CERATIZIT GROUP

The Catalogue

TEAM CUTTING TOOLS

CUTTING SOLUTIONS BY CERATIZIT · KOMET · WNT · KLENK

CERATIZIT is a high-tech engineering group specialised in tooling and hard material technologies.

Tooling the Future

www.ceratizit.com

CERATIZIT Group
With passion and pioneering spirit for carbide

CERATIZIT has been a pioneer in the field of demanding carbide solutions for machining and wear protection for more than 95 years, controlling the entire value chain from powder to the finished end product.

With exclusive access to the highest quality carbide raw materials, CERATIZIT offers more than 130 carbide grades and as a full-range supplier manufactures highly specialized cutting tools, indexable inserts, rods made of hard materials and wear parts.

With more than 9,000 employees worldwide at 34 production sites and a sales network of more than 70 branches, the CERATIZIT Group is a global player in the carbide industry. As a technology leader, CERATIZIT continually invests in research and development and owns more than 1,000 patents.

Under the motto „Tooling the Future," our innovative materials and applications help our customers develop a variety of machines and products that shape our immediate environment and are part of our everyday lives.

The goal remains the same: CERATIZIT provides competitive advantages – through new technological standards, innovative materials and coatings as well as unique carbide products.

Welcome!

Placing your order is quick and easy

Customer Service Centre

Freephone Number
UK: 0800 073 2073
Ireland: 1800 93 22 55

Freefax Number
UK: 0800 073 2074

E-Mail
info.uk@ceratizit.com

It couldn't be easier

Ordering via the Online Shop

http://cuttingtools.ceratizit.com

On-site technical support

Your Local Technical Sales Engineer

Your customer number

Solid drilling and bore machining
1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading
6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning
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Team Cutting Tools

The new full-range supplier in machining

Four experts, one expertise: Cutting Solutions by CERATIZIT, KOMET, WNT and KLENK bundle their expertise and, with Team Cutting Tools, offer a uniquely broad know-how in the field of machining. Partners and customers benefit from a highly attractive, holistic service promise:
One of the largest product ranges on the market. An enormously efficient distribution. Leading expertise in future technologies from digitization to nanotechnology. Deep industry expertise based on many years of experience. All under one roof.

Solutions for the metalworking industry

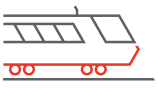
Automotive

Aerospace

Heavy Duty machining

Energy

Medical



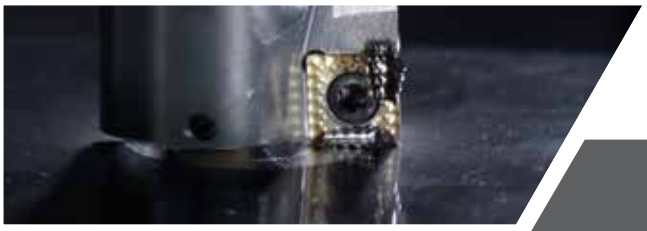
Rail industry

General Engineering

CUTTING SOLUTIONS BY CERATIZIT

COMPETENCE SUPPLIER IN THE DEVELOPMENT AND MANUFACTURE OF INDUSTRIAL SOLUTIONS

Cutting Solutions by CERATIZIT is a leader in the development and manufacturing of industrial solutions and has decades of experience in the manufacture of tungsten carbide tools and inserts.



KOMET

AN INNOVATIVE PIONEER IN HOLE PRODUCTION FOR OVER A CENTURY

KOMET is a global technology leader in high-precision drilling, reaming and threading. Like other members of the CERATIZIT group, KOMET has also established itself as a manufacturer of high-quality cutting tools by developing innovative products.

WNT

STRONG SERVICE, EXTENSIVE PORTFOLIO

Cutting edge quality tooling for every application from the machine spindle to the machine table: With this impressive range of high quality products combined with industry leading service and outstanding logistical support, WNT always delivers the highest cutting efficiency to the customer.

KLENK

PREMIUM CUTTING TOOLS FOR THE AEROSPACE AND ASTRONAUTICAL INDUSTRIES

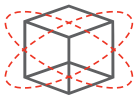
KLENK focuses primarily on the aerospace industry and is a leader in rotary tools for drilling, milling, reaming and countersinking. Many of these products are custom-made for customers worldwide and are predestined for machining CFRP, titanium, aluminum and steel components.

Tool + Service = Solution

On the latest technology

Technical Training

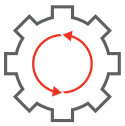
Our engineers are provided with constant training to keep them up to speed on all technical matters. We will gladly share this knowledge with you. Use our Service for the further education of your metal cutting technicians in the Technical Centre.



Tool data always at your fingertips

Cutting data and CAD models for day-to-day assistance

In addition to detailed cutting data we also offer 2D and 3D models to assist you with your tool management or for simulating an operation. All data for this Service is available for you in our Online Shop.



Bringing the old back to life

Regrinding, not replacing

Your used precision tool is in the best possible hands with us. We return your tool to you with the original finish, coating and geometry – as good as new and ready for use back in the machine.

We come full circle

Our recycling service

Our joint contribution for the good of the environment: we take back your carbide and process it appropriately. You receive a credit from us that you can redeem with your next tool purchase.

Intelligent Machining

Industry 4.0 with ToolScope

ToolScope is a modular assistance system for monitoring and optimizing machining processes. With it, we are the only company that offers not only the tools, but also the expertise and capabilities to master and improve processes throughout the entire machining process.

Competent advice also available on call

Application engineers with know-how

An application engineer is always available by phone to answer your application-specific questions. Even if they are not on-site with you, our experts are always ready to answer your questions. Use our Service by telephone Monday to Friday from 8.00 am – 6.30 pm.
The Freephone number is 0800 073 2 073.

Your competent partner on-site

Technical advice from your Technical Sales engineer

There is a simple reason why we like to support our customers: we want the best for them. And the best solutions are developed when we work together. Thanks to many years of practical experience our experts are able to quickly recognize your individual needs and assist you in optimizing your productivity.

Ordered quickly, Available now, Delivered immediately

It couldn't be easier

Ordering via the Online Shop

In the Online Shop you can select and order your tool with a mouse click, 24 hours a day, 7 days a week. All your transactions including those in the past can be viewed clearly and easily in the online shop. Register and use our Service: **cuttingtools.ceratizit.com**

Stock around the clock!

Tool Supply 24/7

If you install a Tool-O-Mat it means that we take on all the procurement and stocking costs for you. You have 100 % availability of all tools at all times and without expenditure.

From single items to large orders!

There are no minimum order quantities

No matter which tool you need, we promise you quick and uncomplicated delivery. Even if you only order one item! We do not have minimum order quantities.

Your tool is ready!

High product availability thanks to state-of-the-art logistics

Why own stock? We take care of that for you! With the cutting-edge logistics center of the cutting tools industry, we guarantee that your order will be delivered promptly.

Where is my order right now?

Order Delivery Tracking

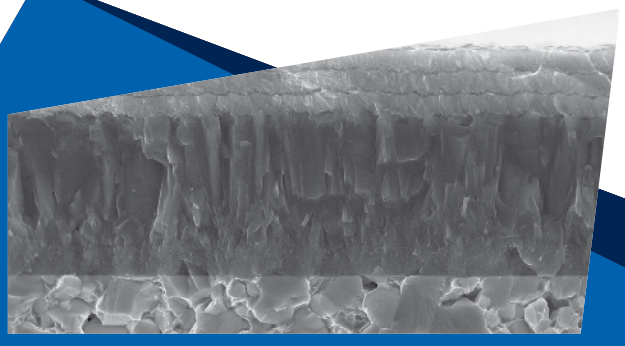
For those who do not want to lose sight of their order: With the shipment number you can track the current status of your order online – no matter how your order was placed.

Dragonskin by CERATIZIT
The latest generation of coating technology

Decades of experience coupled to consistent and constant development are in the unique Dragonskin coating technology. Thanks to our innovative design and expertise in powder metallurgy, we – and above all you – achieve an unmatched level of performance in machining.

Like the Dragon‘s invulnerability, Dragonskin Coating Technology offers the highest levels of protection against wear and is designed with its impermeable layer for the most adverse requirements. The result is an extremely hard and durable surface with a satin finish.

The perfect combination of state-of-the-art high-performance substrates and new coating structures enable high cutting speeds and increased process reliability. A proven – up to 80 % – increased performance through the latest Dragonskin coating technology offers you a significant competitive advantage.



Dragonskin Coating

DRAGONSKIN

Dragonskin – The coatings for the highest performance

The product category Dragonskin is intended to help make tools easily recognizable and quick to find using CERATIZIT's high-performance coating technology. All products that are marked with the Dragonskin icon represent unmatchable performance, maximum tool life and maximum process reliability.

Legendary Performance

Dragonskin

Stable production processes in a networked world

From tool management and the CAD / CAM system to simulation software and the machine itself – all systems involved in modern production processes can and want to deal more and more with digital data. To meet this demand, we are able to provide you with all the necessary production-relevant data that your production systems require for a smooth process.
All tool dimensions & data are in accordance with ISO 13399 in the product tables, enabling the digitized future.

Digital Tool Data

Technology Data

- Recommended use: Secure tool planning information on selecting the ideal tools for the relevant application
- Cutting data: optimal starting values for the machining of different materials

CAD Data

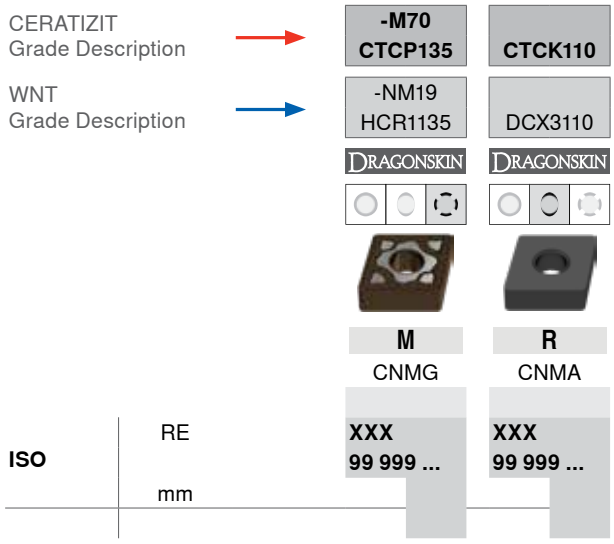
- All tool data is created in accordance with the current standards ISO 13399 / DIN 4003
- 3D solid models in STEP and STL formats
- 2D drawings as DXF
- Usable in all major CAD / CAM systems
- Perfect for integration in tool management systems
- Compatible with the CNC machine simulation to avoid collisions, tool breakage and damage to machinery

Direct and Free of Charge

- Recommended use and cutting data can be found in detail in the catalogue
- All information in digital form can be found on the website to download: **cuttingtools.ceratizit.com**
- Password protected customer area for unrestricted access to all data on the website

Simplified ordering with dual grade descriptions

To simplify identification, the inserts are labeled with the grade descriptions of both CERATIZIT and WNT. Even if these differ, it is always the same, high quality product meaning you can continue to work with the familiar grade description. The same applies to chip breakers, some of which also carry dual designations.



The Catalogue For Workpiece Clamping

We offer our extensive clamping technology program in a separate catalogue. In this you will find the comprehensive vice program, the mechanical (MNG) and pneumatic (PNG) zero-point clamping systems, as well as magnetic clamping technology (MST).

Clamping Systems Overview

Single clamping vice
- power booster systems NCG, HDG and H5G
- fixed jaw as reference
- high repeatability

Centric vice
- symmetrical clamping
- very good accessibility for 5-sided machining
- part datum always centered
- high repeatability

Multiple vice
- Faster set up times
- multifunctional use
- optimum utilization of the machine table
- high repeatability

Clamping variants
- Zero point clamping system
- Zero point clamping system grid plate

Clamping Towers
- Double sided clamping tower
- Triangular clamping tower
- Cruciform clamping tower
- Cube clamping tower

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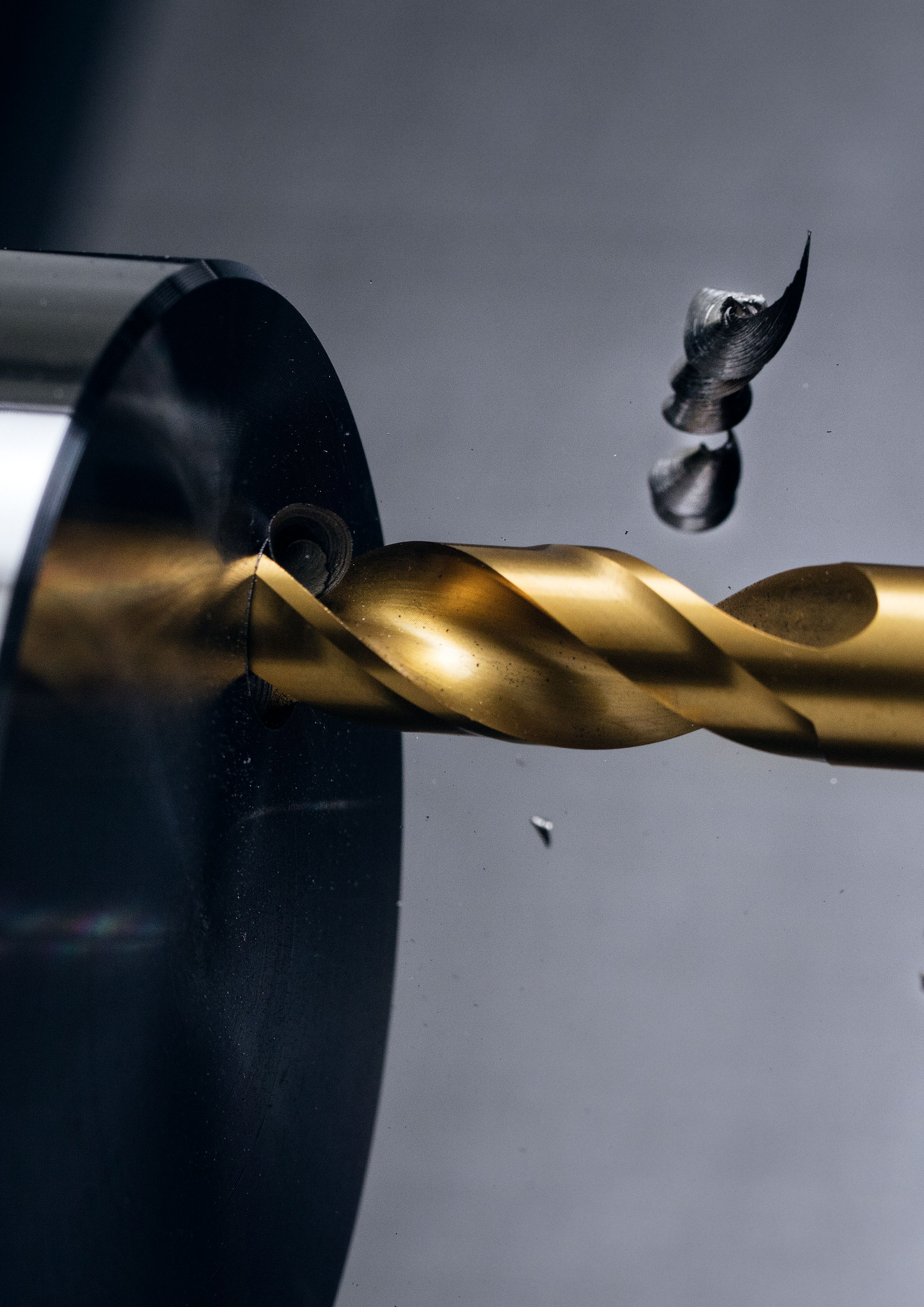

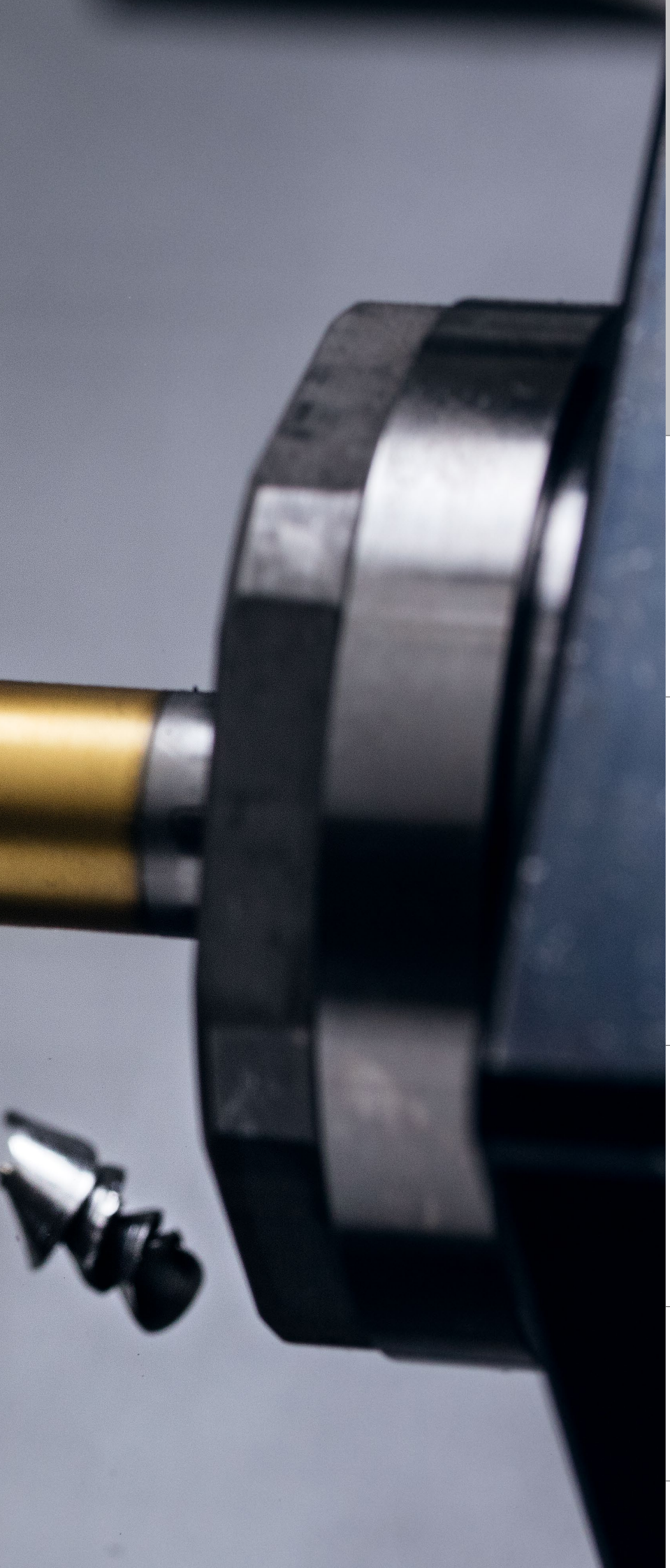

Solid drilling and bore machining

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WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Symbol explanation

Shank

Version

Int. coolant supply

self-centering

● = **Main Application**

○ = Extended application

Toolfinder

	Tool type	Material/ Coating	Description	DIN 1897	DIN 338	DIN 340	Series 1	Series 2	Series 3
				3xD	5xD	10xD	> 10xD		
Steel – Universal	**VX**	HSS-E TiN	▲ universal high-performance drill ▲ shank DIN 1835A ▲ self centering	8	16				
	UNI	HSS-E PM TiN	▲ wear-resistant due to HSS-E-PM and TiN coating ▲ universal high-performance drill	9–14	17–22				
	UNI	HSS-E TiN	▲ as for type VX ▲ without standard shank to DIN 1835 A ▲ available as a set	9–14	17–22	26–28			
	N	HSS vap.	▲ stable twist drill ▲ also suitable for portable drills ▲ available in set	9–14	17–22				
	WT	HSS-E vap.	▲ for high alloy steel and special alloys (Hastelloy, Inconel, Nimonic)	9–14					
	WT	HSS-E TiN	▲ as type WT HSS-E vap. ▲ higher wear resistance due to coating	9–14					
	WTL-L	HSS F.-nit	▲ left-hand cutting ▲ nitrided cutting edge giving increased wear protection to cutting corners and guide lands	15	23				
	WNXi	HSS-E	▲ very good chip evacuation with thro' coolant ▲ for long chipping materials to 1000 N/mm²		25				
	WNXi	HSS-E TiN	▲ as type WNXi HSS-E ▲ higher wear resistance due to coating		25				
	WTL	HSS-E F.-nit	▲ special flute profile with large chip gullet ▲ nitrided cutting edge giving increased wear protection to cutting corners and guide lands		17–22	26–28			
	WTL	HSS-E TiN	▲ as WTL HSS-E, but higher v_c and wear resistance due to coating ▲ suitable for steel and cast iron		17–22				
	WTL	HSS-E TiCN	▲ as WTL TiN, but higher v_c and wear resistance possible with high alloy steels		23				
	WTL	HSS F.-nit	▲ special flute profile with large chip gullet ▲ nitrided cutting edge giving increased wear protection to cutting corners and guide lands			26–28	29	30	30
	WTL	HSS TiN	▲ as WTL HSS, but higher v_c and wear resistance due to coating			26–28			
	WNX	HSS-E	▲ wide chip flutes for long-chipping materials ▲ self-centring	9–14					
	NC	HSS	▲ suitable for use with drill bushes ▲ very good chip evacuation with thro' coolant			25			
	NC	HSS TiAlN	▲ as NC, but higher v_c and wear resistance due to coating			25			
Stainless steel	**VA**	HSS-E	▲ specialist for stainless and acid-resistant materials ▲ special geometry	9–14	17–22				
Non-ferrous metals	**W**	HSS	▲ specialist for non-ferrous metals		17–22				
	WTW	HSS	▲ for non-ferrous metals to 500 N/mm² ▲ for deep holes			26–28			

HSS Drills Overview

3xD without thro‘ coolant

	Tool type	Material | Coating	Point angle	Diameter in mm DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials		coated	uncoated	WNT \ Performance
	VX	HSS-E TiN	118°	2–20	●	●	●	●	○			■		8
	UNI	HSS-E PM TiN	130°	1–14	●	○	●	○	○			■		9–14
	UNI	HSS-E TiN	118°	1–14	●	●	●	●	○	○		■		9–14
	N	HSS vap.	118°	0,4–20	●		●	○				■		9–14
	VA	HSS-E	130°	1–12	○	●	○	○	○				□	9–14
	WNX	HSS-E	130°	1–20	●	○	○	●	○				□	9–14
	WT	HSS-E vap.	130°	0,4–25	●	○	○	○	○	○		■		9–14
	WT	HSS-E TiN	130°	1–20	●	○	○	○	○	○		■		9–14
	WTL-L	HSS F.-nit	130°	1–19	●	○	○	●		○	left-hand cutting	■		15

5xD without thro‘ coolant

	Tool type	Material | Coating	Point angle	Diameter in mm DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials		coated	uncoated	WNT \ Performance
	VX	HSS-E TiN	118°	2–20	●	●	●	●	○			■		16
	UNI	HSS-E PM TiN	130°	1–14	●	○	●	○	○			■		17–22
	UNI	HSS-E TiN	118°	0,9–14	●	●	●	●	○			■		17–22
	N	HSS vap.	118°	0,2–20	●		●	○				■		17–22
	VA	HSS-E	130°	1–12	○	●	○	○	○				□	17–22
	WTL	HSS-E F-nit.	130°	1–16	●	○	○	○				■		17–22
	WTL	HSS-E TiN	130°	1–16	●	○	○	○				■		17–22
	WTL	HSS-E TiCN	130°	3–12	●	○						■		23
	W	HSS	130°	0,20–20				●					□	17–22
	WTL-L	HSS F-nit.	130°	1–16	●		○	○			left-hand cutting	■		23

HSS Drills Overview

	Tool type	Material | Coating	Point angle	Diameter in mm DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials	coated	uncoated	WNT \ Performance
5xD with thro' coolant													
	WNXi	HSS-E	130°	5–20	●	●	●	○	○	E		□	25
	WNXi	HSS-E TiN	130°	5–20	●	●	●	○	○	E	■		25
up to 10xD without thro' coolant													
	UNI	HSS-E TiN	118°	1–14	●	○	●	○		A	■		26–28
	WTL	HSS TiN	130°	1–14	●		●	●		A	■		26–28
	WTL	HSS-E F-nit.	130°	1–12	●	●	●	●		A	■		26–28
	WTL	HSS F-nit.	130°	1–14	●		●	●		A	■		26–28
	WTW	HSS	130°	1–14				●		A		□	26–28
up to 10xD with thro' coolant													
	NC	HSS	130°	3–13	●	○	●	○	○	A		□	25
	NC	HSS TiAlN	130°	3–13	●	○	●	○	○	A	■		25
over 10xD without thro' coolant													
	WTL	HSS Series 1	130°	2–13	●	○	●	●		A	■		29
	WTL	HSS Series 2	130°	2–13	●	○	●	●		A	■		30
	WTL	HSS Series 3	130°	2,5–13	●	○	●	●		A	■		30
Mini-drill													
	N	HSS-E PM	118°	0,15–1,45	●	●	●	●	○	A		□	31
Twist Drill Sets													
	N	HSS vap.	118°	1–10	●		●			A	■		24
	UNI	HSS-E TiN	118°	1–10	●	●	●	●	○	A	■		24

HSS Drills Overview

	Tool type	Material | Coating	Point angle	Diameter in mm DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials		coated	uncoated	WNT \ Performance
NC Spot Drill														
	NC-A	HSS	90°	3–20	●	○	●	○			A ~B		□	35–37
	NC-A	HSS TiN	90°	3–20	●	○	●	○			A ~B	■		35+36
	NC-A	HSS	120°	3–20	●	○	●	○			A ~B		□	35+36
	NC-A	HSS TiN	120°	3–20	●	○	●	○			A ~B	■		35+36
Centre drills														
	ZB	HSS	118°	0,5–6,3	●	○	●	○				DIN 333 – Form A/B/R	□	37–39
	ZB	HSS TiN	118°	0,5–6,3	●	○	●	○				DIN 333 – Form A	■	38
	ZB	HSS-E	118°	0,5–6,3	●	○	●	○				DIN 333 – Form A	□	38
Core drills														
	N	HSS	120°	3,8–12	●	○	●	●	○		A	3 flute	□	40
Stepped drills														
	SB	HSS vap.	118°	2,5–10,2	●	○	●	○			A	Countersinking angle 90°	■	41
	SB	HSS	118°	2,5–10,2	●	○	●	○			A	Countersinking angle 90°	□	41
	SB	HSS vap.	118°	3,2–10,5	●	○	●	○			A	Countersinking angle 90°	■	41
	SB	HSS	118°	3,2–10,5	●	○	●	○			A	Countersinking angle 90°	□	41
	SB	HSS vap.	118°	3,4–11	●	○	●	○			A	Countersinking angle 180°	■	42
	SB	HSS	118°	3,4–11	●	○	●	○			A	Countersinking angle 180°	□	42
	SB	HSS vap.	118°	3,3–21	●	○	●	○				Countersinking angle 60°	■	44

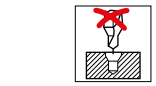
HSS Drills Overview

	Tool type	Material | Coating	Point angle	Diameter in mm DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials		coated	uncoated	WNT \ Performance
Drills with Morse taper														
3xD														
	WT	HSS-E vap.	130°	10–30	●	○	○	○	○		MK	■		31
5xD														
	N	HSS vap.	118°	10–60	●		●	○			MK	■		32
	WTL	HSS-E F.-nit	130°	10–27	●	○	○	○			MK	■		32
10xD														
	N	HSS vap.	118°	10–50	●		●	○			MK	■		33
	WTL	HSS-E F.-nit	130°	10–26	●	●	●	●			MK	■		33
above 10xD														
	WTL	HSS Series 1	130°	10–30	●	○	●	●			MK	■		34
	WTL	HSS Series 2	130°	10–30	●	○	●	●			MK	■		34
Core drills														
	N	HSS vap.	120°	10–30	●	○	●	●	○		MK	3 flute	■	40
Stepped drills														
	SB	HSS vap.	118°	5,5–22	●	○	●	○			MK	Countersinking angle 180°	■	43

High-performance twist drills similar to DIN 1897, extra-short

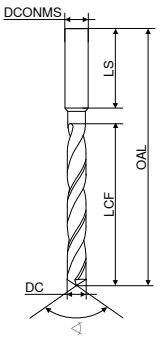
- shank to DIN 1835 A
- special point thinning
- very good centering behaviour
- 4 facet
- highest Performance

≤ 3xD



VX

TiN



HSS-E

DC h8	OAL	LCF	DCONMS h6	LS	T2 Article no. 10 122 ...	
mm	mm	mm	mm	mm	£	
2.00	44	12	3	28	9.42	020
2.10	44	12	3	28	10.67	021
2.20	45	13	3	28	11.50	022
2.30	45	13	3	28	11.50	023
2.40	46	14	3	28	12.04	024
2.50	46	14	3	28	10.52	025
2.60	46	14	3	28	12.04	026
2.70	48	16	3	28	12.46	027
2.80	48	16	3	28	12.46	028
2.90	48	16	3	28	12.46	029
3.00	48	16	3	28	11.50	030
3.10	50	18	4	28	11.50	031
3.20	50	18	4	28	11.50	032
3.30	50	18	4	28	11.50	033
3.40	52	20	4	28	11.50	034
3.50	52	20	4	28	10.93	035
3.60	52	20	4	28	12.22	036
3.70	52	20	4	28	12.46	037
3.80	54	22	4	28	12.19	038
3.90	54	22	4	28	12.46	039
4.00	54	22	4	28	10.11	040
4.10	66	22	6	36	10.11	041
4.20	66	22	6	36	10.67	042
4.30	68	24	6	36	11.21	043
4.40	68	24	6	36	12.73	044
4.50	68	24	6	36	10.52	045
4.60	68	24	6	36	13.29	046
4.70	68	24	6	36	13.56	047
4.80	70	26	6	36	13.56	048
4.90	70	26	6	36	13.56	049
5.00	70	26	6	36	11.50	050
5.10	70	26	6	36	13.29	051
5.20	70	26	6	36	13.70	052
5.30	70	26	6	36	13.85	053
5.40	72	28	6	36	15.36	054
5.50	72	28	6	36	12.19	055
5.55	72	28	6	36	15.36	555
5.60	72	28	6	36	15.36	056
5.70	72	28	6	36	15.36	057
5.80	72	28	6	36	15.36	058
5.90	72	28	6	36	15.36	059
6.00	72	28	6	36	12.87	060
6.10	75	31	8	36	19.93	061
6.20	75	31	8	36	19.93	062
6.30	75	31	8	36	23.80	063
6.40	75	31	8	36	20.67	064
6.50	75	31	8	36	15.10	065
6.60	75	31	8	36	24.23	066
6.70	75	31	8	36	24.23	067
6.80	78	34	8	36	26.51	068
6.90	78	34	8	36	26.16	069
7.00	78	34	8	36	19.93	070
7.10	78	34	8	36	29.33	071
7.20	78	34	8	36	29.78	072
7.30	78	34	8	36	29.78	073
7.40	78	34	8	36	29.78	074
7.45	78	34	8	36	29.78	745
7.50	78	34	8	36	21.04	075
7.60	81	37	8	36	30.22	076
7.70	81	37	8	36	32.52	077
7.80	81	37	8	36	32.52	078
7.90	81	37	8	36	32.52	079
8.00	81	37	8	36	21.59	080
8.10	87	37	10	40	36.91	081
8.20	87	37	10	40	36.91	082
8.30	87	37	10	40	36.91	083
8.40	87	37	10	40	36.91	084
8.50	87	37	10	40	24.49	085
8.60	91	40	10	40	38.35	086
8.70	91	40	10	40	38.35	087
8.80	91	40	10	40	38.35	088
8.90	91	40	10	40	38.35	089
9.00	91	40	10	40	26.72	090
9.10	91	40	10	40	48.09	091
9.20	91	40	10	40	48.09	092
9.30	91	40	10	40	48.09	093
9.35	91	40	10	40	48.09	935
9.40	91	40	10	40	48.09	094
9.50	91	40	10	40	33.40	095
9.60	93	43	10	40	36.03	096
9.70	93	43	10	40	36.03	097
9.80	93	43	10	40	36.03	098
9.90	93	43	10	40	36.03	099
10.00	93	43	10	40	32.11	100
10.10	100	43	12	45	49.74	101
10.20	100	43	12	45	47.52	102
10.30	100	43	12	45	48.36	103
10.40	100	43	12	45	51.47	104
10.50	100	43	12	45	46.18	105
10.60	100	43	12	45	55.29	106
10.70	104	47	12	45	50.47	107
10.80	104	47	12	45	48.51	108
10.90	104	47	12	45	71.27	109
11.00	104	47	12	45	46.18	110
11.10	104	47	12	45	45.16	111
11.50	104	47	12	45	48.09	115
11.70	104	47	12	45	54.06	117
11.80	104	47	12	45	56.45	118
11.90	108	51	12	45	71.38	119
12.00	108	51	12	45	55.22	120
12.10	111	51	16	48	40.22	121
12.20	111	51	16	48	59.88	122
12.30	111	51	16	48	73.61	123
12.40	111	51	16	48	87.84	124
12.50	111	51	16	48	56.88	125
12.60	111	51	16	48	115.31	126
12.70	111	51	16	48	126.19	127
12.80	111	51	16	48	59.91	128
12.90	111	51	16	48	88.33	129
13.00	111	51	16	48	61.14	130
13.50	114	54	16	48	91.53	135
14.00	114	54	16	48	91.53	140
14.50	116	56	16	48	117.24	145
15.00	116	56	16	48	110.41	150
15.50	118	58	16	48	119.41	155
16.00	118	58	16	48	115.35	160
16.50	126	60	20	50	178.83	165
17.00	126	60	20	50	178.83	170
17.50	128	62	20	50	178.83	175
18.00	128	62	20	50	178.83	180
18.50	130	64	20	50	178.83	185
19.00	130	64	20	50	178.83	190
19.50	132	66	20	50	178.83	195
20.00	132	66	20	50	159.07	200

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○

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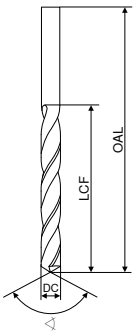
High-performance twist drills similar to DIN 1897, extra-short

≤ 3xD



	UNI	UNI	N	VA	WNX	WT	WT
	TiN	TiN	vap.			vap.	TiN
	◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS-E	HSS-E	HSS-E
	T2	T2	T2	T2	T2	T2	T2

DC h8	DC	OAL	LCF	Article no. 10 113 ...		Article no. 10 107 ...		Article no. 10 105 ...		Article no. 10 130 ...		Article no. 10 106 ...		Article no. 10 109 ...		Article no. 10 110 ...	
mm	inch	mm	mm	£		£		£		£		£		£		£	
0.40		19	2.5					4.43	004 [1]					7.70	00400 [1]		
0.50		20	3.0					3.60	005 [1]					5.56	00500 [1]		
0.55		21	3.5											13.11	00550 [1]		
0.60		21	3.5					4.29	006 [1]					6.84	00600 [1]		
0.65		22	4.0											7.26	00650 [1]		
0.70		23	4.5					4.02	007 [1]					6.28	00700 [1]		
0.75		23	4.5											6.57	00750 [1]		
0.80		24	5.0					3.20	008 [1]					5.43	00800 [1]		
0.85		24	5.0											6.10	00850 [1]		
0.90		25	5.5					3.20	009 [1]					5.43	00900 [1]		
0.95		25	5.5											6.10	00950 [1]		
1.00		26	6.0	7.54	010 [2]	4.84	010	1.82	010 [1]	5.12	010	2.74	010	3.88	01000 [1]	5.00	010
1.05		26	6.0											5.14	01050 [1]		
1.10		28	7.0	7.54	011 [2]	4.84	011	1.94	011 [1]	4.99	011	2.98	011	3.74	01100 [1]	5.27	011
1.15		28	7.0											4.14	01150 [1]		
1.20		30	8.0	7.72	012 [2]	4.57	012	1.94	012 [1]	4.71	012	2.98	012	3.60	01200 [1]	5.00	012
1.25		30	8.0											4.14	01250 [1]		
1.30		30	8.0	8.09	013 [2]	4.84	013	1.94	013 [1]	4.99	013	2.92	013	3.74	01300 [1]	5.27	013
1.35		32	9.0											4.14	01350 [1]		
1.40		32	9.0	7.46	014 [2]	4.71	014	1.94	014 [1]	4.99	014	2.92	014	3.74	01400 [1]	5.27	014
1.45		32	9.0											4.14	01450 [1]		
1.50		32	9.0	7.00	015 [2]	4.38	015	1.67	015 [1]	4.43	015	2.74	015	3.49	01500 [1]	5.00	015
1.55		34	10.0											5.43	01550 [1]		
1.60		34	10.0	7.34	016 [2]	4.38	016	1.82	016 [1]	4.43	016	2.92	016	3.32	01600 [1]	5.00	016
1.65		34	10.0											4.42	01650 [1]		
1.70		34	10.0	7.46	017 [2]	4.14	017	1.82	017 [1]	4.29	017	2.92	017	3.32	01700 [1]	4.71	017
1.75		36	11.0											4.02	01750 [1]		
1.80		36	11.0	7.34	018 [2]	4.38	018	1.94	018 [1]	4.43	018	2.92	018	3.49	01800 [1]	5.00	018
1.83		36	11.0											5.14	01830 [1]		
1.85		36	11.0											3.85	01850 [1]		
1.90		36	11.0	7.34	019 [2]	4.38	019	1.82	019 [1]	4.43	019	2.92	019	3.49	01900 [1]	5.00	019
1.95		38	12.0											5.84	01950 [1]		
2.00		38	12.0	6.17	020 [2]	3.85	020	1.27	020 [1]	3.88	020	2.44	020	2.92	02000 [1]	4.38	020
2.05		38	12.0											5.43	02050 [1]		
2.10		38	12.0	7.54	021 [2]	4.14	021	1.67	021 [1]	4.29	021	2.74	021	3.32	02100 [1]	4.71	021
2.15		40	13.0											5.00	02150 [1]		
2.20		40	13.0	7.54	022 [2]	4.57	022	1.67	022 [1]	4.71	022	2.74	022	3.74	02200 [1]	5.00	022
2.25		40	13.0											4.02	02250 [1]		
2.30		40	13.0	6.36	023 [2]	4.43	023	1.82	023 [1]	4.71	023	2.92	023	3.60	02300 [1]	5.00	023
2.35		40	13.0											5.56	02350 [1]		
2.38	3/32	43	14.0	6.96	238 [2]	4.43	238										
2.40		43	14.0	7.57	024 [2]	4.57	024	1.82	024	4.84	024	2.92	024	3.71	02400	5.27	024
2.45		43	14.0											4.42	02450		

Steel	●	●	●	○	●	●	●
Stainless steel	○	●		●	○	○	○
Cast iron	●	●	●	○	○	○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○	○	○	○
Hardened materials		○				○	○

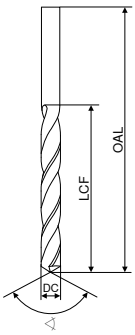
1) uncoated
2) self-centering

→ v_c Page 46+47

Continued on next page

High-performance twist drills similar to DIN 1897, extra-short

≤ 3xD



UNI	UNI	N	VA	WNX	WT	WT
TiN	TiN	vap.			vap.	TiN

◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
HSS-E-PM	HSS-E	HSS	HSS-E	HSS-E	HSS-E	HSS-E
T2	T2	T2	T2	T2	T2	T2

DC h8	DC	OAL	LCF	Article no. 10 113 ...		Article no. 10 107 ...		Article no. 10 105 ...		Article no. 10 130 ...		Article no. 10 106 ...		Article no. 10 109 ...		Article no. 10 110 ...	
mm	inch	mm	mm	£		£		£		£		£		£		£	
2.50		43	14.0	6.62	025 2)	4.14	025	1.38	025	4.16	025	2.74	025	3.32	02500	4.57	025
2.55		43	14.0											5.56	02550		
2.60		43	14.0	7.84	026 2)	4.57	026	1.82	026	4.84	026	2.92	026	3.71	02600	5.27	026
2.65		43	14.0											5.56	02650		
2.70		46	16.0	8.29	027 2)	4.84	027	1.82	027	4.99	027	2.92	027	3.85	02700	5.56	027
2.75		46	16.0											5.56	02750		
2.78	7/64	46	16.0	8.06	278 2)	4.84	278										
2.80		46	16.0	7.72	028 2)	4.84	028	1.82	028	4.99	028	2.98	028	3.85	02800	5.56	028
2.85		46	16.0											5.56	02850		
2.90		46	16.0	8.22	029 2)	4.84	029	1.82	029	4.99	029	3.29	029	3.85	02900	5.56	029
2.95		46	16.0											4.02	02950		
3.00		46	16.0	6.96	030 2)	4.38	030	1.38	030	4.43	030	2.92	030	3.49	03000	4.71	030
3.05		49	18.0											4.16	03050		
3.10		49	18.0	7.46	031 2)	4.71	031	1.82	031	4.99	031	3.41	031	3.85	03100	5.43	031
3.15		49	18.0											6.10	03150		
3.17	1/8	49	18.0	7.34	317 2)	4.57	317										
3.20		49	18.0	7.00	032 2)	4.43	032	1.67	032	4.84	032	2.92	032	3.71	03200	5.14	032
3.25		49	18.0											4.38	03250		
3.30		49	18.0	7.00	033 2)	4.84	033	1.82	033	5.12	033	2.98	033	3.88	03300	5.56	033
3.35		49	18.0											5.56	03350		
3.40		52	20.0	8.09	034 2)	5.00	034	2.10	034	5.12	034	3.58	034	3.88	03400	5.56	034
3.45		52	20.0											4.38	03450		
3.50		52	20.0	7.00	035 2)	4.84	035	1.67	035	5.12	035	3.41	035	3.88	03500	5.00	035
3.55		52	20.0											4.42	03550		
3.57	9/64	52	20.0	7.95	357 2)	5.00	357										
3.60		52	20.0	9.31	036 2)	5.00	036	2.10	036	5.12	036	3.58	036	3.88	03600	5.56	036
3.70		52	20.0	8.06	037 2)	5.26	037	2.10	037	5.53	037	3.58	037	4.16	03700	6.02	037
3.75		52	20.0											4.42	03750		
3.80		55	22.0	8.60	038 2)	5.14	038	2.10	038	5.41	038	3.71	038	4.02	03800	5.56	038
3.85		55	22.0											6.84	03850		
3.90		55	22.0	9.73	039 2)	5.82	039	2.10	039			3.71	039	4.16	03900	6.02	039
3.95		55	22.0											6.84	03950		
3.97	5/32	55	22.0	8.78	397 2)	5.53	397										
4.00		55	22.0	7.95	040 2)	5.14	040	1.67	040	5.41	040	3.71	040	4.14	04000	5.14	040
4.05		55	22.0											4.84	04050		
4.10		55	22.0	9.12	041 2)	5.43	041	1.94	041	5.69	041	3.85	041	4.38	04100	5.56	041
4.15		55	22.0											6.84	04150		
4.20		55	22.0	7.95	042 2)	5.26	042	1.94	042	5.53	042	3.41	042	4.16	04200	5.56	042
4.25		55	22.0											7.43	04250		
4.30		58	24.0	9.05	043 2)	5.56	043	2.78	043	5.82	043	3.85	043	4.57	04300	6.28	043
4.35		58	24.0											7.43	04350		
4.37	11/64	58	24.0	12.16	437 2)	7.43	437										
4.40		58	24.0	9.73	044 2)	6.28	044	2.78	044			3.85	044	4.57	04400	6.42	044

Steel	●	●	●	○	●	●	●
Stainless steel	○	●		●	○	○	○
Cast iron	●	●	●	○	○	○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○	○	○	○
Hardened materials		○				○	○

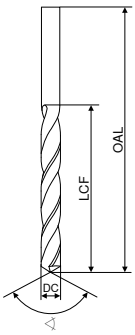
1) uncoated
2) self-centering

→ v_c Page 46+47

Continued on next page

High-performance twist drills similar to DIN 1897, extra-short

≤ 3xD



UNI	UNI	N	VA	WNX	WT	WT
TiN	TiN	vap.			vap.	TiN

◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
HSS-E-PM	HSS-E	HSS	HSS-E	HSS-E	HSS-E	HSS-E
T2	T2	T2	T2	T2	T2	T2

DC_{h8}	DC	OAL	LCF	Article no. 10 113 ...		Article no. 10 107 ...		Article no. 10 105 ...		Article no. 10 130 ...		Article no. 10 106 ...		Article no. 10 109 ...		Article no. 10 110 ...	
mm	inch	mm	mm	£		£		£		£		£		£		£	
4.45		58	24.0											7.56	04450		
4.50		58	24.0	9.05	045 [2]	5.56	045	1.94	045	5.82	045	3.85	045	4.42	04500	5.27	045
4.55		58	24.0											7.43	04550		
4.60		58	24.0	9.12	046 [2]	6.10	046	2.92	046	6.37	046	3.98	046	4.84	04600	6.98	046
4.65		58	24.0											6.84	04650	7.26	465
4.70		58	24.0	10.14	047 [2]	6.42	047	2.92	047	6.65	047	4.14	047	5.00	04700	7.26	047
4.75		58	24.0											6.84	04750		
4.76	3/16	62	26.0	10.14	476 [2]	6.42	476										
4.80		62	26.0	10.34	048 [2]	6.51	048	2.92	048	6.93	048	4.38	048	5.27	04800	7.26	048
4.85		62	26.0											6.10	04850		
4.90		62	26.0	10.41	049 [2]	7.20	049	2.92	049	7.47	049	4.57	049	5.82	04900	7.26	049
4.95		62	26.0											8.72	04950		
5.00		62	26.0	8.78	050 [2]	5.69	050	2.10	050	6.23	050	4.14	050	4.71	05000	5.84	050
5.05		62	26.0											10.12	05050		
5.10		62	26.0	9.66	051 [2]	7.61	051	2.92	051	8.18	051	4.71	051	6.28	05100	7.26	051
5.15		62	26.0											10.71	05150		
5.16	13/64	62	26.0	11.51	516 [2]	9.84	516										
5.20		62	26.0	10.41	052 [2]	9.42	052	2.92	052	9.97	052	4.71	052	7.43	05200	7.26	052
5.25		62	26.0											8.68	05250		
5.30		62	26.0	11.78	053 [2]	9.97	053	2.92	053	10.67	053	4.84	053	8.29	05300	7.56	053
5.35		66	28.0											14.11	05350		
5.40		66	28.0	11.55	054 [2]	9.84	054	3.32	054			5.14	054	8.68	05400	8.40	054
5.45		66	28.0											14.10	05450		
5.50		66	28.0	9.88	055 [2]	7.34	055	2.50	055	7.89	055	5.00	055	6.02	05500	6.28	055
5.55		66	28.0											15.80	05550	7.99	555
5.56	7/32	66	28.0	10.82	556 [2]	8.18	556										
5.60		66	28.0	11.78	056 [2]	12.04	056	3.32	056	12.73	056	5.27	056	9.85	05600	7.99	056
5.70		66	28.0	12.64	057 [2]	12.19	057	3.32	057	13.03	057	5.43	057	10.18	05700	7.99	057
5.75		66	28.0											11.68	05750		
5.80		66	28.0	12.08	058 [2]	12.87	058	3.32	058	13.56	058	5.43	058	10.12	05800	7.99	058
5.85		66	28.0											16.99	05850		
5.90		66	28.0	13.32	059 [2]	13.03	059	3.32	059	13.70	059	5.56	059	10.54	05900	8.27	059
5.95	15/64	66	28.0	20.18	595 [2]	14.28	595							10.71	05950		
6.00		66	28.0	10.64	060 [2]	7.34	060	2.50	060	7.89	060	5.00	060	6.02	06000	6.84	060
6.05		70	31.0											16.99	06050		
6.10		70	31.0	12.49	061 [2]	13.85	061	3.60	061	14.81	061	5.82	061	11.12	06100	10.28	061
6.15		70	31.0											12.67	06150		
6.20		70	31.0	12.49	062 [2]	14.11	062	3.60	062	15.23	062	5.84	062	11.68	06200	10.71	062
6.25		70	31.0											14.39	06250		
6.30		70	31.0	14.31	063 [2]	15.36	063	3.60	063	16.19	063	5.84	063	12.52	06300	10.83	063
6.35	1/4	70	31.0	13.13	635 [2]	15.23	635							8.68	06350		
6.40		70	31.0	13.25	064 [2]	15.64	064	3.74	064	16.60	064	6.28	064	12.70	06400	11.19	064
6.45		70	31.0											14.39	06450		

Steel	●	●	●	○	●	●	●
Stainless steel	○	●		●	○	○	○
Cast iron	●	●	●	○	○	○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○	○	○	○
Hardened materials		○				○	○

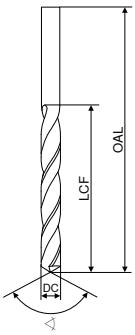
1) uncoated
2) self-centering

→ v_c Page 46+47

Continued on next page

High-performance twist drills similar to DIN 1897, extra-short

≤ 3xD



	UNI	UNI	N	VA	WNX	WT	WT
	TiN	TiN	vap.			vap.	TiN
	◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS-E	HSS-E	HSS-E
	T2	T2	T2	T2	T2	T2	T2

DC h8	DC	OAL	LCF	Article no. 10 113 ...		Article no. 10 107 ...		Article no. 10 105 ...		Article no. 10 130 ...		Article no. 10 106 ...		Article no. 10 109 ...		Article no. 10 110 ...	
mm	inch	mm	mm	£		£		£		£		£		£		£	
6.50		70	31.0	12.49	065 2)	8.59	065	2.92	065	9.14	065	5.84	065	6.98	06500	7.99	065
6.55		70	31.0											17.25	06550		
6.60		70	31.0	13.77	066 2)	16.19	066	3.74	066	17.17	066	6.42	066	13.26	06600	11.19	066
6.65		70	31.0											18.39	06650		
6.70		70	31.0	15.18	067 2)	16.48	067	4.02	067	17.71	067	6.57	067	13.66	06700	11.19	067
6.75		74	34.0	18.67	675 2)	12.62	675							13.68	06750		
6.80		74	34.0	15.21	068 2)	16.89	068	4.57	068	18.13	068	7.26	068	14.10	06800	11.68	068
6.85		74	34.0											19.24	06850		
6.90		74	34.0	15.03	069 2)	17.02	069	4.99	069	18.28	069	7.43	069	13.96	06900	11.68	069
7.00		74	34.0	13.93	070 2)	9.84	070	3.74	070	10.52	070	6.42	070	7.85	07000	9.68	070
7.05		74	34.0											22.38	07050		
7.10		74	34.0	16.88	071 2)	17.71	071	5.12	071	18.82	071	8.68	071	14.11	07100	13.11	071
7.14	9/32	74	34.0	22.40	714 2)	18.13	714										
7.20		74	34.0	17.37	072 2)	17.87	072	5.12	072	19.23	072	9.28	072	15.12	07200	13.11	072
7.25		74	34.0											15.38	07250		
7.30		74	34.0	18.67	073 2)	17.99	073	5.41	073			9.68	073	14.97	07300	13.26	073
7.35		74	34.0											19.66	07350		
7.40		74	34.0	17.49	074 2)	17.87	074	5.69	074			10.54	074	15.56	07400	13.26	074
7.50		74	34.0	14.53	075 2)	11.21	075	4.02	075	12.04	075	6.98	075	9.28	07500	10.12	075
7.60		79	37.0	22.68	076 2)	16.74	076	6.37	076			10.18	076	16.57	07600	14.39	076
7.70		79	37.0	24.57	077 2)	20.77	077	6.37	077	22.00	077	10.28	077	16.54	07700	14.39	077
7.75		79	37.0											20.81	07750		
7.80		79	37.0	18.74	078 2)	20.07	078	6.37	078			10.28	078	17.44	07800	14.39	078
7.90		79	37.0	26.23	079 2)	22.00	079	6.51	079	23.25	079	9.85	079	17.38	07900	14.39	079
7.94	5/16	79	37.0	17.98	794 2)	11.34	794										
8.00		79	37.0	17.37	080 2)	10.83	080	4.16	080	11.09	080	7.26	080	8.72	08000	10.42	080
8.05		79	37.0											27.95	08050		
8.10		79	37.0	22.18	081 2)	22.57	081	6.93	081	24.07	081	10.83	081	18.39	08100	14.39	081
8.15		79	37.0											27.95	08150		
8.20		79	37.0	23.09	082 2)	23.54	082	7.20	082	24.90	082	11.19	082	18.96	08200	14.39	082
8.25		79	37.0											21.67	08250		
8.30		79	37.0	24.22	083 2)	25.31	083	7.47	083	26.98	083	11.12	083	20.50	08300	15.12	083
8.40		79	37.0	23.23	084 2)	26.01	084	7.61	084	27.68	084	11.55	084	21.25	08400	15.12	084
8.50		79	37.0	20.18	085 2)	12.87	085	5.69	085	13.56	085	8.72	085	10.28	08500	12.52	085
8.55		84	40.0											31.65	08550		
8.60		84	40.0			15.47	086	7.61	086	28.50	086	12.22	086	21.67	08600	15.55	086
8.70		84	40.0			17.80	087	7.76	087	29.33	087	12.67	087	23.25	08700	15.55	087
8.73	11/32	84	40.0	31.91	873 2)	20.39	873										
8.75		84	40.0											34.87	08750		
8.80		84	40.0	25.32	088 2)	16.74	088	7.89	088			13.96	088	23.54	08800	15.55	088
8.90		84	40.0			22.01	089	8.18	089			9.28	089	24.27	08900	15.98	089
8.95		84	40.0											38.88	08950		
9.00		84	40.0	20.48	090 2)	13.56	090	5.41	090	14.52	090	8.40	090	10.83	09000	12.70	090

Steel	●	●	●	○	●	●	●
Stainless steel	○	●		●	○	○	○
Cast iron	●	●	●	○	○	○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○	○	○	○
Hardened materials		○				○	○

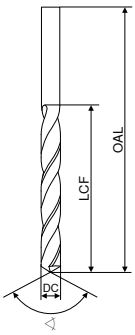
1) uncoated
2) self-centering

→ v_c Page 46+47

Continued on next page

High-performance twist drills similar to DIN 1897, extra-short

≤ 3xD



	UNI	UNI	N	VA	WNX	WT	WT
	TiN	TiN	vap.			vap.	TiN
	130°	118°	118°	130°	130°	130°	130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS-E	HSS-E	HSS-E
	T2	T2	T2	T2	T2	T2	T2
DC h8	Article no. 10 113 ...	Article no. 10 107 ...	Article no. 10 105 ...	Article no. 10 130 ...	Article no. 10 106 ...	Article no. 10 109 ...	Article no. 10 110 ...
mm	£	£	£	£	£	£	£

DC h8 mm	DC inch	OAL mm	LCF mm	Article no. 10 113 ... £		Article no. 10 107 ... £		Article no. 10 105 ... £		Article no. 10 130 ... £		Article no. 10 106 ... £		Article no. 10 109 ... £		Article no. 10 110 ... £	
9.05		84	40.0											25.52	09050		
9.10		84	40.0			18.55	091	9.14	091			14.39	091	25.27	09100	20.35	091
9.20		84	40.0			18.68	092	9.97	092	33.35	092	15.38	092	25.52	09200	20.35	092
9.25		84	40.0											29.22	09250		
9.30		84	40.0	23.23	093 2)	32.93	093	10.11	093	35.16	093	10.83	093	27.18	09300	20.35	093
9.40		84	40.0			21.66	094	10.38	094			10.83	094	26.93	09400	20.35	094
9.50		84	40.0	22.68	095 2)	14.52	095	8.59	095	15.64	095	10.28	095	11.85	09500	16.54	095
9.60		89	43.0			22.65	096	10.93	096			16.57	096	26.93	09600	20.67	096
9.65		89	43.0											31.67	09650		
9.70		89	43.0			22.01	097	11.09	097			16.57	097	27.50	09700	20.67	097
9.75		89	43.0											38.88	09750		
9.80		89	43.0	27.02	098 2)	33.91	098	11.62	098	36.26	098	16.54	098	27.95	09800	22.11	098
9.90		89	43.0			23.52	099	11.62	099			16.95	099	28.78	09900	22.11	099
10.00		89	43.0	22.33	100 2)	16.89	100	6.51	100	18.13	100	9.28	100	14.10	10000	15.55	100
10.05		89	43.0											36.47	10050		
10.10		89	43.0			22.65	101	12.87	101					38.36	10100		
10.20		89	43.0	28.27	102 2)	26.84	102	11.09	102	28.50	102	16.57	102	21.67	10200	21.95	102
10.25		89	43.0											33.40	10250		
10.30		89	43.0			21.04	103	13.70	103					35.45	10300		
10.40		89	43.0			24.63	104	14.28	104					41.83	10400		
10.50		89	43.0	26.79	105 2)	29.07	105	11.62	105	30.99	105	13.55	105	24.27	10500	20.92	105
10.60		95	47.0					17.87	106					42.29	10600		
10.70		95	47.0					17.87	107					42.29	10700		
10.75		95	47.0											35.92	10750		
10.80		95	47.0					18.28	108			17.97	108	41.13	10800	46.65	108
10.90		95	47.0					18.28	109					41.83	10900		
11.00		95	47.0	29.79	110 2)	30.99	110	11.62	110	32.93	110	15.98	110	25.52	11000	20.92	110
11.10		95	47.0					18.28	111					46.46	11100		
11.11	7/16	95	47.0	34.97	111 2)	36.53	111										
11.20		95	47.0					19.23	112					49.82	11200		
11.30		95	47.0					19.52	113					51.59	11300		
11.40		95	47.0					19.52	114					52.02	11400		
11.50		95	47.0	34.33	115 2)	35.16	115	12.32	115	37.37	115	20.92	115	29.22	11500	21.81	115
11.60		95	47.0					19.52	116								
11.70		95	47.0					19.52	117	70.28	117			52.02	11700		
11.75		95	47.0											57.68	11750		
11.80		95	47.0					19.79	118			26.31	118	52.02	11800	26.16	118
11.90		102	51.0					19.79	119								
12.00		102	51.0	33.60	120 2)	41.37	120	14.81	120	44.02	120	20.92	120	34.43	12000	24.95	120
12.10		102	51.0					20.90	121					51.59	12100		
12.20		102	51.0					20.90	122					52.02	12200		
12.25		102	51.0											58.55	12250		
12.30		102	51.0	56.92	123 2)	38.48	123	21.17	123			26.31	123	40.69	12300	38.35	123

Steel	●	●	●	○	●	●	●
Stainless steel	○	●		●	○	○	○
Cast iron	●	●	●	○	○	○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○	○	○	○
Hardened materials		○				○	○

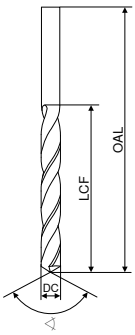
1) uncoated
2) self-centering

→ v_c Page 46+47

Continued on next page

High-performance twist drills similar to DIN 1897, extra-short

≤ 3xD



UNI	UNI	N	VA	WNX	WT	WT
TiN	TiN	vap.			vap.	TiN
◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
HSS-E-PM	HSS-E	HSS	HSS-E	HSS-E	HSS-E	HSS-E
T2	T2	T2	T2	T2	T2	T2

DC h8	DC	OAL	LCF	Article no. 10 113 ...		Article no. 10 107 ...		Article no. 10 105 ...		Article no. 10 130 ...		Article no. 10 106 ...		Article no. 10 109 ...		Article no. 10 110 ...	
mm	inch	mm	mm	£		£		£		£		£		£		£	
12.40		102	51.0					21.17	124					52.02	12400		
12.50		102	51.0	36.86	125 2)	41.66	125	15.64	125			21.36	125	34.51	12500	26.16	125
12.60		102	51.0					21.59	126					35.49	12600		
12.70		102	51.0	47.05	127 2)	31.78	127	20.63	127					35.49	12700		
12.80		102	51.0					22.41	128			32.11	128	53.33	12800	48.32	128
12.90		102	51.0					23.12	129					53.33	12900		
13.00		102	51.0	36.86	130 2)	41.66	130	15.93	130			23.84	130	36.47	13000	26.37	130
13.20		102	51.0					23.80	132					53.33	13200		
13.30		107	54.0					24.49	133								
13.50		107	54.0	39.14	135 2)	41.66	135	18.28	135			29.51	135	40.26	13500	28.81	135
13.80		107	54.0					25.06	138			38.36	138			31.08	138
14.00		107	54.0	48.87	140 2)	44.27	140	18.54	140			26.93	140	40.26	14000	30.22	140
14.50		111	56.0					20.63	145			34.87	145	50.56	14500	30.95	145
14.75		111	56.0					31.57	147								
14.80		111	56.0									48.37	148				
15.00		111	56.0					20.07	150			32.41	150	48.09	15000	31.98	150
15.25		115	58.0					33.35	152					104.32	15250		
15.50		115	58.0					22.14	155			49.11	155	60.14	15500	41.70	155
15.75		115	58.0													44.04	157
16.00		115	58.0					22.41	160			38.94	160	49.32	16000	41.13	160
16.50		119	60.0					26.43	165			39.21	165	81.07	16500	60.56	165
17.00		119	60.0					27.13	170			40.39	170	69.13	17000	59.72	170
17.50		123	62.0					28.38	175			41.26	175	81.94	17500	55.87	175
17.75		123	62.0													67.70	177
18.00		123	62.0					28.66	180			40.77	180	76.71	18000	65.36	180
18.50		127	64.0					31.28	185					97.93	18500	73.23	185
19.00		127	64.0					32.93	190			42.18	190	81.94	19000	71.74	190
19.50		131	66.0					34.87	195					95.44	19500	80.49	195
19.75		131	66.0													80.52	197
20.00		131	66.0					34.87	200			44.47	200	81.95	20000	76.99	200
20.50		136	68.0											115.64	20500		
21.00		136	68.0											110.98	21000		
21.50		141	70.0											118.98	21500		
22.00		141	70.0											120.14	22000		
22.20		141	70.0											124.36	22200		
23.00		146	72.0											128.98	23000		
24.00		151	75.0											141.94	24000		
25.00		151	75.0											162.43	25000		

Steel	●	●	●	○	●	●	●
Stainless steel	○	●		●	○	○	○
Cast iron	●	●	●	○	○	○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○	○	○	○
Hardened materials		○				○	○

1) uncoated
2) self-centering

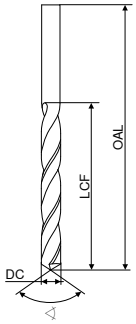
→ v_c Page 46+47

High-performance twist drills similar to DIN 1897, extra-short

▲ left-hand cutting

≤ 3xD

WTL-L



DC h8	OAL	LCF	T2 Article no. 10 112 ...	
mm	mm	mm	£	
1.0	26	6	3.71	010 1)
1.1	28	7	3.98	011 1)
1.2	30	8	3.85	012 1)
1.3	30	8	3.85	013 1)
1.4	32	9	3.58	014 1)
1.5	32	9	3.29	015 1)
1.6	34	10	3.41	016 1)
1.7	34	10	4.84	017 1)
1.8	36	11	4.84	018 1)
1.9	36	11	4.57	019 1)
2.0	38	12	2.92	020 1)
2.1	38	12	2.98	021 1)
2.2	40	13	3.41	022 1)
2.3	40	13	4.99	023 1)
2.4	43	14	3.58	024 2)
2.5	43	14	2.98	025 2)
2.6	43	14	3.58	026 2)
2.7	46	16	3.71	027 2)
2.8	46	16	3.85	028 2)
2.9	46	16	3.98	029 2)
3.0	46	16	3.41	030 2)
3.1	49	18	4.14	031 2)
3.2	49	18	3.71	032 2)
3.3	49	18	4.14	033 2)
3.4	52	20	4.38	034 2)
3.5	52	20	6.10	035 2)
3.6	52	20	4.38	036 2)
3.7	52	20	4.38	037 2)
3.8	55	22	4.71	038 2)
3.9	55	22	4.71	039 2)
4.0	55	22	4.71	040 2)
4.1	55	22	5.27	041 2)
4.2	55	22	4.71	042 2)
4.3	58	24	6.42	043 2)
4.4	58	24	6.42	044 2)
4.5	58	24	5.14	045 2)
4.6	58	24	6.84	046 2)
4.7	58	24	6.84	047 2)
4.8	62	26	6.84	048 2)
4.9	62	26	9.84	049 2)
5.0	62	26	5.82	050 2)
5.1	62	26	6.84	051 2)
5.2	62	26	6.98	052 2)
5.3	62	26	7.26	053 2)
5.4	66	28	7.26	054 2)
5.5	66	28	6.57	055 2)
5.6	66	28	7.26	056 2)
5.7	66	28	10.80	057 2)
5.8	66	28	7.56	058 2)
5.9	66	28	7.70	059 2)
6.0	66	28	6.98	060 2)
6.1	70	31	8.29	061 2)
6.2	70	31	8.29	062 2)
6.3	70	31	8.29	063 2)
6.4	70	31	8.72	064 2)
6.5	70	31	7.26	065 2)
6.6	70	31	8.68	066 2)
6.7	70	31	9.28	067 2)
6.8	74	34	9.85	068 2)
6.9	74	34	11.68	069 2)
7.0	74	34	7.85	070 2)
7.2	74	34	15.38	072 2)
7.3	74	34	22.41	073 2)
7.4	74	34	15.98	074 2)
7.5	74	34	8.72	075 2)
7.7	79	37	24.07	077 2)
8.0	79	37	8.68	080 2)
8.1	79	37	17.25	081 2)
8.2	79	37	17.80	082 2)
8.3	79	37	17.80	083 2)
8.5	79	37	9.85	085 2)
8.6	84	40	18.89	086 2)
8.7	84	40	27.13	087 2)
8.8	84	40	28.66	088 2)
9.0	84	40	10.71	090 2)
9.5	84	40	12.22	095 2)
9.7	89	43	21.95	097 2)
10.0	89	43	12.26	100 2)
10.1	89	43	28.19	101 2)
10.2	89	43	20.35	102 2)
10.5	89	43	19.91	105 2)
11.0	95	47	20.35	110 2)
11.5	95	47	22.25	115 2)
11.8	95	47	29.51	118 2)
12.0	102	51	22.51	120 2)
12.5	102	51	35.42	125 2)
12.8	102	51	31.22	128 2)
13.0	102	51	27.31	130 2)
14.0	107	54	33.40	140 2)
14.5	111	56	41.19	145 2)
15.0	111	56	36.35	150 2)
16.0	115	58	43.48	160 3)
18.0	123	62	108.95	180 3)
19.0	127	64	143.67	190 3)

Steel	●
Stainless steel	○
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	○

1) uncoated
2) nitrided chamfer
3) vaporised

→ v_c Page 47

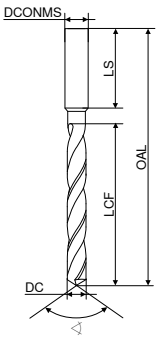
High-performance twist drill similar to DIN 338, short

- with shank to DIN 1835 A
- special point thinning
- 4 facet
- highest Performance
- very good centering behaviour

≤ 5xD

VX

TiN



HSS-E

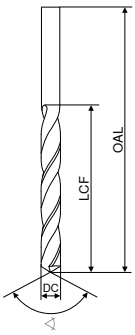
DC h8	OAL	LCF	DCONMS h6	LS	T2 Article no. 10 124 ...	
mm	mm	mm	mm	mm	£	
2.00	56	24	3	28	12.22	020
2.10	56	24	3	28	13.98	021
2.20	59	27	3	28	13.98	022
2.30	59	27	3	28	13.98	023
2.40	62	30	3	28	13.98	024
2.50	62	30	3	28	13.98	025
2.60	62	30	3	28	13.98	026
2.70	65	33	3	28	13.98	027
2.80	65	33	3	28	13.98	028
2.90	65	33	3	28	13.98	029
3.00	65	33	3	28	13.29	030
3.10	68	36	4	28	15.23	031
3.20	68	36	4	28	15.23	032
3.30	68	36	4	28	15.23	033
3.40	71	39	4	28	15.23	034
3.50	71	39	4	28	15.23	035
3.60	71	39	4	28	16.95	036
3.70	71	39	4	28	16.95	037
3.80	75	43	4	28	16.95	038
3.90	75	43	4	28	16.95	039
4.00	75	43	4	28	16.95	040
4.10	87	43	6	36	19.65	041
4.20	87	43	6	36	20.77	042
4.30	91	47	6	36	19.65	043
4.40	91	47	6	36	19.65	044
4.50	91	47	6	36	19.65	045
4.60	91	47	6	36	22.29	046
4.65	91	47	6	36	22.29	465
4.70	91	47	6	36	22.29	047
4.80	96	52	6	36	22.29	048
4.90	96	52	6	36	22.29	049
5.00	96	52	6	36	24.23	050
5.10	96	52	6	36	24.23	051
5.20	96	52	6	36	24.23	052
5.30	96	52	6	36	26.74	053
5.40	101	57	6	36	26.74	054
5.50	101	57	6	36	24.23	055
5.55	101	57	6	36	27.81	555
5.60	101	57	6	36	27.81	056
5.70	101	57	6	36	27.81	057
5.80	101	57	6	36	27.81	058
5.90	101	57	6	36	27.81	059
6.00	101	57	6	36	26.43	060
6.10	107	63	8	36	32.66	061
6.20	107	63	8	36	32.66	062
6.30	107	63	8	36	32.66	063
6.40	107	63	8	36	32.66	064
6.50	107	63	8	36	32.66	065
6.60	107	63	8	36	35.02	066
6.70	107	63	8	36	35.02	067
6.80	113	69	8	36	35.02	068
6.90	113	69	8	36	35.02	069
7.00	113	69	8	36	35.02	070
7.10	113	69	8	36	36.46	071
7.20	113	69	8	36	36.46	072
7.30	113	69	8	36	36.46	073
7.40	113	69	8	36	36.46	074
7.50	113	69	8	36	36.46	075
7.55	119	75	8	36	36.40	755
7.60	119	75	8	36	36.40	076
7.70	119	75	8	36	36.40	077
7.80	119	75	8	36	36.40	078
7.90	119	75	8	36	36.40	079
8.00	119	75	8	36	36.40	080
8.10	125	75	10	40	40.77	081
8.20	125	75	10	40	40.77	082
8.30	125	75	10	40	40.77	083
8.40	125	75	10	40	40.77	084
8.50	125	75	10	40	41.11	085
8.60	131	81	10	40	37.93	086
8.70	131	81	10	40	37.93	087
8.80	131	81	10	40	37.93	088
8.90	131	81	10	40	37.93	089
9.00	131	81	10	40	37.93	090
9.10	131	81	10	40	40.77	091
9.20	131	81	10	40	40.77	092
9.30	131	81	10	40	40.77	093
9.40	131	81	10	40	40.77	094
9.50	131	81	10	40	40.77	095
9.55	137	87	10	40	44.47	955
9.60	137	87	10	40	44.47	096
9.70	137	87	10	40	44.47	097
9.80	137	87	10	40	44.47	098
9.90	137	87	10	40	44.47	099
10.00	137	87	10	40	44.47	100
10.10	144	87	12	45	56.37	101
10.20	144	87	12	45	56.37	102
10.30	144	87	12	45	56.37	103
10.40	144	87	12	45	56.37	104
10.50	144	87	12	45	56.37	105
10.60	144	87	12	45	61.91	106
10.70	151	94	12	45	61.91	107
10.80	151	94	12	45	61.91	108
10.90	151	94	12	45	61.91	109
11.00	151	94	12	45	52.18	110
11.10	151	94	12	45	55.87	111
11.20	151	94	12	45	55.87	112
11.30	151	94	12	45	55.87	113
11.40	151	94	12	45	55.87	114
11.50	151	94	12	45	55.87	115
11.60	151	94	12	45	61.60	116
11.70	151	94	12	45	61.60	117
11.80	151	94	12	45	61.60	118
11.90	158	101	12	45	61.60	119
12.00	158	101	12	45	61.60	120
12.10	161	101	16	48	70.77	121
12.20	161	101	16	48	70.77	122
12.30	161	101	16	48	70.77	123
12.40	161	101	16	48	70.77	124
12.50	161	101	16	48	70.77	125
12.60	161	101	16	48	74.53	126
12.70	161	101	16	48	74.53	127
12.80	161	101	16	48	74.53	128
12.90	161	101	16	48	74.53	129
13.00	161	101	16	48	82.21	130
13.50	166	106	16	48	106.62	135
14.00	166	106	16	48	106.62	140
14.50	169	109	16	48	136.41	145
15.00	169	109	16	48	128.14	150
15.50	172	112	16	48	138.88	155
16.00	172	112	16	48	134.09	160
16.50	181	115	20	50	207.88	165
17.00	181	115	20	50	207.88	170
17.50	184	118	20	50	207.88	175
18.00	184	118	20	50	207.88	180
18.50	188	122	20	50	207.88	185
19.00	188	122	20	50	207.88	190
19.50	191	125	20	50	207.88	195
20.00	191	125	20	50	184.80	200

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○

→ v_c Page 48

Twist drill to DIN 338, short

≤ 5xD



	UNI	UNI	N	VA	W	WTL	WTL
	TiN	TiN	vap.			F.-nit	TiN
	◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS	HSS-E	HSS-E
	T2	T2	T2	T2	T2	T2	T2

DC_{h8}	DC	OAL	LCF	Article no. 10 173 ...		Article no. 10 171 ...		Article no. 10 152 ...		Article no. 10 175 ...		Article no. 10 161 ...		Article no. 10 168 ...		Article no. 10 170 ...	
mm	inch	mm	mm	£		£		£		£		£		£		£	
0.20		19	2.5					3.88	00200 [1]			8.29	00200				
0.25		19	3.0					3.74	00250 [1]			17.71	00250				
0.30		19	3.0					2.62	00300 [1]			9.28	00300				
0.35		19	4.0					2.62	00350 [1]			5.84	00350				
0.40		20	5.0					2.22	00400 [1]			4.84	00400				
0.45		20	5.0					2.37	00450 [1]			5.14	00450				
0.50		22	6.0					1.94	00500 [1]			3.71	00500				
0.55		24	7.0					2.78	00550 [1]			9.01	00550				
0.60		24	7.0					1.82	00600 [1]			3.98	00600				
0.65		26	8.0					2.62	00650 [1]			6.28	00650				
0.70		28	9.0					1.67	00700 [1]			3.58	00700				
0.75		28	9.0					1.94	00750 [1]			3.85	00750				
0.80		30	10.0					1.67	00800 [1]			3.29	00800				
0.85		30	10.0					1.82	00850 [1]			3.71	00850				
0.90		32	11.0			4.16	009	1.67	00900 [1]			2.98	00900				
0.95		32	11.0					1.82	00950 [1]			3.71	00950				
1.00		34	12.0	5.98	010 [2]	4.16	010	1.54	01000 [1]	3.98	010	3.29	01000	3.41	010 [1]	7.26	010
1.05		34	12.0					1.67	01050 [1]			3.58	01050				
1.10		36	14.0	6.48	011 [2]	4.16	011	1.54	01100 [1]	3.98	011	2.92	01100	3.71	011 [1]	7.85	011
1.15		36	14.0					1.67	01150 [1]			3.29	01150				
1.20		38	16.0	6.36	012 [2]	4.71	012	1.54	01200 [1]	4.42	012	2.92	01200	3.71	012 [1]	7.85	012
1.25		38	16.0			4.43	125	1.67	01250 [1]			3.29	01250				
1.30		38	16.0	6.48	013 [2]	4.43	013	1.54	01300 [1]	4.38	013	2.92	01300	3.58	013 [1]	7.70	013
1.35		40	18.0					1.67	01350 [1]			3.29	01350				
1.40		40	18.0	6.55	014 [2]	4.16	014	1.54	01400 [1]	3.98	014	2.92	01400	3.71	014 [1]	7.85	014
1.45		40	18.0			4.16	145	1.54	01450 [1]			3.29	01450			10.25	901
1.50		40	18.0	6.17	015 [2]	3.88	015	1.38	01500 [1]	3.71	015	2.92	01500	3.41	015 [1]	7.26	015
1.55		43	20.0			4.16	155	1.54	01550 [1]			3.29	01550			12.04	902
1.60		43	20.0	6.17	016 [2]	4.16	016	1.27	01600 [1]	3.98	016	2.55	01600	3.41	016 [1]	7.26	016
1.65		43	20.0			4.29	165	1.54	01650 [1]			3.29	01650			12.22	903
1.70		43	20.0	6.62	017 [2]	4.29	017	1.27	01700 [1]	4.14	017	2.74	01700	3.41	017 [1]	7.26	017
1.75		46	22.0					1.54	01750 [1]			3.29	01750				
1.80		46	22.0	6.55	018 [2]	4.16	018	1.27	01800 [1]	3.98	018	2.74	01800	3.41	018 [1]	7.26	018
1.85		46	22.0					1.38	01850 [1]			3.29	01850			8.40	904
1.90		46	22.0	6.55	019 [2]	4.29	019	1.27	01900 [1]	4.14	019	2.74	01900	3.41	019 [1]	7.26	019
1.95		49	24.0					1.38	01950 [1]			2.98	01950				
2.00		49	24.0	6.36	020 [2]	3.85	020	0.97	02000 [1]	3.41	020	2.15	02000	2.98	020 [1]	6.42	020
2.05		49	24.0					1.38	02050 [1]			2.92	02050			8.98	905
2.10		49	24.0	6.62	021 [2]	4.71	021	1.27	02100 [1]	4.42	021	2.55	02100	3.41	021 [1]	6.84	021
2.15		53	27.0					1.38	02150 [1]			2.92	02150				
2.20		53	27.0	6.96	022 [2]	4.71	022	1.27	02200 [1]	4.42	022	2.55	02200	3.41	022 [1]	6.84	022
2.25		53	27.0					1.38	02250 [1]			2.92	02250				
2.30		53	27.0	6.74	023 [2]	4.71	023	1.27	02300 [1]	4.42	023	2.55	02300	3.41	023 [1]	6.84	023
2.35		53	27.0					1.82	02350 [1]			3.41	02350				
2.38	3/32	57	30.0	6.74	238 [2]	4.71	238										
2.40		57	30.0	6.36	024 [2]	4.71	024	1.27	02400	4.42	024	2.55	02400	3.41	024	6.84	024

Steel			●		●		●		○						●		●
Stainless steel			○		●				●						○		○
Cast iron			●		●		●		○						○		○
Non ferrous metals			○		●		○		○		●				○		○
Heat resistant alloys			○		○				○								
Hardened materials					○												

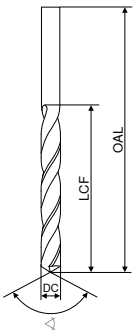
1) uncoated
2) self-centering

→ v_c Page 48+49

Continued on next page

Twist drill to DIN 338, short

≤ 5xD



	UNI	UNI	N	VA	W	WTL	WTL
	TiN	TiN	vap.			F.-nit	TiN
	◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS	HSS-E	HSS-E
	T2	T2	T2	T2	T2	T2	T2

DC h8	DC	OAL	LCF	Article no. 10 173 ...		Article no. 10 171 ...		Article no. 10 152 ...		Article no. 10 175 ...		Article no. 10 161 ...		Article no. 10 168 ...		Article no. 10 170 ...	
mm	inch	mm	mm	£		£		£		£		£		£		£	
2.45		57	30.0					1.67	02450			3.41	02450				
2.50		57	30.0	6.48	025 2)	3.98	025	1.27	02500	3.71	025	2.29	02500	2.98	025	6.57	025
2.55		57	30.0			4.71	255	1.82	02550			3.98	02550				
2.60		57	30.0	6.74	026 2)	4.71	026	1.27	02600	4.57	026	2.74	02600	3.41	026	6.84	026
2.65		57	30.0					1.94	02650			3.98	02650				
2.70		61	33.0	7.16	027 2)	4.71	027	1.27	02700	4.57	027	2.74	02700	3.58	027	7.56	027
2.75		61	33.0					1.67	02750			3.85	02750				
2.78	7/64	61	33.0	8.74	278 2)	5.56	278										
2.80		61	33.0	7.00	028 2)	4.71	028	1.27	02800	4.57	028	2.98	02800	3.58	028	7.70	028
2.85		61	33.0					1.82	02850			4.71	02850				
2.90		61	33.0	7.16	029 2)	4.84	029	1.27	02900	4.57	029	2.98	02900	3.58	029	7.70	029
2.95		61	33.0					1.67	02950			3.98	02950				
3.00		61	33.0	6.81	030 2)	3.98	030	1.12	03000	3.71	030	2.44	03000	3.29	030	6.84	030
3.05		65	36.0					1.54	03050			3.41	03050				
3.10		65	36.0	7.57	031 2)	4.84	031	1.38	03100	4.71	031	2.98	03100	3.58	031	7.56	031
3.15		65	36.0					1.54	03150			3.41	03150				
3.17	1/8	65	36.0	7.54	317 2)	4.57	317										
3.20		65	36.0	7.46	032 2)	4.38	032	1.38	03200	3.98	032	2.74	03200	3.71	032	7.85	032
3.25		65	36.0			4.99	325	1.54	03250			4.99	03250				
3.30		65	36.0	7.57	033 2)	4.38	033	1.38	03300	3.98	033	2.74	03300	3.71	033	7.99	033
3.35		65	36.0					1.67	03350			3.41	03350				
3.40		70	39.0	8.09	034 2)	5.12	034	1.38	03400	4.84	034	2.98	03400	4.14	034	8.85	034
3.45		70	39.0					1.67	03450			3.71	03450				
3.50		70	39.0	8.22	035 2)	4.38	035	1.27	03500	3.98	035	2.92	03500	3.58	035	7.56	035
3.55		70	39.0					1.67	03550			3.71	03550				
3.57	9/64	70	39.0	8.22	357 2)	5.26	357										
3.60		70	39.0	8.29	036 2)	5.26	036	1.54	03600	5.14	036	2.98	03600	4.14	036	8.68	036
3.65		70	39.0					1.67	03650			3.58	03650				
3.70		70	39.0	8.29	037 2)	5.26	037	1.54	03700	5.14	037	3.29	03700	4.14	037	8.85	037
3.75		70	39.0					1.67	03750			3.85	03750				
3.80		75	43.0	8.78	038 2)	5.56	038	1.54	03800	5.14	038	3.41	03800	4.42	038	9.74	038
3.85		75	43.0					1.82	03850			3.85	03850				
3.90		75	43.0	8.98	039 2)	5.82	039	1.67	03900	5.27	039	3.41	03900	4.71	039	10.18	039
3.95		75	43.0					1.82	03950			3.85	03950				
3.97	5/32	75	43.0	9.12	397 2)	6.10	397										
4.00		75	43.0	8.60	040 2)	4.57	040	1.27	04000	4.38	040	2.92	04000	3.85	040	8.29	040
4.05		75	43.0					1.94	04050			4.84	04050				
4.10		75	43.0	8.78	041 2)	5.53	041	1.67	04100	5.27	041	3.41	04100	4.71	041	10.18	041
4.15		75	43.0					1.94	04150			4.84	04150				
4.20		75	43.0	8.78	042 2)	5.53	042	1.54	04200	5.43	042	2.98	04200	4.38	042	9.42	042
4.25		75	43.0			5.84	425	1.94	04250			4.84	04250				
4.30		80	47.0	9.35	043 2)	5.82	043	1.67	04300	5.43	043	4.14	04300	4.84	043	10.54	043
4.35		80	47.0					2.50	04350			5.84	04350				
4.37	11/64	80	47.0	9.46	437 2)	6.23	437										
4.40		80	47.0	9.35	044 2)	5.84	044	1.67	04400	5.56	044	4.14	04400	4.84	044	10.54	044
4.45		80	47.0					2.50	04450								

Steel	●	●	●	○		●	●
Stainless steel	○	●		●		○	○
Cast iron	●	●	●	○		○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○			
Hardened materials		○					

1) uncoated
2) self-centering

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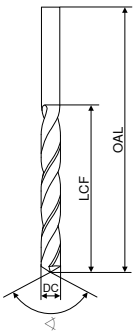
Continued on next page

Twist drill to DIN 338, short

≤ 5xD



UNI	UNI	N	VA	W	WTL	WTL
TiN	TiN	vap.			F.-nit	TiN

◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
HSS-E-PM	HSS-E	HSS	HSS-E	HSS	HSS-E	HSS-E
T2	T2	T2	T2	T2	T2	T2

DC $_{h8}$	DC	OAL	LCF	Article no. 10 173 ...		Article no. 10 171 ...		Article no. 10 152 ...		Article no. 10 175 ...		Article no. 10 161 ...		Article no. 10 168 ...		Article no. 10 170 ...	
mm	inch	mm	mm	£		£		£		£		£		£		£	
4.50		80	47.0	9.12	045 2)	5.82	045	1.67	04500	5.43	045	3.71	04500	4.57	045	9.42	045
4.55		80	47.0					2.50	04550			7.26	04550				
4.60		80	47.0	9.66	046 2)	6.23	046	1.67	04600	5.82	046	4.14	04600	5.14	046	11.12	046
4.65		80	47.0			6.37	465	2.50	04650			7.26	04650				
4.70		80	47.0	11.69	047 2)	6.42	047	1.67	04700	5.84	047	4.14	04700	5.14	047	11.12	047
4.75		80	47.0					3.32	04750			5.82	04750				
4.76	3/16	86	52.0	9.88	476 2)	6.37	476										
4.80		86	52.0	9.88	048 2)	6.23	048	1.82	04800	5.84	048	4.14	04800	5.14	048	11.12	048
4.85		86	52.0					4.29	04850			7.26	04850				
4.90		86	52.0	10.04	049 2)	6.37	049	1.82	04900	6.02	049	4.14	04900	5.27	049	11.26	049
4.95		86	52.0			6.37	495	2.78	04950			7.26	04950				
5.00		86	52.0	10.11	050 2)	5.56	050	1.54	05000	5.14	050	3.98	05000	4.71	050	10.12	050
5.05		86	52.0			6.37	505	2.92	05050			8.40	05050				
5.10		86	52.0	10.11	051 2)	6.37	051	3.32	05100	6.02	051	4.38	05100	5.27	051	11.26	051
5.15		86	52.0					2.92	05150								
5.16	13/64	86	52.0	11.02	516 2)	6.98	516										
5.20		86	52.0	10.41	052 2)	6.84	052	1.94	05200	6.28	052	4.42	05200	5.43	052	12.22	052
5.25		86	52.0					2.92	05250			9.84	05250				
5.30		86	52.0	11.02	053 2)	6.84	053	1.94	05300	6.28	053	4.42	05300	5.43	053	12.22	053
5.35		93	57.0					3.49	05350								
5.40		93	57.0	13.52	054 2)	7.43	054	2.22	05400	6.84	054	4.71	05400	5.84	054	12.70	054
5.45		93	57.0					6.37	05450			5.84	05450				
5.50		93	57.0	11.65	055 2)	7.61	055	2.10	05500	7.26	055	4.42	05500	5.43	055	11.85	055
5.55		93	57.0			8.68	555	3.60	05550			5.84	05550				
5.56	7/32	93	57.0	13.70	556 2)	8.68	556										
5.60		93	57.0	12.41	056 2)	7.56	056	2.22	05600	6.98	056	5.14	05600	6.02	056	13.11	056
5.65		93	57.0					3.74	05650			7.99	05650				
5.70		93	57.0	12.26	057 2)	7.56	057	2.22	05700	6.98	057	5.14	05700	6.02	057	13.11	057
5.75		93	57.0			7.56	575	4.29	05750			7.85	05750				
5.80		93	57.0	12.26	058 2)	7.56	058	2.22	05800	6.98	058	5.14	05800	6.02	058	13.26	058
5.85		93	57.0					3.74	05850			9.42	05850				
5.90		93	57.0	13.02	059 2)	7.56	059	2.37	05900	6.98	059	5.14	05900	6.57	059	14.11	059
5.95	15/64	93	57.0	15.94	595 2)	9.68	595	2.37	05950			5.14	05950				
6.00		93	57.0	11.78	060 2)	7.43	060	2.10	06000	6.84	060	5.14	06000	6.02	060	13.96	060
6.05		101	63.0					4.02	06050			11.26	06050				
6.10		101	63.0	13.32	061 2)	8.40	061	2.50	06100	7.85	061	5.14	06100	6.57	061	14.52	061
6.15		101	63.0					4.02	06150			8.40	06150				
6.20		101	63.0	13.13	062 2)	8.40	062	2.50	06200	7.85	062	5.14	06200	6.84	062	14.70	062
6.25		101	63.0					4.02	06250			8.88	06250				
6.30		101	63.0	14.50	063 2)	8.40	063	2.50	06300	7.85	063	5.43	06300	7.56	063	15.80	063
6.35	1/4	101	63.0	15.34	635 2)	8.98	635	2.62	06350			5.27	06350				
6.40		101	63.0	15.37	064 2)	8.98	064	2.62	06400	8.40	064	5.43	06400	7.56	064	15.98	064
6.45		101	63.0					4.43	06450								
6.50		101	63.0	14.15	065 2)	8.29	065	2.50	06500	7.70	065	5.27	06500	6.84	065	14.52	065
6.55		101	63.0					4.71	06550			11.68	06550				
6.60		101	63.0	15.56	066 2)	8.98	066	2.62	06600	8.40	066	6.28	06600	7.70	066	16.99	066

Steel	●	●	●	○		●	●
Stainless steel	○	●		●		○	○
Cast iron	●	●	●	○		○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○			
Hardened materials		○					

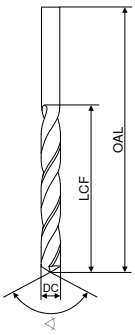
1) uncoated
2) self-centering

→ v_c Page 48+49

Continued on next page

Twist drill to DIN 338, short

≤ 5xD



	UNI	UNI	N	VA	W	WTL	WTL
	TiN	TiN	vap.			F.-nit	TiN
	◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS	HSS-E	HSS-E
	T2	T2	T2	T2	T2	T2	T2

DC h8	DC	OAL	LCF	Article no. 10 173 ...		Article no. 10 171 ...		Article no. 10 152 ...		Article no. 10 175 ...		Article no. 10 161 ...		Article no. 10 168 ...		Article no. 10 170 ...	
mm	inch	mm	mm	£		£		£		£		£		£		£	
6.65		101	63.0					8.43	06650			16.48	06650				
6.70		101	63.0	15.52	067 2)	8.98	067	2.78	06700	8.40	067	6.42	06700	7.70	067	16.99	067
6.75		109	69.0	20.96	675 2)	12.31	675	3.32	06750			9.84	06750				
6.80		109	69.0	15.94	068 2)	10.18	068	3.32	06800	9.28	068	6.84	06800	7.99	068	17.44	068
6.85		109	69.0					5.12	06850			17.02	06850				
6.90		109	69.0	16.27	069 2)	10.18	069	3.32	06900	9.28	069	6.84	06900	8.40	069	17.80	069
6.95		109	69.0					5.26	06950			17.02	06950				
7.00		109	69.0	15.94	070 2)	8.68	070	2.92	07000	7.99	070	6.02	07000	7.26	070	15.55	070
7.05		109	69.0					5.69	07050			9.74	07050				
7.10		109	69.0	18.36	071 2)	11.55	071	3.32	07100	10.83	071	8.27	07100	11.19	071	24.27	071
7.14	9/32	109	69.0	27.47	714 2)	17.25	714										
7.15		109	69.0					9.84	07150								
7.20		109	69.0	18.32	072 2)	11.55	072	3.49	07200	10.83	072	8.27	07200	11.19	072	24.66	072
7.25		109	69.0					9.42	07250			19.93	07250				
7.30		109	69.0	18.97	073 2)	11.55	073	3.49	07300	10.83	073	8.27	07300	11.19	073	24.27	073
7.35		109	69.0					5.69	07350								
7.40		109	69.0	18.54	074 2)	11.55	074	3.60	07400	10.83	074	8.27	07400	11.19	074	24.27	074
7.45		109	69.0			9.28	745	5.53	07450								
7.50		109	69.0	16.88	075 2)	9.28	075	3.32	07500	8.72	075	6.98	07500	8.29	075	17.80	075
7.55		117	75.0					6.51	07550								
7.60		117	75.0	20.48	076 2)	13.56	076	3.88	07600	13.11	076	9.16	07600	12.22	076	26.74	076
7.65		117	75.0					6.51	07650								
7.70		117	75.0	23.32	077 2)	13.96	077	3.88	07700	13.11	077	9.16	07700	12.22	077	26.74	077
7.75		117	75.0					5.82	07750			15.80	07750				
7.80		117	75.0	20.03	078 2)	13.56	078	3.88	07800	13.11	078	9.16	07800	12.22	078	26.74	078
7.85		117	75.0					6.51	07850								
7.90		117	75.0	23.96	079 2)	13.96	079	3.88	07900	13.11	079	10.54	07900	12.22	079	26.74	079
7.94	5/16	117	75.0	21.47	794 2)	13.56	794										
7.95		117	75.0					6.78	07950								
8.00		117	75.0	19.04	080 2)	11.26	080	3.32	08000	10.42	080	7.70	08000	9.28	080	20.39	080
8.05		117	75.0					6.93	08050			20.20	08050				
8.10		117	75.0	20.86	081 2)	13.56	081	4.02	08100	13.11	081	10.83	08100	12.70	081	28.61	081
8.15		117	75.0					7.07	08150			20.20	08150				
8.20		117	75.0	20.48	082 2)	14.52	082	4.02	08200	14.10	082	11.26	08200	13.26	082	29.22	082
8.25		117	75.0					4.84	08250			16.39	08250				
8.30		117	75.0	22.75	083 2)	14.52	083	4.43	08300	14.10	083	11.85	08300	14.11	083	30.78	083
8.35		117	75.0					7.61	08350								
8.40		117	75.0	22.91	084 2)	15.23	084	4.43	08400	14.52	084	11.85	08400	14.11	084	30.78	084
8.45		117	75.0					7.76	08450			27.54	08450				
8.50		117	75.0	19.60	085 2)	11.12	085	4.29	08500	10.28	085	8.88	08500	10.54	085	23.25	085
8.55		125	81.0					9.01	08550			19.91	08550				
8.60		125	81.0			24.86	086	4.84	08600	15.56	086	11.85	08600	15.99	086	34.58	086
8.65		125	81.0					16.06	08650								
8.70		125	81.0			24.86	087	4.84	08700	15.56	087	13.11	08700	15.80	087	35.32	087
8.73	11/32	125	81.0	21.24	873 2)	16.33	873										
8.75		125	81.0					8.02	08750			18.96	08750				

Steel	●	●	●	○		●	●
Stainless steel	○	●		●		○	○
Cast iron	●	●	●	○		○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○			
Hardened materials		○					

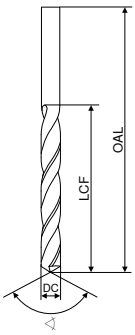
1) uncoated
2) self-centering

→ v_c Page 48+49

Continued on next page

Twist drill to DIN 338, short

≤ 5xD



UNI	UNI	N	VA	W	WTL	WTL
TiN	TiN	vap.			F.-nit	TiN

130°	118°	118°	130°	130°	130°	130°
HSS-E-PM	HSS-E	HSS	HSS-E	HSS	HSS-E	HSS-E
T2	T2	T2	T2	T2	T2	T2

DC $_{h8}$	DC	OAL	LCF	Article no. 10 173 ...		Article no. 10 171 ...		Article no. 10 152 ...		Article no. 10 175 ...		Article no. 10 161 ...		Article no. 10 168 ...		Article no. 10 170 ...	
mm	inch	mm	mm	£		£		£		£		£		£		£	
8.80		125	81.0	22.91	088 2)	17.30	088	4.99	08800	16.54	088	13.11	08800	15.80	088	35.32	088
8.90		125	81.0			21.36	089	5.12	08900	17.38	089	13.26	08900	15.98	089	35.90	089
8.95		125	81.0					16.74	08950								
9.00		125	81.0	21.57	090 2)	13.98	090	4.57	09000	13.66	090	9.74	09000	12.26	090	26.51	090
9.05		125	81.0					9.42	09050								
9.10		125	81.0			23.23	091	5.12	09100	18.39	091	14.70	09100	17.44	091	37.36	091
9.15		125	81.0					16.74	09150								
9.20		125	81.0			23.84	092	5.12	09200	19.39	092	14.70	09200	18.39	092	40.20	092
9.25		125	81.0					12.19	09250			22.97	09250				
9.30		125	81.0	24.90	093 2)	21.17	093	5.12	09300	20.50	093	14.70	09300	18.39	093	40.39	093
9.35		125	81.0			16.48	935	18.13	09350								
9.40		125	81.0			26.16	094	5.12	09400	21.95	094	14.70	09400	18.39	094	40.39	094
9.45		125	81.0					10.11	09450								
9.50		125	81.0	22.68	095 2)	16.48	095	5.12	09500	15.80	095	11.12	09500	13.11	095	28.38	095
9.55		133	87.0					11.34	09550								
9.60		133	87.0			23.66	096	5.69	09600	22.80	096	16.99	09600	19.24	096	43.16	096
9.65		133	87.0					11.34	09650								
9.70		133	87.0			27.79	097	5.69	09700	22.80	097	17.30	09700	21.36	097	46.18	097
9.75		133	87.0					7.47	09750								
9.80		133	87.0	27.02	098 2)	23.66	098	6.37	09800	22.80	098	17.30	09800	21.36	098	46.18	098
9.85		133	87.0					11.09	09850								
9.90		133	87.0			21.78	099	6.37	09900	22.80	099	17.59	09900	21.36	099	46.18	099
9.95		133	87.0					12.32	09950								
10.00		133	87.0	25.63	100 2)	16.57	100	5.41	10000	14.97	100	11.68	10000	14.70	100	33.13	100
10.05		133	87.0					15.64	10050			29.94	10050				
10.10		133	87.0			21.39	101	6.78	10100	25.71	101	17.89	10100	33.40	101	73.09	101
10.15		133	87.0					28.09	10150								
10.20		133	87.0	29.59	102 2)	22.41	102	6.93	10200	21.95	102	17.89	10200	20.39	102	44.75	102
10.25		133	87.0					9.28	10250			20.20	10250				
10.30		133	87.0			18.68	103	8.30	10300	33.64	103	17.89	10300	26.93	103	59.72	103
10.35		133	87.0					15.64	10350								
10.40		133	87.0			23.13	104	8.30	10400	33.64	104	17.89	10400	29.22	104	63.50	104
10.45		133	87.0					28.09	10450								
10.50		133	87.0	29.79	105 2)	23.25	105	7.07	10500	22.25	105	14.39	10500	19.05	105	41.70	105
10.55		133	87.0			25.48	955	19.93	10550								
10.60		133	87.0					8.72	10600	60.32	106	25.72	10600	29.22	106		
10.70		142	94.0					10.11	10700	44.05	107	29.48	10700	29.22	107	63.50	107
10.75		142	94.0					11.09	10750			33.91	10750				
10.80		142	94.0					9.84	10800	45.48	108	30.72	10800	27.38	108	61.02	108
10.90		142	94.0					10.38	10900	45.48	109	30.72	10900	35.32	109		
11.00		142	94.0	30.77	110 2)	25.48	110	8.02	11000	24.70	110	17.30	11000	23.25	110	48.74	110
11.10		142	94.0					10.38	11100	47.66	111	21.36	11100	33.64	111		
11.11	7/16	142	94.0	38.57	111 2)	49.13	111										
11.20		142	94.0			49.13	112	10.11	11200	47.66	112	27.04	11200	37.36	112	84.41	112
11.30		142	94.0			49.39	113			47.94	113			37.36	113		
11.40		142	94.0			49.39	114	10.67	11400	47.94	114	43.17	11400	37.36	114		

Steel	●	●	●	○		●	●
Stainless steel	○	●		●		○	○
Cast iron	●	●	●	○		○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○			
Hardened materials		○					

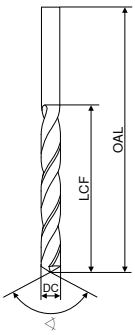
1) uncoated
2) self-centering

→ v_c Page 48+49

Continued on next page

Twist drill to DIN 338, short

≤ 5xD



	UNI	UNI	N	VA	W	WTL	WTL
	TiN	TiN	vap.			F.-nit	TiN
	◁ 130°	◁ 118°	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS	HSS-E	HSS-E
	T2	T2	T2	T2	T2	T2	T2

DC_{h8}	DC	OAL	LCF	Article no. 10 173 ...		Article no. 10 171 ...		Article no. 10 152 ...		Article no. 10 175 ...		Article no. 10 161 ...		Article no. 10 168 ...		Article no. 10 170 ...	
mm	inch	mm	mm	£		£		£		£		£		£		£	
11.50		142	94.0	34.14	115 2)	32.52	115	8.72	11500	31.55	115	19.24	11500	26.51	115	59.26	115
11.60		142	94.0			56.59	116	10.67	11600	54.78	116	29.94	11600	37.36	116		
11.70		142	94.0					11.09	11700	54.78	117	29.94	11700	37.36	117	84.41	117
11.80		142	94.0					11.21	11800	54.78	118	29.94	11800	40.39	118	88.77	118
11.90		151	101.0					12.32	11900	54.78	119	29.94	11900				
12.00		151	101.0	36.48	120 2)	36.26	120	9.84	12000	34.51	120	21.07	12000	28.38	120	61.58	120
12.15		151	101.0			37.22	121										
12.20		151	101.0					13.03	12200			35.75	12200				
12.25		151	101.0					14.28	12250								
12.30		151	101.0	65.48	123 2)	38.48	123										
12.50		151	101.0	37.96	125 2)	37.22	925	10.93	12500			21.07	12500	34.93	125	78.01	125
12.70		151	101.0	49.58	127 2)	29.19	127	12.19	12700			20.50	12700				
12.80		151	101.0					14.52	12800			37.64	12800	61.60	128	133.80	128
13.00		151	101.0	40.34	130 2)	39.70	130	12.04	13000			24.99	13000	34.93	130	77.44	130
13.10		151	101.0			50.22	131										
13.20		151	101.0					15.64	13200			45.76	13200				
13.30		160	108.0			50.22	133										
13.50		160	108.0	71.72	135 2)	50.22	135	13.85	13500			30.95	13500	46.89	135	104.31	135
13.80		160	108.0					19.93	13800			57.54	13800	54.34	138	118.53	138
14.00		160	108.0	48.87	140 2)	48.15	140	15.36	14000			29.65	14000	42.73	140	92.70	140
14.50		169	114.0					16.48	14500			39.23	14500	52.30	145	111.43	145
14.80		169	114.0											108.90	148	237.13	148
15.00		169	114.0					17.71	15000			35.17	15000	52.58	150	117.24	150
15.25		178	120.0					33.08	15250								
15.50		178	120.0					19.38	15500			49.54	15500	78.15	155	234.64	155
15.80		178	120.0					31.82	15800								
16.00		178	120.0					20.90	16000			46.94	16000	65.96	160	143.97	160
16.50		184	125.0					23.80	16500			78.15	16500				
17.00		184	125.0					25.20	17000			79.62	17000				
17.50		191	130.0					27.54	17500			156.88	17500				
18.00		191	130.0					29.33	18000			85.84	18000				
18.50		198	135.0					31.82	18500								
19.00		198	135.0					34.18	19000			97.93	19000				
19.50		205	140.0					36.26	19500								
20.00		205	140.0					39.70	20000			121.30	20000				

Steel	●	●	●	○		●	●
Stainless steel	○	●		●		○	○
Cast iron	●	●	●	○		○	○
Non ferrous metals	○	●	○	○	●	○	○
Heat resistant alloys	○	○		○			
Hardened materials		○					

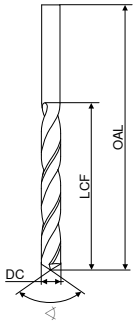
1) uncoated
2) self-centering

→ v_c Page 48+49

Twist drill to DIN 338, short

▲ Article no. 10 169 ... WTL-L – left-hand cutting drill

≤ 5xD



WTL	WTL-L
TiCN	F.-nit

130° HSS-E | 130° HSS

DC h8	OAL	LCF	T2 Article no. 10 172 ...		T2 Article no. 10 169 ...	
mm	mm	mm	£		£	
1.0	34	12			5.27	010 1)
1.3	38	16			5.43	013 1)
1.4	40	18			5.43	014 1)
1.5	40	18			4.38	015 1)
1.6	43	20			4.57	016 1)
1.7	43	20			4.57	017 1)
1.8	46	22			4.71	018 1)
1.9	46	22			4.71	019 1)
2.0	49	24			3.71	020 1)
2.1	49	24			4.42	021 1)
2.2	53	27			4.84	022 1)
2.3	53	27			4.57	023 1)
2.4	57	30			4.57	024
2.5	57	30			4.14	025
2.6	57	30			4.71	026
2.7	61	33			4.71	027
2.8	61	33			4.84	028
2.9	61	33			4.84	029
3.0	61	33	8.98	030	4.42	030
3.1	65	36	9.74	031	5.27	031
3.2	65	36	10.12	032	4.84	032
3.3	65	36	10.83	033	5.14	033
3.4	70	39	11.85	034	5.56	034
3.5	70	39	9.74	035	4.71	035
3.6	70	39	11.26	036	5.84	036
3.7	70	39	11.85	037	6.02	037
3.8	75	43	12.52	038	6.42	038
3.9	75	43	13.11	039	6.84	039
4.0	75	43	10.83	040	5.14	040
4.1	75	43	13.11	041	6.84	041
4.2	75	43	12.26	042	6.28	042
4.3	80	47	13.68	043	7.85	043
4.4	80	47	13.68	044	8.29	044
4.5	80	47	12.52	045	6.57	045
4.6	80	47	14.39	046	8.40	046
4.7	80	47	14.39	047	8.40	047
4.8	86	52	14.39	048	8.40	048
4.9	86	52	14.53	049	8.72	049
5.0	86	52	13.26	050	6.28	050
5.1	86	52	14.53	051	8.72	051
5.2	86	52	15.55	052	9.42	052
5.3	86	52	15.55	053	9.42	053
5.4	93	57	16.54	054	10.18	054
5.5	93	57	15.38	055	7.85	055
5.6	93	57	16.99	056	10.54	056
5.7	93	57	16.99	057	10.54	057
5.8	93	57	17.44	058	10.54	058
5.9	93	57	18.39	059	10.54	059
6.0	93	57	17.44	060	7.85	060
6.1	101	63	19.05	061	11.26	061
6.2	101	63	19.24	062	12.52	062
6.3	101	63	21.36	063	12.52	063
6.4	101	63	21.95	064	12.52	064
6.5	101	63	19.05	065	9.42	065
6.6	101	63	22.11	066	13.66	066
6.7	101	63	22.11	067	13.66	067
6.8	109	69	22.80	068	14.39	068
6.9	109	69	24.27	069	14.70	069
7.0	109	69	20.39	070	11.19	070
7.1	109	69	30.78	071	20.39	071
7.2	109	69	30.78	072	20.39	072
7.3	109	69			20.39	073
7.4	109	69	30.78	074	20.39	074
7.5	109	69	23.54	075	12.70	075
7.7	117	75	34.58	077	21.81	077
7.8	117	75	34.58	078	21.81	078
7.9	117	75			21.81	079
8.0	117	75	26.74	080	12.26	080
8.1	117	75	35.92	081	22.11	081
8.2	117	75	37.36	082	22.11	082
8.3	117	75			22.11	083
8.4	117	75	40.20	084	22.11	084
8.5	117	75	29.35	085	15.38	085
8.6	125	81	45.18	086	24.51	086
8.7	125	81	44.90	087	24.51	087
8.8	125	81	44.90	088	24.51	088
8.9	125	81	47.08	089	24.51	089
9.0	125	81	34.87	090	15.56	090
9.2	125	81			25.71	092
9.3	125	81			25.71	093
9.5	125	81	37.78	095	19.66	095
9.8	133	87			26.93	098
9.9	133	87			28.38	099
10.0	133	87	42.60	100	17.44	100
10.1	133	87			28.38	101
10.2	133	87	56.45	102	29.51	102
10.3	133	87			29.22	103
10.4	133	87			30.22	104
10.5	133	87	54.34	105	41.24	105
11.0	142	94	77.44	110	29.35	110
11.5	142	94	77.44	115	45.67	115
12.0	151	101	82.21	120	33.64	120
12.2	151	101			53.03	122
12.5	151	101			35.92	125
13.0	151	101			37.78	130
14.0	160	108			43.05	140
14.5	169	114			47.66	145
15.0	169	114			73.05	150
16.0	178	120			59.26	160

Steel	●	●
Stainless steel	○	
Cast iron		○
Non ferrous metals		○
Heat resistant alloys		

1) uncoated

→ v_c Page 49

Twist drill sets DIN 338, short

▲ in metal box
▲ in 0.1 mm steps

≤ 5xD

	N	UNI
	vap.	TiN
	Drill set type N HSS	Drill set type UNI TiN HSS-E
	T2	T2
$d_{1\ h8}$	Article no. 10 158 ...	Article no. 10 158 ...
mm	£	£
1,0 - 5,9	72.77 050	276.00 054
6,0 - 10,0	151.16 100	432.16 104
Steel	●	●
Stainless steel		●
Cast iron	●	●
Non ferrous metals		●
Heat resistant alloys		○

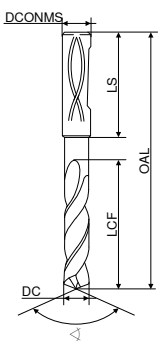
→ v_c Page 48

Set of type N vap. contains the drills of Art. No. 10 152 ...
Set of type UNI TiN contains the drills of Art. No. 10 171 ...

Twist drill with thro' coolant ~ DIN 338, short

- relief ground
- special point thinning
- wide chip flutes
- rounded flute edges
- for long chipping materials up to 1000 N/mm²

≤ 5xD



WNXi

HSS-E

WNXi
TiN

HSS-E

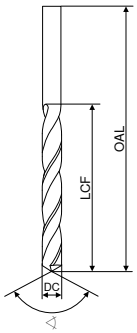
DC h8	OAL	LCF	DCONMS h6	LS	T2 Article no. 10 180 ...		T2 Article no. 10 181 ...	
mm	mm	mm	mm	mm	£		£	
5.0	82	44	6	38	58.69	050	87.16	050
5.5	82	44	6	38	102.39	055	88.50	055
6.0	82	44	6	38	57.68	060	83.67	060
6.5	91	53	8	38	61.14	065	92.11	065
6.8	91	53	8	38	63.34	068	94.13	068
7.0	91	53	8	38	65.10	070	93.57	070
7.5	91	53	8	38	109.71	075	95.00	075
7.8	91	53	8	38	65.10	078	96.91	078
8.0	91	53	8	38	61.47	080	91.24	080
8.5	103	61	10	42	67.70	085	100.40	085
9.0	103	61	10	42	68.29	090	100.06	090
9.5	103	61	10	42	68.28	095	103.29	095
10.0	103	61	10	42	66.24	100	98.49	100
10.2	118	71	12	47	73.40	102	110.98	102
10.5	118	71	12	47	73.40	105	111.72	105
11.0	118	71	12	47	132.53	110	113.88	110
11.5	118	71	12	47	79.32	115	117.39	115
12.0	118	71	12	47	71.55	120	107.67	120
12.5	124	77	14	47	87.66	125	135.68	125
13.0	124	77	14	47	90.67	130	137.72	130
13.5	124	77	14	47	92.70	135	139.75	135
14.0	124	77	14	47	87.31	140	132.78	140
14.5	133	83	16	50	107.96	145	163.73	145
15.0	133	83	16	50	107.16	150	166.50	150
15.5	133	83	16	50	111.85	155	169.97	155
16.0	133	83	16	50	105.91	160	162.25	160
16.5	143	93	18	50	132.35	165	196.55	165
17.0	143	93	18	50	134.23	170	203.55	170
17.5	143	93	18	50	138.29	175	210.50	175
18.0	143	93	18	50	130.31	180	193.07	180
18.5	153	101	20	52	156.88	185	235.20	185
19.0	153	101	20	52	158.62	190	238.68	190
19.5	153	101	20	52	278.64	195	242.16	195
20.0	153	101	20	52	153.55	200	231.72	200

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○

→ v_c Page 49

Twist drills with coolant hole, factory standard, long

≤ 10xD



NC

HSS

NC
TiAlN

HSS

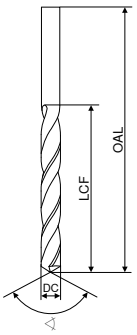
DC h8	OAL	LCF	T2 Article no. 10 223 ...		T2 Article no. 10 224 ...	
mm	mm	mm	£		£	
3.0	100	66	112.74	030	119.01	030
3.3	106	69	117.08	033	136.13	033
3.5	112	73	113.28	035	134.68	035
3.8	119	78			166.50	038
4.0	119	78	116.38	040	135.38	040
4.2	119	78	116.14	042	137.72	042
4.5	126	82	117.66	045	136.86	045
4.8	132	87			165.19	048
5.0	132	87	116.14	050	138.45	050
5.5	139	91	119.01	055	143.38	055
5.8	139	91			166.06	058
6.0	139	91	126.24	060	148.90	060
6.5	148	97	133.94	065	159.50	065
6.8	156	102	134.83	068	160.24	068
7.0	156	102	134.83	070	160.24	070
7.5	156	102	138.88	075	165.75	075
7.8	165	109			176.22	078
8.0	165	109	141.78	080	168.97	080
8.5	165	109	148.17	085	176.51	085
8.8	175	115			181.00	088
9.0	175	115	148.17	090	180.58	090
9.5	175	115	153.84	095	186.81	095
9.8	184	121			192.79	098
10.0	184	121	153.84	100	186.81	100
10.2	184	121	156.77	102	192.79	102
10.5	184	121	156.77	105	194.23	105
10.8	195	128			199.30	108
11.0	195	128	156.77	110	194.23	110
11.5	195	128	160.24	115	198.00	115
11.8	205	134			229.23	118
12.0	205	134	161.53	120	201.20	120
12.8	205	134			240.27	128
13.0	205	134	169.39	130	211.94	130

Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○

→ v_c Page 50

Twist drills, DIN 340, long

≤ 10xD



	UNI	WTL	WTL	WTL	WTW
	TiN	F.-nit	F.-nit	TiN	
	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E	HSS-E	HSS	HSS	HSS
	T2	T2	T2	T2	T2
DC h8	OAL	LCF	Article no. 10 270 ...	Article no. 10 225 ...	Article no. 10 215 ...	Article no. 10 210 ...	Article no. 10 200 ...
mm	mm	mm	£	£	£	£	£
1.0	56	33	7.53 010	8.29 010 1)	6.57 010 1)	14.52 010	6.02 010
1.1	60	37	8.41 011	10.12 011 1)	7.26 011 1)	16.99 011	6.57 011
1.2	65	41	9.39 012	9.74 012 1)	6.84 012 1)	14.52 012	6.02 012
1.3	65	41	9.25 013	9.42 013 1)	6.84 013 1)	15.12 013	5.82 013
1.4	70	45	9.14 014	8.98 014 1)	6.28 014 1)	13.68 014	5.43 014
1.5	70	45	7.95 015	7.85 015 1)	5.43 015 1)	11.85 015	5.43 015
1.6	76	50	9.39 016	8.68 016 1)	5.27 016 1)	11.62 016	5.00 016
1.7	76	50	10.26 017	8.72 017 1)	7.07 017 1)	11.62 017	4.84 017
1.8	80	53	9.79 018	8.72 018 1)	5.14 018 1)	11.12 018	4.84 018
1.9	80	53	10.47 019	7.99 019 1)	6.93 019 1)	11.19 019	4.84 019
2.0	85	56	7.77 020	6.28 020 1)	4.84 020 1)	10.42 020	4.14 020
2.1	85	56	8.97 021	7.56 021 1)	5.43 021 1)	12.22 021	4.84 021
2.2	90	59	9.14 022	7.70 022 1)	5.56 022 1)	12.26 022	4.84 022
2.3	90	59	8.97 023	7.70 023 1)	5.56 023 1)	12.67 023	4.84 023
2.4	95	62	8.30 024	7.85 024	5.82 024	12.70 024	4.84 024
2.5	95	62	7.95 025	6.57 025	5.00 025	11.19 025	4.38 025
2.6	95	62	9.14 026	7.85 026	5.82 026	12.70 026	4.84 026
2.7	100	66	9.67 027	11.21 027	5.84 027	13.08 027	4.84 027
2.8	100	66	9.25 028	7.99 028	5.84 028	13.08 028	4.84 028
2.9	100	66	9.67 029	7.99 029	5.84 029	13.11 029	4.84 029
3.0	100	66	8.57 030	6.84 030	5.14 030	11.12 030	4.57 030
3.1	106	69	10.26 031	8.29 031	6.84 031	14.70 031	6.02 031
3.2	106	69	9.50 032	7.99 032	5.82 032	12.67 032	4.84 032
3.3	106	69	10.08 033	8.68 033	6.57 033	14.10 033	5.43 033
3.4	112	73	10.47 034	8.40 034	6.84 034	15.12 034	6.02 034
3.5	112	73	10.26 035	7.99 035	5.84 035	12.70 035	5.14 035
3.6	112	73	10.62 036	12.04 036	10.11 036	16.10 036	6.28 036
3.7	112	73	10.33 037	8.72 037	6.98 037	15.56 037	6.57 037
3.8	119	78	9.93 038	8.68 038	7.26 038	15.56 038	6.57 038
3.9	119	78	11.13 039	8.85 039	7.26 039	15.55 039	6.84 039
4.0	119	78	10.87 040	8.72 040	6.42 040	13.68 040	5.56 040
4.1	119	78	11.06 041	8.98 041	7.43 041	15.98 041	6.84 041
4.2	119	78	10.62 042	9.42 042	7.26 042	15.56 042	5.84 042
4.3	126	82	11.85 043	9.74 043	7.99 043	17.38 043	7.56 043
4.4	126	82	10.47 044	9.68 044	11.09 044	18.25 044	7.70 044
4.5	126	82	11.13 045	10.12 045	7.26 045	15.80 045	6.84 045
4.6	126	82	10.73 046	10.18 046	8.27 046	18.25 046	7.70 046
4.7	126	82	12.42 047	10.54 047	11.09 047	18.25 047	7.85 047
4.8	132	87	12.09 048	11.12 048	8.27 048	18.25 048	7.99 048
4.9	132	87	12.25 049	11.62 049	8.72 049	25.31 049	8.29 049
5.0	132	87	12.42 050	10.12 050	7.70 050	16.54 050	6.57 050
5.1	132	87	13.73 051	11.85 051	11.90 051	19.47 051	8.40 051
5.2	132	87	13.47 052	12.26 052	9.42 052	20.39 052	8.68 052
5.3	132	87	14.82 053	12.67 053	12.73 053	20.67 053	8.85 053

Steel	●	●	●	●	
Stainless steel	○	●			
Cast iron	●	●	●	●	
Non ferrous metals	○	●	●	●	●
Heat resistant alloys					

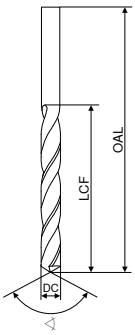
1) uncoated

→ v_c Page 50

Continued on next page

Twist drills, DIN 340, long

≤ 10xD



	UNI	WTL	WTL	WTL	WTW
	TiN	F.-nit	F.-nit	TiN	
	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E	HSS-E	HSS	HSS	HSS
	T2	T2	T2	T2	T2
DC h8	Article no. 10 270 ...	Article no. 10 225 ...	Article no. 10 215 ...	Article no. 10 210 ...	Article no. 10 200 ...
mm	£	£	£	£	£

DC h8 mm	OAL mm	LCF mm	10 270 ... £		10 225 ... £		10 215 ... £		10 210 ... £		10 200 ... £	
5.4	139	91	16.19	054	12.52	054	9.68	054	21.95	054	8.98	054
5.5	139	91	12.90	055	12.22	055	8.85	055	19.82	055	8.40	055
5.6	139	91	16.87	056	13.11	056	10.83	056	23.84	056	13.56	056
5.7	139	91	18.63	057	13.26	057	11.12	057	24.70	057	10.18	057
5.8	139	91	16.36	058	13.66	058	11.62	058	24.51	058	10.54	058
5.9	139	91	18.24	059	13.68	059	11.85	059	26.31	059	10.83	059
6.0	139	91	15.50	060	12.67	060	9.42	060	20.39	060	8.72	060
6.1	148	97	18.39	061	14.52	061	17.02	061	27.50	061	12.67	061
6.2	148	97	16.49	062	14.39	062	13.08	062	27.95	062	12.52	062
6.3	148	97	18.39	063	14.53	063	17.71	063	28.78	063	12.70	063
6.4	148	97	16.72	064	15.38	064	18.96	064	31.08	064	13.26	064
6.5	148	97	16.07	065	13.96	065	10.28	065	22.80	065	9.74	065
6.6	148	97	18.52	066	15.99	066	14.52	066	31.65	066	13.66	066
6.7	148	97	19.00	067	15.98	067	19.93	067	32.20	067	13.68	067
6.8	156	102	20.39	068	17.44	068	15.99	068	35.02	068	14.52	068
6.9	156	102	21.13	069	17.80	069	21.46	069	34.51	069	14.39	069
7.0	156	102	19.18	070	15.55	070	12.22	070	26.74	070	11.68	070
7.1	156	102	18.52	071	18.39	071	21.73	071			14.53	071
7.2	156	102	21.21	072	18.96	072	16.54	072	36.35	072	21.32	072
7.3	156	102	22.17	073	19.24	073	22.70	073	37.36	073	21.46	073
7.4	156	102	22.97	074	28.66	074	22.98	074	36.91	074	21.73	074
7.5	156	102	23.37	075	18.39	075	14.70	075	32.54	075	13.96	075
7.6	165	109	25.08	076			23.54	076	37.93	076	15.98	076
7.7	165	109	23.69	077	22.11	077	24.07	077			16.39	077
7.8	165	109	26.10	078	22.80	078	18.25	078	39.34	078	16.54	078
7.9	165	109	25.17	079	23.25	079	24.49	079	37.94	079	23.80	079
8.0	165	109	21.37	080	17.25	080	14.10	080	30.95	080	13.08	080
8.1	165	109	23.55	081	33.50	081	18.39	081	40.63	081	17.38	081
8.2	165	109	25.69	082	24.70	082	18.82	082	41.70	082	17.54	082
8.3	165	109	27.23	083	24.51	083	25.31	083	42.13	083	17.80	083
8.4	165	109	29.27	084	25.71	084	19.82	084	42.60	084	25.60	084
8.5	165	109	25.08	085	21.95	085	18.25	085	39.76	085	16.95	085
8.6	175	115	24.90	086	26.31	086	27.26	086	44.17	086	19.05	086
8.7	175	115	25.17	087	26.74	087	20.50	087	44.62	087		
8.8	175	115	25.57	088	26.93	088	20.67	088	44.90	088	19.24	088
8.9	175	115	25.99	089	28.61	089	29.48	089	63.64	089	28.66	089
9.0	175	115	26.35	090	21.36	090	16.99	090	37.36	090	15.80	090
9.1	175	115	26.35	091	40.28	091	23.25	091	49.98	091	30.16	091
9.2	175	115	26.35	092	31.08	092	34.87	092			31.98	092
9.3	175	115	26.35	093	31.22	093	26.74	093			24.27	093
9.4	175	115	26.35	094	44.27	094					34.87	094
9.5	175	115	26.35	095	28.19	095	25.52	095	56.22	095	24.27	095
9.6	184	121	27.90	096			41.24	096			41.24	096
9.7	184	121	29.27	097	38.35	097	33.13	097	71.55	097		

Steel	●	●	●	●	
Stainless steel	○	●			
Cast iron	●	●	●	●	
Non ferrous metals	○	●	●	●	●
Heat resistant alloys					

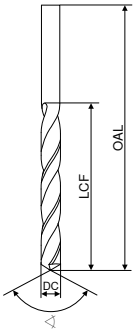
1) uncoated

→ v_c Page 50

Continued on next page

Twist drills, DIN 340, long

≤ 10xD



	UNI	WTL	WTL	WTL	WTW
	TiN	F.-nit	F.-nit	TiN	
	◁ 118°	◁ 130°	◁ 130°	◁ 130°	◁ 130°
	HSS-E	HSS-E	HSS	HSS	HSS
	T2	T2	T2	T2	T2
DC h8	Article no. 10 270 ...	Article no. 10 225 ...	Article no. 10 215 ...	Article no. 10 210 ...	Article no. 10 200 ...
mm	£	£	£	£	£

DC h8 mm	OAL mm	LCF mm	10 270 ... £		10 225 ... £		10 215 ... £		10 210 ... £		10 200 ... £	
9.8	184	121	31.27	**098**	38.35	**098**	35.02	**098**	76.56	**098**	31.22	**098**
9.9	184	121	33.98	**099**	38.35	**099**	48.97	**099**	108.90	**099**		
10.0	184	121	36.74	**100**	32.11	**100**	20.39	**100**	45.18	**100**	18.39	**100**
10.1	184	121	40.13	**101**			45.48	**101**	99.80	**101**		
10.2	184	121	42.87	**102**	41.26	**102**	35.92	**102**	79.10	**102**	80.39	**102**
10.3	184	121	46.25	**103**			54.78	**103**			54.34	**103**
10.4	184	121	46.25	**104**			65.82	**104**			78.46	**104**
10.5	184	121	46.95	**105**	43.05	**105**	36.35	**105**	81.94	**105**	35.90	**105**
10.6	184	121							150.21	**106**		
10.8	195	128			49.11	**108**	54.18	**108**			68.21	**108**
11.0	195	128	55.73	**110**	47.31	**110**	30.95	**110**	65.84	**110**	29.22	**110**
11.5	195	128	56.46	**115**	58.97	**115**	51.43	**115**	110.02	**115**	47.66	**115**
11.6	195	128									63.92	**116**
11.8	195	128			65.36	**118**	62.03	**118**			57.25	**118**
12.0	205	134	57.11	**120**	59.26	**120**	36.91	**120**	83.38	**120**	35.92	**120**
12.2	205	134									66.83	**122**
12.3	205	134									57.25	**123**
12.5	205	134	62.56	**125**			38.35	**125**	85.42	**125**	37.78	**125**
13.0	205	134	68.04	**130**			40.84	**130**	89.64	**130**	40.20	**130**
13.5	214	140	69.36	**135**			74.39	**135**				
14.0	214	140	72.11	**140**			68.29	**140**	153.55	**140**	67.84	**140**

Steel	●	●	●	●	
Stainless steel	○	●			
Cast iron	●	●	●	●	
Non ferrous metals	○	●	●	●	●
Heat resistant alloys					

1) uncoated

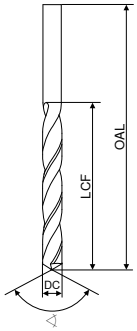
→ v_c Page 50

Twist drills, DIN 1869, extra-long, series 1

> 10xD

WTL

F.-nit



DC h8	OAL	LCF	T2 Article no. 10 235 ...	
mm	mm	mm	£	
2.0	125	85	8.98	020 1)
2.1	125	85	11.12	021 1)
2.2	135	90	11.12	022 1)
2.3	135	90	11.12	023 1)
2.4	140	95	11.68	024
2.5	140	95	8.98	025
2.6	140	95	11.68	026
2.7	150	100	12.26	027
2.8	150	100	12.26	028
2.9	150	100	12.26	029
3.0	150	100	10.42	030
3.1	155	105	12.70	031
3.2	155	105	12.70	032
3.3	155	105	12.70	033
3.4	165	115	13.08	034
3.5	165	115	10.42	035
3.6	165	115	13.08	036
3.7	165	115	14.11	037
3.8	175	120	14.11	038
3.9	175	120	14.11	039
4.0	175	120	10.54	040
4.1	175	120	14.11	041
4.2	175	120	14.39	042
4.3	185	125	15.99	043
4.4	185	125	15.99	044
4.5	185	125	11.26	045
4.6	185	125	15.99	046
4.7	185	125	16.57	047
4.8	195	135	16.54	048
4.9	195	135	17.25	049
5.0	195	135	12.22	050
5.1	195	135	17.80	051
5.2	195	135	18.39	052
5.3	195	135	18.39	053
5.4	205	140	18.39	054
5.5	205	140	13.11	055
5.6	205	140	18.39	056
5.7	205	140	19.05	057
5.8	205	140	18.96	058
5.9	205	140	18.96	059
6.0	205	140	13.11	060
6.1	215	150	20.39	061
6.2	215	150	20.50	062
6.3	215	150	21.95	063
6.4	215	150	22.11	064
6.5	215	150	17.80	065
6.6	215	150	22.11	066
6.7	215	150	23.54	067
6.8	225	155	23.09	068
6.9	225	155	24.70	069
7.0	225	155	19.05	070
7.1	225	155	37.78	071
7.3	225	155	37.78	073
7.4	225	155	37.78	074
7.5	225	155	21.36	075
7.7	240	165	29.51	077
7.8	240	165	31.08	078
7.9	240	165	31.22	079
8.0	240	165	23.09	080
8.1	240	165	35.49	081
8.2	240	165	35.49	082
8.3	240	165	35.49	083
8.4	240	165	37.36	084
8.5	240	165	29.78	085
8.6	250	175	53.57	086
8.7	250	175	40.20	087
8.8	250	175	42.29	088
9.0	250	175	32.41	090
9.2	250	175	47.94	092
9.4	250	175	51.43	094
9.5	250	175	37.48	095
9.6	265	185	52.87	096
9.7	265	185	52.87	097
9.8	265	185	53.75	098
9.9	265	185	53.75	099
10.0	265	185	33.40	100
10.5	265	185	59.26	105
11.0	280	195	43.62	110
11.5	280	195	53.60	115
12.0	295	205	50.84	120
12.5	295	205	62.18	125
13.0	295	205	61.91	130

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	

1) uncoated

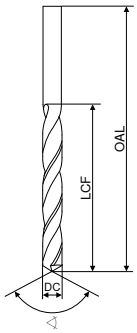
→ v_c Page 51

Twist drills, DIN 1869, extra-long, series 2

> 10xD

WTL

F.-nit



130°
HSS

T2

DC h8	OAL	LCF	Article no. 10 245 ...	
mm	mm	mm	£	
2.0	160	110	17.80	020 1)
2.5	180	120	17.80	025
3.0	190	130	14.10	030
3.5	210	145	13.96	035
4.0	220	150	14.70	040
4.5	235	160	15.99	045
5.0	245	170	15.99	050
5.5	260	180	19.24	055
6.0	260	180	18.96	060
6.5	275	190	21.81	065
7.0	290	200	24.27	070
7.5	290	200	28.61	075
8.0	305	210	28.19	080
8.5	305	210	44.17	085
9.0	320	220	43.16	090
9.5	320	220	49.17	095
10.0	340	235	45.48	100
10.5	340	235	65.96	105
11.0	365	250	64.37	110
11.5	365	250	74.39	115
12.0	375	260	72.53	120
12.5	375	260	72.53	125
13.0	375	260	75.25	130

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	

1) uncoated

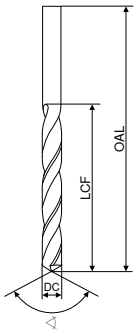
→ v_c Page 51

Twist drills, DIN 1869, extra-long, series 3

> 10xD

WTL

F.-nit



130°
HSS

T2

DC h8	OAL	LCF	Article no. 10 255 ...	
mm	mm	mm	£	
2.5	225	150	23.09	025
3.0	240	160	23.09	030
3.5	265	180	19.05	035
4.0	280	190	19.05	040
4.5	295	200	22.80	045
5.0	315	210	22.80	050
5.5	330	225	24.70	055
6.0	330	225	25.52	060
6.5	350	235	28.19	065
7.0	370	250	35.90	070
7.5	370	250	41.26	075
8.0	390	265	41.19	080
8.5	390	265	53.33	085
9.0	410	280	57.25	090
9.5	410	280	93.26	095
10.0	430	295	66.83	100
10.5	430	295	73.09	105
11.0	455	310	77.44	110
11.5	455	310	85.84	115
12.0	480	330	91.53	120
12.5	480	330	85.84	125
13.0	480	330	86.59	130

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	

→ v_c Page 51

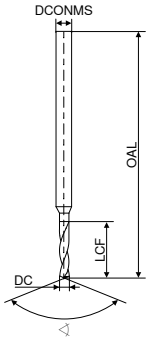
Micro drills, DIN 1899

- 4 facet
- with reinforced shank

Scope of supply:

- pack quantity 5 pieces
- price per piece

N



118°
HSS-E-PM

DC $_{-0,004}$	OAL	LCF	DCONMS $_{h8}$	T2 Article no. 10 103 ...	
mm	mm	mm	mm	£	
0.15	25	0.8	1.0	5.33	00150
0.20	25	1.5	1.0	4.38	00200
0.25	25	1.9	1.0	2.98	00250
0.30	25	1.9	1.0	3.34	00300
0.35	25	2.4	1.0	3.08	00350
0.40	25	3.0	1.0	3.08	00400
0.45	25	3.0	1.0	3.08	00450
0.50	25	3.4	1.0	3.08	00500
0.55	25	3.9	1.0	3.08	00550
0.60	25	3.9	1.0	3.08	00600
0.65	25	4.2	1.0	3.08	00650
0.70	25	4.8	1.0	2.98	00700
0.75	25	4.8	1.0	2.98	00750
0.80	25	5.3	1.5	3.08	00800
0.85	25	5.3	1.5	3.21	00850
0.90	25	6.0	1.5	3.21	00900
0.95	25	6.0	1.5	3.21	00950
1.00	25	6.8	1.5	3.21	01000
1.05	25	6.8	1.5	3.21	01050
1.10	25	7.6	1.5	3.21	01100
1.15	25	7.6	1.5	3.21	01150
1.20	25	8.5	1.5	3.21	01200
1.25	25	8.5	1.5	3.21	01250
1.30	25	8.5	1.5	3.29	01300
1.35	25	9.5	1.5	3.21	01350
1.40	25	9.5	1.5	3.21	01400
1.45	25	9.5	1.5	3.21	01450

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○

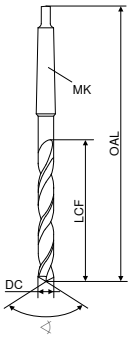
→ v_c Page 52

Twist drill, factory standard, short

≤ 3xD

WT

vap.



MK
130°
HSS-E

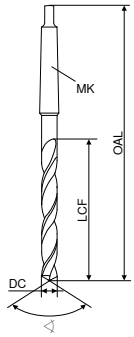
DC $_{h8}$	OAL	LCF	MK	T2 Article no. 10 285 ...	
mm	mm	mm		£	
10.0	138	57	1	43.28	100
10.5	138	57	1	62.27	105
11.0	142	61	1	37.78	110
11.5	142	61	1	49.32	115
12.0	147	66	1	43.73	120
12.5	147	66	1	47.08	125
13.0	147	66	1	45.48	130
13.5	168	70	2	56.88	135
14.0	168	70	2	56.45	140
14.5	172	74	2	60.56	145
15.0	172	74	2	60.14	150
15.5	176	78	2	90.07	155
16.0	176	78	2	56.88	160
16.5	179	81	2	91.53	165
17.0	179	81	2	59.72	170
17.5	183	85	2	95.90	175
18.0	183	85	2	63.41	180
18.5	186	88	2	96.78	185
19.0	186	88	2	70.60	190
19.5	212	91	3	114.34	195
20.0	212	91	3	81.94	200
21.0	216	95	3	90.49	210
22.0	219	98	3	96.78	220
23.0	222	101	3	103.14	230
24.0	225	104	3	105.47	240
25.0	225	104	3	109.82	250
26.0	256	107	4	152.53	260
27.0	259	110	4	162.99	270
28.0	259	110	4	166.61	280
30.0	263	114	4	182.02	300

Steel	●
Stainless steel	○
Cast iron	○
Non ferrous metals	○
Heat resistant alloys	○

→ v_c Page 47

Twist drills, DIN 345

≤ 5xD



N
vap.

MK
118°
HSS

WTL
F.-nit

MK
130°
HSS-E

DC h8	OAL	LCF	MK	T2 Article no. 10 265 ...		T2 Article no. 10 280 ...	
mm	mm	mm		£		£	
10.00	168	87	1	16.95	100	42.13	100
10.20	168	87	1	19.24	102	42.60	102
10.50	168	87	1	17.38	105	42.60	105
10.80	175	94	1	23.25	108	47.66	108
11.00	175	94	1	17.80	110	45.48	110
11.20	175	94	1	24.70	112		
11.50	175	94	1	20.67	115	55.22	115
11.80	175	94	1	26.31	118		
12.00	182	101	1	19.05	120	47.66	120
12.20	182	101	1	26.51	122	51.17	122
12.50	182	101	1	19.66	125	48.74	125
12.80	182	101	1	26.93	128		
13.00	182	101	1	20.39	130	53.47	130
13.20	182	101	1	27.38	132		
13.50	189	108	1	23.09	135	63.50	135
13.80	189	108	1	29.51	138		
14.00	189	108	1	21.95	140	56.45	140
14.25	212	114	2	32.08	142	85.42	142
14.50	212	114	2	22.80	145	66.83	145
14.75	212	114	2	34.87	147		
15.00	212	114	2	24.27	150	67.70	150
15.25	218	120	2	32.41	152	85.79	152
15.50	218	120	2	25.52	155	63.99	155
15.75	218	120	2	29.51	157	71.55	157
16.00	218	120	2	25.52	160	69.69	160
16.25	223	125	2	39.21	162		
16.50	223	125	2	28.19	165	71.55	165 1)
16.75	223	125	2	32.41	167		
17.00	223	125	2	29.22	170	67.70	170 1)
17.25	228	130	2	35.92	172	79.10	172 1)
17.50	228	130	2	29.35	175	74.39	175 1)
17.75	228	130	2	36.47	177	81.94	177 1)
18.00	228	130	2	30.78	180	77.85	180 1)
18.25	233	135	2	37.78	182		
18.50	233	135	2	33.64	185	74.39	185 1)
18.75	233	135	2	39.21	187		
19.00	233	135	2	33.98	190	79.10	190 1)
19.25	238	140	2	42.29	192		
19.50	238	140	2	38.35	195		
19.75	238	140	2	44.17	197		
20.00	238	140	2	35.90	200	86.72	200 1)
20.25	243	145	2	47.31	202		
20.50	243	145	2	37.36	205		
20.75	243	145	2	47.74	207		
21.00	243	145	2	40.69	210	102.57	210 1)
21.25	248	150	2	50.56	212		
21.50	248	150	2	46.65	215		
21.75	248	150	2	51.59	217		
22.00	248	150	2	45.18	220	110.26	220 1)
22.25	248	150	2	53.03	222		
22.50	253	155	2	47.74	225	135.68	225 1)
22.75	253	155	2	54.44	227		
23.00	253	155	2	52.87	230	127.26	230 1)
23.50	276	155	3	51.59	235		
23.75	281	160	3	72.34	237		
24.00	281	160	3	55.22	240	139.03	240 1)
24.50	281	160	3	57.25	245		
24.75	281	160	3	79.32	247		
25.00	281	160	3	60.72	250	141.05	250 1)
25.50	286	165	3	61.99	255		
25.75	286	165	3	82.21	257		
26.00	286	165	3	69.90	260	163.73	260 1)
26.50	286	165	3	66.28	265		
26.75	291	170	3	104.32	267		
27.00	291	170	3	68.28	270	189.15	270 1)
27.50	291	170	3	71.74	275		
27.75	291	170	3	102.12	277		
28.00	291	170	3	75.38	280		
28.50	296	175	3	94.31	285		
28.75	296	175	3	146.92	287		
29.00	296	175	3	81.54	290		
29.50	296	175	3	85.13	295		
29.75	296	175	3	108.52	297		
30.00	296	175	3	81.54	300		
30.50	301	180	3	101.56	305		
31.00	301	180	3	98.64	310		
31.50	301	180	3	112.01	315		
32.00	334	185	4	103.57	320		
32.50	334	185	4	119.28	325		
33.00	334	185	4	111.42	330		
33.50	334	185	4	123.48	335		
34.00	339	190	4	130.45	340		
34.50	339	190	4	143.97	345		
35.00	339	190	4	132.64	350		
35.50	339	190	4	153.27	355		
36.00	344	195	4	142.52	360		
36.50	344	195	4	160.24	365		
37.00	344	195	4	156.02	370		
37.50	344	195	4	175.78	375		
38.00	349	200	4	165.19	380		
38.50	349	200	4	198.30	385		
39.00	349	200	4	180.88	390		
39.50	349	200	4	226.77	395		
40.00	349	200	4	187.82	400		
41.00	354	205	4	202.08	410		
42.00	354	205	4	219.65	420		
43.00	359	210	4	233.86	430		
44.00	359	210	4	244.51	440		
45.00	359	210	4	255.10	450		
46.00	364	215	4	265.69	460		
47.00	364	215	4	283.28	470		
48.00	369	220	4	290.54	480		
49.00	369	220	4	304.63	490		
50.00	369	220	4	311.75	500		
51.00	412	225	5	375.51	510		
52.00	412	225	5	403.85	520		
53.00	412	225	5	586.87	530		
54.00	417	230	5	606.52	540		
55.00	417	230	5	616.35	550		
56.00	417	230	5	635.84	560		
57.00	422	235	5	665.16	570		
58.00	422	235	5	704.33	580		
59.00	422	235	5	743.35	590		
60.00	422	235	5	552.47	600		

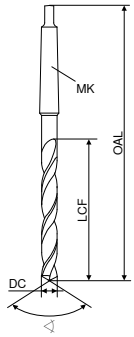
Steel	●	●
Stainless steel		○
Cast iron	●	○
Non ferrous metals	○	○
Heat resistant alloys		

1) vaporised

→ v_c Page 49

Twist drills, DIN 341, long

≤ 10xD



N
vap.

MK
118°
HSS

WTL
F.-nit

MK
130°
HSS-E

DC h8 mm	OAL mm	LCF mm	MK	T2 Article no. 10 295 ... £		T2 Article no. 10 297 ... £	
10.00	197	116	1	23.09	100	57.70	100
10.20	197	116	1	26.31	102	54.93	102
10.50	197	116	1	31.69	105	61.86	105
10.80	206	125	1	40.96	108		
11.00	206	125	1	24.70	110	44.90	110
11.20	206	125	1	32.20	112	55.50	112
11.50	206	125	1	24.70	115	47.08	115
11.80	206	125	1	33.13	118	41.70	118
12.00	215	134	1	24.70	120	47.08	120
12.20	215	134	1	43.60	122	41.13	122
12.50	215	134	1	24.51	125	63.64	125
12.80	215	134	1	47.19	128	40.63	128
13.00	215	134	1	24.51	130	48.74	130
13.20	215	134	1	47.19	132		
13.50	223	142	1	27.75	135	50.75	135
13.80	223	142	1	45.48	138	46.65	138
14.00	223	142	1	27.50	140	57.25	140
14.25	245	147	2	43.05	142		
14.50	245	147	2	34.93	145	55.64	145
14.75	245	147	2	43.05	147		
15.00	245	147	2	34.51	150	58.97	150
15.25	251	153	2	43.05	152		
15.50	251	153	2	33.64	155	57.81	155
15.75	251	153	2	44.17	157		
16.00	251	153	2	35.92	160	60.03	160
16.25	257	159	2	48.74	162		
16.50	257	159	2	37.93	165	59.15	165 [1]
16.75	257	159	2	47.66	167		
17.00	257	159	2	38.36	170	68.29	170 [1]
17.25	263	165	2	71.82	172		
17.50	263	165	2	43.05	175	65.54	175 [1]
17.75	263	165	2	53.75	177		
18.00	263	165	2	42.60	180	69.69	180 [1]
18.25	269	171	2	64.08	182		
18.50	269	171	2	47.74	185	65.54	185 [1]
18.75	269	171	2	81.35	187		
19.00	269	171	2	47.94	190	79.10	190 [1]
19.25	275	177	2	65.84	192		
19.50	275	177	2	55.22	195	80.04	195 [1]
19.75	275	177	2	75.11	197		
20.00	275	177	2	52.46	200	86.14	200 [1]
20.50	282	184	2	65.82	205	84.70	205 [1]
21.00	282	184	2	60.03	210	101.27	210 [1]
21.50	289	191	2	69.69	215		
21.75	289	191	2	126.18	217		
22.00	289	191	2	65.54	220	110.02	220 [1]
22.50	296	198	2	72.34	225		
23.00	296	198	2	68.01	230		
23.50	319	198	3	81.11	235		
24.00	327	206	3	83.38	240	141.05	240 [1]
24.50	327	206	3	89.64	245		
25.00	327	206	3	82.51	250	146.43	250 [1]
25.50	335	214	3	98.61	255		
26.00	335	214	3	96.47	260	171.27	260 [1]
26.50	335	214	3	103.14	265		
27.00	343	222	3	103.14	270		
27.50	343	222	3	127.99	275		
28.00	343	222	3	114.91	280		
29.00	351	230	3	132.78	290		
29.50	351	230	3	148.61	295		
30.00	351	230	3	132.20	300		
30.50	360	239	3	169.25	305		
31.00	360	239	3	160.40	310		
31.50	360	239	3	178.83	315		
32.00	397	248	4	172.01	320		
33.00	397	248	4	172.01	330		
33.50	397	248	4	199.60	335		
34.00	406	257	4	213.12	340		
35.00	406	257	4	206.28	350		
36.00	416	267	4	237.22	360		
37.00	416	267	4	268.16	370		
37.50	416	267	4	288.78	375		
38.00	426	277	4	257.85	380		
39.00	426	277	4	275.12	390		
40.00	426	277	4	288.78	400		
42.00	436	287	4	326.71	420		
43.00	447	298	4	350.55	430		
44.00	447	298	4	350.55	440		
45.00	447	298	4	483.96	450		
50.00	470	321	4	481.26	500		

Steel	●	●
Stainless steel		●
Cast iron	●	●
Non ferrous metals	○	●
Heat resistant alloys		

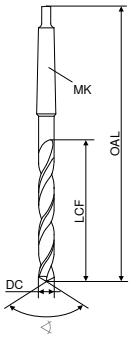
1) vaporised

→ v_c Page 50

Twist drills, DIN 1870, extra-long, series 1

> 10xD

WTL



HSS

DC h8	OAL	LCF	MK	T2 Article no. 10 305 ...	£	
mm	mm	mm				
10.0	285	185	1	44.62	100	1)
10.5	285	185	1	54.18	105	1)
11.0	300	195	1	50.75	110	1)
11.5	300	195	1	53.46	115	1)
12.0	310	205	1	57.81	120	1)
12.5	310	205	1	59.72	125	1)
13.0	310	205	1	59.15	130	1)
13.5	325	220	1	68.28	135	1)
14.0	325	220	1	67.70	140	1)
14.5	340	220	2	70.18	145	1)
15.0	340	220	2	73.81	150	1)
15.5	355	230	2	79.10	155	1)
16.0	355	230	2	75.82	160	1)
16.5	355	230	2	77.85	165	2)
17.0	355	230	2	77.69	170	2)
17.5	370	245	2	83.38	175	2)
18.0	370	245	2	86.14	180	2)
18.5	370	245	2	95.00	185	2)
19.0	370	245	2	97.02	190	2)
19.5	385	260	2	104.76	195	2)
20.0	385	260	2	110.86	200	2)
21.0	385	260	2	127.99	210	2)
22.0	405	270	2	134.09	220	2)
23.0	405	270	2	157.46	230	2)
24.0	440	290	3	175.48	240	2)
25.0	440	290	3	178.83	250	2)
26.0	440	290	3	192.62	260	2)
28.0	460	305	3	223.55	280	2)
30.0	460	305	3	257.85	300	2)

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	

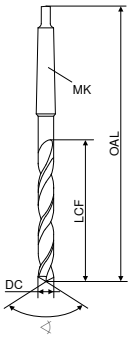
1) nitrided chamfer
2) vaporised

→ v_c Page 51

Twist drills, DIN 1870, extra-long, series 2

> 10xD

WTL



HSS

DC h8	OAL	LCF	MK	T2 Article no. 10 315 ...	£	
mm	mm	mm				
10.0	360	235	1	62.57	100	1)
10.5	360	235	1	106.11	105	1)
11.0	375	250	1	71.55	110	1)
11.5	375	250	1	77.85	115	1)
12.0	395	260	1	87.23	120	1)
13.0	395	260	1	92.97	130	1)
13.5	410	275	1	99.23	135	1)
14.0	410	275	1	99.23	140	1)
14.5	425	275	2	99.80	145	1)
15.0	425	275	2	98.61	150	1)
15.5	445	295	2	104.76	155	1)
16.0	445	295	2	103.14	160	1)
16.5	445	295	2	117.66	165	2)
17.0	445	295	2	110.86	170	2)
17.5	465	310	2	119.70	175	2)
18.0	465	310	2	124.50	180	2)
18.5	465	310	2	134.09	185	2)
19.0	465	310	2	136.25	190	2)
19.5	490	325	2	205.46	195	2)
20.0	490	325	2	153.55	200	2)
21.0	490	325	2	164.44	210	2)
22.0	515	345	2	195.97	220	2)
23.0	515	345	2	264.95	230	2)
24.0	555	365	3	223.55	240	2)
25.0	555	365	3	226.91	250	2)
26.0	555	365	3	264.68	260	2)
28.0	580	385	3	309.41	280	2)
30.0	580	385	3	357.64	300	2)

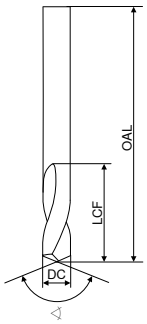
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	

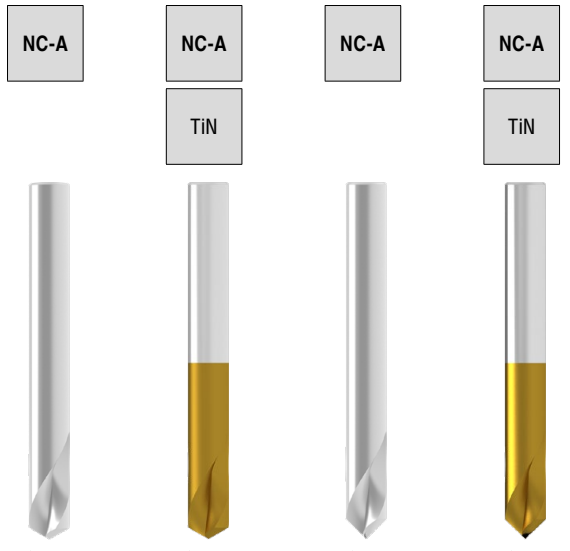
1) nitrided chamfer
2) vaporised

→ v_c Page 51

NC spot drills, factory standard

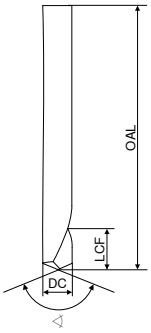
▲ helical flutes

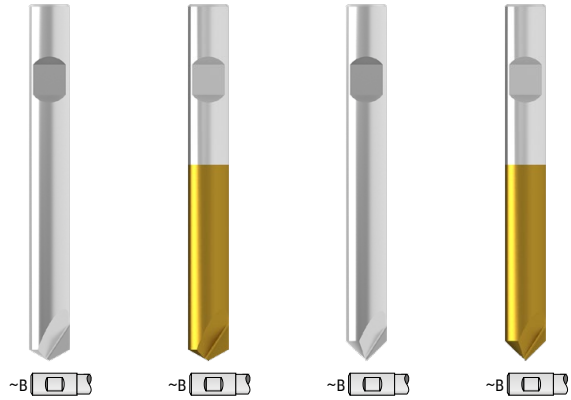




			∢ 120°		∢ 120°		∢ 90°		∢ 90°	
			HSS		HSS		HSS		HSS	
			T2		T2		T2		T2	
DC h6	OAL	LCF	Article no. 10 510 ...		Article no. 10 512 ...		Article no. 10 520 ...		Article no. 10 522 ...	
mm	mm	mm	£		£		£		£	
3	46	12.0	7.70	030	16.89	030	7.43	030	16.89	030
4	55	12.0	7.85	040	17.17	040	7.56	040	17.17	040
5	62	14.0	8.29	050	18.28	050	7.99	050	18.28	050
6	66	16.0	8.27	060	19.23	060	7.99	060	19.23	060
8	79	21.0	13.68	080	30.99	080	13.66	080	30.99	080
10	89	25.0	15.56	100	34.18	100	14.28	100	34.18	100
12	102	30.0	22.25	120	49.96	120	21.95	120	49.96	120
16	115	37.5	28.81	160	65.30	160	28.61	160	65.30	160
20	131	45.0	46.46	200	106.26	200	46.07	200	106.26	200

▲ with clamping flat to DIN 1835 B





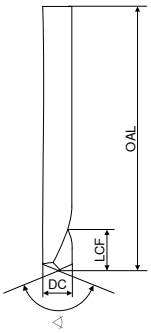
			∢ 120°		∢ 120°		∢ 90°		∢ 90°	
			HSS		HSS		HSS		HSS	
			T2		T2		T2		T2	
DC h6	OAL	LCF	Article no. 10 511 ...		Article no. 10 513 ...		Article no. 10 521 ...		Article no. 10 523 ...	
mm	mm	mm	£		£		£		£	
6	66	7.0	7.85	060	17.50	060	7.85	060	17.50	060
8	79	9.0	11.02	080	24.91	080	11.02	080	24.91	080
10	89	11.5	12.34	100	27.79	100	12.34	100	27.79	100
12	102	14.0	17.15	120	39.06	120	17.15	120	39.06	120
16	115	18.0	22.40	160	51.40	160	22.40	160	51.40	160
20	131	23.0	31.99	200	74.63	200	31.99	200	74.63	200

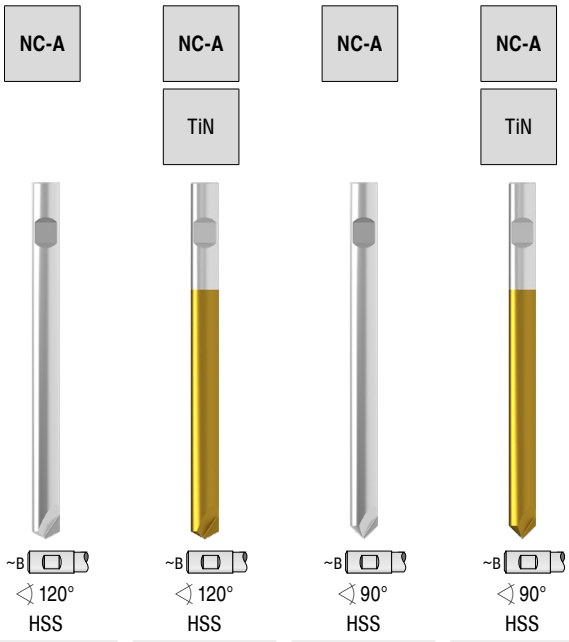
Steel	**15-35**	**25-55**	**15-35**	**25-55**
Stainless steel	10-15	20-25	10-15	20-25
Cast iron	**20-35**	**30-55**	**20-35**	**30-55**
Non ferrous metals	50-70	65-85	50-70	65-85
Heat resistant alloys				

Suitable only for spot drilling!

NC spot Drill Factory Standard Long

▲ with clamping flat to DIN 1835 B





DC_{h6}	OAL	LCF	T2 Article no. 10 530 ...		T2 Article no. 10 532 ...		T2 Article no. 10 526 ...		T2 Article no. 10 528 ...	
mm	mm	mm	£		£		£		£	
6	93	7.0	9.61	060	21.81	060	9.61	060	21.81	060
8	117	9.0	14.97	080	34.38	080	14.97	080	34.38	080
10	133	11.5	16.54	100	37.98	100	16.54	100	37.98	100
12	151	14.0	19.65	120	45.05	120	19.65	120	45.05	120
16	178	18.0	29.96	160	69.71	160	29.96	160	69.71	160
20	205	23.0	41.58	200	97.75	200	41.58	200	97.75	200

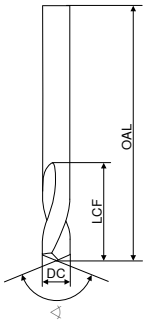
Steel	**15-35**	**25-55**	**15-35**	**25-55**
Stainless steel	10-15	20-25	10-15	20-25
Cast iron	**20-35**	**30-55**	**20-35**	**30-55**
Non ferrous metals	50-70	65-85	50-70	65-85
Heat resistant alloys				

Suitable only for spot drilling!

NC spot drills, factory standard, long

▲ helical flutes

NC-A



90°
HSS

DC h6	OAL	LCF	T2 Article no. 10 525 ...	
mm	mm	mm	£	
6.35	105	17	12.87	**025**
8.00	118	21	23.54	**030**
9.52	132	25	23.80	**040**
12.70	159	30	33.63	**050**
15.87	186	37	29.63	**060**
19.05	213	45	67.67	**075**

Steel	**15-35**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	50-70
Heat resistant alloys	

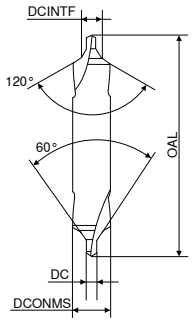
Suitable only for spot drilling!

Centre drills, DIN 333, form B

▲ with protective countersink 120°

ZB

ZB



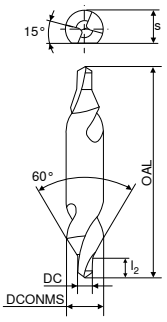
Right-hand
118°
HSS

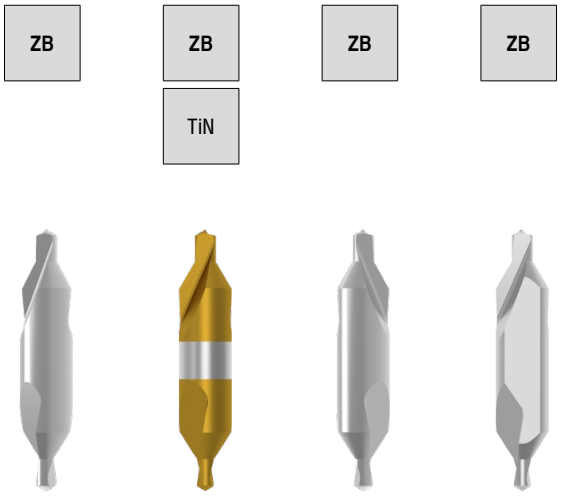
Left-hand
118°
HSS

DC	DCONMS h8	DCINTF k12	OAL	T2 Article no. 10 480 ...		T2 Article no. 10 485 ...	
mm	mm	mm	mm	£		£	
1.00	4.0	2.12	35.5	7.61	**100**	23.54	**100**
1.25	5.0	2.65	40.0	8.43	**125**	27.54	**125**
1.60	6.3	3.35	45.0	7.89	**160**	20.90	**160**
2.00	8.0	4.25	50.0	8.43	**200**	22.14	**200**
2.50	10.0	5.30	56.0	10.38	**250**	23.09	**250**
3.15	11.2	6.70	62.0	15.10	**315**	30.32	**315**
4.00	14.0	8.50	69.0	19.82	**400**	46.36	**400**
5.00	18.0	10.60	77.0	25.71	**500**	49.39	**500**

Steel	**15-35**	**15-35**
Stainless steel	10-15	10-15
Cast iron	**20-35**	**20-35**
Non ferrous metals	50-70	50-70
Heat resistant alloys		

Centre drills, DIN 333, form A



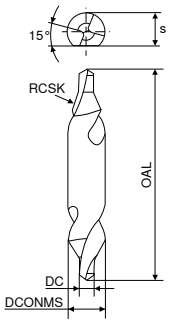


DC	s	DCONMS $_{h8}$	OAL	l_2	Right-hand ◁ 118° HSS T2 Article no. 10 415 ...		Right-hand ◁ 118° HSS T2 Article no. 10 425 ...		Left-hand ◁ 118° HSS T2 Article no. 10 435 ...		Right-hand ◁ 118° HSS-E T2 Article no. 10 445 ...	
mm	mm	mm	mm	mm	£		£		£		£	
0.50		3.15	25.0	0.8	5.41	**050** [2]	13.03	**050** [2]	7.61	**050** [2]		
0.80		3.15	25.0	1.1	5.26	**080** [2]	12.46	**080** [2]	7.47	**080** [2]		
1.00		3.15	31.5	1.3	4.84	**100**	11.50	**100**	6.78	**100**		
1.25		3.15	31.5	1.6	4.18	**125**	13.14	**125**	7.89	**125**		
1.60	3.25	4.00	35.5	2.0							8.30	**160** [1]
1.60		4.00	35.5	2.0	4.43	**160**	10.83	**160**	7.26	**160**		
2.00	4.20	5.00	40.0	2.5							6.42	**200** [1]
2.00		5.00	40.0	2.5	3.63	**200**	11.09	**200**	7.76	**200**		
2.50	5.35	6.30	45.0	3.1							7.26	**250** [1]
2.50		6.30	45.0	3.1	4.18	**250**	13.03	**250**	8.30	**250**		
3.15	6.95	8.00	50.0	3.9							9.74	**315** [1]
3.15		8.00	50.0	3.9	6.93	**315**	16.19	**315**	10.52	**315**		
4.00	8.40	10.00	56.0	5.0							18.54	**400** [1]
4.00		10.00	56.0	5.0	10.67	**400**	25.48	**400**	13.85	**400**		
5.00	10.95	12.50	63.0	6.3							19.52	**500** [1]
5.00		12.50	63.0	6.3	15.36	**500**	36.53	**500**	21.73	**500**		
6.30	14.00	16.00	71.0	8.0							45.37	**630** [1]
6.30		16.00	71.0	8.0	22.41	**630**	54.23	**630**	31.82	**630**		

Steel	**15-35**	**25-55**	**15-35**	**15-35**
Stainless steel	10-15	20-25	10-15	10-15
Cast iron	**20-35**	**30-55**	**20-35**	**20-35**
Non ferrous metals	50-70	65-85	50-70	50-70
Heat resistant alloys				

1) with flat
2) Single ended

Centre drills, DIN 333, form R



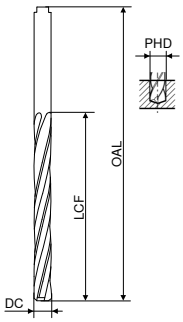
DC	s	DCONMS h8	OAL	RCSK	Right-hand ◁ 118° HSS T2 Article no. 10 455 ...		Left-hand ◁ 118° HSS T2 Article no. 10 475 ...		Right-hand ◁ 118° HSS T2 Article no. 10 465 ...	
mm	mm	mm	mm	mm	£		£		£	
0.50		3.15	25.0	2.00	5.53	**050** [2]				
0.80		3.15	25.0	2.50	5.41	**080** [2]	10.83	**080** [2]		
1.00		3.15	31.5	2.90	4.84	**100**	11.34	**100**		
1.25		3.15	31.5	3.15	5.53	**125**	10.28	**125**		
1.60	3.25	4.00	35.5	4.00					6.28	**160** [1]
1.60		4.00	35.5	4.00	4.57	**160**	8.27	**160**		
2.00	4.20	5.00	40.0	5.00					6.42	**200** [1]
2.00		5.00	40.0	5.00	4.84	**200**	8.40	**200**		
2.50	5.35	6.30	45.0	6.30					7.26	**250** [1]
2.50		6.30	45.0	6.30	5.53	**250**	8.68	**250**		
3.15	6.95	8.00	50.0	8.00					9.42	**315** [1]
3.15		8.00	50.0	8.00	7.07	**315**	12.22	**315**		
4.00	8.40	10.00	56.0	10.00					13.70	**400** [1]
4.00		10.00	56.0	10.00	10.11	**400**	17.38	**400**		
5.00	10.95	12.50	63.0	12.50					19.52	**500** [1]
5.00		12.50	63.0	12.50	15.52	**500**	34.46	**500**		
6.30	14.00	16.00	71.0	16.00					45.37	**630** [1]
6.30		16.00	71.0	16.00	23.12	**630**				

Steel	**15-35**	**15-35**	**15-35**
Stainless steel	10-15	10-15	10-15
Cast iron	**20-35**	**20-35**	**20-35**
Non ferrous metals	50-70	50-70	50-70
Heat resistant alloys			

1) with flat
2) Single ended

Core drills (spiral countersinks)

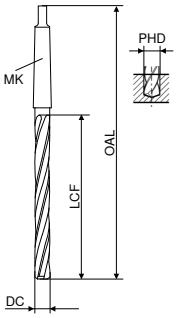
▲ with cylindrical shank, DIN 344



DC h8	OAL	LCF	PHD	T2 Article no. 10 226 ...	
mm	mm	mm	mm	£	
3.80	96	64	2.8	19.47	038
4.00	96	64	2.8	18.82	040
4.80	108	74	3.5	13.96	048
5.00	108	74	3.5	14.10	050
5.80	116	80	4.2	13.96	058
6.00	116	80	4.2	14.10	060
6.80	133	93	4.9	15.99	068
7.00	133	93	4.9	15.99	070
7.80	142	100	5.6	17.97	078
8.00	142	100	5.6	18.01	080
8.80	151	107	6.3	19.47	088
9.00	151	107	6.3	30.03	090
9.80	162	116	7.0	21.25	098
10.00	162	116	7.0	20.81	100
10.75	173	125	7.7	28.38	107
11.00	173	125	7.7	25.71	110
11.75	184	134	8.4	28.81	117
12.00	184	134	8.4	26.31	120

Steel	**15-35**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	**50-80**
Heat resistant alloys	14-28

Core drills (spiral countersinks)



DC h8	OAL	LCF	PHD	MK	T2 Article no. 10 228 ...	
mm	mm	mm	mm		£	
10.00	168	87	7.0	1	25.71	100
10.75	175	94	7.7	1	30.22	107
11.00	175	94	7.7	1	43.03	110
11.75	182	101	8.4	1	30.22	117
12.00	182	101	8.4	1	43.03	120
12.75	182	101	9.1	1	33.56	127
13.00	182	101	9.1	1	29.35	130
13.75	189	108	9.8	1	33.51	137
14.00	189	108	9.8	1	29.78	140
14.75	212	114	10.5	2	37.36	147
15.00	212	114	10.5	2	33.51	150
15.75	218	120	11.2	2	39.37	157
16.00	218	120	11.2	2	35.02	160
16.75	223	125	11.9	2	41.19	167
17.00	223	125	11.9	2	37.36	170
17.75	228	130	12.6	2	43.16	177
18.00	228	130	12.6	2	37.36	180
18.70	233	135	13.3	2	43.60	187
19.00	233	135	13.3	2	42.73	190
19.70	238	140	14.0	2	43.60	197
20.00	238	140	14.0	2	42.73	200
20.70	243	145	14.6	2	49.75	207
21.00	243	145	14.6	2	49.98	210
21.70	248	150	15.3	2	50.99	217
22.00	248	150	15.3	2	50.42	220
22.70	253	155	16.0	2	55.43	227
23.00	253	155	16.0	2	54.87	230
23.70	281	160	16.6	3	57.73	237
24.00	281	160	16.6	3	56.88	240
24.70	281	160	17.3	3	61.58	247
25.00	281	160	17.3	3	61.60	250
25.70	286	165	18.0	3	64.42	257
26.00	286	165	18.0	3	64.95	260
26.70	291	170	18.6	3	76.56	267
27.00	291	170	18.6	3	75.11	270
27.70	291	170	19.3	3	75.82	277
28.00	291	170	19.3	3	75.71	280
28.70	296	175	20.0	3	82.94	287
29.00	296	175	20.0	3	83.83	290
29.70	296	175	20.5	3	88.20	297
30.00	296	175	20.5	3	86.72	300

Steel	**15-35**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	**50-80**
Heat resistant alloys	14-28

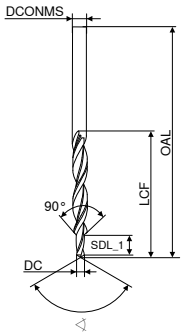
Stepped drills, DIN 8378

- countersinking angle 90°
- for tapping drill holes according to DIN 336, Table 1 with 90° chamfer and for through holes according to DIN EN 20273 – medium

DIN 8378

SB

vap.



118°
HSS

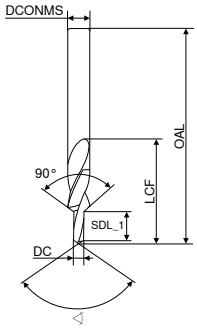
For threads	DC h9	DCONMS h8	OAL	SDL_1	LCF	T2 Article no. 10 365 ... £	
	mm	mm	mm	mm	mm		
M3	2.5	3.4	70	8.8	39	19.39	030
M4	3.3	4.5	80	11.4	47	21.25	040
M5	4.2	5.5	93	13.6	57	21.95	050
M6	5.0	6.6	101	16.5	63	24.51	060
M8	6.8	9.0	125	21.0	81	27.50	080
M10	8.5	11.0	142	25.5	94	35.90	100
M12	10.2	13.5	160	30.0	108	44.90	120

Stepped drills, overall length to DIN 1897

- countersinking angle 90°
- for tapping drill holes according to DIN 336, Table 1 with 90° chamfer and for through holes according to DIN EN 20273 – medium

DIN 8378

SB

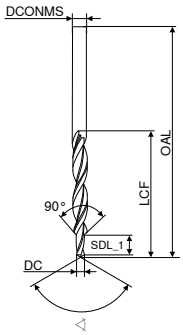


118°
HSS

For threads	DC h6	DCONMS h6	OAL	SDL_1	LCF	T2 Article no. 10 320 ... £	
	mm	mm	mm	mm	mm		
M3	2.5	3.4	52	8.8	20	12.52	030
M4	3.3	4.5	58	11.4	24	12.70	040
M5	4.2	5.5	66	13.6	28	13.68	050
M6	5.0	6.6	70	16.5	31	14.52	060
M8	6.8	9.0	84	21.0	40	16.83	080
M10	8.5	11.0	95	25.5	47	21.81	100
M12	10.2	13.5	107	30.0	54	27.95	120

- for through holes according to DIN EN 20273 – fine
- with 90° screw head countersink

DIN 8374



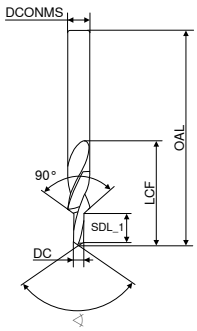
118°
HSS

For threads	DC h9	DCONMS h8	OAL	SDL_1	LCF	T2 Article no. 10 355 ... £	
	mm	mm	mm	mm	mm		
M3	3.2	6.0	93	9	57	22.80	030
M4	4.3	8.0	117	11	75	26.37	040
M5	5.3	10.0	133	13	87	33.13	050
M6	6.4	11.5	142	15	94	50.37	060
M8	8.4	15.0	169	19	114	62.47	080
M10	10.5	19.0	198	23	135	96.47	100

Steel	**10-30**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	50-70
Heat resistant alloys	

- for through holes according to DIN EN 20273 – fine
- with 90° screw head countersink

DIN 8374



118°
HSS

For threads	DC h6	DCONMS h6	OAL	SDL_1	LCF	T2 Article no. 10 330 ... £	
	mm	mm	mm	mm	mm		
M3	3.2	6.0	66	9	28	14.52	030
M4	4.3	8.0	79	11	37	16.57	040
M5	5.3	10.0	89	13	43	20.39	050
M6	6.4	11.5	95	15	47	23.25	060
M8	8.4	15.0	111	19	56	26.37	080
M10	10.5	19.0	127	23	64	39.34	100

Steel	**10-30**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	50-70
Heat resistant alloys	

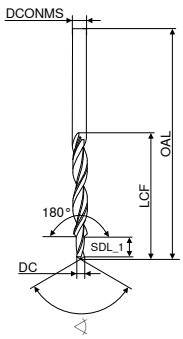
Stepped drills, DIN 8376

- countersinking angle 180°
- for through holes according to DIN EN 20273 – Medium
- for screw heads to DIN 974-1 – Series 1

DIN 8376

SB

vap.



118°
HSS

For threads	DC h9	DCONMS h8	OAL	SDL_1	LCF	T2 Article no. 10 375 ...	
	mm	mm	mm	mm	mm	£	
M3	3.4	6	93	9	57	22.80	**030** 1)
M4	4.5	8	117	11	75	26.37	**040**
M5	5.5	10	133	13	87	31.65	**050**
M6	6.6	11	142	15	94	36.35	**060**
M8	9.0	15	169	19	114	46.65	**080**
M10	11.0	18	191	23	130	97.02	**100**

Steel	**10-30**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	50-70
Heat resistant alloys	

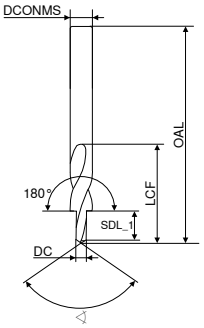
1) DCONMS not according to DIN 974-1

Stepped drills, factory standard, total length according to DIN 1897

- countersinking angle 180°
- for through holes according to DIN EN 20273 – Medium
- for screw heads to DIN 974-1 – Series 1

DIN 8376

SB



118°
HSS

For threads	DC h6	DCONMS h6	OAL	SDL_1	LCF	T2 Article no. 10 340 ...	
	mm	mm	mm	mm	mm	£	
M3	3.4	6	66	9	28	14.10	**030** 1)
M4	4.5	8	79	11	37	15.98	**040**
M5	5.5	10	89	13	43	19.39	**050**
M6	6.6	11	95	15	47	22.80	**060**
M8	9.0	15	111	19	56	29.07	**080**
M10	11.0	18	123	23	62	42.60	**100**

Steel	**10-30**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	50-70
Heat resistant alloys	

1) DCONMS not according to DIN 974-1

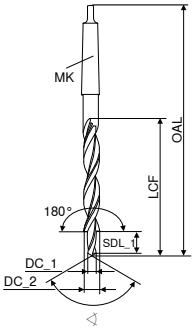
Stepped drills, DIN 8377

- countersinking angle 180°
- for through holes according to DIN EN 20273 – Medium
- for screw heads to DIN 974-1 – Series 1

DIN 8377

SB

vap.



HSS

For threads	DC_1 h9 mm	DC_2 mm	OAL mm	SDL_1 mm	LCF mm	MK	T2 Article no. 10 405 ... £	
M5	5.5	10	168	13	87	1	45.47	**050**
M6	6.6	11	175	15	94	1	46.65	**060**
M8	9.0	15	212	19	114	2	61.47	**080**
M10	11.0	18	228	23	130	2	81.94	**100**
M12	13.5	20	238	27	140	2	99.23	**120**
M14	15.5	24	281	31	160	3	127.26	**140**
M16	17.5	26	286	35	165	3	149.20	**160**
M18	20.0	30	296	39	175	3	232.98	**180**
M20	22.0	33	334	43	185	4	202.95	**200**

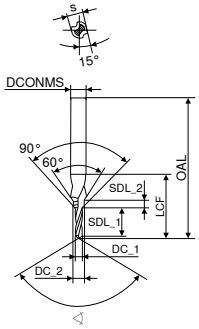
Steel	**10-30**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	50-70
Heat resistant alloys	

Stepped drills for centring, factory standard

- with flat
- countersinking angle 60°
- special drill for creating tapping drill holes with centring, 60° countersinking angle according to DIN 332, sheet 2, form D.
- point thinning ≥ Ø 3,3 mm

SB

vap.



118°
HSS

For threads	DC_1 h8	DCONMS h7	DC_2	s	OAL	SDL_1	LCF	SDL_2	T2 Article no. 10 350 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	£	
M4	3.3	8.0	4.3	6.75	63	11.0	23	1.60	52.75	**040**
M5	4.2	10.0	5.3	8.45	67	13.0	27	2.15	60.03	**050**
M6	5.0	12.5	6.4	10.45	71	16.0	33	2.90	65.54	**060**
M8	6.8	14.0	8.4	12.50	88	19.5	41	3.50	62.03	**080**
M10	8.5	16.0	10.5	14.85	94	23.0	47	4.70	69.69	**100**
M12	10.2	20.0	13.0	18.45	105	28.0	59	6.50	91.92	**120**
M16	14.0	25.0	17.0	23.40	132	33.0	67	8.30	130.75	**160**
M20	17.5	31.5	21.0	29.35	145	38.0	77	10.35	175.48	**200**
M24	21.0	40.0	25.0	36.50	160	45.0	90	12.00	271.79	**240**

Steel	**10-30**
Stainless steel	10-15
Cast iron	**20-35**
Non ferrous metals	50-70
Heat resistant alloys	

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data standard values – Hole depth 3xD

	Type VX-TiN 10 122 ...		Type UNI-PM-TiN 10 113 ...		Type UNI-TiN 10 107 ...		Type N 10 105 ...		Type VA 10 130 ...		Type WNX 10 106 ...	
Index	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F
1.1	**33–38**	5-6	**37-42**	**5-6**	**33–38**	5-6	**22–27**	5-6			**22–27**	5-6
1.2	**40–44**	6	**44-47**	**6-7**	**40–44**	6	**26–34**	5-6			**22–30**	5-6
1.3	**44**	6	**47**	**4**	**44**	6	**30**	6	36	6	**30**	6
1.4	**18–22**	3-4	**20-25**	**4-5**	**18–22**	3-4			18-32	3-4	**15–18**	3-4
1.5	**40–44**	6	**47**	**6**	**40–44**	6	**25**	5			**25**	5
1.6	**26**	5	**44**	**5**	**26**	5	**16**	5			**20**	5
1.7	**27**	4	**30**	**4**	**27**	4					**18**	4
1.8	**22**	3	**25**	**3**	**22**	3					**15**	3
1.9	**20**	4	**22**	**4**	**20**	4					**18**	4
1.10	**22**	4	**25**	**4**	**22**	4			20	4	**18**	4
1.11	**16**	3	**20**	**4**	**16**	3			15	3	**13**	4
1.12	**20**	4	**25**	**4**	**20**	4	**16**	4			**18**	4
1.13	**9**	2	**10**	**2**	**9**	2			12	2	**6**	2
1.14	**13**	3	**16**	**3**	**13**	3					**12**	3
1.15	**15–20**	3-4	**17-22**	**4-5**	**15–20**	3-4	**12–16**	3-4			**13–18**	3-4
1.16	**15–20**	3-4	**17-22**	**4-5**	**15–20**	3-4	**12–16**	3-4			**13–18**	3-4
2.1	**20**	4	19	**4**	**20**	4			**18**	4	13	4
2.2	**18**	4	17	**4**	**18**	4			**15**	4	11	4
2.3	**18**	4	16	**4**	**18**	4			**14**	3	12	4
2.4	**18**	4	15	**4**	**18**	4					11	4
2.5	**15**	3	14	**3**	**15**	3			**13**	3	10	3
2.6	**16**	3	15	**3**	**16**	3			**12**	3	9	3
2.7	**12**	3	13	**3**	**12**	3					8	3
3.1	**45**	6	**50**	6	**45**	6	**34**	6			31	6
3.2	**40**	6	**44**	6	**40**	6	**26**	6			28	6
3.3	**40**	6	**44**	6	**40**	6	**25**	6			21	6
3.4	**30**	6	**33**	6	**30**	6	**20**	6			17	6
3.5	**42**	6	**44**	6	**42**	6	**26**	6	45	6	21	6
3.6	**35**	6	**33**	6	**35**	6	**23**	6	32	6	18	6
3.7	**32**	6	**44**	6	**32**	6	**22**	6			24	6
3.8	**30**	6	**33**	6	**30**	6	**21**	6			23	6
4.1	**70**	7			**70**	7			90	7	**70**	7
4.2	**70**	7			**70**	7			90	7	**70**	7
4.3	**85**	7			**85**	7			80	7	**50**	7
4.4	**70**	7			**70**	7			70	6	**50**	6
4.5	**70**	6			**70**	6			70	6	**50**	6
4.6	**88**	5	88	5	**88**	5			40	5	**60**	5
4.7	**44**	5	50	5	**44**	5			38	4	**40**	4
4.8	**50**	4	33	5	**50**	4			48	4	**36**	4
4.9	**45**	4	29	5	**45**	4			43	4	**35**	4
4.10	**40**	4	28	5	**40**	4			37	4	**32**	4
4.11	**77**	5	84	5	**77**	5	36-40	4				
4.12	**44**	5	46	5	**44**	5			40	5	**40**	5
4.13	**15**	4	27	5	**15**	4					**28**	4
4.14	**25**	4	22	4	**25**	4	18	4	20	4	**18**	4
4.15												
4.16	**70**	6			**70**	6					**70**	6
4.17												
4.18	**14**	3			**14**	3						
4.19	**18**	4			**18**	4						
5.1	8	2			8	2						
5.2	10	2			10	2						
5.3	8	1			8	1						
5.4	8	1	5	**2**	8	1						
5.5	8	2			8	2						
5.6	8	2			8	2						
5.7	10	2	10	**2**	10	2			7	2	6	2
5.8	8	1			8	1						
5.9	8	1			8	1						
5.10	12	2			12	2			10	2		
5.11	8	2			8	2			6	2		
6.1	8	1			8	1						
6.2												
6.3												
6.4												
6.5												

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

	Type WT 10 109 ...		Type WT-TiN 10 110 ...		Type WTL-L 10 112 ...		Type WT-MK 10 285 ...	
Index	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F
1.1	**30–35**	5	**35–45**	5	**22–27**	5-6	**30–35**	5
1.2	**30–35**	5	**35–45**	5	**26–34**	5-6	**30–40**	5
1.3	**36**	4	**44**	4	**30**	6	**36**	6
1.4	**15–20**	3-4	**18–22**	3-4	**13–16**	3-4	**15–20**	3-4
1.5	**40**	5	**44**	5	**25–34**	5	**35–40**	5
1.6	**35**	4	**38**	4	**16**	5	**35**	4
1.7	**20**	4	**27**	4	**16**	4	**20**	4
1.8	**16**	3	**22**	3	**13**	3	**16**	3
1.9	**16**	3	**18**	3	**16**	4	**16**	3
1.10	**16**	4	**22**	4	**16**	4	**16**	4
1.11	**12**	3	**18**	3	**11**	4	**12**	3
1.12	**15**	4	**17**	4	**16**	4	**20**	4
1.13	**8**	2	**9**	2	**12**	2	**8**	2
1.14	**12**	3	**15**	3	**12**	3	**15**	3
1.15	**12–15**	3-4	**14–19**	3-4	**12–16**	3-4	**12–20**	3-4
1.16	**12–15**	3-4	**14–19**	3-4	**12–16**	3-4	**12–20**	3-4
2.1	16	4	18	4	12	4	16	4
2.2	14	4	15	4	10	3	14	4
2.3	15	3	17	3	11	3	15	3
2.4	14	3	15	3	10	3	14	3
2.5	13	3	15	3	9	3	13	3
2.6	12	3	14	3	8	3	12	3
2.7	11	3	13	3	7	3	11	3
3.1	35	6	40	6	30	6	35	6
3.2	30	6	35	6	25	6	30	6
3.3	30	6	33	6	25	6	30	6
3.4	25	6	27	6	20	6	25	6
3.5	30	6	36	6	26	6	30	6
3.6	28	6	34	6	23	6	28	6
3.7	26	6	30	6	22	6	26	6
3.8	24	6	28	6	21	6	24	6
4.1					**70**	7		
4.2					**70**	7		
4.3					**50**	7		
4.4					**50**	6		
4.5					**45**	6		
4.6					**60**	5		
4.7	38	5	40	5	**40**	4	38	5
4.8	38	4	40	4	**32**	4	38	4
4.9	25	4	32	4	**30**	4	25	4
4.10					**28**	4		
4.11								
4.12					**40**	5		
4.13					**28**	5		
4.14	20	4	25	4	**18**	4	20	4
4.15								
4.16					**70**	6		
4.17								
4.18								
4.19								
5.1								
5.2								
5.3	7	1	8	1			7	1
5.4	7	1	8	1			7	1
5.5	7	1	8	1			7	1
5.6	8	2	10	2			8	2
5.7								
5.8								
5.9	12	2	15	2			10	2
5.10	12	2	15	2			10	2
5.11	8	2	10	2			6	2
6.1	4	1	8	1	6	1-2	4	1
6.2			4	1				
6.3								
6.4								
6.5								

When drilling tough materials which tend to jam, chips should be removed at drilling depth ≥ 4xD and the cutting speed v_c should be reduced as follows: at drilling depths > 4xD by 10%, at drilling depths > 6xD by 15–20%. It is also recommended to use an emulsion for cooling.

v_c = Cutting speed in m/min.
F = Factor for feed selection
Feed approximate values see → **Page 53**

Cutting data standard values – Hole depth 5xD

	Type VX-TiN 10 124 ...		Type UNI-PM-TiN 10 173 ...		Type UNI-TiN 10 171 ...		Type N 10 152 ...		Type VA 10 175 ...		Type W 10 161 ...		Type WTL 10 168 ...	
Index	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F
1.1	**33–38**	5-6	**37-42**	**5-6**	**33–38**	5-6	**22–27**	5-6					**30–35**	5
1.2	**40–44**	5-6	**44-47**	**6-7**	**40–44**	5-6	**26–34**	5-6					**40**	5
1.3	**44**	6	**47**	**4**	**44**	6	**30**	6					**36**	5
1.4	**18–22**	3-4	**20-25**	**4-5**	**18–22**	3-4			16-28	3-4			**15–20**	3-4
1.5	**40–44**	6	**47**	**6**	**40–44**	6	**25**	5					**40**	5
1.6	**26**	5	**44**	**5**	**26**	5							**35**	4
1.7	**27**	4	**30**	**4**	**27**	4							**20**	4
1.8	**22**	3	**25**	**3**	**22**	3							**16**	3
1.9	**20**	4	**22**	**4**	**20**	4							**14**	3
1.10	**22**	4	**25**	**4**	**22**	4			18	4			**16**	4
1.11	**16**	3	**20**	**4**	**16**	3			15	3			**12**	3
1.12	**20**	4	**25**	**4**	**20**	4	**16**	4					**10**	3
1.13	**9**	2	**10**	**2**	**9**	2								
1.14	**13**	3	**16**	**3**	**13**	3							**15**	3
1.15	**15–20**	3-4	**17-22**	**4-5**	**15–20**	3-4	**12–16**	3-4					**15**	4
1.16	**15–20**	3-4	**17-22**	**4-5**	**15–20**	3-4	**12–16**	3-4					**12**	3
2.1	**20**	4	19	**4**	**20**	4			**16**	4			15	4
2.2	**18**	4	17	**4**	**18**	4			**14**	4			14	4
2.3	**18**	4	16	**4**	**18**	4			**13**	4			12	3
2.4	**18**	4	15	**4**	**18**	4			**14**	3			13	3
2.5	**15**	3	14	**3**	**15**	3			**12**	3				
2.6	**16**	3	15	**3**	**16**	3			**11**	3				
2.7	**12**	3	13	**3**	**12**	3			**10**	3				
3.1	**45**	6	**50**	6	**45**	6	**34**	6					36	6
3.2	**40**	6	**44**	6	**40**	6	**26**	6					28	6
3.3	**40**	6	**44**	6	**40**	6	**25**	6					30	6
3.4	**30**	6	**33**	6	**30**	6	**20**	6					22	6
3.5	**42**	6	**44**	6	**42**	6	**26**	6	42	6			28	6
3.6	**35**	6	**33**	6	**35**	6	**23**	6	30	6			23	6
3.7	**32**	6	**44**	6	**32**	6	**22**	6					20	6
3.8	**30**	6	**33**	6	**30**	6	**21**	6					18	6
4.1	**70**	7			**70**	7					**80**	7		
4.2	**70**	7			**70**	7			90	7	**80**	7		
4.3	**85**	7			**85**	7			90	7	**63**	7	70	7
4.4	**70**	7			**70**	7			70	6			55	6
4.5	**70**	6			**70**	6			70	6			55	6
4.6	**88**	5	88	5	**88**	5			55	5	**50**	5	40	5
4.7	**44**	5	50	5	**44**	5			44	4			36	5
4.8	**47**	4	33	5	**47**	4			36	4			28	4
4.9	**43**	4	29	5	**43**	4			30	4			22	4
4.10	**38**	4	28	5	**38**	4			30	3			20	4
4.11	**77**	5	84	5	**77**	5								
4.12	**44**	5	46	5	**44**	5			45	5			45	4
4.13	**15**	4	27	5	**15**	4					**28**	5		
4.14	**25**	4	22	4	**25**	4	18	4					20	4
4.15														
4.16	**70**	6			**70**	6								
4.17														
4.18	**14**	3			**14**	3			11	3				
4.19	**18**	4			**18**	4			13	4				
5.1	8	2			8	2								
5.2	10	2			10	2								
5.3	8	1			8	1								
5.4	8	1	5	**2**	8	1								
5.5	8	2			8	2								
5.6	8	2			8	2								
5.7	10	1	10	**2**	10	1			9	2				
5.8	8	1			8	1								
5.9	8	1			8	1								
5.10	12	2			12	2			10	2				
5.11	8	2			8	2								
6.1	8	1			8	1								
6.2														
6.3														
6.4														
6.5														

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

	Type WTL-TiN 10 170 ...		Type WTL-TiCN 10 172 ...		Type WTL-L 10 169 ...		Type WNXi 10 180 ...		Type WNXi-TiN 10 181 ...		Type N-MK 10 265 ...		Type WTL-MK 10 280 ...	
Index	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F
1.1	**36–42**	5	**36–42**	6	**22–27**	5-6	**42–50**	6-7	**42–60**	6-7	**22–27**	5-6	**30–35**	5
1.2	**42–48**	5	**42–48**	6	**25–32**	5-6	**42–50**	6-7	**42–60**	6-7	**25–32**	5-6	**40**	5
1.3	**48**	4	**48**	7	**32**	6	**50**	7	**62**	7	**30**	6	**36**	6
1.4	**20–24**	3-4	**20–24**	4-5			**16–22**	4-5	**20–31**	4-5			**15–20**	3-4
1.5	**48**	5	**48**	6	**25**	5	**38–48**	6	**48–60**	6	**25**	5	**28–40**	5
1.6	**42**	4	**42**	5			**28**	5	**30**	5			**28**	4
1.7	**34**	4	**34**	5			**25**	5	**30**	5			**18–20**	4
1.8	**30**	3	**30**	4			**20**	4	**25**	4			**16**	3
1.9	**18**	3	**20**	4			**22**	5	**25**	5			**14**	3
1.10	**24**	4	**20**	5			**22**	5	**28**	5			**14–16**	4
1.11	**20**	3	**15**	4			**14**	4	**20**	4			**12**	3
1.12	**13**	3	**15**	4			**24**	5	**26**	5	**16**	4	**10**	3
1.13			**11**	3			**15**	3	**18**	3				
1.14	**17**	3	**17**	4			**18**	4	**20**	4			**10–15**	3
1.15	**18**	4	**21**	5	**16**	4	**16–24**	4-5	**18–30**	4-5	**12–16**	3-4	**15**	4
1.16	**14**	3	**15**	4			**16–24**	4-5	**18–30**	4-5	**12–16**	3-4	**12**	3
2.1	18	4	20	5			**20**	5	**25**	5			15	4
2.2	16	4	18	4			**18**	5	**22**	5			14	4
2.3	14	3	16	4			**16**	5	**20**	5			12	3
2.4	15	3	17	4			**18**	5	**22**	5			13	3
2.5							**15**	4	**19**	4				
2.6							**14**	4	**18**	4				
2.7							**12**	4	**17**	4				
3.1	45	6			32	6	**48**	7	**60**	7	**32**	6	36	6
3.2	36	6			25	6	**42**	7	**52**	7	**25**	6	28	6
3.3	40	6			28	6	**42**	7	**52**	7	**28**	6	30	6
3.4	28	6			20	6	**40**	7	**50**	7	**20**	6	22	6
3.5	36	6			25	6	**42**	7	**52**	7	**25**	6	28	6
3.6	30	6			22	6	**35**	7	**45**	7	**22**	6	23	6
3.7	25	6			18	6	**32**	7	**42**	7	**21**	6	20	6
3.8	22	6			16	6	**30**	7	**40**	7	**20**	6	18	6
4.1					80	7								
4.2					80	7								
4.3	85	7			63	7	95	7	120	7			70-80	7
4.4	70	6			50	6	75	8	95	8			60-70	6
4.5	70	6			50	6	75	8	95	8			60-70	6
4.6	88	5			32	5	78	6	98	6			40	5
4.7	45	5			50	5	55	6	62	6			36	5
4.8	32	4			15	4							28	4
4.9	25	4					42	5	48	5			22	4
4.10	22	4					38	5	44	5			20	4
4.11														
4.12					40	5	55	6	55	6			45	4
4.13							38	6	44	6	28	5		
4.14	24	4			16	4					18	4	18	4
4.15														
4.16														
4.17														
4.18							15	4	20	4				
4.19							18	4	22	5				
5.1							9	3	11	3				
5.2							11	3	13	3				
5.3							9	2	11	2				
5.4							9	2	11	2				
5.5							9	2	11	2				
5.6							11	3	13	3				
5.7							9	2	11	2				
5.8							9	3	11	3				
5.9							9	2	11	2				
5.10							14	3	17	3				
5.11							10	3	12	3				
6.1							8	3	10	3				
6.2							4	3	5	3				
6.3														
6.4														
6.5														

When drilling tough materials which tend to jam, chips should be removed at drilling depth ≥ 4xD and the cutting speed v_c should be reduced as follows: at drilling depths > 4xD by 10 %, at drilling depths > 6xD by 15–20 %. It is also recommended to use an emulsion for cooling.

v_c = Cutting speed in m/min.
F = Factor for feed selection
Feed approximate values see → **Page 53**

Cutting data standard values – Hole depth 10xD and over 10xD

	Hole depth 10xD													
	Type NC 10 223 ...		Type NC-TiALN 10 224 ...		Type UNI-TiN 10 270 ...		Type WTL 10 225 ...		Type WTL 10 215 ...		Type WTL-TiN 10 210 ...		Type WTW 10 200 ...	
Index	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F
1.1	**30–40**	5-6	**50–65**	6-7	**25–32**	5-6	**28–32**	5-6	**22–28**	5-6	**24–30**	5-6		
1.2	**30–40**	5-6	**50–65**	6-7	**28–35**	6	**28–32**	5-6	**22–28**	5-6	**28–32**	5-6		
1.3	**40**	6	**65**	7	**28**	6	**32**	6	**28**	6	**32**	6		
1.4	**12–17**	3-4	**18–25**	4-5	**12–14**	3-4	**13–18**	3-4			**10–14**	4		
1.5	**30–40**	5	**45–55**	6	**25–28**	6	**26–36**	5	**22**	5	**26–36**	5		
1.6	**22**	4	**35**	5	**15**	5	**24**	4-5			**24**	4		
1.7	**20**	3	**30**	4	**13**	4	**16**	4			**18**	4		
1.8	**14**	3	**20**	4	**12**	3	**12**	3						
1.9	**14**	3	**20**	4	**13**	4	**12**	3						
1.10	**14**	4	**20**	5	**13**	4	**14**	4			**12**	4		
1.11	**10**	3	**15**	4	**8**	3	**10**	3						
1.12	**10**	3	**15**	4			**8**	3			**8**	3		
1.13	**7**	2	**12**	3			**6**	2						
1.14	**10**	3	**15**	4	**10**	3	**12**	3						
1.15	**20**	4	**30**	4	**10–13**	3-4	**16**	8	**14**	4	**15**	4		
1.16	**10**	3	**15**	4	**10–13**	3-4	**8**	3			**8**	3		
2.1	14	4	20	4	13	4	**12**	4						
2.2	14	4	20	4			**13**	4						
2.3	12	3	18	3	12	4	**10**	3						
2.4	13	3	20	3			**11**	3						
2.5	11	3	16	3			**9**	3						
2.6	10	3	15	3	8-13	3-4	**8**	3						
2.7							**7**	2-3						
3.1	**40**	6	**65**	7	**32**	6	**28**	6	**28**	6	**36**	6-7		
3.2	**30**	6	**50**	7	**26**	6	**22**	6	**22**	6	**28**	6-7		
3.3	**35**	6	**60**	7	**28**	6	**30**	6	**22**	6	**28**	6-7		
3.4	**25**	6	**40**	7	**20**	6	**24**	6	**18**	6	**22**	6-7		
3.5	**30**	6	**50**	7	**28**	6	**24**	6	**22**	6	**28**	6-7		
3.6	**32**	6	**55**	7	**20**	6	**20**	6	**16**	6	**30**	6-7		
3.7	**24**	6	**36**	7	**28**	6	**16**	6	**14**	6	**20**	6-7		
3.8	**22**	6	**32**	7	**20**	6	**15**	6	**13**	6	**18**	6-7		
4.1					50	7							**65**	7
4.2	80	6	110	7	60	7							**65**	7
4.3	80	6	110	7	60	7	**70**	7	**55**	7	**70**	7		
4.4	75	7	95	8	50	6	**60**	6	**45**	6	**55**	6		
4.5	60	6	80	7	50	6	**60**	6	**45**	6	**55**	6		
4.6	60	5	60	6	24	5	**54**	5	**54**	5	**65**	5		
4.7	40	5	60	6			**30**	5	**28**	5	**36**	5		
4.8	36	4	55	5			**26**	4	**24**	4	**28**	4		
4.9	25	4	35	5			**22**	4	**20**	4	**22**	4		
4.10	23	4	30	5			**20**	4	**18**	4	**20**	4		
4.11					35-50	4-5								
4.12	50	5	65	5	28	5	**38**	5	**34**	5	**44**	5		
4.13	30	5	40	5	12	4							**22**	5
4.14					18	4	**16**	4	**14**	4	**18**	4		
4.15														
4.16					50	6							**63**	6
4.17														
4.18	8	2	10	3										
4.19	7	2	9	3										
5.1	8	2	11	2-3										
5.2	6	2	7	2-3										
5.3	6	1	7	2										
5.4	6	2	7	2										
5.5	6	1	7	2										
5.6	5	1	6	2										
5.7	5	1	6	2										
5.8	5	1	6	1										
5.9	5	1	6	1										
5.10	6	2	7	2-3										
5.11	6	1	7	2-3										
6.1	6	3	7	3										
6.2	4	2	5	2										
6.3														
6.4														
6.5														

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

	Hole depth 10xD				Hole depth above 10xD									
	Type N-MK 10 295 ...		Type WTL-MK 10 297 ...		Type WTL-R1 10 235 ...		Type WTL-R2 10 245 ...		Type WTL-R3 10 255 ...		Type WTL-MK-R1 10 305 ...		Type WTL-MK-R2 10 315 ...	
Index	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F
1.1	**28–36**	5-6	**28–32**	5-6	**18–22**	4-5	**18–22**	4-5	**18–22**	4-5	**18–22**	4-5	**18–22**	4-5
1.2	**28–36**	5-6	**28–32**	5-6	**18–22**	4-5	**18–22**	4-5	**18–22**	4-5	**18–22**	4-5	**18–22**	4-5
1.3	**27**	6	**32**	6	**22**	4	**22**	4	**22**	4	**22**	4	**22**	4
1.4	**14**	4	**10–14**	3-4	**10**	3	**10**	3	**10**	3	**10**	3	**10**	3
1.5	**28–36**	5	**36**	5	**18–22**	4	**18–22**	4	**18–22**	4	**18–22**	4	**18–22**	4
1.6	**22**	4	**24**	4										
1.7	**18**	4	**16**	4	**12**	3	**12**	3	**12**	3	**12**	3	**12**	3
1.8			**12**	3										
1.9			**12**	3										
1.10	**12**	4	**12**	4	**8**	3	**8**	3	**8**	3	**8**	3	**8**	3
1.11			**8**	3										
1.12	**8**	3	**8**	3										
1.13			**6**	2										
1.14			**8**	3	**6**	2	**6**	2	**6**	2	**6**	2	**6**	2
1.15	**18**	4	**16**	4										
1.16	**8**	3	**8**	3										
2.1			**12**	4	8	3	8	3	8	3	8	3	8	3
2.2			**13**	4	8	3	8	3	8	3	8	3	8	3
2.3			**10**	3										
2.4			**11**	3										
2.5			**9**	3										
2.6			**8**	3										
2.7			**7**	2-3										
3.1	**36**	6-7	**28**	6	**22**	5	**22**	5	**22**	5	**22**	5	**22**	5
3.2	**28**	6-7	**22**	6	**18**	5	**18**	5	**18**	5	**18**	5	**18**	5
3.3	**28**	6-7	**30**	6	**20**	5	**20**	5	**20**	5	**20**	5	**20**	5
3.4	**22**	6-7	**24**	6	**14**	5	**14**	5	**14**	5	**14**	5	**14**	5
3.5	**28**	6-7	**22**	6	**18**	5	**18**	5	**18**	5	**18**	5	**18**	5
3.6	**30**	6-7	**20**	6	**16**	5	**16**	5	**16**	5	**16**	5	**16**	5
3.7	**20**	6-7	**16**	6	**14**	5	**14**	5	**14**	5	**14**	5	**14**	5
3.8	**18**	6-7	**15**	6	**12**	5	**12**	5	**12**	5	**12**	5	**12**	5
4.1														
4.2														
4.3	70	7	**70**	7	**45**	6	**45**	6	**45**	6	**45**	6	**45**	6
4.4	55	6	**60**	6	**36**	5	**36**	5	**36**	5	**36**	5	**36**	5
4.5	55	6	**50**	6	**36**	5	**36**	5	**36**	5	**36**	5	**36**	5
4.6	54	5	**54**	5	**22**	4	**22**	4	**22**	4	**22**	4	**22**	4
4.7	36	5	**30**	5	**20**	3	**20**	3	**20**	3	**20**	3	**20**	3
4.8	28	4	**26**	4	**22**	3	**22**	3	**22**	3	**22**	3	**22**	3
4.9	22	4	**22**	4	**22**	3	**22**	3	**22**	3	**22**	3	**22**	3
4.10	20	4	**20**	4	**20**	3	**20**	3	**20**	3	**20**	3	**20**	3
4.11														
4.12	36	4	**38**	5	**28**	4	**28**	4	**28**	4	**28**	4	**28**	4
4.13	22	5			**20**	3	**20**	3	**20**	3	**20**	3	**20**	3
4.14	14	4	**16**	4	**14**	4	**14**	4	**14**	4	**14**	4	**14**	4
4.15														
4.16					**55**	5	**55**	5	**55**	5	**55**	5	**55**	5
4.17														
4.18														
4.19														
5.1														
5.2														
5.3														
5.4														
5.5														
5.6														
5.7														
5.8														
5.9														
5.10														
5.11														
6.1														
6.2														
6.3														
6.4														
6.5														

When drilling tough materials which tend to jam, chips should be removed at drilling depth ≥ 4xD and the cutting speed v_c should be reduced as follows: at drilling depths > 4xD by 10 %, at drilling depths > 6xD by 15–20 %. It is also recommended to use an emulsion for cooling.

v_c = Cutting speed in m/min.
F = Factor for feed selection
Feed approximate values see → **Page 53**

Cutting data standard values – micro drills 10 103 ...

		Nominal Ø in mm						
		Ø 0,15	Ø 0,20–0,25	Ø 0,30–0,35	Ø 0,40–0,55	Ø 0,60–0,75	Ø 0,80–0,95	Ø 1,00–1,45
Index	v_c in m/min	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1	**18**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
1.2	**18**	0,007	0,009	0,011	0,014	0,020	0,024	0,041
1.3	**18**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
1.4	**14**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
1.5	**18**	0,007	0,009	0,011	0,014	0,020	0,024	0,041
1.6	**14**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
1.7	**14**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
1.8	**12**	0,004	0,005	0,007	0,009	0,012	0,016	0,029
1.9	**12**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
1.10	**14**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
1.11	**12**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
1.12	**14**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
1.13	**8**	0,003	0,004	0,005	0,007	0,009	0,013	0,024
1.14	**14**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
1.15	**12–14**	0,004	0,006	0,008	0,007	0,010	0,014	0,026
1.16	**12–14**	0,004	0,006	0,008	0,007	0,010	0,014	0,026
2.1	**12**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
2.2	**10**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
2.3	**6**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
2.4	**6**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
2.5	**6**	0,004	0,006	0,008	0,007	0,010	0,014	0,026
2.6	**6**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
2.7	**6**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
3.1	**25**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.2	**22**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.3	**18**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.4	**22**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.5	**22**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.6	**20**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.7	**22**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
3.8	**20**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
4.1								
4.2								
4.3	**26**	0,012	0,014	0,019	0,024	0,034	0,038	0,060
4.4	**24**	0,012	0,014	0,019	0,024	0,034	0,038	0,060
4.5	**18**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
4.6	**42**	0,007	0,009	0,011	0,014	0,020	0,024	0,041
4.7	**38**	0,007	0,009	0,011	0,014	0,020	0,024	0,041
4.8	**45**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
4.9	**35**	0,007	0,009	0,011	0,014	0,020	0,024	0,041
4.10	**30**	0,007	0,009	0,011	0,014	0,02	0,024	0,041
4.11								
4.12	**22**	0,007	0,009	0,011	0,014	0,020	0,024	0,041
4.13	**18**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
4.14	**16**	0,005	0,007	0,009	0,011	0,015	0,020	0,035
4.15								
4.16	**75**	0,009	0,011	0,015	0,019	0,026	0,031	0,050
4.17								
4.18	**6**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
4.19	**6**	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.1	5	0,004	,0,005	0,007	0,008	0,012	0,016	0,029
5.2	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.3	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.4	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.5	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.6	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.7	6	0,005	0,007	0,009	0,011	0,015	0,020	0,035
5.8	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.9	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.10	4	0,003	0,004	0,005	0,007	0,009	0,013	0,024
5.11	4	0,003	0,004	0,005	0,007	0,009	0,013	0,024
6.1	3	0,002	0,003	0,004	0,005	0,007	0,010	0,020
6.2								
6.3								
6.4								
6.5								

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Feed rate guide values for HSS twist drills

Factor F	Drill diameter in mm															
	0,5	1	2	3	4	5	6	8	10	12	14	16	18	20	26	30
	Feed rate f in mm/rev.															
1	0,004	0,006	0,02	0,03	0,04	0,04	0,05	0,06	0,08	0,08	0,09	0,1	0,12	0,15	0,18	0,19
2	0,006	0,008	0,02	0,03	0,05	0,05	0,05	0,08	0,1	0,1	0,1	0,12	0,12	0,2	0,2	0,2
3	0,007	0,012	0,03	0,05	0,06	0,069	0,08	0,1	0,12	0,13	0,13	0,16	0,16	0,25	0,25	0,25
4	0,008	0,014	0,04	0,06	0,08	0,09	0,1	0,14	0,16	0,16	0,16	0,2	0,2	0,3	0,3	0,3
5	0,01	0,016	0,06	0,08	0,1	0,12	0,13	0,16	0,2	0,2	0,22	0,25	0,25	0,4	0,4	0,4
6	0,012	0,018	0,06	0,1	0,12	0,14	0,16	0,2	0,25	0,25	0,25	0,3	0,3	0,5	0,5	0,5
7	0,014	0,02	0,08	0,13	0,16	0,18	0,2	0,25	0,35	0,35	0,35	0,4	0,4	0,6	0,6	0,6
8	0,016	0,023	0,1	0,16	0,2	0,2	0,25	0,35	0,4	0,4	0,4	0,4	0,5	0,6	0,7	0,8
9	0,019	0,025	0,13	0,17	0,2	0,23	0,32	0,4	0,4	0,5	0,5	0,5	0,6	0,8	0,9	0,9

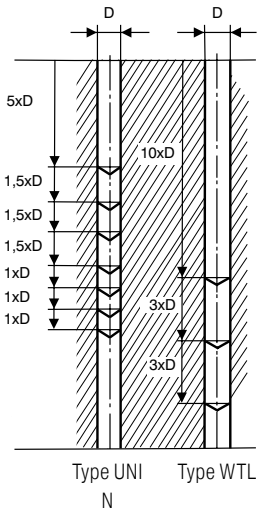
All the indicated data are guide values only and represent average values.

Speed for HSS drills

v_c m/min	Drill diameter in mm															
	2,0	2,5	3,15	4,0	5,0	6,3	8,0	10,0	12,5	16,0	20,0	25,0	31,5	40,0	50,0	63,0	80,0
	Speed in U/min																
80	12500	10000	8000	6300	5000	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320
63	10000	8000	6300	5000	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250
50	8000	6300	5000	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250	200
40	6300	5000	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250	200	160
32	5000	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250	200	160	125
25	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250	200	160	125	100
20	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250	200	160	125	100	80
16	2500	2000	1600	1250	1000	800	630	500	400	320	250	200	160	125	100	80	63
12	2000	1600	1250	1000	800	630	500	400	320	250	200	160	125	100	80	63	50
10	1600	1250	1000	800	630	500	400	320	250	200	160	125	100	80	63	50	40
8	1250	1000	800	630	500	400	320	250	200	160	125	100	80	63	50	40	32
6	1000	800	630	500	400	320	250	200	160	125	100	80	63	50	40	32	25
5	800	630	500	400	320	250	200	160	125	100	80	63	50	40	32	25	20
4	630	500	400	320	250	200	160	125	100	80	63	50	40	32	25	20	16
3	500	400	320	250	200	160	125	100	80	63	50	40	32	25	20	16	12

Peck frequency for deep drilling

- drill must be sufficiently cooled
- by use of a drill with flat chip gullet profile (type WTL) chip transport is substantially improved
- for extremely deep drilling or when machining horizontally through coolant drills with internal coolant supply are recommended



Coatings

TiN

- TiN coating
- maximum application temperature: 450 °C

TiAlN

- TiAlN multilayer coating
- maximum application temperature: 900 °C

vap.

- vaporised
- vaporisation (vapour-deposition) prevents cold welds from forming on the tool and increases the surface hardness and thus the wear resistance

TiCN

- TiCN multilayer coating
- maximum application temperature: 450 °C

F.-nit

- titanium carbon nitride based PVD coating particularly suitable for steel machining
- applicable up to approx. 450 °C

New products for machining technicians

NEW WTX – Speed UNI

≤ 3xD | ≤ 5xD | ≤ 8xD

The new WTX – Speed UNI raises your productivity and increases process security thanks to a new geometry and new Dragonskin coating DPX14S.

NEW WTX – Feed UNI

≤ 5xD | ≤ 8xD | ≤ 12xD

The update means the WTX – Feed UNI is even more versatile and capable thanks to several geometrical changes and the tried-and-tested universal Dragonskin coating DPX74S. Now available from Ø 4.00 mm.

NEW WTX – Quattro 4F

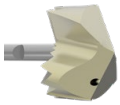
≤ 5xD | ≤ 8xD | ≤ 12xD

The high-performance drill with four guide lands has been made even more capable through geometrical changes and the universal Dragonskin coating DPX74S.

NEW WTX – short step drill

The WTX short step drill with tried-and-tested universal Dragonskin coating DPX74S.

NEW WTX – Change UNI



The WTX – Change UNI exchangeable head with tried-and-tested universal Dragonskin coating DPX74S.

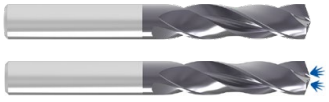
NEW WTX – AL

≤ 5xD | ≤ 8xD | ≤ 12xD

DLC-coated high-performance drill for aluminium machining.

NEW WTX – H

≤ 3xD



High-performance drill for hardened steels from 45 to 70 HRC.

Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
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WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

WNT \ Standard

Quality tools for standard applications.

The quality tools of the **WNT Standard** product line are high quality, powerful and reliable and enjoy the highest trust of our customers worldwide. Tools from this product line are the first choice for many standard applications and guarantee optimal results.

Symbol explanation

Shank

Version

Int. coolant supply

self-centering

▲ Pilot drilling
▲ min. 2xD

● = **Main Application**
○ = Extended application

Toolfinder

Steel/Universal

Product name	Tool type	Description	Int. coolant supply	Heads	1xD	3xD	5xD	8xD	12xD
Solid carbide drilling									
WTX	Speed UNI	▲ high performance drill for high cutting speeds ▲ using new DPX14S Dragonskin coating ▲ new cutting geometry	✓			21–24	38–42	55–58	
WTX	Feed UNI	▲ high feed drills with 3 cutting edges ▲ for difficult drilling conditions ▲ high positional accuracy	✓				38–42	55–58	63–65
WTX	UNI	▲ highest performance for all materials up to 1200 N/mm² ▲ suitable for volume production	✗ ✓			9–13 21–24	32–35 38–42	 55–58	
WPC	UNI	▲ quality tools for standard applications	✗ ✓			14–17 25–28	36 50–53	 59	 66
WTX	180	▲ for inclined surfaces up to 45° and flat bottom holes	✓			31	54		
WTX	Quattro 4F	▲ with additional guide land for best alignment accuracy, concentricity and positional accuracy	✗ ✓				32–35 38–42	 55–58	 63–65
	N	▲ uncoated solid carbide drills ▲ universal application	✗			20	37		
Mini-drill									
WTX	MINI	▲ standard shank Ø 3.0 mm ▲ optimal chip formation and removal thanks to WTX flute geometry	✗ ✓				70 71	 71	 72
Drill Reamers									
WTX	Finish BR/ BR100	▲ solid carbide high performance drill reamer ▲ excellent surface quality ▲ for blind and through holes	✓			73+74	74		
Stepped drills									
WTX	SB	▲ core hole plus countersink for thread forming and tapping	✗			75			
NC Spot Drill									
	NC-A	▲ spiral fluted ▲ 90°, 120°, 142°	✗		76+77				
Centre drills									
	ZB	▲ spiral fluted ▲ 120°	✗		78				
Exchange head drill									
WTX	Change Feed UNI	▲ three-edged exchangeable head drill with solid carbide drill head type Feed UNI from Ø 14.0 mm to 32.0 mm ▲ universal application (steel, cast iron)	✓	79+80		81	81	82	
WTX	Change UNI	▲ exchangeable head drill with type UNI solid carbide drill head from Ø 12.0 mm to 41.0 mm ▲ for steels < 700 N/mm²	✓	83–88	89	89	90	90	91
WTX	Change P	▲ exchangeable head drill with type P solid carbide drill head from Ø 12.0 mm to 41.0 mm ▲ for steels > 700 N/mm²	✓	83–88	89	89	90	90	91
Exchangeable head NC spot drill									
	NC-A	▲ NC spot drill – Exchange Head System ▲ 90°, 120°, 142°	✗	93					

✗ = without through coolant | ✓ = with thro' coolant

Toolfinder

	Product name	Tool type	Description	Int. coolant supply	Heads	1xD	3xD	5xD	8xD	12xD
Stainless steel	**Solid carbide drilling**									
	WTX	VA	▲ highest performance for corrosion and acid resistant steels and aluminium ▲ for volume production	✖ ✓			9–13 21–24	32–35 43–49	 60–62	
	WPC	VA	▲ quality tools for corrosion and acid-resistant steels and aluminum	✖ ✓			14–17 25–28	 50–53		
	WTX	Speed VA	▲ double the cutting speed in corrosion and acid-resistant steels and aluminum	✓				43–49		
	Exchange head drill									
	WTX	Change VA	▲ exchangeable head drill with solid carbide drill head type VA from Ø 12.0 mm to 32.0 mm	✓	83–88	89	89	90	90	91
Cast iron	**Solid carbide drilling**									
	WTX	GG	▲ highest performance in cast materials to 250 HB	✓				43–49	60–62	
	Exchange head drill									
	WTX	Change GG	▲ exchangeable head drill with solid carbide drill head type GG from Ø 12.0 mm to 32.0 mm	✓	83–88	89	89	90	90	91
Non-ferrous metals	**Solid carbide drilling**									
	WTX	AL	▲ solid carbide high performance drill, especially for the machining of aluminum, copper and brass ▲ for volume production	✓				43–49	60–62	63–65
	Exchange head drill									
	WTX	Change AL	▲ exchangeable head drill with solid carbide drill head type AL from Ø 12.0 mm to 32.0 mm	✓	83–88	89	89	90	90	91
Heat-resistant	**Solid carbide drilling**									
	WTX	Ti	▲ highest performance in titanium, titanium alloys and heat resistant alloys	✓			29+30	43–49		
Tempered steel	**Solid carbide drilling**									
	WTX	H	▲ highest performance in hardened steel from 46 to 70 HRC	✖ ✓			19 18			

	Product name	Tool type	Description	Int. coolant supply	16xD	20xD	25xD	30xD	40xD	50xD
	Deep Hole Drills									
Steel/ Universal	WTX	TB UNI	▲ solid carbide deep hole drill to 50xD without peck ▲ 4 facet geometry for excellent alignment accuracy	✓	67	67	68	68	69	69
Non-ferrous metals	WTX	TB ALU	▲ solid carbide deep hole drills, up to 30xD without pecking ▲ 6-facet head geometry for excellent alignment accuracy	✓	67	67	68	68		

✖ = without through coolant | ✓ = with thro' coolant

Overview Solid Carbide Drills

	Product name	Tool type	Length	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials		coated ■	uncoated □	WNT \ Performance	WNT \ Standard
3xD without thro' coolant															
	WTX	UNI	≤ 3xD	3–25	●		●	○		○		■		9–13	
	WTX	VA	≤ 3xD	2–20	○	●	○	●		○		■		9–13	
	WPC	UNI	≤ 3xD	1–20	●		●	○				■			14–17
	WPC	VA	≤ 3xD	1–20	○	●	○	●		○		■			14–17
	WTX	H	≤ 3xD	2,55–14						●	up to 70 HRC	■		19	
		N	≤ 3xD	0,5–20	●	○	○	●	○				□		20
3xD with thro' coolant															
	WTX	Speed UNI	≤ 3xD	3–20	●		●	○		○		■		21–24	
	WTX	UNI	≤ 3xD	3–25	●	○	●	○		○		■		21–24	
	WTX	VA	≤ 3xD	3–20	○	●	○	●	○			■		21–24	
	WPC	UNI	≤ 3xD	1–20	●	○	●	○				■			25–28
	WPC	VA	≤ 3xD	1–20	○	●	○	●	●			■			25–28
	WTX	Ti	≤ 3xD	3–20		●				●		■		29+30	
	WTX	180	≤ 3xD	3–20	●	○	●	○		○		■		31	
	WTX	H	≤ 3xD	2,55–14	○		○			●	up to 58 HRC	■		18	
5xD without thro' coolant															
	WTX	UNI	≤ 5xD	3–20	●		●	○				■		32–35	
	WTX	Quattro 4F	≤ 5xD	3–20	●		●					■		32–35	
	WTX	VA	≤ 5xD	3–20	○	●	○	●		○		■		32–35	
	WPC	UNI	≤ 5xD	3–20	●		●	○				■			36
		N	≤ 5xD	0,5–16	●	○	○	●	○				□		37

Overview Solid Carbide Drills

	Product name	Tool type	Length	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials		coated ■ uncoated □	WNT \ Performance	WNT \ Standard
5xD with thro' coolant														
	WTX	Feed UNI	≤ 5xD	4–20	●	●	●	○			3 flute	■	38–42	
	WTX	Speed UNI	≤ 5xD	3–20	●	●	●	○		○		■	38–42	
	WTX	UNI	≤ 5xD	3–25	●	○	●	○				■	38–42	
	WTX	Quattro 4F	≤ 5xD	3–20	●	○	●	○				■	38–42	
	WTX	Speed VA	≤ 5xD	3–20	○	●	○	○	○			■	43–49	
	WTX	VA	≤ 5xD	3–20	○	●	○	●	○			■	43–49	
	WTX	GG	≤ 5xD	3–20			●	●				■	43–49	
	WTX	AL	≤ 5xD	2,5–20			○	●				■	43–49	
	WTX	Ti	≤ 5xD	3–20		●			●			■	43–49	
	WPC	UNI	≤ 5xD	1–20	●	○	●	○				■		50–53
	WPC	VA	≤ 5xD	1–20	○	●	○	●	●			■		50–53
	WTX	180	≤ 5xD	3–20	●	○	●			○		■	54	
8xD with thro' coolant														
	WTX	Feed UNI	≤ 8xD	4–20	●	●	●				3 flute	■	55–58	
	WTX	Speed UNI	≤ 8xD	3–20	●		●					■	55–58	
	WTX	UNI	≤ 8xD	3–25	●		●	○				■	55–58	
	WTX	Quattro 4F	≤ 8xD	3–20	●		●	○		○		■	55–58	
	WPC	UNI	≤ 8xD	3–20	●	○	●	○				■		59
	WTX	VA	≤ 8xD	3–20	○	●	○	●	○			■	60–62	
	WTX	GG	≤ 8xD	3–20			●	●				■	60–62	
	WTX	AL	≤ 8xD	3–20			○	●				■	60–62	

Overview Solid Carbide Drills

	Product name	Tool type	Length	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials		coated ■ uncoated □	WNT \ Performance	WNT \ Standard
12xD with thro‘ coolant														
	WTX	Feed UNI	≤ 12xD	4–20	●	●	●	○			HA	■	63–65	
	WTX	Quattro 4F	≤ 12xD	3–20	●		●	○			HA	■	63–65	
	WTX	AL	≤ 12xD	3–20			○	●			HA	■	63–65	
	WPC	UNI	≤ 12xD	3–18	●	○	●	○			HA	■		66
Deep Hole Drills														
	WTX	TB UNI	≤ 16xD ≤ 20xD	2–12	●	●	●				HA	■	67	
	WTX	TB UNI	≤ 25xD ≤ 30xD	2–12	●	●	●				HA	■	68	
	WTX	TB UNI	≤ 40xD	3–9	●	●	●				HA	■	69	
	WTX	TB UNI	≤ 50xD	3–6,8	●	●	●				HA	■	69	
	WTX	TB ALU	≤ 16xD ≤ 20xD	2–12				●			HA	■	67	
	WTX	TB ALU	≤ 25xD ≤ 30xD	2–12				●			HA	■	68	
Micro Drills 5xD/8xD/12xD														
	WTX	MINI	≤ 5xD	0,1–2,9	●		●	○	○		HA	■	70	
	WTX	MINI	≤ 5xD	1,0–2,9	●	●	●	●	●		HA	with thro‘ coolant ■	71	
	WTX	MINI	≤ 8xD	1,0–2,9	●	●	●	●	●		HA	with thro‘ coolant ■	71	
	WTX	MINI	≤ 12xD	1,0–2,9	●		●	●			HA	with thro‘ coolant ■	72	
Drill Reamers														
	WTX	Finish BR100	≤ 3xD	3,97–12,02	●		●	○			HA	■	73	
	WTX	Finish BR	≤ 3xD	4–16	●		●	○			HA	Tolerance H7 ■	74	
	WTX	Finish BR	≤ 5xD	4–20	●		●	○			HA	Tolerance H7 ■	74	

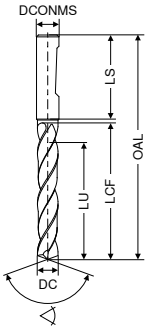
Overview Solid Carbide Drills

	Product name	Tool type	Point angle	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials		coated	uncoated	WNT \ Performance	WNT \ Standard
Stepped drills															
	WTX	SB		2,5–14	●		○	○			Thread cutting	■		75	
					HA										
	WTX	SB		2,8–15	●		○	○			Thread forming	■		75	
					HA										
NC Spot Drill															
		NC–A	◁ 90° ◁ 120° ◁ 142°	2–20	●		●	●					□		76
					HA										
		NC–A	◁ 90° ◁ 120° ◁ 142°	2–20	●		●					■			76
					HB										
		NC–A	◁ 90° ◁ 120° ◁ 142°	3–16	●		●				Long version	■			77
					HA						HB				
Centre drills															
		ZB	◁ 120°	0,5–6,3	●		●	●					□	78	
Exchangeable head system – heads															
	WTX	Change Feed		14–32	●		●					■		79+80	
	WTX	Change UNI		12–41	●		●					■		83–88	
	WTX	Change P		12–41	●		●					■		83–88	
	WTX	Change VA		12–32	○	●	○					■		83–88	
	WTX	Change GG		12–32			●					■		83–88	
	WTX	Change ALU		12–32				●				■		83–88	
Exchangeable head system – holders 1xD/3xD/5xD/8xD/12xD															
	WTX	Change Feed		14–32										81+82	
					HB										
	WTX	Change		12–41										89–91	
					HB										
MultiChange NC spot drill															
		NC–A	◁ 90° ◁ 120° ◁ 142°	8–20	●	●	●	●				■		93	

WTX – High Performance Drill, DIN 6537

2

≤ 3xD



UNI	UNI	UNI	VA	VA
DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		

	HA	HB	HE	HA	HE
	140°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T7	T7	T7	T5	T5
DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 777 ...		Article no. 11 778 ...		Article no. 11 776 ...		Article no. 10 731 ...		Article no. 10 732 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£		£	
2.00	6	58	16	11	36							44.62	020	44.62	020
2.10	6	58	16	11	36							44.62	021	44.62	021
2.20	6	58	16	11	36							44.62	022	44.62	022
2.30	6	58	16	11	36							44.62	023	44.62	023
2.33	6	58	16	11	36							44.62	823		
2.40	6	58	16	11	36							44.62	024	44.62	024
2.43	6	58	16	11	36							44.62	824		
2.50	6	58	16	11	36							44.62	025	44.62	025
2.55	6	58	16	11	36							44.62	825		
2.60	6	58	16	11	36							44.62	026	44.62	026
2.62	6	58	16	11	36							44.62	826		
2.70	6	58	16	11	36							44.62	027	44.62	027
2.80	6	58	16	11	36							44.62	028	44.62	028
2.90	6	58	16	11	36							44.62	029	44.62	029
3.00	6	62	20	14	36	28.81	03000	28.81	03000	28.81	03000	58.94	030	58.94	030
3.10	6	62	20	14	36	28.81	03100	28.81	03100	28.81	03100	58.94	031	58.94	031
3.15	6	62	20	14	36	28.81	03150	28.81	03150	28.81	03150	58.94	831		
3.20	6	62	20	14	36	28.81	03200	28.81	03200	28.81	03200	58.94	032	58.94	032
3.22	6	62	20	14	36	28.81	03220	28.81	03220	28.81	03220	58.94	832		
3.25	6	62	20	14	36	28.81	03250	28.81	03250	28.81	03250	58.94	890		
3.30	6	62	20	14	36	28.81	03300	28.81	03300	28.81	03300	58.94	033	58.94	033
3.40	6	62	20	14	36	28.81	03400	28.81	03400	28.81	03400	58.94	034	58.94	034
3.50	6	62	20	14	36	28.81	03500	28.81	03500	28.81	03500	58.94	035	58.94	035
3.60	6	62	20	14	36	28.81	03600	28.81	03600	28.81	03600	58.94	036	58.94	036
3.70	6	62	20	14	36	28.81	03700	28.81	03700	28.81	03700	58.94	037	58.94	037
3.80	6	66	24	17	36	28.81	03800	28.81	03800	28.81	03800	58.94	038	58.94	038
3.85	6	66	24	17	36	28.81	03850	28.81	03850	28.81	03850	58.94	838		
3.90	6	66	24	17	36	28.81	03900	28.81	03900	28.81	03900	58.94	039	58.94	039
4.00	6	66	24	17	36	28.81	04000	28.81	04000	28.81	04000	58.94	040	58.94	040
4.10	6	66	24	17	36	28.81	04100	28.81	04100	28.81	04100	58.94	041	58.94	041
4.20	6	66	24	17	36	28.81	04200	28.81	04200	28.81	04200	58.94	042	58.94	042
4.25	6	66	24	17	36	28.81	04250	28.81	04250	28.81	04250				
4.30	6	66	24	17	36	28.81	04300	28.81	04300	28.81	04300	58.94	043	58.94	043
4.35	6	66	24	17	36	28.81	04350	28.81	04350	28.81	04350	58.94	843		
4.40	6	66	24	17	36	28.81	04400	28.81	04400	28.81	04400	58.94	044	58.94	044
4.45	6	66	24	17	36	28.81	04450	28.81	04450	28.81	04450	58.94	844		
4.50	6	66	24	17	36	28.81	04500	28.81	04500	28.81	04500	58.94	045	58.94	045
4.60	6	66	24	17	36	28.81	04600	28.81	04600	28.81	04600	58.94	046	58.94	046
4.65	6	66	24	17	36	28.81	04650	28.81	04650	28.81	04650	58.94	900	58.94	900
4.70	6	66	24	17	36	28.81	04700	28.81	04700	28.81	04700	58.94	047	58.94	047
4.80	6	66	28	20	36	28.81	04800	28.81	04800	28.81	04800	58.94	048	58.94	048
4.90	6	66	28	20	36	28.81	04900	28.81	04900	28.81	04900	58.94	049	58.94	049
4.95	6	66	28	20	36	28.81	04950	28.81	04950	28.81	04950				

Steel	●	●	●	○	○
Stainless steel				●	●
Cast iron	●	●	●	○	○
Non ferrous metals	○	○	○	●	●
Heat resistant alloys					
Hardened materials	○	○	○	○	○

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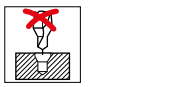
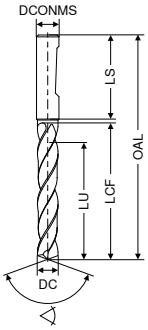
Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 3xD





UNI	UNI	UNI	VA	VA
DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		

	HA	HB	HE	HA	HE
	140°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T7	T7	T7	T5	T5
DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 777 ...		Article no. 11 778 ...		Article no. 11 776 ...		Article no. 10 731 ...		Article no. 10 732 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£		£	
5.00	6	66	28	20	36	28.81	05000	28.81	05000	28.81	05000	58.94	050	58.94	050
5.05	6	66	28	20	36	28.81	05050	28.81	05050	28.81	05050				
5.10	6	66	28	20	36	28.81	05100	28.81	05100	28.81	05100	58.94	051	58.94	051
5.20	6	66	28	20	36	28.81	05200	28.81	05200	28.81	05200	58.94	052	58.94	052
5.30	6	66	28	20	36	28.81	05300	28.81	05300	28.81	05300	58.94	053	58.94	053
5.40	6	66	28	20	36	28.81	05400	28.81	05400	28.81	05400	58.94	054	58.94	054
5.50	6	66	28	20	36	28.81	05500	28.81	05500	28.81	05500	58.94	055	58.94	055
5.55	6	66	28	20	36	28.81	05550	28.81	05550	28.81	05550	58.94	902	58.94	902
5.60	6	66	28	20	36	28.81	05600	28.81	05600	28.81	05600	58.94	056	58.94	056
5.70	6	66	28	20	36	28.81	05700	28.81	05700	28.81	05700	58.94	057	58.94	057
5.75	6	66	28	20	36	28.81	05750	28.81	05750	28.81	05750	58.94	916		
5.80	6	66	28	20	36	28.81	05800	28.81	05800	28.81	05800	58.94	058	58.94	058
5.90	6	66	28	20	36	28.81	05900	28.81	05900	28.81	05900	58.94	059	58.94	059
5.95	6	66	28	20	36	28.81	05950	28.81	05950	28.81	05950	58.94	959		
6.00	6	66	28	20	36	28.81	06000	28.81	06000	28.81	06000	58.94	060	58.94	060
6.10	8	79	34	24	36	31.08	06100	31.08	06100	31.08	06100	74.87	061	74.87	061
6.20	8	79	34	24	36	31.08	06200	31.08	06200	31.08	06200	74.87	062	74.87	062
6.30	8	79	34	24	36	31.08	06300	31.08	06300	31.08	06300	74.87	063	74.87	063
6.40	8	79	34	24	36	31.08	06400	31.08	06400	31.08	06400	74.87	064	74.87	064
6.50	8	79	34	24	36	31.08	06500	31.08	06500	31.08	06500	74.87	065	74.87	065
6.60	8	79	34	24	36	31.08	06600	31.08	06600	31.08	06600	74.87	066	74.87	066
6.70	8	79	34	24	36	31.08	06700	31.08	06700	31.08	06700	74.87	067	74.87	067
6.80	8	79	34	24	36	31.08	06800	31.08	06800	31.08	06800	74.87	068	74.87	068
6.90	8	79	34	24	36	31.08	06900	31.08	06900	31.08	06900	74.87	069	74.87	069
7.00	8	79	34	24	36	31.08	07000	31.08	07000	31.08	07000	74.87	070	74.87	070
7.10	8	79	41	29	36	31.08	07100	31.08	07100	31.08	07100	74.87	071	74.87	071
7.20	8	79	41	29	36	31.08	07200	31.08	07200	31.08	07200	74.87	072	74.87	072
7.30	8	79	41	29	36	31.08	07300	31.08	07300	31.08	07300	74.87	073	74.87	073
7.40	8	79	41	29	36	31.08	07400	31.08	07400	31.08	07400	74.87	074	74.87	074
7.45	8	79	41	29	36	31.08	07450	31.08	07450	31.08	07450	74.87	924		
7.50	8	79	41	29	36	31.08	07500	31.08	07500	31.08	07500	74.87	075	74.87	075
7.60	8	79	41	29	36	31.08	07600	31.08	07600	31.08	07600	74.87	076	74.87	076
7.70	8	79	41	29	36	31.08	07700	31.08	07700	31.08	07700	74.87	077	74.87	077
7.80	8	79	41	29	36	31.08	07800	31.08	07800	31.08	07800	74.87	078	74.87	078
7.90	8	79	41	29	36	31.08	07900	31.08	07900	31.08	07900	74.87	079	74.87	079
8.00	8	79	41	29	36	31.08	08000	31.08	08000	31.08	08000	74.87	080	74.87	080
8.10	10	89	47	35	40	34.09	08100	34.09	08100	34.09	08100	89.24	081	89.24	081
8.20	10	89	47	35	40	34.09	08200	34.09	08200	34.09	08200	89.24	082	89.24	082
8.30	10	89	47	35	40	34.09	08300	34.09	08300	34.09	08300	89.24	083	89.24	083
8.40	10	89	47	35	40	34.09	08400	34.09	08400	34.09	08400	89.24	084	89.24	084
8.50	10	89	47	35	40	34.09	08500	34.09	08500	34.09	08500	89.24	085	89.24	085
8.60	10	89	47	35	40	34.09	08600	34.09	08600	34.09	08600	89.24	086	89.24	086
8.70	10	89	47	35	40	34.09	08700	34.09	08700	34.09	08700	89.24	087	89.24	087

Steel	●	●	●	○	○
Stainless steel				●	●
Cast iron	●	●	●	○	○
Non ferrous metals	○	○	○	●	●
Heat resistant alloys					
Hardened materials	○	○	○	○	○

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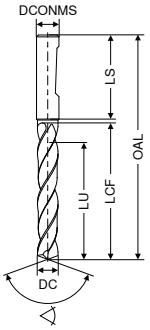
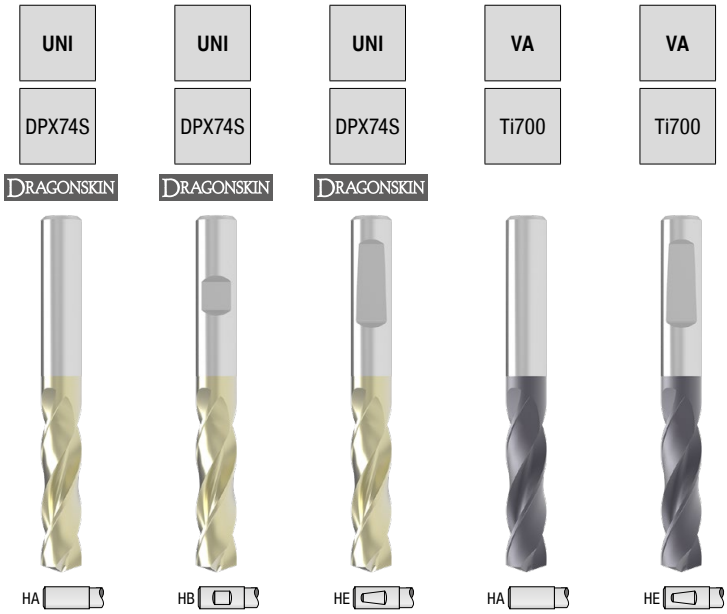
WTX – High Performance Drill, DIN 6537

≤ 3xD





140°
Solid carbide
T7

140°
Solid carbide
T7

140°
Solid carbide
T7

140°
Solid carbide
T5

140°
Solid carbide
T5

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 777 ...		Article no. 11 778 ...		Article no. 11 776 ...		Article no. 10 731 ...		Article no. 10 732 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£		£	
8.80	10	89	47	35	40	34.09	08800	34.09	08800	34.09	08800	89.24	088	89.24	088
8.90	10	89	47	35	40	34.09	08900	34.09	08900	34.09	08900	89.24	089	89.24	089
9.00	10	89	47	35	40	34.09	09000	34.09	09000	34.09	09000	89.24	090	89.24	090
9.10	10	89	47	35	40	34.09	09100	34.09	09100	34.09	09100	89.24	091	89.24	091
9.20	10	89	47	35	40	34.09	09200	34.09	09200	34.09	09200	89.24	092	89.24	092
9.30	10	89	47	35	40	34.09	09300	34.09	09300	34.09	09300	89.24	093	89.24	093
9.35	10	89	47	35	40	34.09	09350	34.09	09350	34.09	09350	89.24	930		
9.40	10	89	47	35	40	34.09	09400	34.09	09400	34.09	09400	89.24	094	89.24	094
9.45	10	89	47	35	40	34.09	09450	34.09	09450	34.09	09450	89.24	994		
9.50	10	89	47	35	40	34.09	09500	34.09	09500	34.09	09500	89.24	095	89.24	095
9.60	10	89	47	35	40	34.09	09600	34.09	09600	34.09	09600	89.24	096	89.24	096
9.70	10	89	47	35	40	34.09	09700	34.09	09700	34.09	09700	89.24	097	89.24	097
9.80	10	89	47	35	40	34.09	09800	34.09	09800	34.09	09800	89.24	098	89.24	098
9.90	10	89	47	35	40	34.09	09900	34.09	09900	34.09	09900	89.24	099	89.24	099
10.00	10	89	47	35	40	34.09	10000	34.09	10000	34.09	10000	89.24	100	89.24	100
10.10	12	102	55	40	45	49.39	10100	49.39	10100	49.39	10100	126.60	101	126.60	101
10.20	12	102	55	40	45	49.39	10200	49.39	10200	49.39	10200	126.60	102	126.60	102
10.30	12	102	55	40	45	49.39	10300	49.39	10300	49.39	10300	126.60	103	126.60	103
10.40	12	102	55	40	45	49.39	10400	49.39	10400	49.39	10400	126.60	104	126.60	104
10.50	12	102	55	40	45	49.39	10500	49.39	10500	49.39	10500	126.60	105	126.60	105
10.55	12	102	55	40	45	49.39	10550	49.39	10550	49.39	10550	126.60	932		
10.60	12	102	55	40	45	49.39	10600	49.39	10600	49.39	10600	126.60	106	126.60	106
10.70	12	102	55	40	45	49.39	10700	49.39	10700	49.39	10700	126.60	107	126.60	107
10.75	12	102	55	40	45	49.39	10750	49.39	10750	49.39	10750				
10.80	12	102	55	40	45	49.39	10800	49.39	10800	49.39	10800	126.60	108	126.60	108
10.90	12	102	55	40	45	49.39	10900	49.39	10900	49.39	10900	126.60	109	126.60	109
11.00	12	102	55	40	45	49.39	11000	49.39	11000	49.39	11000	126.60	110	126.60	110
11.10	12	102	55	40	45	49.39	11100	49.39	11100	49.39	11100	126.60	111	126.60	111
11.20	12	102	55	40	45	49.39	11200	49.39	11200	49.39	11200	126.60	112	126.60	112
11.25	12	102	55	40	45	49.39	11250	49.39	11250	49.39	11250	126.60	912		
11.30	12	102	55	40	45	49.39	11300	49.39	11300	49.39	11300	126.60	113	126.60	113
11.35	12	102	55	40	45	49.39	11350	49.39	11350	49.39	11350	126.60	913		
11.40	12	102	55	40	45	49.39	11400	49.39	11400	49.39	11400	126.60	114	126.60	114
11.45	12	102	55	40	45	49.39	11450	49.39	11450	49.39	11450	126.60	914		
11.50	12	102	55	40	45	49.39	11500	49.39	11500	49.39	11500	126.60	115	126.60	115
11.60	12	102	55	40	45	49.39	11600	49.39	11600	49.39	11600	126.60	116	126.60	116
11.70	12	102	55	40	45	49.39	11700	49.39	11700	49.39	11700	126.60	117	126.60	117
11.80	12	102	55	40	45	49.39	11800	49.39	11800	49.39	11800	126.60	118	126.60	118
11.90	12	102	55	40	45	49.39	11900	49.39	11900	49.39	11900	126.60	119	126.60	119
12.00	12	102	55	40	45	49.39	12000	49.39	12000	49.39	12000	126.60	120	126.60	120
12.15	14	107	60	43	45	64.42	12150	64.42	12150	64.42	12150	167.68	921		
12.25	14	107	60	43	45	64.42	12250	64.42	12250	64.42	12250				
12.50	14	107	60	43	45	64.42	12500	64.42	12500	64.42	12500	167.68	125	167.68	125

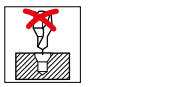
Steel	●	●	●	○	○
Stainless steel				●	●
Cast iron	●	●	●	○	○
Non ferrous metals	○	○	○	●	●
Heat resistant alloys					
Hardened materials	○	○	○	○	○

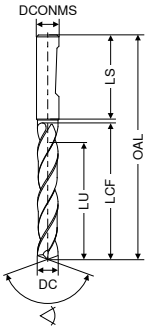
→ v_c Page 100+102

Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 3xD





UNI	UNI	UNI	VA	VA
DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		

	HA	HB	HE	HA	HE
	140°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T7	T7	T7	T5	T5
DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 777 ...	Article no. 11 778 ...	Article no. 11 776 ...	Article no. 10 731 ...	Article no. 10 732 ...
mm	mm	mm	mm	mm	mm	£	£	£	£	£
12.55	14	107	60	43	45	64.42 12550	64.42 12550	64.42 12550	167.68 925	
12.70	14	107	60	43	45	64.42 12700	64.42 12700	64.42 12700		
12.80	14	107	60	43	45	64.42 12800	64.42 12800	64.42 12800	167.68 128	167.68 128
12.90	14	107	60	43	45	64.42 12900	64.42 12900	64.42 12900		
13.00	14	107	60	43	45	64.42 13000	64.42 13000	64.42 13000	167.68 130	167.68 130
13.10	14	107	60	43	45	64.42 13100	64.42 13100	64.42 13100		
13.30	14	107	60	43	45	64.42 13300	64.42 13300	64.42 13300		
13.35	14	107	60	43	45	64.42 13350	64.42 13350	64.42 13350	167.68 933	
13.50	14	107	60	43	45	64.42 13500	64.42 13500	64.42 13500	167.68 135	167.68 135
13.70	14	107	60	43	45	64.42 13700	64.42 13700	64.42 13700		
13.80	14	107	60	43	45	64.42 13800	64.42 13800	64.42 13800	167.68 138	167.68 138
14.00	14	107	60	43	45	64.42 14000	64.42 14000	64.42 14000	167.68 140	167.68 140
14.20	16	115	65	45	48	83.97 14200	83.97 14200	83.97 14200		
14.50	16	115	65	45	48	83.97 14500	83.97 14500	83.97 14500	206.85 145	206.85 145
14.80	16	115	65	45	48	83.97 14800	83.97 14800	83.97 14800	206.85 148	206.85 148
15.00	16	115	65	45	48	83.97 15000	83.97 15000	83.97 15000	206.85 150	206.85 150
15.10	16	115	65	45	48	83.97 15100	83.97 15100	83.97 15100		
15.25	16	115	65	45	48	83.97 15250	83.97 15250	83.97 15250		
15.30	16	115	65	45	48	83.97 15300	83.97 15300	83.97 15300		
15.35	16	115	65	45	48	83.97 15350	83.97 15350	83.97 15350	206.85 953	
15.50	16	115	65	45	48	83.97 15500	83.97 15500	83.97 15500	206.85 155	206.85 155
15.60	16	115	65	45	48	83.97 15600	83.97 15600	83.97 15600		
15.80	16	115	65	45	48	83.97 15800	83.97 15800	83.97 15800	206.85 158	206.85 158
16.00	16	115	65	45	48	83.97 16000	83.97 16000	83.97 16000	206.85 160	206.85 160
16.05	18	123	73	51	48	163.85 16050	163.85 16050	163.85 16050	303.13 960	
16.50	18	123	73	51	48	163.85 16500	163.85 16500	163.85 16500	303.13 165	303.13 165
16.80	18	123	73	51	48	163.85 16800	163.85 16800	163.85 16800	303.13 168	303.13 168
16.90	18	123	73	51	48	163.85 16900	163.85 16900	163.85 16900		
17.00	18	123	73	51	48	163.85 17000	163.85 17000	163.85 17000	303.13 170	303.13 170
17.50	18	123	73	51	48	163.85 17500	163.85 17500	163.85 17500	303.13 175	303.13 175
17.60	18	123	73	51	48	163.85 17600	163.85 17600	163.85 17600		
17.80	18	123	73	51	48	163.85 17800	163.85 17800	163.85 17800	303.13 178	303.13 178
18.00	18	123	73	51	48	163.85 18000	163.85 18000	163.85 18000	303.13 180	303.13 180
18.50	20	131	79	55	50	182.02 18500	182.02 18500	182.02 18500	401.21 185	401.21 185
18.80	20	131	79	55	50	182.02 18800	182.02 18800	182.02 18800	401.21 188	401.21 188
18.90	20	131	79	55	50	182.02 18900	182.02 18900	182.02 18900		
19.00	20	131	79	55	50	182.02 19000	182.02 19000	182.02 19000	401.21 190	401.21 190
19.35	20	131	79	55	50	182.02 19350	182.02 19350	182.02 19350	401.21 993	
19.50	20	131	79	55	50	182.02 19500	182.02 19500	182.02 19500	401.21 195	401.21 195
19.60	20	131	79	55	50	182.02 19600	182.02 19600	182.02 19600		
19.80	20	131	79	55	50	182.02 19800	182.02 19800	182.02 19800	401.21 198	401.21 198
20.00	20	131	79	55	50	182.02 20000	182.02 20000	182.02 20000	401.21 200	401.21 200
20.50	25	151	93	66	56	328.90 20500	328.90 20500	328.90 20500		

Steel	●	●	●	○	○
Stainless steel				●	●
Cast iron	●	●	●	○	○
Non ferrous metals	○	○	○	●	●
Heat resistant alloys					
Hardened materials	○	○	○	○	○

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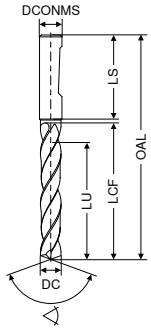
Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 3xD



	UNI	UNI	UNI	VA	VA
	DPX74S	DPX74S	DPX74S	Ti700	Ti700
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		
	HA	HB	HE	HA	HE
	140°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T7	T7	T7	T5	T5

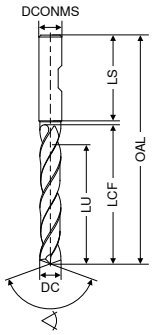
DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 777 ...	Article no. 11 778 ...	Article no. 11 776 ...	Article no. 10 731 ...	Article no. 10 732 ...
mm	mm	mm	mm	mm	mm	£	£	£	£	£
21.00	25	151	93	66	56	328.90 **21000**	328.90 **21000**	328.90 **21000**		
21.50	25	151	93	66	56	328.90 **21500**	328.90 **21500**	328.90 **21500**		
22.00	25	151	93	66	56	328.90 **22000**	328.90 **22000**	328.90 **22000**		
22.50	25	153	96	72	56	328.90 **22500**	328.90 **22500**	328.90 **22500**		
23.00	25	153	96	72	56	328.90 **23000**	328.90 **23000**	328.90 **23000**		
23.50	25	153	96	72	56	328.90 **23500**	328.90 **23500**	328.90 **23500**		
24.00	25	153	96	72	56	328.90 **24000**	328.90 **24000**	328.90 **24000**		
24.50	25	153	96	75	56	328.90 **24500**	328.90 **24500**	328.90 **24500**		
25.00	25	153	96	75	56	328.90 **25000**	328.90 **25000**	328.90 **25000**		

Steel	●	●	●	○	○
Stainless steel				●	●
Cast iron	●	●	●	○	○
Non ferrous metals	○	○	○	●	●
Heat resistant alloys					
Hardened materials	○	○	○	○	○

→ v_c Page 100+102

WPC – High Performance Drill, DIN 6537

≤ 3xD



UNI	UNI	VA	VA
TiAlN	TiAlN	TiAlN	TiAlN

HA / HB

140°

Solid carbide

T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 600 ...		Article no. 11 601 ...		Article no. 11 620 ...		Article no. 11 621 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£	
1.00	4	45	5.0	4.5	32.0	20.35	010			19.79	010		
1.10	4	45	5.5	5.0	31.5	20.35	011			19.79	011		
1.20	4	45	6.0	5.4	31.0	20.35	012			19.79	012		
1.30	4	45	6.5	5.9	31.5	20.35	013			19.79	013		
1.40	4	45	7.0	6.3	30.0	20.35	014			19.79	014		
1.50	4	50	7.5	6.8	35.0	20.35	015			19.79	015		
1.60	4	50	8.0	7.2	34.5	20.35	016			19.79	016		
1.70	4	50	8.5	7.7	34.0	20.35	017			19.79	017		
1.80	4	50	9.0	8.1	33.5	20.35	018			19.79	018		
1.90	4	50	9.5	8.6	33.0	20.35	019			19.79	019		
2.00	6	58	14.0	11.0	36.0	20.35	020	20.35	020	24.39	020	20.35	020
2.10	6	58	14.0	11.0	36.0	20.35	021	20.35	021	24.39	021	20.35	021
2.20	6	58	14.0	11.0	36.0	20.35	022	20.35	022	24.39	022	20.35	022
2.30	6	58	14.0	11.0	36.0	20.35	023	20.35	023	24.39	023	20.35	023
2.40	6	58	14.0	11.0	36.0	20.35	024	20.35	024	24.39	024	20.35	024
2.50	6	58	14.0	11.0	36.0	20.35	025	20.35	025	24.39	025	20.35	025
2.60	6	58	14.0	11.0	36.0	20.35	026	20.35	026	24.39	026	20.35	026
2.70	6	58	14.0	11.0	36.0	20.35	027	20.35	027	24.39	027	20.35	027
2.80	6	58	14.0	11.0	36.0	20.35	028	20.35	028	24.39	028	20.35	028
2.90	6	58	14.0	11.0	36.0	20.35	029	20.35	029	24.39	029	20.35	029
3.00	6	62	20.0	14.0	36.0	19.79	030	20.35	030	19.79	030	20.35	030
3.10	6	62	20.0	14.0	36.0	19.79	031	20.35	031	19.79	031	20.35	031
3.20	6	62	20.0	14.0	36.0	19.79	032	20.35	032	19.79	032	20.35	032
3.30	6	62	20.0	14.0	36.0	19.79	033	20.35	033	19.79	033	20.35	033
3.40	6	62	20.0	14.0	36.0	19.79	034	20.35	034	19.79	034	20.35	034
3.50	6	62	20.0	14.0	36.0	19.79	035	20.35	035	19.79	035	20.35	035
3.60	6	62	20.0	14.0	36.0	19.79	036	20.35	036	19.79	036	20.35	036
3.70	6	62	20.0	14.0	36.0	19.79	037	20.35	037	19.79	037	20.35	037
3.80	6	66	24.0	17.0	36.0	19.79	038	20.35	038	19.79	038	20.35	038
3.90	6	66	24.0	17.0	36.0	19.79	039	20.35	039	19.79	039	20.35	039
4.00	6	66	24.0	17.0	36.0	19.79	040	20.35	040	19.79	040	20.35	040
4.10	6	66	24.0	17.0	36.0	19.79	041	20.35	041	19.79	041	20.35	041
4.20	6	66	24.0	17.0	36.0	19.79	042	20.35	042	19.79	042	20.35	042
4.30	6	66	24.0	17.0	36.0	19.79	043	20.35	043	19.79	043	20.35	043
4.40	6	66	24.0	17.0	36.0	19.79	044	20.35	044	19.79	044	20.35	044
4.50	6	66	24.0	17.0	36.0	19.79	045	20.35	045	19.79	045	20.35	045
4.60	6	66	24.0	17.0	36.0	19.79	046	20.35	046	19.79	046	20.35	046
4.65	6	66	24.0	17.0	36.0	19.79	900	20.35	900	19.79	900	20.35	900
4.70	6	66	24.0	17.0	36.0	19.79	047	20.35	047	19.79	047	20.35	047

Steel	●	●	○	○
Stainless steel			●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys				
Hardened materials			○	○

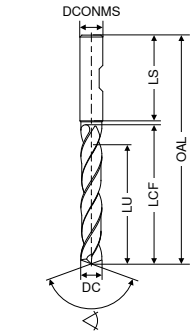
→ v_c Page 116+120

Continued on next page

WPC – High Performance Drill, DIN 6537

2

≤ 3xD



UNI	UNI	VA	VA
TiAlN	TiAlN	TiAlN	TiAlN

HA / HB

140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 600 ...		Article no. 11 601 ...		Article no. 11 620 ...		Article no. 11 621 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£	
4.80	6	66	28.0	20.0	36.0	19.79	048	20.35	048	19.79	048	20.35	048
4.90	6	66	28.0	20.0	36.0	19.79	049	20.35	049	19.79	049	20.35	049
5.00	6	66	28.0	20.0	36.0	19.79	050	20.35	050	19.79	050	20.35	050
5.10	6	66	28.0	20.0	36.0	19.79	051	20.35	051	19.79	051	20.35	051
5.20	6	66	28.0	20.0	36.0	19.79	052	20.35	052	19.79	052	20.35	052
5.30	6	66	28.0	20.0	36.0	19.79	053	20.35	053	19.79	053	20.35	053
5.40	6	66	28.0	20.0	36.0	19.79	054	20.35	054	19.79	054	20.35	054
5.50	6	66	28.0	20.0	36.0	19.79	055	20.35	055	19.79	055	20.35	055
5.55	6	66	28.0	20.0	36.0	19.79	902	20.35	902	19.79	902	20.35	902
5.60	6	66	28.0	20.0	36.0	19.79	056	20.35	056	19.79	056	20.35	056
5.70	6	66	28.0	20.0	36.0	19.79	057	20.35	057	19.79	057	20.35	057
5.80	6	66	28.0	20.0	36.0	19.79	058	20.35	058	19.79	058	20.35	058
5.90	6	66	28.0	20.0	36.0	19.79	059	20.35	059	19.79	059	20.35	059
6.00	6	66	28.0	20.0	36.0	19.79	060	20.35	060	19.79	060	20.35	060
6.10	8	79	34.0	24.0	36.0	20.35	061	20.35	061	20.35	061	20.35	061
6.20	8	79	34.0	24.0	36.0	20.35	062	20.35	062	20.35	062	20.35	062
6.30	8	79	34.0	24.0	36.0	20.35	063	20.35	063	20.35	063	20.35	063
6.40	8	79	34.0	24.0	36.0	20.35	064	20.35	064	20.35	064	20.35	064
6.50	8	79	34.0	24.0	36.0	20.35	065	20.35	065	20.35	065	20.35	065
6.60	8	79	34.0	24.0	36.0	20.35	066	20.35	066	20.35	066	20.35	066
6.70	8	79	34.0	24.0	36.0	20.35	067	20.35	067	20.35	067	20.35	067
6.80	8	79	34.0	24.0	36.0	20.35	068	20.35	068	20.35	068	20.35	068
6.90	8	79	34.0	24.0	36.0	20.35	069	20.35	069	20.35	069	20.35	069
7.00	8	79	34.0	24.0	36.0	20.35	070	20.35	070	20.35	070	20.35	070
7.10	8	79	41.0	29.0	36.0	20.35	071	20.35	071	20.35	071	20.35	071
7.20	8	79	41.0	29.0	36.0	20.35	072	20.35	072	20.35	072	20.35	072
7.30	8	79	41.0	29.0	36.0	20.35	073	20.35	073	20.35	073	20.35	073
7.40	8	79	41.0	29.0	36.0	20.35	074	20.35	074	20.35	074	20.35	074
7.50	8	79	41.0	29.0	36.0	20.35	075	20.35	075	20.35	075	20.35	075
7.55	8	79	41.0	29.0	36.0	20.35	975	20.35	975	20.35	975	20.35	975
7.60	8	79	41.0	29.0	36.0	20.35	076	20.35	076	20.35	076	20.35	076
7.70	8	79	41.0	29.0	36.0	20.35	077	20.35	077	20.35	077	20.35	077
7.80	8	79	41.0	29.0	36.0	20.35	078	20.35	078	20.35	078	20.35	078
7.90	8	79	41.0	29.0	36.0	20.35	079	20.35	079	20.35	079	20.35	079
8.00	8	79	41.0	29.0	36.0	20.35	080	20.35	080	20.35	080	20.35	080
8.10	10	89	47.0	35.0	40.0	21.78	081	23.25	081	21.78	081	23.25	081
8.20	10	89	47.0	35.0	40.0	21.78	082	23.25	082	21.78	082	23.25	082
8.30	10	89	47.0	35.0	40.0	21.78	083	23.25	083	21.78	083	23.25	083
8.40	10	89	47.0	35.0	40.0	21.78	084	23.25	084	21.78	084	23.25	084

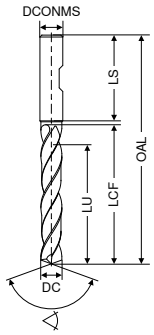
Steel	●	●	○	○
Stainless steel			●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys				
Hardened materials			○	○

→ v_c Page 116+120

Continued on next page

WPC – High Performance Drill, DIN 6537

≤ 3xD



UNI	UNI	VA	VA
TiAlN	TiAlN	TiAlN	TiAlN

HA / HB

140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 600 ...		Article no. 11 601 ...		Article no. 11 620 ...		Article no. 11 621 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£	
8.50	10	89	47.0	35.0	40.0	21.78	085	23.25	085	21.78	085	23.25	085
8.60	10	89	47.0	35.0	40.0	21.78	086	23.25	086	21.78	086	23.25	086
8.70	10	89	47.0	35.0	40.0	21.78	087	23.25	087	21.78	087	23.25	087
8.80	10	89	47.0	35.0	40.0	21.78	088	23.25	088	21.78	088	23.25	088
8.90	10	89	47.0	35.0	40.0	21.78	089	23.25	089	21.78	089	23.25	089
9.00	10	89	47.0	35.0	40.0	21.78	090	23.25	090	21.78	090	23.25	090
9.10	10	89	47.0	35.0	40.0	21.78	091	23.25	091	21.78	091	23.25	091
9.20	10	89	47.0	35.0	40.0	21.78	092	23.25	092	21.78	092	23.25	092
9.25	10	89	47.0	35.0	40.0	21.78	925	23.25	925	21.78	925	23.25	925
9.30	10	89	47.0	35.0	40.0	21.78	093	23.25	093	21.78	093	23.25	093
9.40	10	89	47.0	35.0	40.0	21.78	094	23.25	094	21.78	094	23.25	094
9.50	10	89	47.0	35.0	40.0	21.78	095	23.25	095	21.78	095	23.25	095
9.60	10	89	47.0	35.0	40.0	21.78	096	23.25	096	21.78	096	23.25	096
9.70	10	89	47.0	35.0	40.0	21.78	097	23.25	097	21.78	097	23.25	097
9.80	10	89	47.0	35.0	40.0	21.78	098	23.25	098	21.78	098	23.25	098
9.90	10	89	47.0	35.0	40.0	21.78	099	23.25	099	21.78	099	23.25	099
10.00	10	89	47.0	35.0	40.0	21.78	100	23.25	100	21.78	100	23.25	100
10.10	12	102	55.0	40.0	45.0	33.40	101	34.87	101	33.40	101	34.87	101
10.20	12	102	55.0	40.0	45.0	33.40	102	34.87	102	33.40	102	34.87	102
10.30	12	102	55.0	40.0	45.0	33.40	103	34.87	103	33.40	103	34.87	103
10.40	12	102	55.0	40.0	45.0	33.40	104	34.87	104	33.40	104	34.87	104
10.50	12	102	55.0	40.0	45.0	33.40	105	34.87	105	33.40	105	34.87	105
10.60	12	102	55.0	40.0	45.0	33.40	106	34.87	106	33.40	106	34.87	106
10.70	12	102	55.0	40.0	45.0	33.40	107	34.87	107	33.40	107	34.87	107
10.80	12	102	55.0	40.0	45.0	33.40	108	34.87	108	33.40	108	34.87	108
10.90	12	102	55.0	40.0	45.0	33.40	109	34.87	109	33.40	109	34.87	109
11.00	12	102	55.0	40.0	45.0	33.40	110	34.87	110	33.40	110	34.87	110
11.10	12	102	55.0	40.0	45.0	33.40	111	34.87	111	33.40	111	34.87	111
11.20	12	102	55.0	40.0	45.0	33.40	112	34.87	112	33.40	112	34.87	112
11.30	12	102	55.0	40.0	45.0	33.40	113	34.87	113	33.40	113	34.87	113
11.40	12	102	55.0	40.0	45.0	33.40	114	34.87	114	33.40	114	34.87	114
11.50	12	102	55.0	40.0	45.0	33.40	115	34.87	115	33.40	115	34.87	115
11.60	12	102	55.0	40.0	45.0	33.40	116	34.87	116	33.40	116	34.87	116
11.70	12	102	55.0	40.0	45.0	33.40	117	34.87	117	33.40	117	34.87	117
11.80	12	102	55.0	40.0	45.0	33.40	118	34.87	118	33.40	118	34.87	118
11.90	12	102	55.0	40.0	45.0	33.40	119	34.87	119	33.40	119	34.87	119
12.00	12	102	55.0	40.0	45.0	33.40	120	34.87	120	33.40	120	34.87	120
12.25	14	107	60.0	43.0	45.0	45.05	122	45.05	122				
12.50	14	107	60.0	43.0	45.0	45.05	125	46.49	125	45.05	125	46.49	125

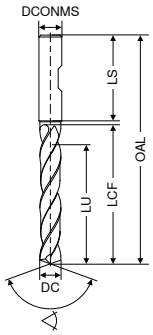
Steel	●	●	○	○
Stainless steel			●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys				
Hardened materials			○	○

→ v_c Page 116+120

Continued on next page

WPC – High Performance Drill, DIN 6537

≤ 3xD



UNI	UNI	VA	VA
TiAlN	TiAlN	TiAlN	TiAlN

HA	HB	HA	HB
140°	140°	140°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide
T1	T1	T1	T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 600 ...		Article no. 11 601 ...		Article no. 11 620 ...		Article no. 11 621 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£	
12.70	14	107	60.0	43.0	45.0	45.05	127	46.49	127	45.05	127	46.49	127
12.80	14	107	60.0	43.0	45.0	45.05	128	45.05	128				
12.90	14	107	60.0	43.0	45.0	45.05	129	45.05	129				
13.00	14	107	60.0	43.0	45.0	45.05	130	46.49	130	45.05	130	46.49	130
13.30	14	107	60.0	43.0	45.0	45.05	133	45.05	133				
13.50	14	107	60.0	43.0	45.0	45.05	135	46.49	135	45.05	135	46.49	135
13.70	14	107	60.0	43.0	45.0	45.05	137	46.49	137	45.05	137	46.49	137
13.80	14	107	60.0	43.0	45.0	45.05	138	45.05	138				
14.00	14	107	60.0	43.0	45.0	45.05	140	46.49	140	45.05	140	46.49	140
14.20	16	115	65.0	45.0	48.0	59.54	142	59.54	142				
14.50	16	115	65.0	45.0	48.0	59.54	145	61.02	145	59.54	145	61.02	145
14.70	16	115	65.0	45.0	48.0	59.54	147	61.02	147	59.54	147	61.02	147
14.80	16	115	65.0	45.0	48.0	59.54	148	59.54	148				
15.00	16	115	65.0	45.0	48.0	59.54	150	61.02	150	59.54	150	61.02	150
15.25	16	115	65.0	45.0	48.0	59.54	152	59.54	152				
15.30	16	115	65.0	45.0	48.0	59.54	153	59.54	153				
15.50	16	115	65.0	45.0	48.0	59.54	155	61.02	155	59.54	155	61.02	155
15.70	16	115	65.0	45.0	48.0	59.54	157	61.02	157	59.54	157	61.02	157
15.80	16	115	65.0	45.0	48.0	59.54	158	59.54	158				
16.00	16	115	65.0	45.0	48.0	59.54	160	61.02	160	59.54	160	61.02	160
16.50	18	123	73.0	51.0	48.0	100.22	165	103.14	165	100.22	165	103.14	165
16.80	18	123	73.0	51.0	48.0	100.22	168	100.22	168				
17.00	18	123	73.0	51.0	48.0	100.22	170	103.14	170	100.22	170	103.14	170
17.50	18	123	73.0	51.0	48.0	100.22	175	103.14	175	100.22	175	103.14	175
17.80	18	123	73.0	51.0	48.0	100.22	178	100.22	178				
18.00	18	123	73.0	51.0	48.0	100.22	180	103.14	180	100.22	180	103.14	180
18.50	20	131	79.0	55.0	50.0	108.95	185	114.76	185	108.95	185	114.76	185
18.80	20	131	79.0	55.0	50.0	108.95	188	108.95	188				
19.00	20	131	79.0	55.0	50.0	108.95	190	114.76	190	108.95	190	114.76	190
19.50	20	131	79.0	55.0	50.0	108.95	195	114.76	195	108.95	195	114.76	195
19.80	20	131	79.0	55.0	50.0	108.95	198	108.95	198				
20.00	20	131	79.0	55.0	50.0	108.95	200	114.76	200	108.95	200	114.76	200

Steel	●	●	○	○
Stainless steel			●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys				
Hardened materials			○	○

→ v_c Page 116+120

WTX – High Performance Drill, factory standard

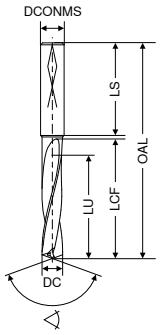
- ▲ Special cutting edge geometry
- ▲ Special flute geometry
- ▲ Special core diameter
- ▲ 46–58 HRC

≤ 3xD

H

DPX64S

DRAGONSKIN



140°

Solid carbide

NEW T4

DC h7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 776 ...	
mm	mm	mm	mm	mm	mm	£	
2.55	4	55	20	7.6	28	39.79	02550
2.60	4	55	20	7.8	28	39.79	02600
2.70	4	55	20	8.1	28	39.79	02700
2.80	4	55	20	8.4	28	39.79	02800
2.90	4	55	20	8.7	28	39.79	02900
3.00	6	62	20	9.0	36	57.38	03000
3.10	6	62	20	9.3	36	57.38	03100
3.20	6	62	20	9.6	36	57.38	03200
3.30	6	62	20	9.9	36	57.38	03300
3.40	6	62	20	10.2	36	57.38	03400
3.50	6	62	20	10.5	36	57.38	03500
3.60	6	62	20	10.8	36	57.38	03600
3.70	6	62	20	11.1	36	57.38	03700
3.80	6	66	24	11.4	36	57.38	03800
3.90	6	66	24	11.7	36	57.38	03900
4.00	6	66	24	12.0	36	57.38	04000
4.10	6	66	24	12.3	36	57.38	04100
4.20	6	66	24	12.6	36	57.38	04200
4.30	6	66	24	12.9	36	57.38	04300
4.40	6	66	24	13.2	36	57.38	04400
4.50	6	66	24	13.5	36	57.38	04500
4.60	6	66	24	13.8	36	57.38	04600
4.70	6	66	24	14.1	36	57.38	04700
4.80	6	66	28	14.4	36	57.38	04800
4.90	6	66	28	14.7	36	57.38	04900
5.00	6	66	28	15.0	36	57.38	05000
5.10	6	66	28	15.3	36	57.38	05100
5.20	6	66	28	15.6	36	57.38	05200
5.30	6	66	28	15.9	36	57.38	05300
5.40	6	66	28	16.2	36	57.38	05400
5.50	6	66	28	16.5	36	57.38	05500
5.60	6	66	28	16.8	36	57.38	05600
5.70	6	66	28	17.1	36	57.38	05700
5.80	6	66	28	17.4	36	57.38	05800
5.90	6	66	28	17.7	36	57.38	05900
6.00	6	66	28	18.0	36	57.38	06000
6.10	8	79	34	18.3	36	74.57	06100
6.20	8	79	34	18.6	36	74.57	06200
6.30	8	79	34	18.9	36	74.57	06300
6.40	8	79	34	19.2	36	74.57	06400
6.50	8	79	34	19.5	36	74.57	06500
6.60	8	79	34	19.8	36	74.57	06600
6.70	8	79	34	20.1	36	74.57	06700
6.80	8	79	34	20.4	36	74.57	06800
6.90	8	79	34	20.7	36	74.57	06900
7.00	8	79	34	21.0	36	74.57	07000
7.10	8	79	41	21.3	36	74.57	07100
7.20	8	79	41	21.6	36	74.57	07200
7.30	8	79	41	21.9	36	74.57	07300
7.40	8	79	41	22.2	36	74.57	07400
7.50	8	79	41	22.5	36	74.57	07500
7.60	8	79	41	22.8	36	74.57	07600
7.70	8	79	41	23.1	36	74.57	07700
7.80	8	79	41	23.4	36	74.57	07800
7.90	8	79	41	23.7	36	74.57	07900
8.00	8	79	41	24.0	36	74.57	08000
8.10	10	89	47	24.3	40	95.80	08100
8.20	10	89	47	24.6	40	95.80	08200
8.30	10	89	47	24.9	40	95.80	08300
8.40	10	89	47	25.2	40	95.80	08400
8.50	10	89	47	25.5	40	95.80	08500
8.60	10	89	47	25.8	40	95.80	08600
8.70	10	89	47	26.1	40	95.80	08700
8.80	10	89	47	26.4	40	95.80	08800
8.90	10	89	47	26.7	40	95.80	08900
9.00	10	89	47	27.0	40	95.80	09000
9.10	10	89	47	27.3	40	95.80	09100
9.20	10	89	47	27.6	40	95.80	09200
9.30	10	89	47	27.9	40	95.80	09300
9.40	10	89	47	28.2	40	95.80	09400
9.50	10	89	47	28.5	40	95.80	09500
9.60	10	89	47	28.8	40	95.80	09600
9.70	10	89	47	29.1	40	95.80	09700
9.80	10	89	47	29.4	40	95.80	09800
9.90	10	89	47	29.7	40	95.80	09900
10.00	10	89	47	30.0	40	95.80	10000
10.10	12	102	55	30.3	45	136.81	10100
10.20	12	102	55	30.6	45	136.81	10200
10.30	12	102	55	30.9	45	136.81	10300
10.40	12	102	55	31.2	45	136.81	10400
10.50	12	102	55	31.5	45	136.81	10500
10.60	12	102	55	31.8	45	136.81	10600
10.70	12	102	55	32.1	45	136.81	10700
10.80	12	102	55	32.4	45	136.81	10800
10.90	12	102	55	32.7	45	136.81	10900
11.00	12	102	55	33.0	45	136.81	11000
11.10	12	102	55	33.3	45	136.81	11100
11.20	12	102	55	33.6	45	136.81	11200
11.30	12	102	55	33.9	45	136.81	11300
11.40	12	102	55	34.2	45	136.81	11400
11.50	12	102	55	34.5	45	136.81	11500
11.60	12	102	55	34.8	45	136.81	11600
11.70	12	102	55	35.1	45	136.81	11700
11.80	12	102	55	35.4	45	136.81	11800
11.90	12	102	55	35.7	45	136.81	11900
12.00	12	102	55	36.0	45	136.81	12000
12.10	14	107	60	36.3	45	176.78	12100
12.20	14	107	60	36.6	45	176.78	12200
12.30	14	107	60	36.9	45	176.78	12300
12.40	14	107	60	37.2	45	176.78	12400
12.50	14	107	60	37.5	45	176.78	12500
12.60	14	107	60	37.8	45	176.78	12600
12.70	14	107	60	38.1	45	176.78	12700
12.80	14	107	60	38.4	45	176.78	12800
12.90	14	107	60	38.7	45	176.78	12900
13.00	14	107	60	39.0	45	176.78	13000
13.10	14	107	60	39.3	45	176.78	13100
13.20	14	107	60	39.6	45	176.78	13200
13.30	14	107	60	39.9	45	176.78	13300
13.40	14	107	60	40.2	45	176.78	13400
13.50	14	107	60	40.5	45	176.78	13500
13.60	14	107	60	40.8	45	176.78	13600
13.70	14	107	60	41.1	45	176.78	13700
13.80	14	107	60	41.4	45	176.78	13800
13.90	14	107	60	41.7	45	176.78	13900
14.00	14	107	60	42.0	45	176.78	14000

Steel	○
Cast iron	○
Hardened < 45 HRC	●
Hardened 46–55 HRC	●
Hardened 56–60 HRC	○
Hardened 61–65 HRC	
Hardened 65–70 HRC	

→ v_c Page 111

WTX – High Performance Drill, factory standard

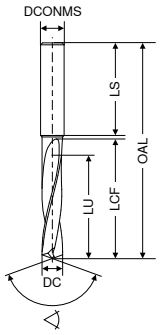
- ▲ Special cutting edge geometry
- ▲ Special flute geometry
- ▲ Special core diameter
- ▲ 46–70 HRC

≤ 3xD

H

DPX64U

DRAGONSKIN



140°

Solid carbide

DC h7	DCONMS h6	OAL	LCF	LU	LS	NEW T4 Article no. 10 777 ...	
mm	mm	mm	mm	mm	mm	£	
2.55	4	55	20	7.6	28	49.73	02550
2.60	4	55	20	7.8	28	49.73	02600
2.70	4	55	20	8.1	28	49.73	02700
2.80	4	55	20	8.4	28	49.73	02800
2.90	4	55	20	8.7	28	49.73	02900
3.00	6	62	20	9.0	36	71.72	03000
3.10	6	62	20	9.3	36	71.72	03100
3.20	6	62	20	9.6	36	71.72	03200
3.30	6	62	20	9.9	36	71.72	03300
3.40	6	62	20	10.2	36	71.72	03400
3.50	6	62	20	10.5	36	71.72	03500
3.60	6	62	20	10.8	36	71.72	03600
3.70	6	62	20	11.1	36	71.72	03700
3.80	6	66	24	11.4	36	71.72	03800
3.90	6	66	24	11.7	36	71.72	03900
4.00	6	66	24	12.0	36	71.72	04000
4.10	6	66	24	12.3	36	71.72	04100
4.20	6	66	24	12.6	36	71.72	04200
4.30	6	66	24	12.9	36	71.72	04300
4.40	6	66	24	13.2	36	71.72	04400
4.50	6	66	24	13.5	36	71.72	04500
4.60	6	66	24	13.8	36	71.72	04600
4.70	6	66	24	14.1	36	71.72	04700
4.80	6	66	28	14.4	36	71.72	04800
4.90	6	66	28	14.7	36	71.72	04900
5.00	6	66	28	15.0	36	71.72	05000
5.10	6	66	28	15.3	36	71.72	05100
5.20	6	66	28	15.6	36	71.72	05200
5.30	6	66	28	15.9	36	71.72	05300
5.40	6	66	28	16.2	36	71.72	05400
5.50	6	66	28	16.5	36	71.72	05500
5.60	6	66	28	16.8	36	71.72	05600
5.70	6	66	28	17.1	36	71.72	05700
5.80	6	66	28	17.4	36	71.72	05800
5.90	6	66	28	17.7	36	71.72	05900
6.00	6	66	28	18.0	36	71.72	06000
6.10	8	79	34	18.3	36	93.21	06100
6.20	8	79	34	18.6	36	93.21	06200
6.30	8	79	34	18.9	36	93.21	06300
6.40	8	79	34	19.2	36	93.21	06400
6.50	8	79	34	19.5	36	93.21	06500
6.60	8	79	34	19.8	36	93.21	06600
6.70	8	79	34	20.1	36	93.21	06700
6.80	8	79	34	20.4	36	93.21	06800
6.90	8	79	34	20.7	36	93.21	06900
7.00	8	79	34	21.0	36	93.21	07000
7.10	8	79	41	21.3	36	93.21	07100
7.20	8	79	41	21.6	36	93.21	07200
7.30	8	79	41	21.9	36	93.21	07300
7.40	8	79	41	22.2	36	93.21	07400
7.50	8	79	41	22.5	36	93.21	07500
7.60	8	79	41	22.8	36	93.21	07600
7.70	8	79	41	23.1	36	93.21	07700
7.80	8	79	41	23.4	36	93.21	07800
7.90	8	79	41	23.7	36	93.21	07900
8.00	8	79	41	24.0	36	93.21	08000
8.10	10	89	47	24.3	40	105.35	08100
8.20	10	89	47	24.6	40	105.35	08200
8.30	10	89	47	24.9	40	105.35	08300
8.40	10	89	47	25.2	40	105.35	08400
8.50	10	89	47	25.5	40	105.35	08500
8.60	10	89	47	25.8	40	105.35	08600
8.70	10	89	47	26.1	40	105.35	08700
8.80	10	89	47	26.4	40	105.35	08800
8.90	10	89	47	26.7	40	105.35	08900
9.00	10	89	47	27.0	40	105.35	09000
9.10	10	89	47	27.3	40	105.35	09100
9.20	10	89	47	27.6	40	105.35	09200
9.30	10	89	47	27.9	40	105.35	09300
9.40	10	89	47	28.2	40	105.35	09400
9.50	10	89	47	28.5	40	105.35	09500
9.60	10	89	47	28.8	40	105.35	09600
9.70	10	89	47	29.1	40	105.35	09700
9.80	10	89	47	29.4	40	105.35	09800
9.90	10	89	47	29.7	40	105.35	09900
10.00	10	89	47	30.0	40	105.35	10000
10.10	12	102	55	30.3	45	136.81	10100
10.20	12	102	55	30.6	45	136.81	10200
10.30	12	102	55	30.9	45	136.81	10300
10.40	12	102	55	31.2	45	136.81	10400
10.50	12	102	55	31.5	45	136.81	10500
10.60	12	102	55	31.8	45	136.81	10600
10.70	12	102	55	32.1	45	136.81	10700
10.80	12	102	55	32.4	45	136.81	10800
10.90	12	102	55	32.7	45	136.81	10900
11.00	12	102	55	33.0	45	136.81	11000
11.10	12	102	55	33.3	45	136.81	11100
11.20	12	102	55	33.6	45	136.81	11200
11.30	12	102	55	33.9	45	136.81	11300
11.40	12	102	55	34.2	45	136.81	11400
11.50	12	102	55	34.5	45	136.81	11500
11.60	12	102	55	34.8	45	136.81	11600
11.70	12	102	55	35.1	45	136.81	11700
11.80	12	102	55	35.4	45	136.81	11800
11.90	12	102	55	35.7	45	136.81	11900
12.00	12	102	55	36.0	45	136.81	12000
12.10	14	107	60	36.3	45	161.66	12100
12.20	14	107	60	36.6	45	161.66	12200
12.30	14	107	60	36.9	45	161.66	12300
12.40	14	107	60	37.2	45	161.66	12400
12.50	14	107	60	37.5	45	161.66	12500
12.60	14	107	60	37.8	45	161.66	12600
12.70	14	107	60	38.1	45	161.66	12700
12.80	14	107	60	38.4	45	161.66	12800
12.90	14	107	60	38.7	45	161.66	12900
13.00	14	107	60	39.0	45	161.66	13000
13.10	14	107	60	39.3	45	161.66	13100
13.20	14	107	60	39.6	45	161.66	13200
13.30	14	107	60	39.9	45	161.66	13300
13.40	14	107	60	40.2	45	161.66	13400
13.50	14	107	60	40.5	45	161.66	13500
13.60	14	107	60	40.8	45	161.66	13600
13.70	14	107	60	41.1	45	161.66	13700
13.80	14	107	60	41.4	45	161.66	13800
13.90	14	107	60	41.7	45	161.66	13900
14.00	14	107	60	42.0	45	161.66	14000

Hardened < 45 HRC	●
Hardened 46–55 HRC	●
Hardened 56–60 HRC	●
Hardened 61–65 HRC	●
Hardened 65–70 HRC	●

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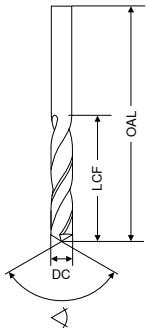
Twist drill similar to DIN 1897

- Rake angle 30°
- Shank Ø h7

≤ 3xD

N



118°
Solid carbide

DC h7	OAL	LCF	T3 Article no. 10 700 ...	
mm	mm	mm	£	
0.5	20	3.0	5.69	005
0.6	21	3.5	5.98	006
0.7	23	4.5	5.98	007
0.8	24	5.0	5.98	008
0.9	25	5.5	5.98	009
1.0	26	6.0	5.98	010
1.2	30	8.0	5.98	012
1.3	30	8.0	5.98	013
1.4	32	9.0	5.98	014
1.5	32	9.0	5.98	015
1.6	34	10.0	5.98	016
1.7	34	10.0	5.98	017
1.8	36	11.0	5.98	018
1.9	36	11.0	5.98	019
2.0	38	12.0	8.02	020
2.1	38	12.0	8.27	021
2.2	40	13.0	8.27	022
2.3	40	13.0	8.27	023
2.4	43	14.0	8.27	024
2.5	43	14.0	9.28	025
2.6	43	14.0	9.28	026
2.7	46	16.0	9.74	027
2.8	46	16.0	9.74	028
2.9	46	16.0	9.74	029
3.0	46	16.0	10.42	030
3.1	49	18.0	10.42	031
3.2	49	18.0	10.42	032
3.3	49	18.0	12.19	033
3.4	52	20.0	12.19	034
3.5	52	20.0	13.14	035
3.6	52	20.0	13.14	036
3.7	52	20.0	13.14	037
3.8	55	22.0	13.55	038
3.9	55	22.0	13.55	039
4.0	55	22.0	15.64	040
4.1	55	22.0	15.64	041
4.2	55	22.0	17.02	042
4.3	58	24.0	17.02	043
4.4	58	24.0	17.02	044
4.5	58	24.0	18.41	045
4.6	58	24.0	18.41	046
4.7	58	24.0	18.41	047
4.8	62	26.0	18.41	048
4.9	62	26.0	18.41	049
5.0	62	26.0	20.63	050
5.1	62	26.0	20.63	051
5.2	62	26.0	21.25	052
5.3	62	26.0	21.25	053
5.4	66	28.0	21.25	054
5.5	66	28.0	23.95	055
5.6	66	28.0	23.95	056
5.7	66	28.0	23.95	057
5.8	66	28.0	23.95	058
5.9	66	28.0	23.95	059
6.0	66	28.0	26.57	060
6.1	70	31.0	27.38	061
6.2	70	31.0	27.38	062
6.3	70	31.0	27.38	063
6.4	70	31.0	27.38	064
6.5	70	31.0	29.63	065
6.6	70	31.0	32.66	066
6.7	70	31.0	32.66	067
6.8	74	34.0	32.66	068
6.9	74	34.0	32.66	069
7.0	74	34.0	32.66	070
7.1	74	34.0	32.66	071
7.2	74	34.0	32.66	072
7.3	74	34.0	32.66	073
7.4	74	34.0	32.66	074
7.5	74	34.0	37.78	075
7.6	79	37.0	37.78	076
7.7	79	37.0	37.78	077
7.8	79	37.0	37.78	078
7.9	79	37.0	37.78	079
8.0	79	37.0	38.78	080
8.1	79	37.0	42.53	081
8.2	79	37.0	42.53	082
8.3	79	37.0	42.53	083
8.4	79	37.0	42.53	084
8.5	79	37.0	44.05	085
8.6	84	40.0	44.90	086
8.7	84	40.0	44.90	087
8.8	84	40.0	49.11	088
8.9	84	40.0	49.11	089
9.0	84	40.0	49.11	090
9.1	84	40.0	49.11	091
9.2	84	40.0	49.11	092
9.3	84	40.0	49.11	093
9.4	84	40.0	49.11	094
9.5	84	40.0	52.87	095
9.6	89	43.0	52.87	096
9.7	89	43.0	52.87	097
9.8	89	43.0	52.87	098
9.9	89	43.0	52.87	099
10.0	89	43.0	58.69	100
10.2	89	43.0	62.57	102
10.5	89	43.0	62.57	105
10.8	95	47.0	62.57	108
11.0	95	47.0	69.72	110
11.2	95	47.0	76.37	112
11.5	95	47.0	77.44	115
11.8	95	47.0	77.44	118
12.0	102	51.0	86.88	120
12.5	102	51.0	94.78	125
13.0	102	51.0	106.20	130
13.5	107	54.0	120.86	135
14.0	107	54.0	131.19	140
14.5	111	56.0	140.37	145
15.0	111	56.0	152.23	150
15.5	115	58.0	164.30	155
16.0	115	58.0	173.18	160
18.0	123	62.0	232.39	180
20.0	131	66.0	311.37	200

Steel	●
Stainless steel	○
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	○

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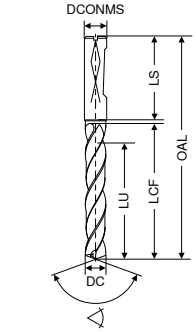
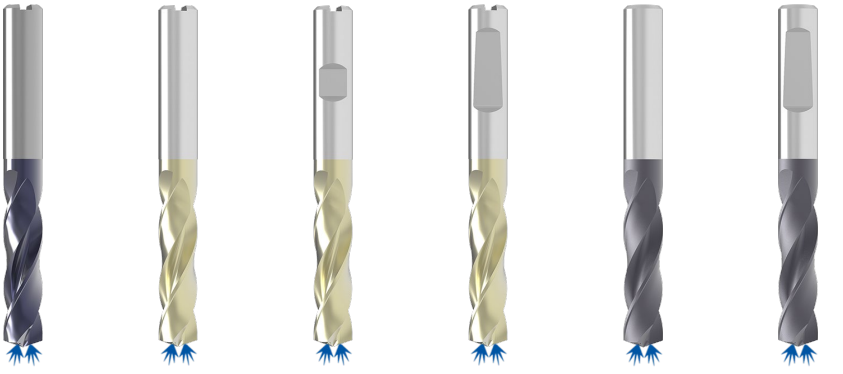
WTX – High Performance Drill, DIN 6537

≤ 3xD



Speed UNI	UNI	UNI	UNI	VA	VA
DPX14S	DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		



	HA	HA	HB	HE	HA	HE
	145°	140°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	NEW T4	T7	T7	T7	T5	T5
	Article no. 10 781 ...	Article no. 11 780 ...	Article no. 11 781 ...	Article no. 11 779 ...	Article no. 10 734 ...	Article no. 10 733 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	£	£	£	£	£	£
mm	mm	mm	mm	mm	mm						
3.00	6	62	20	14	36	91.60 03000	43.16 03000	43.16 03000	43.16 03000	83.84 030	83.84 030
3.10	6	62	20	14	36	91.60 03100	43.16 03100	43.16 03100	43.16 03100	83.84 031	83.84 031
3.15	6	62	20	14	36		43.16 03150	43.16 03150	43.16 03150	83.84 831	
3.20	6	62	20	14	36	91.60 03200	43.16 03200	43.16 03200	43.16 03200	83.84 032	83.84 032
3.22	6	62	20	14	36		43.16 03220	43.16 03220	43.16 03220	83.84 832	
3.25	6	62	20	14	36		43.16 03250	43.16 03250	43.16 03250	83.84 890	
3.30	6	62	20	14	36	91.60 03300	43.16 03300	43.16 03300	43.16 03300	83.84 033	83.84 033
3.40	6	62	20	14	36	91.60 03400	43.16 03400	43.16 03400	43.16 03400	83.84 034	83.84 034
3.50	6	62	20	14	36	91.60 03500	43.16 03500	43.16 03500	43.16 03500	83.84 035	83.84 035
3.60	6	62	20	14	36	91.60 03600	43.16 03600	43.16 03600	43.16 03600	83.84 036	83.84 036
3.70	6	62	20	14	36	91.60 03700	43.16 03700	43.16 03700	43.16 03700	83.84 037	83.84 037
3.80	6	66	24	17	36	91.60 03800	43.16 03800	43.16 03800	43.16 03800	83.84 038	83.84 038
3.85	6	66	24	17	36		43.16 03850	43.16 03850	43.16 03850	83.84 838	
3.90	6	66	24	17	36	91.60 03900	43.16 03900	43.16 03900	43.16 03900	83.84 039	83.84 039
4.00	6	66	24	17	36	91.60 04000	43.16 04000	43.16 04000	43.16 04000	83.84 040	83.84 040
4.10	6	66	24	17	36	91.60 04100	43.16 04100	43.16 04100	43.16 04100	83.84 041	83.84 041
4.20	6	66	24	17	36	91.60 04200	43.16 04200	43.16 04200	43.16 04200	83.84 042	83.84 042
4.25	6	66	24	17	36		43.16 04250	43.16 04250	43.16 04250		
4.30	6	66	24	17	36	91.60 04300	43.16 04300	43.16 04300	43.16 04300	83.84 043	83.84 043
4.35	6	66	24	17	36		43.16 04350	43.16 04350	43.16 04350	83.84 843	
4.40	6	66	24	17	36	91.60 04400	43.16 04400	43.16 04400	43.16 04400	83.84 044	83.84 044
4.45	6	66	24	17	36		43.16 04450	43.16 04450	43.16 04450	83.84 844	
4.50	6	66	24	17	36	91.60 04500	43.16 04500	43.16 04500	43.16 04500	83.84 045	83.84 045
4.60	6	66	24	17	36	91.60 04600	43.16 04600	43.16 04600	43.16 04600	83.84 046	83.84 046
4.65	6	66	24	17	36	91.60 04650	43.16 04650	43.16 04650	43.16 04650	83.84 900	83.84 900
4.70	6	66	24	17	36	91.60 04700	43.16 04700	43.16 04700	43.16 04700	83.84 047	83.84 047
4.80	6	66	28	20	36	91.60 04800	43.16 04800	43.16 04800	43.16 04800	83.84 048	83.84 048
4.90	6	66	28	20	36	91.60 04900	43.16 04900	43.16 04900	43.16 04900	83.84 049	83.84 049
4.95	6	66	28	20	36		43.16 04950	43.16 04950	43.16 04950		
5.00	6	66	28	20	36	91.60 05000	43.16 05000	43.16 05000	43.16 05000	83.84 050	83.84 050
5.05	6	66	28	20	36		43.16 05050	43.16 05050	43.16 05050		
5.10	6	66	28	20	36	91.60 05100	43.16 05100	43.16 05100	43.16 05100	83.84 051	83.84 051
5.20	6	66	28	20	36	91.60 05200	43.16 05200	43.16 05200	43.16 05200	83.84 052	83.84 052
5.30	6	66	28	20	36	91.60 05300	43.16 05300	43.16 05300	43.16 05300	83.84 053	83.84 053
5.40	6	66	28	20	36	91.60 05400	43.16 05400	43.16 05400	43.16 05400	83.84 054	83.84 054
5.50	6	66	28	20	36	91.60 05500	43.16 05500	43.16 05500	43.16 05500	83.84 055	83.84 055
5.55	6	66	28	20	36	91.60 05550	43.16 05550	43.16 05550	43.16 05550	83.84 902	83.84 902
5.60	6	66	28	20	36	91.60 05600	43.16 05600	43.16 05600	43.16 05600	83.84 056	83.84 056
5.70	6	66	28	20	36	91.60 05700	43.16 05700	43.16 05700	43.16 05700	83.84 057	83.84 057
5.75	6	66	28	20	36		43.16 05750	43.16 05750	43.16 05750	83.84 916	
5.80	6	66	28	20	36	91.60 05800	43.16 05800	43.16 05800	43.16 05800	83.84 058	83.84 058
5.90	6	66	28	20	36	91.60 05900	43.16 05900	43.16 05900	43.16 05900	83.84 059	83.84 059

Steel	●	●	●	●	○	○
Stainless steel	●	○	○	○	●	●
Cast iron	●	●	●	●	○	○
Non ferrous metals	○	○	○	○	●	●
Heat resistant alloys					○	○
Hardened materials	○	○	○	○		

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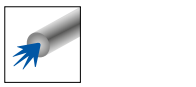
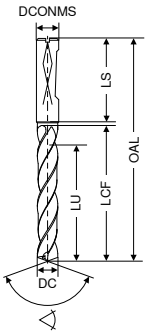
Ø DC_{m7} for Type UNI and VA / **Ø DC_{h7}** for Type Speed UNI

Continued on next page

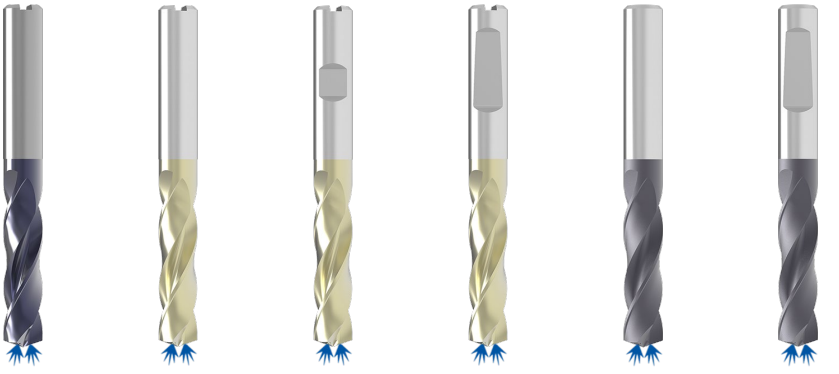
WTX – High Performance Drill, DIN 6537

≤ 3xD





Speed UNI	UNI	UNI	UNI	VA	VA
DPX14S	DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		



	HA	HA	HB	HE	HA	HE
	145°	140°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	NEW T4	T7	T7	T7	T5	T5
DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 781 ...	Article no. 11 780 ...	Article no. 11 781 ...	Article no. 11 779 ...	Article no. 10 734 ...	Article no. 10 733 ...
mm	mm	mm	mm	mm	mm	£	£	£	£	£	£
5.95	6	66	28	20	36		43.16 05950	43.16 05950	43.16 05950	83.84 959	
6.00	6	66	28	20	36	91.60 06000	43.16 06000	43.16 06000	43.16 06000	83.84 060	83.84 060
6.10	8	79	34	24	36	111.94 06100	56.37 06100	56.37 06100	56.37 06100	103.49 061	103.49 061
6.20	8	79	34	24	36	111.94 06200	56.37 06200	56.37 06200	56.37 06200	103.49 062	103.49 062
6.30	8	79	34	24	36	111.94 06300	56.37 06300	56.37 06300	56.37 06300	103.49 063	103.49 063
6.40	8	79	34	24	36	111.94 06400	56.37 06400	56.37 06400	56.37 06400	103.49 064	103.49 064
6.50	8	79	34	24	36	111.94 06500	56.37 06500	56.37 06500	56.37 06500	103.49 065	103.49 065
6.60	8	79	34	24	36	111.94 06600	56.37 06600	56.37 06600	56.37 06600	103.49 066	103.49 066
6.70	8	79	34	24	36	111.94 06700	56.37 06700	56.37 06700	56.37 06700	103.49 067	103.49 067
6.80	8	79	34	24	36	111.94 06800	56.37 06800	56.37 06800	56.37 06800	103.49 068	103.49 068
6.90	8	79	34	24	36	111.94 06900	56.37 06900	56.37 06900	56.37 06900	103.49 069	103.49 069
7.00	8	79	34	24	36	111.94 07000	56.37 07000	56.37 07000	56.37 07000	103.49 070	103.49 070
7.10	8	79	41	29	36	111.94 07100	56.37 07100	56.37 07100	56.37 07100	103.49 071	103.49 071
7.20	8	79	41	29	36	111.94 07200	56.37 07200	56.37 07200	56.37 07200	103.49 072	103.49 072
7.30	8	79	41	29	36	111.94 07300	56.37 07300	56.37 07300	56.37 07300	103.49 073	103.49 073
7.40	8	79	41	29	36	111.94 07400	56.37 07400	56.37 07400	56.37 07400	103.49 074	103.49 074
7.45	8	79	41	29	36		56.37 07450	56.37 07450	56.37 07450	103.49 924	
7.50	8	79	41	29	36	111.94 07500	56.37 07500	56.37 07500	56.37 07500	103.49 075	103.49 075
7.60	8	79	41	29	36	111.94 07600	56.37 07600	56.37 07600	56.37 07600	103.49 076	103.49 076
7.70	8	79	41	29	36	111.94 07700	56.37 07700	56.37 07700	56.37 07700	103.49 077	103.49 077
7.80	8	79	41	29	36	111.94 07800	56.37 07800	56.37 07800	56.37 07800	103.49 078	103.49 078
7.90	8	79	41	29	36	111.94 07900	56.37 07900	56.37 07900	56.37 07900	103.49 079	103.49 079
8.00	8	79	41	29	36	111.94 08000	56.37 08000	56.37 08000	56.37 08000	102.81 080	102.81 080
8.10	10	89	47	35	40	154.39 08100	64.42 08100	64.42 08100	64.42 08100	103.49 081	103.49 081
8.20	10	89	47	35	40	154.39 08200	64.42 08200	64.42 08200	64.42 08200	103.49 082	103.49 082
8.30	10	89	47	35	40	154.39 08300	64.42 08300	64.42 08300	64.42 08300	103.49 083	103.49 083
8.40	10	89	47	35	40	154.39 08400	64.42 08400	64.42 08400	64.42 08400	103.49 084	103.49 084
8.50	10	89	47	35	40	154.39 08500	64.42 08500	64.42 08500	64.42 08500	103.49 085	103.49 085
8.60	10	89	47	35	40	154.39 08600	64.42 08600	64.42 08600	64.42 08600	103.49 086	103.49 086
8.70	10	89	47	35	40	154.39 08700	64.42 08700	64.42 08700	64.42 08700	103.49 087	103.49 087
8.80	10	89	47	35	40	154.39 08800	64.42 08800	64.42 08800	64.42 08800	103.49 088	103.49 088
8.90	10	89	47	35	40	154.39 08900	64.42 08900	64.42 08900	64.42 08900	103.49 089	103.49 089
9.00	10	89	47	35	40	154.39 09000	64.42 09000	64.42 09000	64.42 09000	103.49 090	103.49 090
9.10	10	89	47	35	40	154.39 09100	64.42 09100	64.42 09100	64.42 09100	103.49 091	103.49 091
9.20	10	89	47	35	40	154.39 09200	64.42 09200	64.42 09200	64.42 09200	119.55 092	119.55 092
9.30	10	89	47	35	40	154.39 09300	64.42 09300	64.42 09300	64.42 09300	119.55 093	119.55 093
9.35	10	89	47	35	40		64.42 09350	64.42 09350	64.42 09350	119.55 930	
9.40	10	89	47	35	40	154.39 09400	64.42 09400	64.42 09400	64.42 09400	119.55 094	119.55 094
9.45	10	89	47	35	40		64.42 09450	64.42 09450	64.42 09450	119.55 994	
9.50	10	89	47	35	40	154.39 09500	64.42 09500	64.42 09500	64.42 09500	119.55 095	119.55 095
9.60	10	89	47	35	40	154.39 09600	64.42 09600	64.42 09600	64.42 09600	119.55 096	119.55 096
9.70	10	89	47	35	40	154.39 09700	64.42 09700	64.42 09700	64.42 09700	119.55 097	119.55 097

Steel	●	●	●	●	○	○
Stainless steel	●	○	○	○	●	●
Cast iron	●	●	●	●	○	○
Non ferrous metals	○	○	○	○	●	●
Heat resistant alloys					○	○
Hardened materials	○	○	○	○		

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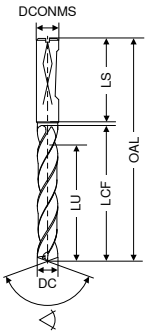
Ø DC_{m7} for Type UNI and VA / **Ø DC_{h7}** for Type Speed UNI

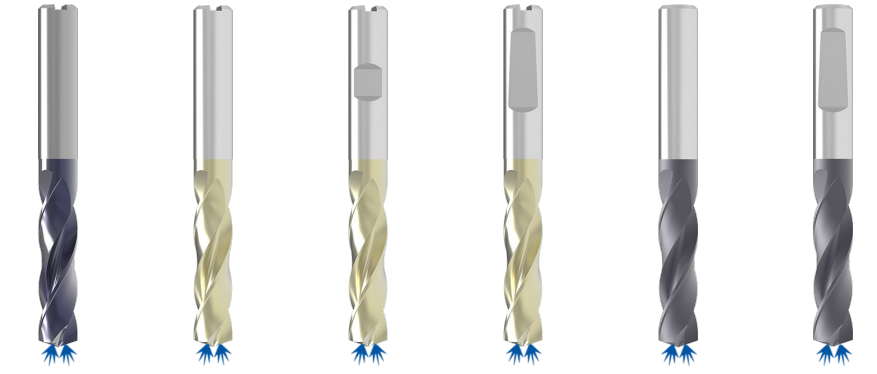
Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 3xD



Speed UNI	UNI	UNI	UNI	VA	VA
DPX14S	DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		



	HA	HA	HB	HE	HA	HE
	145°	140°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	NEW T4	T7	T7	T7	T5	T5
	Article no. 10 781 ...	Article no. 11 780 ...	Article no. 11 781 ...	Article no. 11 779 ...	Article no. 10 734 ...	Article no. 10 733 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	£		£		£		£		£		£	
mm	mm	mm	mm	mm	mm												
9.80	10	89	47	35	40	154.39	09800	64.42	09800	64.42	09800	64.42	09800	119.55	098	119.55	098
9.90	10	89	47	35	40	154.39	09900	64.42	09900	64.42	09900	64.42	09900	119.55	099	119.55	099
10.00	10	89	47	35	40	154.39	10000	64.42	10000	64.42	10000	64.42	10000	119.55	100	119.55	100
10.10	12	102	55	40	45	194.49	10100	89.94	10100	89.94	10100	89.94	10100	165.88	101	165.88	101
10.20	12	102	55	40	45	194.49	10200	89.94	10200	89.94	10200	89.94	10200	165.88	102	165.88	102
10.30	12	102	55	40	45	194.49	10300	89.94	10300	89.94	10300	89.94	10300	165.88	103	165.88	103
10.40	12	102	55	40	45	194.49	10400	89.94	10400	89.94	10400	89.94	10400	165.88	104	165.88	104
10.50	12	102	55	40	45	194.49	10500	89.94	10500	89.94	10500	89.94	10500	165.88	105	165.88	105
10.55	12	102	55	40	45			89.94	10550	89.94	10550	89.94	10550	165.88	932		
10.60	12	102	55	40	45	194.49	10600	89.94	10600	89.94	10600	89.94	10600	165.88	106	165.88	106
10.70	12	102	55	40	45	194.49	10700	89.94	10700	89.94	10700	89.94	10700	165.88	107	165.88	107
10.75	12	102	55	40	45			89.94	10750	89.94	10750	89.94	10750				
10.80	12	102	55	40	45	194.49	10800	89.94	10800	89.94	10800	89.94	10800	165.88	108	165.88	108
10.90	12	102	55	40	45	194.49	10900	89.94	10900	89.94	10900	89.94	10900	165.88	109	165.88	109
11.00	12	102	55	40	45	194.49	11000	89.94	11000	89.94	11000	89.94	11000	165.88	110	165.88	110
11.10	12	102	55	40	45	194.49	11100	89.94	11100	89.94	11100	89.94	11100	165.88	111	165.88	111
11.20	12	102	55	40	45	194.49	11200	89.94	11200	89.94	11200	89.94	11200	165.88	112	165.88	112
11.25	12	102	55	40	45			89.94	11250	89.94	11250	89.94	11250	165.88	912		
11.30	12	102	55	40	45	194.49	11300	89.94	11300	89.94	11300	89.94	11300	165.88	113	165.88	113
11.35	12	102	55	40	45			89.94	11350	89.94	11350	89.94	11350	165.88	913		
11.40	12	102	55	40	45	194.49	11400	89.94	11400	89.94	11400	89.94	11400	165.88	114	165.88	114
11.45	12	102	55	40	45			89.94	11450	89.94	11450	89.94	11450	165.88	914		
11.50	12	102	55	40	45	194.49	11500	89.94	11500	89.94	11500	89.94	11500	165.88	115	165.88	115
11.60	12	102	55	40	45	194.49	11600	89.94	11600	89.94	11600	89.94	11600	165.88	116	165.88	116
11.70	12	102	55	40	45	194.49	11700	89.94	11700	89.94	11700	89.94	11700	165.88	117	165.88	117
11.80	12	102	55	40	45	194.49	11800	89.94	11800	89.94	11800	89.94	11800	165.88	118	165.88	118
11.90	12	102	55	40	45	194.49	11900	89.94	11900	89.94	11900	89.94	11900	165.88	119	165.88	119
12.00	12	102	55	40	45	194.49	12000	89.94	12000	89.94	12000	89.94	12000	165.88	120	165.88	120
12.15	14	107	60	43	45			127.39	12150	127.39	12150	127.39	12150	233.53	921		
12.25	14	107	60	43	45			127.39	12250	127.39	12250	127.39	12250				
12.50	14	107	60	43	45	317.70	12500	127.39	12500	127.39	12500	127.39	12500	233.53	125	233.53	125
12.55	14	107	60	43	45			127.39	12550	127.39	12550	127.39	12550	233.53	925		
12.70	14	107	60	43	45			127.39	12700	127.39	12700	127.39	12700				
12.80	14	107	60	43	45	317.70	12800	127.39	12800	127.39	12800	127.39	12800	233.53	128	233.53	128
12.90	14	107	60	43	45			127.39	12900	127.39	12900	127.39	12900				
13.00	14	107	60	43	45	317.70	13000	127.39	13000	127.39	13000	127.39	13000	233.53	130	233.53	130
13.10	14	107	60	43	45			127.39	13100	127.39	13100	127.39	13100				
13.30	14	107	60	43	45			127.39	13300	127.39	13300	127.39	13300				
13.35	14	107	60	43	45			127.39	13350	127.39	13350	127.39	13350	233.53	933		
13.50	14	107	60	43	45	317.70	13500	127.39	13500	127.39	13500	127.39	13500	233.53	135	233.53	135
13.70	14	107	60	43	45			127.39	13700	127.39	13700	127.39	13700				
13.80	14	107	60	43	45	317.70	13800	127.39	13800	127.39	13800	127.39	13800	233.53	138	233.53	138

Steel	●	●	●	●	○	○
Stainless steel	●	○	○	○	●	●
Cast iron	●	●	●	●	○	○
Non ferrous metals	○	○	○	○	●	●
Heat resistant alloys					○	○
Hardened materials	○	○	○	○		

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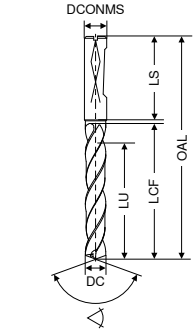
Ø DC_{m7} for Type UNI and VA / **Ø DC_{h7}** for Type Speed UNI

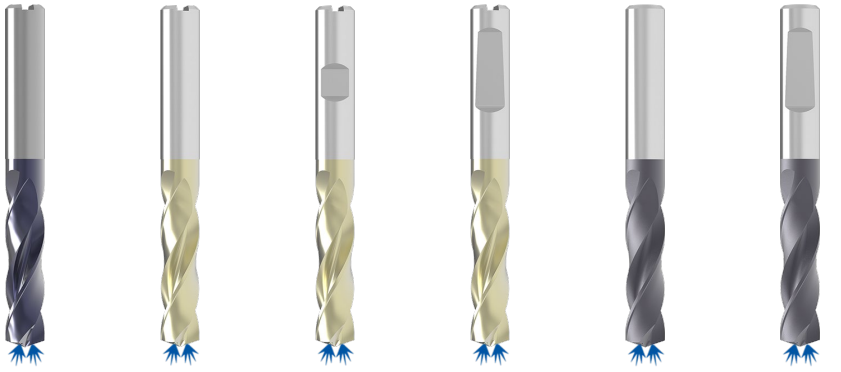
Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 3xD



Speed UNI	UNI	UNI	UNI	VA	VA
DPX14S	DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		



HA	HA	HB	HE	HA	HE
145°	140°	140°	140°	140°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
NEW T4	T7	T7	T7	T5	T5

DC $_{m7/h7}$	DCONMS $_{h6}$	OAL	LCF	LU	LS	Article no. 10 781 ...		Article no. 11 780 ...		Article no. 11 781 ...		Article no. 11 779 ...		Article no. 10 734 ...		Article no. 10 733 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£		£		£	
14.00	14	107	60	43	45	317.70	14000	127.39	14000	127.39	14000	127.39	14000	233.53	140	233.53	140
14.20	16	115	65	45	48			149.92	14200	149.92	14200	149.92	14200				
14.50	16	115	65	45	48	399.34	14500	149.92	14500	149.92	14500	149.92	14500	295.94	145	295.94	145
14.80	16	115	65	45	48	399.34	14800	149.92	14800	149.92	14800	149.92	14800	295.94	148	295.94	148
15.00	16	115	65	45	48	399.34	15000	149.92	15000	149.92	15000	149.92	15000	295.94	150	295.94	150
15.10	16	115	65	45	48			149.92	15100	149.92	15100	149.92	15100				
15.25	16	115	65	45	48			149.92	15250	149.92	15250	149.92	15250				
15.30	16	115	65	45	48			149.92	15300	149.92	15300	149.92	15300				
15.35	16	115	65	45	48			149.92	15350	149.92	15350	149.92	15350	295.94	953		
15.50	16	115	65	45	48	399.34	15500	149.92	15500	149.92	15500	149.92	15500	295.94	155	295.94	155
15.60	16	115	65	45	48			149.92	15600	149.92	15600	149.92	15600				
15.80	16	115	65	45	48	399.34	15800	149.92	15800	149.92	15800	149.92	15800	295.94	158	295.94	158
16.00	16	115	65	45	48	399.34	16000	149.92	16000	149.92	16000	149.92	16000	295.94	160	295.94	160
16.05	18	123	73	51	48			243.32	16050	243.32	16050	243.32	16050	406.33	960		
16.50	18	123	73	51	48	537.42	16500	243.32	16500	243.32	16500	243.32	16500	406.33	165	406.33	165
16.80	18	123	73	51	48	537.42	16800	243.32	16800	243.32	16800	243.32	16800	406.33	168	406.33	168
16.90	18	123	73	51	48			243.32	16900	243.32	16900	243.32	16900				
17.00	18	123	73	51	48	537.42	17000	243.32	17000	243.32	17000	243.32	17000	406.33	170	406.33	170
17.50	18	123	73	51	48	537.42	17500	243.32	17500	243.32	17500	243.32	17500	406.33	175	406.33	175
17.60	18	123	73	51	48			243.32	17600	243.32	17600	243.32	17600				
17.80	18	123	73	51	48	537.42	17800	243.32	17800	243.32	17800	243.32	17800	406.33	178	406.33	178
18.00	18	123	73	51	48	537.42	18000	243.32	18000	243.32	18000	243.32	18000	406.33	180	406.33	180
18.50	20	131	79	55	50	654.71	18500	262.06	18500	262.06	18500	262.06	18500	504.43	185	504.43	185
18.80	20	131	79	55	50	654.71	18800	262.06	18800	262.06	18800	262.06	18800	504.43	188	504.43	188
18.90	20	131	79	55	50			262.06	18900	262.06	18900	262.06	18900				
19.00	20	131	79	55	50	654.71	19000	262.06	19000	262.06	19000	262.06	19000	504.43	190	504.43	190
19.35	20	131	79	55	50			262.06	19350	262.06	19350	262.06	19350	504.43	993		
19.50	20	131	79	55	50	654.71	19500	262.06	19500	262.06	19500	262.06	19500	504.43	195	504.43	195
19.60	20	131	79	55	50			262.06	19600	262.06	19600	262.06	19600				
19.80	20	131	79	55	50	654.71	19800	262.06	19800	262.06	19800	262.06	19800	504.43	198	504.43	198
20.00	20	131	79	55	50	654.71	20000	262.06	20000	262.06	20000	262.06	20000	504.43	200	504.43	200
20.50	25	151	93	66	56			578.57	20500	578.57	20500	578.57	20500				
21.00	25	151	93	66	56			578.57	21000	578.57	21000	578.57	21000				
21.50	25	151	93	66	56			578.57	21500	578.57	21500	578.57	21500				
22.00	25	151	93	66	56			578.57	22000	578.57	22000	578.57	22000				
22.50	25	153	96	72	56			578.57	22500	578.57	22500	578.57	22500				
23.00	25	153	96	72	56			578.57	23000	578.57	23000	578.57	23000				
23.50	25	153	96	72	56			578.57	23500	578.57	23500	578.57	23500				
24.00	25	153	96	72	56			578.57	24000	578.57	24000	578.57	24000				
24.50	25	153	96	75	56			578.57	24500	578.57	24500	578.57	24500				
25.00	25	153	96	75	56			578.57	25000	578.57	25000	578.57	25000				

Steel	●	●	●	●	○	○
Stainless steel	●	○	○	○	●	●
Cast iron	●	●	●	●	○	○
Non ferrous metals	○	○	○	○	●	●
Heat resistant alloys					○	○
Hardened materials	○	○	○	○		

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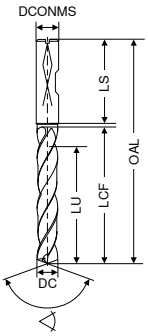
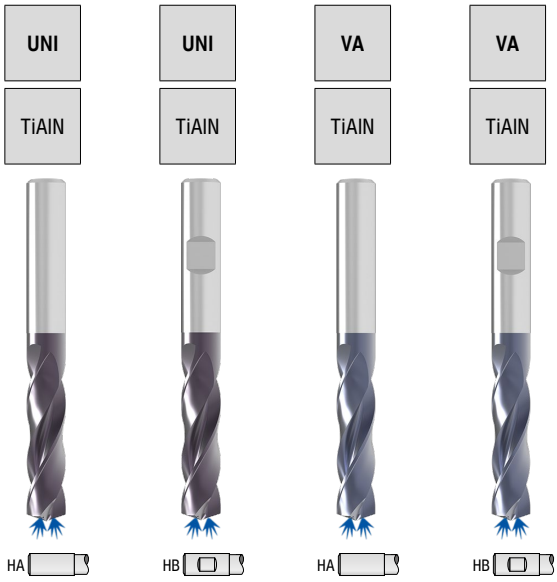
Ø DC_{m7} for Type UNI and VA / **Ø DC_{h7}** for Type Speed UNI

WPC – High Performance Drill, DIN 6537

≤ 3xD





140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 603 ...		Article no. 11 604 ...		Article no. 11 623 ...		Article no. 11 624 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£	
1.00	4	45	6.0	4.5	32.0	25.89	010			25.89	010		
1.10	4	45	6.6	5.0	31.5	25.89	011			25.89	011		
1.20	4	45	7.2	5.4	31.0	25.89	012			25.89	012		
1.30	4	45	7.8	5.9	31.5	25.89	013			25.89	013		
1.40	4	45	8.4	6.3	30.0	25.89	014			25.89	014		
1.50	4	50	9.0	6.8	35.0	25.89	015			25.89	015		
1.60	4	50	9.6	7.2	34.5	25.89	016			25.89	016		
1.70	4	50	10.2	7.7	34.0	25.89	017			25.89	017		
1.80	4	50	10.8	8.1	33.5	25.89	018			25.89	018		
1.90	4	50	11.4	8.6	33.0	25.89	019			25.89	019		
2.00	4	50	12.0	9.0	33.0	25.89	020			25.89	020		
2.10	4	55	12.6	9.5	37.5	25.89	021			25.89	021		
2.20	4	55	13.2	9.9	37.0	25.89	022			25.89	022		
2.30	4	55	13.8	10.4	36.5	25.89	023			25.89	023		
2.40	4	55	14.4	10.8	36.0	25.89	024			25.89	024		
2.50	4	55	15.0	11.3	35.5	25.89	025			25.89	025		
2.60	4	55	15.6	11.7	35.5	25.89	026			25.89	026		
2.70	4	55	16.2	12.2	35.0	25.89	027			25.89	027		
2.80	4	55	16.8	12.6	34.0	25.89	028			25.89	028		
2.90	4	55	17.4	13.1	34.0	25.89	029			25.89	029		
3.00	6	62	20.0	14.0	36.0	25.89	030	26.16	030	25.89	030	26.16	030
3.10	6	62	20.0	14.0	36.0	25.89	031	26.16	031	25.89	031	26.16	031
3.20	6	62	20.0	14.0	36.0	25.89	032	26.16	032	25.89	032	26.16	032
3.25	6	62	20.0	14.0	36.0	26.16	890	26.16	890	35.66	03250		
3.30	6	62	20.0	14.0	36.0	25.89	033	26.16	033	25.89	033	26.16	033
3.40	6	62	20.0	14.0	36.0	25.89	034	26.16	034	25.89	034	26.16	034
3.50	6	62	20.0	14.0	36.0	25.89	035	26.16	035	25.89	035	26.16	035
3.60	6	62	20.0	14.0	36.0	25.89	036	26.16	036	25.89	036	26.16	036
3.70	6	62	20.0	14.0	36.0	25.89	037	26.16	037	25.89	037	26.16	037
3.80	6	66	24.0	17.0	36.0	25.89	038	26.16	038	25.89	038	26.16	038
3.90	6	66	24.0	17.0	36.0	25.89	039	26.16	039	25.89	039	26.16	039
4.00	6	66	24.0	17.0	36.0	26.16	040	27.61	040	26.16	040	27.61	040
4.10	6	66	24.0	17.0	36.0	26.16	041	27.61	041	26.16	041	27.61	041
4.20	6	66	24.0	17.0	36.0	26.16	042	27.61	042	26.16	042	27.61	042
4.30	6	66	24.0	17.0	36.0	26.16	043	27.61	043	26.16	043	27.61	043
4.40	6	66	24.0	17.0	36.0	26.16	044	27.61	044	26.16	044	27.61	044
4.50	6	66	24.0	17.0	36.0	26.16	045	27.61	045	26.16	045	27.61	045
4.60	6	66	24.0	17.0	36.0	26.16	046	27.61	046	26.16	046	27.61	046
4.65	6	66	24.0	17.0	36.0	26.16	900	27.61	900	26.16	900	27.61	900
4.70	6	66	24.0	17.0	36.0	26.16	047	27.61	047	26.16	047	27.61	047
4.80	6	66	28.0	20.0	36.0	26.16	048	27.61	048	26.16	048	27.61	048

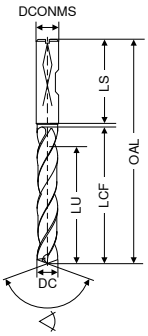
Steel	●	●	○	○
Stainless steel	○	○	●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys			●	●

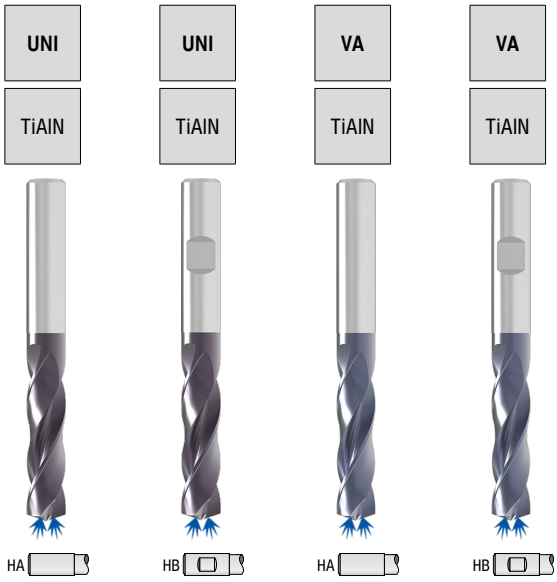
→ v_c Page 116+120

Continued on next page

WPC – High Performance Drill, DIN 6537

≤ 3xD





140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 603 ...		Article no. 11 604 ...		Article no. 11 623 ...		Article no. 11 624 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£	
4.90	6	66	28.0	20.0	36.0	26.16	049	27.61	049	26.16	049	27.61	049
5.00	6	66	28.0	20.0	36.0	26.16	050	27.61	050	26.16	050	27.61	050
5.10	6	66	28.0	20.0	36.0	26.16	051	27.61	051	26.16	051	27.61	051
5.20	6	66	28.0	20.0	36.0	26.16	052	27.61	052	26.16	052	27.61	052
5.30	6	66	28.0	20.0	36.0	26.16	053	27.61	053	26.16	053	27.61	053
5.40	6	66	28.0	20.0	36.0	26.16	054	27.61	054	26.16	054	27.61	054
5.50	6	66	28.0	20.0	36.0	26.16	055	27.61	055	26.16	055	27.61	055
5.55	6	66	28.0	20.0	36.0	26.16	902	27.61	902	26.16	902	27.61	902
5.60	6	66	28.0	20.0	36.0	26.16	056	27.61	056	26.16	056	27.61	056
5.70	6	66	28.0	20.0	36.0	26.16	057	27.61	057	26.16	057	27.61	057
5.80	6	66	28.0	20.0	36.0	26.16	058	27.61	058	26.16	058	27.61	058
5.90	6	66	28.0	20.0	36.0	26.16	059	27.61	059	26.16	059	27.61	059
6.00	6	66	28.0	20.0	36.0	26.16	060	27.61	060	26.16	060	27.61	060
6.10	8	79	34.0	24.0	36.0	36.33	061	36.33	061	36.33	061	36.33	061
6.20	8	79	34.0	24.0	36.0	36.33	062	36.33	062	36.33	062	36.33	062
6.30	8	79	34.0	24.0	36.0	36.33	063	36.33	063	36.33	063	36.33	063
6.40	8	79	34.0	24.0	36.0	36.33	064	36.33	064	36.33	064	36.33	064
6.50	8	79	34.0	24.0	36.0	36.33	065	37.78	065	36.33	065	37.78	065
6.60	8	79	34.0	24.0	36.0	36.33	066	37.78	066	36.33	066	37.78	066
6.70	8	79	34.0	24.0	36.0	36.33	067	37.78	067	36.33	067	37.78	067
6.80	8	79	34.0	24.0	36.0	36.33	068	37.78	068	36.33	068	37.78	068
6.90	8	79	34.0	24.0	36.0	36.33	069	37.78	069	36.33	069	37.78	069
7.00	8	79	34.0	24.0	36.0	36.33	070	37.78	070	36.33	070	37.78	070
7.10	8	79	41.0	29.0	36.0	36.33	071	37.78	071	36.33	071	37.78	071
7.20	8	79	41.0	29.0	36.0	36.33	072	37.78	072	36.33	072	37.78	072
7.30	8	79	41.0	29.0	36.0	36.33	073	37.78	073	36.33	073	37.78	073
7.40	8	79	41.0	29.0	36.0	36.33	074	37.78	074	36.33	074	37.78	074
7.45	8	79	41.0	29.0	36.0	36.33	924	36.33	924	47.81	07450		
7.50	8	79	41.0	29.0	36.0	36.33	075	37.78	075	36.33	075	37.78	075
7.55	8	79	41.0	29.0	36.0	36.33	975	37.78	975	36.33	975	37.78	975
7.60	8	79	41.0	29.0	36.0	36.33	076	37.78	076	36.33	076	37.78	076
7.70	8	79	41.0	29.0	36.0	36.33	077	37.78	077	36.33	077	37.78	077
7.80	8	79	41.0	29.0	36.0	36.33	078	37.78	078	36.33	078	37.78	078
7.90	8	79	41.0	29.0	36.0	36.33	079	37.78	079	36.33	079	37.78	079
8.00	8	79	41.0	29.0	36.0	36.33	080	37.78	080	36.33	080	37.78	080
8.10	10	89	47.0	35.0	40.0	42.13	081	43.60	081	42.13	081	43.60	081
8.20	10	89	47.0	35.0	40.0	42.13	082	43.60	082	42.13	082	43.60	082
8.30	10	89	47.0	35.0	40.0	42.13	083	43.60	083	42.13	083	43.60	083
8.40	10	89	47.0	35.0	40.0	42.13	084	43.60	084	42.13	084	43.60	084
8.50	10	89	47.0	35.0	40.0	42.13	085	43.60	085	42.13	085	43.60	085
8.60	10	89	47.0	35.0	40.0	42.13	086	43.60	086	42.13	086	43.60	086

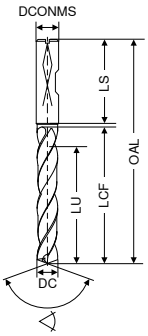
Steel	●	●	○	○
Stainless steel	○	○	●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys			●	●

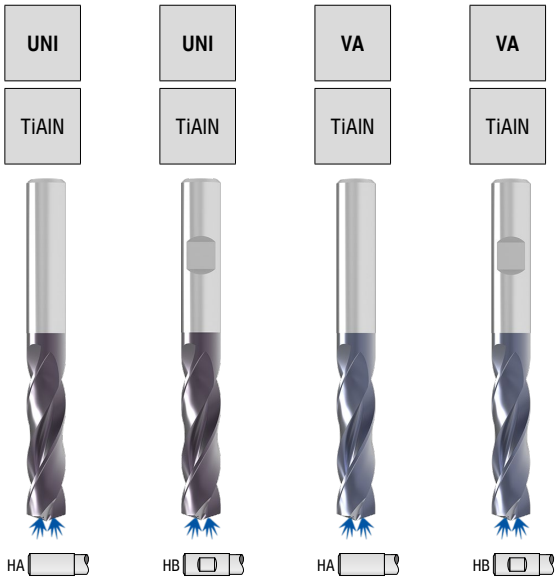
→ v_c Page 116+120

Continued on next page

WPC – High Performance Drill, DIN 6537

≤ 3xD





140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 603 ...		Article no. 11 604 ...		Article no. 11 623 ...		Article no. 11 624 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£	
8.70	10	89	47.0	35.0	40.0	42.13	087	43.60	087	42.13	087	43.60	087
8.80	10	89	47.0	35.0	40.0	42.13	088	43.60	088	42.13	088	43.60	088
8.90	10	89	47.0	35.0	40.0	42.13	089	43.60	089	42.13	089	43.60	089
9.00	10	89	47.0	35.0	40.0	42.13	090	43.60	090	42.13	090	43.60	090
9.10	10	89	47.0	35.0	40.0	42.13	091	43.60	091	42.13	091	43.60	091
9.20	10	89	47.0	35.0	40.0	42.13	092	43.60	092	42.13	092	43.60	092
9.25	10	89	47.0	35.0	40.0	42.13	925	43.60	925	42.13	925	43.60	925
9.30	10	89	47.0	35.0	40.0	42.13	093	43.60	093	42.13	093	43.60	093
9.35	10	89	47.0	35.0	40.0	42.13	930	42.13	930	55.31	09350		
9.40	10	89	47.0	35.0	40.0	42.13	094	43.60	094	42.13	094	43.60	094
9.50	10	89	47.0	35.0	40.0	42.13	095	43.60	095	42.13	095	43.60	095
9.60	10	89	47.0	35.0	40.0	42.13	096	43.60	096	42.13	096	43.60	096
9.70	10	89	47.0	35.0	40.0	42.13	097	43.60	097	42.13	097	43.60	097
9.80	10	89	47.0	35.0	40.0	42.13	098	43.60	098	42.13	098	43.60	098
9.90	10	89	47.0	35.0	40.0	42.13	099	43.60	099	42.13	099	43.60	099
10.00	10	89	47.0	35.0	40.0	42.13	100	43.60	100	42.13	100	43.60	100
10.10	12	102	55.0	40.0	45.0	59.54	101	62.47	101	59.54	101	62.47	101
10.20	12	102	55.0	40.0	45.0	59.54	102	62.47	102	59.54	102	62.47	102
10.30	12	102	55.0	40.0	45.0	59.54	103	62.47	103	59.54	103	62.47	103
10.40	12	102	55.0	40.0	45.0	59.54	104	62.47	104	59.54	104	62.47	104
10.50	12	102	55.0	40.0	45.0	59.54	105	62.47	105	59.54	105	62.47	105
10.60	12	102	55.0	40.0	45.0	59.54	106	62.47	106	59.54	106	62.47	106
10.70	12	102	55.0	40.0	45.0	59.54	107	62.47	107	59.54	107	62.47	107
10.75	12	102	55.0	40.0	45.0	59.54	904	59.54	904	78.69	10750		
10.80	12	102	55.0	40.0	45.0	59.54	108	62.47	108	59.54	108	62.47	108
10.90	12	102	55.0	40.0	45.0	59.54	109	62.47	109	59.54	109	62.47	109
11.00	12	102	55.0	40.0	45.0	59.54	110	62.47	110	59.54	110	62.47	110
11.10	12	102	55.0	40.0	45.0	59.54	111	62.47	111	59.54	111	62.47	111
11.20	12	102	55.0	40.0	45.0	59.54	112	62.47	112	59.54	112	62.47	112
11.25	12	102	55.0	40.0	45.0	59.54	912	59.54	912	78.15	11250		
11.30	12	102	55.0	40.0	45.0	59.54	113	62.47	113	59.54	113	62.47	113
11.40	12	102	55.0	40.0	45.0	59.54	114	62.47	114	59.54	114	62.47	114
11.50	12	102	55.0	40.0	45.0	59.54	115	62.47	115	59.54	115	62.47	115
11.60	12	102	55.0	40.0	45.0	59.54	116	62.47	116	59.54	116	62.47	116
11.70	12	102	55.0	40.0	45.0	59.54	117	62.47	117	59.54	117	62.47	117
11.80	12	102	55.0	40.0	45.0	59.54	118	62.47	118	59.54	118	62.47	118
11.90	12	102	55.0	40.0	45.0	59.54	119	62.47	119	59.54	119	62.47	119
12.00	12	102	55.0	40.0	45.0	59.54	120	62.47	120	59.54	120	62.47	120
12.25	14	107	60.0	43.0	45.0	84.25	122	84.25	122	106.57	12250		
12.50	14	107	60.0	43.0	45.0	84.25	125	87.16	125	84.25	125	87.16	125
12.70	14	107	60.0	43.0	45.0	84.25	127	87.16	127	84.25	127	87.16	127

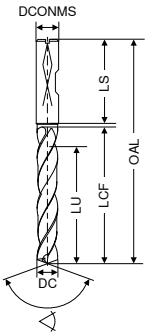
Steel	●	●	○	○
Stainless steel	○	○	●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys			●	●

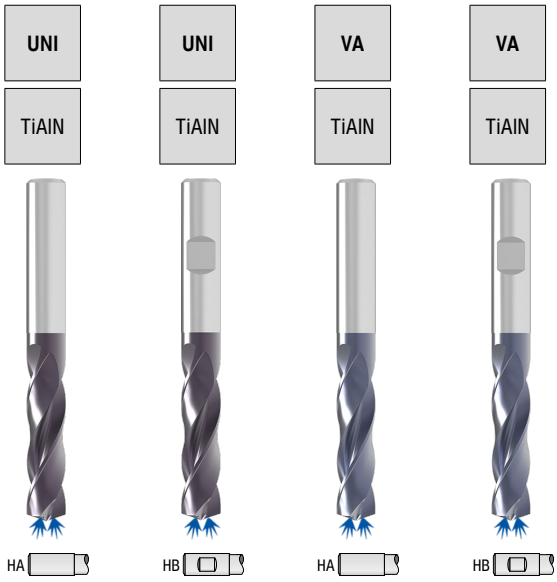
→ v_c Page 116+120

Continued on next page

WPC – High Performance Drill, DIN 6537

≤ 3xD





140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 603 ...		Article no. 11 604 ...		Article no. 11 623 ...		Article no. 11 624 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£	
12.80	14	107	60.0	43.0	45.0	84.25	128	84.25	128				
12.90	14	107	60.0	43.0	45.0	84.25	129	84.25	129				
13.00	14	107	60.0	43.0	45.0	84.25	130	87.16	130	84.25	130	87.16	130
13.10	14	107	60.0	43.0	45.0	84.25	131	84.25	131				
13.30	14	107	60.0	43.0	45.0	84.25	133	84.25	133				
13.50	14	107	60.0	43.0	45.0	84.25	135	87.16	135	84.25	135	87.16	135
13.70	14	107	60.0	43.0	45.0	84.25	137	87.16	137	84.25	137	87.16	137
13.80	14	107	60.0	43.0	45.0	84.25	138	84.25	138				
14.00	14	107	60.0	43.0	45.0	84.25	140	87.16	140	84.25	140	87.16	140
14.20	16	115	65.0	45.0	48.0	103.14	142	103.14	142				
14.50	16	115	65.0	45.0	48.0	103.14	145	107.51	145	103.14	145	107.51	145
14.70	16	115	65.0	45.0	48.0	103.14	147	107.51	147	103.14	147	107.51	147
14.80	16	115	65.0	45.0	48.0	103.14	148	103.14	148				
15.00	16	115	65.0	45.0	48.0	103.14	150	107.51	150	103.14	150	107.51	150
15.10	16	115	65.0	45.0	48.0	103.14	151	103.14	151				
15.25	16	115	65.0	45.0	48.0	103.14	152	103.14	152				
15.30	16	115	65.0	45.0	48.0	103.14	153	103.14	153				
15.50	16	115	65.0	45.0	48.0	103.14	155	107.51	155	103.14	155	107.51	155
15.60	16	115	65.0	45.0	48.0	103.14	156	103.14	156				
15.70	16	115	65.0	45.0	48.0	103.14	157	107.51	157	103.14	157	107.51	157
15.80	16	115	65.0	45.0	48.0	103.14	158	103.14	158				
16.00	16	115	65.0	45.0	48.0	103.14	160	107.51	160	103.14	160	107.51	160
16.50	18	123	73.0	51.0	48.0	165.61	165	172.88	165	165.61	165	172.88	165
16.80	18	123	73.0	51.0	48.0	165.61	168	165.61	168				
16.90	18	123	73.0	51.0	48.0	165.61	169	165.61	169				
17.00	18	123	73.0	51.0	48.0	165.61	170	172.88	170	165.61	170	172.88	170
17.50	18	123	73.0	51.0	48.0	165.61	175	172.88	175	165.61	175	172.88	175
17.60	18	123	73.0	51.0	48.0	165.61	176	165.61	176				
17.80	18	123	73.0	51.0	48.0	165.61	178	165.61	178				
18.00	18	123	73.0	51.0	48.0	165.61	180	172.88	180	165.61	180	172.88	180
18.50	20	131	79.0	55.0	50.0	180.14	185	188.86	185	180.14	185	188.86	185
18.80	20	131	79.0	55.0	50.0	180.14	188	180.14	188				
18.90	20	131	79.0	55.0	50.0	180.14	189	180.14	189				
19.00	20	131	79.0	55.0	50.0	180.14	190	188.86	190	180.14	190	188.86	190
19.50	20	131	79.0	55.0	50.0	180.14	195	188.86	195	180.14	195	188.86	195
19.60	20	131	79.0	55.0	50.0	180.14	196	180.14	196				
19.80	20	131	79.0	55.0	50.0	180.14	198	180.14	198				
20.00	20	131	79.0	55.0	50.0	180.14	200	188.86	200	180.14	200	188.86	200

Steel	●	●	○	○
Stainless steel	○	○	●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys			●	●

→ v_c Page 116+120

WTX – High-performance drill, DIN 6537

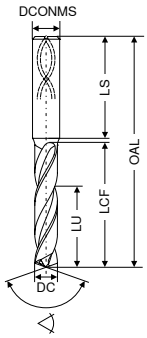
▲ Specialist for difficult to machine materials

≤ 3xD

Ti

DPA54

DRAGONSKIN



140°

Solid carbide

DC m7	DCONMS h6	OAL	LCF	LU	LS	T4 Article no. 10 786 ...	
mm	mm	mm	mm	mm	mm	£	
3.00	6	62	20	14	36	56.93	030
3.10	6	62	20	14	36	56.93	031
3.20	6	62	20	14	36	56.93	032
3.30	6	62	20	14	36	56.93	033
3.40	6	62	20	14	36	56.93	034
3.50	6	62	20	14	36	56.93	035
3.60	6	62	20	14	36	56.93	036
3.70	6	62	20	14	36	56.93	037
3.80	6	66	24	17	36	56.93	038
3.90	6	66	24	17	36	56.93	039
3.97	6	66	24	17	36	56.93	900
4.00	6	66	24	17	36	56.93	040
4.10	6	66	24	17	36	56.93	041
4.20	6	66	24	17	36	56.93	042
4.23	6	66	24	17	36	56.93	901
4.30	6	66	24	17	36	56.93	043
4.40	6	66	24	17	36	56.93	044
4.50	6	66	24	17	36	56.93	045
4.60	6	66	24	17	36	56.93	046
4.70	6	66	24	17	36	56.93	047
4.80	6	66	28	20	36	56.93	048
4.90	6	66	28	20	36	56.93	049
5.00	6	66	28	20	36	56.93	050
5.10	6	66	28	20	36	56.93	051
5.20	6	66	28	20	36	56.93	052
5.30	6	66	28	20	36	56.93	053
5.40	6	66	28	20	36	56.93	054
5.50	6	66	28	20	36	56.93	055
5.56	6	66	28	20	36	56.93	902
5.60	6	66	28	20	36	56.93	056
5.70	6	66	28	20	36	56.93	057
5.80	6	66	28	20	36	56.93	058
5.90	6	66	28	20	36	56.93	059
6.00	6	66	28	20	36	56.93	060
6.10	8	79	34	24	36	76.39	061
6.20	8	79	34	24	36	76.39	062
6.30	8	79	34	24	36	76.39	063
6.35	8	79	34	24	36	76.39	903
6.40	8	79	34	24	36	76.39	064
6.50	8	79	34	24	36	76.39	065
6.60	8	79	34	24	36	76.39	066
6.70	8	79	34	24	36	76.39	067
6.80	8	79	34	24	36	76.39	068
6.90	8	79	34	24	36	76.39	069
7.00	8	79	34	24	36	76.39	070
7.10	8	79	41	29	36	76.39	071
7.20	8	79	41	29	36	76.39	072
7.30	8	79	41	29	36	76.39	073
7.40	8	79	41	29	36	76.39	074
7.50	8	79	41	29	36	76.39	075
7.60	8	79	41	29	36	76.39	076
7.70	8	79	41	29	36	76.39	077
7.80	8	79	41	29	36	76.39	078
7.90	8	79	41	29	36	76.39	079
7.94	8	79	41	29	36	76.39	904
8.00	8	79	41	29	36	76.39	080
8.10	10	89	47	35	40	92.37	081
8.20	10	89	47	35	40	92.37	082
8.30	10	89	47	35	40	92.37	083
8.40	10	89	47	35	40	92.37	084
8.50	10	89	47	35	40	92.37	085
8.60	10	89	47	35	40	92.37	086
8.70	10	89	47	35	40	92.37	087
8.80	10	89	47	35	40	92.37	088
8.90	10	89	47	35	40	92.37	089
9.00	10	89	47	35	40	92.37	090
9.10	10	89	47	35	40	92.37	091
9.20	10	89	47	35	40	92.37	092
9.30	10	89	47	35	40	92.37	093
9.40	10	89	47	35	40	92.37	094
9.50	10	89	47	35	40	92.37	095
9.55	10	89	47	35	40	92.59	905
9.60	10	89	47	35	40	92.37	096
9.70	10	89	47	35	40	92.37	097
9.80	10	89	47	35	40	92.37	098
9.90	10	89	47	35	40	92.37	099
10.00	10	89	47	35	40	92.37	100
10.10	12	102	55	40	45	133.32	101
10.20	12	102	55	40	45	133.32	102
10.30	12	102	55	40	45	133.32	103
10.40	12	102	55	40	45	133.32	104
10.50	12	102	55	40	45	133.32	105
10.60	12	102	55	40	45	133.32	106
10.70	12	102	55	40	45	133.32	107
10.80	12	102	55	40	45	133.32	108
10.90	12	102	55	40	45	133.32	109
11.00	12	102	55	40	45	133.32	110
11.10	12	102	55	40	45	133.32	111
11.11	12	102	55	40	45	133.32	906
11.20	12	102	55	40	45	133.32	112
11.30	12	102	55	40	45	133.32	113
11.40	12	102	55	40	45	133.32	114
11.50	12	102	55	40	45	133.32	115
11.60	12	102	55	40	45	133.32	116
11.70	12	102	55	40	45	133.32	117
11.80	12	102	55	40	45	133.32	118
11.90	12	102	55	40	45	133.32	119
12.00	12	102	55	40	45	133.32	120
12.10	14	107	60	43	45	172.97	121
12.20	14	107	60	43	45	172.97	122
12.30	14	107	60	43	45	172.97	123
12.40	14	107	60	43	45	172.97	124
12.50	14	107	60	43	45	172.97	125
12.60	14	107	60	43	45	172.97	126
12.70	14	107	60	43	45	172.97	907
12.80	14	107	60	43	45	172.97	128
12.90	14	107	60	43	45	172.97	129
13.00	14	107	60	43	45	172.97	130
13.10	14	107	60	43	45	172.97	131
13.20	14	107	60	43	45	172.97	132
13.30	14	107	60	43	45	172.97	133
13.40	14	107	60	43	45	172.97	134
13.50	14	107	60	43	45	172.97	135
13.60	14	107	60	43	45	172.97	136
13.70	14	107	60	43	45	172.97	137
13.80	14	107	60	43	45	172.97	138
13.90	14	107	60	43	45	172.97	139

Steel	
Stainless steel	●
Cast iron	
Non ferrous metals	
Heat resistant alloys	●

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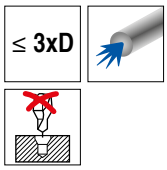
Continued on next page

WTX – High-performance drill, DIN 6537

▲ Specialist for difficult to machine materials

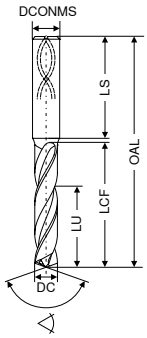
≤ 3xD



Ti

DPA54

DRAGONSKIN



140°

Solid carbide

DC m7	DCONMS h6	OAL	LCF	LU	LS	T4 Article no. 10 786 ...	
mm	mm	mm	mm	mm	mm	£	
14.0	14	107	60	43	45	172.97	140
14.1	16	115	65	45	48	205.39	141
14.2	16	115	65	45	48	205.39	142
14.3	16	115	65	45	48	205.39	143
14.4	16	115	65	45	48	205.39	144
14.5	16	115	65	45	48	205.39	145
14.6	16	115	65	45	48	205.39	146
14.7	16	115	65	45	48	205.39	147
14.8	16	115	65	45	48	205.39	148
14.9	16	115	65	45	48	205.39	149
15.0	16	115	65	45	48	205.39	150
15.1	16	115	65	45	48	205.39	151
15.2	16	115	65	45	48	205.39	152
15.3	16	115	65	45	48	205.39	153
15.4	16	115	65	45	48	205.39	154
15.5	16	115	65	45	48	205.39	155
15.6	16	115	65	45	48	205.39	156
15.7	16	115	65	45	48	205.39	157
15.8	16	115	65	45	48	205.39	158
15.9	16	115	65	45	48	205.39	159
16.0	16	115	65	45	48	205.39	160
16.1	18	123	73	51	48	205.39	161
16.2	18	123	73	51	48	205.39	162
16.3	18	123	73	51	48	205.39	163
16.4	18	123	73	51	48	205.39	164
16.5	18	123	73	51	48	288.28	165
16.6	18	123	73	51	48	288.28	166
16.7	18	123	73	51	48	288.28	167
16.8	18	123	73	51	48	288.28	168
16.9	18	123	73	51	48	288.28	169
17.0	18	123	73	51	48	288.28	170
17.1	18	123	73	51	48	288.28	171
17.2	18	123	73	51	48	288.28	172
17.3	18	123	73	51	48	288.28	173
17.4	18	123	73	51	48	288.28	174
17.5	18	123	73	51	48	288.28	175
17.6	18	123	73	51	48	288.28	176
17.7	18	123	73	51	48	288.28	177
17.8	18	123	73	51	48	288.28	178
17.9	18	123	73	51	48	288.28	179
18.0	18	123	73	51	48	288.28	180
18.1	20	131	79	55	50	360.34	181
18.2	20	131	79	55	50	360.34	182
18.3	20	131	79	55	50	360.34	183
18.4	20	131	79	55	50	360.34	184
18.5	20	131	79	55	50	360.34	185
18.6	20	131	79	55	50	360.34	186
18.7	20	131	79	55	50	360.34	187
18.8	20	131	79	55	50	360.34	188
18.9	20	131	79	55	50	360.34	189
19.0	20	131	79	55	50	360.34	190
19.1	20	131	79	55	50	360.34	191
19.2	20	131	79	55	50	360.34	192
19.3	20	131	79	55	50	360.34	193
19.4	20	131	79	55	50	360.34	194
19.5	20	131	79	55	50	360.34	195
19.6	20	131	79	55	50	360.34	196
19.7	20	131	79	55	50	360.34	197
19.8	20	131	79	55	50	360.34	198
19.9	20	131	79	55	50	360.34	199
20.0	20	131	79	55	50	360.34	200

Steel	
Stainless steel	●
Cast iron	
Non ferrous metals	
Heat resistant alloys	●

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WTX – High Performance Drill, DIN 6537

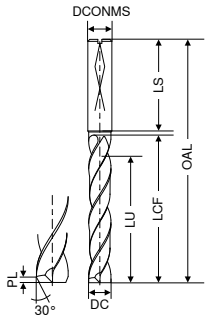
- universal application
- four guidance lands
- polished chip flutes
- Type ALU 3xD (10 722 ...) on request
- PL = corner chamfers

2

≤ 3xD

180

Ti800



HA

180°
Solid carbide

DC m7	DCONMS h6	OAL	LCF	LU	LS	PL	T4 Article no. 10 720 ... £	
mm	mm	mm	mm	mm	mm	mm		
3.00	6	62	20	14	36	0.15	73.88	030
3.10	6	62	20	14	36	0.16	73.88	031
3.20	6	62	20	14	36	0.16	73.88	032
3.30	6	62	20	14	36	0.17	73.88	033
3.40	6	62	20	14	36	0.17	73.88	034
3.50	6	62	20	14	36	0.18	73.88	035
3.60	6	62	20	14	36	0.18	73.88	036
3.70	6	62	20	14	36	0.19	73.88	037
3.80	6	66	24	17	36	0.19	73.88	038
3.90	6	66	24	17	36	0.20	73.88	039
4.00	6	66	24	17	36	0.20	73.88	040
4.10	6	66	24	17	36	0.21	73.88	041
4.20	6	66	24	17	36	0.21	73.88	042
4.30	6	66	24	17	36	0.22	73.88	043
4.40	6	66	24	17	36	0.22	73.88	044
4.50	6	66	24	17	36	0.23	73.88	045
4.60	6	66	24	17	36	0.23	73.88	046
4.65	6	66	24	17	36	0.23	73.88	900
4.70	6	66	24	17	36	0.24	73.88	047
4.80	6	66	28	20	36	0.24	73.88	048
4.90	6	66	28	20	36	0.25	73.88	049
5.00	6	66	28	20	36	0.25	73.88	050
5.10	6	66	28	20	36	0.26	73.88	051
5.20	6	66	28	20	36	0.26	73.88	052
5.30	6	66	28	20	36	0.27	73.88	053
5.40	6	66	28	20	36	0.27	73.88	054
5.50	6	66	28	20	36	0.28	73.88	055
5.55	6	66	28	20	36	0.28	73.88	902
5.60	6	66	28	20	36	0.28	73.88	056
5.70	6	66	28	20	36	0.29	73.88	057
5.80	6	66	28	20	36	0.29	73.88	058
5.90	6	66	28	20	36	0.30	73.88	059
6.00	6	66	28	20	36	0.30	73.88	060
6.10	8	79	34	24	36	0.31	90.62	061
6.20	8	79	34	24	36	0.31	90.62	062
6.30	8	79	34	24	36	0.32	90.62	063
6.40	8	79	34	24	36	0.32	90.62	064
6.50	8	79	34	24	36	0.33	90.62	065
6.60	8	79	34	24	36	0.33	90.62	066
6.70	8	79	34	24	36	0.34	90.62	067
6.80	8	79	34	24	36	0.34	90.62	068
6.90	8	79	34	24	36	0.35	90.62	069
7.00	8	79	34	24	36	0.35	90.62	070
7.10	8	79	41	29	36	0.36	90.62	071
7.20	8	79	41	29	36	0.36	90.62	072
7.30	8	79	41	29	36	0.37	90.62	073
7.40	8	79	41	29	36	0.37	90.62	074
7.50	8	79	41	29	36	0.38	90.62	075
7.60	8	79	41	29	36	0.38	90.62	076
7.70	8	79	41	29	36	0.39	90.62	077
7.80	8	79	41	29	36	0.39	90.62	078
7.90	8	79	41	29	36	0.40	90.62	079
8.00	8	79	41	29	36	0.40	90.62	080
8.10	10	89	47	35	40	0.41	125.22	081

DC m7	DCONMS h6	OAL	LCF	LU	LS	PL	T4 Article no. 10 720 ... £	
mm	mm	mm	mm	mm	mm	mm		
8.20	10	89	47	35	40	0.41	125.22	082
8.30	10	89	47	35	40	0.42	125.22	083
8.40	10	89	47	35	40	0.42	125.22	084
8.50	10	89	47	35	40	0.43	125.22	085
8.60	10	89	47	35	40	0.43	125.22	086
8.70	10	89	47	35	40	0.44	125.22	087
8.80	10	89	47	35	40	0.44	125.22	088
8.90	10	89	47	35	40	0.45	125.22	089
9.00	10	89	47	35	40	0.45	125.22	090
9.10	10	89	47	35	40	0.46	125.22	091
9.20	10	89	47	35	40	0.46	125.22	092
9.30	10	89	47	35	40	0.47	125.22	093
9.40	10	89	47	35	40	0.47	125.22	094
9.50	10	89	47	35	40	0.48	125.22	095
9.60	10	89	47	35	40	0.48	125.22	096
9.70	10	89	47	35	40	0.49	125.22	097
9.80	10	89	47	35	40	0.49	125.22	098
9.90	10	89	47	35	40	0.50	125.22	099
10.00	10	89	47	35	40	0.50	125.22	100
10.10	12	100	53	38	45	0.51	131.30	101
10.20	12	100	53	38	45	0.51	157.72	102
10.30	12	100	53	38	45	0.52	157.72	103
10.40	12	100	53	38	45	0.52	157.72	104
10.50	12	100	53	38	45	0.53	157.72	105
10.60	12	100	53	38	45	0.53	157.72	106
10.70	12	100	53	38	45	0.54	157.72	107
10.80	12	100	53	38	45	0.54	157.72	108
10.90	12	100	53	38	45	0.55	157.72	109
11.00	12	100	53	38	45	0.55	157.72	110
11.10	12	100	53	38	45	0.56	157.72	111
11.20	12	100	53	38	45	0.56	157.72	112
11.30	12	100	53	38	45	0.57	157.72	113
11.40	12	100	53	38	45	0.57	157.72	114
11.50	12	100	53	38	45	0.58	157.72	115
11.60	12	100	53	38	45	0.58	157.72	116
11.70	12	100	53	38	45	0.59	157.72	117
11.80	12	100	53	38	45	0.59	157.72	118
11.90	12	100	53	38	45	0.60	157.72	119
12.00	12	100	53	38	45	0.60	157.72	120
12.50	14	105	58	41	45	0.63	255.94	125
12.80	14	105	58	41	45	0.64	255.94	128
13.00	14	105	58	41	45	0.65	255.94	130
13.50	14	105	58	41	45	0.68	255.94	135
13.80	14	105	58	41	45	0.69	255.94	138
14.00	14	105	58	41	45	0.70	255.94	140
14.50	16	113	63	43	48	0.73	268.37	145
14.80	16	113	63	43	48	0.74	333.43	148
15.00	16	113	63	43	48	0.75	333.43	150
15.50	16	113	63	43	48	0.78	333.43	155
15.80	16	113	63	43	48	0.79	333.43	158
16.00	16	113	63	43	48	0.80	333.43	160
16.50	18	121	71	49	48	0.83	356.09	165
16.80	18	121	71	49	48	0.84	434.42	168
17.00	18	121	71	49	48	0.85	434.42	170
17.50	18	121	71	49	48	0.88	434.42	175
17.80	18	121	71	49	48	0.89	434.42	178
18.00	18	121	71	49	48	0.90	434.42	180
18.50	20	129	77	53	50	0.93	434.42	185
18.80	20	129	77	53	50	0.94	434.42	188
19.00	20	129	77	53	50	0.95	434.42	190
19.50	20	129	77	53	50	0.98	434.42	195
19.80	20	129	77	53	50	0.99	434.42	198
20.00	20	129	77	53	50	1.00	434.42	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
Hardened materials	○

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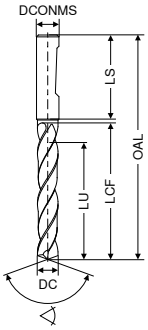
WTX – High Performance Drill, DIN 6537

≤ 5xD



UNI	UNI	UNI	Quattro 4F	VA	VA
DPX74S	DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		

	HA	HB	HE	HA	HA	HE
	140°	140°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T7	T7	T7	NEW T4	T4	T4

DC $_{m7}$	DCONMS $_{h6}$	OAL	LCF	LU	LS	Article no. 11 783 ...		Article no. 11 784 ...		Article no. 11 782 ...		Article no. 10 730 ...		Article no. 10 740 ...		Article no. 10 741 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£		£		£	
3.00	6	66	28	23	36	35.97	03000	35.97	03000	35.97	03000	76.99	03000	69.30	030	69.30	030
3.10	6	66	28	23	36	35.97	03100	35.97	03100	35.97	03100	76.99	03100	69.30	031	69.30	031
3.15	6	66	28	23	36	35.97	03150	35.97	03150	35.97	03150						
3.20	6	66	28	23	36	35.97	03200	35.97	03200	35.97	03200	76.99	03200	69.30	032	69.30	032
3.22	6	66	28	23	36	35.97	03220	35.97	03220	35.97	03220						
3.25	6	66	28	23	36	35.97	03250	35.97	03250	35.97	03250						
3.30	6	66	28	23	36	35.97	03300	35.97	03300	35.97	03300	76.99	03300	69.30	033	69.30	033
3.40	6	66	28	23	36	35.97	03400	35.97	03400	35.97	03400	76.99	03400	69.30	034	69.30	034
3.50	6	66	28	23	36	35.97	03500	35.97	03500	35.97	03500	76.99	03500	69.30	035	69.30	035
3.60	6	66	28	23	36	35.97	03600	35.97	03600	35.97	03600	76.99	03600	69.30	036	69.30	036
3.70	6	66	28	23	36	35.97	03700	35.97	03700	35.97	03700	76.99	03700	69.30	037	69.30	037
3.80	6	74	36	29	36	35.97	03800	35.97	03800	35.97	03800	76.99	03800	69.30	038	69.30	038
3.85	6	74	36	29	36	35.97	03850	35.97	03850	35.97	03850						
3.90	6	74	36	29	36	35.97	03900	35.97	03900	35.97	03900	76.99	03900	69.30	039	69.30	039
4.00	6	74	36	29	36	35.97	04000	35.97	04000	35.97	04000	76.99	04000	69.30	040	69.30	040
4.10	6	74	36	29	36	35.97	04100	35.97	04100	35.97	04100	76.99	04100	69.30	041	69.30	041
4.20	6	74	36	29	36	35.97	04200	35.97	04200	35.97	04200	76.99	04200	69.30	042	69.30	042
4.25	6	74	36	29	36	35.97	04250	35.97	04250	35.97	04250						
4.30	6	74	36	29	36	35.97	04300	35.97	04300	35.97	04300	76.99	04300	69.30	043	69.30	043
4.35	6	74	36	29	36	35.97	04350	35.97	04350	35.97	04350						
4.40	6	74	36	29	36	35.97	04400	35.97	04400	35.97	04400	76.99	04400	69.30	044	69.30	044
4.45	6	74	36	29	36	35.97	04450	35.97	04450	35.97	04450						
4.50	6	74	36	29	36	35.97	04500	35.97	04500	35.97	04500	76.99	04500	69.30	045	69.30	045
4.60	6	74	36	29	36	35.97	04600	35.97	04600	35.97	04600	76.99	04600	69.30	046	69.30	046
4.65	6	74	36	29	36	35.97	04650	35.97	04650	35.97	04650						
4.70	6	74	36	29	36	35.97	04700	35.97	04700	35.97	04700	76.99	04700	69.30	047	69.30	047
4.80	6	82	44	35	36	35.97	04800	35.97	04800	35.97	04800	76.99	04800	69.30	048	69.30	048
4.90	6	82	44	35	36	35.97	04900	35.97	04900	35.97	04900	76.99	04900	69.30	049	69.30	049
4.95	6	82	44	35	36	35.97	04950	35.97	04950	35.97	04950						
5.00	6	82	44	35	36	35.97	05000	35.97	05000	35.97	05000	76.99	05000	69.30	050	69.30	050
5.05	6	82	44	35	36	35.97	05050	35.97	05050	35.97	05050						
5.10	6	82	44	35	36	35.97	05100	35.97	05100	35.97	05100	76.99	05100	69.30	051	69.30	051
5.20	6	82	44	35	36	35.97	05200	35.97	05200	35.97	05200	76.99	05200	69.30	052	69.30	052
5.30	6	82	44	35	36	35.97	05300	35.97	05300	35.97	05300	76.99	05300	69.30	053	69.30	053
5.40	6	82	44	35	36	35.97	05400	35.97	05400	35.97	05400	76.99	05400	69.30	054	69.30	054
5.50	6	82	44	35	36	35.97	05500	35.97	05500	35.97	05500	76.99	05500	69.30	055	69.30	055
5.55	6	82	44	35	36	35.97	05550	35.97	05550	35.97	05550						
5.60	6	82	44	35	36	35.97	05600	35.97	05600	35.97	05600	76.99	05600	69.30	056	69.30	056
5.70	6	82	44	35	36	35.97	05700	35.97	05700	35.97	05700	76.99	05700	69.30	057	69.30	057
5.75	6	82	44	35	36	35.97	05750	35.97	05750	35.97	05750						
5.80	6	82	44	35	36	35.97	05800	35.97	05800	35.97	05800	76.99	05800	69.30	058	69.30	058
5.90	6	82	44	35	36	35.97	05900	35.97	05900	35.97	05900	76.99	05900	69.30	059	69.30	059
5.95	6	82	44	35	36	35.97	05950	35.97	05950	35.97	05950						
6.00	6	82	44	35	36	35.97	06000	35.97	06000	35.97	06000	76.99	06000	83.84	060	83.84	060

Steel	●	●	●	●	○	○
Stainless steel					●	●
Cast iron	●	●	●	●	○	○
Non ferrous metals	○	○	○	○	●	●
Heat resistant alloys						
Hardened materials				○	○	○

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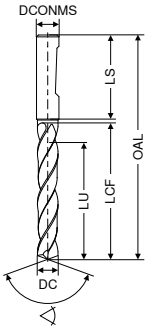
WTX – High Performance Drill, DIN 6537

2

≤ 5xD



UNI	UNI	UNI	Quattro 4F	VA	VA
DPX74S	DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		

HA	HB	HE	HA	HA	HE
140°	140°	140°	140°	140°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
T7	T7	T7	NEW T4	T4	T4

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 783 ...		Article no. 11 784 ...		Article no. 11 782 ...		Article no. 10 730 ...		Article no. 10 740 ...		Article no. 10 741 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£		£		£	
6.10	8	91	53	43	36	39.08	06100	39.08	06100	39.08	06100	91.92	06100	83.84	061	83.84	061
6.20	8	91	53	43	36	39.08	06200	39.08	06200	39.08	06200	91.92	06200	83.84	062	83.84	062
6.30	8	91	53	43	36	39.08	06300	39.08	06300	39.08	06300	91.92	06300	83.84	063	83.84	063
6.40	8	91	53	43	36	39.08	06400	39.08	06400	39.08	06400	91.92	06400	83.84	064	83.84	064
6.50	8	91	53	43	36	39.08	06500	39.08	06500	39.08	06500	91.92	06500	83.84	065	83.84	065
6.60	8	91	53	43	36	39.08	06600	39.08	06600	39.08	06600	91.92	06600	83.84	066	83.84	066
6.70	8	91	53	43	36	39.08	06700	39.08	06700	39.08	06700	91.92	06700	83.84	067	83.84	067
6.80	8	91	53	43	36	39.08	06800	39.08	06800	39.08	06800	91.92	06800	83.84	068	83.84	068
6.90	8	91	53	43	36	39.08	06900	39.08	06900	39.08	06900	91.92	06900	83.84	069	83.84	069
7.00	8	91	53	43	36	39.08	07000	39.08	07000	39.08	07000	91.92	07000	83.84	070	83.84	070
7.10	8	91	53	43	36	39.08	07100	39.08	07100	39.08	07100	91.92	07100	83.84	071	83.84	071
7.20	8	91	53	43	36	39.08	07200	39.08	07200	39.08	07200	91.92	07200	83.84	072	83.84	072
7.30	8	91	53	43	36	39.08	07300	39.08	07300	39.08	07300	91.92	07300	83.84	073	83.84	073
7.40	8	91	53	43	36	39.08	07400	39.08	07400	39.08	07400	91.92	07400	83.84	074	83.84	074
7.45	8	91	53	43	36	39.08	07450	39.08	07450	39.08	07450						
7.50	8	91	53	43	36	39.08	07500	39.08	07500	39.08	07500	91.92	07500	83.84	075	83.84	075
7.60	8	91	53	43	36	39.08	07600	39.08	07600	39.08	07600	91.92	07600	83.84	076	83.84	076
7.70	8	91	53	43	36	39.08	07700	39.08	07700	39.08	07700	91.92	07700	83.84	077	83.84	077
7.80	8	91	53	43	36	39.08	07800	39.08	07800	39.08	07800	91.92	07800	83.84	078	83.84	078
7.90	8	91	53	43	36	39.08	07900	39.08	07900	39.08	07900	91.92	07900	83.84	079	83.84	079
8.00	8	91	53	43	36	39.08	08000	39.08	08000	39.08	08000	91.92	08000	83.84	080	83.84	080
8.10	10	103	61	49	40	42.01	08100	42.01	08100	42.01	08100	108.68	08100	98.09	081	98.09	081
8.20	10	103	61	49	40	42.01	08200	42.01	08200	42.01	08200	108.68	08200	98.09	082	98.09	082
8.30	10	103	61	49	40	42.01	08300	42.01	08300	42.01	08300	108.68	08300	98.09	083	98.09	083
8.40	10	103	61	49	40	42.01	08400	42.01	08400	42.01	08400	108.68	08400	98.09	084	98.09	084
8.50	10	103	61	49	40	42.01	08500	42.01	08500	42.01	08500	108.68	08500	98.09	085	98.09	085
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8.70	10	103	61	49	40	42.01	08700	42.01	08700	42.01	08700	108.68	08700	98.09	087	98.09	087
8.80	10	103	61	49	40	42.01	08800	42.01	08800	42.01	08800	108.68	08800	98.09	088	98.09	088
8.90	10	103	61	49	40	42.01	08900	42.01	08900	42.01	08900	108.68	08900	98.09	089	98.09	089
9.00	10	103	61	49	40	42.01	09000	42.01	09000	42.01	09000	108.68	09000	98.09	090	98.09	090
9.10	10	103	61	49	40	42.01	09100	42.01	09100	42.01	09100	108.68	09100	98.09	091	98.09	091
9.20	10	103	61	49	40	42.01	09200	42.01	09200	42.01	09200	108.68	09200	98.09	092	98.09	092
9.30	10	103	61	49	40	42.01	09300	42.01	09300	42.01	09300	108.68	09300	98.09	093	98.09	093
9.35	10	103	61	49	40	42.01	09350	42.01	09350	42.01	09350						
9.40	10	103	61	49	40	42.01	09400	42.01	09400	42.01	09400	108.68	09400	98.09	094	98.09	094
9.45	10	103	61	49	40	42.01	09450	42.01	09450	42.01	09450						
9.50	10	103	61	49	40	42.01	09500	42.01	09500	42.01	09500	108.68	09500	98.09	095	98.09	095
9.60	10	103	61	49	40	42.01	09600	42.01	09600	42.01	09600	108.68	09600	98.09	096	98.09	096
9.70	10	103	61	49	40	42.01	09700	42.01	09700	42.01	09700	108.68	09700	98.09	097	98.09	097
9.80	10	103	61	49	40	42.01	09800	42.01	09800	42.01	09800	108.68	09800	98.09	098	98.09	098
9.90	10	103	61	49	40	42.01	09900	42.01	09900	42.01	09900	108.68	09900	98.09	099	98.09	099
10.00	10	103	61	49	40	42.01	10000	42.01	10000	42.01	10000	108.68	10000	98.09	100	98.09	100
10.10	12	118	71	56	45	60.97	10100	60.97	10100	60.97	10100	185.53	10100	139.05	101	139.05	101

Steel	●	●	●	●	○	○
Stainless steel					●	●
Cast iron	●	●	●	●	○	○
Non ferrous metals	○	○	○	○	●	●
Heat resistant alloys						
Hardened materials				○	○	○

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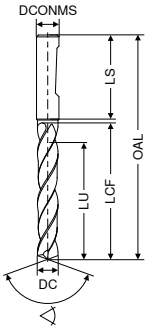
WTX – High Performance Drill, DIN 6537

≤ 5xD



UNI	UNI	UNI	Quattro 4F	VA	VA
DPX74S	DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		

HA	HB	HE	HA	HA	HE
140°	140°	140°	140°	140°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
T7	T7	T7	NEW T4	T4	T4

DC $_{m7}$	DCONMS $_{h6}$	OAL	LCF	LU	LS	Article no. 11 783 ...		Article no. 11 784 ...		Article no. 11 782 ...		Article no. 10 730 ...		Article no. 10 740 ...		Article no. 10 741 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£		£		£	
10.20	12	118	71	56	45	60.97	10200	60.97	10200	60.97	10200	185.53	10200	139.05	102	139.05	102
10.30	12	118	71	56	45	60.97	10300	60.97	10300	60.97	10300	185.53	10300	139.05	103	139.05	103
10.40	12	118	71	56	45	60.97	10400	60.97	10400	60.97	10400	185.53	10400	139.05	104	139.05	104
10.50	12	118	71	56	45	60.97	10500	60.97	10500	60.97	10500	185.53	10500	139.05	105	139.05	105
10.55	12	118	71	56	45	60.97	10550	60.97	10550	60.97	10550						
10.60	12	118	71	56	45	60.97	10600	60.97	10600	60.97	10600	185.53	10600	139.05	106	139.05	106
10.70	12	118	71	56	45	60.97	10700	60.97	10700	60.97	10700	185.53	10700	139.05	107	139.05	107
10.75	12	118	71	56	45	60.97	10750	60.97	10750	60.97	10750						
10.80	12	118	71	56	45	60.97	10800	60.97	10800	60.97	10800	185.53	10800	139.05	108	139.05	108
10.90	12	118	71	56	45	60.97	10900	60.97	10900	60.97	10900	185.53	10900	139.05	109	139.05	109
11.00	12	118	71	56	45	60.97	11000	60.97	11000	60.97	11000	185.53	11000	139.05	110	139.05	110
11.10	12	118	71	56	45	60.97	11100	60.97	11100	60.97	11100	185.53	11100	139.05	111	139.05	111
11.20	12	118	71	56	45	60.97	11200	60.97	11200	60.97	11200	185.53	11200	139.05	112	139.05	112
11.25	12	118	71	56	45	60.97	11250	60.97	11250	60.97	11250						
11.30	12	118	71	56	45	60.97	11300	60.97	11300	60.97	11300	185.53	11300	139.05	113	139.05	113
11.35	12	118	71	56	45	60.97	11350	60.97	11350	60.97	11350						
11.40	12	118	71	56	45	60.97	11400	60.97	11400	60.97	11400	185.53	11400	139.05	114	139.05	114
11.45	12	118	71	56	45	60.97	11450	60.97	11450	60.97	11450						
11.50	12	118	71	56	45	60.97	11500	60.97	11500	60.97	11500	185.53	11500	139.05	115	139.05	115
11.60	12	118	71	56	45	60.97	11600	60.97	11600	60.97	11600	185.53	11600	139.05	116	139.05	116
11.70	12	118	71	56	45	60.97	11700	60.97	11700	60.97	11700	185.53	11700	139.05	117	139.05	117
11.80	12	118	71	56	45	60.97	11800	60.97	11800	60.97	11800	185.53	11800	139.05	118	139.05	118
11.90	12	118	71	56	45	60.97	11900	60.97	11900	60.97	11900	185.53	11900	139.05	119	139.05	119
12.00	12	118	71	56	45	60.97	12000	60.97	12000	60.97	12000	185.53	12000	139.05	120	139.05	120
12.15	14	124	77	60	45	81.79	12150	81.79	12150	81.79	12150						
12.25	14	124	77	60	45	81.79	12250	81.79	12250	81.79	12250						
12.50	14	124	77	60	45	81.79	12500	81.79	12500	81.79	12500	205.84	12500	183.75	125	183.75	125
12.55	14	124	77	60	45	81.79	12550	81.79	12550	81.79	12550						
12.70	14	124	77	60	45	81.79	12700	81.79	12700	81.79	12700						
12.80	14	124	77	60	45	81.79	12800	81.79	12800	81.79	12800	205.84	12800	183.75	128	183.75	128
12.90	14	124	77	60	45	81.79	12900	81.79	12900	81.79	12900						
13.00	14	124	77	60	45	81.79	13000	81.79	13000	81.79	13000	205.84	13000	183.75	130	183.75	130
13.10	14	124	77	60	45	81.79	13100	81.79	13100	81.79	13100						
13.30	14	124	77	60	45	81.79	13300	81.79	13300	81.79	13300						
13.35	14	124	77	60	45	81.79	13350	81.79	13350	81.79	13350						
13.50	14	124	77	60	45	81.79	13500	81.79	13500	81.79	13500	205.84	13500	183.75	135	183.75	135
13.70	14	124	77	60	45	81.79	13700	81.79	13700	81.79	13700						
13.80	14	124	77	60	45	81.79	13800	81.79	13800	81.79	13800	205.84	13800	183.75	138	183.75	138
14.00	14	124	77	60	45	81.79	14000	81.79	14000	81.79	14000	205.84	14000	228.28	140	228.28	140
14.20	16	133	83	63	48	105.01	14200	105.01	14200	105.01	14200						
14.50	16	133	83	63	48	105.01	14500	105.01	14500	105.01	14500	282.69	14500	239.69	145	239.69	145
14.80	16	133	83	63	48	105.01	14800	105.01	14800	105.01	14800	282.69	14800	239.69	148	239.69	148
15.00	16	133	83	63	48	105.01	15000	105.01	15000	105.01	15000	282.69	15000	239.69	150	239.69	150
15.10	16	133	83	63	48	105.01	15100	105.01	15100	105.01	15100						

Steel	●	●	●	●	○	○
Stainless steel					●	●
Cast iron	●	●	●	●	○	○
Non ferrous metals	○	○	○	○	●	●
Heat resistant alloys						
Hardened materials				○	○	○

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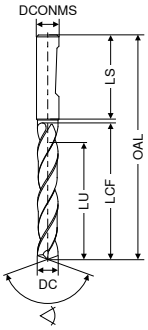
WTX – High Performance Drill, DIN 6537

2

≤ 5xD



UNI	UNI	UNI	Quattro 4F	VA	VA
DPX74S	DPX74S	DPX74S	DPX74S	Ti700	Ti700
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		

	HA	HB	HE	HA	HA	HE
	140°	140°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T7	T7	T7	NEW T4	T4	T4
	Article no. 11 783 ...	Article no. 11 784 ...	Article no. 11 782 ...	Article no. 10 730 ...	Article no. 10 740 ...	Article no. 10 741 ...

DC m7	DCONMS h6	OAL	LCF	LU	LS	£		£		£		£		£		£	
mm	mm	mm	mm	mm	mm												
15.25	16	133	83	63	48	105.01	15250	105.01	15250	105.01	15250						
15.30	16	133	83	63	48	105.01	15300	105.01	15300	105.01	15300						
15.35	16	133	83	63	48	105.01	15350	105.01	15350	105.01	15350						
15.50	16	133	83	63	48	105.01	15500	105.01	15500	105.01	15500	282.69	15500	239.69	155	239.69	155
15.60	16	133	83	63	48	105.01	15600	105.01	15600	105.01	15600						
15.80	16	133	83	63	48	105.01	15800	105.01	15800	105.01	15800	282.69	15800	239.69	158	239.69	158
16.00	16	133	83	63	48	105.01	16000	105.01	16000	105.01	16000	282.69	16000	239.69	160	239.69	160
16.05	18	143	93	71	48	178.41	16050	178.41	16050	178.41	16050						
16.50	18	143	93	71	48	178.41	16500	178.41	16500	178.41	16500	409.94	16500	349.95	165	349.95	165
16.80	18	143	93	71	48	178.41	16800	178.41	16800	178.41	16800	409.94	16800	349.95	168	349.95	168
16.90	18	143	93	71	48	178.41	16900	178.41	16900	178.41	16900						
17.00	18	143	93	71	48	178.41	17000	178.41	17000	178.41	17000	409.94	17000	349.95	170	349.95	170
17.50	18	143	93	71	48	178.41	17500	178.41	17500	178.41	17500	409.94	17500	349.95	175	349.95	175
17.60	18	143	93	71	48	178.41	17600	178.41	17600	178.41	17600						
17.80	18	143	93	71	48	178.41	17800	178.41	17800	178.41	17800	409.94	17800	349.95	178	349.95	178
18.00	18	143	93	71	48	178.41	18000	178.41	18000	178.41	18000	409.94	18000	440.22	180	440.22	180
18.50	20	153	101	77	50	200.17	18500	200.17	18500	200.17	18500	499.57	18500	462.26	185	462.26	185
18.80	20	153	101	77	50	200.17	18800	200.17	18800	200.17	18800	499.57	18800	462.26	188	462.26	188
18.90	20	153	101	77	50	200.17	18900	200.17	18900	200.17	18900						
19.00	20	153	101	77	50	200.17	19000	200.17	19000	200.17	19000	499.57	19000	462.26	190	462.26	190
19.35	20	153	101	77	50	200.17	19350	200.17	19350	200.17	19350						
19.50	20	153	101	77	50	200.17	19500	200.17	19500	200.17	19500	499.57	19500	462.26	195	462.26	195
19.60	20	153	101	77	50	200.17	19600	200.17	19600	200.17	19600						
19.80	20	153	101	77	50	200.17	19800	200.17	19800	200.17	19800	499.57	19800	462.26	198	462.26	198
20.00	20	153	101	77	50	200.17	20000	200.17	20000	200.17	20000	499.57	20000	644.56	200	644.56	200

Steel	●	●	●	●	○	○
Stainless steel					●	●
Cast iron	●	●	●	●	○	○
Non ferrous metals	○	○	○	○	●	●
Heat resistant alloys						
Hardened materials				○	○	○

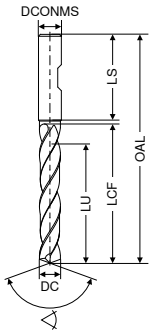
→ v_c Page 101–104

WPC – High Performance Drill, DIN 6537

≤ 5xD

UNI

TiAlN



HA

140°

Solid carbide

UNI

TiAlN

HB

140°

Solid carbide

DC m7	DCONMS h6	OAL	LCF	LU	LS	T1 Article no. 11 606 ...		T1 Article no. 11 607 ...	
mm	mm	mm	mm	mm	mm	£		£	
3.00	6	66	28	23	36	23.25	030	23.25	030
3.10	6	66	28	23	36	23.25	031	23.25	031
3.20	6	66	28	23	36	23.25	032	23.25	032
3.30	6	66	28	23	36	23.25	033	23.25	033
3.40	6	66	28	23	36	23.25	034	23.25	034
3.50	6	66	28	23	36	23.25	035	23.25	035
3.60	6	66	28	23	36	23.25	036	23.25	036
3.70	6	66	28	23	36	23.25	037	23.25	037
3.80	6	74	36	29	36	23.25	038	23.25	038
3.90	6	74	36	29	36	23.25	039	23.25	039
4.00	6	74	36	29	36	23.25	040	23.25	040
4.10	6	74	36	29	36	23.25	041	23.25	041
4.20	6	74	36	29	36	23.25	042	23.25	042
4.30	6	74	36	29	36	23.25	043	23.25	043
4.40	6	74	36	29	36	23.25	044	23.25	044
4.50	6	74	36	29	36	23.25	045	23.25	045
4.60	6	74	36	29	36	23.25	046	23.25	046
4.65	6	74	36	29	36	23.25	900	23.25	900
4.70	6	74	36	29	36	23.25	047	23.25	047
4.80	6	82	44	35	36	23.25	048	23.25	048
4.90	6	82	44	35	36	23.25	049	23.25	049
5.00	6	82	44	35	36	23.25	050	23.25	050
5.10	6	82	44	35	36	23.25	051	23.25	051
5.20	6	82	44	35	36	23.25	052	23.25	052
5.30	6	82	44	35	36	23.25	053	23.25	053
5.40	6	82	44	35	36	23.25	054	23.25	054
5.50	6	82	44	35	36	23.25	055	23.25	055
5.55	6	82	44	35	36	23.25	902	23.25	902
5.60	6	82	44	35	36	23.25	056	23.25	056
5.70	6	82	44	35	36	23.25	057	23.25	057
5.80	6	82	44	35	36	23.25	058	23.25	058
5.90	6	82	44	35	36	23.25	059	23.25	059
6.00	6	82	44	35	36	23.25	060	23.25	060
6.10	8	91	53	43	36	23.25	061	23.25	061
6.20	8	91	53	43	36	23.25	062	23.25	062
6.30	8	91	53	43	36	23.25	063	23.25	063
6.40	8	91	53	43	36	23.25	064	23.25	064
6.50	8	91	53	43	36	23.25	065	23.25	065
6.60	8	91	53	43	36	23.25	066	23.25	066
6.70	8	91	53	43	36	23.25	067	23.25	067
6.80	8	91	53	43	36	23.25	068	23.25	068
6.90	8	91	53	43	36	23.25	069	23.25	069
7.00	8	91	53	43	36	23.25	070	23.25	070
7.10	8	91	53	43	36	23.25	071	23.25	071
7.20	8	91	53	43	36	23.25	072	23.25	072
7.30	8	91	53	43	36	23.25	073	23.25	073
7.40	8	91	53	43	36	23.25	074	23.25	074
7.50	8	91	53	43	36	23.25	075	23.25	075
7.55	8	91	53	43	36	23.25	975	23.25	975
7.60	8	91	53	43	36	23.25	076	23.25	076
7.70	8	91	53	43	36	23.25	077	23.25	077
7.80	8	91	53	43	36	23.25	078	23.25	078
7.90	8	91	53	43	36	23.25	079	23.25	079
8.00	8	91	53	43	36	23.25	080	23.25	080
8.10	10	103	61	49	40	26.16	081	26.16	081
8.20	10	103	61	49	40	26.16	082	26.16	082
8.30	10	103	61	49	40	26.16	083	26.16	083
8.40	10	103	61	49	40	26.16	084	26.16	084
8.50	10	103	61	49	40	26.16	085	26.16	085
8.60	10	103	61	49	40	26.16	086	26.16	086
8.70	10	103	61	49	40	26.16	087	26.16	087
8.80	10	103	61	49	40	26.16	088	26.16	088
8.90	10	103	61	49	40	26.16	089	26.16	089
9.00	10	103	61	49	40	26.16	090	26.16	090
9.10	10	103	61	49	40	26.16	091	26.16	091
9.20	10	103	61	49	40	26.16	092	26.16	092
9.25	10	103	61	49	40	26.16	925	26.16	925
9.30	10	103	61	49	40	26.16	093	26.16	093
9.40	10	103	61	49	40	26.16	094	26.16	094
9.50	10	103	61	49	40	26.16	095	26.16	095
9.60	10	103	61	49	40	26.16	096	26.16	096
9.70	10	103	61	49	40	26.16	097	26.16	097
9.80	10	103	61	49	40	26.16	098	26.16	098
9.90	10	103	61	49	40	26.16	099	26.16	099
10.00	10	103	61	49	40	26.16	100	26.16	100
10.10	12	118	71	56	45	39.23	101	39.23	101
10.20	12	118	71	56	45	39.23	102	39.23	102
10.30	12	118	71	56	45	39.23	103	39.23	103
10.40	12	118	71	56	45	39.23	104	39.23	104
10.50	12	118	71	56	45	39.23	105	39.23	105
10.60	12	118	71	56	45	39.23	106	39.23	106
10.70	12	118	71	56	45	39.23	107	39.23	107
10.80	12	118	71	56	45	39.23	108	39.23	108
10.90	12	118	71	56	45	39.23	109	39.23	109
11.00	12	118	71	56	45	39.23	110	39.23	110
11.10	12	118	71	56	45	39.23	111	39.23	111
11.20	12	118	71	56	45	39.23	112	39.23	112
11.30	12	118	71	56	45	39.23	113	39.23	113
11.40	12	118	71	56	45	39.23	114	39.23	114
11.50	12	118	71	56	45	39.23	115	39.23	115
11.60	12	118	71	56	45	39.23	116	39.23	116
11.70	12	118	71	56	45	39.23	117	39.23	117
11.80	12	118	71	56	45	39.23	118	39.23	118
11.90	12	118	71	56	45	39.23	119	39.23	119
12.00	12	118	71	56	45	39.23	120	39.23	120
12.25	14	124	77	60	45	50.84	122	50.84	122
12.50	14	124	77	60	45	50.84	125	50.84	125
12.70	14	124	77	60	45	50.84	127	50.84	127
12.80	14	124	77	60	45	50.84	128	50.84	128
12.90	14	124	77	60	45	50.84	129	50.84	129
13.00	14	124	77	60	45	50.84	130	50.84	130
13.30	14	124	77	60	45	50.84	133	50.84	133
13.50	14	124	77	60	45	50.84	135	50.84	135
13.70	14	124	77	60	45	50.84	137	50.84	137
13.80	14	124	77	60	45	50.84	138	50.84	138
14.00	14	124	77	60	45	50.84	140	50.84	140
14.20	16	133	83	63	48	66.83	142	66.83	142
14.50	16	133	83	63	48	66.83	145	66.83	145
14.70	16	133	83	63	48	66.83	147	66.83	147
14.80	16	133	83	63	48	66.83	148	66.83	148
15.00	16	133	83	63	48	66.83	150	66.83	150
15.25	16	133	83	63	48	66.83	152	66.83	152
15.30	16	133	83	63	48	66.83	153	66.83	153
15.50	16	133	83	63	48	66.83	155	66.83	155
15.70	16	133	83	63	48	66.83	157	66.83	157
15.80	16	133	83	63	48	66.83	158	66.83	158
16.00	16	133	83	63	48	66.83	160	66.83	160
16.50	18	143	93	71	48	107.51	165	107.51	165
16.80	18	143	93	71	48	107.51	168	107.51	168
17.00	18	143	93	71	48	107.51	170	107.51	170
17.50	18	143	93	71	48	107.51	175	107.51	175
17.80	18	143	93	71	48	107.51	178	107.51	178
18.00	18	143	93	71	48	107.51	180	107.51	180
18.50	20	153	101	77	50	116.21	185	116.21	185
18.80	20	153	101	77	50	116.21	188	116.21	188
19.00	20	153	101	77	50	116.21	190	116.21	190
19.50	20	153	101	77	50	116.21	195	116.21	195
19.80	20	153	101	77	50	116.21	198	116.21	198
20.00	20	153	101	77	50	116.21	200	116.21	200

Steel	●	●
Stainless steel		
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys		

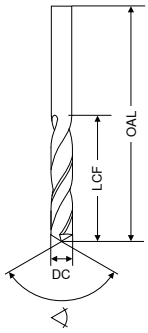
→ v_c Page 117

Twist drill similar to DIN 338

- Rake angle 30°
- Shank Ø h7

≤ 5xD

N



118°
Solid carbide

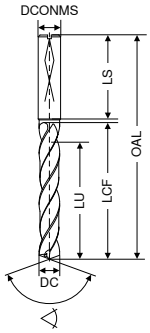
DC h7	OAL	LCF	T3 Article no. 10 710 ...	
mm	mm	mm	£	
0.5	22	6	5.69	005
0.6	24	7	5.69	006
0.7	28	9	5.69	007
0.8	30	10	5.69	008
0.9	32	11	5.69	009
1.0	34	12	5.69	010
1.1	36	14	6.56	011
1.2	38	16	6.56	012
1.3	38	16	6.56	013
1.4	40	18	6.56	014
1.5	40	18	6.56	015
1.6	43	20	6.56	016
1.7	43	20	7.26	017
1.8	46	22	7.70	018
1.9	46	22	7.70	019
2.0	49	24	9.42	020
2.1	49	24	9.68	021
2.2	53	27	9.68	022
2.3	53	27	9.68	023
2.4	57	30	9.68	024
2.5	57	30	11.26	025
2.6	57	30	11.26	026
2.7	61	33	12.37	027
2.8	61	33	13.11	028
2.9	61	33	13.11	029
3.0	61	33	13.08	030
3.1	65	36	13.08	031
3.2	65	36	13.08	032
3.3	65	36	14.52	033
3.4	70	39	14.52	034
3.5	70	39	15.99	035
3.6	70	39	15.99	036
3.7	70	39	15.99	037
3.8	75	43	15.99	038
3.9	75	43	15.99	039
4.0	75	43	19.05	040
4.1	75	43	18.13	041
4.2	75	43	19.65	042
4.3	80	47	20.64	043
4.4	80	47	20.64	044
4.5	80	47	22.11	045
4.6	80	47	22.11	046
4.7	80	47	22.11	047
4.8	86	52	22.52	048
4.9	86	52	22.52	049
5.0	86	52	26.31	050
5.1	86	52	26.31	051
5.2	86	52	26.31	052
5.3	86	52	27.55	053
5.4	93	57	32.41	054
5.5	93	57	32.41	055
5.6	93	57	32.41	056
5.7	93	57	32.41	057
5.8	93	57	32.41	058
5.9	93	57	32.41	059
6.0	93	57	35.32	060
6.1	101	63	36.99	061
6.2	101	63	36.99	062
6.3	101	63	36.99	063
6.4	101	63	36.99	064
6.5	101	63	42.29	065
6.6	109	69	42.29	066
6.8	109	69	48.32	068
7.0	109	69	48.32	070
7.5	109	69	52.30	075
7.8	117	75	57.68	078
8.0	117	75	57.68	080
8.5	117	75	64.85	085
8.8	125	81	78.60	088
9.0	125	81	78.60	090
9.5	125	81	85.42	095
9.8	133	87	94.31	098
10.0	133	87	94.31	100
10.2	133	87	99.05	102
10.5	133	87	102.91	105
11.0	142	94	119.99	110
11.5	142	94	133.26	115
12.0	151	101	155.43	120
13.0	151	101	168.93	130
14.0	160	108	181.09	140
16.0	178	120	245.93	160

Steel	●
Stainless steel	○
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	○

→ v_c Page 119

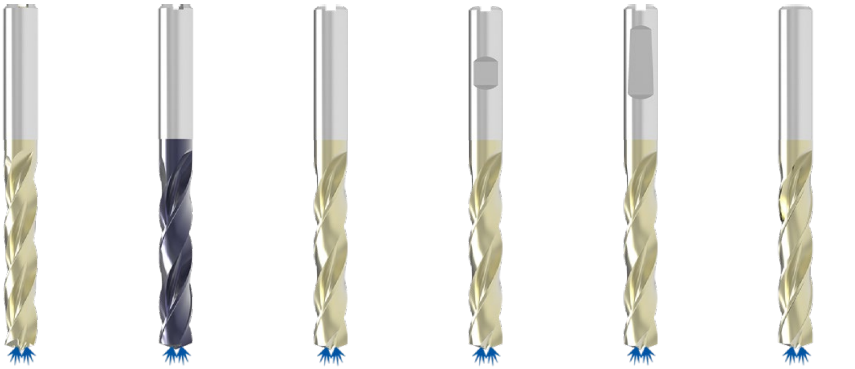
WTX – High Performance Drill, DIN 6537

≤ 5xD



Feed UNI = Three Cutting Edges

Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



HA	HA	HA	HB	HE	HA
140°	145°	140°	140°	140°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
NEW T4	NEW T4	T7	T7	T7	NEW T4
Article no. 10 789 ...	Article no. 10 771 ...	Article no. 11 786 ...	Article no. 11 787 ...	Article no. 11 785 ...	Article no. 10 735 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS												
mm	mm	mm	mm	mm	mm	£		£		£		£		£		£	
3.00	6	66	28	23	36			110.41	03000	56.61	03000	56.61	03000	53.41	03000	110.56	03000
3.10	6	66	28	23	36			110.41	03100	56.61	03100	56.61	03100	53.41	03100	110.56	03100
3.15	6	66	28	23	36					56.61	03150	56.61	03150	53.41	03150		
3.20	6	66	28	23	36			110.41	03200	56.61	03200	56.61	03200	53.41	03200	110.56	03200
3.22	6	66	28	23	36					56.61	03220	56.61	03220	53.41	03220		
3.25	6	66	28	23	36					56.61	03250	56.61	03250	53.41	03250		
3.30	6	66	28	23	36			110.41	03300	56.61	03300	56.61	03300	53.41	03300	110.56	03300
3.40	6	66	28	23	36			110.41	03400	56.61	03400	56.61	03400	53.41	03400	110.56	03400
3.50	6	66	28	23	36			110.41	03500	56.61	03500	56.61	03500	53.41	03500	110.56	03500
3.60	6	66	28	23	36			110.41	03600	56.61	03600	56.61	03600	53.41	03600	110.56	03600
3.70	6	66	28	23	36			110.41	03700	56.61	03700	56.61	03700	53.41	03700	110.56	03700
3.80	6	74	36	29	36			110.41	03800	56.61	03800	56.61	03800	53.41	03800	110.56	03800
3.85	6	74	36	29	36					56.61	03850	56.61	03850	53.41	03850		
3.90	6	74	36	29	36			110.41	03900	56.61	03900	56.61	03900	53.41	03900	110.56	03900
4.00	6	74	36	29	36	90.03	04000	110.41	04000	56.61	04000	56.61	04000	53.41	04000	110.56	04000
4.10	6	74	36	29	36	90.03	04100	110.41	04100	56.61	04100	56.61	04100	53.41	04100	110.56	04100
4.20	6	74	36	29	36	90.03	04200	110.41	04200	56.61	04200	56.61	04200	53.41	04200	110.56	04200
4.25	6	74	36	29	36					56.61	04250	56.61	04250	53.41	04250		
4.30	6	74	36	29	36	90.03	04300	110.41	04300	56.61	04300	56.61	04300	53.41	04300	110.56	04300
4.35	6	74	36	29	36					56.61	04350	56.61	04350	53.41	04350		
4.40	6	74	36	29	36	90.03	04400	110.41	04400	56.61	04400	56.61	04400	53.41	04400	110.56	04400
4.45	6	74	36	29	36					56.61	04450	56.61	04450	53.41	04450		
4.50	6	74	36	29	36	90.03	04500	110.41	04500	56.61	04500	56.61	04500	53.41	04500	110.56	04500
4.60	6	74	36	29	36	90.03	04600	110.41	04600	56.61	04600	56.61	04600	53.41	04600	110.56	04600
4.65	6	74	36	29	36			110.41	04650	56.61	04650	56.61	04650	53.41	04650		
4.70	6	74	36	29	36	90.03	04700	110.41	04700	56.61	04700	56.61	04700	53.41	04700	110.56	04700
4.80	6	82	44	35	36	90.03	04800	110.41	04800	56.61	04800	56.61	04800	53.41	04800	110.56	04800
4.90	6	82	44	35	36	90.03	04900	110.41	04900	56.61	04900	56.61	04900	53.41	04900	110.56	04900
4.95	6	82	44	35	36					56.61	04950	56.61	04950	53.41	04950		
5.00	6	82	44	35	36	90.03	05000	110.41	05000	56.61	05000	56.61	05000	53.41	05000	110.56	05000
5.05	6	82	44	35	36					56.61	05050	56.61	05050	53.41	05050		
5.10	6	82	44	35	36	90.03	05100	110.41	05100	56.61	05100	56.61	05100	53.41	05100	110.56	05100
5.20	6	82	44	35	36	90.03	05200	110.41	05200	56.61	05200	56.61	05200	53.41	05200	110.56	05200
5.30	6	82	44	35	36	90.03	05300	110.41	05300	56.61	05300	56.61	05300	53.41	05300	110.56	05300
5.40	6	82	44	35	36	90.03	05400	110.41	05400	56.61	05400	56.61	05400	53.41	05400	110.56	05400
5.50	6	82	44	35	36	90.03	05500	110.41	05500	56.61	05500	56.61	05500	53.41	05500	110.56	05500

Steel	●	●	●	●	●	●
Stainless steel	●	●	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○	○	○	○	○

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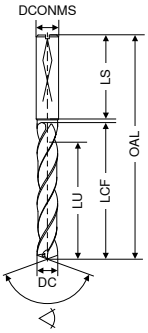
Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ **Ø DC_{h7}** for Type Speed UNI

Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 5xD



Feed UNI = Three Cutting Edges

	Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
	DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
	HA	HA	HA	HB	HE	HA
	140°	145°	140°	140°	140°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	NEW T4	NEW T4	T7	T7	T7	NEW T4
DC m7/h7	Article no. 10 789 ...	Article no. 10 771 ...	Article no. 11 786 ...	Article no. 11 787 ...	Article no. 11 785 ...	Article no. 10 735 ...
mm	£	£	£	£	£	£
5.55	90.03 05550	110.41 05550	66.28 05550	66.28 05550	53.41 05550	
5.60	90.03 05600	110.41 05600	56.61 05600	56.61 05600	53.41 05600	110.56 05600
5.70	90.03 05700	110.41 05700	56.61 05700	56.61 05700	53.41 05700	110.56 05700
5.75			56.61 05750	56.61 05750	53.41 05750	
5.80	90.03 05800	110.41 05800	56.61 05800	56.61 05800	53.41 05800	110.56 05800
5.90	90.03 05900	110.41 05900	56.61 05900	56.61 05900	53.41 05900	110.56 05900
5.95			56.61 05950	56.61 05950	53.41 05950	
6.00	90.03 06000	110.41 06000	56.61 06000	56.61 06000	53.41 06000	110.56 06000
6.10	100.76 06100	123.48 06100	63.82 06100	63.82 06100	60.97 06100	129.29 06100
6.20	100.76 06200	123.48 06200	63.82 06200	63.82 06200	60.97 06200	129.29 06200
6.30	100.76 06300	123.48 06300	63.82 06300	63.82 06300	60.97 06300	129.29 06300
6.40	100.76 06400	123.48 06400	63.82 06400	63.82 06400	60.97 06400	129.29 06400
6.50	100.76 06500	123.48 06500	63.82 06500	63.82 06500	60.97 06500	129.29 06500
6.60	100.76 06600	123.48 06600	63.82 06600	63.82 06600	60.97 06600	129.29 06600
6.70	100.76 06700	123.48 06700	63.82 06700	63.82 06700	60.97 06700	129.29 06700
6.80	100.76 06800	123.48 06800	63.82 06800	63.82 06800	60.97 06800	129.29 06800
6.90	100.76 06900	123.48 06900	63.82 06900	63.82 06900	60.97 06900	129.29 06900
7.00	100.76 07000	123.48 07000	63.82 07000	63.82 07000	60.97 07000	129.29 07000
7.10	100.76 07100	123.48 07100	63.82 07100	63.82 07100	60.97 07100	129.29 07100
7.20	100.76 07200	123.48 07200	63.82 07200	63.82 07200	60.97 07200	129.29 07200
7.30	100.76 07300	123.48 07300	63.82 07300	63.82 07300	60.97 07300	129.29 07300
7.40	100.76 07400	123.48 07400	63.82 07400	63.82 07400	60.97 07400	129.29 07400
7.45			63.82 07450	63.82 07450	63.82 07450	
7.50	100.76 07500	123.48 07500	63.82 07500	63.82 07500	60.97 07500	129.29 07500
7.60	100.76 07600	123.48 07600	63.82 07600	63.82 07600	60.97 07600	129.29 07600
7.70	100.76 07700	123.48 07700	63.82 07700	63.82 07700	60.97 07700	129.29 07700
7.80	100.76 07800	123.48 07800	63.82 07800	63.82 07800	60.97 07800	129.29 07800
7.90	100.76 07900	123.48 07900	63.82 07900	63.82 07900	60.97 07900	129.29 07900
8.00	100.76 08000	123.48 08000	63.82 08000	63.82 08000	60.97 08000	129.29 08000
8.10	145.76 08100	177.24 08100	73.97 08100	73.97 08100	68.80 08100	160.97 08100
8.20	145.76 08200	177.24 08200	73.97 08200	73.97 08200	68.80 08200	160.97 08200
8.30	145.76 08300	177.24 08300	73.97 08300	73.97 08300	68.80 08300	160.97 08300
8.40	145.76 08400	177.24 08400	73.97 08400	73.97 08400	68.80 08400	160.97 08400
8.50	145.76 08500	177.24 08500	73.97 08500	73.97 08500	68.80 08500	160.97 08500
8.60	145.76 08600	177.24 08600	73.97 08600	73.97 08600	68.80 08600	160.97 08600
8.70	145.76 08700	177.24 08700	73.97 08700	73.97 08700	68.80 08700	160.97 08700

Steel	●	●	●	●	●	●
Stainless steel	●	●	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○	○	○	○	○

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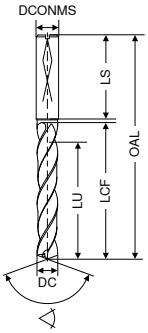
Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ Ø DC_{h7} for Type Speed UNI

Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 5xD



Feed UNI = Three Cutting Edges

Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
HA	HA	HA	HB	HE	HA
140°	145°	140°	140°	140°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
NEW T4	NEW T4	T7	T7	T7	NEW T4

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 789 ...		Article no. 10 771 ...		Article no. 11 786 ...		Article no. 11 787 ...		Article no. 11 785 ...		Article no. 10 735 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£		£		£	
8.80	10	103	61	49	40	145.76	08800	177.24	08800	73.97	08800	73.97	08800	68.80	08800	160.97	08800
8.90	10	103	61	49	40	145.76	08900	177.24	08900	73.97	08900	73.97	08900	68.80	08900	160.97	08900
9.00	10	103	61	49	40	145.76	09000	177.24	09000	73.97	09000	73.97	09000	68.80	09000	160.97	09000
9.10	10	103	61	49	40	145.76	09100	177.24	09100	73.97	09100	73.97	09100	68.80	09100	160.97	09100
9.20	10	103	61	49	40	145.76	09200	177.24	09200	73.97	09200	73.97	09200	68.80	09200	160.97	09200
9.30	10	103	61	49	40	145.76	09300	177.24	09300	73.97	09300	73.97	09300	68.80	09300	160.97	09300
9.35	10	103	61	49	40					73.97	09350	73.97	09350	68.80	09350		
9.40	10	103	61	49	40	145.76	09400	177.24	09400	73.97	09400	73.97	09400	68.80	09400	160.97	09400
9.45	10	103	61	49	40					73.97	09450	73.97	09450	68.80	09450		
9.50	10	103	61	49	40	145.76	09500	177.24	09500	73.97	09500	73.97	09500	68.80	09500	160.97	09500
9.60	10	103	61	49	40	145.76	09600	177.24	09600	73.97	09600	73.97	09600	68.80	09600	160.97	09600
9.70	10	103	61	49	40	145.76	09700	177.24	09700	73.97	09700	73.97	09700	68.80	09700	160.97	09700
9.80	10	103	61	49	40	145.76	09800	177.24	09800	73.97	09800	73.97	09800	68.80	09800	160.97	09800
9.90	10	103	61	49	40	145.76	09900	177.24	09900	73.97	09900	73.97	09900	68.80	09900	160.97	09900
10.00	10	103	61	49	40	145.76	10000	177.24	10000	73.97	10000	73.97	10000	68.80	10000	160.97	10000
10.10	12	118	71	56	45	204.07	10100	249.85	10100	104.76	10100	104.76	10100	99.07	10100	228.35	10100
10.20	12	118	71	56	45	204.07	10200	249.85	10200	104.76	10200	104.76	10200	99.07	10200	228.35	10200
10.30	12	118	71	56	45	204.07	10300	249.85	10300	104.76	10300	104.76	10300	99.07	10300	228.35	10300
10.40	12	118	71	56	45	204.07	10400	249.85	10400	104.76	10400	104.76	10400	99.07	10400	228.35	10400
10.50	12	118	71	56	45	204.07	10500	249.85	10500	104.76	10500	104.76	10500	99.07	10500	228.35	10500
10.55	12	118	71	56	45					104.76	10550	104.76	10550	99.07	10550		
10.60	12	118	71	56	45	204.07	10600	249.85	10600	104.76	10600	104.76	10600	99.07	10600	228.35	10600
10.70	12	118	71	56	45	204.07	10700	249.85	10700	104.76	10700	104.76	10700	99.07	10700	228.35	10700
10.75	12	118	71	56	45					104.76	10750	104.76	10750	99.07	10750		
10.80	12	118	71	56	45	204.07	10800	249.85	10800	104.76	10800	104.76	10800	99.07	10800	228.35	10800
10.90	12	118	71	56	45	204.07	10900	249.85	10900	104.76	10900	104.76	10900	99.07	10900	228.35	10900
11.00	12	118	71	56	45	204.07	11000	249.85	11000	104.76	11000	104.76	11000	99.07	11000	228.35	11000
11.10	12	118	71	56	45	204.07	11100	249.85	11100	104.76	11100	104.76	11100	99.07	11100	228.35	11100
11.20	12	118	71	56	45	204.07	11200	249.85	11200	104.76	11200	104.76	11200	99.07	11200	228.35	11200
11.25	12	118	71	56	45					104.76	11250	104.76	11250	99.07	11250		
11.30	12	118	71	56	45	204.07	11300	249.85	11300	104.76	11300	104.76	11300	99.07	11300	228.35	11300
11.35	12	118	71	56	45					104.76	11350	104.76	11350	99.07	11350		
11.40	12	118	71	56	45	204.07	11400	249.85	11400	104.76	11400	104.76	11400	99.07	11400	228.35	11400
11.45	12	118	71	56	45					104.76	11450	104.76	11450	99.07	11450		
11.50	12	118	71	56	45	204.07	11500	249.85	11500	104.76	11500	104.76	11500	99.07	11500	228.35	11500
11.60	12	118	71	56	45	204.07	11600	249.85	11600	104.76	11600	104.76	11600	99.07	11600	228.35	11600

Steel	●	●	●	●	●	●
Stainless steel	●	●	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○	○	○	○	○

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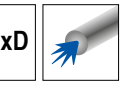
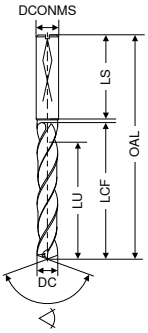
Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ Ø DC_{h7} for Type Speed UNI

Continued on next page

WTX – High Performance Drill, DIN 6537

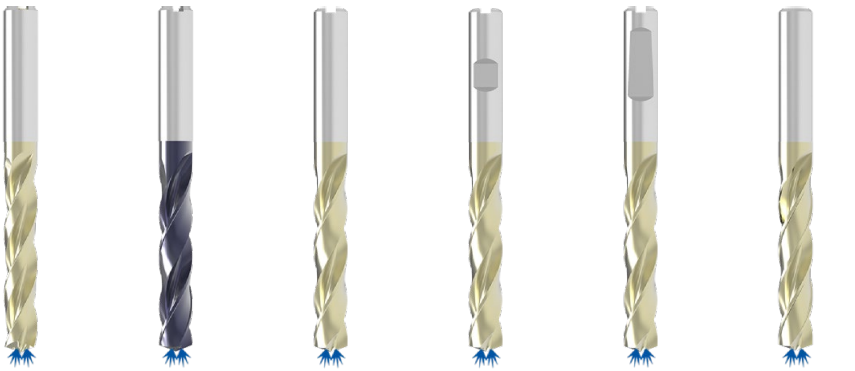
≤ 5xD





Feed UNI = Three Cutting Edges

Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



HA	HA	HA	HB	HE	HA
140°	145°	140°	140°	140°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
NEW T4	NEW T4	T7	T7	T7	NEW T4
Article no. 10 789 ...	Article no. 10 771 ...	Article no. 11 786 ...	Article no. 11 787 ...	Article no. 11 785 ...	Article no. 10 735 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS																
mm	mm	mm	mm	mm	mm	£		£		£		£		£		£					
11.70	12	118	71	56	45	204.07	11700	249.85	11700	104.76	11700	104.76	11700	99.07	11700	228.35	11700				
11.80	12	118	71	56	45	204.07	11800	249.85	11800	104.76	11800	104.76	11800	99.07	11800	228.35	11800				
11.90	12	118	71	56	45	204.07	11900	249.85	11900	104.76	11900	104.76	11900	99.07	11900	228.35	11900				
12.00	12	118	71	56	45	204.07	12000	249.85	12000	104.76	12000	104.76	12000	99.07	12000	228.35	12000				
12.15	14	124	77	60	45					141.23	12150	141.23	12150	131.19	12150						
12.20	14	124	77	60	45			339.91	12200												
12.25	14	124	77	60	45					141.23	12250	141.23	12250	131.19	12250						
12.50	14	124	77	60	45	277.55	12500	339.91	12500	141.23	12500	141.23	12500	131.19	12500	308.83	12500				
12.55	14	124	77	60	45					141.23	12550	141.23	12550	131.19	12550						
12.70	14	124	77	60	45					141.23	12700	141.23	12700	131.19	12700						
12.80	14	124	77	60	45	277.55	12800	339.91	12800	141.23	12800	141.23	12800	131.19	12800	308.83	12800				
12.90	14	124	77	60	45					131.19	12900	131.19	12900	131.19	12900						
13.00	14	124	77	60	45	277.55	13000	339.91	13000	141.23	13000	141.23	13000	131.19	13000	308.83	13000				
13.10	14	124	77	60	45					141.23	13100	141.23	13100	131.19	13100						
13.30	14	124	77	60	45					131.19	13300	131.19	13300	131.19	13300						
13.35	14	124	77	60	45					131.19	13350	131.19	13350	131.19	13350						
13.50	14	124	77	60	45	277.55	13500	339.91	13500	141.23	13500	141.23	13500	131.19	13500	308.83	13500				
13.70	14	124	77	60	45					141.23	13700	141.23	13700	131.19	13700						
13.80	14	124	77	60	45	277.55	13800	339.91	13800	141.23	13800	141.23	13800	131.19	13800	308.83	13800				
14.00	14	124	77	60	45	277.55	14000	339.91	14000	141.23	14000	141.23	14000	131.19	14000	308.83	14000				
14.20	16	133	83	63	48			424.18	14200	163.85	14200	163.85	14200	163.85	14200						
14.50	16	133	83	63	48	346.34	14500	424.18	14500	176.53	14500	176.53	14500	163.85	14500	385.54	14500				
14.80	16	133	83	63	48	346.34	14800	424.18	14800	176.53	14800	176.53	14800	163.85	14800	385.54	14800				
15.00	16	133	83	63	48	346.34	15000	424.18	15000	176.53	15000	176.53	15000	163.85	15000	385.54	15000				
15.10	16	133	83	63	48					176.53	15100	176.53	15100	163.85	15100						
15.20	16	133	83	63	48			424.18	15200												
15.25	16	133	83	63	48					176.53	15250	176.53	15250	163.85	15250						
15.30	16	133	83	63	48					171.65	15300	171.65	15300	163.85	15300						
15.35	16	133	83	63	48					171.65	15350	171.65	15350	163.85	15350						
15.50	16	133	83	63	48	346.34	15500	424.18	15500	176.53	15500	176.53	15500	163.85	15500	385.54	15500				
15.60	16	133	83	63	48					176.53	15600	176.53	15600	163.85	15600						
15.80	16	133	83	63	48	346.34	15800	424.18	15800	176.53	15800	176.53	15800	163.85	15800	385.54	15800				
16.00	16	133	83	63	48	346.34	16000	424.18	16000	176.53	16000	176.53	16000	163.85	16000	385.54	16000				
16.05	18	143	93	71	48					274.55	16050	274.55	16050	254.80	16050						
16.50	18	143	93	71	48	455.96	16500	557.82	16500	274.55	16500	274.55	16500	254.80	16500	507.13	16500				
16.80	18	143	93	71	48	455.96	16800	557.82	16800	274.55	16800	274.55	16800	254.80	16800	507.13	16800				

Steel	●	●	●	●	●	●
Stainless steel	●	●	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○	○	○	○	○

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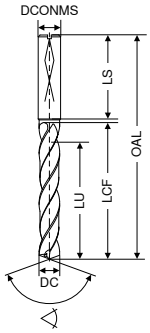
Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ **Ø DC_{h7}** for Type Speed UNI

Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 5xD



Feed UNI = Three Cutting Edges

Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

HA	HA	HA	HB	HE	HA
140°	145°	140°	140°	140°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
NEW T4	NEW T4	T7	T7	T7	NEW T4
Article no. 10 789 ...	Article no. 10 771 ...	Article no. 11 786 ...	Article no. 11 787 ...	Article no. 11 785 ...	Article no. 10 735 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS												
mm	mm	mm	mm	mm	mm	£		£		£		£		£		£	
16.90	18	143	93	71	48					274.55	16900	274.55	16900	254.80	16900		
17.00	18	143	93	71	48	455.96	17000	557.82	17000	274.55	17000	274.55	17000	254.80	17000	507.13	17000
17.50	18	143	93	71	48	455.96	17500	557.82	17500	274.55	17500	274.55	17500	254.80	17500	507.13	17500
17.60	18	143	93	71	48					274.55	17600	274.55	17600	254.80	17600		
17.80	18	143	93	71	48	455.96	17800	557.82	17800	274.55	17800	274.55	17800	254.80	17800	507.13	17800
18.00	18	143	93	71	48	455.96	18000	557.82	18000	274.55	18000	274.55	18000	254.80	18000	507.13	18000
18.50	20	153	101	77	50	590.06	18500	721.96	18500	317.89	18500	317.89	18500	282.11	18500	658.62	18500
18.80	20	153	101	77	50	590.06	18800	721.96	18800	317.89	18800	317.89	18800	282.11	18800	658.62	18800
18.90	20	153	101	77	50					317.89	18900	317.89	18900	282.11	18900		
19.00	20	153	101	77	50	590.06	19000	721.96	19000	317.89	19000	317.89	19000	282.11	19000	658.62	19000
19.35	20	153	101	77	50					317.89	19350	317.89	19350	282.11	19350		
19.50	20	153	101	77	50	590.06	19500	721.96	19500	317.89	19500	317.89	19500	282.11	19500	658.62	19500
19.60	20	153	101	77	50					317.89	19600	317.89	19600	282.11	19600		
19.80	20	153	101	77	50	590.06	19800	721.96	19800	317.89	19800	317.89	19800	282.11	19800	658.62	19800
20.00	20	153	101	77	50	590.06	20000	721.96	20000	317.89	20000	317.89	20000	282.11	20000	658.62	20000
20.50	25	200	135	110	56					817.03	20500	817.03	20500	546.03	20500		
21.00	25	200	135	110	56					817.03	21000	817.03	21000	546.03	21000		
21.50	25	200	135	110	56					817.03	21500	817.03	21500	546.03	21500		
22.00	25	200	135	110	56					817.03	22000	817.03	22000	546.03	22000		
22.50	25	200	140	120	56					817.03	22500	817.03	22500	546.03	22500		
23.00	25	200	140	120	56					817.03	23000	817.03	23000	546.03	23000		
23.50	25	200	140	120	56					817.03	23500	817.03	23500	546.03	23500		
24.00	25	200	140	120	56					817.03	24000	817.03	24000	546.03	24000		
24.50	25	200	140	120	56					817.03	24500	817.03	24500	546.03	24500		
25.00	25	200	140	120	56					817.03	25000	817.03	25000	546.03	25000		

Steel	●	●	●	●	●	●
Stainless steel	●	●	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○	○	○	○	○

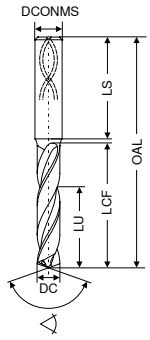
→ v_c Page 96–104

Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ **Ø DC_{h7}** for Type Speed UNI

WTX – High-performance drill, DIN 6537

≤ 5xD

Speed VA	VA	VA	GG	AL	Ti
Ti800	Ti700	Ti700	Ti700	DLC	DPA54
					DRAGONSKIN



Type GG = Straight Fluted

	HA	HA	HE	HA	HA	HA
	135°	140°	140°	130°	135°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T4	T4	T4	T4	NEW T4	T4
DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 773 ...	Article no. 10 745 ...	Article no. 10 746 ...	Article no. 10 749 ...	Article no. 10 791 ...	Article no. 10 787 ...
mm	mm	mm	mm	mm	mm	£	£	£	£	£	£
2.50	4	57	21	17	28					81.53 02500	
2.60	4	57	21	17	28					81.53 02600	
2.70	4	57	21	17	28					81.53 02700	
2.80	4	57	21	17	28					81.53 02800	
2.90	4	57	21	17	28					81.53 02900	
3.00	6	66	28	23	36	111.79 030	98.09 030	98.09 030	74.65 030	81.53 03000	72.44 030
3.10	6	66	28	23	36	111.79 031	98.09 031	98.09 031	74.65 031	81.53 03100	72.44 031
3.15	6	66	28	23	36		98.09 831				
3.20	6	66	28	23	36	111.79 032	98.09 032	98.09 032	74.65 032	81.53 03200	72.44 032
3.22	6	66	28	23	36		98.09 832				
3.25	6	66	28	23	36		98.09 890				
3.30	6	66	28	23	36	111.79 033	98.09 033	98.09 033	74.65 033	81.53 03300	72.44 033
3.40	6	66	28	23	36	111.79 034	98.09 034	98.09 034	74.65 034	81.53 03400	72.44 034
3.50	6	66	28	23	36	111.79 035	98.09 035	98.09 035	74.65 035	81.53 03500	72.44 035
3.60	6	66	28	23	36	111.79 036	98.09 036	98.09 036	74.65 036	81.53 03600	72.44 036
3.70	6	66	28	23	36	111.79 037	98.09 037	98.09 037	74.65 037	81.53 03700	72.44 037
3.80	6	74	36	29	36	111.79 038	98.09 038	98.09 038	74.65 038	78.67 03800	72.44 038
3.85	6	74	36	29	36		98.09 838				
3.90	6	74	36	29	36	111.79 039	98.09 039	98.09 039	74.65 039	78.67 03900	72.44 039
3.97	6	74	36	29	36						72.44 900
4.00	6	74	36	29	36	111.79 040	98.09 040	98.09 040	74.65 040	78.67 04000	72.44 040
4.10	6	74	36	29	36	111.79 041	98.09 041	98.09 041	74.65 041	78.67 04100	72.44 041
4.20	6	74	36	29	36	111.79 042	98.09 042	98.09 042	74.65 042	78.67 04200	72.44 042
4.23	6	74	36	29	36						72.44 901
4.30	6	74	36	29	36	111.79 043	98.09 043	98.09 043	74.65 043	78.67 04300	72.44 043
4.35	6	74	36	29	36		98.09 843				
4.40	6	74	36	29	36	111.79 044	98.09 044	98.09 044	74.65 044	78.67 04400	72.44 044
4.45	6	74	36	29	36		98.09 844				
4.50	6	74	36	29	36	111.79 045	98.09 045	98.09 045	74.65 045	78.67 04500	72.44 045
4.60	6	74	36	29	36	111.79 046	98.09 046	98.09 046	74.65 046	78.67 04600	72.44 046
4.65	6	74	36	29	36	111.79 900	98.09 900				
4.70	6	74	36	29	36	111.79 047	98.09 047	98.09 047	74.65 047	78.67 04700	72.44 047
4.80	6	82	44	35	36	111.79 048	98.09 048	98.09 048	74.65 048	79.03 04800	72.44 048
4.90	6	82	44	35	36	111.79 049	98.09 049	98.09 049	74.65 049	79.03 04900	72.44 049
5.00	6	82	44	35	36	111.79 050	98.09 050	98.09 050	74.65 050	79.03 05000	72.44 050
5.10	6	82	44	35	36	111.79 051	98.09 051	98.09 051	74.65 051	79.03 05100	72.44 051
5.20	6	82	44	35	36	111.79 052	98.09 052	98.09 052	74.65 052	79.03 05200	72.44 052
5.30	6	82	44	35	36	111.79 053	98.09 053	98.09 053	74.65 053	79.03 05300	72.44 053
5.40	6	82	44	35	36	111.79 054	98.09 054	98.09 054	74.65 054	79.03 05400	72.44 054
5.50	6	82	44	35	36	111.79 055	98.09 055	98.09 055	74.65 055	79.03 05500	72.44 055
5.55	6	82	44	35	36	111.79 902					

Steel	○	○	○			
Stainless steel	●	●	●			●
Cast iron	○	○	○	●	○	
Non ferrous metals	○	●	●	●	●	
Heat resistant alloys	○	○	○			●

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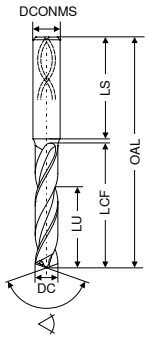
Ø DC_{m7} for Type VA, Ti and GG / Ø DC_{h7} for Type Speed VA and AL

Continued on next page

WTX – High-performance drill, DIN 6537

≤ 5xD

Speed VA	VA	VA	GG	AL	Ti
Ti800	Ti700	Ti700	Ti700	DLC	DPA54
					DRAGONSKIN



Type GG = Straight Fluted

	HA	HA	HE	HA	HA	HA
	135°	140°	140°	130°	135°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T4	T4	T4	T4	NEW T4	T4

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 773 ...		Article no. 10 745 ...		Article no. 10 746 ...		Article no. 10 749 ...		Article no. 10 791 ...		Article no. 10 787 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£		£		£	
5.56	6	82	44	35	36											72.44	902
5.60	6	82	44	35	36	111.79	056	98.09	056	98.09	056	74.65	056	79.03	05600	72.44	056
5.70	6	82	44	35	36	111.79	057	98.09	057	98.09	057	74.65	057	79.03	05700	72.44	057
5.75	6	82	44	35	36			98.09	916								
5.80	6	82	44	35	36	111.79	058	98.09	058	98.09	058	74.65	058	79.03	05800	72.44	058
5.90	6	82	44	35	36	111.79	059	98.09	059	98.09	059	74.65	059	79.03	05900	72.44	059
5.95	6	82	44	35	36			98.09	959								
6.00	6	82	44	35	36	111.79	060	98.09	060	98.09	060	74.65	060	79.03	06000	72.44	060
6.10	8	91	53	43	36	125.15	061	115.95	061	115.95	061	82.42	061	88.20	06100	80.83	061
6.20	8	91	53	43	36	125.15	062	115.95	062	115.95	062	82.42	062	88.20	06200	80.83	062
6.30	8	91	53	43	36	125.15	063	115.95	063	115.95	063	82.42	063	88.20	06300	80.83	063
6.35	8	91	53	43	36											80.83	903
6.40	8	91	53	43	36	125.15	064	115.95	064	115.95	064	82.42	064	88.20	06400	80.83	064
6.50	8	91	53	43	36	125.15	065	115.95	065	115.95	065	82.42	065	88.20	06500	80.83	065
6.60	8	91	53	43	36	125.15	066	115.95	066	115.95	066	82.42	066	88.20	06600	80.83	066
6.70	8	91	53	43	36	125.15	067	115.95	067	115.95	067	82.42	067	88.20	06700	80.83	067
6.80	8	91	53	43	36	125.15	068	115.95	068	115.95	068	82.42	068	88.20	06800	80.83	068
6.90	8	91	53	43	36	125.15	069	115.95	069	115.95	069	82.42	069	88.20	06900	80.83	069
7.00	8	91	53	43	36	125.15	070	115.95	070	115.95	070	82.42	070	88.20	07000	80.83	070
7.10	8	91	53	43	36	125.15	071	115.95	071	115.95	071	82.42	071	88.20	07100	80.83	071
7.20	8	91	53	43	36	125.15	072	115.95	072	115.95	072	82.42	072	88.20	07200	80.83	072
7.30	8	91	53	43	36	125.15	073	115.95	073	115.95	073	82.42	073	88.20	07300	80.83	073
7.40	8	91	53	43	36	125.15	074	115.95	074	115.95	074	82.42	074	88.20	07400	80.83	074
7.45	8	91	53	43	36			115.95	924								
7.50	8	91	53	43	36	125.15	075	115.95	075	115.95	075	82.42	075	88.20	07500	80.83	075
7.60	8	91	53	43	36	125.15	076	115.95	076	115.95	076	82.42	076	88.20	07600	80.83	076
7.70	8	91	53	43	36	125.15	077	115.95	077	115.95	077	82.42	077	88.20	07700	80.83	077
7.80	8	91	53	43	36	125.15	078	115.95	078	115.95	078	82.42	078	88.20	07800	80.83	078
7.90	8	91	53	43	36	125.15	079	115.95	079	115.95	079	82.42	079	88.20	07900	80.83	079
7.94	8	91	53	43	36											80.83	904
8.00	8	91	53	43	36	125.15	080	115.95	080	115.95	080	82.42	080	88.20	08000	80.83	080
8.10	10	103	61	49	40	181.10	081	146.02	081	146.02	081	119.16	081	103.29	08100	94.65	081
8.20	10	103	61	49	40	181.10	082	146.02	082	146.02	082	119.16	082	103.29	08200	94.65	082
8.30	10	103	61	49	40	181.10	083	146.02	083	146.02	083	119.16	083	103.29	08300	94.65	083
8.40	10	103	61	49	40	181.10	084	146.02	084	146.02	084	119.16	084	103.29	08400	94.65	084
8.50	10	103	61	49	40	181.10	085	146.02	085	146.02	085	119.16	085	103.29	08500	94.65	085
8.60	10	103	61	49	40	181.10	086	146.02	086	146.02	086	119.16	086	103.29	08600	94.65	086
8.70	10	103	61	49	40	181.10	087	146.02	087	146.02	087	119.16	087	103.29	08700	94.65	087
8.80	10	103	61	49	40	181.10	088	146.02	088	146.02	088	119.16	088	103.29	08800	94.65	088
8.90	10	103	61	49	40	181.10	089	146.02	089	146.02	089	119.16	089	103.29	08900	94.65	089
9.00	10	103	61	49	40	181.10	090	146.02	090	146.02	090	119.16	090	103.29	09000	94.65	090

Steel	○	○	○			
Stainless steel	●	●	●			●
Cast iron	○	○	○	●	○	
Non ferrous metals	○	●	●	●	●	
Heat resistant alloys	○	○	○			●

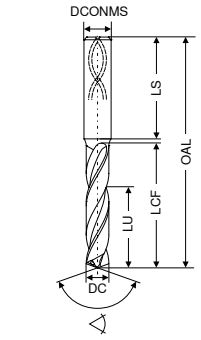
→ v_c Page 95–108

Ø DC_{m7} for Type VA, Ti and GG / Ø DC_{h7} for Type Speed VA and AL

Continued on next page

WTX – High-performance drill, DIN 6537

≤ 5xD



Type GG = Straight Fluted

Speed VA	VA	VA	GG	AL	Ti
Ti800	Ti700	Ti700	Ti700	DLC	DPA54
					DRAGONSKIN

	HA	HA	HE	HA	HA	HA
	135°	140°	140°	130°	135°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T4	T4	T4	T4	NEW T4	T4
DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 773 ...		Article no. 10 745 ...		Article no. 10 746 ...		Article no. 10 749 ...		Article no. 10 791 ...		Article no. 10 787 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£		£		£	
9.10	10	103	61	49	40	181.10	091	146.02	091	146.02	091	119.16	091	103.29	09100	94.65	091
9.20	10	103	61	49	40	181.10	092	146.02	092	146.02	092	119.16	092	103.29	09200	94.65	092
9.30	10	103	61	49	40	181.10	093	146.02	093	146.02	093	119.16	093	103.29	09300	94.65	093
9.35	10	103	61	49	40			146.02	930								
9.40	10	103	61	49	40	181.10	094	146.02	094	146.02	094	119.16	094	103.29	09400	94.65	094
9.45	10	103	61	49	40			146.02	994								
9.50	10	103	61	49	40	181.10	095	146.02	095	146.02	095	119.16	095	103.29	09500	94.65	095
9.53	10	103	61	49	40											94.65	905
9.60	10	103	61	49	40	181.10	096	146.02	096	146.02	096	119.16	096	103.29	09600	94.65	096
9.70	10	103	61	49	40	181.10	097	146.02	097	146.02	097	119.16	097	103.29	09700	94.65	097
9.80	10	103	61	49	40	181.10	098	146.02	098	146.02	098	119.16	098	103.29	09800	94.65	098
9.90	10	103	61	49	40	181.10	099	146.02	099	146.02	099	119.16	099	103.29	09900	94.65	099
10.00	10	103	61	49	40	181.10	100	146.02	100	146.02	100	119.16	100	103.29	10000	94.65	100
10.10	12	118	71	54	45											132.13	101
10.10	12	118	71	56	45	253.86	101	198.30	101	198.30	101	163.50	101	144.11	10100		
10.20	12	118	71	54	45											132.13	102
10.20	12	118	71	56	45	253.86	102	198.30	102	198.30	102	163.50	102	144.11	10200		
10.30	12	118	71	54	45											132.13	103
10.30	12	118	71	56	45	253.86	103	198.30	103	198.30	103	163.50	103	144.11	10300		
10.40	12	118	71	54	45											132.13	104
10.40	12	118	71	56	45	253.86	104	198.30	104	198.30	104	163.50	104	144.11	10400		
10.50	12	118	71	56	45	253.86	105	198.30	105	198.30	105	163.50	105	144.11	10500		
10.50	12	118	71	54	45											132.13	105
10.55	12	118	71	56	45			198.30	932								
10.60	12	118	71	56	45	253.86	106	198.30	106	198.30	106	163.50	106	144.11	10600		
10.60	12	118	71	54	45											132.13	106
10.70	12	118	71	54	45											132.13	107
10.70	12	118	71	56	45	253.86	107	198.30	107	198.30	107	163.50	107	144.11	10700		
10.80	12	118	71	54	45											132.13	108
10.80	12	118	71	56	45	253.86	108	198.30	108	198.30	108	163.50	108	144.11	10800		
10.90	12	118	71	54	45											132.13	109
10.90	12	118	71	56	45	253.86	109	198.30	109	198.30	109	163.50	109				
11.00	12	118	71	54	45											132.13	110
11.00	12	118	71	56	45	253.86	110	198.30	110	198.30	110	163.50	110	144.11	11000		
11.10	12	118	71	56	45	253.86	111	198.30	111	198.30	111	163.50	111	144.11	11100		
11.10	12	118	71	54	45											132.13	111
11.11	12	118	71	54	45											132.13	906
11.20	12	118	71	56	45	253.86	112	198.30	112	198.30	112	163.50	112	144.11	11200		
11.20	12	118	71	54	45											132.13	112
11.25	12	118	71	56	45			198.30	912								
11.30	12	118	71	56	45	253.86	113	198.30	113	198.30	113	163.50	113	144.11	11300		

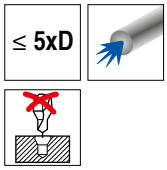
Steel	○	○	○			
Stainless steel	●	●	●			●
Cast iron	○	○	○	●	○	
Non ferrous metals	○	●	●	●	●	
Heat resistant alloys	○	○	○			●

→ v_c Page 95–108

Ø DC_{m7} for Type VA, Ti and GG / Ø DC_{h7} for Type Speed VA and AL

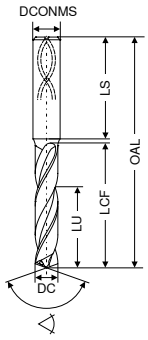
WTX – High-performance drill, DIN 6537

≤ 5xD



Speed VA	VA	VA	GG	AL	Ti
Ti800	Ti700	Ti700	Ti700	DLC	DPA54

DRAGONSKIN



Type GG = Straight Fluted

HA | HA | HE | HA | HA | HA

135° | 140° | 140° | 130° | 135° | 140°

Solid carbide | Solid carbide | Solid carbide | Solid carbide | Solid carbide | Solid carbide

T4 | T4 | T4 | T4 | NEW T4 | T4

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 773 ...		Article no. 10 745 ...		Article no. 10 746 ...		Article no. 10 749 ...		Article no. 10 791 ...		Article no. 10 787 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£		£		£	
11.30	12	118	71	54	45											132.13	113
11.35	12	118	71	56	45			198.30	913								
11.40	12	118	71	54	45											132.13	114
11.40	12	118	71	56	45	253.86	114	198.30	114	198.30	114	163.50	114	144.11	11400		
11.45	12	118	71	56	45			198.30	914								
11.50	12	118	71	56	45	253.86	115	198.30	115	198.30	115	163.50	115	144.11	11500		
11.50	12	118	71	54	45											132.13	115
11.60	12	118	71	54	45											132.13	116
11.60	12	118	71	56	45	253.86	116	198.30	116	198.30	116	163.50	116				
11.70	12	118	71	54	45											132.13	117
11.70	12	118	71	56	45	253.86	117	198.30	117	198.30	117	163.50	117	144.11	11700		
11.80	12	118	71	54	45											132.13	118
11.80	12	118	71	56	45	253.86	118	198.30	118	198.30	118	163.50	118	144.11	11800		
11.90	12	118	71	54	45											132.13	119
11.90	12	118	71	56	45	253.86	119	198.30	119	198.30	119	163.50	119				
12.00	12	118	71	54	45											132.13	120
12.00	12	118	71	56	45	253.86	120	198.30	120	198.30	120	163.50	120	144.11	12000		
12.10	14	124	77	58	45											183.78	121
12.15	14	124	77	60	45			273.27	921								
12.20	14	124	77	58	45											183.78	122
12.20	14	124	77	60	45									200.04	12200		
12.30	14	124	77	58	45											183.78	123
12.40	14	124	77	58	45											183.78	124
12.50	14	124	77	58	45											183.78	125
12.50	14	124	77	60	45	344.42	125	273.27	125	273.27	125	221.33	125	200.04	12500		
12.55	14	124	77	60	45			273.27	925								
12.60	14	124	77	58	45											183.78	126
12.60	14	124	77	60	45									200.04	12600		
12.70	14	124	77	58	45											183.78	907
12.80	14	124	77	58	45											183.78	128
12.80	14	124	77	60	45	344.42	128	273.27	128	273.27	128	221.33	128	200.04	12800		
12.90	14	124	77	58	45											183.78	129
13.00	14	124	77	58	45											183.78	130
13.00	14	124	77	60	45	344.42	130	273.27	130	273.27	130	221.33	130	200.04	13000		
13.10	14	124	77	58	45											183.78	131
13.20	14	124	77	58	45											183.78	132
13.30	14	124	77	58	45											183.78	133
13.35	14	124	77	60	45			273.27	933								
13.40	14	124	77	58	45											183.78	134
13.50	14	124	77	60	45	344.42	135	273.27	135	273.27	135	221.33	135	200.04	13500		
13.50	14	124	77	58	45											183.78	135

Steel	○	○	○			
Stainless steel	●	●	●			●
Cast iron	○	○	○	●	○	
Non ferrous metals	○	●	●	●	●	
Heat resistant alloys	○	○	○			●

→ v_c Page 95–108

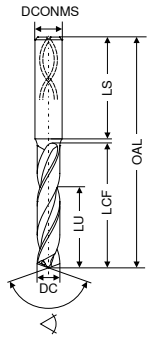
Ø DC_{m7} for Type VA, Ti and GG / **Ø DC_{h7}** for Type Speed VA and AL

Continued on next page

WTX – High-performance drill, DIN 6537

≤ 5xD

Speed VA	VA	VA	GG	AL	Ti
Ti800	Ti700	Ti700	Ti700	DLC	DPA54
					DRAGONSKIN



Type GG = Straight Fluted

	HA	HA	HE	HA	HA	HA
	135°	140°	140°	130°	135°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T4	T4	T4	T4	NEW T4	T4
DC m7/h7	Article no. 10 773 ...	Article no. 10 745 ...	Article no. 10 746 ...	Article no. 10 749 ...	Article no. 10 791 ...	Article no. 10 787 ...
mm	£	£	£	£	£	£
13.60						183.78 136
13.70						183.78 137
13.80						183.78 138
13.80	344.42 138	273.27 138	273.27 138	221.33 138	200.04 13800	
13.90						183.78 139
14.00	344.42 140	273.27 140	273.27 140	221.33 140	200.04 14000	
14.00						183.78 140
14.10						224.60 141
14.20						224.60 142
14.20					244.62 14200	
14.30						224.60 143
14.40						224.60 144
14.50						224.60 145
14.50	430.52 145	344.28 145	344.28 145	273.37 145	244.62 14500	
14.60						224.60 146
14.70						224.60 147
14.80						224.60 148
14.80	430.52 148	344.28 148	344.28 148	273.37 148	244.62 14800	
14.90						224.60 149
15.00						224.60 150
15.00	430.52 150	344.28 150	344.28 150	273.37 150	244.62 15000	
15.10						224.60 151
15.20						224.60 152
15.20					244.62 15200	
15.30						224.60 153
15.35		344.28 953				
15.40						224.60 154
15.50						224.60 155
15.50	430.52 155	344.28 155	344.28 155	273.37 155	244.62 15500	
15.60						224.60 156
15.70						224.60 157
15.80						224.60 158
15.80	430.52 158	344.28 158	344.28 158	273.37 158	244.62 15800	
15.90						224.60 159
16.00						224.60 160
16.00	430.52 160	344.28 160	344.28 160	273.37 160	244.62 16000	
16.05		475.31 960				
16.10						224.60 161
16.20						224.60 162
16.30						224.60 163
16.40						224.60 164

DCONMS h6	OAL	LCF	LU	LS
mm	mm	mm	mm	mm

Steel	○	○	○			
Stainless steel	●	●	●			●
Cast iron	○	○	○	●	○	
Non ferrous metals	○	●	●	●	●	
Heat resistant alloys	○	○	○			●

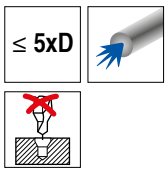
→ v_c Page 95–108

Ø DC_{m7} for Type VA, Ti and GG / **Ø DC_{h7}** for Type Speed VA and AL

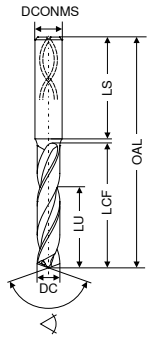
Continued on next page

WTX – High-performance drill, DIN 6537

≤ 5xD



Speed VA	VA	VA	GG	AL	Ti
Ti800	Ti700	Ti700	Ti700	DLC	DPA54
					DRAGONSKIN



Type GG = Straight Fluted

	HA	HA	HE	HA	HA	HA
	135°	140°	140°	130°	135°	140°
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
	T4	T4	T4	T4	NEW T4	T4
DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 773 ...		Article no. 10 745 ...		Article no. 10 746 ...		Article no. 10 749 ...		Article no. 10 791 ...		Article no. 10 787 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£		£		£	
16.50	18	143	93	69	48											311.09	165
16.50	18	143	93	71	48	567.11	165	475.31	165	475.31	165	358.91	165	339.62	16500		
16.60	18	143	93	69	48											311.09	166
16.70	18	143	93	69	48											311.09	167
16.80	18	143	93	69	48											311.09	168
16.80	18	143	93	71	48	567.11	168	475.31	168	475.31	168	358.91	168				
16.90	18	143	93	69	48											311.09	169
17.00	18	143	93	71	48	567.11	170	475.31	170	475.31	170	358.91	170	339.62	17000		
17.00	18	143	93	69	48											311.09	170
17.10	18	143	93	69	48											311.09	171
17.20	18	143	93	69	48											311.09	172
17.30	18	143	93	69	48											311.09	173
17.40	18	143	93	69	48											311.09	174
17.50	18	143	93	69	48											311.09	175
17.50	18	143	93	71	48	567.11	175	475.31	175	475.31	175	358.91	175	339.62	17500		
17.60	18	143	93	69	48											311.09	176
17.70	18	143	93	69	48											311.09	177
17.80	18	143	93	69	48											311.09	178
17.80	18	143	93	71	48	567.11	178	475.31	178	475.31	178	358.91	178				
17.90	18	143	93	69	48											311.09	179
18.00	18	143	93	69	48											311.09	180
18.00	18	143	93	71	48	567.11	180	475.31	180	475.31	180	358.91	180	339.62	18000		
18.10	20	153	101	75	50											384.35	181
18.20	20	153	101	75	50											384.35	182
18.30	20	153	101	75	50											384.35	183
18.40	20	153	101	75	50											384.35	184
18.50	20	153	101	75	50											384.35	185
18.50	20	153	101	77	50	733.39	185	563.20	185	563.20	185	462.00	185	419.38	18500		
18.60	20	153	101	75	50											384.35	186
18.70	20	153	101	75	50											384.35	187
18.80	20	153	101	75	50											384.35	188
18.80	20	153	101	77	50	733.39	188	563.20	188	563.20	188	462.00	188				
18.90	20	153	101	75	50											384.35	189
19.00	20	153	101	75	50											384.35	190
19.00	20	153	101	77	50	733.39	190	563.20	190	563.20	190	462.00	190	419.38	19000		
19.10	20	153	101	75	50											384.35	191
19.20	20	153	101	75	50											384.35	192
19.30	20	153	101	75	50											384.35	193
19.35	20	153	101	77	50			563.20	993								
19.40	20	153	101	75	50											384.35	194
19.50	20	153	101	77	50	733.39	195	563.20	195	563.20	195	462.00	195	419.38	19500		

Steel	○	○	○			
Stainless steel	●	●	●			●
Cast iron	○	○	○	●	○	
Non ferrous metals	○	●	●	●	●	
Heat resistant alloys	○	○	○			●

→ v_c Page 95–108

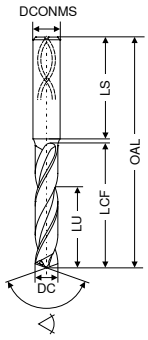
Ø DC_{m7} for Type VA, Ti and GG / Ø DC_{h7} for Type Speed VA and AL

Continued on next page

WTX – High-performance drill, DIN 6537

≤ 5xD

Speed VA	VA	VA	GG	AL	Ti
Ti800	Ti700	Ti700	Ti700	DLC	DPA54
					DRAGONSKIN



Type GG = Straight Fluted

HA | HA | HE | HA | HA | HA

135° | 140° | 140° | 130° | 135° | 140°

Solid carbide | Solid carbide | Solid carbide | Solid carbide | Solid carbide | Solid carbide

T4 | T4 | T4 | T4 | NEW T4 | T4

DC $_{m7/h7}$	DCONMS $_{h6}$	OAL	LCF	LU	LS	Article no. 10 773 ...		Article no. 10 745 ...		Article no. 10 746 ...		Article no. 10 749 ...		Article no. 10 791 ...		Article no. 10 787 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£		£		£	
19.50	20	153	101	75	50											384.35	**195**
19.60	20	153	101	75	50											384.35	**196**
19.70	20	153	101	75	50											384.35	**197**
19.80	20	153	101	77	50	733.39	**198**	563.20	**198**	563.20	**198**	462.00	**198**				
19.80	20	153	101	75	50											384.35	**198**
19.90	20	153	101	75	50											384.35	**199**
20.00	20	153	101	75	50											384.35	**200**
20.00	20	153	101	77	50	733.39	**200**	563.20	**200**	563.20	**200**	462.00	**200**	419.38	**20000**		

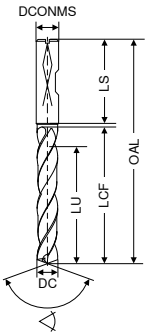
Steel	○	○	○			
Stainless steel	●	●	●			●
Cast iron	○	○	○	●	○	
Non ferrous metals	○	●	●	●	●	
Heat resistant alloys	○	○	○			●

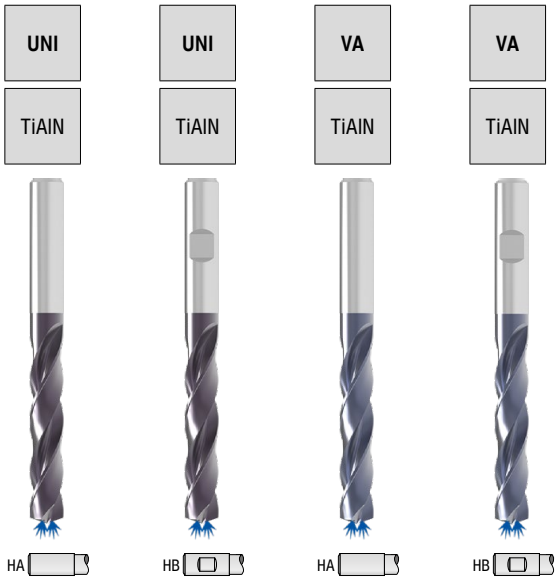
→ v_c Page 95–108

Ø DC$_{m7}$ for Type VA, Ti and GG / **Ø DC$_{h7}$** for Type Speed VA and AL

WPC – High Performance Drill, DIN 6537

≤ 5xD





140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 609 ...		Article no. 11 610 ...		Article no. 11 629 ...		Article no. 11 630 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£	
1.00	4	45	8.0	6.5	30.0	34.39	010			34.39	010		
1.10	4	45	8.8	7.2	29.0	34.39	011			34.39	011		
1.20	4	45	9.6	7.8	29.0	34.39	012			34.39	012		
1.30	4	45	10.4	8.5	28.5	34.39	013			34.39	013		
1.40	4	45	11.2	9.1	28.0	34.39	014			34.39	014		
1.50	4	50	12.0	9.8	32.0	34.39	015			34.39	015		
1.60	4	50	12.8	10.4	31.0	34.39	016			34.39	016		
1.70	4	50	13.6	11.1	30.5	34.39	017			34.39	017		
1.80	4	50	14.4	11.7	30.0	34.39	018			34.39	018		
1.90	4	50	15.2	12.4	29.5	34.39	019			34.39	019		
2.00	4	50	16.0	13.0	29.0	34.39	020			34.39	020		
2.10	4	55	16.8	13.7	33.0	34.39	021			34.39	021		
2.20	4	55	17.6	14.3	32.5	34.39	022			34.39	022		
2.30	4	55	18.4	15.0	32.0	34.39	023			34.39	023		
2.40	4	55	19.2	15.6	31.5	34.39	024			34.39	024		
2.50	4	55	20.0	16.3	30.5	34.39	025			34.39	025		
2.60	4	55	20.8	16.9	30.0	34.39	026			34.39	026		
2.70	4	55	21.6	17.6	29.0	34.39	027			34.39	027		
2.80	4	55	22.4	18.2	29.0	34.39	028			34.39	028		
2.90	4	55	23.2	18.9	28.5	34.39	029			34.39	029		
3.00	6	66	28.0	23.0	36.0	34.39	030	35.00	030	34.39	030	35.00	030
3.10	6	66	28.0	23.0	36.0	34.39	031	35.00	031	34.39	031	35.00	031
3.20	6	66	28.0	23.0	36.0	34.39	032	35.00	032	34.39	032	35.00	032
3.25	6	66	28.0	23.0	36.0	34.87	890	34.87	890	47.87	03250		
3.30	6	66	28.0	23.0	36.0	34.39	033	35.00	033	34.39	033	35.00	033
3.40	6	66	28.0	23.0	36.0	34.39	034	35.00	034	34.39	034	35.00	034
3.50	6	66	28.0	23.0	36.0	34.39	035	35.00	035	34.39	035	35.00	035
3.60	6	66	28.0	23.0	36.0	34.39	036	35.00	036	34.39	036	35.00	036
3.70	6	66	28.0	23.0	36.0	34.39	037	35.00	037	34.39	037	35.00	037
3.80	6	74	36.0	29.0	36.0	34.39	038	35.00	038	34.39	038	35.00	038
3.90	6	74	36.0	29.0	36.0	34.39	039	35.00	039	34.39	039	35.00	039
4.00	6	74	36.0	29.0	36.0	34.87	040	36.33	040	34.87	040	36.33	040
4.10	6	74	36.0	29.0	36.0	34.87	041	36.33	041	34.87	041	36.33	041
4.20	6	74	36.0	29.0	36.0	34.87	042	36.33	042	34.87	042	36.33	042
4.30	6	74	36.0	29.0	36.0	34.87	043	36.33	043	34.87	043	36.33	043
4.40	6	74	36.0	29.0	36.0	34.87	044	36.33	044	34.87	044	36.33	044
4.50	6	74	36.0	29.0	36.0	34.87	045	36.33	045	34.87	045	36.33	045
4.60	6	74	36.0	29.0	36.0	34.87	046	36.33	046	34.87	046	36.33	046
4.65	6	74	36.0	29.0	36.0	34.87	900	36.33	900	34.87	900	36.33	900
4.70	6	74	36.0	29.0	36.0	34.87	047	36.33	047	34.87	047	36.33	047
4.80	6	82	44.0	35.0	36.0	34.87	048	36.33	048	34.87	048	36.33	048
4.90	6	82	44.0	35.0	36.0	34.87	049	36.33	049	34.87	049	36.33	049
5.00	6	82	44.0	35.0	36.0	34.87	050	36.33	050	34.87	050	36.33	050
5.10	6	82	44.0	35.0	36.0	34.87	051	36.33	051	34.87	051	36.33	051

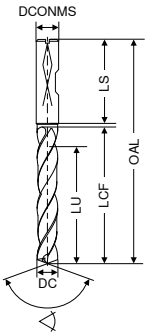
Steel	●	●	○	○
Stainless steel	○	○	●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys			●	●

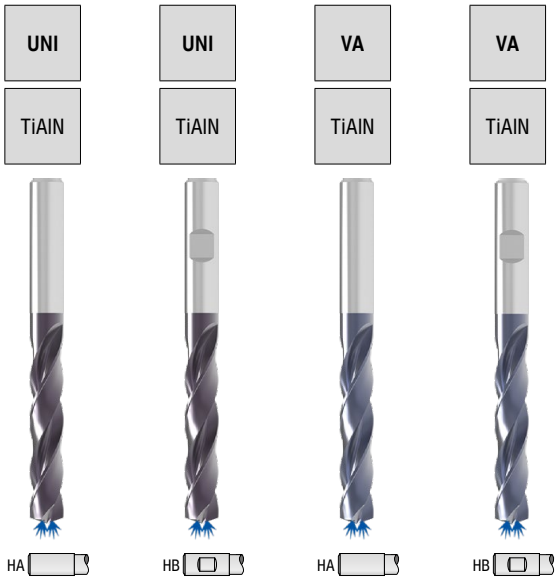
→ v_c Page 117+121

Continued on next page

WPC – High Performance Drill, DIN 6537

≤ 5xD





140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 609 ...		Article no. 11 610 ...		Article no. 11 629 ...		Article no. 11 630 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£	
5.20	6	82	44.0	35.0	36.0	34.87	052	36.33	052	34.87	052	36.33	052
5.30	6	82	44.0	35.0	36.0	34.87	053	36.33	053	34.87	053	36.33	053
5.40	6	82	44.0	35.0	36.0	34.87	054	36.33	054	34.87	054	36.33	054
5.50	6	82	44.0	35.0	36.0	34.87	055	36.33	055	34.87	055	36.33	055
5.55	6	82	44.0	35.0	36.0	34.87	902	36.33	902	34.87	902	36.33	902
5.60	6	82	44.0	35.0	36.0	34.87	056	36.33	056	34.87	056	36.33	056
5.70	6	82	44.0	35.0	36.0	34.87	057	36.33	057	34.87	057	36.33	057
5.80	6	82	44.0	35.0	36.0	34.87	058	36.33	058	34.87	058	36.33	058
5.90	6	82	44.0	35.0	36.0	34.87	059	36.33	059	34.87	059	36.33	059
6.00	6	82	44.0	35.0	36.0	34.87	060	36.33	060	34.87	060	36.33	060
6.10	8	91	53.0	43.0	36.0	39.23	061	36.83	061	39.23	061	39.23	061
6.20	8	91	53.0	43.0	36.0	39.23	062	36.83	062	39.23	062	39.23	062
6.30	8	91	53.0	43.0	36.0	39.23	063	36.83	063	39.23	063	39.23	063
6.40	8	91	53.0	43.0	36.0	39.23	064	36.83	064	39.23	064	39.23	064
6.50	8	91	53.0	43.0	36.0	39.23	065	40.69	065	39.23	065	40.69	065
6.60	8	91	53.0	43.0	36.0	39.23	066	40.69	066	39.23	066	40.69	066
6.70	8	91	53.0	43.0	36.0	39.23	067	40.69	067	39.23	067	40.69	067
6.80	8	91	53.0	43.0	36.0	39.23	068	40.69	068	39.23	068	40.69	068
6.90	8	91	53.0	43.0	36.0	39.23	069	40.69	069	39.23	069	40.69	069
7.00	8	91	53.0	43.0	36.0	39.23	070	40.69	070	39.23	070	40.69	070
7.10	8	91	53.0	43.0	36.0	39.23	071	40.69	071	39.23	071	40.69	071
7.20	8	91	53.0	43.0	36.0	39.23	072	40.69	072	39.23	072	40.69	072
7.30	8	91	53.0	43.0	36.0	39.23	073	40.69	073	39.23	073	40.69	073
7.40	8	91	53.0	43.0	36.0	39.23	074	40.69	074	39.23	074	40.69	074
7.45	8	91	53.0	43.0	36.0	39.23	924	39.23	924	55.05	07450		
7.50	8	91	53.0	43.0	36.0	39.23	075	40.69	075	39.23	075	40.69	075
7.55	8	91	53.0	43.0	36.0	39.23	975	40.69	975	39.23	975	40.69	975
7.60	8	91	53.0	43.0	36.0	39.23	076	40.69	076	39.23	076	40.69	076
7.70	8	91	53.0	43.0	36.0	39.23	077	40.69	077	39.23	077	40.69	077
7.80	8	91	53.0	43.0	36.0	39.23	078	40.69	078	39.23	078	40.69	078
7.90	8	91	53.0	43.0	36.0	39.23	079	40.69	079	39.23	079	40.69	079
8.00	8	91	53.0	43.0	36.0	39.23	080	40.69	080	39.23	080	40.69	080
8.10	10	103	61.0	49.0	40.0	45.05	081	46.49	081	45.05	081	45.05	081
8.20	10	103	61.0	49.0	40.0	45.05	082	46.49	082	45.05	082	45.05	082
8.30	10	103	61.0	49.0	40.0	45.05	083	46.49	083	45.05	083	45.05	083
8.40	10	103	61.0	49.0	40.0	45.05	084	46.49	084	45.05	084	45.05	084
8.50	10	103	61.0	49.0	40.0	45.05	085	46.49	085	45.05	085	45.05	085
8.60	10	103	61.0	49.0	40.0	45.05	086	46.49	086	45.05	086	45.05	086
8.70	10	103	61.0	49.0	40.0	45.05	087	46.49	087	45.05	087	45.05	087
8.80	10	103	61.0	49.0	40.0	45.05	088	46.49	088	45.05	088	45.05	088
8.90	10	103	61.0	49.0	40.0	45.05	089	46.49	089	45.05	089	45.05	089
9.00	10	103	61.0	49.0	40.0	45.05	090	46.49	090	45.05	090	45.05	090
9.10	10	103	61.0	49.0	40.0	45.05	091	46.49	091	45.05	091	45.05	091
9.20	10	103	61.0	49.0	40.0	45.05	092	46.49	092	45.05	092	45.05	092

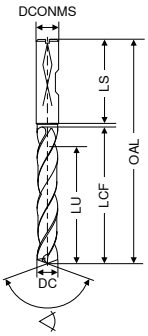
Steel	●	●	○	○
Stainless steel	○	○	●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys			●	●

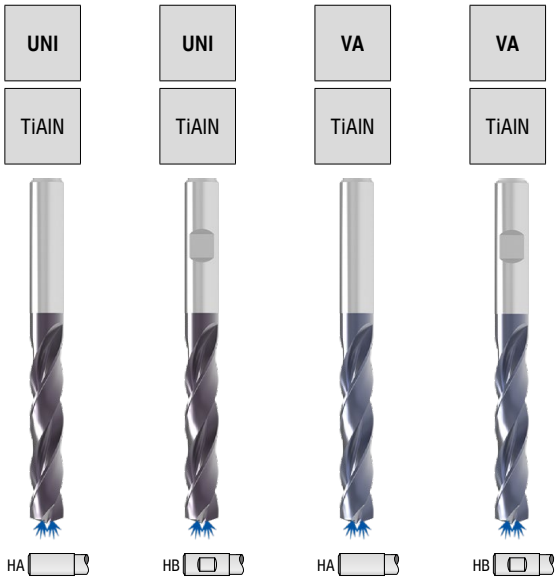
→ v_c Page 117+121

Continued on next page

WPC – High Performance Drill, DIN 6537

≤ 5xD





140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 609 ...		Article no. 11 610 ...		Article no. 11 629 ...		Article no. 11 630 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£	
9.25	10	103	61.0	49.0	40.0	45.05	925	46.49	925	45.05	925	45.05	925
9.30	10	103	61.0	49.0	40.0	45.05	093	46.49	093	45.05	093	45.05	093
9.35	10	103	61.0	49.0	40.0	45.05	930	45.05	930	61.34	09350		
9.40	10	103	61.0	49.0	40.0	45.05	094	46.49	094	45.05	094	45.05	094
9.50	10	103	61.0	49.0	40.0	45.05	095	46.49	095	45.05	095	45.05	095
9.60	10	103	61.0	49.0	40.0	45.05	096	46.49	096	45.05	096	45.05	096
9.70	10	103	61.0	49.0	40.0	45.05	097	46.49	097	45.05	097	45.05	097
9.80	10	103	61.0	49.0	40.0	45.05	098	46.49	098	45.05	098	45.05	098
9.90	10	103	61.0	49.0	40.0	45.05	099	46.49	099	45.05	099	45.05	099
10.00	10	103	61.0	49.0	40.0	45.05	100	46.49	100	45.05	100	45.05	100
10.10	12	118	71.0	56.0	45.0	65.36	101	68.29	101	65.36	101	68.29	101
10.20	12	118	71.0	56.0	45.0	65.36	102	68.29	102	65.36	102	68.29	102
10.30	12	118	71.0	56.0	45.0	65.36	103	68.29	103	65.36	103	68.29	103
10.40	12	118	71.0	56.0	45.0	65.36	104	68.29	104	65.36	104	68.29	104
10.50	12	118	71.0	56.0	45.0	65.36	105	68.29	105	65.36	105	68.29	105
10.60	12	118	71.0	56.0	45.0	65.36	106	68.29	106	65.36	106	68.29	106
10.70	12	118	71.0	56.0	45.0	65.36	107	68.29	107	65.36	107	68.29	107
10.75	12	118	71.0	56.0	45.0	65.36	904	65.36	904	89.12	10750		
10.80	12	118	71.0	56.0	45.0	65.36	108	68.29	108	65.36	108	68.29	108
10.90	12	118	71.0	56.0	45.0	65.36	109	68.29	109	65.36	109	68.29	109
11.00	12	118	71.0	56.0	45.0	65.36	110	68.29	110	65.36	110	68.29	110
11.10	12	118	71.0	56.0	45.0	65.36	111	68.29	111	65.36	111	68.29	111
11.20	12	118	71.0	56.0	45.0	65.36	112	68.29	112	65.36	112	68.29	112
11.25	12	118	71.0	56.0	45.0	65.36	912	65.36	912	88.35	11250		
11.30	12	118	71.0	56.0	45.0	65.36	113	68.29	113	65.36	113	68.29	113
11.40	12	118	71.0	56.0	45.0	65.36	114	68.29	114	65.36	114	68.29	114
11.50	12	118	71.0	56.0	45.0	65.36	115	68.29	115	65.36	115	68.29	115
11.60	12	118	71.0	56.0	45.0	65.36	116	68.29	116	65.36	116	68.29	116
11.70	12	118	71.0	56.0	45.0	65.36	117	68.29	117	65.36	117	68.29	117
11.80	12	118	71.0	56.0	45.0	65.36	118	68.29	118	65.36	118	68.29	118
11.90	12	118	71.0	56.0	45.0	65.36	119	68.29	119	65.36	119	68.29	119
12.00	12	118	71.0	56.0	45.0	65.36	120	68.29	120	65.36	120	68.29	120
12.25	14	124	77.0	60.0	45.0	88.61	122	88.61	122	122.13	12250		
12.50	14	124	77.0	60.0	45.0	88.61	125	92.97	125	88.61	125	92.97	125
12.70	14	124	77.0	60.0	45.0	88.61	127	92.97	127	88.61	127	92.97	127
12.80	14	124	77.0	60.0	45.0	88.61	128	88.61	128				
12.90	14	124	77.0	60.0	45.0	88.61	129	88.61	129				
13.00	14	124	77.0	60.0	45.0	88.61	130	92.97	130	88.61	130	92.97	130
13.10	14	124	77.0	60.0	45.0	88.61	131	88.61	131				
13.30	14	124	77.0	60.0	45.0	88.61	133	88.61	133				
13.50	14	124	77.0	60.0	45.0	88.61	135	92.97	135	88.61	135	92.97	135
13.70	14	124	77.0	60.0	45.0	88.61	137	92.97	137	88.61	137	92.97	137
13.80	14	124	77.0	60.0	45.0	88.61	138	88.61	138				
14.00	14	124	77.0	60.0	45.0	88.61	140	92.97	140	88.61	140	92.97	140

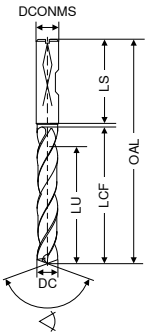
Steel	●	●	○	○
Stainless steel	○	○	●	●
Cast iron	●	●	○	○
Non ferrous metals	○	○	●	●
Heat resistant alloys			●	●

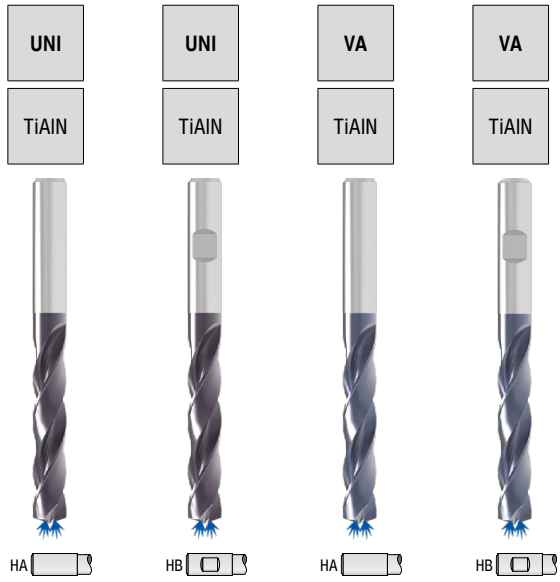
→ v_c Page 117+121

Continued on next page

WPC – High Performance Drill, DIN 6537

≤ 5xD





140°
Solid carbide
T1

DC m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 11 609 ...		Article no. 11 610 ...		Article no. 11 629 ...		Article no. 11 630 ...	
mm	mm	mm	mm	mm	mm	£		£		£		£	
14.20	16	133	83.0	63.0	48.0	110.41	142	110.41	142				
14.50	16	133	83.0	63.0	48.0	110.41	145	114.76	145	110.41	145	114.76	145
14.70	16	133	83.0	63.0	48.0	110.41	147	114.76	147	110.41	147	114.76	147
14.80	16	133	83.0	63.0	48.0	110.41	148	110.41	148				
15.00	16	133	83.0	63.0	48.0	110.41	150	114.76	150	110.41	150	114.76	150
15.10	16	133	83.0	63.0	48.0	110.41	151	110.41	151				
15.25	16	133	83.0	63.0	48.0	110.41	152	110.41	152				
15.30	16	133	83.0	63.0	48.0	110.41	153	110.41	153				
15.50	16	133	83.0	63.0	48.0	110.41	155	114.76	155	110.41	155	114.76	155
15.60	16	133	83.0	63.0	48.0	110.41	156	110.41	156				
15.70	16	133	83.0	63.0	48.0	110.41	157	114.76	157	110.41	157	114.76	157
15.80	16	133	83.0	63.0	48.0	110.41	158	110.41	158				
16.00	16	133	83.0	63.0	48.0	110.41	160	114.76	160	110.41	160	114.76	160
16.50	18	143	93.0	71.0	48.0	177.24	165	183.03	165	177.24	165	183.03	165
16.80	18	143	93.0	71.0	48.0	177.24	168	177.24	168				
16.90	18	143	93.0	71.0	48.0	177.24	169	177.24	169				
17.00	18	143	93.0	71.0	48.0	177.24	170	183.03	170	177.24	170	183.03	170
17.50	18	143	93.0	71.0	48.0	177.24	175	183.03	175	177.24	175	183.03	175
17.60	18	143	93.0	71.0	48.0	177.24	176	177.24	176				
17.80	18	143	93.0	71.0	48.0	177.24	178	177.24	178				
18.00	18	143	93.0	71.0	48.0	177.24	180	183.03	180	177.24	180	183.03	180
18.50	20	153	101.0	77.0	50.0	191.76	185	199.01	185	191.76	185	199.01	185
18.80	20	153	101.0	77.0	50.0	191.76	188	191.76	188				
18.90	20	153	101.0	77.0	50.0	191.76	189	191.76	189				
19.00	20	153	101.0	77.0	50.0	191.76	190	199.01	190	191.76	190	199.01	190
19.50	20	153	101.0	77.0	50.0	191.76	195	199.01	195	191.76	195	199.01	195
19.60	20	153	101.0	77.0	50.0	191.76	196	191.76	196				
19.80	20	153	101.0	77.0	50.0	191.76	198	191.76	198				
20.00	20	153	101.0	77.0	50.0	191.76	200	199.01	200	191.76	200	199.01	200
Steel						●		●		○		○	
Stainless steel						○		○		●		●	
Cast iron						●		●		○		○	
Non ferrous metals						○		○		●		●	
Heat resistant alloys										●		●	

→ v_c Page 117+121

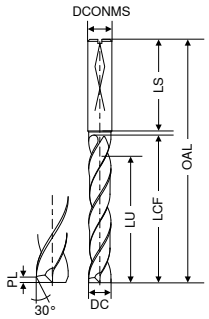
WTX – High Performance Drill, DIN 6537

- ▲ universal application
- ▲ four guidance lands
- ▲ polished chip flutes
- ▲ Type ALU 5xD (10 723 ...) on request
- ▲ PL = corner chamfers

≤ 5xD

180

Ti800



180°
Solid carbide

DC m7	DCONMS h6	OAL	LCF	LU	LS	PL	T4 Article no. 10 721 ... £	
mm	mm	mm	mm	mm	mm	mm		
3.00	6	66	28	23	36	0.15	90.77	030
3.10	6	66	28	23	36	0.16	90.77	031
3.20	6	66	28	23	36	0.16	90.77	032
3.30	6	66	28	23	36	0.17	90.77	033
3.40	6	66	28	23	36	0.17	90.77	034
3.50	6	66	28	23	36	0.18	90.77	035
3.60	6	66	28	23	36	0.18	90.77	036
3.70	6	66	28	23	36	0.19	90.77	037
3.80	6	74	36	29	36	0.19	90.77	038
3.90	6	74	36	29	36	0.20	90.77	039
4.00	6	74	36	29	36	0.20	90.77	040
4.10	6	74	36	29	36	0.21	90.77	041
4.20	6	74	36	29	36	0.21	90.77	042
4.30	6	74	36	29	36	0.22	90.77	043
4.40	6	74	36	29	36	0.22	90.77	044
4.50	6	74	36	29	36	0.23	90.77	045
4.60	6	74	36	29	36	0.23	90.77	046
4.65	6	74	36	29	36	0.23	90.77	900
4.70	6	74	36	29	36	0.24	90.77	047
4.80	6	82	44	35	36	0.24	90.77	048
4.90	6	82	44	35	36	0.25	90.77	049
5.00	6	82	44	35	36	0.25	90.77	050
5.10	6	82	44	35	36	0.26	90.77	051
5.20	6	82	44	35	36	0.26	90.77	052
5.30	6	82	44	35	36	0.27	90.77	053
5.40	6	82	44	35	36	0.27	90.77	054
5.50	6	82	44	35	36	0.28	90.77	055
5.55	6	82	44	35	36	0.28	90.77	902
5.60	6	82	44	35	36	0.28	90.77	056
5.70	6	82	44	35	36	0.29	90.77	057
5.80	6	82	44	35	36	0.29	90.77	058
5.90	6	82	44	35	36	0.30	90.77	059
6.00	6	82	44	35	36	0.30	90.77	060
6.10	8	91	53	43	36	0.31	101.56	061
6.20	8	91	53	43	36	0.31	101.56	062
6.30	8	91	53	43	36	0.32	101.56	063
6.40	8	91	53	43	36	0.32	101.56	064
6.50	8	91	53	43	36	0.33	101.56	065
6.60	8	91	53	43	36	0.33	101.56	066
6.70	8	91	53	43	36	0.34	101.56	067
6.80	8	91	53	43	36	0.34	101.56	068
6.90	8	91	53	43	36	0.35	101.56	069
7.00	8	91	53	43	36	0.35	101.56	070
7.10	8	91	53	43	36	0.36	101.56	071
7.20	8	91	53	43	36	0.36	101.56	072
7.30	8	91	53	43	36	0.37	101.56	073
7.40	8	91	53	43	36	0.37	101.56	074
7.50	8	91	53	43	36	0.38	101.56	075
7.60	8	91	53	43	36	0.38	101.56	076
7.70	8	91	53	43	36	0.39	101.56	077
7.80	8	91	53	43	36	0.39	101.56	078
7.90	8	91	53	43	36	0.40	101.56	079
8.00	8	91	53	43	36	0.40	101.56	080
8.10	10	103	61	49	40	0.41	146.80	081

DC m7	DCONMS h6	OAL	LCF	LU	LS	PL	T4 Article no. 10 721 ... £	
mm	mm	mm	mm	mm	mm	mm		
8.20	10	103	61	49	40	0.41	146.80	082
8.30	10	103	61	49	40	0.42	146.80	083
8.40	10	103	61	49	40	0.42	146.80	084
8.50	10	103	61	49	40	0.43	146.80	085
8.60	10	103	61	49	40	0.43	146.80	086
8.70	10	103	61	49	40	0.44	146.80	087
8.80	10	103	61	49	40	0.44	146.80	088
8.90	10	103	61	49	40	0.45	146.80	089
9.00	10	103	61	49	40	0.45	146.80	090
9.10	10	103	61	49	40	0.46	146.80	091
9.20	10	103	61	49	40	0.46	146.80	092
9.30	10	103	61	49	40	0.47	146.80	093
9.40	10	103	61	49	40	0.47	146.80	094
9.50	10	103	61	49	40	0.48	146.80	095
9.60	10	103	61	49	40	0.48	146.80	096
9.70	10	103	61	49	40	0.49	146.80	097
9.80	10	103	61	49	40	0.49	146.80	098
9.90	10	103	61	49	40	0.50	146.80	099
10.00	10	103	61	49	40	0.50	146.80	100
10.10	12	116	69	54	45	0.51	205.31	101
10.20	12	116	69	54	45	0.51	205.31	102
10.30	12	116	69	54	45	0.52	205.31	103
10.40	12	116	69	54	45	0.52	205.31	104
10.50	12	116	69	54	45	0.53	205.31	105
10.60	12	116	69	54	45	0.53	205.31	106
10.70	12	116	69	54	45	0.54	205.31	107
10.80	12	116	69	54	45	0.54	205.31	108
10.90	12	116	69	54	45	0.55	205.31	109
11.00	12	116	69	54	45	0.55	205.31	110
11.10	12	116	69	54	45	0.56	205.31	111
11.20	12	116	69	54	45	0.56	205.31	112
11.30	12	116	69	54	45	0.57	205.31	113
11.40	12	116	69	54	45	0.57	205.31	114
11.50	12	116	69	54	45	0.58	205.31	115
11.60	12	116	69	54	45	0.58	205.31	116
11.70	12	116	69	54	45	0.59	205.31	117
11.80	12	116	69	54	45	0.59	205.31	118
11.90	12	116	69	54	45	0.60	205.31	119
12.00	12	116	69	54	45	0.60	205.31	120
12.50	14	122	75	58	45	0.63	279.19	125
12.80	14	122	75	58	45	0.64	279.19	128
13.00	14	122	75	58	45	0.65	279.19	130
13.50	14	122	75	58	45	0.68	279.19	135
13.80	14	122	75	58	45	0.69	279.19	138
14.00	14	122	75	58	45	0.70	279.19	140
14.50	16	131	81	61	48	0.73	348.50	145
14.80	16	131	81	61	48	0.74	348.50	148
15.00	16	131	81	61	48	0.75	348.50	150
15.50	16	131	81	61	48	0.78	348.50	155
15.80	16	131	81	61	48	0.79	348.50	158
16.00	16	131	81	61	48	0.80	348.50	160
16.50	18	141	91	69	48	0.83	459.47	165
16.80	18	141	91	69	48	0.84	459.47	168
17.00	18	141	91	69	48	0.85	459.47	170
17.50	18	141	91	69	48	0.88	459.47	175
17.80	18	141	91	69	48	0.89	459.47	178
18.00	18	141	91	69	48	0.90	459.47	180
18.50	20	151	99	75	50	0.93	594.21	185
18.80	20	151	99	75	50	0.94	594.21	188
19.00	20	151	99	75	50	0.95	594.21	190
19.50	20	151	99	75	50	0.98	594.21	195
19.80	20	151	99	75	50	0.99	594.21	198
20.00	20	151	99	75	50	1.00	594.21	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
Hardened materials	○

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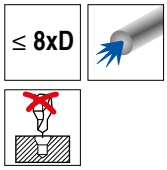
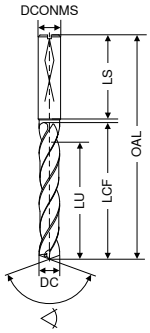
WTX – High Performance Drill, factory standard

≤ 8xD





Feed UNI = Three Cutting Edges

Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

HA	HA	HA	HB	HE	HA
135°	145°	135°	135°	135°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
NEW T4	NEW T4	T7	T7	T7	NEW T4
Article no. 10 794 ...	Article no. 10 782 ...	Article no. 11 789 ...	Article no. 11 790 ...	Article no. 11 788 ...	Article no. 10 736 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 794 ...	Article no. 10 782 ...	Article no. 11 789 ...	Article no. 11 790 ...	Article no. 11 788 ...	Article no. 10 736 ...
mm	mm	mm	mm	mm	mm	£	£	£	£	£	£
3.00	6	72	34	29	36		169.25 03000	123.63 030	123.63 030	123.63 030	185.53 03000
3.10	6	72	34	29	36		169.25 03100	123.63 031	123.63 031	123.63 031	185.53 03100
3.20	6	72	34	29	36		169.25 03200	123.63 032	123.63 032	123.63 032	185.53 03200
3.30	6	72	34	29	36		169.25 03300	123.63 033	123.63 033	123.63 033	185.53 03300
3.40	6	72	34	29	36		169.25 03400	123.63 034	123.63 034	123.63 034	185.53 03400
3.50	6	72	34	29	36		169.25 03500	123.63 035	123.63 035	123.63 035	185.53 03500
3.60	6	72	34	29	36		169.25 03600	123.63 036	123.63 036	123.63 036	185.53 03600
3.70	6	72	34	29	36		169.25 03700	123.63 037	123.63 037	123.63 037	185.53 03700
3.80	6	81	43	36	36		169.25 03800	123.63 038	123.63 038	123.63 038	185.53 03800
3.90	6	81	43	36	36		169.25 03900	123.63 039	123.63 039	123.63 039	185.53 03900
4.00	6	81	43	36	36		169.25 04000	123.63 040	123.63 040	123.63 040	185.53 04000
4.00	6	95	57	48	36	142.27 04000					
4.10	6	81	43	36	36		169.25 04100	123.63 041	123.63 041	123.63 041	185.53 04100
4.10	6	95	57	48	36	142.27 04100					
4.20	6	81	43	36	36		169.25 04200	123.63 042	123.63 042	123.63 042	185.53 04200
4.20	6	95	57	48	36	142.27 04200					
4.30	6	81	43	36	36		169.25 04300	123.63 043	123.63 043	123.63 043	185.53 04300
4.30	6	95	57	48	36	142.27 04300					
4.40	6	81	43	36	36		169.25 04400	123.63 044	123.63 044	123.63 044	185.53 04400
4.40	6	95	57	48	36	142.27 04400					
4.50	6	81	43	36	36		169.25 04500	123.63 045	123.63 045	123.63 045	185.53 04500
4.50	6	95	57	48	36	142.27 04500					
4.60	6	81	43	36	36		169.25 04600	123.63 046	123.63 046	123.63 046	185.53 04600
4.60	6	95	57	48	36	142.27 04600					
4.65	6	81	43	36	36		169.25 04650				
4.70	6	81	43	36	36		169.25 04700	123.63 047	123.63 047	123.63 047	185.53 04700
4.70	6	95	57	48	36	142.27 04700					
4.80	6	95	57	48	36	142.27 04800	169.25 04800	123.63 048	123.63 048	123.63 048	185.53 04800
4.90	6	95	57	48	36	142.27 04900	169.25 04900	123.63 049	123.63 049	123.63 049	185.53 04900
5.00	6	95	57	48	36	142.27 05000	169.25 05000	123.63 050	123.63 050	123.63 050	185.53 05000
5.10	6	95	57	48	36	142.27 05100	169.25 05100	123.63 051	123.63 051	123.63 051	185.53 05100
5.20	6	95	57	48	36	142.27 05200	169.25 05200	123.63 052	123.63 052	123.63 052	185.53 05200
5.30	6	95	57	48	36	142.27 05300	169.25 05300	123.63 053	123.63 053	123.63 053	185.53 05300
5.40	6	95	57	48	36	142.27 05400	169.25 05400	123.63 054	123.63 054	123.63 054	185.53 05400
5.50	6	95	57	48	36	142.27 05500	169.25 05500	123.63 055	123.63 055	123.63 055	185.53 05500
5.55	6	95	57	48	36	142.27 05550	169.25 05550				

Steel	●	●	●	●	●	●
Stainless steel	●	●				
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○				○

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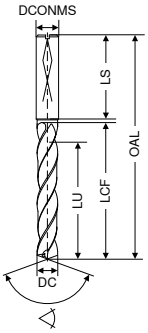
Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ Ø DC_{h7} for Type Speed UNI

Continued on next page

WTX – High Performance Drill, factory standard

≤ 8xD



Feed UNI = Three Cutting Edges

Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

HA	HA	HA	HB	HE	HA
135°	145°	135°	135°	135°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
NEW T4	NEW T4	T7	T7	T7	NEW T4
Article no. 10 794 ...	Article no. 10 782 ...	Article no. 11 789 ...	Article no. 11 790 ...	Article no. 11 788 ...	Article no. 10 736 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS												
mm	mm	mm	mm	mm	mm	£		£		£		£		£		£	
5.60	6	95	57	48	36	142.27	05600	169.25	05600	123.63	056	123.63	056	123.63	056	185.53	05600
5.70	6	95	57	48	36	142.27	05700	169.25	05700	123.63	057	123.63	057	123.63	057	185.53	05700
5.80	6	95	57	48	36	142.27	05800	169.25	05800	123.63	058	123.63	058	123.63	058	185.53	05800
5.90	6	95	57	48	36	142.27	05900	169.25	05900	123.63	059	123.63	059	123.63	059	185.53	05900
6.00	6	95	57	48	36	142.27	06000	169.25	06000	123.63	060	123.63	060	123.63	060	185.53	06000
6.10	8	114	76	64	36	190.08	06100	227.13	06100	149.92	061	149.92	061	149.92	061	204.10	06100
6.20	8	114	76	64	36	190.08	06200	227.13	06200	149.92	062	149.92	062	149.92	062	204.10	06200
6.30	8	114	76	64	36	190.08	06300	227.13	06300	149.92	063	149.92	063	149.92	063	204.10	06300
6.40	8	114	76	64	36	190.08	06400	227.13	06400	149.92	064	149.92	064	149.92	064	204.10	06400
6.50	8	114	76	64	36	190.08	06500	227.13	06500	149.92	065	149.92	065	149.92	065	204.10	06500
6.60	8	114	76	64	36	190.08	06600	227.13	06600	149.92	066	149.92	066	149.92	066	204.10	06600
6.70	8	114	76	64	36	190.08	06700	227.13	06700	149.92	067	149.92	067	149.92	067	204.10	06700
6.80	8	114	76	64	36	190.08	06800	227.13	06800	149.92	068	149.92	068	149.92	068	204.10	06800
6.90	8	114	76	64	36	190.08	06900	227.13	06900	149.92	069	149.92	069	149.92	069	204.10	06900
7.00	8	114	76	64	36	190.08	07000	227.13	07000	149.92	070	149.92	070	149.92	070	204.10	07000
7.10	8	114	76	64	36	190.08	07100	227.13	07100	149.92	071	149.92	071	149.92	071	204.10	07100
7.20	8	114	76	64	36	190.08	07200	227.13	07200	149.92	072	149.92	072	149.92	072	204.10	07200
7.30	8	114	76	64	36	190.08	07300	227.13	07300	149.92	073	149.92	073	149.92	073	204.10	07300
7.40	8	114	76	64	36	190.08	07400	227.13	07400	149.92	074	149.92	074	149.92	074	204.10	07400
7.50	8	114	76	64	36	190.08	07500	227.13	07500	149.92	075	149.92	075	149.92	075	204.10	07500
7.60	8	114	76	64	36	190.08	07600	227.13	07600	149.92	076	149.92	076	149.92	076	204.10	07600
7.70	8	114	76	64	36	190.08	07700	227.13	07700	149.92	077	149.92	077	149.92	077	204.10	07700
7.80	8	114	76	64	36	190.08	07800	227.13	07800	149.92	078	149.92	078	149.92	078	204.10	07800
7.90	8	114	76	64	36	190.08	07900	227.13	07900	149.92	079	149.92	079	149.92	079	204.10	07900
8.00	8	114	76	64	36	190.08	08000	227.13	08000	149.92	080	149.92	080	149.92	080	204.10	08000
8.10	10	142	95	80	40	274.04	08100	328.09	08100	181.58	081	181.58	081	181.58	081	294.03	08100
8.20	10	142	95	80	40	274.04	08200	328.09	08200	181.58	082	181.58	082	181.58	082	294.03	08200
8.30	10	142	95	80	40	274.04	08300	328.09	08300	181.58	083	181.58	083	181.58	083	294.03	08300
8.40	10	142	95	80	40	274.04	08400	328.09	08400	181.58	084	181.58	084	181.58	084	294.03	08400
8.50	10	142	95	80	40	274.04	08500	328.09	08500	181.58	085	181.58	085	181.58	085	294.03	08500
8.60	10	142	95	80	40	274.04	08600	328.09	08600	181.58	086	181.58	086	181.58	086	294.03	08600
8.70	10	142	95	80	40	274.04	08700	328.09	08700	181.58	087	181.58	087	181.58	087	294.03	08700
8.80	10	142	95	80	40	274.04	08800	328.09	08800	181.58	088	181.58	088	181.58	088	294.03	08800
8.90	10	142	95	80	40	274.04	08900	328.09	08900	181.58	089	181.58	089	181.58	089	294.03	08900
9.00	10	142	95	80	40	274.04	09000	328.09	09000	181.58	090	181.58	090	181.58	090	294.03	09000
9.10	10	142	95	80	40	274.04	09100	328.09	09100	181.58	091	181.58	091	181.58	091	294.03	09100

Steel	●	●	●	●	●	●
Stainless steel	●	●				
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○				○

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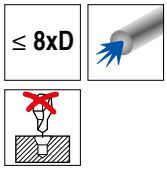
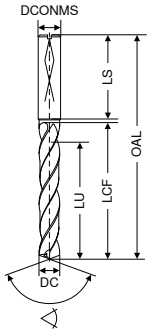
Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ **Ø DC_{h7}** for Type Speed UNI

Continued on next page

WTX – High Performance Drill, factory standard

≤ 8xD





Feed UNI = Three Cutting Edges

Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

HA	HA	HA	HB	HE	HA
135°	145°	135°	135°	135°	140°
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
NEW T4	NEW T4	T7	T7	T7	NEW T4
Article no. 10 794 ...	Article no. 10 782 ...	Article no. 11 789 ...	Article no. 11 790 ...	Article no. 11 788 ...	Article no. 10 736 ...

DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	£	£	£	£	£	£
mm	mm	mm	mm	mm	mm						
9.20	10	142	95	80	40	274.04 09200	328.09 09200	181.58 092	181.58 092	181.58 092	294.03 09200
9.30	10	142	95	80	40	274.04 09300	328.09 09300	181.58 093	181.58 093	181.58 093	294.03 09300
9.40	10	142	95	80	40	274.04 09400	328.09 09400	181.58 094	181.58 094	181.58 094	294.03 09400
9.50	10	142	95	80	40	274.04 09500	328.09 09500	181.58 095	181.58 095	181.58 095	294.03 09500
9.60	10	142	95	80	40	274.04 09600	328.09 09600	181.58 096	181.58 096	181.58 096	294.03 09600
9.70	10	142	95	80	40	274.04 09700	328.09 09700	181.58 097	181.58 097	181.58 097	294.03 09700
9.80	10	142	95	80	40	274.04 09800	328.09 09800	181.58 098	181.58 098	181.58 098	294.03 09800
9.90	10	142	95	80	40	274.04 09900	328.09 09900	181.58 099	181.58 099	181.58 099	294.03 09900
10.00	10	142	95	80	40	274.04 10000	328.09 10000	181.58 100	181.58 100	181.58 100	294.03 10000
10.10	12	162	114	96	45	354.52 10100	423.11 10100	239.69 101	239.69 101	239.69 101	377.98 10100
10.20	12	162	114	96	45	354.52 10200	423.11 10200	239.69 102	239.69 102	239.69 102	377.98 10200
10.30	12	162	114	96	45	354.52 10300	423.11 10300	239.69 103	239.69 103	239.69 103	377.98 10300
10.40	12	162	114	96	45	354.52 10400	423.11 10400	239.69 104	239.69 104	239.69 104	377.98 10400
10.50	12	162	114	96	45	354.52 10500	423.11 10500	239.69 105	239.69 105	239.69 105	377.98 10500
10.60	12	162	114	96	45	354.52 10600	423.11 10600	239.69 106	239.69 106	239.69 106	377.98 10600
10.70	12	162	114	96	45	354.52 10700	423.11 10700	239.69 107	239.69 107	239.69 107	377.98 10700
10.80	12	162	114	96	45	354.52 10800	423.11 10800	239.69 108	239.69 108	239.69 108	377.98 10800
10.90	12	162	114	96	45	354.52 10900	423.11 10900	239.69 109	239.69 109	239.69 109	377.98 10900
11.00	12	162	114	96	45	354.52 11000	423.11 11000	239.69 110	239.69 110	239.69 110	377.98 11000
11.10	12	162	114	96	45	354.52 11100	423.11 11100	239.69 111	239.69 111	239.69 111	377.98 11100
11.20	12	162	114	96	45	354.52 11200	423.11 11200	239.69 112	239.69 112	239.69 112	377.98 11200
11.30	12	162	114	96	45	354.52 11300	423.11 11300	239.69 113	239.69 113	239.69 113	377.98 11300
11.40	12	162	114	96	45	354.52 11400	423.11 11400	239.69 114	239.69 114	239.69 114	377.98 11400
11.50	12	162	114	96	45	354.52 11500	423.11 11500	239.69 115	239.69 115	239.69 115	377.98 11500
11.60	12	162	114	96	45	354.52 11600	423.11 11600	239.69 116	239.69 116	239.69 116	377.98 11600
11.70	12	162	114	96	45	354.52 11700	423.11 11700	239.69 117	239.69 117	239.69 117	377.98 11700
11.80	12	162	114	96	45	354.52 11800	423.11 11800	239.69 118	239.69 118	239.69 118	377.98 11800
11.90	12	162	114	96	45	354.52 11900	423.11 11900	239.69 119	239.69 119	239.69 119	377.98 11900
12.00	12	162	114	96	45	354.52 12000	423.11 12000	239.69 120	239.69 120	239.69 120	377.98 12000
12.50	14	178	133	112	45	425.64 12500	507.74 12500		294.03 125	294.03 125	518.66 12500
12.50	14	178	131	112	45			294.03 125			
12.80	14	178	133	112	45	425.64 12800	507.74 12800		294.03 128	294.03 128	518.66 12800
12.80	14	178	131	112	45			294.03 128			
13.00	14	178	133	112	45	425.64 13000	507.74 13000		294.03 130	294.03 130	518.66 13000
13.00	14	178	131	112	45			294.03 130			
13.50	14	178	131	112	45			294.03 135			

Steel	●	●	●	●	●	●
Stainless steel	●	●				
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○				○

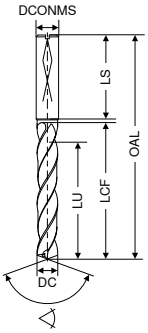
→ v_c Page 97–104

Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ Ø DC_{h7} for Type Speed UNI

Continued on next page

WTX – High Performance Drill, factory standard

≤ 8xD



Feed UNI = Three Cutting Edges

Feed UNI	Speed UNI	UNI	UNI	UNI	Quattro 4F
DPX74S	DPX14S	DPX74S	DPX74S	DPX74S	DPX74S
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

						HA		HA		HA		HB		HE		HA							
						135°		145°		135°		135°		135°		140°							
						Solid carbide		Solid carbide		Solid carbide		Solid carbide		Solid carbide		Solid carbide							
						NEW	T4	NEW	T4		T7		T7		T7	NEW	T4						
DC m7/h7	DCONMS h6	OAL	LCF	LU	LS	Article no.		Article no.		Article no.		Article no.		Article no.		Article no.							
						10 794 ...		10 782 ...		11 789 ...		11 790 ...		11 788 ...		10 736 ...							
mm	mm	mm	mm	mm	mm	£		£		£		£		£		£							
13.50	14	178	133	112	45	425.64	13500	507.74	13500			294.03	135	294.03	135	518.66	13500						
13.80	14	178	133	112	45	425.64	13800	507.74	13800			294.03	138	294.03	138	518.66	13800						
13.80	14	178	131	112	45					294.03	138												
14.00	14	178	133	112	45	425.64	14000	507.74	14000			294.03	140	294.03	140	518.66	14000						
14.00	14	178	131	112	45					294.03	140												
14.50	16	203	152	128	48	573.74	14500	684.40	14500	364.90	145	364.90	145	364.90	145	654.11	14500						
14.80	16	203	152	128	48	573.74	14800	684.40	14800	364.90	148	364.90	148	364.90	148	654.11	14800						
15.00	16	203	152	128	48	573.74	15000	684.40	15000	364.90	150	364.90	150	364.90	150	654.11	15000						
15.50	16	203	152	128	48	573.74	15500	684.40	15500	364.90	155	364.90	155	364.90	155	654.11	15500						
15.80	16	203	152	128	48	573.74	15800	684.40	15800	364.90	158	364.90	158	364.90	158	654.11	15800						
16.00	16	203	152	128	48	573.74	16000	684.40	16000	364.90	160	364.90	160	364.90	160	654.11	16000						
16.50	18	222	171	144	48	804.63	16500	960.53	16500	462.26	165	462.26	165	462.26	165	939.09	16500						
16.80	18	222	171	144	48	804.63	16800	960.53	16800	462.26	168	462.26	168	462.26	168	939.09	16800						
17.00	18	222	171	144	48	804.63	17000	960.53	17000	462.26	170	462.26	170	462.26	170	939.09	17000						
17.50	18	222	171	144	48	804.63	17500	960.53	17500	462.26	175	462.26	175	462.26	175	939.09	17500						
17.80	18	222	171	144	48	804.63	17800	960.53	17800	462.26	178	462.26	178	462.26	178	939.09	17800						
18.00	18	222	171	144	48	804.63	18000	960.53	18000	462.26	180	462.26	180	462.26	180	939.09	18000						
18.50	20	243	190	160	50	1,013.38	18500	1,211.44	18500	542.57	185	542.57	185	542.57	185	1,184.95	18500						
18.80	20	243	190	160	50	1,013.38	18800	1,211.44	18800	542.57	188	542.57	188	542.57	188	1,184.95	18800						
19.00	20	243	190	160	50	1,013.38	19000	1,211.44	19000	542.57	190	542.57	190	542.57	190	1,184.95	19000						
19.50	20	243	190	160	50	1,013.38	19500	1,211.44	19500	542.57	195	542.57	195	542.57	195	1,184.95	19500						
19.80	20	243	190	160	50	1,013.38	19800	1,211.44	19800	542.57	198	542.57	198	542.57	198	1,184.95	19800						
20.00	20	243	190	160	50	1,013.38	20000	1,211.44	20000	542.57	200	542.57	200	542.57	200	1,184.95	20000						

Steel	●	●	●	●	●	●
Stainless steel	●	●				
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys						
Hardened materials		○				○

→ v_c Page 97–104

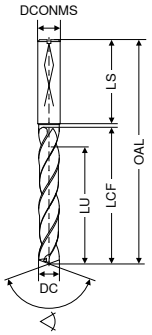
Ø DC_{m7} for Type UNI, Feed UNI and Quattro 4F/ **Ø DC_{h7}** for Type Speed UNI

WPC – High Performance Drill, factory standard

≤ 8xD

UNI

TiAlN



135°
Solid carbide

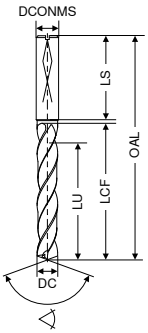
DC h7	DCONMS h6	OAL	LCF	LU	LS	T1 Article no. 11 612 ...	
mm	mm	mm	mm	mm	mm	£	
3.0	6	72	34	29	36	87.71	030
3.1	6	72	34	29	36	87.71	031
3.2	6	72	34	29	36	87.71	032
3.3	6	72	34	29	36	87.71	033
3.4	6	72	34	29	36	87.71	034
3.5	6	72	34	29	36	87.71	035
3.6	6	72	34	29	36	87.71	036
3.7	6	72	34	29	36	87.71	037
3.8	6	81	43	36	36	87.71	038
3.9	6	81	43	36	36	87.71	039
4.0	6	81	43	36	36	87.71	040
4.1	6	81	43	36	36	87.71	041
4.2	6	81	43	36	36	87.71	042
4.3	6	81	43	36	36	87.71	043
4.4	6	81	43	36	36	87.71	044
4.5	6	81	43	36	36	87.71	045
4.6	6	81	43	36	36	87.71	046
4.7	6	81	43	36	36	87.71	047
4.8	6	95	57	48	36	87.71	048
4.9	6	95	57	48	36	87.71	049
5.0	6	95	57	48	36	87.71	050
5.1	6	95	57	48	36	87.71	051
5.2	6	95	57	48	36	87.71	052
5.3	6	95	57	48	36	87.71	053
5.5	6	95	57	48	36	87.71	055
5.8	6	95	57	48	36	87.71	058
5.9	6	95	57	48	36	87.71	059
6.0	6	95	57	48	36	87.71	060
6.1	8	114	76	64	36	112.47	061
6.2	8	114	76	64	36	112.47	062
6.3	8	114	76	64	36	112.47	063
6.5	8	114	76	64	36	112.47	065
6.6	8	114	76	64	36	112.47	066
6.8	8	114	76	64	36	112.47	068
7.0	8	114	76	64	36	112.47	070
7.4	8	114	76	64	36	112.47	074
7.5	8	114	76	64	36	112.47	075
7.7	8	114	76	64	36	112.47	077
7.8	8	114	76	64	36	112.47	078
7.9	8	114	76	64	36	112.47	079
8.0	8	114	76	64	36	112.47	080
8.1	10	142	95	80	40	141.40	081
8.2	10	142	95	80	40	141.40	082
8.3	10	142	95	80	40	141.40	083
8.5	10	142	95	80	40	141.40	085
8.6	10	142	95	80	40	141.40	086
8.7	10	142	95	80	40	141.40	087
8.8	10	142	95	80	40	141.40	088
9.0	10	142	95	80	40	141.40	090
9.1	10	142	95	80	40	141.40	091
9.2	10	142	95	80	40	141.40	092
9.3	10	142	95	80	40	141.40	093
9.4	10	142	95	80	40	141.40	094
9.5	10	142	95	80	40	141.40	095
9.7	10	142	95	80	40	141.40	097
9.8	10	142	95	80	40	141.40	098
9.9	10	142	95	80	40	141.40	099
10.0	10	142	95	80	40	141.40	100
10.2	12	162	114	96	45	188.17	102
10.5	12	162	114	96	45	188.17	105
10.8	12	162	114	96	45	188.17	108
11.0	12	162	114	96	45	188.17	110
11.2	12	162	114	96	45	188.17	112
11.5	12	162	114	96	45	188.17	115
11.8	12	162	114	96	45	188.17	118
12.0	12	162	114	96	45	188.17	120
12.5	14	178	131	112	45	276.15	125
13.0	14	178	131	112	45	276.15	130
13.5	14	178	131	112	45	276.15	135
14.0	14	178	131	112	45	276.15	140
14.5	16	203	152	128	48	360.75	145
15.0	16	203	152	128	48	360.75	150
15.5	16	203	152	128	48	360.75	155
16.0	16	203	152	128	48	360.75	160
16.5	18	222	171	144	48	448.72	165
17.0	18	222	171	144	48	448.72	170
17.5	18	222	171	144	48	448.72	175
18.0	18	222	171	144	48	448.72	180
18.5	20	243	190	160	50	499.95	185
19.0	20	243	190	160	50	499.95	190
20.0	20	243	190	160	50	499.95	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	

→ v_c Page 118

WTX – High Performance Drill, factory standard

≤ 8xD



Type GG = Straight Fluted

140° Solid carbide
T4

130° Solid carbide
T4

135° Solid carbide
NEW T4

DC $_{h7/m7}$	DCONMS $_{h6}$	OAL	LCF	LU	LS	Article no. 10 770 ...		Article no. 10 753 ...		Article no. 10 792 ...	
mm	mm	mm	mm	mm	mm	£		£		£	
3.0	6	72	34	29	36	139.88	030	144.46	030	137.72	03000
3.1	6	72	34	29	36	139.88	031	144.46	031	137.72	03100
3.2	6	72	34	29	36	139.88	032	144.46	032	137.72	03200
3.3	6	72	34	29	36	139.88	033	144.46	033	137.72	03300
3.4	6	72	34	29	36	139.88	034	144.46	034	137.72	03400
3.5	6	72	34	29	36	139.88	035	144.46	035	137.72	03500
3.6	6	72	34	29	36	139.88	036	144.46	036	137.72	03600
3.7	6	72	34	29	36	139.88	037	144.46	037	137.72	03700
3.8	6	81	43	36	36	139.88	038	144.46	038	137.72	03800
3.9	6	81	43	36	36	139.88	039	144.46	039	137.72	03900
4.0	6	81	43	36	36	139.88	040	144.46	040	137.72	04000
4.1	6	81	43	36	36	139.88	041	144.46	041	137.72	04100
4.2	6	81	43	36	36	139.88	042	144.46	042	137.72	04200
4.3	6	81	43	36	36	139.88	043	144.46	043	137.72	04300
4.4	6	81	43	36	36	139.88	044	144.46	044	137.72	04400
4.5	6	81	43	36	36	139.88	045	144.46	045	137.72	04500
4.6	6	81	43	36	36	139.88	046	144.46	046	137.72	04600
4.7	6	81	43	36	36	139.88	047	144.46	047	137.72	04700
4.8	6	95	57	48	36	139.88	048	144.46	048	137.72	04800
4.9	6	95	57	48	36	139.88	049	144.46	049	137.72	04900
5.0	6	95	57	48	36	139.88	050	144.46	050	137.72	05000
5.1	6	95	57	48	36	139.88	051	144.46	051	137.72	05100
5.2	6	95	57	48	36	139.88	052	144.46	052	137.72	05200
5.3	6	95	57	48	36	139.88	053	144.46	053	137.72	05300
5.4	6	95	57	48	36	139.88	054	144.46	054	137.72	05400
5.5	6	95	57	48	36	139.88	055	144.46	055	137.72	05500
5.6	6	95	57	48	36	139.88	056	144.46	056	137.72	05600
5.7	6	95	57	48	36	139.88	057	144.46	057	137.72	05700
5.8	6	95	57	48	36	139.88	058	144.46	058	137.72	05800
5.9	6	95	57	48	36	139.88	059	144.46	059	137.72	05900
6.0	6	95	57	48	36	139.88	060	144.46	060	137.72	06000
6.1	8	114	76	64	36	168.44	061	151.09	061	173.02	06100
6.2	8	114	76	64	36	168.44	062	151.09	062	173.02	06200
6.3	8	114	76	64	36	168.44	063	151.09	063	173.02	06300
6.4	8	114	76	64	36	168.44	064	151.09	064	173.02	06400
6.5	8	114	76	64	36	168.44	065	151.09	065	173.02	06500
6.6	8	114	76	64	36	168.44	066	151.09	066	173.02	06600
6.7	8	114	76	64	36	168.44	067	151.09	067	173.02	06700
6.8	8	114	76	64	36	168.44	068	151.09	068	173.02	06800
6.9	8	114	76	64	36	168.44	069	151.09	069	173.02	06900
7.0	8	114	76	64	36	168.44	070	151.09	070	173.02	07000
7.1	8	114	76	64	36	168.44	071	151.09	071	173.02	07100
7.2	8	114	76	64	36	168.44	072	151.09	072	173.02	07200
7.3	8	114	76	64	36	168.44	073	151.09	073	173.02	07300
7.4	8	114	76	64	36	168.44	074	151.09	074	173.02	07400

Steel	○		
Stainless steel	●		
Cast iron	○	●	○
Non ferrous metals	●	●	●
Heat resistant alloys	○		

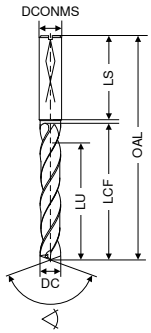
→ v_c Page 103–108

Ø DC_{m7} for Type VA and GG / **Ø DC_{h7}** for Type AL

Continued on next page

WTX – High Performance Drill, factory standard

≤ 8xD



Type GG = Straight Fluted

140° Solid carbide T4 | 130° Solid carbide T4 | 135° Solid carbide NEW T4

DC h7/m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 770 ...		Article no. 10 753 ...		Article no. 10 792 ...	
mm	mm	mm	mm	mm	mm	£		£		£	
7.5	8	114	76	64	36	168.44	075	151.09	075	173.02	07500
7.6	8	114	76	64	36	168.44	076	151.09	076	173.02	07600
7.7	8	114	76	64	36	168.44	077	151.09	077	173.02	07700
7.8	8	114	76	64	36	168.44	078	151.09	078	173.02	07800
7.9	8	114	76	64	36	168.44	079	151.09	079	173.02	07900
8.0	8	114	76	64	36	168.44	080	151.09	080	173.02	08000
8.1	10	142	95	80	40	243.65	081	210.02	081	219.65	08100
8.2	10	142	95	80	40	243.65	082	210.02	082	219.65	08200
8.3	10	142	95	80	40	243.65	083	210.02	083	219.65	08300
8.4	10	142	95	80	40	243.65	084	210.02	084	219.65	08400
8.5	10	142	95	80	40	243.65	085	210.02	085	219.65	08500
8.6	10	142	95	80	40	243.65	086	210.02	086	219.65	08600
8.7	10	142	95	80	40	243.65	087	210.02	087	219.65	08700
8.8	10	142	95	80	40	243.65	088	210.02	088	219.65	08800
8.9	10	142	95	80	40	243.65	089	210.02	089	219.65	08900
9.0	10	142	95	80	40	243.65	090	210.02	090	219.65	09000
9.1	10	142	95	80	40	243.65	091	210.02	091	219.65	09100
9.2	10	142	95	80	40	243.65	092	210.02	092	219.65	09200
9.3	10	142	95	80	40	243.65	093	210.02	093	219.65	09300
9.4	10	142	95	80	40	243.65	094	210.02	094	219.65	09400
9.5	10	142	95	80	40	243.65	095	210.02	095	219.65	09500
9.6	10	142	95	80	40	243.65	096	210.02	096	219.65	09600
9.7	10	142	95	80	40	243.65	097	210.02	097	219.65	09700
9.8	10	142	95	80	40	243.65	098	210.02	098	219.65	09800
9.9	10	142	95	80	40	243.65	099	210.02	099	219.65	09900
10.0	10	142	95	80	40	243.65	100	210.02	100	219.65	10000
10.1	12	162	114	96	45	312.93	101	267.65	101		
10.2	12	162	114	96	45	312.93	102	267.65	102	280.37	10200
10.3	12	162	114	96	45	312.93	103	267.65	103	280.37	10300
10.4	12	162	114	96	45	312.93	104	267.65	104	280.37	10400
10.5	12	162	114	96	45	312.93	105	267.65	105	280.37	10500
10.6	12	162	114	96	45	312.93	106	267.65	106		
10.7	12	162	114	96	45	312.93	107	267.65	107	280.37	10700
10.8	12	162	114	96	45	312.93	108	267.65	108	280.37	10800
10.9	12	162	114	96	45	312.93	109	267.65	109		
11.0	12	162	114	96	45	312.93	110	267.65	110	280.37	11000
11.1	12	162	114	96	45	312.93	111	267.65	111		
11.2	12	162	114	96	45	312.93	112	267.65	112	280.37	11200
11.3	12	162	114	96	45	312.93	113	267.65	113		
11.4	12	162	114	96	45	312.93	114	267.65	114		
11.5	12	162	114	96	45	312.93	115	267.65	115	280.37	11500
11.6	12	162	114	96	45	312.93	116	267.65	116	280.37	11600
11.7	12	162	114	96	45	312.93	117	267.65	117		
11.8	12	162	114	96	45	312.93	118	267.65	118	280.37	11800
11.9	12	162	114	96	45	312.93	119	267.65	119		

Steel	○		
Stainless steel	●		
Cast iron	○	●	○
Non ferrous metals	●	●	●
Heat resistant alloys	○		

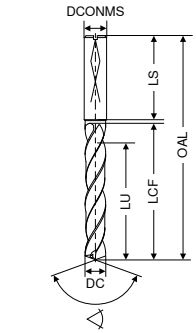
→ v_c Page 103–108

Ø DC_{m7} for Type VA and GG / **Ø DC_{h7}** for Type AL

Continued on next page

WTX – High Performance Drill, factory standard

≤ 8xD



Type GG = Straight Fluted

140° Solid carbide
T4

130° Solid carbide
T4

135° Solid carbide
NEW T4

DC h7/m7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 770 ...		Article no. 10 753 ...		Article no. 10 792 ...	
mm	mm	mm	mm	mm	mm	£		£		£	
12.0	12	162	114	96	45	312.93	**120**	267.65	**120**	280.37	**12000**
12.2	14	178	131	112	45					355.32	**12200**
12.5	14	178	133	112	45	375.85	**125**	390.84	**125**		
12.5	14	178	131	112	45					355.32	**12500**
12.8	14	178	131	112	45					355.32	**12800**
12.8	14	178	133	112	45	375.85	**128**	390.84	**128**		
13.0	14	178	131	112	45					355.32	**13000**
13.0	14	178	133	112	45	375.85	**130**	390.84	**130**		
13.2	14	178	131	112	45					355.32	**13200**
13.5	14	178	131	112	45					355.32	**13500**
13.5	14	178	133	112	45	375.85	**135**	390.84	**135**		
13.8	14	178	131	112	45					355.32	**13800**
13.8	14	178	133	112	45	375.85	**138**	390.84	**138**		
14.0	14	178	133	112	45	375.85	**140**	390.84	**140**		
14.0	14	178	131	112	45					355.32	**14000**
14.2	16	203	152	128	48					507.13	**14200**
14.5	16	203	152	128	48	508.20	**145**	506.08	**145**	507.13	**14500**
14.8	16	203	152	128	48	508.20	**148**	506.08	**148**	507.13	**14800**
15.0	16	203	152	128	48	508.20	**150**	506.08	**150**	507.13	**15000**
15.2	16	203	152	128	48					507.13	**15200**
15.5	16	203	152	128	48	508.20	**155**	506.08	**155**	507.13	**15500**
15.8	16	203	152	128	48	508.20	**158**	506.08	**158**	507.13	**15800**
16.0	16	203	152	128	48	508.20	**160**	506.08	**160**	507.13	**16000**
16.2	18	222	171	144	48					621.01	**16200**
16.5	18	222	171	144	48	710.99	**165**	701.35	**165**	621.01	**16500**
16.8	18	222	171	144	48	710.99	**168**	701.35	**168**	621.01	**16800**
17.0	18	222	171	144	48	710.99	**170**	701.35	**170**	621.01	**17000**
17.2	18	222	171	144	48					621.01	**17200**
17.5	18	222	171	144	48	710.99	**175**	701.35	**175**	621.01	**17500**
17.8	18	222	171	144	48	710.99	**178**	701.35	**178**	621.01	**17800**
18.0	18	222	171	144	48	710.99	**180**	701.35	**180**	621.01	**18000**
18.2	20	243	190	160	50					757.41	**18200**
18.5	20	243	190	160	50	896.87	**185**	878.67	**185**	757.41	**18500**
18.8	20	243	190	160	50	896.87	**188**	878.67	**188**	757.41	**18800**
19.0	20	243	190	160	50	896.87	**190**	878.67	**190**	757.41	**19000**
19.1	20	243	190	160	50					757.41	**19100**
19.2	20	243	190	160	50					757.41	**19200**
19.5	20	243	190	160	50	896.87	**195**	878.67	**195**	757.41	**19500**
19.8	20	243	190	160	50	896.87	**198**	878.67	**198**	757.41	**19800**
20.0	20	243	190	160	50	896.87	**200**	878.67	**200**	757.41	**20000**

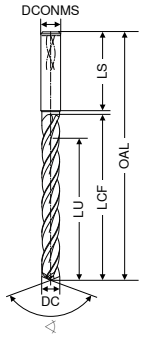
Steel	○		
Stainless steel	●		
Cast iron	○	●	○
Non ferrous metals	●	●	●
Heat resistant alloys	○		

→ v_c Page 103–108

Ø DC_{m7} for Type VA and GG / **Ø DC_{h7}** for Type AL

WTX – High Performance Drill, factory standard

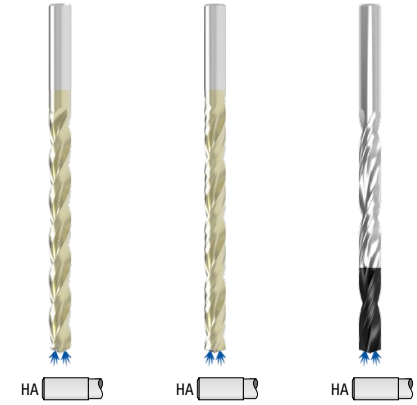
≤ 12xD



Feed UNI | Quattro 4F | AL

DPX74S | DPX74S | DLC

DRAGONSKIN | DRAGONSKIN



135° Solid carbide | 140° Solid carbide | 135° Solid carbide

DC h7/m7	DCONMS h6	OAL	LCF	LU	LS	NEW T4 Article no. 10 796 ...		NEW T4 Article no. 10 737 ...		NEW T4 Article no. 10 793 ...	
mm	mm	mm	mm	mm	mm	£		£		£	
3.0	6	92	54	48	36			226.62	03000	166.50	03000
3.1	6	92	54	48	36			226.62	03100	166.50	03100
3.2	6	92	54	48	36			226.62	03200	166.50	03200
3.3	6	92	54	48	36			226.62	03300	166.50	03300
3.4	6	92	54	48	36			226.62	03400	166.50	03400
3.5	6	92	54	48	36			226.62	03500	166.50	03500
3.6	6	92	54	48	36			226.62	03600	166.50	03600
3.7	6	92	54	48	36			226.62	03700	166.50	03700
3.8	6	102	64	58	36			226.62	03800	166.50	03800
3.9	6	102	64	58	36			226.62	03900	166.50	03900
4.0	6	102	64	58	36	190.89	04000	226.62	04000	166.50	04000
4.1	6	102	64	58	36	190.89	04100	226.62	04100	166.50	04100
4.2	6	102	64	58	36	190.89	04200	226.62	04200	166.50	04200
4.3	6	102	64	58	36	190.89	04300	226.62	04300	166.50	04300
4.4	6	102	64	58	36	190.89	04400	226.62	04400	166.50	04400
4.5	6	102	64	58	36	190.89	04500	226.62	04500	166.50	04500
4.6	6	102	64	58	36	190.89	04600	226.62	04600	166.50	04600
4.7	6	102	64	58	36	190.89	04700	226.62	04700	166.50	04700
4.8	6	116	78	70	36	190.89	04800	226.62	04800	166.50	04800
4.9	6	116	78	70	36	190.89	04900	226.62	04900	166.50	04900
5.0	6	116	78	70	36	190.89	05000	226.62	05000	166.50	05000
5.1	6	116	78	70	36	190.89	05100	226.62	05100	166.50	05100
5.2	6	116	78	70	36	190.89	05200	226.62	05200	166.50	05200
5.3	6	116	78	70	36	190.89	05300	226.62	05300	166.50	05300
5.4	6	116	78	70	36	190.89	05400	226.62	05400	166.50	05400
5.5	6	116	78	70	36	190.89	05500	226.62	05500	166.50	05500
5.6	6	116	78	70	36	190.89	05600	226.62	05600	166.50	05600
5.7	6	116	78	70	36	190.89	05700	226.62	05700	166.50	05700
5.8	6	116	78	70	36	190.89	05800	226.62	05800	166.50	05800
5.9	6	116	78	70	36	190.89	05900	226.62	05900	166.50	05900
6.0	6	116	78	70	36	190.89	06000	226.62	06000	166.50	06000
6.1	8	146	108	94	36	245.84	06100	237.65	06100	230.12	06100
6.2	8	146	108	94	36	245.84	06200	237.65	06200	230.12	06200
6.3	8	146	108	94	36	245.84	06300	237.65	06300	230.12	06300
6.4	8	146	108	94	36	245.84	06400	237.65	06400	230.12	06400
6.5	8	146	108	94	36	245.84	06500	237.65	06500	230.12	06500
6.6	8	146	108	94	36	245.84	06600	237.65	06600	230.12	06600
6.7	8	146	108	94	36	245.84	06700	237.65	06700	230.12	06700
6.8	8	146	108	94	36	245.84	06800	237.65	06800	230.12	06800
6.9	8	146	108	94	36	245.84	06900	237.65	06900	230.12	06900
7.0	8	146	108	94	36	245.84	07000	237.65	07000	230.12	07000
7.1	8	146	108	94	36	245.84	07100	237.65	07100	230.12	07100
7.2	8	146	108	94	36	245.84	07200	237.65	07200	230.12	07200

Steel	●	●	
Stainless steel	●		
Cast iron	●	●	○
Non ferrous metals	○	○	●
Heat resistant alloys			

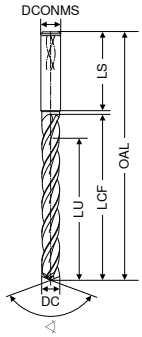
→ v_c Page 99–107

Ø DC_{m7} for Type Feed UNI and Quattro 4F / **Ø DC_{h7}** for Type AL

Continued on next page

WTX – High Performance Drill, factory standard

≤ 12xD



Feed UNI | DPX74S | DRAGONSKIN

135°
Solid carbide

Quattro 4F | DPX74S | DRAGONSKIN

140°
Solid carbide

AL | DLC

135°
Solid carbide

DC h7/m7	DCONMS h6	OAL	LCF	LU	LS	NEW T4 Article no. 10 796 ...		NEW T4 Article no. 10 737 ...		NEW T4 Article no. 10 793 ...	
mm	mm	mm	mm	mm	mm	£		£		£	
7.3	8	146	108	94	36	245.84	07300	237.65	07300	230.12	07300
7.4	8	146	108	94	36	245.84	07400	237.65	07400	230.12	07400
7.5	8	146	108	94	36	245.84	07500	237.65	07500	230.12	07500
7.6	8	146	108	94	36	245.84	07600	237.65	07600	230.12	07600
7.7	8	146	108	94	36	245.84	07700	237.65	07700	230.12	07700
7.8	8	146	108	94	36	245.84	07800	237.65	07800	230.12	07800
7.9	8	146	108	94	36	245.84	07900	237.65	07900	230.12	07900
8.0	8	146	108	94	36	245.84	08000	237.65	08000	230.12	08000
8.1	10	162	120	110	40	320.34	08100	323.80	08100	292.15	08100
8.2	10	162	120	110	40	320.34	08200	323.80	08200	292.15	08200
8.3	10	162	120	110	40	320.34	08300	323.80	08300	292.15	08300
8.4	10	162	120	110	40	320.34	08400	323.80	08400	292.15	08400
8.5	10	162	120	110	40	320.34	08500	323.80	08500	292.15	08500
8.6	10	162	120	110	40	320.34	08600	323.80	08600	292.15	08600
8.7	10	162	120	110	40	320.34	08700	323.80	08700	292.15	08700
8.8	10	162	120	110	40	320.34	08800	323.80	08800	292.15	08800
8.9	10	162	120	110	40	320.34	08900	323.80	08900	292.15	08900
9.0	10	162	120	110	40	320.34	09000	323.80	09000	292.15	09000
9.1	10	162	120	110	40	320.34	09100	323.80	09100	292.15	09100
9.2	10	162	120	110	40	320.34	09200	323.80	09200	292.15	09200
9.3	10	162	120	110	40	320.34	09300	323.80	09300	292.15	09300
9.4	10	162	120	110	40	320.34	09400	323.80	09400	292.15	09400
9.5	10	162	120	110	40	320.34	09500	323.80	09500	292.15	09500
9.6	10	162	120	110	40	320.34	09600	323.80	09600	292.15	09600
9.7	10	162	120	110	40	320.34	09700	323.80	09700	292.15	09700
9.8	10	162	120	110	40	320.34	09800	323.80	09800	292.15	09800
9.9	10	162	120	110	40	320.34	09900	323.80	09900	292.15	09900
10.0	10	162	120	110	40	320.34	10000	323.80	10000	292.15	10000
10.1	12	204	156	142	45	417.87	10100	400.48	10100		
10.2	12	204	156	142	45	417.87	10200	400.48	10200	395.86	10200
10.3	12	204	156	142	45	417.87	10300	400.48	10300		
10.4	12	204	156	142	45	417.87	10400	400.48	10400		
10.5	12	204	156	142	45	417.87	10500	400.48	10500	395.86	10500
10.6	12	204	156	142	45	417.87	10600	400.48	10600		
10.7	12	204	156	142	45	417.87	10700	400.48	10700	395.86	10700
10.8	12	204	156	142	45	417.87	10800	400.48	10800	395.86	10800
10.9	12	204	156	142	45	417.87	10900	400.48	10900		
11.0	12	204	156	142	45	417.87	11000	400.48	11000	395.86	11000
11.1	12	204	156	142	45	417.87	11100	400.48	11100		
11.2	12	204	156	142	45	417.87	11200	400.48	11200	395.86	11200
11.3	12	204	156	142	45	417.87	11300	400.48	11300	395.86	11300
11.4	12	204	156	142	45	417.87	11400	400.48	11400		
11.5	12	204	156	142	45	417.87	11500	400.48	11500	395.86	11500

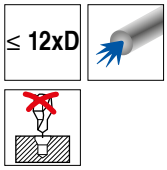
Steel	●	●	
Stainless steel	●		
Cast iron	●	●	○
Non ferrous metals	○	○	●
Heat resistant alloys			

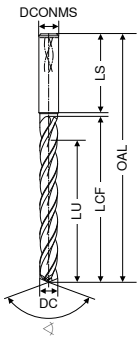
→ v_c Page 99–107

Ø DC_{m7} for Type Feed UNI and Quattro 4F / **Ø DC_{h7}** for Type AL

Continued on next page

WTX – High Performance Drill, factory standard





135° Solid carbide | 140° Solid carbide | 135° Solid carbide

DC h7/m7	DCONMS h6	OAL	LCF	LU	LS	NEW T4 Article no. 10 796 ...		NEW T4 Article no. 10 737 ...		NEW T4 Article no. 10 793 ...	
mm	mm	mm	mm	mm	mm	£		£		£	
11.6	12	204	156	142	45	417.87	11600	400.48	11600		
11.7	12	204	156	142	45	417.87	11700	400.48	11700		
11.8	12	204	156	142	45	417.87	11800	400.48	11800	395.86	11800
11.9	12	204	156	142	45	417.87	11900	400.48	11900		
12.0	12	204	156	142	45	417.87	12000	400.48	12000	395.86	12000
12.1	14	230	182	166	45					557.98	12100
12.2	14	230	182	166	45					557.98	12200
12.5	14	230	182	166	45	535.66	12500	585.57	12500	557.98	12500
12.8	14	230	182	166	45	535.66	12800	585.57	12800	557.98	12800
13.0	14	230	182	166	45	535.66	13000	585.57	13000	557.98	13000
13.2	14	230	182	166	45					557.98	13200
13.5	14	230	182	166	45	535.66	13500	585.57	13500	557.98	13500
13.8	14	230	182	166	45	535.66	13800	585.57	13800	557.98	13800
14.0	14	230	182	166	45	535.66	14000	585.57	14000	557.98	14000
14.2	16	260	208	192	48					676.51	14200
14.5	16	260	208	192	48	696.43	14500	765.25	14500	676.51	14500
14.7	16	260	208	192	48					676.51	14700
14.8	16	260	208	192	48	696.43	14800	765.25	14800	676.51	14800
15.0	16	260	208	192	48	696.43	15000	765.25	15000	676.51	15000
15.2	16	260	208	192	48					676.51	15200
15.5	16	260	208	192	48	696.43	15500	765.25	15500	676.51	15500
15.7	16	260	208	192	48					676.51	15700
15.8	16	260	208	192	48	696.43	15800	765.25	15800	676.51	15800
16.0	16	260	208	192	48	696.43	16000	765.25	16000	676.51	16000
16.2	18	285	234	216	48					752.48	16200
16.5	18	285	234	216	48	898.88	16500	1,057.08	16500	752.48	16500
16.8	18	285	234	216	48	898.88	16800	1,057.08	16800	752.48	16800
17.0	18	285	234	216	48	898.88	17000	1,057.08	17000	752.48	17000
17.2	18	285	234	216	48					752.48	17200
17.5	18	285	234	216	48	898.88	17500	1,057.08	17500	752.48	17500
17.8	18	285	234	216	48	898.88	17800	1,057.08	17800	752.48	17800
18.0	18	285	234	216	48	898.88	18000	1,057.08	18000	752.48	18000
18.2	20	310	258	240	50					952.81	18200
18.5	20	310	258	240	50	1,099.04	18500	1,335.84	18500	952.81	18500
18.7	20	310	258	240	50					952.81	18700
18.8	20	310	258	240	50	1,099.04	18800	1,335.84	18800	952.81	18800
19.0	20	310	258	240	50	1,099.04	19000	1,335.84	19000	952.81	19000
19.2	20	310	258	240	50					952.81	19200
19.5	20	310	258	240	50	1,099.04	19500	1,335.84	19500	952.81	19500
19.8	20	310	258	240	50	1,099.04	19800	1,335.84	19800	952.81	19800
20.0	20	310	258	240	50	1,099.04	20000	1,335.84	20000	952.81	20000

Steel	●	●	
Stainless steel	●		
Cast iron	●	●	○
Non ferrous metals	○	○	●
Heat resistant alloys			

→ v_c Page 99–107

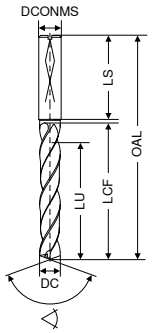
Ø DC_{m7} for Type Feed UNI and Quattro 4F / **Ø DC_{h7}** for Type AL

WPC – High Performance Drill, factory standard

≤ 12xD

UNI

TiAlN



HA

135°

Solid carbide

DC h7	DCONMS h6	OAL	LCF	LU	LS	T1 Article no. 11 615 ...	
mm	mm	mm	mm	mm	mm	£	
3.0	6	92	54	48	36	131.14	030
3.1	6	92	54	48	36	131.14	031
3.2	6	92	54	48	36	131.14	032
3.3	6	92	54	48	36	131.14	033
3.4	6	92	54	48	36	131.14	034
3.5	6	92	54	48	36	131.14	035
3.6	6	92	54	48	36	131.14	036
3.7	6	92	54	48	36	131.14	037
3.8	6	102	64	58	36	131.14	038
3.9	6	102	64	58	36	131.14	039
4.0	6	102	64	58	36	131.14	040
4.1	6	102	64	58	36	131.14	041
4.2	6	102	64	58	36	131.14	042
4.3	6	102	64	58	36	131.14	043
4.4	6	102	64	58	36	131.14	044
4.5	6	102	64	58	36	131.14	045
4.6	6	102	64	58	36	131.14	046
4.7	6	102	64	58	36	131.14	047
4.8	6	116	78	70	36	131.14	048
4.9	6	116	78	70	36	131.14	049
5.0	6	116	78	70	36	131.14	050
5.5	6	116	78	70	36	131.14	055
5.8	6	116	78	70	36	131.14	058
6.0	6	116	78	70	36	131.14	060
6.3	8	146	108	94	36	150.94	063
6.5	8	146	108	94	36	150.94	065
6.6	8	146	108	94	36	150.94	066
6.8	8	146	108	94	36	150.94	068
7.0	8	146	108	94	36	150.94	070
7.5	8	146	108	94	36	150.94	075
7.8	8	146	108	94	36	150.94	078
8.0	8	146	108	94	36	150.94	080
8.2	10	162	120	110	40	217.74	082
8.5	10	162	120	110	40	217.74	085
9.0	10	162	120	110	40	217.74	090
9.5	10	162	120	110	40	217.74	095
9.8	10	162	120	110	40	217.74	098
10.0	10	162	120	110	40	217.74	100
10.5	12	204	156	142	45	300.63	105
11.0	12	204	156	142	45	300.63	110
11.5	12	204	156	142	45	300.63	115
12.0	12	204	156	142	45	300.63	120
13.0	14	230	182	166	45	377.33	130
14.0	14	230	182	166	45	377.33	140
15.0	16	260	208	192	48	498.57	150
16.0	16	260	208	192	48	498.57	160
18.0	18	285	234	216	48	570.32	180

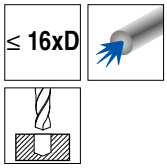
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	

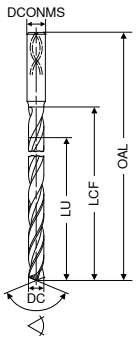
→ v_c Page 118

WTX – High performance deep hole drills

- up to 16xD without peck drilling
- pilot hole necessary
- excellent alignment precision
- secure chip evacuation

≤ 16xD





TB 16 UNI | TiAlN

TB 16 ALU | DLC

HA

135°

Solid carbide

T7

DC h7	DCONMS h5	OAL	LCF	LU	Article no. 11 016 ... £		Article no. 11 017 ... £	
mm	mm	mm	mm	mm				
2.0	4	84	42	39	100.29	020	100.29	020
2.2	4	84	42	39	100.29	022	100.29	022
2.3	4	84	42	39	100.29	023	100.29	023
2.4	4	96	54	50	111.95	024	111.95	024
2.5	4	96	54	50	111.95	025	111.95	025
2.7	4	96	54	50	111.95	027	111.95	027
2.8	4	96	54	50	111.95	028	111.95	028
3.0	6	100	60	55	142.27	030	142.27	030
3.2	6	100	60	55	142.27	032	142.27	032
3.3	6	100	60	55	142.27	033	142.27	033
3.5	6	100	60	55	142.27	035	142.27	035
3.8	6	115	75	69	148.10	038	148.10	038
4.0	6	115	75	69	148.10	040	148.10	040
4.2	6	115	75	69	159.76	042	159.76	042
4.5	6	130	90	83	159.76	045	159.76	045
4.8	6	130	90	83	169.09	048	169.09	048
5.0	6	130	90	83	169.09	050	169.09	050
5.5	6	150	108	99	176.09	055	176.09	055
5.8	6	150	108	99	176.09	058	176.09	058
6.0	6	150	108	99	176.09	060	176.09	060
6.5	8	165	125	115	187.75	065	187.75	065
6.8	8	165	125	115	201.75	068	201.75	068
7.0	8	165	125	115	201.75	070	201.75	070
7.5	8	180	140	128	226.24	075	226.24	075
7.8	8	180	140	128	226.24	078	226.24	078
8.0	8	180	140	128	226.24	080	226.24	080
8.5	10	205	160	147	249.55	085	249.55	085
8.8	10	205	160	147	277.55	088	277.55	088
9.0	10	205	160	147	277.55	090	277.55	090
9.8	10	225	180	165	277.55	098	277.55	098
10.0	10	225	180	165	277.55	100	277.55	100
10.2	12	240	190	174	310.19	102	310.19	102
10.8	12	240	190	174	310.19	108	299.71	108
11.8	12	265	215	197	310.19	118	310.19	118
12.0	12	265	215	197	310.19	120	299.71	120

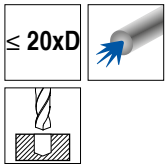
Steel	●	
Stainless steel	●	
Cast iron	●	
Non ferrous metals		●
Heat resistant alloys		

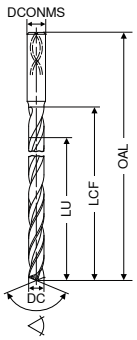
→ v_c Page 122+124
→ Machining information: Page 134

WTX – High performance deep hole drills

- up to 20xD without peck drilling
- pilot hole necessary
- excellent alignment precision
- secure chip evacuation

≤ 20xD





TB 20 UNI | TiAlN

TB 20 ALU | DLC

HA

135°

Solid carbide

T7

DC h7	DCONMS h5	OAL	LCF	LU	Article no. 11 020 ... £		Article no. 11 021 ... £	
mm	mm	mm	mm	mm				
2.0	4	92	50	47	106.11	020	106.11	020
2.2	4	92	50	47	102.52	022	106.11	022
2.3	4	92	50	47	106.11	023	106.11	023
2.4	4	112	70	66	114.92	024	118.94	024
2.5	4	112	70	66	118.94	025	118.94	025
2.7	4	112	70	66	114.92	027	118.94	027
2.8	4	112	70	66	118.94	028	118.94	028
3.0	6	120	80	75	153.23	030	158.59	030
3.2	6	120	80	75	158.59	032	158.59	032
3.3	6	120	80	75	153.23	033	158.59	033
3.5	6	120	80	75	158.59	035	158.59	035
3.8	6	130	90	84	159.99	038	165.58	038
4.0	6	130	90	84	165.58	040	165.58	040
4.2	6	160	110	103	171.25	042	177.25	042
4.5	6	160	110	103	177.25	045	177.25	045
4.8	6	160	120	113	181.39	048	187.75	048
5.0	6	160	120	113	187.75	050	187.75	050
5.5	6	185	140	131	189.29	055	195.92	055
5.8	6	185	140	131	195.92	058	195.92	058
6.0	6	185	140	131	195.92	060	195.92	060
6.5	8	210	160	150	208.74	065	208.74	065
6.8	8	210	160	150	225.07	068	225.07	068
7.0	8	210	160	150	225.07	070	225.07	070
7.5	8	230	180	168	250.72	075	250.72	075
7.8	8	230	180	168	250.72	078	250.72	078
8.0	8	230	180	168	250.72	080	250.72	080
8.5	10	260	195	182	276.37	085	276.37	085
8.8	10	290	230	216	310.19	088	310.19	088
9.0	10	290	230	216	310.19	090	310.19	090
9.8	10	290	230	216	310.19	098	310.19	098
10.0	10	290	230	216	310.19	100	310.19	100
10.2	12	315	268	251	340.51	102	340.51	102
10.8	12	315	268	251	340.51	108	340.51	108
11.8	12	315	268	251	340.51	118	340.51	118
12.0	12	315	268	251	340.51	120	340.51	120

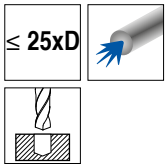
Steel	●	
Stainless steel	●	
Cast iron	●	
Non ferrous metals		●
Heat resistant alloys		

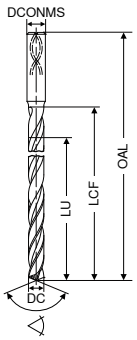
→ v_c Page 122+124
→ Machining information: Page 134

WTX – High performance deep hole drills

- up to 25xD without peck drilling
- pilot hole necessary
- excellent alignment precision
- secure chip evacuation

≤ 25xD





TB 25 UNI

TiAlN

HA

135°

Solid carbide

T7

DC h7	DCONMS h5	OAL	LCF	LU	Article no. 11 025 ...	
mm	mm	mm	mm	mm	£	
2.0	4	104	60	57	113.12	020
2.2	4	104	60	57	113.12	022
2.3	4	104	60	57	113.12	023
2.4	4	125	80	76	128.28	024
2.5	4	125	80	76	128.28	025
2.7	4	125	80	76	128.28	027
2.8	4	125	80	76	128.28	028
3.0	6	135	98	93	184.25	030
3.2	6	135	98	93	184.25	032
3.3	6	150	110	105	204.07	033
3.5	6	150	110	105	204.07	035
3.8	6	160	120	114	209.90	038
4.0	6	160	120	114	209.90	040
4.2	6	160	120	114	209.90	042
4.5	6	180	135	128	219.24	045
4.8	6	180	135	128	219.24	048
5.0	6	180	135	128	219.24	050
5.5	6	205	168	159	235.56	055
5.8	6	205	168	159	235.56	058
6.0	6	205	168	159	235.56	060
6.5	8	240	200	190	262.39	065
6.8	8	240	200	190	262.39	068
7.0	8	240	200	190	262.39	070
7.5	8	260	220	208	291.54	075
7.8	8	260	220	208	291.54	078
8.0	8	260	220	208	291.54	080
8.5	10	285	240	227	328.84	085
8.8	10	310	268	254	356.84	088
9.0	10	310	268	254	356.84	090
9.8	10	310	268	254	356.84	098
10.0	10	310	268	254	356.84	100
10.2	12	375	325	308	429.15	102
10.8	12	375	325	308	429.15	108
11.8	12	375	325	308	429.15	118
12.0	12	375	325	308	429.15	120

TB 25 ALU

DLC

HA

135°

Solid carbide

T7

Article no. 11 026 ...	
£	
113.12	020
113.12	022
113.12	023
128.28	024
128.28	025
128.28	027
128.28	028
184.25	030
184.25	032
202.92	033
202.92	035
209.90	038
209.90	040
209.90	042
219.24	045
219.24	048
219.24	050
235.56	055
235.56	058
235.56	060
262.39	065
262.39	068
262.39	070
291.54	075
291.54	078
291.54	080
328.84	085
356.84	088
356.84	090
356.84	098
356.84	100
429.15	102
429.15	108
429.15	118
429.15	120

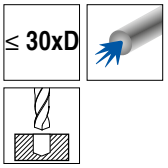
Steel	●	
Stainless steel	●	
Cast iron	●	
Non ferrous metals		●
Heat resistant alloys		

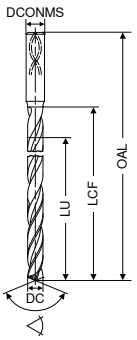
→ v_c Page 122+124
→ Machining information: Page 134

WTX – High performance deep hole drills

- up to 30xD without peck drilling
- pilot hole necessary
- excellent alignment precision
- secure chip evacuation

≤ 30xD





TB 30 UNI

TiAlN

HA

135°

Solid carbide

T7

DC h7	DCONMS h5	OAL	LCF	LU	Article no. 11 030 ...	
mm	mm	mm	mm	mm	£	
2.0	4	115	70	67	120.12	020
2.2	4	115	70	67	120.12	022
2.3	4	115	70	67	120.12	023
2.4	4	138	90	86	139.94	024
2.5	4	138	90	86	139.94	025
2.7	4	138	90	86	139.94	027
2.8	4	138	90	86	139.94	028
3.0	6	150	105	100	235.56	030
3.2	6	150	105	100	235.56	032
3.3	6	185	135	130	242.57	033
3.5	6	185	135	130	242.57	035
3.8	6	185	135	130	242.57	038
4.0	6	185	135	130	242.57	040
4.2	6	185	135	130	242.57	042
4.5	6	215	165	158	249.55	045
4.8	6	215	165	158	249.55	048
5.0	6	215	165	158	249.55	050
5.5	6	230	180	171	261.22	055
5.8	6	230	180	171	261.22	058
6.0	6	230	180	171	261.22	060
6.5	8	280	215	205	286.87	065
6.8	8	280	230	220	299.69	068
7.0	8	280	230	220	299.69	070
7.5	8	280	230	220	299.69	075
7.8	8	315	265	253	333.51	078
8.0	8	315	265	253	333.51	080
8.5	10	350	295	282	384.84	085
8.8	10	380	330	316	404.65	088
9.0	10	380	330	316	404.65	090
9.8	10	380	330	316	404.65	098
10.0	10	380	330	316	404.65	100
10.2	12	430	380	365	516.61	102
10.8	12	430	380	365	516.61	108
11.8	12	430	380	365	516.61	118
12.0	12	430	380	365	516.61	120

TB 30 ALU

DLC

HA

135°

Solid carbide

T7

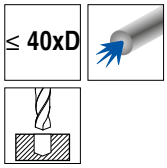
Article no. 11 031 ...	
£	
120.12	020
120.12	022
120.12	023
139.94	024
139.94	025
139.94	027
139.94	028
235.56	030
235.56	032
242.57	033
242.57	035
242.57	038
242.57	040
242.57	042
249.55	045
249.55	048
249.55	050
261.22	055
261.22	058
261.22	060
286.87	065
299.69	068
299.69	070
299.69	075
333.51	078
333.51	080
384.84	085
404.65	088
404.65	090
404.65	098
404.65	100
516.61	102
516.61	108
516.61	118
516.61	120

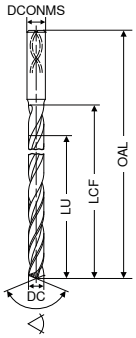
Steel	●	
Stainless steel	●	
Cast iron	●	
Non ferrous metals		●
Heat resistant alloys		

→ v_c Page 122+124
→ Machining information: Page 134

WTX – High performance deep hole drills

- up to 40xD without peck drilling
- pilot hole necessary
- excellent alignment precision
- secure chip evacuation





Solid carbide

T7

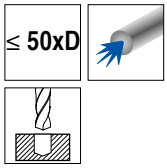
DC fg6	DCONMS h5	OAL	LCF	LU	Article no. 11 040 ...	
mm	mm	mm	mm	mm	£	
3.0	6	195	150	146	299.69	030
4.0	6	220	175	169	299.69	040
4.2	6	245	200	194	331.19	042
4.5	6	245	200	194	331.19	045
4.8	6	275	230	223	353.34	048
5.0	6	275	230	223	353.34	050
5.5	6	305	260	251	380.16	055
5.8	6	305	260	251	380.16	058
6.0	6	305	260	251	380.16	060
6.5	8	345	300	290	409.32	065
6.8	8	345	300	290	409.32	068
7.0	8	345	300	290	409.32	070
7.5	8	385	340	328	454.79	075
7.8	8	385	340	328	454.79	078
8.0	8	385	340	328	454.79	080
8.5	10	430	380	367	501.44	085
8.8	10	430	380	367	501.44	088
9.0	10	430	380	367	501.44	090

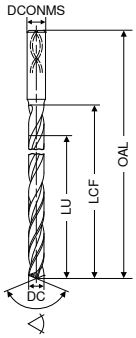
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	
Heat resistant alloys	

→ v_c Page 123
→ Machining information: Page 134

WTX – High performance deep hole drills

- up to 50xD without peck drilling
- pilot hole necessary
- excellent alignment precision
- secure chip evacuation





Solid carbide

T7

DC fg6	DCONMS h5	OAL	LCF	LU	Article no. 11 050 ...	
mm	mm	mm	mm	mm	£	
3.0	6	220	175	170	406.99	030
4.0	6	265	220	214	406.99	040
4.2	6	290	245	238	452.46	042
4.5	6	290	245	238	452.46	045
4.8	6	320	275	268	510.77	048
5.0	6	320	275	268	510.77	050
5.5	6	355	310	302	574.91	055
5.8	6	355	315	306	583.08	058
6.0	6	355	315	306	583.08	060
6.5	8	395	350	340	648.38	065
6.8	8	425	380	370	703.19	068

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	
Heat resistant alloys	

→ v_c Page 123
→ Machining information: Page 134

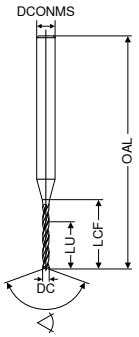
WTX – High Performance Drills

▲ standard shank Ø 3 mm h6 for use in heat shrink adapters

≤ 5xD

MINI

TiAlN



Solid carbide

DC +0,004 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	T7 Article no. 11 770 ... £	
0.10	3	38	1.2	1.0	37.96	00100
0.15	3	38	2.0	1.7	33.52	00150
0.20	3	38	3.5	3.0	29.31	00200
0.25	3	38	3.5	3.0	24.97	00250
0.30	3	38	5.5	5.0	20.53	00300
0.35	3	38	5.5	5.0	20.53	00350
0.40	3	38	7.0	6.0	20.53	00400
0.45	3	38	7.0	6.0	20.53	00450
0.50	3	38	7.0	6.0	20.53	00500
0.55	3	38	7.0	6.0	20.53	00550
0.60	3	38	7.0	6.0	20.53	00600
0.65	3	38	7.0	6.0	20.53	00650
0.70	3	38	10.5	8.0	20.53	00700
0.75	3	38	10.5	8.0	20.53	00750
0.80	3	38	10.5	8.0	20.53	00800
0.85	3	38	10.5	8.0	20.53	00850
0.90	3	38	10.5	8.0	20.53	00900
0.95	3	38	10.5	8.0	20.53	00950
0.97	3	38	10.5	8.0	20.53	00970
0.98	3	38	10.5	8.0	20.53	00980
0.99	3	38	10.5	8.0	20.53	00990
1.00	3	38	10.5	8.0	20.53	01000
1.01	3	38	10.5	8.0	20.53	01010
1.02	3	38	10.5	8.0	20.53	01020
1.03	3	38	10.5	8.0	20.53	01030
1.05	3	38	10.5	8.0	20.53	01050
1.10	3	38	10.5	8.0	20.53	01100
1.15	3	38	10.5	8.0	20.53	01150
1.20	3	38	10.5	8.0	20.53	01200
1.25	3	38	10.5	8.0	20.53	01250
1.30	3	38	10.5	8.0	20.53	01300
1.35	3	38	10.5	8.0	20.53	01350
1.40	3	38	10.5	8.0	20.53	01400
1.45	3	38	10.5	8.0	20.53	01450
1.47	3	38	10.5	8.0	20.53	01470
1.48	3	38	10.5	8.0	20.53	01480
1.49	3	38	10.5	8.0	20.53	01490
1.50	3	38	10.5	8.0	20.53	01500
1.51	3	38	10.5	8.0	20.53	01510
1.52	3	38	10.5	8.0	20.53	01520
1.53	3	38	10.5	8.0	20.53	01530
1.55	3	38	10.5	8.0	20.53	01550
1.60	3	38	10.5	8.0	20.53	01600
1.65	3	38	10.5	8.0	20.53	01650
1.70	3	38	10.5	8.0	20.53	01700
1.75	3	38	10.5	8.0	20.53	01750
1.80	3	38	10.5	8.0	20.53	01800
1.85	3	38	12.0	8.0	20.53	01850
1.90	3	38	12.0	8.0	20.53	01900
1.95	3	38	12.0	8.0	20.53	01950
1.97	3	38	12.0	8.0	20.53	01970
1.98	3	38	12.0	8.0	20.53	01980
1.99	3	38	12.0	8.0	20.53	01990
2.00	3	42	13.0	9.0	29.44	02000
2.01	3	42	13.0	9.0	29.44	02010
2.02	3	42	13.0	9.0	29.44	02020
2.03	3	42	13.0	9.0	29.44	02030
2.05	3	42	13.0	9.0	29.44	02050
2.10	3	42	13.0	9.0	29.44	02100
2.15	3	42	13.0	9.0	29.44	02150
2.20	3	46	15.0	10.0	33.15	02200
2.25	3	46	15.0	10.0	33.15	02250
2.30	3	46	15.0	10.0	33.15	02300
2.35	3	46	15.0	10.0	33.15	02350
2.40	3	46	15.0	10.0	33.15	02400
2.45	3	46	15.0	10.0	33.15	02450
2.47	3	46	15.0	10.0	33.15	02470
2.48	3	46	15.0	10.0	33.15	02480
2.49	3	46	15.0	10.0	33.15	02490
2.50	3	46	15.0	10.0	33.15	02500
2.51	3	46	15.0	10.0	33.15	02510
2.52	3	46	15.0	10.0	33.15	02520
2.53	3	46	15.0	10.0	33.15	02530
2.60	3	46	15.0	10.0	33.15	02600
2.70	3	46	15.0	10.0	33.15	02700
2.80	3	46	15.0	10.0	33.15	02800
2.90	3	46	15.0	10.0	33.15	02900

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○

→ v_c Page 110

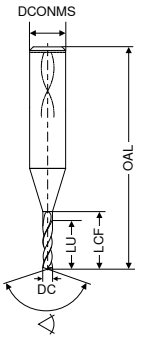
WTX – High Performance Drill, factory standard

- WTX flute geometry, optimises swarf control and chip evacuation
- all diameters with standard shank 3 mm

≤ 5xD

MINI

Ti700



Solid carbide

T4

DC +0,004	DCONMS -0,002/-0,005	OAL	LCF	LU	Article no. 10 775 ...	
mm	mm	mm	mm	mm	£	
1.0	3	55	8	5	129.73	010
1.1	3	55	12	8	129.73	011
1.2	3	55	12	8	129.73	012
1.3	3	55	12	8	129.73	013
1.4	3	55	12	8	129.73	014
1.5	3	55	12	8	129.73	015
1.6	3	68	16	11	138.29	016
1.7	3	68	16	11	138.29	017
1.8	3	68	16	11	138.29	018
1.9	3	68	16	11	138.29	019
2.0	3	68	16	11	138.29	020
2.1	3	74	20	14	141.78	021
2.2	3	74	20	14	141.78	022
2.3	3	74	20	14	141.78	023
2.4	3	74	20	14	141.78	024
2.5	3	74	20	14	141.78	025
2.6	3	81	23	16	147.00	026
2.7	3	81	23	16	147.00	027
2.8	3	81	23	16	147.00	028
2.9	3	81	23	16	147.00	029

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●

→ v_c Page 109

Coolant pressure 20–50 bar

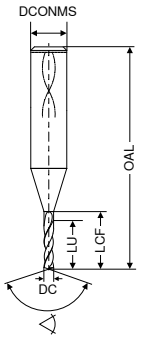
WTX – High Performance Drill, factory standard

- WTX flute geometry, optimises swarf control and chip evacuation
- all diameters with standard shank 3 mm

≤ 8xD

MINI

Ti700



Solid carbide

T4

DC +0,004	DCONMS -0,002/-0,005	OAL	LCF	LU	Article no. 10 778 ...	
mm	mm	mm	mm	mm	£	
1.0	3	55	11	8	138.29	010
1.1	3	55	17	13	138.29	011
1.2	3	55	17	13	138.29	012
1.3	3	55	17	13	138.29	013
1.4	3	55	17	13	138.29	014
1.5	3	55	17	13	138.29	015
1.6	3	68	22	17	147.00	016
1.7	3	68	22	17	147.00	017
1.8	3	68	22	17	147.00	018
1.9	3	68	22	17	147.00	019
2.0	3	68	22	17	147.00	020
2.1	3	74	28	22	150.36	021
2.2	3	74	28	22	150.36	022
2.3	3	74	28	22	150.36	023
2.4	3	74	28	22	150.36	024
2.5	3	74	28	22	150.36	025
2.6	3	81	32	25	155.43	026
2.7	3	81	32	25	155.43	027
2.8	3	81	32	25	155.43	028
2.9	3	81	32	25	155.43	029

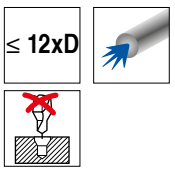
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●

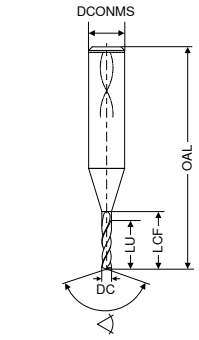
→ v_c Page 109

Coolant pressure 20–50 bar

WTX – High Performance Drill, factory standard

- ▲ WTX flute geometry guarantees optimum swarf control and chip evacuation
- ▲ all diameters with standard shank 3 mm





MINI

Ti700

Solid carbide

T4

DC +0,004 mm	DCONMS -0,002/-0,005 mm	OAL mm	LCF mm	LU mm	Article no. 10 779 ... £	
1.0	3	55	15	12	155.43	010
1.1	3	55	23	19	155.43	011
1.2	3	55	23	19	155.43	012
1.3	3	55	23	19	155.43	013
1.4	3	55	23	19	155.43	014
1.5	3	55	23	19	155.43	015
1.6	3	68	30	25	164.14	016
1.7	3	68	30	25	164.14	017
1.8	3	68	30	25	164.14	018
1.9	3	68	30	25	164.14	019
2.0	3	68	30	25	164.14	020
2.1	3	74	38	32	167.64	021
2.2	3	74	38	32	167.64	022
2.3	3	74	38	32	167.64	023
2.4	3	74	38	32	167.64	024
2.5	3	74	38	32	167.64	025
2.6	3	81	44	37	172.88	026
2.7	3	81	44	37	172.88	027
2.8	3	81	44	37	172.88	028
2.9	3	81	44	37	172.88	029

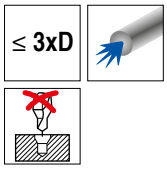
Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	

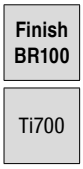
→ v_c Page 109

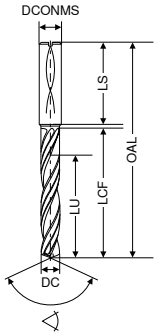
Coolant pressure 20–50 bar

WTX – Drill-Reamer -1/100

- ▲ solid carbide high-performance drill-reaming tool
- ▲ drilling and reaming in one operation
- ▲ 2 drilling edges
- ▲ 4 reaming edges
- ▲ high feed rates
- ▲ good surface quality
- ▲ for blind holes and through holes







Solid carbide

T4

DC ±0,003	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 761 ...	
mm	mm	mm	mm	mm	mm	£	
3.97	6	66	24	17	36	135.26	03970
3.98	6	66	24	17	36	135.26	03980
3.99	6	66	24	17	36	135.26	03990
4.00	6	66	24	17	36	135.26	04000
4.01	6	66	24	17	36	135.26	04010
4.02	6	66	24	17	36	135.26	04020
4.97	6	66	24	17	36	135.26	04970
4.98	6	66	24	17	36	135.26	04980
4.99	6	66	24	17	36	135.26	04990
5.00	6	79	34	24	36	135.26	05000
5.01	6	79	34	24	36	135.26	05010
5.02	6	79	34	24	36	135.26	05020
5.97	6	79	34	24	36	135.26	05970
5.98	6	79	34	24	36	135.26	05980
5.99	6	79	34	24	36	135.26	05990
6.00	6	79	34	24	36	135.26	06000
6.01	6	79	34	24	36	135.26	06010
6.02	6	79	34	24	36	135.26	06020
7.97	8	79	34	24	36	135.26	07970
7.98	8	79	34	24	36	135.26	07980
7.99	8	79	34	24	36	135.26	07990
8.00	8	79	34	24	36	135.26	08000
8.01	8	79	34	24	36	135.26	08010
8.02	8	79	34	24	36	135.26	08020
9.97	10	89	47	35	40	156.77	09970
9.98	10	89	47	35	40	156.77	09980
9.99	10	89	47	35	40	156.77	09990
10.00	10	89	47	35	40	156.77	10000
10.01	10	89	47	35	40	156.77	10010
10.02	10	89	47	35	40	156.77	10020
11.97	12	102	55	40	45	223.27	11970
11.98	12	102	55	40	45	223.27	11980
11.99	12	102	55	40	45	223.27	11990
12.00	12	102	55	40	45	223.27	12000
12.01	12	102	55	40	45	223.27	12010
12.02	12	102	55	40	45	223.27	12020

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	

→ v_c Page 112

Tolerances e.g. Ø 8 F7 = 8.02 mm						
Ø 4	3,97	U 7	**X 7**			
	3,98	**N 10**	**N 11**	R 7		
	3,99	M 8	**N 7**	**N 8**	**N 9**	
	4,00	**J 7**	**J 8**	JS 7	JS 8	JS 9
	4,01	**G 7**	**H 8**			
	4,02	**F 8**	**H 9**			
Ø 5	4,97	U 7	**X 7**			
	4,98	**N 10**	**N 11**	R 7		
	4,99	M 8	**N 7**	**N 8**	**N 9**	
	5,00	**J 7**	**J 8**	**JS 7**	**JS 8**	**JS 9**
	5,01	**G 7**	**H 8**			
	5,02	**F 8**	**H 9**			
Ø 6	5,97	U 7	**X 7**			
	5,98	**N 10**	**N 11**	R 7		
	5,99	M 8	**N 7**	**N 8**	**N 9**	
	6,00	**J 7**	**J 8**	**JS 7**	**JS 8**	**JS 9**
	6,01	**G 7**	**H 8**			
	6,02	**F 8**	**H 9**			
Ø 8	7,97	S 7	**U 7**			
	7,98	N 8	**N 10**	**N 11**	P 7	R 7
	7,99	K 8	M 6	M 7	**M 8**	N 9
	8,00	**J 7**	**J 8**	**JS 7**	**JS 8**	**JS 9**
	8,01	G 7	**H 8**			
	8,02	**F 7**	F 8	**H 9**		
Ø 10	9,97	S 7	**U 7**			
	9,98	N 8	**N 10**	**N 11**	P 7	R 7
	9,99	K 8	M 6	M 7	**M 8**	N 9
	10,00	**J 7**	**J 8**	**JS 7**	**JS 8**	**JS 9**
	10,01	G 7	**H 8**			
	10,02	**F 7**	F 8	H 9		
Ø 12	11,97	N 11	R 7	**S 7**		
	11,98	N 8	**N 9**	**N 10**	**P 7**	
	11,99	K 8	**M 6**	**M 7**	**M 8**	N 7
	12,00	**J 7**	**J 8**	**JS 7**	**JS 8**	
	12,01	G 6	**H 7**	H 8	**JS 9**	
	12,02	F 7				

Tolerance classes written in standard print are not optimally positioned in the tolerance field.

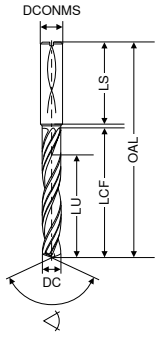
WTX – Drill-Reamer

- solid carbide high-performance drill-reaming tool
- drilling and reaming to tolerance H7 in one operation
- 2 drilling edges
- 4 reaming edges
- high feed rates
- good surface quality
- for blind holes and through holes
- optimum roundness – tolerance H7

≤ 3xD

Finish BR

Ti700



140°
Solid carbide

T4

DC h7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 760 ...	
mm	mm	mm	mm	mm	mm	£	
4	6	66	24	17	36	135.26	040
5	6	79	34	24	36	135.26	050
6	6	79	34	24	36	135.26	060
8	8	79	34	24	36	135.26	080
10	10	89	47	35	40	156.77	100
12	12	102	55	40	45	223.27	120
14	14	107	60	43	45	295.18	140
16	16	115	65	45	48	408.35	160

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	

→ v_c Page 112

Special dimensions available upon request

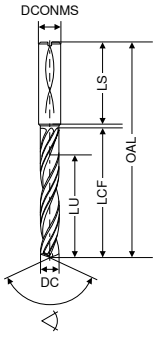
WTX – Drill-Reamer

- solid carbide high-performance drill-reaming tool
- drilling and reaming to tolerance H7 in one operation
- 2 drilling edges
- 4 reaming edges
- high feed rates
- good surface quality
- for blind holes and through holes
- optimum roundness – tolerance H7

≤ 5xD

Finish BR

Ti700



140°
Solid carbide

T4

DC h7	DCONMS h6	OAL	LCF	LU	LS	Article no. 10 762 ...	
mm	mm	mm	mm	mm	mm	£	
4	6	74	36	29	36	162.12	040
5	6	91	53	43	36	162.12	050
6	6	91	53	43	36	162.12	060
8	8	91	53	43	36	162.12	080
10	10	103	61	49	40	232.28	100
12	12	118	71	56	45	329.16	120
14	14	124	77	60	45	444.51	140
16	16	133	83	63	48	554.19	160
18	18	143	93	71	48	734.87	180
20	20	153	101	77	50	884.82	200

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	

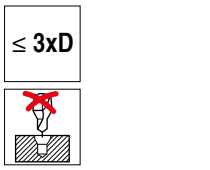
→ v_c Page 113

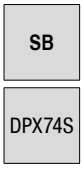
Special dimensions available upon request

2

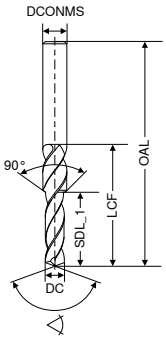
WTX – Short 90° step drill

▲ for core hole plus countersink for thread cutting





DRAGONSKIN



140°

Solid carbide

NEW T4

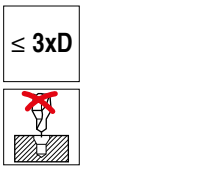
For threads	DC m7	DCONMS h6	OAL	SDL_1	LCF	Article no. 10 767 ...	
	mm	mm	mm	mm	mm	£	
M3	2.5	6	62	8.8	20	51.47	02500
M4	3.3	6	62	11.4	24	63.06	03300
M5	4.2	6	66	13.6	28	64.95	04200
M6	5.0	8	79	16.5	34	91.92	05000
M8	6.8	10	89	21.0	47	133.23	06800
M10	8.5	12	102	25.5	55	176.33	08500
M12	10.2	14	107	30.0	60	226.91	10200
M14	12.0	16	115	34.5	65	259.14	12000
M16	14.0	18	123	38.5	73	291.56	14000

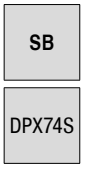
Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	

→ v_c Page 110

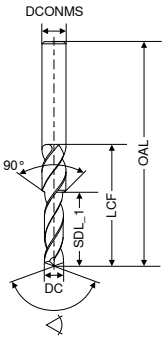
WTX – Short 90° step drill

▲ for core hole plus countersink for thread forming





DRAGONSKIN



140°

Solid carbide

NEW T4

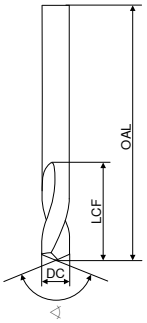
For threads	DC m7	DCONMS h6	OAL	SDL_1	LCF	Article no. 10 772 ...	
	mm	mm	mm	mm	mm	£	
M3	2.80	6	62	8.8	20	51.47	02800
M4	3.70	6	62	11.4	24	63.06	03700
M5	4.65	6	66	13.6	28	64.95	04650
M6	5.55	8	79	16.5	34	91.92	05550
M8	7.45	10	89	21.0	47	133.23	07450
M10	9.30	12	102	25.5	55	176.33	09300
M12	11.20	14	107	30.0	60	226.91	11200
M14	13.00	16	115	34.5	65	259.14	13000
M16	15.00	18	123	38.5	73	291.56	15000

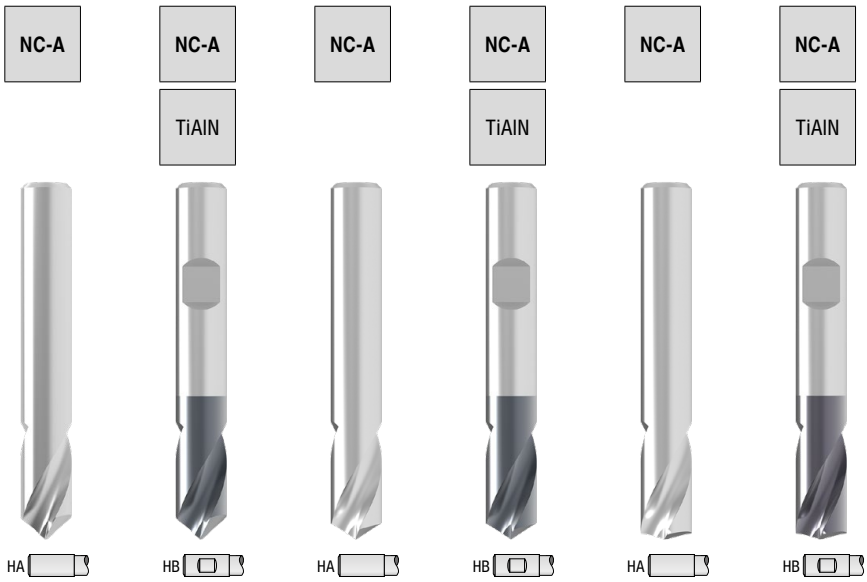
Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	

→ v_c Page 110

NC Spot Drill, factory standard

▲ spiral flute





			90°		90°		120°		120°		142°		142°	
			Solid carbide		Solid carbide		Solid carbide		Solid carbide		Solid carbide		Solid carbide	
			T3		T3		T3		T3		T3		T3	
DC_{h5}	OAL	LCF	Article no. 10 702 ...		Article no. 10 716 ...		Article no. 10 703 ...		Article no. 10 717 ...		Article no. 10 704 ...		Article no. 10 718 ...	
mm	mm	mm	£		£		£		£		£		£	
2	32	6	22.00	002	21.63	002 1)	22.00	002	21.63	002 1)	22.00	002	21.63	002 1)
3	32	8	22.00	003	21.63	003 1)	22.00	003	21.63	003 1)	22.00	003	21.63	003 1)
4	40	10	17.25	004	22.81	004 1)	17.25	004	22.81	004 1)	17.25	004	22.81	004 1)
5	50	13	19.82	005	25.23	005 1)	19.82	005	25.23	005 1)	19.82	005	25.23	005 1)
6	50	13	22.11	006	27.62	006	22.11	006	27.62	006	22.11	006	27.62	006
8	60	23	33.98	008	38.43	008	33.98	008	38.43	008	33.98	008	38.43	008
10	70	24	47.66	010	50.45	010	47.66	010	50.45	010	47.66	010	50.45	010
12	70	24	68.73	012	66.06	012	68.73	012	66.06	012	68.73	012	66.06	012
14	75	26	79.03	014	97.28	014	79.03	014	97.28	014	79.03	014	97.28	014
16	75	29	115.35	016	112.91	016	115.35	016	112.91	016	115.35	016	112.91	016
18	100	35	223.72	018	202.99	018	223.72	018	202.99	018	223.72	018	202.99	018
20	100	35	187.82	020	213.80	020	187.82	020	213.80	020	187.82	020	213.80	020
Steel			●		●		●		●		●		●	
Stainless steel														
Cast iron			●		●		●		●		●		●	
Non ferrous metals			●				●				●			
Heat resistant alloys														

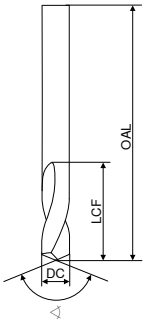
1) DIN 6535 HA Shank

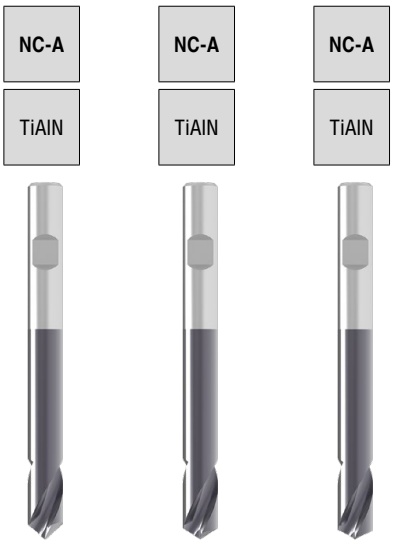
→ v_c Page 125+126

NC Spot Drill, factory standard, long

▲ spiral flutes

2





DC h5	OAL	LCF	90° Solid carbide T3 Article no. 10 724 ...		120° Solid carbide T3 Article no. 10 726 ...		142° Solid carbide T3 Article no. 10 727 ...	
mm	mm	mm	£		£		£	
3	66	8	22.81	003 [1]	22.81	003 [1]	22.81	003 [1]
4	74	10	26.42	004 [1]	26.42	004 [1]	26.42	004 [1]
6	82	13	33.63	006	33.63	006	33.63	006
8	91	23	49.25	008	49.25	008	49.25	008
10	103	24	68.47	010	68.47	010	68.47	010
12	118	24	103.30	012	103.30	012	103.30	012
16	133	29	193.38	016	193.38	016	193.38	016
Steel			●		●		●	
Stainless steel								
Cast iron			●		●		●	
Non ferrous metals								
Heat resistant alloys								

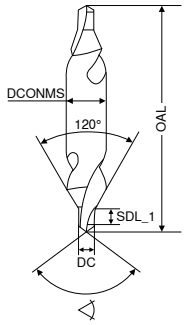
1) DIN 6535 HA Shank

→ v_c Page 126

Centre drills, DIN 333, form A

▲ spiral flutes

ZB



120°
Solid carbide
T3

DC k13	DCONMS h6	OAL	SDL_1	Article no. 10 708 ...	
mm	mm	mm	mm	£	
0.50	3.15	20.0	0.76	37.28	**050** 1)
0.80	3.15	20.0	1.07	37.28	**080** 1)
1.00	3.15	31.5	1.31	36.33	**100**
1.25	3.15	31.5	1.54	36.33	**125**
1.60	4.00	35.5	1.94	38.50	**160**
2.00	5.00	40.0	2.32	40.65	**200**
2.50	6.30	45.0	2.88	45.81	**250**
3.15	8.00	50.0	3.49	53.47	**315**
4.00	10.00	56.0	4.45	64.37	**400**
5.00	12.50	63.0	5.46	95.74	**500**
6.30	16.00	71.0	6.78	145.57	**630**

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	

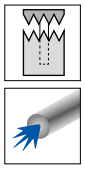
1) Single ended

→ v_c Page 125

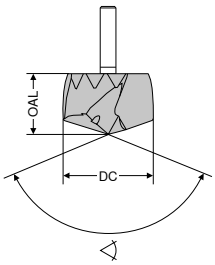
WTX – Drilling Head for Exchangeable drills

▲ extra long head type
▲ three-edged

Scope of supply:
Drill head incl. differential screw



Change Feed UNI
Ti750



140°
Solid carbide

DC m7	OAL	W2 Article no. 10 925 ...	
mm	mm	£	
14.0	13.5	102.22	140
14.1	13.5	102.22	141
14.2	13.5	102.22	142
14.3	13.5	102.22	143
14.4	13.5	102.22	144
14.5	14.0	102.22	145
14.6	14.0	102.22	146
14.7	14.0	102.22	147
14.8	14.0	102.22	148
14.9	14.0	102.22	149
15.0	14.4	102.22	150
15.1	14.4	102.22	151
15.2	14.4	102.22	152
15.3	14.4	102.22	153
15.4	14.4	102.22	154
15.5	15.4	114.49	155
15.6	15.4	114.49	156
15.7	15.4	114.49	157
15.8	15.4	114.49	158
15.9	15.4	114.49	159
16.0	15.4	114.49	160
16.1	15.4	114.49	161
16.2	15.4	114.49	162
16.3	15.4	114.49	163
16.4	15.4	114.49	164
16.5	16.3	114.49	165
16.6	16.3	114.49	166
16.7	16.3	114.49	167
16.8	16.3	114.49	168
16.9	16.3	114.49	169
17.0	16.3	114.49	170
17.1	16.3	114.49	171
17.2	16.3	114.49	172
17.3	16.3	114.49	173
17.4	16.3	114.49	174
17.5	17.2	129.95	175
17.6	17.2	129.95	176
17.7	17.2	129.95	177
17.8	17.2	129.95	178
17.9	17.2	129.95	179
18.0	17.2	129.95	180
18.1	17.2	129.95	181
18.2	17.2	129.95	182
18.3	17.2	129.95	183
18.4	17.2	129.95	184
18.5	18.2	129.95	185
18.6	18.2	129.95	186
18.7	18.2	129.95	187
18.8	18.2	129.95	188
18.9	18.2	129.95	189
19.0	18.2	129.95	190
19.1	18.2	129.95	191
19.2	18.2	129.95	192
19.3	18.2	129.95	193
19.4	18.2	129.95	194
19.5	19.1	149.10	195
19.6	19.1	149.10	196
19.7	19.1	149.10	197
19.8	19.1	149.10	198
19.9	19.1	149.10	199
20.0	19.1	149.10	200
20.1	19.1	149.10	201
20.2	19.1	149.10	202
20.3	19.1	149.10	203
20.4	19.1	149.10	204
20.5	20.0	149.10	205
20.6	20.0	149.10	206
20.7	20.0	149.10	207
20.8	20.0	149.10	208
20.9	20.0	149.10	209
21.0	20.0	149.10	210
21.1	20.0	149.10	211
21.2	20.0	149.10	212
21.3	20.0	149.10	213
21.4	20.0	149.10	214
21.5	21.0	149.10	215
21.6	21.0	149.10	216
21.7	21.0	149.10	217
21.8	21.0	149.10	218
21.9	21.0	149.10	219
22.0	21.0	149.10	220
22.1	21.0	149.10	221
22.2	21.0	149.10	222
22.3	21.0	149.10	223
22.4	21.0	149.10	224
22.5	21.9	165.88	225
22.6	21.9	165.88	226
22.7	21.9	165.88	227
22.8	21.9	165.88	228
22.9	21.9	165.88	229
23.0	21.9	165.88	230
23.1	21.9	165.88	231
23.2	21.9	165.88	232
23.3	21.9	165.88	233
23.4	21.9	165.88	234
23.5	22.8	165.88	235
23.6	22.8	165.88	236
23.7	22.8	165.88	237
23.8	22.8	165.88	238
23.9	22.8	165.88	239
24.0	22.8	165.88	240
24.1	22.8	165.88	241
24.2	22.8	165.88	242
24.3	22.8	165.88	243
24.4	22.8	165.88	244
24.5	23.8	188.02	245
24.6	23.8	188.02	246
24.7	23.8	188.02	247
24.8	23.8	188.02	248
24.9	23.8	188.02	249
25.0	23.8	188.02	250

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	
Heat resistant alloys	

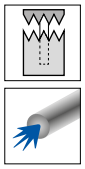
→ v_c Page 127

Continued on next page

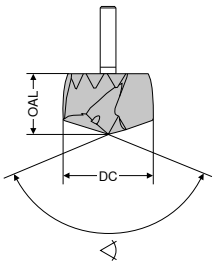
WTX – Drilling Head for Exchangeable drills

▲ extra long head type
▲ three-edged

Scope of supply:
Drill head incl. differential screw



Change Feed UNI
Ti750



140°
Solid carbide

DC m7	OAL	W2 Article no. 10 925 ...	
mm	mm	£	
25.1	23.8	188.02	251
25.2	23.8	188.02	252
25.3	23.8	188.02	253
25.4	23.8	188.02	254
25.5	24.7	188.02	255
25.6	24.7	188.02	256
25.7	24.7	188.02	257
25.8	24.7	188.02	258
25.9	24.7	188.02	259
26.0	24.7	188.02	260
26.1	24.7	188.02	261
26.2	24.7	188.02	262
26.3	24.7	188.02	263
26.4	24.7	188.02	264
26.5	25.6	202.82	265
26.6	25.6	202.82	266
26.7	25.6	202.82	267
26.8	25.6	202.82	268
26.9	25.6	202.82	269
27.0	25.6	202.82	270
27.1	25.6	202.82	271
27.2	25.6	202.82	272
27.3	25.6	202.82	273
27.4	25.6	202.82	274
27.5	26.6	202.82	275
27.6	26.6	202.82	276
27.7	26.6	202.82	277
27.8	26.6	202.82	278
27.9	26.6	202.82	279
28.0	26.6	202.82	280
28.1	26.6	202.82	281
28.2	26.6	202.82	282
28.3	26.6	202.82	283
28.4	26.6	202.82	284
28.5	27.5	223.71	285
28.6	27.5	223.71	286
28.7	27.5	223.71	287
28.8	27.5	223.71	288
28.9	27.5	223.71	289
29.0	27.5	223.71	290
29.1	27.5	223.71	291
29.2	27.5	223.71	292
29.3	27.5	223.71	293
29.4	27.5	223.71	294
29.5	28.4	223.71	295
29.6	28.4	223.71	296
29.7	28.4	223.71	297
29.8	28.4	223.71	298
29.9	28.4	223.71	299
30.0	28.4	223.71	300
30.1	28.4	223.71	301
30.2	28.4	223.71	302
30.3	28.4	223.71	303
30.4	28.4	223.71	304
30.5	29.3	244.23	305
30.6	29.3	244.23	306
30.7	29.3	244.23	307
30.8	29.3	244.23	308
30.9	29.3	244.23	309
31.0	29.3	244.23	310
31.1	29.3	244.23	311
31.2	29.3	244.23	312
31.3	29.3	244.23	313
31.4	29.3	244.23	314
31.5	30.3	244.23	315
31.6	30.3	244.23	316
31.7	30.3	244.23	317
31.8	30.3	244.23	318
31.9	30.3	244.23	319
32.0	30.3	244.23	320

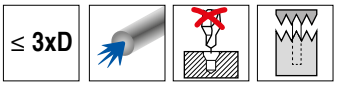
Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	
Heat resistant alloys	

→ v_c Page 127

WTX – Holder for Exchangeable drills

Scope of supply:
Holder incl. blade holder and interchangeable blade

≤ 3xD



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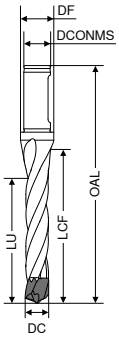


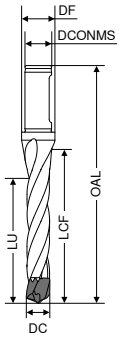
DC	DCONMS h6	OAL	LCF	LU	DF	torque moment	W1 Article no. 10 914 ...	
mm	mm	mm	mm	mm	mm	Nm	£	
14,00 - 14,49	16	120	72	48	20	0,7	266.86	140
14,50 - 14,99	16	122	74	49	20	0,7	266.86	145
15,00 - 15,49	16	124	76	51	25	0,7	266.86	150
15,50 - 16,49	20	131	81	54	25	0,7	275.73	155
16,50 - 17,49	20	135	85	58	25	0,7	275.73	165
17,50 - 18,49	20	140	90	61	25	1,3	275.73	175
18,50 - 19,49	25	150	94	64	31	1,3	324.82	185
19,50 - 20,49	25	155	99	68	31	2,0	327.74	195
20,50 - 21,49	25	159	103	71	31	2,0	358.88	205
21,50 - 22,49	25	164	108	74	31	2,0	358.88	215
22,50 - 23,49	25	168	112	78	31	2,0	393.27	225
23,50 - 24,49	25	173	117	81	31	2,0	393.27	235
24,50 - 25,49	32	182	122	84	38	3,1	442.57	245
25,50 - 26,49	32	186	126	87	38	3,1	442.57	255
26,50 - 27,49	32	191	131	91	38	3,1	442.57	265
27,50 - 28,49	32	195	135	94	38	3,1	442.57	275
28,50 - 29,49	32	200	140	97	38	5,6	510.05	285
29,50 - 30,49	32	204	144	101	38	5,6	510.05	295
30,50 - 31,49	32	209	149	104	38	5,6	557.95	305
31,50 - 32,49	32	213	153	107	38	5,6	557.95	315

WTX – Holder for Exchangeable drills

Scope of supply:
Holder incl. blade holder and interchangeable blade

≤ 5xD

Change Feed



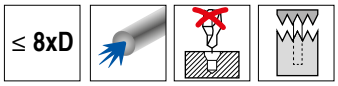
DC	DCONMS h6	OAL	LCF	LU	DF	torque moment	W1 Article no. 10 916 ...	
mm	mm	mm	mm	mm	mm	Nm	£	
14,00 - 14,49	16	149	101	77	20	0,7	294.76	140
14,50 - 14,99	16	152	104	79	20	0,7	294.76	145
15,00 - 15,49	16	155	107	82	25	0,7	294.76	150
15,50 - 16,49	20	164	114	87	25	0,7	319.20	155
16,50 - 17,49	20	170	120	93	25	0,7	319.20	165
17,50 - 18,49	20	177	127	98	25	1,3	319.20	175
18,50 - 19,49	25	189	133	103	31	1,3	365.15	185
19,50 - 20,49	25	196	140	109	31	2,0	367.97	195
20,50 - 21,49	25	202	146	114	31	2,0	401.59	205
21,50 - 22,49	25	209	153	119	31	2,0	401.59	215
22,50 - 23,49	25	215	159	124	31	2,0	432.52	225
23,50 - 24,49	25	222	166	130	31	2,0	432.52	235
24,50 - 25,49	32	233	173	135	38	3,1	480.85	245
25,50 - 26,49	32	239	179	140	38	3,1	480.85	255
26,50 - 27,49	32	246	186	146	38	3,1	480.85	265
27,50 - 28,49	32	252	192	151	38	3,1	480.85	275
28,50 - 29,49	32	259	199	156	38	5,6	547.13	285
29,50 - 30,49	32	265	205	162	38	5,6	547.13	295
30,50 - 31,49	32	272	212	167	38	5,6	594.18	305
31,50 - 32,49	32	278	218	172	38	5,6	594.18	315

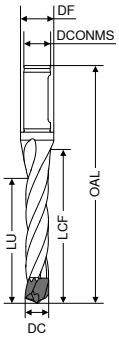
Spare parts DC	W1 Interchangeable blade Article no. 80 022 ...		Y7 Blade holder Article no. 80 020 ...		W1 Torque handle Article no. 80 023 ...		W2 Differential screw Article no. 10 950 ...	
	£		£		£		£	
14,00 - 14,49	20.49	007	33.52	025	342.19	012	6.71	064
14,50 - 14,99	20.49	007	33.52	025	342.19	012	6.71	064
15,00 - 15,49	20.49	007	33.52	025	342.19	012	6.71	064
15,50 - 16,49	20.49	007	33.52	025	342.19	012	6.71	064
16,50 - 17,49	20.49	007	33.52	025	342.19	012	6.71	064
17,50 - 18,49	20.49	008	33.52	025	366.26	060	6.71	065
18,50 - 19,49	20.49	008	33.52	025	366.26	060	6.71	065
19,50 - 20,49	23.84	010	33.52	025	366.26	060	6.71	066
20,50 - 21,49	23.84	010	33.52	025	366.26	060	6.71	066
21,50 - 22,49	23.84	010	33.52	025	366.26	060	6.71	066
22,50 - 23,49	23.84	010	33.52	025	366.26	060	6.71	066
23,50 - 24,49	23.84	010	33.52	025	366.26	060	6.71	066
24,50 - 25,49	38.51	015	33.52	025	366.26	060	6.71	067
25,50 - 26,49	38.51	015	33.52	025	366.26	060	6.71	067
26,50 - 27,49	38.51	015	33.52	025	366.26	060	6.71	067
27,50 - 28,49	38.51	015	33.52	025	366.26	060	6.71	067
28,50 - 29,49	38.51	015	33.52	025	366.26	060	6.71	068
29,50 - 30,49	38.51	015	33.52	025	366.26	060	6.71	068
30,50 - 31,49	38.51	015	33.52	025	366.26	060	6.71	068
31,50 - 32,49	38.51	015	33.52	025	366.26	060	6.71	068

WTX – Holder for Exchangeable drills

Scope of supply:

Holder incl. blade holder and interchangeable blade





DC	DCONMS h6	OAL	LCF	LU	DF	torque moment	NEW W1 Article no. 10 917 ...	
mm	mm	mm	mm	mm	mm	Nm	£	
14,00 - 14,49	16	192	121	116	20	0,7	385.70	14000
14,50 - 14,99	16	197	125	120	20	0,7	385.70	14500
15,00 - 15,49	16	202	129	124	25	0,7	385.70	15000
15,50 - 16,49	20	213	137	132	25	0,7	414.36	15500
16,50 - 17,49	20	223	146	140	25	0,7	414.36	16500
17,50 - 18,49	20	232	154	148	25	1,3	414.36	17500
18,50 - 19,49	25	248	162	156	31	1,3	466.53	18500
19,50 - 20,49	25	257	171	164	31	2,0	472.93	19500
20,50 - 21,49	25	267	179	172	31	2,0	504.74	20500
21,50 - 22,49	25	276	187	180	31	2,0	504.74	21500
22,50 - 23,49	25	286	195	188	31	2,0	559.86	22500
23,50 - 24,49	25	295	204	196	31	2,0	559.86	23500
24,50 - 25,49	32	309	212	204	38	3,1	604.26	24500
25,50 - 26,49	32	319	220	212	38	3,1	604.26	25500
26,50 - 27,49	32	328	229	220	38	3,1	604.26	26500
27,50 - 28,49	32	338	237	228	38	3,1	604.26	27500
28,50 - 29,49	32	342	245	236	38	5,6	693.50	28500
29,50 - 30,49	32	352	254	244	38	5,6	693.50	29500
30,50 - 31,49	32	361	262	252	38	5,6	764.88	30500
31,50 - 32,49	32	371	270	260	38	5,6	764.88	31500

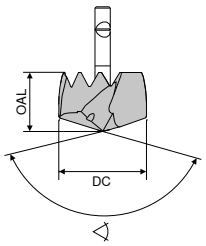
Spare parts DC	W1 Interchangeable blade Article no. 80 022 ...		Y7 Blade holder Article no. 80 020 ...		W1 Torque handle Article no. 80 023 ...		W2 Differential screw Article no. 10 950 ...	
	£		£		£		£	
14,00 - 14,49	20.49	007	33.52	025	342.19	012	6.71	064
14,50 - 14,99	20.49	007	33.52	025	342.19	012	6.71	064
15,00 - 15,49	20.49	007	33.52	025	342.19	012	6.71	064
15,50 - 16,49	20.49	007	33.52	025	342.19	012	6.71	064
16,50 - 17,49	20.49	007	33.52	025	342.19	012	6.71	064
17,50 - 18,49	20.49	008	33.52	025	366.26	060	6.71	065
18,50 - 19,49	20.49	008	33.52	025	366.26	060	6.71	065
19,50 - 20,49	23.84	010	33.52	025	366.26	060	6.71	066
20,50 - 21,49	23.84	010	33.52	025	366.26	060	6.71	066
21,50 - 22,49	23.84	010	33.52	025	366.26	060	6.71	066
22,50 - 23,49	23.84	010	33.52	025	366.26	060	6.71	066
23,50 - 24,49	23.84	010	33.52	025	366.26	060	6.71	066
24,50 - 25,49	38.51	015	33.52	025	366.26	060	6.71	067
25,50 - 26,49	38.51	015	33.52	025	366.26	060	6.71	067
26,50 - 27,49	38.51	015	33.52	025	366.26	060	6.71	067
27,50 - 28,49	38.51	015	33.52	025	366.26	060	6.71	067
28,50 - 29,49	38.51	015	33.52	025	366.26	060	6.71	068
29,50 - 30,49	38.51	015	33.52	025	366.26	060	6.71	068
30,50 - 31,49	38.51	015	33.52	025	366.26	060	6.71	068
31,50 - 32,49	38.51	015	33.52	025	366.26	060	6.71	068

WTX – Drilling Head for Exchangeable drills

▲ extra long head type

2

Change UNI	Change P	Change VA	Change GG	Change AL
DPX74S	Ti750	Ti700	TiSi	TiB
DRAGONSKIN				



DC h7/m7	OAL	140° Solid carbide NEW W2 Article no. 10 919 ...		138° Solid carbide W2 Article no. 10 923 ...		138° Solid carbide W2 Article no. 10 921 ...		140° Solid carbide W2 Article no. 10 924 ...		140° Solid carbide W2 Article no. 10 922 ...	
mm	mm	£		£		£		£		£	
12.0	10.7	120.57	12000	120.57	120	120.57	120	120.57	120	120.57	120
12.1	10.7	120.57	12100	120.57	121	120.57	121	120.57	121	120.57	121
12.2	10.7	120.57	12200	120.57	122	120.57	122	120.57	122	120.57	122
12.3	10.7	120.57	12300	120.57	123	120.57	123	120.57	123	120.57	123
12.4	10.7	120.57	12400	120.57	124	120.57	124	120.57	124	120.57	124
12.5	10.7	120.57	12500	120.57	125	120.57	125	120.57	125	120.57	125
12.6	10.7	120.57	12600	120.57	126	120.57	126	120.57	126	120.57	126
12.7	10.7	120.57	12700	120.57	127	120.57	127	120.57	127	120.57	127
12.8	10.7	120.57	12800	120.57	128	120.57	128	120.57	128	120.57	128
12.9	10.7	120.57	12900	120.57	129	120.57	129	120.57	129	120.57	129
13.0	10.7	120.57	13000	120.57	130	120.57	130	120.57	130	120.57	130
13.1	10.7	120.57	13100	120.57	131	120.57	131	120.57	131	120.57	131
13.2	10.7	120.57	13200	120.57	132	120.57	132	120.57	132	120.57	132
13.3	10.7	120.57	13300	120.57	133	120.57	133	120.57	133	120.57	133
13.4	10.7	120.57	13400	120.57	134	120.57	134	120.57	134	120.57	134
13.5	11.3	120.57	13500	120.57	135	120.57	135	120.57	135	120.57	135
13.6	11.3	120.57	13600	120.57	136	120.57	136	120.57	136	120.57	136
13.7	11.3	120.57	13700	120.57	137	120.57	137	120.57	137	120.57	137
13.8	11.3	120.57	13800	120.57	138	120.57	138	120.57	138	120.57	138
13.9	11.3	120.57	13900	120.57	139	120.57	139	120.57	139	120.57	139
14.0	11.3	120.57	14000	120.57	140	120.57	140	120.57	140	120.57	140
14.1	11.3	120.57	14100	120.57	141	120.57	141	120.57	141	120.57	141
14.2	11.3	120.57	14200	120.57	142	120.57	142	120.57	142	120.57	142
14.3	11.3	120.57	14300	120.57	143	120.57	143	120.57	143	120.57	143
14.4	11.3	120.57	14400	120.57	144	120.57	144	120.57	144	120.57	144
14.5	11.3	120.57	14500	120.57	145	120.57	145	120.57	145	120.57	145
14.6	11.3	120.57	14600	120.57	146	120.57	146	120.57	146	120.57	146
14.7	11.3	120.57	14700	120.57	147	120.57	147	120.57	147	120.57	147
14.8	11.3	120.57	14800	120.57	148	120.57	148	120.57	148	120.57	148
14.9	11.3	120.57	14900	120.57	149	120.57	149	120.57	149	120.57	149
15.0	11.3	120.57	15000	120.57	150	120.57	150	120.57	150	120.57	150
15.1	11.3	120.57	15100	120.57	151	120.57	151	120.57	151	120.57	151
15.2	11.3	120.57	15200	120.57	152	120.57	152	120.57	152	120.57	152
15.3	11.3	120.57	15300	120.57	153	120.57	153	120.57	153	120.57	153
15.4	11.3	120.57	15400	120.57	154	120.57	154	120.57	154	120.57	154
15.5	11.9	120.57	15500	120.57	155	120.57	155	120.57	155	120.57	155
15.6	11.9	120.57	15600	120.57	156	120.57	156	120.57	156	120.57	156
15.7	11.9	120.57	15700	120.57	157	120.57	157	120.57	157	120.57	157

Steel	●	●	○		
Stainless steel			●		
Cast iron	●	●	○	●	
Non ferrous metals					●
Heat resistant alloys					

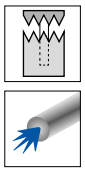
→ v_c Page 128–131

Ø DC_{m7} for Type UNI, P, GG und AL / **Ø DC_{h7}** for Type VA

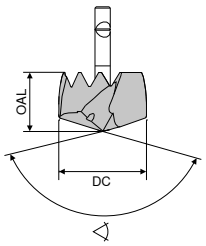
Continued on next page

WTX – Drilling Head for Exchangeable drills

▲ extra long head type



Change UNI	Change P	Change VA	Change GG	Change AL
DPX74S	Ti750	Ti700	TiSi	TiB
DRAGONSKIN				



DC h7/m7	OAL	140° Solid carbide NEW W2 Article no. 10 919 ...		138° Solid carbide W2 Article no. 10 923 ...		138° Solid carbide W2 Article no. 10 921 ...		140° Solid carbide W2 Article no. 10 924 ...		140° Solid carbide W2 Article no. 10 922 ...	
mm	mm	£		£		£		£		£	
15.8	11.9	120.57	15800	120.57	158	120.57	158	120.57	158	120.57	158
15.9	11.9	120.57	15900	120.57	159	120.57	159	120.57	159	120.57	159
16.0	11.9	120.57	16000	120.57	160	120.57	160	120.57	160	120.57	160
16.1	11.9	120.57	16100	120.57	161	120.57	161	120.57	161	120.57	161
16.2	11.9	120.57	16200	120.57	162	120.57	162	120.57	162	120.57	162
16.3	11.9	120.57	16300	120.57	163	120.57	163	120.57	163	120.57	163
16.4	11.9	120.57	16400	120.57	164	120.57	164	120.57	164	120.57	164
16.5	13.4	120.57	16500	120.57	165	120.57	165	120.57	165	120.57	165
16.6	13.4	120.57	16600	120.57	166	120.57	166	120.57	166	120.57	166
16.7	13.4	120.57	16700	120.57	167	120.57	167	120.57	167	120.57	167
16.8	13.4	120.57	16800	120.57	168	120.57	168	120.57	168	120.57	168
16.9	13.4	120.57	16900	120.57	169	120.57	169	120.57	169	120.57	169
17.0	13.4	120.57	17000	120.57	170	120.57	170	120.57	170	120.57	170
17.1	13.4	120.57	17100	120.57	171	120.57	171	120.57	171	120.57	171
17.2	13.4	120.57	17200	120.57	172	120.57	172	120.57	172	120.57	172
17.3	13.4	120.57	17300	120.57	173	120.57	173	120.57	173	120.57	173
17.4	13.4	120.57	17400	120.57	174	120.57	174	120.57	174	120.57	174
17.5	13.4	120.57	17500	120.57	175	120.57	175	120.57	175	120.57	175
17.6	13.4	120.57	17600	120.57	176	120.57	176	120.57	176	120.57	176
17.7	13.4	120.57	17700	120.57	177	120.57	177	120.57	177	120.57	177
17.8	13.4	120.57	17800	120.57	178	120.57	178	120.57	178	120.57	178
17.9	13.4	120.57	17900	120.57	179	120.57	179	120.57	179	120.57	179
18.0	13.4	120.57	18000	120.57	180	120.57	180	120.57	180	120.57	180
18.1	13.4	131.19	18100	131.19	181	131.19	181	131.19	181	131.19	181
18.2	13.4	131.19	18200	131.19	182	131.19	182	131.19	182	131.19	182
18.3	13.4	131.19	18300	131.19	183	131.19	183	131.19	183	131.19	183
18.4	13.4	131.19	18400	131.19	184	131.19	184	131.19	184	131.19	184
18.5	13.4	131.19	18500	131.19	185	131.19	185	131.19	185	131.19	185
18.6	13.4	131.19	18600	131.19	186	131.19	186	131.19	186	131.19	186
18.7	13.4	131.19	18700	131.19	187	131.19	187	131.19	187	131.19	187
18.8	13.4	131.19	18800	131.19	188	131.19	188	131.19	188	131.19	188
18.9	13.4	131.19	18900	131.19	189	131.19	189	131.19	189	131.19	189
19.0	13.4	131.19	19000	131.19	190	131.19	190	131.19	190	131.19	190
19.1	13.4	131.19	19100	131.19	191	131.19	191	131.19	191	131.19	191
19.2	13.4	131.19	19200	131.19	192	131.19	192	131.19	192	131.19	192
19.3	13.4	131.19	19300	131.19	193	131.19	193	131.19	193	131.19	193
19.4	13.4	131.19	19400	131.19	194	131.19	194	131.19	194	131.19	194
19.5	13.4	131.19	19500	131.19	195	131.19	195	131.19	195	131.19	195

Steel	●	●	○		
Stainless steel			●		
Cast iron	●	●	○	●	
Non ferrous metals					●
Heat resistant alloys					

→ v_c Page 128–131

Ø DC_{m7} for Type UNI, P, GG und AL / **Ø DC_{h7}** for Type VA

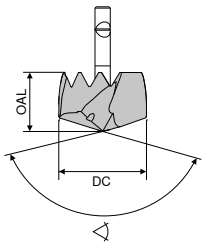
Continued on next page

WTX – Drilling Head for Exchangeable drills

▲ extra long head type

2

Change UNI	Change P	Change VA	Change GG	Change AL
DPX74S	Ti750	Ti700	TiSi	TiB
DRAGONSKIN				



DC h7/m7	OAL	140° Solid carbide NEW W2 Article no. 10 919 ...		138° Solid carbide W2 Article no. 10 923 ...		138° Solid carbide W2 Article no. 10 921 ...		140° Solid carbide W2 Article no. 10 924 ...		140° Solid carbide W2 Article no. 10 922 ...	
mm	mm	£		£		£		£		£	
19.6	13.4	131.19	19600	131.19	196	131.19	196	131.19	196	131.19	196
19.7	13.4	131.19	19700	131.19	197	131.19	197	131.19	197	131.19	197
19.8	13.4	131.19	19800	131.19	198	131.19	198	131.19	198	131.19	198
19.9	13.4	131.19	19900	131.19	199	131.19	199	131.19	199	131.19	199
20.0	13.4	131.19	20000	131.19	200	131.19	200	131.19	200	131.19	200
20.1	13.4	144.98	20100	144.98	201	144.98	201	144.98	201	109.31	201
20.2	13.4	144.98	20200	144.98	202	144.98	202	144.98	202	144.98	202
20.3	13.4	144.98	20300	144.98	203	144.98	203	144.98	203	144.98	203
20.4	13.4	144.98	20400	144.98	204	144.98	204	144.98	204	144.98	204
20.5	15.4	144.98	20500	144.98	205	144.98	205	144.98	205	144.98	205
20.6	15.4	144.98	20600	144.98	206	144.98	206	144.98	206	144.98	206
20.7	15.4	144.98	20700	144.98	207	144.98	207	144.98	207	144.98	207
20.8	15.4	144.98	20800	144.98	208	144.98	208	144.98	208	144.98	208
20.9	15.4	144.98	20900	144.98	209	144.98	209	144.98	209	144.98	209
21.0	15.4	144.98	21000	144.98	210	144.98	210	144.98	210	144.98	210
21.1	15.4	144.98	21100	144.98	211	144.98	211	144.98	211	144.98	211
21.2	15.4	144.98	21200	144.98	212	144.98	212	144.98	212	144.98	212
21.3	15.4	144.98	21300	144.98	213	144.98	213	144.98	213	144.98	213
21.4	15.4	144.98	21400	144.98	214	144.98	214	144.98	214	144.98	214
21.5	15.4	144.98	21500	144.98	215	144.98	215	144.98	215	144.98	215
21.6	15.4	144.98	21600	144.98	216	144.98	216	144.98	216	144.98	216
21.7	15.4	144.98	21700	144.98	217	144.98	217	144.98	217	144.98	217
21.8	15.4	144.98	21800	144.98	218	144.98	218	144.98	218	144.98	218
21.9	15.4	144.98	21900	144.98	219	144.98	219	144.98	219	144.98	219
22.0	15.4	144.98	22000	144.98	220	144.98	220	144.98	220	144.98	220
22.1	15.4	155.59	22100	155.59	221	155.59	221	155.59	221	155.59	221
22.2	15.4	155.59	22200	155.59	222	155.59	222	155.59	222	155.59	222
22.3	15.4	155.59	22300	155.59	223	155.59	223	155.59	223	155.59	223
22.4	15.4	155.59	22400	155.59	224	155.59	224	155.59	224	155.59	224
22.5	15.4	155.59	22500	155.59	225	155.59	225	155.59	225	155.59	225
22.6	15.4	155.59	22600	155.59	226	155.59	226	155.59	226	155.59	226
22.7	15.4	155.59	22700	155.59	227	155.59	227	155.59	227	155.59	227
22.8	15.4	155.59	22800	155.59	228	155.59	228	155.59	228	155.59	228
22.9	15.4	155.59	22900	155.59	229	155.59	229	155.59	229	155.59	229
23.0	15.4	155.59	23000	155.59	230	155.59	230	155.59	230	155.59	230
23.1	15.4	155.59	23100	155.59	231	155.59	231	155.59	231	155.59	231
23.2	15.4	155.59	23200	155.59	232	155.59	232	155.59	232	155.59	232
23.3	15.4	155.59	23300	155.59	233	155.59	233	155.59	233	155.59	233

Steel	●	●	○		
Stainless steel			●		
Cast iron	●	●	○	●	
Non ferrous metals					●
Heat resistant alloys					

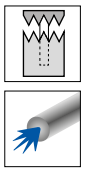
→ v_c Page 128–131

Ø DC_{m7} for Type UNI, P, GG und AL / **Ø DC_{h7}** for Type VA

Continued on next page

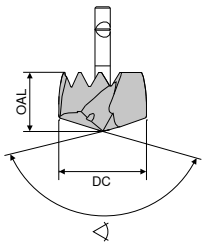
WTX – Drilling Head for Exchangeable drills

▲ extra long head type



Change UNI	Change P	Change VA	Change GG	Change AL
DPX74S	Ti750	Ti700	TiSi	TiB

DRAGONSKIN



DC h7/m7	OAL	140° Solid carbide NEW W2 Article no. 10 919 ...		138° Solid carbide W2 Article no. 10 923 ...		138° Solid carbide W2 Article no. 10 921 ...		140° Solid carbide W2 Article no. 10 924 ...		140° Solid carbide W2 Article no. 10 922 ...	
mm	mm	£		£		£		£		£	
23.4	15.4	155.59	23400	155.59	234	155.59	234	155.59	234	155.59	234
23.5	15.4	155.59	23500	155.59	235	155.59	235	155.59	235	155.59	235
23.6	15.4	155.59	23600	155.59	236	155.59	236	155.59	236	155.59	236
23.7	15.4	155.59	23700	155.59	237	155.59	237	155.59	237	155.59	237
23.8	15.4	155.59	23800	155.59	238	155.59	238	155.59	238	155.59	238
23.9	15.4	155.59	23900	155.59	239	155.59	239	155.59	239	155.59	239
24.0	15.4	155.59	24000	155.59	240	155.59	240	155.59	240	155.59	240
24.1	15.4	169.39	24100	162.99	241	179.99	241	162.99	241	179.99	241
24.2	15.4	169.39	24200	162.99	242	179.99	242	162.99	242	179.99	242
24.3	15.4	169.39	24300	162.99	243	179.99	243	162.99	243	179.99	243
24.4	15.4	169.39	24400	162.99	244	179.99	244	162.99	244	179.99	244
24.5	17.4	169.39	24500	169.39	245	179.99	245	169.39	245	179.99	245
24.6	17.4	169.39	24600	169.39	246	179.99	246	169.39	246	179.99	246
24.7	17.4	169.39	24700	169.39	247	179.99	247	169.39	247	179.99	247
24.8	17.4	169.39	24800	169.39	248	179.99	248	169.39	248	179.99	248
24.9	17.4	169.39	24900	169.39	249	179.99	249	169.39	249	179.99	249
25.0	17.4	169.39	25000	169.39	250	179.99	250	169.39	250	179.99	250
25.1	17.4	169.39	25100	169.39	251	179.99	251	169.39	251	179.99	251
25.2	17.4	169.39	25200	169.39	252	179.99	252	169.39	252	179.99	252
25.3	17.4	169.39	25300	169.39	253	179.99	253	169.39	253	179.99	253
25.4	17.4	169.39	25400	169.39	254	179.99	254	169.39	254	179.99	254
25.5	17.4	169.39	25500	169.39	255	179.99	255	169.39	255	179.99	255
25.6	17.4	179.99	25600	179.99	256	179.99	256	179.99	256	179.99	256
25.7	17.4	179.99	25700	179.99	257	179.99	257	179.99	257	179.99	257
25.8	17.4	179.99	25800	179.99	258	179.99	258	179.99	258	179.99	258
25.9	17.4	179.99	25900	179.99	259	179.99	259	179.99	259	179.99	259
26.0	17.4	179.99	26000	179.99	260	179.99	260	179.99	260	179.99	260
26.1	17.4	179.99	26100	179.99	261	179.99	261	179.99	261	179.99	261
26.2	17.4	179.99	26200	179.99	262	179.99	262	179.99	262	179.99	262
26.3	17.4	179.99	26300	179.99	263	179.99	263	179.99	263	179.99	263
26.4	17.4	179.99	26400	179.99	264	179.99	264	179.99	264	179.99	264
26.5	17.4	179.99	26500	179.99	265	179.99	265	179.99	265	179.99	265
26.6	17.4	179.99	26600	179.99	266	179.99	266	179.99	266	179.99	266
26.7	17.4	179.99	26700	179.99	267	179.99	267	179.99	267	179.99	267
26.8	17.4	179.99	26800	179.99	268	179.99	268	179.99	268	179.99	268
26.9	17.4	179.99	26900	179.99	269	179.99	269	179.99	269	179.99	269
27.0	17.4	179.99	27000	179.99	270	179.99	270	179.99	270	179.99	270
27.1	17.4	179.99	27100	179.99	271	179.99	271	179.99	271	179.99	271

Steel	●	●	○		
Stainless steel			●		
Cast iron	●	●	○	●	
Non ferrous metals					●
Heat resistant alloys					

→ v_c Page 128–131

Ø DC_{m7} for Type UNI, P, GG und AL / **Ø DC_{h7}** for Type VA

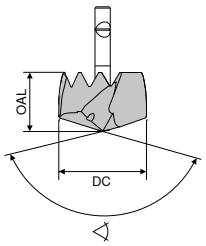
Continued on next page

WTX – Drilling Head for Exchangeable drills

▲ extra long head type

2

Change UNI	Change P	Change VA	Change GG	Change AL
DPX74S	Ti750	Ti700	TiSi	TiB
DRAGONSKIN				



DC h7/m7	OAL	140° Solid carbide NEW W2 Article no. 10 919 ...		138° Solid carbide W2 Article no. 10 923 ...		138° Solid carbide W2 Article no. 10 921 ...		140° Solid carbide W2 Article no. 10 924 ...		140° Solid carbide W2 Article no. 10 922 ...	
mm	mm	£		£		£		£		£	
27.2	17.4	179.99	27200	179.99	272	179.99	272	179.99	272	179.99	272
27.3	17.4	179.99	27300	179.99	273	179.99	273	179.99	273	179.99	273
27.4	17.4	179.99	27400	179.99	274	179.99	274	179.99	274	179.99	274
27.5	17.4	179.99	27500	179.99	275	179.99	275	179.99	275	179.99	275
27.6	17.4	179.99	27600	179.99	276	179.99	276	179.99	276	179.99	276
27.7	17.4	179.99	27700	179.99	277	179.99	277	179.99	277	179.99	277
27.8	17.4	179.99	27800	179.99	278	179.99	278	179.99	278	179.99	278
27.9	17.4	179.99	27900	179.99	279	179.99	279	179.99	279	179.99	279
28.0	17.4	179.99	28000	179.99	280	179.99	280	179.99	280	179.99	280
28.1	17.4	196.85	28100	196.85	281	196.85	281	196.85	281	196.85	281
28.2	17.4	196.85	28200	196.85	282	196.85	282	196.85	282	196.85	282
28.3	17.4	196.85	28300	196.85	283	196.85	283	196.85	283	196.85	283
28.4	17.4	196.85	28400	196.85	284	196.85	284	196.85	284	196.85	284
28.5	18.4	196.85	28500	196.85	285	196.85	285	196.85	285	196.85	285
28.6	18.4	196.85	28600	196.85	286	196.85	286	196.85	286	196.85	286
28.7	18.4	196.85	28700	196.85	287	196.85	287	196.85	287	196.85	287
28.8	18.4	196.85	28800	196.85	288	196.85	288	196.85	288	196.85	288
28.9	18.4	196.85	28900	196.85	289	196.85	289	196.85	289	196.85	289
29.0	18.4	196.85	29000	196.85	290	196.85	290	196.85	290	196.85	290
29.1	18.4	196.85	29100	196.85	291	196.85	291	196.85	291	196.85	291
29.2	18.4	196.85	29200	196.85	292	196.85	292	196.85	292	196.85	292
29.3	18.4	196.85	29300	196.85	293	196.85	293	196.85	293	196.85	293
29.4	18.4	196.85	29400	196.85	294	196.85	294	196.85	294	196.85	294
29.5	18.4	196.85	29500	196.85	295	196.85	295	196.85	295	196.85	295
29.6	18.4	196.85	29600	196.85	296	196.85	296	196.85	296	196.85	296
29.7	18.4	196.85	29700	196.85	297	196.85	297	196.85	297	196.85	297
29.8	18.4	196.85	29800	196.85	298	196.85	298	196.85	298	196.85	298
29.9	18.4	196.85	29900	196.85	299	196.85	299	196.85	299	196.85	299
30.0	18.4	196.85	30000	196.85	300	196.85	300	196.85	300	196.85	300
30.1	18.4	219.65	30100	219.65	301	219.65	301	219.65	301	219.65	301
30.2	18.4	219.65	30200	219.65	302	219.65	302	219.65	302	219.65	302
30.3	18.4	219.65	30300	219.65	303	219.65	303	219.65	303	219.65	303
30.4	18.4	219.65	30400	219.65	304	219.65	304	219.65	304	219.65	304
30.5	18.4	219.65	30500	219.65	305	219.65	305	219.65	305	219.65	305
30.6	18.4	219.65	30600	219.65	306	219.65	306	219.65	306	219.65	306
30.7	18.4	219.65	30700	219.65	307	219.65	307	219.65	307	219.65	307
30.8	18.4	219.65	30800	219.65	308	219.65	308	219.65	308	219.65	308
30.9	18.4	219.65	30900	219.65	309	219.65	309	219.65	309	219.65	309

Steel	●	●	○		
Stainless steel			●		
Cast iron	●	●	○	●	
Non ferrous metals					●
Heat resistant alloys					

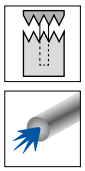
→ v_c Page 128–131

Ø DC_{m7} for Type UNI, P, GG und AL / **Ø DC_{h7}** for Type VA

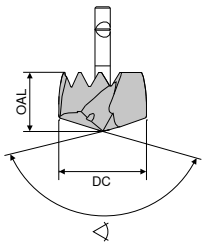
Continued on next page

WTX – Drilling Head for Exchangeable drills

▲ extra long head type



Change UNI	Change P	Change VA	Change GG	Change AL
DPX74S	Ti750	Ti700	TiSi	TiB
DRAGONSKIN				



DC h7/m7	OAL	◁ 140° Solid carbide NEW W2 Article no. 10 919 ...		◁ 138° Solid carbide W2 Article no. 10 923 ...		◁ 138° Solid carbide W2 Article no. 10 921 ...		◁ 140° Solid carbide W2 Article no. 10 924 ...		◁ 140° Solid carbide W2 Article no. 10 922 ...	
mm	mm	£		£		£		£		£	
31.0	18.4	219.65	31000	219.65	310	219.65	310	219.65	310	219.65	310
31.1	18.4	219.65	31100	219.65	311	219.65	311	219.65	311	219.65	311
31.2	18.4	219.65	31200	219.65	312	219.65	312	219.65	312	219.65	312
31.3	18.4	219.65	31300	219.65	313	219.65	313	219.65	313	219.65	313
31.4	18.4	219.65	31400	219.65	314	219.65	314	219.65	314	219.65	314
31.5	18.4	219.65	31500	219.65	315	219.65	315	219.65	315	219.65	315
31.6	18.4	219.65	31600	219.65	316	219.65	316	219.65	316	219.65	316
31.7	18.4	219.65	31700	219.65	317	219.65	317	219.65	317	219.65	317
31.8	18.4	219.65	31800	219.65	318	219.65	318	219.65	318	219.65	318
31.9	18.4	219.65	31900	219.65	319	219.65	319	219.65	319	219.65	319
32.0	18.4	219.65	32000	219.65	320	219.65	320	219.65	320	219.65	320
32.5	24.3	235.11	32500	235.11	325						
33.0	24.3	235.11	33000	235.11	330						
33.5	24.3	235.11	33500	235.11	335						
34.0	24.3	235.11	34000	235.11	340						
34.5	24.3	235.11	34500	235.11	345						
35.0	24.3	235.11	35000	235.11	350						
35.5	26.3	268.90	35500	268.90	355						
36.0	26.3	268.90	36000	268.90	360						
36.5	26.3	268.90	36500	268.90	365						
37.0	26.3	268.90	37000	268.90	370						
37.5	26.3	268.90	37500	268.90	375						
38.0	26.3	268.90	38000	268.90	380						
38.5	26.3	292.29	38500	292.29	385						
39.0	26.3	292.29	39000	292.29	390						
39.5	26.3	292.29	39500	292.29	395						
40.0	26.3	292.29	40000	292.29	400						
40.5	26.3	292.29	40500	292.29	405						
41.0	26.3	292.29	41000	292.29	410						

Steel		●		●		○					
Stainless steel						●					
Cast iron		●		●		○		●			
Non ferrous metals										●	
Heat resistant alloys											

→ v_c Page 128–131

Ø DC_{m7} for Type UNI, P, GG und AL / **Ø DC_{h7}** for Type VA

2

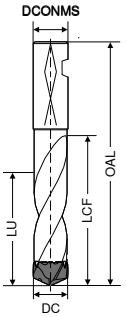
WTX – Holder for Exchangeable drills

▲ with radial teeth

Scope of supply:

Holder incl. screw driver

≤ 1xD | Change



HB

DC	DCONMS h6	OAL	LCF	LU	torque moment	W1 Article no. 10 911 ...	
mm	mm	mm	mm	mm	Nm	£	
12,00 - 12,49	14	81	29	12.5	1,0	235.11	120
12,50 - 12,99	14	81	29	13.0	1,0	235.11	125
13,00 - 13,49	14	81	31	13.5	1,0	235.11	130
13,50 - 13,99	16	86	32	14.0	1,3	235.11	135
14,00 - 14,49	16	86	33	14.5	1,3	235.11	140
14,50 - 14,99	16	91	34	15.0	1,3	235.11	145
15,00 - 15,49	16	91	36	15.5	1,3	235.11	150
15,50 - 16,49	18	92	38	16.5	1,3	242.92	160
15,50 - 16,49	20	97	38	16.5	1,3	242.92	161
16,50 - 17,49	18	94	40	17.5	3,5	242.92	165
16,50 - 17,49	20	99	40	17.5	3,5	242.92	166
17,50 - 18,49	18	99	43	18.5	3,5	242.92	175
17,50 - 18,49	20	104	43	18.5	3,5	242.92	176
18,50 - 19,49	20	99	45	19.5	3,5	287.09	185
19,50 - 20,49	20	104	47	20.5	3,5	287.09	195
20,50 - 21,49	25	111	49	21.5	3,5	318.26	205
21,50 - 22,49	25	116	52	22.5	3,5	318.26	215
22,50 - 23,49	25	116	54	23.5	3,5	348.15	225
23,50 - 24,49	25	121	56	24.5	4,0	348.15	235
24,50 - 25,49	25	123	59	25.5	4,0	378.01	245
25,50 - 26,49	25	123	61	26.5	4,0	378.01	255
26,50 - 27,49	25	128	63	27.5	4,0	378.01	265
27,50 - 28,49	25	128	66	28.5	4,0	378.01	275
28,50 - 29,49	32	134	68	29.5	4,0	439.07	285
29,50 - 30,49	32	139	70	30.5	4,0	439.07	295
30,50 - 31,49	32	139	75	31.5	4,0	484.52	305
31,50 - 32,49	32	139	75	32.5	4,0	484.52	315
32,50 - 33,49	32	150	78	33.5	6,0	522.20	325
33,50 - 34,49	32	150	79	34.5	6,0	522.20	335
34,50 - 35,49	32	150	82	35.5	6,0	522.20	345
35,50 - 37,49	32	152	86	37.5	6,0	601.44	355
37,50 - 39,49	32	157	91	39.5	6,0	623.53	375
39,50 - 41,00	32	167	95	41.5	6,0	639.12	395

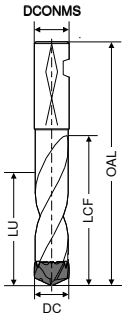
WTX – Holder for Exchangeable drills

▲ with radial teeth

Scope of supply:

Holder incl. screw driver

≤ 3xD | Change



HB

DC	DCONMS h6	OAL	LCF	LU	torque moment	W1 Article no. 10 913 ...	
mm	mm	mm	mm	mm	Nm	£	
12,00 - 12,49	14	100	53	38.0	1,0	265.84	120
12,50 - 12,99	14	105	55	39.0	1,0	265.84	125
13,00 - 13,49	14	105	57	40.0	1,0	265.84	130
13,50 - 13,99	16	110	59	42.0	1,3	265.84	135
14,00 - 14,49	16	115	61	43.0	1,3	265.84	140
14,50 - 14,99	16	115	63	45.0	1,3	265.84	145
15,00 - 15,49	16	115	65	46.0	1,3	265.84	150
15,50 - 16,49	18	120	70	50.0	1,3	259.31	160
15,50 - 16,49	20	125	70	50.0	1,3	259.31	161
16,50 - 17,49	18	125	74	53.0	3,5	259.31	165
16,50 - 17,49	20	130	74	50.0	3,5	259.31	166
17,50 - 18,49	18	130	78	55.0	3,5	259.31	175
17,50 - 18,49	20	135	78	50.0	3,5	259.31	176
18,50 - 19,49	20	135	82	58.0	3,5	306.66	185
19,50 - 20,49	20	140	87	62.0	3,5	306.66	195
20,50 - 21,49	25	150	91	65.0	3,5	338.63	205
21,50 - 22,49	25	155	95	67.0	3,5	338.63	215
22,50 - 23,49	25	160	99	70.0	3,5	370.72	225
23,50 - 24,49	25	165	103	73.0	3,5	370.72	235
24,50 - 25,49	25	165	108	77.0	4,0	402.66	245
25,50 - 26,49	25	175	112	80.0	4,0	402.66	255
26,50 - 27,49	25	175	116	82.0	4,0	402.66	265
27,50 - 28,49	25	180	120	85.0	4,0	402.66	275
28,50 - 29,49	32	190	124	88.0	4,0	466.75	285
29,50 - 30,49	32	195	129	92.0	4,0	466.75	295
30,50 - 31,49	32	195	133	94.0	4,0	515.55	305
31,50 - 32,49	32	200	137	97.0	4,0	515.55	315
32,50 - 33,49	32	210	144	100.5	6,0	607.94	325
33,50 - 34,49	32	215	148	103.5	6,0	607.94	335
34,50 - 35,49	32	220	153	106.5	6,0	607.94	345
35,50 - 37,49	32	227	161	112.5	6,0	698.88	355
37,50 - 39,49	32	237	170	118.5	6,0	724.86	375
39,50 - 41,00	32	247	178	124.5	6,0	743.05	395

Spare parts for Exchangeable Head Drill-Ø

Y7

Screw driver

		Article no. 80 950 ... £	
12,00 - 12,49	SW 1,3	3.59	132
12,50 - 13,49	SW 1,3	3.59	132
13,50 - 14,49	SW 1,5	4.67	133
14,50 - 16,49	SW 1,5	4.67	133
16,50 - 20,49	SW 2	4.45	134
20,50 - 24,49	SW 2	4.45	134
24,50 - 28,49	SW 2,5	4.17	135
28,50 - 32,49	SW 2,5	4.17	135
32,50 - 35,49	SW 3	4.17	136
35,50 - 39,49	SW 3	4.17	136
39,50 - 41,00	SW 3	4.17	136

W1

Grub screw

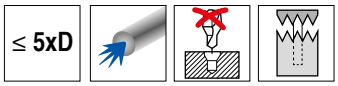
	Article no. 10 950 ... £	
M2,5 x 0,45 x 5	4.16	025
M2,5 x 0,45 x 6	4.16	026
M3 x 0,5 x 6	4.16	031
M3 x 0,5 x 7	4.29	030
M4 x 0,5 x 7,5	4.29	040
M4 x 0,5 x 10	4.29	041
M5 x 0,5 x 11	4.29	050
M5 x 0,5 x 14	4.29	051
M6 x 0,5 x 16	7.67	060
M6 x 0,5 x 18	7.67	061
M6 x 0,5 x 20	7.67	062

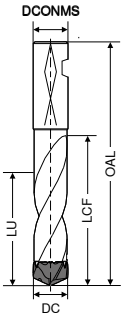
WTX – Holder for Exchangeable drills

▲ with radial teeth

Scope of supply:

Holder incl. screw driver





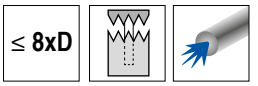
DC	DCONMS h6	OAL	LCF	LU	torque moment	W1 Article no. 10 915 ...	
mm	mm	mm	mm	mm	Nm	£	
12,00 - 12,49	14	125	78	62.0	1,0	299.26	120
12,50 - 12,99	14	130	81	65.0	1,0	299.26	125
13,00 - 13,49	14	130	84	67.0	1,0	299.26	130
13,50 - 13,99	16	140	88	70.0	1,3	299.26	135
14,00 - 14,49	16	140	90	72.0	1,3	299.26	140
14,50 - 14,99	16	145	94	75.0	1,3	299.26	145
15,00 - 15,49	16	145	96	77.0	1,3	299.26	150
15,50 - 16,49	18	155	103	82.0	1,3	306.66	160
15,50 - 16,49	20	160	103	82.0	1,3	306.66	161
16,50 - 17,49	18	160	109	87.0	3,5	306.66	165
16,50 - 17,49	20	165	109	87.0	3,5	306.66	166
17,50 - 18,49	18	165	115	92.0	3,5	306.66	175
17,50 - 18,49	20	170	115	92.0	3,5	306.66	176
18,50 - 19,49	20	175	121	97.0	3,5	355.47	185
19,50 - 20,49	20	180	128	102.0	3,5	355.47	195
20,50 - 21,49	25	195	134	107.0	3,5	385.98	205
21,50 - 22,49	25	200	140	112.0	3,5	385.98	215
22,50 - 23,49	25	205	146	117.0	3,5	419.52	225
23,50 - 24,49	25	210	152	122.0	3,5	419.52	235
24,50 - 25,49	25	220	159	127.0	4,0	451.50	245
25,50 - 26,49	25	225	165	132.0	4,0	451.50	255
26,50 - 27,49	25	230	171	137.0	4,0	451.50	265
27,50 - 28,49	25	240	177	142.0	4,0	451.50	275
28,50 - 29,49	32	250	183	146.0	4,0	515.55	285
29,50 - 30,49	32	255	190	152.0	4,0	515.55	295
30,50 - 31,49	32	260	196	157.0	4,0	562.89	305
31,50 - 32,49	32	265	202	162.0	4,0	562.89	315
32,50 - 33,49	32	275	210	167.5	6,0	687.18	325
33,50 - 34,49	32	285	217	172.5	6,0	687.18	335
34,50 - 35,49	32	290	224	177.5	6,0	687.18	345
35,50 - 37,49	32	302	236	187.5	6,0	772.90	355
37,50 - 39,49	32	317	249	197.5	6,0	801.51	375
39,50 - 41,00	32	327	261	207.5	6,0	819.67	395

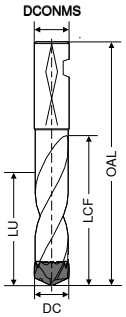
WTX – Holder for Exchangeable drills

▲ with radial teeth

Scope of supply:

Holder incl. screw driver





DC	DCONMS h6	OAL	LCF	LU	torque moment	W1 Article no. 10 918 ...	
mm	mm	mm	mm	mm	Nm	£	
12,00 - 12,49	14	165	116	100	1,0	380.60	120
12,50 - 12,99	14	170	121	104	1,0	380.60	125
13,00 - 13,49	14	175	126	108	1,0	380.60	130
13,50 - 13,99	16	180	129	111	1,3	380.60	135
14,00 - 14,49	16	185	134	115	1,3	380.60	140
14,50 - 14,99	16	190	139	120	1,3	380.60	145
15,00 - 15,49	16	195	144	124	1,3	380.60	150
15,50 - 16,49	18	205	152	131	1,3	387.87	160
15,50 - 16,49	20	210	152	131	1,3	387.87	161
16,50 - 17,49	18	215	161	138	3,5	387.87	165
16,50 - 17,49	20	220	161	138	3,5	387.87	166
17,50 - 18,49	18	220	171	147	3,5	387.87	175
17,50 - 18,49	20	225	171	147	3,5	387.87	176
18,50 - 19,49	20	235	180	155	3,5	445.97	185
19,50 - 20,49	20	240	189	163	3,5	445.97	195
20,50 - 21,49	25	260	198	170	3,5	485.19	205
21,50 - 22,49	25	270	207	178	3,5	485.19	215
22,50 - 23,49	25	275	217	187	3,5	544.75	225
23,50 - 24,49	25	285	226	194	3,5	544.75	235
24,50 - 25,49	25	295	235	202	4,0	623.17	245
25,50 - 26,49	25	305	244	210	4,0	623.17	255
26,50 - 27,49	25	315	253	218	4,0	623.17	265
27,50 - 28,49	25	325	263	226	4,0	623.17	275
28,50 - 29,49	32	340	272	234	4,0	720.51	285
29,50 - 30,49	32	345	281	242	4,0	720.51	295
30,50 - 31,49	32	355	290	249	4,0	798.97	305
31,50 - 32,00	32	360	299	257	4,0	798.97	315

Y7

Screw driver

W1

Grub screw

Spare parts for Exchangeable Head Drill-Ø		Y7 Article no. 80 950 ... £			W1 Article no. 10 950 ... £	
12,00 - 12,49	SW 1,3	3.59	132	M2,5 x 0,45 x 5	4.16	025
12,50 - 13,49	SW 1,3	3.59	132	M2,5 x 0,45 x 6	4.16	026
13,50 - 14,49	SW 1,5	4.67	133	M3 x 0,5 x 6	4.16	031
14,50 - 16,49	SW 1,5	4.67	133	M3 x 0,5 x 7	4.29	030
16,50 - 20,49	SW 2	4.45	134	M4 x 0,5 x 7,5	4.29	040
20,50 - 24,49	SW 2	4.45	134	M4 x 0,5 x 10	4.29	041
24,50 - 28,49	SW 2,5	4.17	135	M5 x 0,5 x 11	4.29	050
28,50 - 32,49	SW 2,5	4.17	135	M5 x 0,5 x 14	4.29	051
32,50 - 35,49	SW 3	4.17	136	M6 x 0,5 x 16	7.67	060
35,50 - 39,49	SW 3	4.17	136	M6 x 0,5 x 18	7.67	061
39,50 - 41,00	SW 3	4.17	136	M6 x 0,5 x 20	7.67	062

WTX – Holder for Exchangeable drills

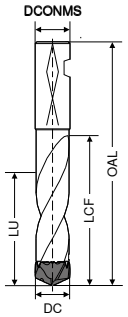
2

▲ with radial teeth

Scope of supply:
Holder incl. screw driver

≤ 12xD

Change



HB

DC	DCONMS h6	OAL	LCF	LU	torque moment	NEW W1 Article no. 10 912 ...	
mm	mm	mm	mm	mm	Nm	£	
12,00 - 12,49	14	210	162	150	1,0	502.79	12000
12,50 - 12,99	14	216	168	156	1,0	502.79	12500
13,00 - 13,49	14	223	175	162	1,0	502.79	13000
13,50 - 13,99	16	235	182	168	1,3	502.79	13500
14,00 - 14,49	16	242	189	174	1,3	502.79	14000
14,50 - 14,99	16	248	195	180	1,3	502.79	14500
15,00 - 15,49	16	255	202	186	1,3	502.79	15000
15,50 - 16,49	18	262	209	198	1,3	547.71	15500
16,50 - 17,49	18	275	222	210	3,5	547.71	16500
17,50 - 18,49	18	289	236	222	3,5	547.71	17500
18,50 - 19,49	20	304	249	234	3,5	663.65	18500
19,50 - 20,49	20	318	236	246	3,5	663.65	19500
20,50 - 21,49	25	337	276	258	3,5	716.89	20500
21,50 - 22,49	25	351	290	270	3,5	716.89	21500
22,50 - 23,49	25	364	303	282	3,5	796.57	22500
23,50 - 24,49	25	378	317	294	3,5	796.57	23500
24,50 - 25,49	25	391	330	306	4,0	902.92	24500
25,50 - 26,49	25	405	344	318	4,0	902.92	25500
26,50 - 27,49	25	418	357	330	4,0	902.92	26500
27,50 - 28,49	25	432	371	342	4,0	902.92	27500
28,50 - 29,49	32	449	384	354	4,0	1,035.49	28500
29,50 - 30,49	32	463	398	366	4,0	1,035.49	29500
30,50 - 31,49	32	476	411	378	4,0	1,141.96	30500
31,50 - 32,00	32	490	425	390	4,0	1,141.96	31500

Y7
Screw driver

W1
Grub screw

Spare parts for Exchangeable Head Drill-Ø		Article no. 80 950 ... £			Article no. 10 950 ... £	
12,00 - 12,49	SW 1,3	3.59	132	M2,5 x 0,45 x 5	4.16	025
12,50 - 13,49	SW 1,3	3.59	132	M2,5 x 0,45 x 6	4.16	026
13,50 - 14,49	SW 1,5	4.67	133	M3 x 0,5 x 6	4.16	031
14,50 - 16,49	SW 1,5	4.67	133	M3 x 0,5 x 7	4.29	030
16,50 - 20,49	SW 2	4.45	134	M4 x 0,5 x 7,5	4.29	040
20,50 - 24,49	SW 2	4.45	134	M4 x 0,5 x 10	4.29	041
24,50 - 28,49	SW 2,5	4.17	135	M5 x 0,5 x 11	4.29	050
28,50 - 32,49	SW 2,5	4.17	135	M5 x 0,5 x 14	4.29	051
32,50 - 35,49	SW 3	4.17	136	M6 x 0,5 x 16	7.67	060
35,50 - 39,49	SW 3	4.17	136	M6 x 0,5 x 18	7.67	061
39,50 - 41,00	SW 3	4.17	136	M6 x 0,5 x 20	7.67	062

MultiChange Programme Overview

The highly stable „MultiChange“ exchangeable head system enables an extremely fast tool change. Designed to be durable and for a very high radial run-out accuracy, this exchangeable head system is probably the most stable and precise exchangeable head system on the market. The following chapters contain suitable exchangeable heads for almost every application.

Reaming and countersinking

- Through hole reamers
  Ø 8–30.2 mm incl. special diameters / ZEFP* 4–6
- Blind hold reamers
  Ø 12.2–30.2 mm incl. special diameters / ZEFP* 6

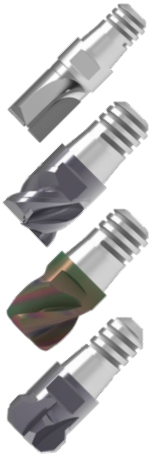
→ **Chapter 4, Reaming and countersinking**

*ZEFP = Number of teeth

Solid carbide milling cutters

- PCD shoulder mills
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 2
- Solid carbide shoulder mills
  Type N, PCR-UNI, PCR-ALU / Ø 8, 10, 12, 16, 20 mm / ZEFP* 3+4
- Solid carbide rough and finish milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 4–6
- Solid carbide finish milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 6
- Solid carbide high-feed cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 6
- Solid carbide ball-nosed end mills
  Ø 10, 12, 16, 20 mm / ZEFP* 4
- Solid carbide torus bull nose milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 3+4
- Solid carbide quarter round cutter
  Ø 8, 10, 12, 16, 20 mm
- Solid carbide deburring cutters
  Ø 10, 12, 16, 20 mm / ZEFP* 4+6

→ **Chapter 14, Solid carbide milling cutters**



*ZEFP = Number of teeth

Tool holder

- Steel holder, extra short
  Cylindrical / Tapered 87°
  Length 60–90 mm
  for KLG: 8, 10, 12, 16, 20 mm

- Short holder steel/Solid carbide
  Cylindrical
  Length 85–120 mm
  for KLG: 8, 10, 12, 16, 20 mm

- Holder steel/Solid carbide, short
  87° taper
  Length 85–120 mm
  for KLG: 8, 10, 12, 16, 20 mm

- Solid carbide holder, medium
  Cylindrical / Tapered 87°
  Length 110–150 mm
  for KLG: 8, 10, 12, 16, 20 mm

- Holder steel/Solid carbide, long
  Cylindrical
  Length 150–200 mm
  for KLG: 8, 10, 12, 16, 20 mm

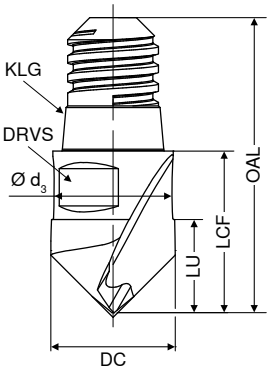
- Holder steel/Solid carbide, long
  87° taper
  Length 150–200 mm
  for KLG: 8, 10, 12, 16, 20 mm

- Steel/Solid carbide holder, extra long
  Cylindrical
  Length 200–250 mm
  for KLG: 16 and 20 mm

→ **Chapter 17, Accessories**

MultiChange – NC Spot Drill

- ▲ KLG = Coupling Size
- ▲ TQX = Torque Moment
- ▲ NOF = No. of cutting edges



DC mm	KLG	LU mm	d_3 mm	LCF mm	OAL mm	NOF	DRVS mm	TQX Nm	$a_{p\,max}$ mm	◁ 90° Solid carbide T7 Article no. 10 709 ... £		◁ 120° Solid carbide T7 Article no. 10 712 ... £		◁ 142° Solid carbide T7 Article no. 10 714 ... £	
8	06	6.0	7.8	11	20.4	2	6	5.0	4	32.30	**080**	32.30	**080**	32.30	**080**
10	08	7.5	9.8	13	26.9	2	8	12.5	5	35.80	**100**	35.80	**100**	35.80	**100**
12	10	9.0	11.8	16	30.1	2	10	15.0	6	45.93	**120**	45.93	**120**	45.93	**120**
16	12	12.0	15.8	20	37.3	2	13	20.0	8	64.97	**160**	64.97	**160**	64.97	**160**
20	16	15.0	19.8	25	47.2	2	16	25.0	10	94.50	**200**	94.50	**200**	94.50	**200**

Steel	●	●	●
Stainless steel	●	●	●
Cast iron	●	●	●
Non ferrous metals	●	●	●
Heat resistant alloys			

→ v_c Page 125

Torque wrench should be used for coupling sizes 06 and 08.

For unstable applications, the cutting data should be reduced.

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data standard values – WTX – Ti

Index	Drilling depth 3xD Ti 10 786 ...						Drilling depth 5xD Ti 10 787 ...					
	v_c m/min with through coolant	Ø 4–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	v_c m/min with through coolant	Ø 4–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1												
1.2												
1.3												
1.4												
1.5												
1.6												
1.7												
1.8												
1.9												
1.10												
1.11												
1.12												
1.13												
1.14												
1.15												
1.16												
2.1	**75**	0,08	0,12	0,15	0,2	0,25	75	0,08	0,12	0,15	0,2	0,25
2.2	**75**	0,08	0,12	0,15	0,2	0,25	75	0,08	0,12	0,15	0,2	0,25
2.3	**65**	0,08	0,12	0,15	0,2	0,25	65	0,08	0,12	0,15	0,2	0,25
2.4	**65**	0,08	0,12	0,15	0,2	0,25	65	0,08	0,12	0,15	0,2	0,25
2.5	**70**	0,08	0,12	0,15	0,2	0,25	70	0,08	0,12	0,15	0,2	0,25
2.6	**70**	0,08	0,12	0,15	0,2	0,25	70	0,08	0,12	0,15	0,2	0,25
2.7	**40**	0,04	0,08	0,12	0,16	0,2	40	0,04	0,08	0,12	0,16	0,2
3.1												
3.2												
3.3												
3.4												
3.5												
3.6												
3.7												
3.8												
4.1												
4.2												
4.3												
4.4												
4.5												
4.6												
4.7												
4.8												
4.9												
4.10												
4.11												
4.12												
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
5.2	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
5.3	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
5.4	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
5.5	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
5.6	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
5.7	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
5.8	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
5.9	**45**	0,04	0,08	0,12	0,16	0,2	**45**	0,04	0,08	0,12	0,16	0,2
5.10	**40**	0,04	0,08	0,12	0,16	0,2	**40**	0,04	0,08	0,12	0,16	0,2
5.11	**35**	0,04	0,08	0,12	0,16	0,2	**35**	0,04	0,08	0,12	0,16	0,2
6.1												
6.2												
6.3												
6.4												
6.5												

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Cutting data standard values – WTX – Speed

Index	Drilling depth 3xD Speed UNI 10 781 ...						Drilling depth 5xD Speed UNI 10 771 ...					
	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	**200**	0,15	0,20	0,26	0,31	0,35	**200**	0,14	0,19	0,24	0,29	0,32
1.2	**240**	0,25	0,33	0,42	0,50	0,56	**240**	0,23	0,30	0,38	0,46	0,52
1.3	**200**	0,19	0,25	0,33	0,39	0,44	**200**	0,18	0,23	0,30	0,36	0,40
1.4	**160**	0,17	0,22	0,29	0,35	0,39	**160**	0,15	0,20	0,26	0,32	0,36
1.5	**180**	0,19	0,25	0,33	0,39	0,44	**180**	0,18	0,23	0,30	0,36	0,40
1.6	**160**	0,17	0,22	0,29	0,35	0,39	**160**	0,15	0,20	0,26	0,32	0,36
1.7	**160**	0,17	0,22	0,29	0,35	0,39	**160**	0,15	0,20	0,26	0,32	0,36
1.8	**120**	0,14	0,18	0,23	0,28	0,31	**120**	0,13	0,17	0,22	0,26	0,29
1.9	**180**	0,19	0,25	0,33	0,39	0,44	**180**	0,18	0,23	0,30	0,36	0,40
1.10	**120**	0,14	0,18	0,23	0,28	0,31	**120**	0,13	0,17	0,22	0,26	0,29
1.11	**100**	0,12	0,16	0,21	0,25	0,28	**100**	0,11	0,15	0,19	0,23	0,26
1.12	**120**	0,14	0,18	0,23	0,28	0,31	**120**	0,13	0,17	0,22	0,26	0,29
1.13	**120**	0,14	0,18	0,23	0,28	0,31	**120**	0,13	0,17	0,22	0,26	0,29
1.14	**100**	0,12	0,16	0,21	0,25	0,28	**100**	0,11	0,15	0,19	0,23	0,26
1.15	**100**	0,14	0,18	0,23	0,28	0,31	**100**	0,13	0,17	0,22	0,26	0,29
1.16	**100**	0,14	0,18	0,23	0,28	0,31	**100**	0,13	0,17	0,22	0,26	0,29
2.1	**65**	0,09	0,12	0,15	0,19	0,23	**65**	0,09	0,12	0,15	0,19	0,23
2.2	**65**	0,09	0,12	0,15	0,19	0,23	**65**	0,09	0,12	0,15	0,19	0,23
2.3	**65**	0,09	0,12	0,15	0,19	0,23	**65**	0,09	0,12	0,15	0,19	0,23
2.4	**65**	0,09	0,12	0,15	0,19	0,23	**65**	0,09	0,12	0,15	0,19	0,23
2.5	**60**	0,08	0,10	0,13	0,16	0,20	**60**	0,08	0,10	0,13	0,16	0,20
2.6	**65**	0,09	0,12	0,15	0,19	0,23	**65**	0,09	0,12	0,15	0,19	0,23
2.7	**60**	0,08	0,10	0,13	0,16	0,20	**60**	0,08	0,10	0,13	0,16	0,20
3.1	**140**	0,24	0,31	0,39	0,47	0,54	**140**	0,24	0,31	0,39	0,47	0,54
3.2	**100**	0,21	0,27	0,35	0,42	0,47	**100**	0,21	0,27	0,35	0,42	0,47
3.3	**120**	0,27	0,35	0,45	0,54	0,60	**120**	0,27	0,35	0,45	0,54	0,60
3.4	**75**	0,21	0,27	0,35	0,42	0,47	**75**	0,21	0,27	0,35	0,42	0,47
3.5	**170**	0,30	0,39	0,49	0,59	0,67	**170**	0,30	0,39	0,49	0,59	0,67
3.6	**140**	0,27	0,35	0,45	0,54	0,60	**140**	0,27	0,35	0,45	0,54	0,60
3.7	**170**	0,27	0,35	0,45	0,54	0,60	**170**	0,27	0,35	0,45	0,54	0,60
3.8	**140**	0,21	0,27	0,35	0,42	0,47	**140**	0,21	0,27	0,35	0,42	0,47
4.1												
4.2												
4.3												
4.4												
4.5												
4.6												
4.7												
4.8												
4.9												
4.10												
4.11	200	0,24	0,31	0,39	0,47	0,54	200	0,24	0,31	0,39	0,47	0,54
4.12	200	0,21	0,27	0,35	0,42	0,47	200	0,21	0,27	0,35	0,42	0,47
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1	50	0,10	0,13	0,17	0,20	0,23	50	0,09	0,12	0,15	0,19	0,21
6.2	40	0,06	0,08	0,11	0,13	0,15	40	0,06	0,08	0,10	0,12	0,13
6.3												
6.4												
6.5												

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Index	Drilling depth 8xD Speed UNI 10 782 ...					
	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	**170**	0,13	0,17	0,22	0,26	0,30
1.2	**205**	0,23	0,30	0,38	0,46	0,52
1.3	**170**	0,18	0,23	0,30	0,36	0,40
1.4	**135**	0,15	0,20	0,26	0,32	0,36
1.5	**155**	0,18	0,23	0,30	0,36	0,40
1.6	**135**	0,15	0,20	0,26	0,32	0,36
1.7	**135**	0,15	0,20	0,26	0,32	0,36
1.8	**100**	0,13	0,17	0,22	0,26	0,29
1.9	**155**	0,18	0,23	0,30	0,36	0,40
1.10	**100**	0,13	0,17	0,22	0,26	0,29
1.11	**85**	0,11	0,15	0,19	0,23	0,26
1.12	**100**	0,13	0,17	0,22	0,26	0,29
1.13	**100**	0,13	0,17	0,22	0,26	0,29
1.14	**85**	0,11	0,15	0,19	0,23	0,26
1.15	**85**	0,13	0,17	0,22	0,26	0,29
1.16	**85**	0,13	0,17	0,22	0,26	0,29
2.1	**65**	0,09	0,12	0,15	0,19	0,23
2.2	**65**	0,09	0,12	0,15	0,19	0,23
2.3	**65**	0,09	0,12	0,15	0,19	0,23
2.4	**65**	0,09	0,12	0,15	0,19	0,23
2.5	**60**	0,08	0,10	0,13	0,16	0,20
2.6	**65**	0,09	0,12	0,15	0,19	0,23
2.7	**60**	0,08	0,10	0,13	0,16	0,20
3.1	**125**	0,24	0,31	0,39	0,47	0,54
3.2	**100**	0,21	0,27	0,35	0,42	0,47
3.3	**120**	0,27	0,35	0,45	0,54	0,60
3.4	**75**	0,21	0,27	0,35	0,42	0,47
3.5	**170**	0,30	0,39	0,49	0,59	0,67
3.6	**140**	0,27	0,35	0,45	0,54	0,60
3.7	**170**	0,27	0,35	0,45	0,54	0,60
3.8	**140**	0,21	0,27	0,35	0,42	0,47
4.1						
4.2						
4.3						
4.4						
4.5						
4.6						
4.7						
4.8						
4.9						
4.10						
4.11	200	0,24	0,31	0,39	0,47	0,54
4.12	200	0,21	0,27	0,35	0,42	0,47
4.13						
4.14						
4.15						
4.16						
4.17						
4.18						
4.19						
5.1						
5.2						
5.3						
5.4						
5.5						
5.6						
5.7						
5.8						
5.9						
5.10						
5.11						
6.1	40	0,10	0,13	0,17	0,20	0,23
6.2	30	0,06	0,08	0,11	0,13	0,15
6.3						
6.4						
6.5						

Index	Drilling depth 5xD Speed VA 10 773 ...					
	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	200	0,10	0,13	0,17	0,20	0,23
1.2	240	0,17	0,21	0,27	0,33	0,37
1.3	200	0,13	0,17	0,21	0,26	0,29
1.4	160	0,11	0,14	0,19	0,23	0,25
1.5	180	0,13	0,17	0,21	0,26	0,29
1.6	160	0,11	0,14	0,19	0,23	0,25
1.7	160	0,11	0,14	0,19	0,23	0,25
1.8	120	0,09	0,12	0,15	0,18	0,21
1.9	180	0,13	0,17	0,21	0,26	0,29
1.10	120	0,09	0,12	0,15	0,18	0,21
1.11	100	0,08	0,11	0,14	0,16	0,18
1.12	120	0,09	0,12	0,15	0,18	0,21
1.13	120	0,09	0,12	0,15	0,18	0,21
1.14	100	0,08	0,11	0,14	0,16	0,18
1.15	100	0,09	0,12	0,15	0,18	0,21
1.16	100	0,09	0,12	0,15	0,18	0,21
2.1	**90**	0,10	0,13	0,17	0,20	0,23
2.2	**75**	0,08	0,11	0,14	0,18	0,20
2.3	**90**	0,08	0,10	0,13	0,16	0,18
2.4	**60**	0,08	0,10	0,13	0,16	0,18
2.5	**65**	0,08	0,10	0,13	0,16	0,18
2.6	**75**	0,08	0,11	0,14	0,18	0,20
2.7	**50**	0,07	0,09	0,12	0,14	0,16
3.1	140	0,17	0,22	0,28	0,34	0,38
3.2	100	0,15	0,20	0,25	0,30	0,34
3.3	120	0,19	0,25	0,32	0,38	0,43
3.4	75	0,15	0,20	0,25	0,30	0,34
3.5	170	0,22	0,28	0,35	0,42	0,48
3.6	140	0,19	0,25	0,32	0,38	0,43
3.7	170	0,19	0,25	0,32	0,38	0,43
3.8	140	0,15	0,20	0,25	0,30	0,34
4.1						
4.2						
4.3						
4.4						
4.5						
4.6						
4.7						
4.8						
4.9						
4.10						
4.11	200	0,24	0,31	0,39	0,47	0,54
4.12	200	0,21	0,27	0,35	0,42	0,47
4.13						
4.14						
4.15						
4.16						
4.17						
4.18						
4.19						
5.1	50	0,06	0,08	0,10	0,12	0,13
5.2	25	0,06	0,08	0,10	0,12	0,13
5.3	25	0,06	0,08	0,10	0,12	0,13
5.4	25	0,06	0,08	0,10	0,12	0,13
5.5	25	0,06	0,08	0,10	0,12	0,13
5.6	25	0,06	0,08	0,10	0,12	0,13
5.7	50	0,06	0,08	0,10	0,12	0,13
5.8	15	0,06	0,08	0,10	0,12	0,13
5.9	50	0,12	0,16	0,20	0,25	0,28
5.10	40	0,15	0,19	0,25	0,31	0,35
5.11	40	0,12	0,16	0,20	0,25	0,28
6.1						
6.2						
6.3						
6.4						
6.5						

Cutting data standard values – WTX – Feed

		Drilling depth 5xD Feed UNI 10 789 ...							
Index	v_c m/min with through coolant	Ø 4–6 f mm/rev.	Ø 6–7 f mm/rev.	Ø 7–8 f mm/rev.	Ø 8–10 f mm/rev.	Ø 10–12 f mm/rev.	Ø 12–15 f mm/rev.	Ø 15–17 f mm/rev.	Ø 17–20 f mm/rev.
1.1	**100**	0,27	0,31	0,35	0,40	0,44	0,49	0,54	0,56
1.2	**120**	0,45	0,51	0,57	0,64	0,71	0,78	0,86	0,90
1.3	**100**	0,35	0,40	0,44	0,50	0,55	0,61	0,67	0,70
1.4	**80**	0,30	0,35	0,39	0,44	0,49	0,54	0,59	0,62
1.5	**90**	0,35	0,40	0,44	0,50	0,55	0,61	0,67	0,70
1.6	**80**	0,30	0,35	0,39	0,44	0,49	0,54	0,59	0,62
1.7	**80**	0,30	0,35	0,39	0,44	0,49	0,54	0,59	0,62
1.8	**60**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.9	**90**	0,35	0,40	0,44	0,50	0,55	0,61	0,67	0,70
1.10	**60**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.11	**50**	0,22	0,25	0,28	0,32	0,35	0,39	0,43	0,45
1.12	**60**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.13	**60**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.14	**50**	0,22	0,25	0,28	0,32	0,35	0,39	0,43	0,45
1.15	**50**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.16	**50**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
2.1	**65**	0,14	0,16	0,18	0,21	0,23	0,26	0,28	0,30
2.2	**55**	0,12	0,14	0,16	0,18	0,20	0,22	0,25	0,27
2.3	**65**	0,11	0,13	0,14	0,17	0,18	0,20	0,23	0,24
2.4	**45**	0,11	0,13	0,14	0,17	0,18	0,20	0,23	0,24
2.5	**40**	0,11	0,13	0,14	0,17	0,18	0,20	0,23	0,24
2.6	**55**	0,12	0,14	0,16	0,18	0,20	0,22	0,25	0,27
2.7	**40**	0,10	0,12	0,13	0,15	0,17	0,18	0,20	0,21
3.1	**120**	0,38	0,42	0,47	0,53	0,59	0,65	0,71	0,76
3.2	**85**	0,33	0,38	0,42	0,48	0,52	0,58	0,64	0,67
3.3	**110**	0,43	0,48	0,54	0,61	0,67	0,74	0,81	0,86
3.4	**75**	0,33	0,38	0,42	0,48	0,52	0,58	0,64	0,67
3.5	**140**	0,47	0,53	0,59	0,67	0,73	0,81	0,89	0,95
3.6	**115**	0,43	0,48	0,54	0,61	0,67	0,74	0,81	0,86
3.7	**140**	0,43	0,48	0,54	0,61	0,67	0,74	0,81	0,86
3.8	**115**	0,33	0,38	0,42	0,48	0,52	0,58	0,64	0,67
4.1	300	0,32	0,34	0,36	0,42	0,46	0,50	0,55	0,60
4.2	300	0,32	0,34	0,36	0,42	0,46	0,50	0,55	0,60
4.3	250	0,40	0,44	0,48	0,54	0,58	0,65	0,71	0,79
4.4	220	0,40	0,44	0,48	0,54	0,58	0,65	0,71	0,79
4.5	180	0,40	0,44	0,48	0,54	0,58	0,65	0,71	0,79
4.6									
4.7									
4.8	120	0,29	0,31	0,35	0,40	0,44	0,48	0,52	0,58
4.9	200	0,38	0,48	0,56	0,66	0,72	0,78	0,84	1,00
4.10	200	0,38	0,48	0,56	0,66	0,72	0,78	0,84	1,00
4.11	200	0,38	0,48	0,56	0,66	0,72	0,78	0,84	1,00
4.12	200	0,38	0,48	0,56	0,66	0,72	0,78	0,84	1,00
4.13									
4.14									
4.15									
4.16									
4.17									
4.18									
4.19									
5.1									
5.2									
5.3									
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5.5									
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5.7									
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5.9									
5.10									
5.11									
6.1									
6.2									
6.3									
6.4									
6.5									

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Index	v_c m/min with through coolant	Hole depth 8xD and 12xD Feed UNI 10 794 ..., 10 796 ... Ø 4–6 f mm/rev.	Ø 6–7 f mm/rev.	Ø 7–8 f mm/rev.	Ø 8–10 f mm/rev.	Ø 10–12 f mm/rev.	Ø 12–15 f mm/rev.	Ø 15–17 f mm/rev.	Ø 17–20 f mm/rev.
1.1	**90**	0,27	0,31	0,35	0,40	0,44	0,49	0,54	0,56
1.2	**110**	0,45	0,51	0,57	0,64	0,71	0,78	0,86	0,90
1.3	**90**	0,35	0,40	0,44	0,50	0,55	0,61	0,67	0,70
1.4	**70**	0,30	0,35	0,39	0,44	0,49	0,54	0,59	0,62
1.5	**80**	0,35	0,40	0,44	0,50	0,55	0,61	0,67	0,70
1.6	**70**	0,30	0,35	0,39	0,44	0,49	0,54	0,59	0,62
1.7	**70**	0,30	0,35	0,39	0,44	0,49	0,54	0,59	0,62
1.8	**55**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.9	**80**	0,35	0,40	0,44	0,50	0,55	0,61	0,67	0,70
1.10	**55**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.11	**45**	0,22	0,25	0,28	0,32	0,35	0,39	0,43	0,45
1.12	**55**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.13	**55**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.14	**45**	0,22	0,25	0,28	0,32	0,35	0,39	0,43	0,45
1.15	**45**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
1.16	**45**	0,25	0,28	0,32	0,36	0,40	0,44	0,48	0,50
2.1	**60**	0,14	0,16	0,18	0,21	0,23	0,26	0,28	0,30
2.2	**50**	0,12	0,14	0,16	0,18	0,20	0,22	0,25	0,27
2.3	**60**	0,11	0,13	0,14	0,17	0,18	0,20	0,23	0,24
2.4	**40**	0,11	0,13	0,14	0,17	0,18	0,20	0,23	0,24
2.5	**35**	0,11	0,13	0,14	0,17	0,18	0,20	0,23	0,24
2.6	**50**	0,12	0,14	0,16	0,18	0,20	0,22	0,25	0,27
2.7	**35**	0,10	0,12	0,13	0,15	0,17	0,18	0,20	0,21
3.1	**110**	0,38	0,42	0,47	0,53	0,59	0,65	0,71	0,76
3.2	**75**	0,33	0,38	0,42	0,48	0,52	0,58	0,64	0,67
3.3	**100**	0,43	0,48	0,54	0,61	0,67	0,74	0,81	0,86
3.4	**65**	0,33	0,38	0,42	0,48	0,52	0,58	0,64	0,67
3.5	**130**	0,47	0,53	0,59	0,67	0,73	0,81	0,89	0,95
3.6	**110**	0,43	0,48	0,54	0,61	0,67	0,74	0,81	0,86
3.7	**130**	0,43	0,48	0,54	0,61	0,67	0,74	0,81	0,86
3.8	**110**	0,33	0,38	0,42	0,48	0,52	0,58	0,64	0,67
4.1	300	0,32	0,34	0,36	0,42	0,46	0,50	0,55	0,60
4.2	300	0,32	0,34	0,36	0,42	0,46	0,50	0,55	0,60
4.3	250	0,40	0,44	0,48	0,54	0,58	0,65	0,71	0,79
4.4	220	0,40	0,44	0,48	0,54	0,58	0,65	0,71	0,79
4.5	180	0,40	0,44	0,48	0,54	0,58	0,65	0,71	0,79
4.6									
4.7									
4.8	120	0,29	0,31	0,35	0,40	0,44	0,48	0,52	0,58
4.9	200	0,38	0,48	0,56	0,66	0,72	0,78	0,84	1,00
4.10	200	0,38	0,48	0,56	0,66	0,72	0,78	0,84	1,00
4.11	200	0,38	0,48	0,56	0,66	0,72	0,78	0,84	1,00
4.12	200	0,38	0,48	0,56	0,66	0,72	0,78	0,84	1,00
4.13									
4.14									
4.15									
4.16									
4.17									
4.18									
4.19									
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5.6									
5.7									
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5.9									
5.10									
5.11									
6.1									
6.2									
6.3									
6.4									
6.5									

Cutting data standard values – WTX – UNI

Index	Drilling depth 3xD UNI 11 776 ..., 11 777 ..., 11 778 ..., 11 779 ..., 11 780 ..., 11 781 ...							
	v_c m/min without through coolant	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	Ø 20–25 f mm/rev.
1.1	**110**	**125**	0,14	0,17	0,22	0,26	0,30	0,32
1.2	**130**	**150**	0,23	0,28	0,35	0,42	0,48	0,51
1.3	**110**	**125**	0,18	0,21	0,28	0,33	0,37	0,40
1.4	**90**	**100**	0,15	0,19	0,24	0,29	0,33	0,35
1.5	**100**	**115**	0,18	0,21	0,28	0,33	0,37	0,40
1.6	**90**	**100**	0,15	0,19	0,24	0,29	0,33	0,35
1.7	**90**	**100**	0,15	0,19	0,24	0,29	0,33	0,35
1.8	**65**	**75**	0,12	0,15	0,20	0,24	0,27	0,28
1.9	**100**	**115**	0,18	0,21	0,28	0,33	0,37	0,40
1.10	**65**	**75**	0,12	0,15	0,20	0,24	0,27	0,28
1.11	**55**	**65**	0,11	0,14	0,18	0,21	0,24	0,26
1.12	**65**	**75**	0,12	0,15	0,20	0,24	0,27	0,28
1.13	**65**	**75**	0,12	0,15	0,20	0,24	0,27	0,28
1.14	**55**	**65**	0,11	0,14	0,18	0,21	0,24	0,26
1.15	**55**	**65**	0,12	0,15	0,20	0,24	0,27	0,28
1.16	**55**	**65**	0,12	0,15	0,20	0,24	0,27	0,28
2.1		50	0,10	0,12	0,15	0,19	0,21	0,23
2.2		45	0,08	0,10	0,13	0,16	0,19	0,21
2.3		45	0,07	0,09	0,12	0,15	0,17	0,18
2.4		35	0,07	0,09	0,12	0,15	0,17	0,18
2.5		35	0,07	0,09	0,12	0,15	0,17	0,18
2.6		50	0,08	0,10	0,13	0,16	0,19	0,21
2.7		35	0,07	0,08	0,11	0,13	0,15	0,16
3.1	**70**	**90**	0,20	0,24	0,31	0,37	0,42	0,46
3.2	**50**	**60**	0,18	0,21	0,28	0,33	0,37	0,40
3.3	**60**	**80**	0,23	0,28	0,35	0,42	0,48	0,51
3.4	**45**	**55**	0,18	0,21	0,28	0,33	0,37	0,40
3.5	**90**	**110**	0,25	0,30	0,39	0,46	0,53	0,58
3.6	**75**	**90**	0,23	0,28	0,35	0,42	0,48	0,51
3.7	**90**	**110**	0,23	0,28	0,35	0,42	0,48	0,51
3.8	**75**	**90**	0,18	0,21	0,28	0,33	0,37	0,40
4.1								
4.2								
4.3								
4.4								
4.5								
4.6								
4.7								
4.8								
4.9								
4.10								
4.11	120	200	0,18	0,22	0,28	0,34	0,38	0,42
4.12	120	200	0,16	0,20	0,25	0,30	0,34	0,36
4.13								
4.14								
4.15								
4.16								
4.17	240		0,12	0,15	0,20	0,24	0,27	0,29
4.18								
4.19								
5.1								
5.2								
5.3								
5.4								
5.5								
5.6								
5.7								
5.8								
5.9								
5.10								
5.11								
6.1	40	55	0,09	0,11	0,14	0,17	0,19	0,21
6.2	25	35	0,06	0,08	0,10	0,12	0,13	0,14
6.3								
6.4								
6.5								

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Index	Drilling depth 5xD UNI 11 782 ..., 11 783 ..., 11 784 ..., 11 785 ..., 11 786 ..., 11 787 ...								Drilling depth 8xD UNI 11 788 ..., 11 789 ..., 11 790 ...					
	v_c m/min without through coolant	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	Ø 20–25 f mm/rev.	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	**90**	**125**	0,13	0,17	0,22	0,26	0,30	0,32	**110**	0,13	0,17	0,22	0,26	0,30
1.2	**110**	**150**	0,21	0,28	0,35	0,42	0,48	0,51	**130**	0,21	0,28	0,35	0,42	0,48
1.3	**90**	**125**	0,16	0,21	0,28	0,33	0,37	0,40	**110**	0,16	0,21	0,28	0,33	0,37
1.4	**75**	**100**	0,14	0,19	0,24	0,29	0,33	0,35	**90**	0,14	0,19	0,24	0,29	0,33
1.5	**80**	**115**	0,16	0,21	0,28	0,33	0,37	0,40	**100**	0,16	0,21	0,28	0,33	0,37
1.6	**75**	**100**	0,14	0,19	0,24	0,29	0,33	0,35	**90**	0,14	0,19	0,24	0,29	0,33
1.7	**75**	**100**	0,14	0,19	0,24	0,29	0,33	0,35	**90**	0,14	0,19	0,24	0,29	0,33
1.8	**55**	**75**	0,12	0,15	0,20	0,24	0,27	0,28	**65**	0,12	0,15	0,20	0,24	0,27
1.9	**80**	**115**	0,16	0,21	0,28	0,33	0,37	0,40	**100**	0,16	0,21	0,28	0,33	0,37
1.10	**55**	**75**	0,12	0,15	0,20	0,24	0,27	0,28	**65**	0,12	0,15	0,20	0,24	0,27
1.11	**45**	**65**	0,10	0,14	0,18	0,21	0,24	0,26	**55**	0,10	0,14	0,18	0,21	0,24
1.12	**55**	**75**	0,12	0,15	0,20	0,24	0,27	0,28	**65**	0,12	0,15	0,20	0,24	0,27
1.13	**55**	**75**	0,12	0,15	0,20	0,24	0,27	0,28	**65**	0,12	0,15	0,20	0,24	0,27
1.14	**45**	**65**	0,10	0,14	0,18	0,21	0,24	0,26	**55**	0,10	0,14	0,18	0,21	0,24
1.15	**45**	**65**	0,12	0,15	0,20	0,24	0,27	0,28	**55**	0,12	0,15	0,20	0,24	0,27
1.16	**45**	**65**	0,12	0,15	0,20	0,24	0,27	0,28	**55**	0,12	0,15	0,20	0,24	0,27
2.1		50	0,09	0,12	0,15	0,19	0,21	0,23						
2.2		45	0,08	0,10	0,13	0,16	0,19	0,21						
2.3		45	0,07	0,09	0,12	0,15	0,17	0,18						
2.4		35	0,07	0,09	0,12	0,15	0,17	0,18						
2.5		35	0,07	0,09	0,12	0,15	0,17	0,18						
2.6		50	0,08	0,10	0,13	0,16	0,19	0,21						
2.7		35	0,06	0,08	0,11	0,13	0,15	0,16						
3.1	**75**	**90**	0,17	0,22	0,28	0,34	0,38	0,42	**80**	0,17	0,22	0,28	0,34	0,38
3.2	**55**	**60**	0,15	0,20	0,25	0,30	0,34	0,36	**55**	0,15	0,20	0,25	0,30	0,34
3.3	**70**	**80**	0,19	0,25	0,32	0,38	0,43	0,47	**70**	0,19	0,25	0,32	0,38	0,43
3.4	**45**	**55**	0,15	0,20	0,25	0,30	0,34	0,36	**50**	0,15	0,20	0,25	0,30	0,34
3.5	**90**	**110**	0,22	0,28	0,35	0,42	0,48	0,52	**95**	0,22	0,28	0,35	0,42	0,48
3.6	**75**	**90**	0,19	0,25	0,32	0,38	0,43	0,47	**80**	0,19	0,25	0,32	0,38	0,43
3.7	**90**	**110**	0,19	0,25	0,32	0,38	0,43	0,47	**95**	0,19	0,25	0,32	0,38	0,43
3.8	**75**	**90**	0,15	0,20	0,25	0,30	0,34	0,36	**80**	0,15	0,20	0,25	0,30	0,34
4.1														
4.2														
4.3														
4.4														
4.5														
4.6														
4.7														
4.8														
4.9														
4.10														
4.11	100	200	0,17	0,22	0,28	0,34	0,38	0,42	200	0,17	0,22	0,28	0,34	0,38
4.12	100	200	0,15	0,20	0,25	0,30	0,34	0,36	200	0,15	0,20	0,25	0,30	0,34
4.13														
4.14														
4.15														
4.16														
4.17														
4.18														
4.19														
5.1														
5.2														
5.3														
5.4														
5.5														
5.6														
5.7														
5.8														
5.9														
5.10														
5.11														
6.1		55	0,08	0,11	0,14	0,17	0,19	0,21						
6.2														
6.3														
6.4														
6.5														

Cutting data standard values – WTX – VA

Index	Drilling depth 3xD VA 10 731 ..., 10 732 ..., 10 733 ..., 10 734 ...							Drilling depth 5xD VA 10 740 ..., 10 741 ..., 10 745 ..., 10 746 ...						
	v_c m/min without through coolant	v_c m/min with through coolant	Ø 2–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	v_c m/min without through coolant	v_c m/min with through coolant	Ø 2–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	90	90	0,09	0,12	0,16	0,19	0,22	90	90	0,09	0,12	0,16	0,19	0,22
1.2	105	105	0,15	0,20	0,26	0,31	0,35	105	105	0,15	0,20	0,26	0,31	0,35
1.3	90	90	0,11	0,16	0,20	0,24	0,27	90	90	0,11	0,16	0,20	0,24	0,27
1.4	70	70	0,10	0,14	0,18	0,21	0,24	70	70	0,10	0,14	0,18	0,21	0,24
1.5	80	80	0,11	0,16	0,20	0,24	0,27	80	80	0,11	0,16	0,20	0,24	0,27
1.6	70	70	0,10	0,14	0,18	0,21	0,24	70	70	0,10	0,14	0,18	0,21	0,24
1.7	70	70	0,10	0,14	0,18	0,21	0,24	70	70	0,10	0,14	0,18	0,21	0,24
1.8	55	55	0,08	0,11	0,14	0,17	0,19	55	55	0,08	0,11	0,14	0,17	0,19
1.9	80	80	0,11	0,16	0,20	0,24	0,27	80	80	0,11	0,16	0,20	0,24	0,27
1.10	55	55	0,08	0,11	0,14	0,17	0,19	55	55	0,08	0,11	0,14	0,17	0,19
1.11	45	45	0,07	0,10	0,13	0,15	0,17	45	45	0,07	0,10	0,13	0,15	0,17
1.12	55	55	0,08	0,11	0,14	0,17	0,19	55	55	0,08	0,11	0,14	0,17	0,19
1.13	55	55	0,08	0,11	0,14	0,17	0,19	55	55	0,08	0,11	0,14	0,17	0,19
1.14	45	45	0,07	0,10	0,13	0,15	0,17	45	45	0,07	0,10	0,13	0,15	0,17
1.15	45	45	0,08	0,11	0,14	0,17	0,19	45	45	0,08	0,11	0,14	0,17	0,19
1.16	45	45	0,08	0,11	0,14	0,17	0,19	45	45	0,08	0,11	0,14	0,17	0,19
2.1	**30**	**60**	0,08	0,11	0,14	0,17	0,19	**30**	**60**	0,08	0,11	0,14	0,17	0,19
2.2	**25**	**50**	0,06	0,09	0,12	0,15	0,17	**25**	**50**	0,06	0,09	0,12	0,15	0,17
2.3	**30**	**60**	0,06	0,08	0,11	0,13	0,15	**30**	**60**	0,06	0,08	0,11	0,13	0,15
2.4	**20**	**40**	0,06	0,08	0,11	0,13	0,15	**20**	**40**	0,06	0,08	0,11	0,13	0,15
2.5	**18**	**35**	0,06	0,08	0,11	0,13	0,15	**18**	**35**	0,06	0,08	0,11	0,13	0,15
2.6	**25**	**50**	0,06	0,09	0,12	0,15	0,17	**25**	**50**	0,06	0,09	0,12	0,15	0,17
2.7	**18**	**35**	0,05	0,08	0,10	0,12	0,13	**18**	**35**	0,05	0,08	0,10	0,12	0,13
3.1	90	100	0,16	0,22	0,28	0,34	0,38	80	100	0,16	0,22	0,28	0,34	0,38
3.2	65	70	0,14	0,20	0,25	0,30	0,34	60	70	0,14	0,20	0,25	0,30	0,34
3.3	80	90	0,18	0,25	0,32	0,38	0,43	70	90	0,18	0,25	0,32	0,38	0,43
3.4	50	60	0,14	0,20	0,25	0,30	0,34	50	60	0,14	0,20	0,25	0,30	0,34
3.5	110	120	0,20	0,28	0,35	0,42	0,48	100	120	0,20	0,28	0,35	0,42	0,48
3.6	90	100	0,18	0,25	0,32	0,38	0,43	80	100	0,18	0,25	0,32	0,38	0,43
3.7	110	120	0,18	0,25	0,32	0,38	0,43	95	120	0,18	0,25	0,32	0,38	0,43
3.8	90	100	0,14	0,20	0,25	0,30	0,34	80	100	0,14	0,20	0,25	0,30	0,34
4.1	**240**	**320**	0,11	0,15	0,20	0,24	0,27	**160**	**320**	0,11	0,15	0,20	0,24	0,27
4.2	**180**	**240**	0,11	0,15	0,20	0,24	0,27	**120**	**240**	0,11	0,15	0,20	0,24	0,27
4.3	**150**	**200**	0,14	0,20	0,25	0,30	0,34	**100**	**200**	0,14	0,20	0,25	0,30	0,34
4.4	**120**	**160**	0,11	0,15	0,20	0,24	0,27	**80**	**160**	0,11	0,15	0,20	0,24	0,27
4.5	**90**	**120**	0,10	0,14	0,18	0,22	0,24	**60**	**120**	0,10	0,14	0,18	0,22	0,24
4.6	**240**	**320**	0,10	0,14	0,18	0,22	0,24	**200**	**320**	0,10	0,14	0,18	0,22	0,24
4.7	**210**	**280**	0,10	0,14	0,18	0,22	0,24	**175**	**280**	0,10	0,14	0,18	0,22	0,24
4.8	**120**	**160**	0,10	0,14	0,18	0,22	0,24	**100**	**160**	0,10	0,14	0,18	0,22	0,24
4.9	**150**	**200**	0,10	0,14	0,18	0,22	0,24	**125**	**200**	0,10	0,14	0,18	0,22	0,24
4.10	**120**	**160**	0,10	0,14	0,18	0,22	0,24	**100**	**160**	0,10	0,14	0,18	0,22	0,24
4.11	**120**	**160**	0,16	0,22	0,28	0,34	0,38	**120**	**160**	0,16	0,22	0,28	0,34	0,38
4.12	**120**	**160**	0,14	0,20	0,25	0,30	0,34	**120**	**160**	0,14	0,20	0,25	0,30	0,34
4.13	**80**	**120**	0,05	0,08	0,10	0,12	0,13	**60**	**120**	0,05	0,08	0,10	0,12	0,13
4.14	**100**	**150**	0,09	0,12	0,16	0,19	0,22	**75**	**150**	0,09	0,12	0,16	0,19	0,22
4.15	**80**	**120**	0,09	0,12	0,16	0,19	0,22	**60**	**120**	0,09	0,12	0,16	0,19	0,22
4.16	**150**	**300**	0,11	0,15	0,20	0,24	0,27		**300**	0,11	0,15	0,20	0,24	0,27
4.17	400		0,11	0,15	0,20	0,24	0,27	400		0,11	0,15	0,20	0,24	0,27
4.18		**40**	0,06	0,09	0,12	0,15	0,17		**40**	0,06	0,09	0,12	0,15	0,17
4.19		**40**	0,05	0,08	0,10	0,12	0,13		**40**	0,05	0,08	0,10	0,12	0,13
5.1		40	0,05	0,08	0,10	0,12	0,13		40	0,05	0,08	0,10	0,12	0,13
5.2		20	0,05	0,08	0,10	0,12	0,13		20	0,05	0,08	0,10	0,12	0,13
5.3		20	0,05	0,08	0,10	0,12	0,13		20	0,05	0,08	0,10	0,12	0,13
5.4		20	0,05	0,08	0,10	0,12	0,13		20	0,05	0,08	0,10	0,12	0,13
5.5		20	0,05	0,08	0,10	0,12	0,13		20	0,05	0,08	0,10	0,12	0,13
5.6		18	0,05	0,08	0,10	0,12	0,13		18	0,05	0,08	0,10	0,12	0,13
5.7		15	0,05	0,08	0,10	0,12	0,13		15	0,05	0,08	0,10	0,12	0,13
5.8		10	0,05	0,08	0,10	0,12	0,13		10	0,05	0,08	0,10	0,12	0,13
5.9		20	0,05	0,08	0,10	0,12	0,13		20	0,05	0,08	0,10	0,12	0,13
5.10		25	0,05	0,08	0,10	0,12	0,13		25	0,05	0,08	0,10	0,12	0,13
5.11		20	0,05	0,08	0,10	0,12	0,13		20	0,05	0,08	0,10	0,12	0,13
6.1	30		0,05	0,08	0,10	0,10	0,10	20		0,05	0,08	0,10	0,10	0,10
6.2	22		0,04	0,06	0,07	0,07	0,07	15		0,04	0,06	0,07	0,07	0,07
6.3														
6.4														
6.5														

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Index	Drilling depth 8xD VA 10 770 ...					
	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	75	0,09	0,12	0,16	0,19	0,22
1.2	90	0,15	0,20	0,26	0,31	0,35
1.3	75	0,11	0,16	0,20	0,24	0,27
1.4	60	0,10	0,14	0,18	0,21	0,24
1.5	70	0,11	0,16	0,20	0,24	0,27
1.6	60	0,10	0,14	0,18	0,21	0,24
1.7	60	0,10	0,14	0,18	0,21	0,24
1.8	45	0,08	0,11	0,14	0,17	0,19
1.9	70	0,11	0,16	0,20	0,24	0,27
1.10	45	0,08	0,11	0,14	0,17	0,19
1.11	40	0,07	0,10	0,13	0,15	0,17
1.12	45	0,08	0,11	0,14	0,17	0,19
1.13	45	0,08	0,11	0,14	0,17	0,19
1.14	40	0,07	0,10	0,13	0,15	0,17
1.15	40	0,08	0,11	0,14	0,17	0,19
1.16	40	0,08	0,11	0,14	0,17	0,19
2.1	**50**	0,08	0,11	0,14	0,17	0,19
2.2	**45**	0,06	0,09	0,12	0,15	0,17
2.3	**50**	0,06	0,08	0,11	0,13	0,15
2.4	**35**	0,06	0,08	0,11	0,13	0,15
2.5	**30**	0,06	0,08	0,11	0,13	0,15
2.6	**45**	0,06	0,09	0,12	0,15	0,17
2.7	**30**	0,05	0,08	0,10	0,12	0,13
3.1	85	0,16	0,22	0,28	0,34	0,38
3.2	60	0,14	0,20	0,25	0,30	0,34
3.3	75	0,18	0,25	0,32	0,38	0,43
3.4	50	0,14	0,20	0,25	0,30	0,34
3.5	100	0,20	0,28	0,35	0,42	0,48
3.6	85	0,18	0,25	0,32	0,38	0,43
3.7	100	0,18	0,25	0,32	0,38	0,43
3.8	85	0,14	0,20	0,25	0,30	0,34
4.1	**270**	0,11	0,15	0,20	0,24	0,27
4.2	**205**	0,11	0,15	0,20	0,24	0,27
4.3	**170**	0,14	0,20	0,25	0,30	0,34
4.4	**135**	0,11	0,15	0,20	0,24	0,27
4.5	**100**	0,10	0,14	0,18	0,22	0,24
4.6	**270**	0,10	0,14	0,18	0,22	0,24
4.7	**240**	0,10	0,14	0,18	0,22	0,24
4.8	**135**	0,10	0,14	0,18	0,22	0,24
4.9	**170**	0,10	0,14	0,18	0,22	0,24
4.10	**135**	0,10	0,14	0,18	0,22	0,24
4.11	**135**	0,16	0,22	0,28	0,34	0,38
4.12	**135**	0,14	0,20	0,25	0,30	0,34
4.13	**100**	0,05	0,08	0,10	0,12	0,13
4.14	**130**	0,09	0,12	0,16	0,19	0,22
4.15	**100**	0,09	0,12	0,16	0,19	0,22
4.16	**255**	0,11	0,15	0,20	0,24	0,27
4.17						
4.18	**35**	0,06	0,09	0,12	0,15	0,17
4.19	**35**	0,05	0,08	0,10	0,12	0,13
5.1	35	0,05	0,08	0,10	0,12	0,13
5.2	15	0,05	0,08	0,10	0,12	0,13
5.3	15	0,05	0,08	0,10	0,12	0,13
5.4	15	0,05	0,08	0,10	0,12	0,13
5.5	15	0,05	0,08	0,10	0,12	0,13
5.6	15	0,05	0,08	0,10	0,12	0,13
5.7	15	0,05	0,08	0,10	0,12	0,13
5.8	10	0,05	0,08	0,10	0,12	0,13
5.9	15	0,05	0,08	0,10	0,12	0,13
5.10	20	0,05	0,08	0,10	0,12	0,13
5.11	15	0,05	0,08	0,10	0,12	0,13
6.1						
6.2						
6.3						
6.4						
6.5						

Cutting data standard values – WTX – Quattro 4F

Index	Drilling depth 5xD Quattro 4F 10 730 ..., 10 735...							Drilling depth 8xD Quattro 4F 10 736 ...					
	v_c m/min without through coolant	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	**90**	**125**	0,13	0,17	0,22	0,26	0,30	**110**	0,13	0,17	0,22	0,26	0,30
1.2	**110**	**150**	0,21	0,28	0,35	0,42	0,48	**130**	0,21	0,28	0,35	0,42	0,48
1.3	**90**	**125**	0,16	0,21	0,28	0,33	0,37	**110**	0,16	0,21	0,28	0,33	0,37
1.4	**75**	**100**	0,14	0,19	0,24	0,29	0,33	**90**	0,14	0,19	0,24	0,29	0,33
1.5	**80**	**115**	0,16	0,21	0,28	0,33	0,37	**100**	0,16	0,21	0,28	0,33	0,37
1.6	**75**	**100**	0,14	0,19	0,24	0,29	0,33	**90**	0,14	0,19	0,24	0,29	0,33
1.7	**75**	**100**	0,14	0,19	0,24	0,29	0,33	**90**	0,14	0,19	0,24	0,29	0,33
1.8	**55**	**75**	0,12	0,15	0,20	0,24	0,27	**65**	0,12	0,15	0,20	0,24	0,27
1.9	**80**	**115**	0,16	0,21	0,28	0,33	0,37	**100**	0,16	0,21	0,28	0,33	0,37
1.10	**55**	**75**	0,12	0,15	0,20	0,24	0,27	**65**	0,12	0,15	0,20	0,24	0,27
1.11	**45**	**65**	0,10	0,14	0,18	0,21	0,24	**55**	0,10	0,14	0,18	0,21	0,24
1.12	**55**	**75**	0,12	0,15	0,20	0,24	0,27	**65**	0,12	0,15	0,20	0,24	0,27
1.13	**55**	**75**	0,12	0,15	0,20	0,24	0,27	**65**	0,12	0,15	0,20	0,24	0,27
1.14	**45**	**65**	0,10	0,14	0,18	0,21	0,24	**55**	0,10	0,14	0,18	0,21	0,24
1.15	**45**	**65**	0,12	0,15	0,20	0,24	0,27	**55**	0,12	0,15	0,20	0,24	0,27
1.16	**45**	**65**	0,12	0,15	0,20	0,24	0,27	**55**	0,12	0,15	0,20	0,24	0,27
2.1		50	0,09	0,12	0,15	0,19	0,21						
2.2		45	0,08	0,10	0,13	0,16	0,19						
2.3		45	0,07	0,09	0,12	0,15	0,17						
2.4		35	0,07	0,09	0,12	0,15	0,17						
2.5		35	0,07	0,09	0,12	0,15	0,17						
2.6		50	0,08	0,10	0,13	0,16	0,19						
2.7		35	0,06	0,08	0,11	0,13	0,15						
3.1	**75**	**90**	0,17	0,22	0,28	0,34	0,38	**80**	0,17	0,22	0,28	0,34	0,38
3.2	**55**	**60**	0,15	0,20	0,25	0,30	0,34	**55**	0,15	0,20	0,25	0,30	0,34
3.3	**70**	**80**	0,19	0,25	0,32	0,38	0,43	**70**	0,19	0,25	0,32	0,38	0,43
3.4	**45**	**55**	0,15	0,20	0,25	0,30	0,34	**50**	0,15	0,20	0,25	0,30	0,34
3.5	**90**	**110**	0,22	0,28	0,35	0,42	0,48	**95**	0,22	0,28	0,35	0,42	0,48
3.6	**75**	**90**	0,19	0,25	0,32	0,38	0,43	**80**	0,19	0,25	0,32	0,38	0,43
3.7	**90**	**110**	0,19	0,25	0,32	0,38	0,43	**95**	0,19	0,25	0,32	0,38	0,43
3.8	**75**	**90**	0,15	0,20	0,25	0,30	0,34	**80**	0,15	0,20	0,25	0,30	0,34
4.1													
4.2													
4.3													
4.4													
4.5													
4.6													
4.7													
4.8													
4.9													
4.10													
4.11	120	200	0,17	0,22	0,28	0,34	0,38	200	0,17	0,22	0,28	0,34	0,38
4.12	120	200	0,15	0,20	0,25	0,30	0,34	200	0,15	0,20	0,25	0,30	0,34
4.13													
4.14													
4.15													
4.16													
4.17	240		0,12	0,15	0,20	0,24	0,27						
4.18													
4.19													
5.1													
5.2													
5.3													
5.4													
5.5													
5.6													
5.7													
5.8													
5.9													
5.10													
5.11													
6.1	40	55	0,08	0,11	0,14	0,17	0,19	55	0,08	0,11	0,14	0,17	0,19
6.2	20	35	0,06	0,08	0,10	0,12	0,13						
6.3													
6.4													
6.5													

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

		Drilling depth 12xD Quattro 4F 10 737 ...				
Index	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	100	0,12	0,15	0,20	0,24	0,27
1.2	120	0,19	0,25	0,32	0,38	0,43
1.3	100	0,15	0,20	0,25	0,30	0,34
1.4	80	0,13	0,17	0,22	0,27	0,30
1.5	90	0,15	0,20	0,25	0,30	0,34
1.6	80	0,13	0,17	0,22	0,27	0,30
1.7	80	0,13	0,17	0,22	0,27	0,30
1.8	60	0,10	0,14	0,18	0,22	0,24
1.9	90	0,15	0,20	0,25	0,30	0,34
1.10	60	0,10	0,14	0,18	0,22	0,24
1.11	50	0,09	0,12	0,16	0,19	0,22
1.12	60	0,10	0,14	0,18	0,22	0,24
1.13	60	0,10	0,14	0,18	0,22	0,24
1.14	50	0,09	0,12	0,16	0,19	0,22
1.15	50	0,10	0,14	0,18	0,22	0,24
1.16	50	0,10	0,14	0,18	0,22	0,24
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
3.1	80	0,17	0,22	0,28	0,34	0,38
3.2	55	0,15	0,20	0,25	0,30	0,34
3.3	70	0,19	0,25	0,32	0,38	0,43
3.4	50	0,15	0,20	0,25	0,30	0,34
3.5	95	0,22	0,28	0,35	0,42	0,48
3.6	80	0,19	0,25	0,32	0,38	0,43
3.7	95	0,19	0,25	0,32	0,38	0,43
3.8	80	0,15	0,20	0,25	0,30	0,34
4.1						
4.2						
4.3						
4.4						
4.5						
4.6						
4.7						
4.8						
4.9						
4.10						
4.11	200	0,17	0,22	0,28	0,34	0,38
4.12	200	0,15	0,20	0,25	0,30	0,34
4.13						
4.14						
4.15						
4.16						
4.17						
4.18						
4.19						
5.1						
5.2						
5.3						
5.4						
5.5						
5.6						
5.7						
5.8						
5.9						
5.10						
5.11						
6.1						
6.2						
6.3						
6.4						
6.5						

Cutting data standard values – WTX – AL

Index	Drilling depth 5xD AL 10 791 ...						Drilling depth 8xD AL 10 792 ...					
	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1												
1.2												
1.3												
1.4												
1.5												
1.6												
1.7												
1.8												
1.9												
1.10												
1.11												
1.12												
1.13												
1.14												
1.15												
1.16												
2.1												
2.2												
2.3												
2.4												
2.5												
2.6												
2.7												
3.1	105	0,23	0,33	0,42	0,52	0,58	105	0,23	0,33	0,42	0,52	0,58
3.2	100	0,23	0,33	0,42	0,52	0,58	100	0,23	0,33	0,42	0,52	0,58
3.3	105	0,2	0,25	0,35	0,4	0,46	105	0,2	0,25	0,35	0,4	0,46
3.4	100	0,2	0,25	0,35	0,4	0,46	100	0,2	0,25	0,35	0,4	0,46
3.5	105	0,2	0,25	0,35	0,4	0,46	105	0,2	0,25	0,35	0,4	0,46
3.6	100	0,2	0,25	0,35	0,4	0,46	100	0,2	0,25	0,35	0,4	0,46
3.7	105	0,2	0,25	0,35	0,4	0,46	105	0,2	0,25	0,35	0,4	0,46
3.8	100	0,2	0,25	0,35	0,4	0,46	100	0,2	0,25	0,35	0,4	0,46
4.1	**360**	0,3	0,4	0,5	0,6	0,65	**330**	0,3	0,4	0,5	0,6	0,65
4.2	**400**	0,3	0,4	0,5	0,6	0,65	**360**	0,3	0,4	0,5	0,6	0,65
4.3	**360**	0,35	0,45	0,55	0,65	0,7	**330**	0,35	0,45	0,55	0,65	0,7
4.4	**350**	0,3	0,4	0,5	0,6	0,65	**320**	0,3	0,4	0,5	0,6	0,65
4.5	**300**	0,3	0,4	0,5	0,6	0,65	**300**	0,3	0,4	0,5	0,6	0,65
4.6	**160**	0,23	0,3	0,38	0,45	0,52	**130**	0,23	0,3	0,38	0,45	0,52
4.7	**200**	0,23	0,3	0,38	0,45	0,52	**170**	0,23	0,3	0,38	0,45	0,52
4.8												
4.9												
4.10												
4.11	**200**	0,23	0,3	0,38	0,45	0,52	**170**	0,23	0,3	0,38	0,45	0,52
4.12	**160**	0,23	0,3	0,38	0,45	0,52	**130**	0,23	0,3	0,38	0,45	0,52
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1												
6.2												
6.3												
6.4												
6.5												

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Index	Drilling depth 12xD AL 10 793 ...					
	v_c m/min with through coolant	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20
		f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1						
1.2						
1.3						
1.4						
1.5						
1.6						
1.7						
1.8						
1.9						
1.10						
1.11						
1.12						
1.13						
1.14						
1.15						
1.16						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
3.1	105	0,23	0,33	0,42	0,52	0,58
3.2	100	0,23	0,33	0,42	0,52	0,58
3.3	105	0,2	0,25	0,35	0,4	0,46
3.4	100	0,2	0,25	0,35	0,4	0,46
3.5	105	0,2	0,25	0,35	0,4	0,46
3.6	100	0,2	0,25	0,35	0,4	0,46
3.7	105	0,2	0,25	0,35	0,4	0,46
3.8	100	0,2	0,25	0,35	0,4	0,46
4.1	**330**	0,3	0,4	0,5	0,6	0,65
4.2	**360**	0,3	0,4	0,5	0,6	0,65
4.3	**330**	0,35	0,45	0,55	0,65	0,7
4.4	**320**	0,3	0,4	0,5	0,6	0,65
4.5	**300**	0,3	0,4	0,5	0,6	0,65
4.6	**130**	0,23	0,3	0,38	0,45	0,52
4.7	**170**	0,23	0,3	0,38	0,45	0,52
4.8						
4.9						
4.10						
4.11	**170**	0,23	0,3	0,38	0,45	0,52
4.12	**130**	0,23	0,3	0,38	0,45	0,52
4.13						
4.14						
4.15						
4.16						
4.17						
4.18						
4.19						
5.1						
5.2						
5.3						
5.4						
5.5						
5.6						
5.7						
5.8						
5.9						
5.10						
5.11						
6.1						
6.2						
6.3						
6.4						
6.5						

Cutting data standard values – WTX – GG

Index	Drilling depth 5xD GG 10 749 ...						Drilling depth 8xD GG 10 753 ...					
	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1												
1.2												
1.3												
1.4												
1.5												
1.6												
1.7												
1.8												
1.9												
1.10												
1.11												
1.12												
1.13												
1.14												
1.15												
1.16												
2.1												
2.2												
2.3												
2.4												
2.5												
2.6												
2.7												
3.1	**100**	0,15	0,18	0,25	0,30	0,34	**100**	0,14	0,16	0,22	0,27	0,31
3.2	**70**	0,13	0,16	0,23	0,27	0,30	**70**	0,12	0,14	0,20	0,24	0,27
3.3	**90**	0,17	0,21	0,29	0,35	0,39	**90**	0,16	0,18	0,26	0,31	0,35
3.4	**60**	0,13	0,16	0,23	0,27	0,30	**60**	0,12	0,14	0,20	0,24	0,27
3.5	**120**	0,19	0,23	0,32	0,38	0,43	**120**	0,17	0,20	0,28	0,34	0,38
3.6	**100**	0,17	0,21	0,29	0,35	0,39	**100**	0,16	0,18	0,26	0,31	0,35
3.7	**120**	0,17	0,21	0,29	0,35	0,39	**120**	0,16	0,18	0,26	0,31	0,35
3.8	**100**	0,13	0,16	0,23	0,27	0,30	**100**	0,12	0,14	0,20	0,24	0,27
4.1												
4.2	**300**	0,12	0,14	0,20	0,24	0,27	**300**	0,12	0,14	0,20	0,24	0,27
4.3	**250**	0,15	0,18	0,25	0,30	0,34	**250**	0,15	0,18	0,25	0,30	0,34
4.4	**200**	0,12	0,14	0,20	0,24	0,27	**200**	0,12	0,14	0,20	0,24	0,27
4.5	**150**	0,10	0,13	0,18	0,22	0,24	**150**	0,10	0,13	0,18	0,22	0,24
4.6												
4.7												
4.8	**200**	0,10	0,13	0,18	0,22	0,24	**200**	0,10	0,13	0,18	0,22	0,24
4.9	**250**	0,10	0,13	0,18	0,22	0,24	**250**	0,10	0,13	0,18	0,22	0,24
4.10	**200**	0,10	0,13	0,18	0,22	0,24	**200**	0,10	0,13	0,18	0,22	0,24
4.11	**200**	0,17	0,20	0,28	0,34	0,38	**200**	0,17	0,20	0,28	0,34	0,38
4.12	**200**	0,15	0,18	0,25	0,30	0,34	**200**	0,15	0,18	0,25	0,30	0,34
4.13	**120**	0,06	0,07	0,10	0,12	0,13	**120**	0,06	0,07	0,10	0,12	0,13
4.14	**150**	0,09	0,11	0,16	0,19	0,22	**150**	0,09	0,11	0,16	0,19	0,22
4.15	**120**	0,09	0,11	0,16	0,19	0,22	**120**	0,09	0,11	0,16	0,19	0,22
4.16	**300**	0,12	0,14	0,20	0,24	0,27	**300**	0,12	0,14	0,20	0,24	0,27
4.17	**400**	0,12	0,14	0,20	0,24	0,27	**400**	0,12	0,14	0,20	0,24	0,27
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1												
6.2												
6.3												
6.4												
6.5												

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Cutting data standard values – WTX – Mini

Index	Drilling depth 5xD MINI 10 775 ...				Drilling depth 8xD MINI 10 778 ...				Drilling depth 12xD MINI 10 779 ...			
	v_c m/min with through coolant	Ø 1,0–1,5 f mm/rev.	Ø 1,6–2,0 f mm/rev.	Ø 2,1–2,9 f mm/rev.	v_c m/min with through coolant	Ø 1,0–1,5 f mm/rev.	Ø 1,6–2,0 f mm/rev.	Ø 2,1–2,9 f mm/rev.	v_c m/min with through coolant	Ø 1,0–1,5 f mm/rev.	Ø 1,6–2,0 f mm/rev.	Ø 2,1–2,9 f mm/rev.
1.1	80	0,07	0,08	0,09	80	0,06	0,07	0,08	70	0,06	0,06	0,07
1.2	95	0,12	0,14	0,16	95	0,11	0,12	0,14	85	0,10	0,11	0,13
1.3	90	0,09	0,10	0,12	90	0,08	0,09	0,11	70	0,07	0,08	0,10
1.4	65	0,08	0,09	0,10	65	0,07	0,08	0,09	60	0,06	0,07	0,08
1.5	70	0,09	0,10	0,12	70	0,08	0,09	0,11	65	0,07	0,08	0,10
1.6	65	0,08	0,09	0,10	65	0,07	0,08	0,09	55	0,06	0,07	0,08
1.7	65	0,08	0,09	0,10	65	0,07	0,08	0,09	55	0,06	0,07	0,08
1.8	50	0,06	0,07	0,08	50	0,06	0,06	0,07	40	0,05	0,06	0,07
1.9	70	0,09	0,10	0,12	70	0,08	0,09	0,11	60	0,07	0,08	0,10
1.10	50	0,06	0,07	0,08	50	0,06	0,06	0,07	40	0,05	0,06	0,07
1.11	40	0,06	0,06	0,07	40	0,05	0,06	0,07	35	0,04	0,05	0,06
1.12	50	0,06	0,07	0,08	50	0,06	0,06	0,07	40	0,05	0,06	0,07
1.13	50	0,06	0,07	0,08	50	0,06	0,06	0,07	40	0,05	0,06	0,07
1.14	40	0,06	0,06	0,07	40	0,05	0,06	0,07	35	0,04	0,05	0,06
1.15	40	0,06	0,07	0,08	40	0,06	0,06	0,07	35	0,05	0,06	0,07
1.16	40	0,06	0,07	0,08	40	0,06	0,06	0,07	35	0,05	0,06	0,07
2.1	50	0,05	0,06	0,06	50	0,04	0,05	0,06				
2.2	40	0,04	0,05	0,06	40	0,04	0,04	0,05				
2.3	50	0,04	0,04	0,05	50	0,03	0,04	0,05				
2.4	32	0,04	0,04	0,05	32	0,03	0,04	0,05				
2.5	28	0,04	0,04	0,05	28	0,03	0,04	0,05				
2.6	40	0,04	0,05	0,06	40	0,04	0,04	0,05				
2.7	28	0,03	0,04	0,05	28	0,03	0,04	0,04				
3.1	90	0,11	0,12	0,14	90	0,10	0,11	0,13	80	0,09	0,10	0,11
3.2	65	0,09	0,10	0,12	65	0,08	0,09	0,11	55	0,07	0,08	0,10
3.3	80	0,12	0,14	0,16	80	0,11	0,12	0,14	70	0,10	0,11	0,13
3.4	55	0,09	0,10	0,12	55	0,08	0,09	0,11	50	0,07	0,08	0,10
3.5	100	0,14	0,16	0,18	100	0,13	0,14	0,16	95	0,11	0,13	0,14
3.6	90	0,12	0,14	0,16	90	0,11	0,12	0,14	80	0,10	0,11	0,13
3.7	105	0,12	0,14	0,16	105	0,11	0,12	0,14	95	0,10	0,11	0,13
3.8	90	0,09	0,10	0,12	90	0,08	0,09	0,11	80	0,07	0,08	0,10
4.1												
4.2	180	0,07	0,08	0,09	180	0,06	0,07	0,08	180	0,06	0,06	0,07
4.3	150	0,09	0,10	0,12	150	0,08	0,09	0,11	150	0,07	0,08	0,10
4.4	120	0,07	0,08	0,09	120	0,06	0,07	0,08	120	0,06	0,06	0,07
4.5	90	0,06	0,07	0,08	90	0,06	0,06	0,07	90	0,05	0,06	0,07
4.6												
4.7												
4.8	120	0,06	0,07	0,08	120	0,06	0,06	0,07	120	0,05	0,06	0,07
4.9	150	0,06	0,07	0,08	150	0,06	0,06	0,07	150	0,05	0,06	0,07
4.10	120	0,06	0,07	0,08	120	0,06	0,06	0,07	120	0,05	0,06	0,07
4.11	120	0,11	0,12	0,14	120	0,10	0,11	0,13	160	0,09	0,10	0,11
4.12	120	0,09	0,10	0,12	120	0,08	0,09	0,11	160	0,07	0,08	0,10
4.13	100	0,03	0,04	0,05	100	0,03	0,04	0,04	96	0,03	0,03	0,04
4.14	125	0,06	0,06	0,07	125	0,05	0,06	0,07	120	0,04	0,05	0,06
4.15	120	0,06	0,06	0,07	110	0,05	0,06	0,07	95	0,04	0,05	0,06
4.16	180	0,07	0,08	0,09	180	0,06	0,07	0,08	180	0,06	0,06	0,07
4.17									320	0,06	0,06	0,07
4.18	30	0,04	0,05	0,06	30	0,04	0,04	0,05				
4.19	32	0,03	0,04	0,05	32	0,03	0,04	0,04				
5.1	35	0,03	0,04	0,05	35	0,03	0,04	0,04				
5.2	16	0,03	0,04	0,05	16	0,03	0,04	0,04				
5.3	16	0,03	0,04	0,05	16	0,03	0,04	0,04				
5.4	16	0,03	0,04	0,05	16	0,03	0,04	0,04				
5.5	16	0,03	0,04	0,05	16	0,03	0,04	0,04				
5.6	15	0,03	0,04	0,05	15	0,03	0,04	0,04				
5.7	12	0,03	0,04	0,05	12	0,03	0,04	0,04				
5.8	8	0,03	0,04	0,05	8	0,03	0,04	0,04				
5.9	16	0,03	0,04	0,05	16	0,03	0,04	0,04				
5.10	20	0,03	0,04	0,05	20	0,03	0,04	0,04				
5.11	16	0,03	0,04	0,05	16	0,03	0,04	0,04				
6.1												
6.2												
6.3												
6.4												
6.5												

Coolant pressure 20–50 bar. High coolant pressure can lead to stiffening of the tool and may result in tool breakage with minimum radial force. The coolant system should be operated with a filter of 20–25 microns in order to avoid a possible blockage of the coolant channels. The cutting values are highly dependent on the external conditions, the material and the machine. The values shown represent possible cutting data which may have to be corrected up or down depending on application.

Cutting data standard values – WTX – Mini, WTX – SB

Index	Drilling depth 5xD Mini 11 770 ...				
	v_c m/min without through coolant	< Ø 1,0	> Ø 1,0–1,5	> Ø 1,5–2,0	> Ø 2,0–2,9
		f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1	70	0,01	0,015	0,03	0,05
1.2	70	0,01	0,015	0,03	0,05
1.3	75	0,01	0,015	0,03	0,05
1.4	65	0,01	0,015	0,03	0,05
1.5	65	0,02	0,03	0,04	0,06
1.6	65	0,01	0,015	0,03	0,05
1.7	65	0,02	0,03	0,04	0,06
1.8	50	0,01	0,015	0,03	0,05
1.9					
1.10	65	0,01	0,015	0,03	0,05
1.11	65	0,01	0,015	0,03	0,05
1.12	50	0,01	0,015	0,03	0,05
1.13					
1.14					
1.15	50	0,01	0,015	0,03	0,05
1.16	50	0,01	0,015	0,03	0,05
2.1					
2.2					
2.3					
2.4					
2.5					
2.6					
2.7					
3.1	70	0,01	0,015	0,03	0,05
3.2	70	0,01	0,015	0,03	0,05
3.3	70	0,01	0,015	0,03	0,05
3.4	70	0,01	0,015	0,03	0,05
3.5	70	0,01	0,015	0,03	0,05
3.6	70	0,01	0,015	0,03	0,05
3.7	70	0,01	0,015	0,03	0,05
3.8	70	0,01	0,015	0,03	0,05
4.1	200	0,01	0,015	0,03	0,05
4.2	200	0,01	0,015	0,03	0,05
4.3	160	0,01	0,015	0,03	0,05
4.4	130	0,01	0,015	0,03	0,05
4.5	130	0,01	0,015	0,03	0,05
4.6	100	0,01	0,015	0,03	0,05
4.7	100	0,01	0,015	0,03	0,05
4.8					
4.9					
4.10					
4.11	70	0,01	0,015	0,03	0,05
4.12	120	0,01	0,015	0,03	0,05
4.13					
4.14					
4.15					
4.16	200	0,01	0,015	0,03	0,05
4.17					
4.18					
4.19					
5.1					
5.2					
5.3					
5.4					
5.5					
5.6					
5.7					
5.8					
5.9	30	0,01	0,015	0,03	0,05
5.10	20	0,01	0,015	0,03	0,05
5.11	20	0,01	0,015	0,03	0,05
6.1					
6.2					
6.3					
6.4					
6.5					

Index	Drilling depth 3xD SB 10 767 ..., 10 772 ...				
	v_c m/min without through coolant	Ø 2–5	Ø 5–8	Ø 8–12	Ø 12–16
		f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1	100	0,11	0,15	0,20	0,24
1.2	120	0,19	0,25	0,32	0,38
1.3	100	0,14	0,20	0,25	0,30
1.4	80	0,12	0,17	0,22	0,27
1.5	90	0,14	0,20	0,25	0,30
1.6	80	0,12	0,17	0,22	0,27
1.7	80	0,12	0,17	0,22	0,27
1.8	60	0,10	0,14	0,18	0,22
1.9	90	0,14	0,20	0,25	0,30
1.10	60	0,10	0,14	0,18	0,22
1.11	50	0,09	0,12	0,16	0,19
1.12	60	0,10	0,14	0,18	0,22
1.13	60	0,10	0,14	0,18	0,22
1.14	50	0,09	0,12	0,16	0,19
1.15	50	0,10	0,14	0,18	0,22
1.16	50	0,10	0,14	0,18	0,22
2.1					
2.2					
2.3					
2.4					
2.5					
2.6					
2.7					
3.1	70	0,17	0,22	0,28	0,34
3.2	50	0,14	0,20	0,25	0,30
3.3	60	0,19	0,25	0,32	0,38
3.4	45	0,14	0,20	0,25	0,30
3.5	90	0,21	0,28	0,35	0,42
3.6	75	0,19	0,25	0,32	0,38
3.7	90	0,19	0,25	0,32	0,38
3.8	75	0,14	0,20	0,25	0,30
4.1					
4.2					
4.3					
4.4					
4.5					
4.6					
4.7					
4.8					
4.9					
4.10					
4.11	120	0,17	0,22	0,28	0,34
4.12	120	0,14	0,20	0,25	0,30
4.13					
4.14					
4.15					
4.16					
4.17	240	0,11	0,15	0,20	0,24
4.18					
4.19					
5.1					
5.2					
5.3					
5.4					
5.5					
5.6					
5.7					
5.8					
5.9					
5.10					
5.11					
6.1					
6.2					
6.3					
6.4					
6.5					

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Cutting data standard values – WTX – H

Index	Drilling depth 3xD H 10 776 ...								Drilling depth 3xD H 10 777 ...							
	v_c m/min with through coolant	Ø 2–3 f mm/rev.	Ø 3–4 f mm/rev.	Ø 4–5 f mm/rev.	Ø 5–6 f mm/rev.	Ø 6–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	v_c m/min without through coolant	Ø 2–3 f mm/rev.	Ø 3–4 f mm/rev.	Ø 4–5 f mm/rev.	Ø 5–6 f mm/rev.	Ø 6–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.
1.1	120	0,1	0,14	0,18	0,21	0,24	0,3	0,35								
1.2	120	0,1	0,14	0,18	0,21	0,24	0,3	0,35								
1.3	120	0,1	0,14	0,18	0,21	0,24	0,3	0,35								
1.4	100	0,09	0,13	0,16	0,19	0,22	0,28	0,34								
1.5	110	0,09	0,13	0,16	0,19	0,22	0,28	0,34								
1.6	100	0,08	0,12	0,15	0,18	0,21	0,27	0,32								
1.7	100	0,09	0,13	0,16	0,19	0,22	0,28	0,34								
1.8	85	0,08	0,12	0,15	0,18	0,21	0,27	0,32								
1.9																
1.10	100	0,08	0,12	0,15	0,18	0,21	0,27	0,32								
1.11	100	0,08	0,12	0,15	0,18	0,21	0,27	0,32								
1.12																
1.13	30	0,045	0,06	0,08	0,1	0,12	0,15	0,2								
1.14																
1.15	60	0,045	0,06	0,08	0,1	0,12	0,15	0,2								
1.16	80	0,08	0,12	0,15	0,18	0,21	0,27	0,32								
2.1																
2.2																
2.3																
2.4																
2.5																
2.6																
2.7																
3.1	115	0,15	0,19	0,23	0,27	0,335	0,425	0,52								
3.2	95	0,15	0,19	0,23	0,27	0,335	0,425	0,52								
3.3	95	0,125	0,155	0,18	0,2	0,25	0,35	0,4								
3.4	90	0,125	0,155	0,18	0,2	0,25	0,35	0,4								
3.5	95	0,125	0,155	0,18	0,2	0,25	0,35	0,4								
3.6	90	0,125	0,155	0,18	0,2	0,25	0,35	0,4								
3.7	95	0,125	0,155	0,18	0,2	0,25	0,35	0,4								
3.8	90	0,125	0,155	0,18	0,2	0,25	0,35	0,4								
4.1																
4.2																
4.3																
4.4																
4.5																
4.6																
4.7																
4.8																
4.9																
4.10																
4.11																
4.12																
4.13																
4.14																
4.15																
4.16																
4.17																
4.18																
4.19																
5.1																
5.2																
5.3																
5.4																
5.5																
5.6																
5.7																
5.8																
5.9																
5.10																
5.11																
6.1	**28**	**0,02**	**0,03**	**0,04**	**0,055**	**0,08**	**0,12**	**0,16**	**28**	**0,05**	**0,06**	**0,07**	**0,08**	**0,09**	**0,11**	**0,13**
6.2	**20**	**0,02**	**0,03**	**0,04**	**0,055**	**0,08**	**0,12**	**0,16**	**28**	**0,05**	**0,06**	**0,07**	**0,08**	**0,09**	**0,11**	**0,13**
6.3	20	0,02	0,03	0,04	0,055	0,08	0,12	0,16	**20**	**0,05**	**0,06**	**0,07**	**0,08**	**0,09**	**0,11**	**0,13**
6.4									**16**	**0,04**	**0,04**	**0,049**	**0,055**	**0,065**	**0,075**	**0,09**
6.5									**10**	**0,04**	**0,04**	**0,049**	**0,055**	**0,065**	**0,075**	**0,09**

The cutting data depends extremely on the external conditions, the material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Cutting data standard values – WTX – BR

	Drilling depth 3xD BR 10 760 ..., 10 761 ...								
Index	v_c m/min with through coolant	Ø 4 f mm/rev.	Ø 5 f mm/rev.	Ø 6 f mm/rev.	Ø 8 f mm/rev.	Ø 10 f mm/rev.	Ø 12 f mm/rev.	Ø 14 f mm/rev.	Ø 16 f mm/rev.
1.1									
1.2	**90**	0,13	0,16	0,19	0,23	0,26	0,28	0,31	0,33
1.3	**75**	0,10	0,12	0,15	0,18	0,20	0,22	0,24	0,26
1.4	**60**	0,09	0,11	0,13	0,15	0,18	0,20	0,21	0,23
1.5	**70**	0,10	0,12	0,15	0,18	0,20	0,22	0,24	0,26
1.6	**60**	0,09	0,11	0,13	0,15	0,18	0,20	0,21	0,23
1.7	**60**	0,09	0,11	0,13	0,15	0,18	0,20	0,21	0,23
1.8	**45**	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
1.9	**70**	0,10	0,12	0,15	0,18	0,20	0,22	0,24	0,26
1.10	**45**	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
1.11	**40**	0,06	0,08	0,09	0,11	0,13	0,14	0,15	0,16
1.12	**45**	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
1.13	**45**	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
1.14	**35**	0,06	0,08	0,09	0,11	0,13	0,14	0,15	0,16
1.15	**35**	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
1.16	**35**	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
2.1									
2.2									
2.3									
2.4									
2.5									
2.6									
2.7									
3.1	**80**	0,11	0,14	0,17	0,20	0,22	0,25	0,27	0,29
3.2	**55**	0,10	0,12	0,15	0,18	0,20	0,22	0,24	0,26
3.3	**70**	0,13	0,16	0,19	0,23	0,26	0,28	0,31	0,33
3.4	**50**	0,10	0,12	0,15	0,18	0,20	0,22	0,24	0,26
3.5	**90**	0,14	0,18	0,21	0,25	0,28	0,31	0,34	0,36
3.6	**80**	0,13	0,16	0,19	0,23	0,26	0,28	0,31	0,33
3.7	**95**	0,13	0,16	0,19	0,23	0,26	0,28	0,31	0,33
3.8	**80**	0,10	0,12	0,15	0,18	0,20	0,22	0,24	0,26
4.1									
4.2									
4.3	125	0,10	0,12	0,15	0,18	0,20	0,22	0,24	0,26
4.4	100	0,08	0,10	0,12	0,14	0,16	0,18	0,19	0,21
4.5	75	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
4.6									
4.7									
4.8	100	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
4.9	125	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
4.10	100	0,07	0,09	0,11	0,13	0,14	0,16	0,17	0,18
4.11	100	0,11	0,14	0,17	0,20	0,22	0,25	0,27	0,29
4.12									
4.13									
4.14									
4.15									
4.16									
4.17									
4.18									
4.19									
5.1									
5.2									
5.3									
5.4									
5.5									
5.6									
5.7									
5.8									
5.9									
5.10									
5.11									
6.1									
6.2									
6.3									
6.4									
6.5									

The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type!
The values indicated represent possible cutting data which may need to be corrected depending on operating conditions!

		Drilling depth 5xD BR 10 762 ...									
Index	v_c m/min with through coolant	Ø 4 f mm/rev.	Ø 5 f mm/rev.	Ø 6 f mm/rev.	Ø 8 f mm/rev.	Ø 10 f mm/rev.	Ø 12 f mm/rev.	Ø 14 f mm/rev.	Ø 16 f mm/rev.	Ø 18 f mm/rev.	Ø 20 f mm/rev.
1.1											
1.2	90	0,13	0,15	0,18	0,23	0,26	0,28	0,31	0,33	0,36	0,40
1.3	75	0,11	0,13	0,15	0,18	0,20	0,22	0,24	0,26	0,27	0,30
1.4	60	0,09	0,10	0,12	0,15	0,18	0,20	0,21	0,23	0,24	0,27
1.5	70	0,11	0,13	0,15	0,18	0,20	0,22	0,24	0,26	0,27	0,30
1.6	60	0,09	0,10	0,12	0,15	0,18	0,20	0,21	0,23	0,24	0,27
1.7	60	0,09	0,10	0,12	0,15	0,18	0,20	0,21	0,23	0,24	0,27
1.8	45	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
1.9	70	0,11	0,13	0,15	0,18	0,20	0,22	0,24	0,26	0,27	0,30
1.10	45	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
1.11	40	0,07	0,08	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,18
1.12	45	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
1.13	45	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
1.14	35	0,07	0,08	0,09	0,11	0,13	0,14	0,15	0,16	0,16	0,18
1.15	35	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
1.16	35	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
2.1											
2.2											
2.3											
2.4											
2.5											
2.6											
2.7											
3.1	80	0,12	0,13	0,16	0,20	0,22	0,25	0,27	0,29	0,31	0,34
3.2	55	0,11	0,13	0,15	0,18	0,20	0,22	0,24	0,26	0,27	0,30
3.3	70	0,13	0,15	0,18	0,23	0,26	0,28	0,31	0,33	0,36	0,40
3.4	50	0,11	0,13	0,15	0,18	0,20	0,22	0,24	0,26	0,27	0,30
3.5	90	0,13	0,15	0,18	0,25	0,28	0,31	0,34	0,36	0,39	0,43
3.6	80	0,13	0,15	0,18	0,23	0,26	0,28	0,31	0,33	0,36	0,40
3.7	95	0,13	0,15	0,18	0,23	0,26	0,28	0,31	0,33	0,36	0,40
3.8	80	0,11	0,13	0,15	0,18	0,20	0,22	0,24	0,26	0,27	0,30
4.1											
4.2											
4.3	125	0,11	0,13	0,15	0,18	0,20	0,22	0,24	0,26	0,27	0,30
4.4	100	0,09	0,10	0,12	0,14	0,16	0,18	0,19	0,21	0,23	0,25
4.5	75	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
4.6											
4.7											
4.8	100	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
4.9	125	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
4.10	100	0,08	0,09	0,11	0,13	0,14	0,16	0,17	0,18	0,19	0,21
4.11	100	0,12	0,13	0,16	0,20	0,22	0,25	0,27	0,29	0,31	0,34
4.12											
4.13											
4.14											
4.15											
4.16											
4.17											
4.18											
4.19											
5.1											
5.2											
5.3											
5.4											
5.5											
5.6											
5.7											
5.8											
5.9											
5.10											
5.11											
6.1											
6.2											
6.3											
6.4											
6.5											

Cutting data standard values – WTX – 180

	Drilling depth 3xD Type 180 10 720 ...						
Index	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	Ø 20–25 f mm/rev.
1.1	**100**	0,12	0,15	0,20	0,24	0,27	0,29
1.2	**120**	0,21	0,25	0,32	0,38	0,43	0,47
1.3	**100**	0,16	0,20	0,25	0,30	0,34	0,36
1.4	**80**	0,14	0,17	0,22	0,27	0,30	0,32
1.5	**90**	0,16	0,20	0,25	0,30	0,34	0,36
1.6	**80**	0,14	0,17	0,22	0,27	0,30	0,32
1.7	**80**	0,14	0,17	0,22	0,27	0,30	0,32
1.8	**60**	0,11	0,14	0,18	0,22	0,24	0,26
1.9	**90**	0,16	0,20	0,25	0,30	0,34	0,36
1.10	**60**	0,11	0,14	0,18	0,22	0,24	0,26
1.11	**50**	0,10	0,12	0,16	0,19	0,22	0,23
1.12	**60**	0,11	0,14	0,18	0,22	0,24	0,26
1.13	**60**	0,11	0,14	0,18	0,22	0,24	0,26
1.14	**50**	0,10	0,12	0,16	0,19	0,22	0,23
1.15	**50**	0,11	0,14	0,18	0,22	0,24	0,26
1.16	**50**	0,11	0,14	0,18	0,22	0,24	0,26
2.1	60	0,09	0,11	0,14	0,17	0,19	0,21
2.2	50	0,07	0,09	0,12	0,15	0,17	0,19
2.3	60	0,07	0,08	0,11	0,13	0,15	0,17
2.4	40	0,07	0,08	0,11	0,13	0,15	0,17
2.5	35	0,07	0,08	0,11	0,13	0,15	0,17
2.6	50	0,07	0,09	0,12	0,15	0,17	0,19
2.7	35	0,06	0,08	0,10	0,12	0,13	0,14
3.1	**90**	0,18	0,22	0,28	0,34	0,38	0,42
3.2	**65**	0,16	0,20	0,25	0,30	0,34	0,36
3.3	**80**	0,21	0,25	0,32	0,38	0,43	0,47
3.4	**55**	0,16	0,20	0,25	0,30	0,34	0,36
3.5	**110**	0,23	0,28	0,35	0,42	0,48	0,52
3.6	**90**	0,21	0,25	0,32	0,38	0,43	0,47
3.7	**110**	0,21	0,25	0,32	0,38	0,43	0,47
3.8	**90**	0,16	0,20	0,25	0,30	0,34	0,36
4.1							
4.2							
4.3							
4.4							
4.5							
4.6							
4.7							
4.8							
4.9							
4.10							
4.11	160	0,18	0,22	0,28	0,34	0,38	0,42
4.12	160	0,16	0,20	0,25	0,30	0,34	0,36
4.13							
4.14							
4.15							
4.16							
4.17							
4.18							
4.19							
5.1							
5.2							
5.3							
5.4							
5.5							
5.6							
5.7							
5.8							
5.9							
5.10							
5.11							
6.1	50	0,07	0,09	0,11	0,14	0,15	0,17
6.2	30	0,05	0,06	0,08	0,10	0,11	0,12
6.3							
6.4							
6.5							

Index	v_c m/min with through coolant	Drilling depth 5xD Type 180 10 721 ... Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	90	0,09	0,12	0,16	0,19	0,22
1.2	110	0,16	0,20	0,26	0,31	0,35
1.3	90	0,12	0,16	0,20	0,24	0,27
1.4	75	0,10	0,14	0,18	0,21	0,24
1.5	80	0,12	0,16	0,20	0,24	0,27
1.6	75	0,10	0,14	0,18	0,21	0,24
1.7	75	0,10	0,14	0,18	0,21	0,24
1.8	55	0,08	0,11	0,14	0,17	0,19
1.9	85	0,12	0,16	0,20	0,24	0,27
1.10	60	0,08	0,11	0,14	0,17	0,19
1.11	50	0,07	0,10	0,13	0,15	0,17
1.12	60	0,08	0,11	0,14	0,17	0,19
1.13	60	0,08	0,11	0,14	0,17	0,19
1.14	50	0,07	0,10	0,13	0,15	0,17
1.15	50	0,08	0,11	0,14	0,17	0,19
1.16	50	0,08	0,11	0,14	0,17	0,19
2.1	60	0,07	0,09	0,11	0,14	0,15
2.2	50	0,06	0,07	0,10	0,12	0,14
2.3	60	0,05	0,07	0,09	0,11	0,12
2.4	40	0,05	0,07	0,09	0,11	0,12
2.5	35	0,05	0,07	0,09	0,11	0,12
2.6	50	0,06	0,07	0,10	0,12	0,14
2.7	35	0,05	0,06	0,08	0,10	0,11
3.1	90	0,14	0,18	0,22	0,27	0,31
3.2	65	0,12	0,16	0,20	0,24	0,27
3.3	80	0,16	0,20	0,26	0,31	0,35
3.4	55	0,12	0,16	0,20	0,24	0,27
3.5	110	0,17	0,22	0,28	0,34	0,38
3.6	90	0,16	0,20	0,26	0,31	0,35
3.7	110	0,16	0,20	0,26	0,31	0,35
3.8	90	0,12	0,16	0,20	0,24	0,27
4.1						
4.2						
4.3						
4.4						
4.5						
4.6						
4.7						
4.8						
4.9						
4.10						
4.11	160	0,17	0,22	0,28	0,34	0,38
4.12	160	0,15	0,20	0,25	0,30	0,34
4.13						
4.14						
4.15						
4.16						
4.17						
4.18						
4.19						
5.1						
5.2						
5.3						
5.4						
5.5						
5.6						
5.7						
5.8						
5.9						
5.10						
5.11						
6.1	50	0,06	0,08	0,10	0,12	0,13
6.2	30	0,04	0,05	0,07	0,08	0,09
6.3						
6.4						
6.5						

Application Note:

Spot drilling with reduced feedrate

1. Feedrate f [mm/U] should be multiplied by correction factor A_k
2. Drill with reduced feed rate until tool is fully engaged in workpiece by approximately 0.25xD
3. Retract from the hole at double the feed rate f in mm/U – only with inclined surfaces

   This operation is necessary in order to achieve maximum performance of the drill!
4. Drill the hole with feed rate f [mm/U] without pecking for chip evacuation

Correction factor A_k for f [mm/U] when spot drilling		
Inclination workpiece surface	A_k to 3xD (10 720 ...)	A_k to 5xD (10 721 ...)
15°	0,5	0,25
30°	0,4	not recommended
45°	0,25	not recommended

For drilling on flat surfaces (inclination 0°) with the WTX – 180 5xD, we recommend the use of a pilot drill (WTX – UNI 3xD).

Cutting data standard values – WPC – UNI

			Drilling depth 3xD UNI 11 600 ..., 11 601 ..., 11 603 ..., 11 604 ...							
Index	v_c m/min without through coolant	v_c m/min with through coolant	Ø 1–1,5 f mm/rev.	Ø 1,5–2 f mm/rev.	Ø 2–3 f mm/rev.	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	**100**	**100**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
1.2	**120**	**120**	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
1.3	**100**	**100**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
1.4	**80**	**80**	0,05	0,07	0,09	0,13	0,18	0,24	0,29	0,31
1.5	**90**	**90**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
1.6	**80**	**80**	0,05	0,07	0,09	0,13	0,18	0,24	0,29	0,31
1.7	**80**	**80**	0,05	0,07	0,09	0,13	0,18	0,24	0,29	0,31
1.8	**60**	**60**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
1.9	**90**	**90**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
1.10	**60**	**60**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
1.11	**50**	**50**	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
1.12	**60**	**60**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
1.13	**60**	**60**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
1.14	**50**	**50**	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
1.15	**50**	**50**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
1.16	**50**	**50**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
2.1		45	0,04	0,04	0,06	0,08	0,12	0,16	0,18	0,20
2.2		40	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
2.3		45	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.4		30	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.5		25	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.6		40	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
2.7		25	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
3.1	**70**	**80**	0,09	0,10	0,13	0,17	0,24	0,31	0,37	0,40
3.2	**50**	**55**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
3.3	**60**	**70**	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.4	**45**	**50**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
3.5	**90**	**95**	0,11	0,13	0,16	0,21	0,30	0,39	0,46	0,49
3.6	**75**	**80**	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.7	**90**	**95**	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.8	**75**	**80**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.1										
4.2										
4.3										
4.4										
4.5										
4.6										
4.7										
4.8										
4.9										
4.10										
4.11	120	200	0,09	0,10	0,13	0,17	0,24	0,31	0,37	0,40
4.12	120	200	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.13										
4.14										
4.15										
4.16										
4.17	240		0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.18										
4.19										
5.1										
5.2										
5.3										
5.4										
5.5										
5.6										
5.7										
5.8										
5.9										
5.10										
5.11										
6.1										
6.2										
6.3										
6.4										
6.5										

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine.
The specified values represent guideline cutting data that must be corrected according to the usage conditions.

Index	v_c m/min without through coolant	v_c m/min with through coolant	Drilling depth 5xD UNI 11 606 ..., 11 607 ..., 11 609 ..., 11 610 ... Ø 1–1,5 f mm/rev.	Ø 1,5–2 f mm/rev.	Ø 2–3 f mm/rev.	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	**80**	**100**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
1.2	**96**	**120**	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
1.3	**80**	**100**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
1.4	**64**	**80**	0,05	0,07	0,09	0,13	0,18	0,24	0,29	0,31
1.5	**72**	**90**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
1.6	**64**	**80**	0,05	0,07	0,09	0,13	0,18	0,24	0,29	0,31
1.7	**64**	**80**	0,05	0,07	0,09	0,13	0,18	0,24	0,29	0,31
1.8	**48**	**60**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
1.9	**72**	**90**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
1.10	**48**	**60**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
1.11	**40**	**50**	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
1.12	**48**	**60**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
1.13	**48**	**60**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
1.14	**40**	**50**	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
1.15	**40**	**50**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
1.16	**40**	**50**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
2.1		45	0,04	0,04	0,06	0,08	0,12	0,16	0,18	0,20
2.2		40	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
2.3		45	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.4		30	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.5		25	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.6		40	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
2.7		25	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
3.1	**65**	**80**	0,09	0,10	0,13	0,17	0,24	0,31	0,37	0,40
3.2	**46**	**55**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
3.3	**59**	**70**	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.4	**40**	**50**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
3.5	**78**	**95**	0,11	0,13	0,16	0,21	0,30	0,39	0,46	0,49
3.6	**65**	**80**	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.7	**78**	**95**	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.8	**65**	**80**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.1										
4.2										
4.3										
4.4										
4.5										
4.6										
4.7										
4.8										
4.9										
4.10										
4.11	100	200	0,09	0,10	0,13	0,17	0,24	0,31	0,37	0,40
4.12	100	200	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.13										
4.14										
4.15										
4.16										
4.17	240		0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.18										
4.19										
5.1										
5.2										
5.3										
5.4										
5.5										
5.6										
5.7										
5.8										
5.9										
5.10										
5.11										
6.1										
6.2										
6.3										
6.4										
6.5										

Cutting data standard values – WPC – UNI

Index	Drilling depth 8xD UNI 11 612 ...						Drilling depth 12xD UNI 11 615 ...					
	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–18 f mm/rev.
1.1	**90**	0,10	0,14	0,18	0,22	0,24	**80**	0,10	0,14	0,18	0,22	0,24
1.2	**110**	0,17	0,23	0,29	0,35	0,39	**100**	0,17	0,23	0,29	0,35	0,38
1.3	**90**	0,13	0,18	0,23	0,27	0,30	**80**	0,13	0,18	0,23	0,27	0,30
1.4	**70**	0,12	0,15	0,20	0,24	0,27	**65**	0,12	0,15	0,20	0,24	0,26
1.5	**80**	0,13	0,18	0,23	0,27	0,30	**70**	0,13	0,18	0,23	0,27	0,30
1.6	**70**	0,12	0,15	0,20	0,24	0,27	**65**	0,12	0,15	0,20	0,24	0,26
1.7	**70**	0,12	0,15	0,20	0,24	0,27	**65**	0,12	0,15	0,20	0,24	0,26
1.8	**55**	0,09	0,13	0,16	0,19	0,22	**50**	0,09	0,13	0,16	0,19	0,21
1.9	**80**	0,13	0,18	0,23	0,27	0,30	**70**	0,13	0,18	0,23	0,27	0,30
1.10	**55**	0,09	0,13	0,16	0,19	0,22	**50**	0,09	0,13	0,16	0,19	0,21
1.11	**45**	0,08	0,11	0,14	0,17	0,19	**40**	0,08	0,11	0,14	0,17	0,19
1.12	**55**	0,09	0,13	0,16	0,19	0,22	**50**	0,09	0,13	0,16	0,19	0,21
1.13	**55**	0,09	0,13	0,16	0,19	0,22	**50**	0,09	0,13	0,16	0,19	0,21
1.14	**45**	0,08	0,11	0,14	0,17	0,19	**40**	0,08	0,11	0,14	0,17	0,19
1.15	**45**	0,09	0,13	0,16	0,19	0,22	**40**	0,09	0,13	0,16	0,19	0,21
1.16	**45**	0,09	0,13	0,16	0,19	0,22	**40**	0,09	0,13	0,16	0,19	0,21
2.1	45	0,07	0,10	0,13	0,15	0,17	40	0,07	0,10	0,13	0,15	0,17
2.2	40	0,06	0,08	0,11	0,13	0,15	35	0,06	0,08	0,11	0,13	0,15
2.3	45	0,06	0,08	0,10	0,12	0,14	40	0,06	0,08	0,10	0,12	0,13
2.4	30	0,06	0,08	0,10	0,12	0,14	25	0,06	0,08	0,10	0,12	0,13
2.5	25	0,06	0,08	0,10	0,12	0,14	25	0,06	0,08	0,10	0,12	0,13
2.6	40	0,06	0,08	0,11	0,13	0,15	35	0,06	0,08	0,11	0,13	0,15
2.7	25	0,05	0,07	0,09	0,11	0,12	25	0,05	0,07	0,09	0,11	0,12
3.1	**80**	0,15	0,20	0,25	0,30	0,34	**70**	0,15	0,20	0,25	0,30	0,33
3.2	**55**	0,13	0,18	0,23	0,27	0,30	**50**	0,13	0,18	0,23	0,27	0,30
3.3	**70**	0,17	0,23	0,29	0,35	0,39	**65**	0,17	0,23	0,29	0,35	0,38
3.4	**50**	0,13	0,18	0,23	0,27	0,30	**45**	0,13	0,18	0,23	0,27	0,30
3.5	**95**	0,19	0,25	0,32	0,38	0,43	**85**	0,19	0,25	0,32	0,38	0,42
3.6	**80**	0,17	0,23	0,29	0,35	0,39	**70**	0,17	0,23	0,29	0,35	0,38
3.7	**95**	0,17	0,23	0,29	0,35	0,39	**85**	0,17	0,23	0,29	0,35	0,38
3.8	**80**	0,13	0,18	0,23	0,27	0,30	**70**	0,13	0,18	0,23	0,27	0,30
4.1												
4.2												
4.3												
4.4												
4.5												
4.6												
4.7												
4.8												
4.9												
4.10												
4.11	200	0,17	0,22	0,28	0,34	0,38	180	0,17	0,22	0,28	0,34	0,37
4.12	200	0,15	0,20	0,25	0,30	0,34	180	0,15	0,20	0,25	0,30	0,33
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1												
6.2												
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6.4												
6.5												

Recommended application for WPC 8xD and 12xD

The following application notes should be observed for optimum machining results.

1. For 8xD and 12xD tools a pilot hole is recommended. The pilot hole can be drilled with the WPC 3xD drills. The tolerance of the 3xD drill (m7) and the tolerance of the 8xD and 12xD drill (h7) are matched accordingly.

2. Alternatively, with cutting speed and feedrate both reduced by 50 % the 8xD and 12xD tool can drill to a depth of 1xD.
Then, with normal feed and speed values continue drilling.
Note: when accelerating to normal speed, the spindle must not stop for gear changes!

3. The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type! The values indicated represent possible cutting data which may need to be corrected depending on operating conditions !

Cutting data standard values – Type N – Twist drills

Index	Drilling depth 3xD Type N (similar DIN 1897) 10 700 ...							Drilling depth 5xD Type N (similar DIN 338) 10 710 ...					
	v_c m/min without through coolant	Ø 0,5–3 f mm/rev.	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.	v_c m/min without through coolant	Ø 0,5–3 f mm/rev.	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.
1.1	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2	0,15–0,2	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2
1.2	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2	0,15–0,2	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2
1.3	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2	0,15–0,2	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2
1.4	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2	0,15–0,2	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2
1.5	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2	0,15–0,2	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2
1.6	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2	0,15–0,2	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2
1.7	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2	0,15–0,2	**40–60**	0,01–0,06	0,05–0,08	0,08–0,13	0,1–0,15	0,15–0,2
1.8													
1.9													
1.10													
1.11													
1.12													
1.13	**25**	0,01–0,03	0,02–0,05	0,04–0,06	0,05–0,08	0,08–0,1	0,08–0,1	**25**	0,01–0,03	0,02–0,05	0,04–0,06	0,05–0,08	0,08–0,1
1.14													
1.15													
1.16													
2.1	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16	0,1–0,16	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16
2.2	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16	0,1–0,16	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16
2.3	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16	0,1–0,16	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16
2.4	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16	0,1–0,16	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16
2.5	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16	0,1–0,16	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16
2.6	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16	0,1–0,16	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16
2.7	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16	0,1–0,16	20–30	0,01–0,05	0,04–0,06	0,05–0,1	0,08–0,12	0,1–0,16
3.1	40–80	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2	0,15–0,2	40–80	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2
3.2	40–80	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2	0,15–0,2	40–80	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2
3.3	40–80	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2	0,15–0,2	40–80	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2
3.4	40–80	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2	0,15–0,2	40–80	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2
3.5	40–60	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2	0,15–0,2	40–60	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2
3.6	40–60	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2	0,15–0,2	40–60	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2
3.7	40–60	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2	0,15–0,2	40–60	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2
3.8	40–60	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2	0,15–0,2	40–60	0,01–0,06	0,05–0,07	0,06–0,12	0,1–0,16	0,15–0,2
4.1	**200**	0,01	0,03	0,07	0,11	0,15	0,2	**200**	0,01	0,03	0,07	0,11	0,15
4.2	**200**	0,01	0,03	0,07	0,11	0,15	0,2	**200**	0,01	0,03	0,07	0,11	0,15
4.3	**180**	0,01	0,03	0,07	0,11	0,15	0,2	**180**	0,01	0,03	0,07	0,11	0,15
4.4	**160**	0,01	0,03	0,07	0,11	0,15	0,2	**160**	0,01	0,03	0,07	0,11	0,15
4.5	**130**	0,01	0,03	0,07	0,11	0,15	0,2	**130**	0,01	0,03	0,07	0,11	0,15
4.6	**100**	0,007	0,02	0,06	0,11	0,16	0,2	**100**	0,007	0,02	0,06	0,11	0,16
4.7	**120**	0,007	0,02	0,06	0,11	0,16	0,2	**120**	0,007	0,02	0,06	0,11	0,16
4.8													
4.9													
4.10													
4.11	**160**	0,007	0,02	0,06	0,11	0,16	0,2	**160**	0,007	0,02	0,06	0,11	0,16
4.12	**120**	0,007	0,02	0,06	0,11	0,16	0,2	**120**	0,007	0,02	0,06	0,11	0,16
4.13	**50**	0,013	0,04	0,08	0,12	0,16	0,2	**50**	0,013	0,04	0,08	0,12	0,16
4.14	**70**	0,013	0,04	0,08	0,12	0,16	0,2	**70**	0,013	0,04	0,08	0,12	0,16
4.15													
4.16	**200**	0,01	0,03	0,07	0,11	0,15	0,2	**200**	0,01	0,03	0,07	0,11	0,15
4.17													
4.18													
4.19													
5.1													
5.2													
5.3													
5.4													
5.5													
5.6													
5.7													
5.8													
5.9	30	0,003	0,01	0,03	0,06	0,08	0,1	30	0,003	0,01	0,03	0,06	0,08
5.10	20	0,003	0,01	0,03	0,06	0,08	0,1	20	0,003	0,01	0,03	0,06	0,08
5.11	20	0,003	0,01	0,03	0,06	0,08	0,1	20	0,003	0,01	0,03	0,06	0,08
6.1													
6.2													
6.3													
6.4													
6.5													

The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type!
The values indicated represent possible cutting data which may need to be corrected depending on operating conditions!

Cutting data standard values – WPC – VA

Index	Drilling depth 3xD VA 11 620 ..., 11 621 ..., 11 623 ..., 11 624 ...									
	v_c m/min without through coolant	v_c m/min with through coolant	Ø 1–1,5	Ø 1,5–2	Ø 2–3	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20
			f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1	90	90	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
1.2	105	105	0,08	0,09	0,11	0,15	0,22	0,28	0,33	0,36
1.3	90	90	0,06	0,07	0,09	0,12	0,17	0,22	0,26	0,28
1.4	70	70	0,04	0,06	0,07	0,10	0,15	0,19	0,23	0,25
1.5	80	80	0,06	0,07	0,09	0,12	0,17	0,22	0,26	0,28
1.6	70	70	0,04	0,06	0,07	0,10	0,15	0,19	0,23	0,25
1.7	70	70	0,04	0,06	0,07	0,10	0,15	0,19	0,23	0,25
1.8	55	55	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.9	80	80	0,06	0,07	0,09	0,12	0,17	0,22	0,26	0,28
1.10	55	55	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.11	45	45	0,03	0,04	0,05	0,07	0,11	0,14	0,17	0,18
1.12	55	55	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.13	55	55	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.14	45	45	0,03	0,04	0,05	0,07	0,11	0,14	0,17	0,18
1.15	45	45	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.16	45	45	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
2.1	**30**	**60**	0,04	0,04	0,06	0,08	0,12	0,16	0,18	0,20
2.2	**25**	**50**	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
2.3	**30**	**60**	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.4	**20**	**40**	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.5	**18**	**35**	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.6	**25**	**50**	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
2.7	**18**	**35**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
3.1	90	100	0,09	0,10	0,13	0,17	0,24	0,31	0,37	0,40
3.2	65	70	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
3.3	80	90	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.4	50	60	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
3.5	110	120	0,11	0,13	0,16	0,21	0,30	0,39	0,46	0,49
3.6	90	100	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.7	110	120	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.8	90	100	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.1	**240**	**320**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.2	**180**	**240**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.3	**150**	**200**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.4	**120**	**160**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.5	**90**	**120**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.6	**240**	**320**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.7	**210**	**280**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.8	**120**	**160**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.9	**150**	**200**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.10	**120**	**160**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.11	**120**	**160**	0,09	0,10	0,13	0,17	0,24	0,31	0,37	0,40
4.12	**120**	**160**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.13	**80**	**120**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
4.14	**100**	**150**	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
4.15	**80**	**120**	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
4.16	**150**	**300**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.17	**400**		0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.18		**40**	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
4.19		**40**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.1		**40**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.2		**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.3		**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.4		**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.5		**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.6		**18**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.7		**15**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.8		**10**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.9		**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.10		**25**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.11		**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
6.1	30		0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
6.2	22		0,02	0,02	0,03	0,04	0,06	0,08	0,09	0,10
6.3										
6.4										
6.5										

The cutting data depends extremely on the external conditions, such as stability of the tool and workpiece clamping, material and machine type.
The indicated values are possible values which have to be increased or reduced according to the application conditions.

Cutting data standard values – WPC – VA

Index	v_c m/min with through coolant	Drilling depth 5xD VA 11 629 ..., 11 630 ... Ø 1–1,5 f mm/rev.	Ø 1,5–2 f mm/rev.	Ø 2–3 f mm/rev.	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	Ø 12–16 f mm/rev.	Ø 16–20 f mm/rev.
1.1	90	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
1.2	105	0,08	0,09	0,11	0,15	0,22	0,28	0,33	0,36
1.3	90	0,06	0,07	0,09	0,12	0,17	0,22	0,26	0,28
1.4	70	0,04	0,06	0,07	0,10	0,15	0,19	0,23	0,25
1.5	80	0,06	0,07	0,09	0,12	0,17	0,22	0,26	0,28
1.6	70	0,04	0,06	0,07	0,10	0,15	0,19	0,23	0,25
1.7	70	0,04	0,06	0,07	0,10	0,15	0,19	0,23	0,25
1.8	55	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.9	80	0,06	0,07	0,09	0,12	0,17	0,22	0,26	0,28
1.10	55	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.11	45	0,03	0,04	0,05	0,07	0,11	0,14	0,17	0,18
1.12	55	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.13	55	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.14	45	0,03	0,04	0,05	0,07	0,11	0,14	0,17	0,18
1.15	45	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
1.16	45	0,04	0,04	0,06	0,08	0,12	0,16	0,19	0,20
2.1	**60**	0,04	0,04	0,06	0,08	0,12	0,16	0,18	0,20
2.2	**50**	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
2.3	**60**	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.4	**40**	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.5	**35**	0,03	0,03	0,04	0,06	0,09	0,12	0,15	0,16
2.6	**50**	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
2.7	**35**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
3.1	100	0,09	0,10	0,13	0,17	0,24	0,31	0,37	0,40
3.2	70	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
3.3	90	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.4	60	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
3.5	120	0,11	0,13	0,16	0,21	0,30	0,39	0,46	0,49
3.6	100	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.7	120	0,10	0,11	0,14	0,19	0,27	0,35	0,42	0,45
3.8	100	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.1	**320**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.2	**240**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.3	**200**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.4	**160**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.5	**120**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.6	**320**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.7	**280**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.8	**160**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.9	**200**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.10	**160**	0,04	0,06	0,07	0,10	0,15	0,20	0,24	0,25
4.11	**160**	0,09	0,10	0,13	0,17	0,24	0,31	0,37	0,40
4.12	**160**	0,07	0,09	0,11	0,15	0,21	0,28	0,33	0,35
4.13	**120**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
4.14	**150**	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
4.15	**120**	0,04	0,05	0,06	0,09	0,13	0,18	0,21	0,22
4.16	**300**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.17	**300**	0,05	0,06	0,08	0,12	0,17	0,22	0,26	0,28
4.18	**40**	0,03	0,04	0,05	0,07	0,10	0,13	0,16	0,18
4.19	**40**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.1	**40**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.2	**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.3	**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.4	**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.5	**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.6	**18**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.7	**15**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.8	**10**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.9	**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.10	**25**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
5.11	**20**	0,02	0,03	0,04	0,06	0,08	0,11	0,13	0,14
6.1									
6.2									
6.3									
6.4									
6.5									

The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type!
The values indicated represent possible cutting data which may need to be corrected depending on operating conditions!

Cutting data standard values – WTX – TB UNI

	WTX–TB16 UNI	WTX–TB20 UNI	WTX–TB25 UNI	WTX–TB30 UNI	Hole depth TB UNI 11 016 ..., 11 020 ..., 11 025 ..., 11 030 ...			
Index	v_c m/min	v_c m/min	v_c m/min	v_c m/min	Ø 2–3	Ø > 3–5	Ø > 5–8	Ø > 8–12
					f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1	**100**	**95**	**85**	**80**	0,075	0,1	0,15	0,2
1.2	**100**	**95**	**85**	**80**	0,075	0,1	0,15	0,2
1.3	**105**	**100**	**90**	**85**	0,1	0,14	0,2	0,275
1.4	**95**	**90**	**80**	**75**	0,075	0,1	0,15	0,2
1.5	**95**	**90**	**80**	**75**	0,1	0,14	0,2	0,275
1.6	**95**	**90**	**80**	**75**	0,075	0,1	0,15	0,2
1.7	**95**	**90**	**80**	**75**	0,1	0,14	0,2	0,275
1.8	**75**	**70**	**65**	**60**	0,075	0,1	0,15	0,2
1.9	**75**	**70**	**65**	**60**	0,075	0,1	0,15	0,2
1.10	**95**	**90**	**80**	**75**	0,075	0,1	0,15	0,2
1.11	**95**	**90**	**80**	**75**	0,075	0,1	0,15	0,2
1.12	**75**	**70**	**65**	**60**	0,075	0,1	0,15	0,2
1.13								
1.14								
1.15								
1.16	**75**	**70**	**65**	**60**	0,075	0,1	0,15	0,2
2.1	**75**	**70**	**65**	**60**	0,05	0,08	0,12	0,15
2.2	**75**	**70**	**65**	**60**	0,05	0,08	0,12	0,15
2.3	**50**	**45**	**45**	**40**	0,05	0,08	0,12	0,15
2.4	**50**	**45**	**45**	**40**	0,05	0,08	0,12	0,15
2.5	**55**	**50**	**50**	**45**	0,05	0,08	0,12	0,15
2.6	**55**	**50**	**50**	**45**	0,05	0,08	0,12	0,15
2.7								
3.1	**105**	**100**	**90**	**85**	0,15	0,23	0,335	0,425
3.2	**100**	**95**	**85**	**80**	0,15	0,23	0,335	0,425
3.3	**105**	**100**	**90**	**85**	0,125	0,2	0,25	0,35
3.4	**100**	**95**	**85**	**80**	0,125	0,2	0,25	0,35
3.5	**105**	**100**	**90**	**85**	0,125	0,2	0,25	0,35
3.6	**100**	**95**	**85**	**80**	0,125	0,2	0,25	0,35
3.7	**105**	**100**	**90**	**85**	0,125	0,2	0,25	0,35
3.8	**100**	**95**	**85**	**80**	0,125	0,2	0,25	0,35
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Cutting data standard values – WTX – TB UNI

Index	WTX–TB40 UNI	WTX–TB50 UNI	Hole depth 40xD / 50xD TB UNI 11 040 ..., 11 050 ...			
	v_c m/min	v_c m/min	Ø 2–3	Ø > 3–5	Ø > 5–8	Ø > 8–9
			f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1	65	55	0,05	0,08	0,12	0,15
1.2	65	55	0,05	0,08	0,12	0,15
1.3	70	60	0,075	0,1	0,15	0,2
1.4	60	50	0,05	0,08	0,12	0,15
1.5	60	50	0,075	0,1	0,15	0,2
1.6	60	50	0,05	0,08	0,12	0,15
1.7	60	50	0,075	0,1	0,15	0,2
1.8	50	45	0,05	0,08	0,12	0,15
1.9	50	55	0,05	0,08	0,12	0,15
1.10	60	50	0,05	0,08	0,12	0,15
1.11	60	50	0,05	0,08	0,12	0,15
1.12	50	45	0,05	0,08	0,12	0,15
1.13						
1.14						
1.15						
1.16	50	45	0,05	0,08	0,12	0,15
2.1	50	45	0,04	0,06	0,09	0,11
2.2	50	45	0,04	0,06	0,09	0,11
2.3	35	30	0,04	0,06	0,09	0,11
2.4	35	30	0,04	0,06	0,09	0,11
2.5	40	35	0,04	0,06	0,09	0,11
2.6	40	35	0,04	0,06	0,09	0,11
2.7						
3.1	70	60	0,125	0,2	0,25	0,35
3.2	65	55	0,125	0,2	0,25	0,35
3.3	70	60	0,1	0,14	0,2	0,275
3.4	65	55	0,1	0,14	0,2	0,275
3.5	70	60	0,1	0,14	0,2	0,275
3.6	65	55	0,1	0,14	0,2	0,275
3.7	70	60	0,1	0,14	0,2	0,275
3.8	65	55	0,1	0,14	0,2	0,275
4.1						
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The cutting data depends extremely on the external conditions, the material and machine type. The indicated values are possible values which have to be increased or reduced according to the application conditions.

All solid carbide WTX deep hole drills must be used with a pilot bore. The tool must never be run at high speed while not engaged in a material. Please refer to the strategy for the production of deep holes on → **Page 134**

Cutting data standard values – WTX – TB ALU

	WTX-TB16 ALU	WTX-TB20 ALU	WTX-TB25 ALU	Hole depth 16xD / 20xD / 25xD TB ALU 11 017 ..., 11 021 ..., 11 026 ...				WTX-TB30 ALU	Hole depth TB ALU 11 031 ...			
Index	v_c m/min	v_c m/min	v_c m/min	Ø 2–3 f mm/rev.	Ø > 3–5 f mm/rev.	Ø > 5–8 f mm/rev.	Ø > 8–12 f mm/rev.	v_c m/min	Ø 2–3 f mm/rev.	Ø > 3–5 f mm/rev.	Ø > 5–8 f mm/rev.	Ø > 8–12 f mm/rev.
1.1												
1.2												
1.3												
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3.8												
4.1	**160**	**150**	**130**	0,125	0,2	0,25	0,35	**120**	0,08	0,15	0,21	0,27
4.2	**160**	**150**	**130**	0,125	0,2	0,25	0,35	**120**	0,08	0,15	0,21	0,27
4.3	**160**	**150**	**130**	0,15	0,23	0,3	0,38	**120**	0,15	0,23	0,3	0,38
4.4	**140**	**130**	**120**	0,125	0,2	0,25	0,35	**110**	0,08	0,15	0,21	0,27
4.5	**140**	**130**	**120**	0,125	0,2	0,25	0,35	**110**	0,08	0,15	0,21	0,27
4.6	**90**	**80**	**75**	0,125	0,2	0,25	0,35	**70**	0,08	0,15	0,21	0,27
4.7	**90**	**80**	**75**	0,125	0,2	0,25	0,35	**70**	0,08	0,15	0,21	0,27
4.8												
4.9												
4.10												
4.11	**115**	**100**	**90**	0,125	0,2	0,25	0,35	**80**	0,08	0,15	0,21	0,27
4.12	**115**	**100**	**90**	0,125	0,2	0,25	0,35	**80**	0,08	0,15	0,21	0,27
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4.14												
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The cutting data depends extremely on the external conditions, the material and machine type. The indicated values are possible values which have to be increased or reduced according to the application conditions.

All solid carbide WTX deep hole drills must be used with a pilot bore.
The tool must never be run at high speed while not engaged in a material.
Please refer to the strategy for the production of deep holes on
→ **Page 134**

Cutting data standard values – Solid Carbide NC Spot Drills, Centre Drills

Index	Solid Carbide NC Spot Drills MultiChange 10 709 ..., 10 712 ..., 10 714 ...						Solid Carbide NC Spot Drills ZB & NC-A 10 708 ..., 10 704 ..., 10 703 ..., 10 702 ...				
	v_c m/min	Ø 8	Ø 10	Ø 12	Ø 16	Ø 20	v_c m/min without through coolant	Ø 2–5	Ø 5–8	Ø 8–12	Ø 12–20
		f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.		f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1	40–130	0,180	0,200	0,220	0,280	0,300	80	0,14	0,2	0,27	0,35
1.2	40–130	0,215	0,235	0,260	0,330	0,355	80	0,14	0,2	0,27	0,35
1.3	40–130	0,180	0,200	0,220	0,280	0,300	75	0,14	0,2	0,27	0,35
1.4	40–130	0,165	0,180	0,200	0,255	0,275	70	0,14	0,2	0,27	0,35
1.5	40–130	0,195	0,220	0,240	0,305	0,325	65	0,14	0,2	0,27	0,35
1.6	40–130	0,165	0,180	0,200	0,255	0,275	65	0,1	0,15	0,2	0,26
1.7	40–130	0,195	0,220	0,240	0,305	0,325	65	0,14	0,2	0,27	0,35
1.8	40–130	0,130	0,145	0,160	0,205	0,220	65	0,1	0,15	0,2	0,26
1.9	40–130	0,180	0,200	0,220	0,280	0,300					
1.10	40–130	0,130	0,145	0,160	0,205	0,220	65	0,1	0,15	0,2	0,26
1.11	40–130	0,115	0,125	0,140	0,180	0,190	65	0,1	0,15	0,2	0,26
1.12	40–130	0,130	0,145	0,160	0,205	0,220					
1.13	40–130	0,130	0,145	0,160	0,205	0,220					
1.14	40–130	0,000	0,000	0,000	0,000	0,000					
1.15	40–130	0,115	0,125	0,140	0,180	0,190	50	0,1	0,15	0,2	0,26
1.16	40–130	0,115	0,125	0,140	0,180	0,190	50	0,1	0,15	0,2	0,26
2.1	20–40	0,145	0,165	0,180	0,230	0,245					
2.2	20–40	0,130	0,145	0,160	0,205	0,220					
2.3	20–40	0,130	0,145	0,160	0,205	0,220					
2.4	20–40	0,100	0,110	0,120	0,155	0,165					
2.5	20–40	0,115	0,125	0,140	0,180	0,190					
2.6	20–40	0,115	0,125	0,140	0,180	0,190					
2.7	20–40	0,100	0,110	0,120	0,155	0,165					
3.1	60–80	0,215	0,235	0,260	0,330	0,355	70	0,12	0,17	0,22	0,3
3.2	60–80	0,180	0,200	0,220	0,280	0,300	70	0,1	0,15	0,2	0,26
3.3	60–80	0,195	0,220	0,240	0,305	0,325	70	0,1	0,15	0,2	0,26
3.4	60–80	0,165	0,180	0,200	0,255	0,275	70	0,1	0,15	0,2	0,26
3.5	60–80	0,195	0,220	0,240	0,305	0,325	70	0,1	0,15	0,2	0,26
3.6	60–80	0,180	0,200	0,220	0,280	0,300	70	0,1	0,15	0,2	0,26
3.7	60–80	0,195	0,220	0,240	0,305	0,325	70	0,1	0,15	0,2	0,26
3.8	60–80	0,165	0,180	0,200	0,255	0,275	70	0,1	0,15	0,2	0,26
4.1	90–300	0,310	0,345	0,380	0,485	0,520	200	0,03	0,07	0,11	0,15
4.2	90–300	0,310	0,345	0,380	0,485	0,520	200	0,03	0,07	0,11	0,15
4.3	90–300	0,295	0,325	0,360	0,460	0,490	180	0,03	0,07	0,11	0,15
4.4	90–300	0,280	0,310	0,340	0,435	0,465	160	0,03	0,07	0,11	0,15
4.5	90–300	0,245	0,275	0,300	0,380	0,410	130	0,03	0,07	0,11	0,15
4.6	90–300	0,195	0,220	0,240	0,305	0,325	100	0,02	0,06	0,11	0,15
4.7	90–300	0,180	0,200	0,220	0,280	0,300	120	0,02	0,06	0,11	0,15
4.8	90–300	0,145	0,165	0,180	0,230	0,245					
4.9	90–300	0,115	0,125	0,140	0,180	0,190					
4.10	90–300	0,115	0,125	0,140	0,180	0,190					
4.11	90–300	0,215	0,235	0,260	0,330	0,355	160	0,02	0,06	0,11	0,15
4.12	90–300	0,215	0,235	0,260	0,330	0,355	120	0,02	0,06	0,11	0,15
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The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type!
The values indicated represent possible cutting data which may need to be corrected depending on operating conditions!

Cutting data standard values – Solid Carbide NC-A TiAlN

Index	Solid Carbide NC Spot Drill Type NC-A TiAlN 10 716 ..., 10 717 ..., 10 718 ...					Solid Carbide NC Spot Drills, long Type NC-A TiAlN 10 724 ..., 10 726 ..., 10 727 ...				
	v_c m/min	> Ø 2–5 f mm/rev.	> Ø 5–8 f mm/rev.	> Ø 8–12 f mm/rev.	> Ø 12–20 f mm/rev.	v_c m/min	> Ø 2–5 f mm/rev.	> Ø 5–8 f mm/rev.	> Ø 8–12 f mm/rev.	> Ø 12–20 f mm/rev.
1.1	70	0,1	0,15	0,2	0,26	70	0,1	0,15	0,2	0,26
1.2	70	0,1	0,15	0,2	0,26	70	0,1	0,15	0,2	0,26
1.3	75	0,14	0,2	0,275	0,35	75	0,14	0,2	0,275	0,35
1.4	65	0,14	0,2	0,275	0,35	65	0,14	0,2	0,275	0,35
1.5	65	0,14	0,2	0,275	0,35	65	0,14	0,2	0,275	0,35
1.6	65	0,1	0,15	0,2	0,26	65	0,1	0,15	0,2	0,26
1.7	65	0,14	0,2	0,275	0,35	65	0,14	0,2	0,275	0,35
1.8	50	0,1	0,15	0,2	0,26	50	0,1	0,15	0,2	0,26
1.9										
1.10	65	0,1	0,15	0,2	0,26	65	0,1	0,15	0,2	0,26
1.11	65	0,1	0,15	0,2	0,26	65	0,1	0,15	0,2	0,26
1.12	50	0,1	0,15	0,2	0,26	50	0,1	0,15	0,2	0,26
1.13										
1.14										
1.15	50	0,1	0,15	0,2	0,26	50	0,1	0,15	0,2	0,26
1.16	50	0,1	0,15	0,2	0,26	50	0,1	0,15	0,2	0,26
2.1										
2.2										
2.3										
2.4										
2.5										
2.6										
2.7										
3.1	70	0,125	0,175	0,225	0,3	70	0,125	0,175	0,225	0,3
3.2	70	0,1	0,15	0,2	0,26	70	0,1	0,15	0,2	0,26
3.3	70	0,1	0,15	0,2	0,26	70	0,1	0,15	0,2	0,26
3.4	70	0,1	0,15	0,2	0,26	70	0,1	0,15	0,2	0,26
3.5	70	0,1	0,15	0,2	0,26	70	0,1	0,15	0,2	0,26
3.6	70	0,1	0,15	0,2	0,26	70	0,1	0,15	0,2	0,26
3.7	70	0,1	0,15	0,2	0,26	70	0,1	0,15	0,2	0,26
3.8	70	0,1	0,15	0,2	0,26	70	0,1	0,15	0,2	0,26
4.1										
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The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type!
The values indicated represent possible cutting data which may need to be corrected depending on operating conditions!

Cutting data standard values – WTX – Change Feed

Index	v_c m/min with through coolant	v_c m/min With external coolant	v_c m/min MMS	Change Feed UNI 10 925 ... > Ø 14,0 f mm/rev.	>Ø 17,5 f mm/rev.	>Ø 21,5 f mm/rev.	>Ø 26,0 f mm/rev.	Ø 32,0 f mm/rev.
1.1	90	80	80	0,42	0,46	0,51	0,54	0,55
1.2	90	80	80	0,42	0,46	0,51	0,54	0,55
1.3	90	80	80	0,42	0,46	0,51	0,54	0,55
1.4	90	75	75	0,49	0,55	0,60	0,64	0,66
1.5	90	80	80	0,42	0,46	0,51	0,54	0,55
1.6	80	70	70	0,52	0,58	0,64	0,68	0,69
1.7	90	75	75	0,49	0,55	0,60	0,64	0,66
1.8	65	55	55	0,39	0,43	0,48	0,50	0,51
1.9	90	75	75	0,49	0,55	0,60	0,64	0,66
1.10	90	75	75	0,49	0,55	0,60	0,64	0,66
1.11	65	55	55	0,39	0,43	0,48	0,50	0,51
1.12	70	60	60	0,44	0,49	0,54	0,58	0,59
1.13	55	50	50	0,36	0,40	0,44	0,47	0,48
1.14	55	50	50	0,36	0,40	0,44	0,47	0,48
1.15	55	50	50	0,36	0,40	0,44	0,47	0,48
1.16	70	60	60	0,44	0,49	0,54	0,58	0,59
2.1								
2.2								
2.3								
2.4								
2.5								
2.6								
2.7								
3.1	110	75	75	0,69	0,77	0,85	0,91	0,93
3.2	90	70	70	0,55	0,61	0,67	0,72	0,73
3.3	145	90	110	0,64	0,71	0,78	0,83	0,85
3.4	90	70	70	0,55	0,61	0,67	0,72	0,73
3.5	80	70	70	0,59	0,66	0,72	0,77	0,78
3.6	70	65	65	0,47	0,52	0,57	0,61	0,62
3.7	80	70	70	0,59	0,66	0,72	0,77	0,78
3.8	70	65	65	0,47	0,52	0,57	0,61	0,62
4.1								
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6.4								
6.5								

The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type!
The values indicated represent possible cutting data which may need to be corrected depending on operating conditions!

Cutting data standard values – WTX – Change

Index	v_c m/min	Change UNI 10 919 ... > Ø 12–15,7 f mm/rev.	> Ø 15,7–20 f mm/rev.	> Ø 20–25 f mm/rev.	> Ø 25–32 f mm/rev.	> Ø 32–41 f mm/rev.
1.1	100	0,22	0,26	0,29	0,32	0,40
1.2	120	0,35	0,41	0,47	0,51	0,64
1.3	100	0,28	0,32	0,36	0,40	0,50
1.4	80	0,24	0,28	0,32	0,35	0,44
1.5	90	0,28	0,32	0,36	0,40	0,50
1.6	80	0,24	0,28	0,32	0,35	0,44
1.7	80	0,24	0,28	0,32	0,35	0,44
1.8	60	0,20	0,23	0,26	0,28	0,35
1.9	90	0,28	0,32	0,36	0,40	0,50
1.10	60	0,20	0,23	0,26	0,28	0,35
1.11	50	0,18	0,21	0,23	0,26	0,32
1.12	60	0,20	0,23	0,26	0,28	0,35
1.13	60	0,20	0,23	0,26	0,28	0,35
1.14	50	0,18	0,21	0,23	0,26	0,32
1.15	50	0,20	0,23	0,26	0,28	0,35
1.16	50	0,20	0,23	0,26	0,28	0,35
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
3.1	90	0,34	0,40	0,46	0,51	0,64
3.2	60	0,30	0,35	0,40	0,44	0,55
3.3	80	0,39	0,45	0,51	0,57	0,71
3.4	55	0,30	0,35	0,40	0,44	0,55
3.5	110	0,43	0,50	0,58	0,63	0,78
3.6	90	0,39	0,45	0,51	0,57	0,71
3.7	110	0,39	0,45	0,51	0,57	0,71
3.8	90	0,30	0,35	0,40	0,44	0,55
4.1						
4.2						
4.3						
4.4						
4.5						
4.6						
4.7						
4.8						
4.9						
4.10						
4.11						
4.12						
4.13						
4.14						
4.15						
4.16						
4.17						
4.18						
4.19						
5.1						
5.2						
5.3						
5.4						
5.5						
5.6						
5.7						
5.8						
5.9						
5.10						
5.11						
6.1						
6.2						
6.3						
6.4						
6.5						

The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type!
The values indicated represent possible cutting data which may need to be corrected depending on operating conditions!

Index	v_c m/min	Change P 10 923 ... > Ø 12–15,7 f mm/rev.	> Ø 15,7–20 f mm/rev.	> Ø 20–25 f mm/rev.	> Ø 25–32 f mm/rev.	> Ø 32–41 f mm/rev.
1.1	110	0,25	0,28	0,33	0,40	0,46
1.2	130	0,40	0,45	0,54	0,64	0,73
1.3	110	0,32	0,35	0,41	0,49	0,57
1.4	90	0,28	0,31	0,37	0,44	0,50
1.5	100	0,32	0,35	0,41	0,49	0,57
1.6	90	0,28	0,31	0,37	0,44	0,50
1.7	90	0,28	0,31	0,37	0,44	0,50
1.8	65	0,23	0,25	0,30	0,35	0,40
1.9	100	0,32	0,35	0,41	0,49	0,57
1.10	65	0,23	0,25	0,30	0,35	0,40
1.11	55	0,21	0,23	0,26	0,31	0,37
1.12	65	0,23	0,25	0,30	0,35	0,40
1.13	65	0,23	0,25	0,30	0,35	0,40
1.14	55	0,21	0,23	0,26	0,31	0,37
1.15	55	0,21	0,23	0,26	0,31	0,37
1.16	55	0,21	0,23	0,26	0,31	0,37
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
3.1	100	0,37	0,42	0,51	0,60	0,70
3.2	65	0,33	0,37	0,44	0,52	0,60
3.3	90	0,43	0,47	0,56	0,67	0,78
3.4	60	0,33	0,37	0,44	0,52	0,60
3.5	120	0,47	0,53	0,64	0,76	0,86
3.6	100	0,43	0,47	0,56	0,67	0,78
3.7	120	0,43	0,47	0,56	0,67	0,78
3.8	100	0,33	0,37	0,44	0,52	0,60
4.1						
4.2						
4.3						
4.4						
4.5						
4.6						
4.7						
4.8						
4.9						
4.10						
4.11						
4.12						
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4.18						
4.19						
5.1						
5.2						
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5.7						
5.8						
5.9						
5.10						
5.11						
6.1						
6.2						
6.3						
6.4						
6.5						

For through holes, the feed must be reduced by approx. 30 % when exiting the hole. For more accurate positioning, precentre with a 142° NC spot drill.
With Type VA 5xD and 8xD, enter the hole with reduced feed of 0.05–0.06 mm/revolution.

Cutting data standard values – WTX – Change

	Change VA 10 921 ...					Change GG 10 924 ...				
Index	v_c m/min	> Ø 12–15,7 f mm/rev.	> Ø 15,7–20 f mm/rev.	> Ø 20–25 f mm/rev.	> Ø 25–32 f mm/rev.	v_c m/min	> Ø 12–15,7 f mm/rev.	> Ø 15,7–20 f mm/rev.	> Ø 20–25 f mm/rev.	> Ø 25–32 f mm/rev.
1.1	100	0,22	0,26	0,29	0,32					
1.2	120	0,35	0,41	0,47	0,51					
1.3	100	0,28	0,32	0,36	0,40					
1.4	80	0,24	0,28	0,32	0,35					
1.5	90	0,28	0,32	0,36	0,40					
1.6	80	0,24	0,28	0,32	0,35					
1.7	80	0,24	0,28	0,32	0,35					
1.8	60	0,20	0,23	0,26	0,28					
1.9	90	0,28	0,32	0,36	0,40					
1.10	60	0,20	0,23	0,26	0,28					
1.11	50	0,18	0,21	0,23	0,26					
1.12	60	0,20	0,23	0,26	0,28					
1.13	60	0,20	0,23	0,26	0,28					
1.14	50	0,18	0,21	0,23	0,26					
1.15	50	0,20	0,23	0,26	0,28					
1.16	50	0,20	0,23	0,26	0,28					
2.1	**60**	0,17	0,19	0,23	0,27					
2.2	**50**	0,15	0,17	0,20	0,24					
2.3	**60**	0,13	0,15	0,18	0,22					
2.4	**40**	0,13	0,15	0,18	0,22					
2.5	**35**	0,13	0,15	0,18	0,22					
2.6	**50**	0,15	0,17	0,20	0,24					
2.7	**35**	0,12	0,13	0,16	0,19					
3.1	90	0,34	0,40	0,46	0,51	**110**	0,44	0,49	0,60	0,71
3.2	60	0,30	0,35	0,40	0,44	**75**	0,39	0,43	0,52	0,62
3.3	80	0,39	0,45	0,51	0,57	**100**	0,51	0,56	0,66	0,79
3.4	55	0,30	0,35	0,40	0,44	**70**	0,39	0,43	0,52	0,62
3.5	110	0,43	0,50	0,58	0,63	**135**	0,56	0,62	0,75	0,89
3.6	90	0,39	0,45	0,51	0,57	**110**	0,51	0,56	0,66	0,79
3.7	110	0,39	0,45	0,51	0,57	**135**	0,51	0,56	0,66	0,79
3.8	90	0,30	0,35	0,40	0,44	**110**	0,39	0,43	0,52	0,62
4.1										
4.2										
4.3										
4.4										
4.5										
4.6										
4.7										
4.8										
4.9										
4.10										
4.11										
4.12										
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4.14										
4.15										
4.16										
4.17										
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5.2										
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5.4										
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5.6										
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5.8										
5.9										
5.10										
5.11										
6.1										
6.2										
6.3										
6.4										
6.5										

The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type!
The values indicated represent possible cutting data which may need to be corrected depending on operating conditions!

Index	v_c m/min	Change AL 10 922 ... > Ø 12–15,7 f mm/rev.	> Ø 15,7–20 f mm/rev.	> Ø 20–25 f mm/rev.	> Ø 25–32 f mm/rev.
1.1					
1.2					
1.3					
1.4					
1.5					
1.6					
1.7					
1.8					
1.9					
1.10					
1.11					
1.12					
1.13					
1.14					
1.15					
1.16					
2.1					
2.2					
2.3					
2.4					
2.5					
2.6					
2.7					
3.1					
3.2					
3.3					
3.4					
3.5					
3.6					
3.7					
3.8					
4.1	350	0,30	0,37	0,50	0,65
4.2	300	0,30	0,37	0,50	0,65
4.3	250	0,37	0,46	0,63	0,82
4.4	200	0,30	0,37	0,50	0,65
4.5	150	0,27	0,33	0,45	0,59
4.6	180	0,27	0,33	0,45	0,59
4.7	140	0,27	0,33	0,45	0,59
4.8	140	0,27	0,33	0,45	0,59
4.9	130	0,27	0,33	0,45	0,59
4.10	120	0,27	0,33	0,45	0,59
4.11	200	0,42	0,52	0,71	0,93
4.12	200	0,37	0,46	0,63	0,82
4.13					
4.14					
4.15					
4.16					
4.17					
4.18					
4.19					
5.1					
5.2					
5.3					
5.4					
5.5					
5.6					
5.7					
5.8					
5.9					
5.10					
5.11					
6.1					
6.2					
6.3					
6.4					
6.5					

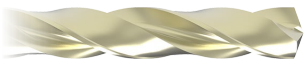
With through-holes the feedrate should be reduced at the break out by approx. 30 %. Use 142° NC Spot Drill to ensure positional accuracy.
Use reduced feedrate of 0.05–0.06 mm/U when using type VA 5xD and 8xD drill.

Type overview – WTX high performance drilling tools

- good self-centring
- optimum swarf control
- precise radial run-out
- excellent alignment precision
- high-quality surface finish
- close drilling tolerances
- limited hardening of peripheral zones of the material
- good chip evacuation even with large drilling depths

For all products that are marked with the video icon, a relevant product video can be viewed at **cutting.tools/uk/type-overview-wtx/**

UNI DRAGONSKIN



- high-performance solid carbide drill for universal application, for all materials up to 1200 N/mm²

Feed UNI DRAGONSKIN

- solid carbide high feed drills with 3 cutting edges
- very good positional accuracy

Speed UNI DRAGONSKIN

- for double the cutting speed
- asymetric point geometry permits performance improvement when drilling steel and cast iron by up to 60 %

Quattro 4F DRAGONSKIN

- with additional guide land for best alignment accuracy, concentricity and positional accuracy

180

- for inclined surfaces up to 45° and flat bottom holes

TB

- solid carbide deep hole drill, up to 50xD without peck drilling
- 4 or 6 facet head geometry for excellent alignment accuracy

VA

- first choice for corrosion and acid resistant seels
- for volume production

AL

- solid carbide high performance drill specailly for the machining of aluminium, copper and brass
- 6 facet geometry for excellent hole quality

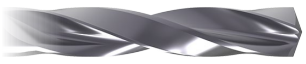
GG

- for cast materials to 250 HB
- straight flutes

Ti DRAGONSKIN

- specialist for cost effective machining of Titanium, Titanium Alloys and Heat Resistant Alloys

H DRAGONSKIN



- high-performance drill for hardened steels from 45 to 70 HRC

MINI

- solid carbide micro drill for the precise manufacture of very small holes from Ø 0.1 mm to 2.9 mm

Change

- replaceable head drills with the performance level of a solid carbide drill, from Ø 12.0 mm to 41.0 mm

BR

- solid carbide high performance drill reamer
- drill and ream in one operation

Change Feed

- exchangeable head drill with three cutting edges for even greater performance, from Ø 14.0 mm to 32.0 mm

SB DRAGONSKIN

- core hole plus countersink for tapping and thread forming

Important application criteria for WTX drills

Axial offset
The axial run-out of the axis between a rotating work piece and a stationary tool must not exceed 0.04 mm. A larger run-out reduces tool life and drilling quality and can lead to tool breakage.

Run-out
The concentricity error when the tool is rotating should not exceed 0.015 mm.

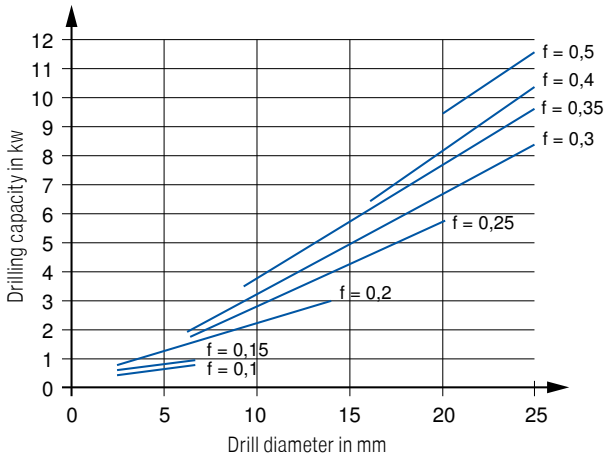
With internally cooled tools the coolant pressure should be min. 20 bar – see diagram bottom right
High-quality semi-synthetic or emulsion coolants with min. 10 % oil content and EP additives are recommended. This allows better life, and achieves higher tolerance accuracy and better surface quality. A fine filter system is recommended to prevent possible clogging of the coolant channels.

Drilling into solid
Due to the geometric design of the solid carbide drills, they are suitable for drilling into solid material.
With solid carbide drills ≤ 12xD drilling can be carried out in solid material without the need for centering and spot drilling operations.

Flute run-out
When using WTX drills a safety margin of at least 1 to 1.5xD must be maintained between the work piece and the flute outlet groove of the drill to ensure optimum chip evacuation and prevent chip clogging and tool fracture.

Peck drilling
Pecking should be avoided as there is a very high risk of fracture caused by chips left behind or flushed into the hole.

Feed rate f in mm/rev.
Drilling capacity relative to the diameter: v_c = 80 m/min.
Tensile strength of the material = 600 N/mm²



Secondary tools
If a smaller diameter WTX drill is used as a following tool in the same hole, it should have a smaller drill point angle to ensure that it centres properly.

Interrupted Cuts
Reduce the feedrate on entry to and from cross holes

Drill exit
To avoid severe burr formation, reduce v_c and f.

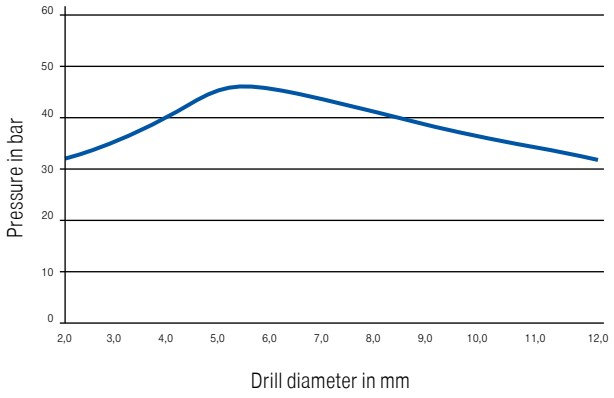
Workpiece clamping
To avoid tool breakages, care must be taken to ensure a proper workpiece clamping without vibration or workpiece deflection.

Tool holding
With optimum clamping high alignment accuracy and tolerances (IT7-8) are possible.
Due to the high surface quality reaming operations can often be dispensed with.

Machine Requirements
Please note the performance diagram (below left)

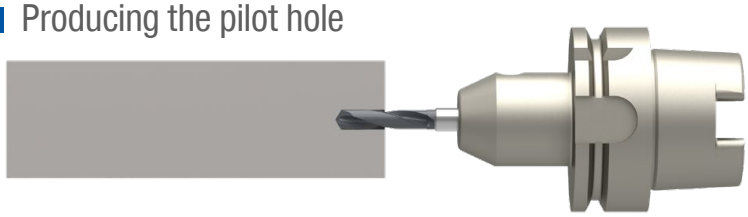
Cutting data table
To control the chip length (comma chip) the feed rates should be no lower than the lower limits quoted in the cutting data table.

Coolant pressure



Strategy for the production of deep holes with the WTX solid carbide deep hole drill

1 Producing the pilot hole

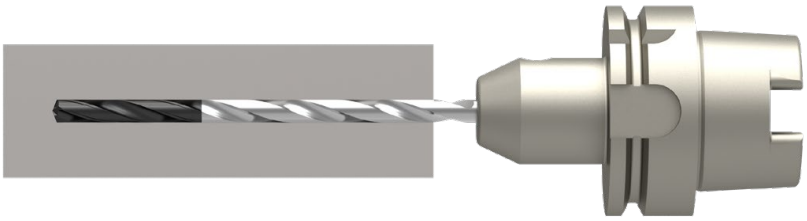


- For the pilot hole, we recommend a WTX drill 3xD / 5xD with the same nominal diameter
- The pilot hole should be 0.01–0.03 mm larger in diameter and at least 3xD deep.
- From a hole depth of 40xD, we recommend a pilot hole of 12xD with our WTX Quattro 4F.

2 Movement of the deep hole drill into the pilot hole

- Move the WTX deep hole drill without coolant pressure and with reduced speed (n = 200–300 rpm) into the pilot hole at a feed of v_f = 1000 mm/min
- Approx. 2 mm before reaching the bottom of the hole (end of the pilot hole), stop the feed, switch on the coolant and wait for a short time until the recommended pressure is reached. Then increase the spindle speed to the recommended speed as smoothly as possible.

3 Drilling to required depth without pecking



- Reduce feed rate for cross holes and at drill exit by 50 %.

4 Retracting the drill

- Retract the drill to approximately the depth of the pilot hole.
- Reduce the rpm to a low speed (n = 200–300 U/min).
- Use normal rapid feed (V_f = 3000 mm/min) when exiting the hole.

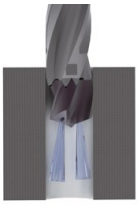
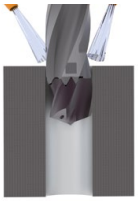
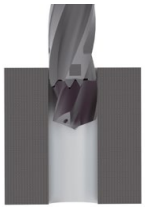
For horizontal deep drilling operations from 40xD, move the deep hole drill into the hole counter-clockwise at 200 rpm. This prevents sagging of the deep hole drill.

It is essential to ensure that deep hole drills never run unsupported at full speed in the machine!

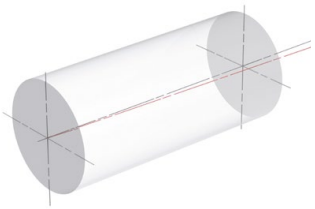
Application notes for WTX – Change Feed and WTX – Change exchangeable head drills

Coolant conditions

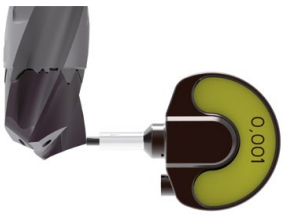
Coolant pressure dependent on drilling depth:

with thro' coolant		with external cooling		without coolant supply
				
1xD: 8 bar	✓	1xD: 8 bar	✓	
3xD: 8 bar	✓	3xD: 8 bar	✓	
5xD: 12 bar	✓	5xD: 12 bar	✗	max. bore depth: 3xD
8xD: 25 bar	✓	8xD: 25 bar	✗	
12xD: 25 bar	✓	12xD: 25 bar	✗	

Runout accuracy

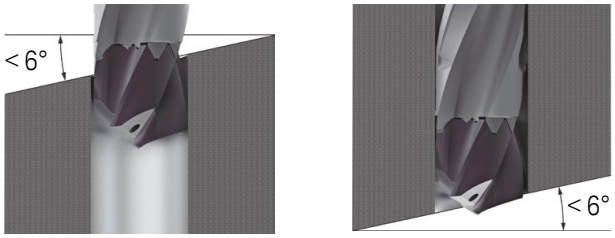


max. 0,02 mm



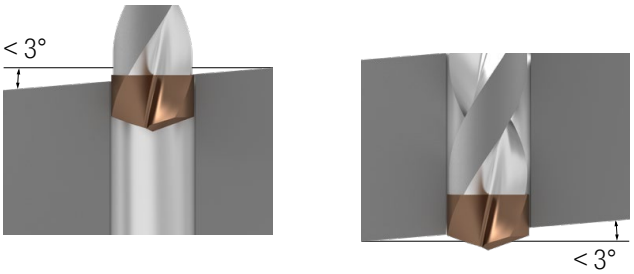
max. 0,04 mm

Max. entry and exit angle for the WTX – Change Feed



When entering and exiting angled surfaces, reduce v_f by 50 %.

Max. entry and exit angle for the WTX – Change



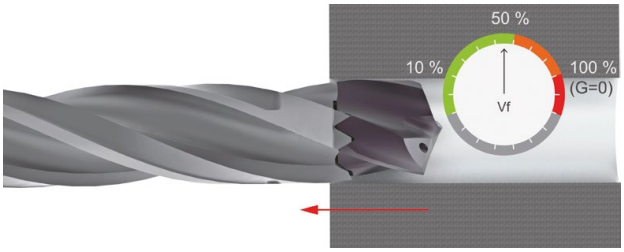
When entering and exiting angled surfaces, reduce v_f by 50 %.

Exiting a through hole

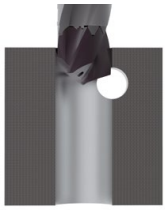
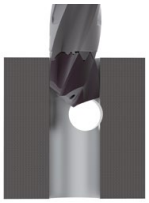
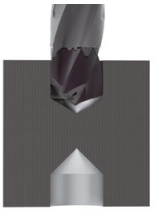
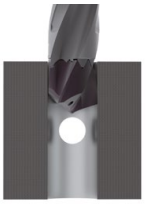
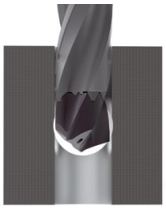
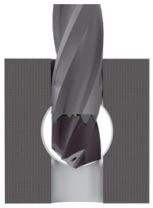
▲ WTX Change Feed and WTX Change

Do not retract at rapid feedrate

For withdrawal, a rate of 5 times the value of the feed rate is recommended.



Machining situations

Offset cross hole point is engaged	*Offset cross hole point is not engaged*	*Breakthrough at counterbore*	*Hole on centre and smaller Ø*	*Hole on centre and same Ø*	*Hole on centre and larger Ø*
					
WTX – Change Feed ✓	*WTX – Change Feed* ✗	*WTX – Change Feed* ✓	*WTX – Change Feed* ✓	*WTX – Change Feed* ✗	*WTX – Change Feed* ✗
WTX – Change ✓	*WTX – Change* ✗	*WTX – Change* ✗	*WTX – Change* ✓	*WTX – Change* ✗	*WTX – Change* ✗

Recommendations for solid carbide drilling operations

Reasons for ...	Solutions ...
... Built-up edge	
v_c too low Too much material taken off at main cutting edge Uncoated cutting edge	Increase v_c Reduce cut Coating
... Corners broken off	
Unstable conditions Run out too high Interrupted cut	Change clamping Optimize radial run-out Reduce feed rate
... Heavy flank wear	
v_c too low Feed rate too low Clearance angle too small	Reduce v_c Increase feed rate Increase clearance angle
... Scoring on the tool flanks	
Unstable conditions Run out too high Interrupted cut Abrasive materials	Change clamping Correct radial run-out Reduce feed rate Thicker emulsion or oil
... Round chamfer wear	
Unstable conditions Run out too high Back taper too small Wrong emulsion or too thin emulsion	More stable clamping Check radial run-out Increase back taper Thicker emulsion or oil
... Material broken off at main cutting edge	
Unstable conditions Interrupted cut Wrong type of tool Max. tool life has been exceeded	More stable clamping Reduce feed rate Optimize tool Change tool earlier
... Heavy wear at chisel edge	
v_c too low Feed rate too high Too much material taken off at main cutting edge	Increase v_c Reduce feed rate Optimize cutting edge
... Material broken off at intersections, drill point and main cutting edge	
Clearance angle too small Too much material taken off at main cutting edge Wrong tool	Increase clearance angle Optimize cutting edge Other tool
... Plastic deformation of cutting corner	
v_c too high Insufficient emulsion Wrong or no corner chamfer	Reduce v_c Increase amount of coolant Correct corner chamfer
... Poor surface quality	
Run out too high Insufficient cooling Unstable conditions	Check radial run-out More emulsion Change toolholding
... Heavy burring on hole exit	
Feed too high Excessive honing of main cutting edge	Reduce feed rate Reduce cutting edge

Coatings

Ti800
- AlTiN nanolayer coating
- Maximum application temperature: 1100 °C

Ti700
- TiAlN multilayer coating
- Maximum application temperature: 1100 °C

TiAlN
- TiAlN multilayer coating
- Maximum application temperature: 900 °C

TiB
- TiB monolayer coating
- Specially for aluminium machining
- Maximum application temperature: 900 °C

TiSi
- TiSi multilayer coating
- Maximum application temperature: 800 °C

Ti1050
- Ti multilayer coating
- HV0.005 = 3300
- Coefficient of friction (against steel) = 0.3–0.5
- Maximum application temperature: 900 °C

Ti750
- TiAlN nanolayer coating
- Maximum application temperature: 1000 °C

DLC
- Diamond-like carbon coating
- Specially for machining non-ferrous metals
- Maximum application temperature: 400 °C

DPX74S DRAGONSKIN
- Special TiAlN nanolayer coating
- Maximum application temperature: 1000 °C

DPA54 DRAGONSKIN
- Special multilayer coating
- High hardness and heat resistance
- Maximum application temperature: 800 °C

DPX64S DRAGONSKIN
- TiAlN monolayer coating
- Perfected for hardened materials
- Optimised coating and surface structure
- Maximum application temperature: 800 °C

DPX14S DRAGONSKIN
- TiAlN nanolayer coating
- Coefficient of friction (dry, against steel) = 0.35
- Maximum application temperature: 1000 °C

DPX64U DRAGONSKIN
- Special TiAlN monolayer coating
- Perfected for hardened materials
- Optimised coating and surface structure
- Maximum application temperature: 800 °C

New products for machining technicians

NEW KUB Pentron

- Ø 14–46 mm
- Cyl. shank, ABS, PSC
- 2xD, 3xD, 4xD, 5xD

6–18

NEW KUB 100

- Ø 14–27 mm
- Cyl. shank
- 3xD

27

NEW KUB Trigon

- Ø 14–44 mm
- Combi shank, ABS
- 2xD, 3xD, 4xD

29–34

NEW Indexable inserts for KUB Pentron

BK8425

- Universal PVD grade

BK6115

- Wear resistant
  CVD-coated indexable insert

19

NEW Indexable inserts for KUB Trigon

BK8425

- Universal PVD grade

BK6115

- Wear resistant
  CVD-coated indexable insert

35

Programme Extension

MaxiDrill 900

- Expansion to include intermediate Ø for 4xD and 5xD

20–26

Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

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Application tips – eccentric sleeves	3
Toolfinder	4+5
Product programme	6–38
Technical Information	
Material examples	39
Cutting Data	40–50
Maximum Offset Range	51–53
Technical data for turning – MaxiDrill 900	52
Coding example, coolant supply	54
Problems / possible causes / solutions	55
Application and Grade Comparison	56+57

KOMET \ Performance

Premium quality tools for high performance.

The premium quality tools from the **KOMET Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

KOMET \ Standard

Quality tools for standard applications.

The quality tools of the **KOMET Standard** product line are high quality, high performance, reliable and enjoy the highest level of trust among our customers worldwide. Tools from this product line are the first choice for many standard applications and guarantee optimal results.

Symbol explanation

Shank

C Cylindrical shank with clamping flat
Guarantees optimum clamping of the tool and can be clamped in every standard adapter

K Drill with combi shank
This drill shank has two clamping flats (DIN 6535HE, DIN 6595) that guarantee pull-out protection and good face contact of the drill. Both Weldon and Whistle Notch adapters can be used.

ABS Drill with ABS connection
The ABS connection from Komet is a modular coupling system for rotating tools and stationary tools, and offers a number of advantages, such as improved force transmission

PSC Drill with polygonal shank
The polygonal shank offers the best rigidity during the transmission of force from the drill to the adapter. The tapered polygonal shape easily absorbs torsional forces and bending forces

Version

Drill with thro' coolant supply
The tried-and-tested thro' coolant system guarantees a reduction in heat at the cutting edges of the tool as well as improved chip removal

Designation		Pages
Adjuster with ABS connection		38

Adapters can be found in → **Chapter 16 Adapters.**

Application tips – eccentric sleeves

Users of rotating tools can now enjoy greater flexibility.
Using the eccentric sleeves, you can vary and adjust the diameter of the hole by +/- 0.3 mm with ease.

Two types of eccentric sleeve are available:
One for use with the new indexable insert drill adapter and one for use with the existing Weldon adapter.
The difference lies solely in the design and position of the slots for the adapter's clamping screws.
There are four sizes per type, which are tailored to the shank diameter.

Eccentric sleeve for indexable insert drill adapter

Eccentric sleeve for Weldon adapter

Designation		Pages
Eccentric sleeves for indexable insert drill adapters		37
Eccentric sleeves for Weldon adapters		37

Toolfinder

● = **Main Application**
○ = Extended application
- = Not possible

KUB Pentron

The specialist for large hole depths

- ▲ The all-rounder for process-secure drilling under a wide variety of conditions
- ▲ Ideal for extreme machining situations

Boring depth	Drilling through a transverse hole	Stack plate drilling	Drilling on uneven surfaces	Drilling	Spot drilling an edge	Spot drilling a convex surface	Spot drilling angled surfaces	Spot drilling a pointed contour	Chain drilling	Drilling through a centre or pre-op
2xD	●	●	●	○	●	●	●	●	●	●
3xD	●	●	●	○	●	●	●	●	●	●
4xD	●	○	○	-	●	●	●	●	○	●
5xD	●	○	○	-	●	○	●	○	-	○
3xD	●	●	●	○	●	●	●	●	●	●
4xD	●	○	○	-	●	●	●	●	○	●
5xD	●	○	○	-	●	○	●	○	-	○
3xD	●	●	●	○	●	●	●	●	●	●

MaxiDrill 900

The specialist for high productivity in rough machining

- ▲ Provides perfect drilling quality even under enormous loads
- ▲ Ideal for large drilling depths: The high feed rates increase productivity
- ▲ For stable machining situations

2xD	●	●	●	○	●	●	●	●	○	●
3xD	●	●	●	○	●	●	●	●	○	●
4xD	●	○	○	○	●	●	●	●	○	●
5xD	●	○	○	○	●	●	●	●	○	●

KUB 100

Ideal for robust machining situations

- ▲ The high performance all-rounder for outstanding productivity and reliability
- ▲ Offers consistent hole quality and a constant diameter across all materials and feed rates

3xD	●	●	●	○	●	●	●	●	●	●

KUB Trigon

The solution for unstable conditions and high accuracy

- ▲ Ideal for machining under unstable conditions
- ▲ Well-suited to machining on less powerful machines
- ▲ The first choice for creating dimensionally accurate holes

2xD	●	-	●	○	○	●	●	○	●	○
3xD	○	-	○	○	○	○	○	○	○	○
4xD	○	-	○	-	-	○	○	-	○	○
2xD	●	-	●	○	○	●	●	○	●	○
3xD	○	-	○	○	○	○	○	○	○	○
4xD	○	-	○	-	-	○	○	-	○	○

MaxiDrill Classic

The drilling tool for universal application

- ▲ Ideal for use on machines with limited power
- ▲ Suitable for use under unstable conditions

2xD	●	-	●	-	-	○	○	-	-	●
3xD	●	-	●	-	-	○	○	-	-	●
4xD	●	-	●	-	-	○	○	-	-	●

3

Shank	Diameter Ø	KOMET \ Performance	KOMET \ Standard	Insert type		No. of cutting edges	Grade	Steel	Stainless steel	Cast iron	Non ferrous metals	Heat resistant alloys	Hardened materials	KOMET \ Performance
		Pages												Pages
C	14–46	6+7			SOGX	4	-01 BK6115	●		●			○	19
C	14–46	8+9			SOGX	4	-01 BK8425	●	●	●				19
C	14–46	10+11			SOGX	4	-01 BK7935	●	●	○	○	○		🛒
C	14–46	12+13			SOGX	4	-01 BK7710				●	○		🛒
ABS	14–30	14												
ABS	14–30	15												
ABS	14–30	16												
PSC	14–30	17+18												
C	12–63	20+21			SONT	2 / 4	-M30 CTCP420 -M30 DCX1420	●	○	●				28
C	12–63	22+23												
C	12–54	24+25			SONT	2 / 4	-M30 CTPP430 -M30 CCN1430	●	●	○	○	○		28
C	12–41	26												
					SONT	2 / 4	-M30 CTCP420 -M30 DCX1420	●	○	●				28
C	14–27	27												
					SONT	2 / 4	-M30 CTPP430 -M30 CCN1430	●	●	○	○	○		28
K	14–44	29			WOEX	3	-01 BK8425	●	●	●				35
K	14–44	30			WOEX	3	-03 BK8425	●	●	●				35
K	14–35	31			WOEX	3	-13 BK8425	●	●	●				35
ABS	14–44	32			WOEX	3	-01 BK6115	●		●			○	35
ABS	14–44	33			WOEX	3	-01 BK7935	●	●	○	○	○		🛒
ABS	14–44	34			WOEX	3	-01 BK62			●			○	🛒
					WOEX	3	-11 BK77				●	●		🛒
C	14–53		🛒											
C	14–50		🛒											
C	18–50		🛒											

🛒 MaxiDrill Classic and specialised indexable inserts can be found in our online shop at cuttingtools.ceratizit.com

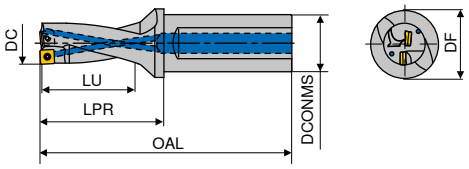
KUB Pentron

Scope of supply:

Indexable Insert Drill incl. clamping screws

≤ 2xD

C



NEW 2B/6#

Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	Article no. 10 872 ... £	
KUB-P.2D.140.R.04-C20	U4201400	14.0	20	30	91	28	41	0,38	SOGX 040204	307.27	14001
KUB-P.2D.145.R.04-C20	U4201450	14.5	20	30	94	30	44	0,38	SOGX 040204	290.27	14501
KUB-P.2D.150.R.04-C20	U4201500	15.0	20	30	94	30	44	0,38	SOGX 040204	290.27	15001
KUB-P.2D.155.R.04-C20	U4201550	15.5	20	30	98	32	48	0,38	SOGX 040204	290.27	15501
KUB-P.2D.160.R.04-C20	U4201600	16.0	20	30	98	32	48	0,38	SOGX 040204	290.27	16001
KUB-P.2D.165.R.05-C20	U4201650	16.5	20	30	101	34	51	0,62	SOGX 050204	290.27	16501
KUB-P.2D.170.R.05-C20	U4201700	17.0	20	30	101	34	51	0,62	SOGX 050204	295.91	17001
KUB-P.2D.175.R.05-C25	U4211750	17.5	25	30	109	36	53	0,62	SOGX 050204	295.91	17502
KUB-P.2D.180.R.05-C25	U4211800	18.0	25	30	109	36	53	0,62	SOGX 050204	295.91	18002
KUB-P.2D.185.R.06-C25	U4211850	18.5	25	30	112	38	56	1,01	SOGX 060206	295.91	18502
KUB-P.2D.190.R.06-C25	U4211900	19.0	25	30	112	38	56	1,01	SOGX 060206	302.55	19002
KUB-P.2D.195.R.06-C25	U4211950	19.5	25	30	114	40	58	1,01	SOGX 060206	302.55	19502
KUB-P.2D.200.R.06-C25	U4212000	20.0	25	30	114	40	58	1,01	SOGX 060206	302.55	20002
KUB-P.2D.205.R.07-C25	U4212050	20.5	25	30	117	42	61	1,01	SOGX 07T208	322.36	20502
KUB-P.2D.210.R.07-C25	U4212100	21.0	25	30	117	42	61	1,01	SOGX 07T208	322.36	21002
KUB-P.2D.215.R.07-C25	U4212150	21.5	25	30	119	44	63	1,01	SOGX 07T208	322.36	21502
KUB-P.2D.220.R.07-C25	U4212200	22.0	25	30	119	44	63	1,01	SOGX 07T208	322.36	22002
KUB-P.2D.225.R.07-C25	U4212250	22.5	25	30	122	46	66	1,01	SOGX 07T208	322.36	22502
KUB-P.2D.230.R.07-C25	U4212300	23.0	25	30	122	46	66	1,01	SOGX 07T208	322.36	23002
KUB-P.2D.235.R.08-C32	U4222350	23.5	32	39	128	48	68	1,28	SOGX 080308	349.82	23503
KUB-P.2D.240.R.08-C32	U4222400	24.0	32	39	128	48	68	1,28	SOGX 080308	349.82	24003
KUB-P.2D.245.R.08-C32	U4222450	24.5	32	39	131	50	71	1,28	SOGX 080308	349.82	24503
KUB-P.2D.250.R.08-C32	U4222500	25.0	32	39	131	50	71	1,28	SOGX 080308	349.82	25003
KUB-P.2D.255.R.08-C32	U4222550	25.5	32	39	133	52	73	1,28	SOGX 080308	349.82	25503
KUB-P.2D.260.R.08-C32	U4222600	26.0	32	39	133	52	73	1,28	SOGX 080308	349.82	26003
KUB-P.2D.265.R.09-C32	U4222650	26.5	32	39	136	54	76	2,25	SOGX 09T308	369.64	26503
KUB-P.2D.270.R.09-C32	U4222700	27.0	32	39	136	54	76	2,25	SOGX 09T308	369.64	27003
KUB-P.2D.275.R.09-C32	U4222750	27.5	32	39	138	56	78	2,25	SOGX 09T308	369.64	27503
KUB-P.2D.280.R.09-C32	U4222800	28.0	32	39	138	56	78	2,25	SOGX 09T308	369.64	28003
KUB-P.2D.285.R.09-C32	U4222850	28.5	32	39	141	58	81	2,25	SOGX 09T308	369.64	28503
KUB-P.2D.290.R.09-C32	U4222900	29.0	32	39	141	58	81	2,25	SOGX 09T308	369.64	29003
KUB-P.2D.295.R.09-C32	U4222950	29.5	32	39	143	60	83	2,25	SOGX 09T308	369.64	29503
KUB-P.2D.300.R.09-C32	U4223000	30.0	32	39	143	60	83	2,25	SOGX 09T308	369.64	30003
KUB-P.2D.310.R.10-C40	U4233100	31.0	40	50	154	62	86	2,8	SOGX 100408	401.82	31004
KUB-P.2D.320.R.10-C40	U4233200	32.0	40	50	156	64	88	2,8	SOGX 100408	401.82	32004
KUB-P.2D.330.R.10-C40	U4233300	33.0	40	50	159	66	91	2,8	SOGX 100408	401.82	33004
KUB-P.2D.340.R.11-C40	U4233400	34.0	40	50	161	68	93	2,8	SOGX 110408	420.73	34004
KUB-P.2D.350.R.11-C40	U4233500	35.0	40	50	164	70	96	2,8	SOGX 110408	420.73	35004
KUB-P.2D.360.R.11-C40	U4233600	36.0	40	50	166	72	98	2,8	SOGX 110408	420.73	36004
KUB-P.2D.370.R.11-C40	U4233700	37.0	40	50	169	74	101	2,8	SOGX 110408	420.73	37004
KUB-P.2D.380.R.12-C40	U4233800	38.0	40	50	171	76	103	6,25	SOGX 120408	433.00	38004
KUB-P.2D.390.R.12-C40	U4233900	39.0	40	50	174	78	106	6,25	SOGX 120408	433.00	39004
KUB-P.2D.400.R.12-C40	U4234000	40.0	40	50	176	80	108	6,25	SOGX 120408	433.00	40004
KUB-P.2D.410.R.12-C40	U4234100	41.0	40	50	179	82	111	6,25	SOGX 120408	433.00	41004
KUB-P.2D.420.R.12-C40	U4234200	42.0	40	50	181	84	113	6,25	SOGX 120408	433.00	42004

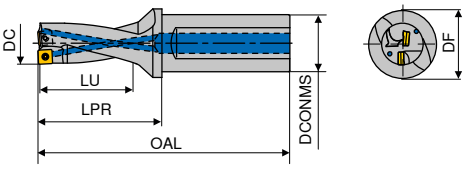
Continued on next page

KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

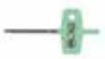
≤ 2xD

C



Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 872 ... £	
KUB-P.2D.430.R.13-C40	U4234300	43.0	40	50	184	86	116	6,25	SOGX 130508	433.00	**43004**
KUB-P.2D.440.R.13-C40	U4234400	44.0	40	50	186	88	118	6,25	SOGX 130508	433.00	**44004**
KUB-P.2D.450.R.13-C40	U4234500	45.0	40	50	189	90	121	6,25	SOGX 130508	433.00	**45004**
KUB-P.2D.460.R.13-C40	U4234600	46.0	40	50	191	92	123	6,25	SOGX 130508	433.00	**46004**

Y7



Screwdriver

Y7

Key D

W7

Clamping screw

Spare parts DC		Article no. 80 950 ... £			Article no. 80 950 ... £			Article no. 10 950 ... £	
14 - 16	T05 - IP	7.67	**057**				M1,8x3,8 - 05IP	2.15	**10100**
16,5 - 18				T06 - IP	13.68	**123**	M2,0x4,3 - 06IP	2.15	**10000**
18,5 - 23				T06 - IP	13.68	**123**	M2,2x5,5 - 06IP	2.15	**10700**
23,5 - 26				T08 - IP	13.49	**125**	M2,5x6,3 - 08IP	2.15	**10800**
26,5 - 30				T08 - IP	13.49	**125**	M3,0x7,6 - 08IP	2.15	**10200**
31 - 37				T15 - IP	15.77	**128**	M3,5x7,5 - 15IP	2.15	**10300**
38 - 46				T20 - IP	16.56	**129**	M4,5x10,0 - 20IP	2.15	**10400**

Suitable adapters can be found in → **Chapter 16 Adapters.**

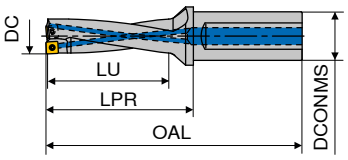
KUB Pentron

Scope of supply:

Indexable Insert Drill incl. clamping screws

≤ 3xD

C



NEW 2B/6#

Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	Article no. 10 873 ... £	
KUB-P.3D.140.R.04-C20	U4301400	14.0	20	30	105	42	55	0,38	SOGX 040204	301.64	14001
KUB-P.3D.145.R.04-C20	U4301450	14.5	20	30	109	45	59	0,38	SOGX 040204	301.64	14501
KUB-P.3D.150.R.04-C20	U4301500	15.0	20	30	109	45	59	0,38	SOGX 040204	301.64	15001
KUB-P.3D.155.R.04-C20	U4301550	15.5	20	30	114	48	64	0,38	SOGX 040204	301.64	15501
KUB-P.3D.160.R.04-C20	U4301600	16.0	20	30	114	48	64	0,38	SOGX 040204	301.64	16001
KUB-P.3D.165.R.05-C20	U4301650	16.5	20	30	118	51	68	0,62	SOGX 050204	301.64	16501
KUB-P.3D.170.R.05-C20	U4301700	17.0	20	30	118	51	68	0,62	SOGX 050204	309.18	17001
KUB-P.3D.175.R.05-C25	U4311750	17.5	25	30	127	54	71	0,62	SOGX 050204	309.18	17501
KUB-P.3D.180.R.05-C25	U4311800	18.0	25	30	127	54	71	0,62	SOGX 050204	309.18	18001
KUB-P.3D.185.R.06-C25	U4311850	18.5	25	30	131	57	75	1,01	SOGX 060206	309.18	18501
KUB-P.3D.190.R.06-C25	U4311900	19.0	25	30	131	57	75	1,01	SOGX 060206	318.64	19001
KUB-P.3D.195.R.06-C25	U4311950	19.5	25	30	134	60	78	1,01	SOGX 060206	318.64	19501
KUB-P.3D.200.R.06-C25	U4312000	20.0	25	30	134	60	78	1,01	SOGX 060206	318.64	20001
KUB-P.3D.205.R.07-C25	U4312050	20.5	25	30	138	63	82	1,01	SOGX 07T208	339.45	20501
KUB-P.3D.210.R.07-C25	U4312100	21.0	25	30	138	63	82	1,01	SOGX 07T208	339.45	21001
KUB-P.3D.215.R.07-C25	U4312150	21.5	25	30	141	66	85	1,01	SOGX 07T208	339.45	21501
KUB-P.3D.220.R.07-C25	U4312200	22.0	25	30	141	66	85	1,01	SOGX 07T208	339.45	22002
KUB-P.3D.225.R.07-C25	U4312250	22.5	25	30	145	69	89	1,01	SOGX 07T208	339.45	22502
KUB-P.3D.230.R.07-C25	U4312300	23.0	25	30	145	69	89	1,01	SOGX 07T208	339.45	23002
KUB-P.3D.235.R.08-C32	U4322350	23.5	32	39	152	72	92	1,28	SOGX 080308	367.82	23503
KUB-P.3D.240.R.08-C32	U4322400	24.0	32	39	152	72	92	1,28	SOGX 080308	367.82	24003
KUB-P.3D.245.R.08-C32	U4322450	24.5	32	39	156	75	96	1,28	SOGX 080308	367.82	24503
KUB-P.3D.250.R.08-C32	U4322500	25.0	32	39	156	75	96	1,28	SOGX 080308	367.82	25003
KUB-P.3D.255.R.08-C32	U4322550	25.5	32	39	159	78	99	1,28	SOGX 080308	367.82	25503
KUB-P.3D.260.R.08-C32	U4322600	26.0	32	39	159	78	99	1,28	SOGX 080308	367.82	26003
KUB-P.3D.265.R.09-C32	U4322650	26.5	32	39	163	81	103	2,25	SOGX 09T308	386.73	26503
KUB-P.3D.270.R.09-C32	U4322700	27.0	32	39	163	81	103	2,25	SOGX 09T308	386.73	27003
KUB-P.3D.275.R.09-C32	U4322750	27.5	32	39	166	84	106	2,25	SOGX 09T308	386.73	27503
KUB-P.3D.280.R.09-C32	U4322800	28.0	32	39	166	84	106	2,25	SOGX 09T308	386.73	28003
KUB-P.3D.285.R.09-C32	U4322850	28.5	32	39	170	87	110	2,25	SOGX 09T308	386.73	28503
KUB-P.3D.290.R.09-C32	U4322900	29.0	32	39	170	87	110	2,25	SOGX 09T308	386.73	29003
KUB-P.3D.295.R.09-C32	U4322950	29.5	32	39	173	90	113	2,25	SOGX 09T308	386.73	29503
KUB-P.3D.300.R.09-C32	U4323000	30.0	32	39	173	90	113	2,25	SOGX 09T308	386.73	30003
KUB-P.3D.310.R.10-C40	U4333100	31.0	40	50	185	93	117	2,8	SOGX 100408	421.64	31004
KUB-P.3D.320.R.10-C40	U4333200	32.0	40	50	188	96	120	2,8	SOGX 100408	421.64	32004
KUB-P.3D.330.R.10-C40	U4333300	33.0	40	50	192	99	124	2,8	SOGX 100408	421.64	33004
KUB-P.3D.340.R.11-C40	U4333400	34.0	40	50	195	102	127	2,8	SOGX 110408	441.55	34004
KUB-P.3D.350.R.11-C40	U4333500	35.0	40	50	199	105	131	2,8	SOGX 110408	441.55	35004
KUB-P.3D.360.R.11-C40	U4333600	36.0	40	50	202	108	134	2,8	SOGX 110408	441.55	36004
KUB-P.3D.370.R.11-C40	U4333700	37.0	40	50	206	111	138	2,8	SOGX 110408	441.55	37004
KUB-P.3D.380.R.12-C40	U4333800	38.0	40	50	209	114	141	6,25	SOGX 120408	454.73	38004
KUB-P.3D.390.R.12-C40	U4333900	39.0	40	50	213	117	145	6,25	SOGX 120408	454.73	39004
KUB-P.3D.400.R.12-C40	U4334000	40.0	40	50	216	120	148	6,25	SOGX 120408	454.73	40004
KUB-P.3D.410.R.12-C40	U4334100	41.0	40	50	220	123	152	6,25	SOGX 120408	454.73	41004
KUB-P.3D.420.R.12-C40	U4334200	42.0	40	50	223	126	155	6,25	SOGX 120408	454.73	42004

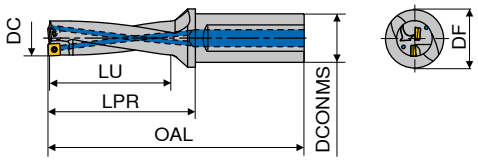
Continued on next page

KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

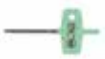
≤ 3xD

C



Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 873 ... £	
KUB-P.3D.430.R.13-C40	U4334300	43.0	40	50	227	129	159	6,25	SOGX 130508	454.73	**43004**
KUB-P.3D.440.R.13-C40	U4334400	44.0	40	50	230	132	162	6,25	SOGX 130508	454.73	**44004**
KUB-P.3D.450.R.13-C40	U4334500	45.0	40	50	234	135	166	6,25	SOGX 130508	454.73	**45004**
KUB-P.3D.460.R.13-C40	U4334600	46.0	40	50	237	138	169	6,25	SOGX 130508	454.73	**46004**

Y7



Screwdriver

Y7

Key D

W7

Clamping screw

Spare parts DC		Article no. 80 950 ... £			Article no. 80 950 ... £			Article no. 10 950 ... £	
14 - 16	T05 - IP	7.67	**057**				M1,8x3,8 - 05IP	2.15	**10100**
16,5 - 18				T06 - IP	13.68	**123**	M2,0x4,3 - 06IP	2.15	**10000**
18,5 - 23				T06 - IP	13.68	**123**	M2,2x5,5 - 06IP	2.15	**10700**
23,5 - 26				T08 - IP	13.49	**125**	M2,5x6,3 - 08IP	2.15	**10800**
26,5 - 30				T08 - IP	13.49	**125**	M3,0x7,6 - 08IP	2.15	**10200**
31 - 37				T15 - IP	15.77	**128**	M3,5x7,5 - 15IP	2.15	**10300**
38 - 46				T20 - IP	16.56	**129**	M4,5x10,0 - 20IP	2.15	**10400**

Suitable adapters can be found in → **Chapter 16 Adapters.**

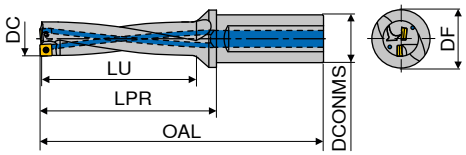
KUB Pentron

Scope of supply:

Indexable Insert Drill incl. clamping screws

≤ 4xD

C



Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 874 ... £	
KUB-P.4D.140.R.04-C20	U4401400	14.0	20	30	119	56	69	0,38	SOGX 040204	384.82	14001
KUB-P.4D.145.R.04-C20	U4401450	14.5	20	30	124	60	74	0,38	SOGX 040204	384.82	14501
KUB-P.4D.150.R.04-C20	U4401500	15.0	20	30	124	60	74	0,38	SOGX 040204	384.82	15001
KUB-P.4D.155.R.04-C20	U4401550	15.5	20	30	130	64	80	0,38	SOGX 040204	384.82	15501
KUB-P.4D.160.R.04-C20	U4401600	16.0	20	30	130	64	80	0,38	SOGX 040204	384.82	16001
KUB-P.4D.165.R.05-C20	U4401650	16.5	20	30	135	68	85	0,62	SOGX 050204	384.82	16501
KUB-P.4D.170.R.05-C20	U4401700	17.0	20	30	135	68	85	0,62	SOGX 050204	395.18	17001
KUB-P.4D.175.R.05-C25	U4411750	17.5	25	30	145	72	89	0,62	SOGX 050204	395.18	17502
KUB-P.4D.180.R.05-C25	U4411800	18.0	25	30	145	72	89	0,62	SOGX 050204	395.18	18002
KUB-P.4D.185.R.06-C25	U4411850	18.5	25	30	150	76	94	1,01	SOGX 060206	395.18	18502
KUB-P.4D.190.R.06-C25	U4411900	19.0	25	30	150	76	94	1,01	SOGX 060206	406.55	19002
KUB-P.4D.195.R.06-C25	U4411950	19.5	25	30	154	80	98	1,01	SOGX 060206	406.55	19502
KUB-P.4D.200.R.06-C25	U4412000	20.0	25	30	154	80	98	1,01	SOGX 060206	406.55	20002
KUB-P.4D.205.R.07-C25	U4412050	20.5	25	30	159	84	103	1,01	SOGX 07T208	421.64	20502
KUB-P.4D.210.R.07-C25	U4412100	21.0	25	30	159	84	103	1,01	SOGX 07T208	421.64	21002
KUB-P.4D.215.R.07-C25	U4412150	21.5	25	30	163	88	107	1,01	SOGX 07T208	421.64	21502
KUB-P.4D.220.R.07-C25	U4412200	22.0	25	30	163	88	107	1,01	SOGX 07T208	421.64	22002
KUB-P.4D.225.R.07-C25	U4412250	22.5	25	30	168	92	112	1,01	SOGX 07T208	421.64	22502
KUB-P.4D.230.R.07-C25	U4412300	23.0	25	30	168	92	112	1,01	SOGX 07T208	421.64	23002
KUB-P.4D.235.R.08-C32	U4422350	23.5	32	39	176	96	116	1,28	SOGX 080308	437.73	23503
KUB-P.4D.240.R.08-C32	U4422400	24.0	32	39	176	96	116	1,28	SOGX 080308	437.73	24003
KUB-P.4D.245.R.08-C32	U4422450	24.5	32	39	181	100	121	1,28	SOGX 080308	437.73	24503
KUB-P.4D.250.R.08-C32	U4422500	25.0	32	39	181	100	121	1,28	SOGX 080308	437.73	25003
KUB-P.4D.255.R.08-C32	U4422550	25.5	32	39	185	104	125	1,28	SOGX 080308	437.73	25503
KUB-P.4D.260.R.08-C32	U4422600	26.0	32	39	185	104	125	1,28	SOGX 080308	437.73	26003
KUB-P.4D.265.R.09-C32	U4422650	26.5	32	39	190	108	130	2,25	SOGX 09T308	494.45	26503
KUB-P.4D.270.R.09-C32	U4422700	27.0	32	39	190	108	130	2,25	SOGX 09T308	494.45	27003
KUB-P.4D.275.R.09-C32	U4422750	27.5	32	39	194	112	134	2,25	SOGX 09T308	494.45	27503
KUB-P.4D.280.R.09-C32	U4422800	28.0	32	39	194	112	134	2,25	SOGX 09T308	494.45	28003
KUB-P.4D.285.R.09-C32	U4422850	28.5	32	39	199	116	139	2,25	SOGX 09T308	494.45	28503
KUB-P.4D.290.R.09-C32	U4422900	29.0	32	39	199	116	139	2,25	SOGX 09T308	494.45	29003
KUB-P.4D.295.R.09-C32	U4422950	29.5	32	39	203	120	143	2,25	SOGX 09T308	494.45	29503
KUB-P.4D.300.R.09-C32	U4423000	30.0	32	39	203	120	143	2,25	SOGX 09T308	494.45	30003
KUB-P.4D.310.R.10-C40	U4433100	31.0	40	50	216	124	148	2,8	SOGX 100408	523.82	31004
KUB-P.4D.320.R.10-C40	U4433200	32.0	40	50	220	128	152	2,8	SOGX 100408	523.82	32004
KUB-P.4D.330.R.10-C40	U4433300	33.0	40	50	225	132	157	2,8	SOGX 100408	523.82	33004
KUB-P.4D.340.R.11-C40	U4433400	34.0	40	50	229	136	161	2,8	SOGX 110408	538.91	34004
KUB-P.4D.350.R.11-C40	U4433500	35.0	40	50	234	140	166	2,8	SOGX 110408	538.91	35004
KUB-P.4D.360.R.11-C40	U4433600	36.0	40	50	238	144	170	2,8	SOGX 110408	538.91	36004
KUB-P.4D.370.R.11-C40	U4433700	37.0	40	50	243	148	175	2,8	SOGX 110408	538.91	37004
KUB-P.4D.380.R.12-C40	U4433800	38.0	40	50	247	152	179	6,25	SOGX 120408	555.91	38004
KUB-P.4D.390.R.12-C40	U4433900	39.0	40	50	252	156	184	6,25	SOGX 120408	555.91	39004
KUB-P.4D.400.R.12-C40	U4434000	40.0	40	50	256	160	188	6,25	SOGX 120408	555.91	40004
KUB-P.4D.410.R.12-C40	U4434100	41.0	40	50	261	164	193	6,25	SOGX 120408	555.91	41004
KUB-P.4D.420.R.12-C40	U4434200	42.0	40	50	265	168	197	6,25	SOGX 120408	555.91	42004

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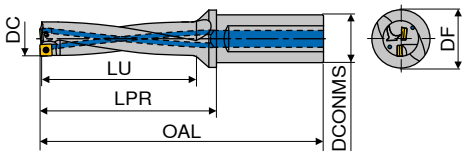
KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

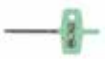
≤ 4xD

C



Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 874 ... £	
KUB-P.4D.430.R.13-C40	U4434300	43.0	40	50	270	172	202	6,25	SOGX 130508	597.55	**43004**
KUB-P.4D.440.R.13-C40	U4434400	44.0	40	50	274	176	206	6,25	SOGX 130508	597.55	**44004**
KUB-P.4D.450.R.13-C40	U4434500	45.0	40	50	279	180	211	6,25	SOGX 130508	597.55	**45004**
KUB-P.4D.460.R.13-C40	U4434600	46.0	40	50	283	184	215	6,25	SOGX 130508	597.55	**46004**

Y7



Screwdriver

Y7

Key D

W7

Clamping screw

Spare parts DC		Article no. 80 950 ... £			Article no. 80 950 ... £			Article no. 10 950 ... £	
14 - 16	T05 - IP	7.67	**057**				M1,8x3,8 - 05IP	2.15	**10100**
16,5 - 18				T06 - IP	13.68	**123**	M2,0x4,3 - 06IP	2.15	**10000**
18,5 - 23				T06 - IP	13.68	**123**	M2,2x5,5 - 06IP	2.15	**10700**
23,5 - 26				T08 - IP	13.49	**125**	M2,5x6,3 - 08IP	2.15	**10800**
26,5 - 30				T08 - IP	13.49	**125**	M3,0x7,6 - 08IP	2.15	**10200**
31 - 37				T15 - IP	15.77	**128**	M3,5x7,5 - 15IP	2.15	**10300**
38 - 46				T20 - IP	16.56	**129**	M4,5x10,0 - 20IP	2.15	**10400**

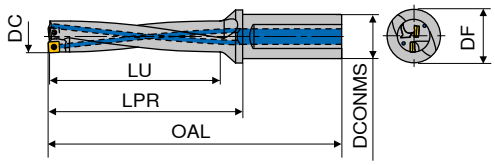
Suitable adapters can be found in → **Chapter 16 Adapters.**

KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 5xD

C



Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 875 ... £	
KUB-P.5D.140.R.04-C20	U4501400	14.0	20	30	133	70	83	0,38	SOGX 040204	416.00	14001
KUB-P.5D.145.R.04-C20	U4501450	14.5	20	30	139	75	89	0,38	SOGX 040204	416.00	14501
KUB-P.5D.150.R.04-C20	U4501500	15.0	20	30	139	75	89	0,38	SOGX 040204	416.00	15001
KUB-P.5D.155.R.04-C20	U4501550	15.5	20	30	146	80	96	0,38	SOGX 040204	416.00	15501
KUB-P.5D.160.R.04-C20	U4501600	16.0	20	30	146	80	96	0,38	SOGX 040204	416.00	16001
KUB-P.5D.165.R.05-C20	U4501650	16.5	20	30	152	85	102	0,62	SOGX 050204	416.00	16501
KUB-P.5D.170.R.05-C20	U4501700	17.0	20	30	152	85	102	0,62	SOGX 050204	428.27	17001
KUB-P.5D.175.R.05-C25	U4511750	17.5	25	30	163	90	107	0,62	SOGX 050204	428.27	17502
KUB-P.5D.180.R.05-C25	U4511800	18.0	25	30	163	90	107	0,62	SOGX 050204	428.27	18002
KUB-P.5D.185.R.06-C25	U4511850	18.5	25	30	169	95	113	1,01	SOGX 060206	428.27	18502
KUB-P.5D.190.R.06-C25	U4511900	19.0	25	30	169	95	113	1,01	SOGX 060206	437.73	19002
KUB-P.5D.195.R.06-C25	U4511950	19.5	25	30	174	100	118	1,01	SOGX 060206	437.73	19502
KUB-P.5D.200.R.06-C25	U4512000	20.0	25	30	174	100	118	1,01	SOGX 060206	437.73	20002
KUB-P.5D.205.R.07-C25	U4512050	20.5	25	30	180	105	124	1,01	SOGX 07T208	453.82	20502
KUB-P.5D.210.R.07-C25	U4512100	21.0	25	30	180	105	124	1,01	SOGX 07T208	453.82	21002
KUB-P.5D.215.R.07-C25	U4512150	21.5	25	30	185	110	129	1,01	SOGX 07T208	453.82	21502
KUB-P.5D.220.R.07-C25	U4512200	22.0	25	30	185	110	129	1,01	SOGX 07T208	453.82	22002
KUB-P.5D.225.R.07-C25	U4512250	22.5	25	30	191	115	135	1,01	SOGX 07T208	453.82	22502
KUB-P.5D.230.R.07-C25	U4512300	23.0	25	30	191	115	135	1,01	SOGX 07T208	453.82	23002
KUB-P.5D.235.R.08-C32	U4522350	23.5	32	39	200	120	140	1,28	SOGX 080308	468.91	23503
KUB-P.5D.240.R.08-C32	U4522400	24.0	32	39	200	120	140	1,28	SOGX 080308	468.91	24003
KUB-P.5D.245.R.08-C32	U4522450	24.5	32	39	206	125	146	1,28	SOGX 080308	468.91	24503
KUB-P.5D.250.R.08-C32	U4522500	25.0	32	39	206	125	146	1,28	SOGX 080308	468.91	25003
KUB-P.5D.255.R.08-C32	U4522550	25.5	32	39	211	130	151	1,28	SOGX 080308	468.91	25503
KUB-P.5D.260.R.08-C32	U4522600	26.0	32	39	211	130	151	1,28	SOGX 080308	468.91	26003
KUB-P.5D.265.R.09-C32	U4522650	26.5	32	39	217	135	157	2,25	SOGX 09T308	528.55	26503
KUB-P.5D.270.R.09-C32	U4522700	27.0	32	39	217	135	157	2,25	SOGX 09T308	528.55	27003
KUB-P.5D.275.R.09-C32	U4522750	27.5	32	39	222	140	162	2,25	SOGX 09T308	528.55	27503
KUB-P.5D.280.R.09-C32	U4522800	28.0	32	39	222	140	162	2,25	SOGX 09T308	528.55	28003
KUB-P.5D.285.R.09-C32	U4522850	28.5	32	39	228	145	168	2,25	SOGX 09T308	528.55	28503
KUB-P.5D.290.R.09-C32	U4522900	29.0	32	39	228	145	168	2,25	SOGX 09T308	528.55	29003
KUB-P.5D.295.R.09-C32	U4522950	29.5	32	39	233	150	173	2,25	SOGX 09T308	528.55	29503
KUB-P.5D.300.R.09-C32	U4523000	30.0	32	39	233	150	173	2,25	SOGX 09T308	528.55	30003
KUB-P.5D.310.R.10-C40	U4533100	31.0	40	50	247	155	179	2,8	SOGX 100408	565.36	31004
KUB-P.5D.320.R.10-C40	U4533200	32.0	40	50	252	160	184	2,8	SOGX 100408	565.36	32004
KUB-P.5D.330.R.10-C40	U4533300	33.0	40	50	258	165	190	2,8	SOGX 100408	565.36	33004
KUB-P.5D.340.R.11-C40	U4533400	34.0	40	50	263	170	195	2,8	SOGX 110408	581.45	34004
KUB-P.5D.350.R.11-C40	U4533500	35.0	40	50	269	175	201	2,8	SOGX 110408	581.45	35004
KUB-P.5D.360.R.11-C40	U4533600	36.0	40	50	274	180	206	2,8	SOGX 110408	581.45	36004
KUB-P.5D.370.R.11-C40	U4533700	37.0	40	50	280	185	212	2,8	SOGX 110408	581.45	37004
KUB-P.5D.380.R.12-C40	U4533800	38.0	40	50	285	190	217	6,25	SOGX 120408	597.55	38004
KUB-P.5D.390.R.12-C40	U4533900	39.0	40	50	291	195	223	6,25	SOGX 120408	597.55	39004
KUB-P.5D.400.R.12-C40	U4534000	40.0	40	50	296	200	228	6,25	SOGX 120408	597.55	40004
KUB-P.5D.410.R.12-C40	U4534100	41.0	40	50	302	205	234	6,25	SOGX 120408	597.55	41004
KUB-P.5D.420.R.12-C40	U4534200	42.0	40	50	307	210	239	6,25	SOGX 120408	597.55	42004

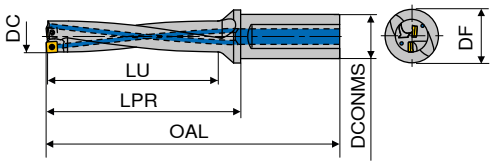
Continued on next page

KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

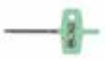
≤ 5xD

C



Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 875 ... £	
KUB-P.5D.430.R.13-C40	U4534300	43.0	40	50	313	215	245	6,25	SOGX 130508	651.45	**43004**
KUB-P.5D.440.R.13-C40	U4534400	44.0	40	50	318	220	250	6,25	SOGX 130508	651.45	**44004**
KUB-P.5D.450.R.13-C40	U4534500	45.0	40	50	324	225	256	6,25	SOGX 130508	651.45	**45004**
KUB-P.5D.460.R.13-C40	U4534600	46.0	40	50	329	230	261	6,25	SOGX 130508	651.45	**46004**

Y7



Screwdriver

Y7

Key D

W7

Clamping screw

Spare parts DC		Article no. 80 950 ... £			Article no. 80 950 ... £			Article no. 10 950 ... £	
14 - 16	T05 - IP	7.67	**057**				M1,8x3,8 - 05IP	2.15	**10100**
16,5 - 18				T06 - IP	13.68	**123**	M2,0x4,3 - 06IP	2.15	**10000**
18,5 - 23				T06 - IP	13.68	**123**	M2,2x5,5 - 06IP	2.15	**10700**
23,5 - 26				T08 - IP	13.49	**125**	M2,5x6,3 - 08IP	2.15	**10800**
26,5 - 30				T08 - IP	13.49	**125**	M3,0x7,6 - 08IP	2.15	**10200**
31 - 37				T15 - IP	15.77	**128**	M3,5x7,5 - 15IP	2.15	**10300**
38 - 46				T20 - IP	16.56	**129**	M4,5x10,0 - 20IP	2.15	**10400**

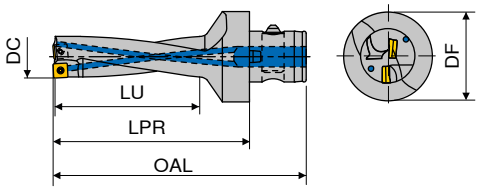
Suitable adapters can be found in → **Chapter 16 Adapters.**

KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 3xD

ABS



NEW 2B/6#

Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	Article no. 10 873 ... £	
KUB-P.3D.140.R.04-ABS50	U4351400	14.0	50	100	42	69	0,38	SOGX 040204	367.82	14095
KUB-P.3D.145.R.04-ABS50	U4351450	14.5	50	104	45	73	0,38	SOGX 040204	367.82	14595
KUB-P.3D.150.R.04-ABS50	U4351500	15.0	50	104	45	73	0,38	SOGX 040204	367.82	15095
KUB-P.3D.155.R.04-ABS50	U4351550	15.5	50	109	48	78	0,38	SOGX 040204	367.82	15595
KUB-P.3D.160.R.04-ABS50	U4351600	16.0	50	109	48	78	0,38	SOGX 040204	367.82	16095
KUB-P.3D.165.R.05-ABS50	U4351650	16.5	50	113	51	82	0,62	SOGX 050204	367.82	16595
KUB-P.3D.170.R.05-ABS50	U4351700	17.0	50	113	51	82	0,62	SOGX 050204	376.27	17095
KUB-P.3D.175.R.05-ABS50	U4351750	17.5	50	116	54	85	0,62	SOGX 050204	376.27	17595
KUB-P.3D.180.R.05-ABS50	U4351800	18.0	50	116	54	85	0,62	SOGX 050204	376.27	18095
KUB-P.3D.185.R.06-ABS50	U4351850	18.5	50	120	57	89	1,01	SOGX 060206	376.27	18595
KUB-P.3D.190.R.06-ABS50	U4351900	19.0	50	120	57	89	1,01	SOGX 060206	385.73	19095
KUB-P.3D.195.R.06-ABS50	U4351950	19.5	50	123	60	92	1,01	SOGX 060206	385.73	19595
KUB-P.3D.200.R.06-ABS50	U4352000	20.0	50	123	60	92	1,01	SOGX 060206	385.73	20095
KUB-P.3D.205.R.07-ABS50	U4352050	20.5	50	126	63	95	1,01	SOGX 07T208	397.09	20595
KUB-P.3D.210.R.07-ABS50	U4352100	21.0	50	126	63	95	1,01	SOGX 07T208	397.09	21095
KUB-P.3D.215.R.07-ABS50	U4352150	21.5	50	129	66	98	1,01	SOGX 07T208	397.09	21595
KUB-P.3D.220.R.07-ABS50	U4352200	22.0	50	129	66	98	1,01	SOGX 07T208	397.09	22095
KUB-P.3D.225.R.07-ABS50	U4352250	22.5	50	132	69	101	1,01	SOGX 07T208	397.09	22595
KUB-P.3D.230.R.07-ABS50	U4352300	23.0	50	132	69	101	1,01	SOGX 07T208	397.09	23095
KUB-P.3D.235.R.08-ABS50	U4352350	23.5	50	135	72	104	1,28	SOGX 080308	409.36	23595
KUB-P.3D.240.R.08-ABS50	U4352400	24.0	50	135	72	104	1,28	SOGX 080308	409.36	24095
KUB-P.3D.245.R.08-ABS50	U4352450	24.5	50	139	75	108	1,28	SOGX 080308	409.36	24595
KUB-P.3D.250.R.08-ABS50	U4352500	25.0	50	139	75	108	1,28	SOGX 080308	409.36	25095
KUB-P.3D.255.R.08-ABS50	U4352550	25.5	50	142	78	111	1,28	SOGX 080308	409.36	25595
KUB-P.3D.260.R.08-ABS50	U4352600	26.0	50	142	78	111	1,28	SOGX 080308	409.36	26095
KUB-P.3D.265.R.09-ABS50	U4352650	26.5	50	146	81	115	2,25	SOGX 09T308	458.55	26595
KUB-P.3D.270.R.09-ABS50	U4352700	27.0	50	146	81	115	2,25	SOGX 09T308	458.55	27095
KUB-P.3D.275.R.09-ABS50	U4352750	27.5	50	149	84	118	2,25	SOGX 09T308	458.55	27595
KUB-P.3D.280.R.09-ABS50	U4352800	28.0	50	149	84	118	2,25	SOGX 09T308	458.55	28095
KUB-P.3D.285.R.09-ABS50	U4352850	28.5	50	153	87	122	2,25	SOGX 09T308	458.55	28595
KUB-P.3D.290.R.09-ABS50	U4352900	29.0	50	153	87	122	2,25	SOGX 09T308	458.55	29095
KUB-P.3D.295.R.09-ABS50	U4352950	29.5	50	156	90	125	2,25	SOGX 09T308	458.55	29595
KUB-P.3D.300.R.09-ABS50	U4353000	30.0	50	156	90	125	2,25	SOGX 09T308	458.55	30095

Y7

Screwdriver

Y7

Key D

W7

Clamping screw

Spare parts DC		Article no. 80 950 ... £			Article no. 80 950 ... £		Article no. 10 950 ... £	
14 - 16	T05 - IP	7.67	057				M1,8x3,8 - 05IP	2.15	10100
16,5 - 18				T06 - IP	13.68	123	M2,0x4,3 - 06IP	2.15	10000
18,5 - 23				T06 - IP	13.68	123	M2,2x5,5 - 06IP	2.15	10700
23,5 - 26				T08 - IP	13.49	125	M2,5x6,3 - 08IP	2.15	10800
26,5 - 30				T08 - IP	13.49	125	M3,0x7,6 - 08IP	2.15	10200

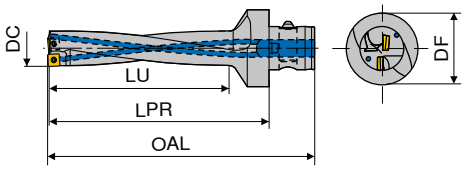
Suitable adapters can be found in → **Chapter 16 Adapters.**

KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 4xD

ABS



Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 874 ... £	
KUB-P.4D.140.R.04-ABS50	U4451400	14.0	50	114	56	83	0,38	SOGX 040204	437.73	14095
KUB-P.4D.145.R.04-ABS50	U4451450	14.5	50	119	60	88	0,38	SOGX 040204	437.73	14595
KUB-P.4D.150.R.04-ABS50	U4451500	15.0	50	119	60	88	0,38	SOGX 040204	437.73	15095
KUB-P.4D.155.R.04-ABS50	U4451550	15.5	50	125	64	94	0,38	SOGX 040204	437.73	15595
KUB-P.4D.160.R.04-ABS50	U4451600	16.0	50	125	64	94	0,38	SOGX 040204	437.73	16095
KUB-P.4D.165.R.05-ABS50	U4451650	16.5	50	130	68	99	0,62	SOGX 050204	437.73	16595
KUB-P.4D.170.R.05-ABS50	U4451700	17.0	50	130	68	99	0,62	SOGX 050204	450.00	17095
KUB-P.4D.175.R.05-ABS50	U4451750	17.5	50	134	72	103	0,62	SOGX 050204	450.00	17595
KUB-P.4D.180.R.05-ABS50	U4451800	18.0	50	134	72	103	0,62	SOGX 050204	450.00	18095
KUB-P.4D.185.R.06-ABS50	U4451850	18.5	50	139	76	108	1,01	SOGX 060206	450.00	18595
KUB-P.4D.190.R.06-ABS50	U4451900	19.0	50	139	76	108	1,01	SOGX 060206	458.55	19095
KUB-P.4D.195.R.06-ABS50	U4451950	19.5	50	143	80	112	1,01	SOGX 060206	458.55	19595
KUB-P.4D.200.R.06-ABS50	U4452000	20.0	50	143	80	112	1,01	SOGX 060206	458.55	20095
KUB-P.4D.205.R.07-ABS50	U4452050	20.5	50	147	84	116	1,01	SOGX 07T208	476.55	20595
KUB-P.4D.210.R.07-ABS50	U4452100	21.0	50	147	84	116	1,01	SOGX 07T208	476.55	21095
KUB-P.4D.215.R.07-ABS50	U4452150	21.5	50	151	88	120	1,01	SOGX 07T208	476.55	21595
KUB-P.4D.220.R.07-ABS50	U4452200	22.0	50	151	88	120	1,01	SOGX 07T208	476.55	22095
KUB-P.4D.225.R.07-ABS50	U4452250	22.5	50	155	92	124	1,01	SOGX 07T208	476.55	22595
KUB-P.4D.230.R.07-ABS50	U4452300	23.0	50	155	92	124	1,01	SOGX 07T208	476.55	23095
KUB-P.4D.235.R.08-ABS50	U4452350	23.5	50	159	96	128	1,28	SOGX 080308	490.73	23595
KUB-P.4D.240.R.08-ABS50	U4452400	24.0	50	159	96	128	1,28	SOGX 080308	490.73	24095
KUB-P.4D.245.R.08-ABS50	U4452450	24.5	50	164	100	133	1,28	SOGX 080308	490.73	24595
KUB-P.4D.250.R.08-ABS50	U4452500	25.0	50	164	100	133	1,28	SOGX 080308	490.73	25095
KUB-P.4D.255.R.08-ABS50	U4452550	25.5	50	168	104	137	1,28	SOGX 080308	490.73	25595
KUB-P.4D.260.R.08-ABS50	U4452600	26.0	50	168	104	137	1,28	SOGX 080308	490.73	26095
KUB-P.4D.265.R.09-ABS50	U4452650	26.5	50	173	108	142	2,25	SOGX 09T308	550.27	26595
KUB-P.4D.270.R.09-ABS50	U4452700	27.0	50	173	108	142	2,25	SOGX 09T308	550.27	27095
KUB-P.4D.275.R.09-ABS50	U4452750	27.5	50	177	112	146	2,25	SOGX 09T308	550.27	27595
KUB-P.4D.280.R.09-ABS50	U4452800	28.0	50	177	112	146	2,25	SOGX 09T308	550.27	28095
KUB-P.4D.285.R.09-ABS50	U4452850	28.5	50	182	116	151	2,25	SOGX 09T308	550.27	28595
KUB-P.4D.290.R.09-ABS50	U4452900	29.0	50	182	116	151	2,25	SOGX 09T308	550.27	29095
KUB-P.4D.295.R.09-ABS50	U4452950	29.5	50	186	120	155	2,25	SOGX 09T308	550.27	29595
KUB-P.4D.300.R.09-ABS50	U4453000	30.0	50	186	120	155	2,25	SOGX 09T308	550.27	30095

Y7

Screwdriver

Y7

Key D

W7

Clamping screw

Spare parts DC		Article no. 80 950 ... £			Article no. 80 950 ... £			Article no. 10 950 ... £	
14 - 16	T05 - IP	7.67	057				M1,8x3,8 - 05IP	2.15	10100
16,5 - 18				T06 - IP	13.68	123	M2,0x4,3 - 06IP	2.15	10000
18,5 - 23				T06 - IP	13.68	123	M2,2x5,5 - 06IP	2.15	10700
23,5 - 26				T08 - IP	13.49	125	M2,5x6,3 - 08IP	2.15	10800
26,5 - 30				T08 - IP	13.49	125	M3,0x7,6 - 08IP	2.15	10200

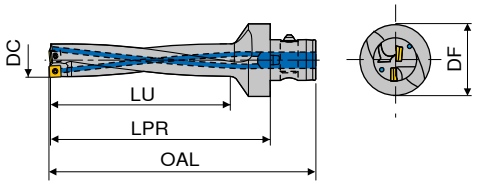
Suitable adapters can be found in → **Chapter 16 Adapters.**

KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 5xD

ABS



Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 875 ... £	
KUB-P.5D.140.R.04-ABS50	U4551400	14.0	50	128	70	97	0,38	SOGX 040204	468.91	14095
KUB-P.5D.145.R.04-ABS50	U4551450	14.5	50	134	75	103	0,38	SOGX 040204	468.91	14595
KUB-P.5D.150.R.04-ABS50	U4551500	15.0	50	134	75	103	0,38	SOGX 040204	468.91	15095
KUB-P.5D.155.R.04-ABS50	U4551550	15.5	50	141	80	110	0,38	SOGX 040204	468.91	15595
KUB-P.5D.160.R.04-ABS50	U4551600	16.0	50	141	80	110	0,38	SOGX 040204	468.91	16095
KUB-P.5D.165.R.05-ABS50	U4551650	16.5	50	147	85	116	0,62	SOGX 050204	468.91	16595
KUB-P.5D.170.R.05-ABS50	U4551700	17.0	50	147	85	116	0,62	SOGX 050204	481.27	17095
KUB-P.5D.175.R.05-ABS50	U4551750	17.5	50	152	90	121	0,62	SOGX 050204	481.27	17595
KUB-P.5D.180.R.05-ABS50	U4551800	18.0	50	152	90	121	0,62	SOGX 050204	481.27	18095
KUB-P.5D.185.R.06-ABS50	U4551850	18.5	50	158	95	127	1,01	SOGX 060206	481.27	18595
KUB-P.5D.190.R.06-ABS50	U4551900	19.0	50	158	95	127	1,01	SOGX 060206	490.73	19095
KUB-P.5D.195.R.06-ABS50	U4551950	19.5	50	163	100	132	1,01	SOGX 060206	490.73	19595
KUB-P.5D.200.R.06-ABS50	U4552000	20.0	50	163	100	132	1,01	SOGX 060206	490.73	20095
KUB-P.5D.205.R.07-ABS50	U4552050	20.5	50	168	105	137	1,01	SOGX 07T208	507.73	20595
KUB-P.5D.210.R.07-ABS50	U4552100	21.0	50	168	105	137	1,01	SOGX 07T208	507.73	21095
KUB-P.5D.215.R.07-ABS50	U4552150	21.5	50	173	110	142	1,01	SOGX 07T208	507.73	21595
KUB-P.5D.220.R.07-ABS50	U4552200	22.0	50	173	110	142	1,01	SOGX 07T208	507.73	22095
KUB-P.5D.225.R.07-ABS50	U4552250	22.5	50	178	115	147	1,01	SOGX 07T208	507.73	22595
KUB-P.5D.230.R.07-ABS50	U4552300	23.0	50	178	115	147	1,01	SOGX 07T208	507.73	23095
KUB-P.5D.235.R.08-ABS50	U4552350	23.5	50	183	120	152	1,28	SOGX 080308	523.82	23595
KUB-P.5D.240.R.08-ABS50	U4552400	24.0	50	183	120	152	1,28	SOGX 080308	523.82	24095
KUB-P.5D.245.R.08-ABS50	U4552450	24.5	50	189	125	158	1,28	SOGX 080308	523.82	24595
KUB-P.5D.250.R.08-ABS50	U4552500	25.0	50	189	125	158	1,28	SOGX 080308	523.82	25095
KUB-P.5D.255.R.08-ABS50	U4552550	25.5	50	194	130	163	1,28	SOGX 080308	523.82	25595
KUB-P.5D.260.R.08-ABS50	U4552600	26.0	50	194	130	163	1,28	SOGX 080308	523.82	26095
KUB-P.5D.265.R.09-ABS50	U4552650	26.5	50	200	135	169	2,25	SOGX 09T308	581.45	26595
KUB-P.5D.270.R.09-ABS50	U4552700	27.0	50	200	135	169	2,25	SOGX 09T308	581.45	27095
KUB-P.5D.275.R.09-ABS50	U4552750	27.5	50	205	140	174	2,25	SOGX 09T308	581.45	27595
KUB-P.5D.280.R.09-ABS50	U4552800	28.0	50	205	140	174	2,25	SOGX 09T308	581.45	28095
KUB-P.5D.285.R.09-ABS50	U4552850	28.5	50	211	145	180	2,25	SOGX 09T308	581.45	28595
KUB-P.5D.290.R.09-ABS50	U4552900	29.0	50	211	145	180	2,25	SOGX 09T308	581.45	29095
KUB-P.5D.295.R.09-ABS50	U4552950	29.5	50	216	150	185	2,25	SOGX 09T308	581.45	29595
KUB-P.5D.300.R.09-ABS50	U4553000	30.0	50	216	150	185	2,25	SOGX 09T308	581.45	30095

Y7

Screwdriver

Y7

Key D

W7

Clamping screw

Spare parts DC		Article no. 80 950 ... £			Article no. 80 950 ... £			Article no. 10 950 ... £	
14 - 16	T05 - IP	7.67	057				M1,8x3,8 - 05IP	2.15	10100
16,5 - 18				T06 - IP	13.68	123	M2,0x4,3 - 06IP	2.15	10000
18,5 - 23				T06 - IP	13.68	123	M2,2x5,5 - 06IP	2.15	10700
23,5 - 26				T08 - IP	13.49	125	M2,5x6,3 - 08IP	2.15	10800
26,5 - 30				T08 - IP	13.49	125	M3,0x7,6 - 08IP	2.15	10200

Suitable adapters can be found in → **Chapter 16 Adapters.**

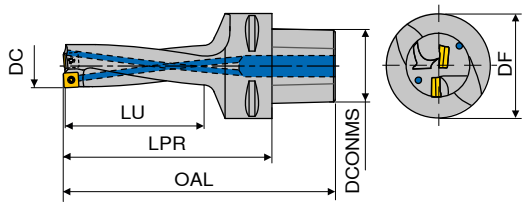
KUB Pentron

Scope of supply:

Indexable Insert Drill incl. clamping screws

≤ 3xD

PSC



3

Designation	KOMET no.	DC	DCONMS	DF	OAL	LU	LPR	torque moment	Insert	NEW 2B/6# Article no. 10 873 ... £	
		mm	mm	mm	mm	mm	mm	Nm			
KUB-P.3D.140.R.04-PSC50	U4061400	14.0	24.25	50	103	42	73	0,38	SOGX 040204	399.91	14055
KUB-P.3D.145.R.04-PSC50	U4061450	14.5	24.25	50	107	45	77	0,38	SOGX 040204	399.91	14555
KUB-P.3D.150.R.04-PSC50	U4061500	15.0	24.25	50	107	45	77	0,38	SOGX 040204	399.91	15055
KUB-P.3D.155.R.04-PSC50	U4061550	15.5	24.25	50	112	48	82	0,38	SOGX 040204	399.91	15555
KUB-P.3D.160.R.04-PSC50	U4061600	16.0	24.25	50	112	48	82	0,38	SOGX 040204	399.91	16055
KUB-P.3D.160.R.04-PSC63	U4071600	16.0	30.30	63	124	48	86	0,38	SOGX 040204	399.91	16056
KUB-P.3D.165.R.05-PSC50	U4061650	16.5	24.25	50	116	51	86	0,62	SOGX 050204	409.36	16555
KUB-P.3D.170.R.05-PSC50	U4061700	17.0	24.25	50	116	51	86	0,62	SOGX 050204	409.36	17055
KUB-P.3D.175.R.05-PSC50	U4061750	17.5	24.25	50	119	54	89	0,62	SOGX 050204	409.36	17555
KUB-P.3D.180.R.05-PSC50	U4061800	18.0	24.25	50	119	54	89	0,62	SOGX 050204	409.36	18055
KUB-P.3D.165.R.05-PSC63	U4071650	16.5	30.30	63	128	51	90	0,62	SOGX 050204	409.36	16556
KUB-P.3D.170.R.05-PSC63	U4071700	17.0	30.30	63	128	51	90	0,62	SOGX 050204	409.36	17056
KUB-P.3D.175.R.05-PSC63	U4071750	17.5	30.30	63	131	54	93	0,62	SOGX 050204	409.36	17556
KUB-P.3D.180.R.05-PSC63	U4071800	18.0	30.30	63	131	54	93	0,62	SOGX 050204	409.36	18056
KUB-P.3D.185.R.06-PSC50	U4061850	18.5	24.25	50	123	57	93	1,01	SOGX 060206	409.36	18555
KUB-P.3D.190.R.06-PSC50	U4061900	19.0	24.25	50	123	57	93	1,01	SOGX 060206	419.82	19055
KUB-P.3D.195.R.06-PSC50	U4061950	19.5	24.25	50	126	60	96	1,01	SOGX 060206	419.82	19555
KUB-P.3D.200.R.06-PSC50	U4062000	20.0	24.25	50	126	60	96	1,01	SOGX 060206	419.82	20055
KUB-P.3D.185.R.06-PSC63	U4071850	18.5	30.30	63	135	57	97	1,01	SOGX 060206	409.36	18556
KUB-P.3D.190.R.06-PSC63	U4071900	19.0	30.30	63	135	57	97	1,01	SOGX 060206	419.82	19056
KUB-P.3D.195.R.06-PSC63	U4071950	19.5	30.30	63	138	60	100	1,01	SOGX 060206	419.82	19556
KUB-P.3D.200.R.06-PSC63	U4072000	20.0	30.30	63	138	60	100	1,01	SOGX 060206	419.82	20056
KUB-P.3D.205.R.07-PSC50	U4062050	20.5	24.25	50	130	63	100	1,01	SOGX 07T208	432.09	20555
KUB-P.3D.210.R.07-PSC50	U4062100	21.0	24.25	50	130	63	100	1,01	SOGX 07T208	432.09	21055
KUB-P.3D.215.R.07-PSC50	U4062150	21.5	24.25	50	133	66	103	1,01	SOGX 07T208	432.09	21555
KUB-P.3D.220.R.07-PSC50	U4062200	22.0	24.25	50	133	66	103	1,01	SOGX 07T208	432.09	22055
KUB-P.3D.225.R.07-PSC50	U4062250	22.5	24.25	50	137	69	107	1,01	SOGX 07T208	432.09	22555
KUB-P.3D.230.R.07-PSC50	U4062300	23.0	24.25	50	137	69	107	1,01	SOGX 07T208	432.09	23055
KUB-P.3D.205.R.07-PSC63	U4072050	20.5	30.30	63	142	63	104	1,01	SOGX 07T208	432.09	20556
KUB-P.3D.210.R.07-PSC63	U4072100	21.0	30.30	63	142	63	104	1,01	SOGX 07T208	432.09	21056
KUB-P.3D.215.R.07-PSC63	U4072150	21.5	30.30	63	145	66	107	1,01	SOGX 07T208	432.09	21556
KUB-P.3D.220.R.07-PSC63	U4072200	22.0	30.30	63	145	66	107	1,01	SOGX 07T208	432.09	22056
KUB-P.3D.225.R.07-PSC63	U4072250	22.5	30.30	63	149	69	111	1,01	SOGX 07T208	432.09	22556
KUB-P.3D.230.R.07-PSC63	U4072300	23.0	30.30	63	149	69	111	1,01	SOGX 07T208	432.09	23056
KUB-P.3D.235.R.08-PSC50	U4062350	23.5	24.25	50	140	72	110	1,28	SOGX 080308	445.27	23555
KUB-P.3D.240.R.08-PSC50	U4062400	24.0	24.25	50	140	72	110	1,28	SOGX 080308	445.27	24055
KUB-P.3D.245.R.08-PSC50	U4062450	24.5	24.25	50	144	75	114	1,28	SOGX 080308	445.27	24555
KUB-P.3D.250.R.08-PSC50	U4062500	25.0	24.25	50	144	75	114	1,28	SOGX 080308	445.27	25055
KUB-P.3D.255.R.08-PSC50	U4062550	25.5	24.25	50	147	78	117	1,28	SOGX 080308	445.27	25555
KUB-P.3D.260.R.08-PSC50	U4062600	26.0	24.25	50	147	78	117	1,28	SOGX 080308	445.27	26055
KUB-P.3D.235.R.08-PSC63	U4072350	23.5	30.30	63	152	72	114	1,28	SOGX 080308	445.27	23556
KUB-P.3D.240.R.08-PSC63	U4072400	24.0	30.30	63	152	72	114	1,28	SOGX 080308	445.27	24056
KUB-P.3D.245.R.08-PSC63	U4072450	24.5	30.30	63	156	75	118	1,28	SOGX 080308	445.27	24556
KUB-P.3D.250.R.08-PSC63	U4072500	25.0	30.30	63	156	75	118	1,28	SOGX 080308	445.27	25056
KUB-P.3D.255.R.08-PSC63	U4072550	25.5	30.30	63	159	78	121	1,28	SOGX 080308	445.27	25556
KUB-P.3D.260.R.08-PSC63	U4072600	26.0	30.30	63	159	78	121	1,28	SOGX 080308	445.27	26056
KUB-P.3D.265.R.09-PSC50	U4062650	26.5	24.25	50	151	81	121	2,25	SOGX 09T308	498.27	26555
KUB-P.3D.270.R.09-PSC50	U4062700	27.0	24.25	50	151	81	121	2,25	SOGX 09T308	498.27	27055
KUB-P.3D.275.R.09-PSC50	U4062750	27.5	24.25	50	154	84	124	2,25	SOGX 09T308	498.27	27555

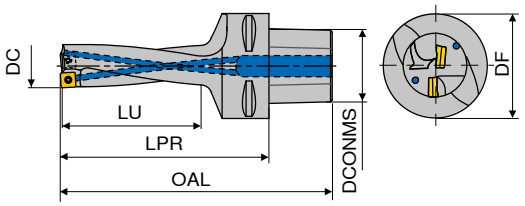
Continued on next page

KUB Pentron

Scope of supply:
Indexable Insert Drill incl. clamping screws

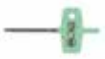
≤ 3xD

PSC



Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 873 ... £	
KUB-P.3D.280.R.09-PSC50	U4062800	28.0	24.25	50	154	84	124	2,25	SOGX 09T308	498.27	**28055**
KUB-P.3D.285.R.09-PSC50	U4062850	28.5	24.25	50	158	87	128	2,25	SOGX 09T308	498.27	**28555**
KUB-P.3D.290.R.09-PSC50	U4062900	29.0	24.25	50	158	87	128	2,25	SOGX 09T308	498.27	**29055**
KUB-P.3D.295.R.09-PSC50	U4062950	29.5	24.25	50	161	90	131	2,25	SOGX 09T308	498.27	**29555**
KUB-P.3D.300.R.09-PSC50	U4063000	30.0	24.25	50	161	90	131	2,25	SOGX 09T308	498.27	**30055**
KUB-P.3D.265.R.09-PSC63	U4072650	26.5	30.30	63	163	81	125	2,25	SOGX 09T308	498.27	**26556**
KUB-P.3D.270.R.09-PSC63	U4072700	27.0	30.30	63	163	81	125	2,25	SOGX 09T308	498.27	**27056**
KUB-P.3D.275.R.09-PSC63	U4072750	27.5	30.30	63	166	84	128	2,25	SOGX 09T308	498.27	**27556**
KUB-P.3D.280.R.09-PSC63	U4072800	28.0	30.30	63	166	84	128	2,25	SOGX 09T308	498.27	**28056**
KUB-P.3D.285.R.09-PSC63	U4072850	28.5	30.30	63	170	87	132	2,25	SOGX 09T308	498.27	**28556**
KUB-P.3D.290.R.09-PSC63	U4072900	29.0	30.30	63	170	87	132	2,25	SOGX 09T308	498.27	**29056**
KUB-P.3D.295.R.09-PSC63	U4072950	29.5	30.30	63	173	90	135	2,25	SOGX 09T308	498.27	**29556**
KUB-P.3D.300.R.09-PSC63	U4073000	30.0	30.30	63	173	90	135	2,25	SOGX 09T308	498.27	**30056**

Y7



Screwdriver

Y7

Key D

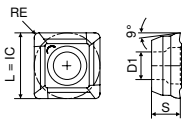
W7

Clamping screw

Spare parts DC		Article no. 80 950 ... £			Article no. 80 950 ... £			Article no. 10 950 ... £	
14 - 16	T05 - IP	7.67	**057**				M1,8x3,8 - 05IP	2.15	**10100**
16,5 - 18				T06 - IP	13.68	**123**	M2,0x4,3 - 06IP	2.15	**10000**
18,5 - 23				T06 - IP	13.68	**123**	M2,2x5,5 - 06IP	2.15	**10700**
23,5 - 26				T08 - IP	13.49	**125**	M2,5x6,3 - 08IP	2.15	**10800**
26,5 - 30				T08 - IP	13.49	**125**	M3,0x7,6 - 08IP	2.15	**10200**

SOGX

Designation	L	IC	D1	S
	mm	mm	mm	mm
SOGX 0402..	4.8	4.8	2.05	2.20
SOGX 0502..	5.5	5.5	2.30	2.40
SOGX 0602..	6.2	6.2	2.60	2.75
SOGX 07T2..	7.1	7.1	2.60	2.97
SOGX 0803..	8.0	8.0	2.85	3.40
SOGX 09T3..	8.9	8.9	3.40	3.90
SOGX 1004..	9.8	9.8	4.10	4.20
SOGX 1104..	10.9	10.9	4.10	4.50
SOGX 1204..	12.0	12.0	5.20	4.80
SOGX 1305..	13.2	13.2	5.20	5.20



3

SOGX

			-01 BK8425		-01 BK6115	
			SOGX		SOGX	
			NEW 1A/3#		NEW 1A/3#	
ISO	KOMET no.	RE	Article no. 10 820 ...		Article no. 10 820 ...	
		mm	£		£	
040204	W8010010.046115	0.4			14.65	40401
040204	W8010010.048425	0.4	14.65	30401		
050204	W8012010.046115	0.4			14.75	40501
050204	W8012010.048425	0.4	14.75	30501		
060206	W8018010.066115	0.6			14.85	40601
060206	W8018010.068425	0.6	14.85	30601		
07T208	W8020010.086115	0.8			14.94	40701
07T208	W8020010.088425	0.8	14.94	30701		
080308	W8024010.086115	0.8			15.04	40801
080308	W8024010.088425	0.8	15.04	30801		
09T308	W8028010.086115	0.8			15.60	40901
09T308	W8028010.088425	0.8	15.60	30901		
100408	W8032010.086115	0.8			16.07	41001
100408	W8032010.088425	0.8	16.07	31001		
110408	W8038010.086115	0.8			16.55	41101
110408	W8038010.088425	0.8	16.55	31101		
120408	W8042010.086115	0.8			17.40	41201
120408	W8042010.088425	0.8	17.40	31201		
130508	W8046010.086115	0.8			20.24	41301
130508	W8046010.088425	0.8	20.24	31301		
Steel			●		●	
Stainless steel			●			
Cast iron			●		●	
Non ferrous metals						
Heat resistant alloys						
hardened materials					○	

→ v_c/f_z Page 40–42

BK6115 -01 is exclusively recommended for use on the peripheral cutting edge!

Specialised indexable inserts for machining aluminium or stainless steels (BK7935, BK7710, BK6425) can be found in our online shop at cuttingtools.ceratizit.com

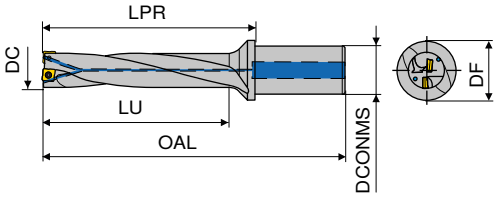
MaxiDrill 900

Scope of supply:

Indexable Insert Drill including clamping screws and key

≤ 2xD

C



2B/41

Designation	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	Article no. 10 852 ... £	
MD900.2D.120.R.03-C20	12.0	20	28	90	24	40	0,4	SONT 031804	221.64	120
MD900.2D.125.R.03-C20	12.5	20	28	91	25	41	0,4	SONT 031804	221.64	125
MD900.2D.130.R.03-C20	13.0	20	28	92	26	42	0,4	SONT 031804	221.64	130
MD900.2D.135.R.03-C20	13.5	20	28	93	27	43	0,4	SONT 031804	221.64	135
MD900.2D.140.R.04-C20	14.0	20	30	96	28	46	0,7	SONT 042105	235.91	140
MD900.2D.145.R.04-C20	14.5	20	30	97	29	47	0,7	SONT 042105	235.91	145
MD900.2D.150.R.04-C20	15.0	20	30	98	30	48	0,7	SONT 042105	235.91	150
MD900.2D.155.R.04-C20	15.5	20	30	99	31	49	0,7	SONT 042105	235.91	155
MD900.2D.160.R.05-C20	16.0	20	30	100	32	50	0,7	SONT 052306	235.91	160
MD900.2D.165.R.05-C20	16.5	20	30	101	33	51	0,7	SONT 052306	235.91	165
MD900.2D.170.R.05-C20	17.0	20	30	102	34	52	0,7	SONT 052306	251.09	170
MD900.2D.175.R.05-C20	17.5	20	30	103	35	53	0,7	SONT 052306	251.09	175
MD900.2D.180.R.06-C25	18.0	25	32	111	36	55	1	SONT 062506	251.09	180
MD900.2D.185.R.06-C25	18.5	25	32	112	37	56	1	SONT 062506	251.09	185
MD900.2D.190.R.06-C25	19.0	25	32	113	38	57	1	SONT 062506	269.82	190
MD900.2D.195.R.06-C25	19.5	25	32	114	39	58	1	SONT 062506	269.82	195
MD900.2D.200.R.06-C25	20.0	25	32	115	40	59	1	SONT 062506	269.82	200
MD900.2D.205.R.06-C25	20.5	25	32	116	41	60	1	SONT 062506	269.82	205
MD900.2D.210.R.07-C25	21.0	25	32	118	42	62	1	SONT 072907	269.82	210
MD900.2D.220.R.07-C25	22.0	25	32	120	44	64	1	SONT 072907	269.82	220
MD900.2D.230.R.07-C25	23.0	25	32	122	46	66	1	SONT 072907	278.27	230
MD900.2D.240.R.08-C32	24.0	32	40	132	48	72	1,2	SONT 083308	278.27	240
MD900.2D.250.R.08-C32	25.0	32	40	134	50	74	1,2	SONT 083308	278.27	250
MD900.2D.260.R.08-C32	26.0	32	40	136	52	76	1,2	SONT 083308	308.09	260
MD900.2D.270.R.08-C32	27.0	32	40	138	54	78	1,2	SONT 083308	308.09	270
MD900.2D.280.R.09-C32	28.0	32	40	140	56	80	2,2	SONT 093808	308.09	280
MD900.2D.290.R.09-C32	29.0	32	40	142	58	82	2,2	SONT 093808	308.09	290
MD900.2D.300.R.09-C32	30.0	32	40	144	60	84	2,2	SONT 093808	308.09	300
MD900.2D.310.R.09-C32	31.0	32	40	146	62	86	2,2	SONT 093808	334.18	310
MD900.2D.320.R.09-C32	32.0	32	40	148	64	88	2,2	SONT 093808	334.18	320
MD900.2D.330.R.10-C40	33.0	40	50	163	66	93	3,2	SONT 104408	334.18	330
MD900.2D.340.R.10-C40	34.0	40	50	165	68	95	3,2	SONT 104408	334.18	340
MD900.2D.350.R.10-C40	35.0	40	50	167	70	97	3,2	SONT 104408	341.73	350
MD900.2D.360.R.10-C40	36.0	40	50	169	72	99	3,2	SONT 104408	341.73	360
MD900.2D.370.R.12-C40	37.0	40	56	174	74	104	3,2	SONT 124810	352.82	370
MD900.2D.380.R.12-C40	38.0	40	56	176	76	106	3,2	SONT 124810	352.82	380
MD900.2D.390.R.12-C40	39.0	40	56	178	78	108	3,2	SONT 124810	352.82	390
MD900.2D.400.R.12-C40	40.0	40	56	180	80	110	3,2	SONT 124810	352.82	400
MD900.2D.410.R.12-C40	41.0	40	56	182	82	112	3,2	SONT 124810	352.82	410

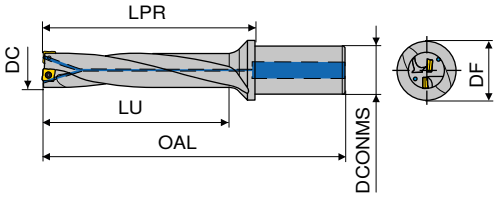
Continued on next page

MaxiDrill 900

Scope of supply:
Indexable Insert Drill including clamping screws and key

≤ 2xD

C



Designation	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	2B/41 Article no. 10 852 ... £	
MD900.2D.420.R.13-C40	42.0	40	60	187	84	117	5	SONT 135012	370.64	420
MD900.2D.430.R.13-C40	43.0	40	60	189	86	119	5	SONT 135012	370.64	430
MD900.2D.440.R.13-C40	44.0	40	60	191	88	121	5	SONT 135012	370.64	440
MD900.2D.450.R.13-C40	45.0	40	60	193	90	123	5	SONT 135012	370.64	450
MD900.2D.460.R.13-C40	46.0	40	60	195	92	125	5	SONT 135012	370.64	460
MD900.2D.470.R.15-C40	47.0	40	60	198	94	128	5	SONT 155312	389.36	470
MD900.2D.480.R.15-C40	48.0	40	60	200	96	130	5	SONT 155312	389.36	480
MD900.2D.490.R.15-C40	49.0	40	60	202	98	132	5	SONT 155312	420.09	490
MD900.2D.500.R.15-C40	50.0	40	60	204	100	134	5	SONT 155312	420.09	500
MD900.2D.520.R.15-C40	51.0	40	60	206	102	136	5	SONT 155312	431.36	510
MD900.2D.510.R.15-C40	52.0	40	60	208	104	138	5	SONT 155312	431.36	520
MD900.2D.530.R.15-C40	53.0	40	60	210	106	140	5	SONT 155312	431.36	530
MD900.2D.540.R.15-C40	54.0	40	60	212	108	142	5	SONT 155312	431.36	540
MD900.2D.550.R.17-C40	55.0	40	60	215	110	145	5	SONT 175612	431.36	550
MD900.2D.560.R.17-C40	56.0	40	60	217	112	147	5	SONT 175612	447.18	560
MD900.2D.570.R.17-C40	57.0	40	60	219	114	149	5	SONT 175612	447.18	570
MD900.2D.580.R.17-C40	58.0	40	60	221	116	151	5	SONT 175612	447.18	580
MD900.2D.590.R.17-C40	59.0	40	60	223	118	153	5	SONT 175612	447.18	590
MD900.2D.600.R.17-C40	60.0	40	62	225	120	155	5	SONT 175612	447.18	600
MD900.2D.610.R.17-C40	61.0	40	62	227	122	157	5	SONT 175612	447.18	610
MD900.2D.620.R.17-C40	62.0	40	64	229	124	159	5	SONT 175612	447.18	620
MD900.2D.630.R.17-C40	63.0	40	64	231	126	161	5	SONT 175612	447.18	630

Y7

Key D

2A/28

Clamping screw

Spare parts DC		Article no. 80 950 ... £			Article no. 70 950 ... £	
12 - 13,5	T06 - IP	13.68	123	M1,8x3,6 - IP	3.35	862
14 - 17,5	T06 - IP	13.68	123	M2x4,3 - IP	2.98	863
18 - 23	T07 - IP	13.49	124	M2,2x5 - IP	2.89	856
24 - 27	T08 - IP	13.49	125	M2,5x6 - IP	3.72	857
28 - 32	T09 - IP	14.77	126	M3x7 - IP	2.85	819
33 - 41	T15 - IP	15.77	128	M3,5x8,6 - IP	2.85	859
42 - 63	T20 - IP	16.56	129	M4,5x10,5 - IP	2.85	864

Suitable adapters can be found in → **Chapter 16 Adapters.**

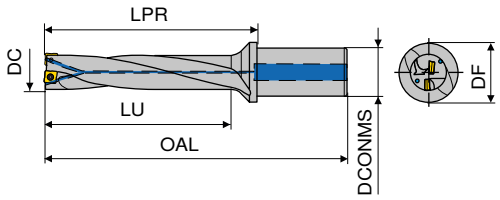
MaxiDrill 900

Scope of supply:

Indexable Insert Drill including clamping screws and key

≤ 3xD

C



2B/41

Designation	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	Article no. 10 853 ... £	
MD900.3D.120.R.03-C20	12.0	20	28	102	36.0	52	0,4	SONT 031804	236.09	120
MD900.3D.125.R.03-C20	12.5	20	28	104	37.5	54	0,4	SONT 031804	236.09	125
MD900.3D.130.R.03-C20	13.0	20	28	105	39.0	55	0,4	SONT 031804	236.09	130
MD900.3D.135.R.03-C20	13.5	20	28	107	40.5	57	0,4	SONT 031804	236.09	135
MD900.3D.140.R.04-C20	14.0	20	30	109	42.0	59	0,7	SONT 042105	248.64	140
MD900.3D.145.R.04-C20	14.5	20	30	111	44.0	61	0,7	SONT 042105	248.64	145
MD900.3D.150.R.04-C20	15.0	20	30	112	45.0	62	0,7	SONT 042105	248.64	150
MD900.3D.155.R.04-C20	15.5	20	30	114	47.0	64	0,7	SONT 042105	254.55	155
MD900.3D.160.R.05-C20	16.0	20	30	115	48.0	65	0,7	SONT 052306	254.55	160
MD900.3D.165.R.05-C20	16.5	20	30	117	50.0	67	0,7	SONT 052306	254.55	165
MD900.3D.170.R.05-C20	17.0	20	30	118	51.0	68	0,7	SONT 052306	264.36	170
MD900.3D.175.R.05-C20	17.5	20	30	120	53.0	70	0,7	SONT 052306	264.36	175
MD900.3D.180.R.06-C25	18.0	25	32	128	54.0	72	1	SONT 062506	264.36	180
MD900.3D.185.R.06-C25	18.5	25	32	130	56.0	74	1	SONT 062506	264.36	185
MD900.3D.190.R.06-C25	19.0	25	32	131	57.0	75	1	SONT 062506	284.00	190
MD900.3D.195.R.06-C25	19.5	25	32	133	59.0	77	1	SONT 062506	284.00	195
MD900.3D.200.R.06-C25	20.0	25	32	134	60.0	78	1	SONT 062506	284.00	200
MD900.3D.205.R.06-C25	20.5	25	32	136	62.0	80	1	SONT 062506	284.00	205
MD900.3D.210.R.07-C25	21.0	25	32	138	63.0	82	1	SONT 072907	284.00	210
MD900.3D.215.R.07-C25	21.5	25	32	140	65.0	84	1	SONT 072907	284.00	215
MD900.3D.220.R.07-C25	22.0	25	32	141	66.0	85	1	SONT 072907	284.00	220
MD900.3D.225.R.07-C25	22.5	25	32	143	68.0	87	1	SONT 072907	292.82	225
MD900.3D.230.R.07-C25	23.0	25	32	144	69.0	88	1	SONT 072907	292.82	230
MD900.3D.235.R.07-C25	23.5	25	32	146	71.0	90	1	SONT 072907	292.82	235
MD900.3D.240.R.08-C32	24.0	32	40	155	72.0	95	1,2	SONT 083308	292.82	240
MD900.3D.245.R.08-C32	24.5	32	40	157	74.0	97	1,2	SONT 083308	292.82	245
MD900.3D.250.R.08-C32	25.0	32	40	158	75.0	98	1,2	SONT 083308	292.82	250
MD900.3D.255.R.08-C32	25.5	32	40	160	77.0	100	1,2	SONT 083308	292.82	255
MD900.3D.260.R.08-C32	26.0	32	40	161	78.0	101	1,2	SONT 083308	324.27	260
MD900.3D.265.R.08-C32	26.5	32	40	163	80.0	103	1,2	SONT 083308	324.27	265
MD900.3D.270.R.08-C32	27.0	32	40	164	81.0	104	1,2	SONT 083308	324.27	270
MD900.3D.275.R.08-C32	27.5	32	40	166	83.0	106	1,2	SONT 083308	324.27	275
MD900.3D.280.R.09-C32	28.0	32	40	167	84.0	107	2,2	SONT 093808	324.27	280
MD900.3D.285.R.09-C32	28.5	32	40	169	86.0	109	2,2	SONT 093808	324.27	285
MD900.3D.290.R.09-C32	29.0	32	40	170	87.0	110	2,2	SONT 093808	324.27	290
MD900.3D.295.R.09-C32	29.5	32	40	172	89.0	112	2,2	SONT 093808	324.27	295
MD900.3D.300.R.09-C32	30.0	32	40	173	90.0	113	2,2	SONT 093808	324.27	300
MD900.3D.305.R.09-C32	30.5	32	40	175	92.0	115	2,2	SONT 093808	324.27	305
MD900.3D.310.R.09-C32	31.0	32	40	176	93.0	116	2,2	SONT 093808	351.82	310
MD900.3D.315.R.09-C32	31.5	32	40	178	95.0	118	2,2	SONT 093808	351.82	315
MD900.3D.320.R.09-C32	32.0	32	40	179	96.0	119	2,2	SONT 093808	351.82	320
MD900.3D.325.R.10-C40	32.5	40	50	192	98.0	124	3,2	SONT 104408	351.82	325
MD900.3D.330.R.10-C40	33.0	40	50	193	99.0	125	3,2	SONT 104408	351.82	330
MD900.3D.335.R.10-C40	33.5	40	50	195	101.0	127	3,2	SONT 104408	351.82	335
MD900.3D.340.R.10-C40	34.0	40	50	196	102.0	128	3,2	SONT 104408	351.82	340
MD900.3D.345.R.10-C40	34.5	40	50	198	104.0	130	3,2	SONT 104408	351.82	345
MD900.3D.350.R.10-C40	35.0	40	50	199	105.0	131	3,2	SONT 104408	359.64	350

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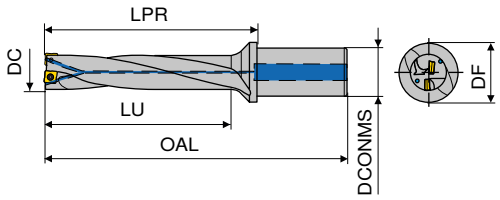
MaxiDrill 900

Scope of supply:

Indexable Insert Drill including clamping screws and key

≤ 3xD

C



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Designation	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	2B/41 Article no. 10 853 ... £	
MD900.3D.355.R.10-C40	35.5	40	50	201	107.0	133	3,2	SONT 104408	359.64	355
MD900.3D.360.R.10-C40	36.0	40	50	202	108.0	134	3,2	SONT 104408	359.64	360
MD900.3D.365.R.10-C40	36.5	40	50	204	110.0	136	3,2	SONT 104408	359.64	365
MD900.3D.370.R.12-C40	37.0	40	56	211	111.0	141	3,2	SONT 124810	371.45	370
MD900.3D.380.R.12-C40	38.0	40	56	214	114.0	144	3,2	SONT 124810	371.45	380
MD900.3D.390.R.12-C40	39.0	40	56	217	117.0	147	3,2	SONT 124810	371.45	390
MD900.3D.400.R.12-C40	40.0	40	56	220	120.0	150	3,2	SONT 124810	371.45	400
MD900.3D.410.R.12-C40	41.0	40	56	223	123.0	153	3,2	SONT 124810	371.45	410
MD900.3D.420.R.13-C40	42.0	40	60	229	126.0	159	5	SONT 135012	390.09	420
MD900.3D.430.R.13-C40	43.0	40	60	232	129.0	162	5	SONT 135012	390.09	430
MD900.3D.440.R.13-C40	44.0	40	60	235	132.0	165	5	SONT 135012	390.09	440
MD900.3D.450.R.13-C40	45.0	40	60	238	135.0	168	5	SONT 135012	390.09	450
MD900.3D.460.R.13-C40	46.0	40	60	241	138.0	171	5	SONT 135012	390.09	460
MD900.3D.470.R.15-C40	47.0	40	60	245	141.0	175	5	SONT 155312	409.73	470
MD900.3D.480.R.15-C40	48.0	40	60	248	144.0	178	5	SONT 155312	409.73	480
MD900.3D.490.R.15-C40	49.0	40	60	251	147.0	181	5	SONT 155312	442.18	490
MD900.3D.500.R.15-C40	50.0	40	60	254	150.0	184	5	SONT 155312	442.18	500
MD900.3D.510.R.15-C40	51.0	40	60	257	153.0	187	5	SONT 155312	454.00	510
MD900.3D.520.R.15-C40	52.0	40	60	260	156.0	190	5	SONT 155312	454.00	520
MD900.3D.530.R.15-C40	53.0	40	60	263	159.0	193	5	SONT 155312	454.00	530
MD900.3D.540.R.15-C40	54.0	40	60	266	162.0	196	5	SONT 155312	454.00	540
MD900.3D.550.R.17-C40	55.0	40	60	270	165.0	200	5	SONT 175612	454.00	550
MD900.3D.560.R.17-C40	56.0	40	60	273	168.0	203	5	SONT 175612	470.73	560
MD900.3D.570.R.17-C40	57.0	40	60	276	171.0	206	5	SONT 175612	470.73	570
MD900.3D.580.R.17-C40	58.0	40	60	279	174.0	209	5	SONT 175612	470.73	580
MD900.3D.590.R.17-C40	59.0	40	60	282	177.0	212	5	SONT 175612	470.73	590
MD900.3D.600.R.17-C40	60.0	40	62	285	180.0	215	5	SONT 175612	470.73	600
MD900.3D.610.R.17-C40	61.0	40	62	288	183.0	218	5	SONT 175612	470.73	610
MD900.3D.620.R.17-C40	62.0	40	64	291	186.0	221	5	SONT 175612	470.73	620
MD900.3D.630.R.17-C40	63.0	40	64	294	189.0	224	5	SONT 175612	470.73	630

Y7

Key D

2A/28

Clamping screw

Spare parts DC		Article no. 80 950 ... £		Article no. 70 950 ... £	
12 - 13,5	T06 - IP	13.68	123	M1,8x3,6 - IP	3.35	862
14 - 17,5	T06 - IP	13.68	123	M2x4,3 - IP	2.98	863
18 - 23,5	T07 - IP	13.49	124	M2,2x5 - IP	2.89	856
24 - 27,5	T08 - IP	13.49	125	M2,5x6 - IP	3.72	857
28 - 32	T09 - IP	14.77	126	M3x7 - IP	2.85	819
32,5 - 41	T15 - IP	15.77	128	M3,5x8,6 - IP	2.85	859
42 - 63	T20 - IP	16.56	129	M4,5x10,5 - IP	2.85	864

Suitable adapters can be found in → **Chapter 16 Adapters.**

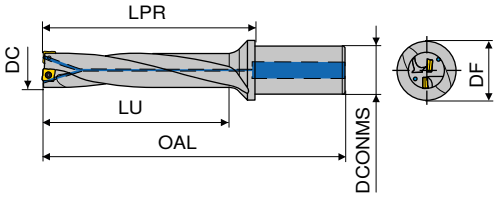
MaxiDrill 900

Scope of supply:

Indexable Insert Drill including clamping screws and key

≤ 4xD

C



2B/41

Designation	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	Article no. 10 854 ... £	
MD900.4D.120.R.03-C20	12.0	20	28	114	48	64	0,4	SONT 031804	325.64	120
MD900.4D.125.R.03-C20	12.5	20	28	116	50	66	0,4	SONT 031804	325.64	125
MD900.4D.130.R.03-C20	13.0	20	28	118	52	68	0,4	SONT 031804	325.64	130
MD900.4D.135.R.03-C20	13.5	20	28	120	54	70	0,4	SONT 031804	325.64	135
MD900.4D.140.R.04-C20	14.0	20	30	123	56	73	0,7	SONT 042105	335.09	140
MD900.4D.145.R.04-C20	14.5	20	30	125	58	75	0,7	SONT 042105	335.09	145
MD900.4D.150.R.04-C20	15.0	20	30	127	60	77	0,7	SONT 042105	335.09	150
MD900.4D.155.R.04-C20	15.5	20	30	129	62	79	0,7	SONT 042105	335.09	155
MD900.4D.160.R.05-C20	16.0	20	30	131	64	81	0,7	SONT 052306	342.91	160
MD900.4D.165.R.05-C20	16.5	20	30	133	66	83	0,7	SONT 052306	342.91	165
MD900.4D.170.R.05-C20	17.0	20	30	135	68	85	0,7	SONT 052306	355.82	170
MD900.4D.175.R.05-C20	17.5	20	30	137	70	87	0,7	SONT 052306	355.82	175
MD900.4D.180.R.06-C25	18.0	25	32	146	72	90	1	SONT 062506	355.82	180
MD900.4D.185.R.06-C25	18.5	25	32	148	74	92	1	SONT 062506	355.82	185
MD900.4D.190.R.06-C25	19.0	25	32	150	76	94	1	SONT 062506	382.27	190
MD900.4D.195.R.06-C25	19.5	25	32	152	78	96	1	SONT 062506	382.27	195
MD900.4D.200.R.06-C25	20.0	25	32	154	80	98	1	SONT 062506	382.27	200
MD900.4D.205.R.06-C25	20.5	25	32	156	82	100	1	SONT 062506	382.27	205
MD900.4D.210.R.07-C25	21.0	25	32	159	84	103	1	SONT 072907	382.27	210
MD900.4D.220.R.07-C25	22.0	25	32	163	88	107	1	SONT 072907	382.27	220
MD900.4D.230.R.07-C25	23.0	25	32	167	92	111	1	SONT 072907	395.00	230
MD900.4D.240.R.08-C32	24.0	32	40	179	96	119	1,2	SONT 083308	395.00	240
MD900.4D.250.R.08-C32	25.0	32	40	183	100	123	1,2	SONT 083308	395.00	250
MD900.4D.260.R.08-C32	26.0	32	40	187	104	127	1,2	SONT 083308	436.36	260
MD900.4D.270.R.08-C32	27.0	32	40	191	108	131	1,2	SONT 083308	436.36	270
MD900.4D.280.R.09-C32	28.0	32	40	195	112	135	2,2	SONT 093808	436.36	280
MD900.4D.290.R.09-C32	29.0	32	40	199	116	139	2,2	SONT 093808	436.36	290
MD900.4D.300.R.09-C32	30.0	32	40	203	120	143	2,2	SONT 093808	436.36	300
MD900.4D.310.R.09-C32	31.0	32	40	207	124	147	2,2	SONT 093808	473.64	310
MD900.4D.320.R.09-C32	32.0	32	40	211	128	151	2,2	SONT 093808	473.64	320
MD900.4D.330.R.10-C40	33.0	40	50	228	132	158	3,2	SONT 104408	473.64	330
MD900.4D.340.R.10-C40	34.0	40	50	232	136	162	3,2	SONT 104408	473.64	340
MD900.4D.350.R.10-C40	35.0	40	50	236	140	166	3,2	SONT 104408	483.55	350
MD900.4D.360.R.10-C40	36.0	40	50	240	144	170	3,2	SONT 104408	483.55	360
MD900.4D.370.R.12-C40	37.0	40	56	248	148	178	3,2	SONT 124810	500.18	370
MD900.4D.380.R.12-C40	38.0	40	56	252	152	182	3,2	SONT 124810	500.18	380
MD900.4D.390.R.12-C40	39.0	40	56	256	156	186	3,2	SONT 124810	500.18	390
MD900.4D.400.R.12-C40	40.0	40	56	260	160	190	3,2	SONT 124810	500.18	400
MD900.4D.410.R.12-C40	41.0	40	56	264	164	194	3,2	SONT 124810	500.18	410

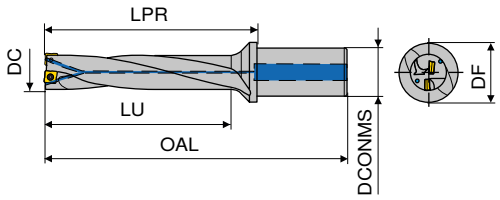
Continued on next page

MaxiDrill 900

Scope of supply:
Indexable Insert Drill including clamping screws and key

≤ 4xD

C



Designation	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	2B/41 Article no. 10 854 ... £	
MD900.4D.420.R.13-C40	42.0	40	60	271	168	201	5	SONT 135012	524.73	**420**
MD900.4D.430.R.13-C40	43.0	40	60	275	172	205	5	SONT 135012	524.73	**430**
MD900.4D.440.R.13-C40	44.0	40	60	279	176	209	5	SONT 135012	524.73	**440**
MD900.4D.450.R.13-C40	45.0	40	60	283	180	213	5	SONT 135012	524.73	**450**
MD900.4D.460.R.13-C40	46.0	40	60	287	184	217	5	SONT 135012	524.73	**460**
MD900.4D.470.R.15-C40	47.0	40	60	292	188	222	5	SONT 155312	553.27	**470**
MD900.4D.480.R.15-C40	48.0	40	60	296	192	226	5	SONT 155312	553.27	**480**
MD900.4D.490.R.15-C40	49.0	40	60	300	196	230	5	SONT 155312	553.27	**490**
MD900.4D.500.R.15-C40	50.0	40	60	304	200	234	5	SONT 155312	553.27	**500**
MD900.4D.510.R.15-C40	51.0	40	60	308	204	238	5	SONT 155312	553.27	**510**
MD900.4D.520.R.15-C40	52.0	40	60	312	208	242	5	SONT 155312	553.27	**520**
MD900.4D.530.R.15-C40	53.0	40	60	316	212	246	5	SONT 155312	553.27	**530**
MD900.4D.540.R.15-C40	54.0	40	60	320	216	250	5	SONT 155312	553.27	**540**

Y7

Key D

2A/28

Clamping screw

Spare parts DC		Article no. 80 950 ... £			Article no. 70 950 ... £	
12 - 13	T06 - IP	13.68	**123**	M1,8x3,6 - IP	3.35	**862**
14 - 17	T06 - IP	13.68	**123**	M2x4,3 - IP	2.98	**863**
18 - 23	T07 - IP	13.49	**124**	M2,2x5 - IP	2.89	**856**
24 - 27	T08 - IP	13.49	**125**	M2,5x6 - IP	3.72	**857**
28 - 32	T09 - IP	14.77	**126**	M3x7 - IP	2.85	**819**
33 - 41	T15 - IP	15.77	**128**	M3,5x8,6 - IP	2.85	**859**
42 - 54	T20 - IP	16.56	**129**	M4,5x10,5 - IP	2.85	**864**

Suitable adapters can be found in → **Chapter 16 Adapters.**

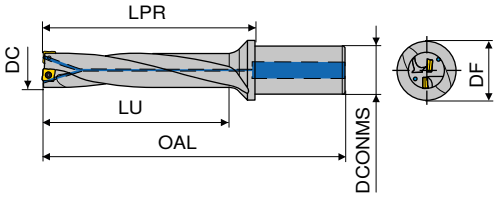
MaxiDrill 900

Scope of supply:

Indexable Insert Drill including clamping screws and key

≤ 5xD

C



2B/41

Designation	DC	DCONMS	DF	OAL	LU	LPR	torque moment	Insert	Article no. 10 855 ...	
	mm	mm	mm	mm	mm	mm	Nm		£	
MD900.5D.120.R.03-C20	12.0	20	28	126	60.0	76.0	0,4	SONT 031804	389.27	120
MD900.5D.125.R.03-C20	12.5	20	28	128	62.5	78.0	0,4	SONT 031804	389.27	125
MD900.5D.130.R.03-C20	13.0	20	28	131	65.0	81.0	0,4	SONT 031804	389.27	130
MD900.5D.135.R.03-C20	13.5	20	28	132	67.5	82.0	0,4	SONT 031804	389.27	135
MD900.5D.140.R.04-C20	14.0	20	30	137	70.0	87.0	0,7	SONT 042105	398.00	140
MD900.5D.145.R.04-C20	14.5	20	30	139	72.5	89.0	0,7	SONT 042105	398.00	145
MD900.5D.150.R.04-C20	15.0	20	30	142	75.0	92.0	0,7	SONT 042105	398.00	150
MD900.5D.155.R.04-C20	15.5	20	30	144	77.5	94.5	0,7	SONT 042105	398.00	155
MD900.5D.160.R.05-C20	16.0	20	30	147	80.0	97.0	0,7	SONT 052306	407.82	160
MD900.5D.165.R.05-C20	16.5	20	30	149	82.5	99.0	0,7	SONT 052306	407.82	165
MD900.5D.170.R.05-C20	17.0	20	30	152	85.0	102.0	0,7	SONT 052306	422.55	170
MD900.5D.175.R.05-C20	17.5	20	30	154	87.5	104.0	0,7	SONT 052306	422.55	175
MD900.5D.180.R.06-C25	18.0	25	32	164	90.0	108.0	1	SONT 062506	422.55	180
MD900.5D.185.R.06-C25	18.5	25	32	166	92.5	110.0	1	SONT 062506	422.55	185
MD900.5D.190.R.06-C25	19.0	25	32	169	95.0	113.0	1	SONT 062506	454.00	190
MD900.5D.195.R.06-C25	19.5	25	32	171	97.5	115.0	1	SONT 062506	454.00	195
MD900.5D.200.R.06-C25	20.0	25	32	174	100.0	118.0	1	SONT 062506	454.00	200
MD900.5D.205.R.06-C25	20.5	25	32	175	102.5	119.0	1	SONT 062506	454.00	205
MD900.5D.210.R.07-C25	21.0	25	32	180	105.0	124.0	1	SONT 072907	454.00	210
MD900.5D.220.R.07-C25	22.0	25	32	184	110.0	128.0	1	SONT 072907	454.00	220
MD900.5D.230.R.07-C25	23.0	25	32	189	115.0	133.0	1	SONT 072907	470.18	230
MD900.5D.240.R.08-C32	24.0	32	40	203	120.0	143.0	1,2	SONT 083308	470.18	240
MD900.5D.250.R.08-C32	25.0	32	40	208	125.0	148.0	1,2	SONT 083308	470.18	250
MD900.5D.260.R.08-C32	26.0	32	40	212	130.0	152.0	1,2	SONT 083308	518.91	260
MD900.5D.270.R.08-C32	27.0	32	40	217	135.0	157.0	1,2	SONT 083308	518.91	270
MD900.5D.280.R.09-C32	28.0	32	40	221	140.0	161.0	2,2	SONT 093808	518.91	280
MD900.5D.290.R.09-C32	29.0	32	40	226	145.0	166.0	2,2	SONT 093808	518.91	290
MD900.5D.300.R.09-C32	30.0	32	40	230	150.0	170.0	2,2	SONT 093808	518.91	300
MD900.5D.310.R.09-C32	31.0	32	40	235	155.0	175.0	2,2	SONT 093808	562.09	310
MD900.5D.320.R.09-C32	32.0	32	40	239	160.0	179.0	2,2	SONT 093808	562.09	320
MD900.5D.330.R.10-C40	33.0	40	50	259	165.0	191.0	3,2	SONT 104408	562.09	330
MD900.5D.340.R.10-C40	34.0	40	50	264	170.0	196.0	3,2	SONT 104408	562.09	340
MD900.5D.350.R.10-C40	35.0	40	50	269	175.0	201.0	3,2	SONT 104408	574.82	350
MD900.5D.360.R.10-C40	36.0	40	50	274	180.0	206.0	3,2	SONT 104408	574.82	360
MD900.5D.370.R.12-C40	37.0	40	56	285	185.0	215.0	3,2	SONT 124810	594.55	370
MD900.5D.380.R.12-C40	38.0	40	56	290	190.0	220.0	3,2	SONT 124810	594.55	380
MD900.5D.390.R.12-C40	39.0	40	56	295	195.0	225.0	3,2	SONT 124810	594.55	390
MD900.5D.400.R.12-C40	40.0	40	56	300	200.0	230.0	3,2	SONT 124810	594.55	400
MD900.5D.410.R.12-C40	41.0	40	56	305	205.0	235.0	3,2	SONT 124810	594.55	410

Y7

Key D

2A/28

Clamping screw

Spare parts DC		Article no. 80 950 ...			Article no. 70 950 ...	
		£			£	
12 - 13	T06 - IP	13.68	123	M1,8x3,6 - IP	3.35	862
14 - 17	T06 - IP	13.68	123	M2x4,3 - IP	2.98	863
18 - 23	T07 - IP	13.49	124	M2,2x5 - IP	2.89	856
24 - 27	T08 - IP	13.49	125	M2,5x6 - IP	3.72	857
28 - 32	T09 - IP	14.77	126	M3x7 - IP	2.85	819
33 - 41	T15 - IP	15.77	128	M3,5x8,6 - IP	2.85	859

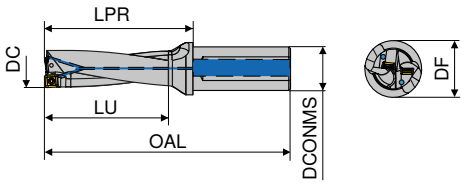
Suitable adapters can be found in → **Chapter 16 Adapters.**

KUB 100

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 3xD

C



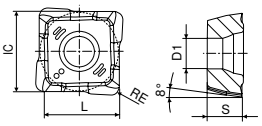
Designation	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 881 ... £	
KUB-100.3D.140.R.04-C20	14.0	20	30	105	42	55	0,7	SONT 042105	328.09	**99140**
KUB-100.3D.150.R.04-C20	15.0	20	30	109	45	59	0,7	SONT 042105	328.09	**99150**
KUB-100.3D.160.R.05-C20	16.0	20	30	114	48	64	0,7	SONT 052306	328.09	**99160**
KUB-100.3D.165.R.05-C20	16.5	20	30	118	51	68	0,7	SONT 052306	328.09	**99165**
KUB-100.3D.170.R.05-C20	17.0	20	30	118	51	68	0,7	SONT 052306	336.55	**99170**
KUB-100.3D.175.R.05-C25	17.5	25	30	127	54	71	0,7	SONT 052306	336.55	**99175**
KUB-100.3D.180.R.06-C25	18.0	25	30	127	54	71	1	SONT 062506	336.55	**99180**
KUB-100.3D.185.R.06-C25	18.5	25	30	131	57	75	1	SONT 062506	336.55	**99185**
KUB-100.3D.190.R.06-C25	19.0	25	30	131	57	75	1	SONT 062506	346.00	**99190**
KUB-100.3D.195.R.06-C25	19.5	25	30	134	60	78	1	SONT 062506	346.00	**99195**
KUB-100.3D.200.R.06-C25	20.0	25	30	134	60	78	1	SONT 062506	346.00	**99200**
KUB-100.3D.210.R.07-C25	21.0	25	30	138	63	82	1	SONT 072907	368.73	**99210**
KUB-100.3D.220.R.07-C25	22.0	25	30	141	66	85	1	SONT 072907	368.73	**99220**
KUB-100.3D.230.R.07-C25	23.0	25	30	145	69	89	1	SONT 072907	368.73	**99230**
KUB-100.3D.240.R.08-C32	24.0	32	39	152	72	92	1,2	SONT 083308	399.91	**99240**
KUB-100.3D.250.R.08-C32	25.0	32	39	156	75	96	1,2	SONT 083308	399.91	**99250**
KUB-100.3D.260.R.08-C32	26.0	32	39	159	78	99	1,2	SONT 083308	399.91	**99260**
KUB-100.3D.270.R.08-C32	27.0	32	39	163	81	103	1,2	SONT 083308	420.73	**99270**

Spare parts DC	Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £	
14 - 17,5	T06 - IP	13.68 **123**	M2x4,3 - IP	2.98 **863**
18 - 23	T07 - IP	13.49 **124**	M2,2x5 - IP	2.89 **856**
24 - 27	T08 - IP	13.49 **125**	M2,5x6 - IP	3.72 **857**

Suitable adapters can be found in → **Chapter 16 Adapters.**

SONT

Designation	IC	D1	L	S
	mm	mm	mm	mm
SONT 0318..	5.4	2.10	3.8	1.80
SONT 0421..	4.6	2.25	4.2	2.10
SONT 0523..	5.3	2.25	4.8	2.30
SONT 0625..	5.9	2.50	5.5	2.50
SONT 0729..	6.5	2.50	6.1	2.90
SONT 0833..	7.7	2.90	7.3	3.30
SONT 0938..	8.9	3.50	8.5	3.80
SONT 1044..	10.1	4.10	9.6	4.40
SONT 1248..	11.6	4.10	11.0	4.80
SONT 1350..	13.0	5.30	12.2	5.00
SONT 1553..	15.2	5.30	14.4	5.30
SONT 1756..	17.5	5.30	16.7	5.60



SONT

		-M30 CTPP430	-M30 CTPP430	-M30 CTCP420	-M30 CTCP420
		-M30 CCN1430	-M30 CCN1430	-M30 DCX1420	-M30 DCX1420
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		SONT 1A/08	SONT 1A/08	SONT 1A/08	SONT 1A/08
ISO	RE	Article no. 10 830 ...	Article no. 10 830 ...	Article no. 10 830 ...	Article no. 10 830 ...
	mm	£	£	£	£
031804	0.4	11.01 103 [1]		11.01 703 [1]	
042105	0.5		12.62 104		12.62 704
052306	0.6		12.79 105		12.79 705
062506	0.6		13.00 106		13.00 706
072907	0.7		13.29 107		13.29 707
083308	0.8		13.58 108		13.58 708
093808	0.8		13.91 109		13.91 709
104408	0.8		14.57 110		14.57 710
124810	1.0		15.44 112		15.44 712
135012	1.2		16.35 113		16.35 713
155312	1.2		18.54 115		18.54 715
175612	1.2		19.65 117		19.65 717
Steel		●	●	●	●
Stainless steel		●	●	○	○
Cast iron		○	○	●	●
Non ferrous metals		○	○		
Heat resistant alloys		○	○		
hardened materials					

1) two usable cutting edges

→ v_c/f_z Page 43–46

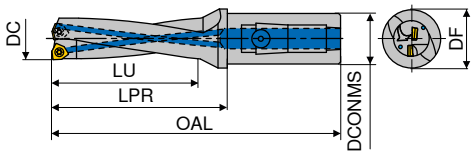
CTCP420 -M30 (DCX1420) is exclusively recommended for use on the peripheral cutting edge!

KUB Trigon

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 2xD

K



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Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 892 ... £	
KUB-T.2D.140.R.03-K20	V4331404	14	20	30	102	28	52	0,62	WOEX 030204	275.09	14011
KUB-T.2D.150.R.03-K20	V4331504	15	20	30	104	30	54	0,62	WOEX 030204	275.09	15011
KUB-T.2D.160.R.03-K20	V4331602	16	20	30	106	32	56	0,62	WOEX 030204	275.09	16011
KUB-T.2D.170.R.03-K20	V4331702	17	20	30	108	34	58	0,62	WOEX 030204	275.09	17011
KUB-T.2D.180.R.03-K20	V4331802	18	20	30	110	36	60	0,62	WOEX 030204	275.09	18011
KUB-T.2D.190.R.03-K20	V4331902	19	20	30	112	38	62	0,62	WOEX 030204	275.09	19011
KUB-T.2D.200.R.04-K25	V4432002	20	25	30	120	40	64	1,01	WOEX 040304	278.00	20012
KUB-T.2D.210.R.04-K25	V4432102	21	25	30	122	42	66	1,01	WOEX 040304	278.00	21012
KUB-T.2D.220.R.04-K25	V4432202	22	25	30	124	44	68	1,01	WOEX 040304	278.00	22012
KUB-T.2D.230.R.04-K25	V4432302	23	25	30	126	46	70	1,01	WOEX 040304	278.00	23012
KUB-T.2D.240.R.04-K25	V4432402	24	25	30	128	48	72	1,01	WOEX 040304	278.00	24012
KUB-T.2D.250.R.05-K32	V4532502	25	32	39	134	50	74	1,28	WOEX 05T304	301.64	25013
KUB-T.2D.260.R.05-K32	V4532602	26	32	39	136	52	76	1,28	WOEX 05T304	301.64	26013
KUB-T.2D.270.R.05-K32	V4532702	27	32	39	138	54	78	1,28	WOEX 05T304	301.64	27013
KUB-T.2D.280.R.05-K32	V4532802	28	32	39	140	56	80	1,28	WOEX 05T304	301.64	28013
KUB-T.2D.290.R.05-K32	V4532902	29	32	39	142	58	82	1,28	WOEX 05T304	301.64	29013
KUB-T.2D.300.R.05-K32	V4533002	30	32	39	149	60	89	1,28	WOEX 05T304	301.64	30013
KUB-T.2D.310.R.05-K32	V4533102	31	32	39	151	62	91	1,28	WOEX 05T304	301.64	31013
KUB-T.2D.320.R.05-K32	V4533202	32	32	39	153	64	93	1,28	WOEX 05T304	301.64	32013
KUB-T.2D.330.R.05-K32	V4533302	33	32	39	155	66	95	1,28	WOEX 05T304	301.64	33013
KUB-T.2D.340.R.05-K32	V4533402	34	32	39	157	68	97	1,28	WOEX 05T304	301.64	34013
KUB-T.2D.350.R.05-K32	V4533502	35	32	39	159	70	99	1,28	WOEX 05T304	301.64	35013
KUB-T.2D.360.R.05-K32	V4533602	36	32	39	161	72	101	1,28	WOEX 05T304	301.64	36013
KUB-T.2D.370.R.06-K32	V4533702	37	32	39	173	74	113	2,8	WOEX 06T304	314.82	37013
KUB-T.2D.380.R.06-K32	V4533802	38	32	39	175	76	115	2,8	WOEX 06T304	314.82	38013
KUB-T.2D.390.R.06-K32	V4533902	39	32	39	177	78	117	2,8	WOEX 06T304	314.82	39013
KUB-T.2D.400.R.06-K32	V4534002	40	32	39	179	80	119	2,8	WOEX 06T304	314.82	40013
KUB-T.2D.410.R.06-K32	V4534102	41	32	39	181	82	121	2,8	WOEX 06T304	314.82	41013
KUB-T.2D.420.R.06-K32	V4534202	42	32	39	183	84	123	2,8	WOEX 06T304	314.82	42013
KUB-T.2D.430.R.06-K32	V4534302	43	32	39	185	86	125	2,8	WOEX 06T304	314.82	43013
KUB-T.2D.440.R.06-K32	V4534402	44	32	39	187	88	127	2,8	WOEX 06T304	314.82	44013

Spare parts DC	Y7 Key D Article no. 80 950 ... £		W7 Clamping screw Article no. 10 950 ... £	
14 - 19	T06 - IP	13.68 123	M2,0x4,3 - 06IP	2.15 10000
20 - 24	T06 - IP	13.68 123	M2,2x5,5 - 06IP	2.15 10700
25 - 36	T08 - IP	13.49 125	M2,5x7,2 - 10IP	2.15 10500
37 - 44	T10 - IP	15.31 127	M3,5x7,3 - 10IP	2.15 10600

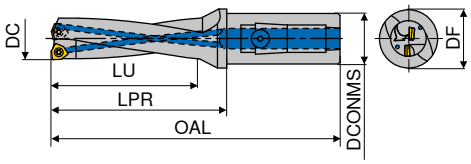
Suitable adapters can be found in → **Chapter 16 Adapters.**

KUB Trigon

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 3xD

K



NEW 2B/6#

Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	Article no. 10 893 ... £	
KUB-T.3D.140.R.03-K20	V4371404	14	20	30	116	42	66	0,62	WOEX 030204	288.36	14011
KUB-T.3D.150.R.03-K20	V4371504	15	20	30	119	45	69	0,62	WOEX 030204	288.36	15011
KUB-T.3D.160.R.03-K20	V4371602	16	20	30	122	48	72	0,62	WOEX 030204	288.36	16011
KUB-T.3D.170.R.03-K20	V4371702	17	20	30	125	51	75	0,62	WOEX 030204	288.36	17011
KUB-T.3D.180.R.03-K20	V4371802	18	20	30	128	54	78	0,62	WOEX 030204	288.36	18011
KUB-T.3D.190.R.03-K20	V4371902	19	20	30	131	57	81	0,62	WOEX 030204	288.36	19011
KUB-T.3D.200.R.04-K25	V4472002	20	25	30	140	60	84	1,01	WOEX 040304	309.18	20012
KUB-T.3D.210.R.04-K25	V4472102	21	25	30	143	63	87	1,01	WOEX 040304	309.18	21012
KUB-T.3D.220.R.04-K25	V4472202	22	25	30	146	66	90	1,01	WOEX 040304	309.18	22012
KUB-T.3D.230.R.04-K25	V4472302	23	25	30	149	69	93	1,01	WOEX 040304	309.18	23012
KUB-T.3D.240.R.04-K25	V4472402	24	25	30	152	72	96	1,01	WOEX 040304	309.18	24012
KUB-T.3D.250.R.05-K32	V4572502	25	32	39	159	75	99	1,28	WOEX 05T304	336.55	25013
KUB-T.3D.260.R.05-K32	V4572602	26	32	39	162	78	102	1,28	WOEX 05T304	336.55	26013
KUB-T.3D.270.R.05-K32	V4572702	27	32	39	165	81	105	1,28	WOEX 05T304	336.55	27013
KUB-T.3D.280.R.05-K32	V4572802	28	32	39	168	84	108	1,28	WOEX 05T304	336.55	28013
KUB-T.3D.290.R.05-K32	V4572902	29	32	39	171	87	111	1,28	WOEX 05T304	336.55	29013
KUB-T.3D.300.R.05-K32	V4573002	30	32	39	179	90	119	1,28	WOEX 05T304	336.55	30013
KUB-T.3D.310.R.05-K32	V4573102	31	32	39	182	93	122	1,28	WOEX 05T304	336.55	31013
KUB-T.3D.320.R.05-K32	V4573202	32	32	39	185	96	125	1,28	WOEX 05T304	336.55	32013
KUB-T.3D.330.R.05-K32	V4573302	33	32	39	188	99	128	1,28	WOEX 05T304	336.55	33013
KUB-T.3D.340.R.05-K32	V4573402	34	32	39	191	102	131	1,28	WOEX 05T304	336.55	34013
KUB-T.3D.350.R.05-K32	V4573502	35	32	39	194	105	134	1,28	WOEX 05T304	336.55	35013
KUB-T.3D.360.R.05-K32	V4573602	36	32	39	197	108	137	1,28	WOEX 05T304	336.55	36013
KUB-T.3D.370.R.06-K32	V4573702	37	32	39	210	111	150	2,8	WOEX 06T304	364.91	37013
KUB-T.3D.380.R.06-K32	V4573802	38	32	39	213	114	153	2,8	WOEX 06T304	364.91	38013
KUB-T.3D.390.R.06-K32	V4573902	39	32	39	216	117	156	2,8	WOEX 06T304	364.91	39013
KUB-T.3D.400.R.06-K32	V4574002	40	32	39	219	120	159	2,8	WOEX 06T304	364.91	40013
KUB-T.3D.410.R.06-K32	V4574102	41	32	39	222	123	162	2,8	WOEX 06T304	364.91	41013
KUB-T.3D.420.R.06-K32	V4574202	42	32	39	225	126	165	2,8	WOEX 06T304	364.91	42013
KUB-T.3D.430.R.06-K32	V4574302	43	32	39	228	129	168	2,8	WOEX 06T304	364.91	43013
KUB-T.3D.440.R.06-K32	V4574402	44	32	39	231	132	171	2,8	WOEX 06T304	364.91	44013

Y7

Key D

W7

Clamping screw

Spare parts DC		Article no. 80 950 ... £		Article no. 10 950 ... £	
14 - 19	T06 - IP	13.68	123	M2,0x4,3 - 06IP	2.15 10000
20 - 24	T06 - IP	13.68	123	M2,2x5,5 - 06IP	2.15 10700
25 - 36	T08 - IP	13.49	125	M2,5x7,2 - 10IP	2.15 10500
37 - 44	T10 - IP	15.31	127	M3,5x7,3 - 10IP	2.15 10600

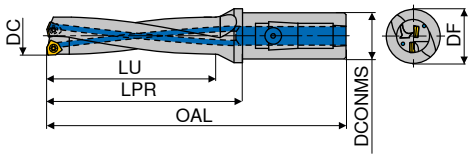
Suitable adapters can be found in → **Chapter 16 Adapters.**

KUB Trigon

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 4xD

K



Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 894 ... £	
KUB-T.4D.140.R.03-K20	V4391404	14	20	30	130	56	80	0,62	WOEX 030204	316.73	**14011**
KUB-T.4D.150.R.03-K20	V4391504	15	20	30	134	60	84	0,62	WOEX 030204	316.73	**15011**
KUB-T.4D.160.R.03-K20	V4391602	16	20	30	138	64	88	0,62	WOEX 030204	316.73	**16011**
KUB-T.4D.170.R.03-K20	V4391702	17	20	30	142	68	92	0,62	WOEX 030204	316.73	**17011**
KUB-T.4D.180.R.03-K20	V4391802	18	20	30	146	72	96	0,62	WOEX 030204	316.73	**18011**
KUB-T.4D.190.R.03-K20	V4391902	19	20	30	150	76	100	0,62	WOEX 030204	316.73	**19011**
KUB-T.4D.200.R.04-K25	V4492002	20	25	30	160	80	104	1,01	WOEX 040304	340.36	**20012**
KUB-T.4D.210.R.04-K25	V4492102	21	25	30	164	84	108	1,01	WOEX 040304	340.36	**21012**
KUB-T.4D.220.R.04-K25	V4492202	22	25	30	168	88	112	1,01	WOEX 040304	340.36	**22012**
KUB-T.4D.230.R.04-K25	V4492302	23	25	30	172	92	116	1,01	WOEX 040304	340.36	**23012**
KUB-T.4D.240.R.04-K25	V4492402	24	25	30	176	96	120	1,01	WOEX 040304	340.36	**24012**
KUB-T.4D.250.R.05-K32	V4592502	25	32	39	184	100	124	1,28	WOEX 05T304	348.91	**25013**
KUB-T.4D.260.R.05-K32	V4592602	26	32	39	188	104	128	1,28	WOEX 05T304	348.91	**26013**
KUB-T.4D.270.R.05-K32	V4592702	27	32	39	192	108	132	1,28	WOEX 05T304	348.91	**27013**
KUB-T.4D.280.R.05-K32	V4592802	28	32	39	196	112	136	1,28	WOEX 05T304	348.91	**28013**
KUB-T.4D.290.R.05-K32	V4592902	29	32	39	200	116	140	1,28	WOEX 05T304	367.82	**29013**
KUB-T.4D.300.R.05-K32	V4593002	30	32	39	209	120	149	1,28	WOEX 05T304	367.82	**30013**
KUB-T.4D.310.R.05-K32	V4593102	31	32	39	213	124	153	1,28	WOEX 05T304	367.82	**31013**
KUB-T.4D.320.R.05-K32	V4593202	32	32	39	217	128	157	1,28	WOEX 05T304	367.82	**32013**
KUB-T.4D.330.R.05-K32	V4593302	33	32	39	221	132	161	1,28	WOEX 05T304	367.82	**33013**
KUB-T.4D.340.R.05-K32	V4593402	34	32	39	225	136	165	1,28	WOEX 05T304	367.82	**34013**
KUB-T.4D.350.R.05-K32	V4593502	35	32	39	229	140	169	1,28	WOEX 05T304	367.82	**35013**

Y7

Key D

W7

Clamping screw

Spare parts DC	Article no. 80 950 ...	£		Article no. 10 950 ...	£	
14 - 19	T06 - IP	13.68	**123**	M2,0x4,3 - 06IP	2.15	**10000**
20 - 24	T06 - IP	13.68	**123**	M2,2x5,5 - 06IP	2.15	**10700**
25 - 35	T08 - IP	13.49	**125**	M2,5x7,2 - 10IP	2.15	**10500**

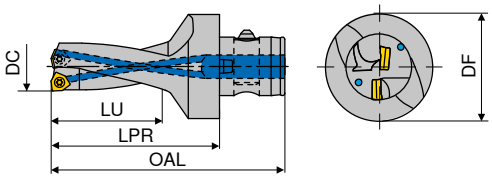
Suitable adapters can be found in → **Chapter 16 Adapters.**

KUB Trigon

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 2xD

ABS



NEW 2B/6#

Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	Article no. 10 892 ... £	
KUB-T.2D.140.R.03-ABS50	V3031403	14	50	94	28	63	0,62	WOEX 030204	324.27	14095
KUB-T.2D.150.R.03-ABS50	V3031503	15	50	96	30	65	0,62	WOEX 030204	324.27	15095
KUB-T.2D.160.R.03-ABS50	V3031601	16	50	98	32	67	0,62	WOEX 030204	324.27	16095
KUB-T.2D.170.R.03-ABS50	V3031701	17	50	100	34	69	0,62	WOEX 030204	324.27	17095
KUB-T.2D.180.R.03-ABS50	V3031801	18	50	102	36	71	0,62	WOEX 030204	324.27	18095
KUB-T.2D.190.R.03-ABS50	V3031901	19	50	104	38	73	0,62	WOEX 030204	324.27	19095
KUB-T.2D.200.R.04-ABS50	V3032001	20	50	106	40	75	1,01	WOEX 040304	326.18	20095
KUB-T.2D.210.R.04-ABS50	V3032101	21	50	108	42	77	1,01	WOEX 040304	326.18	21095
KUB-T.2D.220.R.04-ABS50	V3032201	22	50	110	44	79	1,01	WOEX 040304	326.18	22095
KUB-T.2D.230.R.04-ABS50	V3032301	23	50	112	46	81	1,01	WOEX 040304	326.18	23095
KUB-T.2D.240.R.04-ABS50	V3032401	24	50	114	48	83	1,01	WOEX 040304	326.18	24095
KUB-T.2D.250.R.05-ABS50	V3032501	25	50	116	50	85	1,28	WOEX 05T304	330.91	25095
KUB-T.2D.260.R.05-ABS50	V3032601	26	50	118	52	87	1,28	WOEX 05T304	330.91	26095
KUB-T.2D.270.R.05-ABS50	V3032701	27	50	120	54	89	1,28	WOEX 05T304	330.91	27095
KUB-T.2D.280.R.05-ABS50	V3032801	28	50	122	56	91	1,28	WOEX 05T304	330.91	28095
KUB-T.2D.290.R.05-ABS50	V3032901	29	50	124	58	93	1,28	WOEX 05T304	330.91	29095
KUB-T.2D.300.R.05-ABS50	V3033001	30	50	131	60	100	1,28	WOEX 05T304	330.91	30095
KUB-T.2D.310.R.05-ABS50	V3033101	31	50	133	62	102	1,28	WOEX 05T304	330.91	31095
KUB-T.2D.320.R.05-ABS50	V3033201	32	50	135	64	104	1,28	WOEX 05T304	330.91	32095
KUB-T.2D.330.R.05-ABS50	V3033301	33	50	137	66	106	1,28	WOEX 05T304	330.91	33095
KUB-T.2D.340.R.05-ABS50	V3033401	34	50	139	68	108	1,28	WOEX 05T304	330.91	34095
KUB-T.2D.350.R.05-ABS50	V3033501	35	50	141	70	110	1,28	WOEX 05T304	330.91	35095
KUB-T.2D.360.R.05-ABS50	V3033601	36	50	143	72	112	1,28	WOEX 05T304	330.91	36095
KUB-T.2D.370.R.06-ABS50	V3033701	37	50	155	74	124	2,8	WOEX 06T304	347.91	37095
KUB-T.2D.380.R.06-ABS50	V3033801	38	50	157	76	126	2,8	WOEX 06T304	347.91	38095
KUB-T.2D.390.R.06-ABS50	V3033901	39	50	159	78	128	2,8	WOEX 06T304	347.91	39095
KUB-T.2D.400.R.06-ABS50	V3034001	40	50	161	80	130	2,8	WOEX 06T304	347.91	40095
KUB-T.2D.410.R.06-ABS50	V3034101	41	50	163	82	132	2,8	WOEX 06T304	347.91	41095
KUB-T.2D.420.R.06-ABS50	V3034201	42	50	165	84	134	2,8	WOEX 06T304	347.91	42095
KUB-T.2D.430.R.06-ABS50	V3034301	43	50	167	86	136	2,8	WOEX 06T304	347.91	43095
KUB-T.2D.440.R.06-ABS50	V3034401	44	50	169	88	138	2,8	WOEX 06T304	347.91	44095

Y7

Key D

W7

Clamping screw

Spare parts DC	Article no. 80 950 ...	£		Article no. 10 950 ...	£	
14 - 19	T06 - IP	13.68	123	M2,0x4,3 - 06IP	2.15	10000
20 - 24	T06 - IP	13.68	123	M2,2x5,5 - 06IP	2.15	10700
25 - 36	T08 - IP	13.49	125	M2,5x7,2 - 10IP	2.15	10500
37 - 44	T10 - IP	15.31	127	M3,5x7,3 - 10IP	2.15	10600

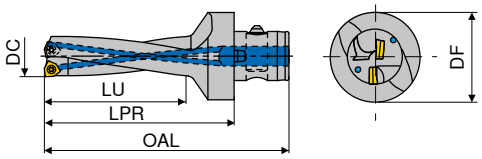
Suitable adapters can be found in → **Chapter 16 Adapters.**

KUB Trigon

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 3xD

ABS



Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 893 ... £	
KUB-T.3D.140.R.03-ABS50	V3071403	14	50	108	42	77	0,62	WOEX 030204	356.45	14095
KUB-T.3D.150.R.03-ABS50	V3071503	15	50	111	45	80	0,62	WOEX 030204	356.45	15095
KUB-T.3D.160.R.03-ABS50	V3071601	16	50	114	48	83	0,62	WOEX 030204	356.45	16095
KUB-T.3D.170.R.03-ABS50	V3071701	17	50	117	51	86	0,62	WOEX 030204	356.45	17095
KUB-T.3D.180.R.03-ABS50	V3071801	18	50	120	54	89	0,62	WOEX 030204	356.45	18095
KUB-T.3D.190.R.03-ABS50	V3071901	19	50	123	57	92	0,62	WOEX 030204	356.45	19095
KUB-T.3D.200.R.04-ABS50	V3072001	20	50	126	60	95	1,01	WOEX 040304	363.09	20095
KUB-T.3D.210.R.04-ABS50	V3072101	21	50	129	63	98	1,01	WOEX 040304	363.09	21095
KUB-T.3D.220.R.04-ABS50	V3072201	22	50	132	66	101	1,01	WOEX 040304	363.09	22095
KUB-T.3D.230.R.04-ABS50	V3072301	23	50	135	69	104	1,01	WOEX 040304	363.09	23095
KUB-T.3D.240.R.04-ABS50	V3072401	24	50	138	72	107	1,01	WOEX 040304	363.09	24095
KUB-T.3D.250.R.05-ABS50	V3072501	25	50	141	75	110	1,28	WOEX 05T304	371.55	25095
KUB-T.3D.260.R.05-ABS50	V3072601	26	50	144	78	113	1,28	WOEX 05T304	371.55	26095
KUB-T.3D.270.R.05-ABS50	V3072701	27	50	147	81	116	1,28	WOEX 05T304	371.55	27095
KUB-T.3D.280.R.05-ABS50	V3072801	28	50	150	84	119	1,28	WOEX 05T304	371.55	28095
KUB-T.3D.290.R.05-ABS50	V3072901	29	50	153	87	122	1,28	WOEX 05T304	371.55	29095
KUB-T.3D.300.R.05-ABS50	V3073001	30	50	161	90	130	1,28	WOEX 05T304	371.55	30095
KUB-T.3D.310.R.05-ABS50	V3073101	31	50	164	93	133	1,28	WOEX 05T304	371.55	31095
KUB-T.3D.320.R.05-ABS50	V3073201	32	50	167	96	136	1,28	WOEX 05T304	371.55	32095
KUB-T.3D.330.R.05-ABS50	V3073301	33	50	170	99	139	1,28	WOEX 05T304	371.55	33095
KUB-T.3D.340.R.05-ABS50	V3073401	34	50	173	102	142	1,28	WOEX 05T304	371.55	34095
KUB-T.3D.350.R.05-ABS50	V3073501	35	50	176	105	145	1,28	WOEX 05T304	371.55	35095
KUB-T.3D.360.R.05-ABS50	V3073601	36	50	179	108	148	1,28	WOEX 05T304	371.55	36095
KUB-T.3D.370.R.06-ABS50	V3073701	37	50	192	111	161	2,8	WOEX 06T304	403.73	37095
KUB-T.3D.380.R.06-ABS50	V3073801	38	50	195	114	164	2,8	WOEX 06T304	403.73	38095
KUB-T.3D.390.R.06-ABS50	V3073901	39	50	198	117	167	2,8	WOEX 06T304	403.73	39095
KUB-T.3D.400.R.06-ABS50	V3074001	40	50	201	120	170	2,8	WOEX 06T304	403.73	40095
KUB-T.3D.410.R.06-ABS50	V3074101	41	50	204	123	173	2,8	WOEX 06T304	403.73	41095
KUB-T.3D.420.R.06-ABS50	V3074201	42	50	207	126	176	2,8	WOEX 06T304	403.73	42095
KUB-T.3D.430.R.06-ABS50	V3074301	43	50	210	129	179	2,8	WOEX 06T304	403.73	43095
KUB-T.3D.440.R.06-ABS50	V3074401	44	50	213	132	182	2,8	WOEX 06T304	403.73	44095

Spare parts

DC	Y7 Key D Article no. 80 950 ...	£		W7 Clamping screw Article no. 10 950 ...	£	
14 - 19	T06 - IP	13.68	123	M2,0x4,3 - 06IP	2.15	10000
20 - 24	T06 - IP	13.68	123	M2,2x5,5 - 06IP	2.15	10700
25 - 36	T08 - IP	13.49	125	M2,5x7,2 - 10IP	2.15	10500
37 - 44	T10 - IP	15.31	127	M3,5x7,3 - 10IP	2.15	10600

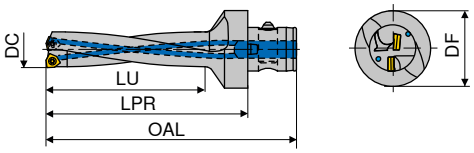
Suitable adapters can be found in → **Chapter 16 Adapters.**

KUB Trigon

Scope of supply:
Indexable Insert Drill incl. clamping screws

≤ 4xD

ABS



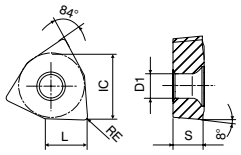
Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	torque moment Nm	Insert	NEW 2B/6# Article no. 10 894 ... £	
KUB-T.4D.140.R.03-ABS50	V3091403	14	50	122	56	91	0,62	WOEX 030204	392.36	14095
KUB-T.4D.150.R.03-ABS50	V3091503	15	50	126	60	95	0,62	WOEX 030204	392.36	15095
KUB-T.4D.160.R.03-ABS50	V3091601	16	50	130	64	99	0,62	WOEX 030204	392.36	16095
KUB-T.4D.170.R.03-ABS50	V3091701	17	50	134	68	103	0,62	WOEX 030204	392.36	17095
KUB-T.4D.180.R.03-ABS50	V3091801	18	50	138	72	107	0,62	WOEX 030204	392.36	18095
KUB-T.4D.190.R.03-ABS50	V3091901	19	50	142	76	111	0,62	WOEX 030204	392.36	19095
KUB-T.4D.200.R.04-ABS50	V3092001	20	50	146	80	115	1,01	WOEX 040304	399.91	20095
KUB-T.4D.210.R.04-ABS50	V3092101	21	50	150	84	119	1,01	WOEX 040304	399.91	21095
KUB-T.4D.220.R.04-ABS50	V3092201	22	50	154	88	123	1,01	WOEX 040304	399.91	22095
KUB-T.4D.230.R.04-ABS50	V3092301	23	50	158	92	127	1,01	WOEX 040304	399.91	23095
KUB-T.4D.240.R.04-ABS50	V3092401	24	50	162	96	131	1,01	WOEX 040304	399.91	24095
KUB-T.4D.250.R.05-ABS50	V3092501	25	50	166	100	135	1,28	WOEX 05T304	408.45	25095
KUB-T.4D.260.R.05-ABS50	V3092601	26	50	170	104	139	1,28	WOEX 05T304	408.45	26095
KUB-T.4D.270.R.05-ABS50	V3092701	27	50	174	108	143	1,28	WOEX 05T304	408.45	27095
KUB-T.4D.280.R.05-ABS50	V3092801	28	50	178	112	147	1,28	WOEX 05T304	408.45	28095
KUB-T.4D.290.R.05-ABS50	V3092901	29	50	182	116	151	1,28	WOEX 05T304	408.45	29095
KUB-T.4D.300.R.05-ABS50	V3093001	30	50	191	120	160	1,28	WOEX 05T304	408.45	30095
KUB-T.4D.310.R.05-ABS50	V3093101	31	50	195	124	164	1,28	WOEX 05T304	408.45	31095
KUB-T.4D.320.R.05-ABS50	V3093201	32	50	199	128	168	1,28	WOEX 05T304	408.45	32095
KUB-T.4D.330.R.05-ABS50	V3093301	33	50	203	132	172	1,28	WOEX 05T304	408.45	33095
KUB-T.4D.340.R.05-ABS50	V3093401	34	50	207	136	176	1,28	WOEX 05T304	408.45	34095
KUB-T.4D.350.R.05-ABS50	V3093501	35	50	211	140	180	1,28	WOEX 05T304	408.45	35095
KUB-T.4D.360.R.05-ABS50	V3093601	36	50	215	144	184	1,28	WOEX 05T304	408.45	36095
KUB-T.4D.370.R.06-ABS50	V3093701	37	50	229	148	198	2,8	WOEX 06T304	443.45	37095
KUB-T.4D.380.R.06-ABS50	V3093801	38	50	233	152	202	2,8	WOEX 06T304	443.45	38095
KUB-T.4D.390.R.06-ABS50	V3093901	39	50	237	156	206	2,8	WOEX 06T304	443.45	39095
KUB-T.4D.400.R.06-ABS50	V3094001	40	50	241	160	210	2,8	WOEX 06T304	443.45	40095
KUB-T.4D.410.R.06-ABS50	V3094101	41	50	245	164	214	2,8	WOEX 06T304	443.45	41095
KUB-T.4D.420.R.06-ABS50	V3094201	42	50	249	168	218	2,8	WOEX 06T304	443.45	42095
KUB-T.4D.430.R.06-ABS50	V3094301	43	50	253	172	222	2,8	WOEX 06T304	443.45	43095
KUB-T.4D.440.R.06-ABS50	V3094401	44	50	257	176	226	2,8	WOEX 06T304	443.45	44095

Spare parts DC	Y7 Key D Article no. 80 950 ... £		W7 Clamping screw Article no. 10 950 ... £	
14 - 19	T06 - IP	13.68 123	M2,0x4,3 - 06IP	2.15 10000
20 - 24	T06 - IP	13.68 123	M2,2x5,5 - 06IP	2.15 10700
25 - 36	T08 - IP	13.49 125	M2,5x7,2 - 10IP	2.15 10500
37 - 44	T10 - IP	15.31 127	M3,5x7,3 - 10IP	2.15 10600

Suitable adapters can be found in → **Chapter 16 Adapters.**

WOEX

Designation	L	IC	S	D1
	mm	mm	mm	mm
WOEX 0302..	3.2	5.00	2.30	2.30
WOEX 0403..	4.1	6.35	3.18	2.55
WOEX 05T3..	5.3	8.00	3.80	2.85
WOEX 06T3..	6.6	10.00	3.80	4.05



WOEX

			-01 BK8425		-03 BK8425		-13 BK8425		-01 BK6115	
			WOEX		WOEX		WOEX		WOEX	
			NEW 1A/3#		NEW 1A/3#		NEW 1A/3#		NEW 1A/3#	
ISO	KOMET no.	RE	Article no. 10 821 ...		Article no. 10 821 ...		Article no. 10 821 ...		Article no. 10 821 ...	
		mm	£		£		£		£	
030204	W2910030.048425	0.4			10.59	30303				
030204	W2910130.048425	0.4					12.48	30313		
030204	W2910010.048425	0.4	10.31	30301						
030204	W2910010.046115	0.4							14.94	40301
040304	W2918130.048425	0.4					12.57	30413		
040304	W2918030.048425	0.4			11.25	30403				
040304	W2918010.048425	0.4	10.96	30401						
040304	W2918010.046115	0.4							15.04	40401
05T304	W2924130.048425	0.4					12.85	30513		
05T304	W2924030.048425	0.4			15.88	30503				
05T304	W2924010.048425	0.4	11.25	30501						
05T304	W2924010.046115	0.4							14.46	40501
06T304	W2934130.048425	0.4					14.18	30613		
06T304	W2934030.048425	0.4			16.64	30603				
06T304	W2934010.048425	0.4	12.57	30601						
06T304	W2934010.046115	0.4							16.07	40601
Steel			●		●		●		●	
Stainless steel			●		●		●			
Cast iron			●		●		●		●	
Non ferrous metals										
Heat resistant alloys										
hardened materials									○	

→ v_c/f_z Page 47–50

BK8425 -03 and BK6115 -01 are exclusively recommended for use on the peripheral cutting edge!

Specialised indexable inserts for machining aluminium or stainless steels (BK7935, BK62, BK77) can be found in our online shop at cuttingtools.ceratizit.com

Application tips – eccentric sleeves

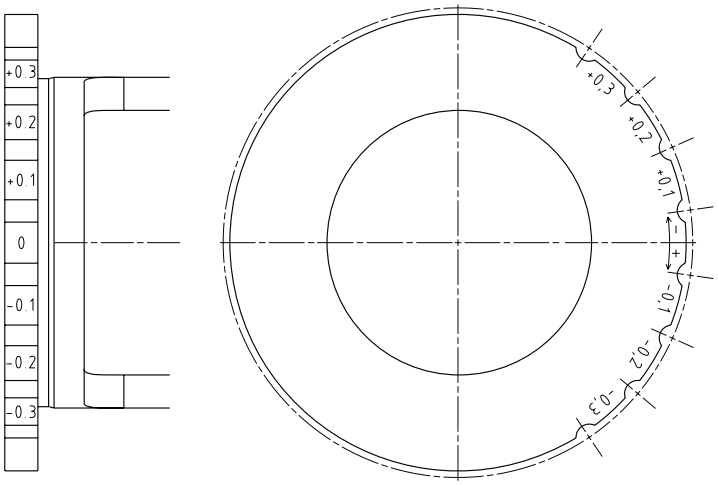
Users of rotating tools can now enjoy greater flexibility.
Using the eccentric sleeves, you can vary and adjust the diameter of the hole by +/- 0.3 mm with ease.

Two types of eccentric sleeve are available:
One for use with the new indexable insert drill adapter and one for use with the existing Weldon adapter.
The difference lies solely in the design and position of the slots for the adapter's clamping screws.
There are four sizes per type, which are tailored to the shank diameter.

Eccentric sleeve for indexable insert drill adapter

Eccentric sleeve for Weldon adapter

A scale is engraved on every eccentric sleeve (radially and on the face),
so that the user can adjust the bore diameter according to requirements.



Side view *End view*

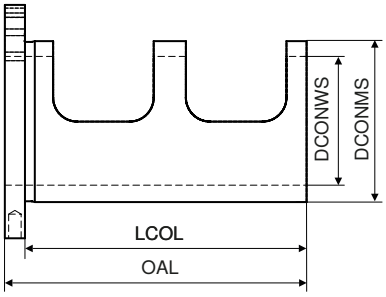
Instructions for use

1. Position the sleeve in the respective adapter and insert the indexable insert drill.
2. Set the sleeve to the zero position. → The „0“ must align with the clamping screws on the adapter.
3. Clamp the adapter's clamping screws.
4. Drill.
5. Measure the bore diameter.
6. Loosen the clamping screws.
7. Correct the bore diameter using the sleeve. → Observe the scale on the sleeve. The value must align with the clamping screws on the adapter.
8. Clamp the clamping screws.
9. Drill.

A scale is engraved on every eccentric sleeve (radially and on the face).

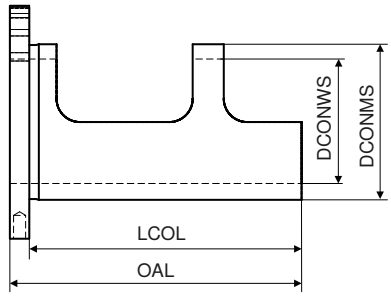
Owing to the radial adjustment of the drill axis, the feed rate should be reduced by approx. 30 % for longer drilling tools (4xD and 5xD).

Eccentric sleeve – indexable insert drill adapter



Designation	DCONWS	DCONMS	OAL	LCOL	2A/28 Article no. 10 870 ...	
	mm	mm	mm	mm	£	
EHB.D20.D25	20	25	61	56	142.00	**120**
EHB.D25.D32	25	32	65	60	154.45	**125**
EHB.D32.D40	32	40	75	70	168.73	**132**
EHB.D40.D50	40	50	85	80	184.91	**140**

Eccentric sleeve – standard Weldon adapter

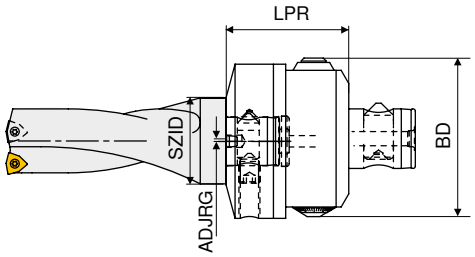


Designation	DCONWS	DCONMS	OAL	LCOL	2A/28 Article no. 10 871 ...	
	mm	mm	mm	mm	£	
EHW.D20.D25	20	25	61	56	142.00	**120**
EHW.D25.D32	25	32	65	60	154.45	**125**
EHW.D32.D40	32	40	75	70	168.73	**132**
EHW.D40.D50	40	50	85	80	184.91	**140**

Application tips for eccentric sleeves can be found on → **Page 36.**

Adjuster with ABS connection

- Precise adjustment using micrometric adjusting spindle
- Max. adjustment range 3 mm on diameter
- Graduation of scale 1 line 0.02 mm on diameter
- Stable clamping of the top section after adjustment using four clamping screws arranged on the face



AD

Adapter	KOMET no.	BD	LPR	ADJRG	SZID	NEW W4 Article no. 84 210 ...
		mm	mm	mm		£
ABS 50	M0100001	70	57	1.5	ABS 50	1,086.07 **05097**

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data standard values for KUB Pentron – 2xD, 3xD

Index	BK6115	BK8425	C, ABS and PSC											
			Ø 14–15,5 mm	Ø 16–17,5 mm	Ø 18–19,5 mm	Ø 20–21,5 mm	Ø 22–23,5 mm	Ø 24–25,5 mm	Ø 26–27,5 mm	Ø 28–30 mm	Ø 31–33 mm	Ø 34–37 mm	Ø 38–42 mm	Ø 43–46 mm
	v_c in m/min		f in mm/rev.											
1.1	250–350	200–320	0,04–0,1	0,04–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12
1.2	250–350	200–320	0,04–0,1	0,04–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12
1.3	250–300	250–300	0,04–0,1	0,04–0,14	0,1–0,15	0,1–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16
1.4	250–300	250–300	0,04–0,1	0,04–0,14	0,1–0,15	0,1–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16
1.5	250–300	250–300	0,04–0,1	0,04–0,14	0,1–0,15	0,1–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16
1.6	200–280	140–220	0,08–0,16	0,08–0,2	0,11–0,2	0,11–0,2	0,13–0,22	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,25	0,14–0,25	0,14–0,25
1.7	200–280	140–220	0,08–0,16	0,08–0,2	0,11–0,2	0,11–0,2	0,13–0,22	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,25	0,14–0,25	0,14–0,25
1.8	200–280	140–220	0,08–0,16	0,08–0,2	0,11–0,2	0,11–0,2	0,13–0,22	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,25	0,14–0,25	0,14–0,25
1.9	250–300	250–300	0,04–0,1	0,04–0,14	0,1–0,15	0,1–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16
1.10	200–280	140–220	0,08–0,16	0,08–0,2	0,11–0,2	0,11–0,2	0,13–0,22	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,25	0,14–0,25	0,14–0,25
1.11	200–280	140–220	0,08–0,16	0,08–0,2	0,11–0,2	0,11–0,2	0,13–0,22	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,25	0,14–0,25	0,14–0,25
1.12	200–280	140–220	0,08–0,16	0,08–0,2	0,11–0,2	0,11–0,2	0,13–0,22	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,25	0,14–0,25	0,14–0,25
1.13	200–280	140–220	0,08–0,16	0,08–0,2	0,11–0,2	0,11–0,2	0,13–0,22	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,25	0,14–0,25	0,14–0,25
1.14	200–280	140–220	0,08–0,16	0,08–0,2	0,11–0,2	0,11–0,2	0,13–0,22	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,24	0,14–0,25	0,14–0,25	0,14–0,25
1.15	170–230	120–200	0,06–0,12	0,06–0,15	0,1–0,15	0,09–0,2	0,12–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.16	170–230	120–200	0,06–0,12	0,06–0,15	0,1–0,15	0,09–0,2	0,12–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
2.1		150–210	0,06–0,14	0,08–0,14	0,08–0,14	0,08–0,16	0,1–0,18	0,12–0,18	0,12–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18
2.2		150–210	0,06–0,14	0,08–0,14	0,08–0,14	0,08–0,16	0,1–0,18	0,12–0,18	0,12–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18
2.3		150–210	0,06–0,14	0,08–0,14	0,08–0,14	0,08–0,16	0,1–0,18	0,12–0,18	0,12–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18
2.4		120–200	0,06–0,14	0,08–0,14	0,08–0,14	0,08–0,16	0,1–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18
2.5		110–190	0,06–0,11	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16
2.6		120–200	0,06–0,14	0,08–0,14	0,08–0,14	0,08–0,16	0,1–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18
2.7		110–190	0,06–0,11	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16
3.1	160–320	140–220	0,08–0,18	0,1–0,18	0,1–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.2	160–320	140–220	0,08–0,18	0,1–0,18	0,1–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.3	120–200	140–220	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.4	100–180	120–180	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.5	90–150	110–170	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.6	90–150	110–170	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.7	90–150	110–170	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.8	90–150	110–170	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
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6.1	50–90		0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06	0,02–0,06
6.2	30–50		0,01–0,03	0,01–0,03	0,01–0,03	0,01–0,03	0,01–0,02	0,01–0,02	0,01–0,02	0,01–0,02	0,01–0,02	0,01–0,02	0,01–0,02	0,01–0,02
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During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

Cutting data standard values for KUB Pentron – 4xD

Index	BK6115	BK8425	C and ABS											
			Ø 14–15,5 mm	Ø 16–17,5 mm	Ø 18–19,5 mm	Ø 20–21,5 mm	Ø 22–23,5 mm	Ø 24–25,5 mm	Ø 26–27,5 mm	Ø 28–30 mm	Ø 31–33 mm	Ø 34–37 mm	Ø 38–42 mm	Ø 43–46 mm
	v_c in m/min		f in mm/rev.											
1.1	250–350	200–320	0,04–0,08	0,04–0,12	0,06–0,1	0,05–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12
1.2	250–350	200–320	0,04–0,08	0,04–0,12	0,06–0,1	0,05–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12
1.3	250–300	250–300	0,04–0,09	0,04–0,14	0,1–0,15	0,1–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16
1.4	250–300	250–300	0,04–0,09	0,04–0,14	0,1–0,15	0,1–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16
1.5	250–300	250–300	0,04–0,09	0,04–0,14	0,1–0,15	0,1–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16
1.6	200–280	140–220	0,06–0,16	0,08–0,16	0,11–0,16	0,11–0,18	0,13–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.7	200–280	140–220	0,06–0,16	0,08–0,16	0,11–0,16	0,11–0,18	0,13–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.8	200–280	140–220	0,06–0,16	0,08–0,16	0,11–0,16	0,11–0,18	0,13–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.9	250–300	250–300	0,04–0,09	0,04–0,14	0,1–0,15	0,1–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16	0,11–0,16
1.10	200–280	140–220	0,06–0,16	0,08–0,16	0,11–0,16	0,11–0,18	0,13–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.11	200–280	140–220	0,06–0,16	0,08–0,16	0,11–0,16	0,11–0,18	0,13–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.12	200–280	140–220	0,06–0,16	0,08–0,16	0,11–0,16	0,11–0,18	0,13–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.13	200–280	140–220	0,06–0,16	0,08–0,16	0,11–0,16	0,11–0,18	0,13–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.14	200–280	140–220	0,06–0,16	0,08–0,16	0,11–0,16	0,11–0,18	0,13–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.15	170–230	120–200	0,06–0,12	0,06–0,15	0,1–0,15	0,09–0,2	0,12–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
1.16	170–230	120–200	0,06–0,12	0,06–0,15	0,1–0,15	0,09–0,2	0,12–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,22
2.1		150–210	0,06–0,12	0,08–0,12	0,08–0,12	0,08–0,15	0,1–0,18	0,12–0,18	0,12–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18
2.2		150–210	0,06–0,12	0,08–0,12	0,08–0,12	0,08–0,15	0,1–0,18	0,12–0,18	0,12–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18
2.3		150–210	0,06–0,12	0,08–0,12	0,08–0,12	0,08–0,15	0,1–0,18	0,12–0,18	0,12–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18	0,1–0,18
2.4		120–200	0,06–0,12	0,08–0,12	0,08–0,12	0,08–0,15	0,1–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18
2.5		110–190	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16
2.6		120–200	0,06–0,12	0,08–0,12	0,08–0,12	0,08–0,15	0,1–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18	0,12–0,18
2.7		110–190	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16
3.1	160–320	140–220	0,08–0,18	0,1–0,18	0,1–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.2	160–320	140–220	0,08–0,18	0,1–0,18	0,1–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.3	120–200	140–220	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.4	100–180	120–180	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.5	90–150	110–170	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.6	90–150	110–170	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.7	90–150	110–170	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
3.8	90–150	110–170	0,08–0,18	0,12–0,18	0,12–0,18	0,12–0,22	0,14–0,25	0,16–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3
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During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

3

Cutting data standard values for KUB Pentron – 5xD

Index	BK6115	BK8425	C and ABS											
			Ø 14–15,5 mm	Ø 16–17,5 mm	Ø 18–19,5 mm	Ø 20–21,5 mm	Ø 22–23,5 mm	Ø 24–25,5 mm	Ø 26–27,5 mm	Ø 28–30 mm	Ø 31–33 mm	Ø 34–37 mm	Ø 38–42 mm	Ø 43–46 mm
	v_c in m/min		f in mm/rev.											
1.1	250–350	200–320	0,04–0,09	0,06–0,1	0,06–0,1	0,05–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,12
1.2	250–350	200–320	0,04–0,09	0,06–0,1	0,06–0,1	0,05–0,12	0,06–0,12	0,06–0,12	0,06–0,12	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,12
1.3	250–300	250–300	0,04–0,1	0,06–0,13	0,08–0,13	0,08–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14
1.4	250–300	250–300	0,04–0,1	0,06–0,13	0,08–0,13	0,08–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14
1.5	250–300	250–300	0,04–0,1	0,06–0,13	0,08–0,13	0,08–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14
1.6	200–280	140–220	0,06–0,12	0,06–0,13	0,08–0,13	0,08–0,18	0,13–0,22	0,14–0,22	0,14–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2
1.7	200–280	140–220	0,06–0,12	0,06–0,13	0,08–0,13	0,08–0,18	0,13–0,22	0,14–0,22	0,14–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2
1.8	200–280	140–220	0,06–0,12	0,06–0,13	0,08–0,13	0,08–0,18	0,13–0,22	0,14–0,22	0,14–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2
1.9	250–300	250–300	0,04–0,1	0,06–0,13	0,08–0,13	0,08–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14	0,09–0,14
1.10	200–280	140–220	0,06–0,12	0,06–0,13	0,08–0,13	0,08–0,18	0,13–0,22	0,14–0,22	0,14–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2
1.11	200–280	140–220	0,06–0,12	0,06–0,13	0,08–0,13	0,08–0,18	0,13–0,22	0,14–0,22	0,14–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2
1.12	200–280	140–220	0,06–0,12	0,06–0,13	0,08–0,13	0,08–0,18	0,13–0,22	0,14–0,22	0,14–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2
1.13	200–280	140–220	0,06–0,12	0,06–0,13	0,08–0,13	0,08–0,18	0,13–0,22	0,14–0,22	0,14–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2
1.14	200–280	140–220	0,06–0,12	0,06–0,13	0,08–0,13	0,08–0,18	0,13–0,22	0,14–0,22	0,14–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,2
1.15	170–230	120–200	0,06–0,12	0,08–0,15	0,09–0,15	0,09–0,2	0,12–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,2	0,14–0,2	0,14–0,2	0,14–0,2
1.16	170–230	120–200	0,06–0,12	0,08–0,15	0,09–0,15	0,09–0,2	0,12–0,22	0,14–0,22	0,14–0,22	0,14–0,22	0,14–0,2	0,14–0,2	0,14–0,2	0,14–0,2
2.1		150–210	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16
2.2		150–210	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16
2.3		150–210	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16	0,1–0,16
2.4		120–200	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,12–0,16	0,12–0,14	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14
2.5		110–190	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,11	0,07–0,14	0,1–0,14	0,1–0,14	0,1–0,14	0,1–0,14	0,1–0,14	0,1–0,14	0,1–0,14
2.6		120–200	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,13	0,09–0,16	0,12–0,16	0,12–0,14	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14
2.7		110–190	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,11	0,07–0,14	0,1–0,14	0,1–0,14	0,1–0,14	0,1–0,14	0,1–0,14	0,1–0,14	0,1–0,14
3.1	160–320	140–220	0,08–0,15	0,08–0,16	0,1–0,16	0,1–0,2	0,12–0,23	0,14–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28
3.2	160–320	140–220	0,08–0,15	0,08–0,16	0,1–0,16	0,1–0,2	0,12–0,23	0,14–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28
3.3	120–200	140–220	0,08–0,15	0,08–0,16	0,1–0,16	0,1–0,2	0,12–0,23	0,14–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28
3.4	100–180	120–180	0,08–0,15	0,08–0,16	0,1–0,16	0,1–0,2	0,12–0,23	0,14–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28
3.5	90–150	110–170	0,08–0,15	0,08–0,16	0,1–0,16	0,1–0,2	0,12–0,23	0,14–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28
3.6	90–150	110–170	0,08–0,15	0,08–0,16	0,1–0,16	0,1–0,2	0,12–0,23	0,14–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28
3.7	90–150	110–170	0,08–0,15	0,08–0,16	0,1–0,16	0,1–0,2	0,12–0,23	0,14–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28
3.8	90–150	110–170	0,08–0,15	0,08–0,16	0,1–0,16	0,1–0,2	0,12–0,23	0,14–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28	0,18–0,28
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During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

Cutting data standard values for MaxiDrill 900 – 2xD

Index	DRAGONSKIN CTCP420 (DCX1420)	DRAGONSKIN CTPP430 (CCN1430)	C Ø 12–15,5 mm	Ø 16–17,5 mm	Ø 18–20,5 mm	Ø 21–23,5 mm	Ø 24–27,5 mm	Ø 28–32 mm	Ø 32,5–36,5 mm	Ø 37–41 mm	Ø 41,5–46 mm	Ø 46,5–63 mm
	v_c in m/min		f in mm/rev.									
1.1	**240–390**	**200–300**	0,04–0,16	0,04–0,17	0,05–0,18	0,06–0,20	0,07–0,22	0,07–0,24	0,07–0,24	0,10–0,25	0,10–0,27	0,10–0,29
1.2	**240–390**	**200–300**	0,04–0,16	0,04–0,17	0,05–0,18	0,06–0,20	0,07–0,22	0,07–0,24	0,07–0,24	0,10–0,25	0,10–0,27	0,10–0,29
1.3	**190–310**	**180–280**	0,04–0,16	0,04–0,17	0,05–0,18	0,06–0,20	0,07–0,22	0,07–0,24	0,07–0,24	0,10–0,25	0,10–0,27	0,10–0,29
1.4	**190–310**	**180–280**	0,04–0,13	0,04–0,14	0,05–0,15	0,05–0,15	0,06–0,17	0,06–0,19	0,06–0,19	0,10–0,21	0,10–0,23	0,10–0,23
1.5	**190–310**	**180–280**	0,04–0,15	0,04–0,15	0,05–0,16	0,05–0,17	0,06–0,19	0,06–0,21	0,06–0,21	0,08–0,22	0,08–0,22	0,09–0,26
1.6	**170–290**	**160–250**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,22	0,07–0,24	0,07–0,24	0,10–0,25	0,10–0,27	0,10–0,29
1.7	**180–280**	**150–220**	0,04–0,17	0,05–0,18	0,05–0,20	0,06–0,22	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,27	0,10–0,30	0,10–0,32
1.8	**170–280**	**130–200**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,29
1.9	**170–280**	**130–200**	0,04–0,17	0,05–0,18	0,05–0,20	0,06–0,22	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,27	0,10–0,30	0,10–0,32
1.10	**170–280**	**130–200**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,08–0,25	0,09–0,27	0,10–0,29
1.11	**170–280**	**130–200**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,08–0,25	0,09–0,27	0,10–0,29
1.12	**170–280**	**130–200**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,08–0,25	0,09–0,27	0,10–0,29
1.13	**170–280**	**130–200**	0,04–0,16	0,05–0,17	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,30
1.14	**170–280**	**130–200**	0,04–0,16	0,05–0,17	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,30
1.15	**120–200**	**100–160**	0,04–0,16	0,05–0,17	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,30
1.16	**120–200**	**100–160**	0,04–0,16	0,05–0,17	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,30
2.1	140–230	**100–180**	0,04–0,11	0,04–0,12	0,05–0,15	0,06–0,15	0,06–0,17	0,06–0,19	0,06–0,19	0,10–0,22	0,10–0,22	0,10–0,22
2.2	140–230	**100–180**	0,04–0,11	0,04–0,12	0,05–0,15	0,06–0,15	0,06–0,17	0,06–0,19	0,06–0,19	0,10–0,22	0,10–0,22	0,10–0,22
2.3		**100–180**	0,04–0,12	0,04–0,13	0,05–0,15	0,05–0,16	0,05–0,18	0,06–0,18	0,06–0,18	0,09–0,23	0,10–0,23	0,10–0,23
2.4		**80–140**	0,04–0,12	0,04–0,13	0,05–0,15	0,05–0,16	0,05–0,18	0,06–0,18	0,06–0,18	0,09–0,23	0,10–0,23	0,10–0,23
2.5		**80–140**	0,04–0,10	0,04–0,11	0,05–0,13	0,05–0,14	0,05–0,15	0,05–0,15	0,05–0,16	0,08–0,20	0,08–0,20	0,08–0,20
2.6	140–230	**100–160**	0,04–0,11	0,04–0,12	0,05–0,14	0,05–0,15	0,06–0,15	0,06–0,16	0,06–0,17	0,10–0,22	0,10–0,22	0,10–0,22
2.7		**80–140**	0,04–0,10	0,04–0,11	0,05–0,13	0,05–0,14	0,05–0,15	0,05–0,15	0,05–0,16	0,08–0,20	0,08–0,20	0,08–0,20
3.1	**190–310**	120–200	0,07–0,20	0,07–0,22	0,08–0,24	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
3.2	**170–290**	100–180	0,07–0,19	0,07–0,20	0,08–0,22	0,10–0,24	0,1–0,26	0,1–0,26	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,32
3.3	**190–310**	120–200	0,07–0,20	0,07–0,20	0,08–0,22	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,32
3.4	**170–290**	100–180	0,07–0,18	0,07–0,18	0,08–0,20	0,10–0,23	0,1–0,25	0,1–0,25	0,1–0,25	0,10–0,27	0,10–0,27	0,10–0,29
3.5	**140–230**	80–160	0,07–0,19	0,07–0,20	0,08–0,21	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
3.6	**130–210**	70–150	0,07–0,19	0,07–0,20	0,08–0,21	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
3.7	**140–230**	80–160	0,07–0,19	0,07–0,20	0,08–0,21	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
3.8	**130–210**	70–150	0,07–0,19	0,07–0,20	0,08–0,21	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
4.1		150–500	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,16	0,10–0,16	0,10–0,17	0,10–0,17	0,10–0,18	0,10–0,18	0,10–0,18
4.2		150–450	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.3		150–350	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.4		150–300	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.5												
4.6		150–300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.7		150–300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.8		150–300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.9		150–300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.10		150–300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.11		150–300	0,06–0,15	0,07–0,16	0,08–0,18	0,10–0,18	0,10–0,18	0,10–0,20	0,10–0,20	0,10–0,25	0,10–0,25	0,10–0,25
4.12		150–300	0,06–0,15	0,07–0,16	0,08–0,18	0,10–0,18	0,10–0,18	0,10–0,20	0,10–0,20	0,10–0,25	0,10–0,25	0,10–0,25
4.13												
4.14		50–150	0,04–0,09	0,04–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12
4.15		50–140	0,06–0,14	0,07–0,14	0,08–0,15	0,10–0,16	0,10–0,16	0,10–0,16	0,10–0,16	0,10–0,18	0,10–0,18	0,10–0,18
4.16												
4.17												
4.18												
4.19												
5.1		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.2		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.3		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.4		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.5		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.6		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.7		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.8		20–80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.9		40–100	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.10		40–80	0,04–0,10	0,04–0,10	0,07–0,10	0,05–0,12	0,06–0,12	0,07–0,15	0,07–0,15	0,08–0,16	0,08–0,16	0,08–0,18
5.11		40–80	0,04–0,10	0,04–0,10	0,07–0,10	0,05–0,12	0,06–0,12	0,07–0,15	0,07–0,15	0,08–0,16	0,08–0,16	0,08–0,18
6.1												
6.2												
6.3												
6.4												
6.5												

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

Cutting data standard values for MaxiDrill 900 + KUB 100 – 3xD

Index	DRAGONSKIN CTCP420 (DCX1420)	DRAGONSKIN CTPP430 (CCN1430)	C Ø 12–15,5 mm	Ø 16–17,5 mm	Ø 18–20,5 mm	Ø 21–23,5 mm	Ø 24–27,5 mm	Ø 28–32 mm	Ø 32,5–36,5 mm	Ø 37–41 mm	Ø 41,5–46 mm	Ø 46,5–63 mm
	v_c in m/min		f in mm/rev.									
1.1	**240–390**	**200–300**	0,04–0,16	0,04–0,17	0,05–0,18	0,06–0,20	0,07–0,22	0,07–0,24	0,07–0,24	0,10–0,25	0,10–0,27	0,10–0,29
1.2	**240–390**	**200–300**	0,04–0,16	0,04–0,17	0,05–0,18	0,06–0,20	0,07–0,22	0,07–0,24	0,07–0,24	0,10–0,25	0,10–0,27	0,10–0,29
1.3	**190–310**	**180–280**	0,04–0,16	0,04–0,17	0,05–0,18	0,06–0,20	0,07–0,22	0,07–0,24	0,07–0,24	0,10–0,25	0,10–0,27	0,10–0,29
1.4	**190–310**	**180–280**	0,04–0,13	0,04–0,14	0,05–0,15	0,05–0,15	0,06–0,17	0,06–0,19	0,06–0,19	0,10–0,21	0,10–0,23	0,10–0,23
1.5	**190–310**	**180–280**	0,04–0,15	0,04–0,15	0,05–0,16	0,05–0,17	0,06–0,19	0,06–0,21	0,06–0,21	0,08–0,22	0,08–0,22	0,09–0,24
1.6	**170–290**	**160–250**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,22	0,07–0,24	0,07–0,24	0,10–0,25	0,10–0,27	0,10–0,29
1.7	**180–280**	**150–220**	0,04–0,17	0,05–0,18	0,05–0,20	0,06–0,22	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,27	0,10–0,30	0,10–0,32
1.8	**170–280**	**130–200**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,29
1.9	**170–280**	**130–200**	0,04–0,17	0,05–0,18	0,05–0,20	0,06–0,22	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,27	0,10–0,30	0,10–0,32
1.10	**170–280**	**130–200**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,08–0,25	0,09–0,27	0,10–0,29
1.11	**170–280**	**130–200**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,08–0,25	0,09–0,27	0,10–0,29
1.12	**170–280**	**130–200**	0,04–0,15	0,05–0,16	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,08–0,25	0,09–0,27	0,10–0,29
1.13	**170–280**	**130–200**	0,04–0,16	0,05–0,17	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,30
1.14	**170–280**	**130–200**	0,04–0,16	0,05–0,17	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,30
1.15	**120–200**	**100–160**	0,04–0,16	0,05–0,17	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,30
1.16	**120–200**	**100–160**	0,04–0,16	0,05–0,17	0,05–0,18	0,06–0,20	0,07–0,23	0,07–0,25	0,07–0,25	0,10–0,25	0,10–0,27	0,10–0,30
2.1	140–230	**100–180**	0,04–0,11	0,04–0,12	0,05–0,15	0,06–0,15	0,06–0,17	0,06–0,19	0,06–0,19	0,10–0,22	0,10–0,22	0,10–0,22
2.2	140–230	**100–180**	0,04–0,11	0,04–0,12	0,05–0,15	0,06–0,15	0,06–0,17	0,06–0,19	0,06–0,19	0,10–0,22	0,10–0,22	0,10–0,22
2.3		**100–180**	0,04–0,12	0,04–0,13	0,05–0,15	0,05–0,16	0,05–0,18	0,06–0,18	0,06–0,18	0,09–0,23	0,10–0,23	0,10–0,23
2.4		**80–140**	0,04–0,12	0,04–0,13	0,05–0,15	0,05–0,16	0,05–0,18	0,06–0,18	0,06–0,18	0,09–0,23	0,10–0,23	0,10–0,23
2.5		**80–140**	0,04–0,10	0,04–0,11	0,05–0,13	0,05–0,14	0,05–0,15	0,05–0,15	0,05–0,16	0,08–0,20	0,08–0,20	0,08–0,20
2.6	140–230	**100–160**	0,04–0,11	0,04–0,12	0,05–0,14	0,05–0,15	0,06–0,15	0,06–0,16	0,06–0,17	0,10–0,22	0,10–0,22	0,10–0,22
2.7		**80–140**	0,04–0,10	0,04–0,11	0,05–0,13	0,05–0,14	0,05–0,15	0,05–0,15	0,05–0,16	0,08–0,20	0,08–0,20	0,08–0,20
3.1	**190–310**	120-200	0,07–0,20	0,07–0,22	0,08–0,24	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
3.2	**170–290**	100-180	0,07–0,19	0,07–0,20	0,08–0,22	0,10–0,24	0,1–0,26	0,1–0,26	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,32
3.3	**190–310**	120-200	0,07–0,20	0,07–0,20	0,08–0,22	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,32
3.4	**170–290**	100-180	0,07–0,18	0,07–0,18	0,08–0,20	0,10–0,23	0,1–0,25	0,1–0,25	0,1–0,25	0,10–0,27	0,10–0,27	0,10–0,29
3.5	**140–230**	80-160	0,07–0,19	0,07–0,20	0,08–0,21	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
3.6	**130–210**	70-150	0,07–0,19	0,07–0,20	0,08–0,21	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
3.7	**140–230**	80-160	0,07–0,19	0,07–0,20	0,08–0,21	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
3.8	**130–210**	70-150	0,07–0,19	0,07–0,20	0,08–0,21	0,10–0,25	0,1–0,28	0,1–0,28	0,1–0,30	0,10–0,32	0,10–0,32	0,10–0,34
4.1		150-500	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,16	0,10–0,16	0,10–0,17	0,10–0,17	0,10–0,18	0,10–0,18	0,10–0,18
4.2		150-450	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.3		150-350	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.4		150-300	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.5												
4.6		150-300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.7		150-300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.8		150-300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.9		150-300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.10		150-300	0,06–0,13	0,07–0,16	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,19	0,10–0,19	0,10–0,19
4.11		150-300	0,06–0,15	0,07–0,16	0,08–0,18	0,10–0,18	0,10–0,18	0,10–0,20	0,10–0,20	0,10–0,25	0,10–0,25	0,10–0,25
4.12		150-300	0,06–0,15	0,07–0,16	0,08–0,18	0,10–0,18	0,10–0,18	0,10–0,20	0,10–0,20	0,10–0,25	0,10–0,25	0,10–0,25
4.13												
4.14		50-150	0,04–0,09	0,04–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12
4.15		50-140	0,06–0,14	0,07–0,14	0,08–0,15	0,10–0,16	0,10–0,16	0,10–0,16	0,10–0,16	0,10–0,18	0,10–0,18	0,10–0,18
4.16												
4.17												
4.18												
4.19												
5.1		20-80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.2		20-80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.3		20-80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.4		20-80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.5		20-80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.6		20-80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.7		20-80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.8		20-80	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.9		40-100	0,03–0,07	0,04–0,08	0,04–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,06–0,15
5.10		40-80	0,04–0,10	0,04–0,10	0,07–0,10	0,05–0,12	0,06–0,12	0,07–0,15	0,07–0,15	0,08–0,16	0,08–0,16	0,08–0,18
5.11		40-80	0,04–0,10	0,04–0,10	0,07–0,10	0,05–0,12	0,06–0,12	0,07–0,15	0,07–0,15	0,08–0,16	0,08–0,16	0,08–0,18
6.1												
6.2												
6.3												
6.4												
6.5												

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

Cutting data for MaxiDrill 900 indexable insert drill – 4xD

Index	DRAGONSKIN CTCP420 (DCX1420)	DRAGONSKIN CTPP430 (CCN1430)	C									
			Ø 12–15,5 mm	Ø 16–17,5 mm	Ø 18–20 mm	Ø 21–23 mm	Ø 24–27 mm	Ø 28–32 mm	Ø 33–36 mm	Ø 37–41 mm	Ø 41,5–46 mm	Ø 46,5–54 mm
	v_c in m/min		f in mm/rev.									
1.1	**240–390**	**200–300**	0,04–0,14	0,04–0,15	0,05–0,16	0,06–0,18	0,07–0,20	0,07–0,22	0,07–0,22	0,07–0,23	0,07–0,23	0,08–0,25
1.2	**240–390**	**200–300**	0,04–0,14	0,04–0,15	0,05–0,16	0,06–0,18	0,07–0,20	0,07–0,22	0,07–0,22	0,07–0,23	0,07–0,23	0,08–0,25
1.3	**190–310**	**180–280**	0,04–0,14	0,04–0,15	0,05–0,16	0,06–0,18	0,07–0,20	0,07–0,22	0,07–0,22	0,07–0,23	0,07–0,23	0,08–0,25
1.4	**190–310**	**180–280**	0,04–0,11	0,04–0,12	0,05–0,12	0,05–0,13	0,06–0,15	0,06–0,17	0,06–0,17	0,06–0,17	0,06–0,17	0,07–0,17
1.5	**190–310**	**180–280**	0,04–0,13	0,04–0,14	0,05–0,14	0,05–0,15	0,06–0,17	0,06–0,19	0,06–0,19	0,06–0,20	0,06–0,20	0,07–0,22
1.6	**170–290**	**160–250**	0,04–0,14	0,04–0,15	0,05–0,16	0,06–0,18	0,07–0,20	0,07–0,22	0,07–0,22	0,07–0,23	0,07–0,23	0,08–0,25
1.7	**180–280**	**150–220**	0,04–0,17	0,04–0,18	0,05–0,18	0,06–0,20	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,24	0,07–0,24	0,08–0,26
1.8	**170–280**	**130–200**	0,04–0,14	0,04–0,15	0,05–0,15	0,06–0,17	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,23	0,07–0,23	0,08–0,25
1.9	**170–280**	**130–200**	0,04–0,17	0,04–0,18	0,05–0,18	0,06–0,20	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,24	0,07–0,24	0,08–0,26
1.10	**170–280**	**130–200**	0,04–0,14	0,04–0,15	0,05–0,15	0,06–0,17	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,23	0,07–0,23	0,08–0,25
1.11	**170–280**	**130–200**	0,04–0,14	0,04–0,15	0,05–0,15	0,06–0,17	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,23	0,07–0,23	0,08–0,25
1.12	**170–280**	**130–200**	0,04–0,14	0,04–0,15	0,05–0,15	0,06–0,17	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,23	0,07–0,23	0,08–0,25
1.13	**170–280**	**130–200**	0,04–0,14	0,04–0,15	0,05–0,15	0,06–0,17	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,23	0,07–0,23	0,08–0,25
1.14	**170–280**	**130–200**	0,04–0,14	0,04–0,15	0,05–0,15	0,06–0,18	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,23	0,07–0,23	0,08–0,25
1.15	**120–200**	**100–160**	0,04–0,14	0,04–0,15	0,05–0,15	0,06–0,18	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,23	0,07–0,23	0,08–0,25
1.16	**120–200**	**100–160**	0,04–0,14	0,04–0,15	0,05–0,15	0,06–0,18	0,07–0,20	0,07–0,23	0,07–0,23	0,07–0,23	0,07–0,23	0,08–0,25
2.1	140–230	**100–180**	0,04–0,10	0,04–0,10	0,05–0,12	0,06–0,12	0,06–0,15	0,06–0,17	0,06–0,17	0,08–0,20	0,08–0,20	0,08–0,20
2.2	140–230	**100–180**	0,04–0,10	0,04–0,10	0,05–0,12	0,06–0,12	0,06–0,15	0,06–0,17	0,06–0,17	0,08–0,20	0,08–0,20	0,08–0,20
2.3		**100–180**	0,04–0,12	0,04–0,12	0,05–0,15	0,05–0,16	0,05–0,18	0,06–0,16	0,06–0,16	0,08–0,22	0,08–0,22	0,08–0,22
2.4		**80–140**	0,04–0,12	0,04–0,12	0,05–0,15	0,05–0,16	0,05–0,18	0,06–0,16	0,06–0,16	0,08–0,22	0,08–0,22	0,08–0,22
2.5		**80–140**	0,04–0,10	0,04–0,10	0,05–0,10	0,05–0,12	0,05–0,13	0,05–0,13	0,05–0,13	0,07–0,16	0,07–0,16	0,07–0,16
2.6	140–230	**100–160**	0,04–0,10	0,04–0,10	0,05–0,12	0,05–0,13	0,06–0,13	0,06–0,14	0,06–0,14	0,08–0,20	0,08–0,20	0,08–0,20
2.7		**80–140**	0,04–0,10	0,04–0,10	0,05–0,10	0,05–0,12	0,05–0,13	0,05–0,13	0,05–0,13	0,07–0,16	0,07–0,16	0,07–0,16
3.1	**190–310**	120-200	0,07–0,18	0,07–0,20	0,08–0,22	0,10–0,24	0,1–0,25	0,1–0,25	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,30
3.2	**170–290**	100-180	0,07–0,17	0,07–0,18	0,08–0,20	0,10–0,22	0,1–0,25	0,1–0,25	0,1–0,27	0,10–0,29	0,10–0,29	0,10–0,29
3.3	**190–310**	120-200	0,07–0,18	0,07–0,18	0,08–0,20	0,10–0,24	0,1–0,26	0,1–0,26	0,1–0,26	0,10–0,28	0,10–0,28	0,10–0,28
3.4	**170–290**	100-180	0,07–0,17	0,07–0,18	0,08–0,18	0,10–0,22	0,1–0,22	0,1–0,22	0,1–0,23	0,10–0,25	0,10–0,25	0,10–0,25
3.5	**140–230**	80-160	0,07–0,17	0,07–0,18	0,08–0,18	0,10–0,22	0,1–0,25	0,1–0,25	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,30
3.6	**130–210**	70-150	0,07–0,17	0,07–0,18	0,08–0,18	0,10–0,22	0,1–0,25	0,1–0,25	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,30
3.7	**140–230**	80-160	0,07–0,17	0,07–0,18	0,08–0,18	0,10–0,22	0,1–0,25	0,1–0,25	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,30
3.8	**130–210**	70-150	0,07–0,17	0,07–0,18	0,08–0,18	0,10–0,22	0,1–0,25	0,1–0,25	0,1–0,28	0,10–0,30	0,10–0,30	0,10–0,30
4.1		150-500	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,16	0,10–0,16	0,10–0,17	0,10–0,17	0,10–0,17	0,10–0,17	0,10–0,17
4.2		150-450	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.3		150-350	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.4		150-300	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,20	0,10–0,20	0,10–0,20
4.5												
4.6		150-300	0,06–0,13	0,07–0,14	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,18	0,10–0,18	0,10–0,18
4.7		150-300	0,06–0,13	0,07–0,14	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,18	0,10–0,18	0,10–0,18
4.8		150-300	0,06–0,13	0,07–0,14	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,18	0,10–0,18	0,10–0,18
4.9		150-300	0,06–0,13	0,07–0,14	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,18	0,10–0,18	0,10–0,18
4.10		150-300	0,06–0,13	0,07–0,14	0,08–0,15	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,18	0,10–0,18	0,10–0,18
4.11		150-300	0,06–0,15	0,07–0,16	0,08–0,18	0,10–0,18	0,10–0,18	0,10–0,20	0,10–0,20	0,10–0,22	0,10–0,22	0,10–0,22
4.12		150-300	0,06–0,15	0,07–0,16	0,08–0,18	0,10–0,18	0,10–0,18	0,10–0,20	0,10–0,20	0,10–0,22	0,10–0,22	0,10–0,22
4.13												
4.14		50-150	0,04–0,09	0,04–0,10	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12	0,05–0,12
4.15		50-140	0,06–0,14	0,07–0,14	0,08–0,14	0,10–0,15	0,10–0,16	0,10–0,16	0,10–0,16	0,10–0,18	0,10–0,18	0,10–0,18
4.16												
4.17												
4.18												
4.19												
5.1		20-80	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.2		20-80	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.3		20-80	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.4		20-80	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.5		20-80	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.6		20-80	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.7		20-80	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.8		20-80	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.9		40-100	0,03–0,07	0,04–0,07	0,04–0,07	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
5.10		40-80	0,04–0,10	0,04–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,06–0,15	0,07–0,15	0,07–0,15	0,07–0,15	0,07–0,15
5.11		40-80	0,04–0,10	0,04–0,10	0,05–0,10	0,05–0,12	0,05–0,12	0,06–0,15	0,07–0,15	0,07–0,15	0,07–0,15	0,07–0,15
6.1												
6.2												
6.3												
6.4												
6.5												

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

3

Cutting data standard values for MaxiDrill 900 – 5xD

	DRAGONSKIN	DRAGONSKIN	C							
Index	CTCP420 (DCX1420)	CTPP430 (CCN1430)	Ø 12–15,5 mm	Ø 16–17,5 mm	Ø 18–20 mm	Ø 21–23 mm	Ø 24–27 mm	Ø 28–32 mm	Ø 33–36 mm	Ø 37–41 mm
	v_c in m/min		f in mm/rev.							
1.1	**240–390**	**200–300**	0,04–0,12	0,04–0,12	0,05–0,12	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,23
1.2	**240–390**	**200–300**	0,04–0,12	0,04–0,12	0,05–0,12	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,23
1.3	**190–310**	**180–280**	0,04–0,12	0,04–0,12	0,05–0,12	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,23
1.4	**190–310**	**180–280**	0,04–0,09	0,04–0,09	0,04–0,08	0,04–0,10	0,06–0,12	0,06–0,14	0,06–0,14	0,08–0,17
1.5	**190–310**	**180–280**	0,04–0,10	0,04–0,10	0,05–0,10	0,05–0,12	0,06–0,14	0,06–0,16	0,06–0,16	0,08–0,20
1.6	**170–290**	**160–250**	0,04–0,10	0,04–0,12	0,05–0,12	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,23
1.7	**180–280**	**150–220**	0,04–0,15	0,04–0,15	0,05–0,15	0,05–0,17	0,07–0,18	0,08–0,20	0,08–0,20	0,10–0,25
1.8	**170–280**	**130–200**	0,04–0,13	0,04–0,14	0,05–0,13	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,23
1.9	**170–280**	**130–200**	0,04–0,15	0,04–0,16	0,05–0,15	0,05–0,17	0,07–0,18	0,08–0,20	0,08–0,20	0,10–0,25
1.10	**170–280**	**130–200**	0,04–0,12	0,04–0,13	0,05–0,13	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,25
1.11	**170–280**	**130–200**	0,04–0,12	0,04–0,13	0,05–0,13	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,25
1.12	**170–280**	**130–200**	0,04–0,12	0,04–0,13	0,05–0,13	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,25
1.13	**170–280**	**130–200**	0,04–0,12	0,04–0,13	0,05–0,13	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,25
1.14	**170–280**	**130–200**	0,04–0,12	0,04–0,13	0,05–0,13	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,25
1.15	**120–200**	**100–160**	0,04–0,12	0,04–0,13	0,05–0,13	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,25
1.16	**120–200**	**100–160**	0,04–0,12	0,04–0,13	0,05–0,13	0,05–0,15	0,07–0,17	0,08–0,19	0,08–0,19	0,10–0,25
2.1	140–230	**100–180**	0,04–0,09	0,04–0,09	0,04–0,08	0,04–0,10	0,06–0,12	0,07–0,15	0,07–0,15	0,08–0,18
2.2	140–230	**100–180**	0,04–0,09	0,04–0,09	0,04–0,08	0,04–0,10	0,06–0,12	0,07–0,15	0,07–0,15	0,08–0,18
2.3		**100–180**	0,04–0,11	0,04–0,11	0,04–0,13	0,05–0,15	0,05–0,16	0,06–0,16	0,06–0,16	0,08–0,20
2.4		**80–140**	0,04–0,11	0,04–0,11	0,04–0,13	0,05–0,15	0,05–0,16	0,06–0,16	0,06–0,16	0,08–0,20
2.5		**80–140**	0,04–0,08	0,04–0,08	0,04–0,09	0,05–0,11	0,05–0,12	0,05–0,12	0,05–0,12	0,08–0,15
2.6	140–230	**100–160**	0,04–0,09	0,04–0,09	0,04–0,09	0,05–0,11	0,05–0,12	0,05–0,12	0,05–0,12	0,08–0,16
2.7		**80–140**	0,04–0,08	0,04–0,08	0,04–0,09	0,05–0,11	0,05–0,12	0,05–0,12	0,05–0,12	0,08–0,15
3.1	**190–310**	120–200	0,07–0,18	0,07–0,20	0,08–0,22	0,10–0,23	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25
3.2	**170–290**	100–180	0,07–0,17	0,07–0,18	0,08–0,18	0,10–0,20	0,10–0,22	0,10–0,22	0,10–0,22	0,10–0,22
3.3	**190–310**	120–200	0,07–0,18	0,07–0,18	0,08–0,18	0,10–0,23	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25
3.4	**170–290**	100–180	0,07–0,17	0,07–0,18	0,08–0,16	0,10–0,20	0,10–0,22	0,10–0,22	0,10–0,22	0,10–0,22
3.5	**140–230**	80–160	0,07–0,17	0,07–0,18	0,08–0,16	0,10–0,20	0,10–0,22	0,10–0,22	0,10–0,22	0,10–0,22
3.6	**130–210**	70–150	0,07–0,17	0,07–0,18	0,08–0,16	0,10–0,20	0,10–0,22	0,10–0,22	0,10–0,22	0,10–0,22
3.7	**140–230**	80–160	0,07–0,17	0,07–0,18	0,08–0,16	0,10–0,20	0,10–0,22	0,10–0,22	0,10–0,22	0,10–0,22
3.8	**130–210**	70–150	0,07–0,17	0,07–0,18	0,08–0,16	0,10–0,20	0,10–0,22	0,10–0,22	0,10–0,22	0,10–0,22
4.1		150–500	0,06–0,12	0,07–0,14	0,08–0,15	0,10–0,16	0,10–0,16	0,10–0,17	0,10–0,17	0,10–0,17
4.2		150–450	0,06–0,12	0,07–0,14	0,08–0,14	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,19
4.3		150–350	0,06–0,12	0,07–0,14	0,08–0,14	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,19
4.4		150–300	0,06–0,12	0,07–0,14	0,08–0,14	0,10–0,18	0,10–0,18	0,10–0,19	0,10–0,19	0,10–0,19
4.5										
4.6		150–300	0,06–0,13	0,07–0,14	0,08–0,14	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,17
4.7		150–300	0,06–0,13	0,07–0,14	0,08–0,14	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,17
4.8		150–300	0,06–0,13	0,07–0,14	0,08–0,14	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,17
4.9		150–300	0,06–0,13	0,07–0,14	0,08–0,14	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,17
4.10		150–300	0,06–0,13	0,07–0,14	0,08–0,14	0,10–0,15	0,10–0,15	0,10–0,17	0,10–0,17	0,10–0,17
4.11		150–300	0,06–0,15	0,07–0,16	0,08–0,16	0,10–0,18	0,10–0,18	0,10–0,20	0,10–0,20	0,10–0,20
4.12		150–300	0,06–0,15	0,07–0,16	0,08–0,16	0,10–0,18	0,10–0,18	0,10–0,20	0,10–0,20	0,10–0,20
4.13										
4.14		50–150	0,04–0,09	0,04–0,10	0,04–0,08	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10	0,05–0,10
4.15		50–140	0,06–0,14	0,07–0,14	0,08–0,14	0,10–0,15	0,10–0,15	0,10–0,15	0,10–0,15	0,10–0,15
4.16										
4.17										
4.18										
4.19										
5.1		20–80	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.2		20–80	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.3		20–80	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.4		20–80	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.5		20–80	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.6		20–80	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.7		20–80	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.8		20–80	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.9		40–100	0,03–0,06	0,04–0,06	0,04–0,06	0,04–0,06	0,04–0,07	0,05–0,08	0,05–0,08	0,05–0,09
5.10		40–80	0,04–0,08	0,04–0,08	0,04–0,08	0,05–0,11	0,05–0,11	0,06–0,12	0,07–0,12	0,07–0,12
5.11		40–80	0,04–0,08	0,04–0,08	0,04–0,08	0,05–0,11	0,05–0,11	0,06–0,12	0,07–0,12	0,07–0,12
6.1										
6.2										
6.3										
6.4										
6.5										

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

Cutting data standard values KUB Trigon – 2xD

Index	BK6115	BK8425	K and ABS Ø 14–16 mm	Ø 17–19 mm	Ø 20–24 mm	Ø 25–29 mm	Ø 30–36 mm	Ø 37–40 mm	Ø 41–44 mm
	v_c in m/min		f in mm/rev.						
1.1	250–350	200–320	0,04–0,08	0,04–0,1	0,04–0,1	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12
1.2	250–350	200–320	0,04–0,08	0,04–0,1	0,04–0,1	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12
1.3	250–300	250–300	0,04–0,06	0,04–0,08	0,06–0,12	0,07–0,14	0,07–0,14	0,07–0,14	0,08–0,16
1.4	250–300	250–300	0,04–0,06	0,04–0,08	0,06–0,12	0,07–0,14	0,07–0,14	0,07–0,14	0,08–0,16
1.5	250–300	250–300	0,04–0,06	0,04–0,08	0,06–0,12	0,07–0,14	0,07–0,14	0,07–0,14	0,08–0,16
1.6	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.7	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.8	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.9	250–300	250–300	0,04–0,06	0,04–0,08	0,06–0,12	0,07–0,14	0,07–0,14	0,07–0,14	0,08–0,16
1.10	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.11	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.12	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.13	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.14	70–110	50–90	0,03–0,05	0,03–0,06	0,04–0,08	0,06–0,1	0,07–0,1	0,08–0,12	0,08–0,12
1.15	170–230	120–200	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,12	0,08–0,12	0,08–0,12	0,08–0,14
1.16	170–230	120–200	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,12	0,08–0,12	0,08–0,12	0,08–0,14
2.1		150–210	0,04–0,06	0,04–0,08	0,06–0,1	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14
2.2		150–210	0,04–0,06	0,04–0,08	0,06–0,1	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14
2.3		150–210	0,04–0,06	0,04–0,08	0,06–0,1	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14
2.4		120–200	0,04–0,06	0,04–0,06	0,06–0,08	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,14
2.5		110–190	0,04–0,06	0,04–0,06	0,06–0,08	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,12
2.6		120–200	0,04–0,06	0,04–0,06	0,06–0,08	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,14
2.7		110–190	0,04–0,06	0,04–0,06	0,06–0,08	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,12
3.1	160–320	140–220	0,06–0,1	0,06–0,12	0,08–0,14	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,25
3.2	160–320	140–220	0,06–0,1	0,06–0,12	0,08–0,14	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,25
3.3	120–200	140–220	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,25
3.4	100–180	120–180	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,25
3.5	90–150	110–170	0,06–0,1	0,06–0,12	0,08–0,16	0,1–0,25	0,1–0,25	0,1–0,25	0,1–0,25
3.6	90–150	110–170	0,06–0,1	0,06–0,12	0,08–0,16	0,1–0,25	0,1–0,25	0,1–0,25	0,1–0,25
3.7	90–150	110–170	0,06–0,1	0,06–0,12	0,08–0,16	0,1–0,25	0,1–0,25	0,1–0,25	0,1–0,25
3.8	90–150	110–170	0,06–0,1	0,06–0,12	0,08–0,16	0,1–0,25	0,1–0,25	0,1–0,25	0,1–0,25
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5.9									
5.10									
5.11									
6.1	50–90		0,03–0,05	0,03–0,05	0,04–0,08	0,06–0,1	0,06–0,1	0,08–0,12	0,08–0,12
6.2	30–50		0,03–0,05	0,03–0,05	0,04–0,08	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,1
6.3									
6.4									
6.5									

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

Cutting data standard values KUB Trigon – 3xD

Index	BK6115	BK8425	K and ABS Ø 14–16 mm	Ø 17–19 mm	Ø 20–24 mm	Ø 25–29 mm	Ø 30–36 mm	Ø 37–40 mm	Ø 41–44 mm
	v_c in m/min		f in mm/rev.						
1.1	250–350	200–320	0,04–0,08	0,04–0,1	0,04–0,1	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12
1.2	250–350	200–320	0,04–0,08	0,04–0,1	0,04–0,1	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,12
1.3	250–300	250–300	0,04–0,06	0,04–0,08	0,06–0,12	0,07–0,14	0,07–0,14	0,07–0,14	0,08–0,16
1.4	250–300	250–300	0,04–0,06	0,04–0,08	0,06–0,12	0,07–0,14	0,07–0,14	0,07–0,14	0,08–0,16
1.5	250–300	250–300	0,04–0,06	0,04–0,08	0,06–0,12	0,07–0,14	0,07–0,14	0,07–0,14	0,08–0,16
1.6	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.7	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.8	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.9	250–300	250–300	0,04–0,06	0,04–0,08	0,06–0,12	0,07–0,14	0,07–0,14	0,07–0,14	0,08–0,16
1.10	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.11	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.12	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.13	200–280	140–220	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,14	0,08–0,16	0,08–0,16	0,08–0,16
1.14	70–110	50–90	0,03–0,05	0,03–0,06	0,04–0,08	0,06–0,1	0,07–0,1	0,08–0,12	0,08–0,12
1.15	170–230	120–200	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,12	0,08–0,12	0,08–0,12	0,08–0,14
1.16	170–230	120–200	0,04–0,06	0,04–0,08	0,06–0,1	0,07–0,12	0,08–0,12	0,08–0,12	0,08–0,14
2.1		150–210	0,04–0,06	0,04–0,08	0,06–0,1	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14
2.2		150–210	0,04–0,06	0,04–0,08	0,06–0,1	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14
2.3		150–210	0,04–0,06	0,04–0,08	0,06–0,1	0,08–0,14	0,08–0,14	0,08–0,14	0,08–0,14
2.4		120–200	0,04–0,06	0,04–0,06	0,06–0,08	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,14
2.5		110–190	0,04–0,06	0,04–0,06	0,06–0,08	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,12
2.6		120–200	0,04–0,06	0,04–0,06	0,06–0,08	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,14
2.7		110–190	0,04–0,06	0,04–0,06	0,06–0,08	0,08–0,12	0,08–0,12	0,08–0,12	0,08–0,12
3.1	160–320	140–220	0,06–0,1	0,06–0,12	0,08–0,14	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,25
3.2	160–320	140–220	0,06–0,1	0,06–0,12	0,08–0,14	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,25
3.3	120–200	140–220	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,25
3.4	100–180	120–180	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,2	0,1–0,2	0,1–0,2	0,1–0,25
3.5	90–150	110–170	0,06–0,1	0,06–0,12	0,08–0,16	0,1–0,25	0,1–0,25	0,1–0,25	0,1–0,25
3.6	90–150	110–170	0,06–0,1	0,06–0,12	0,08–0,16	0,1–0,25	0,1–0,25	0,1–0,25	0,1–0,25
3.7	90–150	110–170	0,06–0,1	0,06–0,12	0,08–0,16	0,1–0,25	0,1–0,25	0,1–0,25	0,1–0,25
3.8	90–150	110–170	0,06–0,1	0,06–0,12	0,08–0,16	0,1–0,25	0,1–0,25	0,1–0,25	0,1–0,25
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6.1	50–90		0,03–0,05	0,03–0,05	0,04–0,08	0,06–0,1	0,06–0,1	0,08–0,12	0,08–0,12
6.2	30–50		0,03–0,05	0,03–0,05	0,04–0,08	0,06–0,1	0,06–0,1	0,06–0,1	0,06–0,1
6.3									
6.4									
6.5									

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation, coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

Cutting data standard values KUB Trigon – 4xD

Index	BK6115	BK8425	K				
			Ø 14–16 mm	Ø 17–19 mm	Ø 20–24 mm	Ø 25–29 mm	Ø 30–35 mm
	v_c in m/min		f in mm/rev.				
1.1	250–350	200–320	0,04–0,06	0,04–0,08	0,04–0,08	0,05–0,1	0,05–0,1
1.2	250–350	200–320	0,04–0,06	0,04–0,08	0,04–0,08	0,05–0,1	0,05–0,1
1.3	250–300	250–300	0,02–0,04	0,04–0,06	0,04–0,1	0,06–0,12	0,06–0,12
1.4	250–300	250–300	0,02–0,04	0,04–0,06	0,04–0,1	0,06–0,12	0,06–0,12
1.5	250–300	250–300	0,02–0,04	0,04–0,06	0,04–0,1	0,06–0,12	0,06–0,12
1.6	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14
1.7	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14
1.8	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14
1.9	250–300	250–300	0,02–0,04	0,04–0,06	0,04–0,1	0,06–0,12	0,06–0,12
1.10	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14
1.11	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14
1.12	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14
1.13	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14
1.14	70–110	50–90	0,02–0,04	0,03–0,04	0,04–0,06	0,04–0,08	0,04–0,1
1.15	170–230	120–200	0,02–0,04	0,04–0,06	0,06–0,08	0,05–0,1	0,05–0,1
1.16	170–230	120–200	0,02–0,04	0,04–0,06	0,06–0,08	0,05–0,1	0,05–0,1
2.1		150–210	0,02–0,04	0,04–0,06	0,04–0,08	0,06–0,12	0,06–0,12
2.2		150–210	0,02–0,04	0,04–0,06	0,04–0,08	0,06–0,12	0,06–0,12
2.3		150–210	0,02–0,04	0,04–0,06	0,04–0,08	0,06–0,12	0,06–0,12
2.4		120–200	0,02–0,04	0,02–0,04	0,04–0,06	0,06–0,1	0,06–0,1
2.5		110–190	0,02–0,04	0,02–0,04	0,04–0,06	0,06–0,1	0,06–0,1
2.6		120–200	0,02–0,04	0,02–0,04	0,04–0,06	0,06–0,1	0,06–0,1
2.7		110–190	0,02–0,04	0,02–0,04	0,04–0,06	0,06–0,1	0,06–0,1
3.1	160–320	140–220	0,06–0,08	0,06–0,1	0,06–0,12	0,08–0,18	0,08–0,18
3.2	160–320	140–220	0,06–0,08	0,06–0,1	0,06–0,12	0,08–0,18	0,08–0,18
3.3	120–200	140–220	0,04–0,06	0,06–0,08	0,06–0,12	0,08–0,18	0,08–0,18
3.4	100–180	120–180	0,04–0,06	0,06–0,08	0,06–0,12	0,08–0,18	0,08–0,18
3.5	90–150	110–170	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,23	0,1–0,23
3.6	90–150	110–170	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,23	0,1–0,23
3.7	90–150	110–170	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,23	0,1–0,23
3.8	90–150	110–170	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,23	0,1–0,23
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Cutting data standard values KUB Trigon – 4xD

Index	BK6115	BK8425	ABS Ø 14–16 mm	ABS Ø 17–19 mm	ABS Ø 20–24 mm	ABS Ø 25–29 mm	ABS Ø 30–36 mm	ABS Ø 37–40 mm	ABS Ø 41–44 mm
	v_c in m/min		f in mm/rev.						
1.1	250–350	200–320	0,04–0,06	0,04–0,08	0,04–0,08	0,05–0,1	0,05–0,1	0,05–0,1	0,05–0,1
1.2	250–350	200–320	0,04–0,06	0,04–0,08	0,04–0,08	0,05–0,1	0,05–0,1	0,05–0,1	0,05–0,1
1.3	250–300	250–300	0,02–0,04	0,04–0,06	0,04–0,1	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,14
1.4	250–300	250–300	0,02–0,04	0,04–0,06	0,04–0,1	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,14
1.5	250–300	250–300	0,02–0,04	0,04–0,06	0,04–0,1	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,14
1.6	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14	0,06–0,14	0,06–0,14
1.7	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14	0,06–0,14	0,06–0,14
1.8	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14	0,06–0,14	0,06–0,14
1.9	250–300	250–300	0,02–0,04	0,04–0,06	0,04–0,1	0,06–0,12	0,06–0,12	0,06–0,12	0,06–0,14
1.10	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14	0,06–0,14	0,06–0,14
1.11	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14	0,06–0,14	0,06–0,14
1.12	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14	0,06–0,14	0,06–0,14
1.13	200–280	140–220	0,02–0,04	0,04–0,06	0,06–0,08	0,06–0,12	0,06–0,14	0,06–0,14	0,06–0,14
1.14	70–110	50–90	0,02–0,04	0,03–0,04	0,04–0,06	0,04–0,08	0,04–0,1	0,05–0,12	0,05–0,12
1.15	170–230	120–200	0,02–0,04	0,04–0,06	0,06–0,08	0,05–0,1	0,05–0,1	0,05–0,1	0,05–0,12
1.16	170–230	120–200	0,02–0,04	0,04–0,06	0,06–0,08	0,05–0,1	0,05–0,1	0,05–0,1	0,05–0,12
2.1		150–210	0,02–0,04	0,04–0,06	0,04–0,08	0,06–0,12	0,06–0,12	0,06–0,12	0,08–0,12
2.2		150–210	0,02–0,04	0,04–0,06	0,04–0,08	0,06–0,12	0,06–0,12	0,06–0,12	0,08–0,12
2.3		150–210	0,02–0,04	0,04–0,06	0,04–0,08	0,06–0,12	0,06–0,12	0,06–0,12	0,08–0,12
2.4		120–200	0,02–0,04	0,04–0,06	0,04–0,06	0,06–0,1	0,06–0,1	0,06–0,1	0,08–0,12
2.5		110–190	0,02–0,04	0,04–0,06	0,04–0,06	0,06–0,1	0,06–0,1	0,06–0,1	0,08–0,1
2.6		120–200	0,02–0,04	0,04–0,06	0,04–0,06	0,06–0,1	0,06–0,1	0,06–0,1	0,08–0,12
2.7		110–190	0,02–0,04	0,04–0,06	0,04–0,06	0,06–0,1	0,06–0,1	0,06–0,1	0,08–0,1
3.1	160–320	140–220	0,06–0,08	0,06–0,1	0,06–0,12	0,08–0,18	0,08–0,18	0,08–0,18	0,1–0,23
3.2	160–320	140–220	0,06–0,08	0,06–0,1	0,06–0,12	0,08–0,18	0,08–0,18	0,08–0,18	0,1–0,23
3.3	120–200	140–220	0,04–0,06	0,06–0,08	0,06–0,12	0,08–0,18	0,08–0,18	0,08–0,18	0,1–0,23
3.4	100–180	120–180	0,04–0,06	0,06–0,08	0,06–0,12	0,08–0,18	0,08–0,18	0,08–0,18	0,1–0,23
3.5	90–150	110–170	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,23	0,1–0,23	0,1–0,23	0,1–0,23
3.6	90–150	110–170	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,23	0,1–0,23	0,1–0,23	0,1–0,23
3.7	90–150	110–170	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,23	0,1–0,23	0,1–0,23	0,1–0,23
3.8	90–150	110–170	0,06–0,08	0,06–0,1	0,08–0,14	0,1–0,23	0,1–0,23	0,1–0,23	0,1–0,23
4.1									
4.2									
4.3									
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5.1									
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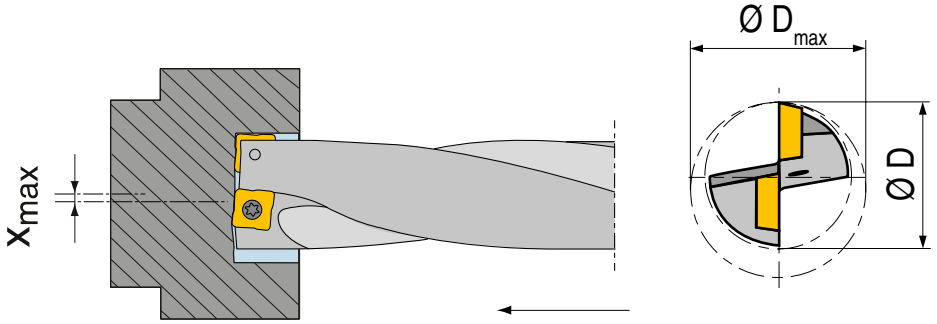
5.7									
5.8									
5.9									
5.10									
5.11									
6.1									
6.2									
6.3									
6.4									
6.5									

During the drilling operation on through holes a sharp disk will be produced.
Safety precautions must be observed.
A safety guard has to be provided as protection.

In order to ensure efficient chip evacuation,
coolant pressure must be at least 5 bar.
Optimum pressure is > 15 bar.

Maximum adjustment range (X) during solid drilling / from the centre for stationary applications – KUB Pentron



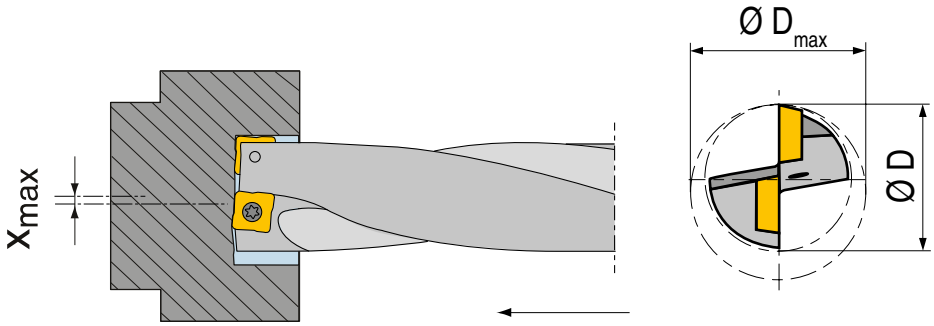
At max. offset X_{max} the hole will be:
$D_{max} = D + 2X_{max}$
e.g. for D = 20.0 mm, X_{max} = 0.20 mm:
$D_{max} = D + 0.4 = 20.4$ mm

Ø D mm	Insert Size	X_{max} mm	Ø D_{max} mm
14	SOGX 04....	0,25	14,5
14,5		0,25	15,0
15,0		0,25	15,5
15,5		0,25	16,0
16,0		0,25	16,5
16,5	SOGX 05....	0,25	17,0
17,0		0,25	17,5
17,5		0,25	18,0
18,0		0,25	18,5
18,5	SOGX 06....	0,25	19,0
19,0		0,25	19,5
19,5		0,25	20,0
20,0		0,25	20,5
20,5	SOGX 07....	0,25	21,0
21,0		0,25	21,5
21,5		0,25	22,0
22,0		0,25	22,5
22,5		0,25	23,0
23,0		0,25	23,5
23,5	SOGX 08....	0,25	24,0
24,0		0,25	24,5
24,5		0,25	25,0
25,0		0,25	25,5
25,5		0,25	26,0
26,0		0,25	26,5
26,5	SOGX 09....	0,25	27,0
27,0		0,25	27,5
27,5		0,25	28,0
28,0		0,25	28,5
28,5		0,25	29,0
29,0		0,25	29,5
29,5		0,25	30,0
30,0		0,25	30,5
31,0	SOGX 10....	0,25	31,5
32,0		0,25	32,5
33,0		0,25	33,5

Ø D mm	Insert Size	X_{max} mm	Ø D_{max} mm
34,0	SOGX 11....	0,25	34,5
35,0		0,25	35,5
36,0		0,25	36,5
37,0		0,25	37,5
38,0	SOGX 12....	0,25	38,5
39,0		0,25	39,5
40,0		0,25	40,5
41,0		0,25	41,5
42,0		0,25	42,5
43,0	SOGX 13....	0,25	43,5
44,0		0,25	44,5
45,0		0,25	45,5
46,0		0,25	46,5

The maximum radial X-offset affects the cutting force balance of the drill, therefore, the use of lower feed rates is recommended!

Maximum off set (X) for drilling into full material / with stationary applications – MaxiDrill 900 + KUB 100



At max. offset X_{max} the hole will be:
$D_{max} = D + 2X_{max}$
e.g. for D = 20.0 mm, X_{max} = 0.20 mm:
$D_{max} = D + 0.4 = 20.4$ mm

Ø D mm	Insert Size	X_{max} mm	Ø D_{max} mm
12,0	SONT 03....	0,50	13,0
12,5		0,40	13,3
13,0		0,35	13,7
13,5		0,30	14,1
14,0	SONT 04....	0,35	14,7
14,5		0,25	15,0
15,0		0,20	15,4
15,5		0,15	15,8
16,0	SONT 05....	0,40	16,8
16,5		0,35	17,2
17,0		0,30	17,6
17,5		0,25	18,0
18,0	SONT 06....	0,50	19,0
18,5		0,40	19,3
19,0		0,35	19,7
19,5		0,25	20,0
20,0		0,20	20,4
20,5		0,15	20,8
21,0	SONT 07....	0,35	21,7
21,5		0,30	22,1
22,0		0,25	22,5
22,5		0,15	22,8
23,0		0,15	23,3
23,5		0,10	23,7
24,0	SONT 08....	0,65	25,3
24,5		0,55	25,6
25,0		0,55	26,1
25,5		0,40	26,3
26,0		0,35	26,7
26,5		0,30	27,1
27,0		0,25	27,5
27,5		0,15	27,8
28,0	SONT 09....	0,90	29,8
28,5		0,80	30,1
29,0		0,75	30,5
29,5		0,70	30,9
30,0		0,60	31,2
30,5		0,55	31,6
31,0		0,45	31,9
31,5		0,40	32,3
32,0		0,30	32,6

Ø D mm	Insert Size	X_{max} mm	Ø D_{max} mm
32,5	SONT 10....	0,80	34,1
33,0		0,80	34,6
33,5		0,65	34,8
34,0		0,60	35,2
34,5		0,50	35,5
35,0		0,45	35,9
35,5		0,35	36,2
36,0		0,35	36,7
36,5		0,20	36,9
37,0	SONT 12....	1,00	39,0
38,0		0,85	39,7
39,0		0,70	40,4
40,0		0,50	41,0
41,0		0,35	41,7
42,0	SONT 13....	0,95	43,9
43,0		0,80	44,6
44,0		0,60	45,2
45,0		0,45	45,9
46,0		0,30	46,6
47,0	SONT 15....	1,80	50,6
48,0		1,65	51,3
49,0		1,50	52,0
50,0		1,35	52,7
51,0		1,15	53,3
52,0		0,95	53,9
53,0		0,80	54,6
54,0		0,60	55,2
55,0	SONT 17....	2,10	59,2
56,0		1,90	59,8
57,0		1,75	60,5
58,0		1,55	61,1
59,0		1,35	61,7
60,0		1,15	62,3
61,0		1,00	63,0
62,0		0,85	63,7
63,0		0,65	64,3

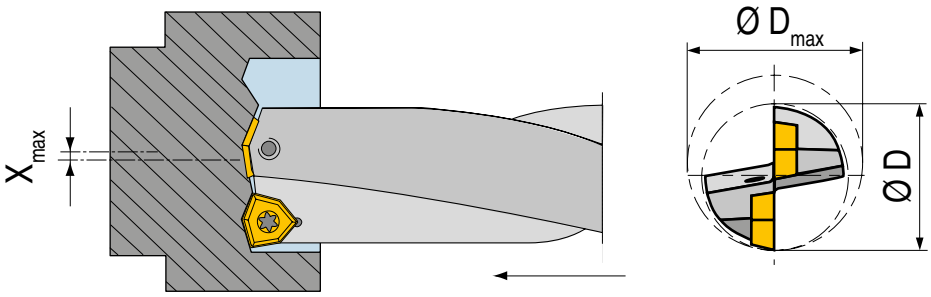
The maximum radial X-offset affects the cutting force balance of the drill, therefore, the use of lower feed rates is recommended!

Technical data for turning – MaxiDrill 900

Insert Size	$a_{p\,max.}$ in mm	f in mm/rev.
SONT 03	0,40–1,50	0,08–0,22
SONT 04	0,40–1,80	0,09–0,27
SONT 05	0,60–2,40	0,10–0,30
SONT 06	0,60–2,80	0,11–0,34
SONT 07	0,60–3,40	0,13–0,38
SONT 08	0,70–4,20	0,15–0,41

Insert Size	$a_{p\,max.}$ in mm	f in mm/rev.
SONT 09	0,70–4,50	0,16–0,42
SONT 10	0,70–4,80	0,17–0,44
SONT 12	0,90–5,50	0,18–0,45
SONT 13	1,00–6,00	0,20–0,45
SONT 15	1,20–6,40	0,21–0,46
SONT 17	1,20–6,70	0,21–0,47

Maximum adjustment range (X) during solid drilling / from the centre for stationary applications – KUB Trigon



At max. offset X_{max} the hole will be:
$D_{max} = D + 2X_{max}$
e.g. for D = 20.0 mm, X_{max} = 0.20 mm:
$D_{max} = D + 0.4 = 20.4$ mm

Ø D mm	Insert Size	X_{max} mm	Ø D_{max} mm
14,0	WOEX 03....	0,5	15,0
15,0		0,5	16,0
16,0		0,5	17,0
17,0		0,5	18,0
18,0		0,5	19,0
19,0		0,5	20,0
20,0	WOEX 04....	0,5	21,0
21,0		0,5	22,0
22,0		0,5	23,0
23,0		0,5	24,0
24,0		0,5	25,0
25,0	WOEX 05....	0,5	26,0
26,0		1,0	28,0
27,0		1,5	30,0
28,0		1,5	31,0
29,0		1,5	32,0
30,0		1,25	32,5
31,0		1,25	33,5
32,0		1,0	34,0
33,0		0,5	34,0
34,0		0,5	35,0
35,0		0,5	36,0
36,0		0,5	37,0

Ø D mm	Insert Size	X_{max} mm	Ø D_{max} mm
37	WOEX 06....	1,5	40,0
38		1,5	41,0
39		1,5	42,0
40		1,5	43,0
41		1,5	44,0
42		1,5	45,0
43		1,0	45,0
44		0,5	45,0

The maximum radial X-offset affects the cutting force balance of the drill, therefore, the use of lower feed rates is recommended!

Coding example indexable insert drilling

System	Length	Bore diameter	Direction of rotation	Insert size	Machine connection and size
MD-900	4D	240	R	08	C 32
KUB-T	2D	350	R	05	K 32
KUB-P	3D	215	R	07	ABS 50
KUB-P	3D	290	R	04	PSC 63
KUB-100	3D	300	R	07	C 25

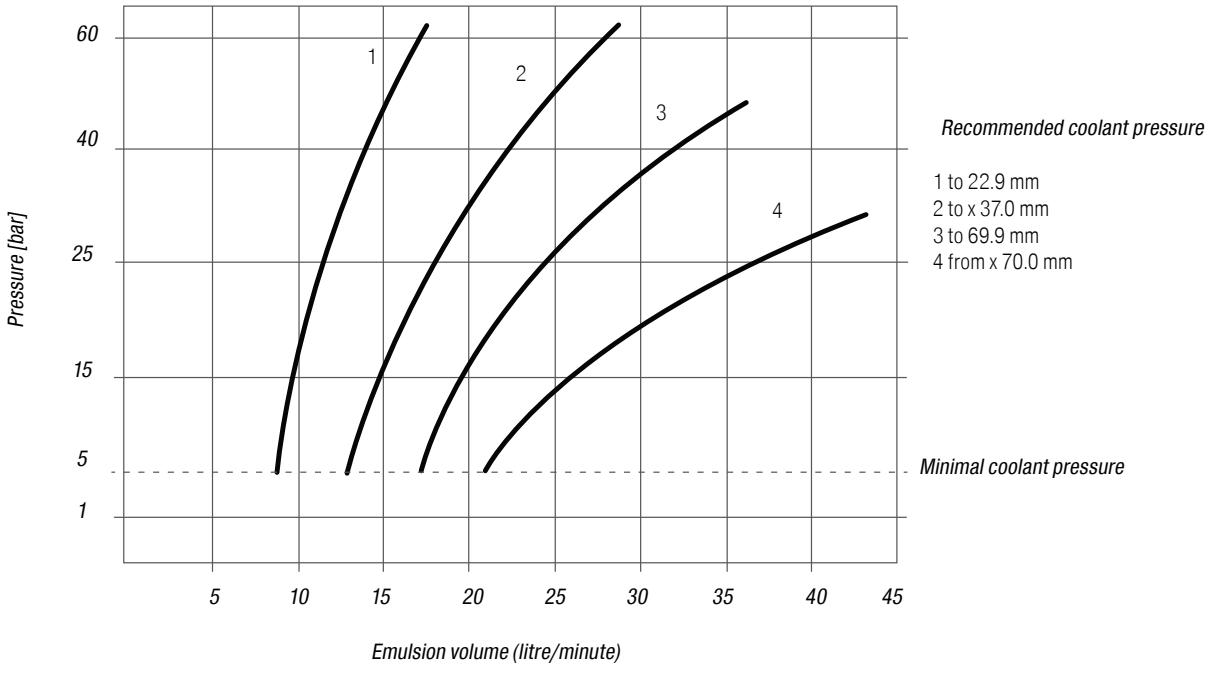
- MD-900 = MaxiDrill 900
- KUB-P = KUB Pentron
- KUB-T = KUB Trigon
- KUB-100 = KUB 100

- 240 = 24.0 mm
- 350 = 35.0 mm
- 215 = 21.5 mm
- 290 = 29,0 mm
- 300 = 30,0 mm

- R = right

- C32 = Cylindrical shank Ø 32.0 mm
- K32 = Cylindrical shank with combi clamping flat Ø 32.0 mm
- ABS50 = ABS adapter size 50
- PSC63 = PSC adapter shank size 63
- C25 = Cylindrical Shank Ø 25.0 mm

Recommended coolant pressure and coolant flow

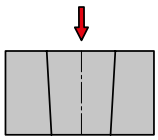


Problems / possible causes / solutions

Rotating and stationary application

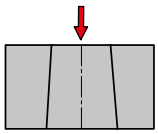
Short service life / types of wear of indexable inserts

- Cutting speed too high → select the correct cutting speed
- Insert grade selection has too little wear resistance → select a wear resistant grade
- Tool overhang too large → if possible, use a shorter tool
- Damaged insert seat → check tool, replace if necessary
- Clamping device stability too low → increase stability



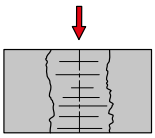
Hole tapers in

- Chip jam on the outer cutting edge → use a different chip breakage geometry, increase the feed if necessary
- Material very soft → increase the cutting speed, reduce the feed
- Use a positive cutting edge geometry



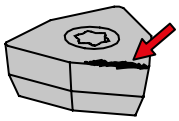
Hole tapers out

- Chip jam on the inner cutting edge → use a different chip breakage geometry, increase the feed if necessary



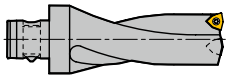
Poor surface quality

- Poor chip evacuation → optimise the cutting parameters: Increase the cutting speed, reduce the feed



Built-up edge

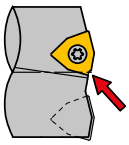
- Cutting speed too low → increase cutting speed
- Indexable insert too negative → use positive geometry
- Unsuitable coating → select the correct coating



Friction marks on the tool shank

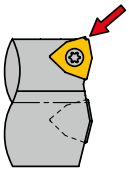
- Bore diameter too small → check the setting
- Chip evacuation problems → optimise the cutting parameters, check the geometry of the indexable insert
- Cutting radius too high → use the correct cutting radius

Stationary application



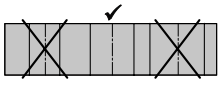
Edge breakage on the inner cutting edge

- Centre height of the tool too high/too low → adjust tool turret/adapter if necessary → Recalibrate the machine
- Indexable insert grades interchanged → use correct indexable insert
- Feed too high → reduce feed
- Indexable insert grade too brittle → use a tougher indexable insert grade
- Incorrect indexable insert geometry → if necessary use a geometry with a chamfered cutting edge



Edge breakage on the outer cutting edge

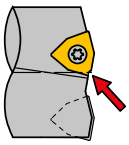
- Feed too high → reduce feed
- Interrupted cut → switch to a tougher grade of indexable insert
- Cutting radius too small → use an indexable insert with a larger cutting radius



Hole too small / too large

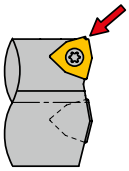
- Machine is not in the X-0 position → move axis to correct position
- Machine axis has been moved → recalibrate the machine

Rotating application



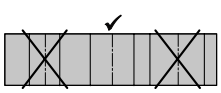
Edge breakage on the inner cutting edge

- Indexable insert grades interchanged → use correct indexable insert
- Feed too high → reduce feed
- Indexable insert grade too brittle → use a tougher indexable insert grade
- Incorrect indexable insert geometry → if necessary use a geometry with a chamfered cutting edge



Edge breakage on the outer cutting edge

- Feed too high → reduce feed
- Interrupted cut → switch to a tougher grade of indexable insert
- Cutting radius too small → use an indexable insert with a larger cutting radius



Hole too small / too large when using adjustable tools

- Incorrect cutting radius used → use the correct cutting radius
- Incorrect setting → use the correct tool setting
- Increase cutting fluid supply

Grades Overview

CTPP430
CCN1430

- Carbide, TiAlN-coated
- ISO | **P30** | **M25** | S25 | K30 | N25
- The universal high-performance grade for steel, austenitic steel and heat-resistant alloys

BK8425

- Carbide, TiAlN/TiN-coated
- ISO | **P25** | **M25** | **K25**
- Universally applicable grade with increased wear resistance thanks to the innovative PVD coating in a multilayer design

CTCP420
DCX1420

- Carbide, TiCN-Al_2O_3-coated
- ISO | **P20** | **K20** | M20
- The wear-resistant solution for steel and cast iron materials at high cutting speeds

BK6115

- Carbide, TiCN-TiN-Al_2O_3-coated
- ISO | **P20** | **K20** | H20
- High-quality, surface-treated coating for machining cast iron materials under normal to stable conditions and high cutting speeds

BK7710

- Carbide, TiB_2-coated
- ISO | **N10** | S10
- The wear-resistant grade with optimum cutting characteristics to prevent built-up edge formation for machining aluminium and titanium alloys

BK7935

- Carbide, AlTiN-coated
- ISO | **P35** | **M30** | S30 | K30| N30
- The tough carbide grade for machining stainless steel and acid-resistant steels as well as special alloys

BK6425

- Carbide, TiCN-Al_2O_3-TiN-coated
- ISO | **P25 | M15**| K20
- The extremely wear-resistant grade for machining all steel and stainless materials

BK77

- Carbide, TiN-coated
- ISO | **S10** | **N10**
- The wear-resistant carbide grade for machining aluminum alloys, superalloys and plastics at medium cutting speeds

BK62

- Carbide, TiN-TiCN-Al_2O_3-coated
- ISO | **K15** | H15
- Special carbide grade for machining cast iron materials at high cutting speeds
  Not suitable for machining aluminium materials

Chip breakers

-01

- Universal geometry suitable for a wide range of materials
- Can be used for the center and peripheral insert

-03

- Geometry for chip breaking problems with excellent chip control at low feed rates
- Can only be used for the peripheral insert
- Main application in low alloyed and stainless steels

-11

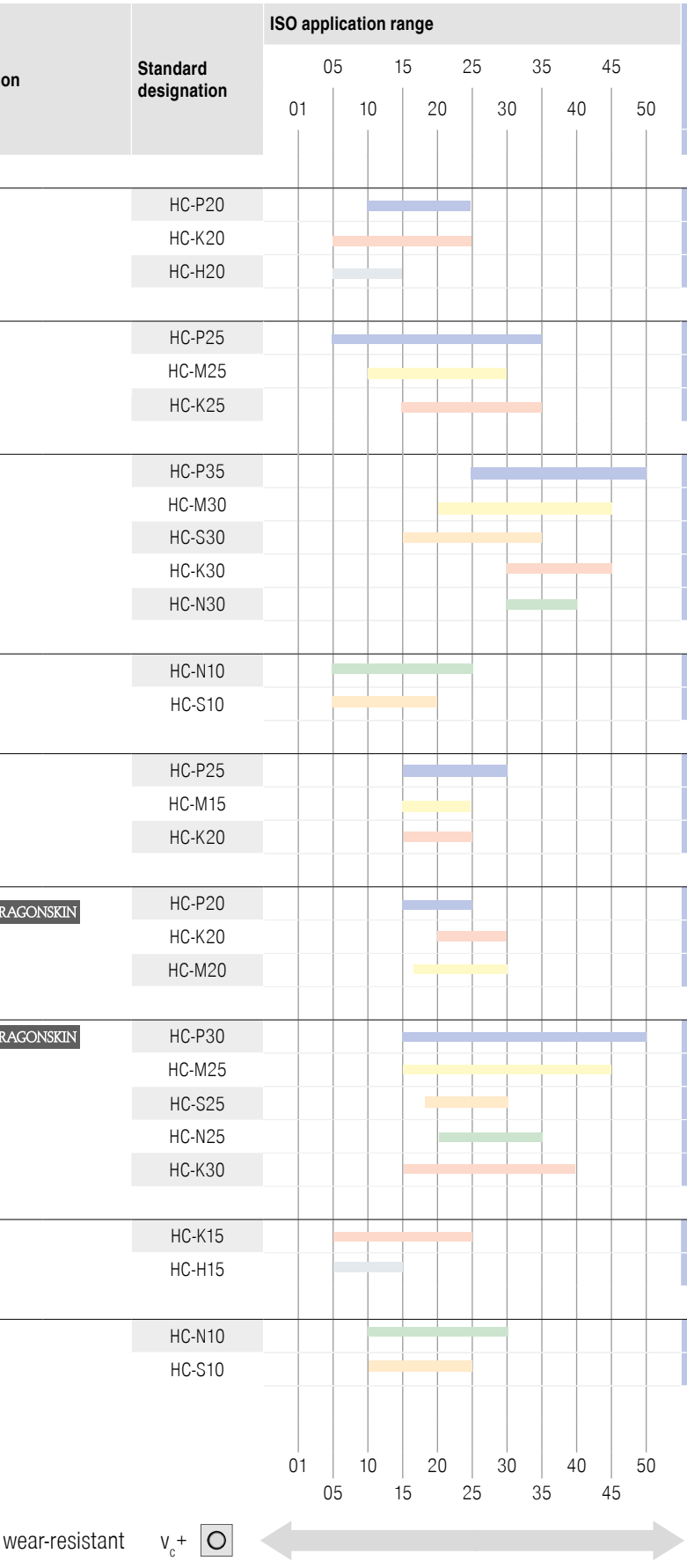
- Highly positive, minimally rounded chip breaker
- For soft cutting use
- Main application in aluminum

-13

- Very positive geometry for low alloy, stainless and acid-resistant steels
- Can be used for the center and peripheral insert
- Due to the low cutting forces well suited to unstable conditions

Application

Grade designation	Standard designation	Steel P	Stainless steel M	Cast iron K	Non ferrous metals N	Heat resistant alloys S	Hardened materials H
BK6115	HC-P20	●					
	HC-K20			●			
	HC-H20						○
BK8425	HC-P25	●					
	HC-M25		●				
	HC-K25			●			
BK7935	HC-P35	●					
	HC-M30		●				
	HC-S30					○	
	HC-K30			○			
	HC-N30				○		
BK7710	HC-N10				●		
	HC-S10					○	
BK6425	HC-P25	●					
	HC-M15		●				
	HC-K20			○			
CTCP420 (DCX1420) DRAGONSKIN	HC-P20	●					
	HC-K20			●			
	HC-M20		○				
CTPP430 (CCN1430) DRAGONSKIN	HC-P30	●					
	HC-M25		●				
	HC-S25					○	
	HC-N25				○		
	HC-K30			○			
BK62	HC-K15			●			
	HC-H15						○
BK77	HC-N10				●		
	HC-S10					●	



New products for machining technicians

NEW REAMAX TS

- maximum flexibility and efficiency up to Ø 65.00 mm
- up to 5xD
- can be adjusted for the smallest tolerances and for wear compensation

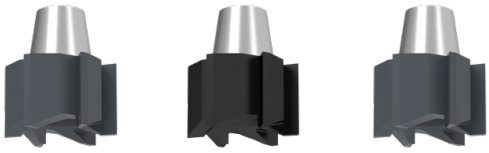
---

NEW Fullmax high-performance reamers

- solid carbide high-performance reamers
- type UNI, VA, K, ALU and H
- maximum efficiency in all materials
- available as standard H7, as 1/100, and as configurable version

---

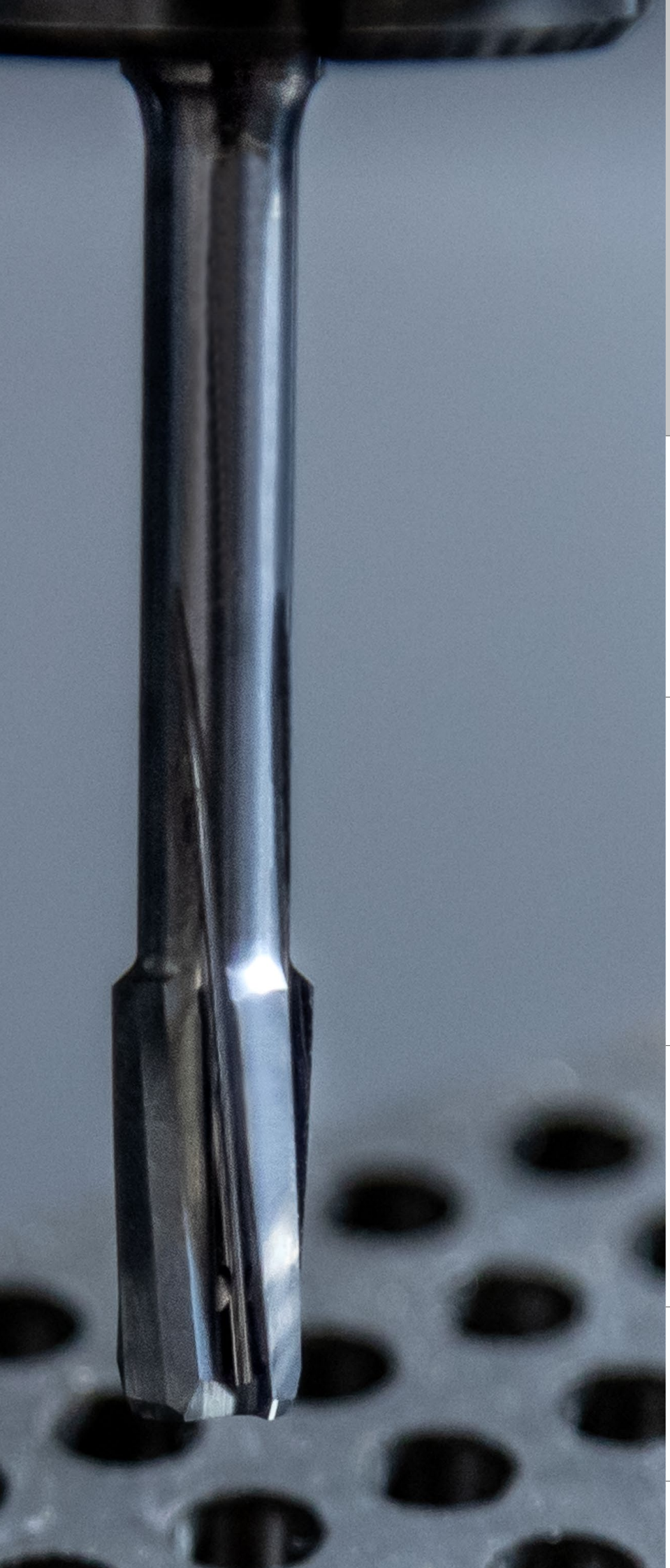
NEW REAMAX extension



- extension of the proven REAMAX reaming system
- new cutting edge geometries and coatings

NEW Monomax extension

- extension of the proven Monomax reamers
- new grades and cutting edge geometries



Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking 4
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

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Reamers Toolfinder	4+5
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Solid carbide – Reamers	29–31
HSS – Reamers	32–39
Product range – Countersinks	40–49
Technical Information	
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KOMET \ Performance

Premium quality tools for high performance.

The premium quality tools from the **KOMET Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

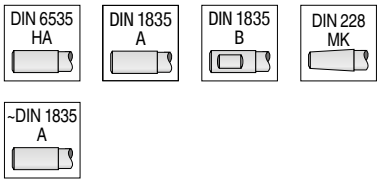
KOMET \ Standard

Quality tools for standard applications.

The quality tools of the **KOMET Standard** product line are high quality, high performance, reliable and enjoy the highest level of trust among our customers worldwide. Tools from this product line are the first choice for many standard applications and guarantee optimal results.

Symbol explanation

Shank



Version

Central internal coolant

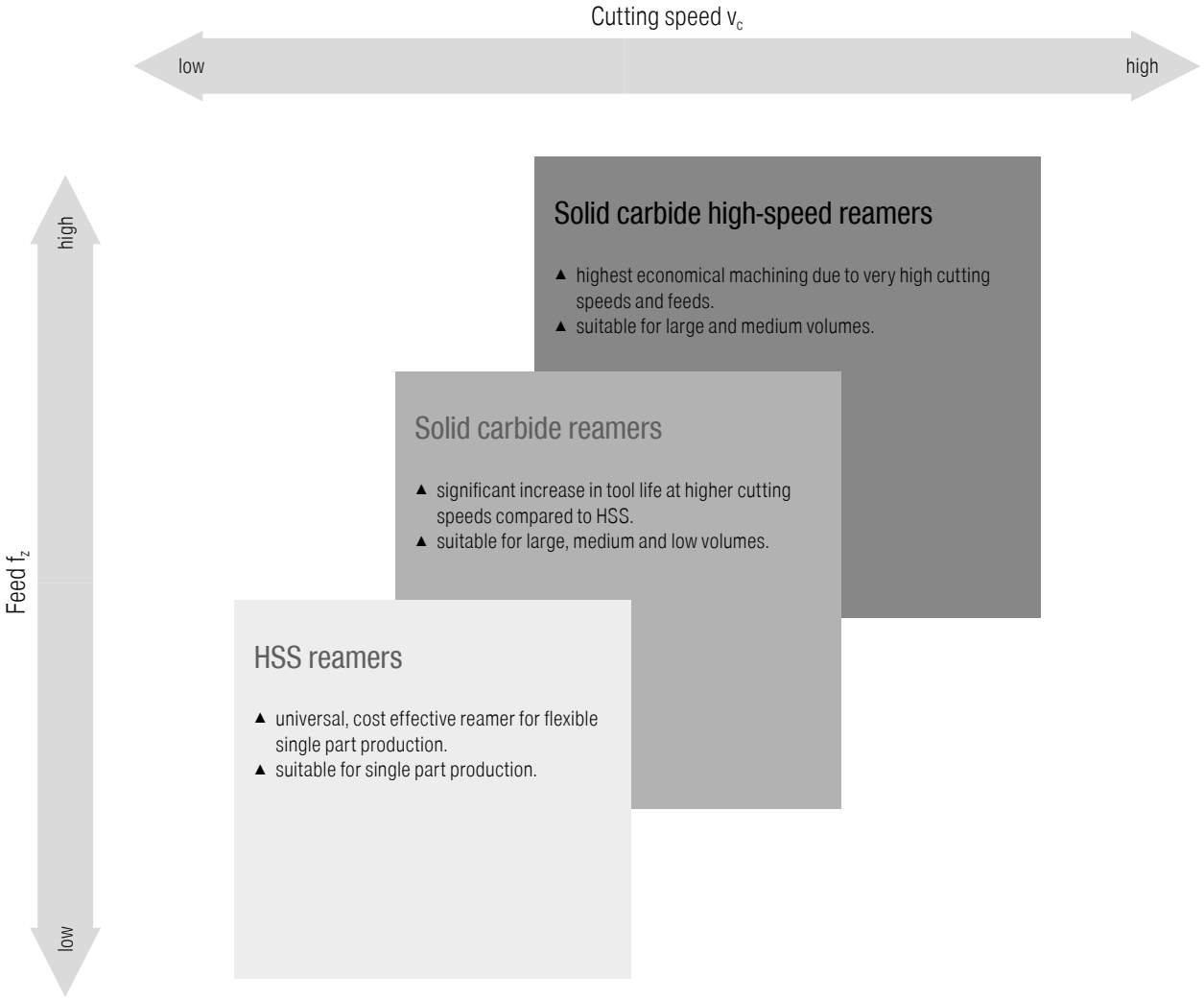
Lateral internal coolant

ZEFP = Number of teeth

● = **Main Application**

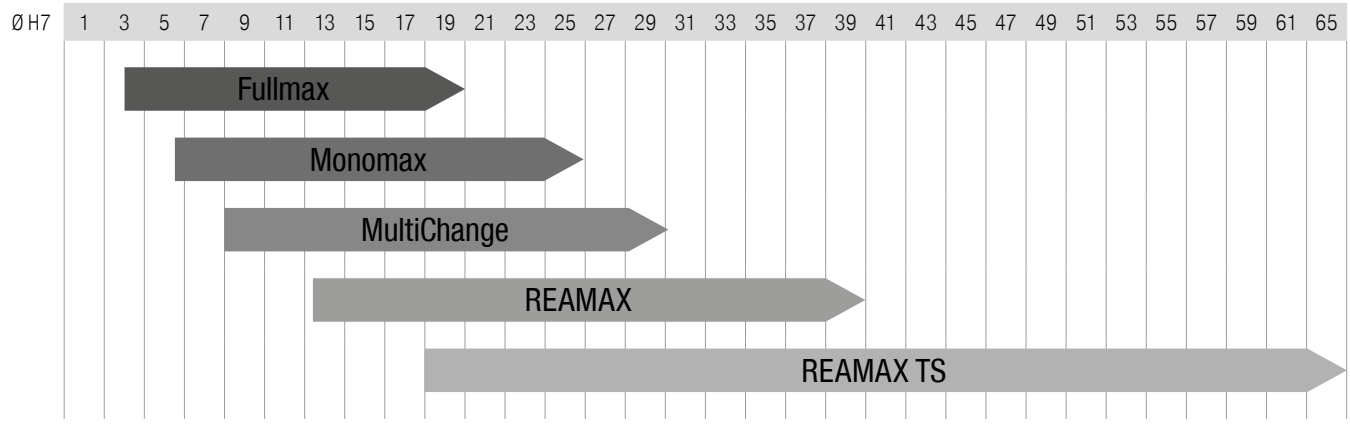
○ = Extended application

Toolfinder – Reamers



4

Overview of solid carbide high-speed reamers



	mono	modular
fixed	Fullmax	MultiChange REAMAX
adjustable	Monomax	REAMAX TS

Toolfinder – Reamers

Solid carbide – High speed reamers	REAMAX TS			▲ highly flexible and economical replaceable head system ▲ all common materials ▲ can be adjusted in µm range
				▲ holder available in 3xD and 5xD ▲ holder type DAH Zero available in 3xD and 5xD
	REAMAX			▲ exchange head system, optimised for use with air mist coolant (MMS) ▲ face and taper contact giving run out accuracy ≤ 2 µm
				▲ holder available in 3xD and 5xD
	MultiChange			▲ flexible quick change system for reaming, countersinking and chamfering ▲ face and taper contact giving run out accuracy ≤ 5 µm
				▲ stable holder in solid carbide and steel, from short to long
	Monomax			▲ adjustable monoblock reamer in 3xD and 5xD ▲ regrinding and re-tipping on the base body
	Fullmax UNI			▲ high-speed reamer for universal use ▲ extremely irregular pitch ▲ standard shank ~ DIN 6535 HA
	Fullmax VA			▲ high speed reamer for corrosion and acid resistant steels ▲ extremely irregular pitch ▲ DIN 6535 HA shank
	Fullmax K			▲ high-speed reamer for use on cast iron materials ▲ extremely irregular pitch ▲ standard shank ~ DIN 6535 HA
	Fullmax ALU			▲ high-speed reamer for use on aluminium ▲ extremely irregular pitch ▲ standard shank ~ DIN 6535 HA
	Fullmax H			▲ high speed reamer for hardened material to 63 HRC ▲ extremely irregular pitch ▲ DIN 6535 HA shank
Solid carbide – Reamers	NC	NC 100		▲ universal solid carbide reamer without thro' coolant ▲ extremely irregular pitch ▲ DIN 6535 HA shank
	N			▲ universal solid carbide reamer without thro' coolant ▲ extremely irregular pitch
HSS – Reamers	NC	NC 100		▲ HSS-E NC machine reamer ▲ DIN 1835 A shank
	N	N 100		▲ HSS-E machine reamer
	S			▲ HSS-E spiral machine reamer DIN 212
	AR	AR 100		▲ HSS-E automatic machine reamer DIN 8089
	N			▲ HSS-e machine reamer DIN 208 ▲ with morse taper
	H			▲ HSS hand reamer with cylindrical shank DIN 206

Hole diameter in mm Ø DC	Standard tolerance	Through hole	Blind hole	Int. coolant supply	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials	KOMET \ Performance	KOMET \ Standard
18,00–65,00	H7 1/100	✓	✓	✓	●	●	●	●			7–9	
				✓							10+11	
12,50–40,00	H7 1/100	✓	✓	✓	●	●	●	●			12+13	
				✓							14	
8,00–30,20	H7 1/100	✓	✓	✓	●	●	●	●	○		16+17	
				✓							→ **Chapter 17, Accessories**	
5,60–25,89	H7 1/100	✓	✓	✓	●	●	●				18–22	
4,00–16,00 2,96–20,05	H7 1/100	✓	✓	✓	●		●				23–28	
4,00–16,00 2,96–20,05	H7 1/100	✓	✓	✓		●					23–28	
2,96–20,05	1/100	✓	✓	✓			●				25–28	
4,00–16,00 2,96–20,05	H7 1/100	✓	✓	✓				●			23–28	
2,96–20,05	1/100	✓	✓	✓						●	25–28	
2,00–30,00 0,59–12,05	H7 1/100	✓			●		●	●	○		29+30	
2,00–12,00	H7	✓			●		●	●	○			31
1,50–20,00 0,95–12,00	H7 1/100	✓			●	○	●	●	○		32+33	
1,00–20,00 0,95–12,00	H7 1/100	✓			●	○	●	●	○			34–36
1,00–20,00	H7	✓			●			●				37
4,00–20,00 3,76–12,00	H7 1/100	✓			●	○	●	●	○			37+38
16,00–50,00	H7	✓			●	○	●	●	○			39
1,00–40,00	H7	✓			●	○	●	●	○			39

4

Countersinks Overview

	Tool type	Coating	Hole diameter in mm Ø DC	Point angle	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Hardened materials	KOMET \ Performance	KOMET \ Standard
Indexable Insert Counterbore Tool												
	WPS		15,0–33,0		●	○	●	●	○			40
HSS – Counterbores												
	N		6,0–20,0		●	●	●	●	○			42
Solid Carbide Countersinks												
	N	TPX76S	6,3–31,0	90°	●	○	●	●	○	○	43	
	N		12,5–25,0	60°	●	○	●	●	○			44
	N		10,4–31,0	90°	●	○	●	●	○			44
HSS Countersinks												
	N		6,3–25,0	60°	●	○	●	●	○			47
	N		16,0–80,0	60°	●	○	●	●	○			47
	N	Ti50	4,3–31,0	90°	●	○	●	●	○		45	
	N		4,3–31,0	90°	●	○	●	●	○			46
	N	TiN	5,0–31,0	90°	●	○	●	●	○			46
	N	TiAlN	5,0–31,0	90°	●	○	●	●	○			46
	VA	TiAlN	6,3–31,0	90°		●						46
	AL		6,3–31,0	90°				●				46
	N		16,5–80,0	90°	●	○	●	●	○			48
	N		6,3–25,0	120°	●	○	●	●	○			48
HSS – Hand deburrer												
	N		12,4–25,0	90°								49
Deburring Countersink												
	N		6,3–35,0	90°	●		●	●				49
	N	TiN	6,3–35,0	90°	●		●	●				49

REAMAX TS – Selection guide

Ø 18–65 mm

Material	Preferred type available	KOMET no.	75J.93	75J.65	75H.65	75J.17	75H.17	75H.93	75H.65	75H.71	75J.93
		Lead	ASG4000	ASG0106	ASG0106	ASG0706	ASG0706	ASG3000	ASG3000	ASG3000	ASG3000
		Lead angle	25°	45°	45°	45°/8°	45°/8°	45°	45°	45°	45°
		Grade / coating	DST	DBG-P	DBG-P	DBC	DBC	DST	DBG-P	TiN	DST
		Article no.	40 597 ...	40 521 ...	40 571 ...	40 526 ...	40 580 ...	40 539 ...	40 585 ...	40 535 ...	40 544 ...
		Application	Through hole	Through hole	Blind hole	Through hole	Blind hole	Blind hole	Blind hole	Blind hole	Through hole
Steel up to 1000 N/mm²	✓		●								●
								●	○	○	
									○	○	
									●	○	
Steel > 1000 N/mm²				●							
					●					○	
				●							
					●					○	
Stainless steel				●							
					●						
				●							
					●						
Grey cast iron / alloyed nodular cast iron (0.7661) and vermicular cast iron (5.2200)									○		
									●		
Nodular cast iron			○								●
								●	○		
									○		
									●		
Copper, brass, bronze											●
										○	
										○	
										●	
Aluminium						●					
							●				
						●					
							●				

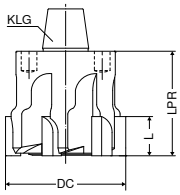
Applications:

Main application	●
Additional range of application	○

4

REAMAX TS – Replaceable reaming heads

- ▲ up to tolerance class IT 6 with absolute process security, from the first hole
- ▲ precise repeatability < 3 µm
- ▲ high precision grind for maximum quality
- ▲ can be adjusted for the smallest hole tolerances
- ▲ interface enables head change in the machine
- ▲ retraction from the hole at 3–4 times the cutting feed rate
- ▲ KLG = coupling size



	DST	DBG-P	DBC	DST
	75J.93 ◁ 25° ASG4000 CERMET Through hole	75J.65 ◁ 45° ASG0106 HM Through hole	75J.17 ◁ 45/8° ASG0706 HM Through hole	75J.93 ◁ 45° ASG3000 CERMET Through hole
	NEW U3	NEW U3	NEW U3	NEW U3
	Article no. 40 597 ...	Article no. 40 521 ...	Article no. 40 526 ...	Article no. 40 544 ...

DC H7 mm	L mm	LPR mm	ZEFP	KLG	£		£		£		£	
18,00	6	20	6	1	308.07	18000	308.07	18000	308.07	18000	308.07	18000
18,01 - 19,99	6	20	6	1	660.32	xxxx 1)	660.32	xxxx 1)	660.32	xxxx 2)	660.32	xxxx 1)
20,00	6	20	6	2	315.92	20000	315.92	20000	315.92	20000	315.92	20000
20,01 - 21,99	6	20	6	2	774.19	xxxx 1)	774.19	xxxx 1)	774.19	xxxx 2)	774.19	xxxx 1)
22,00	6	20	6	3	321.81	22000	321.81	22000	321.81	22000	321.81	22000
22,01 - 23,99	6	20	6	3	805.42	xxxx 1)	805.42	xxxx 1)	805.42	xxxx 2)	805.42	xxxx 1)
24,00	6	20	6	3	331.62	24000	331.62	24000	331.62	24000	331.62	24000
24,01 - 24,99	6	20	6	3	805.42	xxxx 1)	805.42	xxxx 1)	805.42	xxxx 2)	805.42	xxxx 1)
25,00	6	20	6	3	331.62	25000	331.62	25000	331.62	25000	331.62	25000
25,01 - 25,99	6	20	6	3	805.42	xxxx 1)	805.42	xxxx 1)	805.42	xxxx 2)	805.42	xxxx 1)
26,00	6	20	6	3	344.38	26000	344.38	26000	805.42	26000 2)	344.38	26000
26,01 - 26,99	6	20	6	3	805.42	xxxx 1)	805.42	xxxx 1)	805.42	xxxx 2)	805.42	xxxx 1)
27,00 - 27,99	6	25	6	4	838.79	xxxx 1)	838.79	xxxx 1)	838.79	xxxx 2)	838.79	xxxx 1)
28,00	6	25	6	4	344.38	28000	344.38	28000	344.38	28000	344.38	28000
28,01 - 29,99	6	25	6	4	838.79	xxxx 1)	838.79	xxxx 1)	838.79	xxxx 2)	838.79	xxxx 1)
30,00	6	25	6	4	360.07	30000	360.07	30000	360.07	30000	360.07	30000
30,01 - 31,79	6	25	6	4	838.79	xxxx 1)	838.79	xxxx 1)	838.79	xxxx 2)	838.79	xxxx 1)
31,80 - 31,99	6	25	8	4	876.80	xxxx 1)	876.80	xxxx 1)	876.80	xxxx 2)	876.80	xxxx 1)
32,00	6	25	8	4	372.83	32000	372.83	32000	372.83	32000	372.83	32000
32,01 - 34,99	6	25	8	4	876.80	xxxx 1)	876.80	xxxx 1)	876.80	xxxx 2)	876.80	xxxx 1)
35,00	6	25	8	5	390.48	35000	390.48	35000	390.48	35000	390.48	35000
35,01 - 39,99	6	25	8	5	959.25	xxxx 1)	959.25	xxxx 1)	959.25	xxxx 2)	959.25	xxxx 1)
40,00	6	25	8	5	413.05	40000	413.05	40000	413.05	40000	413.05	40000
40,01 - 41,99	6	25	8	5	959.25	xxxx 1)	959.25	xxxx 1)	959.25	xxxx 2)	959.25	xxxx 1)
42,00	6	30	8	6	413.05	42000	413.05	42000	1,041.88	42000 2)	413.05	42000
42,01 - 49,99	6	30	8	6	1,041.88	xxxx 1)	1,041.88	xxxx 1)	1,041.88	xxxx 2)	1,041.88	xxxx 1)
50,00	6	30	8	6	422.86	50000	422.86	50000	422.86	50000	422.86	50000
50,01 - 51,99	6	30	8	6	1,041.88	xxxx 1)	1,041.88	xxxx 1)	1,041.88	xxxx 2)	1,041.88	xxxx 1)
52,00 - 53,99	8	35	10	7	1,155.57	xxxx 1)	1,155.57	xxxx 1)	1,155.57	xxxx 2)	1,155.57	xxxx 1)
54,00	8	35	10	7	475.84	54000	475.84	54000	1,155.57	54000 2)	475.84	54000
54,01 - 65,00	8	35	10	7	1,155.57	xxxx 1)	1,155.57	xxxx 1)	1,155.57	xxxx 2)	1,155.57	xxxx 1)

Steel	●	●		●
Stainless steel		●		
Cast iron	●			●
Non ferrous metals			●	○
Heat resistant alloys				
Hardened materials				

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 20 working days / Minimum order 2 pieces

2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days / Minimum order 2 pieces

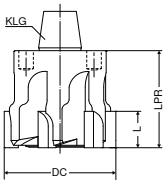
→ v_c Page 51–53

For xxxx when ordering please specifiy the required Ø in H7 (eg Ø 24.12 H7 → Article no. 40 597 2412)!
All other diameters and tolerance classes are also possible (eg 18.5 $^{+0.025}$ or 18 N7)!

Assembly instructions can be found on → **Page 71**

REAMAX TS – Replaceable reaming heads

- up to tolerance class IT 6 with absolute process security, from the first hole
- precise repeatability < 3 µm
- high precision grind for maximum quality
- can be adjusted for the smallest hole tolerances
- interface enables head change in the machine
- retraction from the hole at 3–4 times the cutting feed rate
- KLG = coupling size



DST	DBG-P	DBC	DBG-P	TiN
75H.93 ◁ 45° ASG3000 CERMET Blind hole	75H.65 ◁ 45° ASG0106 HM Blind hole	75H.17 ◁ 45/8° ASG0706 HM Blind hole	75H.65 ◁ 45° ASG3000 HM Blind hole	75H.71 ◁ 45° ASG3000 HM Blind hole
NEW U3	NEW U3	NEW U3	NEW U3	NEW U3
Article no. 40 539 ...	Article no. 40 571 ...	Article no. 40 580 ...	Article no. 40 585 ...	Article no. 40 535 ...
£	£	£	£	£

DC H7 mm	L mm	LPR mm	ZEFP	KLG	£		£		£		£		£	
18,00	6	20	6	1	308.07	18000	308.07	18000	660.32	18000 2)	660.32	18000 1)	660.32	18000 1)
18,01 - 19,99	6	20	6	1	660.32	xxxx 1)	660.32	xxxx 1)	660.32	xxxx 2)	660.32	xxxx 1)	660.32	xxxx 1)
20,00	6	20	6	2	315.92	20000	315.92	20000	774.19	20000 2)	774.19	20000 1)	774.19	20000 1)
20,01 - 21,99	6	20	6	2	774.19	xxxx 1)	774.19	xxxx 1)	774.19	xxxx 2)	774.19	xxxx 1)	774.19	xxxx 1)
22,00	6	20	6	3	321.81	22000	321.81	22000	805.42	22000 2)	805.42	22000 1)	805.42	22000 1)
22,01 - 23,99	6	20	6	3	805.42	xxxx 1)	805.42	xxxx 1)	805.42	xxxx 2)	805.42	xxxx 1)	805.42	xxxx 1)
24,00	6	20	6	3	331.62	24000	331.62	24000	805.42	24000 2)	805.42	24000 1)	805.42	24000 1)
24,01 - 24,99	6	20	6	3	805.42	xxxx 1)	805.42	xxxx 1)	805.42	xxxx 2)	805.42	xxxx 1)	805.42	xxxx 1)
25,00	6	20	6	3	331.62	25000	331.62	25000	805.42	25000 2)	805.42	25000 1)	805.42	25000 1)
25,01 - 25,99	6	20	6	3	805.42	xxxx 1)	805.42	xxxx 1)	805.42	xxxx 2)	805.42	xxxx 1)	805.42	xxxx 1)
26,00	6	20	6	3	344.38	26000	344.38	26000	805.42	26000 2)	805.42	26000 1)	805.42	26000 1)
26,01 - 26,99	6	20	6	3	805.42	xxxx 1)	805.42	xxxx 1)	805.42	xxxx 2)	805.42	xxxx 1)	805.42	xxxx 1)
27,00 - 27,99	6	25	6	4	838.79	xxxx 1)	838.79	xxxx 1)	838.79	xxxx 2)	838.79	xxxx 1)	838.79	xxxx 1)
28,00	6	25	6	4	344.38	28000	344.38	28000	838.79	28000 2)	838.79	28000 1)	838.79	28000 1)
28,01 - 29,99	6	25	6	4	838.79	xxxx 1)	838.79	xxxx 1)	838.79	xxxx 2)	838.79	xxxx 1)	838.79	xxxx 1)
30,00	6	25	6	4	360.07	30000	360.07	30000	838.79	30000 2)	838.79	30000 1)	838.79	30000 1)
30,01 - 31,79	6	25	6	4	838.79	xxxx 1)	838.79	xxxx 1)	838.79	xxxx 2)	838.79	xxxx 1)	838.79	xxxx 1)
31,80 - 31,99	6	25	8	4	876.80	xxxx 1)	876.80	xxxx 1)	876.80	xxxx 2)	876.80	xxxx 1)	876.80	xxxx 1)
32,00	6	25	8	4	372.83	32000	372.83	32000	876.80	32000 2)	876.80	32000 1)	876.80	32000 1)
32,01 - 34,99	6	25	8	4	876.80	xxxx 1)	876.80	xxxx 1)	876.80	xxxx 2)	876.80	xxxx 1)	876.80	xxxx 1)
35,00	6	25	8	5	390.48	35000	390.48	35000	959.25	35000 2)	959.25	35000 1)	959.25	35000 1)
35,01 - 39,99	6	25	8	5	959.25	xxxx 1)	959.25	xxxx 1)	959.25	xxxx 2)	959.25	xxxx 1)	959.25	xxxx 1)
40,00	6	25	8	5	413.05	40000	413.05	40000	959.25	40000 2)	959.25	40000 1)	959.25	40000 1)
40,01 - 41,99	6	25	8	5	959.25	xxxx 1)	959.25	xxxx 1)	959.25	xxxx 2)	959.25	xxxx 1)	959.25	xxxx 1)
42,00	6	30	8	6	413.05	42000	413.05	42000	1,041.88	42000 2)	1,041.88	42000 1)	1,041.88	42000 1)
42,01 - 49,99	6	30	8	6	1,041.88	xxxx 1)	1,041.88	xxxx 1)	1,041.88	xxxx 2)	1,041.88	xxxx 1)	1,041.88	xxxx 1)
50,00	6	30	8	6	422.86	50000	422.86	50000	1,041.88	50000 2)	1,041.88	50000 1)	1,041.88	50000 1)
50,01 - 51,99	6	30	8	6	1,041.88	xxxx 1)	1,041.88	xxxx 1)	1,041.88	xxxx 2)	1,041.88	xxxx 1)	1,041.88	xxxx 1)
52,00 - 53,99	8	35	10	7	1,155.57	xxxx 1)	1,155.57	xxxx 1)	1,155.57	xxxx 2)	1,155.57	xxxx 1)	1,155.57	xxxx 1)
54,00	8	35	10	7	475.84	54000	475.84	54000	1,155.57	54000 2)	1,155.57	54000 1)	1,155.57	54000 1)
54,01 - 65,00	8	35	10	7	1,155.57	xxxx 1)	1,155.57	xxxx 1)	1,155.57	xxxx 2)	1,155.57	xxxx 1)	1,155.57	xxxx 1)

Steel	●	●		●	○
Stainless steel		●			
Cast iron	●			●	
Non ferrous metals	○		●		●
Heat resistant alloys					
Hardened materials					

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 20 working days / Minimum order 2 pieces
2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days / Minimum order 2 pieces

→ v_c Page 51–53

For xxxx when ordering please specifiy the required Ø in H7 (eg Ø 24.12 H7 → Article no. 40 539 2412)!
All other diameters and tolerance classes are also possible (eg 18.5 $^{+0.025}$ or 18 N7)!

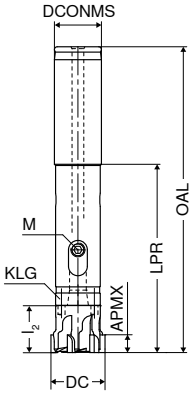
Assembly instructions can be found on → **Page 71**

REAMAX TS – Holder

▲ KLG = Coupling Size

Supply details:

Complete holder incl. pull stud but without exchangeable head



DC mm	KOMET no.	KLG	OAL mm	l_2 mm	LPR mm	APMX mm	DCONMS $_{h6}$ mm	M Nm	NEW U3 Article no. 40 501 ... £		NEW U3 Article no. 40 503 ... £	
18,00 - 19,99	75A.40.13010	1	130	20	80	6	20	1,5	329.95	**02099**		
18,00 - 19,99	75A.40.15010	1	190	20	140	6	20	1,5			342.21	**02099**
20,00 - 21,99	75A.40.13020	2	130	20	80	6	20	2,5	342.21	**02299**		
20,00 - 21,99	75A.40.15020	2	190	20	140	6	20	2,5			356.93	**02299**
22,00 - 26,99	75A.40.13030	3	130	20	80	6	20	4	350.75	**02799**		
22,00 - 26,99	75A.40.15030	3	210	20	160	6	20	4			376.55	**02799**
27,00 - 34,99	75A.40.13040	4	176	25	120	6	25	5	364.29	**03599**		
27,00 - 34,99	75A.40.15040	4	236	25	180	6	25	5			387.54	**03599**
35,00 - 41,99	75A.40.13050	5	176	25	120	6	25	6	415.79	**04299**		
35,00 - 41,99	75A.40.15050	5	256	25	200	6	25	6			415.79	**04299**
42,00 - 51,99	75A.40.13060	6	180	30	120	6	32	10	429.24	**05299**		
42,00 - 51,99	75A.40.15060	6	280	30	220	6	30	10			429.24	**05299**
52,00 - 65,00	75A.40.13070	7	180	30	120	8	32	13	442.78	**06599**		
52,00 - 65,00	75A.40.15070	7	280	30	220	8	30	13			442.78	**06599**

Do not heat shrink tools!

U3

Reamax TS pull stud

Y7

Clamping key – T

Y7

Key D

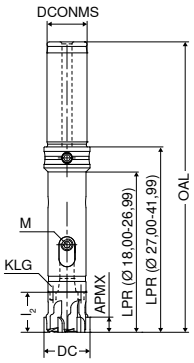
Spare parts DC	Article no. 40 900 ... £			Article no. 80 397 ... £		Article no. 80 950 ... £	
18,00 - 19,99	13.73	**00100**				T08 - IP 8.72	**039**
20,00 - 21,99	13.73	**00200**	SW2,5	4.96	**025**		
22,00 - 26,99	13.73	**00300**	SW3	4.78	**030**		
27,00 - 34,99	13.73	**00400**	SW3	4.78	**030**		
35,00 - 41,99	19.04	**00500**	SW3	4.78	**030**		
42,00 - 51,99	19.04	**00500**	SW4	4.78	**040**		
52,00 - 65,00	19.04	**00700**	SW5	6.09	**050**		

Assembly instructions can be found on → **Page 71**

REAMAX TS – Holder

- KLG = Coupling size
- adjustment inside the machine
- alignable DAH Zero holder for correction of concentricity error
- DAH Zero holder is pre-loaded and set to a runout of < 0.005 mm

Supply details:
Complete holder incl. pull stud but without exchangeable head



DAH Zero

~A
≤ 3xD

DAH Zero

~A
≤ 5xD

DC mm	KOMET no.	KLG	OAL mm	l_2 mm	LPR mm	APMX mm	DCONMS $_{h6}$ mm	M Nm	NEW U3 Article no. 40 504 ... £		NEW U3 Article no. 40 506 ... £	
18,00 - 19,99	75A.41.13010	1	145	20	80	6	20	1,5	442.78	**02099**		
18,00 - 19,99	75A.41.15010	1	205	20	140	6	20	1,5			470.94	**02099**
20,00 - 21,99	75A.41.13020	2	145	20	80	6	20	2,5	447.69	**02299**		
20,00 - 21,99	75A.41.15020	2	205	20	140	6	20	2,5			485.66	**02299**
22,00 - 26,99	75A.41.13030	3	145	20	80	6	20	4	458.68	**02799**		
22,00 - 26,99	75A.41.15030	3	225	20	160	6	20	4			499.19	**02799**
27,00 - 34,99	75A.41.13040	4	145	25	120	6	25	5	482.03	**03599**		
27,00 - 34,99	75A.41.15040	4	236	25	180	6	25	5			499.19	**03599**
35,00 - 41,99	75A.41.13050	5	176	25	120	6	25	6	586.22	**04299**		
35,00 - 41,99	75A.41.15050	5	236	25	200	6	25	6			597.30	**04299**

Do not heat shrink tools!

U3

Reamax TS pull stud

Y7

Clamping key – T

Y7

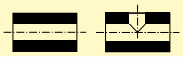
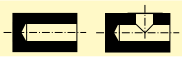
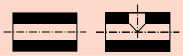
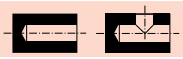
Key D

Spare parts DC	Article no. 40 900 ... £			Article no. 80 397 ... £			Article no. 80 950 ... £	
18,00 - 19,99	13.73	**00100**				T08 - IP	8.72	**039**
20,00 - 21,99	13.73	**00200**	SW2,5	4.96	**025**			
22,00 - 26,99	13.73	**00300**	SW3	4.78	**030**			
27,00 - 34,99	13.73	**00400**	SW3	4.78	**030**			
35,00 - 41,99	19.04	**00500**	SW3	4.78	**030**			

Assembly instructions can be found on → **Page 71**

REAMAX – Selection guide

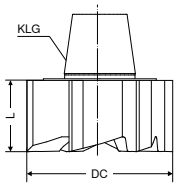
Ø 12,5–40 mm

Material	KOMET no.	640.93	640.65	640.27	640.93	640.65	640.71
	Lead	ASG4000	ASG0106	ASG0706	ASG3000	ASG3000	ASG3000
	Lead angle	25°	45°	45°/8°	45°	45°	45°
	New grade / coating	DST	DBG-P	DBC	DST	DBG-P	TiN
	Old grade / coating	CWC10	TiALN	DLC	CWC10	TiALN	CWN10
	Article no.	40 536 ...	40 551 ...	40 570 ...	40 525 ...	40 560 ...	40 505 ...
	Application	Through hole	Through hole-Blind hole				
	Preferred type available	✓	✓	✓	✓	✓	✓
Steel up to 1000 N/mm²		●			●	○	○
					●	○	○
						●	○
						●	○
Steel > 1000 N/mm²			●		●		
			●				
			●				
			●				
Stainless steel			●				
			●				
Grey cast iron / alloyed nodular cast iron (0.7661) and vermicular cast iron (5.2200)						●	
						●	
Nodular cast iron		○			●	○	
					●	○	
						●	
						●	
Copper, brass, bronze					○		●
					○		●
							●
							●
Aluminium				●			
				●			
				●			
				●			
Tempered steel			●				
			●				
			●				
			●				

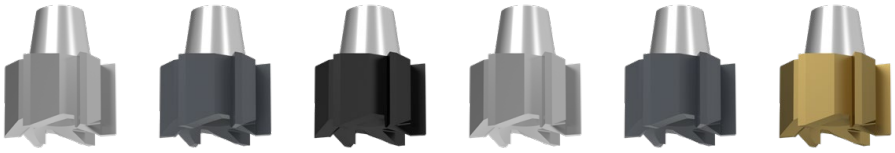
Applications:	Main application	●
	Additional range of application	○

REAMAX – Replaceable reaming heads

- ▲ up to tolerance zone IT 7 with absolute process safety, from the first hole
- ▲ precise repeatability < 2 µm
- ▲ maximum radial run-out accuracy thanks to precision ground taper location
- ▲ no Ø adjustment necessary
- ▲ optimised for application with minimum quantity lubrication (MMS)
- ▲ retraction from the hole at 3–4 times the cutting feed rate
- ▲ KLG = coupling size



DST	DBG-P	DBC	DST	DBG-P	TiN
CWC10	TiAlN	DLC	CWC10	TiAlN	CWN10



640.93 ◁ 25° ASG4000 CERMET Through hole

640.65 ◁ 45° ASG0106 HM Through hole + Blind hole

640.27 ◁ 45° ASG0706 HM Through hole + Blind hole

640.93 ◁ 45° ASG3000 CERMET Through hole + Blind hole

640.65 ◁ 45° ASG3000 HM Through hole + Blind hole

640.71 ◁ 45° ASG3000 HM Through hole + Blind hole

DC H7	L	ZEFP	KLG	U3 Article no. 40 536 ...		NEW U3 Article no. 40 551 ...		NEW U3 Article no. 40 570 ...		U3 Article no. 40 525 ...		NEW U3 Article no. 40 560 ...		U3 Article no. 40 505 ...	
mm	mm			£		£		£		£		£		£	
12,50 - 14,99	9	6	1	459.55	xxxx [2]	459.55	xxxx [1]	459.55	xxxx [1]	459.55	xxxx [2]	459.55	xxxx [1]	459.55	xxxx [1]
15,00	9	6	1	459.55	15000 [2]	208.98	15000 [1]	208.98	15000 [1]	459.55	15000 [2]	208.98	15000	382.37	150
15,01 - 15,99	9	6	1	459.55	xxxx [2]	459.55	xxxx [1]	459.55	xxxx [1]	459.55	xxxx [2]	459.55	xxxx [1]	459.55	xxxx [1]
16,00	9	6	2	439.81	160	240.37	16000 [1]	240.37	16000 [1]	439.81	160	240.37	16000	439.81	160
16,01 - 17,99	9	6	2	524.33	xxxx [2]	524.33	xxxx [1]	524.33	xxxx [1]	524.33	xxxx [2]	524.33	xxxx [1]	524.33	xxxx [1]
18,00	9	6	2	445.20	180	243.32	18000 [1]	243.32	18000 [1]	445.20	180	243.32	18000	445.20	180
18,01 - 19,99	9	6	2	524.33	xxxx [2]	524.33	xxxx [1]	524.33	xxxx [1]	524.33	xxxx [2]	524.33	xxxx [1]	524.33	xxxx [1]
20,00	9	6	2	454.17	200	248.23	20000 [1]	248.23	20000 [1]	454.17	200	248.23	20000	454.17	200
20,01 - 21,99	9	6	2	524.33	xxxx [2]	524.33	xxxx [1]	524.33	xxxx [1]	524.33	xxxx [2]	524.33	xxxx [1]	524.33	xxxx [1]
22,00	9	8	3	464.95	220	254.11	22000 [1]	254.11	22000 [1]	464.95	220	254.11	22000	464.95	220
22,01 - 23,99	9	8	3	566.63	xxxx [2]	566.63	xxxx [1]	566.63	xxxx [1]	566.63	xxxx [2]	566.63	xxxx [1]	566.63	xxxx [1]
24,00	9	8	3	566.63	24000 [2]	262.94	24000 [1]	262.94	24000 [1]	566.63	24000 [2]	262.94	24000	481.10	240
24,01 - 24,99	9	8	3	566.63	xxxx [2]	566.63	xxxx [1]	566.63	xxxx [1]	566.63	xxxx [2]	566.63	xxxx [1]	566.63	xxxx [1]
25,00	9	8	3	500.85	250	273.74	25000 [1]	273.74	25000 [1]	500.85	250	273.74	25000	500.85	250
25,01 - 25,99	9	8	3	566.63	xxxx [2]	566.63	xxxx [1]	566.63	xxxx [1]	566.63	xxxx [2]	566.63	xxxx [1]	566.63	xxxx [1]
26,00 - 27,99	9	8	4	518.80	xxxx [2]	649.26	xxxx [1]	649.26	xxxx [1]	518.80	xxxx [2]	649.26	xxxx [1]	518.80	xxxx [1]
28,00	9	8	4	518.80	280	283.54	28000 [1]	283.54	28000 [1]	518.80	280	283.54	28000	518.80	280
28,01 - 29,99	9	8	4	649.26	xxxx [2]	649.26	xxxx [1]	649.26	xxxx [1]	649.26	xxxx [2]	649.26	xxxx [1]	649.26	xxxx [1]
30,00	9	8	4	543.93	300	297.28	30000 [1]	297.28	30000 [1]	543.93	300	297.28	30000	543.93	300
30,01 - 32,00	9	8	4	649.26	xxxx [2]	649.26	xxxx [1]	649.26	xxxx [1]	649.26	xxxx [2]	649.26	xxxx [1]	649.26	xxxx [1]
32,01 - 39,99	9	8	5	736.17	xxxx [2]	736.17	xxxx [1]	736.17	xxxx [1]	736.17	xxxx [2]	737.06	xxxx [1]	736.17	xxxx [1]
40,00	9	8	5	576.25	400	314.94	40000 [1]	314.94	40000 [1]	576.25	400	314.94	40000	576.25	400

Steel	●	●		●	●	○
Stainless steel		●				
Cast iron	○			●	●	
Non ferrous metals			●	○		●
Heat resistant alloys						
Hardened materials		●				

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days / Minimum order 2 pieces

2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 20 working days / Minimum order 2 pieces

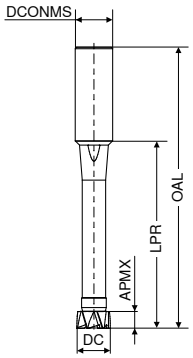
→ v_c Page 55-57

For xxxx when ordering please specifiy the required Ø in H7 (eg Ø 15.12 H7 → Article no. 40 525 1512)!
All other diameters and tolerance classes are also possible (eg 18.5 $^{+0.025}$ or 18 N7)!

REAMAX – Holder

▲ KLG = Coupling size

Supply details:
Tool holder fitted with clamp and hexagonal key, but without replaceable head

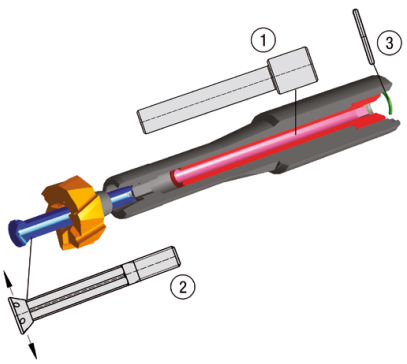


DC mm	KOMET no.	KLG	OAL mm	LPR mm	APMX mm	DCONMS h6 mm	M Nm	U3 Article no. 40 590 ... £		U3 Article no. 40 591 ... £	
12,50 - 15,99	640.01.001	1	107	59	9	16	4 - 5	596.90	**016**		
12,50 - 15,99	640.81.001	1	137	89	9	16	4 - 5			596.90	**016**
16,00 - 21,99	640.01.002	2	119	69	9	20	6 - 7	623.82	**022**		
16,00 - 21,99	640.81.002	2	169	119	9	20	6 - 7			623.82	**022**
22,00 - 25,99	640.01.003	3	140	84	9	25	10 - 12	664.21	**026**		
22,00 - 25,99	640.81.003	3	196	140	9	25	10 - 12			664.21	**026**
26,00 - 32,00	640.01.005	4	160	104	9	25	18 - 20	686.65	**032**		
26,00 - 32,00	640.81.005	4	226	170	9	25	18 - 20			686.65	**032**
32,01 - 40,00	640.01.006	5	199	139	9	32	26 - 28	785.39	**040**		
32,01 - 40,00	640.81.006	5	270	210	9	32	26 - 28			785.39	**040**

Do not heat shrink tools!

Spare parts DC	DCONMS h6	U3 Draw bolt 5xD Article no. 40 950 ... £		U3 Draw bolt 3xD Article no. 40 950 ... £		U3 Draw bar Article no. 40 950 ... £		U3 Circlip Article no. 40 950 ... £	
12,50 - 15,99	16			81.32	**101**	206.44	**001**	0.98	**301**
12,50 - 15,99	16	80.78	**107**			206.44	**001**	0.98	**301**
16,00 - 21,99	20	80.78	**108**			206.44	**002**	0.98	**302**
16,00 - 21,99	20			81.32	**102**	206.44	**002**	0.98	**302**
22,00 - 25,99	25			95.14	**103**	215.42	**003**	0.98	**303**
22,00 - 25,99	25	95.14	**109**			215.42	**003**	0.98	**303**
26,00 - 32,00	25			109.50	**104**	226.73	**004**	0.98	**303**
26,00 - 32,00	25	109.50	**110**			226.73	**004**	0.98	**303**
32,01 - 40,00	32	123.87	**112**			244.68	**005**	0.98	**304**
32,01 - 40,00	32			123.87	**106**	244.68	**005**	0.98	**304**

1. Draw bolt
2. Draw bar
3. Circlip



MultiChange Programme Overview

The highly stable „MultiChange“ exchangeable head system enables an extremely fast tool change. Designed to be durable and for a very high radial run-out accuracy, this exchangeable head system is probably the most stable and precise exchangeable head system on the market. The following chapters contain suitable exchangeable heads for almost every application.

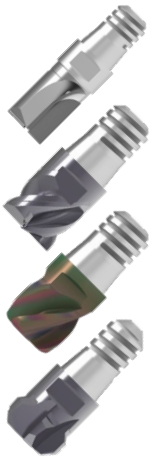
Solid carbide drilling

- Solid carbide NC Spot Drill
  ◁ 90°, 120°, 142° / Ø 8, 10, 12, 16, 20 mm / ZEFP* 2

→ **Chapter 2, Solid carbide drilling**

*ZEFP = Number of teeth

Solid carbide milling cutters



- PCD shoulder mills
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 2
- Solid carbide shoulder mills
  Type N, PCR-UNI, PCR-ALU / Ø 8, 10, 12, 16, 20 mm / ZEFP 3+4
- Solid carbide rough and finish milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 4–6
- Solid carbide finish milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 6
- Solid carbide high-feed cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 6
- Solid carbide ball-nosed end mills
  Ø 10, 12, 16, 20 mm / ZEFP* 4
- Solid carbide torus bull nose milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 3+4
- Solid carbide quarter round cutter
  Ø 8, 10, 12, 16, 20 mm
- Solid carbide deburring cutters
  Ø 10, 12, 16, 20 mm / ZEFP* 4+6

→ **Chapter 14, Solid carbide milling cutters**

*ZEFP = Number of teeth

Tool holder

- Steel holder extra short
  Cylindrical / Tapered 87°
  Length 60–90 mm
  for KLG 8, 10, 12, 16, 20 mm

- Short holder steel/Solid carbide
  Cylindrical
  Length 85–120 mm
  for KLG 8, 10, 12, 16, 20 mm

- Holder steel /Solid carbide, short
  87° Taper
  Length 85–120 mm
  for KLG 8, 10, 12, 16, 20 mm

- Solid carbide holder, medium
  Cylindrical / Tapered 87°
  Length 110–150 mm
  for KLG 8, 10, 12, 16, 20 mm

- Holder steel/Solid carbide, long
  Cylindrical
  Length 150–200 mm
  for KLG 8, 10, 12, 16, 20 mm

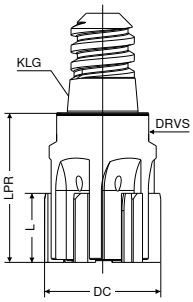
- Holder steel/Solid carbide, long
  87° Taper
  Length 150–200 mm
  for KLG 8, 10, 12, 16, 20 mm

- Steel/Solid carbide holder, extra long
  Cylindrical
  Length 200–250 mm
  for Ø 16 and 20 mm

→ **Chapter 17, Accessories**

MultiChange – Reaming head, for thro' holes

- ▲ to tolerance zone IT 7 with absolute process security – from the first hole
- ▲ high-speed reaming heads
- ▲ irregular pitch for highest concentricity
- ▲ repeatability ≤ 5 µm
- ▲ KLG = coupling size



	CWC10	TiAlN	TiAlN	K10	PDC
	Left Hand Helix ◁ 30° CERMET Through hole	Left Hand Helix ◁ 30° HM Through hole	straight flute ◁ 45° HM Through hole	straight flute ◁ 45° Solid carbide Through hole	straight flute ◁ 45° PDC Through hole
	U3	U3	U3	U3	U3
DC H7 mm	KLG	L mm	LPR mm	ZEFP	DRVS mm	TQX Nm	Article no. 40 210 ... £		Article no. 40 220 ... £		Article no. 40 230 ... £		Article no. 40 240 ... £		Article no. 40 245 ... £	
8,00	06	8	18	4	6	5.0	266.86	080	266.86	080	266.86	080	240.52	080 1)	665.37	080 1)
8,01 - 9,70	06	8	18	4	6	5.0	289.69	xxxx 1)	289.69	xxxx 1)	289.69	xxxx 1)	261.59	xxxx 1)	747.91	xxxx 1)
9,71 - 9,99	06	8	18	6	8	5.0	328.30	xxxx 1)	328.30	xxxx 1)	328.30	xxxx 1)	294.94	xxxx 1)	814.61	xxxx 1)
10,00	06	8	18	6	8	5.0	301.96	100	301.96	100	301.96	100	272.13	100 1)	733.86	100 1)
10,01 - 10,70	06	8	18	6	8	5.0	328.30	xxxx 1)	328.30	xxxx 1)	328.30	xxxx 1)	294.94	xxxx 1)	814.61	xxxx 1)
10,71 - 11,99	08	8	20	6	8	12.5	328.30	xxxx 1)	328.30	xxxx 1)	328.30	xxxx 1)	294.94	xxxx 1)	840.94	xxxx 1)
12,00	08	8	20	6	8	12.5	301.96	120	301.96	120	301.96	120	272.13	120 1)	747.91	120 1)
12,01 - 12,70	08	8	20	6	8	12.5	328.30	xxxx 1)	328.30	xxxx 1)	328.30	xxxx 1)	294.94	xxxx 1)	840.94	xxxx 1)
12,71 - 13,99	10	8	22	6	10	15.0	349.37	xxxx 1)	349.37	xxxx 1)	349.37	xxxx 1)	314.27	xxxx 1)	840.94	xxxx 1)
14,00	10	8	22	6	10	15.0	321.27	140	321.27	140	321.27	140	289.69	140 1)	747.91	140 1)
14,01 - 15,99	10	8	22	6	10	15.0	349.37	xxxx 1)	349.37	xxxx 1)	349.37	xxxx 1)	314.27	xxxx 1)	840.94	xxxx 1)
16,00	10	8	22	6	10	15.0	321.27	160	321.27	160	321.27	160	289.69	160 1)	786.52	160 1)
16,01 - 16,20	10	8	22	6	10	15.0	349.37	xxxx 1)	349.37	xxxx 1)	349.37	xxxx 1)	314.27	xxxx 1)	883.09	xxxx 1)
16,21 - 17,20	10	8	22	6	13	15.0	349.37	xxxx 1)	349.37	xxxx 1)	349.37	xxxx 1)	314.27	xxxx 1)	883.09	xxxx 1)
17,21 - 17,99	12	12	26	6	13	20.0	365.17	xxxx 1)	365.17	xxxx 1)	365.17	xxxx 1)	328.30	xxxx 1)	893.61	xxxx 1)
18,00	12	12	26	6	13	20.0	335.34	180	335.34	180	335.34	180	301.96	180 1)	795.30	180 1)
18,01 - 19,20	12	12	26	6	13	20.0	365.17	xxxx 1)	365.17	xxxx 1)	365.17	xxxx 1)	328.30	xxxx 1)	893.61	xxxx 1)
19,21 - 19,99	12	12	26	6	16	20.0	365.17	xxxx 1)	365.17	xxxx 1)	365.17	xxxx 1)	328.30	xxxx 1)	893.61	xxxx 1)
20,00	12	12	26	6	16	20.0	335.34	200	335.34	200	335.34	200	301.96	200 1)	795.30	200 1)
20,01 - 20,20	12	12	26	6	16	20.0	365.17	xxxx 1)	365.17	xxxx 1)	365.17	xxxx 1)	328.30	xxxx 1)	893.61	xxxx 1)
20,21 - 21,20	12	12	26	6	16	20.0	380.97	xxxx 1)	380.97	xxxx 1)	380.97	xxxx 1)	342.35	xxxx 1)	893.61	xxxx 1)
21,21 - 21,99	16	12	26	6	16	25.0	380.97	xxxx 1)	380.97	xxxx 1)	380.97	xxxx 1)	342.35	xxxx 1)	909.40	xxxx 1)
22,00	16	12	26	6	16	25.0	351.13	220	351.13	220	351.13	220	314.27	220 1)	809.33	220 1)
22,01 - 23,99	16	12	26	6	16	25.0	380.97	xxxx 1)	380.97	xxxx 1)	380.97	xxxx 1)	342.35	xxxx 1)	909.40	xxxx 1)
24,00	16	12	26	6	16	25.0	351.13	240	351.13	240	351.13	240	314.27	240 1)	809.33	240 1)
24,01 - 24,20	16	12	26	6	16	25.0	380.97	xxxx 1)	380.97	xxxx 1)	380.97	xxxx 1)	342.35	xxxx 1)	909.40	xxxx 1)
24,21 - 24,99	16	12	26	6	19	25.0	407.31	xxxx 1)	407.31	xxxx 1)	407.31	xxxx 1)	366.94	xxxx 1)	937.50	xxxx 1)
25,00	16	12	26	6	19	25.0	373.94	250	373.94	250	373.94	250	337.07	250 1)	833.92	250 1)
25,01 - 25,99	16	12	26	6	19	25.0	407.31	xxxx 1)	407.31	xxxx 1)	407.31	xxxx 1)	366.94	xxxx 1)	937.50	xxxx 1)
26,00	16	12	26	6	19	25.0	373.94	260	373.94	260	373.94	260	337.07	260 1)	833.92	260 1)
26,01 - 26,20	16	12	26	6	19	25.0	407.31	xxxx 1)	407.31	xxxx 1)	407.31	xxxx 1)	366.94	xxxx 1)	937.50	xxxx 1)
26,21 - 27,99	16	12	26	6	21	25.0	407.31	xxxx 1)	407.31	xxxx 1)	407.31	xxxx 1)	366.94	xxxx 1)	937.50	xxxx 1)
28,00	16	12	26	6	21	25.0	373.94	280	373.94	280	373.94	280	337.07	280 1)	833.92	280 1)
28,01 - 28,20	16	12	26	6	21	25.0	407.31	xxxx 1)	407.31	xxxx 1)	407.31	xxxx 1)	366.94	xxxx 1)	937.50	xxxx 1)
28,21 - 29,20	16	12	26	6	24	25.0	451.19	xxxx 1)	451.19	xxxx 1)	451.19	xxxx 1)	405.55	xxxx 1)	937.50	xxxx 1)
29,21 - 29,99	16	12	26	8	24	25.0	451.19	xxxx 1)	451.19	xxxx 1)	451.19	xxxx 1)	405.55	xxxx 1)	991.92	xxxx 1)
30,00	16	12	26	8	24	25.0	414.34	300	414.34	300	414.34	300	373.94	300 1)	883.09	300 1)
30,01 - 30,20	16	12	26	8	24	25.0	451.19	xxxx 1)	451.19	xxxx 1)	451.19	xxxx 1)	405.55	xxxx 1)	991.92	xxxx 1)

Steel	●				
Stainless steel		●			
Cast iron			●		
Non ferrous metals		○		●	●
Heat resistant alloys		●			
Hardened materials					

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 23 working days / Minimum order 2 pieces

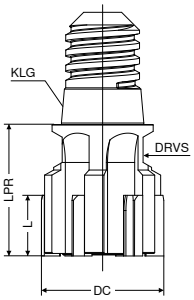
→ v_c Page 58+59

For xxxx please indicate in the order the required diameter to H7 (e.g Ø 10.89 H7 → article no. 40 230 1089)!
All other diameters and tolerances are also possible (e.g. 8.5 $^{+0.025}$ or 11 N7).

Holders and accessories can be found in → **Chapter 17, Accessories**.

MultiChange – Reaming head, for blind holes

- ▲ to tolerance zone IT 7 with absolute process security – from the first hole
- ▲ high-speed reaming heads
- ▲ irregular pitch for highest concentricity
- ▲ repeatability ≤ 5 µm
- ▲ KLG = coupling size



	CWC10	TiAlN	TiAlN	K10	PDC
	straight flute ◁ 60° CERMET Blind hole	straight flute ◁ 60° HM Blind hole	straight flute ◁ 60° HM Blind hole	straight flute ◁ 60° Solid carbide Blind hole	straight flute ◁ 75° PDC Blind hole
	U3	U3	U3	U3	U3
DC H7 mm	KLG	L mm	LPR mm	ZEFP	DRVS mm	TQX Nm	Article no. 40 211 ... £		Article no. 40 221 ... £		Article no. 40 231 ... £		Article no. 40 241 ... £		Article no. 40 246 ... £	
12,20 - 12,70	06	8	20	6	6	5.0	328.30	xxxx 1)	328.30	xxxx 1)	328.30	xxxx 1)	294.94	xxxx 1)	840.94	xxxx 1)
12,71 - 13,99	06	8	22	6	6	5.0	349.37	xxxx 1)	349.37	xxxx 1)	349.37	xxxx 1)	314.27	xxxx 1)	840.94	xxxx 1)
14,00	06	8	22	6	6	5.0	321.27	140	321.27	140	321.27	140	289.69	140 1)	747.91	140 1)
14,01 - 14,20	06	8	22	6	6	5.0	349.37	xxxx 1)	349.37	xxxx 1)	349.37	xxxx 1)	314.27	xxxx 1)	840.94	xxxx 1)
14,21 - 15,99	08	8	22	6	8	12.5	349.37	xxxx 1)	349.37	xxxx 1)	349.37	xxxx 1)	314.27	xxxx 1)	883.09	xxxx 1)
16,00	08	8	22	6	8	12.5	321.27	160	321.27	160	321.27	160	289.69	160 1)	786.52	160 1)
16,01 - 16,20	08	8	22	6	8	12.5	349.37	xxxx 1)	349.37	xxxx 1)	349.37	xxxx 1)	314.27	xxxx 1)	883.09	xxxx 1)
16,21 - 17,20	10	8	22	6	10	15.0	349.37	xxxx 1)	349.37	xxxx 1)	349.37	xxxx 1)	314.27	xxxx 1)	883.09	xxxx 1)
17,21 - 17,99	10	12	26	6	10	15.0	365.17	xxxx 1)	365.17	xxxx 1)	365.17	xxxx 1)	328.30	xxxx 1)	893.61	xxxx 1)
18,00	10	12	26	6	10	15.0	335.34	180	335.34	180	335.34	180	301.96	180 1)	795.30	180 1)
18,01 - 19,99	10	12	26	6	10	15.0	365.17	xxxx 1)	365.17	xxxx 1)	365.17	xxxx 1)	328.30	xxxx 1)	893.61	xxxx 1)
20,00	10	12	26	6	10	15.0	335.34	200	335.34	200	335.34	200	301.96	200 1)	795.30	200 1)
20,01 - 20,20	10	12	26	6	10	15.0	365.17	xxxx 1)	365.17	xxxx 1)	365.17	xxxx 1)	328.30	xxxx 1)	893.61	xxxx 1)
20,21 - 21,99	12	12	26	6	13	20.0	380.97	xxxx 1)	380.97	xxxx 1)	380.97	xxxx 1)	342.35	xxxx 1)	893.61	xxxx 1)
22,00	12	12	26	6	13	20.0	351.13	220	351.13	220	351.13	220	314.27	220 1)	809.33	220 1)
22,01 - 23,99	12	12	26	6	13	20.0	380.97	xxxx 1)	380.97	xxxx 1)	380.97	xxxx 1)	342.35	xxxx 1)	909.40	xxxx 1)
24,00	12	12	26	6	13	20.0	351.13	240	351.13	240	351.13	240	314.27	240 1)	809.33	240 1)
24,01 - 24,20	12	12	26	6	13	20.0	380.97	xxxx 1)	380.97	xxxx 1)	380.97	xxxx 1)	342.35	xxxx 1)	909.40	xxxx 1)
24,21 - 24,99	16	12	26	6	16	25.0	407.31	xxxx 1)	407.31	xxxx 1)	407.31	xxxx 1)	366.94	xxxx 1)	909.40	xxxx 1)
25,00	16	12	26	6	16	25.0	373.94	250	373.94	250	373.94	250	337.07	250 1)	833.92	250 1)
25,01 - 25,99	16	12	26	6	16	25.0	407.31	xxxx 1)	407.31	xxxx 1)	407.31	xxxx 1)	366.94	xxxx 1)	909.40	xxxx 1)
26,00	16	12	26	6	16	25.0	373.94	260	373.94	260	373.94	260	337.07	260 1)	833.92	260 1)
26,01 - 27,99	16	12	26	6	16	25.0	407.31	xxxx 1)	407.31	xxxx 1)	407.31	xxxx 1)	366.94	xxxx 1)	937.50	xxxx 1)
28,00	16	12	26	6	16	25.0	373.94	280	373.94	280	373.94	280	337.07	280 1)	833.92	280 1)
28,01 - 28,20	16	12	26	6	16	25.0	407.31	xxxx 1)	407.31	xxxx 1)	407.31	xxxx 1)	366.94	xxxx 1)	937.50	xxxx 1)
28,21 - 29,20	16	12	26	6	16	25.0	451.19	xxxx 1)	451.19	xxxx 1)	451.19	xxxx 1)	405.55	xxxx 1)	937.50	xxxx 1)
29,21 - 29,99	16	12	26	8	16	25.0	451.19	xxxx 1)	451.19	xxxx 1)	451.19	xxxx 1)	405.55	xxxx 1)	991.92	xxxx 1)
30,00	16	12	26	8	16	25.0	414.34	300	414.34	300	414.34	300	373.94	300 1)	883.09	300 1)
30,01 - 30,20	16	12	26	8	16	25.0	451.19	xxxx 1)	451.19	xxxx 1)	451.19	xxxx 1)	405.55	xxxx 1)	991.92	xxxx 1)

	CWC10	TiAlN	TiAlN	K10	PDC
Steel	●				
Stainless steel		●			
Cast iron			●		
Non ferrous metals		○		●	●
Heat resistant alloys		●			
Hardened materials					

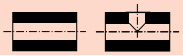
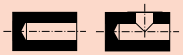
1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 23 working days / Minimum order 2 pieces

→ v_c Page 58+59

For xxxx please indicate in the order the required diameter to H7 (e.g Ø 12.89 H7 – article no. 40 231 1289)!
All other diameters and tolerances are also possible (e.g. 18.5 $^{+0.025}$ or 15 N7).

Holders and accessories can be found in → **Chapter 17, Accessories**.

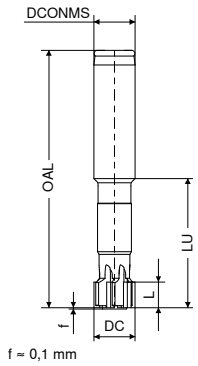
Monomax – Selection guide

Ø 5,60–25,89	**KOMET no. (3xD)**	56J.93	56J.65	56H.65	56J.17	56H.17	56J.93	56H.65	56J.71
	KOMET no. (5xD)	56R.93	56R.65	56Q.65	56R.17	56Q.17	56R.93	56Q.65	56R.71
	Lead	ASG4000	ASG0106	ASG0106	ASG0706	ASG0706	ASG3000	ASG3000	ASG3000
	Lead angle	25°	45°	45°	45°/8°	45°/8°	45°	45°	45°
	New grade / coating	DST	DBG-P	DBG-P	DBC	DBC	DST	DBG-P	TIN
	Old grade / coating	CWC10	TiALN	TiALN	DLC	DLC	CWC10	TiALN	CWN10
	Article no. (3xD)	40 635 ...	40 652 ...	40 644 ...	40 648 ...	40 640 ...	40 625 ...	40 657 ...	40 605 ...
	Article no. (5xD)	40 636 ...	40 653 ...	40 645 ...	40 649 ...	40 641 ...	40 626 ...	40 665 ...	40 606 ...
	Application	Through hole	Through hole	Blind hole	Through hole	Blind hole	Through hole	Blind hole	Through hole
Material	**Preferred type available**	✓	✓				✓		✓
Steel up to 900 N/mm²		●					●		○
								●	
									○
								●	
Steel > 900 N/mm²			●						
			○	●					
			●						
			○	●					
Stainless steel			●						
			○	●					
			●						
			○	●					
Grey cast iron / alloyed nodular cast iron (0.7661) and vermicular cast iron (5.2200)								○	○
								●	
Nodular cast iron		●					●	○	○
							○	●	
								○	○
								●	
Copper, brass, bronze							○		●
									●
Aluminium					●				
					○	●			
					●				
					○	●			

Applications:	Main application	●
	Additional range of application	○

Monomax – High-speed reamers, short

- adjustable for smallest bore tolerances
- wear compensation within the tolerance zone
- retraction from the hole at 3–4 times the cutting feed rate
- up to tolerance class IT 5 with absolute process security, from the first hole



f ≈ 0,1 mm

DST	DBC	DBG-P	DST	TiN
CWC10	DLC	TiAlN	CWC10	CWN10

56J.93	56J.17	56J.65	56J.93	56J.71
≤ 3xD	≤ 3xD	≤ 3xD	≤ 3xD	≤ 3xD
◁ 45°	◁ 45/8°	◁ 45°	◁ 25°	◁ 45°
ASG3000	ASG0706	ASG0106	ASG4000	ASG3000
CERMET	HM	HM	CERMET	HM
Through hole	Through hole	Through hole	Through hole	Through hole

DC H7	OAL	LU	L	DCONMS h6	ZEFP	U3 Article no. 40 625 ... £		NEW U3 Article no. 40 648 ... £		NEW U3 Article no. 40 652 ... £		U3 Article no. 40 635 ... £		U3 Article no. 40 605 ... £	
mm	mm	mm	mm	mm											
5,60 - 5,99	85	40	10	12	4	633.55	xxxx 2)	633.55	xxxx 1)	633.55	xxxx 1)	633.55	xxxx 2)	633.55	xxxx 1)
6,00	85	40	10	12	4	524.19	060	633.55	06000 1)	286.49	06000	524.19	060	524.19	060
6,01 - 7,99	85	40	10	12	4	633.55	xxxx 2)	633.55	xxxx 1)	633.55	xxxx 1)	633.55	xxxx 2)	633.55	xxxx 1)
8,00	85	40	10	12	4	543.93	080	633.55	08000 1)	297.28	08000	543.93	080	543.93	080
8,01 - 8,89	85	40	10	12	4	633.55	xxxx 2)	633.55	xxxx 1)	633.55	xxxx 1)	633.55	xxxx 2)	633.55	xxxx 1)
8,90 - 9,89	95	50	10	12	6	729.57	xxxx 2)	729.57	xxxx 1)	729.57	xxxx 1)	729.57	xxxx 2)	729.57	xxxx 1)
9,90 - 9,99	95	50	10	12	6	729.57	xxxx 2)	729.57	xxxx 1)	729.57	xxxx 1)	729.57	xxxx 2)	729.57	xxxx 1)
10,00	95	50	10	12	6	588.81	100	729.57	10000 1)	321.81	10000	588.81	100	588.81	100
10,01 - 11,99	95	50	10	12	6	729.57	xxxx 2)	729.57	xxxx 1)	729.57	xxxx 1)	729.57	xxxx 2)	729.57	xxxx 1)
12,00	95	50	10	12	6	606.76	120	729.57	12000 1)	331.62	12000	606.76	120	606.76	120
12,01 - 13,99	95	50	10	12	6	729.57	xxxx 2)	729.57	xxxx 1)	729.57	xxxx 1)	729.57	xxxx 2)	729.57	xxxx 1)
14,00	95	50	10	12	6	649.85	140	729.57	14000 1)	355.17	14000	649.85	140	649.85	140
14,01 - 14,99	95	50	10	12	6	729.57	xxxx 2)	729.57	xxxx 1)	729.57	xxxx 1)	729.57	xxxx 2)	729.57	xxxx 1)
15,00	95	50	10	12	6	666.00	150	729.57	15000 1)	364.00	15000	666.00	150	666.00	150
15,01 - 15,89	95	50	10	12	6	729.57	xxxx 2)	729.57	xxxx 1)	729.57	xxxx 1)	729.57	xxxx 2)	729.57	xxxx 1)
15,90 - 15,99	100	50	10	16	6	896.79	xxxx 2)	896.79	xxxx 1)	896.79	xxxx 1)	896.79	xxxx 2)	896.79	xxxx 1)
16,00	100	50	10	16	6	682.16	160	896.79	16000 1)	372.83	16000	682.16	160	682.16	160
16,01 - 17,99	100	50	10	16	6	896.79	xxxx 2)	896.79	xxxx 1)	896.79	xxxx 1)	896.79	xxxx 2)	896.79	xxxx 1)
18,00	100	50	10	16	6	728.83	180	896.79	18000 1)	398.34	18000	728.83	180	728.83	180
18,01 - 18,89	100	50	10	16	6	896.79	xxxx 2)	896.79	xxxx 1)	896.79	xxxx 1)	896.79	xxxx 2)	896.79	xxxx 1)
18,90 - 19,99	120	60	10	20	6	1,088.64	xxxx 2)	1,088.64	xxxx 1)	1,088.64	xxxx 1)	1,088.64	xxxx 2)	1,088.64	xxxx 1)
20,00	120	60	10	20	6	786.28	200	1,088.64	20000 1)	429.74	20000	786.28	200	786.28	200
20,01 - 25,89	120	60	10	20	6	1,088.64	xxxx 2)	1,088.64	xxxx 1)	1,088.64	xxxx 1)	1,088.64	xxxx 2)	1,088.64	xxxx 1)

Steel	●		●	●	○
Stainless steel			●		
Cast iron	●				
Non ferrous metals		●			●
Heat resistant alloys					
Hardened materials					

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days / Minimum order 2 pieces
2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 20 working days / Minimum order 2 pieces

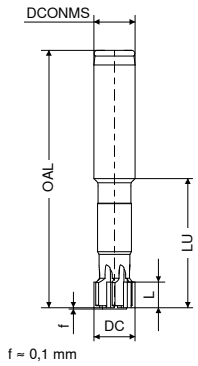
→ v_c Page 60–63

Do not heat shrink tools!

For xxxx when ordering please specifiy the required Ø in H7 (eg Ø 15.89 H7 → Article no. 40 635 1589)!
All other diameters and tolerance classes are also possible (eg 18.5 $^{+0.025}$ or 18 N7)!

Monomax – High-speed reamers, short

- ▲ adjustable for smallest bore tolerances
- ▲ wear compensation within the tolerance zone
- ▲ retraction from the hole at 3–4 times the cutting feed rate
- ▲ up to tolerance class IT 5 with absolute process security, from the first hole



f ≈ 0,1 mm

DBG-P	DBC	DBG-P
TiAlN	DLC	TiAlN
56H.65 ≤ 3xD ◁ 45° ASG0106 HM Blind hole	56H.17 ≤ 3xD ◁ 45/8° ASG0706 HM Blind hole	56H.65 ≤ 3xD ◁ 45° ASG3000 HM Blind hole

DC $_{H7}$	OAL	LU	L	DCONMS $_{h6}$	ZEFP	NEW U3 Article no. 40 644 ...		NEW U3 Article no. 40 640 ...		NEW U3 Article no. 40 657 ...	
mm	mm	mm	mm	mm		£		£		£	
5,60 - 5,99	85	40	10	12	4	633.55	xxxx 1)	633.55	xxxx 1)	633.55	xxxx 1)
6,00	85	40	10	12	4	633.55	06000 1)	633.55	06000 1)	633.55	06000 1)
6,01 - 7,99	85	40	10	12	4	633.55	xxxx 1)	633.55	xxxx 1)	633.55	xxxx 1)
8,00	85	40	10	12	4	633.55	08000 1)	633.55	08000 1)	633.55	08000 1)
8,01 - 8,89	85	40	10	12	4	633.55	xxxx 1)	633.55	xxxx 1)	633.55	xxxx 1)
8,90 - 9,89	95	50	10	12	6	729.57	xxxx 1)	729.57	xxxx 1)	729.57	xxxx 1)
9,90 - 9,99	95	50	10	12	6	729.57	xxxx 1)	729.57	xxxx 1)	729.57	xxxx 1)
10,00	95	50	10	12	6	729.57	10000 1)	729.57	10000 1)	729.57	10000 1)
10,01 - 11,99	95	50	10	12	6	729.57	xxxx 1)	729.57	xxxx 1)	729.57	xxxx 1)
12,00	95	50	10	12	6	729.57	12000 1)	729.57	12000 1)	729.57	12000 1)
12,01 - 13,99	95	50	10	12	6	729.57	xxxx 1)	729.57	xxxx 1)	729.57	xxxx 1)
14,00	95	50	10	12	6	729.57	14000 1)	729.57	14000 1)	729.57	14000 1)
14,01 - 14,99	95	50	10	12	6	729.57	xxxx 1)	729.57	xxxx 1)	729.57	xxxx 1)
15,00	95	50	10	12	6	729.57	15000 1)	729.57	15000 1)	729.57	15000 1)
15,01 - 15,89	95	50	10	12	6	729.57	xxxx 1)	729.57	xxxx 1)	729.57	xxxx 1)
15,90 - 15,99	100	50	10	16	6	896.79	xxxx 1)	896.79	xxxx 1)	896.79	xxxx 1)
16,00	100	50	10	16	6	896.79	16000 1)	896.79	16000 1)	896.79	16000 1)
16,01 - 17,99	100	50	10	16	6	896.79	xxxx 1)	896.79	xxxx 1)	896.79	xxxx 1)
18,00	100	50	10	16	6	896.79	18000 1)	896.79	18000 1)	896.79	18000 1)
18,01 - 18,89	100	50	10	16	6	896.79	xxxx 1)	896.79	xxxx 1)	896.79	xxxx 1)
18,90 - 19,99	120	60	10	20	6	1,088.64	xxxx 1)	1,088.64	xxxx 1)	1,088.64	xxxx 1)
20,00	120	60	10	20	6	1,088.64	20000 1)	1,088.64	20000 1)	1,088.64	20000 1)
20,01 - 25,89	120	60	10	20	6	1,088.64	xxxx 1)	1,088.64	xxxx 1)	1,088.64	xxxx 1)

Steel	●		●
Stainless steel	●		
Cast iron			●
Non ferrous metals		●	
Heat resistant alloys			
Hardened materials			

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days / Minimum order 2 pieces

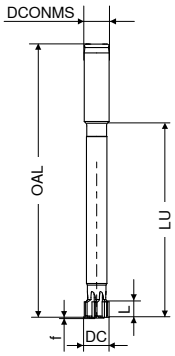
→ v_c Page 60–63

Do not heat shrink tools!

For xxxx when ordering please specifiy the required Ø in H7 (eg Ø 15.89 H7 → Article no. 40 644 1589)!
All other diameters and tolerance classes are also possible (eg 18.5 $^{+0.025}$ or 18 N7)!

Monomax – High-speed reamers, long

- adjustable for the smallest bore tolerances
- wear compensation within the tolerance zone
- retraction from the hole at 3–4 times the cutting feed rate
- up to tolerance class IT 5 with absolute process security, from the first hole



f ≈ 0,1 mm

DST	DBC	DBG-P	DST	TiN
CWC10	DLC	TiAlN	CWC10	CWN10
56R.93 ≤ 5xD ∢ 45° ASG3000 CERMET Through hole	56R.17 ≤ 5xD ∢ 45/8° ASG0706 HM Through hole	56R.65 ≤ 5xD ∢ 45° ASG0106 HM Through hole	56R.93 ≤ 5xD ∢ 25° ASG4000 CERMET Through hole	56R.71 ≤ 5xD ∢ 45° ASG3000 HM Through hole
U3	NEW U3	NEW U3	U3	U3
Article no. 40 626 ...	Article no. 40 649 ...	Article no. 40 653 ...	Article no. 40 636 ...	Article no. 40 606 ...

DC H7 mm	OAL mm	LU mm	L mm	DCONMS h6 mm	ZEFP	£		£		£		£		£	
5,60 - 5,99	130	85	10	12	4	633.55	xxxx 2)	633.55	xxxx 1)	633.55	xxxx 1)	633.55	xxxx 2)	633.55	xxxx 1)
6,00	130	85	10	12	4	524.19	060	633.55	06000 1)	286.49	06000	524.19	060	524.19	060
6,01 - 7,99	130	85	10	12	4	633.55	xxxx 2)	633.55	xxxx 1)	633.55	xxxx 1)	633.55	xxxx 2)	633.55	xxxx 1)
8,00	130	85	10	12	4	543.93	080	633.55	08000 1)	297.28	08000	543.93	080	543.93	080
8,01 - 8,89	130	85	10	12	4	633.55	xxxx 2)	633.55	xxxx 1)	633.55	xxxx 1)	633.55	xxxx 2)	633.55	xxxx 1)
8,90 - 9,89	130	85	10	12	6	729.57	xxxx 2)	729.57	xxxx 1)	729.57	xxxx 1)	729.57	xxxx 2)	729.57	xxxx 1)
9,90 - 9,99	160	115	10	12	6	809.88	xxxx 2)	809.88	xxxx 1)	809.88	xxxx 1)	809.88	xxxx 2)	809.88	xxxx 1)
10,00	160	115	10	12	6	588.81	100	809.88	10000 1)	321.81	10000	588.81	100	588.81	100
10,01 - 11,99	160	115	10	12	6	809.88	xxxx 2)	809.88	xxxx 1)	809.88	xxxx 1)	809.88	xxxx 2)	809.88	xxxx 1)
12,00	160	115	10	12	6	606.76	120	809.88	12000 1)	331.62	12000	606.76	120	606.76	120
12,01 - 13,99	160	115	10	12	6	809.88	xxxx 2)	809.88	xxxx 1)	809.88	xxxx 1)	809.88	xxxx 2)	809.88	xxxx 1)
14,00	160	115	10	12	6	649.85	140	809.88	14000 1)	355.17	14000	649.85	140	649.85	140
14,01 - 14,99	160	115	10	12	6	809.88	xxxx 2)	809.88	xxxx 1)	809.88	xxxx 1)	809.88	xxxx 2)	809.88	xxxx 1)
15,00	160	115	10	12	6	666.00	150	809.88	15000 1)	364.00	15000	666.00	150	666.00	150
15,01 - 15,89	160	115	10	12	6	809.88	xxxx 2)	809.88	xxxx 1)	809.88	xxxx 1)	809.88	xxxx 2)	809.88	xxxx 1)
15,90 - 15,99	180	130	10	16	6	896.79	xxxx 2)	896.79	xxxx 1)	896.79	xxxx 1)	896.79	xxxx 2)	896.79	xxxx 1)
16,00	180	130	10	16	6	682.16	160	896.79	16000 1)	372.83	16000	682.16	160	682.16	160
16,01 - 17,99	180	130	10	16	6	896.79	xxxx 2)	896.79	xxxx 1)	896.79	xxxx 1)	896.79	xxxx 2)	896.79	xxxx 1)
18,00	180	130	10	16	6	728.83	180	896.79	18000 1)	398.34	18000	728.83	180	728.83	180
18,01 - 18,89	180	130	10	16	6	896.79	xxxx 2)	896.79	xxxx 1)	896.79	xxxx 1)	896.79	xxxx 2)	896.79	xxxx 1)
18,90 - 19,99	200	140	10	20	6	1,088.64	xxxx 2)	1,088.64	xxxx 1)	1,088.64	xxxx 1)	1,088.64	xxxx 2)	1,088.64	xxxx 1)
20,00	200	140	10	20	6	786.28	200	1,088.64	20000 1)	429.74	20000	786.28	200	786.28	200
20,01 - 25,89	200	140	10	20	6	1,088.64	xxxx 2)	1,088.64	xxxx 1)	1,088.64	xxxx 1)	1,088.64	xxxx 2)	1,088.64	xxxx 1)

Steel	●		●	●	○
Stainless steel			●		
Cast iron	●				
Non ferrous metals		●			●
Heat resistant alloys					
Hardened materials					

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days / Minimum order 2 pieces
2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 20 working days / Minimum order 2 pieces

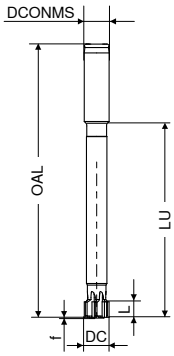
→ v_c Page 60–63

Do not heat shrink tools!

For xxxx when ordering please specifiy the required Ø in H7 (eg Ø 15.89 H7 → Article no. 40 636 1589)!
All other diameters and tolerance classes are also possible (eg 18.5 $^{+0.025}$ or 18 N7)!

Monomax – High-speed reamers, long

- ▲ adjustable for the smallest bore tolerances
- ▲ wear compensation within the tolerance zone
- ▲ retraction from the hole at 3–4 times the cutting feed rate
- ▲ up to tolerance class IT 5 with absolute process security, from the first hole



f ≈ 0,1 mm

DBG-P	DBC	DBG-P
TiAlN	DLC	TiAlN
56Q.65 ≤ 5xD ∢ 45° ASG0106 HM Blind hole	56Q.17 ≤ 5xD ∢ 45/8° ASG0706 HM Blind hole	56Q.65 ≤ 5xD ∢ 45° ASG3000 HM Blind hole

DC H7	OAL	LU	L	DCONMS h6	ZEFP	NEW U3 Article no. 40 645 ...		NEW U3 Article no. 40 641 ...		NEW U3 Article no. 40 665 ...	
mm	mm	mm	mm	mm		£		£		£	
5,60 - 5,99	130	85	10	12	4	633.55	xxxx 1)	633.55	xxxx 1)	633.55	xxxx 1)
6,00	130	85	10	12	4	633.55	06000 1)	633.55	06000 1)	633.55	06000 1)
6,01 - 7,99	130	85	10	12	4	633.55	xxxx 1)	633.55	xxxx 1)	633.55	xxxx 1)
8,00	130	85	10	12	4	633.55	08000 1)	633.55	08000 1)	633.55	08000 1)
8,01 - 8,89	130	85	10	12	4	633.55	xxxx 1)	633.55	xxxx 1)	633.55	xxxx 1)
8,90 - 9,89	130	85	10	12	6	729.57	xxxx 1)	729.57	xxxx 1)	729.57	xxxx 1)
9,90 - 9,99	160	115	10	12	6	809.88	xxxx 1)	809.88	xxxx 1)	809.88	xxxx 1)
10,00	160	115	10	12	6	809.88	10000 1)	809.88	10000 1)	809.88	10000 1)
10,01 - 11,99	160	115	10	12	6	809.88	xxxx 1)	809.88	xxxx 1)	809.88	xxxx 1)
12,00	160	115	10	12	6	809.88	12000 1)	809.88	12000 1)	809.88	12000 1)
12,01 - 13,99	160	115	10	12	6	809.88	xxxx 1)	809.88	xxxx 1)	809.88	xxxx 1)
14,00	160	115	10	12	6	809.88	14000 1)	809.88	14000 1)	809.88	14000 1)
14,01 - 14,99	160	115	10	12	6	809.88	xxxx 1)	809.88	xxxx 1)	809.88	xxxx 1)
15,00	160	115	10	12	6	809.88	15000 1)	809.88	15000 1)	809.88	15000 1)
15,01 - 15,89	160	115	10	12	6	809.88	xxxx 1)	809.88	xxxx 1)	809.88	xxxx 1)
15,90 - 15,99	180	130	10	16	6	896.79	xxxx 1)	896.79	xxxx 1)	896.79	xxxx 1)
16,00	180	130	10	16	6	896.79	16000 1)	896.79	16000 1)	896.79	16000 1)
16,01 - 17,99	180	130	10	16	6	896.79	xxxx 1)	896.79	xxxx 1)	896.79	xxxx 1)
18,00	180	130	10	16	6	896.79	18000 1)	896.79	18000 1)	896.79	18000 1)
18,01 - 18,89	180	130	10	16	6	896.79	xxxx 1)	896.79	xxxx 1)	896.79	xxxx 1)
18,90 - 19,99	200	140	10	20	6	1,088.64	xxxx 1)	1,088.64	xxxx 1)	1,088.64	xxxx 1)
20,00	200	140	10	20	6	1,088.64	20000 1)	1,088.64	20000 1)	1,088.64	20000 1)
20,01 - 25,89	200	140	10	20	6	1,088.64	xxxx 1)	1,088.64	xxxx 1)	1,088.64	xxxx 1)

Steel	●		●
Stainless steel	●		
Cast iron			●
Non ferrous metals		●	
Heat resistant alloys			
Hardened materials			

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days / Minimum order 2 pieces

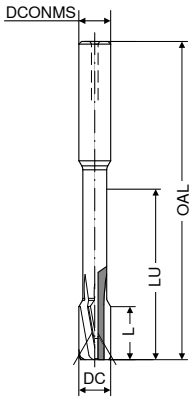
→ v_c Page 60–63

Do not heat shrink tools!

For xxxx when ordering please specifiy the required Ø in H7 (eg Ø 15.89 H7 → Article no. 40 645 1589)!
All other diameters and tolerance classes are also possible (eg 18.5 $^{+0.025}$ or 18 N7)!

Fullmax – High-performance machine reamers

- ▲ extremely irregular pitch
- ▲ designed for high-speed machining
- ▲ specialised geometries and coatings



Fullmax UNI	Fullmax VA	Fullmax ALU
DBG-U	DBQ	DBC-N
52P.57	52S.44	52N.17
HA	HA	HA
Left Hand Helix	Left Hand Helix	straight flute
◁ 30°	◁ 30°	◁ 30°
ASG2210	ASG2231	ASG2270
Solid carbide	Solid carbide	Solid carbide
Through hole	Through hole	Through hole
NEW U4	NEW U4	NEW U4
Article no. 40 484 ...	Article no. 40 401 ...	Article no. 40 471 ...
£	£	£

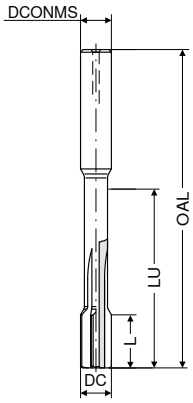
DC $_{H7}$ mm	OAL mm	L mm	LU mm	DCONMS $_{h6}$ mm	ZEFP	£		£		£	
4	60	12	32	4	4	129.50	**04000**	142.26	**04000**	142.26	**04000**
5	76	12	40	6	4	131.47	**05000**	145.21	**05000**	144.22	**05000**
6	76	12	40	6	4	134.42	**06000**	147.17	**06000**	147.17	**06000**
7	101	16	65	8	6	140.30	**07000**	154.04	**07000**	154.04	**07000**
8	101	16	65	8	6	140.30	**08000**	154.04	**08000**	154.04	**08000**
9	108	16	68	10	6	198.19	**09000**	217.81	**09000**	218.79	**09000**
10	108	16	68	10	6	198.19	**10000**	217.81	**10000**	218.79	**10000**
11	130	20	85	12	6	262.94	**11000**	288.45	**11000**	288.45	**11000**
12	130	20	85	12	6	262.94	**12000**	288.45	**12000**	288.45	**12000**
16	150	20	102	16	6	345.35	**16000**	379.69	**16000**	379.69	**16000**

Steel	●		
Stainless steel	●	●	
Cast iron	●		
Non ferrous metals	○		●
Heat resistant alloys	○		
Hardened materials	○		

→ v_c Page 64+65

Fullmax – High-performance machine reamers

- extremely irregular pitch
- designed for high-speed machining
- specialised geometries and coatings



	Fullmax UNI	Fullmax VA	Fullmax ALU
	DBG-U	DBQ	DBC-N
	52M.57	52T.45	52Q.17
	HA	HA	HA
	straight flute	straight flute	straight flute
	◁ 60°	◁ 45°	◁ 60°
	ASG2110	ASG2131	ASG2170
	Solid carbide	Solid carbide	Solid carbide
	Blind hole	Blind hole	Blind hole
	NEW U4	NEW U4	NEW U4
	Article no. 40 485 ...	Article no. 40 402 ...	Article no. 40 472 ...
	£	£	£

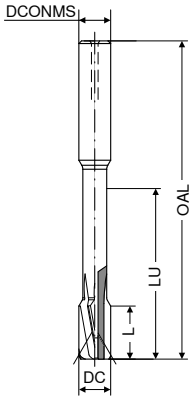
DC $_{H7}$ mm	OAL mm	L mm	LU mm	DCONMS $_{h6}$ mm	ZEFP					
4	60	12	32	4	4	107.92	04000	118.71	04000	118.71	04000
5	76	12	40	6	4	109.88	05000	121.66	05000	120.67	05000
6	76	12	40	6	4	114.80	06000	126.56	06000	125.59	06000
7	101	16	65	8	6	120.67	07000	132.45	07000	131.47	07000
8	101	16	65	8	6	120.67	08000	132.45	08000	131.47	08000
9	108	16	68	10	6	172.68	09000	190.34	09000	188.38	09000
10	108	16	68	10	6	172.68	10000	190.34	10000	188.38	10000
11	130	20	85	12	6	229.58	11000	252.15	11000	251.16	11000
12	130	20	85	12	6	229.58	12000	252.15	12000	251.16	12000
16	150	20	102	16	6	309.05	16000	340.45	16000	338.49	16000

Steel	●		
Stainless steel	●	●	
Cast iron	●		
Non ferrous metals	○		●
Heat resistant alloys	○		
Hardened materials	○		

→ v_c Page 64+65

Fullmax – High-performance machine reamers

- ▲ extremely irregular pitch
- ▲ designed for high-speed machining
- ▲ specialised geometries and coatings
- ▲ tolerance: Ø 2,96–5,03 mm = +0,004 mm
- ▲ tolerance: Ø 5,97–12,03 mm = +0,005 mm



Fullmax UNI	Fullmax VA	Fullmax K	Fullmax ALU	Fullmax H
DBG-U	DBQ	DBG-P	DBC-N	DBF-A

52P.57 | 52S.44 | 52J.65 | 52N.17 | 52G.55

HA

Left Hand Helix | Left Hand Helix | straight flute | straight flute | straight flute

◁ 30° | ◁ 30° | ◁ 30° | ◁ 30° | ◁ 30°

ASG2210 | ASG2231 | ASG2350 | ASG2270 | ASG2360

Solid carbide Through hole | Solid carbide Through hole | Solid carbide Through hole | Solid carbide Through hole | Solid carbide Through hole

DC +0,004/+0,005	OAL	L	LU	DCONMS h6	ZEFP	NEW U4 Article no. 40 486 ...		NEW U4 Article no. 40 403 ...		NEW U4 Article no. 40 477 ...		NEW U4 Article no. 40 473 ...		NEW U4 Article no. 40 475 ...	
mm	mm	mm	mm	mm		£		£		£		£		£	
2,96 - 3,96	60	12	32	4	4	294.47	xxxxx[1]	301.25	xxxxx[2]	301.25	xxxxx[1]	301.25	xxxxx[1]	301.25	xxxxx[1]
3,97	60	12	32	4	4	137.36	03970	151.10	03970	301.25	03970[1]	301.25	03970[1]	301.25	03970[1]
3,98	60	12	32	4	4	137.36	03980	151.10	03980	301.25	03980[1]	301.25	03980[1]	301.25	03980[1]
3,99	60	12	32	4	4	137.36	03990	151.10	03990	301.25	03990[1]	301.25	03990[1]	301.25	03990[1]
4,00	60	12	32	4	4	137.36	04000	151.10	04000	343.55	04000[1]	301.25	04000[1]	343.55	04000[1]
4,01	60	12	32	4	4	137.36	04010	151.10	04010	301.25	04010[1]	301.25	04010[1]	301.25	04010[1]
4,02	60	12	32	4	4	137.36	04020	151.10	04020	301.25	04020[1]	301.25	04020[1]	301.25	04020[1]
4,03	60	12	32	4	4	137.36	04030	151.10	04030	301.25	04030[1]	301.25	04030[1]	301.25	04030[1]
4,04 - 4,05	60	12	32	4	4	294.47	xxxxx[1]	301.25	xxxxx[2]	301.25	xxxxx[1]	301.25	xxxxx[1]	301.25	xxxxx[1]
4,06 - 4,96	76	12	40	6	4	298.93	xxxxx[1]	312.32	xxxxx[2]	312.32	xxxxx[1]	312.32	xxxxx[1]	312.32	xxxxx[1]
4,97	76	12	40	6	4	140.30	04970	154.04	04970	312.32	04970[1]	312.32	04970[1]	312.32	04970[1]
4,98	76	12	40	6	4	140.30	04980	154.04	04980	312.32	04980[1]	312.32	04980[1]	312.32	04980[1]
4,99	76	12	40	6	4	140.30	04990	154.04	04990	312.32	04990[1]	312.32	04990[1]	312.32	04990[1]
5,00	76	12	40	6	4	140.30	05000	154.04	05000	354.79	05000[1]	312.32	05000[1]	354.79	05000[1]
5,01	76	12	40	6	4	140.30	05010	154.04	05010	312.32	05010[1]	312.32	05010[1]	312.32	05010[1]
5,02	76	12	40	6	4	140.30	05020	154.04	05020	312.32	05020[1]	312.32	05020[1]	312.32	05020[1]
5,03	76	12	40	6	4	140.30	05030	154.04	05030	312.32	05030[1]	312.32	05030[1]	312.32	05030[1]
5,04 - 5,96	76	12	40	6	4	298.93	xxxxx[1]	312.32	xxxxx[2]	312.32	xxxxx[1]	312.32	xxxxx[1]	312.32	xxxxx[1]
5,97	76	12	40	6	4	141.28	05970	156.00	05970	312.32	05970[1]	312.32	05970[1]	312.32	05970[1]
5,98	76	12	40	6	4	141.28	05980	156.00	05980	312.32	05980[1]	312.32	05980[1]	312.32	05980[1]
5,99	76	12	40	6	4	141.28	05990	156.00	05990	312.32	05990[1]	312.32	05990[1]	312.32	05990[1]
6,00	76	12	40	6	4	141.28	06000	156.00	06000	354.79	06000[1]	312.32	06000[1]	354.79	06000[1]
6,01	76	12	40	6	4	141.28	06010	156.00	06010	312.32	06010[1]	312.32	06010[1]	312.32	06010[1]
6,02	76	12	40	6	4	141.28	06020	156.00	06020	312.32	06020[1]	312.32	06020[1]	312.32	06020[1]
6,03	76	12	40	6	4	141.28	06030	156.00	06030	312.32	06030[1]	312.32	06030[1]	312.32	06030[1]
6,04 - 6,05	76	12	40	6	4	303.39	xxxxx[1]	312.32	xxxxx[2]	312.32	xxxxx[1]	312.32	xxxxx[1]	312.32	xxxxx[1]
6,06 - 7,96	101	16	65	8	6	314.64	xxxxx[1]	321.24	xxxxx[2]	321.24	xxxxx[1]	321.24	xxxxx[1]	321.24	xxxxx[1]
7,97	101	16	65	8	6	148.15	07970	162.87	07970	321.24	07970[1]	321.24	07970[1]	321.24	07970[1]
7,98	101	16	65	8	6	148.15	07980	162.87	07980	321.24	07980[1]	321.24	07980[1]	321.24	07980[1]

Steel	●				
Stainless steel	●	●			
Cast iron	●		●		
Non ferrous metals	○			●	
Heat resistant alloys	○				
Hardened materials	○				●

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days
2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 32 working days

→ v_c Page 64+65

This tool concept permits numerous tolerances. For sizes covered please refer to the table on → **Page 75**.
For xxxxx please indicate required Ø in the order (e.g. Ø 8.82 mm → Article No. 40 486 08820)!

Continued on next page

Fullmax – High-performance machine reamers

- ▲ extremely irregular pitch
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- ▲ tolerance: Ø 2,96–5,03 mm = +0,004 mm
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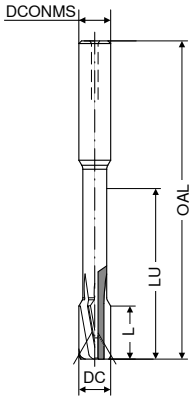

Fullmax UNI	Fullmax VA	Fullmax K	Fullmax ALU	Fullmax H
DBG-U	DBQ	DBG-P	DBC-N	DBF-A
52P.57	52S.44	52J.65	52N.17	52G.55
HA	HA	HA	HA	HA
Left Hand Helix	Left Hand Helix	straight flute	straight flute	straight flute
◁ 30°	◁ 30°	◁ 30°	◁ 30°	◁ 30°
ASG2210	ASG2231	ASG2350	ASG2270	ASG2360
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
Through hole	Through hole	Through hole	Through hole	Through hole

DC +0,004/+0,005	OAL	L	LU	DCONMS h6	ZEFP	NEW U4 Article no. 40 486 ...	NEW U4 Article no. 40 403 ...	NEW U4 Article no. 40 477 ...	NEW U4 Article no. 40 473 ...	NEW U4 Article no. 40 475 ...
mm	mm	mm	mm	mm		£	£	£	£	£
7,99	101	16	65	8	6	148.15 **07990**	162.87 **07990**	321.24 **07990**[1]	321.24 **07990**[1]	321.24 **07990**[1]
8,00	101	16	65	8	6	148.15 **08000**	162.87 **08000**	365.86 **08000**[1]	321.24 **08000**[1]	365.86 **08000**[1]
8,01	101	16	65	8	6	148.15 **08010**	162.87 **08010**	321.24 **08010**[1]	321.24 **08010**[1]	321.24 **08010**[1]
8,02	101	16	65	8	6	148.15 **08020**	162.87 **08020**	321.24 **08020**[1]	321.24 **08020**[1]	321.24 **08020**[1]
8,03	101	16	65	8	6	148.15 **08030**	162.87 **08030**	321.24 **08030**[1]	321.24 **08030**[1]	321.24 **08030**[1]
8,04 - 8,05	101	16	65	8	6	314.64 **xxxxx**[1]	321.24 **xxxxx**[2]	321.24 **xxxxx**[1]	321.24 **xxxxx**[1]	321.24 **xxxxx**[1]
8,06 - 9,96	108	16	68	10	6	390.48 **xxxxx**[1]	452.95 **xxxxx**[2]	452.95 **xxxxx**[1]	452.95 **xxxxx**[1]	452.95 **xxxxx**[1]
9,97	108	16	68	10	6	210.94 **09970**	232.53 **09970**	452.95 **09970**[1]	452.95 **09970**[1]	452.95 **09970**[1]
9,98	108	16	68	10	6	210.94 **09980**	232.53 **09980**	452.95 **09980**[1]	452.95 **09980**[1]	452.95 **09980**[1]
9,99	108	16	68	10	6	210.94 **09990**	232.53 **09990**	452.95 **09990**[1]	452.95 **09990**[1]	452.95 **09990**[1]
10,00	108	16	68	10	6	210.94 **10000**	232.53 **10000**	515.41 **10000**[1]	452.95 **10000**[1]	515.41 **10000**[1]
10,01	108	16	68	10	6	210.94 **10010**	232.53 **10010**	452.95 **10010**[1]	452.95 **10010**[1]	452.95 **10010**[1]
10,02	108	16	68	10	6	210.94 **10020**	232.53 **10020**	452.95 **10020**[1]	452.95 **10020**[1]	452.95 **10020**[1]
10,03	108	16	68	10	6	210.94 **10030**	232.53 **10030**	452.95 **10030**[1]	452.95 **10030**[1]	452.95 **10030**[1]
10,04 - 10,05	108	16	68	10	6	390.48 **xxxxx**[1]	452.95 **xxxxx**[2]	452.95 **xxxxx**[1]	452.95 **xxxxx**[1]	452.95 **xxxxx**[1]
10,06 - 11,96	130	20	85	12	6	588.94 **xxxxx**[1]	606.78 **xxxxx**[2]	606.78 **xxxxx**[1]	606.78 **xxxxx**[1]	606.78 **xxxxx**[1]
11,97	130	20	85	12	6	280.60 **11970**	309.05 **11970**	606.78 **11970**[1]	606.78 **11970**[1]	606.78 **11970**[1]
11,98	130	20	85	12	6	280.60 **11980**	309.05 **11980**	606.78 **11980**[1]	606.78 **11980**[1]	606.78 **11980**[1]
11,99	130	20	85	12	6	280.60 **11990**	309.05 **11990**	606.78 **11990**[1]	606.78 **11990**[1]	606.78 **11990**[1]
12,00	130	20	85	12	6	280.60 **12000**	309.05 **12000**	689.41 **12000**[1]	606.78 **12000**[1]	689.41 **12000**[1]
12,01	130	20	85	12	6	280.60 **12010**	309.05 **12010**	606.78 **12010**[1]	606.78 **12010**[1]	606.78 **12010**[1]
12,02	130	20	85	12	6	280.60 **12020**	309.05 **12020**	606.78 **12020**[1]	606.78 **12020**[1]	606.78 **12020**[1]
12,03	130	20	85	12	6	280.60 **12030**	309.05 **12030**	606.78 **12030**[1]	606.78 **12030**[1]	606.78 **12030**[1]
12,04 - 12,05	130	20	85	12	6	588.94 **xxxxx**[1]	606.78 **xxxxx**[2]	606.78 **xxxxx**[1]	606.78 **xxxxx**[1]	606.78 **xxxxx**[1]
12,06 - 14,05	130	20	85	14	6	687.09 **xxxxx**[1]	707.26 **xxxxx**[2]	707.26 **xxxxx**[1]	707.26 **xxxxx**[1]	707.26 **xxxxx**[1]
14,06 - 16,05	150	20	102	16	6	783.11 **xxxxx**[1]	803.10 **xxxxx**[2]	803.10 **xxxxx**[1]	803.10 **xxxxx**[1]	803.10 **xxxxx**[1]
16,06 - 18,05	150	20	102	18	6	834.33 **xxxxx**[1]	872.34 **xxxxx**[2]	872.34 **xxxxx**[1]	872.34 **xxxxx**[1]	872.34 **xxxxx**[1]
18,06 - 20,05	160	20	110	20	6	885.73 **xxxxx**[1]	919.10 **xxxxx**[2]	919.10 **xxxxx**[1]	919.10 **xxxxx**[1]	919.10 **xxxxx**[1]

Steel	●				
Stainless steel	●	●			
Cast iron	●		●		
Non ferrous metals	○			●	
Heat resistant alloys	○				
Hardened materials	○				●

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days
2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 32 working days

→ v_c Page 64+65

This tool concept permits numerous tolerances. For sizes covered please refer to the table on → **Page 75**.
For xxxxx please indicate required Ø in the order (e.g. Ø 8.82 mm → Article No. 40 486 08820)!

Fullmax – High-performance machine reamers

- ▲ extremely irregular pitch
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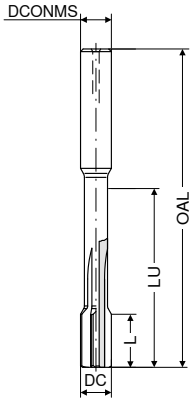

Fullmax UNI	Fullmax VA	Fullmax K	Fullmax ALU	Fullmax H
DBG-U	DBQ	DBG-P	DBC-N	DBF-A
52M.57	52T.45	52K.65	52Q.17	52H.55
HA	HA	HA	HA	HA
straight flute	straight flute	straight flute	straight flute	straight flute
◁ 60°	◁ 45°	◁ 30°	◁ 60°	◁ 30°
ASG2110	ASG2131	ASG2350	ASG2170	ASG2360
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
Blind hole	Blind hole	Blind hole	Blind hole	Blind hole

DC +0,004/+0,005	OAL	L	LU	DCONMS h6	ZEFP	NEW U4 Article no. 40 487 ...		NEW U4 Article no. 40 404 ...		NEW U4 Article no. 40 478 ...		NEW U4 Article no. 40 474 ...		NEW U4 Article no. 40 476 ...	
mm	mm	mm	mm	mm		£		£		£		£		£	
2,96 - 3,96	60	12	32	4	4	245.39	xxxxx[1]	254.31	xxxxx[2]	254.31	xxxxx[2]	254.31	xxxxx[1]	254.31	xxxxx[1]
3,97	60	12	32	4	4	115.77	03970	127.55	03970	254.31	03970[2]	254.31	03970[1]	254.31	03970[1]
3,98	60	12	32	4	4	115.77	03980	127.55	03980	254.31	03980[2]	254.31	03980[1]	254.31	03980[1]
3,99	60	12	32	4	4	115.77	03990	127.55	03990	254.31	03990[2]	254.31	03990[1]	254.31	03990[1]
4,00	60	12	32	4	4	115.77	04000	127.55	04000	254.31	04000[2]	254.31	04000[1]	290.01	04000[1]
4,01	60	12	32	4	4	115.77	04010	127.55	04010	254.31	04010[2]	254.31	04010[1]	254.31	04010[1]
4,02	60	12	32	4	4	115.77	04020	127.55	04020	254.31	04020[2]	254.31	04020[1]	254.31	04020[1]
4,03	60	12	32	4	4	115.77	04030	127.55	04030	254.31	04030[2]	254.31	04030[1]	254.31	04030[1]
4,04 - 4,05	60	12	32	4	4	245.39	xxxxx[1]	254.31	xxxxx[2]	254.31	xxxxx[2]	254.31	xxxxx[1]	254.31	xxxxx[1]
4,06 - 4,96	76	12	40	6	4	252.17	xxxxx[1]	261.10	xxxxx[2]	261.10	xxxxx[1]	261.10	xxxxx[1]	261.10	xxxxx[1]
4,97	76	12	40	6	4	118.71	04970	129.50	04970	261.10	04970[2]	261.10	04970[1]	261.10	04970[1]
4,98	76	12	40	6	4	118.71	04980	129.50	04980	261.10	04980[2]	261.10	04980[1]	261.10	04980[1]
4,99	76	12	40	6	4	118.71	04990	129.50	04990	261.10	04990[2]	261.10	04990[1]	261.10	04990[1]
5,00	76	12	40	6	4	118.71	05000	129.50	05000	261.10	05000[2]	261.10	05000[1]	296.79	05000[1]
5,01	76	12	40	6	4	118.71	05010	129.50	05010	261.10	05010[2]	261.10	05010[1]	261.10	05010[1]
5,02	76	12	40	6	4	118.71	05020	129.50	05020	261.10	05020[2]	261.10	05020[1]	261.10	05020[1]
5,03	76	12	40	6	4	118.71	05030	129.50	05030	261.10	05030[2]	261.10	05030[1]	261.10	05030[1]
5,04 - 5,96	76	12	40	6	4	252.17	xxxxx[1]	261.10	xxxxx[2]	261.10	xxxxx[2]	261.10	xxxxx[1]	261.10	xxxxx[1]
5,97	76	12	40	6	4	120.67	05970	132.45	05970	261.10	05970[2]	261.10	05970[1]	261.10	05970[1]
5,98	76	12	40	6	4	120.67	05980	132.45	05980	261.10	05980[2]	261.10	05980[1]	261.10	05980[1]
5,99	76	12	40	6	4	120.67	05990	132.45	05990	261.10	05990[2]	261.10	05990[1]	261.10	05990[1]
6,00	76	12	40	6	4	120.67	06000	132.45	06000	261.10	06000[2]	261.10	06000[1]	296.79	06000[1]
6,01	76	12	40	6	4	120.67	06010	132.45	06010	261.10	06010[2]	261.10	06010[1]	261.10	06010[1]
6,02	76	12	40	6	4	120.67	06020	132.45	06020	261.10	06020[2]	261.10	06020[1]	261.10	06020[1]
6,03	76	12	40	6	4	120.67	06030	132.45	06030	261.10	06030[2]	261.10	06030[1]	261.10	06030[1]
6,04 - 6,05	76	12	40	6	4	254.31	xxxxx[1]	261.10	xxxxx[2]	261.10	xxxxx[2]	261.10	xxxxx[1]	261.10	xxxxx[1]
6,06 - 7,96	101	16	65	8	6	272.16	xxxxx[1]	281.08	xxxxx[2]	281.08	xxxxx[1]	281.08	xxxxx[1]	281.08	xxxxx[1]
7,97	101	16	65	8	6	126.56	07970	139.32	07970	281.08	07970[2]	281.08	07970[1]	281.08	07970[1]
7,98	101	16	65	8	6	126.56	07980	139.32	07980	281.08	07980[2]	281.08	07980[1]	281.08	07980[1]

Steel	●				
Stainless steel	●	●			
Cast iron	●		●		
Non ferrous metals	○			●	
Heat resistant alloys	○				
hardened materials	○				●

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→ v_c Page 64+65

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Continued on next page

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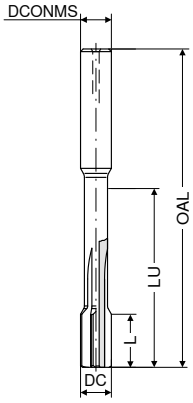


Fullmax UNI	Fullmax VA	Fullmax K	Fullmax ALU	Fullmax H
DBG-U	DBQ	DBG-P	DBC-N	DBF-A
52M.57	52T.45	52K.65	52Q.17	52H.55
HA	HA	HA	HA	HA
straight flute	straight flute	straight flute	straight flute	straight flute
◁ 60°	◁ 45°	◁ 30°	◁ 60°	◁ 30°
ASG2110	ASG2131	ASG2350	ASG2170	ASG2360
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
Blind hole	Blind hole	Blind hole	Blind hole	Blind hole

DC +0,004/+0,005	OAL	L	LU	DCONMS h6	ZEFP	NEW U4 Article no. 40 487 ...	NEW U4 Article no. 40 404 ...	NEW U4 Article no. 40 478 ...	NEW U4 Article no. 40 474 ...	NEW U4 Article no. 40 476 ...
mm	mm	mm	mm	mm		£	£	£	£	£
7,99	101	16	65	8	6	126.56 07990	139.32 07990	281.08 07990 2)	281.08 07990 1)	281.08 07990 1)
8,00	101	16	65	8	6	126.56 08000	139.32 08000	281.08 08000 2)	281.08 08000 1)	321.24 08000 1)
8,01	101	16	65	8	6	126.56 08010	139.32 08010	281.08 08010 2)	281.08 08010 1)	281.08 08010 1)
8,02	101	16	65	8	6	126.56 08020	139.32 08020	281.08 08020 2)	281.08 08020 1)	281.08 08020 1)
8,03	101	16	65	8	6	126.56 08030	139.32 08030	281.08 08030 2)	281.08 08030 1)	281.08 08030 1)
8,04 - 8,05	101	16	65	8	6	272.16 xxxxx 1)	281.08 xxxxx 2)	281.08 xxxxx 2)	281.08 xxxxx 1)	281.08 xxxxx 1)
8,06 - 9,96	108	16	68	10	6	345.87 xxxxx 1)	406.01 xxxxx 2)	406.01 xxxxx 1)	406.01 xxxxx 1)	406.01 xxxxx 1)
9,97	108	16	68	10	6	184.45 09970	203.09 09970	406.01 09970 2)	406.01 09970 1)	406.01 09970 1)
9,98	108	16	68	10	6	184.45 09980	203.09 09980	406.01 09980 2)	406.01 09980 1)	406.01 09980 1)
9,99	108	16	68	10	6	184.45 09990	203.09 09990	406.01 09990 2)	406.01 09990 1)	406.01 09990 1)
10,00	108	16	68	10	6	184.45 10000	203.09 10000	406.01 10000 2)	406.01 10000 1)	461.87 10000 1)
10,01	108	16	68	10	6	184.45 10010	203.09 10010	406.01 10010 2)	406.01 10010 1)	406.01 10010 1)
10,02	108	16	68	10	6	184.45 10020	203.09 10020	406.01 10020 2)	406.01 10020 1)	406.01 10020 1)
10,03	108	16	68	10	6	184.45 10030	203.09 10030	406.01 10030 2)	406.01 10030 1)	406.01 10030 1)
10,04 - 10,05	108	16	68	10	6	345.87 xxxxx 1)	406.01 xxxxx 2)	406.01 xxxxx 2)	406.01 xxxxx 1)	406.01 xxxxx 1)
10,06 - 11,96	130	20	85	12	6	524.33 xxxxx 1)	553.24 xxxxx 2)	553.24 xxxxx 1)	553.24 xxxxx 1)	553.24 xxxxx 1)
11,97	130	20	85	12	6	246.26 11970	270.79 11970	553.24 11970 2)	553.24 11970 1)	553.24 11970 1)
11,98	130	20	85	12	6	246.26 11980	270.79 11980	553.24 11980 2)	553.24 11980 1)	553.24 11980 1)
11,99	130	20	85	12	6	246.26 11990	270.79 11990	553.24 11990 2)	553.24 11990 1)	553.24 11990 1)
12,00	130	20	85	12	6	246.26 12000	270.79 12000	553.24 12000 2)	553.24 12000 1)	629.09 12000 1)
12,01	130	20	85	12	6	246.26 12010	270.79 12010	553.24 12010 2)	553.24 12010 1)	553.24 12010 1)
12,02	130	20	85	12	6	246.26 12020	270.79 12020	553.24 12020 2)	553.24 12020 1)	553.24 12020 1)
12,03	130	20	85	12	6	246.26 12030	270.79 12030	553.24 12030 2)	553.24 12030 1)	553.24 12030 1)
12,04 - 12,05	130	20	85	12	6	524.33 xxxxx 1)	553.24 xxxxx 2)	553.24 xxxxx 2)	553.24 xxxxx 1)	553.24 xxxxx 1)
12,06 - 14,05	130	20	85	14	6	609.10 xxxxx 1)	635.87 xxxxx 2)	635.87 xxxxx 1)	635.87 xxxxx 1)	635.87 xxxxx 1)
14,06 - 16,05	150	20	102	16	6	704.94 xxxxx 1)	734.03 xxxxx 2)	734.03 xxxxx 1)	734.03 xxxxx 1)	734.03 xxxxx 1)
16,06 - 18,05	150	20	102	18	6	747.42 xxxxx 1)	776.33 xxxxx 2)	776.33 xxxxx 1)	776.33 xxxxx 1)	776.33 xxxxx 1)
18,06 - 20,05	160	20	110	20	6	809.88 xxxxx 1)	834.33 xxxxx 2)	834.33 xxxxx 1)	834.33 xxxxx 1)	834.33 xxxxx 1)

Steel	●				
Stainless steel	●	●			
Cast iron	●		●		
Non ferrous metals	○			●	
Heat resistant alloys	○				
hardened materials	○				●

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 25 working days
2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 32 working days

→ v_c Page 64+65

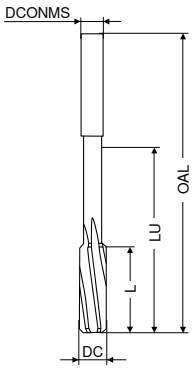
This tool concept permits numerous tolerances. For sizes covered please refer to the table on → **Page 75**.
For xxxxx please indicate required Ø in the order (e.g. Ø 8.82 mm → Article no. 40 487 08820)!

NC machine reamers, DIN 8093-2B

- ▲ extremely irregular pitch
- ▲ Ø 2–3.5 mm with centres both ends
- ▲ Ø 4–13 mm with protected centres
- ▲ from Ø 22 mm, similar to DIN 8093-2B

NC

TiAlN



~HA
Left Hand Helix
Solid carbide

~HA
Left Hand Helix
Solid carbide

DC $_{H7}$	OAL	L	LU	DCONMS $_{h6}$	ZEFP	U4 Article no. 40 420 ... £		U4 Article no. 40 421 ... £	
mm	mm	mm	mm	mm					
2.0	50	12	18.5	3	4	62.27	**020**	82.41	**020**
2.5	60	16	29.0	3	4	62.27	**025**	82.41	**025**
3.0	65	17	33.0	4	6	64.83	**030**	85.92	**030**
3.2	65	18	33.0	4	6	64.83	**032**	85.92	**032**
3.5	75	18	43.0	4	6	64.83	**035**	85.92	**035**
4.0	75	19	43.0	4	6	77.62	**040**	102.81	**040**
4.5	80	21	39.0	6	6	77.62	**045**	102.81	**045**
5.0	93	23	52.0	6	6	86.99	**050**	115.24	**050**
5.5	93	26	53.0	6	6	86.99	**055**	115.24	**055**
6.0	93	26	53.0	6	6	93.79	**060**	124.35	**060**
6.5	101	28	61.0	6	6	93.79	**065**	124.35	**065**
7.0	109	31	68.0	8	6	104.02	**070**	137.88	**070**
7.5	109	31	68.0	8	6	104.02	**075**	137.88	**075**
8.0	117	33	77.0	8	6	121.13	**080**	160.33	**080**
8.5	117	33	77.0	8	6	121.13	**085**	160.33	**085**
9.0	125	36	80.0	10	6	132.20	**090**	175.19	**090**
9.5	125	36	80.0	10	6	132.20	**095**	175.19	**095**
10.0	133	38	88.0	10	6	141.59	**100**	187.43	**100**
10.5	133	38	88.0	10	6	141.59	**105**	187.43	**105**
11.0	142	41	97.0	10	6	182.51	**110**	241.24	**110**
12.0	151	44	100.0	12	6	182.51	**120**	241.24	**120**
13.0	151	44	100.0	12	6	179.12	**130**	237.53	**130**
14.0	160	47	106.0	16	6	179.12	**140** [1]	237.53	**140** [1]
15.0	162	50	108.0	16	6	191.08	**150** [1]	252.37	**150** [1]
16.0	170	52	116.0	16	6	196.11	**160** [1]	259.82	**160** [1]
17.0	175	52	121.0	18	6	201.25	**170** [1]	267.22	**170** [1]
18.0	182	52	128.0	18	6	202.97	**180** [1]	269.10	**180** [1]
19.0	189	52	133.0	20	6	211.47	**190** [1]	280.21	**190** [1]
20.0	195	52	139.0	20	6	213.22	**200** [1]	282.08	**200** [1]
22.0	160	25	105.0	20	6	213.22	**220** [1]		
24.0	180	25	125.0	20	8	259.29	**240** [1]		
25.0	180	25	125.0	20	8	259.29	**250** [1]		
26.0	180	25	125.0	20	8	291.69	**260** [1]		
28.0	180	25	119.0	25	8	305.31	**280** [1]		
30.0	200	25	139.0	25	8	315.54	**300** [1]		

Steel	●	●
Stainless steel		
Cast iron	○	●
Non ferrous metals	●	
Heat resistant alloys	○	
Hardened materials		

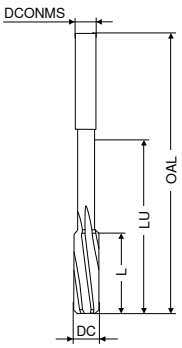
1) with carbide cutting edges

→ v_c Page 66+67

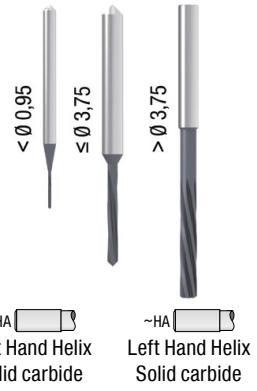
NC machine reamers, DIN 8093-2B

- ▲ 0.01 mm steps
- ▲ extremely irregular pitch
- ▲ Ø 0.59–0.95 mm similar to DIN 8093-B
- ▲ Ø 0.96–3.75 mm with centres both ends
- ▲ Ø 3.76–12.05 mm with protected centres

NC 100



TiAlN



Left Hand Helix
Solid carbide

Left Hand Helix
Solid carbide

DC +0,004	OAL	L	LU	DCONMS h6	ZEFP	U4 Article no. 40 430 ...		U4 Article no. 40 431 ...	
mm	mm	mm	mm	mm		£		£	
0,59 - 0,64	45	5	7.5	3	4	110.38	xxxxx[2]		
0,65 - 0,74	45	5	7.5	3	4	110.38	xxxxx[2]		
0,75 - 0,84	45	6	8.0	3	4	110.38	xxxxx[2]		
0,85 - 0,95	45	6	8.0	3	4	110.38	xxxxx[2]		
0,96	50	6	17.5	3	3	86.25	00960[2]		
0,97	50	6	17.5	3	3	86.25	00970[2]		
0,98	50	6	17.5	3	3	86.25	00980[1]		
0,99	50	6	17.5	3	3	86.25	00990[1]		
1,00	50	6	17.5	3	3	86.25	01000[1]	131.39	01000[1]
1,01	50	6	17.5	3	3	86.25	01010[1]	131.39	01010[1]
1,02	50	6	17.5	3	3	86.25	01020[1]	131.39	01020[1]
1,03	50	6	17.5	3	3	86.25	01030[1]	131.39	01030[1]
1,04 - 1,06	50	6	17.5	3	3	99.21	xxxxx[1]	131.39	xxxxx[1]
1,07 - 1,18	50	9	17.5	3	3	99.21	xxxxx[1]	131.39	xxxxx[1]
1,19 - 1,32	50	9	17.5	3	3	99.21	xxxxx[1]	131.39	xxxxx[1]
1,33 - 1,50	50	9	18.0	3	3	99.21	xxxxx[1]	131.39	xxxxx[1]
1,51 - 1,70	50	10	18.0	3	3	99.21	xxxxx[1]	131.39	xxxxx[1]
1,71 - 1,90	50	11	18.5	3	4	112.12	xxxxx[1]	131.39	xxxxx[1]
1,91 - 1,97	50	12	18.5	3	4	112.12	xxxxx[1]	131.39	xxxxx[1]
1,98	50	12	18.5	3	4	112.12	01980	148.63	01980
1,99	50	12	18.5	3	4	112.12	01990	148.63	01990
2,00	50	12	18.5	3	4	112.12	02000	148.63	02000
2,01	50	12	18.5	3	4	112.12	02010	148.63	02010
2,02	50	12	18.5	3	4	112.12	02020	148.63	02020
2,03	50	12	18.5	3	4	112.12	02030	148.63	02030
2,04 - 2,12	50	12	18.5	3	4	98.82	xxxxx[1]	131.39	xxxxx[1]
2,13 - 2,36	50	12	18.5	3	4	98.82	xxxxx[1]	131.39	xxxxx[1]
2,37 - 2,47	60	16	29.0	3	4	86.25	xxxxx[1]	131.39	xxxxx[1]
2,48	60	16	29.0	3	4	86.25	02480	114.32	02480
2,49	60	16	29.0	3	4	86.25	02490	114.32	02490
2,50	60	16	29.0	3	4	86.25	02500	114.32	02500
2,51	60	16	29.0	3	4	86.25	02510	114.32	02510
2,52	60	16	29.0	3	4	86.25	02520	114.32	02520
2,53	60	16	29.0	3	4	86.25	02530	114.32	02530
2,54 - 2,65	60	16	29.0	3	4	86.25	xxxxx[1]	114.32	xxxxx[1]
2,66 - 2,80	65	17	33.0	4	6	86.25	xxxxx[1]	114.32	xxxxx[1]
2,81 - 2,96	65	17	33.0	4	6	86.25	xxxxx[1]	114.32	xxxxx[1]
2,97	65	17	33.0	4	6	74.21	02970	98.37	02970
2,98	65	17	33.0	4	6	74.21	02980	98.37	02980
2,99	65	17	33.0	4	6	74.21	02990	98.37	02990
3,00	65	17	33.0	4	6	64.83	03000	85.92	03000
3,01	65	17	33.0	4	6	74.21	03010	98.37	03010
3,02	65	17	33.0	4	6	74.21	03020	98.37	03020
3,03	65	17	33.0	4	6	74.21	03030	98.37	03030
3,04 - 3,35	65	18	33.0	4	6	99.21	xxxxx[1]	131.39	xxxxx[1]
3,36 - 3,75	75	18	43.0	4	6	99.21	xxxxx[1]	131.39	xxxxx[1]
3,76 - 3,96	75	19	43.0	4	6	99.21	xxxxx[1]	131.39	xxxxx[1]
3,97	75	19	43.0	4	6	86.99	03970	115.24	03970
3,98	75	19	43.0	4	6	86.99	03980	115.24	03980
3,99	75	19	43.0	4	6	86.99	03990	115.24	03990
4,00	75	19	43.0	4	6	77.62	04000	102.81	04000
4,01	75	19	43.0	4	6	86.99	04010	115.24	04010
4,02	75	19	43.0	4	6	86.99	04020	115.24	04020
4,03	75	19	43.0	4	6	86.99	04030	115.24	04030
4,04 - 4,25	75	19	43.0	4	6	107.81	xxxxx[1]	142.90	xxxxx[1]
4,26 - 4,75	80	21	39.0	6	6	107.81	xxxxx[1]	142.90	xxxxx[1]
4,76 - 4,96	93	23	52.0	6	6	107.81	xxxxx[1]	142.90	xxxxx[1]
4,97	93	23	52.0	6	6	95.52	04970	126.56	04970
4,98	93	23	52.0	6	6	95.52	04980	126.56	04980
4,99	93	23	52.0	6	6	95.52	04990	126.56	04990
5,00	93	23	52.0	6	6	86.99	05000	115.24	05000
5,01	93	23	52.0	6	6	95.52	05010	126.56	05010
5,02	93	23	52.0	6	6	95.52	05020	126.56	05020
5,03	93	23	52.0	6	6	95.52	05030	126.56	05030
5,04 - 5,30	93	23	52.0	6	6	116.42	xxxxx[1]	154.21	xxxxx[1]
5,31 - 5,96	93	26	53.0	6	6	116.42	xxxxx[1]	154.21	xxxxx[1]
5,97	93	26	53.0	6	6	104.02	05970	137.88	05970
5,98	93	26	53.0	6	6	104.02	05980	137.88	05980
5,99	93	26	53.0	6	6	104.02	05990	137.88	05990
6,00	93	26	53.0	6	6	93.79	06000	124.35	06000
6,01	93	26	53.0	6	6	104.02	06010	137.88	06010
6,02	93	26	53.0	6	6	104.02	06020	137.88	06020
6,03	93	26	53.0	6	6	104.02	06030	137.88	06030
6,04 - 6,70	101	28	61.0	6	6	142.32	xxxxx[1]	188.54	xxxxx[1]
6,71 - 7,50	109	31	68.0	8	6	142.32	xxxxx[1]	188.54	xxxxx[1]
7,51 - 7,96	117	33	77.0	8	6	142.32	xxxxx[1]	188.54	xxxxx[1]
7,97	117	33	77.0	8	6	129.62	07970	171.84	07970
7,98	117	33	77.0	8	6	129.62	07980	171.84	07980
7,99	117	33	77.0	8	6	129.62	07990	171.84	07990
8,00	117	33	77.0	8	6	121.13	08000	160.33	08000
8,01	117	33	77.0	8	6	129.62	08010	171.84	08010
8,02	117	33	77.0	8	6	129.62	08020	171.84	08020
8,03	117	33	77.0	8	6	129.62	08030	171.84	08030
8,04	117	33	77.0	8	6	129.62	08040	171.84	08040
8,05 - 8,50	117	33	77.0	8	6	159.57	xxxxx[1]	211.37	xxxxx[1]
8,51 - 9,04	125	36	80.0	10	6	159.57	xxxxx[1]	211.37	xxxxx[1]
9,05 - 9,50	125	36	80.0	10	6	159.57	xxxxx[1]	211.37	xxxxx[1]
9,51 - 9,96	133	38	88.0	10	6	159.57	xxxxx[1]	211.37	xxxxx[1]
9,97	133	38	88.0	10	6	151.82	09970	200.43	09970
9,98	133	38	88.0	10	6	151.82	09980	200.43	09980
9,99	133	38	88.0	10	6	151.82	09990	200.43	09990
10,00	133	38	88.0	10	6	141.59	10000	187.43	10000
10,01	133	38	88.0	10	6	151.82	10010	200.43	10010
10,02	133	38	88.0	10	6	151.82	10020	200.43	10020
10,03	133	38	88.0	10	6	151.82	10030	200.43	10030
10,04	133	38	88.0	10	6	151.82	10040	200.43	10040
10,05	133	38	88.0	10	6	151.82	10050	200.43	10050
10,06 - 10,60	133	38	88.0	10	6	189.75	xxxxx[1]	251.46	xxxxx[1]
10,61 - 11,80	142	41	97.0	10	6	189.75	xxxxx[1]	251.46	xxxxx[1]
11,81 - 11,96	151	44	100.0	12	6	189.75	xxxxx[1]	251.46	xxxxx[1]
11,97	151	44	100.0	12	6	182.51	11970	241.24	11970
11,98	151	44	100.0	12	6	182.51	11980	241.24	11980
11,99	151	44	100.0	12	6	182.51	11990	241.24	11990
12,00	151	44	100.0	12	6	172.34	12000	228.26	12000
12,01	151	44	100.0	12	6	182.51	12010	241.24	12010
12,02	151	44	100.0	12	6	182.51	12020	241.24	12020
12,03	151	44	100.0	12	6	182.51	12030	241.24	12030
12,04	151	44	100.0	12	6	182.51	12040	241.24	12040
12,05	151	44	100.0	12	6	182.51	12050	241.24	12050

Steel	●	●
Stainless steel		
Cast iron	○	●
Non ferrous metals	●	
Heat resistant alloys	○	
Hardened materials		

→ v_c Page 66+67

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 14 working days

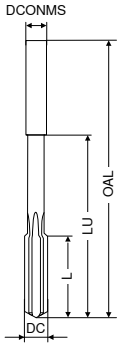
2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 14 working days / Minimum order 3 pieces

This tool concept permits numerous tolerances.
Please refer to the table on → **Page 75** for tolerances covered.
For xxxxx please indicate required Ø in the order
(e.g. Ø 8.05 mm → Article no. 40 430 08050)!

Machine reamers, similar to DIN 8093-A / -B

▲ extremely irregular pitch

N



Left Hand Helix
Solid carbide

straight flute
Solid carbide

DC $_{H7}$	OAL	L	LU	DCONMS $_{h7}$	ZEFP	U4 Article no. 40 410 ...		U4 Article no. 40 400 ...	
mm	mm	mm	mm	mm		£		£	
2.0	49	11	31	2.0	4	27.65	020	27.65	020
2.1	49	11	31	2.0	4	33.22	021	33.22	021
2.2	53	12	35	2.2	4	33.22	022	33.22	022
2.3	53	12	35	2.2	4	33.22	023	33.22	023
2.4	57	14	34	2.5	4	33.22	024	33.22	024
2.5	57	14	34	2.5	4	29.65	025	29.65	025
2.6	57	14	34	2.5	4	35.58	026	35.58	026
2.7	61	15	36	3.0	4	35.58	027	35.58	027
2.8	61	15	36	3.0	4	35.58	028	35.58	028
2.9	61	15	36	3.0	4	35.58	029	35.58	029
3.0	61	15	36	3.0	4	31.85	030	31.85	030
3.1	61	15	36	3.0	4	38.28	031	38.28	031
3.2	70	18	40	3.5	4	38.28	032	38.28	032
3.3	70	18	40	3.5	4	38.28	033	38.28	033
3.4	70	18	40	3.5	4	38.28	034	38.28	034
3.5	70	18	40	3.5	4	36.44	035	36.44	035
3.6	70	18	40	3.5	4	43.70	036	43.70	036
3.7	70	18	40	3.5	4	43.70	037	43.70	037
3.8	75	19	43	4.0	4	43.70	038	43.70	038
3.9	75	19	43	4.0	4	43.70	039	43.70	039
4.0	75	19	43	4.0	4	39.20	040	39.20	040
4.1	75	19	43	4.0	4	47.01	041	47.01	041
4.2	75	19	43	4.0	4	47.01	042	47.01	042
4.3	75	21	42	4.5	4	47.01	043	47.01	043
4.4	75	21	42	4.5	4	47.01	044	47.01	044
4.5	75	21	42	4.5	4	42.62	045	42.62	045
4.6	75	21	42	4.5	4	51.15	046	51.15	046
4.7	75	21	42	4.5	4	51.15	047	51.15	047
4.8	86	23	52	5.0	4	51.15	048	51.15	048
4.9	86	23	52	5.0	4	51.15	049	51.15	049
5.0	86	23	52	5.0	4	48.15	050	48.15	050
5.1	86	23	52	5.0	4	55.41	051	55.41	051
5.2	86	23	52	5.0	4	55.41	052	55.41	052
5.3	86	23	52	5.0	6	55.41	053	55.41	053
5.4	93	26	57	5.6	6	55.41	054	55.41	054
5.5	93	26	57	5.6	6	50.97	055	50.97	055
5.6	93	26	57	5.6	6	58.56	056	58.56	056
5.7	93	26	57	5.6	6	58.56	057	58.56	057
5.8	93	26	57	5.6	6	58.56	058	58.56	058
5.9	93	26	57	5.6	6	58.56	059	58.56	059
6.0	93	26	57	5.6	6	60.97	060	60.97	060
6.1	93	26	57	5.6	6	70.08	061	70.08	061
6.2	93	26	57	5.6	6	70.08	062	70.08	062
6.3	101	28	63	6.3	6	70.08	063	70.08	063
6.4	101	28	63	6.3	6	70.08	064	70.08	064
6.5	101	28	63	6.3	6	68.44	065	68.44	065
6.6	101	28	63	6.3	6	78.69	066	78.69	066
6.7	101	28	63	6.3	6	78.69	067	78.69	067
6.8	109	31	69	7.1	6	78.69	068	78.69	068
6.9	109	31	69	7.1	6	78.69	069	78.69	069
7.0	109	31	69	7.1	6	76.40	070	76.40	070
7.1	109	31	69	7.1	6	87.87	071	87.87	071
7.2	109	31	69	7.1	6	87.87	072	87.87	072
7.3	109	31	69	7.1	6	87.87	073	87.87	073
7.4	109	31	69	7.1	6	87.87	074	87.87	074
7.5	109	31	69	7.1	6	82.59	075	82.59	075
7.6	117	33	75	8.0	6	94.95	076	94.95	076
7.7	117	33	75	8.0	6	94.95	077	94.95	077
7.8	117	33	75	8.0	6	94.95	078	94.95	078
7.9	117	33	75	8.0	6	94.95	079	94.95	079
8.0	117	33	75	8.0	6	87.92	080	87.92	080
8.1	117	33	75	8.0	6	96.73	081	96.73	081
8.2	117	33	75	8.0	6	96.73	082	96.73	082
8.3	117	33	75	8.0	6	96.73	083	96.73	083
8.4	117	33	75	8.0	6	96.73	084	96.73	084
8.5	117	33	75	8.0	6	95.34	085	95.34	085
8.6	125	36	81	9.0	6	104.85	086	104.85	086
8.7	125	36	81	9.0	6	104.85	087	104.85	087
8.8	125	36	81	9.0	6	104.85	088	104.85	088
8.9	125	36	81	9.0	6	104.85	089	104.85	089
9.0	125	36	81	9.0	6	102.23	090	102.23	090
9.1	125	36	81	9.0	6	112.41	091	112.41	091
9.2	125	36	81	9.0	6	112.41	092	112.41	092
9.3	125	36	81	9.0	6	112.41	093	112.41	093
9.4	125	36	81	9.0	6	112.41	094	112.41	094
9.5	125	36	81	9.0	6	109.62	095	109.62	095
9.6	133	38	87	10.0	6	120.57	096	120.57	096
9.7	133	38	87	10.0	6	120.57	097	120.57	097
9.8	133	38	87	10.0	6	120.57	098	120.57	098
9.9	133	38	87	10.0	6	120.57	099	120.57	099
10.0	133	38	87	10.0	6	117.96	100	117.96	100
10.1	133	38	87	10.0	6	129.76	101	129.76	101
10.2	133	38	87	10.0	6	129.76	102	129.76	102
10.3	133	38	87	10.0	6	129.76	103	129.76	103
10.4	133	38	87	10.0	6	129.76	104	129.76	104
10.5	133	38	87	10.0	6	123.29	105	123.29	105
10.6	133	38	87	10.0	6	135.64	106	135.64	106
10.7	142	41	96	10.0	6	135.64	107	135.64	107
10.8	142	41	96	10.0	6	135.64	108	135.64	108
10.9	142	41	96	10.0	6	135.64	109	135.64	109
11.0	142	41		10.0	6	133.62	110	133.62	110
11.1	142	41		10.0	6	146.97	111	146.97	111
11.2	142	41		10.0	6	146.97	112	146.97	112
11.3	142	41		10.0	6	146.97	113	146.97	113
11.4	142	41		10.0	6	146.97	114	146.97	114
11.5	142	41		10.0	6	141.74	115	141.74	115
11.6	142	41		10.0	6	155.99	116	155.99	116
11.7	142	41		10.0	6	155.99	117	155.99	117
11.8	142	41		10.0	6	155.99	118	155.99	118
11.9	151	44		10.0	6	155.99	119	155.99	119
12.0	151	44		10.0	6	153.65	120	153.65	120

Steel	●	●
Stainless steel		
Cast iron	○	○
Non ferrous metals	●	●
Heat resistant alloys	○	○
Hardened materials		

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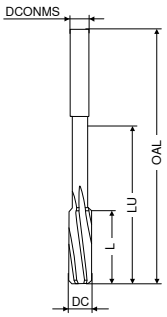
4

NC machine reamers, DIN 212-3-B

▲ maximum radial run-out accuracy

NC



Left Hand Helix
HSS-E

DC $_{H7}$	OAL	L	LU	DCONMS $_{h6}$	ZEFP	U2 Article no. 40 110 ...	
mm	mm	mm	mm	mm		£	
1.5	40	8	15.5	2	3	17.06	015
1.6	43	9	16.0	2	3	19.11	016
1.7	43	9	16.0	2	3	19.11	017
1.8	46	10	19.0	2	4	19.11	018
1.9	46	10	19.0	2	4	19.11	019
2.0	49	11	21.0	2	4	16.60	020
2.1	49	11	21.0	2	4	20.15	021
2.2	53	12	22.0	3	4	20.15	022
2.3	53	12	22.0	3	4	20.15	023
2.4	57	14	26.0	3	4	20.15	024
2.5	57	14	26.0	3	4	16.60	025
2.6	57	14	26.0	3	4	21.31	026
2.7	61	15	30.0	3	6	21.31	027
2.8	61	15	30.0	3	6	21.31	028
2.9	61	15	30.0	3	6	21.31	029
3.0	61	15	30.0	3	6	15.24	030
3.1	65	16	34.0	4	6	20.15	031
3.2	65	16	34.0	4	6	20.15	032
3.3	65	16	34.0	4	6	20.15	033
3.4	70	18	39.0	4	6	20.15	034
3.5	70	18	39.0	4	6	17.90	035
3.6	70	18	39.0	4	6	22.34	036
3.7	70	18	39.0	4	6	22.34	037
3.8	75	19	44.0	4	6	22.34	038
3.9	75	19	44.0	4	6	16.19	039
4.0	75	19	44.0	4	6	16.60	040
4.1	75	19	44.0	4	6	20.98	041
4.2	75	19	44.0	4	6	20.98	042
4.3	80	21	48.0	5	6	20.98	043
4.4	80	21	48.0	5	6	20.98	044
4.5	80	21	48.0	5	6	17.90	045
4.6	80	21	48.0	5	6	22.71	046
4.7	80	21	48.0	5	6	22.71	047
4.8	86	23	54.0	5	6	22.71	048
4.9	86	23	54.0	5	6	22.71	049
5.0	86	23	54.0	5	6	17.06	050
5.1	86	23	54.0	5	6	22.71	051
5.2	86	23	54.0	5	6	22.71	052
5.3	86	23	54.0	5	6	22.71	053
5.4	93	26	53.0	6	6	22.71	054
5.5	93	26	53.0	6	6	20.98	055
5.6	93	26	53.0	6	6	22.71	056
5.7	93	26	53.0	6	6	22.71	057
5.8	93	26	53.0	6	6	22.71	058
5.9	93	26	53.0	6	6	22.71	059
6.0	93	26	53.0	6	6	18.24	060
6.1	101	28	61.0	6	6	22.71	061
6.2	101	28	61.0	6	6	22.71	062
6.3	101	28	61.0	6	6	22.71	063
6.4	101	28	61.0	6	6	22.71	064
6.5	101	28	61.0	6	6	21.85	065
6.6	101	28	61.0	6	6	22.71	066
6.7	101	28	61.0	6	6	22.71	067
6.8	109	31	69.0	8	6	22.71	068
6.9	109	31	69.0	8	6	22.71	069
7.0	109	31	69.0	8	6	21.85	070
7.1	109	31	69.0	8	6	25.42	071
7.2	109	31	69.0	8	6	25.42	072
7.3	109	31	69.0	8	6	25.42	073
7.4	109	31	69.0	8	6	25.42	074
7.5	109	31	69.0	8	6	24.87	075
7.6	117	33	77.0	8	6	26.82	076
7.7	117	33	77.0	8	6	26.82	077
7.8	117	33	77.0	8	6	26.82	078
7.9	117	33	77.0	8	6	26.82	079
8.0	117	33	77.0	8	6	22.71	080
8.1	117	33	77.0	8	6	31.27	081
8.2	117	33	77.0	8	6	31.27	082
8.3	117	33	77.0	8	6	31.27	083
8.4	117	33	77.0	8	6	31.27	084
8.5	117	33	77.0	8	6	28.48	085
8.6	125	36	81.0	10	6	28.96	086
8.7	125	36	81.0	10	6	28.96	087
8.8	125	36	81.0	10	6	28.96	088
8.9	125	36	81.0	10	6	28.96	089
9.0	125	36	81.0	10	6	26.26	090
9.1	125	36	81.0	10	6	29.89	091
9.2	125	36	81.0	10	6	29.89	092
9.3	125	36	81.0	10	6	29.89	093
9.4	125	36	81.0	10	6	29.89	094
9.5	125	36	81.0	10	6	29.31	095
9.6	133	38	89.0	10	6	30.69	096
9.7	133	38	89.0	10	6	30.69	097
9.8	133	38	89.0	10	6	30.69	098
9.9	133	38	89.0	10	6	30.69	099
10.0	133	38	89.0	10	6	26.82	100
11.0	142	41	98.0	10	6	37.53	110
12.0	151	44	106.0	10	6	39.23	120
13.0	151	44	106.0	10	6	43.55	130
14.0	160	47	110.0	14	8	45.16	140
15.0	162	50	112.0	14	8	46.09	150
16.0	170	52	120.0	14	8	47.73	160
17.0	175	54	125.0	14	8	57.17	170
18.0	182	56	132.0	14	8	58.83	180
19.0	189	58	136.0	16	8	68.18	190
20.0	195	60	142.0	16	8	65.70	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

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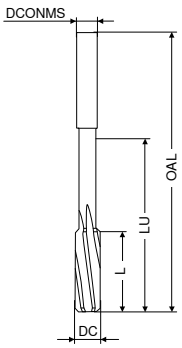
NC machine reamers, DIN 212-3-B

- 0.01 mm steps
- tolerance: Ø 0.95–5.50 mm = +0.004 mm
- tolerance: Ø 5.51–12.00 mm = +0.005 mm

NC 100



A
Left Hand Helix
HSS-E

DC +0,004/+0,005	OAL	L	LU	DCONMS h6	ZEFP	U2 Article no. 40 115 ...	
mm	mm	mm	mm	mm		£	
0,95 - 0,99	34	5.5	12.5	1	3	24.63	xxxxx[1]
1,00	34	5.5	12.5	1	3	24.87	01000
1,01	34	5.5	12.5	1	3	24.87	01010
1,02	34	5.5	12.5	1	3	24.87	01020
1,03 - 1,06	34	5.5	12.5	1	3	25.91	xxxxx[1]
1,07 - 1,18	36	6.5	13.0	1	3	25.91	xxxxx[1]
1,19 - 1,32	38	7.5	14.0	2	3	25.91	xxxxx[1]
1,33 - 1,41	40	8.0	15.5	2	3	24.63	xxxxx[1]
1,42 - 1,49	40	8.0	15.5	2	3	25.91	xxxxx[1]
1,50	40	8.0	15.5	2	3	21.85	01500
1,51	43	9.0	16.0	2	3	21.85	01510
1,52	43	9.0	16.0	2	3	21.85	01520
1,53 - 1,70	43	9.0	16.0	2	3	25.91	xxxxx[1]
1,71 - 1,90	46	10.0	19.0	2	4	25.91	xxxxx[1]
1,91 - 1,96	49	11.0	21.0	2	4	25.91	xxxxx[1]
1,97	49	11.0	21.0	2	4	21.85	01970
1,98	49	11.0	21.0	2	4	21.85	01980
1,99	49	11.0	21.0	2	4	21.85	01990
2,00	49	11.0	21.0	2	4	20.51	02000
2,01	49	11.0	21.0	2	4	20.51	02010
2,02	49	11.0	21.0	2	4	20.51	02020
2,03 - 2,12	49	11.0	21.0	2	4	25.91	xxxxx[1]
2,13 - 2,36	53	12.0	22.0	3	4	25.91	xxxxx[1]
2,37 - 2,47	57	14.0	26.0	3	4	25.91	xxxxx[1]
2,48	57	14.0	26.0	3	4	23.51	02480
2,49	57	14.0	26.0	3	4	23.51	02490
2,50	57	14.0	26.0	3	4	20.15	02500
2,51	57	14.0	26.0	3	4	20.15	02510
2,52	57	14.0	26.0	3	4	20.15	02520
2,53 - 2,65	57	14.0	26.0	3	4	25.91	xxxxx[1]
2,66 - 2,96	61	15.0	30.0	3	6	24.63	xxxxx[1]
2,97	61	15.0	30.0	3	6	24.07	02970
2,98	61	15.0	30.0	3	6	24.07	02980
2,99	61	15.0	30.0	3	6	24.07	02990
3,00	61	15.0	30.0	3	6	17.90	03000
3,01	61	15.0	30.0	3	6	17.90	03010
3,02	61	15.0	30.0	3	6	17.90	03020
3,03	61	15.0	30.0	3	6	25.91	03030[1]
3,04 - 3,35	65	16.0	34.0	4	6	25.91	xxxxx[1]
3,36 - 3,75	70	18.0	39.0	4	6	25.91	xxxxx[1]
3,76 - 3,96	75	19.0	44.0	4	6	25.91	xxxxx[1]
3,97	75	19.0	44.0	4	6	19.63	03970
3,98	75	19.0	44.0	4	6	19.63	03980
3,99	75	19.0	44.0	4	6	19.63	03990
4,00	75	19.0	44.0	4	6	19.63	04000
4,01	75	19.0	44.0	4	6	19.63	04010
4,02	75	19.0	44.0	4	6	19.63	04020
4,03 - 4,25	75	19.0	44.0	4	6	25.91	xxxxx[1]
4,26 - 4,75	80	21.0	48.0	5	6	24.63	xxxxx[1]
4,76 - 4,96	86	23.0	54.0	5	6	25.91	xxxxx[1]
4,97	86	23.0	54.0	5	6	21.31	04970
4,98	86	23.0	54.0	5	6	21.31	04980
4,99	86	23.0	54.0	5	6	21.31	04990
5,00	86	23.0	54.0	5	6	21.31	05000
5,01	86	23.0	54.0	5	6	21.31	05010
5,02	86	23.0	54.0	5	6	21.31	05020
5,03 - 5,30	86	23.0	54.0	5	6	25.91	xxxxx[1]
5,31 - 5,60	93	26.0	53.0	6	6	25.91	xxxxx[1]
5,61 - 5,96	93	26.0	53.0	6	6	24.63	xxxxx[1]
5,97	93	26.0	53.0	6	6	23.51	05970
5,98	93	26.0	53.0	6	6	23.51	05980
5,99	93	26.0	53.0	6	6	23.51	05990
6,00	93	26.0	53.0	6	6	23.51	06000
6,01	93	26.0	53.0	6	6	23.51	06010
6,02	93	26.0	53.0	6	6	23.51	06020
6,03	93	26.0	53.0	6	6	25.91	06030[1]
6,04 - 6,70	101	28.0	61.0	6	6	25.91	xxxxx[1]
6,71 - 7,20	109	31.0	69.0	8	6	25.91	xxxxx[1]
7,21 - 7,50	109	31.0	69.0	8	6	24.63	xxxxx[1]
7,51 - 7,96	117	33.0	77.0	8	6	28.92	xxxxx[1]
7,97	117	33.0	77.0	8	6	25.42	07970
7,98	117	33.0	77.0	8	6	25.42	07980
7,99	117	33.0	77.0	8	6	25.42	07990
8,00	117	33.0	77.0	8	6	25.42	08000
8,01	117	33.0	77.0	8	6	25.42	08010
8,02	117	33.0	77.0	8	6	25.42	08020
8,03 - 8,20	117	33.0	77.0	8	6	34.51	xxxxx[1]
8,21 - 8,50	117	33.0	77.0	8	6	34.51	xxxxx[1]
8,51 - 8,99	125	36.0	81.0	10	6	34.51	xxxxx[1]
9,00	125	36.0	81.0	10	6	32.09	09000
9,01	125	36.0	81.0	10	6	32.09	09010
9,02	125	36.0	81.0	10	6	32.09	09020
9,03 - 9,20	125	36.0	81.0	10	6	34.51	xxxxx[1]
9,21 - 9,50	125	36.0	81.0	10	6	33.12	xxxxx[1]
9,51 - 9,96	133	38.0	89.0	10	6	50.25	xxxxx[1]
9,97	133	38.0	89.0	10	6	32.09	09970
9,98	133	38.0	89.0	10	6	32.09	09980
9,99	133	38.0	89.0	10	6	32.09	09990
10,00	133	38.0	89.0	10	6	32.09	10000
10,01	133	38.0	89.0	10	6	32.09	10010
10,02	133	38.0	89.0	10	6	32.09	10020
10,03 - 10,20	133	38.0	89.0	10	6	51.71	xxxxx[1]
10,21 - 10,60	133	38.0	89.0	10	6	51.71	xxxxx[1]
10,61 - 11,20	142	41.0	98.0	10	6	48.91	xxxxx[1]
11,21 - 11,80	142	41.0	98.0	10	6	51.71	xxxxx[1]
11,81 - 11,96	151	44.0	106.0	10	6	48.91	xxxxx[1]
11,97	151	44.0	106.0	10	6	46.09	11970
11,98	151	44.0	106.0	10	6	46.09	11980
11,99	151	44.0	106.0	10	6	46.09	11990
12,00	151	44.0	106.0	10	6	46.09	12000

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

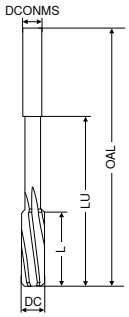
→ v_c Page 68+69

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 14 working days / Minimum order 5 pieces

This tool concept permits numerous tolerances.
Please refer to the table on → **Page 75** for tolerances covered.
For xxxxx please indicate required Ø in the order
(e.g. Ø 8.03 mm → Article no. 40 115 08030)!

Machine reamers, DIN 212-B

N



Left Hand Helix
HSS-E

DC H7	OAL	L	LU	DCONMS h9	ZEFP	U2 Article no. 40 150 ... £	
mm	mm	mm	mm	mm			
1.0	34	5.5	15.0	1.0	3	21.88	010
1.1	36	6.5	15.5	1.1	3	23.07	011
1.2	38	7.5	16.5	1.2	3	21.37	012
1.3	38	7.5	16.5	1.2	3	23.87	013
1.4	40	8.0	18.0	1.4	3	19.76	014
1.5	40	8.0	18.0	1.5	3	18.14	015
1.6	43	9.0	20.0	1.6	3	20.18	016
1.7	43	9.0	20.0	1.6	3	20.18	017
1.8	46	10.0	22.0	1.8	4	20.18	018
1.9	46	10.0	22.0	1.8	4	20.18	019
2.0	49	11.0	24.0	2.0	4	17.79	020
2.1	49	11.0	24.0	2.0	4	21.37	021
2.2	53	12.0	25.0	2.2	4	21.37	022
2.3	53	12.0	25.0	2.2	4	21.37	023
2.4	57	14.0	29.0	2.5	4	21.37	024
2.5	57	14.0	29.0	2.5	4	17.79	025
2.6	57	14.0	29.0	2.5	4	22.20	026
2.7	61	15.0	33.0	2.8	6	22.20	027
2.8	61	15.0	33.0	2.8	6	22.20	028
2.9	61	15.0	36.0	3.0	6	22.20	029
3.0	61	15.0	36.0	3.0	6	16.03	030
3.1	65	16.0	36.0	3.2	6	21.01	031
3.2	65	16.0	36.0	3.2	6	21.01	032
3.3	65	16.0	36.0	3.2	6	21.01	033
3.4	70	18.0	41.0	3.5	6	21.01	034
3.5	70	18.0	41.0	3.5	6	18.52	035
3.6	70	18.0	41.0	3.5	6	23.51	036
3.7	70	18.0	41.0	3.5	6	23.51	037
3.8	75	19.0	44.0	4.0	6	23.51	038
3.9	75	19.0	44.0	4.0	6	17.31	039
4.0	75	19.0	44.0	4.0	6	17.79	040
4.1	75	19.0	44.0	4.0	6	21.88	041
4.2	75	19.0	44.0	4.0	6	21.88	042
4.3	80	21.0	48.0	4.5	6	21.88	043
4.4	80	21.0	48.0	4.5	6	21.88	044
4.5	80	21.0	48.0	4.5	6	18.52	045
4.6	80	21.0	48.0	4.5	6	23.87	046
4.7	80	21.0	48.0	4.5	6	23.87	047
4.8	86	23.0	53.0	5.0	6	23.87	048
4.9	86	23.0	53.0	5.0	6	23.87	049
5.0	86	23.0	53.0	5.0	6	18.14	050
5.1	86	23.0	53.0	5.0	6	23.87	051
5.2	86	23.0	53.0	5.0	6	23.87	052
5.3	86	23.0	53.0	5.0	6	23.87	053
5.4	93	26.0	58.0	5.6	6	23.87	054
5.5	93	26.0	58.0	5.6	6	21.88	055
5.6	93	26.0	58.0	5.6	6	23.87	056
5.7	93	26.0	58.0	5.6	6	23.87	057
5.8	93	26.0	58.0	5.6	6	23.87	058
5.9	93	26.0	58.0	5.6	6	23.87	059
6.0	93	26.0	58.0	5.6	6	19.00	060
6.1	101	28.0	64.0	6.3	6	23.87	061
6.2	101	28.0	64.0	6.3	6	23.87	062
6.3	101	28.0	64.0	6.3	6	23.87	063
6.4	101	28.0	64.0	6.3	6	23.87	064
6.5	101	28.0	64.0	6.3	6	23.07	065
6.6	101	28.0	64.0	6.3	6	23.87	066
6.7	101	28.0	64.0	6.3	6	23.87	067
6.8	109	31.0	70.0	7.1	6	24.33	068
6.9	109	31.0	70.0	7.1	6	24.33	069
7.0	109	31.0	70.0	7.1	6	23.07	070
7.1	109	31.0	70.0	7.1	6	26.78	071
7.2	109	31.0	70.0	7.1	6	26.78	072
7.3	109	31.0	70.0	7.1	6	26.78	073
7.4	109	31.0	70.0	7.1	6	26.78	074
7.5	109	31.0	70.0	7.1	6	25.94	075
7.6	117	33.0	76.0	8.0	6	27.99	076
7.7	117	33.0	76.0	8.0	6	27.99	077
7.8	117	33.0	76.0	8.0	6	27.99	078
7.9	117	33.0	76.0	8.0	6	27.99	079
8.0	117	33.0	76.0	8.0	6	23.87	080
8.1	117	33.0	76.0	8.0	6	33.32	081
8.2	117	33.0	76.0	8.0	6	33.32	082
8.3	117	33.0	76.0	8.0	6	33.32	083
8.4	117	33.0	76.0	8.0	6	33.32	084
8.5	117	33.0	76.0	8.0	6	30.14	085
8.6	125	36.0	82.0	9.0	6	30.48	086
8.7	125	36.0	82.0	9.0	6	30.48	087
8.8	125	36.0	82.0	9.0	6	30.48	088
8.9	125	36.0	82.0	9.0	6	30.48	089
9.0	125	36.0	82.0	9.0	6	27.56	090
9.1	125	36.0	82.0	9.0	6	31.71	091
9.2	125	36.0	82.0	9.0	6	31.71	092
9.3	125	36.0	82.0	9.0	6	31.71	093
9.4	125	36.0	82.0	9.0	6	31.71	094
9.5	125	36.0	82.0	9.0	6	30.84	095
9.6	133	38.0	88.0	10.0	6	32.95	096
9.7	133	38.0	88.0	10.0	6	32.95	097
9.8	133	38.0	88.0	10.0	6	32.95	098
9.9	133	38.0	88.0	10.0	6	32.95	099
10.0	133	38.0	88.0	10.0	6	27.99	100
11.0	142	41.0	97.0	10.0	6	39.52	110
12.0	151	44.0	106.0	10.0	6	41.11	120
13.0	151	44.0	106.0	10.0	6	46.09	130
14.0	160	47.0	111.0	12.5	8	47.82	140
15.0	162	50.0	113.0	12.5	8	49.39	150
16.0	170	52.0	121.0	12.5	8	51.15	160
17.0	175	54.0	124.0	14.0	8	60.19	170
18.0	182	56.0	131.0	14.0	8	61.75	180
19.0	189	58.0	132.0	16.0	8	72.51	190
20.0	195	60.0	136.0	16.0	8	69.23	200

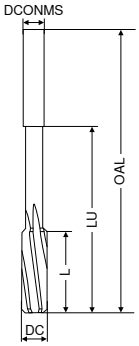
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

→ v_c Page 68+69

Machine reamers, DIN 212-B

- 0.01 mm steps
- tolerance: Ø 0.95–5.50 mm = +0.004 mm
- tolerance: Ø 5.51–12.00 mm = +0.005 mm

N 100



Left Hand Helix
HSS-E

DC +0,004/+0,005	OAL	L	LU	DCONMS h9	ZEFP	U2 Article no. 40 140 ...	
mm	mm	mm	mm	mm		£	
0,95 - 1,06	34	5.5	15.0	1.0	3	23.87	xxxxx[1]
1,07 - 1,18	36	6.5	15.5	1.1	3	23.87	xxxxx[1]
1,19 - 1,32	38	7.5	16.5	1.2	3	23.87	xxxxx[1]
1,33 - 1,39	40	8.0	18.0	1.4	3	23.87	xxxxx[1]
1,40 - 1,47	40	8.0	18.0	1.4	3	21.88	xxxxx[1]
1,48	40	8.0	18.0	1.4	3	21.88	01480
1,49	40	8.0	18.0	1.4	3	21.88	01490
1,50	40	8.0	18.0	1.4	3	20.67	01500
1,51 - 1,70	43	9.0	20.0	1.6	3	20.67	xxxxx[1]
1,71 - 1,90	46	10.0	22.0	1.8	4	20.67	xxxxx[1]
1,91 - 1,97	49	11.0	24.0	2.0	4	20.67	xxxxx[1]
1,98	49	11.0	24.0	2.0	4	20.67	01980
1,99	49	11.0	24.0	2.0	4	20.67	01990
2,00	49	11.0	24.0	2.0	4	19.39	02000
2,01	49	11.0	24.0	2.0	4	19.39	02010
2,02	49	11.0	24.0	2.0	4	19.39	02020
2,03	49	11.0	24.0	2.0	4	19.39	02030
2,04	49	11.0	24.0	2.0	4	19.39	02040
2,05	49	11.0	24.0	2.0	4	19.39	02050
2,06 - 2,09	49	11.0	24.0	2.0	4	19.39	xxxxx[1]
2,10 - 2,12	49	11.0	24.0	2.0	4	22.20	xxxxx[1]
2,13 - 2,36	53	12.0	25.0	2.2	4	22.20	xxxxx[1]
2,37 - 2,49	57	14.0	29.0	2.5	4	22.20	xxxxx[1]
2,50 - 2,59	57	14.0	29.0	2.5	4	19.00	xxxxx[1]
2,60 - 2,65	57	14.0	29.0	2.5	4	23.07	xxxxx[1]
2,66 - 2,80	61	15.0	33.0	2.8	6	23.07	xxxxx[1]
2,81 - 2,94	61	15.0	36.0	3.0	6	23.07	xxxxx[1]
2,95	61	15.0	36.0	3.0	6	23.07	02950
2,96	61	15.0	36.0	3.0	6	23.07	02960
2,97	61	15.0	36.0	3.0	6	23.07	02970
2,98	61	15.0	36.0	3.0	6	23.07	02980
2,99	61	15.0	36.0	3.0	6	23.07	02990
3,00	61	15.0	36.0	3.0	6	18.49	03000
3,01	65	16.0	36.0	3.2	6	17.31	03010
3,02	65	16.0	36.0	3.2	6	17.31	03020
3,03	65	16.0	36.0	3.2	6	17.31	03030
3,04	65	16.0	36.0	3.2	6	17.31	03040
3,05	65	16.0	36.0	3.2	6	17.31	03050
3,06	65	16.0	36.0	3.2	6	17.31	03060
3,07	65	16.0	36.0	3.2	6	17.31	03070
3,08 - 3,09	65	16.0	36.0	3.2	6	17.31	xxxxx[1]
3,10 - 3,35	65	16.0	36.0	3.2	6	21.88	xxxxx[1]
3,36 - 3,49	70	18.0	41.0	3.5	6	21.88	xxxxx[1]
3,50 - 3,59	70	18.0	41.0	3.5	6	19.00	xxxxx[1]
3,60 - 3,75	70	18.0	41.0	3.5	6	24.33	xxxxx[1]
3,76 - 3,81	75	19.0	44.0	4.0	6	24.33	xxxxx[1]
3,82 - 3,94	75	19.0	44.0	4.0	6	18.52	xxxxx[1]
3,95	75	19.0	44.0	4.0	6	18.52	03950
3,96	75	19.0	44.0	4.0	6	18.52	03960
3,97	75	19.0	44.0	4.0	6	18.52	03970
3,98	75	19.0	44.0	4.0	6	18.52	03980
3,99	75	19.0	44.0	4.0	6	18.52	03990
4,00	75	19.0	44.0	4.0	6	18.52	04000
4,01	75	19.0	44.0	4.0	6	18.52	04010
4,02	75	19.0	44.0	4.0	6	18.52	04020
4,03	75	19.0	44.0	4.0	6	18.52	04030
4,04	75	19.0	44.0	4.0	6	18.52	04040
4,05	75	19.0	44.0	4.0	6	18.52	04050
4,06	75	19.0	44.0	4.0	6	18.52	04060
4,07	75	19.0	44.0	4.0	6	18.52	04070
4,08	75	19.0	44.0	4.0	6	18.52	04080
4,09 - 4,20	75	19.0	44.0	4.0	6	18.52	xxxxx[1]
4,21 - 4,25	75	19.0	44.0	4.0	6	22.71	xxxxx[1]
4,26 - 4,75	80	21.0	48.0	4.5	5	22.71	xxxxx[1]
4,76 - 4,95	86	23.0	53.0	5.0	6	20.18	xxxxx[1]
4,96	86	23.0	53.0	5.0	6	20.18	04960
4,97	86	23.0	53.0	5.0	6	20.18	04970
4,98	86	23.0	53.0	5.0	6	20.18	04980
4,99	86	23.0	53.0	5.0	6	20.18	04990
5,00	86	23.0	53.0	5.0	6	20.18	05000
5,01	86	23.0	53.0	5.0	6	20.18	05010
5,02	86	23.0	53.0	5.0	6	20.18	05020
5,03	86	23.0	53.0	5.0	6	20.18	05030
5,04	86	23.0	53.0	5.0	6	20.18	05040
5,05	86	23.0	53.0	5.0	6	20.18	05050
5,06	86	23.0	53.0	5.0	6	20.18	05060
5,07	86	23.0	53.0	5.0	6	20.18	05070
5,08 - 5,20	86	23.0	53.0	5.0	6	20.18	xxxxx[1]
5,21 - 5,30	86	23.0	53.0	5.0	6	22.20	xxxxx[1]
5,31 - 5,94	93	26.0	58.0	5.6	6	22.20	xxxxx[1]
5,95	93	26.0	58.0	5.6	6	22.20	05950
5,96	93	26.0	58.0	5.6	6	22.20	05960
5,97	93	26.0	58.0	5.6	6	22.20	05970
5,98	93	26.0	58.0	5.6	6	22.20	05980
5,99	93	26.0	58.0	5.6	6	22.20	05990

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

→ v_c Page 68+69

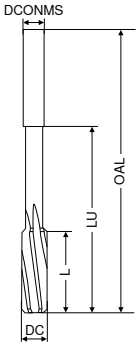
1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 14 working days

This tool concept permits numerous tolerances.
For achievable tolerances covered, please see the table on → **Page 75**.
For xxxxx please indicate requested Ø in the order
(e.g. Ø 10.06 mm → Article no. 40 140 10060)!

Machine reamers, DIN 212-B

- ▲ 0.01 mm steps
- ▲ tolerance: Ø 0.95–5.50 mm = +0.004 mm
- ▲ tolerance: Ø 5.51–12.00 mm = +0.005 mm

N 100



Left Hand Helix
HSS-E

DC	OAL	L	LU	DCONMS h9	ZEFP	U2 Article no. 40 140 ... £	
mm	mm	mm	mm	mm			
6,00	93	26	58	5.6	6	22.20	06000
6,01	101	28	64	6.3	6	22.20	06010
6,02	101	28	64	6.3	6	22.20	06020
6,03	101	28	64	6.3	6	22.20	06030
6,04	101	28	64	6.3	6	22.20	06040
6,05	101	28	64	6.3	6	22.20	06050
6,06 - 6,11	101	28	64	6.3	6	22.20	xxxxx 1)
6,12 - 6,34	101	28	64	6.3	6	24.33	xxxxx 1)
6,35	101	28	64	6.3	6	24.33	06350
6,36	101	28	64	6.3	6	24.33	06360 1)
6,71 - 6,94	109	31	70	7.1	6	24.33	xxxxx 1)
6,95	109	31	70	7.1	6	24.33	06950
6,96	109	31	70	7.1	6	24.33	06960
6,97	109	31	70	7.1	6	24.33	06970
6,98	109	31	70	7.1	6	24.33	06980
6,99	109	31	70	7.1	6	24.33	06990
7,00	109	31	70	7.1	6	24.33	07000
7,01	109	31	70	7.1	6	24.33	07010
7,02	109	31	70	7.1	6	24.33	07020
7,03	109	31	70	7.1	6	24.33	07030
7,04 - 7,50	109	31	70	7.1	6	24.33	xxxxx 1)
7,51 - 7,63	109	31	76	7.1	6	24.33	xxxxx 1)
7,64 - 7,94	117	33	76	8.0	6	24.33	xxxxx 1)
7,95	117	33	76	8.0	6	24.33	07950
7,96	117	33	76	8.0	6	24.33	07960
7,97	117	33	76	8.0	6	24.33	07970
7,98	117	33	76	8.0	6	24.33	07980
7,99	117	33	76	8.0	6	24.33	07990
8,00	117	33	76	8.0	6	24.33	08000
8,01	117	33	76	8.0	6	24.33	08010
8,02	117	33	76	8.0	6	24.33	08020
8,03	117	33	76	8.0	6	24.33	08030
8,04	117	33	76	8.0	6	24.33	08040
8,05	117	33	76	8.0	6	24.33	08050
8,06 - 8,20	117	33	76	8.0	6	24.33	xxxxx 1)
8,21 - 8,50	117	33	76	8.0	6	30.48	xxxxx 1)
8,51 - 8,63	117	33	82	8.0	6	30.48	xxxxx 1)
8,64 - 8,95	125	36	82	9.0	6	30.48	xxxxx 1)
8,96	125	36	82	9.0	6	30.48	08960
8,97	125	36	82	9.0	6	30.48	08970
8,98	125	36	82	9.0	6	30.48	08980
8,99	125	36	82	9.0	6	30.48	08990
9,00	125	36	82	9.0	6	30.48	09000
9,01	125	36	82	9.0	6	30.48	09010
9,02	125	36	82	9.0	6	30.48	09020
9,03 - 9,50	125	36	82	9.0	6	30.48	xxxxx 1)
9,51 - 9,63	125	36	88	9.0	6	30.48	xxxxx 1)
9,64 - 9,95	133	38	88	10.0	6	30.48	xxxxx 1)
9,96	133	38	88	10.0	6	30.48	09960
9,97	133	38	88	10.0	6	30.48	09970
9,98	133	38	88	10.0	6	30.48	09980
9,99	133	38	88	10.0	6	30.48	09990
10,00	133	38	88	10.0	6	30.48	10000
10,01	133	38	88	10.0	6	30.48	10010
10,02	133	38	88	10.0	6	30.48	10020
10,03	133	38	88	10.0	6	30.48	10030
10,04	133	38	88	10.0	6	30.48	10040
10,05	133	38	88	10.0	6	30.48	10050
10,06 - 10,09	133	38	88	10.0	6	30.48	xxxxx 1)
10,10	133	38	88	10.0	6	30.48	10100
10,11 - 10,19	133	38	88	10.0	6	30.48	xxxxx 1)
10,20	133	38	88	10.0	6	30.48	10200
10,21 - 10,69	133	38	88	10.0	6	38.23	xxxxx 1)
10,70 - 11,20	142	41	97	10.0	6	38.23	xxxxx 1)
11,21 - 11,80	142	41	97	10.0	6	43.63	xxxxx 1)
11,81 - 11,95	151	44	106	10.0	6	43.63	xxxxx 1)
11,96	151	44	106	10.0	6	43.63	11960
11,97	151	44	106	10.0	6	43.63	11970
11,98	151	44	106	10.0	6	43.63	11980
11,99	151	44	106	10.0	6	43.63	11990
12,00	151	44	106	10.0	6	43.63	12000

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

→ v_c Page 68+69

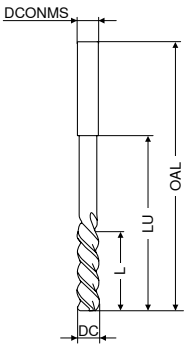
1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 14 working days

This tool concept permits numerous tolerances.
For achievable tolerances covered, please see the table on → **Page 75**.
For xxxxx please indicate requested Ø in the order
(e.g. Ø 10.06 mm → Article no. 40 140 10060)!

Quick spiral machine reamers, DIN 212-C

- with 45° left-hand helix and conical chamfer
- for reaming through holes in long chipping materials
- not suitable for blind holes
- the reaming allowance should be for at least 50 % greater and the feed up to 100 % higher than the normal values for reamers. This gives a clean, chatter-free surface, high roundness of the bore and a longer service life.

S



Left Hand Helix
HSS-E
Through hole

DC $_{H7}$ mm	OAL mm	L mm	LU mm	DCONMS $_{h9}$ mm	ZEFP	U2 Article no. 40 155 ... £	
1.0	34	5.5	15	1.0	2	26.29	010 1)
1.5	40	8.0	18	1.5	2	20.18	015 1)
1.8	46	10.0	22	1.8	2	24.10	018 1)
2.0	49	11.0	24	2.0	3	20.64	020 1)
2.2	53	12.0	25	2.2	3	30.64	022 1)
2.5	57	14.0	29	2.5	3	21.96	025 1)
2.8	61	15.0	33	2.8	3	34.20	028 1)
3.0	61	15.0	36	3.0	3	24.59	030 1)
3.2	65	16.0	36	3.2	3	36.37	032 1)
3.5	70	18.0	41	3.5	3	28.48	035 1)
4.0	75	19.0	44	4.0	3	24.59	040
4.5	80	21.0	48	4.5	3	28.48	045
5.0	86	23.0	53	5.0	3	27.19	050
6.0	93	26.0	58	5.6	3	26.74	060
6.5	101	28.0	64	6.3	3	32.01	065
7.0	109	31.0	70	7.1	3	29.76	070
8.0	117	33.0	76	8.0	3	29.76	080
9.0	125	36.0	82	9.0	3	39.87	090
10.0	133	38.0	88	10.0	3	37.65	100
11.0	142	41.0	97	10.0	3	48.20	110
12.0	151	44.0	106	10.0	3	45.49	120
13.0	151	44.0	106	10.0	3	64.00	130
14.0	160	47.0	111	12.5	3	59.60	140
15.0	162	50.0	113	12.5	3	60.52	150
16.0	170	52.0	121	12.5	3	64.00	160
17.0	175	54.0	124	14.0	3	95.46	170
18.0	182	56.0	131	14.0	3	87.58	180
19.0	189	58.0	132	16.0	3	99.01	190
20.0	195	60.0	136	16.0	3	95.46	200

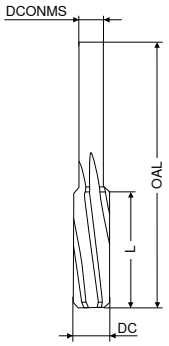
Steel	●
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

→ v_c Page 68+69

1) not standardised

Stub reamers, DIN 8089-B

AR



Left Hand Helix
HSS-E
Through hole

DC $_{H7}$ mm	OAL mm	L mm	DCONMS $_{h8}$ mm	ZEFP	U2 Article no. 40 145 ... £	
4.0	56	20	3.55	6	18.43	040
4.5	63	22	4.00	6	21.01	045
5.0	63	22	4.00	6	20.18	050
5.5	63	22	5.00	6	23.25	055
6.0	63	22	5.00	6	20.18	060
6.5	63	22	5.00	6	24.59	065
7.0	71	25	6.30	6	24.59	070
8.0	71	25	6.30	6	24.10	080
9.0	71	25	8.00	6	28.48	090
10.0	71	25	8.00	6	29.34	100
11.0	80	28	10.00	6	40.31	110
12.0	80	28	10.00	6	42.92	120
13.0	80	28	10.00	6	48.28	130
14.0	90	32	12.50	8	49.02	140
15.0	90	32	12.50	8	50.88	150
16.0	90	32	12.50	8	53.47	160
17.0	90	32	12.50	8	61.20	170
18.0	100	36	16.00	8	64.79	180
19.0	100	36	16.00	8	75.33	190
20.0	100	36	16.00	8	70.89	200

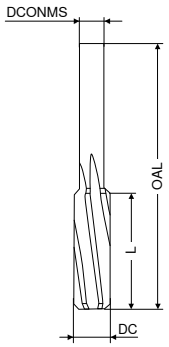
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

→ v_c Page 68+69

Stub reamers, DIN 8089-B

- 0.01 mm steps
- tolerance: Ø 3.76–5.50 mm = +0.004 mm
- tolerance: Ø 5.51–12.00 mm = +0.005 mm

AR 100



Left Hand Helix
HSS-E

DC +0,004/+0,005	OAL	L	DCONMS h8	ZEFP	U2 Article no. 40 139 ...	
mm	mm	mm	mm		£	
3,76 - 3,81	56	20	3.55	6	26.74	xxxxx 1)
3,82 - 3,94	56	20	3.55	6	19.73	xxxxx 1)
3,95	56	20	3.55	6	19.73	03950
3,96	56	20	3.55	6	19.73	03960
3,97	56	20	3.55	6	19.73	03970
3,98	56	20	3.55	6	19.73	03980
3,99	56	20	3.55	6	19.73	03990
4,00	56	20	3.55	6	19.73	04000
4,01	56	20	3.55	6	19.73	04010
4,02	56	20	3.55	6	19.73	04020
4,03 - 4,20	56	20	3.55	6	19.73	xxxxx 1)
4,21 - 4,25	56	20	3.55	6	23.66	xxxxx 1)
4,26 - 4,75	63	22	4.00	6	23.66	xxxxx 1)
4,76 - 4,94	63	22	4.00	6	21.01	xxxxx 1)
4,95	63	22	4.00	6	21.01	04950
4,96	63	22	4.00	6	21.01	04960
4,97	63	22	4.00	6	21.01	04970
4,98	63	22	4.00	6	21.01	04980
4,99	63	22	4.00	6	21.01	04990
5,00	63	22	4.00	6	21.01	05000
5,01	63	22	4.00	6	21.01	05010
5,02	63	22	4.00	6	21.01	05020
5,03	63	22	4.00	6	21.01	05030
5,04	63	22	4.00	6	21.01	05040
5,05	63	22	4.00	6	21.01	05050
5,06 - 5,20	63	22	4.00	6	21.01	xxxxx 1)
5,21 - 5,30	63	22	4.00	6	23.66	xxxxx 1)
5,31 - 5,70	63	22	5.00	6	23.66	xxxxx 1)
5,71 - 5,94	63	22	5.00	6	23.66	xxxxx 1)
5,95	63	22	5.00	6	23.66	05950
5,96	63	22	5.00	6	23.66	05960
5,97	63	22	5.00	6	23.66	05970
5,98	63	22	5.00	6	23.66	05980
5,99	63	22	5.00	6	23.66	05990
6,00	63	22	5.00	6	23.66	06000
6,01	63	22	5.00	6	23.66	06010
6,02	63	22	5.00	6	23.66	06020
6,03 - 6,11	63	22	5.00	6	23.66	xxxxx 1)
6,12 - 6,70	63	22	5.00	6	25.42	xxxxx 1)
6,71 - 6,94	71	25	6.30	6	25.42	xxxxx 1)
6,95	71	25	6.30	6	25.42	06950
6,96	71	25	6.30	6	25.42	06960
6,97	71	25	6.30	6	25.42	06970
6,98	71	25	6.30	6	25.42	06980
6,99	71	25	6.30	6	25.42	06990
7,00	71	25	6.30	6	25.42	07000
7,01	71	25	6.30	6	25.42	07010
7,02	71	25	6.30	6	25.42	07020
7,03 - 7,25	71	25	6.30	6	25.42	xxxxx 1)
7,26 - 7,94	71	25	6.30	6	25.42	xxxxx 1)
7,95	71	25	6.30	6	25.42	07950
7,96	71	25	6.30	6	25.42	07960
7,97	71	25	6.30	6	25.42	07970
7,98	71	25	6.30	6	25.42	07980
7,99	71	25	6.30	6	25.42	07990
8,00	71	25	6.30	6	25.42	08000
8,01	71	25	6.30	6	25.42	08010
8,02	71	25	6.30	6	25.42	08020
8,03	71	25	6.30	6	25.42	08030
8,04	71	25	6.30	6	25.42	08040
8,05 - 8,20	71	25	6.30	6	25.42	xxxxx 1)
8,21 - 8,50	71	25	6.30	6	32.01	xxxxx 1)
8,51 - 8,94	71	25	8.00	6	32.01	xxxxx 1)
8,95	71	25	8.00	6	32.01	08950
8,96	71	25	8.00	6	32.01	08960
8,97	71	25	8.00	6	32.01	08970
8,98	71	25	8.00	6	32.01	08980
8,99	71	25	8.00	6	32.01	08990
9,00	71	25	8.00	6	32.01	09000
9,01	71	25	8.00	6	32.01	09010 1)
9,02	71	25	8.00	6	32.01	09020
9,03 - 9,25	71	25	8.00	6	32.01	xxxxx
9,26 - 9,94	71	25	8.00	6	32.01	xxxxx 1)
9,95	71	25	8.00	6	32.01	09950
9,96	71	25	8.00	6	32.01	09960
9,97	71	25	8.00	6	32.01	09970
9,98	71	25	8.00	6	32.01	09980
9,99	71	25	8.00	6	32.01	09990
10,00	71	25	8.00	6	32.01	10000
10,01	71	25	8.00	6	32.01	10010
10,02	71	25	8.00	6	32.01	10020
10,03 - 10,20	71	25	8.00	6	32.01	xxxxx 1)
10,21 - 10,60	71	25	8.00	6	40.72	xxxxx 1)
10,61 - 11,20	80	28	10.00	6	40.72	xxxxx 1)
11,21 - 11,25	80	28	10.00	6	47.28	xxxxx 1)
11,26 - 11,94	80	28	10.00	6	47.28	xxxxx 1)
11,95	80	28	10.00	6	47.28	11950
11,96	80	28	10.00	6	47.28	11960
11,97	80	28	10.00	6	47.28	11970
11,98	80	28	10.00	6	47.28	11980
11,99	80	28	10.00	6	47.28	11990
12,00	80	28	10.00	6	47.28	12000

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

→ v_c Page 68+69

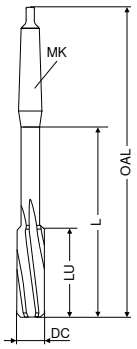
1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 14 working days

This tool concept permits numerous tolerances.
For achievable tolerances covered, please see the table on → **Page 75**.
For xxxxx please indicate required diameter in the order
(e.g. Ø 3.82 mm → Article no. 40 139 03820)!

Machine reamers HSS-E, DIN 208

▲ the circular land on the cutting edge burnishes the hole and guides the reamer

N



Left Hand Helix
HSS-E
Through hole

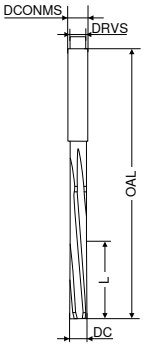
DC H7	OAL	L	LU	MK	ZEFP	U2 Article no. 40 160 ... £	
mm	mm	mm	mm				
16	210	52	130	2	8	61.20	160
17	214	54	134	2	8	65.70	170
18	219	56	139	2	8	68.29	180
19	223	58	143	2	8	71.82	190
20	228	60	148	2	8	71.82	200
21	232	62	152	2	8	81.42	210
22	237	64	157	2	8	81.42	220
23	241	66	161	2	8	93.63	230
24	268	68	169	3	8	96.37	240
25	268	68	169	3	8	99.01	250
26	273	70	174	3	8	106.05	260
27	277	71	178	3	10	117.35	270
28	277	71	178	3	10	117.35	280
29	281	73	182	3	10	131.41	290
30	281	73	182	3	10	121.78	300
32	317	77	193	4	10	159.34	320
34	321	78	197	4	10	177.72	340
35	321	78	197	4	10	177.72	350
36	325	79	201	4	10	193.46	360
38	329	81	205	4	10	212.71	380
40	329	81	205	4	10	214.51	400
42	333	82	209	4	12	234.66	420
44	336	83	212	4	12	276.66	440
45	336	83	212	4	12	279.28	450
46	340	84	216	4	12	330.00	460
47	340	84	216	4	12	349.29	470
48	344	86	220	4	12	351.04	480
50	344	86	220	4	12	351.04	500

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

→ v_c Page 68+69

Hand reamers, DIN 206-B

H



Left Hand Helix
HSS

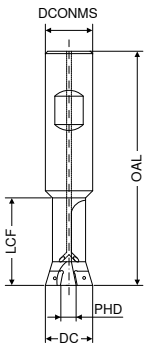
DC H7	OAL	L	DRVS	DCONMS	ZEFP	U2 Article no. 40 100 ... £	
mm	mm	mm	mm	mm			
1.0	34	13		1.0	3	33.76	010
1.2	38	17		1.2	3	32.01	012
1.3	38	17		1.3	3	32.84	013
1.4	41	20	1.12	1.4	3	28.48	014
1.5	41	20	1.12	1.5	3	27.19	015
1.6	44	21	1.25	1.6	3	28.92	016
1.8	47	23	1.40	1.8	4	29.34	018
2.0	50	25	1.60	2.0	4	24.99	020
2.2	54	27	1.80	2.2	4	29.34	022
2.5	58	29	2.00	2.5	4	24.59	025
2.8	62	31	2.24	2.8	6	30.22	028
3.0	62	31	2.24	3.0	6	25.87	030
3.2	66	33	25.00	3.2	6	32.01	032
3.5	71	35	2.80	3.5	6	30.22	035
4.0	76	38	3.15	4.0	6	21.96	040
4.5	81	41	3.55	4.5	6	26.74	045
5.0	87	44	4.00	5.0	6	25.87	050
5.5	93	47	4.50	5.5	6	27.56	055
6.0	93	47	4.50	6.0	6	24.99	060
7.0	107	54	5.60	7.0	6	27.19	070
8.0	115	58	6.30	8.0	6	28.48	080
9.0	124	62	7.10	9.0	6	32.01	090
10.0	133	66	8.00	10.0	6	32.01	100
11.0	142	71	9.00	11.0	6	35.49	110
12.0	152	76	10.00	12.0	6	38.10	120
13.0	152	76	10.00	13.0	6	56.08	130
14.0	163	81	11.20	14.0	8	61.20	140
15.0	163	81	11.20	15.0	8	64.79	150
16.0	175	87	12.50	16.0	8	67.57	160
17.0	175	87	14.00	17.0	8	70.89	170
18.0	188	93	14.00	18.0	8	78.83	180
19.0	188	93	14.00	19.0	8	84.97	190
20.0	201	100	16.00	20.0	8	83.26	200
22.0	215	107	18.00	22.0	8	96.37	220
24.0	231	115	20.00	24.0	8	111.22	240
25.0	231	115	20.00	25.0	8	113.81	250
26.0	231	115	20.00	26.0	8	121.78	260
28.0	247	124	22.40	28.0	10	155.83	280
30.0	247	124	22.40	30.0	10	163.82	300
32.0	265	133	25.00	32.0	10	180.47	320
34.0	284	142	28.00	34.0	10	218.95	340
35.0	284	142	28.00	35.0	10	220.64	350
36.0	284	142	28.00	36.0	10	238.94	360
38.0	305	152	31.50	38.0	10	278.41	380
40.0	305	152	31.50	40.0	10	291.49	400

Insert Countersink

- ▲ 2 cutting edges, right-hand cutting for countersinking according to DIN 974-1
- ▲ for countersinking of hexagon socket screws ISO 1207, ISO 4762 (DIN 912), DIN 6912, DIN 7984
- ▲ for sinking cap screws the recommended inserts are specified

Supply details:
Indexable insert countersink including clamping screws

WPS



for screws	DC	PHD	DCONMS h6	OAL	LCF	Insert	U3 Article no. 30 195 ...	
	mm	mm	mm	mm	mm		£	
M8	15	4.0	16	90	25	CC.T 060204	250.69	**015**
M10	18	7.0	16	90	31	CC.T 060204	266.46	**018**
M12	20	9.0	20	100	40	CC.T 060204	274.50	**020**
M16	26	8.5	25	110	52	CC.T 09T304	297.87	**026**
M20	33	15.5	32	130	66	CC.T 09T304	313.49	**033**

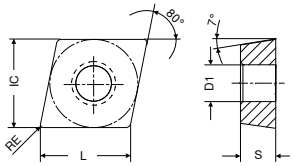
Key D

Clamping screw

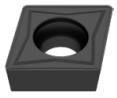
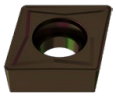
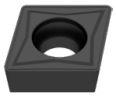
Spare parts		Y7 Article no. 80 950 ...			2A Article no. 70 950 ...	
Insert		£			£	
CC.T 060204	T08	10.30	**110**	M2,5x6	2.15	**112**
CC.T 09T304	T15	12.26	**113**	M3,5x7,2	2.85	**110**

CCMT / CCGT

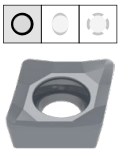
Designation	L	S	D1	IC
	mm	mm	mm	mm
CC.T 0602..	6.4	2.38	2.8	6.35
CC.T 09T3..	9.7	3.97	4.4	9.52



CCMT

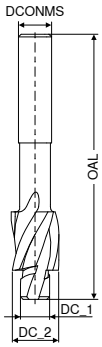
	-SM CTCP125	-SM CTCP135	-SM CTC2135	-SM CTCK110
	-ZM HCX1125	-ZM HCR1135	-ZM CWN2135	-ZM DCX3110
	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN
				
	M	M	M	M
	CCMT	CCMT	CCMT	CCMT
	1A/08	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 76 252 ... £	Article no. 76 252 ... £	Article no. 70 252 ... £	Article no. 70 252 ... £
060204EN 0.4	7.07 504	7.07 704	6.85 670	7.07 004
060208EN 0.8		7.07 706		7.07 006
09T304EN 0.4	8.82 516	8.82 716	8.80 674	8.82 016
09T308EN 0.8	8.82 518	8.82 718	8.80 676	8.82 018
09T312EN 1.2				8.82 020
Steel	●	●	○	●
Stainless steel	○	○	●	○
Cast iron	○			●
Non ferrous metals				
Heat resistant alloys		○	●	
Hardened materials				

CCGT

	-27 H10T	-27 CWN15	-27 AMZ
	-AL CWK15	-AL CWN15	-AL AMZ
			
	M	M	M
	CCGT	CCGT	CCGT
	1A/90	1A	1A/90
ISO / RE mm	Article no. 70 254 ... £	Article no. 70 254 ... £	Article no. 70 254 ... £
060202FN 0.2	9.29 600	11.79 300	11.29 450
060204FN 0.4	9.29 602	11.79 302	11.29 452
09T302FN 0.2	9.92 604	12.19 304	11.59 454
09T304FN 0.4	9.92 606	12.19 306	11.59 456
09T308FN 0.8	9.92 608	12.19 308	11.59 458
Steel			○
Stainless steel		○	○
Cast iron	○		○
Non ferrous metals	●	●	●
Heat resistant alloys	○		
Hardened materials			

Counterbore, DIN 373

- with fixed pilot
- with 3 cutting edges, right-hand flutes for counterbores according to DIN 74
- for countersinking to suit hexagon socket screws according to DIN 912, DIN 6912, DIN 7984 and cap screws according to DIN 84



HSS
Core hole

fine
HSS
Through hole

medium
HSS
Through hole

Thread	DC_2 z9	DCONMS h9	OAL	DC_1 e8	U1 Article no. 30 192 ...		U1 Article no. 30 190 ...		U1 Article no. 30 191 ...	
	mm	mm	mm	mm	£		£		£	
M3	6	5.0	71	2.5	22.51	**030**				
M3	6	5.0	71	3.2			20.79	**030** 1)		
M3	6	5.0	71	3.4					20.79	**030** 1)
M4	8	5.0	71	3.3	21.67	**040**				
M4	8	5.0	71	4.3			18.25	**040** 1)		
M4	8	5.0	71	4.5					18.25	**040** 1)
M5	10	8.0	80	4.2	20.67	**050**				
M5	10	8.0	80	5.3			19.91	**050** 1)		
M5	10	8.0	80	5.5					19.91	**050** 1)
M6	11	8.0	80	5.0	22.80	**060**				
M6	11	8.0	80	6.4			21.25	**060** 1)		
M6	11	8.0	80	6.6					21.25	**060** 1)
M8	15	12.5	100	6.8	35.49	**080**				
M8	15	12.5	100	8.4			34.43	**080** 1)		
M8	15	12.5	100	9.0					34.43	**080** 1)
M10	18	12.5	100	8.5	44.04	**100**				
M10	18	12.5	100	10.5			41.13	**100** 1)		
M10	18	12.5	100	11.0					41.13	**100** 1)
M12	20	12.5	100	10.2	47.89	**120**				
M12	20	12.5	100	13.0			44.75	**120**		
M12	20	12.5	100	13.5					44.75	**120**

1) included in the set

Counterbore, DIN 373 – Set

Scope of supply:
Counterbores M3; M4; M5; M6; M8; M10 in case

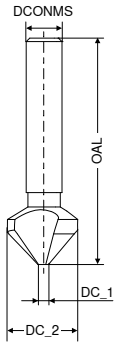
U1 Article no. 30 190 ...		U1 Article no. 30 191 ...	
£		£	
182.73	**999**	182.73	**999**

Countersink 90° with irregular pitch, DIN 335-C

- ▲ all sizes with 3 cutting edges and highly irregular pitch, resulting in smooth running, excellent roundness and chatter reduction giving the highest surface quality
- ▲ special TPX76S coating
- ▲ for very high tool life in almost all materials
- ▲ greatly reduced axial and radial forces
- ▲ for countersinking to DIN 7991

N

TPX76S



90°
Solid carbide

DC_2 z9	DC_1	DCONMS h6	OAL	DIN 7991	U1 Article no. 30 116 ...	
mm	mm	mm	mm		£	
6.3	1.5	5	45	M3	144.89	063
8.3	2.0	6	50	M4	156.30	083
10.4	2.5	6	50	M5	163.15	104
12.4	2.8	8	56	M6	171.13	124
16.5	3.2	10	60	M8	208.78	165
20.5	3.5	10	63	M10	240.73	205
25.0	3.8	10	67	M12	277.24	250
31.0	4.2	12	71	M16	328.57	310

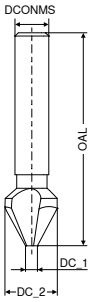
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	○

→ v_c Page 70

Countersink 60°, factory standard-C

▲ with 3 cutting edges for countersinking and deburring in high-tensile steels, grey cast iron, aluminium alloys containing silicon and corrosion resistant steels

N



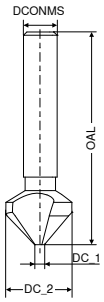
◁ 60°
Solid carbide

DC_2 z9	DC_1	DCONMS h9	OAL	U1 Article no. 30 160 ...	
mm	mm	mm	mm	£	
12.5	3.2	8	56	238.84	**125**
16.0	4.0	10	63	325.07	**160**
20.0	5.0	10	67	377.03	**200**
25.0	6.3	10	71	420.53	**250**

Countersink 90°, factory standard-C

▲ with 3 cutting edges for countersinking and deburring in high-tensile steels, grey cast iron, alumínium alloys containing silicon and corrosion resistant steels
▲ from Ø 12.4 mm with solid carbide head

N



◁ 90°
Solid carbide

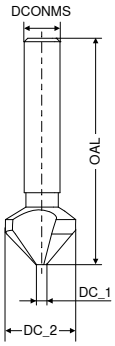
DC_2 z9	DC_1	DCONMS h9	OAL	DIN ISO 7721	DIN 7991	U1 Article no. 30 115 ...	
mm	mm	mm	mm			£	
10.4	2.5	8	46	M5		165.75	**100**
12.4	2.8	8	56		M6	165.75	**124**
15.0	3.2	10	60	M8		204.25	**150**
16.5	3.2	10	60		M8	216.46	**165**
20.5	3.5	10	63		M10	258.28	**205**
25.0	3.8	10	67		M12	296.63	**250**
31.0	4.2	12	71		M16	395.98	**310**

Countersink 90° with irregular pitch, DIN 335-C

- ▲ all sizes with 3 cutting edges and highly irregular pitch, resulting in smooth running, excellent roundness and chatter reduction giving the highest surface quality
- ▲ special Ti50 coating
- ▲ for very high tool life in almost all materials
- ▲ greatly reduced axial and radial forces
- ▲ for countersinking to DIN ISO 7721 and DIN 7991

N

Ti50



4

90°
HSS

DC_2 z9	DC_1	DCONMS	OAL	DIN ISO 7721	DIN 7991	U1 Article no. 30 140 ...	
mm	mm	mm	mm			£	
4.3	1.3	4	40	M2		25.49	043
6.0	1.5	5	45	M3		31.59	060
6.3	1.5	5	45		M3	31.59	063
8.0	2.0	6	50	M4		29.64	080
8.3	2.0	6	50		M4	30.44	083
10.0	2.5	6	50	M5		30.81	100
10.4	2.5	6	50		M5	32.20	104 1)
11.5	2.8	8	56	M6		35.33	115
12.4	2.8	8	56		M6	37.23	124
15.0	3.2	10	60	M8		41.62	150
16.5	3.2	10	60		M8	44.04	165 1)
19.0	3.5	10	63	M10		51.08	190
20.5	3.5	10	63		M10	61.60	205
23.0	3.8	10	67	M12		76.81	230
25.0	3.8	10	67		M12	84.41	250 1)
31.0	4.2	12	71		M16	109.38	310

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

1) included in the set

→ v_c Page 70

Countersink 90° with irregular pitch, DIN 335-C – Set

Scope of supply:

Countersinks Ø 10.4 / 16.5 / 25.0 mm in storage case

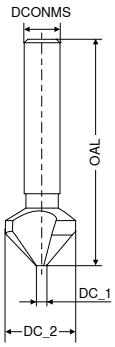
N

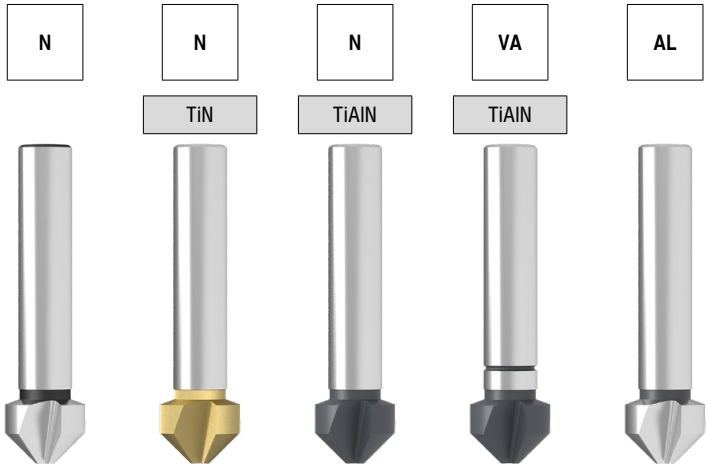
Ti50

U1 Article no. 30 140 ...	
£	
235.20	999

Countersink 90°, DIN 335-C

- 3 cutting edges to avoid burrs and chatter marks when countersinking and deburring in virtually all materials. Particularly suitable for DIN screws according to DIN ISO 7721 and 7991, as the countersink diameters are matched to the heads of these screws.
- the TiN version makes high cutting rates possible; very long tool life and very good friction resistance properties in order to avoid material sticking.
- TiAlN version shows considerably improved performance compared to TiN version. Particularly suitable for all abrasive materials (cast iron, AlSi) and/or at high temperature.





DC_2 z9	DC_1	DCONMS	OAL	DIN ISO 7721	DIN 7991	U1 Article no. 30 100 ...		U1 Article no. 30 110 ...		U1 Article no. 30 130 ...		U1 Article no. 30 132 ...		U1 Article no. 30 102 ...	
mm	mm	mm	mm			£		£		£		£		£	
4.3	1.3	4	40	M2		12.22	043								
5.0	1.5	4	40	M2,5		12.22	050	23.23	050	31.65	050				
6.0	1.5	5	45	M3		12.22	060								
6.3	1.5	5	45		M3	12.22	063 1)	23.23	063 1)	32.41	063	20.32	063	13.93	063
7.0	1.8	6	50	M3,5		13.14	070								
8.0	2.0	6	50	M4		13.55	080	27.75	080	33.86	080				
8.3	2.0	6	50		M4	14.52	083 1)	27.75	083 1)	33.51	083	24.07	083	14.71	083
9.4	2.2	6	50			14.97	094								
10.0	2.5	6	50	M5		16.06	100	30.22	100	35.49	100				
10.4	2.5	6	50		M5	16.54	104 1)	32.20	104 1)	36.88	104	33.98	104	17.05	104
11.5	2.8	8	56	M6		16.95	115								
12.4	2.8	8	56		M6	17.54	124 1)	35.49	124 1)	46.94	124	29.60	124	18.14	124
13.4	2.9	8	56			18.89	134								
15.0	3.2	10	60	M8		20.92	150	37.94	150	60.03	150	36.58	150	20.49	150
16.5	3.2	10	60		M8	22.80	165 1)	44.04	165 1)	61.91	165	39.63	165	22.04	165
19.0	3.5	10	63	M10		28.81	190								
20.5	3.5	10	63		M10	30.22	205 1)	61.60	205 1)	80.78	205	47.10	205	30.34	205
23.0	3.8	10	67	M12		38.22	230								
25.0	3.8	10	67		M12	40.39	250	84.41	250	115.35	250	61.40	250	40.33	250
31.0	4.2	12	71		M16	61.60	310	109.38	310	157.35	310	91.18	310		
31.0	4.2	12	67		M16									64.77	310

1) included in the set

Countersink 90°, DIN 335-C – set

Scope of supply:

Countersinks Ø 6,3; 8,3; 10,4; 12,4; 16,5; 20,5 in case

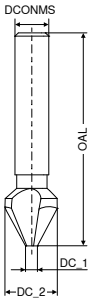
N

TiN

U1 Article no. 30 100 ...		U1 Article no. 30 110 ...	
£		£	
117.66	999	235.20	999

Countersink 60°, DIN 334-C

▲ 3 cutting edges for countersinking and deburring in virtually all materials



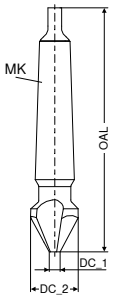
60°
HSS

DC_2 z9	DC_1	DCONMS h9	OAL	U1 Article no. 30 150 ...	
mm	mm	mm	mm	£	
6.3	1.6	5	45	14.10	063 1)
8.0	2.0	6	50	14.10	080 1)
10.0	2.5	6	52	17.38	100 1)
12.5	3.2	8	56	17.80	125 1)
16.0	4.0	10	63	22.25	160 1)
20.0	5.0	10	67	32.11	200 1)
25.0	6.3	10	71	42.18	250

1) included in the set

Countersink 60°, DIN 334-D

▲ 3 cutting edges for countersinking and deburring in virtually all materials



MK
60°
HSS

DC_2 z9	DC_1	OAL	MK	U1 Article no. 30 155 ...	
mm	mm	mm		£	
16.0	4.0	90	1	50.32	160
20.0	5.0	106	2	59.99	200
25.0	6.3	112	2	62.85	250
31.5	10.0	118	2	69.90	315
40.0	12.5	150	3	110.34	400
50.0	16.0	160	3	140.78	500
63.0	20.0	190	4	260.18	630
80.0	25.0	200	4	356.58	800

Countersink 60°, DIN 334-C – set

Scope of supply:

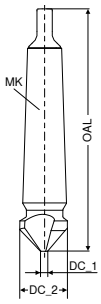
Countersinks Ø 6.3; 8.0; 10.0; 12.5; 16.0; 20.0 in case

U1 Article no. 30 150 ...	
£	
130.60	999

Countersink 90°, DIN 335-C

▲ 3 cutting edges to avoid burrs and chatter marks when countersinking and deburring in virtually all materials. Particularly suitable for DIN screws according to DIN ISO 7721 and 7991, as the countersink diameters are matched to the heads of these screws.

N

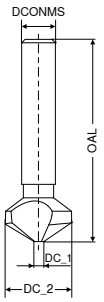


MK
90°
HSS

DC_2 z9	DC_1	OAL	MK	U1 Article no. 30 105 ...	
mm	mm	mm		£	
16.5	3.2	85	1	45.05	**165**
19.0	3.2	100	2	57.29	**190**
20.5	3.5	100	2	60.57	**205**
23.0	3.8	106	2	60.57	**230**
25.0	3.8	106	2	62.47	**250**
26.0	3.8	106	2	57.73	**260**
28.0	4.0	112	2	65.42	**280**
30.0	4.2	112	2	65.42	**300**
31.0	4.2	112	2	69.90	**310**
34.0	4.5	118	2	75.49	**340**
37.0	4.8	118	2	90.80	**370**
40.0	10.0	140	3	103.81	**400**
50.0	14.0	150	3	128.82	**500**
63.0	16.0	180	4	203.93	**630**
80.0	22.0	190	4	345.75	**800**

Countersink 120°, factory standard-C

▲ 3 cutting edges for countersinking and deburring in virtually all materials

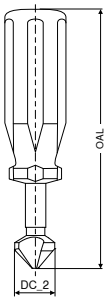


120°
HSS

DC_2 z9	DC_1	DCONMS h9	OAL	U1 Article no. 30 170 ...	
mm	mm	mm	mm	£	
6.3	1.5	5	45	16.99	**063**
8.3	2.0	6	50	16.99	**083**
10.4	2.5	6	50	18.89	**104**
12.4	2.8	8	56	19.82	**124**
16.5	3.2	10	60	28.81	**165**
20.5	3.5	10	60	39.66	**205**
25.0	3.8	10	63	49.39	**250**

Hand deburring tool 90°

- 3 cutting edges and non-slip plastic handle
- for countersinking and deburring on all materials



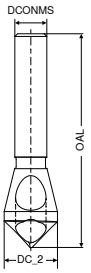
90°
HSS

DC_2	OAL	U1 Article no. 30 125 ...	
mm	mm	£	
12.4	135	24.95	124
15.0	135	29.23	150
16.5	135	30.95	165
20.5	135	36.03	205
25.0	135	43.60	250

Deburring countersink 90°, factory standard-A

- with angled hole to avoid burrs and chattermarks when countersinking and deburring in soft long-chipping materials, e.g. aluminium, plastics etc.

TiN



90°
HSS-E

90°
HSS-E

DC_2	D_{min} - D_{max}	DCONMS h9	OAL	U1 Article no. 30 120 ...		U1 Article no. 30 121 ...	
mm	mm	mm	mm	£		£	
6.3	1 - 4	6.3	45	27.06	040 [1]	39.26	040 [1]
10.0	2 - 5	6.0	45	16.94	050	25.52	050
14.0	5 - 10	8.0	48	20.58	101	36.88	101
21.0	10 - 15	10.0	65	35.37	150	60.03	150
28.0	15 - 20	12.0	85	74.28	200	121.89	200
35.0	20 - 25	15.0	102	101.67	250	154.71	250

1) can be used in both directions

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data standard values for REAMAX TS

	Grade / coating	HM-DBG-P / Ti700				HM-DBG-P / Ti700				
	Article no. / type	40 585 ... / 75H.65 – ASG3000				40 521 ..., 40 571 ... / 75J.65, 75H.65 – ASG0106				
	Nominal Ø in mm	18–21,999	22–31,799	31,8–51,999	52–65	18–21,999	22–31,799	31,8–51,999	52–65	
	Reaming allowance Ø	0,20–0,30	0,20–0,30	0,30–0,40	0,30–0,50	0,20–0,30	0,20–0,30	0,30–0,40	0,30–0,50	
	Number of teeth	6	6	8	10	6	6	8	10	
Index	v_c m/min		f	f	f	v_c m/min		f	f	f	f
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.
1.1	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.2	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.3	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.4	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.5	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.6	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.7	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.8	80–120	80–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00						
1.9	80–120	80–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00						
1.10	80–120	80–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00						
1.11							80–120	80–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.12							60–100	60–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.13							60–100	60–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.14							40–60	40–60	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.15							40–60	40–60	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.16							40–60	40–60	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
2.1							45–60	40–50	0,60–0,90	0,80–1,10	1,10–1,50	1,50–2,30
2.2							45–60	40–50	0,60–0,90	0,80–1,10	1,10–1,50	1,50–2,30
2.3							30–50	30–40	0,60–0,90	0,80–1,10	1,10–1,50	1,50–2,30
2.4							30–50	30–40	0,60–0,90	0,80–1,10	1,10–1,50	1,50–2,30
2.5							30–50	30–40	0,60–0,90	0,80–1,10	1,10–1,50	1,50–2,30
2.6							45–60	40–50	0,60–0,90	0,80–1,10	1,10–1,50	1,50–2,30
2.7							30–50	30–40	0,60–0,90	0,80–1,10	1,10–1,50	1,50–2,30
3.1	150–220	120–150	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40						
3.2	150–220	120–150	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40						
3.3	175–300	150–180	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40						
3.4	120–180	120–150	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
3.5	150–250	120–160	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40						
3.6	150–250	120–160	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40						
3.7	120–180	120–150	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
3.8	120–180	120–150	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
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The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

4

Cutting data standard values for REAMAX TS

	Grade / coating	HM-TiN / CWN10				HM-DBC / CWN10			
	Article no. / type	40 535 ... / 75H.71 – ASG3000				40 526 ..., 40 580 ... / 75J.17, 75H.17 – ASG0706			
	Nominal Ø in mm	18–21,999	22–31,799	31,8–51,999	52–65	18–21,999	22–31,799	31,8–51,999	52–65
	Reaming allowance Ø	0,20–0,30	0,20–0,30	0,30–0,40	0,30–0,50	0,20–0,30	0,20–0,30	0,30–0,40	0,30–0,50
	Number of teeth	6	6	8	10	6	6	8	10
Index	v_c m/min		f	f	f	v_c m/min		f	f	f	f
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.
1.1	100–140	80–120	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.2	100–140	80–120	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.3	100–140	80–120	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.4	100–140	80–120	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.5	100–140	80–120	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.6	100–140	80–120	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.7	100–140	80–120	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80						
1.8	30–45	30–45	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00						
1.9	30–45	30–45	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00						
1.10	30–45	30–45	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00						
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4.1							**150–300**	**150–200**	0,90–1,30	1,10–1,70	1,50–2,30	2,20–3,40
4.2							**150–300**	**150–200**	0,90–1,30	1,10–1,70	1,50–2,30	2,20–3,40
4.3							**200–300**	**150–200**	0,90–1,30	1,10–1,70	1,50–2,30	2,20–3,40
4.4							**200–300**	**150–200**	0,90–1,30	1,10–1,70	1,50–2,30	2,20–3,40
4.5							**200–300**	**150–200**	0,90–1,30	1,10–1,70	1,50–2,30	2,20–3,40
4.6	**80–150**	**80–120**	0,70–1,10	0,90–1,40	1,20–1,90	1,70–2,60						
4.7	**120–200**	**120–150**	0,70–1,10	0,90–1,40	1,20–1,90	1,70–2,60						
4.8												
4.9												
4.10												
4.11	**120–200**	**120–200**	0,90–1,30	1,10–1,70	1,50–2,30	2,20–3,40						
4.12	**80–150**	**80–120**	0,90–1,30	1,10–1,70	1,50–2,30	2,20–3,40						
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The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data standard values for REAMAX TS

	Grade / coating	DST / CWC10				DST / CWC10				
	Article no. / type	40 539 ... / 75H.93 – ASG3000				40 597 ... / 75J.93 – ASG4000				
	Nominal Ø in mm	18–21,999	22–31,799	31,8–51,999	52–65	18–21,999	22–31,799	31,8–51,999	52–65	
	Reaming allowance Ø	0,20–0,30	0,20–0,30	0,30–0,40	0,30–0,50	0,20–0,30	0,20–0,30	0,30–0,40	0,30–0,50	
	Number of teeth	6	6	8	10	6	6	8	10	
Index	v_c m/min		f	f	f	v_c m/min		f	f	f	f
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.
1.1	**150–200**	**120–160**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	**150–200**	**120–160**	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
1.2	**150–200**	**120–160**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	**150–200**	**120–160**	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
1.3	**150–200**	**120–160**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	**150–200**	**120–160**	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
1.4	**150–200**	**120–160**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	**150–200**	**120–160**	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
1.5	**150–200**	**120–160**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	**150–200**	**120–160**	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
1.6	**150–200**	**120–160**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	**150–200**	**120–160**	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
1.7	**150–200**	**120–160**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	**150–200**	**120–160**	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
1.8												
1.9	**80–120**	**80–100**	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00	**80–120**	**80–100**	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.10	**80–120**	**80–100**	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00	**80–120**	**80–100**	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.11	**80–120**	**80–100**	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00	**80–120**	**80–100**	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.12	**80–120**	**80–100**	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00	**80–120**	**80–100**	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
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3.3	**175–300**	**150–180**	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40	225–300	180–240	1,20–1,60	1,50–2,00	2,00–2,70	2,90–4,10
3.4	**120–150**	**100–120**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	120–150	100–120	1,20–1,60	1,50–2,00	2,00–2,70	2,90–4,10
3.5	**150–250**	**120–200**	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40						
3.6	**150–250**	**120–200**	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40						
3.7	**120–180**	**120–150**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	120–180	120–150	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
3.8	**120–180**	**120–150**	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80	120–180	120–150	1,00–1,30	1,20–1,70	1,70–2,30	2,40–3,40
4.1												
4.2												
4.3												
4.4												
4.5												
4.6	150–320	150–200	0,90–1,30	1,10–1,70	1,50–2,30	2,10–3,10						
4.7	150–320	150–200	0,90–1,30	1,10–1,70	1,50–2,30	2,10–3,10						
4.8												
4.9												
4.10												
4.11	150–320	150–200	0,90–1,30	1,10–1,70	1,50–2,30	2,10–3,10						
4.12	150–320	150–200	0,90–1,30	1,10–1,70	1,50–2,30	2,10–3,10						
4.13												
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The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

4

Cutting data standard values for REAMAX TS

	Grade / coating		DST / CWC10			
	Article no. / type		40 544 ... / 75J.93 – ASG3000			
	Nominal Ø in mm		18–21,999	22–31,799	31,8–51,999	52–65
	Reaming allowance Ø		0,20–0,30	0,20–0,30	0,30–0,40	0,30–0,50
	Number of teeth		6	6	8	10
Index	V_c m/min		f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
	3xD	5xD				
1.1	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
1.2	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
1.3	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
1.4	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
1.5	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
1.6	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
1.7	150–200	120–160	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
1.8						
1.9	80–120	80–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.10	80–120	80–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.11	80–120	80–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.12	80–120	80–100	0,50–0,80	0,70–1,00	0,90–1,30	1,30–2,00
1.13						
1.14						
1.15						
1.16						
2.1						
2.2						
2.3						
2.4						
2.5						
2.6						
2.7						
3.1						
3.2						
3.3	175–300	150–180	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40
3.4	120–150	100–120	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
3.5	150–250	120–200	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40
3.6	150–250	120–200	0,90–1,30	1,20–1,70	1,60–2,30	2,30–3,40
3.7	120–180	120–150	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
3.8	120–180	120–150	0,80–1,10	1,00–1,40	1,30–1,90	1,90–2,80
4.1						
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4.3						
4.4						
4.5						
4.6	150–320	150–200	0,90–1,30	1,10–1,70	1,50–2,30	2,10–3,10
4.7	150–320	150–200	0,90–1,30	1,10–1,70	1,50–2,30	2,10–3,10
4.8						
4.9						
4.10						
4.11	150–320	150–200	0,90–1,30	1,10–1,70	1,50–2,30	2,10–3,10
4.12	150–320	150–200	0,90–1,30	1,10–1,70	1,50–2,30	2,10–3,10
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The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data standard values for REAMAX

	Grade / coating	HM-TiN / CWN 10					HM-DBC				
	Article no. / type	40 505 ... / 640.71 – ASG3000					40 570 ... / 640.27 – ASG0706				
	Nominal Ø in mm	12–21,999	22–32,000	32,001–40			12–21,999	22–32,000	32,001–40		
	Reaming allowance Ø	0,10–0,30	0,20–0,40	0,20–0,40			0,10–0,30	0,20–0,40	0,20–0,40		
	Number of teeth	6	8	8			6	8	8		
Index	v_c m/min		f mm/rev.	f mm/rev.	f mm/rev.		v_c m/min		f mm/rev.	f mm/rev.	f mm/rev.
	3xD	5xD					3xD	5xD			
1.1	100–140	80–120	0,90–1,20	1,50–2,00	1,50–2,00						
1.2	100–140	80–120	0,90–1,20	1,50–2,00	1,50–2,00						
1.3	100–140	80–120	0,90–1,20	1,50–2,00	1,50–2,00						
1.4	100–140	80–120	0,90–1,20	1,50–2,00	1,50–2,00						
1.5	100–140	80–120	0,90–1,20	1,50–2,00	1,50–2,00						
1.6	100–140	80–120	0,90–1,20	1,50–2,00	1,50–2,00						
1.7	100–140	80–120	0,90–1,20	1,50–2,00	1,50–2,00						
1.8	30–45	30–45	0,60–0,80	1,00–1,40	1,00–1,40						
1.9	30–45	30–45	0,60–0,80	1,00–1,40	1,00–1,40						
1.10	30–45	30–45	0,60–0,80	1,00–1,40	1,00–1,40						
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4.1							150–300	150–300	1,00–1,40	1,70–2,40	1,70–2,40
4.2							150–300	150–300	1,00–1,40	1,70–2,40	1,70–2,40
4.3							200–300	150–300	1,00–1,40	1,70–2,40	1,70–2,40
4.4							200–300	150–300	1,00–1,40	1,70–2,40	1,70–2,40
4.5							200–300	150–300	1,00–1,40	1,70–2,40	1,70–2,40
4.6	80–150	80–120	0,80–1,20	1,40–2,00	1,40–2,00						
4.7	120–200	120–150	1,00–1,40	1,70–2,40	1,70–2,40						
4.8											
4.9											
4.10											
4.11	120–200	120–200	1,00–1,40	1,70–2,40	1,70–2,40						
4.12	120–200	120–200	1,00–1,40	1,70–2,40	1,70–2,40						
4.13											
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The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

4

Cutting data standard values for REAMAX

	Grade / coating	DST / CWC 10				DST / CWC 10				
	Article no. / type	40 525 ... / 640.93 – ASG3000				40 536 ... / 640.93 – ASG4000				
	Nominal Ø in mm	12–21,999	22–32,000	32,001–40		12–21,999	22–32,000	32,001–40		
	Reaming allowance Ø	0,10–0,30	0,20–0,40	0,20–0,40		0,10–0,30	0,20–0,40	0,20–0,40		
	Number of teeth	6	8	8		6	8	8		
Index	v_c m/min		f	f	f	v_c m/min		f	f	f
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.
1.1	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00	150–200	120–160	1,10–1,40	1,80–2,40	1,80–2,40
1.2	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00	150–200	120–160	1,10–1,40	1,80–2,40	1,80–2,40
1.3	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00	150–200	120–160	1,10–1,40	1,80–2,40	1,80–2,40
1.4	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00	150–200	120–160	1,10–1,40	1,80–2,40	1,80–2,40
1.5	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00	150–200	120–160	1,10–1,40	1,80–2,40	1,80–2,40
1.6	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00	150–200	120–160	1,10–1,40	1,80–2,40	1,80–2,40
1.7	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00	150–200	120–160	1,10–1,40	1,80–2,40	1,80–2,40
1.8										
1.9	80–120	80–120	0,90–1,20	1,50–2,00	1,50–2,00	80–120	80–120	1,10–1,40	1,80–2,40	1,80–2,40
1.10	80–120	80–120	0,90–1,20	1,50–2,00	1,50–2,00	80–120	80–120	1,10–1,40	1,80–2,40	1,80–2,40
1.11	80–120	80–120	0,90–1,20	1,50–2,00	1,50–2,00	80–120	80–120	1,10–1,40	1,80–2,40	1,80–2,40
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3.3	175–300	150–180	1,00–1,40	1,80–2,40	1,80–2,40	175–300	150–180	1,20–1,60	1,50–2,00	2,00–2,70
3.4	150–250	120–160	1,00–1,40	1,80–2,40	1,80–2,40	120–180	120–150	1,20–1,60	1,50–2,00	2,00–2,70
3.5	150–250	120–160	1,00–1,40	1,80–2,40	1,80–2,40					
3.6	150–250	120–160	1,00–1,40	1,80–2,40	1,80–2,40					
3.7	120–180	120–150	0,90–1,20	1,50–2,00	1,50–2,00	120–180	120–150	1,00–1,30	1,20–1,70	1,70–2,30
3.8	120–180	120–150	0,90–1,20	1,50–2,00	1,50–2,00	120–180	120–150	1,00–1,30	1,20–1,70	1,70–2,30
4.1										
4.2										
4.3										
4.4										
4.5										
4.6	150–300	150–200	1,00–1,40	1,70–2,40	1,70–2,40					
4.7	150–300	150–200	1,00–1,40	1,70–2,40	1,70–2,40					
4.8										
4.9										
4.10										
4.11	150–300	150–200	1,00–1,40	1,70–2,40	1,70–2,40					
4.12	150–300	150–200	1,00–1,40	1,70–2,40	1,70–2,40					
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The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data standard values for REAMAX

	Grade / coating	HM-DBG-P / Ti700			HM-DBG-P / Ti700				
	Article no. / type	40 560 ... / 640.65 – ASG3000			40 551 ... / 640.65 – ASG0106				
	Nominal Ø in mm	12–21,999	22–32,000	32,001–40	12–21,999	22–32,000	32,001–40		
	Reaming allowance Ø	0,10–0,30	0,20–0,40	0,20–0,40	0,10–0,30	0,20–0,40	0,20–0,40		
	Number of teeth	6	8	8	6	8	8		
Index	v_c m/min		f	f	f	v_c m/min		f	f	f
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.
1.1	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00					
1.2	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00					
1.3	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00					
1.4	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00					
1.5	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00					
1.6	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00					
1.7	150–200	120–160	0,90–1,20	1,50–2,00	1,50–2,00					
1.8	80–120	80–100	0,70–1,00	0,90–1,30	0,90–1,30					
1.9	80–120	80–100	0,70–1,00	0,90–1,30	0,90–1,30					
1.10	80–120	80–100	0,70–1,00	0,90–1,30	0,90–1,30					
1.11						80–120	80–100	0,70–1,00	0,90–1,30	0,90–1,30
1.12						60–100	60–100	0,70–1,00	0,90–1,30	0,90–1,30
1.13						60–100	60–100	0,70–1,00	0,90–1,30	0,90–1,30
1.14						40–60	40–60	0,60–0,80	0,90–1,10	0,90–1,10
1.15						40–60	40–60	0,60–0,80	0,90–1,10	0,90–1,10
1.16						40–60	40–60	0,60–0,80	0,90–1,10	0,90–1,10
2.1						45–60	40–50	0,70–0,90	1,20–1,60	1,20–1,60
2.2						45–60	40–50	0,70–0,90	1,20–1,60	1,20–1,60
2.3						30–50	30–40	0,70–0,90	1,20–1,60	1,20–1,60
2.4						30–50	30–40	0,70–0,90	1,20–1,60	1,20–1,60
2.5						30–50	30–40	0,70–0,90	1,20–1,60	1,20–1,60
2.6						45–60	40–50	0,70–0,90	1,20–1,60	1,20–1,60
2.7						30–50	30–40	0,70–0,90	1,20–1,60	1,20–1,60
3.1	200–250	160–200	1,00–1,40	1,30–1,90	1,30–1,90					
3.2	200–250	160–200	1,00–1,40	1,30–1,90	1,30–1,90					
3.3	225–300	180–240	1,00–1,40	1,30–1,90	1,30–1,90					
3.4	120–150	100–120	0,90–1,20	1,20–1,60	1,20–1,60					
3.5	150–250	120–200	0,90–1,20	1,20–1,60	1,20–1,60					
3.6	150–250	120–200	0,90–1,20	1,20–1,60	1,20–1,60					
3.7	120–150	100–120	0,90–1,20	1,20–1,60	1,20–1,60					
3.8	120–150	100–120	0,90–1,20	1,20–1,60	1,20–1,60					
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5.10										
5.11										
6.1						40–60	40–60	0,40–0,80	0,60–1,00	0,60–1,00
6.2						40–60	40–60	0,40–0,80	0,60–1,00	0,60–1,00
6.3						30–50	30–50	0,40–0,80	0,60–1,00	0,60–1,00
6.4						30–50	30–50	0,40–0,80	0,60–1,00	0,60–1,00
6.5										

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

4

Cutting data for MultiChange exchange head reamers

	Coating	CWC 10			TiAlN			TiAlN		
	Article no.	40 210 ... / 40 211 ...			40 220 ... / 40 221 ...			40 230 ... / 40 231 ...		
	Nominal Ø in mm	8,0–12,59	12,6–29,99	30,0–30,20	8,0–12,59	12,6–29,99	30,0–30,20	8,0–12,59	12,6–18,59	18,6–30,20
	Reaming allowance Ø	0,15–0,3	0,2–0,4	0,2–0,4	0,15–0,3	0,15–0,3	0,15–0,3	0,15–0,4	0,2–0,5	0,2–0,5
	Number of teeth	4/6	6	8	4/6	6	8	4/6	6	8
Index	v_c	f	f	f	f	f	f	f	f	f
	m/min	mm/rev.	mm/rev.	mm/rev.	mm/rev.	mm/rev.	mm/rev.	mm/rev.	mm/rev.	mm/rev.
1.1	120–200	0,60–1,00	0,90–1,50	1,20–2,00						
1.2	120–200	0,60–1,00	0,90–1,50	1,20–2,00						
1.3	120–200	0,60–1,00	0,90–1,50	1,20–2,00						
1.4	120–200	0,60–1,00	0,90–1,50	1,20–2,00						
1.5	120–200	0,60–1,00	0,90–1,50	1,20–2,00						
1.6	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.7	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.8	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.9	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.10	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.11	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.12	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.13	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.14	100–160	0,60–1,00	0,90–1,50	1,20–2,00						
1.15	80–140	0,60–1,00	0,90–1,50	1,20–2,00						
1.16	80–140	0,60–1,00	0,90–1,50	1,20–2,00						
2.1	20–40				0,32–0,60	0,48–0,90	0,64–1,20			
2.2	20–40				0,32–0,60	0,48–0,90	0,64–1,20			
2.3	20–40				0,32–0,60	0,48–0,90	0,64–1,20			
2.4	10–30				0,32–0,60	0,48–0,90	0,64–1,20			
2.5	20–40				0,32–0,60	0,48–0,90	0,64–1,20			
2.6	20–40				0,32–0,60	0,48–0,90	0,64–1,20			
2.7	10–20				0,32–0,60	0,48–0,90	0,64–1,20			
3.1	80–120							0,40–0,80	0,90–1,50	0,90–2,40
3.2	80–120							0,40–0,80	0,90–1,50	0,90–2,40
3.3	80–120							0,40–0,80	0,90–1,50	0,90–2,40
3.4	60–100							0,32–0,48	0,60–1,20	0,60–1,20
3.5	80–120							0,40–0,80	0,60–1,20	0,60–1,20
3.6	80–120							0,40–0,80	0,60–1,20	0,60–1,20
3.7	80–120							0,40–0,80	0,60–1,20	0,60–1,20
3.8	60–100							0,32–0,48	0,60–1,20	0,60–1,20
4.1										
4.2										
4.3										
4.4										
4.5										
4.6										
4.7										
4.8										
4.9										
4.10										
4.11										
4.12	80–120				0,40–1,00	0,60–1,50	0,80–2,00			
4.13										
4.14										
4.15										
4.16										
4.17	10–30				0,24–0,72	0,36–1,08	0,48–1,44			
4.18										
4.19										
5.1	10–30				0,60–1,40	0,90–1,80	1,20–2,00			
5.2	10–30				0,60–1,50	0,90–1,80	1,20–2,00			
5.3	10–30				0,60–1,60	0,90–1,80	1,20–2,00			
5.4	10–30				0,60–1,70	0,90–1,80	1,20–2,00			
5.5	10–25				0,60–1,80	0,90–1,80	1,20–2,00			
5.6	10–25				0,60–1,90	0,90–1,80	1,20–2,00			
5.7	10–20				0,20–0,48	0,30–0,72	0,40–0,96			
5.8	10–20				0,20–0,48	0,30–0,72	0,40–0,96			
5.9	10–30				0,20–0,48	0,30–0,48	0,48–1,00			
5.10	10–30				0,20–0,48	0,30–0,48	0,48–1,00			
5.11	10–30				0,20–0,48	0,30–0,48	0,48–1,00			
6.1										
6.2										
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6.5										

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data for MultiChange exchange head reamers

	Coating	K10				PDC		
	Article no.	40 240 ... / 40 241 ...				40 245 ... / 40 246 ...		
	Nominal Ø in mm	8,0–12,59	12,6–29,99	30,0–30,20		8,0–12,59	12,6–29,99	30,0–30,20
	Reaming allowance Ø	0,15–0,5	0,15–0,5	0,15–0,5		0,15–0,5	0,15–0,5	0,15–0,5
	Number of teeth	4/6	6	8		4/6	6	8
Index	v_c m/min	f mm/rev.	f mm/rev.	f mm/rev.	v_c m/min	f mm/rev.	f mm/rev.	f mm/rev.
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1.3								
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1.9								
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1.11								
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1.13								
1.14								
1.15								
1.16								
2.1								
2.2								
2.3								
2.4								
2.5								
2.6								
2.7								
3.1								
3.2								
3.3								
3.4								
3.5								
3.6								
3.7								
3.8								
4.1	**100–300**	0,40–1,20	0,60–1,80	0,80–2,40	**100–500**	0,40–1,20	0,90–2,10	1,20–2,80
4.2	**100–300**	0,40–0,80	0,60–1,20	1,20–2,00	**100–500**	0,40–1,20	0,90–2,10	1,20–2,80
4.3	**100–300**	0,40–0,80	0,60–1,20	1,20–2,00				
4.4	**100–300**	0,40–0,80	0,60–1,20	1,20–2,00				
4.5					**100–200**	0,40–1,20	0,90–2,10	1,20–2,80
4.6	**50–100**	0,40–1,00	0,60–1,50	0,80–2,00				
4.7	**50–150**	0,40–1,00	0,60–1,50	0,80–2,00				
4.8								
4.9								
4.10	**15–40**	0,48–1,00	0,72–1,50	0,96–2,00				
4.11	**15–40**	0,48–1,00	0,72–1,50	0,96–2,00				
4.12								
4.13								
4.14								
4.15					**10–40**	0,10–0,32	0,15–0,48	0,20–0,64
4.16	**25–50**	0,40–1,00	0,60–1,50	0,80–2,00	**100–250**	0,10–0,25	0,60–1,50	0,80–2,00
4.17								
4.18	**10–25**	0,60–1,00	0,90–1,50	1,20–2,00				
4.19	**10–25**	0,60–1,00	0,90–1,50	1,20–2,00				
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The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data standard values for Monomax

	Grade / coating	DBC				DBC				
	Article no. / type	40 648 ..., 40 649 ... / 56J.17, 56R.17 – ASG0706				40 640..., 40 641... / 56H.17, 56Q.17 – ASG0706				
	Nominal Ø in mm	5,60–8,89	8,90–12,00	12,01–22,00	22,01–25,89	5,60–8,89	8,90–12,00	12,01–22,00	22,01–25,89	
	Reaming allowance Ø	0,10–0,20	0,10–0,30	0,20–0,30	0,20–0,40	0,10–0,20	0,10–0,30	0,20–0,30	0,20–0,40	
	Number of teeth	4	6	6	6	4	6	6	6	
Index	v_c m/min		f	f	f	v_c m/min		f	f	f	f
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.
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4.1	150–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50	150–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
4.2	150–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50	150–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
4.3	200–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50	200–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
4.4	200–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50	200–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
4.5	200–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50	200–300	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
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The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data standard values for Monomax

	Grade / coating	HM-DBG-P / Ti700				HM-DBG-P / Ti700				
	Article no. / type	40 657 ... , 40 665 ... / 56H.65, 56Q.65 – ASG3000				40 652 ..., 40 653 ... / 56J.65, 56R.65 – ASG0106				
	Nominal Ø in mm	5,60–8,89	8,90–12,00	12,01–22,00	22,01–25,89	5,60–8,89	8,90–12,00	12,01–22,00	22,01–25,89	
	Reaming allowance Ø	0,10–0,20	0,10–0,30	0,20–0,30	0,20–0,40	0,10–0,20	0,10–0,30	0,20–0,30	0,20–0,40	
	Number of teeth	4	6	6	6	4	6	6	6	
Index	v_c m/min		f	f	f	v_c m/min		f	f	f	f
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.
1.1	150–200	120–160	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
1.2	150–200	120–160	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
1.3	150–200	120–160	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
1.4	150–200	120–160	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
1.5	150–200	120–160	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
1.6	150–200	120–160	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
1.7	150–200	120–160	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
1.8	80–120	80–100	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90						
1.9	80–120	80–100	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90						
1.10	80–120	80–100	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90						
1.11							80–120	80–100	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.12							60–100	60–100	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.13							60–100	60–100	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.14							40–60	40–60	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.15							40–60	40–60	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.16							40–60	40–60	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
2.1							45–60	40–50	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00
2.2							45–60	40–50	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00
2.3							30–50	30–40	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00
2.4							30–50	30–40	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00
2.5							30–50	30–40	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00
2.6							45–60	40–50	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00
2.7							30–50	30–40	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00
3.1	150–220	120–150	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50						
3.2	150–220	120–150	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50						
3.3	175–300	150–180	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50						
3.4	120–180	120–150	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
3.5	150–250	120–160	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50						
3.6	150–250	120–160	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50						
3.7	120–180	120–150	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
3.8	120–180	120–150	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30						
4.1												
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The cutting data greatly depends on the external conditions, the material and the machine.
The indicated values are possible cutting data, which may need to be increased or decreased according to the conditions.

4

Cutting data standard values for Monomax

	Grade / coating	DST / CWC 10						DST / CWC 10					
	Article no. / type	40 625 ..., 40 626 ... / 56J.93, 56R.93 – ASG3000						40 635 ... , 40 636 ... / 56J.93, 56R.93 – ASG4000					
	Nominal Ø in mm	5,60–8,89		8,90–12,00	12,01–22,00	22,01–25,89		5,60–8,89		8,90–12,00	12,01–22,00	22,01–25,89	
	Reaming allowance Ø	0,10–0,20		0,10–0,30	0,20–0,30	0,20–0,40		0,10–0,20		0,10–0,30	0,20–0,30	0,20–0,40	
	Number of teeth	4		6	6	6		4		6	6	6	
Index	v_c m/min		f	f	f	f	v_c m/min		f	f	f	f	
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.	
1.1	**150–200**	**120–160**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**150–200**	**120–160**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.2	**150–200**	**120–160**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**150–200**	**120–160**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.3	**150–200**	**120–160**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**150–200**	**120–160**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.4	**150–200**	**120–160**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**150–200**	**120–160**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.5	**150–200**	**120–160**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**150–200**	**120–160**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.6	**150–200**	**120–160**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**150–200**	**120–160**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.7	**150–200**	**120–160**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**150–200**	**120–160**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.8													
1.9	**80–120**	**80–100**	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	**80–120**	**80–100**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.10	**80–120**	**80–100**	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	**80–120**	**80–100**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
1.11	**80–120**	**80–100**	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	**80–120**	**80–100**	0,40–0,60	0,70–0,90	0,90–1,20	1,20–1,50	
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3.3	**175–300**	**150–180**	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50	**175–300**	**150–180**	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50	
3.4	**120–150**	**100–120**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**120–180**	**120–150**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	
3.5	**150–250**	**120–200**	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50							
3.6	**150–250**	**120–200**	0,40–0,60	0,70–0,90	0,90–1,20	1,10–1,50							
3.7	**120–180**	**120–150**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**120–180**	**120–150**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	
3.8	**120–180**	**120–150**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	**120–180**	**120–150**	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30	
4.1													
4.2													
4.3													
4.4													
4.5													
4.6	150–320	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50							
4.7	150–320	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50							
4.8													
4.9													
4.10													
4.11	150–320	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50							
4.12	150–320	150–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50							
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The cutting data greatly depends on the external conditions, the material and the machine.
The indicated values are possible cutting data, which may need to be increased or decreased according to the conditions.

Cutting data standard values for Monomax

	Grade / coating	HM-DBG-P / Ti700				HM-TiN / CWN 10				
	Article no. / type	40 644 ..., 40 645 ... / 56H.65, 56Q.65 – ASG0106				40 605 ..., 40 606 ... / 56J.71, 56R.71 – ASG3000				
	Nominal Ø in mm	5,60–8,89	8,90–12,00	12,01–22,00	22,01–25,89	5,60–8,89	8,90–12,00	12,01–22,00	22,01–25,89	
	Reaming allowance Ø	0,10–0,20	0,10–0,30	0,20–0,30	0,20–0,40	0,10–0,20	0,10–0,30	0,20–0,30	0,20–0,40	
	Number of teeth	4	6	6	6	4	6	6	6	
Index	v_c m/min		f	f	f	v_c m/min		f	f	f	f
	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.	3xD	5xD	mm/rev.	mm/rev.	mm/rev.	mm/rev.
1.1							100–140	80–120	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30
1.2							100–140	80–120	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30
1.3							100–140	80–120	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30
1.4							100–140	80–120	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30
1.5							100–140	80–120	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30
1.6							100–140	80–120	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30
1.7							100–140	80–120	0,30–0,50	0,50–0,70	0,70–1,00	0,90–1,30
1.8							30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.9							30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.10							30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.11	80–120	80–100	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.12	60–100	60–100	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.13	60–100	60–100	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.14	40–60	40–60	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.15	40–60	40–60	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
1.16	40–60	40–60	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90	30–45	30–45	0,20–0,30	0,40–0,50	0,50–0,70	0,60–0,90
2.1	45–60	40–50	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00						
2.2	45–60	40–50	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00						
2.3	30–50	30–40	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00						
2.4	30–50	30–40	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00						
2.5	30–50	30–40	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00						
2.6	45–60	40–50	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00						
2.7	30–50	30–40	0,30–0,40	0,40–0,60	0,60–0,80	0,70–1,00						
3.1												
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4.6							80–150	80–120	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
4.7							120–200	120–150	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
4.8												
4.9												
4.10												
4.11							120–200	120–200	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
4.12							80–150	80–120	0,40–0,60	0,60–0,90	0,80–1,20	1,10–1,50
4.13												
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The cutting data greatly depends on the external conditions, the material and the machine.
The indicated values are possible cutting data, which may need to be increased or decreased according to the conditions.

4

Cutting data standard values for Fullmax

Type UNI		40 484 ... / 40 485 ... / 40 486 ... / 40 487 ...											
		Ø 2,97 – 4,05		Ø 4,06 – 6,05		Ø 6,06 – 7,55		Ø 7,56 – 12,05		Ø 12,06 – 16,05		Ø 16,06 – 20,05	
Number of teeth		4		4		6		6		6		6	
Index	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
1.1	180–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,40–1,80	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
1.2	180–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,40–1,80	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
1.3	180–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,40–1,80	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
1.4	180–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,40–1,80	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
1.5	180–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,40–1,80	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
1.6	180–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,40–1,80	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
1.7	180–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,40–1,80	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
1.8	80–120	0,40–0,50	0,10–0,20	0,40–0,60	0,10–0,20	0,90–1,10	0,20	1,00–1,20	0,20	1,00–1,30	0,20–0,30	1,30–1,50	0,30
1.9	80–120	0,40–0,50	0,10–0,20	0,40–0,60	0,10–0,20	0,90–1,10	0,20	1,00–1,20	0,20	1,00–1,30	0,20–0,30	1,30–1,50	0,30
1.10	80–120	0,40–0,50	0,10–0,20	0,40–0,60	0,10–0,20	0,90–1,10	0,20	1,00–1,20	0,20	1,00–1,30	0,20–0,30	1,30–1,50	0,30
1.11	80–120	0,40–0,50	0,10–0,20	0,40–0,60	0,10–0,20	0,90–1,10	0,20	1,00–1,20	0,20	1,00–1,30	0,20–0,30	1,30–1,50	0,30
1.12	60–100	0,40–0,50	0,10–0,20	0,40–0,60	0,10–0,20	0,90–1,10	0,20	1,00–1,20	0,20	1,00–1,30	0,20–0,30	1,30–1,50	0,30
1.13	60–100	0,40–0,50	0,10–0,20	0,40–0,60	0,10–0,20	0,90–1,10	0,20	1,00–1,20	0,20	1,00–1,30	0,20–0,30	1,30–1,50	0,30
1.14													
1.15	40–60	0,40–0,50	0,10–0,20	0,40–0,60	0,10–0,20	0,90–1,10	0,20	1,00–1,20	0,20	1,00–1,30	0,20–0,30	1,30–1,50	0,30
1.16	40–60	0,40–0,50	0,10–0,20	0,40–0,60	0,10–0,20	0,90–1,10	0,20	1,00–1,20	0,20	1,00–1,30	0,20–0,30	1,30–1,50	0,30
2.1	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,60	0,20	0,48–0,60	0,20	0,60–0,72	0,20–0,30	0,60–0,72	0,30
2.2	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,60	0,20	0,48–0,60	0,20	0,60–0,72	0,20–0,30	0,60–0,72	0,30
2.3	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,60	0,20	0,48–0,60	0,20	0,60–0,72	0,20–0,30	0,60–0,72	0,30
2.4	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,60	0,20	0,48–0,60	0,20	0,60–0,72	0,20–0,30	0,60–0,72	0,30
2.5	15–30	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,60	0,20	0,48–0,60	0,20	0,60–0,72	0,20–0,30	0,60–0,72	0,30
2.6	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,60	0,20	0,48–0,60	0,20	0,60–0,72	0,20–0,30	0,60–0,72	0,30
2.7	15–30	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,60	0,20	0,48–0,60	0,20	0,60–0,72	0,20–0,30	0,60–0,72	0,30
3.1	120–180	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,30–1,60	0,20	1,60–2,00	0,20–0,30	1,90–2,20	0,30
3.2	120–180	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,30–1,60	0,20	1,60–2,00	0,20–0,30	1,90–2,20	0,30
3.3	200–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,30–1,60	0,20	1,60–2,00	0,20–0,30	1,90–2,20	0,30
3.4	120–150	0,50–0,60	0,10–0,20	0,50–0,70	0,10–0,20	1,00–1,30	0,20	1,00–1,30	0,20	1,30–1,60	0,20–0,30	1,50–1,80	0,30
3.5	200–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,30–1,60	0,20	1,60–2,00	0,20–0,30	1,90–2,20	0,30
3.6	200–250	0,60–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,60	0,20	1,30–1,60	0,20	1,60–2,00	0,20–0,30	1,90–2,20	0,30
3.7	120–150	0,50–0,60	0,10–0,20	0,50–0,70	0,10–0,20	1,00–1,30	0,20	1,00–1,30	0,20	1,30–1,60	0,20–0,30	1,50–1,80	0,30
3.8	120–150	0,50–0,60	0,10–0,20	0,50–0,70	0,10–0,20	1,00–1,30	0,20	1,00–1,30	0,20	1,30–1,60	0,20–0,30	1,50–1,80	0,30
4.1													
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4.10													
4.11	150–250	0,50–0,80	0,10–0,20	0,70–0,90	0,10–0,20	1,30–1,40	0,20	1,40–1,70	0,20	1,60–1,90	0,20–0,30	1,90–2,20	0,30
4.12	100–150	0,40–0,60	0,10–0,20	0,60–0,80	0,10–0,20	1,00–1,30	0,20	1,20–1,40	0,20	1,30–1,60	0,20–0,30	1,60–1,80	0,30
4.13													
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5.1													
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5.3													
5.4	40–60	0,30–0,40	0,10–0,20	0,40–0,50	0,10–0,20	0,70–0,90	0,20	0,80–1,10	0,20	0,90–1,10	0,20–0,30	1,10–1,30	0,30
5.5	40–60	0,30–0,40	0,10–0,20	0,40–0,50	0,10–0,20	0,70–0,90	0,20	0,80–1,10	0,20	0,90–1,10	0,20–0,30	1,10–1,30	0,30
5.6													
5.7													
5.8	40–60	0,30–0,40	0,10–0,20	0,40–0,50	0,10–0,20	0,70–0,90	0,20	0,80–1,10	0,20	0,90–1,10	0,20–0,30	1,10–1,30	0,30
5.9	30–60	0,30–0,40	0,10–0,20	0,40–0,50	0,10–0,20	0,70–0,90	0,20	0,80–1,10	0,20	0,90–1,10	0,20–0,30	1,10–1,30	0,30
5.10	30–60	0,30–0,40	0,10–0,20	0,40–0,50	0,10–0,20	0,70–0,90	0,20	0,80–1,10	0,20	0,90–1,10	0,20–0,30	1,10–1,30	0,30
5.11	30–60	0,30–0,40	0,10–0,20	0,40–0,50	0,10–0,20	0,70–0,90	0,20	0,80–1,10	0,20	0,90–1,10	0,20–0,30	1,10–1,30	0,30
6.1	40–60	0,50–0,60	0,10–0,20	0,60–0,90	0,10–0,20	1,10–1,60	0,20	1,20–1,60	0,20	1,20–1,80	0,20–0,30	1,20–1,80	0,30
6.2	40–60	0,50–0,60	0,10–0,20	0,60–0,90	0,10–0,20	1,10–1,60	0,20	1,20–1,60	0,20	1,20–1,80	0,20–0,30	1,20–1,80	0,30
6.3	30–50	0,50–0,70	0,10–0,20	0,70–1,00	0,10–0,20	1,20–1,70	0,20	1,30–1,70	0,20	1,30–2,00	0,20–0,30	1,30–2,00	0,30
6.4	30–50	0,50–0,70	0,10–0,20	0,70–1,00	0,10–0,20	1,20–1,70	0,20	1,30–1,70	0,20	1,30–2,00	0,20–0,30	1,30–2,00	0,30
6.5													

The cutting data greatly depends on the external conditions, the material and the machine.
The indicated values are possible cutting data, which may need to be increased or decreased according to the conditions.

Cutting data standard values for Fullmax

Type K

		40 477 ... / 40 478 ...											
		Ø 2,97 – 4,05		Ø 4,06 – 6,05		Ø 6,06 – 7,55		Ø 7,56 – 12,05		Ø 12,06 – 16,05		Ø 16,06 – 20,05	
Number of teeth		6		6		8		8		8		8	
Index	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
3.1	200–250	0,80–1,00	0,10–0,20	0,90–1,20	0,10–0,20	1,50–1,90	0,20	1,50–1,90	0,20	1,80–2,30	0,20–0,30	2,20–2,60	0,30
3.2	200–250	0,80–1,00	0,10–0,20	0,90–1,20	0,10–0,20	1,50–1,90	0,20	1,50–1,90	0,20	1,80–2,30	0,20–0,30	2,20–2,60	0,30
3.3	225–300	0,80–1,00	0,10–0,20	0,90–1,20	0,10–0,20	1,50–1,90	0,20	1,50–1,90	0,20	1,80–2,30	0,20–0,30	2,20–2,60	0,30
3.4	120–150	0,60–0,90	0,10–0,20	0,70–1,00	0,10–0,20	1,20–1,60	0,20	1,20–1,60	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
3.5	225–300	0,80–1,00	0,10–0,20	0,90–1,20	0,10–0,20	1,50–1,90	0,20	1,50–1,90	0,20	1,80–2,30	0,20–0,30	2,20–2,60	0,30
3.6	225–300	0,80–1,00	0,10–0,20	0,90–1,20	0,10–0,20	1,50–1,90	0,20	1,50–1,90	0,20	1,80–2,30	0,20–0,30	2,20–2,60	0,30
3.7	120–150	0,60–0,90	0,10–0,20	0,70–1,00	0,10–0,20	1,20–1,60	0,20	1,20–1,60	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30
3.8	120–150	0,60–0,90	0,10–0,20	0,70–1,00	0,10–0,20	1,20–1,60	0,20	1,20–1,60	0,20	1,50–1,90	0,20–0,30	1,80–2,20	0,30

Type VA

		40 401 ... / 40 402 ... / 40 403 ... / 40 404 ...											
		Ø 2,97 – 4,05		Ø 4,06 – 6,05		Ø 6,06 – 7,55		Ø 7,56 – 12,05		Ø 12,06 – 16,05		Ø 16,06 – 20,05	
Number of teeth		4		4		6		6		6		6	
Index	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
2.1	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,6	0,20	0,48–0,6	0,20	0,6–0,72	0,20–0,30	0,6–0,72	0,30
2.2	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,6	0,20	0,48–0,6	0,20	0,6–0,72	0,20–0,30	0,6–0,72	0,30
2.3	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,6	0,20	0,48–0,6	0,20	0,6–0,72	0,20–0,30	0,6–0,72	0,30
2.4	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,6	0,20	0,48–0,6	0,20	0,6–0,72	0,20–0,30	0,6–0,72	0,30
2.5	15–30	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,6	0,20	0,48–0,6	0,20	0,6–0,72	0,20–0,30	0,6–0,72	0,30
2.6	20–40	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,6	0,20	0,48–0,6	0,20	0,6–0,72	0,20–0,30	0,6–0,72	0,30
2.7	15–30	0,32–0,50	0,10–0,20	0,32–0,50	0,10–0,20	0,48–0,6	0,20	0,48–0,6	0,20	0,6–0,72	0,20–0,30	0,6–0,72	0,30

Type ALU

		40 471 ... / 40 472 ... / 40 473 ... / 40 474 ...											
		Ø 2,97 – 4,05		Ø 4,06 – 6,05		Ø 6,06 – 7,55		Ø 7,56 – 12,05		Ø 12,06 – 16,05		Ø 16,06 – 20,05	
Number of teeth		4		4		6		6		6		6	
Index	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
4.1	200–300	0,50–0,60	0,10–0,20	0,60–0,90	0,10–0,20	1,10–1,60	0,20	1,20–1,60	0,20	1,20–1,80	0,20–0,30	1,20–1,80	0,30
4.2	200–300	0,50–0,60	0,10–0,20	0,60–0,90	0,10–0,20	1,10–1,60	0,20	1,20–1,60	0,20	1,20–1,80	0,20–0,30	1,20–1,80	0,30
4.3	200–300	0,50–0,70	0,10–0,20	0,70–1,00	0,10–0,20	1,20–1,70	0,20	1,30–1,70	0,20	1,30–2,00	0,20–0,30	1,30–2,00	0,30
4.4	200–250	0,50–0,70	0,10–0,20	0,70–1,00	0,10–0,20	1,20–1,70	0,20	1,30–1,70	0,20	1,30–2,00	0,20–0,30	1,30–2,00	0,30
4.5	200–250	0,50–0,70	0,10–0,20	0,70–1,00	0,10–0,20	1,20–1,70	0,20	1,30–1,70	0,20	1,30–2,00	0,20–0,30	1,30–2,00	0,30

Type H

		40 475 ... / 40 476 ...											
		Ø 2,97 – 4,05		Ø 4,06 – 6,05		Ø 6,06 – 7,55		Ø 7,56 – 12,05		Ø 12,06 – 16,05		Ø 16,06 – 20,05	
Number of teeth		4		4		6		6		6		6	
Index	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
6.1	40–60	0,20–0,30	0,10–0,20	0,20–0,30	0,10–0,20	0,40–0,60	0,20	0,50–0,60	0,20	0,50–0,70	0,20	0,60–0,80	0,20
6.2	40–60	0,20–0,30	0,10–0,20	0,20–0,30	0,10–0,20	0,40–0,60	0,20	0,50–0,60	0,20	0,50–0,70	0,20	0,60–0,80	0,20
6.3	30–50	0,20–0,30	0,10	0,20–0,30	0,10	0,40–0,60	0,10	0,50–0,60	0,10	0,50–0,70	0,20	0,60–0,80	0,20
6.4	30–50	0,20–0,30	0,10	0,20–0,30	0,10	0,40–0,60	0,10	0,50–0,60	0,10	0,50–0,70	0,20	0,60–0,80	0,20

The cutting data greatly depends on the external conditions, the material and the machine.
The indicated values are possible cutting data, which may need to be increased or decreased according to the conditions.

Cutting data standard values for solid carbide reamers

	40 430 ...			40 420 ... / 40 421 ... / 40 430 ... / 40 431 ... / 40 410 ... / 40 400 ...							
	uncoated	to Ø 0.94 mm		uncoated	TiAlN	to Ø 5 mm		to Ø 8 mm		to Ø 10 mm	
Index	v_c m/min	f mm/rev.	Reaming allowance Ø mm	v_c m/min	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
1.1											
1.2	10–15	0,1–0,15	0,03–0,05	15–20	25–35	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.3											
1.4	8–12	0,1–0,15	0,03–0,05	12–15	20–30	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.5	10–15	0,1–0,15	0,03–0,05	15–20	25–35	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.6	8–12	0,1–0,15	0,03–0,05	12–15	20–30	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.7	10–15	0,1–0,15	0,03–0,05	15–20	25–35	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.8	8–12	0,1–0,15	0,03–0,05	12–15	20–30	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.9	10–15	0,1–0,15	0,03–0,05	15–20	25–35	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.10	8–12	0,1–0,15	0,03–0,05	12–15	20–30	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.11											
1.12											
1.13	6–8	0,1–0,15	0,03–0,05	8–12	12–20	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2
1.14											
1.15											
1.16											
2.1											
2.2											
2.3											
2.4											
2.5											
2.6											
2.7											
3.1	10–15	0,1–0,15	0,03–0,05	12–20	20–35	0,1–0,15	0,1	0,15–0,2	0,1–0,2	0,15–0,2	0,1–0,2
3.2											
3.3	8–12	0,1–0,15	0,03–0,05	12–15	20–30	0,1–0,15	0,1	0,15–0,2	0,1–0,2	0,15–0,2	0,1–0,2
3.4	8–10	0,1–0,15	0,03–0,05	10–15	15–20	0,1–0,15	0,1	0,15–0,2	0,1–0,2	0,15–0,2	0,1–0,2
3.5											
3.6	10–15	0,1–0,15	0,03–0,05	12–20	20–35	0,1–0,15	0,1	0,15–0,2	0,1–0,2	0,15–0,2	0,1–0,2
3.7											
3.8											
4.1											
4.2	10–30	0,12–0,16	0,03–0,05	20–60		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2
4.3											
4.4	10–15	0,12–0,16	0,03–0,05	20–30		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2
4.5											
4.6	10–30	0,12–0,16	0,03–0,05	20–80		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2
4.7	10–25	0,12–0,16	0,03–0,05	25–60		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2
4.8											
4.9	8–15	0,12–0,16	0,03–0,05	15–30		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2
4.10											
4.11											
4.12	10–25	0,12–0,16	0,03–0,05	20–50		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2
4.13											
4.14											
4.15	6–10	0,12–0,16	0,03–0,05	10–15		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2
4.16	6–10	0,06–0,1	0,03–0,05	15–20		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
4.17	5–10	0,06–0,1	0,03–0,05	10–20		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
4.18	5–8	0,06–0,1	0,03–0,05	7–12		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
4.19	5–8										
5.1											
5.2	8–12	0,06–0,1	0,03–0,05	10–20		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
5.3											
5.4											
5.5				8–10		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
5.6	5–8	0,06–0,1	0,03–0,05								
5.7				6–10		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
5.8	3–5	0,06–0,1	0,03–0,05	5–8		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
5.9	5–8	0,06–0,1	0,03–0,05	6–10		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
5.10											
5.11	3–5	0,06–0,1	0,03–0,05	6–8		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1
6.1											
6.2											
6.3											
6.4											
6.5											

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data standard values for solid carbide reamers

	40 420 ... / 40 421 ... / 40 430 ... / 40 431 ... / 40 410 ... / 40 400 ...											
	uncoated	TiAlN	to Ø 12 mm		to Ø 15 mm		to Ø 20 mm		to Ø 25 mm		to Ø 30 mm	
Index	v_c m/min	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
1.1												
1.2	15–20	25–35	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.3												
1.4	12–15	20–30	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.5	15–20	25–35	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.6	12–15	20–30	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.7	15–20	25–35	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.8	12–15	20–30	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.9	15–20	25–35	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.10	12–15	20–30	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.11												
1.12												
1.13	8–12	12–20	0,15–0,2	0,1–0,2	0,2–0,25	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3	0,3–0,5	0,3–0,4
1.14												
1.15												
1.16												
2.1												
2.2												
2.3												
2.4												
2.5												
2.6												
2.7												
3.1												
3.2	12–20	20–35	0,15–0,3	0,15–0,25	0,2–0,3	0,2–0,3	0,2–0,4	0,2–0,4	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
3.3	12–15	20–30	0,15–0,3	0,15–0,25	0,2–0,3	0,2–0,3	0,2–0,4	0,2–0,4	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
3.4	10–15	15–20	0,15–0,3	0,15–0,25	0,2–0,3	0,2–0,3	0,2–0,4	0,2–0,4	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
3.5												
3.6	12–20	20–35	0,15–0,3	0,15–0,25	0,2–0,3	0,2–0,3	0,2–0,4	0,2–0,4	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
3.7												
3.8												
4.1												
4.2	20–60		0,15–0,25	0,15–0,2	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
4.3												
4.4	20–30		0,15–0,25	0,15–0,2	0,2–0,3	0,2–0,3	0,2–0,3	0,2–0,3	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
4.5												
4.6	20–80		0,15–0,3	0,15–0,2	0,25–0,35	0,2–0,3	0,2–0,4	0,2–0,3	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
4.7	25–60		0,15–0,3	0,15–0,2	0,25–0,35	0,2–0,3	0,2–0,4	0,2–0,3	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
4.8												
4.9	15–30		0,15–0,3	0,15–0,2	0,25–0,35	0,2–0,3	0,2–0,4	0,2–0,3	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
4.10												
4.11												
4.12	20–50		0,15–0,3	0,15–0,2	0,25–0,35	0,2–0,3	0,2–0,4	0,2–0,3	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
4.13												
4.14												
4.15	10–15		0,15–0,3	0,15–0,2	0,25–0,35	0,2–0,3	0,2–0,4	0,2–0,3	0,3–0,4	0,3–0,4	0,3–0,5	0,3–0,5
4.16	15–20		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
4.17	10–20		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
4.18	7–12		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
4.19												
5.1												
5.2	10–20		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
5.3												
5.4												
5.5	8–10		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
5.6												
5.7	6–10		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
5.8	5–8		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
5.9	6–10		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
5.10												
5.11	6–8		0,15–0,2	0,15	0,2–0,25	0,2	0,2–0,3	0,2	0,25–0,35	0,3	0,3–0,35	0,3
6.1												
6.2												
6.3												
6.4												
6.5												

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

4

Cutting data for HSS-E reamers

		40 110 ... / 40 115 ... / 40 139 ... / 40 140 ... 40 145 ... / 40 150 ... / 40 155 ... / 40 160 ...									
		to Ø 5 mm		to Ø 8 mm		to Ø 12 mm		to Ø 15 mm		to Ø 20 mm	
Index	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
1.1	18	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
1.2	15	0,1–0,15	0,1	0,2–0,3	0,2–0,3	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
1.3											
1.4	12	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
1.5											
1.6											
1.7											
1.8	10	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
1.9	14	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
1.10	12	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
1.11	10	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
1.12											
1.13											
1.14											
1.15											
1.16											
2.1	10	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
2.2	8	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
2.3											
2.4											
2.5											
2.6											
2.7											
3.1	14	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
3.2											
3.3	12	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
3.4	10	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
3.5	12	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
3.6	10	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
3.7	12	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
3.8	10	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2	0,2–0,3	0,2	0,2–0,3	0,2
4.1	20	0,15	0,1	0,2	0,2	0,3	0,2	0,3	0,2	0,3	0,2
4.2											
4.3											
4.4	18	0,15	0,1	0,2	0,2	0,3	0,2	0,3	0,2	0,3	0,2
4.5	16	0,15	0,1	0,2	0,2	0,3	0,2	0,3	0,2	0,3	0,2
4.6	20	0,15	0,1	0,2	0,2	0,3	0,2	0,3	0,2	0,3	0,2
4.7											
4.8											
4.9											
4.10											
4.11											
4.12											
4.13	14	0,15	0,1	0,2	0,2	0,3	0,2	0,3	0,2	0,3	0,2
4.14											
4.15	10	0,15	0,1	0,2	0,2	0,3	0,2	0,3	0,2	0,3	0,2
4.16	22	0,15	0,1	0,2	0,2	0,3	0,2	0,3	0,2	0,3	0,2
4.17											
4.18											
4.19											
5.1	6	0,1–0,15	0,1	0,2	0,2	0,25	0,2	0,3	0,2	0,4	0,3
5.2											
5.3											
5.4											
5.5	5	0,1–0,15	0,1	0,2	0,2	0,25	0,25	0,3	0,2	0,4	0,3
5.6											
5.7											
5.8											
5.9											
5.10	3	0,1	0,1	0,1	0,2	0,12	0,2	0,15	0,2	0,2	0,2
5.11											
6.1											
6.2											
6.3											
6.4											
6.5											

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data for HSS-E reamers

		40 110 ... / 40 115 ... / 40 139 ... / 40 140 ... 40 145 ... / 40 150 ... / 40 155 ... / 40 160 ...							
		to Ø 25 mm		to Ø 30 mm		to Ø 40 mm		to Ø 50 mm	
Index	v_c m/min	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm	f mm/rev.	Reaming allowance Ø mm
1.1	18	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
1.2	15	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
1.3									
1.4	12	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
1.5									
1.6									
1.7									
1.8	10	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
1.9	14	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
1.10	12	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
1.11	10	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
1.12									
1.13									
1.14									
1.15									
1.16									
2.1	10	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
2.2	8	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
2.3									
2.4									
2.5									
2.6									
2.7									
3.1	14	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
3.2									
3.3	12	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
3.4	10	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
3.5	12	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
3.6	10	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
3.7	12	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
3.8	10	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4	0,3–0,5	0,4
4.1	20	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
4.2									
4.3									
4.4	18	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
4.5	16	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
4.6	20	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
4.7									
4.8									
4.9									
4.10									
4.11									
4.12									
4.13	14	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
4.14									
4.15	10	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
4.16	22	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4
4.17									
4.18									
4.19									
5.1	6	0,5	0,4	0,5	0,4	0,6	0,4	0,8	0,4
5.2									
5.3									
5.4									
5.5	5	0,5	0,4	0,5	0,4	0,6	0,4	0,8	0,4
5.6									
5.7									
5.8									
5.9									
5.10	3	0,25	0,3	0,25	0,3	0,3	0,4	0,3	0,4
5.11									
6.1									
6.2									
6.3									
6.4									
6.5									

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

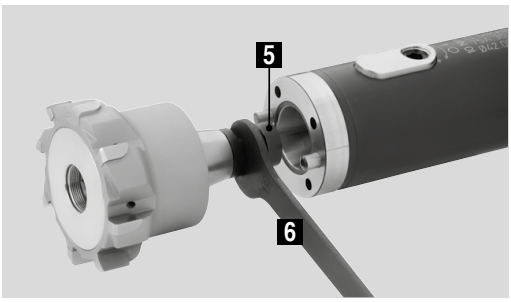
4

Cutting data for countersinks with irregular pitch

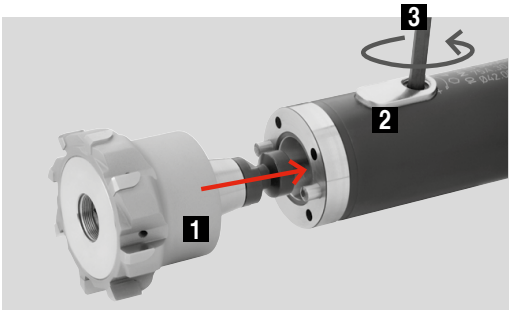
		30 116 ... TPX76S						30 140 ... Ti50					
		Ø 4,3–8,0 mm	Ø 8,00–12,4 mm	Ø 12,40–16,5 mm	Ø 16,5–20,5 mm	Ø 20,5–25,0 mm	Ø 25,0–31,0 mm	Ø 4,3–8,0 mm	Ø 8,0–12,4 mm	Ø 12,4–16,5 mm	Ø 16,5–20,5 mm	Ø 20,5–25,0 mm	Ø 25,0–31,0 mm
Index	v_c m/min	f in mm/rev.						v_c m/min	f in mm/rev.				
1.1	**60**	**0,08**	**0,1**	**0,12**	**0,14**	**0,18**	**0,22**	**36**	0,08	0,10	0,12	0,14	0,18	0,22
1.2	**60**	**0,08**	**0,1**	**0,12**	**0,14**	**0,18**	**0,22**	**36**	0,08	0,10	0,12	0,14	0,18	0,22
1.3	**60**	**0,08**	**0,1**	**0,12**	**0,14**	**0,18**	**0,22**	**36**	0,08	0,1	0,12	0,14	0,18	0,22
1.4	**50**	**0,06**	**0,08**	**0,1**	**0,12**	**0,14**	**0,18**	**36**	0,08	0,1	0,12	0,14	0,18	0,22
1.5	**50**	**0,06**	**0,08**	**0,1**	**0,12**	**0,14**	**0,18**	**36**	0,08	0,1	0,12	0,14	0,18	0,22
1.6	**50**	**0,06**	**0,08**	**0,1**	**0,12**	**0,14**	**0,18**	**36**	0,08	0,1	0,12	0,14	0,18	0,22
1.7	**50**	**0,06**	**0,08**	**0,1**	**0,12**	**0,14**	**0,18**	**30**	0,06	0,08	0,1	0,12	0,14	0,18
1.8	**40**	**0,04**	**0,05**	**0,06**	**0,1**	**0,12**	**0,16**	**30**	0,06	0,08	0,1	0,12	0,14	0,18
1.9	**50**	**0,06**	**0,08**	**0,1**	**0,12**	**0,14**	**0,18**	**36**	0,08	0,1	0,12	0,14	0,18	0,22
1.10	**40**	**0,04**	**0,05**	**0,06**	**0,1**	**0,12**	**0,16**	**36**	0,08	0,1	0,12	0,14	0,18	0,22
1.11	**40**	**0,04**	**0,05**	**0,06**	**0,1**	**0,12**	**0,16**	**36**	0,08	0,1	0,12	0,14	0,18	0,22
1.12	**40**	**0,04**	**0,05**	**0,06**	**0,1**	**0,12**	**0,16**	**30**	0,06	0,08	0,1	0,12	0,14	0,18
1.13	**40**	**0,04**	**0,05**	**0,06**	**0,1**	**0,12**	**0,16**	8	0,04	0,05	0,06	0,08	0,10	0,12
1.14	**40**	**0,04**	**0,05**	**0,06**	**0,1**	**0,12**	**0,16**	12	0,04	0,05	0,06	0,08	0,10	0,12
1.15	**40**	**0,04**	**0,05**	**0,06**	**0,1**	**0,12**	**0,16**	12	0,04	0,05	0,06	0,08	0,10	0,12
1.16	**40**	**0,04**	**0,05**	**0,06**	**0,1**	**0,12**	**0,16**	12	0,04	0,05	0,06	0,08	0,10	0,12
2.1	30	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
2.2	30	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
2.3	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
2.4	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
2.5	30	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
2.6	30	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
2.7	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
3.1	**50**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**	**14**	0,1	0,12	0,14	0,18	0,2	0,25
3.2	**45**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**	**14**	0,1	0,12	0,14	0,18	0,2	0,25
3.3	**45**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**	**14**	0,1	0,12	0,14	0,18	0,2	0,25
3.4	**45**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**	**12**	0,1	0,12	0,14	0,18	0,2	0,25
3.5	**35**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**	**14**	0,1	0,12	0,14	0,18	0,2	0,25
3.6	**35**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**	**14**	0,1	0,12	0,14	0,18	0,2	0,25
3.7	**35**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**	**14**	0,1	0,12	0,14	0,18	0,2	0,25
3.8	**35**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**	**14**	0,1	0,12	0,14	0,18	0,2	0,25
4.1	**80**	**0,1**	**0,12**	**0,14**	**0,18**	**0,22**	**0,26**	42	0,08	0,1	0,12	0,14	0,18	0,22
4.2	**80**	**0,1**	**0,12**	**0,14**	**0,18**	**0,22**	**0,26**	42	0,08	0,1	0,12	0,14	0,18	0,22
4.3	**80**	**0,1**	**0,12**	**0,14**	**0,18**	**0,22**	**0,26**	42	0,08	0,1	0,12	0,14	0,18	0,22
4.4	**60**	**0,1**	**0,12**	**0,14**	**0,18**	**0,22**	**0,26**							
4.5	**60**	**0,1**	**0,12**	**0,14**	**0,18**	**0,22**	**0,26**							
4.6	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,30**	42	0,1	0,12	0,14	0,18	0,2	0,24
4.7	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,30**	42	0,1	0,12	0,14	0,18	0,2	0,24
4.8	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,30**	42	0,1	0,12	0,14	0,18	0,2	0,24
4.9	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,30**	42	0,1	0,12	0,14	0,18	0,2	0,24
4.10	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,30**	42	0,1	0,12	0,14	0,18	0,2	0,24
4.11	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,30**	42	0,1	0,12	0,14	0,18	0,2	0,24
4.12	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,30**	42	0,1	0,12	0,14	0,18	0,2	0,24
4.13	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,3**	42	0,12	0,14	0,18	0,20	0,24	0,30
4.14	**70**	**0,12**	**0,14**	**0,18**	**0,2**	**0,24**	**0,30**	42	0,12	0,14	0,18	0,20	0,24	0,30
4.15	**25**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**							
4.16														
4.17	**25**	**0,1**	**0,12**	**0,14**	**0,18**	**0,2**	**0,25**							
4.18	**15**	**0,05**	**0,06**	**0,07**	**0,08**	**0,09**	**0,12**							
4.19	**15**	**0,05**	**0,06**	**0,07**	**0,08**	**0,09**	**0,12**							
5.1	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
5.2	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
5.3	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
5.4	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
5.5	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
5.6	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
5.7	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
5.8	25	0,05	0,06	0,07	0,08	0,09	0,12	10	0,05	0,06	0,07	0,08	0,09	0,12
5.9	25	0,05	0,06	0,07	0,08	0,09	0,12							
5.10	15	0,05	0,06	0,07	0,08	0,09	0,12							
5.11	15	0,05	0,06	0,07	0,08	0,09	0,12							
6.1	12	0,05	0,06	0,07	0,08	0,09	0,12							
6.2	8	0,05	0,06	0,07	0,08	0,09	0,12							
6.3	8	0,05	0,06	0,07	0,08	0,09	0,12							
6.4	8	0,05	0,06	0,07	0,08	0,09	0,12							
6.5														

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

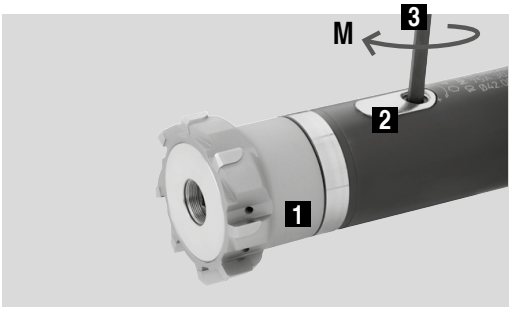
REAMAX TS – Assembly instructions



Clean the Morse taper adapter/face contact → grease-free.
Screw the pull stud (5) into the reaming head and tighten using the open-ended spanner (6).

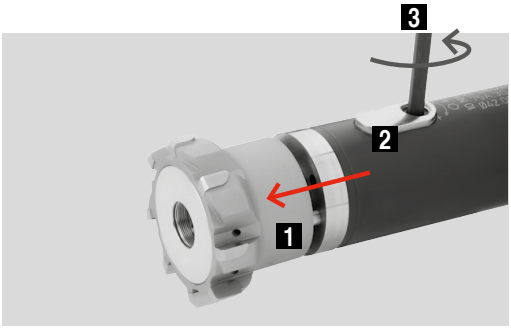


Use key (3) to open jaws (2), but do not fully release, and insert reaming head (1).

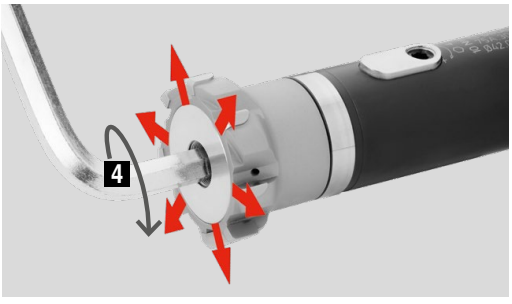


Use the key (3) to close the jaws (2), observe the recommended tightening torque. When inserting the reaming head (1), this is pulled into its final position when the jaws (2) are closed.

x Range	Tightening torque (M)
18,000 – 19,999	1,5 Nm
20,000 – 21,999	2,5 Nm
22,000 – 26,999	4 Nm
27,000 – 34,999	5 Nm
35,000 – 41,999	6 Nm
42,000 – 51,999	10 Nm
52,000 – 70,000	13 Nm



When removing the reamer head (1), this is pressed out of its position by the jaws (2) and can thus be easily removed from the holder:
Use key (3) to open the jaws (2) but do not fully release, and remove reamer head (1).



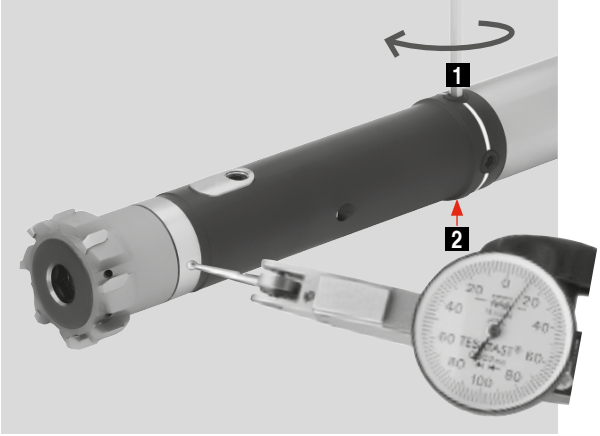
Adjustment for wear compensation:
The smallest drilling tolerances up to IT 4 can be achieved through adjustment with the hex key (4).

REAMAX TS – Operating instructions

Aligning the DAH Zero holder

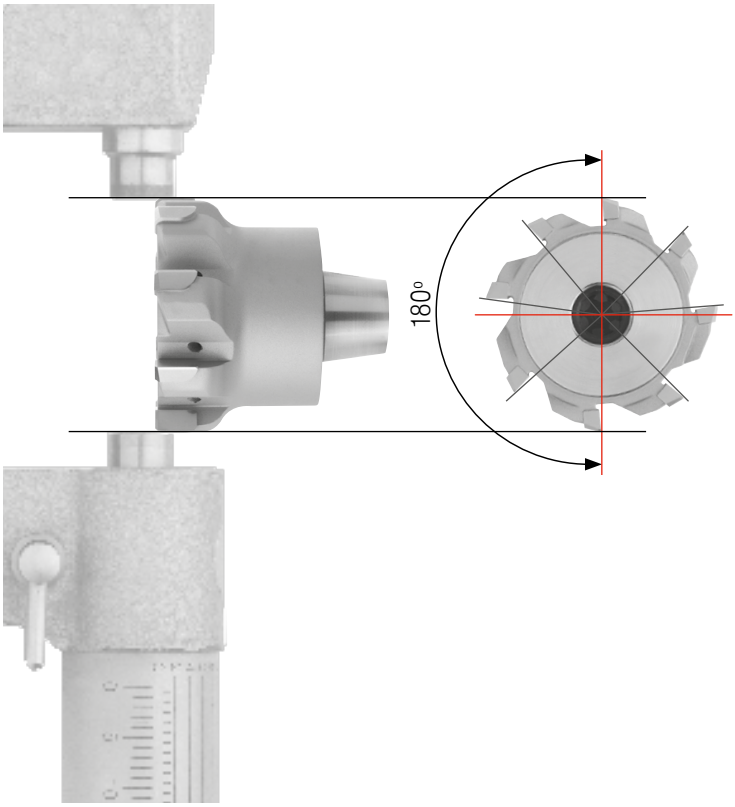
The tool is recommended for radial alignment of max. 20 µm.

1. Loosen all adjustment screws and pre-load with 1 Nm (new tools are already supplied like this).
2. Place dial gauge with µm display on the ground bezel diameter.
3. Turn the tool to determine the point with the largest runout error using the dial gauge.
4. Adjust the corresponding adjustment screw with the hex key clockwise (1) until half the runout error has been corrected. In doing so, over-tighten by approx. 5 µm.
5. Release the opposite adjustment screw (2) by the over-tightened amount.
6. Adjust all 4 adjustment screws until the runout is < 2 µm.

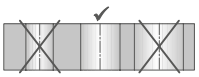


Please note:
- the runout must be checked and if necessary re-aligned after an adapter changeover, change of application, after any adjustment for wear compensation and before every re-commissioning, using adjustment steps 1 to 6
- adjustment screws must always be tightened during usage with at least 1 Nm
- the max. re-adjustment torque is 4.5 Nm

Caution!
- uneven angle distribution!
- there are 2 cutting edges 180° opposite each other = measuring teeth
- measure the diameter at the front on the cutting edge (due to back taper, see diagram)
- avoid damage to the cutting edge

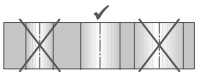


Problems / possible causes / solutions



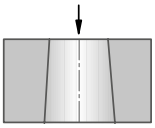
Hole too large

- runout error for reamer in the spindle → use DAH compensation system and correct runout
- inaccurate alignment, reamer back-cuts → correct alignment and use DPS floating holder
- built-up edge → reduce cutting speed v_c for uncoated carbide cutting material, increase it for DST and coated cutting material or increase the oil content of the coolant
- reamer too large → have reamer adapted



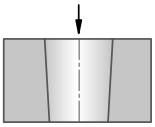
Hole too small

- worn reamer → have reamer adjusted, replaced or repaired
- reaming allowance too small → increase reaming allowance
- cutting force too high → reduce feed or select other lead geometry (ASG)
- reamer too small → have reamer adjusted, replaced or repaired



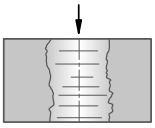
Conical hole, tapered backwards

- inaccurate alignment → correct alignment and use DPS floating holder
- misalignment between headstock and turret → correct turret and use DPS floating holder



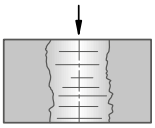
Conical hole, tapered forwards

- poor alignment, cutting edges push initially → correct alignment and use DPS floating holder



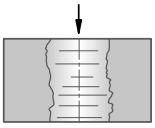
Hole is not round

- reamer runout error too large → correct the runout with DAH compensation system
- alignment error → correct alignment error and use DPS floating holder
- asymmetric initial cutting through angled entry surface → countersink hole
- workpiece tensioning → correct clamping of the workpieces
- poor pre-machining → optimise pre-machining
- feed too high → reduce feed



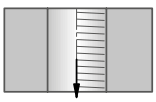
Hole exhibits chatter marks

- cutting speed v_c too high → reduce cutting speed
- OAL to DC ratio too high→ reduce the speed of entry, pilot the bore or select other lead geometry (ASG)



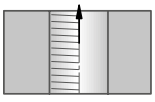
Non clean-up

- built-up edge → reduce cutting speed v_c for uncoated carbide cutting material, increase it for DST and coated cutting material or increase the oil content of the coolant
- cutting edge worn→ have cutting edge repaired or replace the tool
- reamer runout error → correct the runout with DAH compensation system
- no or insufficient cooling, chips are getting trapped → use thro' coolant supply and increase coolant pressure
- unsuitable coolant → increase the oil content of the coolant
- incorrect cutting data→ use data according to catalogue recommendation



Grooves in the hole "feed marking"

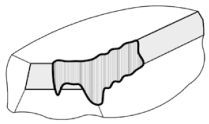
- faulty cutting edge (edge breakage) → have reamer replaced or repaired
- built-up edges → reduce cutting speed v_c for uncoated carbide cutting material, increase it for DST and coated cutting material or increase the oil content of the coolant



Grooves in the hole "retraction marking"

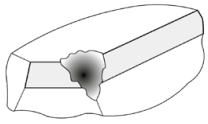
- cutting edges moved too far out of the hole → move no more than lead length + 2 mm out of the hole
- material springs back → do not retract at high speed but with increased (2-3 times) feed rate

Types of wear



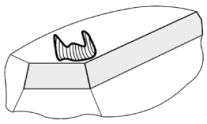
Wear on clearance face

Reduce the cutting speed and select a more wear resistant cutting material or coating.



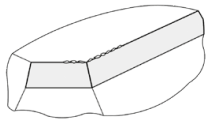
Cutting edge breakage

Reduce feed and reaming allowance. In the case of interrupted holes, use coated carbide instead of DST.



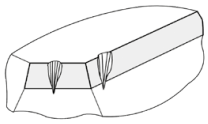
Cratering

Reduce the cutting speed and use a positive cutting edge geometry.



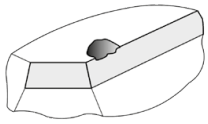
Edge breakages

Increase the cutting speed and use larger rake angle.



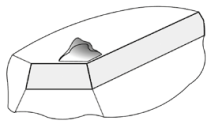
Notch wear

Reduce the cutting speed and select a more wear resistant cutting material or coating.



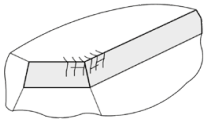
Fatigue fracture

Reduce feed, increase reamer stability.



Built-up edge

Use positive cutting edge geometry, increase the oil content of the coolant, reduce the cutting speed v_c for uncoated carbide cutting material, increase it for DST and coated cutting material.



Cracks at right angles to the cutting edge

Use sufficient coolant and thro' coolant, reduce the cutting speed.

Tolerance classes covered with 1/100 reamer

The most common tolerance is H7, so most reamers configured for an H7 fit tolerance.
With the 1/100 reamers, increments of 0.01 mm can be covered, but are also suitable for various other dimensions.
For example, a 1/100 reamer diameter 8.02 mm can be used for a 8.0 fit F7.
Other fit sizes shown in the table.

Tolerance zone	Nominal Ø in mm											
	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0
A9				4,29	5,29	6,29	7,30	8,30	9,30	10,30	11,32	12,32
A11	1,31	2,31	3,31	4,32	5,32	6,32	7,35	8,35	9,35	10,35	11,37	12,37
B8				4,15	5,15	6,15	7,16	8,16	9,16	10,16		
B9				4,16	5,16	6,16	7,17	8,17	9,17	10,17	11,18	12,18
B10	1,17	2,17	3,17	4,17	5,17	6,17	7,19	8,19	9,19	10,19	11,20	12,20
B11	1,18	2,18	3,18	4,19	5,19	6,19	7,22	8,22	9,22	10,22	11,23	12,23
C8				4,08	5,08	6,08	7,09	8,09	9,09	10,09	11,11	12,11
C9	1,07	2,07	3,07	4,09	5,09	6,09	7,10	8,10	9,10	10,10	11,12	12,12
C10	1,09	2,09	3,09	4,10	5,10	6,10	7,12	8,12	9,12	10,12	11,14	12,14
C11	1,10	2,10	3,10	4,12	5,12	6,12	7,15	8,15	9,15	10,15	11,18	12,18
D7											11,06	12,06
D8				4,04	5,04	6,04	7,05	8,05	9,05	10,05	11,06	12,06
D9				4,05	5,05	6,05	7,06	8,06	9,06	10,06	11,08	12,08
D10	1,05	2,05	3,05	4,06	5,06	6,06	7,08	8,08	9,08	10,08	11,10	12,10
D11	1,06	2,06	3,06	4,08	5,08	6,08	7,10	8,10	9,10	10,10	11,13	12,13
E7							7,03	8,03	9,03	10,03	11,04	12,04
E8	1,02	2,02	3,02	4,03	5,03	6,03	7,04	8,04	9,04	10,04	11,05	12,05
E9	1,03	2,03	3,03	4,04	5,04	6,04	7,05	8,05	9,05	10,05	11,06	12,06
F7	1,01	2,01	3,01				7,02	8,02	9,02	10,02	11,02	12,02
F8	1,01	2,01	3,01	4,02	5,02	6,02	7,02	8,02	9,02	10,02	11,03	12,03
F9	1,02	2,02	3,02	4,03	5,03	6,03	7,03	8,03	9,03	10,03	11,04	12,04
F10				4,04	5,04	6,04	7,05	8,05	9,05	10,05	11,07	12,07
G7				4,01	5,01	6,01	7,01	8,01	9,01	10,01		
H7										10,01	11,01	12,01
H8				4,01	5,01	6,01	7,01	8,01	9,01	10,01	11,02	12,02
H9	1,01	2,01	3,01	4,02	5,02	6,02	7,02	8,02	9,02	10,02	11,03	12,03
H10	1,03	2,03	3,03	4,03	5,03	6,03	7,04	8,04	9,04	10,04	11,05	12,05
H11	1,04	2,04	3,04	4,05	5,05	6,05	7,06	8,06	9,06	10,06	11,08	12,08
H12	1,07	2,07	3,07	4,08	5,08	6,08	7,10	8,10	9,10	10,10	11,13	12,13
H13	1,11	2,11	3,11	4,14	5,14	6,14	7,18	8,18	9,18	10,18	11,22	12,22
J6				4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00
J7				4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00
J8	1,00	2,00	3,00	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00
JS7				4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00
JS8	1,00	2,00	3,00	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00
JS9	1,00	2,00	3,00	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,01	12,01
K8	0,99	1,99	2,99				6,99	7,99	8,99	9,99	10,99	11,99
M6							6,99	7,99	8,99	9,99	10,99	11,99
M7							6,99	7,99	8,99	9,99	10,99	11,99
M8	0,99	1,99	2,99	3,99	4,99	5,99	6,99	7,99	8,99	9,99	10,99	11,99
N6				3,99	4,99	5,99						
N7	0,99	1,99	2,99	3,99	4,99	5,99	6,99	7,99	8,99	9,99	10,99	11,99
N8	0,99	1,99	2,99	3,99	4,99	5,99	6,99	7,99	8,99	9,99	10,98	11,98
N9	0,98	1,98	2,98	3,99	4,99	5,99	6,99	7,99	8,99	9,99	10,98	11,98
N10	0,98	1,98	2,98	3,98	4,94	5,98	6,98	7,98	8,98	9,98	10,98	11,98
N11	0,98	1,98	2,98	3,98	4,94	5,98	6,98	7,98	8,98	9,98	10,97	11,97
P6	0,99	1,99	2,99								10,98	11,98
P7	0,99	1,99	2,99				6,98	7,98	8,98	9,98	10,98	11,98
P8	0,99	1,99	2,99	3,98	4,98	5,98					10,97	11,97
R6							6,98	7,98	8,98	9,98		
R7				3,98	4,98	5,98	6,98	7,98	8,98	9,98	10,97	11,97
S6				3,98	4,98	5,98					10,97	11,97
S7	0,98	1,98	2,98	3,98	4,98	5,98	6,97	7,97	8,97	9,97	10,97	11,97
U6							6,97	7,97	8,97	9,97		
U7				3,97	4,97	5,97	6,97	7,97	8,97	9,97		
X7				3,97	4,97	5,97						
X8	0,97	1,97	2,97				6,96	7,96	8,96	9,96	10,95	11,95
X9	0,97	1,97	2,97	3,96	4,96	5,96	6,95	7,95	8,95	9,95		
Z7	0,97	1,97	2,97	3,96	4,96	5,96	6,96	7,96	8,96	9,96	10,95	11,95
Z8	0,97	1,97	2,97	3,96	4,96	5,96	6,95	7,95	8,95	9,95	10,94	11,94
Z9				3,95	4,95	5,95						
Z10	0,96	1,96	2,96	3,95	4,95	5,95	6,94	7,94	8,94	9,94	10,93	11,93
ZA7	0,96	1,96	2,96	3,95	4,95	5,95	6,94	7,94	8,94	9,94		
ZA8							6,94	7,94	8,94	9,94	10,93	11,93
ZB8	0,95	1,95	2,95	3,94	4,94	5,94					10,90	11,90
ZB9	0,95	1,95	2,95	3,94	4,94	5,94	6,92	7,92	8,92	9,92	10,90	11,90

Coatings

AlTiN
- ▲ AlTiN nanolayer coating
- ▲ maximum application temperature: 1100 °C

Ti700
- ▲ TiAlN multilayer coating
- ▲ maximum application temperature: 1100 °C

DBC
DLC
- ▲ diamond-like carbon coating
- ▲ specially for machining non-ferrous metals
- ▲ maximum application temperature: 400 °C

DBG-P
TiAlN
- ▲ TiAlN multilayer coating
- ▲ maximum application temperature: 900 °C

Ti50
- ▲ TiN multilayer coating
- ▲ maximum application temperature: 400 °C

TiN
CWN10
- ▲ TiN coating
- ▲ maximum application temperature: 450 °C

TPX76S
- ▲ TiN-TiAlN-ZrN Monolayer coating
- ▲ maximum application temperature: 800 °C

Type

AMZ
- ▲ carbide, TiAlN-coated
- ▲ ISO | P10 | K10 | **N10** | S10
- ▲ the coated carbide grade for aluminium machining

CWN15
- ▲ carbide, TiN-coated
- ▲ ISO | **K15**
- ▲ special carbide grade for abrasive aluminium alloys

DST
CWC10
- ▲ cermet, uncoated
- ▲ ISO | **P15** | **M10** | K10
- ▲ the uncoated cermet grade for finish machining stainless and hardened steel
- ▲ particularly wear resistant thanks to high heat resistance

CWN 2135
- ▲ carbide, TiCN-TiNB-coated
- ▲ ISO | P35 | **M30** | S35
- ▲ the turning grade for general stainless machining

CWK10
- ▲ carbide, uncoated
- ▲ ISO | **K10**
- ▲ the uncoated carbide grade for universal application

DCX3110
- ▲ carbide, TiCN-Al_2O_3-coated
- ▲ ISO | P05 | **K10**
- ▲ the wear-resistant grade for machining cast iron materials at high cutting speeds in a continuous cut

CWK15
- ▲ carbide, uncoated
- ▲ ISO | **K15** | **N15**
- ▲ the uncoated carbide grade for machining aluminium and other non-ferrous metals

HCR1135
- ▲ carbide, TiCN-Al_2O_3-coated
- ▲ ISO | **P35** | M25 | S25
- ▲ the tough alternative for heavily interrupted cut and unstable conditions

TiN
CWN10
- ▲ carbide, TiN-coated
- ▲ ISO | **K10**
- ▲ the carbide grade for machining steels, stainless steels and non-ferrous metals

HCX1125
- ▲ xarbide, TiCN-Al_2O_3-coated
- ▲ ISO | P25 | M20 | **K30**
- ▲ the first choice for universal machining of steels

New products for machining technicians

NEW BluFlex 2

It gets even better

As well as its unbeatable, innovative and highly precise characteristics, the BluFlex 2 system also boasts a modern high contrast OLED display. The MicroKom BluFlex 2 app and the Bluetooth-capable precision adjustment head ensure incredibly simple handling.

NEW hi.flex

The hi.flex system distinguishes itself with its high flexibility. With just a single adjustable head, a variety of boring bars and intelligently designed adapter solutions, it covers the entire diameter range from 6 to 365 mm.

Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling 5

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

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KOMET \ Performance

Premium quality tools for high performance.

The premium quality tools from the **KOMET Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Symbol explanation

F	Fine Machining
M	Medium Machining
R	Rough Machining

	Smooth cut
	Irregular cutting depth
	Interrupted cut

	Central internal coolant
	Axial coolant (Form AD)
	Coolant supply either via the flange or centrally

ABS	**KOMET ABS** – modular coupling system for rotating and stationary tools
STM	Modular SpinTools interface
ER 32	System-independent ER 32 interface

Micron-precise display resolution: 0.001 mm in diameter

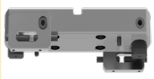
Universal ABS interface

Modern, high contrast OLED display on the precision adjustment head itself

Absolute position measuring system

Additional Bluetooth Low Energy interface for easy display on any conventional smartphone

Toolfinder

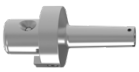
		System		Diameter range per head in mm	Digital	Analogue	ABS Modular	STM Modular	ER 32 Modular	Monoblock	Through spindle	Comments	Pages
Machining	Finishing	BluFlex 2 – precision adjustment head	6,0–125 mm	6,0–125	✓		✓				✓	Through spindle larger head diameters	5–8
		hi.flex – precision adjustment head	6,0–125 mm	6,0–125		✓	✓				✓	Through spindle larger head diameters	5–8
		Micro Boring Head	0,3–19,1 mm	0,3–7,1 / 0,3–19,1	✓	✓							12+13
		Fine boring head	14,7–24,1 mm	14,7–17,1 / 16,7–20,1 / 19,7–24,1		✓					✓		14+15
		Multi-Head – Fine boring head	3,0–320 mm	3,0–320		✓		✓		✓	✓	Through spindle larger head diameters	16+17
		Single point boring head	3,0–88,1 mm	3,0–88,1	✓	✓		✓	✓		✓	Through spindle larger head diameters	18–26
		Single point finish boring heads	23,9–116,1 mm	23,9–31,1 / 30,9–40,1 / 39,9–51,1 / 50,9–67,1 / 66,9–87,1 / 86,9–116,1	✓	✓		✓			✓		27–29
		Vario-Head – boring and fine boring head	3–152 mm	3–152	✓			✓					30+31
		Single point finish boring heads	86–402 mm	86–402		✓		✓			✓		32+33
		Console tool with baseplate	 150–655 mm	150–205 / 200–255 / 250–305 / 300–355 / 350–405 / 150–205 / 200–255 / 250–305 / 300–355 / 350–405		✓					✓	also available with roughing head	
		Console tool with slide	650–2205 mm	650–1105 / 1100–1655 / 1650–2205		✓					✓	also available with roughing head	
	Roughing - Finishing	Twin edged rough / fine boring head	29,5–115,5 mm	29,5–40,1 / 39,5–50,5 / 49,5–66,5 / 65,5–87,5 / 86,5–115,5		✓		✓			✓		34+35
	Roughing	Twin rough boring head	23,5–153,0 mm	23,5–30,5 / 29,5–40,1 / 39,5–50,5 / 49,5–66,5 / 65,5–87,5 / 86,5–115,5 / 114,5–153,0		✓		✓			✓		36–38

This article can be found in our online shop at cuttingtools.ceratizit.com

Overview of base adapters and accessories

System			DIN 69871	MAS-BT	HSK-A	Cylindrical shank
Base adapter		ABS	ABS base adapters can be found in → **Chapter 16, Adapters.**			
Base adapter		STM	40	41	42	43

Accessories

Extension		STM	46
Reduction		STM	44+45
Collet Chuck		STM	39
Shell mill adapter		STM	39

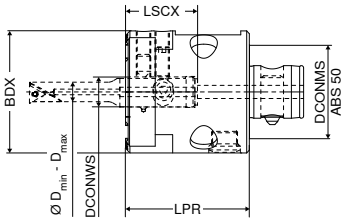
General		
Balancing rings		24
Insert		9–11 47+48

MicroKom – BluFlex 2 – precision spindle head

▲ Via the App, the MicroKom BluFlex 2 display in the head can also be transferred to a standard smartphone (62 840 16097)

Scope of supply:
incl. Battery

ABS



D_{min} - D_{max} mm	KOMET no.	Adapter	DCONWS mm	DCONMS mm	BDX mm	LPR mm	LSCX mm	without Bluetooth NEW W4 Article no. 62 820 ... £		with Bluetooth NEW W4 Article no. 62 840 ... £	
6 - 125	M0430100	ABS 50	16	28	65	71	38	2,082.92	16097		
6 - 125	M0430000	ABS 50	16	28	65	71	38			2,082.92	16097

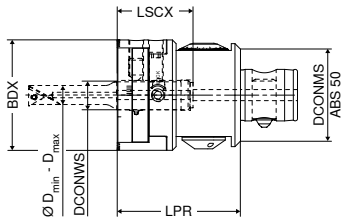
Spare parts for Article no.		XX Clamping screw Article no. 62 950 ... £		W7 Clamping screw Article no. 62 950 ... £		W7 Clamping screw Article no. 62 950 ... £		W7 Clamping sleeve Article no. 62 950 ... £		W7 Battery cover Article no. 62 950 ... £	
62 820 16097	M8x1x12/SW4	5.60	13989	M8x1x20/SW4	1.48	13700	M5x14/SW4	2.15	18600	6.19	18500	8.25	18400
62 840 16097	M8x1x12/SW4	5.60	13989	M8x1x20/SW4	1.48	13700	M5x14/SW4	2.15	18600	6.19	18500	8.25	18400

Suitable ABS adapters can be found in → **Chapter 16, Adapters.**

MicroKom – hi.flex – precision adjustment head

- **For boring bars Ø 16 mm and bridges**
- With internal coolant supply
- LSCX = Boring depth

ABS



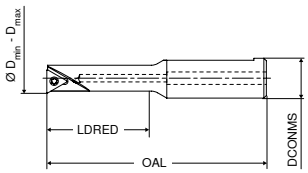
D_{min} - D_{max} mm	KOMET no.	Adapter	DCONWS mm	DCONMS mm	BDX mm	LPR mm	LSCX mm	NEW W4 Article no. 62 800 ... £	
6 - 125	M0501000	ABS 50	16	28	60	67	39.7	1,048.82	**16097**

	XX Clamping screw		W7 Clamping screw		W7 Clamping screw	
Spare parts	**Article no. 62 950 ...**		**Article no. 62 950 ...**		**Article no. 62 950 ...**	
for Article no.		£		£		£
62 800 16097	M8x1x12/SW4	5.60 **13989**	M8x8/SW4	1.48 **14700**	M8x1x20/SW4	1.48 **13700**

Suitable ABS adapters can be found in → **Chapter 16, Adapters.**

MicroKom – Steel boring bar for hi.flex, BluFlex 2

▲ With internal coolant supply



D_{min} - D_{max} mm	KOMET no.	OAL mm	LDRED mm	DCONMS $_{h6}$ mm	Insert	NEW W4 Article no. 62 850 ... £	
6 - 8	B0520100	71.7	21.0	16	WO.. 02T0	112.83	00600
8 - 12	B0520120	77.4	28.0	16	TO.. 06T1	116.56	00800
10 - 14	B0520140	81.8	34.0	16	TO.. 0902	111.66	01000
12 - 18	B0520160	88.2	42.0	16	TO.. 0902	121.46	01200
14 - 18	B0520180	94.4	50.0	16	TO.. 0902	120.19	01400
18 - 25	B0520220	100.0	60.0	16	TO.. 0902	127.55	01800
22 - 26	B0520260	108.0	68.5	16	TO.. 1403	146.00	02200

Suitable inserts can be found on → **Page 9–11**.

Spare parts

W7
TORX® Screws

Insert	Article no. 62 950 ... £	
TO.. 06T1	2.56	12800
TO.. 0902	2.23	12000
TO.. 1403	2.23	12600
WO.. 02T0	2.23	11800

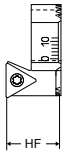
MicroKom – Insert holder for serrated body hi.flex, BluFlex 2

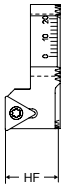
▲ With internal coolant supply

Scope of supply:

▲ without inserts

▲ incl. mounting screws





for	KOMET no.	HF mm	Insert	NEW W4 Article no. 62 863 ... £	
62 861 06300	M0520101	13.5	TO.. 06T1	130.00	04400
62 861 06300 / 62 860 12500	M0520151	13.5	TO.. 0902	132.45	12500

Suitable inserts can be found on → **Page 10+11**.

Spare parts

W7
TORX® Screws

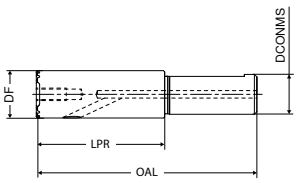
for Article no.	Article no. 62 950 ... £	
62 863 04400	2.56	09700
62 863 12500	2.23	09900

MicroKom – Serrated body for hi.flex, BluFlex 2

▲ With internal coolant supply

Scope of supply:

without insert holder



D_{min} - D_{max} mm	KOMET no.	DCONMS mm	OAL mm	LPR mm	DF mm	NEW W4 Article no. 62 861 ... £	
25 - 63	M0590100	16	88.5	65	19	132.45	06300

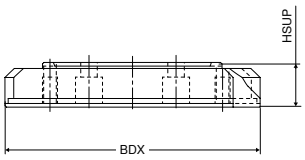
Spare parts

W7
Cylindrical screw

W7
Disk spring

for Article no.	Article no. 62 950 ... £		Article no. 62 950 ... £	
62 861 06300	0.83	00000	1.48	19100

MicroKom – Bridge for hi.flex, BluFlex 2



D_{min} - D_{max} mm	KOMET no.	BDX mm	HSUP mm	WT kg	NEW W4 Article no. 62 860 ... £	
90 - 125	M0580101	85	12	0.147	182.78	12500

Spare parts

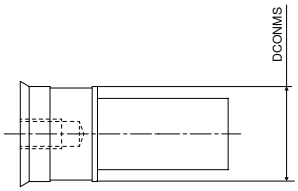
W7
Cylindrical screw

W7
Disk spring

for Article no.	Article no. 62 950 ... £		Article no. 62 950 ... £	
62 860 12500	0.83	00000	1.48	19100

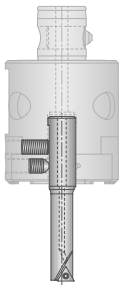
5

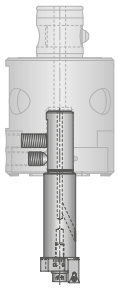
MicroKom – Filling piece for hi.flex, BluFlex 2

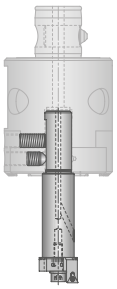


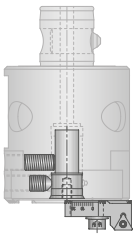
DCONMS	KOMET no.	NEW W4 Article no. 62 862 ...
mm		£
16	M0590501	17.66 09300

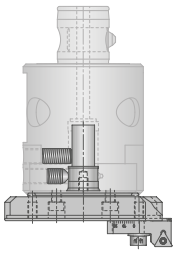
Overview of diameters available







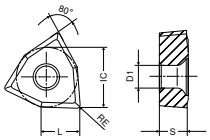




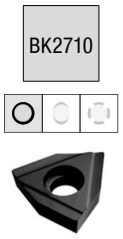
Ø 6–25	Ø 25–44	Ø 44–63	Ø 63–93	Ø 90–125
Boring Bar	Serrated body	Serrated body	Filling piece	Filling piece
62 850 ...	62 861 06300	62 861 06300	62 862 09300	62 862 09300
	+	+	+	+
	Insert holder	Insert holder	Insert holder	Bridge
	62 863 04400	62 863 12500	62 863 12500	62 860 12500
				+
				Insert holder
				62 863 12500

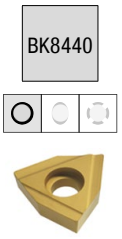
WOHX

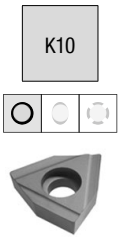
Designation	L	S	D1	IC
	mm	mm	mm	mm
WOHX 02T0..	2.6	1.20	2	4



WOHX







ISO	KOMET no.	RE	F WOHX NEW X2 Article no. 62 600 ... £		F WOHX NEW X2 Article no. 62 600 ... £		F WOHX NEW X2 Article no. 62 600 ... £	
		mm						
02T001	W0004120.018440	0.1			17.07	**00102**		
02T001	W0004120.012710	0.1	17.07	**10102**				
02T001	W0004120.0121	0.1					14.03	**20102**
Steel			●		●			
Stainless steel			●		●			
Cast iron			●					
Non ferrous metals							●	
Heat resistant alloys							●	
Hardened materials								

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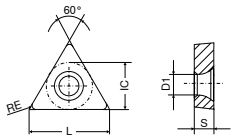
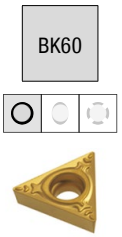
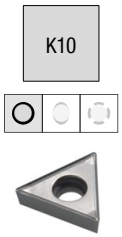
TOGX

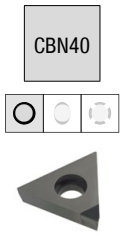
Designation	L	S	D1	IC
	mm	mm	mm	mm
TOGX 06T1..	6.64	1.80	2.2	4.0
TOGX 0902..	9.12	2.50	2.8	5.6
TOGX 1403..	13.62	3.00	3.8	8.2



TOGX







ISO	KOMET no.	RE	F TOGX NEW X2 Article no. 62 601 ...		F TOGX NEW X2 Article no. 62 601 ...		F TOGX NEW Y0 Article no. 62 601 ...	
		mm	£		£		£	
06T102	W5704120.0223	0.2			13.25	**50206**		
06T102	W5704140.0260	0.2	13.25	**90206**				
06T102	W3004990.0240	0.2					57.04	**60206**
090204	W5714120.0423	0.4			14.52	**50409**		
090204	W5714140.0460	0.4	14.52	**70409**				
090204	W3014990.0440	0.4					63.28	**60409**
140304	W5726120.0423	0.4			23.45	**50414**		
140304	W5726140.0460	0.4	20.50	**70414**				

Steel	●		
Stainless steel			
Cast iron			
Non ferrous metals		●	
Heat resistant alloys		●	
Hardened materials			●

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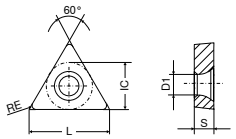
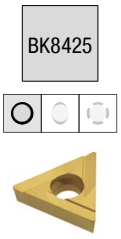
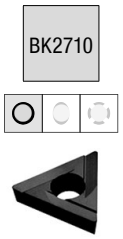
TOHX

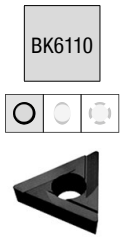
Designation	L	S	D1	IC
	mm	mm	mm	mm
TOHX 06T1..	6.50	1.80	2.2	4.0
TOHX 0902..	9.12	2.50	2.8	5.6
TOHX 1403..	13.62	3.00	3.8	8.2

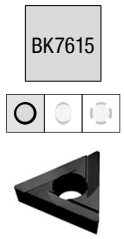


TOHX









ISO	KOMET no.	RE	F TOHX NEW X2 Article no. 62 602 ...		F TOHX NEW X2 Article no. 62 602 ...		F TOHX NEW X2 Article no. 62 602 ...		F TOHX NEW X2 Article no. 62 602 ...	
		mm	£		£		£		£	
06T103	W3004060.032710	0.3			13.64	**10606**				
06T103	W3004060.036110	0.3					14.52	**40606**		
06T103	W3004420.038425	0.3	13.05	**30606**						
06T103	W3004060.037615	0.3							16.09	**80606**
090204	W3014060.046110	0.4					16.09	**40409**		
090204	W3014060.042710	0.4			15.51	**10409**				
090204	W3014060.047615	0.4							17.56	**80409**
140304	W3026060.046110	0.4					17.95	**40414**		

Steel	●		●		○	
Stainless steel	●		●			
Cast iron	●		●		●	●
Non ferrous metals						
Heat resistant alloys						
Hardened materials						

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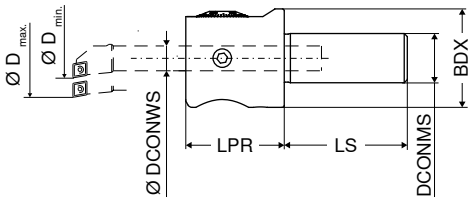
SpinTools – Micro-Boring Head

▲ max. speed 30,000 U/min



D_{min} - D_{max}	BDX	DCONWS	DCONMS	LPR	LS	Digital W4 Article no. 62 386 ... £		Analogue W4 Article no. 62 382 ... £	
mm	mm	mm	mm	mm	mm				
0,3 - 7,1	25	4	10	25	25	1,007.23	**025**	797.43	**025**
0,3 - 19,1	32	7	16	32	40	1,083.82	**032**	826.58	**032**

SpinTools – Digital Stick

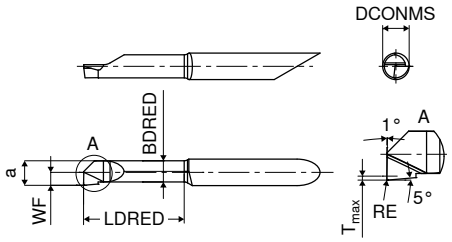
▲ suitable for all SpinTools Digital Heads

Scope of supply:
incl. AAA Battery

W4 Article no. 62 309 ... £	
258.88	**000**

Spare parts		W7 Clamping screw ST Article no. 62 950 ... £			W7 Locking screw Article no. 62 950 ... £	
for Article no.						
62 382 025 / 62 386 025	M5x4	1.67	**214**	M4x8	1.68	**228**
62 382 032 / 62 386 032	M6x5	1.67	**215**	M6x10	1.68	**229**

SpinTools – Solid carbide boring bar



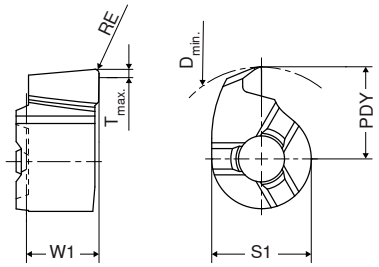
TiN

D_{min} - D_{max}	DCONMS	LDRED	RE	a	BDRED	WF	$T_{max.}$	W4 Article no. 62 383 ...	
mm	mm	mm	mm	mm	mm	mm	mm	£	
0,3 - 0,7	4	1.2		0.25	0.15	0.15	0.03	35.15	**003**
0,6 - 1,1	4	2.5		0.55	0.46	0.30	0.05	35.15	**006**
1,0 - 2,3	4	4.0	0.05	0.95	0.65	0.50	0.10	35.76	**010**
2,2 - 3,3	4	6.0	0.05	2.00	1.55	1.10	0.20	29.95	**022**
3,2 - 4,3	4	10.2	0.05	3.00	2.55	1.60	0.20	30.74	**032**
3,9 - 7,1	4	15.2	0.05	3.70	3.45	1.95	0.30	33.11	**039**
5,2 - 6,3	7	20.3	0.05	5.00	4.25	2.60	0.50	46.37	**052**
6,2 - 7,3	7	20.3	0.05	6.00	5.25	3.10	0.50	46.37	**062**
6,9 - 12,1	7	25.4	0.20	6.70	6.25	3.45	0.50	41.41	**069**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

→ v_c Page 53

SpinTools – Carbide inserts



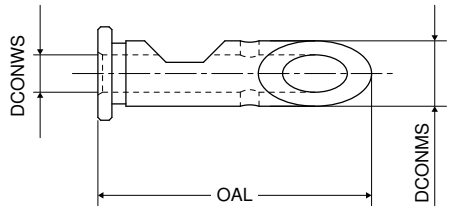
TiN

D_{min} - D_{max}	RE	PDY	S1	W1	$T_{max.}$	W4 Article no. 62 384 ...	
mm	mm	mm	mm	mm	mm	£	
6,9 - 8,1	0.2	3.45	4.8	3.5	1	16.92	**069**
7,9 - 9,1	0.2	3.95	4.8	3.5	1	16.92	**079**
8,9 - 10,1	0.2	4.45	4.8	3.5	1	16.92	**089**
9,9 - 12,1	0.2	4.95	7.0	3.9	1	20.61	**099**
11,9 - 14,1	0.2	5.95	7.0	3.9	1	20.61	**119**
13,9 - 19,1	0.2	6.95	7.0	3.9	1	20.61	**139**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

→ v_c Page 53

SpinTools – Adapter

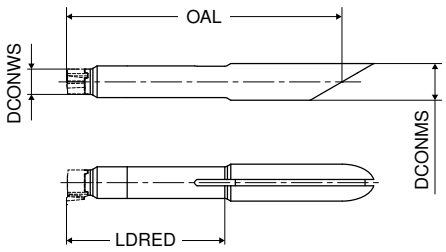


DCONMS	DCONWS	OAL	W4 Article no. 62 335 ...	
mm	mm	mm	£	
7	4	30	58.78	**407**

SpinTools – Toolholder for carbide inserts

▲ with thro' coolant

▲ appropriate inserts for article no. 62 384 ... can be found in the table above



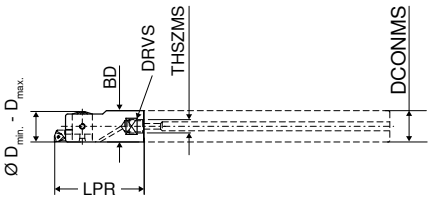
DCONMS	LDRED	DCONWS	OAL	W4 Article no. 62 385 ...	
mm	mm	mm	mm	£	
7	30	4.8	56	156.30	**330**
7	35	7.0	61	166.91	**350**

Spare parts	W7 Article no. 62 950 ...		Y7 Article no. 80 950 ...	
	TORX® Screws		Key D	
for Article no.	£		£	
62 385 330	9.13	**007**	13.49	**124**
62 385 350	9.13	**094**	14.77	**126**

SpinTools – Precision boring head

▲ With internal coolant supply

Scope of supply:
Fine boring head without shank, without insert holder



BD mm	D_{min} - D_{max} mm	THSZMS	DCONMS mm	LPR mm	DRVS mm	W4 Article no. 62 304 ...	£	
14	14,7 - 17,1	M6	14	40	12		694.69	**017**
16	16,7 - 20,1	M10	16	40	14		694.69	**020**
19	19,7 - 24,1	M10	18	40	16		694.69	**024**

TORX® Screws

Key D

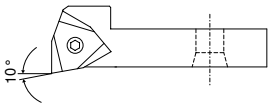
Clamping screw ST

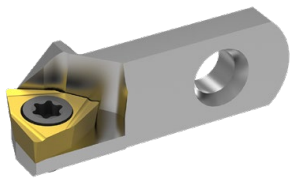
Spare parts for Article no.		W7 Article no. 62 950 ... £		Y7 Article no. 80 950 ... £		W7 Article no. 62 950 ... £	
62 304 017	M2,5x6	4.42	**022**	T07	10.30	**109**	M3x2	2.92	**017**
62 304 020	M2,5x6	4.42	**022**	T07	10.30	**109**	M3x2,5	2.92	**018**
62 304 024	M2,5x6	4.42	**022**	T07	10.30	**109**	M3x4	2.92	**019**

Information on the working length can be found on → **Page 55.**

SpinTools – Insert holder, 90°

Scope of supply:
without insert





for boring head	Insert	W4 Article no. 62 317 ... £	
62 304 ...	WC.. 0201..	121.58	**024**

Suitable inserts can be found on → **Page 47.**

TORX® Screws

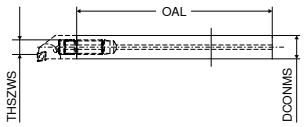
Key D

Spare parts Insert		W7 Article no. 62 950 ... £			Y7 Article no. 80 950 ... £	
WC.. 0201..	M2x3,7	4.42	**021**	T06	11.15	**108**

SpinTools – High-speed carbide boring bars

- with threaded mounting stud made of high quality steel
- with thro' coolant
- Shank clamping length 35 mm
- Boring shanks with DCONMS Ø 18 mm are for use in collet chuck or hydraulic chuck

Scope of supply:
boring shank, without boring head

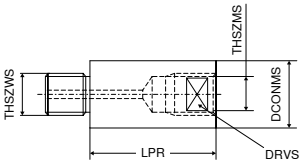


DCONMS h6	OAL	THSZWS	W4 Article no. 62 353 ...	
mm	mm		£	
14	110	M6	296.73	014
16	120	M10	329.84	016
18	100	M10	348.39	018
18	180	M10	622.58	218
18	140	M10	480.85	118

Information on the working length can be found on → **Page 55.**

SpinTools – Shank extensions (tempered steel)

- with thro' coolant



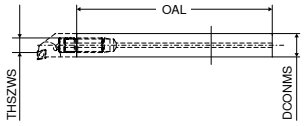
DCONMS h9	LPR	THSZWS	THSZMS	DRVS	W4 Article no. 62 349 ...	
mm	mm			mm	£	
16	32	M10	M10	14	54.78	732
16	64	M10	M10	14	62.78	764

5

SpinTools – High Speed Steel Extension

- with thro' coolant
- Boring shanks with DCONMS Ø 18 mm are for use in collet chuck or hydraulic chuck

Scope of supply:
boring shank, without boring head

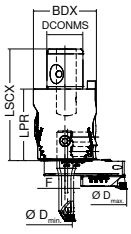


DCONMS h6	OAL	THSZWS	W4 Article no. 62 329 ...	
mm	mm		£	
14	60	M6	69.47	660
16	70	M10	72.14	770
18	80	M10	78.82	880

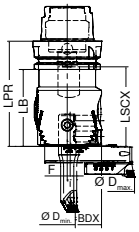
SpinTools – Multi-Head – boring and fine boring head

- **For boring bars Ø 16 mm and bridges**
- With internal coolant supply
- LSCX = Boring depth

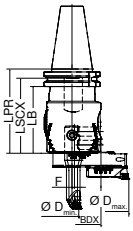
Scope of supply:
without boring bar, bridge and insert holder



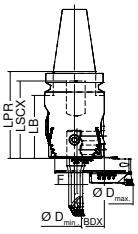
STM Modular



HSK-A 63



SK 40



MAS-BT 40

STM Modular

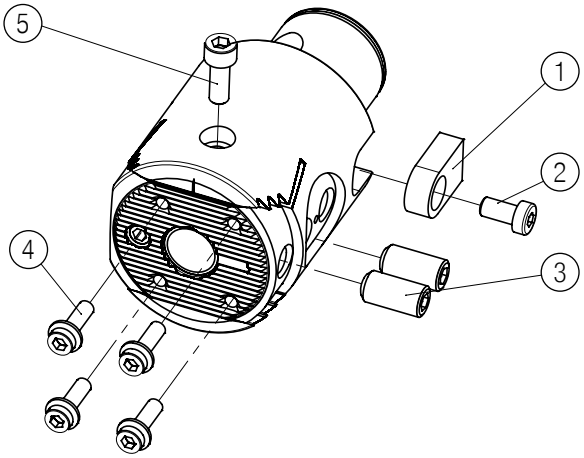
HSK-A

SK

MAS-BT

D_{min} - D_{max}	Adapter	DCONMS	BDX	LPR	LB	LSCX	F	W4 Article no. 62 372 ...		W4 Article no. 62 373 ...		W4 Article no. 62 373 ...		W4 Article no. 62 373 ...	
mm		mm	mm	mm	mm	mm	mm	£		£		£		£	
3 - 320	STM 36	36	63	71.6		111.6	0 - 2,7	1,001.43	653						
3 - 320	HSK-A 63		63	96.6	70.6	73.0	0 - 2,7			1,225.30	653				
3 - 320	SK 40		63	91.6	72.5	81.6	0 - 2,7					1,225.30	153		
3 - 320	BT 40		63	91.6	69.0	81.6	0 - 2,7							1,225.30	453

Suitable base adapters can be found on → **page onwards 40.**



1. *Drive dogs*
2. *Carrier screw*
3. *Clamping screw*
4. *Flange screw*
5. *Clamping screw MH*

Driver

Clamping screw MH

Flange screw

Spare parts		W7 Article no. 62 950 ...			W7 Article no. 62 950 ...			W7 Article no. 62 950 ...	
D_{min} - D_{max}		£			£			£	
3 - 320	16x26,5x8	51.87	040	M6x16	2.74	226	M5x16	4.38	225

Clamping screw

Screw for drivers

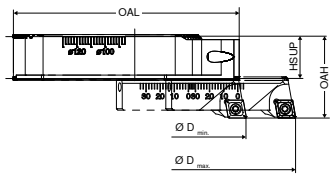
Spare parts					W7 Article no. 62 950 ...			W7 Article no. 62 950 ...	
D_{min} - D_{max}					£			£	
3 - 320				M6x16	1.54	227	M6x12	1.67	167

SpinTools – Bridge for Multi-Head

- Ø adjustable
- With internal coolant supply

Scope of supply:

- without tool holder
- including fixation screws

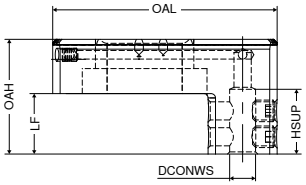


D_{min} - D_{max}	OAL	HSUP	OAH	W4 Article no. 62 376 ...	
mm	mm	mm	mm	£	
86 - 164	80	15	29	231.81	**164**
162 - 320	158	15	29	347.06	**320**

Insert holders can be found on → **Page 19.**

SpinTools – Axial groving holder for UltraMini

- With internal coolant supply



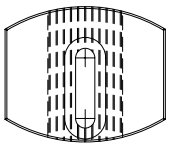
DCONWS	OAL	OAH	HSUP	LF	WT	W4 Article no. 62 358 ...	
mm	mm	mm	mm	mm	kg	£	
6	52	26.58	15	14	0.092	202.67	**006**
7	52	26.58	15	14	0.091	202.67	**007**
8	52	26.58	20	14	0.088	202.67	**008**

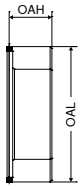
Suitable inserts for axial grooving can be found in
→ **Chapter 12, Miniature Turning Tools**

SpinTools – Counterweight

Scope of supply:

Including fixation screw





for	OAL	OAH	W4 Article no. 62 378 ...	
	mm	mm	£	
62 376 ...	38	12	66.23	**320**

W7

Clamping screw ST

Spare parts DCONWS	Article no. 62 950 ...	
	£	
6	1.67	**214**
7	1.67	**214**
8	1.67	**214**

SpinTools – Multi-Head – Boring and Fine Boring Head Set

- suitable for Ø 3 – Ø 320 mm

Scope of supply:

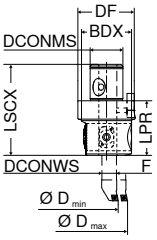
- **1 Tool Kit**
- **1 Multi-Head-Boring- and Fine Boring Head (depending on selection)**
- **4 Boring bars**
  - 62 345 015 Ø 9.75 – Ø 15.1 mm
  - 62 345 020 Ø 14.75 – Ø 20.1 mm
  - 62 345 024 Ø 19.75 – Ø 25.1 mm
  - 62 345 029 Ø 24.75 – Ø 30.1 mm
- **2 Boring tools, adjustable**
  - 62 375 048 Ø 29.75 – Ø 48.1 mm
  - 62 375 088 Ø 47.75 – Ø 88.1 mm
- **incl. insert holder**
  - 62 377 048 CC.. 0602
  - 62 377 088 CC.. 0602
- **1 Bridge**
  - 62 376 164 Ø 86 – Ø 164 mm
- **1 Torx-Key – T7**
- **1 6-adjustment key – SW5**

D_{min} - D_{max}	Adapter	STM Modular W4 Article no. 62 374 ...		HSK-A W4 Article no. 62 379 ...		SK W4 Article no. 62 379 ...		MAS-BT W4 Article no. 62 379 ...	
mm		£		£		£		£	
9,75 - 164	STM 36	1,904.84	**999**						
9,75 - 164	HSK-A 63			2,120.76	**996**				
9,75 - 164	SK 40					2,120.76	**990**		
9,75 - 164	BT 40							2,120.76	**993**

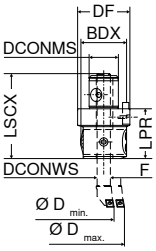
SpinTools – Single point boring heads – Modular system

▲ LSCX = Boring depth
▲ With internal coolant supply

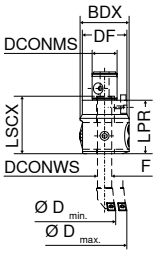
STM



Digital with collar



with flange



without flange

Digital with collar
STM Modular

with flange
STM Modular

without flange
STM Modular

D_{min} - D_{max} mm	Adapter	DCONMS mm	BDX mm	DF mm	DCONWS mm	LPR mm	LSCX mm	F mm	WT kg	W4 Article no. 62 326 ... £		W4 Article no. 62 332 ... £		W4 Article no. 62 332 ... £	
3,0 - 88,1	STM 28	28	55	50	16	60	62	0 - 2,7	0.98					786.89	**553**
3,0 - 88,1	STM 36	36	55	63	16	60	101	0 - 2,7	1.26			786.89	**653**		
3,0 - 88,1	STM 36	36	55	63	16	60	106	0 - 2,7	0.43	1,075.18	**036**				

SpinTools – Digital Stick

▲ suitable for all SpinTools Digital Heads

Scope of supply:
incl. AAA Battery

W4 Article no. 62 309 ... £	
258.88	**000**

Clamping screw

Screw for drivers

Driver

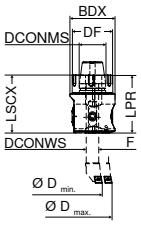
Clamping screw ST

Spare parts for Article no.		W7 Article no. 62 950 ... £			W7 Article no. 62 950 ... £			W7 Article no. 62 950 ... £			W7 Article no. 62 950 ... £	
62 332 553	M10x16	1.67	**047**	M5x10	1.67	**166**	12x20x6	40.84	**039**	M10x8	1.67	**046**
62 332 653	M10x16	1.67	**047**	M6x12	1.67	**167**	16x26,5x8	51.87	**040**	M10x8	1.67	**046**
62 326 036	M10x16	1.67	**047**	M6x12	1.67	**167**	16x26,5x8	51.87	**040**	M10x8	1.67	**046**

SpinTools – Single point boring heads

- Interface for use on ER32 collet chucks
- LSCX = Recess depth of boring bar
- with thro' coolant supply
- Suitable for Ø 3.0 – Ø 88.1 mm

ER 32



ER 32

D_{min} - D_{max} mm	Adapter	DCONMS mm	BDX mm	DF mm	DCONWS mm	LPR mm	LSCX mm	F mm	W4 Article no. 62 332 ... £	
3,0 - 88,1	ER 32	32	55	49.5	16	60	86.5	0 - 2,7	983.65	**732**

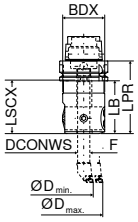
Clamping screw

Clamping screw ST

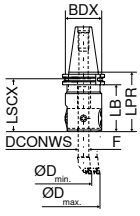
Spare parts		W7 Article no. 62 950 ... £			W7 Article no. 62 950 ... £	
for Article no.						
62 332 732	M10x16	1.67	**047**	M10x8	1.67	**046**

SpinTools – Single Point Boring Head – Monoblock

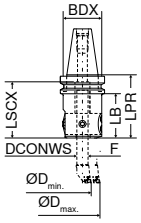
- LSCX = Boring depth
- With internal coolant supply



HSK-A 63



SK 40



MAS-BT 40

HSK-A

SK

MAS-BT

D_{min} - D_{max} mm	Adapter	BDX mm	DCONWS mm	LPR mm	LB mm	LSCX mm	F mm	WT kg	W4 Article no. 62 333 ... £		W4 Article no. 62 333 ... £		W4 Article no. 62 333 ... £	
3,0 - 88,1	HSK-A 63	55	16	95	69	70	0 - 2,7	1.66	999.32	**653**				
3,0 - 88,1	SK 40	55	16	90	70	80	0 - 2,7	1.83			999.32	**153**		
3,0 - 88,1	BT 40	55	16	90	63	80	0 - 2,7	1.90					999.32	**453**

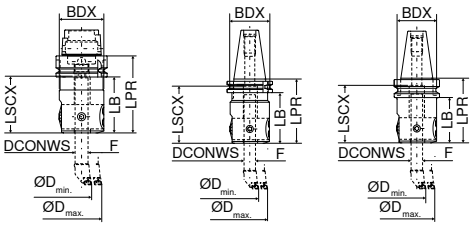
Clamping screw

Clamping screw ST

Spare parts		W7 Article no. 62 950 ... £			W7 Article no. 62 950 ... £	
for Article no.						
62 333 653	M10x16	1.67	**047**	M10x8	1.67	**046**
62 333 153	M10x16	1.67	**047**	M10x8	1.67	**046**
62 333 453	M10x16	1.67	**047**	M10x8	1.67	**046**

SpinTools – Single Point Boring Head – Monoblock

▲ LSCX = Boring depth
▲ With internal coolant supply



HSK-A 63 | SK 40 | MAS-BT 40

Digital HSK-A | Digital SK | Digital MAS-BT

D_{min} - D_{max} mm	Adapter	BDX mm	DCONWS mm	LPR mm	LB mm	LSCX mm	F mm	W4 Article no. 62 363 ...	£		W4 Article no. 62 363 ...	£		W4 Article no. 62 363 ...	£	
3,0 - 88,1	HSK-A 63	55	16	95	70	70	0 - 2,7		1,518.14	**688**						
3,0 - 88,1	SK 40	55	16	90	71	80	0 - 2,7					1,518.14	**188**			
3,0 - 88,1	BT 40	55	16	90	59	80	0 - 2,7								1,518.14	**488**

SpinTools – Digital Stick

▲ suitable for all SpinTools Digital Heads

Scope of supply:
incl. AAA Battery

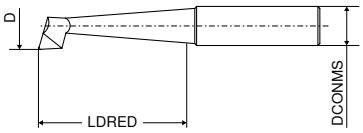
	W4 Article no. 62 309 ...	£	
		258.88	**000**

Clamping screw

Clamping screw ST

Spare parts		W7 Article no. 62 950 ...	£			W7 Article no. 62 950 ...	£	
for Article no.								
62 363 488 / 62 363 188	M10x16		1.67	**047**	M10x8		1.67	**046**

SpinTools – Boring tools with carbide cutting edge



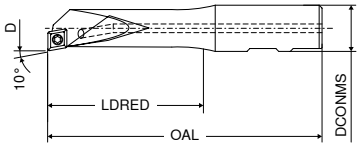
D_{min} - D_{max} mm	LDRED mm	DCONMS $_{h6}$ mm	W4 Article no. 62 346 ... £	
3,0 - 8,0	20	10	102.87	008
4,0 - 9,0	23	10	102.87	009
5,0 - 10,0	25	10	102.87	010
6,0 - 11,0	25	10	102.87	011
7,0 - 12,0	31	10	102.87	012

Steel	●
Stainless steel	○
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

→ v_c Page 52

SpinTools – Steel boring bars

▲ With internal coolant supply



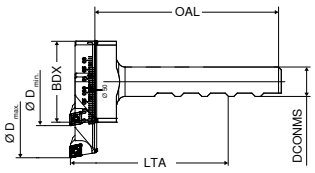
D_{min} - D_{max} mm	OAL mm	LDRED mm	DCONMS $_{h6}$ mm	Insert	W4 Article no. 62 345 ... £	
9,75 - 15,1	75	30	16	CC.. 0602	140.27	015
11,75 - 17,1	80	37	16	CC.. 0602	140.27	017
13,75 - 19,1	85	43	16	CC.. 0602	140.27	019
14,75 - 20,1	90	51	16	CC.. 0602	140.27	020
15,75 - 21,1	95	57	16	CC.. 0602	140.27	021
17,75 - 23,1	100	67	16	CC.. 0602	140.27	023
19,75 - 25,1	105	72	16	CC.. 0602	161.65	024
19,75 - 25,1	105	72	16	CC.. 09T3	161.65	025
21,75 - 27,1	110	77	16	CC.. 09T3	161.65	027
24,75 - 30,1	115	82	16	CC.. 0602	161.65	029
24,75 - 30,1	115	82	16	CC.. 09T3	161.65	030
27,75 - 33,1	115	82	16	CC.. 09T3	169.66	033
31,75 - 37,1	115	82	16	CC.. 09T3	169.66	037
34,75 - 40,1	115	82	16	CC.. 09T3	169.66	040
38,75 - 44,1	115	82	16	CC.. 09T3	180.36	044
42,75 - 48,1	115	82	16	CC.. 09T3	189.71	048
47,75 - 53,1	115	82	16	CC.. 09T3	212.43	053

Suitable inserts can be found on → **Page 48.**

SpinTools – Adjustable boring bar bridge

▲ With internal coolant supply

Scope of supply:
without insert holder

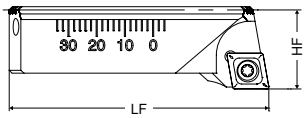


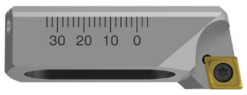
D_{min} - D_{max} mm	OAL mm	BDX mm	LTA mm	DCONMS mm	W4 Article no. 62 375 ... £	
29,75 - 48,1	103	25	85	16	95.37	048
47,75 - 88,1	101	44	85	16	112.22	088

SpinTools – Tool holder for boring bar and bridge Multi-Head

▲ With internal coolant supply

Scope of supply:
▲ without inserts
▲ incl. mounting screws





for	LF mm	HF mm	Insert	W4 Article no. 62 377 ... £	
62 375 048	28.2	12	CC.. 0602	169.56	048
62 375 088 / 62 376 ...	46.0	14	CC.. 0602	186.77	088
62 375 088 / 62 376 ...	46.0	14	CC.. 09T3	194.72	089

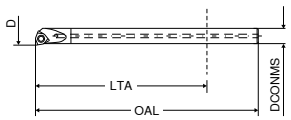
Suitable inserts can be found on → **Page 48.**

	W7		Y7		W7	
	TORX® Screws		Key D		Flange screw	
Spare parts	**Article no. 62 950 ...**		**Article no. 80 950 ...**		**Article no. 62 950 ...**	
for Article no.	£		£		£	
62 377 048	4.42	022	10.30	109	4.38	225
62 377 088	4.42	022	10.30	109	4.38	225
62 377 089	5.14	023	12.26	113	4.38	225

5

SpinTools – Boring bars with carbide shank

▲ With internal coolant supply
▲ LTA = max. overhang



D_{min} - D_{max}	DCONMS $_{h6}$	OAL	LTA	Insert	W4 Article no. 62 341 ...	
mm	mm	mm	mm		£	
5,8 - 11,2	5	80	45	WC.. 0201..	205.75	011
7,8 - 13,2	6	100	60	WC.. 0201..	205.75	013

Suitable inserts can be found on → **Page 47.**

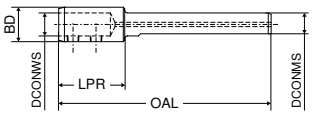
TORX® Screws

Key D

Spare parts	W7 Article no. 62 950 ...		Y7 Article no. 80 950 ...	
Insert	£		£	
WC.. 0201..	4.42	021	11.15	108

SpinTools – Boring tool extensions

▲ with thro' coolant



DCONWS	DCONMS	BD	OAL	LPR	W4 Article no. 62 337 ...	
mm	mm	mm	mm	mm	£	
10	16	16	128		137.62	128
16	16	24	148	44	156.30	148

Clamping screw

Spare parts	W7 Article no. 62 950 ...	
for Article no.	£	
62 337 128	8.18	048
62 337 148	6.42	049

SpinTools – Reduction sleeves

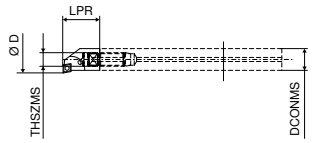
▲ for boring bars and boring tools

DCONMS	DCONWS	OAL	W4 Article no. 62 335 ...	
mm	mm	mm	£	
16	4	37	64.13	104
16	5	37	64.13	105
16	6	37	64.13	106
16	8	37	64.13	108
16	9	37	64.13	109
16	10	37	64.13	110
16	11	37	64.13	111
16	12	37	64.13	112
16	13	37	64.13	113
16	14	37	64.13	114

SpinTools – High-speed boring head

- for overturning holder and high speed carbide shank
- With internal coolant supply
- $D_{max.}$ = using a head with fine adjustment 0 – 2,7 mm

Scope of supply:
Boring head without boring shank, without inserts



D_{min} - D_{max} mm	LPR mm	THSZMS	DCONMS $_{h6}$ mm	Insert	W4 Article no. 62 361 ... £	
8,75 - 14,1	18	M5	8	CC.. 0602	96.70	**014**
9,75 - 15,1	18	M5	9	CC.. 0602	96.70	**015**
10,75 - 16,1	23	M6	10	CC.. 0602	96.70	**016**
11,75 - 17,1	23	M6	11	CC.. 0602	96.70	**017**
12,75 - 18,1	23	M6	12	CC.. 0602	96.70	**018**
13,75 - 19,1	23	M6	13	CC.. 0602	96.70	**019**
14,75 - 20,1	23	M6	14	CC.. 0602	96.70	**020**
15,75 - 21,1	23	M6	14	CC.. 0602	96.70	**021**
16,75 - 22,1	27	M10	16	CC.. 0602	96.70	**022**
17,75 - 23,1	27	M10	16	CC.. 0602	96.70	**023**
19,75 - 25,1	27	M10	16	CC.. 0602	96.70	**025**
21,75 - 27,1	27	M10	16	CC.. 0602	98.03	**027**
24,75 - 30,1	27	M10	16	CC.. 0602	98.03	**030**
27,75 - 33,1	27	M10	16	CC.. 0602	98.03	**033**
31,75 - 37,1	27	M10	16	CC.. 0602	105.98	**037**
34,75 - 40,1	27	M10	16	CC.. 0602	113.56	**040**

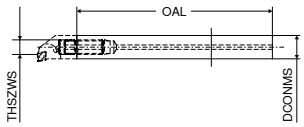
Suitable inserts can be found on → **Page 48.**

Spare parts	W7 TORX® Screws Article no. 62 950 ...		Y7 Key D Article no. 80 950 ...	
Insert	£		£	
CC.. 0602	4.42	**022**	10.30	**109**

SpinTools – High-speed carbide boring bars

- with threaded mounting stud made of high quality steel
- with thro' coolant
- Shank clamping length 35 mm
- Boring shanks with DCONMS Ø 18 mm are for use in collet chuck or hydraulic chuck

Scope of supply:
boring shank, without boring head



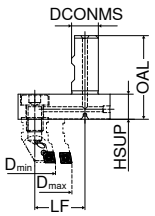
DCONMS $_{h6}$ mm	OAL mm	THSZWS	W4 Article no. 62 353 ... £	
8	73	M5	194.72	**008**
9	80	M5	204.01	**009**
10	82	M6	217.25	**010**
11	89	M6	227.83	**011**
12	96	M6	239.75	**012**
13	103	M6	243.73	**013**
14	110	M6	296.73	**014**
16	120	M10	329.84	**016**

Information on the working length can be found on → **Page 55.**

SpinTools – Over turning holder for boring head

- With internal coolant supply

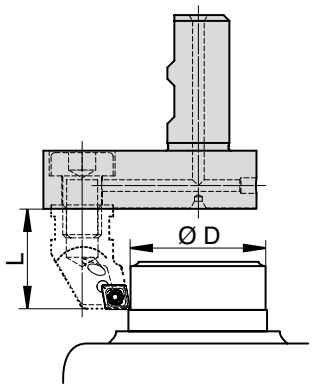
Scope of supply:
without boring head and insert



D_{min} - D_{max} mm	DCONMS $_{h6}$ mm	LF mm	HSUP mm	OAL mm	W4 Article no. 62 404 ... £	
5,3 - 28,6	16	20	15	50	239.75	**028**
25,3 - 48,6	16	30	15	50	280.82	**048**

Help me choose the correct over-turning adapter

- ▲ for the combination of overturning with high speed boring heads
- ▲ the length L can be extended with shank extensions



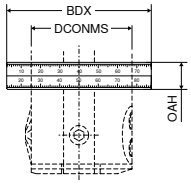
Boring range Ø $D_{min.}$ – Ø $D_{max.}$ mm	Tool holder 62 404 ...	L mm	Boring Head 62 361 ...	Pages
5,3 – 10,6	028	27	040	23
8,3 – 13,6	028	27	037	
12,3 – 17,6	028	27	033	
15,3 – 20,6	028	27	030	
18,3 – 23,6	028	27	027	
20,3 – 25,6	028	27	025	
22,3 – 27,6	028	27	023	
23,3 – 28,6	028	27	022	
25,3 – 30,6	048	27	040	
28,3 – 33,6	048	27	037	
32,3 – 37,6	048	27	033	
35,3 – 40,6	048	27	030	
38,3 – 43,6	048	27	027	
40,3 – 45,6	048	27	025	
42,3 – 47,6	048	27	023	
43,3 – 48,6	048	27	022	

SpinTools – Balancing rings

- ▲ For balancing the tools without dynamic balancing machine

Scope of supply:

CD-ROM with application data and setting values



DCONMS	BDX	OAH	WT	W4 Article no. 62 300 ...	
mm	mm	mm	kg	£	
32	50	16	0.08	223.10	**032**
40	58	16	0.09	239.14	**040**
50	70	16	0.13	256.50	**050**
55	75	16	0.14	265.86	**055**
63	84	16	0.16	273.88	**063**

W7

Clamping screw

Spare parts DCONMS	Article no. 62 950 ...	
	£	
32 - 63	8.72	**009**

SpinTools – Single point boring heads Set 1

- suitable for Ø 3 – Ø 88.1 mm
- supplied with Ø 9.75 – Ø 30.1 or Ø 9.75 – Ø 40.1 mm
- with thro' coolant

Scope of supply:

- **1 Tool Kit**
- **1 single point boring head (depending on selection)**
- **4 Boring bars (SK40- and MAS-BT-Set)**
  - 62 345 015 Ø 9,75 – Ø 15,1 mm
  - 62 345 020 Ø 14,75 – Ø 20,1 mm
  - 62 345 024 Ø 19,75 – Ø 25,1 mm
  - 62 345 029 Ø 24,75 – Ø 30,1 mm
- **8 Boring bars (Modular-Set)**
  - 62 345 015 Ø 9,75 – Ø 15,1 mm
  - 62 345 019 Ø 13,75 – Ø 19,1 mm
  - 62 345 023 Ø 17,75 – Ø 23,1 mm
  - 62 345 027 Ø 21,75 – Ø 27,1 mm
  - 62 345 030 Ø 24,75 – Ø 30,1 mm
  - 62 345 033 Ø 27,75 – Ø 33,1 mm
  - 62 345 037 Ø 31,75 – Ø 37,1 mm
  - 62 345 040 Ø 34,75 – Ø 40,1 mm
- **1 6-adjustment key – SW5**
- **1 Torx-Key – T7**

D_{min} - D_{max} mm	Adapter	STM Modular W4 Article no. 62 334 ...	£	SK W4 Article no. 62 345 ...	£	MAS-BT W4 Article no. 62 345 ...	£
9,75 - 40,1	STM 36	1,836.96	999				
9,75 - 30,1	SK 40			1,442.86	990		
9,75 - 30,1	BT 40					1,442.86	993

SpinTools – Single point boring heads Set 2

- suitable for Ø 3 – Ø 88.1 mm
- Supplied with Ø 9.75 – Ø 88.1 mm
- with thro' coolant

Scope of supply:

- **1 Tool Kit**
- **1 Fine boring head (depending on selection) (depending on selection)**
- **4 Boring bars**
  - 62 345 015 Ø 9.75 – Ø 15.1 mm
  - 62 345 020 Ø 14.75 – Ø 20.1 mm
  - 62 345 024 Ø 19.75 – Ø 25.1 mm
  - 62 345 029 Ø 24.75 – Ø 30.1 mm
- **2 Boring tools, adjustable**
  - 62 375 048 Ø 29.75 – Ø 48.1 mm
  - 62 375 088 Ø 47.75 – Ø 88.1 mm
- **incl. insert holder**
  - 62 377 048 CC.. 0602
  - 62 377 088 CC.. 0602
- **1 Torx key – T7**
- **1 6-adjustment key – SW5**

D_{min} - D_{max} mm	Adapter	STM Modular W4 Article no. 62 334 ...	£	HSK-A W4 Article no. 62 345 ...	£	SK W4 Article no. 62 345 ...	£	MAS-BT W4 Article no. 62 345 ...	£
9,75 - 88,1	STM 36	1,750.12	997						
9,75 - 88,1	HSK-A 63			1,962.54	997				
9,75 - 88,1	SK 40					1,962.54	998		
9,75 - 88,1	BT 40							1,962.54	999

SpinTools – Single point boring heads ER32 Set

- Suitable for Ø 3.0 – Ø 88.1 mm
- Scope of supply Ø 9.75 – Ø 30.1 mm
- with thro' coolant supply

Scope of supply:

- **1 tool kit**
- **1 single point boring head (62332732)**
- **4 boring bars**
  - 62 345 015 Ø 9.75 – Ø 15.1 mm
  - 62 345 020 Ø 14.75 – Ø 20.1 mm
  - 62 345 024 Ø 19.75 – Ø 25.1 mm
  - 62 345 029 Ø 24.75 – Ø 30.1 mm
- **1 Torx Key – T7**
- **1 Allen Key – SW5**

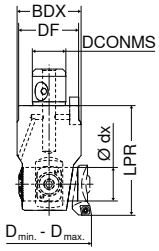
D_{min} - D_{max} mm	Adapter	W4 Article no. 62 332 ...	£	
9,75 - 30,1	ER 32		1,309.45	**999**

SpinTools – Single point finish boring heads

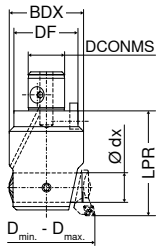
▲ With internal coolant supply

Scope of supply:
without insert holder and inserts

STM



Digital



Analogue

Digital STM Modular

Analogue STM Modular

5

D_{min} - D_{max} mm	D_{min} - D_{max} extended mm	Adapter	DCONMS mm	BDX mm	DF mm	LPR mm	Ø dx mm	WT kg	W4 Article no. 62 308 ... £		W4 Article no. 62 303 ... £	
23,9 - 31,1	29,9 - 37,1	STM 11	11	20	20	40	11	0.08	770.83	**031**	513.01	**031**
30,9 - 40,1	37,9 - 47,1	STM 14	14	25	25	45	13	0.15	770.83	**040**	513.01	**040**
39,9 - 51,1	47,9 - 59,1	STM 18	18	32	32	65	17	0.38	789.47	**051**	530.38	**051**
50,9 - 67,1	64,9 - 81,1	STM 22	22	42	40	72	22	0.70	817.47	**067**	555.76	**067**
66,9 - 87,1	84,9 - 105,1	STM 28	28	55	50	82	30	1.32	865.28	**087**	599.86	**087**
86,9 - 116,1	104,9 - 134,1 (124,9 - 154,1)	STM 36	36	72	63	105	30	3.15	979.56	**116**	701.39	**116**

For optimal stability when fine boring the main insert holder ranges are preferred over the extended range.

SpinTools – Digital Stick

▲ suitable for all SpinTools Digital Heads

Scope of supply:
incl. AAA Battery

W4 Article no. 62 309 ... £	
258.88	**000**

Spare parts

Screw for drivers

Driver

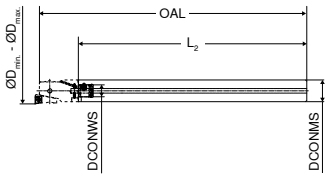
Fillister-head screw

Clamping screw ST

for Article no.		W7 Article no. 62 950 ... £			W7 Article no. 62 950 ... £			W7 Article no. 62 950 ... £			W7 Article no. 62 950 ... £	
62 303 031 / 62 308 031	M2x2,5	1.12	**162**	5x8,5x3	26.93	**035**	M4x6	8.72	**287**	M4x3	1.67	**213**
62 303 040 / 62 308 040	M2,5x6	1.12	**163**	6x10,3x4	28.78	**036**	M5x8	8.72	**288**	M5x4	1.67	**214**
62 303 051 / 62 308 051	M3x8	1.38	**164**	8x15x5	30.22	**037**	M6x10	8.72	**289**	M6x5	1.67	**215**
62 303 067 / 62 308 067	M4x10	1.38	**165**	10x18,1x6	34.09	**038**	M8x12	8.72	**290**	M8x6	1.67	**216**
62 303 087 / 62 308 087	M5x10	1.67	**166**	12x20x6	40.84	**039**	M10x16	8.72	**291**	M10x10	1.67	**217**
62 303 116 / 62 308 116	M6x12	1.67	**167**	16x26,5x8	51.87	**040**	M10x16	8.72	**291**	M10x18	1.67	**218**

SpinTools – High-speed carbide boring tools

▲ for single point finish boring heads Article no. 62 303 ..., 62 308 ...
▲ with thro' coolant

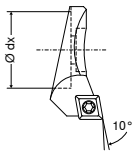


D_{min} - D_{max} mm	DCONWS mm	DCONMS h5 mm	OAL mm	L_2 mm	WT kg	W4 Article no. 62 354 ... £	
23,9 - 31,1	11	20	250	210	0.81	1,061.03	**020**
30,9 - 40,1	14	25	306	261	1.54	1,450.49	**025**
39,9 - 51,1	18	32	380	315	3.03	2,270.45	**032**

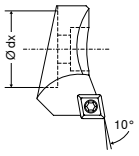
SpinTools – Insert holder, 90° and 95°

▲ for single point finish boring heads Article no. 62 303 ..., 62 308 ...

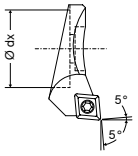
Scope of supply:
incl. Torx clamping screw for inserts, without fixing bolt for holder



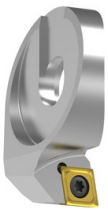
90°



Extended 90°



95°



90°

90° extended

95°

Ø dx mm	Insert	W4 Article no. 62 318 ... £		W4 Article no. 62 318 ... £		W4 Article no. 62 320 ... £	
11	CC.. 0602	106.88	**031**	126.91	**037**	117.57	**031**
13	CC.. 0602	117.57	**040**	140.27	**047**	129.59	**040**
17	CC.. 0602	129.59	**051**	153.63	**059**	142.94	**051**
22	CC.. 0602	140.27	**067**	167.00	**081**	146.95	**067**
30	CC.. 0602	152.30	**087**	180.36	**105**		
30	CC.. 09T3	152.30	**116**	180.36	**134**	167.00	**087**
30	CC.. 09T3			211.08	**154**		

Suitable inserts can be found on → **Page 48.**

TORX® Screws

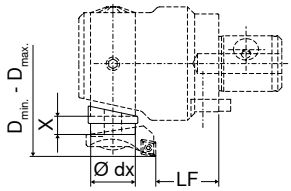
Key D

Spare parts		W7 Article no. 62 950 ... £		Y7 Article no. 80 950 ... £	
Insert					
CC.. 0602	M2,5x6	4.42	**022**	T07 10.30	**109**
CC.. 09T3	M4x9	5.14	**023**	T15 12.26	**113**

SpinTools – Reverse adapter for back boring

▲ For insert holder article no. 62 318 ... / 62 320 ...

Scope of supply:
Adapter including fixing bolt



X mm	Ø dx mm	LF mm	Ø D_{min} - D_{max} mm	W4 Article no. 62 321 ... £	
6.5	11	13.0	37 - 44	165.66	**044**
8.0	11	13.0	40 - 47	165.66	**051**
6.5	13	12.6	44 - 53	165.66	**053**
10.0	13	12.6	51 - 60	165.66	**060**
6.5	17	31.3	53 - 64	165.66	**064**
10.0	17	31.3	60 - 71	165.66	**071**
6.5	22	31.2	68 - 80	171.01	**080**
12.0	22	31.2	75 - 91	171.01	**091**
10.0	30	29.0	87 - 107	176.33	**107**

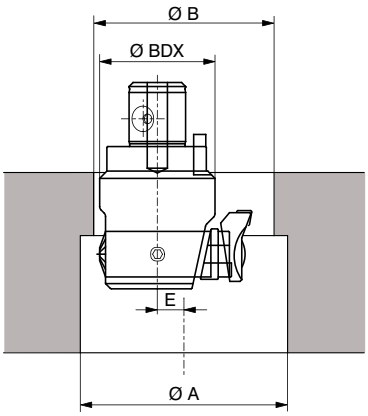
Note left hand direction of spindle rotation when in use

W7

Fillister-head screw

Spare parts for Article no.	Article no. 62 950 ... £	
62 321 044	8.68	**278**
62 321 051	8.98	**279**
62 321 053	8.68	**280**
62 321 060	8.98	**281**
62 321 064	8.68	**282**
62 321 071	8.98	**283**
62 321 080	8.68	**284**
62 321 091	8.98	**285**
62 321 107	10.28	**286**

Minimum diameter (Ø B) during retraction for back boring



Minimum diameter (Ø B) of the entry bore

$$Ø B = \frac{Ø BDX + Ø A}{2} + 1^*$$

Minimum offset (E) for starting

$$E = \frac{Ø A - Ø B}{2} + 0{,}5^*$$

*Safety margin

Example:
Boring head = 62 303 031
Insert Holder= 62 318 031
Reverse adapter = 62 321 044
Ø BDX = 20 mm
Ø A ≙ Amin. = 37 mm
*Safety margin = 1 mm

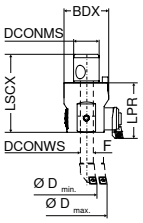
$$Ø B = \frac{20 + 37}{2} = 28{,}5 + 1 = 29{,}5 \text{ mm}$$

5

SpinTools – Vario-Head – boring and fine boring head

- For boring bars with a diameter of 16 mm and insert holders
- with thro' coolant supply
- LSCX = Recess depth of boring bar

Scope of supply:
Without boring bar and insert holder
Incl. coolant insert



Digital
STM Modular

D_{min} - D_{max} mm	Adapter	DCONMS mm	BDX mm	DCONWS mm	LPR mm	LSCX mm	F mm	W4 Article no. 62 364 ... £	
3 - 125	STM 36	36	63	16	76.5	110	0 - 6,5	1,191.59	**101**

SpinTools – Digital Stick

- suitable for all SpinTools Digital Heads

Scope of supply:
incl. AAA Battery

W4 Article no. 62 309 ... £	
258.88	**000**

Coolant insert

Clamping screw VH

Grubscrew

Spare parts for Article no.	W4 Article no. 62 366 ... £		W7 Article no. 62 950 ... £		W7 Article no. 62 950 ... £	
62 364 101	85.10	**002**	M10X12 5.41	**341**	M5X16 5.41	**340**

Cylindrical screw

Clamping screw

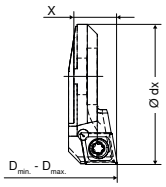
Spare parts for Article no.	W7 Article no. 62 950 ... £		W7 Article no. 62 950 ... £	
62 364 101	M10x25 6.49	**343**	M10X18 5.41	**342**

SpinTools – Insert holder, 90°

▲ for Vario-Head boring and fine boring head 62 364 101

Scope of supply:

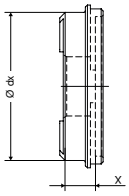
incl. Torx clamping screw for inserts, without fixing bolt for holder



X mm	Ø dx mm	Insert	Ø D_{min} - D_{max} mm	D_{min} - D_{max} extended mm	90° W4 Article no. 62 365 ... £	
13.05	30	CC.. 09T3	87,75 - 101,1	101,1 - 105,75	188.80	**101**
22.05	30	CC.. 09T3	105,75 - 119,1	119,1 - 125,75	225.46	**119**
32.05	30	CC.. 09T3	125,75 - 139,1	139,1 - 152	264.06	**139**

SpinTools – Spacer

▲ For insert holder article no. 62 365 ...



X mm	Ø dx mm	W4 Article no. 62 366 ... £	
6.5	30	215.18	**001**

5

SpinTools – Vario Digital single point boring head (set)

▲ Suitable for Ø 3 – Ø 152 mm
▲ supplied with Ø 9.75 – Ø 101.1 mm
▲ with thro' coolant supply

Scope of supply:

- ▲ **1 tool kit**
- ▲ **1 single point finish boring head**
  - 62 364 101
- ▲ **2 boring bars**
  - 62 345 015 Ø 9.75 – Ø 20.1 mm
  - 62 345 024 Ø 19.75 – Ø 30.1 mm
- ▲ **Boring bars, adjustable**
  - 62 375 048 Ø 29.75 – Ø 48.1 mm
  - 62 377 088 Ø 47.75 – Ø 88.1 mm
- ▲ **3 insert holders**
  - 62 377 048 Ø 29.75 – Ø 48.1 mm
  - 62 375 088 Ø 47.75 – Ø 88.1 mm
  - 62 365 101 Ø 87.75 – Ø 101.1 mm
- ▲ **1 coolant insert 62 366 002**
- ▲ **1 digital display unit 62 309 000**
- ▲ **4 Allen keys – SW2.5/4/5/8**
- ▲ **2 Torx keys – T7/15**

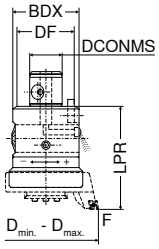
D_{min} - D_{max} mm	Adapter	STM Modular W4 Article no. 62 364 ... £	
9,75 - 101,1	STM 36	2,226.38	**999**

SpinTools – Single point finish boring heads

▲ With internal coolant supply
▲ extremely stable connection between insert holder and boring head

Scope of supply:
Boring head, without insert holder, pressure plate and support

STM



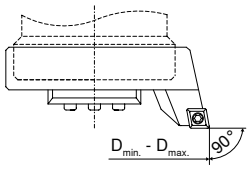
D_{min} - D_{max} mm	Adapter	DCONMS mm	BDX mm	DF mm	LPR mm	F mm	WT kg	STM Modular W4 Article no. 62 305 ... £	
86 - 402	STM 36	36	72	63	120	± 1,25	2.94	1,557.74	**302**

Spare parts		W7 Cylindrical screw Article no. 62 950 ... £		W7 Screw for drivers Article no. 62 950 ... £		W7 Driver Article no. 62 950 ... £		W7 Clamping screw ST Article no. 62 950 ... £	
for Article no.									
62 305 302	M8x45	5.00	**292**	M6x12	1.67	**167**	16x26,5x8	51.87	**040**	M8x60	8.98	**011**

SpinTools – Tool holder

▲ for single point finish boring heads
▲ Approach angle 90°

Scope of supply:
incl. cover plate and support



Ø D_{min} - D_{max} mm	Insert	W4 Article no. 62 438 ... £	
86 - 138	CC.. 09T3	335.15	**138**
86 - 138	CC.. 1204	335.15	**238**
136 - 220	CC.. 09T3	400.04	**220**
136 - 220	CC.. 1204	398.72	**320**
188 - 302	CC.. 09T3	499.39	**302**
242 - 402	CC.. 09T3	598.73	**402**

Suitable inserts can be found on → **Page 48.**

Spare parts – insert holder

		W7			Y7		W7		W7	
		TORX® Screws			Key D		Pressure plate		Support	
Spare parts		**Article no. 62 950 ...**			**Article no. 80 950 ...**		**Article no. 62 950 ...**		**Article no. 62 950 ...**	
for Article no.		£			£		£		£	
62 438 138	M4x9	5.14	023	T15	12.26	113	91.51	152	69.16	149
62 438 238	M5x10	5.84	232	T20	13.11	114	91.51	152	69.16	149
62 438 220	M4x9	5.14	023	T15	12.26	113	105.18	153	78.15	150
62 438 320	M5x10	5.84	232	T20	13.11	114	105.18	153	78.15	150
62 438 302	M4x9	5.14	023	T15	12.26	113	105.18	153	78.15	150
62 438 402	M4x9	5.14	023	T15	12.26	113	105.18	153	78.15	150

5

SpinTools – Boring set

- suitable for Ø 86 – Ø 402 mm
- supplied with Ø 86 – Ø 302 mm
- with thro' coolant

Scope of supply:

- **1 Case**
- **1 single point finish boring head**
  - 62 305 302
- **3 insert holders**
  - 62 438 138 Ø 86 – Ø 138 mm
  - 62 438 220 Ø 136 – Ø 220 mm
  - 62 438 302 Ø 188 – Ø 302 mm
- **2 pressure plates and 2 supports**
  - 62 950 149
  - 62 950 150
  - 62 950 152
  - 62 950 153
- **1 Allen Key – SW5**
- **1 Torx Key – T15**

		STM Modular W4
D_{min} - D_{max} mm	Adapter	**Article no. 62 439 ...**
		£
86 - 302	STM 36	2,398.94 **999**

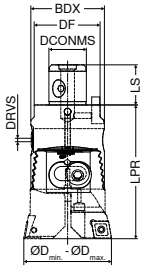
SpinTools – Twin edged Rough / Finish Boring Head

▲ Adjustable tools with through coolant
▲ each line on the adjustment scale equivalent to 0.01 mm on diameter

Scope of supply:

Boring head with spindle adjustment, carrier, stop pin, 2 screws, 2 lock washers

STM



STM Modular

D_{min} - D_{max} mm	Adapter	DCONMS mm	BDX mm	DF mm	LPR mm	LS mm	DRVS mm	WT kg	W4 Article no. 62 380 ...	£	
29,5 - 40,1	STM 14	14	25	25	55	16	2.5	0.12		398.72	**040**
39,5 - 50,5	STM 18	18	32	32	65	20	2.5	0.24		415.94	**050**
49,5 - 66,5	STM 22	22	42	40	82	24	3.0	0.48		450.39	**066**
65,5 - 87,5	STM 28	28	55	50	100	30	3.0	0.94		500.72	**087**
86,5 - 115,5	STM 36	36	72	63	125	40	3.0	1.89		601.40	**115**

W7 Fillister-head screw

W7 Spring ring

W7 Location Pin

Spare parts for Article no.		Article no. 62 950 ...	£			Article no. 62 950 ...	£		Article no. 62 950 ...	£	
62 380 040	M5x12		3.29	**293**	Ø 5,3/9,3		1.12	**312**		8.68	**231**
62 380 050	M6x16		3.29	**294**	Ø 6.4/10,2		1.12	**313**		8.68	**231**
62 380 066	M8x20		3.29	**295**	Ø 8,4/14,0		1.12	**314**		9.74	**234**
62 380 087	M10x25		3.41	**296**	Ø 10,5/17,0		1.12	**315**		9.74	**234**
62 380 115	M12x25		3.71	**297**	Ø 13,0/21,0		1.12	**316**		9.74	**234**

W7 Screw for drivers

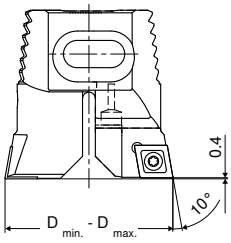
W7 Driver

Spare parts for Article no.		Article no. 62 950 ...	£			Article no. 62 950 ...	£	
62 380 040	M2,5x6	1.12		**163**	6x10,3x4	28.78		**036**
62 380 050	M3x8	1.38		**164**	8x15x5	30.22		**037**
62 380 066	M4x10	1.38		**165**	10x18,1x6	34.09		**038**
62 380 087	M5x10	1.67		**166**	12x20x6	40.84		**039**
62 380 115	M6x12	1.67		**167**	16x26,5x8	51.87		**040**

SpinTools – Pair of Roughing / Finishing Insert Holders, 90°

- ▲ the insert holder for the finishing process is set back axially by 0.4 mm
- ▲ the insert holder for the finishing process is moved by the adjustable spindle
- ▲ the finishing insert must be mounted in the holder without radial adjustment screw
- ▲ machining allowance for the finishing insert holder approximately 0.3 mm in diameter

Scope of supply:
pair of insert holders, 1 adjusting screw, 2 WSP-clamping screws, 1 Grub screw



5

Ø D_{min} - D_{max} mm	Insert	W4 Article no. 62 381 ... £	
29,5 - 40,1	CC.. 0602	305.99	**040**
39,5 - 50,5	CC.. 09T3	325.86	**050**
49,5 - 66,5	CC.. 09T3	372.23	**066**
65,5 - 87,5	CC.. 1204	484.82	**087**
86,5 - 115,5	CC.. 1204	755.05	**115**

Suitable inserts can be found on → **Page 48.**

TORX® Screws

Key D

Adjustment screw

Adjustment screw

Spare parts for Article no.		W7 Article no. 62 950 ... £			Y7 Article no. 80 950 ... £			W7 Article no. 62 950 ... £			W7 Article no. 62 950 ... £	
62 381 040	M2,5x6	4.42	**022**	T07	10.30	**109**	M3x8 - SW1,5	5.34	**015**	M4x0,5x9,5	6.98	**239**
62 381 050	M4x9	5.14	**023**	T15	12.26	**113**	M3x8 - SW1,5	5.34	**015**	M4x0,5x13	7.26	**240**
62 381 066	M4x9	5.14	**023**	T15	12.26	**113**	M3x8 - SW1,5	5.34	**015**	M6x14	1.67	**241**
62 381 087	M5x10	5.84	**232**	T20	13.11	**114**	M3x8 - SW1,5	5.34	**015**	M6x20	1.67	**242**
62 381 115	M5x10	5.84	**232**	T20	13.11	**114**	M3x8 - SW1,5	5.34	**015**	M6x30	1.99	**333**

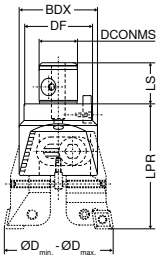
SpinTools – Boring heads for roughing with 2 cutting edges

▲ With internal coolant supply

Scope of supply:

Boring head, Drive dogs, Mounting screws and Spring rings

STM



D_{min} - D_{max} mm	Adapter	DCONMS mm	BDX mm	DF mm	LPR mm	LS mm	WT kg	STM Modular W4 Article no. 62 295 ... £	
23,5 - 30,5	STM 11	11	20	20	40	13	0.05	223.10	**030**
29,5 - 40,1	STM 14	14	25	25	45	16	0.09	239.14	**040**
39,5 - 50,5	STM 18	18	32	32	65	20	0.25	256.50	**050**
49,5 - 66,5	STM 22	22	42	40	72	24	0.38	291.25	**066**
65,5 - 87,5	STM 28	28	55	50	82	30	0.59	342.01	**087**
86,5 - 115,5	STM 36	36	72	63	105	40	1.23	444.87	**115**
114,5 - 153,0	STM 36	36	94	94	140	40	2.80	770.85	**153**

W7 Fillister-head screw

W7 Spring ring

W7 Location Pin

Spare parts for Article no.		Article no. 62 950 ... £			Article no. 62 950 ... £		Article no. 62 950 ... £	
62 295 030	M4x8	3.29	**298**	Ø 4,3/7,3	1.12	**311**	8.68	**231**
62 295 040	M5x12	3.29	**293**	Ø 5,3/9,3	1.12	**312**	8.68	**231**
62 295 050	M6x16	3.29	**294**	Ø 6.4/10,2	1.12	**313**	8.68	**231**
62 295 066	M8x20	3.29	**295**	Ø 8,4/14,0	1.12	**314**	9.74	**234**
62 295 087	M10x25	3.41	**296**	Ø 10,5/17,0	1.12	**315**	9.74	**234**
62 295 115	M12x25	3.71	**297**	Ø 13,0/21,0	1.12	**316**	9.74	**234**
62 295 153	M16x35	10.18	**299**	Ø 17,0/34,0	1.71	**317**	9.74	**234**

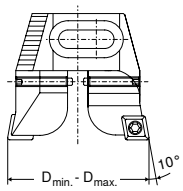
W7 Screw for drivers

W7 Driver

Spare parts for Article no.		Article no. 62 950 ... £			Article no. 62 950 ... £	
62 295 030	M2x2,5	1.12	**162**	5x8,5x3	26.93	**035**
62 295 040	M2,5x6	1.12	**163**	6x10,3x4	28.78	**036**
62 295 050	M3x8	1.38	**164**	8x15x5	30.22	**037**
62 295 066	M4x10	1.38	**165**	10x18,1x6	34.09	**038**
62 295 087	M5x10	1.67	**166**	12x20x6	40.84	**039**
62 295 115	M6x12	1.67	**167**	16x26,5x8	51.87	**040**
62 295 153	M6x12	1.67	**167**	16x26,5x8	51.87	**040**

SpinTools – Pair of tool holders, standard, 90°

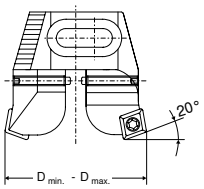
Scope of supply:
Adjustment screws, positioning pin, insert clamping screws



Ø D_{min} - D_{max} mm	Insert	W4 Article no. 62 296 ... £	
23,5 - 30,5	CC.. 0602	256.50	030
29,5 - 40,1	CC.. 0602	268.53	040
39,5 - 50,5	CC.. 09T3	287.24	050
49,5 - 66,5	CC.. 09T3	327.32	066
65,5 - 87,5	CC.. 1204	408.80	087
65,5 - 87,5	CN.. 1204	426.18	088
86,5 - 115,5	CC.. 1204	646.61	115
86,5 - 115,5	CN.. 1606	665.31	116
114,5 - 153	CC.. 1204	780.21	153
114,5 - 153	CN.. 1606	847.01	154

SpinTools – Pair of tool holders, standard, 70°

Scope of supply:
Adjustment screws, positioning pin, insert clamping screws



Ø D_{min} - D_{max} mm	Insert	W4 Article no. 62 299 ... £	
23,5 - 30,5	CC.. 0602	256.50	030
29,5 - 40,1	CC.. 0602	268.53	040
39,5 - 50,5	CC.. 09T3	287.24	050
49,5 - 66,5	CC.. 09T3	327.32	066
65,5 - 87,5	CC.. 1204	408.80	087
65,5 - 87,5	CN.. 1204	426.18	088
86,5 - 115,5	CC.. 1204	646.61	115
86,5 - 115,5	CN.. 1606	665.31	116
114,5 - 153	CN.. 1606	847.01	154

5

Suitable inserts can be found on → **Page 48.**

Spare parts

TORX® Screws

Key D

Adjustment screw

Ø D_{min} - D_{max}	Insert	W7 Article no. 62 950 ...	£		Y7 Article no. 80 950 ...	£		W7 Article no. 62 950 ...	£	
114,5 - 153	CC.. 1204	M5x10	5.84	232	T20	13.11	114	M6x40	3.32	335
23,5 - 30,5	CC.. 0602	M2,5x6	4.42	022	T07	10.30	109	M4x0,5x7	6.84	238
29,5 - 40,1	CC.. 0602	M2,5x6	4.42	022	T07	10.30	109	M4x0,5x9,5	6.98	239
39,5 - 50,5	CC.. 09T3	M4x9	5.14	023	T15	12.26	113	M4x0,5x13	7.26	240
49,5 - 66,5	CC.. 09T3	M4x9	5.14	023	T15	12.26	113	M6x14	1.67	241
65,5 - 87,5	CC.. 1204	M5x10	5.84	232	T20	13.11	114	M6x20	1.67	242
86,5 - 115,5	CC.. 1204	M5x10	5.84	232	T20	13.11	114	M6x30	1.99	333

Spare parts

Shim

Elbow lever screw

Lever

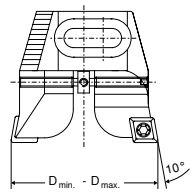
Carbide type C

Adjustment screw

Ø D_{min} - D_{max}	Insert	W7 Article no. 62 950 ...	£		W7 Article no. 62 950 ...	£		W7 Article no. 62 950 ...	£		W7 Article no. 62 950 ...	£		W7 Article no. 62 950 ...	£	
114,5 - 153	CN.. 1606	2.29	177		7.56	180		23.66	179		24.95	178	M8x40	2.29	334
65,5 - 87,5	CN.. 1204	2.29	096		7.56	136		21.36	125		18.25	117	M6x20	1.67	242
86,5 - 115,5	CN.. 1606	2.29	177		7.56	180		23.66	179		24.95	178	M6x30	1.99	333

SpinTools – Pair of tool holders, 'Synchro', 90°

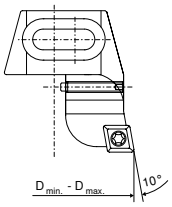
Scope of supply:
Insert clamping screws, synchronization screw



Ø D_{min} - D_{max} mm	Insert	W4 Article no. 62 297 ... £	
23,5 - 30,5	CC.. 0602	295.25	030
29,5 - 40,1	CC.. 0602	308.60	040
39,5 - 50,5	CC.. 09T3	328.64	050
49,5 - 66,5	CC.. 09T3	375.41	066
65,5 - 87,5	CC.. 1204	488.97	087
86,5 - 115,5	CC.. 1204	761.50	115
114,5 - 153	CC.. 1204	911.12	153

SpinTools – Tool holder 90°, axial offset 0.4 mm

Scope of supply:
2 adjustment screws, 1 positioning pin, insert clamping screw



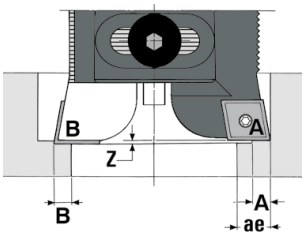
Ø D_{min} - D_{max} mm	Insert	W4 Article no. 62 298 ... £	
23,5 - 30,5	CC.. 0602	171.01	030
29,5 - 40,1	CC.. 0602	179.02	040
39,5 - 50,5	CC.. 09T3	192.38	050
49,5 - 66,5	CC.. 09T3	219.10	066
65,5 - 87,5	CC.. 1204	285.89	087
86,5 - 115,5	CC.. 1204	443.54	115
114,5 - 153	CC.. 1204	533.06	153

Suitable inserts can be found on → **Page 48.**

		W7 TORX® Screws			W7 Synchronization screw			Y7 Key D			W7 Adjustment screw		
Spare parts for Article no.		**Article no. 62 950 ...** £			**Article no. 62 950 ...** £			**Article no. 80 950 ...** £			**Article no. 62 950 ...** £		
62 297 030	M2,5x6	4.42	022	M4x0,5x18	50.99	207	T07	10.30	109	M4x0,5x7	6.84	238
62 297 040	M2,5x6	4.42	022	M4x0,5x23	51.17	208	T07	10.30	109	M4x0,5x9,5	6.98	239
62 297 050	M4x9	5.14	023	M4x0,5x30	52.87	209	T15	12.26	113	M4x0,5x13	7.26	240
62 297 066	M4x9	5.14	023	M6x40	54.18	210	T15	12.26	113	M6x14	1.67	241
62 297 087	M5x10	5.84	232	M6x52	55.64	211	T20	13.11	114	M6x20	1.67	242
62 297 115	M5x10	5.84	232	M6x68	57.25	212	T20	13.11	114	M6x30	1.99	333
62 297 153	M5x10	5.84	232	M6x90	88.55	220	T20	13.11	114	M6x40	3.32	335

		W7 TORX® Screws			Y7 Key D			W7 Adjustment screw		
Spare parts for Article no.		**Article no. 62 950 ...** £			**Article no. 80 950 ...** £			**Article no. 62 950 ...** £		
62 298 030	M2,5x6	4.42	022	T07	10.30	109	M4x0,5x7	6.84	238
62 298 040	M2,5x6	4.42	022	T07	10.30	109	M4x0,5x9,5	6.98	239
62 298 050	M4x9	5.14	023	T15	12.26	113	M4x0,5x13	7.26	240
62 298 066	M4x9	5.14	023	T15	12.26	113	M6x14	1.67	241
62 298 087	M5x10	5.84	232	T20	13.11	114	M6x20	1.67	242
62 298 115	M5x10	5.84	232	T20	13.11	114	M6x30	1.99	333
62 298 153	M5x10	5.84	232	T20	13.11	114	M6x40	3.32	335

Asynchronous machining (divided cut)



Asynchronous boring is possible using a tool holder (A) with offset 0.4mm. This tool holder is black finished and characterized by 3 dots, and must be in the outer position (with regard to the 2 tool holders)

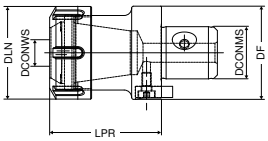
SpinTools – ER collet chuck

- ▲ for ER clamping to DIN 6499
- ▲ With internal coolant supply

Scope of supply:

axial tool length adjustment and lock nut

STM



5

DCONWS	SZID	DCONMS	DF	DLN	LPR	for collet	WT	STM Modular W4 Article no. 62 306 ...
mm		mm	mm	mm	mm		kg	£
1 - 20	STM 28	28	50	50	60	470E (ER32)	0.644	273.88 032

Spare parts	Y8 Y clamping key Article no. 83 357 ...	W7 Screw for drivers Article no. 62 950 ...	W7 Driver Article no. 62 950 ...	Y8 Driver Article no. 83 950 ...	W7 Stop screw IK Article no. 62 950 ...
for Article no.	£	£	£	£	£
62 306 032	32.33 132	1.67 166	40.84 039	14.10 121	11.09 406

Suitable collets can be found in → **Chapter 16, Adapters**

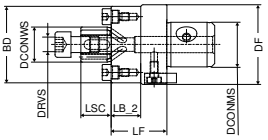
SpinTools – Shell mill adapter

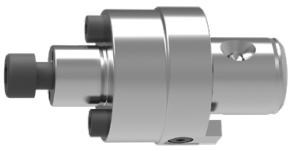
- ▲ for use on mills with parallel or transverse slot to ISO 3937
- ▲ With internal coolant supply

Scope of supply:

drive dogs, drive key and clamping bolt

STM



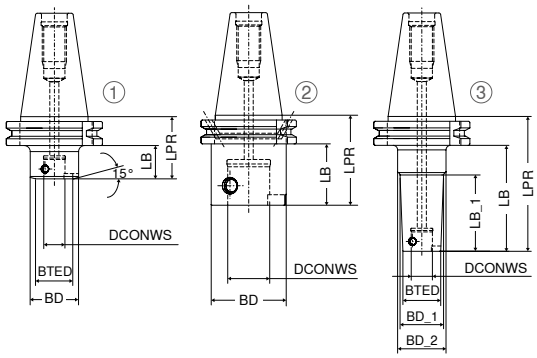


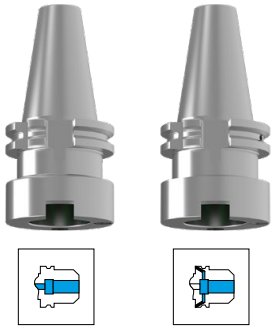
DCONWS	SZID	DCONMS	BD	DF	LSC	LB_2	LF	DRVS	WT	STM Modular W4 Article no. 62 307 ...
mm		mm	mm	mm	mm	mm	mm	mm	kg	£
16	STM 22	22	38	40	17	17.1	30	6	0.363	215.08 016
22	STM 28	28	48	50	19	19.1	35	8	0.685	220.44 022

Spare parts	Y8 Parallel key Article no. 83 950 ...	W7 Screw for drivers Article no. 62 950 ...	W7 Drive dogs Article no. 62 950 ...	W7 Driver Article no. 62 950 ...	Y8 clamping screw Article no. 83 950 ...
for Article no.	£	£	£	£	£
62 307 016	3.29 284	1.38 165	22.29 442	34.09 038	5.65 113
62 307 022	3.29 285	1.67 166	22.29 443	40.84 039	6.38 124

SpinTools – Base adapters DIN 69871

STM





AD SK — AD/B SK

	Adapter	Fig.	SZID	DCONWS	BTED	BD	BD_1	BD_2	LPR	LB	LB_1	WT	W4 Article no. 62 107 ...		W4 Article no. 62 108 ...	
				mm	mm	mm	mm	mm	mm	mm	mm	kg	£		£	
short	SK 30	2	STM 28	28		50			55	35.9		0.62	231.12	328		
	SK 40	1	STM 11	11	20	32			40	20.9		0.91	231.12	111 [1]		
	SK 40	1	STM 14	14	25	32			40	20.9		0.93	231.12	114 [1]		
	SK 40	2	STM 18	18		32			40	20.9		0.89	231.12	118		
	SK 40	2	STM 22	22		40			50	30.9		1.02	231.12	122		
	SK 40	2	STM 28	28		50			50	30.9		1.11	231.12	128	239.14	128
	SK 40	2	STM 36	36		63			60	40.9		1.27	213.76	136	239.14	136
	SK 50	2	STM 28	28		50			50	30.9		2.92	273.88	428	299.26	428
	SK 50	2	STM 36	36		63			63	43.9		3.27	273.88	436	299.26	436
long	SK 40	3	STM 11	11	20		23	32	80	60.9	40.9	1.04	256.50	211 [1]		
	SK 40	3	STM 14	14	25		28	32	80	60.9	40.9	1.07	256.50	214 [1]		
	SK 40	2	STM 18	18		32			80	60.9		1.13	256.50	218		
	SK 40	2	STM 22	22		40			100	80.9		1.47	256.50	222		
	SK 40	2	STM 28	28		50			100	80.9		1.84	256.50	228		
	SK 40	2	STM 36	36		63			120	100.9		2.68	256.50	236	281.89	236
	SK 50	2	STM 36	36		63			120	100.9		4.60	308.60	536	333.99	536

1) Note! BD/BD_1 is larger than BTED, which may lead to a limited bore depth!

O-Ring

Clamping screw ST

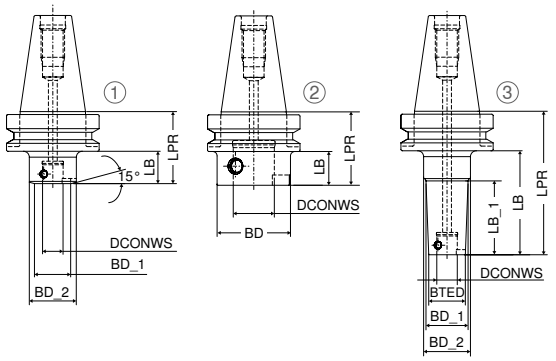
Spare parts DCONWS		W7 Article no. 62 950 ... £			W7 Article no. 62 950 ... £	
11	9x1,5	2.29	254	M4x0,5x6	9.68	026
14	12x1,5	2.29	255	M5x0,5x7,5	10.18	027
18	16x1,5	2.29	256	M6x0,75x9,5	10.42	028
22	19x2	2.29	257	M8x0,75x12	11.55	029
28	25x2	2.29	258	M10x1x14,2	13.55	030
36	33x2	2.29	259	M12x1x18	17.38	031

Suitable pull studs can be found in → **Chapter 16, Adapters**

SpinTools – Base adapters JIS B 6339 (MAS-BT)

▲ form B available upon request

STM



AD
MAS-BT

W4

	Adapter	Fig.	SZID	DCONWS	BTED	BD	BD_1	BD_2	LPR	LB	LB_1	WT	Article no. 62 112 ...	
				mm	mm	mm	mm	mm	mm	mm	mm	kg	£	
short	BT 30	2	STM 28	28		50			55			0.64	231.12	**328**
short	BT 40	1	STM 11	11	20	32			50	23		1.09	231.12	**111** 1)
short	BT 40	1	STM 14	14	25	32			50	23		1.08	231.12	**114** 1)
short	BT 40	2	STM 18	18		32			50	23		1.06	231.12	**118**
short	BT 40	2	STM 22	22		40			50	23		1.10	231.12	**122**
short	BT 40	2	STM 28	28		50			50	23		1.14	231.12	**128**
short	BT 40	2	STM 36	36		63			60	33		1.38	213.76	**136**
short	BT 50	2	STM 28	28		50			63	25		3.75	273.88	**428**
short	BT 50	2	STM 36	36		63			63	25		3.78	273.88	**436**
long	BT 40	3	STM 11	11	20		23	32	90	63	43	1.20	256.50	**211** 1)
long	BT 40	3	STM 14	14	25		28	32	90	63	43	1.24	256.50	**214** 1)
long	BT 40	2	STM 18	18		32			90	63		1.30	256.50	**218**
long	BT 40	2	STM 22	22		40			100	73		1.57	256.50	**222**
long	BT 40	2	STM 28	28		50			100	73		1.87	256.50	**228**
long	BT 40	2	STM 36	36		63			120	93		2.78	256.50	**236**
long	BT 50	2	STM 36	36		63			120	82		5.18	308.60	**536**

1) Note! BD/BD_1 is larger than BTED, which may lead to a limited bore depth!

W7

O-Ring

W7

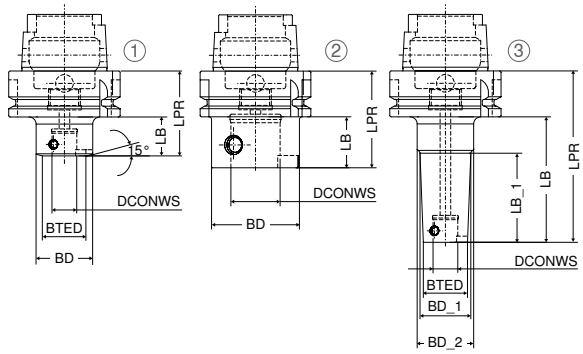
Clamping screw ST

Spare parts DCONWS		Article no. 62 950 ... £			Article no. 62 950 ... £	
11	9x1,5	2.29	**254**	M4x0,5x6	9.68	**026**
14	12x1,5	2.29	**255**	M5x0,5x7,5	10.18	**027**
18	16x1,5	2.29	**256**	M6x0,75x9,5	10.42	**028**
22	19x2	2.29	**257**	M8x0,75x12	11.55	**029**
28	25x2	2.29	**258**	M10x1x14,2	13.55	**030**
36	33x2	2.29	**259**	M12x1x18	17.38	**031**

Suitable pull studs can be found in → **Chapter 16, Adapters**

SpinTools – Base adapters HSK-A ISO 12164-1 (DIN 69893-1)

STM



AD
HSK-A

W4

	Adapter	Fig.	SZID	DCONWS	BTED	BD	BD_1	BD_2	LPR	LB	LB_1	WT	Article no. 62 122 ...	
				mm	mm	mm	mm	mm	mm	mm	mm	kg	£	
short	HSK-A 63	1	STM 11	11	20	32			50	24		0.77	273.88	111 1)
	HSK-A 63	1	STM 14	14	25	32			50	24		0.76	273.88	114 1)
	HSK-A 63	2	STM 18	18		32			50	24		0.74	273.88	118
	HSK-A 63	2	STM 22	22		40			50	24		0.79	273.88	122
	HSK-A 63	2	STM 28	28		50			55	24		0.91	273.88	128
	HSK-A 63	2	STM 36	36		63			65	34		1.10	248.49	136
	HSK-A 100	2	STM 28	28		50			63	34		2.32	316.62	428
	HSK-A 100	2	STM 36	36		63			70	34		2.61	316.62	436
long	HSK-A 63	3	STM 11	11	20		23	32	90	64	44	0.87	299.26	211 1)
	HSK-A 63	3	STM 14	14	25		28	32	90	64	44	0.93	299.26	214 1)
	HSK-A 63	2	STM 18	18		32			90	64		0.98	299.26	218
	HSK-A 63	2	STM 22	22		40			100	74		1.26	299.26	222
	HSK-A 63	2	STM 28	28		50			100	74		1.58	299.26	228
	HSK-A 63	2	STM 36	36		63			120	94		2.41	316.62	236
	HSK-A 100	2	STM 36	36		63			120	91		3.77	342.01	536

1) Note! BD/BD_1 is larger than BTED, which may lead to a limited bore depth!

W7

O-Ring

W7

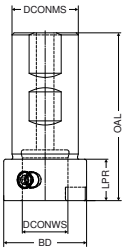
Clamping screw ST

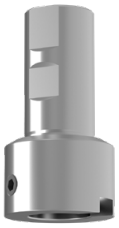
Spare parts DCONWS		Article no. 62 950 ... £			Article no. 62 950 ... £	
11	9x1,5	2.29	254	M4x0,5x6	9.68	026
14	12x1,5	2.29	255	M5x0,5x7,5	10.18	027
18	16x1,5	2.29	256	M6x0,75x9,5	10.42	028
22	19x2	2.29	257	M8x0,75x12	11.55	029
28	25x2	2.29	258	M10x1x14,2	13.55	030
36	33x2	2.29	259	M12x1x18	17.38	031

SpinTools – Adapters to DIN 1835-B

▲ with thro' coolant

STM



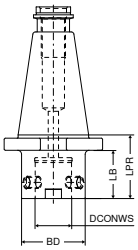


DIN 1835-B

DCONMS	BD	SZID	DCONWS	LPR	OAL	WT	W4 Article no. 62 104 ...	
mm	mm		mm	mm	mm	kg	£	
25	25	STM 14	14	15	72	0.24	169.66	**014**
32	32	STM 18	18	15	76	0.42	175.01	**018**
32	50	STM 28	28	35	96	0.72	212.43	**028**
32	63	STM 36	36	45	106	1.05	233.79	**036**

SpinTools – Base adapter DIN 2080

STM



short SK

Adapter	SZID	DCONWS	BD	LPR	LB	WT	W4 Article no. 62 109 ...	
		mm	mm	mm	mm	kg	£	
SK 40	STM 36	36	63	60	48.4	1.52	275.21	**136**
SK 50	STM 36	36	63	63	47.8	3.33	315.29	**436**

O-Ring

Clamping screw ST

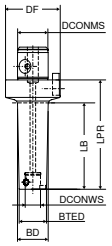
Spare parts DCONWS		W7 Article no. 62 950 ... £			W7 Article no. 62 950 ... £	
14	12x1,5	2.29	**255**	M5x0,5x7,5	10.18	**027**
18	16x1,5	2.29	**256**	M6x0,75x9,5	10.42	**028**
28	25x2	2.29	**258**	M10x1x14,2	13.55	**030**
36	33x2	2.29	**259**	M12x1x18	17.38	**031**

5

SpinTools – Reductions

▲ With internal coolant supply

STM



STM Modular
W4

Adapter	LPR	SZID	DCONMS	DCONWS	DF	BTED	BD	LB	WT	Article no. 62 357 ...	
	mm		mm	mm	mm	mm	mm	mm	kg	£	
STM 11	30	STM 14	14	11	25	20	23	15	0.04	125.84	**111**
STM 11	30	STM 18	18	11	32	20	23	17	0.14	125.84	**211**
STM 14	30	STM 18	18	14	32	25	28	17	0.16	125.84	**214**
STM 11	30	STM 22	22	11	40	20	23	15	0.21	131.14	**311**
STM 14	30	STM 22	22	14	40	25	28	15	0.22	131.14	**314**
STM 18	30	STM 22	22	18	40	32	37	15	0.25	131.14	**318**
STM 11	40	STM 28	28	11	50	20	23	20	0.44	136.45	**411**
STM 14	40	STM 28	28	14	50	25	28	20	0.49	136.45	**414**
STM 18	40	STM 28	28	18	50	32	37	20	0.45	136.45	**418**
STM 22	40	STM 28	28	22	50	40	46	20	0.55	136.45	**422**
STM 11	40	STM 36	36	11	63	20	22	16	0.82	144.40	**511**
STM 11	70	STM 36	36	11	63	20	23	42	0.90	156.30	**811**
STM 11	95	STM 36	36	11	63	20	23	71	0.98	169.56	**611**
STM 11	115	STM 36	36	11	63	20	23	87	1.02	186.77	**911**
STM 11	135	STM 36	36	11	63	20	23	111	1.08	204.01	**711**
STM 14	40	STM 36	36	14	63	25	27	16	0.84	144.40	**514**
STM 14	80	STM 36	36	14	63	25	28	52	1.00	165.58	**814**
STM 14	120	STM 36	36	14	63	25	28	96	1.16	186.77	**614**
STM 14	145	STM 36	36	14	63	25	28	117	1.27	204.01	**914**
STM 14	170	STM 36	36	14	63	25	28	146	1.38	221.21	**714**
STM 18	40	STM 36	36	18	63	32	37	16	0.85	144.40	**518**
STM 18	100	STM 36	36	18	63	32	38	74	1.24	176.18	**818**
STM 18	150	STM 36	36	18	63	32	38	126	1.66	206.64	**918**
STM 18	207	STM 36	36	18	63	32	38	183	2.07	254.32	**618**
STM 22	40	STM 36	36	22	63	40	46	16	0.89	144.40	**522**
STM 22	120	STM 36	36	22	63	40	48	95	1.76	190.75	**822**
STM 22	183	STM 36	36	22	63	40	48	159	2.52	237.12	**622**
STM 22	263	STM 36	36	22	63	40	48	239	3.44	339.12	**722**
STM 28	40	STM 36	36	28	63	50	58	21	1.03	144.40	**528**
STM 28	140	STM 36	36	28	63	50	60	117	2.70	200.02	**828**
STM 28	233	STM 36	36	28	63	50	60	209	4.41	321.89	**628**
STM 28	333	STM 36	36	28	63	50	60	309	6.25	441.10	**728**

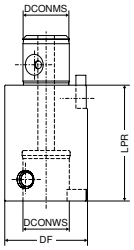
Reductions – Spare Parts

	W7			W7			W7			W7		
	O-Ring			Screw for drivers			Driver			Clamping screw ST		
Spare parts		**Article no. 62 950 ...**			**Article no. 62 950 ...**			**Article no. 62 950 ...**			**Article no. 62 950 ...**	
for Article no.		£			£			£			£	
62 357 111	9x1,5	2.29	254	M2,5x6	1.12	163	6x10,3x4	28.78	036	M4x0,5x6	9.68	026
62 357 211	9x1,5	2.29	254	M3x8	1.38	164	8x15x5	30.22	037	M4x0,5x6	9.68	026
62 357 214	12x1,5	2.29	255	M3x8	1.38	164	8x15x5	30.22	037	M5x0,5x7,5	10.18	027
62 357 311	9x1,5	2.29	254	M4x10	1.38	165	10x18,1x6	34.09	038	M4x0,5x6	9.68	026
62 357 314	12x1,5	2.29	255	M4x10	1.38	165	10x18,1x6	34.09	038	M5x0,5x7,5	10.18	027
62 357 318	16x1,5	2.29	256	M4x10	1.38	165	10x18,1x6	34.09	038	M6x0,75x9,5	10.42	028
62 357 411	9x1,5	2.29	254	M5x10	1.67	166	12x20x6	40.84	039	M4x0,5x6	9.68	026
62 357 414	12x1,5	2.29	255	M5x10	1.67	166	12x20x6	40.84	039	M5x0,5x7,5	10.18	027
62 357 418	16x1,5	2.29	256	M5x10	1.67	166	12x20x6	40.84	039	M6x0,75x9,5	10.42	028
62 357 422	19x2	2.29	257	M5x10	1.67	166	12x20x6	40.84	039	M8x0,75x12	11.55	029
62 357 511	9x1,5	2.29	254	M6x12	1.67	167	16x26,5x8	51.87	040	M4x0,5x6	9.68	026
62 357 811	9x1,5	2.29	254	M6x12	1.67	167	16x26,5x8	51.87	040	M4x0,5x6	9.68	026
62 357 611	9x1,5	2.29	254	M6x12	1.67	167	16x26,5x8	51.87	040	M4x0,5x6	9.68	026
62 357 911	9x1,5	2.29	254	M6x12	1.67	167	16x26,5x8	51.87	040	M4x0,5x6	9.68	026
62 357 711	9x1,5	2.29	254	M6x12	1.67	167	16x26,5x8	51.87	040	M4x0,5x6	9.68	026
62 357 514	12x1,5	2.29	255	M6x12	1.67	167	16x26,5x8	51.87	040	M5x0,5x7,5	10.18	027
62 357 814	12x1,5	2.29	255	M6x12	1.67	167	16x26,5x8	51.87	040	M5x0,5x7,5	10.18	027
62 357 614	12x1,5	2.29	255	M6x12	1.67	167	16x26,5x8	51.87	040	M5x0,5x7,5	10.18	027
62 357 914	12x1,5	2.29	255	M6x12	1.67	167	16x26,5x8	51.87	040	M5x0,5x7,5	10.18	027
62 357 714	12x1,5	2.29	255	M6x12	1.67	167	16x26,5x8	51.87	040	M5x0,5x7,5	10.18	027
62 357 518	16x1,5	2.29	256	M6x12	1.67	167	16x26,5x8	51.87	040	M6x0,75x9,5	10.42	028
62 357 818	16x1,5	2.29	256	M6x12	1.67	167	16x26,5x8	51.87	040	M6x0,75x9,5	10.42	028
62 357 918	16x1,5	2.29	256	M6x12	1.67	167	16x26,5x8	51.87	040	M6x0,75x9,5	10.42	028
62 357 618	16x1,5	2.29	256	M6x12	1.67	167	16x26,5x8	51.87	040	M6x0,75x9,5	10.42	028
62 357 522	19x2	2.29	257	M6x12	1.67	167	16x26,5x8	51.87	040	M8x0,75x12	11.55	029
62 357 822	19x2	2.29	257	M6x12	1.67	167	16x26,5x8	51.87	040	M8x0,75x12	11.55	029
62 357 622	19x2	2.29	257	M6x12	1.67	167	16x26,5x8	51.87	040	M8x0,75x12	11.55	029
62 357 722	19x2	2.29	257	M6x12	1.67	167	16x26,5x8	51.87	040	M8x0,75x12	11.55	029
62 357 528	25x2	2.29	258	M6x12	1.67	167	16x26,5x8	51.87	040	M10x1x14,2	13.55	030
62 357 828	25x2	2.29	258	M6x12	1.67	167	16x26,5x8	51.87	040	M10x1x14,2	13.55	030
62 357 628	25x2	2.29	258	M6x12	1.67	167	16x26,5x8	51.87	040	M10x1x14,2	13.55	030
62 357 728	25x2	2.29	258	M6x12	1.67	167	16x26,5x8	51.87	040	M10x1x14,2	13.55	030

SpinTools – Extensions

▲ With internal coolant supply

STM



Adapter	LPR	SZID	DCONWS	DF	DCONMS	WT	STM Modular W4 Article no. 62 351 ...	
	mm		mm	mm	mm	kg	£	
STM 11	25	STM 11	11	20	11	0.06	120.23	**111**
STM 11	35	STM 11	11	20	11	0.09	120.23	**211**
STM 14	30	STM 14	14	25	14	0.11	120.23	**114**
STM 14	45	STM 14	14	25	14	0.17	120.23	**214**
STM 18	40	STM 18	18	32	18	0.23	128.25	**118**
STM 18	60	STM 18	18	32	18	0.35	127.16	**218**
STM 22	50	STM 22	22	40	22	0.45	137.62	**122**
STM 22	80	STM 22	22	40	22	0.73	136.45	**222**
STM 28	50	STM 28	28	50	28	0.71	137.62	**128**
STM 28	75	STM 28	28	50	28	1.07	144.40	**228**
STM 28	100	STM 28	28	50	28	1.44	152.33	**328**
STM 36	60	STM 36	36	63	36	1.33	145.63	**136**
STM 36	90	STM 36	36	63	36	2.02	161.61	**236**
STM 36	120	STM 36	36	63	36	2.72	178.82	**336**

O-Ring

Screw for drivers

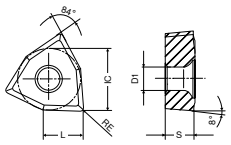
Driver

Clamping screw ST

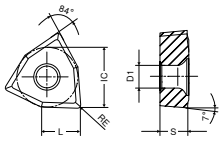
Spare parts DCONWS		W7 Article no. 62 950 ... £			W7 Article no. 62 950 ... £			W7 Article no. 62 950 ... £			W7 Article no. 62 950 ... £	
11	9x1,5	2.29	**254**	M2x2,5	1.12	**162**	5x8,5x3	26.93	**035**	M4x0,5x6	9.68	**026**
14	12x1,5	2.29	**255**	M2,5x6	1.12	**163**	6x10,3x4	28.78	**036**	M5x0,5x7,5	10.18	**027**
18	16x1,5	2.29	**256**	M3x8	1.38	**164**	8x15x5	30.22	**037**	M6x0,75x9,5	10.42	**028**
22	19x2	2.29	**257**	M4x10	1.38	**165**	10x18,1x6	34.09	**038**	M8x0,75x12	11.55	**029**
28	25x2	2.29	**258**	M5x10	1.67	**166**	12x20x6	40.84	**039**	M10x1x14,2	13.55	**030**
36	33x2	2.29	**259**	M6x12	1.67	**167**	16x26,5x8	51.87	**040**	M12x1x18	17.38	**031**

WCMT / WCGT

Designation	L	S	D1	IC
	mm	mm	mm	mm
WCGT 0201..	2.71	1.59	2.1	3.97
WCMT 0201..	4.34	1.59	2.1	3.97

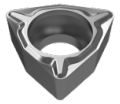
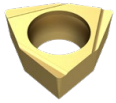


WCMT



WCGT

WCMT / WCGT

		CWC06		CWN10		CWP25	
							
		F		**F**		**F**	
		CERMET WCMT		WCGT		WCGT	
		X2		X2		X2	
ISO	RE	**Article no. 70 294 ...**		**Article no. 70 295 ...**		**Article no. 70 295 ...**	
	mm	£		£		£	
020102	0.2	14.15	**850**	89.65	**850**	40.47	**500**
020104	0.4			89.65	**852**		
Steel		●		●		●	
Stainless steel		○		●		●	
Cast iron		●		●		○	
Non ferrous metals		●		●		●	
Heat resistant alloys		○		●			
hardened materials				●			

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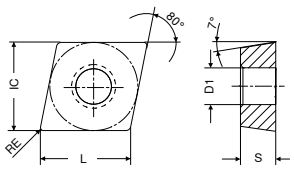
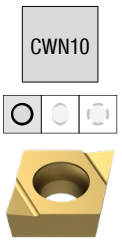
Additional inserts can be found in → **Chapter 9, Turning Tools**

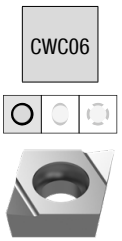
CCGT

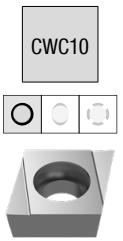
Designation	L	S	D1	IC
	mm	mm	mm	mm
CCGT 06..	6.4	2.38	2.8	6.35
CCGT 09..	9.7	3.97	4.4	9.52



CCGT







ISO	RE	F	F	F
		CCGT	CERMET CCGT	CERMET CCGT
		X2	X2	X2
		Article no. 70 296 ...	Article no. 70 296 ...	Article no. 70 300 ...
	mm	£	£	£
060202L	0.2	63.33 300	40.88 850	15.09 903
060204L	0.4	63.33 302	40.88 852	15.09 905
09T302L	0.2	68.37 304	44.21 854	18.81 911
09T304L	0.4	68.37 306	44.21 856	18.81 913
Steel		●	●	●
Stainless steel		●	○	●
Cast iron		●	●	●
Non ferrous metals		●	●	
Heat resistant alloys		●	○	
hardened materials		●		

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Additional inserts can be found in → **Chapter 9, Turning Tools**

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data standard values for precision adjustment heads

Fine machining with depth of cut a_p = 0.1 - 0.2 mm

	Insert								Tool diameter	● 1st choice ○ suitable		
	BK8440	BK8425	BK2710	K10	BK60	BK6110	BK7615	CBN40	Ø 6-125	Emulsion	Compressed air	MMS
Index	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	f (mm/U)			
1.1	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,12	●	○	
1.2	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,12	●	○	
1.3	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	●	○	
1.4	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	●	○	
1.5	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	●	○	
1.6	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	●	○	
1.7	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	●	○	
1.8	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	○	●	
1.9	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	○	●	
1.10	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	○	●	
1.11	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	○	●	
1.12	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	○	●	
1.13	**150–220**	**150–240**	**150–240**		**150–240**	150-240			0,04-0,10	○	●	
1.14	**60–120**	**60–120**	**60–120**		**60–120**	60-120			0,02-0,08	○	●	
1.15	**60–120**	**60–150**	**60–150**		**60–150**	60-150			0,03-0,10	○	●	
1.16	**100–150**	**100–150**	**100–150**		**100–150**	100-150			0,03-0,10	○	●	
2.1	**100–150**	**100–150**	**100–150**						0,01-0,10	●		
2.2	**100–150**	**100–150**	**100–150**						0,01-0,10	●		
2.3	**100–150**	**100–150**	**100–150**						0,01-0,10	●		
2.4	**100–120**	**100–120**	**100–120**						0,01-0,10	●		
2.5	**100–140**	**100–140**	**100–140**						0,01-0,10	●		
2.6	**100–140**	**100–140**	**100–140**						0,01-0,10	●		
2.7	**80–100**	**80–100**	**80–100**						0,01-0,10	●		
3.1		**120–180**	**120–180**			**120–180**	**120–180**		0,03-0,15	○	●	
3.2		**120–180**	**120–180**			**120–180**	**120–180**		0,03-0,15	○	●	
3.3		**120–180**	**120–180**			**120–180**	**120–180**		0,03-0,15	○	●	
3.4		**120–180**	**120–180**			**120–180**	**120–180**		0,03-0,15	○	●	
3.5		**120–180**	**120–180**			**120–180**	**120–180**		0,03-0,15	○	●	
3.6		**120–180**	**120–180**			**120–180**	**120–180**		0,03-0,15	○	●	
3.7		**120–180**	**120–180**			**120–180**	**120–180**		0,03-0,15	○	●	
3.8		**120–180**	**120–180**			**120–180**	**120–180**		0,03-0,15	○	●	
4.1				**0–500**					0,02-0,12	●		
4.2				**0–500**					0,02-0,12	●		
4.3				**0–500**					0,02-0,12	●		
4.4				**0–500**					0,02-0,12	●		
4.5				**0–500**					0,02-0,12	●		
4.6				**0–500**					0,02-0,12	●		
4.7				**0–500**					0,02-0,12	●		
4.8												
4.9												
4.10												
4.11				**0–500**					0,02-0,12	●		
4.12				**0–500**					0,02-0,12	●		
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
5.4												
5.5				**20–50**					0,01-0,08	●		
5.6												
5.7				**20–50**					0,01-0,08	●		
5.8												
5.9				**15–30**					0,01-0,08	●		
5.10				**15–30**					0,01-0,08	●		
5.11				**15–30**					0,01-0,08	●		
6.1								**80**	0,04-0,08		●	
6.2								**60**	0,04-0,08		●	
6.3								**60**	0,04-0,08		●	
6.4											●	
6.5												

Cutting data values for rough boring heads

Depth of cut a_p = 2.5 – 7 mm

	Insert					Tool Ø (mm)				● 1st choice ○ suitable		
	CTCP125 (HCX1125)	CTCP115 (HCX1115)	CTCP135 (HCR1135)	CTC2135 (CWN2135)	H10T (CWK15)	Ø 23,5–40,5	Ø 40,5–66,5	Ø 66,5–87,5	Ø 87,5–153	Emulsion	Compressed air	MMS
Index	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	f (mm/U)	f (mm/U)	f (mm/U)	f (mm/U)			
1.1	**180–240**	**150–190**	**160–200**	160–210		0,3–0,4	0,4–0,5	0,5–0,7	0,6–0,8	●	○	○
1.2	**230–280**	**170–220**	**170–220**	180–230		0,3–0,4	0,4–0,5	0,5–0,7	0,6–0,8	●	○	○
1.3	**240–290**	**170–210**	**150–190**	150–190		0,3–0,4	0,4–0,5	0,5–0,7	0,6–0,8	●	○	○
1.4	**180–250**	**160–200**	**160–200**	150–190		0,3–0,5	0,4–0,6	0,5–0,7	0,6–0,8	●	○	○
1.5	**200–240**	**170–230**	**140–190**	140–190		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●	○	○
1.6	**190–240**	**160–240**	**150–210**	150–210		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●	○	○
1.7	**180–280**	**130–190**	**150–190**	150–200		0,3–0,5	0,4–0,6	0,5–0,7	0,6–0,8	●	○	○
1.8	**150–210**	**130–180**	**130–170**	130–170		0,3–0,5	0,4–0,6	0,5–0,7	0,6–0,8	○	●	
1.9	**140–200**	**150–210**	**150–180**	160–190		0,3–0,5	0,4–0,6	0,5–0,7	0,6–0,8	○	●	
1.10	**170–220**	**160–200**	**130–180**	130–170		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	○	●	
1.11	**160–220**	**150–200**	**120–160**	130–170		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	○	●	
1.12	**170–240**	**170–210**	**140–190**	160–190		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	○	●	
1.13	**160–230**	**130–190**	**120–170**	120–180		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	○	●	
1.14	**150–190**	**150–200**	**110–150**	120–170		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	○	●	
1.15	**150–210**	**130–200**	**100–140**	100–150		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	○	●	
1.16	**150–190**	**130–200**	**100–140**	100–150		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	○	●	
2.1	200–280		140–200	**140–220**		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●		
2.2	200–260		140–190	**160–240**		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●		
2.3	190–260		110–190	**130–200**		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●		
2.4	190–240		100–180	**120–190**		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●		
2.5			80–150	**100–160**		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●		
2.6			55–75	**90–120**		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●		
2.7			55–75	**90–120**		0,3–0,4	0,4–0,5	0,4–0,6	0,6–0,8	●		
3.1	130–160	150–220			120–160	0,3–0,5	0,4–0,6	0,6–0,8	0,6–1,0	○	●	
3.2	120–170	130–220			90–140	0,3–0,5	0,4–0,6	0,6–0,8	0,6–1,0	○	●	
3.3	130–180	200–360			130–170	0,3–0,5	0,4–0,6	0,6–0,8	0,6–1,0	○	●	
3.4	100–180	180–220			90–130	0,3–0,5	0,4–0,6	0,6–0,8	0,6–1,0	○	●	
3.5	150–200	160–350			140–200	0,3–0,5	0,4–0,6	0,6–0,8	0,6–1,0	○	●	
3.6	130–160	160–260			120–160	0,3–0,5	0,4–0,6	0,6–0,8	0,6–1,0	○	●	
3.7	150–200	180–350			140–200	0,3–0,5	0,4–0,6	0,6–0,8	0,6–1,0	○	●	
3.8	130–180	180–350			120–160	0,3–0,5	0,4–0,6	0,6–0,8	0,6–1,0	○	●	
4.1					**300–2500**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.2					**200–2500**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.3					**400–2000**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.4					**400–1600**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.5					**200–1000**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.6					**150–300**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.7					**250–600**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.8					**150–400**							
4.9					**150–400**							
4.10					**150–400**							
4.11					**150–300**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.12					**130–350**	0,3–0,5	0,4–0,7	0,5–0,7	0,6–0,8	●		○
4.13					**100–200**							
4.14					**80–160**							
4.15					**60–150**							
4.16												
4.17												
4.18					**60–140**					●		
4.19												
5.1			20–40	**20–40**						●		
5.2		15–40	20–40	**20–40**						●		
5.3		15–40	8–25	**15–35**						●		
5.4		15–40	8–25	**15–35**						●		
5.5		15–30	4–15	**8–25**						●		
5.6		15–30	4–15	**4–15**						●		
5.7		15–30	4–15	**4–15**						●		
5.8		15–30	4–12	**4–15**						●		
5.9			80–130	**80–130**	60–120					●		
5.10			15–35	**15–35**	30–80					●		
5.11			15–35	**15–35**	30–80					●		
6.1						0,05–0,16	0,05–0,16	0,05–0,16	0,05–0,16		●	
6.2						0,05–0,16	0,05–0,16	0,05–0,16	0,05–0,16		●	
6.3						0,05–0,16	0,05–0,16	0,05–0,16	0,05–0,16		●	
6.4						0,05–0,16	0,05–0,16	0,05–0,16	0,05–0,16		●	
6.5												

5

Cutting data values for fine and rough boring heads

Fine machining with depth of cut a_p = 0.1 – 0.4 mm

	Insert			Boring tools with carbide cutting edge	Tool diameter		● 1st choice ○ suitable		
	CWN10 CWP25	CWC06	CWC10	K10	Ø 3–200	Ø 200–655	Emulsion	Compressed air	MMS
Index	v_c m/min	v_c m/min	v_c m/min	v_c m/min	f (mm/U)	f (mm/U)			
1.1	150–220	**200–300**	**100–250**	150–200	0,05–0,16	0,08–0,2	●	○	○
1.2	150–220	**200–300**	**100–250**	150–200	0,05–0,16	0,08–0,2	●	○	○
1.3	150–220	**200–300**	**100–250**	150–200	0,05–0,16	0,08–0,2	●	○	○
1.4	150–220	**200–300**	**100–250**	150–200	0,05–0,16	0,08–0,2	●	○	○
1.5	150–220	**200–300**	**80–200**	150–200	0,05–0,16	0,08–0,2	●	○	○
1.6	150–220	**200–300**	**80–200**	150–200	0,05–0,16	0,08–0,2	●	○	○
1.7	150–220	**200–300**	**80–200**	150–200	0,05–0,16	0,08–0,2	●	○	○
1.8	150–220	**200–300**	**80–200**	150–200	0,05–0,16	0,08–0,2	○	●	
1.9	150–220	**200–300**	**80–150**	150–200	0,05–0,16	0,08–0,2	○	●	
1.10	150–220	**200–300**	**100–250**	150–200	0,05–0,16	0,08–0,2	○	●	
1.11	150–220	**200–250**	**100–250**	80–120	0,05–0,16	0,08–0,2	○	●	
1.12	150–220	**200–250**	**80–200**	80–120	0,05–0,16	0,08–0,2	○	●	
1.13	120–150	**150–180**	**80–200**	50–80	0,05–0,16	0,08–0,2	○	●	
1.14	120–150	**150–180**	**80–200**	50–80	0,05–0,16	0,08–0,2	○	●	
1.15	120–150	**150–180**	**80–200**	50–80	0,05–0,16	0,08–0,2	○	●	
1.16	120–150	**150–180**	**80–200**	50–80	0,05–0,16	0,08–0,2	○	●	
2.1	100–140	100–140	**100–140**	80–120	0,05–0,16	0,08–0,2	●		
2.2	100–140	100–140	**100–140**	80–120	0,05–0,16	0,08–0,2	●		
2.3	100–140	100–140	**100–140**	80–120	0,05–0,16	0,08–0,2	●		
2.4	80–120	80–120	**100–120**	60–80	0,05–0,16	0,08–0,2	●		
2.5	100–140	100–140	**100–140**	80–120	0,05–0,16	0,08–0,2	●		
2.6	100–140	100–140	**100–140**	80–120	0,05–0,16	0,08–0,2	●		
2.7	80–100	80–100	**100–140**	40–60	0,05–0,16	0,08–0,2	●		
3.1	140–180	**140–180**	**200–250**	120–150	0,05–0,16	0,08–0,2	○	●	
3.2	140–180	**140–180**	**200–250**	120–150	0,05–0,16	0,08–0,2	○	●	
3.3	140–180	**140–180**	**100–150**	120–150	0,05–0,16	0,08–0,2	○	●	
3.4	120–160	**120–160**	**100–150**	100–130	0,05–0,16	0,08–0,2	○	●	
3.5	140–180	**140–180**	**200–250**	120–150	0,05–0,16	0,08–0,2	○	●	
3.6	120–160	**120–160**	**100–150**	100–130	0,05–0,16	0,08–0,2	○	●	
3.7	140–180	**140–180**	**200–250**	120–150	0,05–0,16	0,08–0,2	○	●	
3.8	120–160	**120–160**	**100–150**	100–130	0,05–0,16	0,08–0,2	○	●	
4.1	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.2	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.3	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.4	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.5	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.6	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.7	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.8						0,08–0,2			
4.9						0,08–0,2			
4.10						0,08–0,2			
4.11	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.12	0–800	**0–800**		0–500	0,05–0,16	0,08–0,2	●		○
4.13									
4.14									
4.15									
4.16									
4.17									
4.18									
4.19									
5.1	30–80*								
5.2	30–80*								
5.3	30–80*								
5.4	30–80*								
5.5	30–80*								
5.6	30–80*								
5.7	30–80*								
5.8	30–80*								
5.9	30–80*								
5.10	30–80*								
5.11	30–80*								
6.1	120–220*				0,05–0,16	0,05–0,16		●	
6.2	70–180*				0,05–0,16	0,05–0,16		●	
6.3	50–150*				0,05–0,16	0,05–0,16		●	
6.4	40–120*				0,05–0,16	0,05–0,16		●	
6.5									

Correction factor (Kf v_c) for the cutting speed (v_c) depending on overhang:
Kf v_c = 1,0 to 4xD
Kf v_c = 0,8 to 5xD
Kf v_c = 0,6 to 6xD

* Only CWN10

Cutting data values for Micro boring heads

	Boring bars / inserts		● 1st choice ○ suitable		
	TiN		Emulsion	Compressed air	MMS
Index	v_c m/min	f (mm/U)			
1.1	**190**	**0,02**	●		
1.2	**210**	**0,02**	●		
1.3	**190**	**0,02**	●		
1.4	**170**	**0,02**	●		
1.5	**180**	**0,02**	●		
1.6	**180**	**0,02**	●		
1.7	**170**	**0,02**	●		
1.8	**170**	**0,02**	●		
1.9	**110**	**0,02**	●		
1.10	**120**	**0,02**	●		
1.11	**100**	**0,02**	●		
1.12	**160**	**0,02**	●		
1.13	**140**	**0,02**	●		
1.14	**60**	**0,02**	●		
1.15	**100**	**0,02**	●		
1.16	**110**	**0,02**	●		
2.1	**80**	**0,02**	●		
2.2	**85**	**0,02**	●		
2.3	**75**	**0,02**	●		
2.4	**70**	**0,02**	●		
2.5	**75**	**0,02**	●		
2.6	**75**	**0,02**	●		
2.7	**70**	**0,02**	●		
3.1	**200**	**0,02**	●		
3.2	**150**	**0,02**	●		
3.3	**120**	**0,02**	●		
3.4	**110**	**0,02**	●		
3.5	**180**	**0,02**	●		
3.6	**150**	**0,02**	●		
3.7	**180**	**0,02**	●		
3.8	**150**	**0,02**	●		
4.1	**300**	**0,02**	●		
4.2	**240**	**0,02**	●		
4.3	**240**	**0,02**	●		
4.4	**180**	**0,02**	●		
4.5	**180**	**0,02**	●		
4.6	**290**	**0,02**	●		
4.7	**290**	**0,02**	●		
4.8	**240**	**0,02**	●		
4.9	**230**	**0,02**	●		
4.10	**210**	**0,02**	●		
4.11	**290**	**0,02**	●		
4.12	**290**	**0,02**	●		
4.13	**300**	**0,02**	●		
4.14	**280**	**0,02**	●		
4.15	**250**	**0,02**	●		
4.16	**220**	**0,02**	●		
4.17	**300**	**0,02**	●		
4.18	**60**	**0,02**	●		
4.19	**60**	**0,02**	●		
5.1	**60**	**0,02**	●		
5.2	**40**	**0,02**	●		
5.3	**30**	**0,02**	●		
5.4	**20**	**0,02**	●		
5.5	**20**	**0,02**	●		
5.6	**20**	**0,02**	●		
5.7	**20**	**0,02**	●		
5.8	**20**	**0,02**	●		
5.9	**30**	**0,02**	●		
5.10	**40**	**0,02**	●		
5.11	**25**	**0,02**	●		
6.1	120	0,02	●		
6.2	110	0,02	●		
6.3	95	0,02	●		
6.4	70	0,02	●		
6.5	50	0,02	●		

Maximum Speeds and Scale Accuracy

Maximum speeds for fine boring heads Ø 3–88.1 mm

Boring range	Offset X = ≤ 0,5 mm n_{max} in 1/min	Offset X = > 0,5 mm n_{max} in 1/min
Ø 3–20 mm	16000	6000
Ø 20–48 mm	12000	4000
Ø 48–88 mm	8000	2000

Maximum speeds for rough boring heads Ø 23.5–153 mm

Boring range	Maximum speed n_{max} in 1/min
Ø 24–31 mm	12000
Ø 31–40 mm	10000
Ø 40–51 mm	8000
Ø 51–68 mm	6500
Ø 67–87 mm	5000
Ø 87–116 mm	4000
Ø 116–153 mm	3000

The specified maximum speeds refer to an overhang length of up to 4xD.

For longer overhangs the maximum speeds should be reduced as follows:

5xD = 80 % n_{max}
6xD = 60 % n_{max}

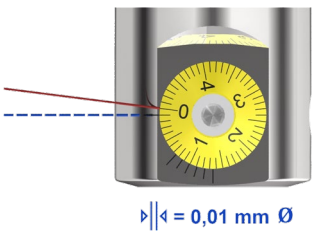
> 6xD n_{max} identify with caution

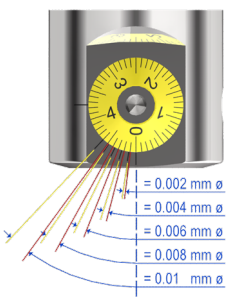
Maximum spindle speed for single point boring heads Ø 24–154 mm

Boring range	Maximum speed with unbalanced system n_{max} in 1/min	Maximum speed with Balanced System n_{max} in 1/min
Ø 24–31 mm	9000	12000
Ø 31–40 mm	7500	10000
Ø 40–51 mm	5250	8000
Ø 51–67 mm	4000	6500
Ø 67– 87 mm	3000	5000
Ø 87–116 mm	2500	4000
Ø 116–153 mm	1750	3000

Large scale with 0.002 mm adjustment

How it works:

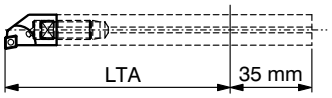




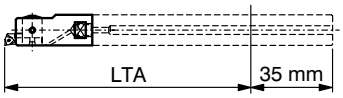
Maximum overhang length LTA

▲ Clamping length 35 mm

Boring bar		High Speed Boring Head 62 361 ...																Fine boring head 62 304 ...		
62 353 ...		014	015	016	017	018	019	020	021	022	023	025	027	030	033	037	040	017	020	024
008	LTA mm	**56**																		
009			**63**																	
010				**70**																
011					**77**															
012						**84**														
013							**91**													
014								**98**	**98**									**115**		
016										**112**	**112**	**112**	**112**	**112**	**112**	**112**	**112**		**125**	
018																				**105**
118																				**145**
218																				**185**



High Speed Boring Head 62 361 ...



Fine boring head 62 304 ...

5

Coatings

K10
- ▲ Carbide, uncoated
- ▲ ISO | **K10**
- ▲ Uncoated carbide grade for machining grey cast iron or non-ferrous metals, depending on the cutting edge geometry

BK2710
- ▲ Carbide, TiAlN-coated
- ▲ ISO | P10 | M10 | **K10**
- ▲ Extremely wear-resistant carbide grade for machining stainless steels, structural steels and tool steels as well as cast iron materials

BK8440
- ▲ Carbide, TiCN-TiN-coated
- ▲ ISO | **P35** | M10
- ▲ Very tough carbide grade for medium cutting speeds and interrupted cut

BK7615
- ▲ Carbide, TiCN-Al_2O_3-coated
- ▲ ISO | **K15**
- ▲ Highly productive grade with extreme edge stability for wet and dry machining of all cast iron materials

TiN
- ▲ TiN coating
- ▲ Maximum application temperature: 450°C

CWN10
- ▲ Carbide, TiN-coated
- ▲ ISO | **K10**
- ▲ The carbide grade for machining steels, stainless steels and non-ferrous metals

CWC10
- ▲ Cermet, uncoated
- ▲ ISO | **P15** | **M10** | K10
- ▲ The uncoated cermet grade for finish machining stainless and hardened steel
- ▲ Particularly wear resistant thanks to high heat resistance

BK60
- ▲ Carbide, TiC-TiCN-TiN-coated
- ▲ ISO | P25 | **M10**
- ▲ Multi-layer coating for long service life even in the upper cutting speed range

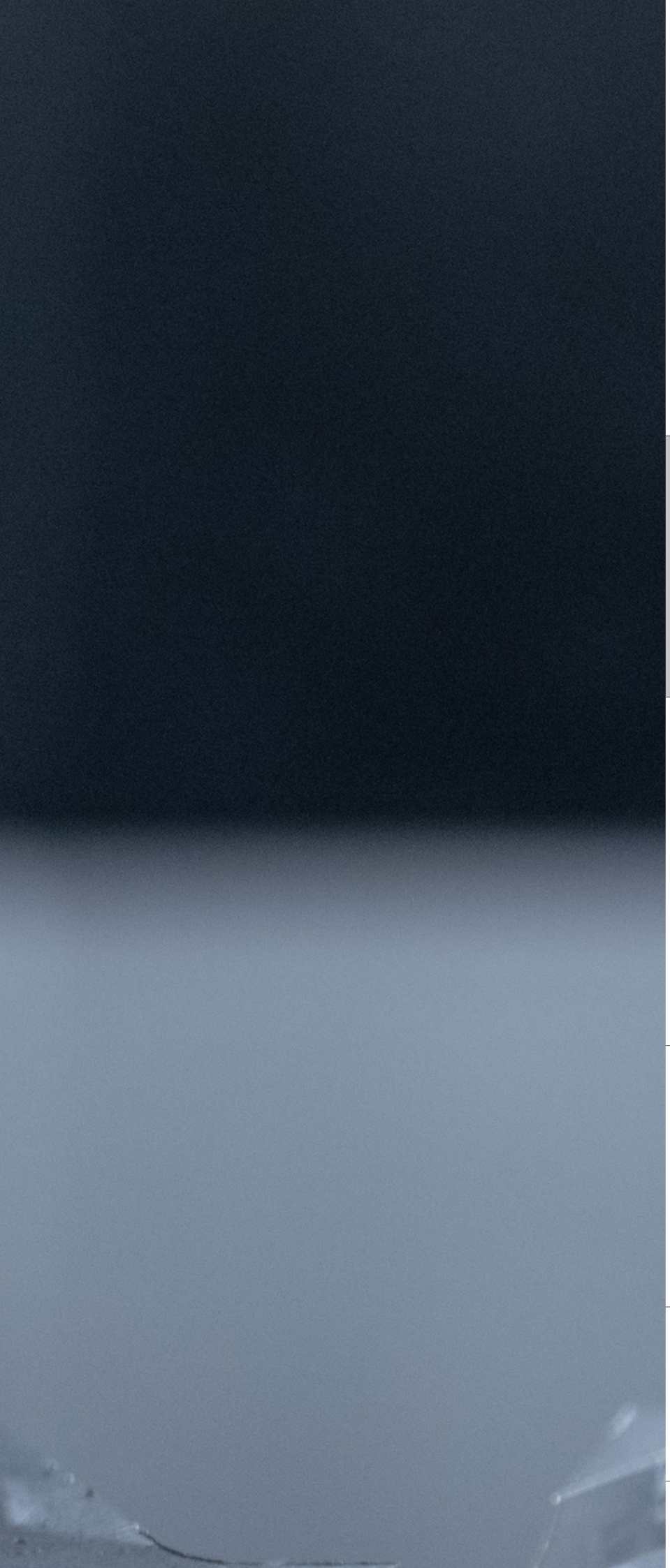
CBN40
- ▲ Cubic boron nitride, uncoated
- ▲ ISO | **H05**
- ▲ Uncoated cutting material made of cubic boron nitride for machining hardened steels over 45 HRC, heat-resistant nickel-based or cobalt-based alloys

BK8425
- ▲ Carbide, TiAlN/TiN-coated
- ▲ ISO | **P25** | **M25** | **K25**
- ▲ Universal grade with greater wear resistance thanks to innovative PVD multi-layer coating

BK6110
- ▲ Carbide, TiCN-TiN-Al_2O_3-coated
- ▲ ISO | P10 | **K10**
- ▲ Wear-resistant carbide for machining cast iron and steel materials

CWC06
- ▲ Cermet, TiC/TiN-coated
- ▲ ISO | **P10** | M10 | **K10** | N10
- ▲ Coated cermet grade for fine boring at high cutting speed and with a uniform cut

CWP25
- ▲ Carbide, uncoated
- ▲ ISO | **P25** | **M25** | K25 | **N25** | S25
- ▲ Uncoated carbide grade for fine boring with large hole depths and small machining allowances



Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
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15 Milling tools with indexable inserts

Tool clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

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WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

WNT \ Standard

Quality tools for standard applications.

The quality tools of the **WNT Standard** product line are high quality, powerful and reliable and enjoy the highest trust of our customers worldwide. Tools from this product line are the first choice for many standard applications and guarantee optimal results.

Symbol explanation

Chamfer form

B 4–5	Form B (with spiral point, 4 – 5 cutting leads)
C 2–3	Form C (without spiral point, 2 – 3 cutting leads)
D 4–5	Form D (without spiral point, 4 – 5 cutting leads)
E 1,5–2	Form E (without spiral point, 1.5 – 2 cutting leads)

Helix angle

42°	Example: helix angle 42°

Tolerances

ISO 2 6H	Explanation of the tolerances can be found on → **Page 114.**

Tensile strength

≤ 1100 N/mm²	Example up to 1100 N/mm²

Tap Material

HSS	High-speed steel
HSS-E	High-performance high speed steel
HSS-PM	High-performance sintered high-speed steel
VHM	Solid carbide

Coloured rings

WNT \ Performance

An explanation of the coloured rings can be found on → **Page 117.**

Thread types

M	Explanation of the thread types can be found on → **Page 3.**

Version

	Int. coolant supply

Tap types

Tool type

WNT \ Performance

Stabil	for through holes to 4xD	**Salo-Rex**	for blind holes up to 3xD, high helix angle for secure chip evacuation	**TWIN**	straight flutes for through and blind holes up 2xD
DL	left hand helix for through holes up to 4xD	**SL**	for blind holes up to 2xD, 15°, 25° or 30° helix angle	**Spanlos**	thread former for through and blind holes up to 3xD

A detailed explanation of the types of tools can be found on → **Page 113**.

Application range

WNT \ Performance

UNI	for universal application	**ST**	for good quality free machining steel	**VG**	for tempered and heat-resistant steels < 1100 N/mm²
HR	for high-tensile steels < 1400 N/mm²	**GG**	for cast iron	**VA**	for stainless and acid-resistant steels up to 1100 N/mm²
NW	for aluminium	**Soft**	for soft materials	**Ms**	for short chipping brass
Ti	for titanium and titanium alloys	**Ni**	special for Inconel 718	**AMPCO**	for Ampco alloys
HT	for hardened steel and chilled iron up to 55 HRc	**EC**	Spanlos – thread former for universal application	**NEO**	Spanlos – thread former for heat resistant alloys
ERGO	hand taps for stainless, heat-resistant and heat-treated steels up to 1100 N/mm²	**ERGO F.T.**	hand tap for steel up to 1400 N/mm², wolfram, chilled iron	**FE**	dies for steel

WNT \ Standard

UNI	for universal application up to 1000 N/mm²	**FE**	for steel to 850 N/mm²	**FE-HF**	for high-tensile steel to 1100 N/mm ²
VA	for corrosion and acid-resistant steels	**GG**	for cast iron	**AL**	for aluminium and aluminium alloys

Special Features

CNC	for synchronised CNC machining with minimum length compensation chuck	**NC**	for synchronised CNC machining with minimum length compensation chuck	**NCW**	with Weldon flat for synchronised CNC machining without length compensation chuck
AZ	with intermittent teeth, reduces friction	**S**	with back taper, for deep threads	**DRY**	for dry machining or minimum quantity lubrication (MMS)
TS	for high-speed machining, up to 100 m/min.	**LH**	for left hand threads	**EL**	extra long, with double overall length
AUT	short version for automatic use	**SN**	thread formers with lubrication grooves	**ES**	extra short
MMB	machine taps	**R_z=1**	lapped dies		

Thread types

M	ISO metric coarse thread DIN 13	**UNF**	Unified fine thread ASME – B1.1	**NPTF**	American taper pipe thread with sealing (1:16) ANSI/ASME – B1.20.3
EG M	ISO Metric coarse thread for wire inserts DIN 8140-2	**EG UNF**	EG Unified fine thread for wire inserts ASME – B18.29.1	**Rp**	Cyl. Whitworth coarse thread DIN EN 10226-1 (ISO7-1)
MF	ISO Metric fine thread DIN 13	**UNJC**	Unified coarse thread ASME – B1.15 and ISO 3161	**Rc**	Whitworth taper pipe thread (1:16) DIN EN 10226-2 (ISO7-1)
G	Whitworth pipe thread DIN EN ISO 228	**UNJF**	Unified fine thread ASME – B1.15 and ISO 3161	**Tr**	ISO metric trapezoidal thread DIN 103
UNC	Unified coarse thread ASME – B1.1	**BSW**	Whitworth thread BS84		
EG UNC	EG Unified coarse thread for wire inserts ASME – B18.29.1	**NPT**	American taper pipe thread with sealing (1:16) ANSI/ASME – B1.20.1		

The thread types BSW, NPTF, Rp and Rc as well as hand taps and dies are now available in the online shop.

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Toolfinder – WNT Performance

Thread formers

for cold-formable materials

Through hole – Blind hole

HSS taps

for universal application up to 1100 N/mm²

Through hole

Blind hole

for steel up to 750 N/mm²

Through hole

Blind hole

Through hole – Blind hole

for steel up to 1400 N/mm²

Through hole

Blind hole

Through hole – Blind hole

for corrosion and acid-resistant steels

Through hole

Blind hole

for cast iron materials

Through hole – Blind hole

for heat-resistant materials

Through hole

Blind hole

Through hole – Blind hole

for aluminium and non-ferrous metal

Through hole

Blind hole

Hard materials

Through hole – Blind hole

For tools for other applications, refer to the taps overview on → **Pages 8–20.**

Shank extensions for taps and thread-cutting oils can be found in our online shop at cuttingtools.ceratizit.com

WNT \ Performance

Tool type	Application range	M	EG M	MF	G	UNC	EG UNC	UNJC	UNF	EG UNF	UNJF	BSW	NPT	NPTF	Rp	Rc	Tr
Spanlos	EC	59–61		81	89	94			103								
Stabil	UNI	21–23	63	65+66	83	90	95		98	104		🛒					
Salo-Rex	UNI	35–38	64	69	85	92	96		100	105		🛒	🛒				
Stabil	ST	24+25		66	83												109
Salo-Rex	ST	39–41		71+72	86												
TWIN	ST	52+53 56		78–80	88								108	🛒	🛒	🛒	
Stabil	HR	25															
Salo-Rex	HR	39–41															
TWIN	HR	52+53		78+79	88												
Stabil	VA	26			83	90											
Salo-Rex	VA	42		74	86	92			100				106				
TWIN	GG	54		79													
Stabil	Ti	27				90			98		🛒						
SL	Ti	44				🛒		97	101		🛒						
TWIN	AMPCO	52															
Stabil	NW	26															
Salo-Rex	NW	43		74													
TWIN	HT	55		78													

6

🛒 This article can be found in our online shop at cuttingtools.ceratizit.com

Toolfinder – WNT Standard

Thread formers

for cold-formable materials	Through hole – Blind hole

HSS taps

for universal application up to 1000 N/mm²	Through hole Blind hole
for steel to 850 N/mm²	Through hole Blind hole
for high-tensile steels up to 1100 N/mm²	Through hole Blind hole
for corrosion and acid-resistant steels	Through hole Blind hole
for cast iron materials	Through hole – Blind hole
for aluminium and non-ferrous metal	Through hole Blind hole

For tools for other applications, refer to the taps overview on → **Pages 8–20.**

Shank extensions for taps and thread-cutting oils can be found in our online shop at cuttingtools.ceratizit.com

Application range	WNT \ Standard M	MF	G	UNC	UNF
UNI	62	82			
UNI	31+32	67+68	84	91	99
UNI	49+50	75+76	87	93	102
FE	32+34	68		91	99
FE	50	76		93	102
FE-HF	32	68		91	
FE-HF	50	76		93	
VA	33	68		91	99
VA	50+51	77		93	102
GG	58				
AL	33				
AL	51				

Taps Overview

M – Metric ISO Standard Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Universal				Stabil	UNI	ISO 2 6H ISO 3 6G 7G	HSS-E	■			21+22	
					UNI	ISO 2 6H	HSS-E HSS-PM	■				31
				Stabil	UNI NCW	ISO 2 6H	HSS-PM	■		with Weldon flat for synchronised CNC machining without length compensation chuck	23	
					UNI NCW	ISO 2 6H	HSS-PM	■		with Weldon flat for synchronised CNC machining without length compensation chuck		32
				Stabil	UNI DRY	ISO 2X 6HX	HSS-E	■		for dry machining or minimum quantity lubrication (MMS)	🛒	
				Stabil	UNI CNC	ISO 2X 6HX ISO 3X 6GX 7GX	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck	23	
					UNI NC	ISO 2 6H	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck		32
				Stabil	UNI EL	ISO 2 6H	HSS-E	■		extra long, with double overall length	29	
Steel				Stabil	ST	ISO 2 6H	HSS-E		□		24	
				Stabil	ST	ISO 1 4H ISO 3 6G	HSS-E		□		🛒	
					FE	ISO 2 6H	HSS-E		□			32
					FE ES	ISO 2 6H	HSS-E		□	extra short		34
				Stabil	ST AZ	ISO 2 6H	HSS-E		□	with intermittent teeth, reduces friction	24	
				Stabil	ST LH	ISO 2 6H	HSS-E		□	for left hand threads	24	
				Stabil	ST TS	ISO 2X 6HX	HSS-E	■		for high-speed machining, up to 100 m/min.	25	
				Stabil	HR	ISO 2X 6HX	HSS-PM	■			25	
				Stabil	VG	ISO 2X 6HX	HSS-E	■			25	
					FE-HF	ISO 2 6H	HSS-E	■				32
				Stabil	VG AZ	ISO 2 6H	HSS-E	■		with intermittent teeth, reduces friction	🛒	

🛒 This article can be found in our online shop at cuttingtools.ceratizit.com

Taps Overview

M – Metric ISO Standard Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated	uncoated	Comments	WNT \ Performance	WNT \ Standard
Steel	✓			Stabil	ST EL	ISO 2 6H	HSS-E		□	extra long, with double overall length	29	
	✓				ST MMB	ISO 2 6H	HSS-E		□	Machine taps	30	
Stainless steel	✓			Stabil	VA	ISO 2 6H	HSS-E	■			26	
	✓				VA	ISO 2 6H	HSS-PM HSS-E	■	□			33
Non-ferrous metals	✓			Stabil	NW	ISO 2 6H	HSS-E	■			26	
	✓				AL	ISO 2 6H	HSS-E	■	□			33
	✓			Stabil	Soft	ISO 2 6H	HSS-E	■			🛒	
Heat-resistant	✓			Stabil	Ti	ISO 1X 4HX ISO 2X 6HX	HSS-PM	■			27	
	✓			DL	Ti	ISO 2X 6HX	HSS-E	■			28	
	✓			DL	Ni	ISO 2X 6HX	HSS-E	■			28	
Universal		✓		Salo-Rex	UNI	ISO 2 6H 7G	HSS-E	■		with thro' coolant	35+36	
		✓		Salo-Rex	UNI	ISO 1 4H ISO 3 6G	HSS-E	■			🛒	
		✓			UNI	ISO 2 6H	HSS-E HSS-PM	■				49
		✓		Salo-Rex	UNI NCW	ISO 2 6H	HSS-PM	■		with Weldon flat for synchronised CNC machining without length compensation chuck	36	
		✓			UNI NCW	ISO 2 6H	HSS-PM	■		with Weldon flat for synchronised CNC machining without length compensation chuck		50
		✓		Salo-Rex	UNI CNC	ISO 2X 6HX ISO 2 6H	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck, with thro' coolant	37	
		✓		Salo-Rex	UNI CNC	ISO 3 6G, 7G	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck	🛒	
		✓			UNI NC	ISO 2 6H	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck		49
		✓		Salo-Rex	UNI DRY	ISO 2 6H	HSS-E	■		for dry machining or minimum quantity lubrication (MMS), with thro' coolant	38	

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Taps Overview

M – Metric ISO Standard Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Universal				Salo-Rex	UNI S	ISO 2 6H	HSS-E	■		with back taper, for deep threads	🛒	
				Salo-Rex	UNI ES	ISO 2 6H	HSS-E	■		extra short	45	
				Salo-Rex	UNI EL	ISO 2 6H	HSS-E	■		extra long, with double overall length	47	
				SL	UNI	ISO 2 6H	HSS-E		□		🛒	
Steel				SL	ST	ISO 2 6H	HSS-E		□		🛒	
				SL	ST CNC	ISO 2X 6HX	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck, with thro' coolant	39	
				SL	ST TS	ISO 2 6H	HSS-PM	■		for high-speed machining, up to 100 m/min.	🛒	
				SL	ST TS	ISO 2X 6HX	HSS-E	■		for high-speed machining, up to 100 m/min.	39	
				SL	ST ES	ISO 2 6H	HSS-E		□	extra short	46	
				SL	ST AUT/ES	ISO 2 6H	HSS-E		□	short version for automatic use; extra short	46	
				SL	ST EL	ISO 2 6H	HSS-E		□	extra long, with double overall length	48	
				SL	HR	ISO 2 6H	HSS-PM		□		39	
				Salo-Rex	ST	ISO 2 6H	HSS-E	■	□		40	
				Salo-Rex	ST	ISO 1 4H ISO 3 6G	HSS-E	■	□		🛒	
					FE	ISO 2 6H	HSS-E		□			50
					FE-HF	ISO 2 6H	HSS-E	■				50
				Salo-Rex	ST LH	ISO 2 6H	HSS-E		□	for left hand threads	40	
				Salo-Rex	ST ES	ISO 2 6H	HSS-E		□	extra short	🛒	
				Salo-Rex	ST EL	ISO 2 6H	HSS-E		□	extra long, with double overall length	47	

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Taps Overview

M – Metric ISO Standard Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Steel				Salo-Rex	HR	ISO 2 6H	HSS-PM	■	□		41	
				Salo-Rex	ST TS	ISO 2 6H	HSS-E	■		with thro' coolant	41	
Stainless steel				Salo-Rex	VA	ISO 2 6H	HSS-E	■		with thro' coolant	42	
					VA	ISO 2 6H	HSS-E HSS-PM	■	□			50+51
				Salo-Rex	VA S	ISO 2 6H	HSS-E	■		with back taper, for deep threads		
Non-ferrous metals				Salo-Rex	Soft	ISO 2 6H	HSS-E	■	□		43	
				Salo-Rex	NW	ISO 2 6H	HSS-E	■			43	
					AL	ISO 2 6H	HSS-E	■	□			51
Heat-resistant				SL	Ti	ISO 2X	HSS-PM	■			44	
				SL	Ni	ISO 2X ISO 2 6H	HSS-PM	■			44	
Steel				TWIN	ST	ISO 2X 6HX	HSS-E		□		52	
				TWIN	ST AZ	ISO 2X 6HX	HSS-E		□	with intermittent teeth, reduces friction		
				TWIN	ST ES	ISO 2X 6HX	HSS-E		□	extra short	56	
				TWIN	ST LH/ES	ISO 2X 6HX	HSS-E		□	for left hand threads; extra short		
				TWIN	HR	ISO 2X 6HX	HSS-E	■				
				TWIN	HR EL	ISO 2X 6HX	HSS-E	■		extra long, with double overall length	57	
Cast iron				TWIN	GG	ISO 2X 6HX	HSS-E	■		with thro' coolant	54	
					GG	ISO 2X 6HX	HSS-E	■				58
Non-ferrous metals				TWIN	Ms	ISO 2X 6HX	HSS-E		□			

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Taps Overview

M – Metric ISO Standard Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Heat-resistant				TWIN	AMPCO	ISO 2X 6HX	HSS-PM		□		52	
Tempered steel				TWIN	HT	ISO 2X 6HX	VHM HSS-PM	■			55	
Machine thread formers				Spanlos	EC	ISO 2X 6HX	HSS-E HSS-PM	■			59	
				Spanlos	EC SN	ISO 2X 6HX ISO 3X 6GX	HSS-E HSS-PM	■		Thread formers with oil grooves and thro' coolant	60+61	
				Spanlos	NEO SN	ISO 2X 6HX	HSS-PM	■		Thread formers with oil grooves and thro' coolant	61	
					UNI	ISO 2X 6HX	HSS-E	■				62
					UNI SN	ISO 2X 6HX	HSS-E	■		Thread formers with lubrication grooves		62
Hand taps					ST	ISO 2X 6HX	HSS-E VHM		□		🛒	
					ERGO	ISO 2X 6HX	HSS-E		□		🛒	
					ERGO F.T.	ISO 2X 6HX	HSS-E	■			🛒	
Dies					FE	ISO 6g ISO 6e	HSS		□		🛒	
					FE	ISO 6g	HSS		□			🛒
					FE R_z=1	ISO 6g	HSS		□	Lapped Dies	🛒	
					FE LH	ISO 6g	HSS		□	for left hand threads	🛒	
					VA	ISO 6g	HSS-E		□		🛒	
					VA R_z=1	ISO 6g	HSS-E		□	Lapped Dies	🛒	
					Ms R_z=1	ISO 6g	HSS		□	Lapped Dies	🛒	

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Taps Overview

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Metric ISO standard thread for wire thread inserts												
Universal	✓			Stabil	UNI	6H mod	HSS-E	■			63	
Universal		✓		Salo-Rex	UNI	6H mod	HSS-E	■			64	
Non-ferrous metals		✓		Salo-Rex	Soft	6H mod	HSS-E	■			64	
MF – Metric ISO Fine Thread												
Universal	✓			Stabil	UNI	ISO 2 6H	HSS-E	■			65+66	
Universal	✓			Stabil	UNI	ISO 3 6G	HSS-E	■			🛒	
Universal	✓				UNI	ISO 2 6H	HSS-PM HSS-E	■				67+68
Universal	✓			Stabil	UNI DRY	ISO 2X 6HX	HSS-E	■		for dry machining or minimum quantity lubrication (MMS)	🛒	
Steel	✓			Stabil	ST	ISO 2 6H	HSS-E		□		🛒	
Steel	✓				FE	ISO 2 6H	HSS-E		□			68
Steel	✓				FE-HF	ISO 2 6H	HSS-E	■				68
Steel	✓			Stabil	ST TS	ISO 2X 6HX	HSS-E	■		for high-speed machining, up to 100 m/min.	66	
Steel	✓			Stabil	ST LH	ISO 2 6H	HSS-E		□	for left hand threads	66	
Steel	✓			Stabil	VG	ISO 2X 6HX	HSS-E	■			65+66	
Stainless steel	✓			Stabil	VA	ISO 2 6H	HSS-E	■			🛒	
Stainless steel	✓				VA	ISO 2 6H	HSS-E	■				68
Universal		✓		Salo-Rex	UNI	ISO 2 6H ISO 3 6G	HSS-E	■		with thro' coolant	69+70	
Universal		✓			UNI	ISO 2 6H	HSS-E HSS-PM	■				75+76
Universal		✓		Salo-Rex	UNI CNC	ISO 3 6G	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck	🛒	

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Taps Overview

MF – Metric ISO Fine Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Universal				Salo-Rex	UNI CNC	7G ISO 2 6H	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck	70	
					UNI NC	ISO 2 6H	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck		76
Steel				Salo-Rex	ST	ISO 2 6H	HSS-E		□		71	
				Salo-Rex	ST	ISO 1 4H	HSS-E		□			
					FE	ISO 2 6H	HSS-E		□			76
					FE-HF	ISO 2 6H	HSS-E	■				76
				Salo-Rex	ST TS	ISO 2 6H	HSS-E	■		for high-speed machining, up to 100 m/min.		
				Salo-Rex	ST LH	ISO 2 6H	HSS-E		□	for left hand threads	71	
				SL	ST	ISO 2 6H	HSS-E		□		72	
				SL	ST CNC	ISO 2X 6HX	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck		
Stainless steel				Salo-Rex	VA	ISO 2 6H	HSS-E	■			74	
					VA	ISO 2 6H	HSS-E HSS-PM	■	□			77
Non-ferrous metals				Salo-Rex	NW	ISO 2 6H	HSS-E	■			74	
Steel				TWIN	ST	ISO 2X 6HX	HSS-E		□		78	
				TWIN	ST ES	ISO 2X 6HX	HSS-E		□	extra short	80	
				TWIN	ST LH/ES	ISO 2X 6HX	HSS-E		□	for left hand threads	80	
				TWIN	HR	ISO 2X 6HX	HSS-E	■			78+79	
Cast iron				TWIN	GG	ISO 2X 6HX	HSS-E	■			79	
Tempered steel				TWIN	HT	ISO 2X 6HX	VHM	■			78	

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Taps Overview

MF – Metric ISO Fine Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Machine thread formers				Spanlos	EC	ISO 2X 6HX	HSS-E	■			81	
				Spanlos	EC SN	ISO 2X 6HX	HSS-E	■		Thread formers with lubrication grooves	81	
					UNI	ISO 2X 6HX	HSS-E	■				82
					UNI SN	ISO 2X 6HX	HSS-E	■		Thread formers with lubrication grooves		82
Hand taps					ST	ISO 2X 6HX	HSS-E		□			
Dies					FE	ISO 6g	HSS		□			
					FE	ISO 6g	HSS		□			
					FE LH	ISO 6g	HSS		□	for left hand threads		
					VA	ISO 6g	HSS-E		□			

G – Whitworth Pipe Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Universal				Stabil	UNI	ISO 228	HSS-E	■			83	
					UNI	ISO 228	HSS-E	■				84
Steel				Stabil	ST	ISO 228	HSS-E		□		83	
					FE	ISO 228	HSS-E		□			
Stainless steel				Stabil	VA	ISO 228	HSS-E	■			83	
Universal				Salo-Rex	UNI	ISO 228 ISO 228 +0,05	HSS-E	■			85	
					UNI	ISO 228	HSS-E	■				87
				Salo-Rex	UNI CNC	ISO 228	HSS-E	■		for synchronised CNC machining with minimum length compensation chuck	86	

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Taps Overview

G – Whitworth Pipe Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated	uncoated	Comments	WNT \ Performance	WNT \ Standard
Steel		✓		Salo-Rex	ST	ISO 228	HSS-E		□		86	
		✓		SL	ST	ISO 228	HSS-E		□		🛒	
Stainless steel		✓		Salo-Rex	VA	ISO 228	HSS-E	■			86	
Steel			✓	TWIN	ST	ISO 228X	HSS-E		□		88	
			✓	TWIN	HR	ISO 228X	HSS-E	■			88	
Cast iron			✓	TWIN	GG	ISO 228X	HSS-E	■			🛒	
Machine thread formers			✓	Spanlos	EC	ISO 228	HSS-E	■			89	
			✓	Spanlos	EC SN	ISO 228	HSS-E	■		Thread formers with lubrication grooves	89	
Hand taps					ERGO	ISO 228	HSS-E		□		🛒	
Dies					FE	ISO 228A	HSS		□		🛒	

UNC – Unified Coarse Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated	uncoated	Comments	WNT \ Performance	WNT \ Standard
Universal	✓			Stabil	UNI	3B	HSS-E	■			🛒	
	✓			Stabil	UNI	2B	HSS-E	■			90	
	✓				UNI	2B	HSS-E	■				91
Steel	✓			Stabil	ST	2B	HSS-E		□		🛒	
	✓				FE	2B	HSS-E		□			91
	✓				FE-HF	2B	HSS-E	■				91
Stainless steel	✓			Stabil	VA	2B	HSS-E	■			90	
	✓				VA	2B	HSS-E	■				91

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Taps Overview

UNC – Unified Coarse Thread

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Heat-resistant				Stabil	Ti	2BX	HSS-PM	■			90	
Universal				Salo-Rex	UNI	2B	HSS-E	■			92	
				Salo-Rex	UNI	2B +0,05	HSS-E	■				
					UNI	2B	HSS-E	■				93
Steel				Salo-Rex	ST	2B	HSS-E		□			
					FE	2B	HSS-E		□			93
					FE-HF	2B	HSS-E	■				93
Stainless steel				Salo-Rex	VA	2B	HSS-E	■			92	
					VA	2B	HSS-E		□			93
Heat-resistant				SL	Ti	2BX	HSS-PM	■				
Cast iron				TWIN	GG	2BX	HSS-E	■				
Machine thread formers				Spanlos	EC	2BX	HSS-E	■			94	
				Spanlos	EC SN	2BX	HSS-E	■		Thread formers with lubrication grooves	94	
Hand taps					ERGO	2BX	HSS-E		□			
Dies					FE	2A	HSS-E		□			

EG UNC – Unified coarse thread for wire inserts

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
Universal				Stabil	UNI	2B	HSS-E	■			95	
				Salo-Rex	UNI	2B	HSS-E	■			96	

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Taps Overview

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
UNJC – Unified Coarse Thread												
Heat-resistant				SL	Ti	3BX	HSS-E	■			97	
UNF – Unified Fine Thread												
Universal				Stabil	UNI	2B	HSS-E	■			98	
					UNI	2B	HSS-E	■				99
Steel				Stabil	ST	2B	HSS-E		□			
					FE	2B	HSS-E		□			99
Stainless steel					VA	2B	HSS-E	■				99
Heat-resistant				Stabil	Ti	2BX	HSS-PM	■			98	
Universal				Salo-Rex	UNI	2B 2B +0,05	HSS-E	■			100	
					UNI	2B	HSS-E	■				102
Steel					FE	2B	HSS-E		□			102
Stainless steel				Salo-Rex	VA	2B	HSS-E	■			100	
					VA	2B	HSS-E		□			102
Heat-resistant				SL	Ti	2BX 3BX	HSS-PM	■			101	
Cast iron				TWIN	GG	2BX	HSS-E	■				
Thread formers				Spanlos	EC SN	2BX	HSS-E	■		Thread formers with lubrication grooves	103	
Dies					FE	2A	HSS		□			

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Taps Overview

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
EG UNF – Unified fine thread for wire inserts												
Universal	●			Stabil	UNI	2B	HSS-E	■			104	
		●		Salo-Rex	UNI	2B	HSS-E	■			105	
UNJF – Unified Extra Fine Thread												
Heat-resistant	●			DL	Ti	3BX	HSS-E	■			🛒	
		●		SL	Ti	3BX	HSS-E	■			🛒	
BSW – Whitworth Thread												
Universal	●			Stabil	UNI	med.	HSS-E	■			🛒	
		●		Salo-Rex	UNI	med.	HSS-E	■			🛒	
NPT – American Tapered Pipe Thread												
Stainless steel		●		Salo-Rex	VA		HSS-E	■			106	
Steel			●	TWIN	ST AZ		HSS-E		□	with intermittent teeth, reduces friction	🛒	
			●	TWIN	VG		HSS-E		□		107	
			●	TWIN	VG AZ		HSS-E		□	with intermittent teeth, reduces friction	🛒	
			●	TWIN	ST ES		HSS-E		□	extra short	108	
Dies					FE		HSS-E		□		🛒	

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Taps Overview

Application range	Through hole	Blind hole	Through hole-Blind hole	Tool type	Application Area / Special Features	Tolerance	Tap Material	coated ■	uncoated □	Comments	WNT \ Performance	WNT \ Standard
NPTF – American Tapered Pipe Thread												
Steel				TWIN	ST		HSS-E		□		🛒	
Steel				TWIN	VG		HSS-E		□		🛒	
Steel				TWIN	ST ES		HSS-E		□	extra short	🛒	
Rp – Cylindrical Whitworth Pipe Thread												
Steel				TWIN	ST	X	HSS-E		□		🛒	
Rc – Tapered Whitworth Pipe Thread												
Steel				TWIN	ST		HSS-E		□		🛒	
Tr – Metric ISO Trapezoidal Thread												
Steel					ST	7H	HSS-E		□		109	

Accessories

Shank extensions for taps	🛒	
Tapping Oil, Chlorine Free	🛒	

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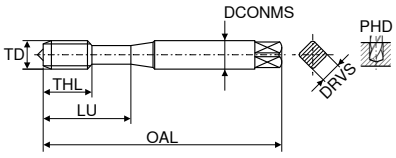
Through hole – Machine taps, right hand

M	Stabil

UNI	UNI	UNI	UNI	UNI
B 4–5	B 4–5	B 4–5	B 4–5	B 4–5
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 3 6G	7G
nitr. + vap.	TiN	TiCN	nitr. + vap.	nitr. + vap.



DIN 371 with reinforced shank

HSS-E | HSS-E | HSS-E | HSS-E | HSS-E
0° | 0° | 0° | 0° | 0°
≤ 1100 N/mm² | ≤ 1100 N/mm² | ≤ 1100 N/mm² | ≤ 1100 N/mm² | ≤ 1100 N/mm²
≤ 4xD | ≤ 4xD | ≤ 4xD | ≤ 4xD | ≤ 4xD
U0 | U0 | U0 | U0 | U0

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	Article no. 22 501 ...		Article no. 22 503 ...		Article no. 22 505 ...		Article no. 22 508 ...		Article no. 22 510 ...	
	mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£	
M1	0.25	40	2.5	2.1	0.75	5	13	2	105.71	010 [1]								
M1,2	0.25	40	2.5	2.1	0.95	5	13	2	101.80	012 [1]								
M1,4	0.30	40	2.5	2.1	1.10	7	13	3	90.58	014 [1]								
M1,6	0.35	40	2.5	2.1	1.25	8	11	3	64.24	016								
M1,7	0.35	40	2.5	2.1	1.35	6	11	2	98.39	017								
M1,8	0.35	40	2.5	2.1	1.45	6	11	2	136.41	018								
M2	0.40	45	2.8	2.1	1.60	7	12	2			46.18	020			45.67	020	56.83	020
M2	0.40	45	2.8	2.1	1.60	8	8	3	47.27	020								
M2,2	0.45	45	2.8	2.1	1.75	7	12	2	48.95	022								
M2,5	0.45	50	2.8	2.1	2.05	9	14	2	46.11	025					45.34	025	54.78	025
M3	0.50	56	3.5	2.7	2.50	11	18	3	30.65	030	38.07	030	38.07	030	36.68	030	42.20	030
M3,5	0.60	56	4.0	3.0	2.90	12	20	3	37.78	035					37.37	035		
M4	0.70	63	4.5	3.4	3.30	13	21	3	27.04	040	36.46	040	36.46	040	38.84	040	42.20	040
M5	0.80	70	6.0	4.9	4.20	15	25	3	28.34	050	36.91	050	36.91	050	37.37	050	43.41	050
M6	1.00	80	6.0	4.9	5.00	17	30	3	28.34	060	45.05	060	45.05	060	40.35	060	44.46	060
M7	1.00	80	7.0	5.5	6.00	17	30	3	45.67	070								
M8	1.25	90	8.0	6.2	6.80	20	35	3	33.56	080	49.17	080	49.17	080	42.88	080	49.48	080
M10	1.50	100	10.0	8.0	8.50	22	39	3	40.26	100	73.52	100	69.69	100	52.23	100	60.04	100
M12	1.75	110	12.0	9.0	10.20	24	44	3	55.82	120								

Steel	6-20	6-25	6-25	6-20	6-20
Stainless steel	4-8	5-10	5-10	4-8	4-8
Cast iron	6-15	10-20	10-20	6-15	6-15
Non ferrous metals		12-25	12-25		
Heat resistant alloys					
Hardened materials					

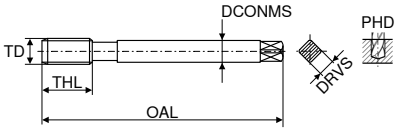
1) Tol. ISO 1 4H ≤ M1.4

DIN 376 can be found on the next page

6

Through hole – Machine taps, right hand

M | Stabil



DIN 376 with reduced shank

UNI	UNI	UNI	UNI
B 4–5	B 4–5	B 4–5	B 4–5
ISO 2 6H	ISO 2 6H	ISO 3 6G	7G
nitr. + vap.	TiN	nitr. + vap.	nitr. + vap.

HSS-E
0°
≤ 1100 N/mm²
≤ 4xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 502 ...		U0 Article no. 22 504 ...		U0 Article no. 22 509 ...		U0 Article no. 22 511 ...	
	mm	mm	mm	mm	mm	mm		£		£		£		£	
M3	0.50	56	2.2		2.5	11	3	62.10	**030**						
M4	0.70	63	2.8	2.1	3.3	13	3	41.33	**040**						
M5	0.80	70	3.5	2.7	4.2	15	3	38.82	**050**						
M6	1.00	80	4.5	3.4	5.0	17	3	38.99	**060**						
M8	1.25	90	6.0	4.9	6.8	20	3	43.24	**080**						
M10	1.50	100	7.0	5.5	8.5	22	3	50.74	**100**						
M12	1.75	110	9.0	7.0	10.2	24	3	49.98	**120**	80.34	**120**	60.63	**120**	67.54	**120**
M14	2.00	110	11.0	9.0	12.0	26	3	63.20	**140**	140.32	**140**			112.87	**140**
M16	2.00	110	12.0	9.0	14.0	27	3	70.12	**160**	104.59	**160**	88.48	**160**	118.84	**160**
M18	2.50	125	14.0	11.0	15.5	30	3	131.49	**180**	222.42	**180**				
M20	2.50	140	16.0	12.0	17.5	32	3	104.32	**200**	226.33	**200**	131.42	**200**		
M22	2.50	140	18.0	14.5	19.5	32	3	176.82	**220**	343.85	**220**				
M24	3.00	160	18.0	14.5	21.0	34	3	139.44	**240**	289.65	**240**				
M27	3.00	160	20.0	16.0	24.0	36	3	199.89	**270**						
M30	3.50	180	22.0	18.0	26.5	40	4	226.91	**300**						
M33	3.50	180	25.0	20.0	29.5	40	4	565.65	**330**						
M36	4.00	200	28.0	22.0	32.0	50	4	651.23	**360**						
M42	4.50	200	32.0	24.0	37.5	56	4	1,236.83	**420**						
M48	5.00	250	36.0	29.0	43.0	65	4	1,306.36	**480**						

Steel	**6-20**	**6-25**	**6-20**	**6-20**
Stainless steel	**4-8**	**5-10**	**4-8**	**4-8**
Cast iron	**6-15**	**10-20**	**6-15**	**6-15**
Non ferrous metals		**12-25**		
Heat resistant alloys				
Hardened materials				

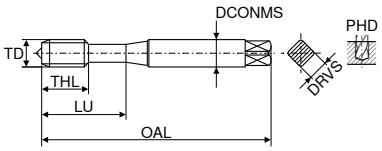
Through hole – Machine taps, right hand

▲ CNC = for synchronised CNC machining with minimum length compensation chuck

▲ NCW = with Weldon flat for synchronised CNC machining without length compensation chuck

M	Stabil

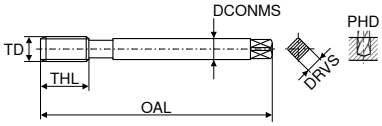
UNI NCW	UNI CNC	UNI CNC	UNI CNC
B 4–5	B 4–5	B 4–5	B 4–5
ISO 2 6H	ISO 2X 6HX	ISO 3X 6GX	7GX
TiN	TiN GS	TiN GS	TiN GS



DIN 371 with reinforced shank

	HSS-PM	HSS-E	HSS-E	HSS-E
	◁ 0° ≤ 1100 N/mm² ≤ 4xD	◁ 0° ≤ 1100 N/mm² ≤ 4xD	◁ 0° ≤ 1100 N/mm² ≤ 4xD	◁ 0° ≤ 1100 N/mm² ≤ 4xD
	U0	U0	U0	U0
TD	Article no. 22 148 ...	Article no. 22 542 ...	Article no. 22 596 ...	Article no. 22 592 ...
	£	£	£	£
M3	63.63 030			
M3		44.05 030		
M4	66.97 040			
M4		46.46 040	52.18 040	56.45 040
M5	68.01 050	48.53 050	53.04 050	58.69 050
M6	84.84 060	61.60 060	66.54 060	74.96 060
M8	93.57 080			
M8		65.84 080	72.65 080	82.21 080
M10	112.87 100			
M10		83.38 100	89.48 100	97.93 100
M12	138.57 120			
M16	194.53 160			

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
	mm	mm	mm	mm	mm	mm	mm	
M3	0.50	70	6.0	4.9	2.5	6	18	3
M3	0.50	56	3.5	2.7	2.5	6	18	3
M4	0.70	70	6.0	4.9	3.3	7	21	3
M4	0.70	63	4.5	3.4	3.3	7	21	3
M5	0.80	70	6.0	4.9	4.2	8	25	3
M6	1.00	80	6.0	4.9	5.0	10	30	3
M8	1.25	90	8.0	6.2	6.8	14	35	3
M8	1.25	90	8.0	6.2	6.8	14	35	4
M10	1.50	100	10.0	8.0	8.5	16	39	3
M10	1.50	100	10.0	8.0	8.5	16	39	4
M12	1.75	110	10.0	8.0	10.2	18		3
M16	2.00	110	12.0	9.0	14.0	22		3



DIN 376 with reduced shank

	U0	U0	U0
TD	Article no. 22 543 ...	Article no. 22 597 ...	Article no. 22 593 ...
	£	£	£
M12	95.76 120	106.20 120	117.96 120
M14	270.61 140		
M16	136.11 160		
M20	237.82 200		

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
	mm	mm	mm	mm	mm	mm	
M12	1.75	110	9	7	10.2	18	4
M14	2.00	110	11	9	12.0	20	4
M16	2.00	110	12	9	14.0	22	4
M20	2.50	140	16	12	17.5	25	4

Steel	6-25	6-25	6-25	6-25
Stainless steel	5-10	5-10	5-10	5-10
Cast iron	10-20	10-20	10-20	10-20
Non ferrous metals	12-25	12-25	12-25	12-25
Heat resistant alloys				
Hardened materials				

6

Through hole – Machine taps, right/left hand

▲ AZ = with intermittent teeth, reduces friction

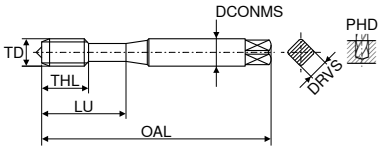
▲ LH = for left hand threads

M | Stabil

ST | ST AZ | ST LH

B 4–5

ISO 2 6H

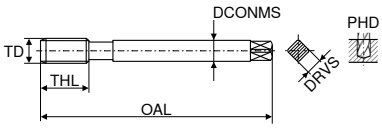


DIN 371 with reinforced shank

HSS-E
∢ 0°
≤ 750 N/mm²
≤ 4xD

U0

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	Article no. 22 020 ... £		Article no. 22 022 ... £		Article no. 22 127 ... £	
	mm	mm	mm	mm	mm	mm	mm							
M2	0.40	45	2.8	2.1	1.60	7	12	2	31.55	**020**	46.18	**020**		
M2,3	0.40	45	2.8	2.1	1.90	7	12	2	35.45	**023**				
M2,5	0.45	50	2.8	2.1	2.05	9	14	2	31.98	**025**				
M2,6	0.45	50	2.8	2.1	2.15	9	14	2	35.45	**026**				
M3	0.50	56	3.5	2.7	2.50	11	18	3	26.16	**030**	43.16	**030**	46.94	**030**
M3,5	0.60	56	4.0	3.0	2.90	12	20	3	28.19	**035**				
M4	0.70	63	4.5	3.4	3.30	13	21	3	26.74	**040**	43.16	**040**	48.32	**040**
M5	0.80	70	6.0	4.9	4.20	15	25	3	28.19	**050**	39.21	**050**	50.17	**050**
M6	1.00	80	6.0	4.9	5.00	17	30	3	28.19	**060**	40.69	**060**	50.17	**060**
M8	1.25	90	8.0	6.2	6.80	20	35	3	33.40	**080**	45.05	**080**	56.83	**080**
M10	1.50	100	10.0	8.0	8.50	22	39	3	39.21	**100**	54.34	**100**	72.65	**100**
M12	1.75	110	12.0	9.0	10.20	24	44	3	44.90	**120**				



DIN 376 with reduced shank

U0

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	Article no. 22 021 ... £		Article no. 22 023 ... £		Article no. 22 147 ... £	
	mm	mm	mm	mm	mm	mm							
M3	0.50	56	2.2		2.5	11	3	32.41	**030**				
M4	0.70	63	2.8	2.1	3.3	13	3	32.11	**040**				
M5	0.80	70	3.5	2.7	4.2	15	3	33.40	**050**				
M6	1.00	80	4.5	3.4	5.0	17	3	33.86	**060**				
M8	1.25	90	6.0	4.9	6.8	20	3	36.03	**080**				
M10	1.50	100	7.0	5.5	8.5	22	3	40.84	**100**				
M12	1.75	110	9.0	7.0	10.2	24	3	49.82	**120**	76.00	**120**	86.23	**120**
M14	2.00	110	11.0	9.0	12.0	26	3	62.93	**140**				
M16	2.00	110	12.0	9.0	14.0	27	3	69.69	**160**	113.77	**160**	130.41	**160**
M18	2.50	125	14.0	11.0	15.5	30	3	101.69	**180**				
M20	2.50	140	16.0	12.0	17.5	32	3	105.62	**200**	162.55	**200**	192.79	**200**
M22	2.50	140	18.0	14.5	19.5	32	3	159.96	**220**				
M24	3.00	160	18.0	14.5	21.0	34	3	136.11	**240**				
M27	3.00	160	20.0	16.0	24.0	36	3	186.53	**270**				
M30	3.50	180	22.0	18.0	26.5	40	4	225.58	**300**				

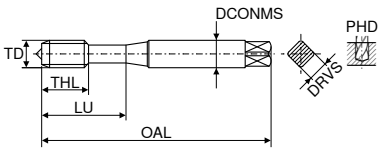
Steel	**10-20**	**10-20**	**10-20**
Stainless steel			
Cast iron			
Non ferrous metals	**10-20**	**10-20**	**10-20**
Heat resistant alloys			
Hardened materials			

Through hole – Machine taps, right hand

▲ TS = for high-speed machining, up to 100 m/min.

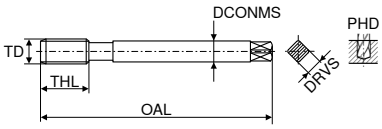
M	Stabil

ST TS	HR	HR	VG
B 4–5	B 4–5	B 4–5	B 4–5
ISO 2X 6HX	ISO 2X 6HX	ISO 2X 6HX	ISO 2X 6HX
TiN	nitr.	TiN	TiN



DIN 371 with reinforced shank

	HSS-E	HSS-PM	HSS-PM	HSS-E
	0° ≤ 1100 N/mm² ≤ 4xD	0° ≤ 1400 N/mm² ≤ 4xD	0° ≤ 1400 N/mm² ≤ 4xD	0° ≤ 1100 N/mm² ≤ 4xD
	U0	U0	U0	U0
TD	Article no. 22 092 ...	Article no. 22 053 ...	Article no. 22 055 ...	Article no. 22 120 ...
	£	£	£	£
M2	0.40 45 2.8 2.1 1.60 8 9.5 2	71.64 020		
M2	0.40 45 2.8 2.1 1.60 4 12.0 2	61.58 020		54.78 020
M2,2	0.45 45 2.8 2.1 1.75 7 12.0 2	71.64 022		
M2,5	0.45 50 2.8 2.1 2.05 9 14.0 2	69.90 025		
M2,5	0.45 50 2.8 2.1 2.05 5 15.0 2	61.58 025		54.78 025
M3	0.50 56 3.5 2.7 2.50 11 18.0 2	35.60 030	46.89 030	
M3	0.50 56 3.5 2.7 2.50 6 18.0 3	48.32 030		40.84 030
M3,5	0.60 56 4.0 3.0 2.90 12 20.0 2	57.25 035		
M4	0.70 63 4.5 3.4 3.30 13 21.0 2	35.90 040	68.43 040	
M4	0.70 63 4.5 3.4 3.30 7 21.0 3	56.30 040		44.17 040
M5	0.80 70 6.0 4.9 4.20 15 25.0 2	37.78 050	48.53 050	
M5	0.80 70 6.0 4.9 4.20 8 25.0 3	59.14 050		46.07 050
M6	1.00 80 6.0 4.9 5.00 17 30.0 3	39.21 060	59.14 060	
M6	1.00 80 6.0 4.9 5.00 10 30.0 3	76.56 060		56.37 060
M8	1.25 90 8.0 6.2 6.80 20 35.0 3	46.33 080	64.08 080	
M8	1.25 90 8.0 6.2 6.80 14 35.0 4	81.07 080		59.54 080
M10	1.50 100 10.0 8.0 8.50 22 39.0 3	56.45 100	90.67 100	
M10	1.50 100 10.0 8.0 8.50 16 39.0 4	109.82 100		85.13 100
M12	1.75 110 12.0 9.0 10.20 24 44.0 3	95.44 120		



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 093 ... £	U0 Article no. 22 121 ... £
	mm	mm	mm	mm	mm	mm			
M12	1.75	110	9	7	10.2	18	4	119.41 120	101.27 120
M16	2.00	110	12	9	14.0	22	4	176.82 160	138.57 160
M20	2.50	140	16	12	17.5	25	4	254.36 200	235.64 200

Steel	20-100	2-6	2-6	6-15
Stainless steel				5-10
Cast iron	20-60			
Non ferrous metals	20-100			10-20
Heat resistant alloys	10-25	3-5	3-5	
Hardened materials				

6

Through hole – Machine taps, right hand

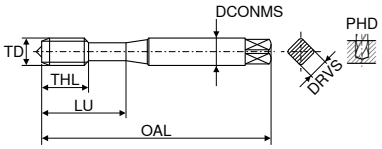
M | Stabil

VA | VA | NW | NW

B 4–5 | B 4–5 | B 4–5 | B 4–5

ISO 2 6H | ISO 2 6H | ISO 2 6H | ISO 2 6H

nitr. | TiN GS | vap. | HCr



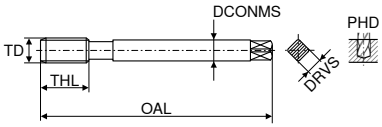
DIN 371 with reinforced shank

HSS-E | HSS-E | HSS-E | HSS-E

0° | 0° | 0° | 0°

≤ 900 N/mm² ≤ 4xD | ≤ 900 N/mm² ≤ 4xD | ≤ 500 N/mm² ≤ 4xD | ≤ 500 N/mm² ≤ 4xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 056 ... £		U0 Article no. 22 038 ... £		U0 Article no. 22 058 ... £		U0 Article no. 22 060 ... £	
	mm	mm	mm	mm	mm	mm	mm									
M1,6	0.35	40	2.5	2.1	1.25	6	11	2			69.43	016				
M2	0.40	45	2.8	2.1	1.60	7	12	2	36.46	020	57.10	020	35.02	020	42.00	020
M2,3	0.40	45	2.8	2.1	1.90	7	12	2					39.76	023	44.47	023
M2,5	0.45	50	2.8	2.1	2.05	9	14	2	35.06	025	54.44	025	35.02	025	42.73	025
M2,6	0.45	50	2.8	2.1	2.15	9	14	2					40.26	026	44.47	026
M3	0.50	56	3.5	2.7	2.50	11	18	3	28.81	030	44.90	030	27.04	030	35.45	030
M3,5	0.60	56	4.0	3.0	2.90	12	20	3	40.41	035			28.38	035	37.78	035
M4	0.70	63	4.5	3.4	3.30	13	21	3	30.22	040	48.53	040	27.38	040	35.49	040
M5	0.80	70	6.0	4.9	4.20	15	25	3	31.98	050	49.54	050	28.38	050	35.32	050
M6	1.00	80	6.0	4.9	5.00	17	30	3	33.40	060	62.47	060	28.38	060	35.75	060
M8	1.25	90	8.0	6.2	6.80	20	35	3	36.35	080	68.01	080	34.58	080	43.28	080
M10	1.50	100	10.0	8.0	8.50	22	39	3	44.47	100	84.25	100	41.13	100	54.34	100



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 057 ... £		U0 Article no. 22 039 ... £		U0 Article no. 22 059 ... £		U0 Article no. 22 061 ... £	
	mm	mm	mm	mm	mm	mm									
M12	1.75	110	9	7.0	10.2	24	3	56.30	120	99.67	120	52.30	120	65.10	120
M14	2.00	110	11	9.0	12.0	26	3	77.85	140	144.25	140				
M16	2.00	110	12	9.0	14.0	27	3	79.66	160	141.36	160	73.81	160	79.10	160
M18	2.50	125	14	11.0	15.5	30	3	195.07	180						
M20	2.50	140	16	12.0	17.5	32	3	116.14	200	241.74	200				
M22	2.50	140	18	14.5	19.5	32	3	306.02	220						
M24	3.00	160	18	14.5	21.0	34	3	159.65	240						
M27	3.00	160	20	16.0	24.0	36	3	334.80	270						
M30	3.50	180	22	18.0	26.5	40	4	257.85	300						

Steel		5-12		
Stainless steel	5-10	5-10		
Cast iron				
Non ferrous metals			10-20	12-25
Heat resistant alloys				
Hardened materials				

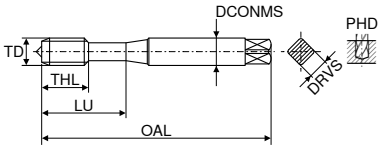
Through hole – Machine taps, right hand

M | Stabil

Ti | B 4–5 | ISO 1X 4HX | TiN

Ti | B 4–5 | ISO 2X 6HX | vap.

Ti | B 4–5 | ISO 2X 6HX | TiN



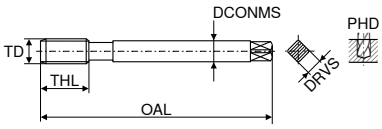
DIN 371 with reinforced shank

HSS-PM | 0° | ≤ 44 HRC | ≤ 4xD

HSS-PM | 0° | ≤ 1400 N/mm² | ≤ 4xD

HSS-PM | 0° | ≤ 44 HRC | ≤ 4xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 081 ...		U0 Article no. 22 075 ...		U0 Article no. 22 077 ...	
	mm	mm	mm	mm	mm	mm	mm		£		£		£	
M1	0.25	40	2.5	2.1	0.75	5	6.5	2	168.52	**010**				
M1,6	0.35	40	2.5	2.1	1.25	8	9.5	3			94.51	**016**		
M2	0.40	45	2.8	2.1	1.60	8	9.5	3	140.70	**020**	120.74	**020**		
M2,5	0.45	50	2.8	2.1	2.05	9	14.0	3			114.98	**025**		
M3	0.50	56	3.5	2.7	2.50	11	18.0	3	85.23	**030**	80.25	**030**	85.23	**030**
M3,5	0.60	56	4.0	3.0	2.90	12	20.0	3			59.50	**035**		
M4	0.70	63	4.5	3.4	3.30	13	21.0	3	86.89	**040**	86.59	**040**	86.89	**040**
M5	0.80	70	6.0	4.9	4.20	15	25.0	3	89.11	**050**	85.23	**050**	89.11	**050**
M6	1.00	80	6.0	4.9	5.00	17	30.0	3	89.11	**060**	85.23	**060**	89.11	**060**
M8	1.25	90	8.0	6.2	6.80	20	35.0	3	102.66	**080**	99.06	**080**	102.66	**080**
M10	1.50	100	10.0	8.0	8.50	22	39.0	3			119.40	**100**	120.37	**100**



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 140 ...		U0 Article no. 22 142 ...	
	mm	mm	mm	mm	mm	mm		£		£	
M12	1.75	110	9	7	10.2	24	3	145.13	**120**	143.48	**120**

Steel	**2-5**	**2-5**	**2-5**
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys	**2-6**	**2-6**	**2-6**
Hardened materials			

6

Through hole – Machine taps, right hand

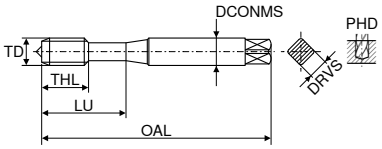
M | DL

Ti | Ni

D 4–5 | D 4–5

ISO 2X 6HX | ISO 2X 6HX

TiCN | TiCN

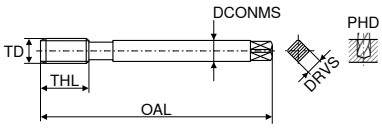


DIN 371 with reinforced shank

HSS-E
◁ 15°
≤ 1200 N/mm²
≤ 4xD

HSS-E
◁ 15°
≤ 1600 N/mm²
≤ 4xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 159 ...		U0 Article no. 22 297 ...	
	mm	mm	mm	mm	mm	mm	mm		£		£	
M3	0.50	56	3.5	2.7	2.5	11	18	2	50.42	**030**	64.90	**030**
M4	0.70	63	4.5	3.4	3.3	13	21	3	54.78	**040**	67.59	**040**
M5	0.80	70	6.0	4.9	4.2	15	25	3	55.36	**050**	69.32	**050**
M6	1.00	80	6.0	4.9	5.0	17	30	3	72.53	**060**	87.71	**060**
M8	1.25	90	8.0	6.2	6.8	20	35	3	79.66	**080**	97.34	**080**
M10	1.50	100	10.0	8.0	8.5	22	39	3	99.80	**100**	121.89	**100**



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 160 ...		U0 Article no. 22 298 ...	
	mm	mm	mm	mm	mm	mm		£		£	
M12	1.75	110	9	7.0	10.2	24	3	115.21	**120**	140.36	**120**
M14	2.00	110	11	9.0	12.0	26	3			208.98	**140**
M16	2.00	110	12	9.0	14.0	27	3	162.25	**160**	196.80	**160**
M20	2.50	140	16	12.0	17.5	32	3	280.37	**200**	335.57	**200**
M24	3.00	160	18	14.5	21.0	34	3	330.63	**240**		

Steel	**6-8**	
Stainless steel	**4-10**	
Cast iron		
Non ferrous metals	**10-12**	
Heat resistant alloys	**4-6**	**2-20**
Hardened materials		

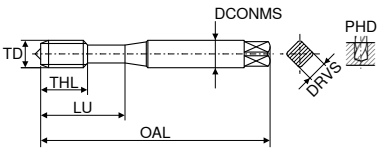
Through hole – Machine taps, right hand

▲ EL = extra long, with double overall length

M | Stabil

UNI EL | B 4–5 | ISO 2 6H | nitr. + vap.

ST EL | B 4–5 | ISO 2 6H

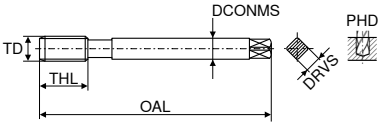


DIN 371 with reinforced shank

HSS-E
0°
≤ 1100 N/mm²
≤ 4xD

HSS-E
0°
≤ 950 N/mm²
≤ 4xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 514 ...		U0 Article no. 22 233 ...	
	mm	mm	mm	mm	mm	mm	mm		£		£	
M3	0.50	100	3.5	2.7	2.5	11	18	3	67.70	030	70.62	030
M4	0.70	125	4.5	3.4	3.3	13	21	3	67.70	040	67.59	040
M5	0.80	140	6.0	4.9	4.2	15	25	3	75.82	050	73.76	050
M6	1.00	160	6.0	4.9	5.0	17	30	3	82.51	060	77.19	060
M8	1.25	180	8.0	6.2	6.8	20	35	3	88.63	080	92.14	080



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 515 ...		U0 Article no. 22 234 ...	
	mm	mm	mm	mm	mm	mm		£		£	
M6	1.00	160	4.5	3.4	5.0	17	3	80.04	060	77.19	060
M8	1.25	180	6.0	4.9	6.8	20	3	98.37	080	92.14	080
M10	1.50	200	7.0	5.5	8.5	22	3	105.74	100	102.52	100
M12	1.75	224	9.0	7.0	10.2	24	3	116.14	120	123.62	120
M14	2.00	224	11.0	9.0	12.0	26	3	203.81	140	199.84	140
M16	2.00	224	12.0	9.0	14.0	27	3	229.10	160	192.23	160
M18	2.50	250	14.0	11.0	15.5	30	3	308.55	180	288.32	180
M20	2.50	280	16.0	12.0	17.5	32	3	272.97	200	259.34	200

Steel	6-20	5-25
Stainless steel	4-8	
Cast iron	6-15	10-20
Non ferrous metals		10-40
Heat resistant alloys		
Hardened materials		

6

Through hole – Machine taps, right hand

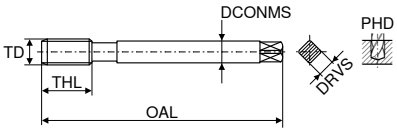
▲ MMB = Nut taps

M

ST
MMB

≈ 20

ISO 2
6H



DIN 357 with reduced shank

HSS-E
0°
≤ 850 N/mm²
≤ 1xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 098 ... £	
	mm	mm	mm	mm	mm	mm			
M3	0.50	70	2.2		2.5	16	3	50.42	**030**
M4	0.70	90	2.8	2.1	3.3	22	3	50.42	**040**
M5	0.80	100	3.5	2.7	4.2	24	3	52.75	**050**
M6	1.00	110	4.5	3.4	5.0	30	3	52.75	**060**
M8	1.25	125	6.0	4.9	6.8	38	3	65.10	**080**
M10	1.50	140	7.0	5.5	8.5	45	3	73.95	**100**
M12	1.75	180	9.0	7.0	10.2	50	3	99.37	**120**
M16	2.00	200	12.0	9.0	14.0	63	3	142.52	**160**

Steel	**10-25**
Stainless steel	
Cast iron	
Non ferrous metals	**10-25**
Heat resistant alloys	
Hardened materials	

Through hole – Machine taps, right hand

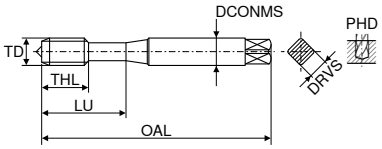
M

UNI | UNI | UNI

B 4–5 | B 4–5 | B 4–5

ISO 2 6H | ISO 2 6H | ISO 2 6H

nitr. + vap. | TiN | TiN

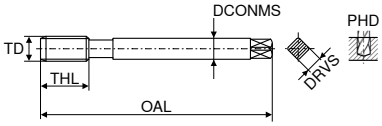


DIN 371 with reinforced shank

HSS-E | HSS-E | HSS-PM

0° ≤ 1000 N/mm² ≤ 3xD | 0° ≤ 1000 N/mm² ≤ 3xD | 0° ≤ 1000 N/mm² ≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	T9 Article no. 23 110 ... £		T9 Article no. 23 112 ... £		T9 Article no. 23 010 ... £	
	mm	mm	mm	mm	mm	mm	mm							
M2	0.40	45	2.8	2.1	1.60	7	12.0	2	27.31	020	31.98	020		
M2	0.40	45	2.8	2.1	1.60	4	13.5	2					9.18	020
M2,5	0.45	50	2.8	2.1	2.05	9	14.0	2	26.37	025	30.95	025		
M3	0.50	56	3.5	2.7	2.50	11	18.0	3	20.81	030	25.94	030	11.53	030
M4	0.70	63	4.5	3.4	3.30	13	21.0	3	21.25	040	29.51	040	10.52	040
M5	0.80	70	6.0	4.9	4.20	15	25.0	3	21.67	050	29.78	050	11.76	050
M6	1.00	80	6.0	4.9	5.00	17	30.0	3	21.81	060	37.64	060	14.10	060
M8	1.25	90	8.0	6.2	6.80	20	35.0	3	24.95	080	40.41	080	15.66	080
M10	1.50	100	10.0	8.0	8.50	22	39.0	3	30.22	100	55.22	100	20.70	100



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 111 ... £		T9 Article no. 23 113 ... £		T9 Article no. 23 021 ... £	
	mm	mm	mm	mm	mm	mm							
M3	0.50	56	2.2		2.5	11	3	8.18	030				
M4	0.70	63	2.8	2.1	3.3	13	3	8.05	040				
M5	0.80	70	3.5	2.7	4.2	15	3	8.05	050				
M6	1.00	80	4.5	3.4	5.0	17	3	8.39	060				
M8	1.25	90	6.0	4.9	6.8	20	3	9.85	080				
M10	1.50	100	7.0	5.5	8.5	22	3	11.42	100				
M12	1.75	110	9.0	7.0	10.2	24	3	13.66	120	61.02	120	24.73	120
M14	2.00	110	11.0	9.0	12.0	26	3	19.81	140	39.61	14000		
M14	2.00	110	11.0	9.0	12.0	20	4					37.49	140
M16	2.00	110	12.0	9.0	14.0	27	3	20.25	160	79.92	160	34.81	160
M18	2.50	125	14.0	11.0	15.5	30	3			62.85	18000		
M18	2.50	125	14.0	11.0	15.5	25	4					60.99	180
M20	2.50	140	16.0	12.0	17.5	32	3	32.23	200	141.94	200	63.01	200
M22	2.50	140	18.0	14.5	19.5	32	3			93.08	22000		
M24	3.00	160	18.0	14.5	21.0	34	3			150.79	240		
M27	3.00	160	20.0	16.0	24.0	36	3			116.39	27000		
M30	3.50	180	22.0	18.0	26.5	40	4			130.55	30000		
M33	3.50	180	25.0	20.0	29.5	40	4			171.24	33000		
M36	4.00	200	28.0	22.0	32.0	50	4			209.74	36000		

Steel	2-25	5-45	10-20
Stainless steel	2-8	5-15	8-15
Cast iron	5-20	10-25	20-25
Non ferrous metals	10-20	15-40	20-25
Heat resistant alloys			
hardened materials			

6

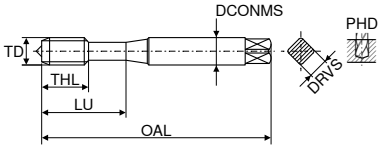
Through hole – Machine taps, right hand

▲ NCW = with Weldon flat for synchronised CNC machining without length compensation chuck

▲ NC = for synchronised CNC machining with minimum length compensation chuck

M

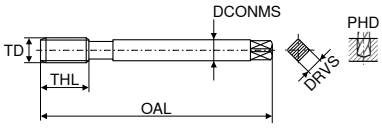
UNI NC	UNI NCW	FE	FE-HF
B 4–5	B 4–5	B 4–5	B 4–5
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
TiN GS	TiCN		TiCN



DIN 371 with reinforced shank

	HSS-E	HSS-PM	HSS-E	HSS-E
	0° ≤ 1000 N/mm² ≤ 3xD	0° ≤ 1000 N/mm² ≤ 3xD	0° ≤ 850 N/mm² ≤ 3xD	0° ≤ 1100 N/mm² ≤ 3xD
	T9	T9	T9	T9
TD	Article no. 23 114 ...	Article no. 23 116 ...	Article no. 23 212 ...	Article no. 23 310 ...
mm	£	£	£	£
M1,6			27.75 016	
M2			18.39 020	
M2,5			15.99 025	
M3		33.13 030		
M3	27.75 030		12.67 030	26.16 030
M3,5			14.10 035	
M4		37.94 040		
M4	29.35 040		12.67 040	27.38 040
M5	30.22 050		12.70 050	28.19 050
M5		37.78 050		
M6	43.48 060		12.70 060	37.78 060
M6		37.78 060		
M8	46.94 080		16.54 080	40.77 080
M8		47.74 080		
M10	58.97 100		19.82 100	51.17 100
M10		57.73 100		

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
	mm	mm	mm	mm	mm	mm	mm	
M1,6	0.35	40	2.5	2.1	1.25	6	11	2
M2	0.40	45	2.8	2.1	1.60	7	12	2
M2,5	0.45	50	2.8	2.1	2.05	9	14	2
M3	0.50	70	6.0	4.9	2.50	6	18	3
M3	0.50	56	3.5	2.7	2.50	11	18	3
M3,5	0.60	56	4.0	3.0	2.90	12	20	3
M4	0.70	70	6.0	4.9	3.30	7	21	3
M4	0.70	63	4.5	3.4	3.30	13	21	3
M5	0.80	70	6.0	4.9	4.20	15	25	3
M5	0.80	70	6.0	4.9	4.20	8	25	3
M6	1.00	80	6.0	4.9	5.00	17	30	3
M6	1.00	80	6.0	4.9	5.00	10	30	3
M8	1.25	90	8.0	6.2	6.80	20	35	3
M8	1.25	90	8.0	6.2	6.80	14	35	3
M10	1.50	100	10.0	8.0	8.50	22	39	3
M10	1.50	100	10.0	8.0	8.50	16	39	3



DIN 376 with reduced shank

	T9	T9	T9	T9			
TD	Article no. 23 115 ...	Article no. 23 117 ...	Article no. 23 213 ...	Article no. 23 311 ...	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
	£	£	£	£	mm	mm	mm	mm	mm	mm	
M12		73.23 120			1.75	110	10	8	10.2	18	3
M12	68.01 120		26.74 120	60.45 120	1.75	110	9	7	10.2	24	3
M14			32.41 140		2.00	110	11	9	12.0	26	3
M16		144.44 160			2.00	110	12	9	14.0	22	3
M16	90.49 160		40.69 160	83.83 160	2.00	110	12	9	14.0	27	3
M20	167.79 200		63.50 200	148.04 200	2.50	140	16	12	17.5	32	3

Steel	5-45	5-45	5-25	5-45
Stainless steel	5-15	5-15		
Cast iron	10-25	10-25		
Non ferrous metals	15-40	15-40		
Heat resistant alloys		5-8		
hardened materials				

Through hole – Machine taps, right hand

M

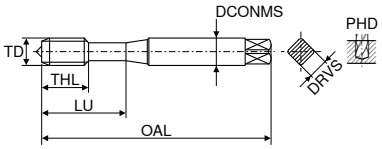
VA | VA | VA | AL | AL

B | B | B | B | B

4–5 | 4–5 | 4–5 | 4–5 | 4–5

ISO 2 6H | ISO 2 6H | ISO 2 6H | ISO 2 6H | ISO 2 6H

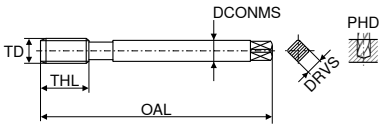
nitr. | nitr. | TiN | | CrN



DIN 371 with reinforced shank

	HSS-PM	HSS-E	HSS-E	HSS-E	HSS-E
	◁ 0° ≤ 1200 N/mm² ≤ 3xD	◁ 0° ≤ 1200 N/mm² ≤ 3xD	◁ 0° ≤ 1200 N/mm² ≤ 3xD	◁ 0° ≤ 500 N/mm² ≤ 3xD	◁ 0° ≤ 500 N/mm² ≤ 3xD
	T9	T9	T9	T9	T9
TD	Article no. 23 450 ...	Article no. 23 410 ...	Article no. 23 412 ...	Article no. 23 610 ...	Article no. 23 612 ...
	£	£	£	£	£
M2		20.64 020	32.73 020		
M2,5		26.37 025	27.70 025		
M3	10.75 030	13.83 030	25.94 030	12.67 030	23.84 030
M4	10.85 040	13.83 040	29.51 040	12.67 040	24.70 040
M5	11.76 050	14.39 050	29.78 050	12.70 050	25.27 050
M6	11.86 060	14.39 060	38.78 060	12.70 060	25.27 060
M8	13.32 080	18.31 080	41.61 080	16.54 080	28.38 080
M10	15.11 100	22.09 100	56.88 100	19.82 100	35.45 100

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
	mm	mm	mm	mm	mm	mm	mm	
M2	0.40	45	2.8	2.1	1.60	7	12	2
M2,5	0.45	50	2.8	2.1	2.05	9	14	2
M3	0.50	56	3.5	2.7	2.50	11	18	3
M4	0.70	63	4.5	3.4	3.30	13	21	3
M5	0.80	70	6.0	4.9	4.20	15	25	3
M6	1.00	80	6.0	4.9	5.00	17	30	3
M8	1.25	90	8.0	6.2	6.80	20	35	3
M10	1.50	100	10.0	8.0	8.50	22	39	3



DIN 376 with reduced shank

	T9	T9	T9	T9	T9
TD	Article no. 23 451 ...	Article no. 23 411 ...	Article no. 23 413 ...	Article no. 23 611 ...	Article no. 23 613 ...
	£	£	£	£	£
M12	26.97 120	29.51 120	64.08 120	26.74 120	43.62 120
M14	35.70 140				
M16	37.72 160	45.05 160	79.92 160		
M20	56.40 200	68.56 200	139.16 200		
M24		90.67 240			

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
	mm	mm	mm	mm	mm	mm	
M12	1.75	110	9	7.0	10.2	24	3
M14	2.00	110	11	9.0	12.0	26	3
M16	2.00	110	12	9.0	14.0	27	3
M20	2.50	140	16	12.0	17.5	32	3
M24	3.00	160	18	14.5	21.0	34	3

Steel					
Stainless steel	5-10	3-10	8-20		
Cast iron					
Non ferrous metals				10-20	15-40
Heat resistant alloys					
hardened materials					

6

Through hole – Machine taps, right hand

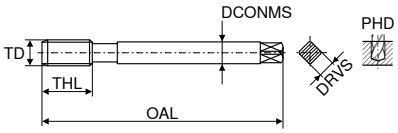
▲ ES = extra short

M

FE
ES

B
4–5

ISO 2
6H



DIN 376 with reduced shank

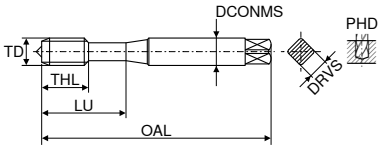
HSS-E
0°
≤ 850 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 210 ...	
	mm	mm	mm	mm	mm	mm		£	
M2	0.40	36	2.8	2.1	1.60	8	2	14.39	**020**
M2,5	0.45	40	2.8	2.1	2.05	9	2	11.26	**025**
M3	0.50	40	3.5	2.7	2.50	10	3	8.27	**030**
M4	0.70	45	4.5	3.4	3.30	12	3	8.27	**040**
M5	0.80	50	6.0	4.9	4.20	14	3	9.28	**050**
M6	1.00	56	6.0	4.9	5.00	16	3	9.42	**060**
M8	1.25	63	6.0	4.9	6.80	20	3	11.26	**080**
M10	1.50	70	7.0	5.5	8.50	22	3	14.70	**100**
M12	1.75	75	9.0	7.0	10.20	24	3	19.47	**120**
M16	2.00	80	12.0	9.0	14.00	27	3	33.40	**160**

Steel	**5-25**
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
hardened materials	

Blind hole – Machine taps, right hand

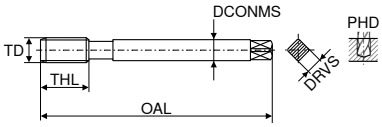
M | Salo-Rex



DIN 371 with reinforced shank

	UNI	UNI	UNI	UNI
	C 2–3	C 2–3	C 2–3	C 2–3
	ISO 2 6H	7G	ISO 2 6H	ISO 2 6H
	vap.	vap.	TiN	TiCN
	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD
	U0	U0	U0	U0
	Article no. 22 518 ...	Article no. 22 532 ...	Article no. 22 520 ...	Article no. 22 522 ...

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	£		£		£	
	mm	mm	mm	mm	mm	mm	mm							
M2	0.40	45	2.8	2.1	1.60	4.0	12	2	36.88	020			53.92	020
M2,2	0.45	45	2.8	2.1	1.75	4.5	12	2	41.55	022				
M2,3	0.40	45	2.8	2.1	1.90	4.5	12	2	45.05	023				
M2,5	0.45	50	2.8	2.1	2.05	5.0	15	2	34.58	025				
M2,6	0.45	50	2.8	2.1	2.15	5.0	15	2	42.73	026				
M3	0.50	56	3.5	2.7	2.50	6.0	18	3	31.55	030	35.90	030	38.50	030	38.22	030
M3,5	0.60	56	4.0	3.0	2.90	7.0	20	3	33.86	035						
M4	0.70	63	4.5	3.4	3.30	7.0	21	3	32.11	040	37.78	040	41.13	040	41.13	040
M5	0.80	70	6.0	4.9	4.20	8.0	25	3	32.08	050	39.34	050	42.13	050	41.83	050
M6	1.00	80	6.0	4.9	5.00	10.0	30	3	33.40	060	53.92	060	49.54	060	49.54	060
M7	1.00	80	7.0	5.5	6.00	10.0	30	3	50.99	070						
M8	1.25	90	8.0	6.2	6.80	14.0	35	3	37.93	080	61.58	080	54.78	080	54.44	080
M10	1.50	100	10.0	8.0	8.50	16.0	39	3	46.49	100	92.97	100	65.54	100	65.54	100
M12	1.75	110	12.0	9.0	10.20	18.0	44	3	53.18	120			81.54	120	81.54	120



DIN 376 with reduced shank

	U0	U0	U0	U0
	Article no. 22 519 ...	Article no. 22 533 ...	Article no. 22 521 ...	Article no. 22 523 ...

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	£		£		£		£	
	mm	mm	mm	mm	mm	mm									
M3	0.50	56	2.2		2.5	6	3	52.36	030						
M4	0.70	63	2.8	2.1	3.3	7	3	49.98	040						
M5	0.80	70	3.5	2.7	4.2	8	3	37.78	050						
M6	1.00	80	4.5	3.4	5.0	10	3	39.23	060						
M8	1.25	90	6.0	4.9	6.8	14	3	43.48	080						
M10	1.50	100	7.0	5.5	8.5	16	3	55.36	100						
M12	1.75	110	9.0	7.0	10.2	18	3	58.27	120	69.13	120	76.26	120	76.26	120
M14	2.00	110	11.0	9.0	12.0	20	3	74.68	140			148.77	140	168.38	140
M16	2.00	110	12.0	9.0	14.0	22	3	82.21	160	125.38	160	112.87	160	112.87	160
M18	2.50	125	14.0	11.0	15.5	25	3	118.84	180			233.76	180	256.12	180
M20	2.50	140	16.0	12.0	17.5	25	3	123.19	200	192.79	200	191.76	200	244.93	200
M22	2.50	140	18.0	14.5	19.5	27	4	176.82	220			343.85	220		
M24	3.00	160	18.0	14.5	21.0	30	4	155.85	240			299.26	240		
M27	3.00	160	20.0	16.0	24.0	30	4	204.68	270						
M30	3.50	180	22.0	18.0	26.5	35	4	262.79	300						
M33	3.50	180	25.0	20.0	29.5	35	4	516.42	330						
M36	4.00	200	28.0	22.0	32.0	40	4	427.37	360						

Steel	6-20	6-20	6-25	6-25
Stainless steel	4-8	4-8	5-10	5-10
Cast iron	6-15	6-15	10-20	10-20
Non ferrous metals			12-25	12-25
Heat resistant alloys				
Hardened materials				

6

Blind hole – Machine taps, right hand

▲ NCW = with Weldon flat for synchronised CNC machining without length compensation chuck

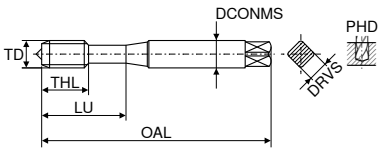
M | Salo-Rex

UNI NCW | UNI | UNI | UNI

C 2–3 | E 1,5–2 | E 1,5–2 | E 1,5–2

ISO 2 6H | ISO 2 6H | ISO 2 6H | ISO 2 6H

TiN | vap. | vap. | TiN



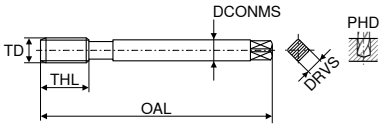
DIN 371 with reinforced shank

HSS-PM | HSS-E | HSS-E | HSS-E

∢ 42° ≤ 1100 N/mm² ≤ 3xD

U0

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	Article no. 22 149 ... £		Article no. 22 524 ... £		Article no. 22 534 ... £		Article no. 22 526 ... £	
	mm	mm	mm	mm	mm	mm	mm									
M3	0.50	70	6.0	4.9	2.5	6	18	3	65.54	030						
M3	0.50	56	3.5	2.7	2.5	6	18	3			32.27	030			37.78	030
M4	0.70	63	4.5	3.4	3.3	7	21	3			32.98	040			41.13	040
M4	0.70	70	6.0	4.9	3.3	7	21	3	71.20	040						
M5	0.80	70	6.0	4.9	4.2	8	25	3	72.53	050	33.86	050	52.30	050	42.13	050
M6	1.00	80	6.0	4.9	5.0	10	30	3	89.94	060	34.30	060	50.14	060	49.54	060
M8	1.25	90	8.0	6.2	6.8	14	35	3	102.12	080	39.21	080	58.97	080	54.78	080
M10	1.50	100	10.0	8.0	8.5	16	39	3	124.50	100	47.80	100	69.13	100	65.54	100



DIN 376 with reduced shank

U0

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	Article no. 22 149 ... £		Article no. 22 525 ... £		Article no. 22 535 ... £		Article no. 22 527 ... £	
	mm	mm	mm	mm	mm	mm									
M12	1.75	110	10	8.0	10.2	18	3	147.74	120						
M12	1.75	110	9	7.0	10.2	18	4			59.72	120	77.15	120	77.73	120
M14	2.00	110	11	9.0	12.0	20	4			112.87	140	114.72	140		
M16	2.00	110	12	9.0	14.0	22	3	201.93	160						
M16	2.00	110	12	9.0	14.0	22	4			84.84	160	115.35	160	112.87	160
M18	2.50	125	14	11.0	15.5	25	4			179.55	180				
M20	2.50	140	16	12.0	17.5	25	4			126.66	200	170.54	200	191.76	200
M22	2.50	140	18	14.5	19.5	27	5			246.64	220				
M24	3.00	160	18	14.5	21.0	30	5			215.16	240				

Steel	6-25	6-20	6-20	6-25
Stainless steel	5-10	4-8	4-8	5-10
Cast iron	10-20	6-15	6-15	10-20
Non ferrous metals	12-25			12-25
Heat resistant alloys				
Hardened materials				

Blind hole – Machine taps, right hand

▲ CNC = for synchronised CNC machining with minimum length compensation chuck

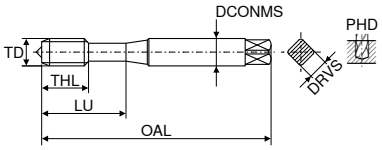
M | Salo-Rex

UNI CNC | C 2–3 | ISO 2X 6HX | TiN

UNI CNC | C 2–3 | ISO 2 6H | TiN GS

UNI CNC | E 1,5–2 | ISO 2 6H | TiN GS

UNI CNC | C 2–3 | 7G | TiN GS



DIN 371 with reinforced shank

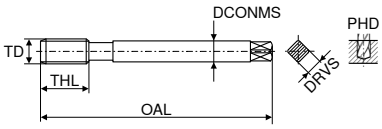
HSS-E ◁ 50° ≤ 1100 N/mm² ≤ 3xD

HSS-E ◁ 45° ≤ 1100 N/mm² ≤ 3xD

HSS-E ◁ 45° ≤ 1100 N/mm² ≤ 3xD

HSS-E ◁ 45° ≤ 1100 N/mm² ≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 416 ...		U0 Article no. 22 544 ...		U0 Article no. 22 546 ...		U0 Article no. 22 594 ...	
	mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
M3	0.50	56	3.5	2.7	2.5	6	18	3	58.32	030	51.27	030			61.47	030
M4	0.70	63	4.5	3.4	3.3	7	21	3	61.02	040	52.30	040			62.47	040
M5	0.80	70	6.0	4.9	4.2	8	25	3	62.75	050	53.60	050	76.26	050	64.79	050
M6	1.00	80	6.0	4.9	5.0	10	30	3	75.82	060	56.22	060	77.24	060	69.72	060
M8	1.25	90	8.0	6.2	6.8	14	35	3	84.25	080	70.89	080	99.67	080	85.13	080
M10	1.50	100	10.0	8.0	8.5	16	39	3	104.38	100	80.91	100	115.21	100	95.58	100



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 417 ...		U0 Article no. 22 545 ...			U0 Article no. 22 595 ...	
	mm	mm	mm	mm	mm	mm		£		£			£	
M12	1.75	110	9	7	10.2	18	3	122.87	120					
M12	1.75	110	9	7	10.2	18	4			108.68	120		129.16	120
M14	2.00	110	11	9	12.0	20	3	175.43	140					
M14	2.00	110	11	9	12.0	20	4			130.88	140		152.41	140
M16	2.00	110	12	9	14.0	22	3	341.73	160					
M16	2.00	110	12	9	14.0	22	4			144.98	160		168.38	160
M20	2.50	140	16	12	17.5	25	3	292.89	200					
M20	2.50	140	16	12	17.5	25	4			208.30	200		241.30	200

Steel	2-25	6-25	6-25	6-25
Stainless steel	1-10	5-10	5-10	5-10
Cast iron		10-20	10-20	10-20
Non ferrous metals	2-20	12-25	12-25	12-25
Heat resistant alloys				
Hardened materials				

6

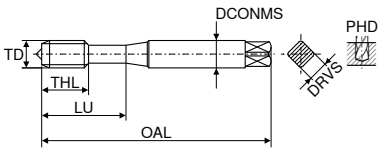
Blind hole – Machine taps, right hand

▲ DRY = for dry machining or minimum quantity lubrication (MMS)

M | Salo-Rex

UNI DRY | C 2–3 | ISO 2 6H | TiN GS

UNI DRY | C 2–3 | ISO 2 6H | TiN

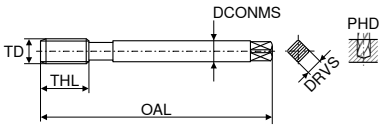


DIN 371 with reinforced shank

HSS-E
∢ 42°
≤ 1100 N/mm²
≤ 3xD

HSS-E
∢ 42°
≤ 1100 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 566 ...		U0 Article no. 22 449 ...	
	mm	mm	mm	mm	mm	mm	mm		£		£	
M3	0.50	56	3.5	2.7	2.5	6	18	3	45.18	**030**		
M4	0.70	63	4.5	3.4	3.3	7	21	3	48.53	**040**		
M5	0.80	70	6.0	4.9	4.2	8	25	3	49.32	**050**	79.85	**050**
M6	1.00	80	6.0	4.9	5.0	10	30	3	56.22	**060**	92.92	**060**
M8	1.25	90	8.0	6.2	6.8	14	35	3	59.15	**080**	102.52	**080**
M10	1.50	100	10.0	8.0	8.5	16	39	3	84.70	**100**	124.51	**100**



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 567 ...		U0 Article no. 22 450 ...	
	mm	mm	mm	mm	mm	mm		£		£	
M12	1.75	110	9	7	10.2	18	4	100.40	**120**	135.03	**120**
M16	2.00	110	12	9	14.0	22	4	156.16	**160**	192.23	**160**
M20	2.50	140	16	12	17.5	25	4	287.18	**200**	314.27	**200**

Steel	**6-25**	**5-45**
Stainless steel	**5-10**	**5-20**
Cast iron		
Non ferrous metals		**20-60**
Heat resistant alloys		
Hardened materials		

Blind hole – Machine taps, right hand

▲ CNC = for synchronised CNC machining with minimum length compensation chuck

▲ TS = for high-speed machining, up to 100 m/min.

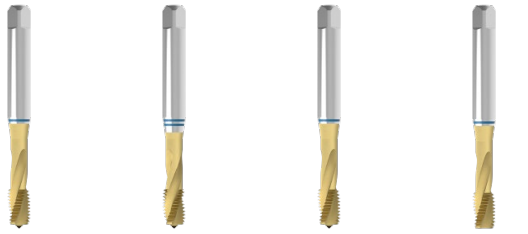
M | SL

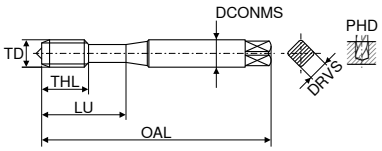
ST TS | HR | ST CNC | ST CNC

C 2–3

ISO 2X 6HX | ISO 2 6H | ISO 2X 6HX | ISO 2X 6HX

TiN | TiN | TiN | TiN

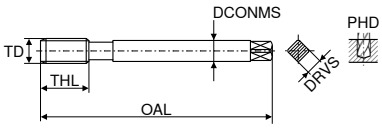




DIN 371 with reinforced shank

HSS-E ◁ 15° ≤ 1050 N/mm² ≤ 2xD | HSS-PM ◁ 25° ≤ 1400 N/mm² ≤ 2xD | HSS-E ◁ 15° ≤ 1100 N/mm² ≤ 2xD | HSS-E ◁ 15° ≤ 1100 N/mm² ≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 406 ... £		U0 Article no. 22 072 ... £		U0 Article no. 22 328 ... £		U0 Article no. 22 443 ... £	
	mm	mm	mm	mm	mm	mm	mm									
M3	0.50	56	3.5	2.7	2.5	6	18	2	54.79	030			50.09	030		
M3	0.50	56	3.5	2.7	2.5	11	18	3			48.53	030				
M4	0.70	63	4.5	3.4	3.3	13	21	3			48.32	040				
M4	0.70	63	4.5	3.4	3.3	7	21	3	58.32	040			52.23	040		
M5	0.80	70	6.0	4.9	4.2	15	25	3			50.99	050				
M5	0.80	70	6.0	4.9	4.2	8	25	3	60.12	050			54.32	050	79.85	050
M6	1.00	80	6.0	4.9	5.0	17	30	3			61.47	060				
M6	1.00	80	6.0	4.9	5.0	10	30	3	73.27	060			67.18	060	92.92	060
M8	1.25	90	8.0	6.2	6.8	20	35	3			66.83	080				
M8	1.25	90	8.0	6.2	6.8	14	35	3	81.62	080			75.82	080	101.75	080
M10	1.50	100	10.0	8.0	8.5	22	39	3			93.41	100				
M10	1.50	100	10.0	8.0	8.5	16	39	3	99.96	100			92.92	100	123.62	100
M12	1.75	110	12.0	9.0	10.2	24	44	3			105.62	120				



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 407 ... £		U0 Article no. 22 329 ... £		U0 Article no. 22 444 ... £	
	mm	mm	mm	mm	mm	mm							
M12	1.75	110	9	7	10.2	18	3	119.32	120	108.81	120	137.60	120
M16	2.00	110	12	9	14.0	22	3	167.82	160	157.18	160	195.29	160
M20	2.50	140	16	12	17.5	25	3	274.56	200	259.34	200		

Steel	20-100	2-6	5-45	5-45
Stainless steel				
Cast iron	20-60		10-30	10-30
Non ferrous metals	20-100		5-30	5-30
Heat resistant alloys	10-25	3-5		
Hardened materials				

Blind hole – Machine taps, right/left hand

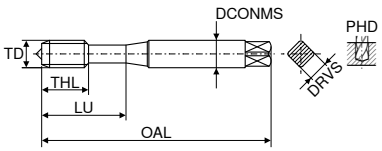
▲ LH = for left hand threads

M | Salo-Rex

ST | C 2–3 | ISO 2 6H

ST | C 2–3 | ISO 2 6H | TiN

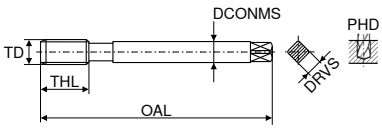
ST LH | C 2–3 | ISO 2 6H



DIN 371 with reinforced shank

HSS-E
∢ 42°
≤ 750 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 082 ...		U0 Article no. 22 084 ...		U0 Article no. 22 138 ...	
	mm	mm	mm	mm	mm	mm	mm		£		£		£	
M2	0.40	45	2.8	2.1	1.60	4.0	12	2	35.32	020	51.17	020		
M2,3	0.40	45	2.8	2.1	1.90	4.5	12	2	38.80	023				
M2,5	0.45	50	2.8	2.1	2.05	5.0	15	2	33.51	025				
M3	0.50	56	3.5	2.7	2.50	6.0	18	3	29.65	030	36.03	030	58.69	030
M3,5	0.60	56	4.0	3.0	2.90	7.0	20	3	32.66	035				
M4	0.70	63	4.5	3.4	3.30	7.0	21	3	29.65	040	38.36	040	52.02	040
M5	0.80	70	6.0	4.9	4.20	8.0	25	3	30.22	050	38.80	050	56.83	050
M6	1.00	80	6.0	4.9	5.00	10.0	30	3	31.55	060	47.66	060	54.78	060
M8	1.25	90	8.0	6.2	6.80	14.0	35	3	37.48	080	52.02	080	66.54	080
M10	1.50	100	10.0	8.0	8.50	16.0	39	3	43.05	100	71.55	100	76.56	100
M12	1.75	110	12.0	9.0	10.20	18.0	44	3	49.17	120				



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 083 ...		U0 Article no. 22 085 ...		U0 Article no. 22 139 ...	
	mm	mm	mm	mm	mm	mm		£		£		£	
M3	0.50	56	2.2		2.5	6	3	38.78	030				
M4	0.70	63	2.8	2.1	3.3	7	3	39.21	040				
M5	0.80	70	3.5	2.7	4.2	8	3	40.39	050				
M6	1.00	80	4.5	3.4	5.0	10	3	47.94	060				
M8	1.25	90	6.0	4.9	6.8	14	3	44.62	080				
M10	1.50	100	7.0	5.5	8.5	16	3			90.07	100		
M12	1.75	110	9.0	7.0	10.2	18	3	56.83	120	85.42	120	105.74	120
M14	2.00	110	11.0	9.0	12.0	20	3	70.12	140				
M16	2.00	110	12.0	9.0	14.0	22	3	78.01	160	109.82	160	154.29	160
M18	2.50	125	14.0	11.0	15.5	25	3	114.62	180				
M20	2.50	140	16.0	12.0	17.5	25	3	117.66	200	185.36	200	226.33	200
M22	2.50	140	18.0	14.5	19.5	27	4	156.88	220				
M24	3.00	160	18.0	14.5	21.0	30	4	148.77	240				
M30	3.50	180	22.0	18.0	26.5	35	4	254.08	300				
M33	3.50	180	25.0	20.0	29.5	35	4	368.82	330				
M36	4.00	200	28.0	22.0	32.0	40	4	368.82	360				

Steel	10-20	10-25	10-20
Stainless steel			
Cast iron			
Non ferrous metals	10-20	10-25	10-20
Heat resistant alloys			
Hardened materials			

Blind hole – Machine taps, right hand

▲ TS = for high-speed machining, up to 100 m/min.

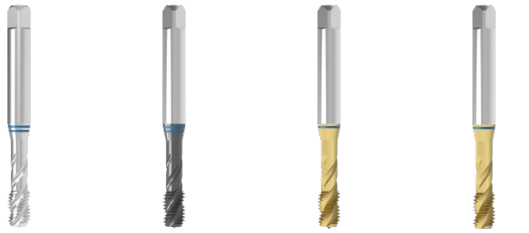
M | Salo-Rex

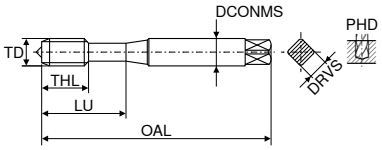
HR | HR | ST TS | ST TS

C 2–3 | C 2–3 | C 2–3 | C 2–3

ISO 2 6H | ISO 2 6H | ISO 2 6H | ISO 2 6H

OSM | TiN | TiN

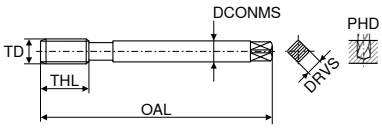




DIN 371 with reinforced shank

HSS-PM ◁ 42° ≤ 1400 N/mm² ≤ 3xD | HSS-PM ◁ 42° ≤ 1400 N/mm² ≤ 3xD | HSS-E ◁ 40° ≤ 1100 N/mm² ≤ 2xD | HSS-E ◁ 40° ≤ 1100 N/mm² ≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 498 ...		U0 Article no. 22 499 ...		U0 Article no. 22 044 ...		U0 Article no. 22 046 ...	
	mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
M3	0.50	56	3.5	2.7	2.5	6	18	3	34.58	030	43.48	030				
M4	0.70	63	4.5	3.4	3.3	7	21	3	32.41	040	43.48	040	56.37	040		
M5	0.80	70	6.0	4.9	4.2	8	25	3	33.40	050	46.33	050	61.60	050	96.78	050
M6	1.00	80	6.0	4.9	5.0	10	30	3	33.51	060	48.53	060	64.50	060	126.39	060
M8	1.25	90	8.0	6.2	6.8	14	35	3	40.20	080	60.14	080	73.65	080	128.42	080
M10	1.50	100	10.0	8.0	8.5	16	39	3	48.09	100	68.70	100	90.22	100	174.78	100



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 045 ...		U0 Article no. 22 047 ...	
	mm	mm	mm	mm	mm	mm		£		£	
M12	1.75	110	9	7	10.2	18	4	108.68	120	191.46	120
M16	2.00	110	12	9	14.0	22	4	157.19	160	293.59	160

Steel	4-12	4-12	20-100	20-100
Stainless steel	6-8	6-8		
Cast iron			20-60	20-60
Non ferrous metals			20-100	20-100
Heat resistant alloys	3-5	3-5	10-25	10-25
Hardened materials				

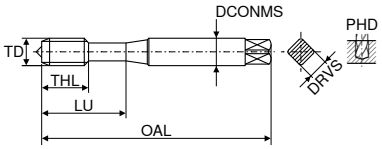
Blind hole – Machine taps, right hand

M | Salo-Rex

VA | C 2–3 | ISO 2 6H | vap.

VA | E 1,5–2 | ISO 2 6H | TiN GS

VA | C 2–3 | ISO 2 6H | TiN GS



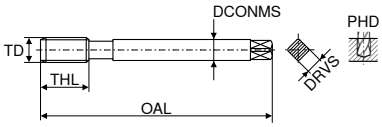
DIN 371 with reinforced shank

HSS-E ◁ 42° ≤ 900 N/mm² ≤ 3xD

HSS-E ◁ 45° ≤ 900 N/mm² ≤ 3xD

HSS-E ◁ 45° ≤ 900 N/mm² ≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 090 ...	£		U0 Article no. 22 042 ...	£		U0 Article no. 22 040 ...	£	
	mm	mm	mm	mm	mm	mm	mm										
M1,6	0.35	40	2.5	2.1	1.25	4	11	2							89.94		**016**
M2	0.40	45	2.8	2.1	1.60	4	12	2	55.43		**020**				49.98		**020**
M2,5	0.45	50	2.8	2.1	2.05	5	15	2	44.62		**025**						
M2,5	0.45	50	2.8	2.1	2.05	5	15	3							47.89		**025**
M3	0.50	56	3.5	2.7	2.50	6	18	3	33.40		**030**				52.30		**030**
M4	0.70	63	4.5	3.4	3.30	7	21	3	34.58		**040**				52.02		**040**
M5	0.80	70	6.0	4.9	4.20	8	25	3	35.02		**050**	77.24		**050**	54.44		**050**
M6	1.00	80	6.0	4.9	5.00	10	30	3	34.93		**060**	79.62		**060**	56.83		**060**
M8	1.25	90	8.0	6.2	6.80	14	35	3	40.77		**080**	100.40		**080**	71.74		**080**
M10	1.50	100	10.0	8.0	8.50	16	39	3	49.82		**100**	116.51		**100**	81.94		**100**



DIN 376 with reduced shank

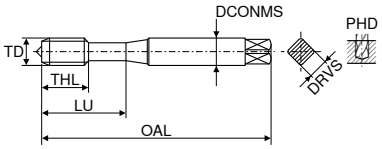
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 091 ...	£		U0 Article no. 22 041 ...	£	
	mm	mm	mm	mm	mm	mm							
M12	1.75	110	9	7.0	10.2	18	4	61.60		**120**	110.86		**120**
M14	2.00	110	11	9.0	12.0	20	4	90.67		**140**	133.06		**140**
M16	2.00	110	12	9.0	14.0	22	4	87.31		**160**	147.74		**160**
M20	2.50	140	16	12.0	17.5	25	4	130.45		**200**	211.80		**200**
M22	2.50	140	18	14.5	19.5	27	5	279.75		**220**			
M24	3.00	160	18	14.5	21.0	30	5	165.61		**240**			
M30	3.50	180	22	18.0	26.5	35	5	350.38		**300**			

Steel		5-12	5-12
Stainless steel	5-10	5-10	5-10
Cast iron			
Non ferrous metals			
Heat resistant alloys			
Hardened materials			

Blind hole – Machine taps, right hand

M | Salo-Rex

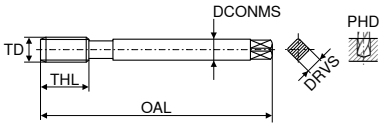
Soft	Soft	NW	NW
C 2–3	C 2–3	C 2–3	C 2–3
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
	CH	vap.	HCr



DIN 371 with reinforced shank

	HSS-E	HSS-E	HSS-E	HSS-E
	∢ 42° ≤ 500 N/mm² ≤ 3xD	∢ 42° ≤ 500 N/mm² ≤ 3xD	∢ 38° ≤ 500 N/mm² ≤ 3xD	∢ 38° ≤ 500 N/mm² ≤ 3xD
	U0	U0	U0	U0
	Article no. 22 326 ...	Article no. 22 324 ...	Article no. 22 086 ...	Article no. 22 088 ...
	£	£	£	£
TD				
M2	48.70 **020**	65.80 **020**	39.23 **020**	46.89 **020**
M2,5	45.67 **025**	63.64 **025**	36.35 **025**	46.94 **025**
M3	37.28 **030**	55.27 **030**		
M3			29.65 **030**	38.78 **030**
M4	37.28 **040**	59.71 **040**		
M4			29.65 **040**	40.84 **040**
M5	38.61 **050**	61.86 **050**		
M5			32.41 **050**	41.13 **050**
M6	38.61 **060**	85.43 **060**		
M6			31.55 **060**	42.29 **060**
M8	46.09 **080**	92.92 **080**		
M8			37.48 **080**	46.18 **080**
M10	54.32 **100**	116.56 **100**		
M10			43.88 **100**	54.78 **100**

TD	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes
M2	0.40	45	2.8	2.1	1.60	4	12	2
M2,5	0.45	50	2.8	2.1	2.05	5	15	2
M3	0.50	56	3.5	2.7	2.50	6	18	2
M3	0.50	56	3.5	2.7	2.50	6	18	3
M4	0.70	63	4.5	3.4	3.30	7	21	2
M4	0.70	63	4.5	3.4	3.30	7	21	3
M5	0.80	70	6.0	4.9	4.20	8	25	2
M5	0.80	70	6.0	4.9	4.20	8	25	3
M6	1.00	80	6.0	4.9	5.00	10	30	2
M6	1.00	80	6.0	4.9	5.00	10	30	3
M8	1.25	90	8.0	6.2	6.80	14	35	2
M8	1.25	90	8.0	6.2	6.80	14	35	3
M10	1.50	100	10.0	8.0	8.50	16	39	2
M10	1.50	100	10.0	8.0	8.50	16	39	3



DIN 376 with reduced shank

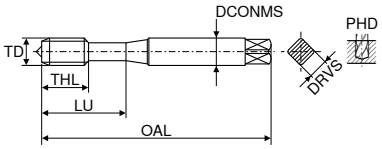
								U0	U0
								Article no. 22 087 ...	Article no. 22 089 ...
								£	£
TD	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes		
M12	1.75	110	9	7	10.2	18	3	56.83 **120**	69.72 **120**
M16	2.00	110	12	9	14.0	22	3	78.01 **160**	96.03 **160**

Steel				
Stainless steel				
Cast iron				
Non ferrous metals	**15-40**	**15-40**	**10-20**	**12-25**
Heat resistant alloys				
Hardened materials				

6

Blind hole – Machine taps, right hand

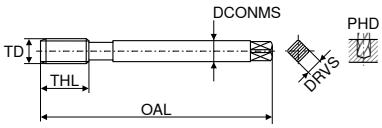
M | SL



DIN 371 with reinforced shank

	Ti	Ti	Ni	Ni
	C 2–3	C 2–3	C 2–3	C 2–3
	ISO 2X 6HX	ISO 2X 6HX	ISO 2 6H	ISO 2X 6HX
	TiN	TiCN	TiCN	TiCN
	HSS-PM	HSS-PM	HSS-PM	HSS-PM
	◁ 30° ≤ 1400 N/mm² ≤ 1,5xD	◁ 15° ≤ 1200 N/mm² ≤ 2xD	◁ 15° ≤ 1600 N/mm² ≤ 1,5xD	◁ 15° ≤ 1600 N/mm² ≤ 2xD
	U0	U0	U0	U0

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	Article no. 22 076 ...		Article no. 22 163 ...		Article no. 22 073 ...		Article no. 22 424 ...	
	mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
M3	0.50	56	3.5	2.7	2.5	11	18	2			48.32	030			67.59	030
M3	0.50	56	3.5	2.7	2.5	11	18	3					107.67	030		
M3	0.50	56	3.5	2.7	2.5	6	18	3	48.32	030						
M3,5	0.60	56	4.0	3.0	2.9	12	20	3			52.87	035				
M4	0.70	63	4.5	3.4	3.3	7	21	3	50.42	040						
M4	0.70	63	4.5	3.4	3.3	13	21	3			53.92	040	107.67	040	70.62	040
M5	0.80	70	6.0	4.9	4.2	8	25	3	50.84	050						
M5	0.80	70	6.0	4.9	4.2	15	25	3			54.34	050	96.33	050	73.27	050
M6	1.00	80	6.0	4.9	5.0	10	30	3	54.90	060						
M6	1.00	80	6.0	4.9	5.0	17	30	3			72.65	060	112.87	060	92.14	060
M8	1.25	90	8.0	6.2	6.8	14	35	3	60.03	080						
M8	1.25	90	8.0	6.2	6.8	20	35	3			79.03	080	166.06	080	100.86	080
M10	1.50	100	10.0	8.0	8.5	16	39	3	83.67	100						
M10	1.50	100	10.0	8.0	8.5	22	39	3			97.34	100	145.26	100	126.32	100
M12	1.75	110	12.0	9.0	10.2	18	44	3	94.42	120						



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	Article no. 22 164 ...		Article no. 22 124 ...		Article no. 22 425 ...	
	mm	mm	mm	mm	mm	mm		£		£		£	
M12	1.75	110	9	7.0	10.2	24	3	110.41	120			146.44	120
M12	1.75	110	9	7.0	10.2	24	4			188.86	120		
M14	2.00	110	11	9.0	12.0	26	3					215.15	140
M14	2.00	110	11	9.0	12.0	26	4			277.54	140		
M16	2.00	110	12	9.0	14.0	27	3	154.87	160			201.37	160
M16	2.00	110	12	9.0	14.0	27	5			228.07	160		
M20	2.50	140	16	12.0	17.5	32	3	265.84	200			350.84	200
M24	3.00	160	18	14.5	21.0	34	3	306.36	240				

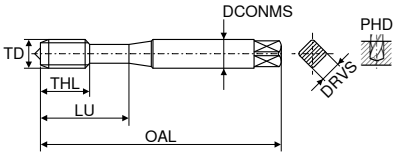
Steel	2-5	6-8		
Stainless steel		4-10		
Cast iron				
Non ferrous metals		10-12		
Heat resistant alloys	2-6	4-6	2-4	2-4
Hardened materials				

Blind hole – Machine taps, right hand

▲ ES = extra short

M | Salo-Rex

UNI ES | E 1,5–2 | ISO 2 6H | vap.



DIN 352 with reinforced shank

HSS-E
42°
≤ 1100 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 500 ... £	
	mm	mm	mm	mm	mm	mm	mm			
M3	0.50	40	3.5	2.7	2.5	6	18	3	28.19	**030**
M3,5	0.60	45	4.0	3.0	2.9	7	20	3	35.49	**035**
M4	0.70	45	4.5	3.4	3.3	7	22	3	28.61	**040**
M5	0.80	50	6.0	4.9	4.2	9	25	3	28.19	**050**
M6	1.00	56	6.0	4.9	5.0	10	28	3	30.95	**060**
M8	1.25	63	6.0	4.9	6.8	14		3	35.45	**080**
M10	1.50	70	7.0	5.5	8.5	16		3	40.69	**100**
M12	1.75	75	9.0	7.0	10.2	18		4	52.58	**120**
M16	2.00	80	12.0	9.0	14.0	22		4	83.38	**160**

Steel	**6-20**
Stainless steel	**4-8**
Cast iron	**6-15**
Non ferrous metals	
Heat resistant alloys	
Hardened materials	

6

Blind hole – Machine taps, right hand

▲ AUT = short version for automatic use

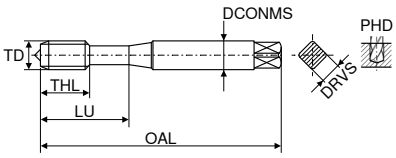
▲ ES = extra short

M | SL

ST ES | ST AUT/ES

C 2–3 | E 1,5–2

ISO 2 6H | ISO 2 6H



DIN 352 with reinforced shank

HSS-E
◁ 15°
≤ 750 N/mm²
≤ 2xD

HSS-E
◁ 15°
≤ 750 N/mm²
≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 016 ... £		U0 Article no. 22 001 ... £	
	mm	mm	mm	mm	mm	mm	mm					
M3	0.50	40	3.5	2.7	2.5	10	18	2	25.27	030	30.65	030
M4	0.70	45	4.5	3.4	3.3	12	22	3	25.09	040	31.55	040
M5	0.80	50	6.0	4.9	4.2	14	25	3	25.94	050	31.67	050
M6	1.00	56	6.0	4.9	5.0	16	28	3	26.51	060	34.43	060
M8	1.25	63	6.0	4.9	6.8	20		3	30.22	080	38.94	080
M10	1.50	70	7.0	5.5	8.5	22		3	38.80	100	47.74	100
M12	1.75	75	9.0	7.0	10.2	24		3	49.32	120		
M14	2.00	80	11.0	9.0	12.0	26		3	71.55	140		
M16	2.00	80	12.0	9.0	14.0	27		3	78.24	160		
M20	2.50	95	16.0	12.0	17.5	32		3	116.66	200		

Steel	**10-20**	**10-20**
Stainless steel		
Cast iron		
Non ferrous metals	**10-20**	**10-20**
Heat resistant alloys		
Hardened materials		

Blind hole – Machine taps, right hand

▲ EL = extra long, with double overall length

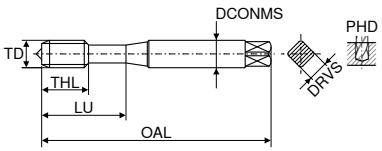
M | Salo-Rex

UNI EL | ST EL

C 2–3 | C 2–3

ISO 2 6H | ISO 2 6H

vap.

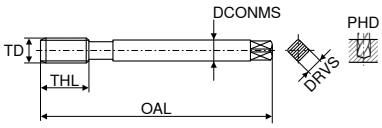


DIN 371 with reinforced shank

HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD

HSS-E ◁ 42° ≤ 750 N/mm² ≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 538 ... £		U0 Article no. 22 422 ... £	
	mm	mm	mm	mm	mm	mm	mm					
M3	0.50	100	3.5	2.7	2.5	6	18	3	57.38	**030**	71.88	**030**
M4	0.70	125	4.5	3.4	3.3	7	21	3	57.29	**040**	70.22	**040**
M5	0.80	140	6.0	4.9	4.2	8	25	3	64.42	**050**	78.46	**050**
M6	1.00	160	6.0	4.9	5.0	10	30	3	67.70	**060**	81.62	**060**
M8	1.25	180	8.0	6.2	6.8	14	35	3	77.15	**080**	98.28	**080**



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 539 ... £		U0 Article no. 22 423 ... £	
	mm	mm	mm	mm	mm	mm					
M6	1.00	160	4.5	3.4	5.0	10	3	86.14	**060**	81.62	**060**
M8	1.25	180	6.0	4.9	6.8	14	3	104.02	**080**	98.28	**080**
M10	1.50	200	7.0	5.5	8.5	16	3	89.94	**100**	107.85	**100**
M12	1.75	224	9.0	7.0	10.2	18	3	111.72	**120**	140.36	**120**
M14	2.00	224	11.0	9.0	12.0	20	3	194.53	**140**	204.42	**140**
M16	2.00	224	12.0	9.0	14.0	22	3	164.03	**160**	198.32	**160**
M18	2.50	250	14.0	11.0	15.5	25	3	304.63	**180**	300.51	**180**
M20	2.50	280	16.0	12.0	17.5	25	3	260.02	**200**	268.48	**200**

Steel	**6-20**	**5-25**
Stainless steel	**4-8**	
Cast iron	**6-15**	
Non ferrous metals		**10-40**
Heat resistant alloys		
Hardened materials		

6

Blind hole – Machine taps, right hand

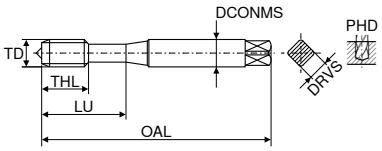
▲ EL = extra long, with double overall length

M | SL

ST
EL

E
1,5–2

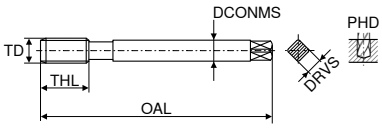
ISO 2
6H



DIN 371 with reinforced shank

HSS-E
∢ 15°
≤ 750 N/mm²
≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 078 ...	£	
	mm	mm	mm	mm	mm	mm	mm				
M3	0.50	100	3.5	2.7	2.5	11	18	2		54.87	**030**
M4	0.70	125	4.5	3.4	3.3	13	21	3		54.87	**040**
M5	0.80	140	6.0	4.9	4.2	15	25	3		63.06	**050**
M6	1.00	160	6.0	4.9	5.0	17	30	3		66.24	**060**
M8	1.25	180	8.0	6.2	6.8	20	35	3		77.69	**080**



DIN 376 with reduced shank

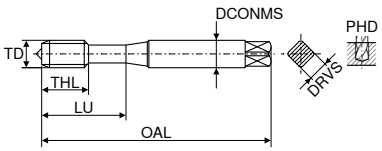
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 080 ...	£	
	mm	mm	mm	mm	mm	mm				
M6	1.00	160	4.5	3.4	5.0	17	3		67.70	**060**
M8	1.25	180	6.0	4.9	6.8	20	3		81.07	**080**
M10	1.50	200	7.0	5.5	8.5	22	3		86.88	**100**
M12	1.75	224	9.0	7.0	10.2	24	3		110.41	**120**
M14	2.00	224	11.0	9.0	12.0	26	3		159.96	**140**
M16	2.00	224	12.0	9.0	14.0	27	3		159.65	**160**
M20	2.50	280	16.0	12.0	17.5	32	3		221.08	**200**

Steel	**10-20**
Stainless steel	
Cast iron	
Non ferrous metals	**10-20**
Heat resistant alloys	
Hardened materials	

Blind hole – Machine taps, right hand

▲ NC = for synchronised CNC machining with minimum length compensation chuck

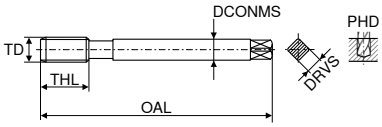
M



DIN 371 with reinforced shank

	UNI	UNI	UNI	UNI	UNI NC
	C 2–3	C 2–3	C 2–3	C 2–3	C 2–3
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
	vap.	TiN	TiN	TiCN	TiN GS
	HSS-E ◁ 35° ≤ 1000 N/mm² ≤ 2,5xD	HSS-E ◁ 35° ≤ 1000 N/mm² ≤ 2,5xD	HSS-PM ◁ 50° ≤ 1000 N/mm² ≤ 2,5xD	HSS-E ◁ 45° ≤ 1000 N/mm² ≤ 3xD	HSS-E ◁ 45° ≤ 1000 N/mm² ≤ 3xD
	T9	T9	T9	T9	T9
TD	Article no. 23 118 ...	Article no. 23 120 ...	Article no. 23 026 ...	Article no. 23 122 ...	Article no. 23 124 ...
	£	£	£	£	£
M2	28.61 020	32.66 020			
M2,5	27.50 025	32.11 025			
M3	21.81 030	27.38 030	13.09 030	28.81 030	30.95 030
M4	22.68 040	30.65 040	13.09 040	30.95 040	32.08 040
M5	23.40 050	31.67 050	14.10 050	32.11 050	34.43 050
M6	24.70 060	39.44 060	16.33 060	40.77 060	46.49 060
M8	27.95 080	43.05 080	19.37 080	44.62 080	49.98 080
M10	31.98 100	57.70 100	24.40 100	56.37 100	63.50 100

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
	mm	mm	mm	mm	mm	mm	mm	
M2	0.40	45	2.8	2.1	1.60	4	12	2
M2,5	0.45	50	2.8	2.1	2.05	5	14	2
M3	0.50	56	3.5	2.7	2.50	6	18	3
M4	0.70	63	4.5	3.4	3.30	7	21	3
M5	0.80	70	6.0	4.9	4.20	8	25	3
M6	1.00	80	6.0	4.9	5.00	10	30	3
M8	1.25	90	8.0	6.2	6.80	14	35	3
M10	1.50	100	10.0	8.0	8.50	16	39	3



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 119 ... £	T9 Article no. 23 121 ... £	T9 Article no. 23 027 ... £	T9 Article no. 23 123 ... £	T9 Article no. 23 125 ... £
	mm	mm	mm	mm	mm	mm						
M3	0.50	56	2.2		2.5	6	3	9.51 030				
M4	0.70	63	2.8	2.1	3.3	7	3	8.62 040				
M5	0.80	70	3.5	2.7	4.2	8	3	8.39 050				
M6	1.00	80	4.5	3.4	5.0	10	3	8.28 060				
M8	1.25	90	6.0	4.9	6.8	14	3	8.72 080				
M10	1.50	100	7.0	5.5	8.5	16	3	11.76 100				
M12	1.75	110	9.0	7.0	10.2	18	3	13.32 120	62.69 120			
M12	1.75	110	9.0	7.0	10.2	18	4			28.87 120	66.83 120	73.81 120
M14	2.00	110	11.0	9.0	12.0	20	3		42.96 14000			
M14	2.00	110	11.0	9.0	12.0	20	4			41.52 140		
M16	2.00	110	12.0	9.0	14.0	22	3	19.58 160	80.08 160			
M16	2.00	110	12.0	9.0	14.0	22	4			41.52 160	89.18 160	98.20 160
M18	2.50	125	14.0	11.0	15.5	25	3		67.94 18000			
M20	2.50	140	16.0	12.0	17.5	25	3	29.54 200	155.65 200	47.57 200		
M20	2.50	140	16.0	12.0	17.5	25	4				161.69 200	179.99 200
M22	2.50	140	18.0	14.5	19.5	27	4		99.59 22000			
M24	3.00	160	18.0	14.5	21.0	34	4		150.79 240			
M27	3.00	160	20.0	16.0	24.0	30	4		124.57 27000			
M30	3.50	180	22.0	18.0	26.5	35	4		138.33 30000			
M33	3.50	180	25.0	20.0	29.5	35	4		199.46 33000			
M36	4.00	200	28.0	22.0	32.0	40	4		216.72 36000			

Steel	2-25	5-45	10-20	5-45	5-45
Stainless steel	2-8	5-15	8-15	5-15	5-15
Cast iron	5-20	10-25	20-25	10-25	10-25
Non ferrous metals	10-20	15-40	20-25	15-40	15-40
Heat resistant alloys					
Hardened materials					

6

Blind hole – Machine taps, right hand

▲ NCW = with Weldon flat for synchronised CNC machining without length compensation chuck

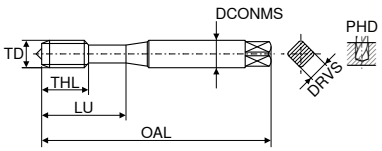
M

UNI NCW | FE | FE-HF | VA

C 2–3

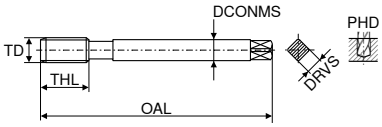
ISO 2 6H

TiCN (UNI NCW, FE-HF)



DIN 371 with reinforced shank

	HSS-PM	HSS-E	HSS-E	HSS-E
	◁ 35° ≤ 1000 N/mm² ≤ 2,5xD	◁ 35° ≤ 850 N/mm² ≤ 2,5xD	◁ 35° ≤ 1100 N/mm² ≤ 2,5xD	◁ 35° ≤ 1200 N/mm² ≤ 2,5xD
	T9	T9	T9	T9
TD	Article no. 23 126 ...	Article no. 23 216 ...	Article no. 23 312 ...	Article no. 23 414 ...
	£	£	£	£
M2	0.40 45 2.8 2.1 1.60 4 12 2	12.52 020		20.79 020
M2,5	0.45 50 2.8 2.1 2.05 5 14 2	25.27 025		27.50 025
M3	0.50 56 3.5 2.7 2.50 6 18 3	12.67 030	26.37 030	13.83 030
M3	0.50 70 6.0 4.9 2.50 6 18 3	33.13 030		
M4	0.70 63 4.5 3.4 3.30 7 21 3	12.67 040	28.81 040	13.83 040
M4	0.70 70 6.0 4.9 3.30 7 21 3	37.94 040		
M5	0.80 70 6.0 4.9 4.20 8 25 3	37.78 050	12.70 050	29.65 050	14.39 050
M6	1.00 80 6.0 4.9 5.00 10 30 3	37.78 060	12.70 060	40.84 060	14.39 060
M8	1.25 90 8.0 6.2 6.80 14 35 3	47.74 080	16.54 080	44.62 080	18.31 080
M10	1.50 100 10.0 8.0 8.50 16 39 3	57.73 100	19.82 100	55.64 100	22.09 100



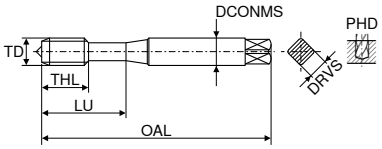
DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 127 ... £	T9 Article no. 23 217 ... £	T9 Article no. 23 313 ... £	T9 Article no. 23 415 ... £
	mm	mm	mm	mm	mm	mm					
M12	1.75	110	10	8.0	10.2	18	3	73.23 120			
M12	1.75	110	9	7.0	10.2	18	3		26.74 120	64.37 120	29.51 120
M14	2.00	110	11	9.0	12.0	20	3		32.41 140		
M16	2.00	110	12	9.0	14.0	22	3	144.44 160	40.69 160	86.88 160	45.05 160
M20	2.50	140	16	12.0	17.5	25	3		63.92 200	155.59 200	68.56 200
M24	3.00	160	18	14.5	21.0	30	4				93.57 240

Steel	5-45	5-25	5-45	
Stainless steel	5-15			3-10
Cast iron	10-25			
Non ferrous metals	15-40			
Heat resistant alloys	5-8			
Hardened materials				

Blind hole – Machine taps, right hand

M

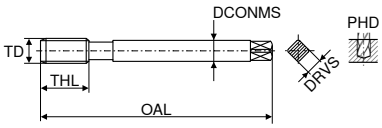


DIN 371 with reinforced shank

VA	VA	VA	AL	AL
C 2–3	C 2–3	C 2–3	C 2–3	C 2–3
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
TiN		TiN		CrN

HSS-E	HSS-PM	HSS-PM	HSS-E	HSS-E
◁ 45° ≤ 1200 N/mm² ≤ 3xD	◁ 40° ≤ 1200 N/mm² ≤ 2,5xD	◁ 40° ≤ 1200 N/mm² ≤ 2,5xD	◁ 35° ≤ 500 N/mm² ≤ 2,5xD	◁ 35° ≤ 500 N/mm² ≤ 2,5xD
T9	T9	T9	T9	T9
Article no. 23 416 ...	Article no. 23 426 ...	Article no. 23 456 ...	Article no. 23 616 ...	Article no. 23 614 ...
£	£	£	£	£

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes										
	mm	mm	mm	mm	mm	mm	mm											
M2	0.40	45	2.8	2.1	1.60	4	12	2	33.56	**020**								
M2,5	0.45	50	2.8	2.1	2.05	5	14	2	32.11	**025**								
M3	0.50	56	3.5	2.7	2.50	6	18	3	27.38	**030**	11.76	**030**	13.09	**030**	12.67	**030**	26.93	**030**
M4	0.70	63	4.5	3.4	3.30	7	21	3	30.65	**040**	11.86	**040**	14.33	**040**	12.67	**040**	26.93	**040**
M5	0.80	70	6.0	4.9	4.20	8	25	3	31.67	**050**	12.20	**050**	14.55	**050**	12.70	**050**	27.95	**050**
M6	1.00	80	6.0	4.9	5.00	10	30	3	40.63	**060**	12.42	**060**	18.69	**060**	12.70	**060**	27.95	**060**
M8	1.25	90	8.0	6.2	6.80	14	35	3	43.05	**080**	14.55	**080**	20.04	**080**	16.54	**080**	32.98	**080**
M10	1.50	100	10.0	8.0	8.50	16	39	3	60.57	**100**	17.46	**100**	27.64	**100**	19.82	**100**	40.39	**100**



DIN 376 with reduced shank

	T9	T9	T9	T9	T9
	Article no. 23 417 ...	Article no. 23 427 ...	Article no. 23 457 ...	Article no. 23 617 ...	Article no. 23 615 ...
	£	£	£	£	£

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes								
	mm	mm	mm	mm	mm	mm									
M12	1.75	110	9	7.0	10.2	18	3			28.87	**120**	39.62	**120**	26.74	**120**	49.98	**120**
M12	1.75	110	9	7.0	10.2	18	4	65.82	**120**								
M14	2.00	110	11	9.0	12.0	20	4			38.06	**140**						
M16	2.00	110	12	9.0	14.0	22	3			41.41	**160**	49.80	**160**				
M16	2.00	110	12	9.0	14.0	22	4	80.08	**160**								
M20	2.50	140	16	12.0	17.5	25	3			61.67	**200**	98.92	**200**				
M20	2.50	140	16	12.0	17.5	25	4	126.10	**200**								
M24	3.00	160	18	14.5	21.0	30	4			78.00	**240**						

Steel																		
Stainless steel									**8-20**			**5-10**			**8-20**			
Cast iron																		
Non ferrous metals																	**10-20**	**15-40**
Heat resistant alloys																		
Hardened materials																		

6

Through hole / Blind hole – Machine taps, right hand

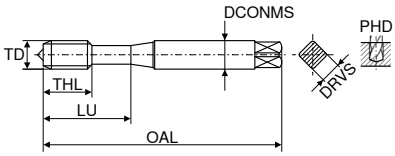
M | TWIN

ST | HR | AMPCO

C 2–3

ISO 2X 6HX

nitr.



DIN 371 with reinforced shank

	HSS-E	HSS-E	HSS-PM
	0° ≤ 750 N/mm² ≤ 2xD	0° ≤ 1400 N/mm² ≤ 2xD	0° ≤ 800 N/mm² ≤ 2xD
	U0	U0	U0
TD	Article no. 22 028 ...	Article no. 22 006 ...	Article no. 22 030 ...
	£	£	£

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes					
	mm	mm	mm	mm	mm	mm	mm						
M1,2	0.25	40	2.5	2.1	0.95	5	13	2	48.32	**012** [1]			
M1,4	0.30	40	2.5	2.1	1.10	6	13	2	39.21	**014** [1]			
M1,6	0.35	40	2.5	2.1	1.25	6	11	2	35.06	**016**			
M1,7	0.35	40	2.5	2.1	1.35	6	11	2	38.80	**017**			
M1,8	0.35	40	2.5	2.1	1.45	6	11	2	36.03	**018**			
M2	0.40	45	2.8	2.1	1.60	7	12	3	30.22	**020**			
M2,2	0.45	45	2.8	2.1	1.75	7	12	3	30.79	**022**			
M2,3	0.40	45	2.8	2.1	1.90	7	12	3	35.02	**023**			
M2,5	0.45	50	2.8	2.1	2.05	9	14	3	29.65	**025**			
M2,6	0.45	50	2.8	2.1	2.15	9	14	3	31.98	**026**			
M3	0.50	56	3.5	2.7	2.50	11	18	3	24.70	**030**	35.06	**030**	35.45	**030**
M3,5	0.60	56	4.0	3.0	2.90	12	20	3	25.27	**035**				
M4	0.70	63	4.5	3.4	3.30	13	21	3	24.66	**040**	35.92	**040**	36.18	**040**
M5	0.80	70	6.0	4.9	4.20	15	25	3	25.27	**050**	38.36	**050**	36.21	**050**
M6	1.00	80	6.0	4.9	5.00	17	30	3	25.09	**060**	37.93	**060**	35.45	**060**
M7	1.00	80	7.0	5.5	6.00	17	30	3	36.33	**070**				
M8	1.25	90	8.0	6.2	6.80	20	35	3	28.38	**080**	41.61	**080**	40.80	**080**
M10	1.50	100	10.0	8.0	8.50	22	39	3	36.35	**100**	52.75	**100**	51.87	**100**
M12	1.75	110	12.0	9.0	10.20	24	44	3	46.18	**120**				

Steel	**10-20**	**6-15**	
Stainless steel			
Cast iron		**6-15**	
Non ferrous metals	**10-20**		
Heat resistant alloys		**3-5**	**3-5**
Hardened materials			

1) Tol. 4H/5H ≤ M1.4

DIN 376 can be found on the next page

Through hole / Blind hole – Machine taps, right hand

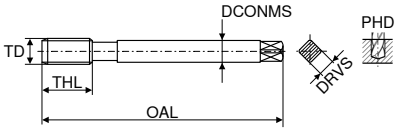
M | TWIN

ST | HR | AMPCO

C 2–3

ISO 2X 6HX

nitr.



DIN 376 with reduced shank

HSS-E | HSS-E | HSS-PM

0° | 0° | 0°

≤ 750 N/mm² | ≤ 1400 N/mm² | ≤ 800 N/mm²

≤ 2xD | ≤ 2xD | ≤ 2xD

U0 | U0 | U0

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	Article no. 22 029 ...		Article no. 22 007 ...		Article no. 22 031 ...	
	mm	mm	mm	mm	mm	mm		£		£		£	
M4	0.70	63	2.8	2.1	3.3	13	3	32.11	**040**				
M5	0.80	70	3.5	2.7	4.2	15	3	32.41	**050**				
M6	1.00	80	4.5	3.4	5.0	17	3	32.41	**060**				
M8	1.25	90	6.0	4.9	6.8	20	3	40.84	**080**				
M10	1.50	100	7.0	5.5	8.5	22	3	46.18	**100**				
M12	1.75	110	9.0	7.0	10.2	24	3	46.94	**120**	65.84	**120**		
M12	1.75	110	9.0	7.0	10.2	24	4					89.85	**120**
M14	2.00	110	11.0	9.0	12.0	26	3	64.95	**140**				
M16	2.00	110	12.0	9.0	14.0	27	3	69.30	**160**	95.90	**160**		
M16	2.00	110	12.0	9.0	14.0	27	4					130.43	**160**
M18	2.50	125	14.0	11.0	15.5	30	4	102.27	**180**				
M20	2.50	140	16.0	12.0	17.5	32	4	104.16	**200**			173.74	**200**
M22	2.50	140	18.0	14.5	19.5	32	4	142.52	**220**				
M24	3.00	160	18.0	14.5	21.0	34	4	141.05	**240**			212.09	**240**
M33	3.50	180	25.0	20.0	29.5	40	4	278.91	**330**				

Steel	**10-20**	**6-15**	
Stainless steel			
Cast iron		**6-15**	
Non ferrous metals	**10-20**		
Heat resistant alloys		**3-5**	**3-5**
Hardened materials			

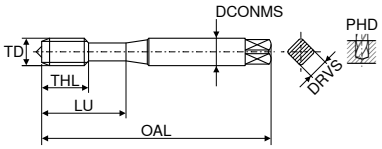
6

Through hole / Blind hole – Machine taps, right hand

M | TWIN

GG | C 2–3 | ISO 2X 6HX | nitr.

GG | C 2–3 | ISO 2X 6HX | nitr.

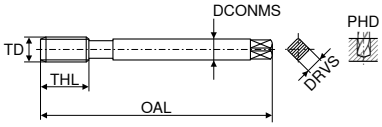


DIN 371 with reinforced shank

HSS-E
0°
≤ 1050 N/mm²
≤ 2xD

HSS-E
0°
≤ 1050 N/mm²
≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 032 ...		U0 Article no. 22 036 ...	
	mm	mm	mm	mm	mm	mm	mm		£		£	
M2	0.40	45	2.8	2.1	1.60	7	12	3	31.55	**020**		
M2,5	0.45	50	2.8	2.1	2.05	9	14	3	32.41	**025**		
M3	0.50	56	3.5	2.7	2.50	11	18	3	27.18	**030**		
M3,5	0.60	56	4.0	3.0	2.90	12	20	3	29.65	**035**		
M4	0.70	63	4.5	3.4	3.30	13	21	3	27.79	**040**		
M5	0.80	70	6.0	4.9	4.20	15	25	3	29.65	**050**	43.73	**050**
M6	1.00	80	6.0	4.9	5.00	17	30	3	29.65	**060**	43.62	**060**
M8	1.25	90	8.0	6.2	6.80	20	35	3	34.09	**080**	49.11	**080**
M10	1.50	100	10.0	8.0	8.50	22	39	3	40.77	**100**	58.55	**100**



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 033 ...		U0 Article no. 22 037 ...	
	mm	mm	mm	mm	mm	mm		£		£	
M4	0.70	63	2.8	2.1	3.3	13	3	43.28	**040**		
M5	0.80	70	3.5	2.7	4.2	15	3	35.32	**050**		
M6	1.00	80	4.5	3.4	5.0	17	3	34.93	**060**		
M8	1.25	90	6.0	4.9	6.8	20	3	38.22	**080**		
M10	1.50	100	7.0	5.5	8.5	22	3	43.28	**100**		
M12	1.75	110	9.0	7.0	10.2	24	3	52.30	**120**	67.26	**120**
M14	2.00	110	11.0	9.0	12.0	26	3	64.42	**140**	92.97	**140**
M16	2.00	110	12.0	9.0	14.0	27	3	74.53	**160**	91.92	**160**
M18	2.50	125	14.0	11.0	15.5	30	4	110.41	**180**		
M20	2.50	140	16.0	12.0	17.5	32	4	110.41	**200**	141.48	**200**
M22	2.50	140	18.0	14.5	19.5	32	4	164.44	**220**		
M24	3.00	160	18.0	14.5	21.0	34	4	146.87	**240**		

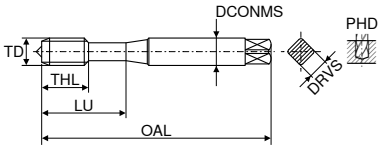
Steel		
Stainless steel		
Cast iron	**10-20**	**10-20**
Non ferrous metals		
Heat resistant alloys		
Hardened materials		

Through hole / Blind hole – Machine taps, right hand

M | TWIN

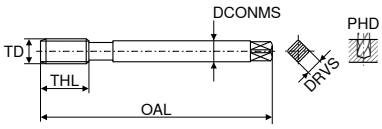
HT | D 4–5 | ISO 2X 6HX | OSM

HT | C 2–3 | ISO 2X 6HX | TiCN



DIN 371 with reinforced shank

									Solid carbide 0° ≤ 63 HRC ≤ 1,5xD		HSS-PM 0° 44 - 52 HRC ≤ 1,5xD	
									U0		U0	
TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	**Article no. 22 806 ...**		**Article no. 22 227 ...**	
	mm	mm	mm	mm	mm	mm	mm		£		£	
M3	0.50	63	4.5	3.4	2.55	6	18	4	174.90	**030**		
M4	0.70	63	4.5	3.4	3.40	8	20	4	174.90	**040**		
M5	0.80	70	6.0	4.9	4.30	10	26	4	200.76	**050**		
M6	1.00	80	6.0	4.9	5.00	10	30	4			151.64	**060**
M6	1.00	80	6.0	4.9	5.10	12	28	4	211.37	**060**		
M8	1.25	90	8.0	6.2	6.80	14	35	5			163.26	**080**
M8	1.25	90	8.0	6.2	6.90	15	35	5	242.16	**080**		
M10	1.50	100	10.0	8.0	8.50	18	38	5	307.09	**100**		
M10	1.50	100	10.0	8.0	8.50	16	39	5			204.42	**100**
M12	1.75	110	12.0	9.0	10.40	21	41	5	568.13	**120**		
M16	2.00	110	16.0	12.0	14.20	24	44	6	807.09	**160**		



DIN 376 with reduced shank

								U0	
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	**Article no. 22 228 ...**	
	mm	mm	mm	mm	mm	mm		£	
M12	1.75	110	9	7	10.4	18	5	254.78	**120**
M16	2.00	110	12	9	14.2	22	6	350.84	**160**

Steel	
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
Hardened materials	**1-3** **1-3**

6

Through hole / Blind hole – Machine taps, right hand

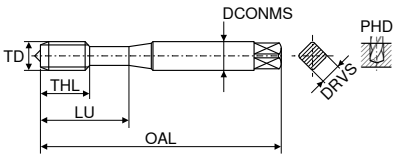
▲ ES = extra short

M | TWIN

ST
ES

C
2–3

ISO 2X
6HX



DIN 352 with reinforced shank

HSS-E
0°
≤ 750 N/mm²
≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 018 ... £	
	mm	mm	mm	mm	mm	mm	mm			
M2	0.40	36	2.8	2.1	1.60	8		3	38.78	**020**
M2,5	0.45	40	2.8	2.1	2.05	9		3	38.78	**025**
M3	0.50	40	3.5	2.7	2.50	10	18	3	29.89	**030**
M4	0.70	45	4.5	3.4	3.30	12	22	3	29.89	**040**
M5	0.80	50	6.0	4.9	4.20	14	25	3	29.89	**050**
M6	1.00	56	6.0	4.9	5.00	16	28	3	31.98	**060**
M8	1.25	63	6.0	4.9	6.80	20		3	36.53	**080**
M10	1.50	70	7.0	5.5	8.50	22		3	48.01	**100**
M12	1.75	75	9.0	7.0	10.20	24		3	48.32	**120**

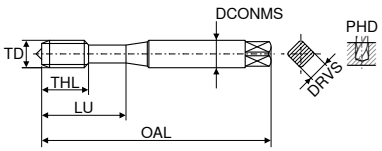
Steel	**10-20**
Stainless steel	
Cast iron	
Non ferrous metals	**10-20**
Heat resistant alloys	
Hardened materials	

Through hole / Blind hole – Machine taps, right hand

▲ EL = extra long, with double overall length

M | TWIN

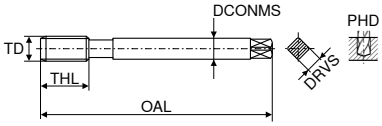
HR EL | C 2–3 | ISO 2X 6HX | nitr.



DIN 371 with reinforced shank

HSS-E
0°
≤ 1400 N/mm²
≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 122 ...	£
	mm	mm	mm	mm	mm	mm	mm			
M3	0.50	100	3.5	2.7	2.5	11	18	3	69.13	**030**
M4	0.70	125	4.5	3.4	3.3	13	21	3	69.13	**040**
M5	0.80	140	6.0	4.9	4.2	15	25	3	74.53	**050**
M6	1.00	160	6.0	4.9	5.0	17	30	3	78.15	**060**
M8	1.25	180	8.0	6.2	6.8	20	35	3	90.07	**080**



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 123 ...	£
	mm	mm	mm	mm	mm	mm			
M10	1.50	200	7	5.5	8.5	22	3	104.02	**100**
M12	1.75	224	9	7.0	10.2	24	3	123.48	**120**
M16	2.00	224	12	9.0	14.0	27	3	192.79	**160**
M20	2.50	280	16	12.0	17.5	32	4	265.41	**200**

Steel	**6-15**
Stainless steel	
Cast iron	**6-15**
Non ferrous metals	
Heat resistant alloys	**3-5**
Hardened materials	

Through hole / Blind hole – Machine taps, right hand

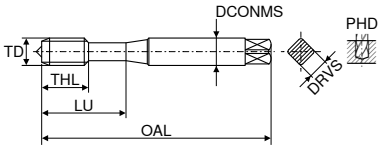
M

GG

C
2–3

ISO 2X
6HX

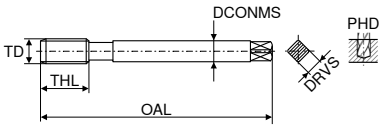
TiCN



DIN 371 with reinforced shank

HSS-E
0°
≤ 900 N/mm²
≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	T9 Article no. 23 512 ...	
	mm	mm	mm	mm	mm	mm	mm		£	
M3	0.50	56	3.5	2.7	2.5	11	18	3	25.94	**030**
M4	0.70	63	4.5	3.4	3.3	13	21	3	29.51	**040**
M5	0.80	70	6.0	4.9	4.2	15	25	3	29.78	**050**
M6	1.00	80	6.0	4.9	5.0	17	30	3	38.78	**060**
M8	1.25	90	8.0	6.2	6.8	20	35	3	41.61	**080**
M10	1.50	100	10.0	8.0	8.5	22	39	3	56.88	**100**



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 513 ...	
	mm	mm	mm	mm	mm	mm		£	
M12	1.75	110	9	7	10.2	24	3	64.08	**120**

Steel	
Stainless steel	
Cast iron	**10-30**
Non ferrous metals	
Heat resistant alloys	
Hardened materials	

Through hole / Blind hole – Machine thread formers, right hand

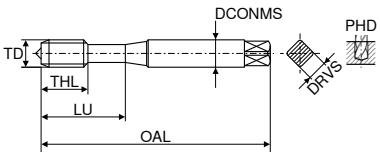
M | Spanlos

EC | C 2–3 | ISO 2X 6HX | Ti200

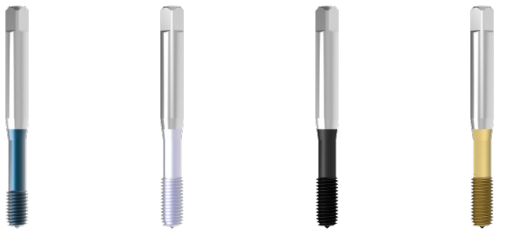
EC | C 2–3 | ISO 2X 6HX | HCr

EC | C 2–3 | ISO 2X 6HX | TiN GS

EC | C 2–3 | ISO 2X 6HX | TiN



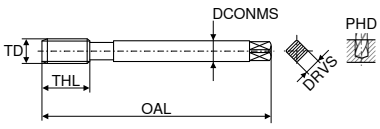
DIN 2174 with reinforced shank



HSS-PM ≤ 1400 N/mm² ≤ 1,5xD | HSS-E ≤ 1100 N/mm² ≤ 1,5xD | HSS-E ≤ 1100 N/mm² ≤ 1,5xD | HSS-E ≤ 1100 N/mm² ≤ 1,5xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	U0 Article no. 22 112 ... £		U0 Article no. 22 128 ... £		U0 Article no. 22 136 ... £		U0 Article no. 22 100 ... £	
	mm	mm	mm	mm	mm	mm	mm								
M1	0.25	40	2.5	2.1	0.90	5	6.5							80.04	**010** [1]
M1,2	0.25	40	2.5	2.1	1.10	5	6.5							73.40	**012** [1]
M1,4	0.30	40	2.5	2.1	1.28	6	9.0							69.13	**014** [1]
M1,6	0.35	40	2.5	2.1	1.47	6	9.0							67.26	**016**
M1,7	0.35	40	2.5	2.1	1.57	6	9.0							69.13	**017**
M2	0.40	45	2.8	2.1	1.85	7	10.0			82.21	**020**			44.90	**020**
M2,5	0.45	50	2.8	2.1	2.30	9	14.0					74.96	**025**		
M2,5	0.45	50	2.8	2.1	2.33	9	14.0			69.13	**025**			45.47	**025**
M2,6	0.45	50	2.8	2.1	2.43	9	14.0							47.80	**026**
M3	0.50	56	3.5	2.7	2.80	6	18.0	71.74	**030**						
M3	0.50	56	3.5	2.7	2.80	11	18.0			50.17	**030**	61.47	**030**	41.41	**030**
M3,5	0.60	56	4.0	3.0	3.25	12	20.0							39.76	**035**
M4	0.70	63	4.5	3.4	3.70	13	21.0			52.02	**040**	61.58	**040**	42.43	**040**
M4	0.70	63	4.5	3.4	3.70	7	21.0	75.25	**040**						
M5	0.80	70	6.0	4.9	4.65	15	25.0			54.78	**050**	65.10	**050**	44.46	**050**
M5	0.80	70	6.0	4.9	4.65	8	25.0	80.04	**050**						
M6	1.00	80	6.0	4.9	5.60	10	30.0	95.76	**060**						
M6	1.00	80	6.0	4.9	5.60	17	30.0			54.78	**060**	72.21	**060**	50.99	**060**
M8	1.25	90	8.0	6.2	7.40	20	35.0							56.08	**080**
M8	1.25	90	8.0	6.2	7.45	20	35.0			61.58	**080**	78.60	**080**		
M8	1.25	90	8.0	6.2	7.45	14	35.0	108.68	**080**						
M10	1.50	100	10.0	8.0	9.35	16	39.0	136.11	**100**						
M10	1.50	100	10.0	8.0	9.35	22	39.0			82.21	**100**	94.36	**100**	70.77	**100**

1) Tol. ISO 1X 4HX ≤ M1.4



DIN 2174 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	U0 Article no. 22 101 ... £	
	mm	mm	mm	mm	mm	mm		
M12	1.75	110	9	7	11.25	24	86.88	**120**
M16	2.00	110	12	9	15.10	27	130.41	**160**

Steel	**8-30**	**8-25**	**8-30**	**8-30**
Stainless steel	**8-15**		**8-15**	**8-15**
Cast iron				
Non ferrous metals	**12-25**	**10-30**	**12-25**	**12-25**
Heat resistant alloys				
Hardened materials				

6

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

M | Spanlos

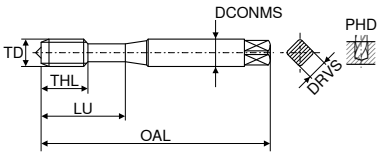
EC SN | C 2–3 | ISO 2X 6HX | nitr.

EC SN | C 2–3 | ISO 2X 6HX | HCr

EC SN | C 2–3 | ISO 3X 6GX | TiN

EC SN | C 2–3 | ISO 2X 6HX | TiN GS

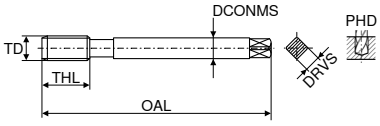
EC SN | C 2–3 | ISO 2X 6HX | TiN



DIN 2174 with reinforced shank

HSS-E ≤ 1100 N/mm² ≤ 3xD | HSS-E ≤ 1100 N/mm² ≤ 3xD | HSS-E ≤ 1100 N/mm² ≤ 3xD | HSS-E ≤ 1100 N/mm² ≤ 3xD | HSS-E ≤ 1100 N/mm² ≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 104 ... £		U0 Article no. 22 107 ... £		U0 Article no. 22 108 ... £		U0 Article no. 22 154 ... £		U0 Article no. 22 105 ... £	
	mm	mm	mm	mm	mm	mm	mm											
M2	0.40	45	2.8	2.1	1.85	7	10	3									52.75	020
M2,5	0.45	50	2.8	2.1	2.33	9	14	3									49.17	025
M3	0.50	56	3.5	2.7	2.80	11	18	3					43.16	030	64.85	030		
M3	0.50	56	3.5	2.7	2.80	11	18	4	32.27	030	44.46	030					45.48	030
M3,5	0.60	56	4.0	3.0	3.25	12	20	3									49.17	035
M4	0.70	63	4.5	3.4	3.70	13	21	4					46.33	040	68.01	040		
M4	0.70	63	4.5	3.4	3.70	13	21	5	38.22	040	45.18	040					47.23	040
M5	0.80	70	6.0	4.9	4.65	15	25	4					49.17	050	70.60	050		
M5	0.80	70	6.0	4.9	4.65	15	25	5	39.34	050	47.80	050					48.81	050
M6	1.00	80	6.0	4.9	5.60	17	30	4					55.22	060	77.85	060		
M6	1.00	80	6.0	4.9	5.60	17	30	5	40.20	060	48.32	060					55.79	060
M8	1.25	90	8.0	6.2	7.45	20	35	6	48.32	080	56.45	080	63.06	080	84.41	080	61.60	080
M10	1.50	100	10.0	8.0	9.35	22	39	6	62.61	100	71.64	100	76.56	100	102.71	100	76.86	100



DIN 2174 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 106 ... £	
	mm	mm	mm	mm	mm	mm			
M12	1.75	110	9	7	11.25	24	6	105.91	120
M14	2.00	110	11	9	13.10	26	5	184.80	140
M16	2.00	110	12	9	15.10	27	7	155.15	160

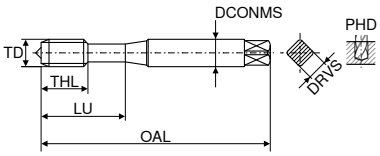
Steel	8-30	8-30	8-30	8-30	8-30
Stainless steel	8-15	8-15	8-15	8-15	8-15
Cast iron					
Non ferrous metals	10-30	10-30	12-25	12-25	12-25
Heat resistant alloys					
Hardened materials					

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

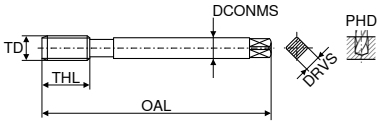
M | Spanlos

EC SN | EC SN | NEO SN | NEO SN
C 2–3 | C 2–3 | C 2–3 | C 2–3
ISO 2X 6HX | ISO 2X 6HX | ISO 2X 6HX | ISO 2X 6HX
Ti200 | Ti200 | TiN | TiN



DIN 2174 with reinforced shank

	HSS-PM ≤ 1400 N/mm² ≤ 3xD		HSS-PM ≤ 1400 N/mm² ≤ 3xD		HSS-PM ≤ 1100 N/mm² ≤ 3xD		HSS-PM ≤ 1100 N/mm² ≤ 3xD	
	U0		U0		U0		U0	
TD	Article no. 22 114 ...		Article no. 22 118 ...		Article no. 22 452 ...		Article no. 22 453 ...	
TP / OAL / DCONMS / DRVS / PHD / THL / LU / Flutes	£		£		£		£	
M2 0.40 45 2.8 2.1 1.85 4 12 3	107.36	020						
M2,5 0.45 50 2.8 2.1 2.33 5 14 3	83.97	025						
M3 0.50 56 3.5 2.7 2.80 6 18 3	79.10	030						
M3 0.50 56 3.5 2.7 2.80 11 18 4					71.39	030		
M4 0.70 63 4.5 3.4 3.70 13 21 4					73.40	040		
M4 0.70 63 4.5 3.4 3.70 7 21 4	81.54	040						
M5 0.80 70 6.0 4.9 4.65 8 25 4	89.07	050	111.85	050				
M5 0.80 70 6.0 4.9 4.65 15 25 4					78.09	050	97.67	050
M6 1.00 80 6.0 4.9 5.60 10 30 4	106.20	060	130.88	060				
M6 1.00 80 6.0 4.9 5.60 17 30 5					98.45	060	118.98	060
M8 1.25 90 8.0 6.2 7.45 20 35 5					110.34	080	133.36	080
M8 1.25 90 8.0 6.2 7.45 14 35 5	118.98	080	147.00	080				
M10 1.50 100 10.0 8.0 9.35 22 39 5					142.78	100	170.85	100
M10 1.50 100 10.0 8.0 9.35 16 39 5	152.41	100	185.95	100				



DIN 2174 with reduced shank

							U0	U0	U0
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	Article no. 22 115 ...	Article no. 22 452 ...	Article no. 22 454 ...
	mm	mm	mm	mm	mm	mm		£	£	£
M12	1.75	110	9	7	11.25	18	5	161.69 120		
M12	1.75	110	9	7	11.25	24	6		166.29 120	199.84 120
M16	2.00	110	12	9	15.10	27	6		269.98 160	305.06 160

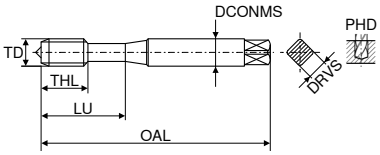
Steel	8-30	8-30	5-30	5-30
Stainless steel	8-15	8-15	5-15	5-15
Cast iron				
Non ferrous metals	12-25	12-25	5-10	5-10
Heat resistant alloys			5-20	5-20
Hardened materials				

6

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

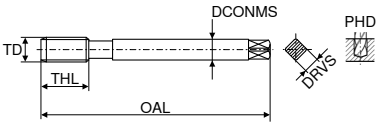
M



DIN 2174 with reinforced shank

	UNI	UNI	UNI SN	UNI SN
	C 2–3	C 2–3	C 2–3	C 2–3
	ISO 2X 6HX	ISO 2X 6HX	ISO 2X 6HX	ISO 2X 6HX
	TiN	CrN	TiN	CrN
	HSS-E ◁ 0° ≤ 850 N/mm² ≤ 3xD	HSS-E ◁ 0° ≤ 850 N/mm² ≤ 3xD	HSS-E ◁ 0° ≤ 850 N/mm² ≤ 3xD	HSS-E ◁ 0° ≤ 850 N/mm² ≤ 3xD
	T9	T9	T9	T9
	Article no. 23 810 ...	Article no. 23 812 ...	Article no. 23 814 ...	Article no. 23 816 ...
	£	£	£	£

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes								
	mm	mm	mm	mm	mm	mm	mm									
M2	0.40	45	2.8	2.1	1.85	7	12		39.66	020	44.47	020				
M2	0.40	45	2.8	2.1	1.85	7	12	3					45.05	020	50.75	020
M2,5	0.45	50	2.8	2.1	2.33	9	14	3					40.84	025	44.47	025
M2,5	0.45	50	2.8	2.1	2.33	9	14		35.32	025	39.23	025				
M3	0.50	56	3.5	2.7	2.80	11	18	3					27.38	030	32.20	030
M3	0.50	56	3.5	2.7	2.80	11	18		25.71	030	28.61	030				
M4	0.70	63	4.5	3.4	3.70	13	21	4					58.66	040	32.20	040
M4	0.70	63	4.5	3.4	3.70	13	21		26.08	040	29.22	040				
M5	0.80	70	6.0	4.9	4.65	15	25	4					61.86	050	34.87	050
M5	0.80	70	6.0	4.9	4.65	15	25		27.95	050	30.22	050				
M6	1.00	80	6.0	4.9	5.60	17	30	4					70.99	060	34.87	060
M6	1.00	80	6.0	4.9	5.60	17	30		33.56	060	30.22	060				
M8	1.25	90	8.0	6.2	7.45	20	35	5					74.16	080	41.26	080
M8	1.25	90	8.0	6.2	7.45	20	35		37.48	080	34.51	080				
M10	1.50	100	10.0	8.0	9.35	22	39	5					47.86	100	51.59	100
M10	1.50	100	10.0	8.0	9.35	22	39		49.98	100	44.47	100				



DIN 2174 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes								
	mm	mm	mm	mm	mm	mm									
M12	1.75	110	9	7.0	11.25	24		57.10	120	55.64	120				
M12	1.75	110	9	7.0	11.25	24	5					62.57	120	62.57	120
M16	2.00	110	12	9.0	15.10	27	6					119.41	160	127.55	160
M16	2.00	110	12	9.0	15.10	27		107.36	160	109.01	160				
M18	2.50	125	14	11.0	16.80	30	6					138.53	18000		
M20	2.50	140	16	12.0	18.80	32	6					128.85	20000		
M24	3.00	160	18	14.5	22.60	34	6					172.14	24000		

Steel	10-50	10-50	10-50	10-50
Stainless steel	5-20	5-20	5-20	5-20
Cast iron				
Non ferrous metals	10-50	10-50	10-50	10-50
Heat resistant alloys	5-15	5-15	5-15	5-15
Hardened materials				

Through hole – machine taps for wire thread inserts, right hand

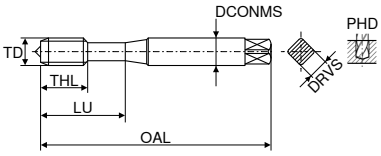
EG M | Stabil

UNI

B
4–5

6H mod

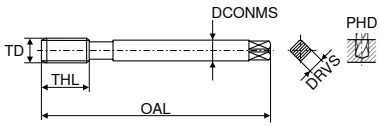
nitr. + vap.



DIN 40435 with reinforced shank

HSS-E
0°
≤ 1100 N/mm²
≤ 4xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 662 ... £	
	mm	mm	mm	mm	mm	mm	mm			
EG-M2,5	0.45	56	3.5	2.7	2.65	11	18	3	50.59	**025**
EG-M3	0.50	63	4.5	3.4	3.15	10	21	3	42.64	**030**
EG-M4	0.70	70	6.0	4.9	4.20	12	25	3	44.67	**040**
EG-M5	0.80	80	6.0	4.9	5.25	13	30	3	42.99	**050**
EG-M6	1.00	90	8.0	6.2	6.30	17	35	3	43.83	**060**
EG-M8	1.25	100	10.0	8.0	8.40	18	39	3	51.41	**080**



DIN 40435 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 663 ... £	
	mm	mm	mm	mm	mm	mm			
EG-M10	1.50	100	9	7.0	10.50	22	3	69.57	**100**
EG-M12	1.75	110	11	9.0	12.50	26	3	81.54	**120**
EG-M16	2.00	125	14	11.0	16.50	27	3	115.05	**160**
EG-M20	2.50	160	18	14.5	20.75	34	3	162.52	**200**

Steel	**6-20**
Stainless steel	**4-8**
Cast iron	**6-15**
Non ferrous metals	
Heat resistant alloys	
Hardened materials	

Blind hole – machine taps for wire thread inserts, right hand

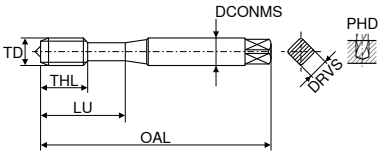
EG M | Salo-Rex

Soft | UNI

C 2–3 | C 2–3

6H mod | 6H mod

CH | vap.

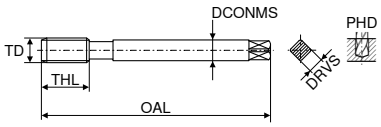


DIN 40435 with reinforced shank

HSS-E
42°
≤ 500 N/mm²
≤ 3xD

HSS-E
42°
≤ 1100 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 280 ...		U0 Article no. 22 664 ...	
	mm	mm	mm	mm	mm	mm	mm		£		£	
EG-M2,5	0.45	56	3.5	2.7	2.65	5	18	2	69.32	025		
EG-M2,5	0.45	56	3.5	2.7	2.65	5	18	3			48.53	025
EG-M3	0.50	63	4.5	3.4	3.15	5	21	2	67.18	030		
EG-M3	0.50	63	4.5	3.4	3.15	5	21	3			43.45	030
EG-M4	0.70	70	6.0	4.9	4.20	8	25	2	67.18	040		
EG-M4	0.70	70	6.0	4.9	4.20	8	25	3			44.32	040
EG-M5	0.80	80	6.0	4.9	5.25	8	30	2	91.25	050		
EG-M5	0.80	80	6.0	4.9	5.25	8	30	3			41.83	050
EG-M6	1.00	90	8.0	6.2	6.30	10	35	2	92.92	060		
EG-M6	1.00	90	8.0	6.2	6.30	10	35	3			46.18	060
EG-M8	1.25	100	10.0	8.0	8.40	16	39	2	116.56	080		
EG-M8	1.25	100	10.0	8.0	8.40	16	39	3			50.83	080



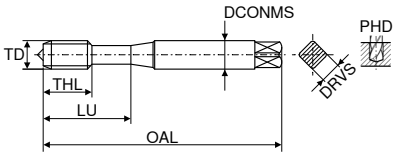
DIN 40435 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 665 ...	
	mm	mm	mm	mm	mm	mm		£	
EG-M10	1.50	100	9	7.0	10.50	15	5	67.84	100
EG-M12	1.75	110	11	9.0	12.50	20	4	83.25	120
EG-M16	2.00	125	14	11.0	16.50	20	5	116.95	160
EG-M20	2.50	160	18	14.5	20.75	30	4	169.53	200

Steel		6-20
Stainless steel		4-8
Cast iron		6-15
Non ferrous metals	15-40	
Heat resistant alloys		
Hardened materials		

Through hole – Machine taps, right hand

MF | Stabil



DIN 371 with reinforced shank

	UNI	UNI	VG
	B 4–5	B 4–5	B 4–5
	ISO 2 6H	ISO 2 6H	ISO 2X 6HX
	nitr. + vap.	TiN	TiN
	HSS-E	HSS-E	HSS-E
	0° ≤ 1100 N/mm² ≤ 4xD	0° ≤ 1100 N/mm² ≤ 4xD	0° ≤ 1100 N/mm² ≤ 4xD
	U0	U0	U0
	Article no. 22 590 ...	Article no. 22 550 ...	Article no. 22 587 ...
	£	£	£

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes						
	mm	mm	mm	mm	mm	mm	mm							
M4x0,5	0.50	63	4.5	3.4	3.5	10	21	3	61.58	**040**	72.65	**040**		
M4x0,5	0.50	63	4.5	3.4	3.5	5	21	3					72.65	**040**
M5x0,5	0.50	70	6.0	4.9	4.5	11	25	3	61.58	**050**	72.65	**050**		
M6x0,5	0.50	80	6.0	4.9	5.5	13	30	3	66.54	**060**	89.94	**060**		
M6x0,75	0.75	80	6.0	4.9	5.2	13	30	3	66.54	**062**	89.94	**062**		
M6x0,75	0.75	80	6.0	4.9	5.2	8	30	3					86.23	**062**
M6x0,5	0.50	80	6.0	4.9	5.5	5	30	3					86.23	**060**
M5x0,5	0.50	70	6.0	4.9	4.5	5	25	3					72.65	**050**
M8x1	1.00	90	8.0	6.2	7.0	17	35	3	64.79	**084**	86.23	**080**		
M10x1	1.00	90	10.0	8.0	9.0	18	35	4	66.54	**102**	98.37	**100**		

Steel	**6-20**	**6-25**	**6-15**
Stainless steel	**4-8**	**5-10**	**5-10**
Cast iron	**6-15**	**10-20**	
Non ferrous metals		**12-25**	**10-20**
Heat resistant alloys			
hardened materials			

DIN 374 can be found on the next page

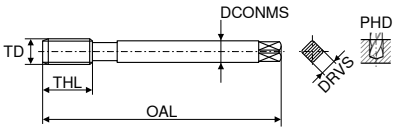
6

Through hole – Machine taps, right/left hand

▲ TS = for high-speed machining, up to 100 m/min.

▲ LH = for left hand threads

MF | Stabil



DIN 374 with reduced shank

ST LH	ST TS	UNI	UNI	VG
B 4–5	B 4–5	B 4–5	B 4–5	B 4–5
ISO 2 6H	ISO 2X 6HX	ISO 2 6H	ISO 2 6H	ISO 2X 6HX
	TiN	nitr. + vap.	TiN	TiN

HSS-E | HSS-E | HSS-E | HSS-E | HSS-E

∢ 0° | ∢ 0° | ∢ 0° | ∢ 0° | ∢ 0°

≤ 750 N/mm² ≤ 4xD | ≤ 1100 N/mm² ≤ 4xD | ≤ 1100 N/mm² ≤ 4xD | ≤ 1100 N/mm² ≤ 4xD | ≤ 1100 N/mm² ≤ 4xD

U0 | U0 | U0 | U0 | U0

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	Article no. 22 210 ...		Article no. 22 193 ...		Article no. 22 551 ...		Article no. 22 552 ...		Article no. 22 570 ...	
	mm	mm	mm	mm	mm	mm		£		£		£		£		£	
M6x0,75	0.75	80	4.5	3.4	5.2	13	3					46.18	062				
M6x0,5	0.50	80	4.5	3.4	5.5	13	3					100.68	060				
M8x0,75	0.75	80	6.0	4.9	7.2	14	3	109.56	082			50.26	082				
M8x1	1.00	90	6.0	4.9	7.0	17	3	82.21	084			47.36	084	76.56	080		
M8x1	1.00	90	6.0	4.9	7.0	10	4			98.37	080					86.23	080
M10x1	1.00	90	7.0	5.5	9.0	18	4	86.14	102			47.94	102	82.21	100		
M10x0,75	0.75	90	7.0	5.5	9.2	18	4					69.61	100				
M10x1,25	1.25	100	7.0	5.5	8.8	16	4									114.72	102
M10x1,25	1.25	100	7.0	5.5	8.8	22	3					104.76	104				
M10x1	1.00	90	7.0	5.5	9.0	10	4			105.75	100					104.02	100
M12x1	1.00	100	9.0	7.0	11.0	18	4	109.56	120			56.83	120	111.28	121		
M12x1,5	1.50	100	9.0	7.0	10.5	22	3	114.72	124			53.33	124	83.09	120		
M12x1,25	1.25	100	9.0	7.0	10.8	22	3					76.10	122				
M12x1,5	1.50	100	9.0	7.0	10.5	15	4			122.03	120					116.21	120
M14x1,5	1.50	100	11.0	9.0	12.5	22	3	148.77	144			74.53	144	112.74	140		
M14x1	1.00	100	11.0	9.0	13.0	18	4					145.69	140				
M14x1,5	1.50	100	11.0	9.0	12.5	15	4			170.17	140					138.57	140
M16x1,5	1.50	100	12.0	9.0	14.5	22	3	148.77	162			84.56	162	116.14	160		
M16x1,5	1.50	100	12.0	9.0	14.5	15	4			172.15	160					159.07	160
M18x1	1.00	110	14.0	11.0	17.0	20	5					230.54	180				
M18x1,5	1.50	110	14.0	11.0	16.5	25	4	172.15	182			103.01	182				
M18x2	2.00	125	14.0	11.0	16.0	26	3					192.06	184				
M18x1,5	1.50	110	14.0	11.0	16.5	17	4			211.37	180					196.40	180
M20x1,5	1.50	125	16.0	12.0	18.5	25	4	196.40	202			112.74	202	173.74	200		
M20x1	1.00	125	16.0	12.0	19.0	20	5					256.82	200				
M20x1,5	1.50	125	16.0	12.0	18.5	17	4			265.41	200					246.64	200
M22x1,5	1.50	125	18.0	14.5	20.5	25	4					117.66	222	254.36	220		
M26x1,5	1.50	140	18.0	14.5	24.5	28	4					176.33	260				
M24x2	2.00	140	18.0	14.5	22.0	27	4					245.81	244				
M25x1,5	1.50	140	18.0	14.5	23.5	28	4					414.60	250				
M24x1,5	1.50	140	18.0	14.5	22.5	27	4					135.68	242				
M27x2	2.00	140	20.0	16.0	25.0	28	4					434.79	272				
M28x1,5	1.50	140	20.0	16.0	26.5	28	5					198.30	280				
M30x1,5	1.50	150	22.0	18.0	28.5	28	5					214.29	302				

Steel	10-20	20-100	6-20	6-25	6-15
Stainless steel			4-8	5-10	5-10
Cast iron		20-60	6-15	10-20	
Non ferrous metals	10-20	20-100		12-25	10-20
Heat resistant alloys		10-25			
hardened materials					

Through hole – Machine taps, right hand

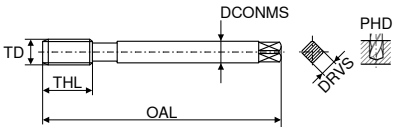
MF

UNI

B
4–5

ISO 2
6H

TiN



DIN 374 with reduced shank

HSS-PM

0°
≤ 1000 N/mm²
≤ 3xD

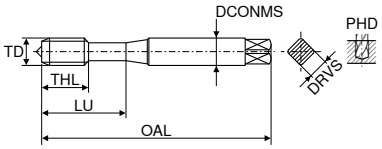
6

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 041 ...	
	mm	mm	mm	mm	mm	mm		£	
M8x1	1.00	90	6	4.9	7.0	17	3	20.48	**081**
M10x1	1.00	90	7	5.5	9.0	18	4	23.39	**102**
M10x1,25	1.25	100	7	5.5	8.8	22	3	25.07	**104**
M12x1	1.00	100	9	7.0	11.0	18	4	28.87	**120**
M12x1,25	1.25	100	9	7.0	10.8	22	3	30.11	**122**
M12x1,5	1.50	100	9	7.0	10.5	22	3	26.86	**121**
M14x1,5	1.50	100	11	9.0	12.5	22	3	33.13	**144**
M14x1,25	1.25	100	11	9.0	12.8	22	3	34.81	**142**
M16x1,5	1.50	100	12	9.0	14.5	22	3	37.49	**162**
M18x1,5	1.50	110	14	11.0	16.5	17	4	49.58	**182**
M20x1,5	1.50	125	16	12.0	18.5	17	4	66.92	**202**
M24x1,5	1.50	140	18	14.5	22.5	27	4	72.30	**242**
M24x2	2.00	140	18	14.5	22.0	27	4	82.38	**244**
M22x1,5	1.50	125	18	14.5	20.5	25	4	63.01	**222**

Steel	**10-20**
Stainless steel	**8-15**
Cast iron	**20-25**
Non ferrous metals	**20-25**
Heat resistant alloys	
hardened materials	

Through hole – Machine taps, right hand

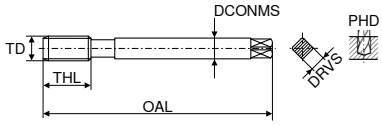
MF



DIN 371 with reinforced shank

	UNI	UNI	FE	FE-HF	VA
	B 4–5	B 4–5	B 4–5	B 4–5	B 4–5
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
	nitr. + vap.	TiN		TiCN	TiN
	HSS-E ◁ 0° ≤ 1000 N/mm² ≤ 3xD	HSS-E ◁ 0° ≤ 1000 N/mm² ≤ 3xD	HSS-E ◁ 0° ≤ 850 N/mm² ≤ 3xD	HSS-E ◁ 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E ◁ 0° ≤ 1200 N/mm² ≤ 4xD
	T9	T9	T9	T9	T9

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	Article no. 23 140 ...		Article no. 23 142 ...		Article no. 23 240 ...		Article no. 23 340 ...		Article no. 23 440 ...	
	mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£	
M4x0,5	0.50	63	4.5	3.4	3.5	10	21	3	35.02	040	39.76	040	20.24	040				
M6x0,75	0.75	80	6.0	4.9	5.2	13	30	3	37.36	062	49.32	062	20.24	062	55.22	062	49.82	062
M6x0,5	0.50	80	6.0	4.9	5.5	13	30	3	37.36	060	49.32	060	20.92	060				
M5x0,5	0.50	70	6.0	4.9	4.5	11	25	3	35.32	050	40.84	050	20.92	050	42.29	050	40.84	050



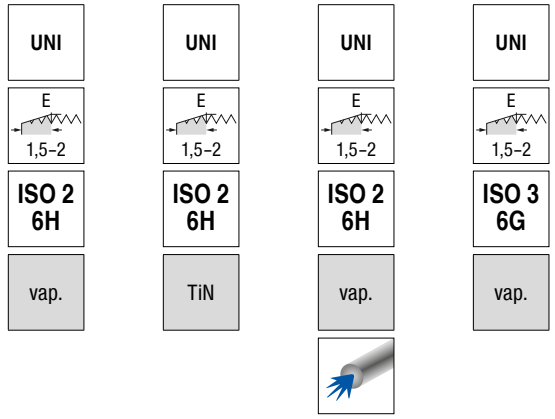
DIN 374 with reduced shank

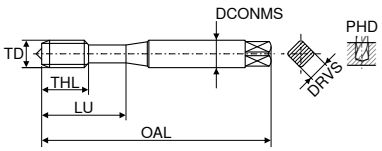
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	Article no. 23 141 ...		Article no. 23 143 ...		Article no. 23 241 ...		Article no. 23 341 ...		Article no. 23 441 ...	
	mm	mm	mm	mm	mm	mm		£		£		£		£		£	
M8x0,75	0.75	80	6	4.9	7.0	14	3							56.30	082		
M8x0,5	0.50	80	6	8.0	7.5	14	3					27.75	080				
M8x1	1.00	90	6	4.9	7.0	17	3	35.92	084			22.25	084	54.34	084	52.75	084
M8x1	1.00	90	6	4.9	7.0	17	4			49.54	084						
M8x0,75	0.75	80	6	4.9	7.2	14	3	39.34	082	51.59	082	23.54	082			55.01	082
M10x0,75	0.75	90	7	5.5	9.2	18	4	56.37	100	70.18	100	32.98	100				
M10x1,25	1.25	100	7	5.5	8.8	22	3	47.74	104	64.85	104	27.18	104				
M10x1	1.00	90	7	5.5	9.0	18	4	37.36	102	53.03	102	26.31	102	60.45	102	56.30	102
M12x1,5	1.50	100	9	7.0	10.5	22	3	40.84	124	56.30	124	29.07	124	65.36	124	60.14	124
M12x1,25	1.25	100	9	7.0	10.8	22	3	48.32	122	65.84	122	31.67	122				
M12x1	1.00	100	9	7.0	11.0	18	4	43.05	120	62.03	120	29.78	120	68.01	120	64.85	120
M14x1	1.00	100	11	9.0	13.0	18	4	58.55	140	74.53	140	37.36	140				
M14x1,5	1.50	100	11	9.0	12.5	22	3	54.34	144	74.82	144	35.90	144	82.94	144	81.07	144
M16x1	1.00	100	12	9.0	15.0	18	4	65.82	160	86.88	160	49.54	160				
M16x1,5	1.50	100	12	9.0	14.5	22	3	65.82	162	86.88	162	45.48	162	95.29	162	92.70	162
M18x1	1.00	110	14	11.0	17.0	20	5					64.95	180				
M18x1,5	1.50	110	14	11.0	16.5	25	4	74.53	182	107.36	182	59.14	182				
M20x1,5	1.50	125	16	12.0	18.5	25	4	86.88	202	135.97	202	65.54	202				
M20x1	1.00	125	16	12.0	19.0	20	5					70.02	200				
M26x1,5	1.50	140	18	14.5	24.5	28	4					112.59	260				
M24x1,5	1.50	140	18	14.5	22.5	27	4	108.09	242	148.04	242	87.73	242				
M22x1,5	1.50	125	18	14.5	20.5	25	4	91.92	222	141.21	222	75.25	222				
M28x1,5	1.50	140	20	16.0	26.5	28	5					127.83	280				
M30x1,5	1.50	150	22	18.0	28.5	28	5					143.97	300				

Steel	2-25	5-45	5-25	5-45	
Stainless steel	2-8	5-15			8-20
Cast iron	5-20	10-25			
Non ferrous metals	10-20	15-40			
Heat resistant alloys					
hardened materials					

Blind hole – Machine taps, right hand

MF | Salo-Rex

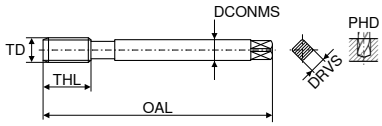




DIN 371 with reinforced shank

HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD | HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD | HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD | HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 441 ...	
	mm	mm	mm	mm	mm	mm	mm		£	
M4x0,5	0.50	63	4.5	3.4	3.50	5	21	3	68.43	040
M6x0,75	0.75	80	6.0	4.9	5.25	8	30	3	68.43	062
M5x0,5	0.50	70	6.0	4.9	4.50	5	25	3	61.91	050



DIN 374 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 555 ...		U0 Article no. 22 556 ...		U0 Article no. 22 491 ...		U0 Article no. 22 490 ...	
	mm	mm	mm	mm	mm	mm		£		£		£		£	
M8x1	1.0	90	6	4.9	7.0	10	3	51.15	080	69.72	080			68.43	080
M10x1	1.0	90	7	5.5	9.0	10	4	58.55	100	89.77	100			74.53	100
M12x1,5	1.5	100	9	7.0	10.5	15	5	65.84	120	101.69	120	109.56	120	82.21	120
M14x1,5	1.5	100	11	9.0	12.5	15	5	81.80	140	128.14	140	144.98	140	105.74	140
M16x1,5	1.5	100	12	9.0	14.5	15	5	99.95	160	136.70	160	148.77	160	129.16	160
M18x1,5	1.5	110	14	11.0	16.5	17	5							147.00	180
M20x1,5	1.5	125	16	12.0	18.5	17	5					226.33	200	172.15	200

Steel	6-20	6-25	6-20	6-20
Stainless steel	4-8	5-10	4-8	4-8
Cast iron	6-15	10-20	6-15	6-15
Non ferrous metals		12-25		
Heat resistant alloys				
hardened materials				

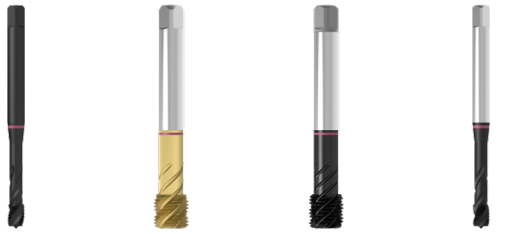
6

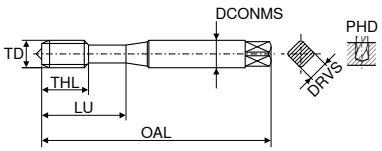
Blind hole – Machine taps, right hand

▲ CNC = for synchronised CNC machining with minimum length compensation chuck

MF | Salo-Rex

UNI	UNI	UNI CNC	UNI CNC
C 2–3	C 2–3	E 1,5–2	E 1,5–2
ISO 2 6H	ISO 2 6H	7G	ISO 2 6H
vap.	TiN	TiN GS	TiN GS

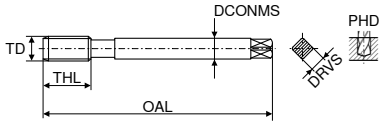




DIN 371 with reinforced shank

HSS-E	HSS-E	HSS-E	HSS-E
◁ 42°	◁ 42°	◁ 45°	◁ 45°
≤ 1100 N/mm²	≤ 1100 N/mm²	≤ 1100 N/mm²	≤ 1100 N/mm²
≤ 3xD	≤ 3xD	≤ 3xD	≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 202 ...				U0 Article no. 22 548 ...	
	mm	mm	mm	mm	mm	mm	mm		£				£	
M4x0,5	0.50	63	4.5	3.4	3.5	5	21	3	68.43	040				
M5x0,5	0.50	70	6.0	4.9	4.5	5	25	3	61.91	050			72.80	050
M6x0,75	0.75	80	6.0	4.9	5.2	8	30	3	68.43	062			72.80	062
M6x0,5	0.50	80	6.0	4.9	5.5	5	30	3	68.43	060			72.80	060



DIN 374 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 553 ...		U0 Article no. 22 554 ...		U0 Article no. 22 563 ...		U0 Article no. 22 549 ...	
	mm	mm	mm	mm	mm	mm		£		£		£		£	
M6x0,75	0.75	80	4.5	3.4	5.2	8	3	59.26	062						
M8x0,75	0.75	80	6.0	4.9	7.2	8	3	55.36	080					76.56	082
M8x1	1.00	90	6.0	4.9	7.0	10	3	50.17	082	69.72	080	105.74	084	90.07	084
M10x0,75	0.75	90	7.0	5.5	9.2	10	4	114.72	101						
M10x1	1.00	90	7.0	5.5	9.0	10	3	53.60	100	89.77	100				
M10x1	1.00	90	7.0	5.5	9.0	10	4					117.57	102	104.16	102
M10x1,25	1.25	100	7.0	5.5	8.8	16	3	130.79	102						
M12x1	1.00	100	9.0	7.0	11.0	11	4	69.72	120	118.84	121			121.89	120
M12x1,25	1.25	100	9.0	7.0	10.8	15	4	105.71	122						
M12x1,5	1.50	100	9.0	7.0	10.5	15	4	65.84	124	101.69	120				
M12x1,5	1.50	100	9.0	7.0	10.5	15	5					137.59	124	116.51	124
M14x1,5	1.50	100	11.0	9.0	12.5	15	5					171.27	144	148.77	144
M14x1,5	1.50	100	11.0	9.0	12.5	15	4	81.80	140	118.98	140				
M16x1,5	1.50	100	12.0	9.0	14.5	15	4	99.95	160	136.70	160				
M16x1,5	1.50	100	12.0	9.0	14.5	15	5					196.40	162	172.15	162
M18x1,5	1.50	110	14.0	11.0	16.5	17	5							208.30	182
M18x1,5	1.50	110	14.0	11.0	16.5	17	4	122.33	180	200.17	182				
M20x1,5	1.50	125	16.0	12.0	18.5	17	5					293.59	202	256.54	202
M20x1,5	1.50	125	16.0	12.0	18.5	17	4	166.06	200	254.36	202				
M22x1,5	1.50	125	18.0	14.5	20.5	17	4	161.98	220						
M26x1,5	1.50	140	18.0	14.5	24.5	20	5	230.40	260						
M24x1,5	1.50	140	18.0	14.5	22.5	20	5	178.69	240						
M28x1,5	1.50	140	20.0	16.0	26.5	20	5	268.31	280						
M30x1,5	1.50	150	22.0	18.0	28.5	22	6	270.20	300						

Steel	6-20	6-25	6-25	6-25
Stainless steel	4-8	5-10	5-10	5-10
Cast iron	6-15	10-20	10-20	10-20
Non ferrous metals		12-25	12-25	12-25
Heat resistant alloys				
hardened materials				

Blind hole – Machine taps, right/left hand

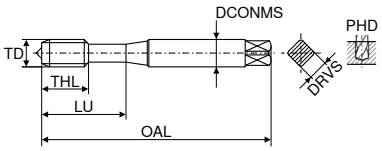
▲ LH = for left hand threads

MF | Salo-Rex

ST LH | ST

C 2–3

ISO 2 6H | ISO 2 6H

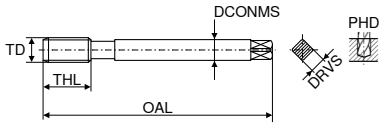


DIN 371 with reinforced shank

HSS-E
42°
≤ 750 N/mm²
≤ 3xD

HSS-E
42°
≤ 750 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 238 ...	
	mm	mm	mm	mm	mm	mm	mm		£	
M2,5x0,35	0.35	50	2.8	2.1	2.15	5.0	15	2	105.74	**025**
M3x0,35	0.35	56	3.5	2.7	2.65	4.5	18	3	66.54	**030**
M3,5x0,35	0.35	56	4.0	3.0	3.15	5.0	20	3	89.94	**035**
M4x0,5	0.50	63	4.5	3.4	3.50	5.0	21	3	59.72	**040**
M5x0,5	0.50	70	6.0	4.9	4.50	5.0	25	3	59.72	**050**
M6x0,75	0.75	80	6.0	4.9	5.20	8.0	30	3	59.72	**060**
M8x0,75	0.75	80	8.0	6.2	7.20	8.0	30	3	68.43	**080**
M8x1	1.00	90	8.0	6.2	7.00	10.0	35	3	59.72	**082**



DIN 374 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 601 ...		U0 Article no. 22 186 ...	
	mm	mm	mm	mm	mm	mm		£		£	
M6x0,75	0.75	80	4.5	3.4	5.2	8	3			52.75	**060**
M8x0,75	0.75	80	6.0	4.9	7.2	8	3			53.92	**080**
M8x1	1.00	90	6.0	4.9	7.0	10	3	98.37	**082**	48.32	**082**
M10x1	1.00	90	7.0	5.5	9.0	10	3	102.12	**100**	51.27	**100**
M12x1,5	1.50	100	9.0	7.0	10.5	15	4			60.57	**122**
M12x1	1.00	100	9.0	7.0	11.0	11	4	123.48	**120**	63.06	**120**
M14x1,5	1.50	100	11.0	9.0	12.5	15	4	134.83	**140**	79.66	**140**
M16x1,5	1.50	100	12.0	9.0	14.5	15	4	159.96	**160**	95.74	**160**
M18x1,5	1.50	110	14.0	11.0	16.5	17	4	183.34	**180**	123.63	**180**
M20x1,5	1.50	125	16.0	12.0	18.5	17	4	215.16	**200**	122.90	**200**
M22x1,5	1.50	125	18.0	14.5	20.5	17	4			140.61	**220**
M26x1,5	1.50	140	18.0	14.5	24.5	20	5			216.59	**260**
M24x1,5	1.50	140	18.0	14.5	22.5	20	5			151.95	**240**

Steel	**10-20**	**10-20**
Stainless steel		
Cast iron		
Non ferrous metals	**10-20**	**10-20**
Heat resistant alloys		
hardened materials		

6

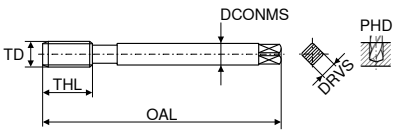
Blind hole – Machine taps, right hand

MF | SL

ST

C
2–3

ISO 2
6H



DIN 374 with reduced shank

HSS-E
15°
≤ 750 N/mm²
≤ 2xD

U0

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	Article no. 22 182 ...	
	mm	mm	mm	mm	mm	mm		£	
M6x0,75	0.75	80	4.5	3.4	5.2	13	3	54.34	**062**
M8x0,75	0.75	80	6.0	4.9	7.2	14	3	54.78	**082**
M8x1	1.00	90	6.0	4.9	7.0	17	3	49.32	**084**
M10x1	1.00	90	7.0	5.5	9.0	18	3	52.75	**102**
M10x0,75	0.75	90	7.0	5.5	9.2	18	3	87.31	**100**
M10x1,25	1.25	100	7.0	5.5	8.8	22	3	76.00	**104**
M9x1	1.00	90	7.0	5.5	8.0	17	3	74.96	**090**
M11x1	1.00	90	8.0	6.2	10.0	18	3	81.95	**110**
M12x1,25	1.25	100	9.0	7.0	10.8	22	3	83.67	**122**
M12x1,5	1.50	100	9.0	7.0	10.5	22	3	61.60	**124**
M12x1	1.00	100	9.0	7.0	11.0	18	3	64.79	**120**
M14x1	1.00	100	11.0	9.0	13.0	18	4	85.29	**140**
M14x1,5	1.50	100	11.0	9.0	12.5	22	3	82.81	**144**
M16x1	1.00	100	12.0	9.0	15.0	18	4	99.95	**160**
M16x1,5	1.50	100	12.0	9.0	14.5	22	3	97.93	**162**
M15x1	1.00	100	12.0	9.0	14.0	18	4	110.41	**150**
M18x1,5	1.50	110	14.0	11.0	16.5	25	4	123.29	**182**
M18x2	2.00	125	14.0	11.0	16.0	26	3	199.30	**184**
M18x1	1.00	110	14.0	11.0	17.0	20	4	137.59	**180**
M20x1	1.00	125	16.0	12.0	19.0	20	4	136.11	**200**
M20x2	2.00	140	16.0	12.0	18.0	27	3	171.27	**204**
M20x1,5	1.50	125	16.0	12.0	18.5	25	4	124.63	**202**
M22x2	2.00	140	18.0	14.5	20.0	27	4	176.33	**224**
M24x1,5	1.50	140	18.0	14.5	22.5	27	4	155.85	**242**
M24x1	1.00	140	18.0	14.5	23.0	20	5	187.99	**240**
M24x2	2.00	140	18.0	14.5	22.0	27	4	184.06	**244**
M22x1,5	1.50	125	18.0	14.5	20.5	25	4	143.38	**222**
M25x1,5	1.50	140	18.0	14.5	23.5	28	4	261.47	**252**
M22x1	1.00	125	18.0	14.5	21.0	20	4	176.33	**220**
M27x1,5	1.50	140	20.0	16.0	25.5	28	4	227.19	**270**
M28x2	2.00	140	20.0	16.0	26.0	28	4	297.07	**282**
M27x2	2.00	140	20.0	16.0	25.0	28	4	254.08	**272**
M30x1,5	1.50	150	22.0	18.0	28.5	28	5	259.58	**302**
M32x1,5	1.50	150	22.0	18.0	30.5	28	6	297.07	**320**
M30x2	2.00	150	22.0	18.0	28.0	28	4	273.83	**304**
M33x2	2.00	160	25.0	20.0	31.0	30	4	363.01	**332**
M36x2	2.00	170	28.0	22.0	34.0	30	5	462.26	**362**
M36x3	3.00	200	28.0	22.0	33.0	42	4	427.09	**364**
M34x1,5	1.50	170	28.0	22.0	32.5	30	6	403.25	**340**

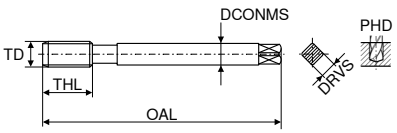
Steel	**10-20**
Stainless steel	
Cast iron	
Non ferrous metals	**10-20**
Heat resistant alloys	
hardened materials	

Continued on next page

Blind hole – Machine taps, right hand

MF | SL

ST | C 2–3 | ISO 2 6H



DIN 374 with reduced shank

HSS-E
15°
≤ 750 N/mm²
≤ 2xD

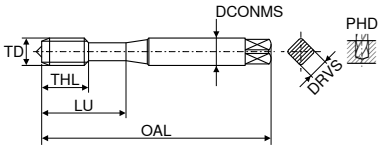
6

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 182 ...	£
	mm	mm	mm	mm	mm	mm			
M40x1,5	1.50	170	32.0	24.0	38.5	30	6	451.50	**400**
M42x3	3.00	200	32.0	24.0	39.0	45	4	577.43	**424**
M42x2	2.00	170	32.0	24.0	40.0	30	6	545.92	**422**
M45x1,5	1.50	180	36.0	29.0	43.5	32	6	536.32	**450**
M48x2	2.00	190	36.0	29.0	46.0	32	6	753.78	**482**
M48x3	3.00	225	36.0	29.0	45.0	50	5	772.97	**484**
M48x1,5	1.50	190	36.0	29.0	46.5	32	6	628.28	**480**
M45x3	3.00	200	36.0	29.0	42.0	45	5	737.21	**454**
M52x2	2.00	190	40.0	32.0	50.0	32	6	906.88	**522**

Steel	**10-20**
Stainless steel	
Cast iron	
Non ferrous metals	**10-20**
Heat resistant alloys	
hardened materials	

Blind hole – Machine taps, right hand

MF | Salo-Rex



DIN 371 with reinforced shank

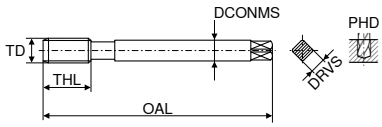
NW	VA	VA
C	E	E
2–3	1,5–2	1,5–2
ISO 2 6H	ISO 2 6H	ISO 2 6H
vap.	vap.	TiN GS

HSS-E
◁ 42°
≤ 500 N/mm²
≤ 3xD

HSS-E
◁ 42°
≤ 750 N/mm²
≤ 3xD

HSS-E
◁ 45°
≤ 900 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 176 ...	
	mm	mm	mm	mm	mm	mm	mm		£	
M4x0,5	0.50	63	4.5	3.4	3.5	5	21	3	89.18	**040**
M6x0,75	0.75	80	6.0	4.9	5.2	8	30	3	73.65	**062**
M6x0,5	0.50	80	6.0	4.9	5.5	5	30	3	73.65	**060**
M5x0,5	0.50	70	6.0	4.9	4.5	5	25	3	73.65	**050**



DIN 374 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 188 ...		U0 Article no. 22 189 ...		U0 Article no. 22 177 ...	
	mm	mm	mm	mm	mm	mm		£		£		£	
M8x1	1.00	90	6	4.9	7.0	10	3	54.18	**081**	53.33	**082**	92.70	**084**
M8x0,75	0.75	80	6	4.9	7.2	8	3					77.44	**082**
M10x1	1.00	90	7	5.5	9.0	10	4			62.61	**100**	103.32	**102**
M10x1	1.00	90	7	5.5	9.0	10	3	56.66	**100**				
M12x1	1.00	100	9	7.0	11.0	11	4	69.30	**120**	81.94	**121**	123.63	**120**
M12x1,5	1.50	100	9	7.0	10.5	15	4	60.57	**122**				
M12x1,5	1.50	100	9	7.0	10.5	15	5			69.72	**120**	118.10	**124**
M14x1,5	1.50	100	11	9.0	12.5	15	5			85.72	**140**	150.65	**144**
M14x1,5	1.50	100	11	9.0	12.5	15	4	89.18	**140**				
M16x1,5	1.50	100	12	9.0	14.5	15	4	95.74	**160**				
M16x1,5	1.50	100	12	9.0	14.5	15	5			104.16	**160**	174.78	**162**
M18x1,5	1.50	110	14	11.0	16.5	17	5					211.80	**182**
M18x1,5	1.50	110	14	11.0	16.5	17	4	135.68	**180**				
M20x1,5	1.50	125	16	12.0	18.5	17	4	122.90	**200**				
M20x1,5	1.50	125	16	12.0	18.5	17	5			145.26	**200**	261.93	**202**
M26x1,5	1.50	140	18	14.5	24.5	20	6			345.73	**260**		
M28x1,5	1.50	140	20	16.0	26.5	20	6			407.43	**280**		
M30x1,5	1.50	150	22	18.0	28.5	22	6			400.67	**300**		

Steel			**5-12**
Stainless steel		**5-10**	**5-10**
Cast iron			
Non ferrous metals	**10-20**		
Heat resistant alloys			
Hardened materials			

Blind hole – Machine taps, right hand

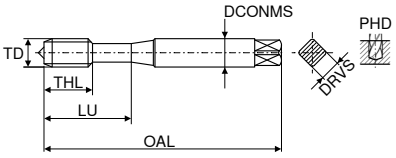
MF

UNI

C
2–3

ISO 2
6H

TiN



DIN 374 with reinforced shank

HSS-PM
40°
≤ 1000 N/mm²
≤ 2,5xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	T9 Article no. 23 047 ...	
	mm	mm	mm	mm	mm	mm	mm		£	
M8x1	1.00	90	6	4.9	7.0	10	35	3	20.04	**081**
M10x1	1.00	90	7	5.5	9.0	10	35	4	26.19	**102**
M10x1,25	1.25	100	7	5.5	8.8	16	39	4	25.52	**104**
M12x1	1.00	100	9	7.0	11.0	11	40	4	29.77	**120**
M12x1,25	1.25	100	9	7.0	10.8	15	40	5	32.46	**122**
M12x1,5	1.50	100	9	7.0	10.5	15	40	5	28.87	**121**
M14x1	1.00	100	11	9.0	12.8	11	40	4	34.81	**140**
M14x1,5	1.50	100	11	9.0	12.5	15	40	5	34.14	**144**
M16x1,5	1.50	100	12	9.0	14.5	15	44	5	44.21	**162**
M18x1,5	1.50	110	14	11.0	16.5	17	44	5	57.53	**182**
M20x1,5	1.50	125	16	12.0	18.5	17	44	5	65.69	**202**
M22x1,5	1.50	125	18	14.5	20.5	17	44	5	72.30	**222**
M24x1,5	1.50	140	18	14.5	22.5	20	48	5	73.63	**242**
M24x2	2.00	140	18	14.5	22.0	20	48	5	85.73	**244**

Steel	**10-20**
Stainless steel	**8-15**
Cast iron	**20-25**
Non ferrous metals	**20-25**
Heat resistant alloys	
Hardened materials	

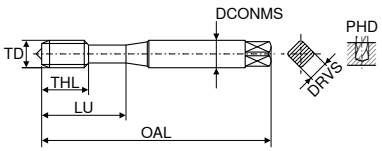
6

Blind hole – Machine taps, right hand

▲ NC = for synchronised CNC machining with minimum length compensation chuck

MF

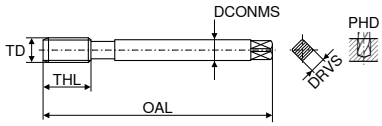
UNI	UNI	UNI NC	FE	FE-HF
C 2–3	C 2–3	E 1,5–2	C 2–3	C 2–3
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
vap.	TiN	TiN GS		TiCN



DIN 371 with reinforced shank

	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
	◁ 35° ≤ 1000 N/mm² ≤ 2,5xD	◁ 35° ≤ 1000 N/mm² ≤ 2,5xD	◁ 45° ≤ 1000 N/mm² ≤ 3xD	◁ 35° ≤ 850 N/mm² ≤ 2,5xD	◁ 35° ≤ 1100 N/mm² ≤ 2,5xD
	T9	T9	T9	T9	T9
TD	Article no. 23 144 ...	Article no. 23 146 ...	Article no. 23 148 ...	Article no. 23 242 ...	Article no. 23 342 ...
	£	£	£	£	£
M4x0,5	38.22 040	43.60 040		21.67 040	
M6x0,75	38.22 062	49.75 062	60.72 062	21.67 062	55.22 062
M6x0,5	38.22 060	49.75 060	60.72 060	22.11 060	
M5x0,5	38.22 050	43.60 050	46.46 050	22.11 050	44.47 050

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
	mm	mm	mm	mm	mm	mm	mm	
M4x0,5	0.50	63	4.5	3.4	3.5	5	21	3
M6x0,75	0.75	80	6.0	4.9	5.2	8	30	3
M6x0,5	0.50	80	6.0	4.9	5.5	5	30	3
M5x0,5	0.50	70	6.0	4.9	4.5	5	25	3



DIN 374 with reduced shank

	T9	T9	T9	T9	T9
TD	Article no. 23 145 ...	Article no. 23 147 ...	Article no. 23 149 ...	Article no. 23 243 ...	Article no. 23 343 ...
	£	£	£	£	£
M4x0,5	14.10 040				
M5x0,5	14.10 050				
M6x0,75	15.00 062				
M8x0,75	17.01 082	53.03 082	64.79 082	25.09 082	
M8x1	12.42 084	49.75 084	60.72 084	23.66 084	55.64 084
M8x0,5				53.33 080	
M8x0,75					66.54 082
M10x1,25	14.43 104	71.74 104		50.56 104	
M10x0,75	27.42 100	82.21 100		58.69 100	
M10x1			70.12 102		
M10x1	12.99 102	56.66 102		27.50 102	62.57 102
M12x1,25	20.59 122	80.91 122		56.66 122	
M12x1,5	15.44 124	64.37 124		30.65 124	69.69 124
M12x1,5			77.15 124		
M12x1	17.46 120	66.54 120	79.66 120	32.41 120	71.55 120
M14x1	23.05 140	86.88 140		56.66 140	
M14x1,5			98.94 144		
M14x1,5	20.92 144	80.91 144		38.22 144	89.94 144
M16x1	24.73 160	95.29 160		65.42 160	
M16x1,5			110.41 162		
M16x1,5	23.95 162	95.29 162		48.37 162	104.31 162
M18x1,5	33.24 182	109.01 182		62.76 182	
M18x1,5			139.75 182		
M20x1,5	30.56 202	141.21 202		70.02 202	
M20x1,5			183.03 202		
M24x1,5	49.47 242	167.79 242		94.42 242	
M22x1,5	45.33 222	157.19 222		81.07 222	

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
	mm	mm	mm	mm	mm	mm	
M4x0,5	0.50	63	2.8	2.1	3.5	5	3
M5x0,5	0.50	70	3.5	2.7	4.5	5	3
M6x0,75	0.75	80	4.5	3.4	5.2	8	3
M8x0,75	0.75	80	6.0	4.9	7.2	8	3
M8x1	1.00	90	6.0	4.9	7.0	10	3
M8x0,5	0.50	80	6.0	8.0	7.5	6	3
M8x0,75	0.75	80	6.0	4.9	7.0	8	3
M10x1,25	1.25	100	7.0	5.5	8.8	16	3
M10x0,75	0.75	90	7.0	5.5	9.2	10	4
M10x1	1.00	90	7.0	5.5	9.0	10	4
M10x1	1.00	90	7.0	5.5	9.0	10	3
M12x1,25	1.25	100	9.0	7.0	10.8	15	4
M12x1,5	1.50	100	9.0	7.0	10.5	15	4
M12x1,5	1.50	100	9.0	7.0	10.5	15	5
M12x1	1.00	100	9.0	7.0	11.0	11	4
M14x1	1.00	100	11.0	9.0	13.0	11	4
M14x1,5	1.50	100	11.0	9.0	12.5	15	5
M14x1,5	1.50	100	11.0	9.0	12.5	15	4
M16x1	1.00	100	12.0	9.0	15.0	12	4
M16x1,5	1.50	100	12.0	9.0	14.5	15	5
M16x1,5	1.50	100	12.0	9.0	14.5	15	4
M18x1,5	1.50	110	14.0	11.0	16.5	17	4
M18x1,5	1.50	110	14.0	11.0	16.5	17	5
M20x1,5	1.50	125	16.0	12.0	18.5	17	4
M20x1,5	1.50	125	16.0	12.0	18.5	17	5
M24x1,5	1.50	140	18.0	14.5	22.5	20	5
M22x1,5	1.50	125	18.0	14.5	20.5	17	4

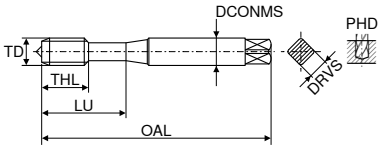
Steel	2-25	5-45	5-45	5-25	5-45
Stainless steel	2-8	5-15	5-15		
Cast iron	5-20	10-25	10-25		
Non ferrous metals	10-20	15-40	15-40		
Heat resistant alloys					
Hardened materials					

Blind hole – Machine taps, right hand

MF

VA
C
2–3
ISO 2
6H

VA
E
1,5–2
ISO 2
6H
TiN

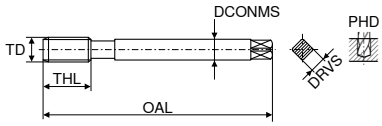


DIN 371 with reinforced shank

HSS-PM
∢ 40°
≤ 1200 N/mm²
≤ 2,5xD

HSS-E
∢ 45°
≤ 1200 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	T9 Article no. 23 442 ... £	
	mm	mm	mm	mm	mm	mm	mm			
M6x0,75	0.75	80	6	4.9	5.2	8	30	3	49.75	**062**
M5x0,5	0.50	70	6	4.9	4.5	5	25	3	43.16	**050**



DIN 374 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 447 ... £		T9 Article no. 23 443 ... £	
	mm	mm	mm	mm	mm	mm					
M8x1	1.00	90	6	4.9	7.0	10	3	32.46	**084**	49.75	**084**
M8x0,75	0.75	80	6	4.9	7.2	8	3			53.03	**082**
M10x1	1.00	90	7	5.5	9.0	10	4	34.58	**102**	57.10	**102**
M12x1,5	1.50	100	9	7.0	10.5	15	5	41.86	**124**	64.37	**124**
M12x1	1.00	100	9	7.0	11.0	11	4	44.66	**120**	66.83	**120**
M14x1,5	1.50	100	11	9.0	12.5	15	5	54.05	**144**	81.53	**144**
M16x1,5	1.50	100	12	9.0	14.5	15	5	63.68	**162**	91.92	**162**
M18x1,5	1.50	110	14	11.0	16.5	17	5	78.57	**182**		
M20x1,5	1.50	125	16	12.0	18.5	17	5	85.50	**202**		

Steel		
Stainless steel	**5-10**	**8-20**
Cast iron		
Non ferrous metals		
Heat resistant alloys		
Hardened materials		

6

Through hole / Blind hole – Machine taps, right hand

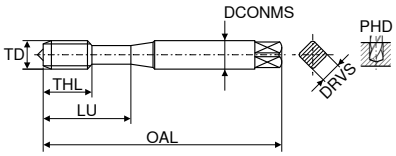
MF | TWIN

ST | HR | HT

C 2–3 | C 2–3 | D 4–5

ISO 2X 6HX | ISO 2X 6HX | ISO 2X 6HX

nitr. | OSM



DIN 371 with reinforced shank

HSS-E | HSS-E | Solid carbide

0° ≤ 750 N/mm² ≤ 2xD | 0° ≤ 1400 N/mm² ≤ 2xD | 0° ≤ 63 HRC ≤ 1,5xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 144 ... £		U0 Article no. 22 146 ... £		U0 Article no. 22 817 ... £	
	mm	mm	mm	mm	mm	mm	mm							
M3x0,35	0.35	56	3.5	2.7	2.65	8	18	3	54.78	**030**				
M4x0,5	0.50	63	4.5	3.4	3.50	10	21	3	52.02	**040**	58.69	**040**		
M5x0,5	0.50	70	6.0	4.9	4.50	11	25	3	52.02	**050**	58.69	**050**		
M6x0,5	0.50	80	6.0	4.9	5.50	13	30	3	52.02	**060**	58.69	**060**		
M6x0,75	0.75	80	6.0	4.9	5.20	13	30	3	52.02	**062**	58.69	**062**		
M8x1	1.00	90	8.0	6.2	7.00	17	35	3	52.02	**084**				
M8x1	1.00	90	8.0	6.2	7.10	15	35	5					403.70	**080**
M10x1	1.00	100	10.0	8.0	9.10	18	38	5					512.07	**100**
M10x1	1.00	90	10.0	8.0	9.00	18	35	4	52.02	**104**				
M12x1,5	1.50	110	12.0	9.0	10.60	21	41	5					597.90	**120**
M14x1,5	1.50	110	14.0	11.0	12.60	24	44	6					699.01	**140**
M16x1,5	1.50	110	16.0	12.0	14.60	24	44	6					795.92	**160**

Steel	**10-20**	**6-15**	
Stainless steel			
Cast iron		**6-15**	
Non ferrous metals	**10-20**		
Heat resistant alloys		**3-5**	
Hardened materials			**1-3**

DIN 374 can be found on the next page

Through hole / Blind hole – Machine taps, right hand

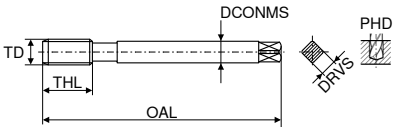
MF | TWIN

ST | HR | GG

C 2–3

ISO 2X 6HX

nitr.



DIN 374 with reduced shank

HSS-E
0°
≤ 750 N/mm²
≤ 2xD

HSS-E
0°
≤ 1400 N/mm²
≤ 2xD

HSS-E
0°
≤ 1050 N/mm²
≤ 2xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 171 ...	£	U0 Article no. 22 209 ...	£	U0 Article no. 22 173 ...	£
	mm	mm	mm	mm	mm	mm							
M4x0,5	0.50	63	2.8	2.1	3.5	10	3	40.77	042				
M5x0,5	0.50	70	3.5	2.7	4.5	11	3	50.42	050			46.94	050
M6x0,75	0.75	80	4.5	3.4	5.2	13	3	46.18	062			51.27	062
M6x0,5	0.50	80	4.5	3.4	5.5	13	3	46.33	060			58.97	060
M8x0,75	0.75	80	6.0	4.9	7.2	14	3	51.87	082			89.94	080
M8x1	1.00	90	6.0	4.9	7.0	17	3	41.19	084	58.69	082	89.94	082
M10x1	1.00	90	7.0	5.5	9.0	18	4	43.16	104	58.69	100	50.56	100
M10x1,25	1.25	100	7.0	5.5	8.8	22	3	51.27	106				
M10x0,75	0.75	90	7.0	5.5	9.2	18	4	66.97	102				
M11x1	1.00	90	8.0	6.2	10.0	18	4	75.38	110				
M12x1	1.00	100	9.0	7.0	11.0	18	4	49.17	122			59.14	120
M12x1,25	1.25	100	9.0	7.0	10.8	22	4	61.47	124				
M12x1,5	1.50	100	9.0	7.0	10.5	22	4	49.17	126	69.13	120	54.87	124
M14x1	1.00	100	11.0	9.0	13.0	18	4	75.38	140			85.84	140
M14x1,25	1.25	100	11.0	9.0	12.8	22	4	69.72	142				
M14x1,5	1.50	100	11.0	9.0	12.5	22	4	72.34	144	89.94	140	78.01	142
M16x1	1.00	100	12.0	9.0	15.0	18	5	78.01	160				
M16x1,5	1.50	100	12.0	9.0	14.5	22	4	70.12	162	98.37	160	79.66	160
M18x1	1.00	110	14.0	11.0	17.0	20	5	101.69	180				
M18x2	2.00	125	14.0	11.0	16.0	26	4	113.77	184				
M18x1,5	1.50	110	14.0	11.0	16.5	25	4	94.01	182	114.72	180	108.38	180
M20x1	1.00	125	16.0	12.0	19.0	20	5	110.41	200				
M20x2	2.00	140	16.0	12.0	18.0	27	4	142.52	204				
M20x1,5	1.50	125	16.0	12.0	18.5	25	4	103.01	202	147.00	200	114.62	200
M24x2	2.00	140	18.0	14.5	22.0	27	4	140.61	244				
M22x2	2.00	140	18.0	14.5	20.0	27	4	156.88	224				
M22x1	1.00	125	18.0	14.5	21.0	20	5	151.95	220				
M24x1	1.00	140	18.0	14.5	23.0	20	6	174.60	240				
M26x1,5	1.50	140	18.0	14.5	24.5	28	4	175.78	260			171.27	260
M24x1,5	1.50	140	18.0	14.5	22.5	27	4	122.90	242			139.44	240
M25x1,5	1.50	140	18.0	14.5	23.5	28	4	227.19	250				
M22x1,5	1.50	125	18.0	14.5	20.5	25	4	110.41	222			121.89	220
M28x1,5	1.50	140	20.0	16.0	26.5	28	5					203.06	280
M27x2	2.00	140	20.0	16.0	25.0	28	4	190.74	274				
M27x1,5	1.50	140	20.0	16.0	25.5	28	5	203.67	272				
M30x2	2.00	150	22.0	18.0	28.0	28	4	238.24	302				
M32x2	2.00	150	22.0	18.0	30.0	28	5	328.90	322				
M32x1,5	1.50	150	22.0	18.0	30.5	28	6	237.65	320				
M30x1,5	1.50	150	22.0	18.0	28.5	28	5	196.98	300			223.00	300
M33x2	2.00	160	25.0	20.0	31.0	30	5	268.31	332				
M36x2	2.00	170	28.0	22.0	34.0	30	5	330.19	362				
M36x1,5	1.50	170	28.0	22.0	34.5	30	6	295.18	360				
M35x1,5	1.50	170	28.0	22.0	33.5	30	6	367.52	350				
M42x1,5	1.50	170	32.0	24.0	40.5	30	6	433.48	420				
M42x3	3.00	200	32.0	24.0	39.0	45	5	526.00	424				
M40x2	2.00	170	32.0	24.0	38.0	30	6	381.33	402				
M50x1,5	1.50	190	36.0	29.0	48.5	32	8	557.37	500				
M52x1,5	1.50	190	40.0	32.0	50.5	32	8	639.75	520				

Steel	10-20	6-15	
Stainless steel			
Cast iron		6-15	10-20
Non ferrous metals	10-20		
Heat resistant alloys		3-5	
Hardened materials			

6

Through hole / Blind hole – Machine taps, right/left hand

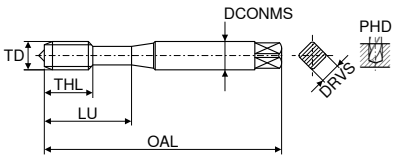
▲ ES = extra short

▲ LH = for left hand threads

MF | TWIN

ST ES | C 2–3 | ISO 2X 6HX

ST LH/ES | C 2–3 | ISO 2X 6HX



DIN 2181 with reinforced shank

HSS-E
0°
≤ 750 N/mm²
≤ 2xD

HSS-E
0°
≤ 750 N/mm²
≤ 2xD

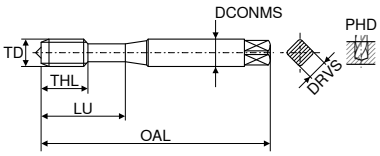
TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 179 ... £		U0 Article no. 22 200 ... £	
	mm	mm	mm	mm	mm	mm	mm					
M2,5x0,35	0.35	40	2.8	2.1	2.15	9		3	78.15	025		
M3x0,35	0.35	40	3.5	2.7	2.65	8	18	3	50.17	030		
M4x0,35	0.35	45	4.5	3.4	3.65	9	22	3	72.65	040		
M4x0,5	0.50	45	4.5	3.4	3.50	9	22	3	50.17	042		
M4,5x0,5	0.50	50	6.0	4.9	4.00	10	24	3	84.25	045		
M5x0,5	0.50	50	6.0	4.9	4.50	11	25	3	50.17	050		
M6x0,5	0.50	56	6.0	4.9	5.50	12	27	3	52.02	060		
M6x0,75	0.75	56	6.0	4.9	5.20	12	27	3	50.17	062	69.13	062
M7x0,75	0.75	56	6.0	4.9	6.20	14		3	56.83	070		
M8x0,5	0.50	56	6.0	4.9	7.50	14		4	69.13	080		
M8x0,75	0.75	56	6.0	4.9	7.20	14		3	56.83	082		
M8x1	1.00	63	6.0	4.9	7.00	17		3	50.17	084	69.13	084
M9x1	1.00	63	7.0	5.5	8.00	17		4	69.13	090		
M10x0,75	0.75	63	7.0	5.5	9.20	18		4	74.53	100		
M10x1	1.00	63	7.0	5.5	9.00	18		4	52.02	102	72.65	102
M10x1,25	1.25	70	7.0	5.5	8.80	22		3	68.43	104		
M11x1	1.00	63	8.0	6.2	10.00	18		4	82.21	110		
M12x1	1.00	70	9.0	7.0	11.00	18		4	61.58	120	86.23	120
M12x1,25	1.25	70	9.0	7.0	10.80	20		4	69.13	122		
M12x1,5	1.50	70	9.0	7.0	10.50	20		4	59.72	124	84.25	124
M13x1	1.00	70	11.0	9.0	12.00	18		4	90.07	130		
M14x1	1.00	70	11.0	9.0	13.00	18		4	82.21	140		
M14x1,25	1.25	70	11.0	9.0	12.80	20		4	82.21	142		
M14x1,5	1.50	70	11.0	9.0	12.50	20		4	78.15	144	111.28	144
M15x1	1.00	70	12.0	9.0	14.00	18		5	100.11	150		
M16x1	1.00	70	12.0	9.0	15.00	18		5	93.57	160		
M16x1,5	1.50	70	12.0	9.0	14.50	20		4	86.23	162	121.73	162
M18x1	1.00	80	14.0	11.0	17.00	18		5	121.73	180		
M18x1,5	1.50	80	14.0	11.0	16.50	22		4	102.12	182	140.37	182
M18x2	2.00	80	14.0	11.0	16.00	22		4	121.73	184		
M20x1,5	1.50	80	16.0	12.0	18.50	22		4	118.84	202	164.44	202
M20x2	2.00	80	16.0	12.0	18.00	22		4	129.16	204		

Steel	10-20	10-20
Stainless steel		
Cast iron		
Non ferrous metals	10-20	10-20
Heat resistant alloys		
Hardened materials		

Through hole / Blind hole – Machine thread formers, right hand

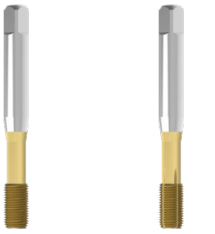
▲ SN = Thread formers with lubrication grooves

MF | Spanlos



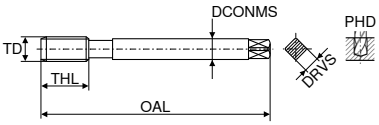
DIN 2174 with reinforced shank

	EC	EC SN
	C 2–3	C 2–3
	ISO 2X 6HX	ISO 2X 6HX
	TiN	TiN



	HSS-E ≤ 1100 N/mm² ≤ 1,5xD	HSS-E ≤ 1100 N/mm² ≤ 3xD
	U0	U0
	Article no. 22 204 ...	Article no. 22 205 ...
	£	£

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes				
	mm	mm	mm	mm	mm	mm	mm					
M4x0,5	0.50	63	4.5	3.4	3.8	10	21		111.28	**040**		
M4x0,5	0.50	63	4.5	3.4	3.8	10	21	4			125.38	**040**
M5x0,5	0.50	70	6.0	4.9	4.8	11	25		95.58	**050**		
M5x0,5	0.50	70	6.0	4.9	4.8	11	25	4			111.28	**050**
M6x0,5	0.50	80	6.0	4.9	5.8	13	30		111.28	**060**		
M6x0,5	0.50	80	6.0	4.9	5.8	13	30	5			125.38	**060**
M6x0,75	0.75	80	6.0	4.9	5.7	13	30		88.32	**062**		
M6x0,75	0.75	80	6.0	4.9	5.7	13	30	4			100.11	**062**
M8x0,75	0.75	80	8.0	6.2	7.7	14	30		114.72	**080**		
M8x0,75	0.75	80	8.0	6.2	7.7	14	30	5			111.28	**080**
M8x1	1.00	90	8.0	6.2	7.6	17	35		105.74	**082**		
M8x1	1.00	90	8.0	6.2	7.6	17	35	5			118.84	**082**
M10x1	1.00	90	10.0	8.0	9.6	18	35		100.11	**100**		
M10x1	1.00	90	10.0	8.0	9.6	18	35	5			109.56	**100**



DIN 2174 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes				
	mm	mm	mm	mm	mm	mm					
M12x1	1.0	100	9	7	11.60	18		94.58	**120**		
M12x1	1.0	100	9	7	11.60	18	6			98.30	**120**
M12x1,5	1.5	100	9	7	11.35	22		89.03	**124**		
M12x1,5	1.5	100	9	7	11.35	22	6			103.73	**124**
M14x1,5	1.5	100	11	9	13.35	22		139.44	**140**		
M14x1,5	1.5	100	11	9	13.35	22	6			144.98	**140**
M16x1,5	1.5	100	12	9	15.35	22		142.80	**160**		
M16x1,5	1.5	100	12	9	15.35	22	6			155.31	**160**
M20x1,5	1.5	125	16	12	19.35	25		201.20	**200**		
M20x1,5	1.5	125	16	12	19.35	25	6			213.12	**200**

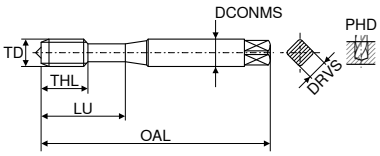
Steel	**8-30**	**8-30**
Stainless steel	**8-15**	**8-15**
Cast iron		
Non ferrous metals	**12-25**	**12-25**
Heat resistant alloys		
Hardened materials		

6

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

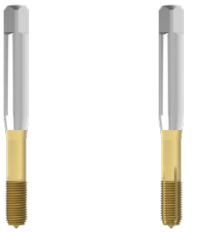
MF



DIN 2174 with reinforced shank

UNI
C
2–3
ISO 2X
6HX
TiN

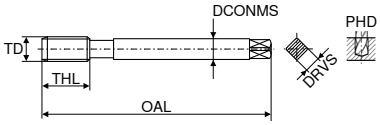
UNI SN
C
2–3
ISO 2X
6HX
TiN



HSS-E
≤ 850 N/mm²
≤ 3xD

HSS-E
≤ 850 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	T9 Article no. 23 840 ... £		T9 Article no. 23 842 ... £	
	mm	mm	mm	mm	mm	mm	mm					
M4x0,5	0.50	63	4.5	3.4	3.80	10	21		62.03	040		
M4x0,5	0.50	63	4.5	3.4	3.80	10	21	4			69.43	040
M5x0,5	0.50	70	6.0	4.9	4.80	11	25		52.58	050		
M5x0,5	0.50	70	6.0	4.9	4.80	11	25	4			61.58	050
M6x0,5	0.50	80	6.0	4.9	5.80	13	30		62.03	060		
M6x0,5	0.50	80	6.0	4.9	5.80	13	30	5			69.90	060
M8x1	1.00	90	8.0	6.2	7.60	17	35		59.72	084		
M8x1	1.00	90	8.0	6.2	7.60	17	35	5			66.54	084
M10x1	1.00	90	10.0	8.0	9.60	18	35		68.01	102		
M10x1	1.00	90	10.0	8.0	9.60	18	35	5			73.81	102
M10x1,25	1.25	100	10.0	8.0	9.45	18	39		80.91	104		
M10x1,25	1.25	100	10.0	8.0	9.45	18	39	5			89.94	104



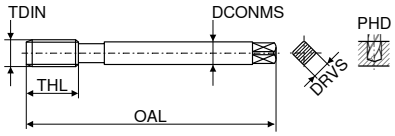
DIN 2174 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 841 ... £		T9 Article no. 23 843 ... £	
	mm	mm	mm	mm	mm	mm					
M12x1,25	1.25	100	9	7	11.45	22		86.88	122		
M12x1,25	1.25	100	9	7	11.45	22	6			98.20	122
M12x1,5	1.50	100	9	7	11.35	22		78.60	124		
M12x1,5	1.50	100	9	7	11.35	22	6			87.62	124
M14x1,5	1.50	100	11	9	13.35	22		97.34	144		
M14x1,5	1.50	100	11	9	13.35	22	6			108.81	144
M16x1,5	1.50	100	12	9	15.35	22		109.01	162		
M16x1,5	1.50	100	12	9	15.35	22	6			126.84	162

Steel	10-50	10-50
Stainless steel	5-20	5-20
Cast iron		
Non ferrous metals	10-50	10-50
Heat resistant alloys	5-15	5-15
Hardened materials		

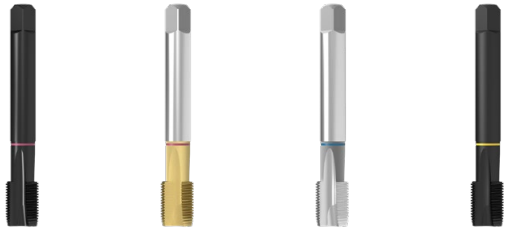
Through hole – Machine taps, right hand

G | Stabil



DIN 5156 with reduced shank

UNI	UNI	ST	VA
B 4–5	B 4–5	B 4–5	B 4–5
ISO 228	ISO 228	ISO 228	ISO 228
nitr. + vap.	TiN		nitr.



HSS-E
0°
≤ 1100 N/mm² ≤ 4xD

HSS-E
0°
≤ 1100 N/mm² ≤ 4xD

HSS-E
0°
≤ 750 N/mm² ≤ 4xD

HSS-E
0°
≤ 900 N/mm² ≤ 4xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 632 ... £		U0 Article no. 22 630 ... £		U0 Article no. 22 346 ... £		U0 Article no. 22 352 ... £	
	mm	mm	mm	mm	mm	mm									
1/8-28	0.907	90	7	5.5	8.80	18	3	62.37	**012**	102.12	**012**	49.82	**012**	61.99	**012**
1/4-19	1.337	100	11	9.0	11.80	22	3	82.73	**025**	134.83	**025**	66.28	**025**	81.54	**025**
3/8-19	1.337	100	12	9.0	15.25	22	3	102.71	**037**	156.16	**037**	79.62	**037**	103.01	**037**
1/2-14	1.814	125	16	12.0	19.00	25	4	131.64	**050**	241.30	**050**	110.86	**050**	135.68	**050**
3/4-14	1.814	140	20	16.0	24.50	28	4	219.10	**075**			177.96	**075**	201.20	**075**
1-11	2.309	160	25	20.0	30.75	30	4	326.48	**100**			252.92	**100**	310.88	**100**

Steel	**6-20**	**6-25**	**10-20**	
Stainless steel	**4-8**	**5-10**		**5-10**
Cast iron	**6-15**	**10-20**		
Non ferrous metals		**12-25**	**10-20**	
Heat resistant alloys				
Hardened materials				

6

Through hole – Machine taps, right hand

G

UNI

B

4–5

ISO 228

nitr. + vap.

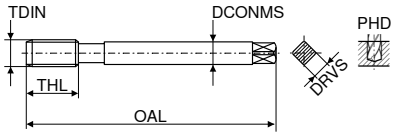
UNI

B

4–5

ISO 228

TiN



DIN 5156 with reduced shank

HSS-E

0°

≤ 1100 N/mm²

≤ 3xD

HSS-E

0°

≤ 1100 N/mm²

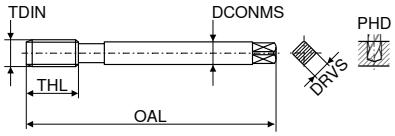
≤ 3xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 161 ... £		T9 Article no. 23 160 ... £	
	mm	mm	mm	mm	mm	mm					
1/8-28	0.907	90	7	5.5	8.80	18	3	38.35	**012**	56.37	**012**
1/4-19	1.337	100	11	9.0	11.80	22	3	51.59	**025**	74.53	**025**
3/8-19	1.337	100	12	9.0	15.25	22	3	65.82	**037**	87.62	**037**
1/2-14	1.814	125	16	12.0	19.00	25	4	86.23	**050**	134.51	**050**
3/4-14	1.814	140	20	16.0	24.50	28	4	140.93	**075**	175.48	**075**
1-11	2.309	160	25	20.0	30.75	30	4	192.20	**100**	324.97	**100**

Steel	**2-25**	**5-45**
Stainless steel	**2-8**	**5-15**
Cast iron	**5-20**	**10-25**
Non ferrous metals	**10-20**	**15-40**
Heat resistant alloys		
Hardened materials		

Blind hole – Machine taps, right hand

G | Salo-Rex



DIN 5156 with reduced shank

	UNI	UNI	UNI	UNI	UNI
	C 2–3	C 2–3	E 1,5–2	E 1,5–2	E 1,5–2
	ISO 228	ISO 228	ISO 228	ISO 228	ISO 228 +0,05
	vap.	TiN	vap.	TiN	vap.
	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD
	U0	U0	U0	U0	U0
	Article no. 22 633 ...	Article no. 22 634 ...	Article no. 22 635 ...	Article no. 22 636 ...	Article no. 22 639 ...

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	£		£		£		£		£	
	mm	mm	mm	mm	mm	mm											
1/8-28	0.907	90	7	5.5	8.80	10	3	61.78	**012**	91.51	**012**						
1/8-28	0.907	90	7	5.5	8.80	10	4					63.49	**012**	91.51	**012**	100.11	**012**
1/4-19	1.337	100	11	9.0	11.80	15	4	88.57	**025**	116.21	**025**						
1/4-19	1.337	100	11	9.0	11.80	15	5					85.22	**025**	116.21	**025**	130.41	**025**
3/8-19	1.337	100	12	9.0	15.25	15	4	107.55	**037**	162.55	**037**						
3/8-19	1.337	100	12	9.0	15.25	15	5					104.70	**037**	162.55	**037**	161.69	**037**
1/2-14	1.814	125	16	12.0	19.00	17	4	142.15	**050**	230.40	**050**						
1/2-14	1.814	125	16	12.0	19.00	17	5					135.68	**050**	230.40	**050**	211.37	**050**
5/8-14	1.814	125	18	14.5	21.00	17	4	176.23	**062**								
5/8-14	1.814	125	18	14.5	21.00	17	5							300.99	**062**		
3/4-14	1.814	140	20	16.0	24.50	20	4	220.52	**075**								
3/4-14	1.814	140	20	16.0	24.50	20	5									315.96	**075**
7/8-14	1.814	150	22	18.0	28.25	22	5	301.17	**087**								
1-11	2.309	160	25	20.0	30.75	24	5	339.83	**100**								
1-11	2.309	160	25	20.0	30.75	24	6									482.28	**100**
1 1/4-11	2.309	170	32	24.0	39.50	25	6	534.78	**125**								
1 1/2-11	2.309	190	36	29.0	45.25	27	6	764.78	**150**								

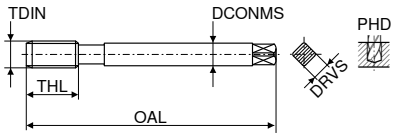
Steel	**6-20**	**6-25**	**6-25**	**6-25**	**6-25**
Stainless steel	**4-8**	**5-10**	**4-10**	**4-10**	**4-10**
Cast iron	**6-15**	**10-20**	**6-20**	**6-20**	**6-20**
Non ferrous metals		**12-25**	**12-25**	**12-25**	**12-25**
Heat resistant alloys					
Hardened materials					

6

Blind hole – Machine taps, right hand

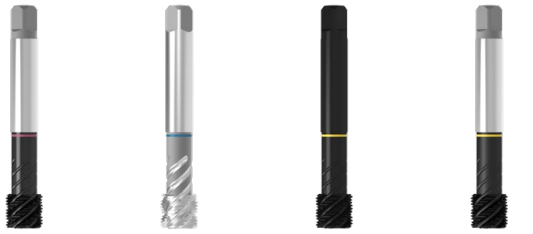
▲ CNC = for synchronised CNC machining with minimum length compensation chuck

G | Salo-Rex



DIN 5156 with reduced shank

UNI CNC	ST	VA	VA
E 1,5–2	C 2–3	E 1,5–2	E 1,5–2
ISO 228	ISO 228	ISO 228	ISO 228
TiN GS		vap.	TiN GS



HSS-E
45°
≤ 1100 N/mm²
≤ 3xD

HSS-E
42°
≤ 750 N/mm²
≤ 3xD

HSS-E
42°
≤ 900 N/mm²
≤ 3xD

HSS-E
45°
≤ 900 N/mm²
≤ 3xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 624 ... £		U0 Article no. 22 354 ... £		U0 Article no. 22 355 ... £		U0 Article no. 22 358 ... £	
	mm	mm	mm	mm	mm	mm									
1/8-28	0.907	90	7	5.5	8.80	10	3			56.83	**012**			112.44	**012**
1/8-28	0.907	90	7	5.5	8.80	10	4	110.86	**012**			63.92	**012**		
1/4-19	1.337	100	11	9.0	11.80	15	4			78.01	**025**				
1/4-19	1.337	100	11	9.0	11.80	15	5	145.85	**025**			86.74	**025**	147.74	**025**
3/8-19	1.337	100	12	9.0	15.25	15	4			95.74	**037**				
3/8-19	1.337	100	12	9.0	15.25	15	5	172.15	**037**			104.16	**037**	174.78	**037**
1/2-14	1.814	125	16	12.0	19.00	17	4			122.90	**050**				
1/2-14	1.814	125	16	12.0	19.00	17	5	258.28	**050**			141.48	**050**	261.93	**050**
5/8-14	1.814	125	18	14.5	21.00	17	5					194.53	**062**		
3/4-14	1.814	140	20	16.0	24.50	20	4			196.11	**075**				
3/4-14	1.814	140	20	16.0	24.50	20	5					218.34	**075**		
1-11	2.309	160	25	20.0	30.75	24	5			303.33	**100**				
1-11	2.309	160	25	20.0	30.75	24	6					336.88	**100**		

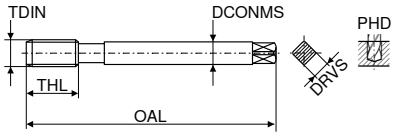
Steel	**6-25**	**10-20**		**5-12**
Stainless steel	**5-10**		**5-10**	**5-10**
Cast iron	**10-20**			
Non ferrous metals	**12-25**	**10-20**		
Heat resistant alloys				
Hardened materials				

Blind hole – Machine taps, right hand

G

UNI | C 2–3 | ISO 228 | vap.

UNI | C 2–3 | ISO 228 | TiN



DIN 5156 with reduced shank

HSS-E ◁ 35° ≤ 1100 N/mm² ≤ 2,5xD

HSS-E ◁ 35° ≤ 1100 N/mm² ≤ 2,5xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 163 ...	£	T9 Article no. 23 162 ...	£
	mm	mm	mm	mm	mm	mm					
1/8-28	0.907	90	7	5.5	8.80	10	3	43.28	**012**	58.69	**012**
1/4-19	1.337	100	11	9.0	11.80	15	4	56.88	**025**	80.91	**025**
3/8-19	1.337	100	12	9.0	15.25	15	4	72.65	**037**	95.29	**037**
1/2-14	1.814	125	16	12.0	19.00	17	4	90.49	**050**	143.38	**050**
3/4-14	1.814	140	20	16.0	24.50	20	4	150.36	**075**	184.63	**075**
1-11	2.309	160	25	20.0	30.75	24	5	227.36	**100**	356.91	**100**

Steel	**2-25**	**5-45**
Stainless steel	**2-8**	**5-15**
Cast iron	**5-20**	**10-25**
Non ferrous metals	**10-20**	**15-40**
Heat resistant alloys		
Hardened materials		

Through hole / Blind hole – Machine taps, right hand

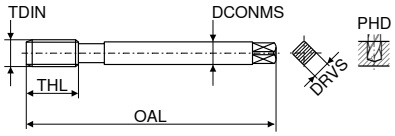
G | TWIN

ST | HR

C 2–3 | C 2–3

ISO 228 X | ISO 228 X

nitr.



DIN 5156 with reduced shank

HSS-E
0°
≤ 750 N/mm²
≤ 2xD

HSS-E
0°
≤ 1400 N/mm²
≤ 2xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 347 ...		U0 Article no. 22 339 ...	
	mm	mm	mm	mm	mm	mm		£		£	
1/16-28	0.907	90	6	4.9	6.80	17	3	56.88	**006**		
1/8-28	0.907	90	7	5.5	8.80	18	4	53.03	**012**	61.58	**012**
1/4-19	1.337	100	11	9.0	11.80	22	4	65.10	**025**	84.25	**025**
3/8-19	1.337	100	12	9.0	15.25	22	4	79.03	**037**	105.75	**037**
1/2-14	1.814	125	16	12.0	19.00	25	4	108.38	**050**	144.98	**050**
3/4-14	1.814	140	20	16.0	24.50	28	4	165.61	**075**	226.33	**075**
1-11	2.309	160	25	20.0	30.75	30	5	254.08	**100**	312.18	**100**
1 1/8-11	2.309	170	28	22.0	35.50	30	5	361.57	**112**	441.18	**112**
1 1/4-11	2.309	170	32	24.0	39.50	30	6	418.66	**125**	523.40	**125**
1 3/8-11	2.309	180	36	29.0	41.75	32	6	513.35	**137**	650.34	**137**
1 1/2-11	2.309	190	36	29.0	45.25	32	6	566.98	**150**	724.87	**150**
1 3/4-11	2.309	190	40	32.0	51.00	32	6			971.52	**175**

Steel	**10-20**	**6-15**
Stainless steel		
Cast iron		**6-15**
Non ferrous metals	**10-20**	
Heat resistant alloys		**3-5**
Hardened materials		

Through hole / Blind hole – Machine thread formers, right hand

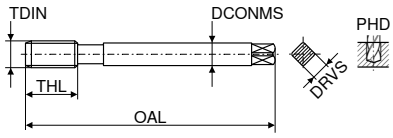
▲ SN = Thread formers with lubrication grooves

G | Spanlos

EC | EC SN

ISO 228 | ISO 228

TiN | TiN



DIN 2189 with reduced shank

HSS-E
≤ 1100 N/mm²
≤ 1,5xD

HSS-E
≤ 1100 N/mm²
≤ 3xD

U0

U0

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	Article no. 22 360 ...		Article no. 22 359 ...	
	mm	mm	mm	mm	mm	mm		£		£	
1/8-28	0.907	90	7	5.5	9.25	18		90.94	**012**		
1/8-28	0.907	90	7	5.5	9.25	18	5			103.29	**012**
1/4-19	1.337	100	11	9.0	12.55	22		116.95	**025**		
1/4-19	1.337	100	11	9.0	12.55	22	6			131.91	**025**
3/8-19	1.337	100	12	9.0	16.05	22		157.63	**037**		
3/8-19	1.337	100	12	9.0	16.05	22	6			176.63	**037**
1/2-14	1.814	125	16	12.0	20.10	25		211.94	**050**		
1/2-14	1.814	125	16	12.0	20.10	25	6			237.65	**050**

Steel	**8-30**	**8-30**
Stainless steel	**8-15**	**8-15**
Cast iron		
Non ferrous metals	**12-25**	**12-25**
Heat resistant alloys		
Hardened materials		

6

Through hole – Machine taps, right hand

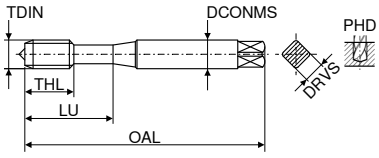
UNC | Stabil

UNI | VA | Ti

B 4–5 | B 4–5 | B 4–5

2B | 2B | 2BX

nitr. + vap. | nitr. | TiN



DIN 371 with reinforced shank

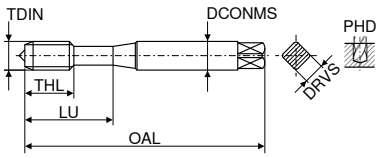
HSS-E | HSS-E | HSS-PM

0° | 0° | 0°

≤ 1100 N/mm² | ≤ 900 N/mm² | ≤ 44 HRC

≤ 4xD | ≤ 4xD | ≤ 4xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 572 ... £		U0 Article no. 22 250 ... £		U0 Article no. 22 269 ... £	
	mm	mm	mm	mm	mm	mm	mm							
Nr. 2-56	0.454	45	2.8	2.1	1.85	7	12	2	83.09	**002**				
Nr. 4-40	0.635	56	3.5	2.7	2.35	11	18	2	45.76	**004**				
Nr. 4-40	0.635	56	3.5	2.7	2.35	11	18	3					103.35	**004**
Nr. 6-32	0.794	56	4.0	3.0	2.85	12	20	3	38.82	**006**	39.76	**006**	92.71	**006**
Nr. 8-32	0.794	63	4.5	3.4	3.50	13	21	3	39.21	**008**	39.37	**008**	92.71	**008**
Nr. 10-24	1.058	70	6.0	4.9	3.90	15	25	3	42.40	**010**	39.21	**010**	99.06	**010**
Nr. 12-24	1.058	80	6.0	4.9	4.50	16	30	3	51.26	**012**				
1/4-20	1.270	80	7.0	5.5	5.10	17	30	3	44.72	**025**	49.75	**025**	103.35	**025**
5/16-18	1.411	90	8.0	6.2	6.60	20	35	3	53.30	**031**	50.99	**031**	111.37	**031**
3/8-16	1.588	100	10.0	8.0	8.00	22	39	3	58.82	**037**	51.87	**037**	131.04	**037**



DIN 371 with reinforced shank

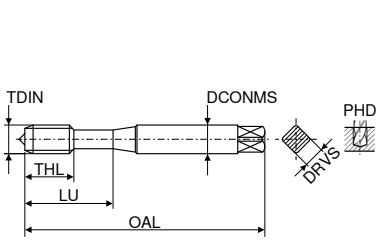
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 573 ... £	
	mm	mm	mm	mm	mm	mm			
1/2-13	1.954	110	9	7.0	10.80	25	3	72.14	**050**
5/8-11	2.309	110	12	9.0	13.50	27	3	98.30	**062**
3/4-10	2.540	125	14	11.0	16.50	30	3	120.84	**075**
7/8-9	2.822	140	18	14.5	19.50	32	3	155.39	**087**
1-8	3.175	160	18	14.5	22.25	36	3	199.67	**100**

Steel	**6-20**		**2-5**
Stainless steel	**4-8**	**5-10**	
Cast iron	**6-15**		
Non ferrous metals			
Heat resistant alloys			**2-6**
Hardened materials			

Through hole – Machine taps, right hand

UNC

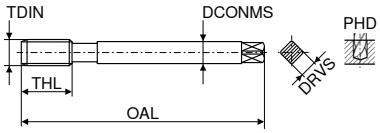
UNI	FE	FE-HF	VA
B 4–5	B 4–5	B 4–5	B 4–5
2B	2B	2B	2B
TiN		TiCN	nitr.



DIN 371 with reinforced shank

HSS-E	HSS-E	HSS-E	HSS-E
0° ≤ 1000 N/mm² ≤ 3xD	0° ≤ 850 N/mm² ≤ 3xD	0° ≤ 1100 N/mm² ≤ 3xD	0° ≤ 1000 N/mm² ≤ 3xD
T9	T9	T9	T9
Article no. 23 170 ...	Article no. 23 270 ...	Article no. 23 370 ...	Article no. 23 470 ...

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	£		£		£		£	
	mm	mm	mm	mm	mm	mm	mm									
Nr. 4-40	0.635	56	3.5	2.7	2.30	11	18	2	30.22	**004**	25.09	**004**	32.41	**004**	29.22	**004**
Nr. 6-32	0.794	56	4.0	3.0	2.85	12	20	3	29.22	**006**	23.84	**006**	30.78	**006**	26.51	**006**
Nr. 8-32	0.794	63	4.5	3.4	3.50	13	21	3	29.22	**008**	23.25	**008**	30.78	**008**	25.94	**008**
Nr. 10-24	1.058	70	6.0	4.9	3.90	15	25	3	30.22	**010**	25.09	**010**	32.54	**010**	29.22	**010**
1/4-20	1.270	80	7.0	5.5	5.20	17	30	3	39.66	**025**	26.16	**025**	45.05	**025**	30.65	**025**
5/16-18	1.411	90	8.0	6.2	6.60	20	35	3	43.60	**031**	29.23	**031**	48.32	**031**	34.93	**031**
3/8-16	1.588	100	10.0	8.0	8.00	22	39	3	50.75	**037**	33.56	**037**	58.27	**037**	40.39	**037**



DIN 376 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 171 ... £		T9 Article no. 23 271 ... £		T9 Article no. 23 371 ... £		T9 Article no. 23 471 ... £	
	mm	mm	mm	mm	mm	mm									
7/16-14	1.814	100	8	6.2	9.40	22	3	60.14	**043**	42.13	**043**	65.84	**043**	50.56	**043**
1/2-13	1.954	110	9	7.0	10.75	25	3	65.84	**050**	46.07	**050**	74.82	**050**	55.36	**050**
5/8-11	2.309	110	12	9.0	13.50	27	3	83.83	**062**	59.26	**062**	90.49	**062**	71.33	**062**
3/4-10	2.540	125	14	11.0	16.50	30	3	126.84	**075**	74.82	**075**	144.25	**075**	91.53	**075**

Steel	**5-45**	**5-25**	**5-45**	
Stainless steel	**5-15**			**3-10**
Cast iron	**10-25**			
Non ferrous metals	**15-40**			
Heat resistant alloys				
Hardened materials				

6

Blind hole – Machine taps, right hand

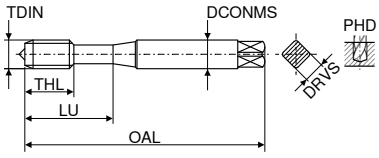
UNC | Salo-Rex

UNI | VA

C 2–3 | C 2–3

2B | 2B

vap. | vap.

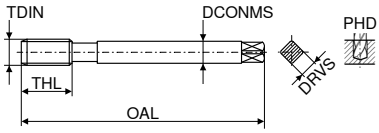


DIN 371 with reinforced shank

HSS-E
◁ 42°
≤ 1100 N/mm²
≤ 3xD

HSS-E
◁ 42°
≤ 900 N/mm²
≤ 3xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 582 ... £		U0 Article no. 22 266 ... £	
	mm	mm	mm	mm	mm	mm	mm					
Nr. 2-56	0.454	45	2.8	2.1	1.85	4.5	12	2	68.86	**002**		
Nr. 4-40	0.635	56	3.5	2.7	2.35	6.0	18	2	40.69	**004**		
Nr. 6-32	0.794	56	4.0	3.0	2.85	7.0	20	3	37.36	**006**	39.37	**006**
Nr. 8-32	0.794	63	4.5	3.4	3.50	8.0	21	3	38.50	**008**	42.00	**008**
Nr. 10-24	1.058	70	6.0	4.9	3.90	10.0	25	3	40.97	**010**	46.33	**010**
1/4-20	1.270	80	7.0	5.5	5.10	13.0	30	3	44.47	**025**	46.65	**025**
5/16-18	1.411	90	8.0	6.2	6.60	14.0	35	3	46.89	**031**	53.60	**031**
3/8-16	1.588	100	10.0	8.0	8.00	16.0	39	3	51.87	**037**	55.43	**037**



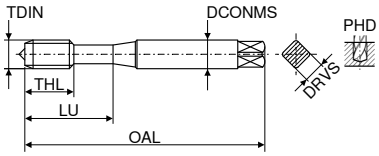
DIN 376 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 583 ... £		U0 Article no. 22 267 ... £	
	mm	mm	mm	mm	mm	mm					
7/16-14	1.814	100	8	6.2	9.40	18	3	99.06	**043**		
7/16-14	1.814	100	8	6.2	9.40	18	4			116.92	**043**
1/2-13	1.954	110	9	7.0	10.80	20	3	72.80	**050**		
1/2-13	1.954	110	9	7.0	10.80	20	4			81.54	**050**
9/16-12	2.117	110	11	9.0	12.25	20	3	105.04	**056**		
5/8-11	2.309	110	12	9.0	13.50	22	3	95.29	**062**		
5/8-11	2.309	110	12	9.0	13.50	22	4			103.49	**062**
3/4-10	2.540	125	14	11.0	16.50	25	3	123.19	**075**		
3/4-10	2.540	125	14	11.0	16.50	25	4			129.00	**075**
7/8-9	2.822	140	18	14.5	19.50	27	4	147.31	**087**		
1-8	3.175	160	18	14.5	22.25	30	4	199.30	**100**		
1-8	3.175	160	18	14.5	22.25	30	5			218.34	**100**

Steel	**6-20**	
Stainless steel	**4-8**	**5-10**
Cast iron	**6-15**	
Non ferrous metals		
Heat resistant alloys		
Hardened materials		

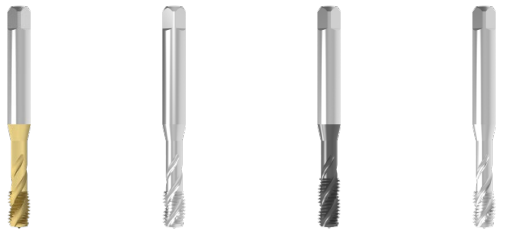
Blind hole – Machine taps, right hand

UNC



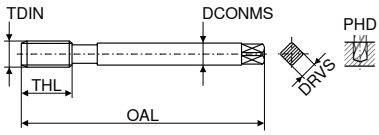
DIN 371 with reinforced shank

	UNI	FE	FE-HF	VA
	C 2–3	C 2–3	C 2–3	C 2–3
	2B	2B	2B	2B
	TiN		TiCN	



	HSS-E	HSS-E	HSS-E	HSS-E
	◁ 35° ≤ 1000 N/mm² ≤ 2,5xD	◁ 35° ≤ 850 N/mm² ≤ 2,5xD	◁ 35° ≤ 1100 N/mm² ≤ 2,5xD	◁ 35° ≤ 1000 N/mm² ≤ 2,5xD
	T9	T9	T9	T9
TDIN	Article no. 23 172 ...	Article no. 23 272 ...	Article no. 23 372 ...	Article no. 23 472 ...
	£	£	£	£
Nr. 4-40			33.64 004	
Nr. 4-40	32.08 004	26.16 004		30.65 004
Nr. 6-32	30.08 006	24.41 006		28.81 006
Nr. 6-32			32.54 006	
Nr. 8-32	32.41 008	25.09 008		29.78 008
Nr. 8-32			34.43 008	
Nr. 10-24	33.40 010	26.31 010		31.67 010
Nr. 10-24			34.93 010	
1/4-20	43.16 025	29.51 025		35.45 025
1/4-20			47.94 025	
5/16-18	43.16 031	30.65 031		37.48 031
5/16-18			49.98 031	
3/8-16	52.87 037	35.02 037		41.83 037
3/8-16			58.30 037	

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes
	mm	mm	mm	mm	mm	mm	mm	
Nr. 4-40	0.635	56	3.5	2.7	2.30	11	18	2
Nr. 4-40	0.635	56	3.5	2.7	2.30	6	18	2
Nr. 6-32	0.794	56	4.0	3.0	2.85	7	20	3
Nr. 6-32	0.794	56	4.0	3.0	2.85	12	20	3
Nr. 8-32	0.794	63	4.5	3.4	3.50	8	21	3
Nr. 8-32	0.794	63	4.5	3.4	3.50	13	21	3
Nr. 10-24	1.058	70	6.0	4.9	3.90	10	25	3
Nr. 10-24	1.058	70	6.0	4.9	3.90	15	25	3
1/4-20	1.270	80	7.0	5.5	5.20	13	30	3
1/4-20	1.270	80	7.0	5.5	5.20	17	30	3
5/16-18	1.411	90	8.0	6.2	6.60	14	35	3
5/16-18	1.411	90	8.0	6.2	6.60	20	35	3
3/8-16	1.588	100	10.0	8.0	8.00	16	39	3
3/8-16	1.588	100	10.0	8.0	8.00	22	39	3



DIN 376 with reduced shank

	T9	T9	T9	T9
TDIN	Article no. 23 173 ...	Article no. 23 273 ...	Article no. 23 373 ...	Article no. 23 473 ...
	£	£	£	£
7/16-14			74.11 043	
7/16-14	66.83 043	47.31 043		57.81 043
1/2-13	70.77 050	47.52 050		57.10 050
1/2-13			78.67 050	
5/8-11	86.88 062	66.54 062		80.04 062
5/8-11			96.03 062	
3/4-10	128.98 075	81.53 075		98.20 075
3/4-10			150.36 075	

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes
	mm	mm	mm	mm	mm	mm	
7/16-14	1.814	100	8	6.2	9.40	22	3
7/16-14	1.814	100	8	6.2	9.40	18	3
1/2-13	1.954	110	9	7.0	10.75	20	3
1/2-13	1.954	110	9	7.0	10.75	25	3
5/8-11	2.309	110	12	9.0	13.50	22	3
5/8-11	2.309	110	12	9.0	13.50	27	3
3/4-10	2.540	125	14	11.0	16.50	25	3
3/4-10	2.540	125	14	11.0	16.50	30	3

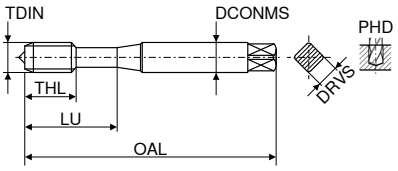
Steel	5-45	5-25	5-45	
Stainless steel	5-15			3-10
Cast iron	10-25			
Non ferrous metals	15-40			
Heat resistant alloys				
Hardened materials				

6

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

UNC | Spanlos



DIN 2174 with reduced shank

	EC	EC SN
	C 2–3	C 2–3
	2BX	2BX
	TiN	TiN

	HSS-E ≤ 1100 N/mm² ≤ 1,5xD	HSS-E ≤ 1100 N/mm² ≤ 3xD
	U0	U0
TDIN	Article no. 22 270 ...	Article no. 22 271 ...
	£	£

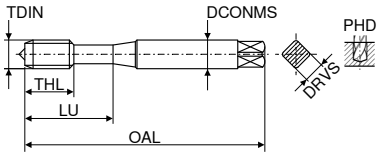
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes				
	mm	mm	mm	mm	mm	mm	mm					
Nr. 4-40	0.635	56	3.5	2.7	2.55	11	18		53.33	**004**		
Nr. 4-40	0.635	56	3.5	2.7	2.55	11	18	3			61.91	**004**
Nr. 6-32	0.794	56	4.0	3.0	3.15	12	20		49.98	**006**		
Nr. 6-32	0.794	56	4.0	3.0	3.15	12	20	3			57.38	**006**
Nr. 8-32	0.794	63	4.5	3.4	3.80	13	21		50.26	**008**		
Nr. 8-32	0.794	63	4.5	3.4	3.80	13	21	4			57.38	**008**
Nr. 10-24	1.058	70	6.0	4.9	4.35	15	25		56.08	**010**		
Nr. 10-24	1.058	70	6.0	4.9	4.35	15	25	4			63.50	**010**
1/4-20	1.270	80	7.0	5.5	5.75	17	30		64.95	**025**		
1/4-20	1.270	80	7.0	5.5	5.75	17	30	4			73.52	**025**
5/16-18	1.411	90	8.0	6.2	7.30	20	35		68.01	**031**		
5/16-18	1.411	90	8.0	6.2	7.30	20	35	5			78.98	**031**
3/8-16	1.588	100	10.0	8.0	8.80	22	39		83.67	**037**		
3/8-16	1.588	100	10.0	8.0	8.80	22	39	5			92.39	**037**

Steel	**8-30**	**8-30**
Stainless steel	**8-15**	**8-15**
Cast iron		
Non ferrous metals	**12-25**	**12-25**
Heat resistant alloys		
Hardened materials		

Through hole – machine taps for wire thread inserts, right hand

EG UNC | Stabil

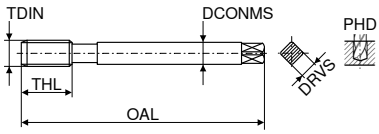
UNI | B 4–5 | 2B | nitr. + vap.



DIN 371 with reinforced shank

HSS-E
0°
≤ 1100 N/mm²
≤ 4xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 668 ...	
	mm	mm	mm	mm	mm	mm	mm		£	
EG Nr. 4-40	0.635	63	4.5	3.4	3.1	13	21	3	59.26	**004**
EG Nr. 6-32	0.794	70	6.0	4.9	3.8	14	25	3	62.10	**006**
EG Nr. 8-32	0.794	80	6.0	4.9	4.4	16	30	3	61.14	**008**
EG Nr. 10-24	1.058	80	7.0	5.5	5.2	17	30	3	65.82	**010**
EG 1/4-20	1.270	90	8.0	6.2	6.7	20	35	3	68.28	**025**
EG 5/16-18	1.411	100	10.0	8.0	8.4	22	39	3	74.96	**031**



DIN 376 with reduced shank

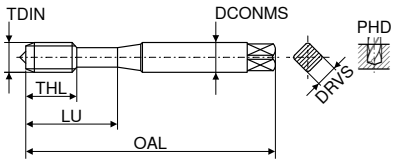
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 670 ...	
	mm	mm	mm	mm	mm	mm		£	
EG 3/8-16	1.588	100	9	7.0	10.00	22	3	86.88	**037**
EG 7/16-14	1.814	110	11	9.0	11.60	26	3	106.20	**043**
EG 1/2-13	1.954	110	12	9.0	13.30	27	3	110.69	**050**
EG 5/8-11	2.309	125	14	11.0	16.50	30	3	139.91	**062**
EG 3/4-10	2.540	140	18	14.5	19.75	32	3	181.45	**075**

Steel	**6-20**
Stainless steel	**4-8**
Cast iron	**6-15**
Non ferrous metals	
Heat resistant alloys	
Hardened materials	

Blind hole – machine taps for wire thread inserts, right hand

EG UNC | Salo-Rex

UNI | E 1,5–2 | 2B | vap.



DIN 371 with reinforced shank

HSS-E
42°
≤ 1100 N/mm²
≤ 3xD

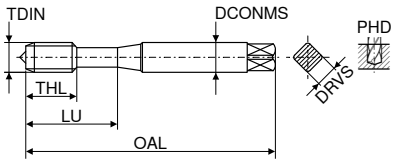
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 672 ... £	
	mm	mm	mm	mm	mm	mm	mm			
EG Nr. 4-40	0.635	63	4.5	3.4	3.1	7	21	3	59.72	**004**
EG Nr. 6-32	0.794	70	6.0	4.9	3.8	8	25	3	59.26	**006**
EG Nr. 8-32	0.794	80	6.0	4.9	4.4	8	30	3	61.14	**008**
EG Nr. 10-24	1.058	80	7.0	5.5	5.2	10	30	3	65.82	**010**
EG 1/4-20	1.270	90	8.0	6.2	6.7	14	35	3	72.65	**025**
EG 5/16-18	1.411	100	10.0	8.0	8.4	16	39	3	76.26	**031**

Steel	**6-20**
Stainless steel	**4-8**
Cast iron	**6-15**
Non ferrous metals	
Heat resistant alloys	
Hardened materials	

Blind hole – Machine taps, right hand

UNJC | SL

Ti | C 2–3 | 3BX | TiCN



DIN 371 with reinforced shank

HSS-E
◁ 15°
≤ 1200 N/mm²
≤ 2xD

U0

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	Article no. 22 166 ...	
	mm	mm	mm	mm	mm	mm	mm		£	
Nr. 4-40	0.635	56	3.5	2.7	2.30	11	18	2	80.91	**004**
Nr. 6-32	0.794	56	4.0	3.0	2.85	12	20	3	82.40	**006**
Nr. 8-32	0.794	63	4.5	3.4	3.50	13	21	3	80.08	**008**
Nr. 10-24	1.058	70	6.0	4.9	3.90	15	25	3	85.84	**010**
1/4-20	1.270	80	7.0	5.5	5.25	17	30	3	109.82	**025**
3/8-16	1.588	100	10.0	8.0	8.10	22	39	3	132.64	**037**

Steel	**6-8**
Stainless steel	**4-10**
Cast iron	
Non ferrous metals	**10-12**
Heat resistant alloys	**4-6**
Hardened materials	

6

Through hole – Machine taps, right hand

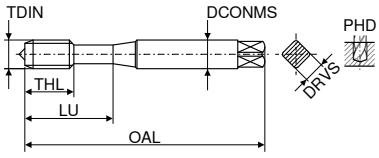
UNF | Stabil

UNI | Ti

B 4–5 | B 4–5

2B | 2BX

nitr. + vap. | TiN

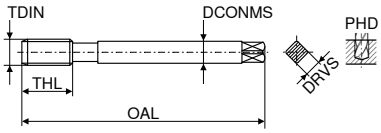


DIN 371 with reinforced shank

HSS-E
0°
≤ 1100 N/mm²
≤ 4xD

HSS-PM
0°
≤ 44 HRC
≤ 4xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 602 ...		U0 Article no. 22 317 ...	
	mm	mm	mm	mm	mm	mm	mm		£		£	
Nr. 4-48	0.529	56	3.5	2.7	2.40	11	18	2	54.10	**004**		
Nr. 4-48	0.529	56	3.5	2.7	2.40	11	18	3			106.94	**004**
Nr. 5-44	0.577	56	3.5	2.7	2.70	11	18	3			110.26	**005**
Nr. 6-40	0.635	56	4.0	3.0	2.95	12	20	3	48.50	**006**	95.32	**006**
Nr. 8-36	0.706	63	4.5	3.4	3.50	13	21	3	47.27	**008**	101.98	**008**
Nr. 10-32	0.794	70	6.0	4.9	4.10	15	25	3	48.54	**010**	102.66	**010**
1/4-28	0.907	80	7.0	5.5	5.50	17	30	3	55.28	**025**	106.94	**025**
5/16-24	1.058	90	8.0	6.2	6.90	17	35	3	66.54	**031**	121.73	**031**
3/8-24	1.058	90	10.0	8.0	8.50	18	35	3			135.30	**037**



DIN 374 with reduced shank

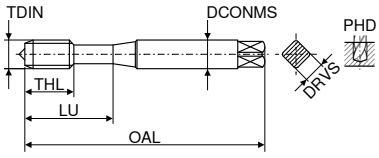
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 603 ...		U0 Article no. 22 421 ...	
	mm	mm	mm	mm	mm	mm		£		£	
7/16-20	1.270	100	8	6.2	9.90	22	3	74.58	**043**		
1/2-20	1.270	100	9	7.0	11.50	22	3	72.14	**050**	174.59	**050**
9/16-18	1.411	100	11	9.0	12.90	22	3	108.38	**056**		
5/8-18	1.411	100	12	9.0	14.50	22	3	99.98	**062**		
3/4-16	1.588	110	14	11.0	17.50	25	4	124.59	**075**		
7/8-14	1.814	125	18	14.5	20.50	25	4	162.52	**087**		
1-12	2.117	140	18	14.5	23.25	28	4	212.37	**100**		
1 1/8-12	2.117	150	22	18.0	26.50	28	4	549.10	**112**		
1 1/4-12	2.117	150	22	18.0	29.75	28	4	612.69	**125**		
1 3/8-12	2.117	170	28	22.0	33.00	30	5	676.21	**137**		

Steel	**6-20**	**2-5**
Stainless steel	**4-8**	
Cast iron	**6-15**	
Non ferrous metals		
Heat resistant alloys		**2-6**
Hardened materials		

Through hole – Machine taps, right hand

UNF

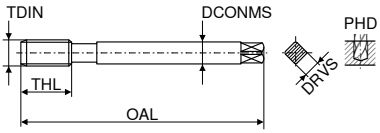
UNI	FE	VA
B 4–5	B 4–5	B 4–5
2B	2B	2B
TiN		nitr.



DIN 371 with reinforced shank

	HSS-E	HSS-E	HSS-E
	∢ 0° ≤ 1100 N/mm² ≤ 3xD	∢ 0° ≤ 850 N/mm² ≤ 3xD	∢ 0° ≤ 1100 N/mm² ≤ 3xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	T9 Article no. 23 180 ...		T9 Article no. 23 280 ...		T9 Article no. 23 480 ...	
	mm	mm	mm	mm	mm	mm	mm		£		£		£	
Nr. 10-32	0.794	70	6	4.9	4.1	15	25	3	35.02	**010**	29.51	**010**	33.56	**010**
1/4-28	0.907	80	7	5.5	5.5	17	30	3	44.62	**025**	31.55	**025**	37.94	**025**
5/16-24	1.058	90	8	6.2	6.9	17	35	3	49.54	**031**	35.02	**031**	41.83	**031**
3/8-24	1.058	90	10	8.0	8.5	18	35	4	53.03	**037**	36.46	**037**	43.73	**037**



DIN 374 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 181 ...		T9 Article no. 23 281 ...		T9 Article no. 23 481 ...	
	mm	mm	mm	mm	mm	mm		£		£		£	
7/16-20	1.270	100	8	6.2	9.9	22	3	65.10	**043**	46.65	**043**	55.01	**043**
1/2-20	1.270	100	9	7.0	11.5	22	3	65.84	**050**	46.65	**050**	55.01	**050**
9/16-18	1.411	100	11	9.0	12.9	22	3	91.39	**056**	63.06	**056**	69.43	**056**
5/8-18	1.411	100	12	9.0	14.5	22	3	82.94	**062**	57.10	**062**	61.58	**062**
3/4-16	1.588	110	14	11.0	17.5	25	4	128.42	**075**	74.53	**075**	97.20	**075**

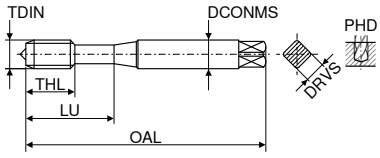
Steel	**5-45**	**5-25**	
Stainless steel	**5-15**		**3-10**
Cast iron	**10-25**		
Non ferrous metals	**15-40**		
Heat resistant alloys			
Hardened materials			

6

Blind hole – Machine taps, right hand

UNF | Salo-Rex

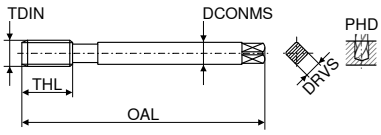
VA	UNI	UNI
E 1,5–2	C 2–3	E 1,5–2
2B	2B	2B +0,05
vap.	vap.	vap.



DIN 371 with reinforced shank

HSS-E ◁ 42° ≤ 900 N/mm² ≤ 3xD | HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD | HSS-E ◁ 42° ≤ 1100 N/mm² ≤ 3xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 308 ... £		U0 Article no. 22 606 ... £		U0 Article no. 22 307 ... £	
	mm	mm	mm	mm	mm	mm	mm							
Nr. 2-64	0.397	45	2.8	2.1	1.85	4.5	12	2	87.71	**002**				
Nr. 4-48	0.529	56	3.5	2.7	2.40	6.0	18	2	59.72	**004**	58.69	**004**		
Nr. 6-40	0.635	56	4.0	3.0	2.95	7.0	20	3	58.69	**006**	44.47	**006**		
Nr. 6-40	0.635	56	4.0	3.0	3.00	7.0	20	3					82.21	**006**
Nr. 8-36	0.706	63	4.5	3.4	3.50	8.0	21	3	72.92	**008**	44.46	**008**		
Nr. 10-32	0.794	70	6.0	4.9	4.10	10.0	25	3	61.58	**010**	46.89	**010**		
Nr. 10-32	0.794	70	6.0	4.9	4.15	10.0	25	3					86.23	**010**
1/4-28	0.907	80	7.0	5.5	5.50	10.0	30	3	64.79	**025**	49.82	**025**		
1/4-28	0.907	80	7.0	5.5	5.55	10.0	30	3					89.94	**025**
5/16-24	1.058	90	8.0	6.2	6.90	10.0	35	3	71.64	**031**	68.43	**031**		
5/16-24	1.058	90	8.0	6.2	6.95	10.0	35	3					104.02	**031**
3/8-24	1.058	90	10.0	8.0	8.50	10.0	35	3	73.95	**037**				
3/8-24	1.058	90	10.0	8.0	8.55	10.0	35	3					104.02	**037**



DIN 374 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 607 ... £		U0 Article no. 22 409 ... £	
	mm	mm	mm	mm	mm	mm					
7/16-20	1.270	100	8	6.2	9.90	13	3	72.80	**043**		
7/16-20	1.270	100	8	6.2	9.95	13	4			130.88	**043**
1/2-20	1.270	100	9	7.0	11.50	13	4	73.81	**050**		
1/2-20	1.270	100	9	7.0	11.55	13	5			125.38	**050**
9/16-18	1.411	100	11	9.0	12.90	15	4	109.38	**056**		
9/16-18	1.411	100	11	9.0	12.95	15	5			177.80	**056**
5/8-18	1.411	100	12	9.0	14.50	15	4	97.34	**062**		
5/8-18	1.411	100	12	9.0	14.55	15	5			161.69	**062**
3/4-16	1.588	110	14	11.0	17.50	17	4	134.23	**075**		
3/4-16	1.588	110	14	11.0	17.55	17	5			217.03	**075**
7/8-14	1.814	125	18	14.5	20.50	17	4	157.35	**087**		
1-12	2.117	140	18	14.5	23.25	20	4	220.36	**100**		
1-12	2.117	140	18	14.5	23.30	20	5			347.61	**100**
1 1/8-12	2.117	150	22	18.0	26.50	22	4	310.44	**112**		
1 1/4-12	2.117	150	22	18.0	29.75	22	5	359.25	**125**		
1 3/8-12	2.117	170	28	22.0	33.00	24	5	416.33	**137**		

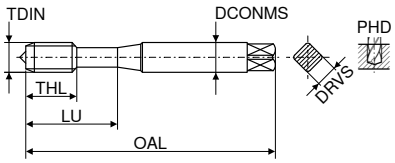
Steel		**6-20**	**6-20**
Stainless steel	**5-10**	**4-8**	**4-8**
Cast iron		**6-15**	**6-15**
Non ferrous metals			
Heat resistant alloys			
Hardened materials			

Blind hole – Machine taps, right hand

UNF | SL

Ti | C 2–3 | 2BX | vap.

Ti | C 2–3 | 3BX | vap.



DIN 371 with reinforced shank

HSS-PM
◁ 30°
≤ 1400 N/mm²
≤ 1,5xD

HSS-PM
◁ 30°
≤ 1400 N/mm²
≤ 1,5xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 302 ... £		U0 Article no. 22 303 ... £	
	mm	mm	mm	mm	mm	mm	mm					
Nr. 10-32	0.794	70	6	4.9	4.1	10	25	3	98.49	**010**	98.49	**010**
1/4-28	0.907	80	7	5.5	5.5	10	30	3	107.67	**025**	107.67	**025**
5/16-24	1.058	90	8	6.2	6.9	10	35	3	122.51	**031**	114.72	**031**
3/8-24	1.058	90	10	8.0	8.5	10	35	3	126.10	**037**	126.10	**037**

Steel	**2-5**	**2-5**
Stainless steel		
Cast iron		
Non ferrous metals		
Heat resistant alloys	**2-6**	**2-6**
Hardened materials		

6

Blind hole – Machine taps, right hand

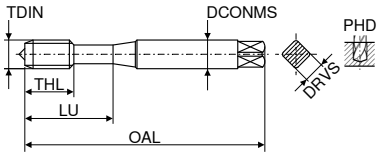
UNF

UNI | FE | VA

C 2–3

2B

TiN



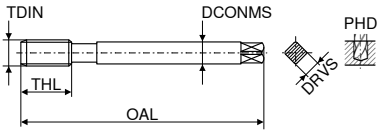
DIN 371 with reinforced shank

HSS-E
35°
≤ 1100 N/mm²
≤ 2,5xD

HSS-E
35°
≤ 850 N/mm²
≤ 2,5xD

HSS-E
35°
≤ 1100 N/mm²
≤ 2,5xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	T9 Article no. 23 182 ... £		T9 Article no. 23 282 ... £		T9 Article no. 23 482 ... £	
	mm	mm	mm	mm	mm	mm	mm							
Nr. 10-32	0.794	70	6	4.9	4.1	10	25	3	36.88	**010**	31.08	**010**	36.47	**010**
1/4-28	0.907	80	7	5.5	5.5	10	30	3	46.33	**025**	33.56	**025**	40.39	**025**
5/16-24	1.058	90	8	6.2	6.9	10	35	3	49.98	**031**	35.06	**031**	42.18	**031**
3/8-24	1.058	90	10	8.0	8.5	10	35	3	55.64	**037**	38.94	**037**	46.65	**037**



DIN 374 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	T9 Article no. 23 183 ... £		T9 Article no. 23 283 ... £		T9 Article no. 23 483 ... £	
	mm	mm	mm	mm	mm	mm							
7/16-20	1.270	100	8	6.2	9.9	13	3	66.83	**043**	47.31	**043**	57.81	**043**
1/2-20	1.270	100	9	7.0	11.5	13	4	70.77	**050**	48.68	**050**	58.55	**050**
9/16-18	1.411	100	11	9.0	12.9	15	4	95.29	**056**	74.53	**056**	81.80	**056**
5/8-18	1.411	100	12	9.0	14.5	15	4	86.14	**062**	65.36	**062**	70.56	**062**
3/4-16	1.588	110	14	11.0	17.5	17	4	136.70	**075**	88.32	**075**	97.20	**075**

Steel	**5-45**	**5-25**	
Stainless steel	**5-15**		**3-10**
Cast iron	**10-25**		
Non ferrous metals	**15-40**		
Heat resistant alloys			
Hardened materials			

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

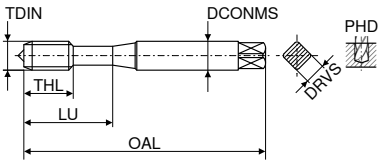
UNF | Spanlos

EC
SN

C
2–3

2BX

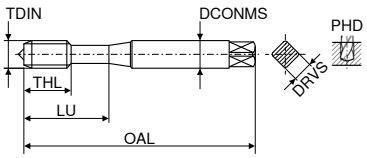
TiN



DIN 2174 with reduced shank

HSS-E
≤ 1100 N/mm²
≤ 3xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 312 ...	
	mm	mm	mm	mm	mm	mm	mm		£	
Nr. 4-48	0.529	56	3.5	2.7	2.62	11	18	3	68.73	**004**
Nr. 6-40	0.635	56	4.0	3.0	3.22	12	20	3	64.08	**006**
Nr. 8-36	0.706	63	4.5	3.4	3.85	13	21	4	66.24	**008**
Nr. 10-32	0.794	70	6.0	4.9	4.45	15	25	4	70.77	**010**
1/4-28	0.907	80	7.0	5.5	5.95	17	30	4	82.96	**025**



DIN 2174 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 313 ...	
	mm	mm	mm	mm	mm	mm		£	
7/16-20	1.27	100	8	6.2	10.55	22	6	123.63	**043**
1/2-20	1.27	100	9	7.0	12.15	22	6	127.12	**050**

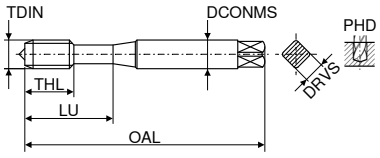
Steel	**8-30**
Stainless steel	**8-15**
Cast iron	
Non ferrous metals	**12-25**
Heat resistant alloys	
Hardened materials	

6

Through hole – machine taps for wire thread inserts, right hand

EG UNF | Stabil

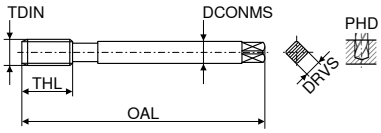
UNI | B 4–5 | 2B | nitr. + vap.



DIN 371 with reinforced shank

HSS-E
0°
≤ 1100 N/mm²
≤ 4xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 676 ...	
	mm	mm	mm	mm	mm	mm	mm		£	
EG Nr. 4-48	0.529	56	4	3.0	3.0	9	20	3	75.64	**004**
EG Nr. 6-40	0.635	70	6	4.9	3.7	11	25	3	74.58	**006**
EG Nr. 8-36	0.706	80	6	4.9	4.4	13	30	3	72.90	**008**
EG Nr. 10-32	0.794	80	6	4.9	5.1	13	30	3	77.73	**010**
EG 1/4-28	0.907	90	8	6.2	6.6	17	35	3	82.94	**025**



DIN 374 with reduced shank

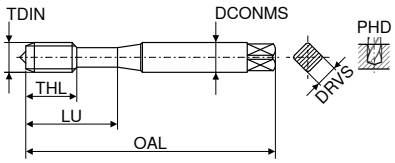
TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 677 ...	
	mm	mm	mm	mm	mm	mm		£	
EG 3/8-24	1.058	90	8	6.2	9.80	18	4	101.52	**037**
EG 7/16-20	1.270	100	9	7.0	11.50	22	3	128.42	**043**
EG 1/2-20	1.270	100	11	9.0	13.10	22	3	120.84	**050**
EG 5/8-18	1.411	110	14	11.0	16.25	25	4	193.66	**062**
EG 3/4-16	1.588	125	16	12.0	19.50	25	4	239.98	**075**

Steel	**6-20**
Stainless steel	**4-8**
Cast iron	**6-15**
Non ferrous metals	
Heat resistant alloys	
Hardened materials	

Blind hole – machine taps for wire thread inserts, right hand

EG UNF | Salo-Rex

UNI | E 1,5–2 | 2B | vap.



DIN 371 with reinforced shank

HSS-E
42°
≤ 1100 N/mm²
≤ 3xD

TDIN	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	U0 Article no. 22 680 ...	£
	mm	mm	mm	mm	mm	mm	mm			
EG Nr. 4-48	0.529	56	4	3.0	3.0	7	20	3	76.56	**004**
EG Nr. 6-40	0.635	70	6	4.9	3.7	8	25	3	74.39	**006**
EG Nr. 8-36	0.706	80	6	4.9	4.4	8	30	3	76.26	**008**
EG Nr. 10-32	0.794	80	6	4.9	5.1	8	30	3	82.21	**010**
EG 1/4-28	0.907	90	8	6.2	6.6	10	35	3	90.67	**025**

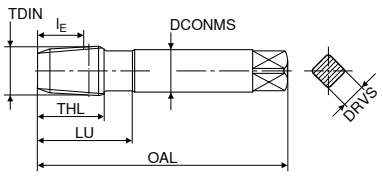
Steel	**6-20**
Stainless steel	**4-8**
Cast iron	**6-15**
Non ferrous metals	
Heat resistant alloys	
Hardened materials	

Blind hole – Machine taps, right hand

NPT | Salo-Rex

VA | C | 2–3 | vap.

VA | C | 2–3 | TiN

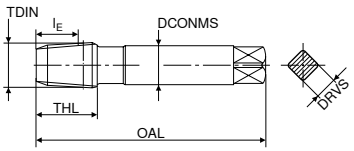


DIN 371 with reinforced shank

HSS-E
35°
≤ 900 N/mm²

HSS-E
42°
≤ 1100 N/mm²

TDIN	TP	OAL	DCONMS	DRVS	l_E	THL	LU	Flutes	U0 Article no. 22 364 ...		U0 Article no. 22 365 ...	
	mm	mm	mm	mm	mm	mm	mm		£		£	
1/16-27	0.941	90	8	6.2	9.24	13.0	26.0	3	98.47	**006**		
1/8-27	0.941	90	10	8.0	9.28	13.0	26.0	3	113.88	**012**		
1/8-27	0.941	90	10	8.0	9.28	12.0	26.0	4			153.84	**012**
1/4-18	1.411	100	14	11.0	13.55	19.5	34.5	3	133.02	**025**		
1/4-18	1.411	100	14	11.0	13.55	18.0	34.5	4			158.33	**025**



DIN 374 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	l_E	THL	Flutes	U0 Article no. 22 371 ...		U0 Article no. 22 372 ...	
	mm	mm	mm	mm	mm	mm		£		£	
3/8-18	1.411	110	14	11	13.86	19.5	3	181.30	**037**		
3/8-18	1.411	110	14	11	13.86	18.0	5			303.02	**037**
1/2-14	1.814	140	16	12	18.11	25.0	5	263.50	**050**		
1/2-14	1.814	140	16	12	18.11	23.0	5			350.58	**050**
3/4-14	1.814	150	20	16	18.59	26.0	5	381.33	**075**		
1-11,5	2.209	170	25	20	22.31	32.0	5	556.95	**100**		

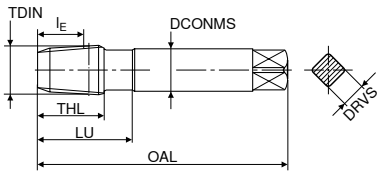
Steel		**2-4**
Stainless steel	**2-4**	**2-4**
Cast iron		
Non ferrous metals		
Heat resistant alloys		
Hardened materials		

Through hole / Blind hole – Machine taps, right hand

NPT | TWIN

VG

C
2–3

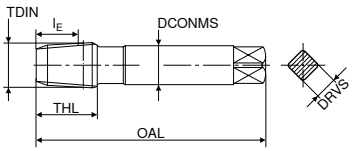


DIN 371 with reinforced shank

HSS-E
0°
≤ 1100 N/mm²

6

TDIN	TP	OAL	DCONMS	DRVS	l_E	THL	LU	Flutes	U0 Article no. 22 374 ...	
	mm	mm	mm	mm	mm	mm	mm		£	
1/16-27	0.941	90	8	6.2	9.24	13.0	26.0	3	86.14	**006**
1/8-27	0.941	90	10	8.0	9.28	13.0	26.0	3	110.56	**012**
1/4-18	1.411	100	14	11.0	13.55	19.5	34.5	3	114.72	**025**



DIN 374 with reduced shank

TDIN	TP	OAL	DCONMS	DRVS	l_E	THL	Flutes	U0 Article no. 22 375 ...	
	mm	mm	mm	mm	mm	mm		£	
3/8-18	1.411	110	14	11	13.86	19.5	3	144.11	**037**
1/2-14	1.814	140	16	12	18.11	25.0	5	194.53	**050**
3/4-14	1.814	150	20	16	18.59	26.0	5	252.33	**075**
1-11,5	2.209	170	25	20	22.31	30.0	5	351.41	**100**

Steel	**2-6**
Stainless steel	
Cast iron	**4-6**
Non ferrous metals	**4-6**
Heat resistant alloys	
Hardened materials	

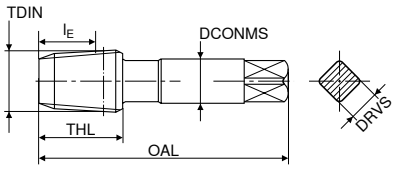
Through hole / Blind hole – Machine taps, right hand

▲ ES = extra short

NPT | TWIN

ST
ES

C
2–3



DIN 2181 with reduced shank

HSS-E
0°
≤ 750 N/mm²

U0

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	l_E mm	THL mm	Flutes	Article no. 22 361 ... £	
1/16-27	0.941	63	6	4.9	9.24	13.0	4	61.99	**006**
1/8-27	0.941	63	7	5.5	9.28	13.0	5	65.84	**012**
1/4-18	1.411	63	11	9.0	13.55	19.5	5	79.03	**025**
3/8-18	1.411	70	12	9.0	13.86	19.5	5	98.80	**037**
1/2-14	1.814	80	16	12.0	18.11	23.0	5	132.35	**050**
3/4-14	1.814	100	20	16.0	18.59	26.0	6	167.20	**075**
1-11,5	2.209	110	25	20.0	22.31	32.0	6	247.11	**100**
2-11,5	2.209	160	45	35.0	23.22	36.0	7	793.88	**200**

Steel	**4-6**
Stainless steel	
Cast iron	
Non ferrous metals	**4-6**
Heat resistant alloys	
Hardened materials	

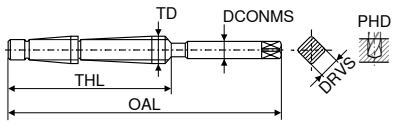
Through hole – Machine taps, right hand

- single finishing trapezoidal taps (2 steps)
- do not reverse

Tr

ST

7H



Factory standard

HSS-E

5°
≤ 900 N/mm²
≤ 2xD

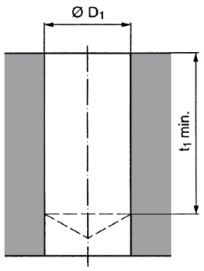
6

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	U0 Article no. 22 402 ... £	
	mm	mm	mm	mm	mm	mm			
Tr 8	1.5	105	6	4.9	6.60	55	3	553.32	**080**
Tr 9	2.0	130	7	5.5	7.20	70	3	532.41	**090**
Tr 10	2.0	130	7	5.5	8.20	70	3	553.32	**102**
Tr 10	3.0	155	7	5.5	7.25	95	3	507.25	**103**
Tr 12	3.0	160	9	7.0	9.25	95	3	608.66	**123**
Tr 14	3.0	170	10	8.0	11.25	100	3	707.00	**143**
Tr 14	4.0	195	10	8.0	10.25	125	3	596.31	**144**
Tr 16	4.0	225	12	9.0	12.25	130	3	596.31	**164**
Tr 18	4.0	225	14	11.0	14.25	116	3	617.81	**184**
Tr 20	4.0	225	16	12.0	16.25	130	3	716.15	**204**
Tr 22	5.0	260	16	12.0	17.25	160	3	830.03	**225**
Tr 24	5.0	285	18	14.5	19.25	165	3	968.19	**245**

Steel	●
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
Hardened materials	

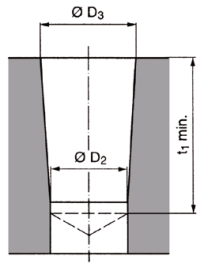
Core hole diameters for taper threads (taper 1:16)

Pre-drilling of cylindrical holes without reamer



		NPT		NPTF				Rc	
Ø D_1 inch	Pitch Gg/1"	Ø D_1 mm	t_1 min. mm	Ø D_1 mm	t_1 min. mm	Ø D_1 inch	Pitch Gg/1"	Ø D_1 mm	t_1 min. mm
1/16	27	6,15	12	6,1	12	1/16	28	6,2	11,9
1/8	27	8,5	12	8,45	12	1/8	28	8,2	11,9
1/4	18	11	17,5	10,9	17,5	1/4	19	10,85	16,3
3/8	18	14,5	17,6	14,3	17,6	3/8	19	14,5	18,1
1/2	14	17,85	22,9	17,6	22,9	1/2	14	18	24
3/4	14	23,2	23	23	23	3/4	14	23,5	25,3
1	11½	29,5	27,4	28,75	27,4	1	11	29,5	30,6
1¼	11½	37,8	28,1	37,5	28,1				
1½	11½	44	28,4	43,75	28,4				
2	11½	56	28,4	55,75	28,4				

Pre-drilling of cylindrical holes and conical boring with reamer

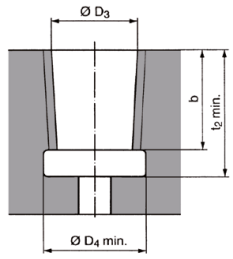


Taper 1:16

		NPT			NPTF		
Ø D_1 inch	Pitch Gg/1"	Ø D_2 mm	Ø D_3 mm	t_1 min. mm	Ø D_2 mm	Ø D_3 mm	t_1 min. mm
1/16	27	5,95	6,39	12	5,95	6,41	12
1/8	27	8,25	8,74	12	8,25	8,76	12
1/4	18	10,75	11,36	17,5	10,75	11,4	17,5
3/8	18	14,1	14,8	17,6	14,1	14,84	17,6
1/2	14	17,5	18,32	22,9	17,5	18,33	22,9
3/4	14	22,7	23,67	23	22,7	23,68	23
1	11½	28,6	29,69	27,4	28,6	29,72	27,4
1¼	11½	37,3	38,45	28,1	37,3	38,48	28,1
1½	11½	43,4	44,52	28,4	43,4	44,5	28,4
2	11½	55,5	56,56	28,4	55,5	56,59	28,4

		Rc		
Ø D_1 inch	Pitch Gg/1"	Ø D_2 mm	Ø D_3 mm	t_1 min. mm
1/16	28	6,1	6,56	11,9
1/8	28	8,1	8,57	11,9
1/4	19	10,75	11,45	17,7
3/8	19	14,25	14,95	18,1
1/2	14	17,75	18,63	24
3/4	14	23	24,12	25,3
1	11	29	30,29	30,6

Recommendation for the pre-drilling of blind hole threads



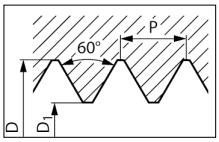
Taper 1:16

		NPT				NPTF			
Ø D_1 inch	Pitch Gg/1"	Ø D_3 mm	b mm	t_2 min. mm	Ø D_4 mm	Ø D_3 mm	b mm	t_2 min. mm	Ø D_4 min. mm
1/16	27	6,39	7	10	7,6	6,41	8	11	7,4
1/8	27	8,74	7	10	10	8,76	8	11	9,8
1/4	18	11,36	10,2	14,5	13,1	11,4	11,6	15,5	12,9
3/8	18	14,8	10,6	15	16,5	14,84	12	16	16,3
1/2	14	18,32	13,8	19	20,5	18,33	15,6	20,5	20,3
3/4	14	23,67	14,2	20	25,8	23,68	16	21,5	25,6
1	11½	29,69	17	24	32,2	29,72	19,2	26	32
1¼	11½	38,45	17,5	24,5	41	38,48	19,7	26,5	40,8
1½	11½	44,52	17,5	24,5	47,2	44,5	19,7	26,5	47
2	11½	56,56	18	25	59,2	56,59	20,2	27	59

		Rc			
Ø D_1 inch	Pitch Gg/1"	Ø D_3 mm	b mm	t_2 min. mm	Ø D_4 min. mm
1/16	28	6,56	5,6	9,5	7,6
1/8	28	8,57	5,6	9,5	9,6
1/4	19	11,45	8,4	14	13
3/8	19	14,95	8,8	14,4	16,5
1/2	14	18,63	11,4	19	20,6
3/4	14	24,12	12,7	20,3	26
1	11	30,29	14,5	24,3	32,8

Tapped hole pilot diameter

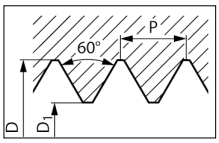
M ISO metric coarse threads 6H to DIN 13 and DIN ISO 965-1 (M1–M1,4 = 5H)



Thread nominal Ø		Ø D_1		Core hole
D	P	min.	max.	
M1	0,25	0,729	0,785	0,75
M1,1	0,25	0,829	0,885	0,85
M1,2	0,25	0,929	0,985	0,95
M1,4	0,3	1,075	1,142	1,1
M1,6	0,35	1,221	1,321	1,25
M1,8	0,35	1,421	1,521	1,45
M2	0,4	1,567	1,679	1,6
M2,2	0,45	1,713	1,838	1,75
M2,5	0,45	2,013	2,138	2,05
M3	0,5	2,459	2,599	2,5
M3,5	0,6	2,850	3,010	2,9
M4	0,7	3,242	3,422	3,3
M4,5	0,75	3,688	3,878	3,7
M5	0,8	4,134	4,334	4,2
M6	1,0	4,917	5,153	5
M7	1,0	5,917	6,153	6
M8	1,25	6,647	6,912	6,8
M9	1,25	7,647	7,912	7,8
M10	1,5	8,376	8,676	8,5
M11	1,5	9,376	9,676	9,5

Thread nominal Ø		Ø D_1		Core hole
D	P	min.	max.	
M12	1,75	10,106	10,441	10,2
M14	2,0	11,835	12,210	12
M16	2,0	13,835	14,210	14
M18	2,5	15,294	15,744	15,5
M20	2,5	17,294	17,744	17,5
M22	2,5	19,294	19,744	19,5
M24	3,0	20,752	21,252	21
M27	3,0	23,752	24,252	24
M30	3,5	26,211	26,771	26,5
M33	3,5	29,211	29,771	29,5
M36	4,0	31,670	32,270	32
M39	4,0	34,670	35,270	35
M42	4,5	37,129	37,799	37,5
M45	4,5	40,129	40,799	40,5
M48	5,0	42,587	43,297	43
M52	5,0	46,587	47,297	47
M56	5,5	50,046	50,796	50,5
M60	5,5	54,046	54,796	54,5
M64	6,0	57,505	58,305	58
M68	6,0	61,505	62,305	62

MF ISO metric fine threads 6H to DIN 13 and DIN ISO 965-1



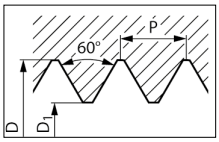
Thread nominal Ø			Ø D_1		Core hole
D	x	P	min.	max.	
M2	x	0,25	1,729	1,774	1,75
M2,2	x	0,25	1,929	1,974	1,95
M2,5	x	0,35	2,121	2,221	2,15
M3	x	0,35	2,621	2,721	2,65
M3,5	x	0,35	3,121	3,221	3,15
M4	x	0,35	3,621	3,721	3,65
M4	x	0,5	3,459	3,599	3,5
M4,5	x	0,5	3,959	4,099	4
M5	x	0,5	4,459	4,599	4,5
M6	x	0,5	5,459	5,599	5,5
M6	x	0,75	5,188	5,378	5,2
M8	x	0,75	7,188	7,378	7,2
M8	x	1,0	6,917	7,153	7
M10	x	0,75	9,188	9,378	9,2
M10	x	1,0	8,917	9,153	9
M10	x	1,25	8,647	8,912	8,8
M12	x	1,0	10,917	11,153	11
M12	x	1,5	10,376	10,676	10,5
M14	x	1,25	12,647	12,912	12,8
M16	x	1,0	14,917	15,153	15
M16	x	1,5	14,376	14,676	14,5

Thread nominal Ø			Ø D_1		Core hole
D	x	P	min.	max.	
M20	x	1,0	18,917	19,153	19
M20	x	1,5	18,376	18,676	18,5
M20	x	2,0	17,835	18,210	18
M24	x	1,5	22,376	22,676	22,5
M30	x	2,0	27,835	28,210	28
M36	x	1,5	34,376	34,676	34,5
M36	x	3,0	32,752	33,252	33
M42	x	2,0	39,835	40,210	40
M48	x	1,5	46,376	46,676	46,5
M48	x	3,0	44,752	45,252	45
M48	x	4,0	43,670	44,270	44
M56	x	1,5	54,376	54,676	54,5
M56	x	2,0	53,835	54,210	54
M56	x	3,0	52,752	53,252	53
M56	x	4,0	51,670	52,270	52
M64	x	3,0	60,752	61,252	61
M64	x	4,0	59,670	60,270	60
M72	x	4,0	67,670	68,270	68
M80	x	6,0	73,505	74,305	74
M95	x	6,0	88,505	89,305	89
M110	x	6,0	103,505	104,305	104

Dimensions in mm; P = Pitch

Thread former pilot hole diameter

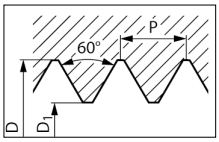
M ISO metric coarse threads 6H to DIN 13 and DIN ISO 965-1 (M1-M1,4 = 5H)



Thread nominal Ø		Ø D_1		Core hole
D	P	min.	max.	
M1	0,25	0,89		0,9
M1,2	0,25	1,09		1,1
M1,4	0,3	1,26		1,26
M1,6	0,35	1,45		1,45
M1,8	0,35	1,65		1,65
M2	0,4	1,83	1,86	1,85
M2,2	0,45	2,00	2,04	2,0
M2,5	0,45	2,30	2,34	2,3
M3	0,5	2,77	2,82	2,8
M3,5	0,6	3,23	3,28	3,25
M4	0,7	3,68	3,73	3,7
M4,5	0,75	4,15	4,21	4,15
M5	0,8	4,63	4,68	4,65

Thread nominal Ø		Ø D_1		Core hole
D	P	min.	max.	
M6	1	5,51	5,59	5,55
M7	1	6,51	6,59	6,55
M8	1,25	7,39	7,48	7,4
M9	1,25	8,39	8,48	8,4
M10	1,5	9,25	9,35	9,3
M11	1,5	10,25	10,35	10,3
M12	1,75	11,12	11,25	11,2
M14	2	13,00	13,15	13,0
M16	2	15,00	15,15	15,0
M18	2,5	16,72	16,90	16,8
M20	2,5	18,72	18,90	18,8
M22	2,5	20,72	20,9	20,8
M24	3	22,46	22,7	22,5

MF ISO metric fine threads 6H to DIN 13 and DIN ISO 965-1



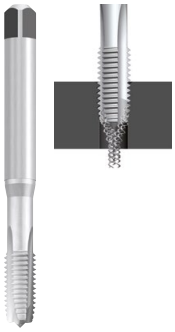
Thread nominal Ø			Ø D_1		Core hole
D	x	P	min.	max.	
M2	x	0,25	1,89		1,9
M2,2	x	0,25	2,09		2,1
M2,5	x	0,25	2,39		2,4
M2,5	x	0,35	2,35		2,35
M3	x	0,25	2,89		2,9
M3	x	0,35	2,85		2,85
M3,5	x	0,35	3,35		3,35
M3,5	x	0,5	3,27	3,32	3,3
M4	x	0,35	3,85		3,85
M4	x	0,5	3,77	3,82	3,8
M4,5	x	0,5	4,27	4,32	4,3
M5	x	0,5	4,77	4,82	4,8
M5	x	0,75	4,65	4,71	4,65
M5,5	x	0,5	5,27	5,32	5,3
M6	x	0,5	5,78	5,83	5,8
M6	x	0,75	5,65	5,71	5,65
M7	x	0,5	6,78	6,83	6,8
M7	x	0,75	6,65	6,71	6,65
M8	x	0,5	7,78	7,83	7,8
M8	x	0,75	7,65	7,71	7,65
M8	x	1,0	7,51	7,59	7,55
M9	x	0,5	8,78	8,83	8,8
M9	x	0,75	8,65	8,71	8,65
M9	x	1,0	8,51	8,59	8,55
M10	x	0,5	9,78	9,83	9,8
M10	x	0,75	9,65	9,71	9,65
M10	x	1,0	9,51	9,59	9,55
M10	x	1,25	9,39	9,48	9,4
M11	x	0,75	10,65	10,71	10,7
M11	x	1,0	10,51	10,59	10,5
M12	x	0,75	11,66	11,72	11,7

Thread nominal Ø			Ø D_1		Core hole
D	x	P	min.	max.	
M12	x	1,0	11,52	11,6	11,5
M12	x	1,25	11,4	11,49	11,4
M12	x	1,5	11,26	11,36	11,3
M13	x	0,75	12,66	12,72	12,7
M13	x	1,0	12,52	12,6	12,5
M13	x	1,5	12,26	12,36	12,3
M14	x	0,75	13,66	13,72	13,7
M14	x	1,0	13,52	13,6	13,5
M14	x	1,25	13,4	13,49	13,4
M14	x	1,5	13,26	13,36	13,3
M15	x	0,75	14,66	14,72	14,7
M15	x	1,0	14,52	14,6	14,5
M15	x	1,5	14,26	14,36	14,3
M16	x	0,75	15,66	15,72	15,7
M16	x	1,0	15,52	15,6	15,5
M16	x	1,5	15,26	15,36	15,3
M18	x	1,0	17,52	17,6	17,5
M18	x	1,5	17,26	17,36	17,3
M18	x	2,0	17	17,15	17
M20	x	1,0	19,52	19,6	19,5
M20	x	1,5	19,26	19,36	19,3
M20	x	2,0	19	19,15	19
M22	x	1,5	21,26	21,36	21,3
M22	x	2,0	21	21,15	21
M24	x	1,5	23,26	23,38	23,3
M24	x	2,0	23,01	23,16	23
M25	x	1,5	24,26	24,38	24,3
M26	x	1,5	25,26	25,38	25,3
M27	x	2,0	26,01	26,16	26
M28	x	1,5	27,26	27,38	27,25
M30	x	1,5	29,26	29,38	29,25
M30	x	2,0	29,01	29,16	29

Dimensions in mm; P = Pitch

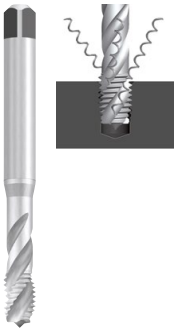
Tap Type Explanation

Stabil
Through hole tap type Stabil



- for through holes up to 4xD
- lead form B: 3.5–5 cutting leads, with spiral point
- straight Flutes
- also suitable for synchronised machining, with Wedlon flat and with extra long version
- due to the special geometry of the flutes, the chips are removed in the direction of cut

Salo-Rex
Blind hole tap type Salo-Rex



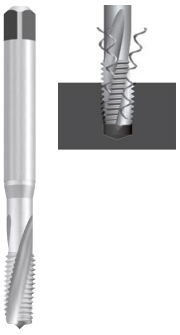
- for blind holes up to 3xD
- lead form C: 2–3 cutting leads, without spiral point
- lead form E: 1.5–2 cutting leads, without spiral point
- (35°, 42°, 45°, 50°) right hand helix
- also suitable for syncronised machining, with Weldon flat, with extra long version and through coolant
- the high helix angle ensures chips are discharged effectively against the direction of cut

6

TWIN
Through and blind hole tap type TWIN

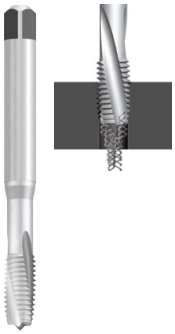
- for blind and through holes up to 2xD
- lead form C: 2–3 cutting leads, without spiral point
- lead form D: 3.5–5 cutting leads, without spiral point
- lead form E: 1.5–2 cutting leads, without spiral point
- straight Flutes
- for steel, short chipping and hardened materials to 55 (62) HRc
- also with extra long version and through coolant

SL
Blind hole tap type SL



- for blind holes up to 2xD
- lead form C: 2–3 cutting leads, without spiral point
- lead form E: 1.5–2 cutting leads, without spiral point
- (15°, 25°, 30°) slow right hand helix
- for steel, titanium alloys and Inconel 718
- also suitable for synchronised machining, with extra long version and through coolant
- also suitable for difficult operating conditions such as cross holes

DL
Through hole tap type DL

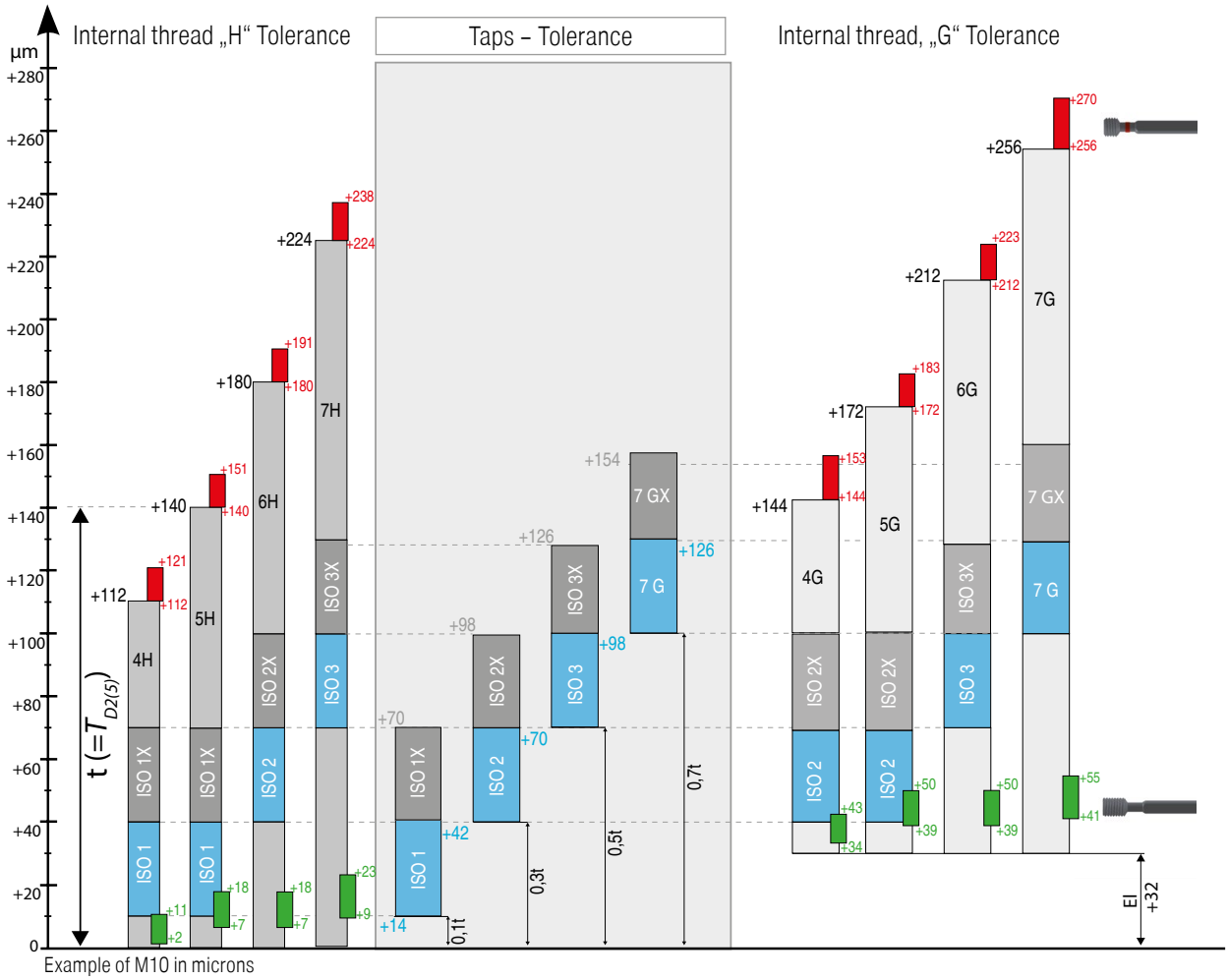


- for through holes up to 4xD
- lead form C: 3.5–5 cutting leads, without spiral point
- 15° left hand helix
- suitable for steel, titanium alloys and Inconel 718
- the chips are discharged in the direction of cut

Spanlos
Thread former type Spanlos

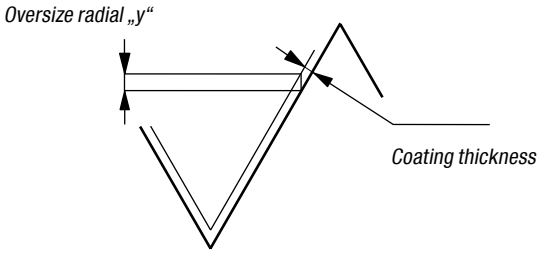
- for blind and through holes up to 3xD
- lead form C: 2–3 cutting leads, without spiral point
- for cold formable materials up to 1400 N/mm^2
- suitable for synchronised machining, with lubrication grooves and internal cooling

Thread tolerances and recommended manufacturing tolerances



Workpieces to be plated require oversize taps.
The interference depends on the coating thickness and the flank angle.

at	60° Flank angle	Oversize ≙ 4 x coating thickness
	55° Flank angle	Oversize ≙ 4.331 x coating thickness
	30° Flank angle	Oversize ≙ 7.727 x coating thickness

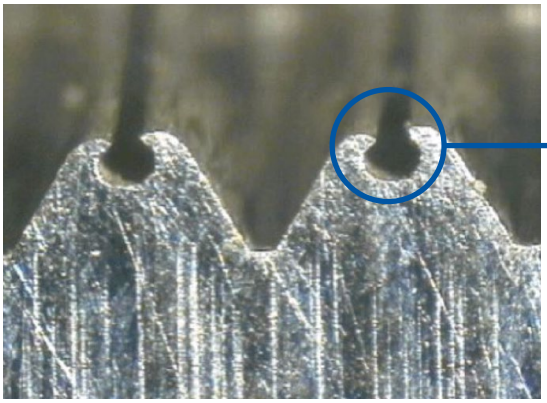


Application class of the tap designation according to		Tolerance class of the internal thread to be cut				
DIN	ISO					
4H	ISO1	4H	5H	–	–	–
6H	ISO2	4G	5G	6H	–	–
6G	ISO3	–	(4E)	6G	7H	8H
7G	–	–	–	(6E)	7G	8G

For special applications, e.g. abrasive cast iron materials or plastics other dimensions have to be chosen which are determined on previous experience. In such cases an „X“ is added to the short designation of the tolerance, e.g. ISO 2X, however the tolerance zone assignment may be limited (6HX for tolerance zone 6H and 5G). In addition it should be taken into account that the dimensions of the internal thread do not only depend on the dimensions of the tap but on the material to be machined and all production conditions. For first taps and intermediate taps no thread dimensions are determined.

Thread formers

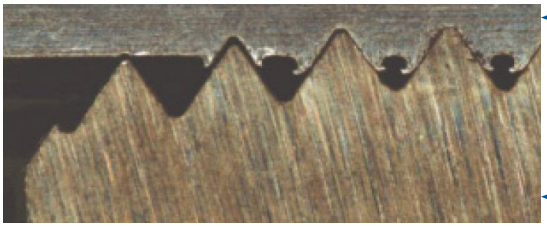
Spanlos thread forming taps for cold-formable materials up to 1400 N/mm² or at least 5 % elongation. The thread is produced by plastic deformation. The molded thread has very high strength.



Prior to forming a thread, you should ensure that a molded thread is acceptable. In certain sectors, the forming of a thread is **not** permitted. Dirt or bacteria can settle in the formed crown.

Important

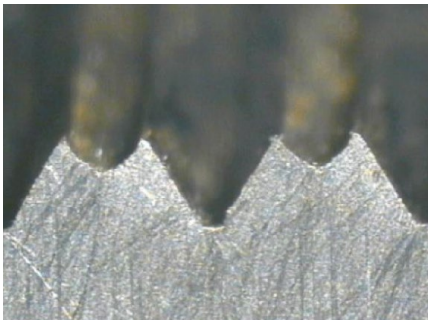
Incremental pressure forming



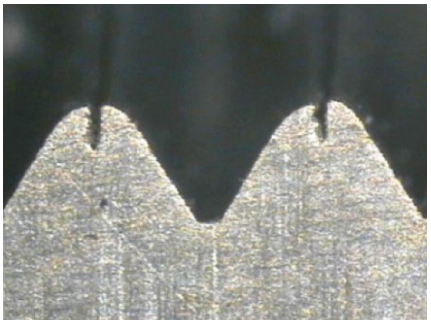
The thread profile is pressed gradually into the material via the start (leading edge) of the tap.

Properties

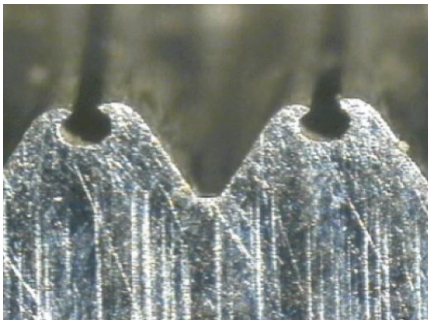
- one type can be used in different materials
- for through and blind holes
- very good thread surface quality
- high static and dynamic strength thread
- secure machining of deep and counterbored threads
- short machining times
- no chip problems
- no swarf
- high process security
- HSS-E and HSS-PM taps for materials up to 33 HRC with a minimum elongation of 5 %



Underformed – core hole too large



Overformed – core hole too small



Perfect form – core hole correct

Troubleshooting

Poor tool life

Cause

- overload fractures of the cutting edge on the lead
- hardness or tool material not suitable for the application
- core hole too small, or work hardened
- insufficient lubrication or incorrect application parameters

Remedy

- a longer lead or more flutes for the same lead length, giving a greater number of cutting teeth
- in reground tools the hardness can be reduced, apply correct parameters for regrinding
- increase frequency of changes or regrinding of the drill
- use the correct operating parameters for drilling
- select the correct lubricant and ensure adequate supply

Axial thread error

Cause

- selected geometry is not suitable
- spindle speed is wrong compared with feed (synchronisation error)
- blind hole taps are used with high feed pressure
- through hole taps are used with low feed pressure

Remedy

- check programming and pitch control or machine synchronisation
- use tapping chuck with length compensation
- increase retraction feed pessure
- increase feed pessure

Oversize thread

Cause

- thread tolerances of tool and thread gauge do not match
- burred tool edges after regrinding
- cold pressure welding

Remedy

- check the correct tolerances for tool and thread gauge
- carefully deburr
- use appropriate (positive) geometry
- reduce cutting speed
- use different surface treatment or coating
- use tapping chuck with length compensation
- use appropriate lubricant

Broken tool

Cause

- tool is worn
- tool has hit the bottom of the hole
- weld deposits
- core hole too small
- chip trapping
- incorrect cutting speed
- chip trapping in the flute
- insufficient cooling / lubrication

Remedy

- employ set taps
- use a tool with lower helix
- use tools with a shorter / longer lead
- check the pre-drilling depth and the thread depth
- drill core hole deeper
- correct cutting speed
- use a different coating or surface treatment
- use tool holder with length compensation
- use suitable lubricant
- use correct core hole
- change geometry and / or flute type
- note chip shape and chip formation

Coatings

vap.
- vaporised
- vaporisation (vapour-deposition) prevents cold welds from forming on the tool and increases the surface hardness and thus the wear resistance

nitr.
- nitrided
- nitriding increases wear resistance and offers low friction properties

vap. + nitr.
- vaporized + nitrated
- combination of increased surface hardness and lubricant carrier

TiN
- TiN coating
- maximum application temperature: 450 °C

TiN GS
- titanium nitride low friction layer
- high wear resistance with low friction properties
- maximum application temperature: 450 °C

TiCN
- TiCN multilayer coating
- maximum application temperature: 450 °C

Ti200
- TiN coating
- well suited for high cutting speeds during thread forming
- maximum application temperature: 450 °C

OSM
- hard material layer and anti-friction layer
- for use in high-strength steels

CH
- amorphous carbon layer
- for use in non-ferrous metals or aluminum
- reduces the material adhesion

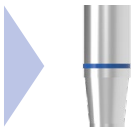
HCr
- hard chromed
- for use in non-ferrous metals or aluminum
- very low surface roughness

CrN
- chromium-nitrogen coating
- very wear-resistant coating
- especially suitable for use in aluminum, but also for P, M and S materials

6

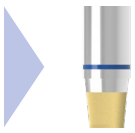
Coloured rings – overview

WNT \ Performance



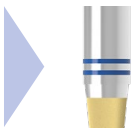
for steel up to 750 N/mm²

Type ST uncoated tap for steel up to 750 N/mm² tensile strength



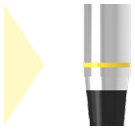
for steel to 1100 N/mm²

Type ST and VG coated tap for steel up to 1100 N/mm² tensile strength



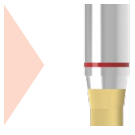
for steel up to 1400 N/mm²

Type HR for steel up to 1400 N/mm² tensile strength



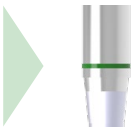
for corrosion and acid-resistant steels

Type VA for stainless steel



for cast iron materials

Type GG for cast iron

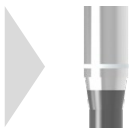


for aluminium and non-ferrous metal

Type NW, Soft and Ms for aluminium, short-chipping brass and soft materials

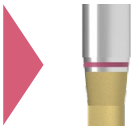
for heat resistant alloys

Type Ti, Ni and AMPCO for heat-resistant steel, titanium and Inconel



for hardened steels

Type HT for hard machining



for universal application up to 1100 N/mm²

Type UNI for the all-purpose use

New products for machining technicians

NEW Circular Thread Milling Cutter – Type H

▲ Specialist for thread production in hardened and difficult-to-machine materials

Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

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WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

WNT \ Standard

Quality tools for standard applications.

The quality tools of the **WNT Standard** product line are high quality, powerful and reliable and enjoy the highest trust of our customers worldwide. Tools from this product line are the first choice for many standard applications and guarantee optimal results.

Symbol explanation

Version

No drilling required

Central internal coolant

Lateral internal coolant

Coolant supply either via the flange or centrally

VHM — Solid carbide

Shank

Thread / Flank angle

M — Explanation of the types of thread can be found on → **Page 74.**

Flank angle 60°

Applications

Circlip grooves

Full radius slot milling

Slot milling

Multipurpose milling

Chamfering and deburring

Gear milling

IR = internal right, IL = internal left

ER = external right, EL = external left

IR/IL + ER/EL

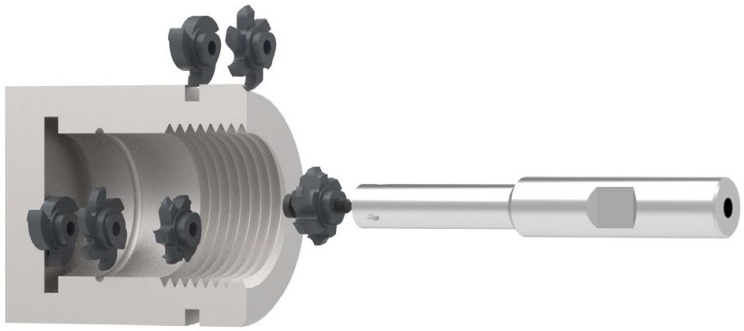
● = **Main application**

○ = Extended application

Overview Circular and Thread Milling Cutters

Modular Circular Milling Cutters with Carbide Indexable Inserts

- the perfect tool for every application
- various holders, depending on overhang
- the same threading insert for different pitches and diameters
- highest flexibility and stability
- in addition to circular thread milling, circular and linear milling operations can also be carried out



1st choice for small batch sizes
and large threads

Thread Milling Cutters with Indexable Carbide Inserts

- exchange of the insert for different threads
- same threading insert for different diameters

Solid Carbide Thread Milling Cutters

- short machining times, ideal for volume production
- one tool for all thread types
- one thread milling cutter for different diameters with the same pitch

MicroMill

SGF

UNI

Toolfinder

				from bore diameter in mm
Modular Circular Milling Cutters with Carbide Indexable Inserts	Polygon		▲ high power transmission through polygon connection ▲ 3 and 6 edged inserts ▲ stable holders in solid carbide and steel	9.6
	Mini Mill		▲ three interlocking rib location ▲ compatible with popular manufacturer systems ▲ 3 and 6 edged inserts ▲ stable holders in solid carbide and steel	9.6
	System 300		▲ proven circular milling tool ▲ 3 edged inserts	7.9
Thread Milling Cutters with Indexable Carbide Inserts	MWN		▲ multi tooth thread milling cutter ▲ double sided inserts ▲ exclusively for thread production ▲ holder for tapered threads	9.0
	GZD		▲ multi tooth drilling and thread milling cutter ▲ for thread milling in solid material ▲ core hole and thread with one tool	14.0
	GZG		▲ multi tooth thread milling cutter ▲ exclusively for thread production	18.5
	EAW		▲ single point thread milling cutter ▲ inserts with 2 or 4 cutting edges ▲ exclusively for thread production ▲ insert holder with cylindrical shank DIN 1835	17.5
	EWM		▲ single point thread milling cutter ▲ inserts with 2 or 4 cutting edges ▲ exclusively for thread production ▲ integral insert holder to DIN 69871	43.0
Solid Carbide Thread Milling Cutters	Micro Mill		▲ solid carbide circular milling cutter for small diameters	1.25
	UNI		▲ circular hole and thread milling cutter ▲ core hole, countersink and thread with one tool ▲ up to 3xD in short or long chipping materials	4.5
	H		▲ circular thread milling cutters ▲ core hole, countersink and thread with one tool ▲ specifically for hardened materials, up to 2xD	2.3
	HR		▲ single point thread milling cutter ▲ exclusively for thread production ▲ up to 3xD in materials up to 63 HRC	4.0
	SFSE		▲ solid carbide thread milling cutter with chamfering facet ▲ only one tool for threading and chamfering	2.4
	SGF		▲ solid carbide thread milling cutter without chamfering facet ▲ exclusively for thread production	3.15

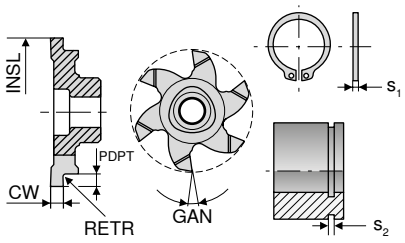
Thread / Flank angle								Applications					Tool holder
60° M / MF	55° G	55° BSW / BSF	60° UN	60° UNC / UNF	80° Pg	60° NPT	30° Tr	DIN 471/472					
11+12	13	13		15			14	6+7	8+9	10	10	16+17	18+19
27+28	28							20+21	22+23 24	23	25		29+30
34	35	35						31+32	33		33		36
37	38		38		39	39							40+41
42	42												43
44	45		46		45								47
48	48		48										49
50	50		50										51
53									52		52		
54													
55				55									
56													
57+59	57+59			58+60		58+60							
61+63 66	62+63	64		64+65									

7

Milling inserts for circlip grooves without chamfer

Polygon

DIN 471/472



Ti500

Solid carbide

W2

Size	$s_{2\ H13}$ mm	INSL mm	CW $_{-0,03}$ mm	PDPT mm	RETR mm	GAN °	s_1 mm	NOF	Article no. 50 880 ... £	
6	0.90	9.6	0.98	1.20	0.3	6	0.80	3	76.79	292
	1.10	11.7	1.18	1.00	0.3	6	1.00	3	73.61	294
	1.30	11.7	1.38	1.00	0.3	6	1.20	3	73.61	296
	1.60	11.7	1.68	1.00	0.3	6	1.50	3	73.61	298
7	1.10	16.0	1.18	0.90	0.3	6	1.00	6	102.25	301
	1.30	16.0	1.38	1.10	0.3	6	1.20	6	82.35	302
	1.60	16.0	1.68	1.25	0.3	6	1.50	6	82.35	304
	1.85	16.0	1.93	1.25	0.3	6	1.75	6	82.35	306
	1.10	17.7	1.18	0.90	0.3	6	1.00	6	103.77	308
	1.30	17.7	1.38	1.10	0.3	6	1.20	6	103.77	309
	1.60	17.7	1.68	1.25	0.3	6	1.50	6	103.77	310
	1.85	17.7	1.93	1.25	0.3	6	1.75	6	103.77	311
9	1.10	20.0	1.18	0.90	0.3	6	1.00	6	106.68	313
	1.30	20.0	1.38	1.10	0.3	6	1.20	6	106.68	314
	1.60	20.0	1.68	1.25	0.3	6	1.50	6	106.68	315
	1.85	20.0	1.93	1.25	0.3	6	1.75	6	106.68	316
	1.60	21.7	1.68	1.25	0.3	6	1.50	6	107.93	318
	1.85	21.7	1.93	1.25	0.3	6	1.75	6	107.93	319
	2.15	21.7	2.23	1.75	0.3	6	2.00	6	107.93	320
	2.65	21.7	2.73	1.75	0.3	6	2.50	6	107.93	321
10	1.30	26.0	1.38	1.10	0.3	6	1.20	6	89.79	322
	1.60	26.0	1.68	1.25	0.3	6	1.50	6	89.79	324
	1.85	26.0	1.93	1.25	0.3	6	1.75	6	89.79	326
	2.15	26.0	2.23	1.75	0.3	6	2.00	6	89.79	328
	2.65	26.0	2.73	1.75	0.3	6	2.20	6	89.79	330
	3.15	26.0	3.23	2.20	0.3	6	3.00	6	89.79	332

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

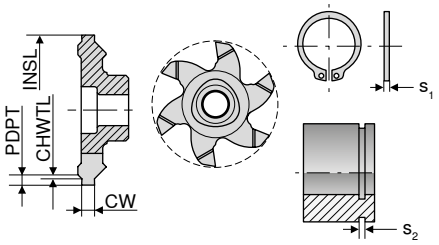
→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Milling inserts for circlip grooves with chamfer

▲ both edges chamfered 0.1x45°

Polygon | DIN 471/472



Ti500

Size	$s_{2\ H13}$ mm	INSL mm	CW $_{-0,03}$ mm	PDPT mm	CHWTL mm	s_1 mm	NOF	Solid carbide W2 Article no. 50 879 ... £	
7	1.10	16.0	1.18	0.50	0.10	1.00	6	109.59	292
	1.30	16.0	1.38	0.85	0.15	1.20	6	90.62	302
	1.60	16.0	1.68	1.00	0.15	1.50	6	90.62	304
	1.85	16.0	1.93	1.25	0.20	1.75	6	90.62	306
9	1.10	20.0	1.18	0.50	0.10	1.00	6	116.64	307
	1.30	20.0	1.38	0.85	0.15	1.20	6	116.64	308
	1.60	20.0	1.68	1.00	0.15	1.50	6	116.64	309
	1.60	21.7	1.68	1.00	0.15	1.50	6	116.64	312
	1.85	20.0	1.93	1.25	0.20	1.75	6	116.64	310
	1.85	21.7	1.93	1.25	0.20	1.75	6	116.64	314
	2.15	21.7	2.23	1.50	0.20	2.00	6	116.64	316
	2.65	21.7	2.73	1.75	0.20	2.50	6	116.64	318
10	1.30	26.0	1.38	0.85	0.15	1.20	6	97.56	322
	1.60	26.0	1.68	1.00	0.15	1.50	6	97.56	324
	1.85	26.0	1.93	1.25	0.20	1.75	6	97.56	326
	2.15	26.0	2.23	1.50	0.20	2.00	6	97.56	328
	2.65	26.0	2.73	1.75	0.20	2.50	6	97.56	330
	3.15	26.0	3.23	1.75	0.20	3.00	6	97.56	332

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 70

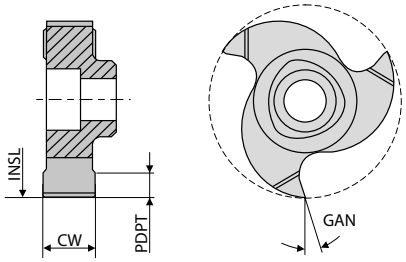
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Milling insert without profile

- ▲ with double sided edge break of 0.1x45°
- ▲ size 7: from 5.0 mm groove width with ground chip breaker
- ▲ size 10: from 6.5 mm groove width with ground chip breaker

Polygon



Ti500

Size	CW +/-0,02 mm	INSL mm	PDPT mm	GAN °	NOF	Solid carbide W2 Article no. 50 875 ... £	
6	1.5	11.7	2.25	6	3	76.79	302
	2.0	11.7	2.25	6	3	76.79	304
	2.5	11.7	2.25	6	3	79.15	306
	3.0	11.7	2.25	6	3	79.15	308
7	3.5	16.0	3.50	0	3	49.75	310
	3.5	16.0	3.50	8	3	49.75	312
	3.5	16.0	3.50	12	3	49.75	314
	5.0	16.0	3.50	0	3	56.45	316
	5.0	16.0	3.50	8	3	56.45	318
	5.0	16.0	3.50	12	3	56.45	320
10	4.0	25.0	5.70	0	3	52.02	330
	4.0	25.0	5.70	8	3	52.02	332
	4.0	25.0	5.70	12	3	52.02	334
	5.0	25.0	5.70	8	3	104.05	337
	6.5	25.0	5.70	0	3	63.41	340
	6.5	25.0	5.70	8	3	63.41	342
	6.5	25.0	5.70	12	3	63.41	344
	8.0	25.0	5.70	0	3	70.12	350
	8.0	25.0	5.70	8	3	70.12	352
	8.0	25.0	5.70	12	3	70.12	354

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

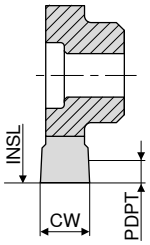
→ v_c/f_z Page 70

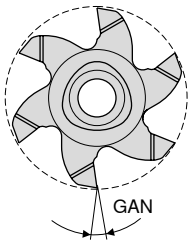
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Milling insert without profile

▲ both edges chamfered 0.1x45°

Polygon





Ti500

Size	CW +/-0,02 mm	INSL mm	PDPT mm	GAN °	NOF	Solid carbide W2 Article no. 50 876 ... £	
7	1.5	17.7	4.0	6	6	93.67	307
	2.0	17.7	4.0	6	6	94.21	308
	2.5	17.7	4.0	6	6	95.20	309
	3.0	16.0	3.5	6	6	86.06	302
	4.0	16.0	3.5	6	6	91.31	304
	5.0	16.0	3.5	6	6	93.67	306
9	1.5	21.7	5.0	6	6	107.93	314
	2.0	21.7	5.0	6	6	108.76	315
	2.5	21.7	5.0	6	6	108.76	316
	3.0	21.7	5.0	6	6	109.85	317
	3.0	20.0	4.2	6	6	109.85	311
	4.0	20.0	4.2	6	6	113.18	312
	5.0	20.0	4.2	6	6	118.98	313
10	1.5	27.7	6.8	6	6	133.51	330
	2.0	27.7	6.8	6	6	135.30	332
	2.5	27.7	6.8	6	6	135.30	334
	3.0	26.0	6.2	6	6	91.31	322
	3.0	27.7	6.8	6	6	136.85	336
	4.0	26.0	6.2	6	6	96.31	324
	5.0	26.0	6.2	6	6	120.51	326
	6.5	26.0	6.2	6	6	98.80	328

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

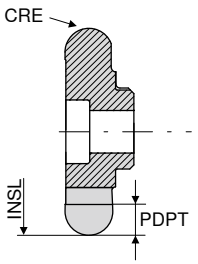
→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Milling inserts for radius milling

Polygon



Ti500

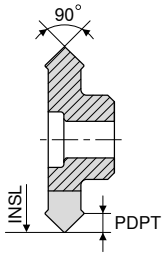
Size	CRE mm	INSL mm	PDPT mm	NOF	Solid carbide W2 Article no. 50 886 ... £	
6	1.100	9.6	1.20	3	73.61	702
	0.788	11.7	2.25	3	73.61	704
	1.100	11.7	2.25	3	73.61	708
	1.190	11.7	2.25	3	73.61	706
7	0.788	17.7	4.20	6	93.12	712
	1.100	17.7	4.20	6	93.12	714
9	0.785	21.7	5.00	6	112.20	720
	1.000	21.7	5.00	6	112.20	722
	1.200	21.7	5.00	6	112.20	724
	1.400	21.7	5.00	6	112.20	726
	1.500	21.7	5.00	6	112.20	728

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 70

Milling inserts for chamfering and deburring

Polygon



Ti500

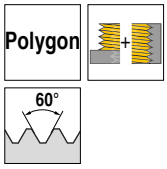
Size	PDPT mm	INSL mm	NOF	Solid carbide W2 Article no. 50 884 ... £	
6	1.2	9.6	3	73.61	292
	1.5	11.7	3	73.61	294
7	1.9	16.0	6	88.96	302
	1.3	17.7	6	111.37	304
9	1.9	20.0	6	114.98	312
	1.6	21.7	6	112.20	314
10	2.1	26.0	6	97.56	322

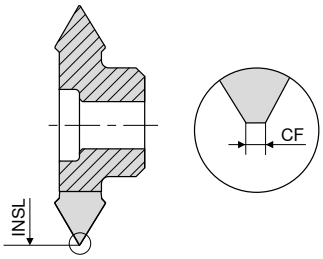
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

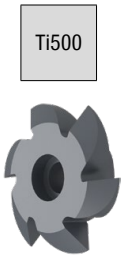
→ v_c/f_z Page 70

Thread milling insert – Partial profile

▲ with holder 50 805 010 / 50 805 011 maximum pitch of 3 mm is possible!







Size	TP mm	INSL mm	CF mm	NOF	Solid carbide W2 Article no. 50 882 ... £	
6	1 - 3	11.7	0.10	3	106.40	292
7	1 - 3	17.7	0.10	6	119.40	306
	1 - 4	16.0	0.10	6	96.31	302
	2,5 - 4	16.0	0.25	6	119.40	304
9	1 - 2	21.7	0.10	6	121.07	314
	1 - 3	20.0	0.10	6	121.07	312
	2 - 4	21.7	0.15	6	121.07	316
10	1 - 3	26.0	0.10	6	103.64	322
	2,5 - 5	26.0	0.25	6	128.55	324

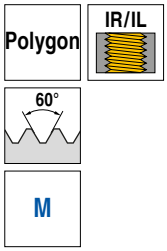
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

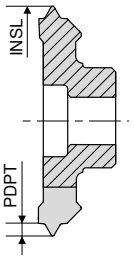
→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Thread milling insert – Full profile





Size	TP	INSL	PDPT	NOF	Solid carbide W2 Article no. 50 881 ... £	
	mm	mm	mm			
6	1	9.6	0.572	3	129.90	292
	1,5	9.6	0.875	3	129.90	293
	2	10.5	1.157	3	129.90	296
7	1,5	16.0	0.875	6	118.98	302
	2	16.0	1.157	6	118.98	304
	2,5	16.0	1.430	6	118.98	306
	3	16.0	1.702	6	118.98	310
	M20x2,5	16.0	1.430	6	124.95	308 1)
9	1,5	20.0	0.875	6	152.07	312
	2	20.0	1.157	6	152.07	314
	M24x3	20.0	1.702	6	152.07	316 1)
10	1,5	26.0	0.875	6	126.32	322
	2	26.0	1.157	6	126.32	324
	3	26.0	1.702	6	126.32	330
	3,5	26.0	1.982	6	126.32	332
	4	26.0	2.263	6	126.32	334
	4,5	26.0	2.553	6	126.32	336
	5	26.0	2.836	6	156.62	337
	M30x3,5	24.0	1.982	6	156.62	331 1)
	M36x4	26.0	2.263	6	156.62	335 1)

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

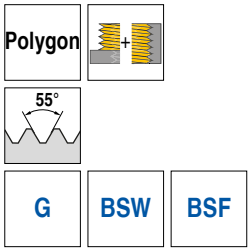
1) profile corrected

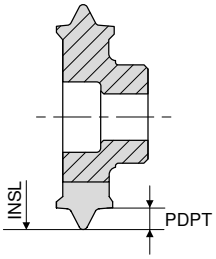
→ v_c/f_z Page 70

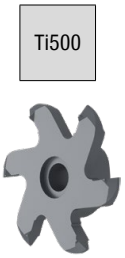
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread milling insert – Full profile

▲ 50 883 322 for threads > 1"







Size	TPI 1/"	TP mm	INSL mm	PDPT mm	NOF	Solid carbide W2 Article no. 50 883 ... £	
6	19	1.337	9.6	0.871	3	129.90	292
7	14	1.814	17.7	1.177	6	144.70	308
	14	1.814	16.0	1.177	6	147.64	304
	11	2.309	16.0	1.494	6	118.98	302
	10	2.540	16.0	1.646	6	147.64	306
9	14	1.814	20.0	1.177	6	152.07	316
	11	2.309	20.0	1.494	6	152.07	314
10	11	2.309	26.0	1.494	6	126.32	322

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

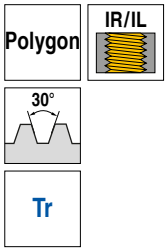
→ v_c/f_z Page 70

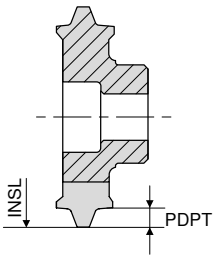
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

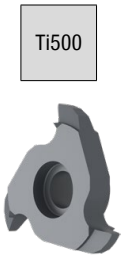
7

Thread milling insert – Full profile

▲ DIN 103







Size	TP	INSL	PDPT	NOF	Thread	Solid carbide W2 Article no. 50 872 ... £	
	mm	mm	mm				
6	2	11.7	1.25	3	Tr 16x2 - Tr 20x2	75.50	292
	3	11.0	1.75	3	Tr 18x3 - Tr 20x3	75.50	294
	4	12.0	2.25	3	Tr 20x4	75.50	296 1)
7	3	14.0	1.75	3	Tr 24x3 - Tr 32x3	102.99	302 2)
	5	15.3	2.75	3	Tr 28x5 - Tr 36x5	102.99	306 3)
	5	15.3	2.75	3	Tr 26x5	102.99	304 3)
	6	16.2	3.50	3	Tr 34x6 - Tr 42x6	102.99	310 2)
	6	16.2	3.50	3	Tr 30x6 - Tr 32x6	102.99	308 2)
10	5	25.0	2.75	3	Tr 44x5 - Tr 48x5	130.41	322 4)
	7	22.0	3.75	3	Tr 38x7 - Tr 42x7	130.41	324 4)
	7	22.0	3.75	3	Tr 44x7	130.41	326 1)
	8	25.0	4.50	3	Tr 46x8 - Tr 48x8	151.03	328 4)
	8	25.0	4.50	3	Tr 50x8 - Tr 52x8	151.03	330 4)
	9	25.0	5.00	3	Tr 55x9 - Tr 60x9	151.03	332 4)
	10	25.0	5.50	3	Tr 65x10 - Tr 80x10	151.03	334 4)

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

1) profile corrected
2) Not suitable for the 50 805 011 and 50 805 010 holders
3) Not suitable for the 50 805 011 and 50 805 010 holders / profile corrected
4) Not suitable for the 50 805 026, 50 805 025 and 50 805 024 holders

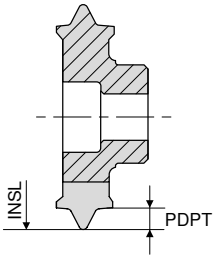
→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread milling insert – Full profile

▲ with holder 50 805 010 / 50 805 011 maximum pitch of 3 mm is possible!

Polygon | IR/IL | 60° | UNC



Ti500

Size	TPI 1/"	INSL mm	PDPT mm	NOF	Solid carbide W2 Article no. 50 886 ... £	
6	12.0	9.6	1.228	3	129.90	202
	11.0	10.5	1.355	3	129.90	204
	10.0	11.7	1.485	3	129.90	206
7	9.0	16.0	1.577	6	147.64	212
9	8.0	18.0	1.809	6	152.07	222
	7.0	20.0	2.043	6	152.07	224
10	6.0	24.0	2.454	6	156.62	232
	5.0	26.0	2.979	6	156.62	234
	4.5	26.0	3.289	6	156.62	236

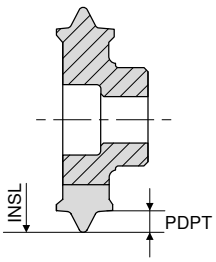
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 70

Thread milling insert – Full profile

▲ with holder 50 805 010 / 50 805 011 maximum pitch of 3 mm is possible!

Polygon | IR/IL | 60° | UNF



Ti500

Size	Thread	INSL mm	PDPT mm	NOF	Solid carbide W2 Article no. 50 886 ... £	
6	1/2 - 20	9.6	0.733	3	129.90	302
	9/16 - 18	10.5	0.827	3	129.90	304
	3/4 - 16	11.7	0.945	3	129.90	306
7	7/8 - 14	17.7	1.071	6	144.70	312
9	1 - 12	20.0	1.228	6	144.70	322

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

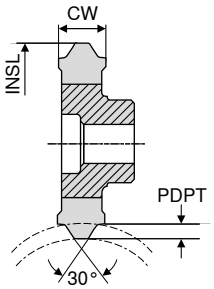
→ v_c/f_z Page 70

Gear cutters, DIN 5480

▲ Z_W = Tooth Number Wave

Polygon

Ti500



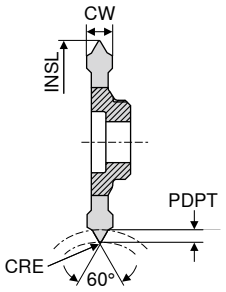
Size	Wave	Module	Z_w	CW mm	INSL mm	PDPT mm	NOF	Solid carbide W2 Article no. 50 874 ... £	
7	W11	0.80	12	3	15.85	0.80	6	102.09	011
	W14	0.80	16	3	16.00	0.80	6	102.09	014
	W16	0.80	18	3	16.00	0.80	6	102.09	016
	W20	0.80	24	3	16.00	0.80	6	102.09	020
	W24	1.25	18	4	16.00	1.25	6	110.06	024
	W25	2.00	11	7	16.00	2.00	3	125.89	025
	W30	1.25	22	4	16.00	1.25	6	110.06	031
	W30	1.25	20	5	16.00	1.25	6	110.06	030
	W35	2.00	16	5	16.00	2.00	6	113.26	035
	W42	1.25	32	4	16.00	1.25	6	110.06	042
	W50	2.00	24	5	16.00	2.00	6	113.26	050

Gear cutters, DIN 5481

▲ Z_W = Tooth Number Wave

Polygon

Ti500



Size	Wave	Z_w	CW mm	INSL mm	CRE mm	PDPT mm	NOF	Solid carbide W2 Article no. 50 874 ... £	
10	26 x 30	35	3	26	0.3	1.638	6	102.09	126
	40 x 44	38	3	26	0.4	1.940	6	102.09	140

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

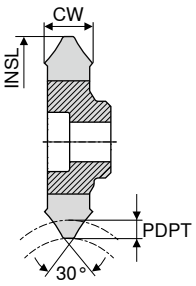
→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Gear cutters, DIN 5482

▲ Z_W = Tooth Number Wave

Polygon



Ti500

Size	Wave	Module	Z_w	CW mm	INSL mm	PDPT mm	NOF	Solid carbide W2 Article no. 50 874 ... £	
7	15 x 12	1.60	8	3.0	16	1.50	6	113.26	215
	17 x 14	1.60	9	5.0	16	1.50	6	102.09	217
	20 x 17	1.60	12	5.0	16	1.50	6	102.09	220
	25 x 22	1.60	14	5.0	16	1.65	6	113.26	225
10	35 x 31	1.75	18	6.5	26	2.00	6	117.92	235
	55 x 50	2.00	26	6.5	26	2.75	6	117.92	255

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

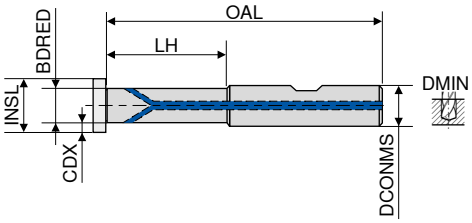
→ v_c/f_z Page 70

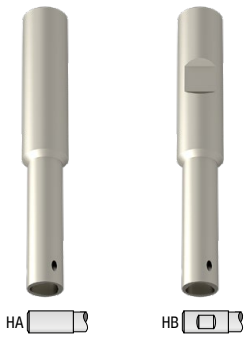
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Polygon circular end milling cutter

- ▲ for maximum machining depth, note insert width (CW)
- ▲ size 6 = for INSL 9,6; 10,5; 11,7; 12
- ▲ size 7 = for INSL 16; 17,7
- ▲ size 9 = for INSL 18; 20; 21,7
- ▲ size 10 = for INSL 24; 25; 26; 27,7

Polygon





Size	LH	CDX	DCONMS h6	OAL	BDRED	DMIN	torque moment	HM W1 Article no. 50 805 ...		HM W1 Article no. 50 805 ...	
	mm	mm	mm	mm	mm	mm	Nm	£		£	
6	20.00	2.25	12	67.5	7.0	12	1,0			223.16	050 1)
	20.00	2.25	12	67.5	7.0	12	1,0			347.67	051
	20.00	2.25	12	67.5	7.0	12	1,0	347.67	052		
	30.00	2.25	12	80.0	7.0	12	1,0			366.49	053
	30.00	2.25	12	80.0	7.0	12	1,0	366.49	054		
	40.00	2.25	12	100.0	7.0	12	1,0			394.58	055
	40.00	2.25	12	100.0	7.0	12	1,0	394.58	056		
7	20.90	4.00	12	67.4	9.0	18	1,1			160.64	002 1)
	21.00	4.00	12	67.4	9.0	18	1,1			469.70	004
	21.00	4.00	12	67.4	9.0	18	1,1	347.67	005		
	36.00	4.00	12	82.4	9.0	18	1,1			451.46	008
	36.00	4.00	12	82.4	9.0	18	1,1	371.20	085		
		4.00	12	122.5	12.0	18	1,1	462.77	010		
		4.00	12	82.4	12.0	18	1,1	616.19	011		
9	29.75	5.00	16	80.0	11.5	22	3,8			223.16	070 1)
	30.00	5.00	16	80.0	11.5	22	3,8			411.03	071
	30.00	5.00	16	80.0	11.5	22	3,8	411.03	072		
	50.00	5.00	16	100.0	11.5	22	3,8			422.79	073
	50.00	5.00	16	100.0	11.5	22	3,8	422.79	074		
10	20.50	5.70	16	105.0	15.5	28	5,5	870.75	025		
	20.50	6.80	16	149.7	15.5	28	5,5	601.68	024		
	20.50	6.80	20	175.4	15.5	28	5,5	681.09	026		
	30.40	6.80	16	79.6	13.6	28	5,5			168.10	012 1)
	30.50	6.80	16	79.6	13.6	28	5,5	411.03	015		
	30.50	6.80	16	79.6	13.6	28	5,5			469.70	014
	45.50	6.80	16	94.6	13.6	28	5,5	422.79	021		
	45.50	6.80	16	94.6	13.6	28	5,5			280.92	020
	60.50	6.80	16	109.6	13.6	28	5,5			290.13	022
	60.50	6.80	16	109.6	13.6	28	5,5	446.30	023		

1) Steel version

Key D

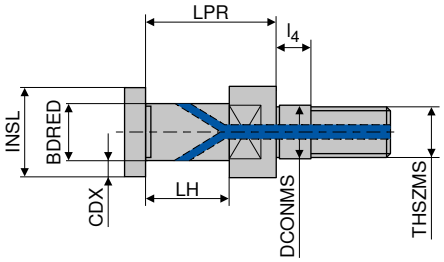
Clamping screw

Spare parts		Y7 Article no. 80 950 ...			2A Article no. 70 960 ...	
Size		£			£	
6	T08 - IP	13.49	125	M2,5x7	5.70	246
7	T08 - IP	13.49	125	M3x13	5.70	231
9	T15 - IP	15.77	128	M4x13	5.70	236
10	T20 - IP	16.56	129	M5x13,5	5.70	243

Polygon circular screw-in milling cutter

- size 7 = for INSL 16; 17,7
- size 10 = for INSL 25; 26
- steel version

Polygon



Size	CDX	LH	DCONMS $_{h6}$	LPR	THSZMS	TQX	BDRED	l_4	torque moment	W1 Article no. 50 799 ...	
	mm	mm	mm	mm		Nm	mm	mm	Nm	£	
7	3.5	16.0	8.5	26.0	M8	25	9.0	5.5	1,1	279.47	002
10	5.7	25.5	12.5	38.5	M12	60	13.6	5.0	5,5	279.47	012

7

Key D

Clamping screw

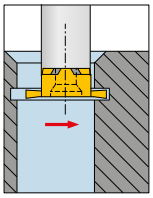
Spare parts		Y7 Article no. 80 950 ...		2A Article no. 70 960 ...	
Size		£		£	
7	T08 - IP	13.49	125	M3x13	5.70	231
10	T20 - IP	16.56	129	M5x13,5	5.70	243

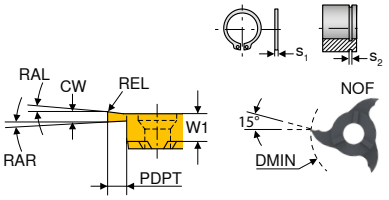
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

MiniMill – Milling insert for circlip grooves

Mini Mill | ≥ Ø 10 mm | DIN 471/472

CWX500





Size	DMIN mm	$s_{2\ H13}$ mm	CW $_{-0,02}$ mm	PDPT mm	W1 mm	RAR °	REL mm	s_1 mm	NOF	W2 Article no. 53 006 ... £	
10	10	0.70	0.74	1.5	3.50	1		0.60	3	67.52	070
	10	0.80	0.84	1.5	3.50	1		0.70	3	67.52	080
	10	0.90	0.94	1.5	3.50	1		0.80	3	67.52	090
	10	1.10	1.21	1.5	3.50	3		1.00	3	60.48	110
	10	1.30	1.41	1.5	3.50	3	0.10	1.20	3	60.48	130
	10	1.60	1.71	1.5	3.50	3	0.10	1.50	3	60.48	160
	12	1.10	1.21	2.5	3.50	3		1.00	3	60.48	112
	12	1.30	1.41	2.5	3.50	3	0.10	1.20	3	60.48	132
	12	1.60	1.71	2.5	3.50	3	0.10	1.50	3	60.48	162
18	18	0.70	0.74	1.5	5.75	1		0.60	3	69.05	270
	18	0.80	0.84	1.7	5.75	1		0.70	3	69.05	280
	18	0.90	0.94	1.9	5.75	1		0.80	3	69.05	290
	18	1.10	1.21	3.5	5.75	3		1.00	3	64.90	310
	18	1.30	1.41	3.5	5.75	3	0.10	1.20	3	64.90	330
	18	1.60	1.71	3.5	5.75	3	0.10	1.50	3	64.90	360
22	22	0.70	0.74	1.5	5.70	1		0.60	3	73.32	470
	22	0.80	0.84	1.7	5.70	1		0.70	3	73.32	480
	22	0.90	0.94	1.9	5.70	1		0.80	3	65.58	490
	22	1.00	1.04	2.1	5.70	1		0.90	3	69.44	500
	22	1.10	1.21	2.5	5.70	1		1.00	3	69.44	510
	22	1.30	1.41	4.5	5.70	3	0.10	1.20	3	66.13	530
	22	1.60	1.71	4.5	5.70	3	0.10	1.50	3	66.13	560
	22	1.85	1.96	4.5	5.70	3	0.15	1.75	3	66.13	585
	22	2.15	2.26	4.5	5.70	3	0.15	2.00	3	66.13	615
	22	2.65	2.76	4.5	5.70	3	0.15	2.50	3	66.13	665
	22	3.15	3.26	4.5	5.70	3	0.20	3.00	3	66.13	415
	22	4.15	4.26	4.5	5.70	3	0.20	4.00	3	66.13	515
	22	5.15	5.26	4.5	5.70	3	0.20	5.00	3	66.13	605

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	○

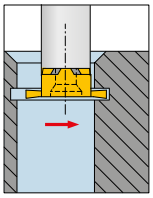
→ v_c/f_z Page 71

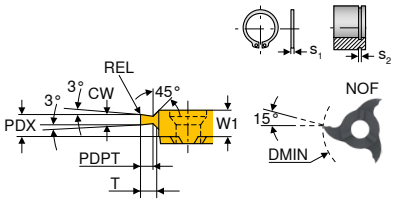
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

MiniMill – Milling insert for circlip grooves with chamfer facet

Mini Mill | ≥ Ø 22 mm | DIN 471/472

CWX500





Size	DMIN mm	$s_{2\ H13}$ mm	CW $_{-0,02}$ mm	T mm	PDPT mm	W1 mm	PDX mm	REL mm	s_1 mm	NOF	W2 Article no. 53 006 ... £	
22	22	1.10	1.21	0.50	0.49	5.85	5.07		1.00	3	71.67	805
	22	1.30	1.41	0.70	0.67	5.85	5.17		1.20	3	71.67	807
	22	1.30	1.41	0.85	0.83	5.85	5.17		1.20	3	71.67	808
	22	1.60	1.71	0.85	0.83	5.85	5.07		1.50	3	71.67	809
	22	1.60	1.71	1.00	0.97	5.85	5.07		1.50	3	71.67	810
	22	1.85	1.96	1.25	1.23	5.85	5.19	0.15	1.75	3	71.67	812
	22	2.15	2.26	1.50	1.47	5.85	5.34	0.15	2.00	3	71.67	815
	22	2.65	2.76	1.75	1.72	5.85	5.09	0.15	2.50	3	71.67	817
	22	2.65	2.76	1.50	1.47	5.85	5.09	0.15	2.50	3	71.67	816
	22	3.15	3.26	1.75	1.72	5.85	5.34	0.20	3.00	3	71.67	818
	22	4.15	4.26	2.50	2.47	5.85	5.34	0.20	4.00	3	71.67	825
	22	4.15	4.26	2.00	1.97	5.85	5.34	0.20	4.00	3	71.67	820

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	○

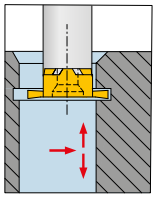
→ v_c/f_z Page 71

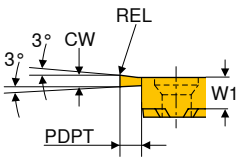
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

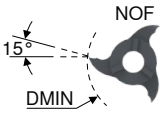
7

MiniMill – Milling insert for groove milling

Mini Mill | ≥ Ø 10 mm | CWX500







Size	DMIN mm	CW +0,02 mm	PDPT mm	W1 mm	REL mm	NOF	W2 Article no. 53 007 ... £	
10	10	1.0	1.5	3.50		3	67.52	010
	10	1.5	1.5	3.50	0.2	3	60.48	015
	10	2.0	1.5	3.50	0.2	3	60.48	020
	10	2.5	1.5	3.50	0.2	3	60.48	025
	12	1.5	2.0	3.50	0.2	6	60.93	114
	12	1.5	2.5	3.50	0.2	3	60.48	115
	12	2.0	2.0	3.50	0.2	6	60.93	119
	12	2.0	2.5	3.50	0.2	3	60.48	120
	12	2.5	2.5	3.50	0.2	3	60.48	125
14	14	1.0	2.5	4.50		3	69.05	210
	14	1.5	2.5	4.50	0.2	3	63.37	215
	14	2.0	2.5	4.50	0.2	3	63.37	220
	14	2.5	2.5	4.50	0.2	3	63.37	225
	16	1.5	3.5	4.50	0.2	3	63.37	315
	16	2.0	3.5	4.50	0.2	3	63.37	320
	16	2.5	3.5	4.50	0.2	3	63.37	325
18	18	1.5	3.5	5.75	0.1	6	68.97	414
	18	1.5	3.5	5.75	0.2	3	64.90	415
	18	2.0	3.5	5.75	0.2	6	68.97	419
	18	2.0	3.5	5.75	0.2	3	64.90	420
	18	2.5	3.5	5.75	0.2	6	68.97	424
	18	2.5	3.5	5.75	0.2	3	64.90	425
	18	3.0	3.5	5.75	0.2	6	68.97	429
	18	3.0	3.5	5.75	0.2	3	64.90	430
	18	4.0	3.5	5.75	0.2	3	37.68	440
22	22	1.0	4.5	6.20	0.1	6	67.54	810
	22	1.5	4.5	6.20	0.1	6	146.66	815
	22	1.5	4.5	5.70	0.2	3	77.36	515
	22	2.0	4.5	5.70	0.2	3	77.36	520
	22	2.0	4.5	6.20	0.2	6	146.66	820
	22	2.5	4.5	5.70	0.2	3	77.36	525
	22	2.5	4.5	6.20	0.2	6	146.66	825
	22	3.0	4.5	5.70	0.2	3	77.36	530
	22	3.0	4.5	6.20	0.2	6	146.66	830
	22	3.5	4.5	5.70	0.2	3	39.36	535
	22	4.0	4.5	5.70	0.2	3	77.36	540
	22	4.0	4.5	6.20	0.2	6	146.66	840
28	25	2.0	5.0	6.50	0.2	3	77.36	620
	25	2.5	5.0	6.50	0.2	3	77.36	625
	25	3.0	5.0	6.50	0.2	3	77.36	630
	25	3.5	5.0	6.50	0.2	3	77.36	635
	25	4.0	5.0	6.50	0.2	3	77.36	640
	28	1.0	6.5	6.25	0.1	6	75.08	610
	28	1.5	6.5	6.25	0.1	6	74.05	615
	28	1.5	6.5	6.50	0.2	3	77.36	715
	28	2.0	6.5	6.25	0.2	6	74.96	721
	28	2.0	6.5	6.50	0.2	3	77.36	720
	28	2.5	6.5	6.25	0.2	6	75.74	726
	28	2.5	6.5	6.50	0.2	3	77.36	725
	28	3.0	6.5	6.50	0.2	3	77.36	730
	28	3.0	6.5	6.25	0.2	6	76.52	731
	28	3.5	6.5	6.50	0.2	3	77.36	735
	28	4.0	6.5	6.25	0.2	6	78.21	741
	28	4.0	6.5	6.50	0.2	3	77.36	740
	28	5.0	6.5	6.50	0.2	3	45.08	750
	28	6.0	6.5	6.50	0.2	3	46.00	760

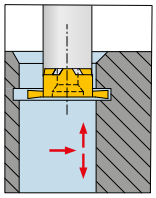
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	○

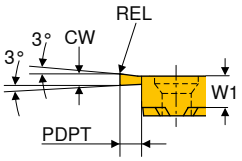
→ v_c/f_z Page 71

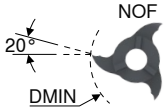
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

MiniMill – Milling insert for groove milling (specialist for aluminium)

Mini Mill | ≥ Ø 32 mm | CWX500







Size	DMIN mm	CW +0,02 mm	PDPT mm	W1 mm	REL mm	NOF	W2 Article no. 53 007 ... £	
28	32	2.0	8.5	6.5	0.2	3	86.34	920
	32	2.5	8.5	6.5	0.2	3	86.34	925
	32	3.0	8.5	6.5	0.2	3	86.34	930

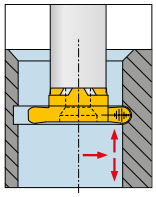
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

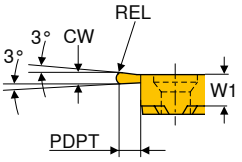
→ v_c/f_z Page 71

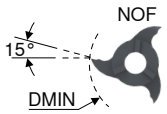
7

MiniMill – Milling insert for groove milling with full radius

Mini Mill | ≥ Ø 22 mm | CWX500







Size	DMIN mm	CW +0,03 mm	PDPT mm	W1 mm	REL mm	NOF	W2 Article no. 53 008 ... £	
10	12	2.2	2.5	3.50	1.1	3	77.36	011
14	16	2.2	3.5	4.60	1.1	3	78.87	111
18	18	2.2	3.5	5.75	1.1	3	80.25	211
22	22	1.0	4.5	5.75	0.5	3	46.76	305
	22	1.6	4.5	5.75	0.8	3	47.55	308
	22	2.0	4.5	5.75	1.0	3	46.76	310
	22	2.4	4.5	5.75	1.2	3	48.47	312
	22	2.8	4.5	5.75	1.4	3	80.25	314
	22	3.0	4.5	5.75	1.5	3	46.76	315
	22	4.0	4.5	5.75	2.0	3	46.76	320
	22	4.4	4.5	5.75	2.2	3	48.21	322
	22	5.0	4.5	5.75	2.5	3	50.01	325

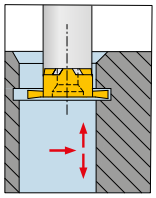
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	○

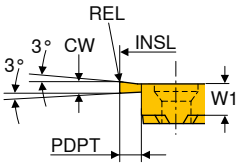
→ v_c/f_z Page 71

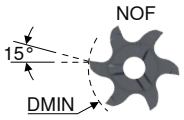
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

MiniMill – Milling insert for groove milling, cross-pitched

Mini Mill | ≥ Ø 22 mm | CWX500







Size	DMIN	INSL	CW +0,02	PDPT	W1	REL	NOF	W2 Article no. 53 015 ...
	mm	mm	mm	mm	mm	mm		£
10	12	11.7	1.5	2.0	3.5	0.2	6	57.08 114
	12	11.7	2.0	2.0	3.5	0.2	6	57.08 119
14	16	15.7	1.5	2.5	4.5	0.2	6	58.19 314
	16	15.7	2.0	2.5	4.5	0.2	6	58.19 319
	16	15.7	2.5	2.5	4.5	0.2	6	58.19 324
18	18	17.7	2.0	4.0	5.8	0.2	6	64.91 419
	18	17.7	2.5	4.0	5.8	0.2	6	64.91 424
	18	17.7	3.0	4.0	5.8	0.2	6	64.91 429
	20	19.7	2.0	5.0	5.8	0.2	6	64.91 469
	20	19.7	2.5	5.0	5.8	0.2	6	64.91 474
	20	19.7	3.0	5.0	5.8	0.2	6	64.91 479
22	22	21.7	2.0	4.5	6.2	0.2	6	62.67 820
	22	21.7	2.5	4.5	6.2	0.2	6	62.67 825
	22	21.7	3.0	4.5	6.2	0.2	6	62.67 830
	22	21.7	4.0	4.5	6.2	0.2	6	62.67 840
	37	36.7	1.5	12.0	6.2	0.1	6	81.71 865
	37	36.7	2.0	12.0	6.2	0.2	6	81.71 870
28	25	24.8	2.5	5.0	6.4	0.2	6	71.63 626
	25	24.8	3.0	5.0	6.4	0.2	6	71.63 631
	25	24.8	4.0	5.0	6.4	0.2	6	74.99 641
	25	24.8	5.0	5.0	6.4	0.2	6	78.34 651
	25	24.8	6.0	5.0	6.4	0.2	6	79.46 661
	28	27.7	2.5	6.5	6.2	0.2	6	71.63 726
	28	27.7	3.0	6.5	6.2	0.2	6	71.63 731
	28	27.7	4.0	6.5	6.2	0.2	6	73.86 741
	28	27.7	5.0	6.5	6.2	0.2	6	74.99 751
	28	27.7	6.0	6.5	6.2	0.2	6	74.99 761
	35	34.7	2.0	10.0	6.2	0.2	6	78.34 770
	35	34.7	2.5	10.0	6.2	0.2	6	79.46 775
	35	34.7	3.0	10.0	6.2	0.2	6	79.46 780

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	○

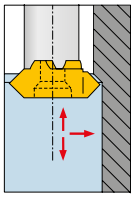
→ v_c/f_z Page 71

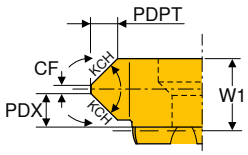
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

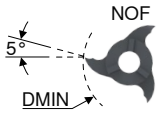
MiniMill – Milling insert for groove milling and chamfering

Mini Mill | ≥ Ø 10 mm

CWX500







Size	DMIN	CF +0,03	PDPT	W1	KCH	PDX	NOF	W2 Article no. 53 009 ...	
	mm	mm	mm	mm	°	mm		£	
10	10	0.2	0.35	3.60	15	1.80	6	61.32	015
	10	0.2	0.45	3.60	20	1.80	6	61.32	020
	10	0.2	0.70	3.60	30	1.80	6	61.32	030
	10	0.2	1.20	3.60	45	1.80	6	61.32	045
	12	1.2	0.80	3.50	45	1.20	3	52.02	035
14	16	1.4	1.20	4.50	45	1.60	3	53.57	145
18	18	2.5	1.40	5.85	45	1.70	3	54.39	258
	18	0.2	2.20	5.75	45	3.00	6	67.96	259
22	22	2.0	1.70	5.85	45	2.00	3	57.70	358
	22	0.2	2.50	6.40	45	3.90	6	148.17	463
	22	3.0	3.00	9.40	45	3.25	3	60.48	394 1)
28	28	0.2	1.90	6.05	45	3.75	6	73.92	560

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	○

1) use clamping screw 73 082 006

→ v_c/f_z Page 71

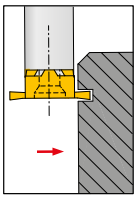
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

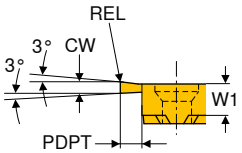
7

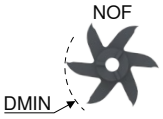
MiniMill – Milling insert for part-off

▲ PDPT = 12.0 mm in combination with holder 53 003 624
▲ reduce feed rate by 50 %

Mini Mill | ≥ Ø 37 mm | CWX500







Size	DMIN mm	CW +0,02 mm	PDPT mm	W1 mm	REL mm	NOF	W2 Article no. 53 013 ... £	
22	37	0.5	12	5.6		6	113.30	705 1)
	37	0.6	12	5.7		6	107.30	706 1)
	37	0.8	12	6.0		6	105.87	708 1)
	37	1.0	12	6.2	0.1	6	108.95	710
	37	1.5	12	6.2	0.1	6	92.97	715

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○

1) the end face is not ground free to the center

→ v_c/f_z Page 71

MiniMill – Set for cut off

▲ size 22

Mini Mill

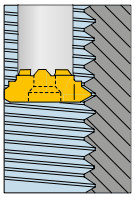
Tool	Designation	Article no.	Hole-Ø mm	Piece	W1 Article no. 53 014 ... £	
Inserts	Milling inserts for separating	53 013 715	37	2	305.06	990
Tool holder	Endmill short	53 003 624		1		
Screw	M5 x 12	73 082 005		1		
Tightening Key	T20			1		

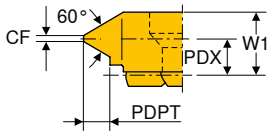
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

MiniMill – Milling insert for internal thread milling – Partial profile

Mini Mill | ≥ M12 | 60°

CWX500





Size	Thread$_{min}$	TP	DMIN	CF	PDPT	W1	PDX	NOF	W2 Article no. 53 010 ...
		mm	mm	mm	mm	mm	mm		£	
10	M12	1,0 - 1,75	9.8	0.13	1.08	3.20	2.4	6	68.74	017
	M14	1,0 - 1,75	11.7	0.13	1.08	3.60	2.8	3	80.25	010
	M14	1,0 - 2,0	10.1	0.13	1.25	3.20	2.2	6	68.74	021
	M14	1,0 - 2,0	11.7	0.13	1.25	3.60	2.8	3	80.25	020
	M16	1,5 - 2,75	11.0	0.19	1.67	3.20	2.0	6	68.74	027
	M16	1,5 - 2,75	11.7	0.19	1.67	3.60	2.4	3	80.25	015
	M16	2,0 - 3,0	11.1	0.25	1.78	3.20	1.9	6	68.74	029
	M16	2,0 - 3,0	11.7	0.25	1.78	3.60	2.2	3	80.25	030
14	M18	1,0 - 1,75	15.7	0.12	1.08	4.60	3.8	3	81.62	210
	M18	1,0 - 2,0	15.7	0.12	1.25	4.60	3.5	3	81.62	220
	M20	1,5 - 2,75	15.7	0.18	1.67	4.60	3.5	3	81.62	215
	M22	2,5 - 3,0	15.7	0.31	1.78	4.60	3.4	3	81.62	230
18	M22	1,0 - 1,75	17.7	0.12	1.03	5.85	5.0	3	87.44	410
	M22	1,0 - 2,0	17.7	0.12	1.19	5.85	4.7	3	81.62	412
	M22	1,0 - 2,0	17.7	0.12	1.19	5.85	5.0	6	80.15	416
	M22	1,5 - 2,75	17.7	0.19	1.62	5.85	4.6	3	81.62	415
	M24	2,0 - 3,0	17.7	0.25	1.73	5.85	4.4	3	87.44	425
	M24	2,0 - 3,5	17.7	0.25	2.06	5.85	4.2	3	81.62	455
	M24	2,0 - 3,5	17.7	0.25	2.06	5.85	4.3	6	81.83	434
	M24	2,0 - 3,75	17.7	0.25	2.22	5.85	4.2	3	81.62	420
	M24	2,5 - 5,0	17.7	0.31	2.98	5.85	3.8	3	81.62	430
	M24	3,0 - 5,5	17.7	0.38	3.25	5.85	4.2	3	81.62	435
22	M27	1,0 - 2,0	21.7	0.12	1.19	5.85	4.6	3	84.55	610
	M27	1,0 - 2,0	21.7	0.12	1.19	6.20	5.0	6	173.76	710
	M27	1,5 - 2,75	21.7	0.18	1.62	5.85	4.5	3	84.55	615
	M27	2,0 - 3,75	21.7	0.25	2.22	5.85	4.2	3	84.55	620
	M27	2,5 - 4,5	21.7	0.25	2.70	5.85	3.7	3	87.44	655
	M27	2,0 - 4,5	21.7	0.25	2.70	6.05	4.2	6	178.48	755
	M30	2,5 - 5,0	21.7	0.31	2.98	5.85	3.8	3	84.55	630
	M30	3,5 - 6,0	21.7	0.44	3.52	5.85	3.4	3	87.44	640
	M30	3,5 - 6,5	21.7	0.44	3.84	5.85	3.2	3	87.44	645
28	M33	1,0 - 2,0	27.7	0.12	1.20	6.60	4.5	3	57.56	820
	M33	1,5 - 2,5	27.7	0.18	1.49	6.60	4.3	3	57.56	825
	M33	1,5 - 2,5	27.7	0.19	1.60	6.10	5.0	6	86.13	826
	M36	2,5 - 5,0	27.7	0.38	2.93	6.10	2.3	6	86.13	850
	M36	2,5 - 5,0	27.7	0.37	2.93	6.60	4.0	3	57.56	840
	M39	4,0 - 6,0	27.7	0.62	3.37	6.60	3.6	3	57.56	860

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○

→ v_c/f_z Page 71

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

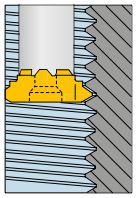
7

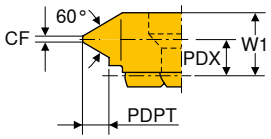
MiniMill – Milling insert for internal thread milling – Full profile

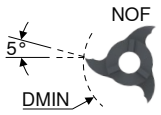
Mini Mill | ≥ M22

60° | M

CWX500







Size	Thread$_{min}$	TP mm	DMIN mm	CF mm	PDPT mm	W1 mm	PDX mm	NOF	W2 Article no. 53 011 ... £	
18	M22	1.50	17.7	0.18	0.81	5.85	4.8	3	84.55	415
	M22	1.75	17.7	0.20	0.95	5.85	4.7	3	89.94	417
	M22	2.00	17.7	0.25	1.08	5.85	4.6	3	89.94	420
	M24	2.50	17.7	0.31	1.35	5.85	4.4	3	89.94	425
	M27	3.00	17.7	0.37	1.62	5.85	4.3	3	89.94	430
	M27	3.50	17.7	0.43	1.89	5.85	4.0	3	89.94	435
22	M24	1.50	21.7	0.19	0.81	5.85	4.8	3	88.69	615
	M24	1.50	21.7	0.19	0.81	6.20	5.3	6	78.46	715
	M27	1.75	21.7	0.22	0.95	6.20	5.2	6	82.49	717
	M27	1.75	21.7	0.22	0.95	5.85	4.7	3	88.69	617
	M27	2.00	21.7	0.25	1.08	5.85	4.6	3	92.83	620
	M27	2.00	21.7	0.25	1.08	6.20	5.0	6	82.49	720
	M30	3.00	21.7	0.37	1.62	5.85	4.3	3	92.83	630
	M30	3.00	21.7	0.37	1.62	6.20	4.8	6	84.06	730
	M30	3.50	21.7	0.43	1.89	5.85	4.0	3	99.88	635
	M33	4.00	21.7	0.50	2.16	5.85	3.9	3	99.88	640
	M33	4.00	21.7	0.50	2.16	6.20	4.4	6	88.48	740
	M33	4.50	21.7	0.56	2.43	5.85	3.7	3	99.88	645

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○

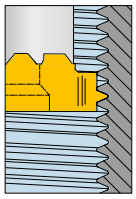
→ v_c/f_z Page 71

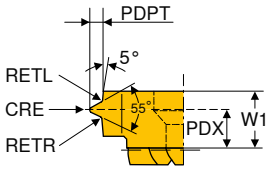
MiniMill – Milling insert for internal thread milling – Full profile

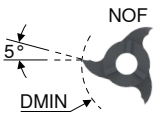
Mini Mill | ≥ G 3/8"

55° | G

CWX500







Size	Thread$_{min}$	TP mm	DMIN mm	TPI 1/"	W1 mm	PDX mm	PDPT mm	CRE mm	RETL mm	RETR mm	NOF	W2 Article no. 53 012 ... £	
10	G 3/8"	1.34	11.7	19	3.60	2.5	0.860	0.18	0.18	0.18	3	99.63	113
	G 1/2"	1.81	11.7	14	3.60	2.3	1.160	0.24	0.24	0.24	3	99.63	118
	G 1"	2.31	11.7	11	3.60	2.0	1.480	0.31	0.31	0.31	3	99.63	123
18	-	1.34	17.7	19	5.85	4.9	0.856	0.18	0.18	0.18	3	50.01	219
	G 3/4"	1.81	17.7	14	5.85	4.6	1.160	0.24	0.24	0.24	3	50.01	214
	G 1"	2.31	17.7	11	5.85	4.4	1.480	0.31	0.31	0.31	3	50.01	211
22	G 1"	2.31	21.7	11	5.85	4.0	1.480	0.31	0.31	0.31	3	104.05	311
	-	3.17	21.7	8	5.85	3.5	2.030	0.43	0.43	0.43	3	111.25	308
	BSW 1 1/2"	4.23	21.7	6	5.85	3.1	2.710	0.58	0.58	0.58	3	111.25	306

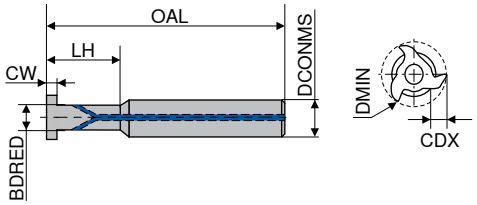
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○

→ v_c/f_z Page 71

MiniMill – Circular milling cutter, extra short

▲ steel Version

Mini Mill

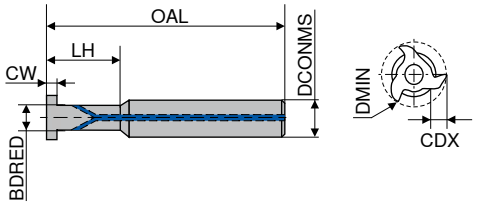


Size	DCONMS h6	BDRED	OAL	LH	DMIN	CW	CDX	torque moment	Steel W1 Article no. 53 004 ...	
	mm	mm	mm	mm	mm	mm	mm	Nm	£	
10	10	6.0	60	15.2	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	233.41	015
14	10	8.0	60	17.7	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	233.41	217
	13	8.0	70	25.7	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	239.07	225
18	10	9.0	60	17.0	17,7	≤5,6	3,5	4,5	233.41	417
	13	9.0	70	25.0	17,7	≤5,6	3,5	4,5	239.07	425
22	10	11.3	60	10.7	21,7	≤9,15	4,5	7,0	239.07	610
	13	11.3	70	25.7	21,7	≤9,15	4	7,0	247.51	625
28	13	14.0	70	10.7	27,7	≤10	6,5	7,0	239.07	810
	20	14.0	100	35.7	27,7	≤10	6,5	7,0	247.51	835

MiniMill – Circular milling cutter, short

▲ steel Version

Mini Mill



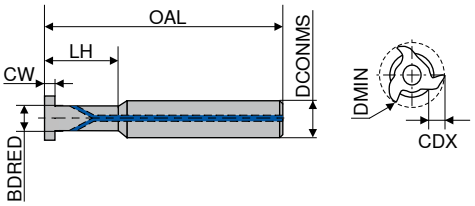
Size	DCONMS h6	BDRED	OAL	LH	DMIN	CW	CDX	torque moment	Steel W1 Article no. 53 002 ...		Steel W1 Article no. 53 003 ...	
	mm	mm	mm	mm	mm	mm	mm	Nm	£		£	
10	16	6	80	12.0	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	269.92	012	269.92	012
14	16	8	80	16.0	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	269.92	216	269.92	216
18	16	9	80	18.0	17,7	≤5,6	3,5	4,5	264.11	418	264.11	418
22	16	12	80	24.0	21,7	≤9,15	4,5	7,0	267.02	624	267.02	624
28	20	14	100	35.7	27,7	≤10	6,5	7,0			506.78	835

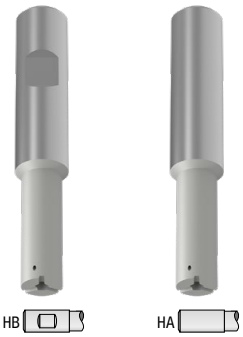
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

MiniMill – Circular milling cutter, vibration-damped

Mini Mill





HM
W1

HM
W1

Size	DCONMS h6	BDRED	OAL	LH	DMIN	CW	CDX	torque moment	Article no. 53 001 ...		Article no. 53 000 ...	
	mm	mm	mm	mm	mm	mm	mm	Nm	£		£	
10	12	6.0	80	21	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	342.82	021	342.82	021
	12	6.0	90	30	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	371.04	030	371.04	030
	12	6.0	100	42	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	424.60	042	424.60	042
	12	7.3	90	30	9,7 / 11,7	≤3,35	0,9 / 1,85	2,0	387.92	130	387.92	130
	16	7.3	100	25	9,7 / 11,7	≤3,35	0,9 / 1,85	2,0	570.68	025	570.68	025
14	12	8.0	95	29	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	342.82	229	342.82	229
	12	8.0	110	42	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	373.81	242	373.81	242
	12	8.0	120	56	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	424.60	256	424.60	256
	12	9.5	110	42	13,7 / 15,7	≤4,35	1,65 / 2,7	3,5	424.60	342	424.60	342
	16	9.5	110	33	13,7 / 15,7	≤4,35	1,65 / 2,7	3,5	522.83	233	522.83	233
18	12	9.0	100	32	17,7	≤5,6	3,5	4,5	427.36	432	427.36	432
	12	9.0	100	45	17,7	≤5,6	3,5	4,5	477.86	445	477.86	445
	12	9.0	120	64	17,7	≤5,6	3,5	4,5	565.01	464	565.01	464
	16	9.0	93	25	17,7	≤5,6	3,5	4,5	477.86	425	477.86	425
	16	9.0	100	32	17,7	≤5,6	3,5	4,5	505.94	532	505.94	532
	16	9.0	110	45	17,7	≤5,6	3,5	4,5	593.10	545	593.10	545
	16	9.0	130	64	17,7	≤5,6	3,5	4,5	683.02	564	683.02	564
	16	13.0	110	64	17,7	≤5,6	1,5	4,5	522.83	465	522.83	465
	16	13.0	130	66	17,7	≤5,6	1,5	4,5	663.39	466	663.39	466
22	12		100	42	21,7	≤9,15	4,5	7,0	376.58	642	376.58	642
	12		130	60	21,7	≤9,15	4,5	7,0	446.87	660	446.87	660
	16	11.5	90	30	21,7	≤9,15	4,5	7,0	477.86	630	477.86	630
	16	12.0	100	42	21,7	≤9,15	4,5	7,0	497.50	742	497.50	742
	16	12.0	130	60	21,7	≤9,15	4,5	7,0	595.87	760	595.87	760
	16	12.0	160	85	21,7	≤9,15	4,5	7,0	677.50	685	677.50	685
	20	16.0	110	45	21,7	≤9,15	2,5	7,0	725.09	645	725.09	645
	20	16.0	130	65	21,7	≤9,15	2,5	7,0	730.73	665	730.73	665
28	16	14.3	100	42	27,7 / 24,8	≤10	6,5 / 5	7,0	528.35	842	528.35	842
	16	14.3	130	60	27,7 / 24,8	≤10	6,5 / 5	7,0	626.71	860	626.71	860
	16	14.3	160	85	27,7 / 24,8	≤10	6,5 / 5	7,0	733.64	885	733.64	885
	20	13.5	104	35	27,7 / 24,8	≤10	6,5 / 5	7,0	652.03	835	652.03	835
	20	14.3	160	85	27,7 / 24,8	≤10	6,5 / 5	7,0	834.65	985	834.65	985

Y7

Key D

Y5

Clamping screw

Y5

Clamping screw

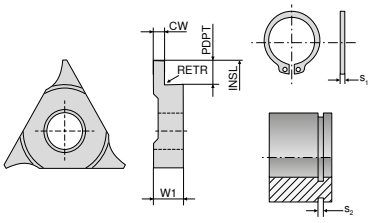
Spare parts		Article no. 80 950 ...			Article no. 73 082 ...			Article no. 73 082 ...	
Size		£			£			£	
10	T08	10.30	110				M2,6	7.14	002
14	T10	12.05	112				M3,5	7.14	003
18	T15	12.26	113				M4	7.14	004
22	T20	13.11	114	M5	13.96	006	M5	7.14	005
28	T20	13.11	114				M5	7.14	005

Clamping screw 73 082 006 only for insert 53 009 394.

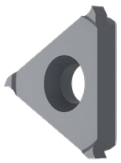
Milling inserts for circlip grooves without chamfer

System 300

DIN 471/472



Ti500



Solid carbide
W2

Size	$s_{2\ H13}$ mm	INSL mm	W1 mm	$CW_{-0,03}$ mm	PDPT mm	RETR mm	s_1 mm	Article no. 50 853 ... £	
04	0.90	7.9	2.34	0.98	0.70	0.3	0.80	52.02	300
03	0.90	10.6	2.34	0.98	0.70	0.3	0.80	43.05	302
	1.10	10.6	2.34	1.18	0.90	0.3	1.00	43.05	304
	1.30	10.6	2.34	1.38	1.10	0.3	1.20	43.05	306
	1.60	10.6	2.34	1.68	1.25	0.3	1.50	43.05	308
	1.85	10.6	2.34	1.93	1.25	0.3	1.75	43.05	310
02	0.90	17.5	3.50	0.98	0.70	0.3	0.80	39.23	312
	1.10	17.5	3.50	1.18	0.90	0.3	1.00	39.23	314
	1.30	17.5	3.50	1.38	1.10	0.3	1.20	39.23	316
	1.60	17.5	3.50	1.68	1.25	0.3	1.50	39.23	318
	1.85	17.5	3.50	1.93	1.25	0.3	1.75	39.23	320
	2.15	17.5	3.50	2.23	1.75	0.3	2.00	39.23	322
	2.65	17.5	3.50	2.73	1.75	0.3	2.50	39.23	324
	3.15	17.5	3.50	3.23	2.20	0.3	3.00	39.23	326
01	0.90	23.0	4.00	0.98	0.70	0.3	0.80	39.23	328
	1.10	23.0	4.00	1.18	0.90	0.3	1.00	39.23	330
	1.30	23.0	4.00	1.38	1.10	0.3	1.20	39.23	332
	1.60	23.0	4.00	1.68	1.25	0.3	1.50	39.23	334
	1.85	23.0	4.00	1.93	1.25	0.3	1.75	39.23	336
	2.15	23.0	4.00	2.23	1.75	0.3	2.00	39.23	338
	2.65	23.0	4.00	2.73	1.75	0.3	2.50	39.23	340
	3.15	23.0	4.00	3.23	2.20	0.3	3.00	39.23	342

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

→ v_c/f_z Page 70

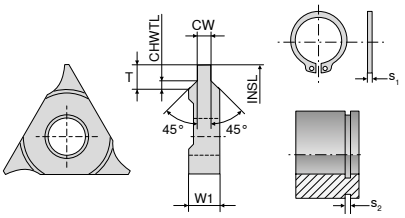
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Milling inserts for circlip grooves with chamfer

System 300

DIN 471/472



Ti500

Solid carbide

W2

Size	$s_{2\ H13}$ mm	INSL mm	W1 mm	$CW_{-0,03}$ mm	T mm	CHWTL mm	s_1 mm	Article no. 50 852 ... £	
03	1.10	10.6	2.34	1.18	0.50	0.10	1.00	46.07	302
02	1.10	17.5	3.50	1.18	0.50	0.10	1.00	40.77	312
	1.30	17.5	3.50	1.38	0.85	0.15	1.20	40.77	314
	1.60	17.5	3.50	1.68	1.00	0.15	1.50	40.77	316
	1.85	17.5	3.50	1.93	1.25	0.20	1.75	40.77	317
	2.15	17.5	3.50	2.23	1.50	0.20	2.00	40.77	318
	2.65	17.5	3.50	2.73	1.50	0.20	2.50	40.77	319
01	1.10	23.0	4.00	1.18	0.50	0.10	1.00	40.77	320
	1.30	23.0	4.00	1.38	0.70	0.15	1.20	40.77	321
	1.30	23.0	4.00	1.38	0.85	0.15	1.20	40.77	322
	1.60	23.0	4.00	1.68	1.00	0.15	1.50	40.77	324
	1.60	23.0	4.00	1.68	0.85	0.15	1.50	40.77	323
	1.85	23.0	4.00	1.93	1.25	0.20	1.75	40.77	325
	2.15	23.0	4.00	2.23	1.50	0.20	2.00	40.77	326
	2.65	23.0	4.00	2.73	1.75	0.20	2.50	40.77	328
	2.65	23.0	4.00	2.73	1.50	0.20	2.50	40.77	327
	3.15	23.0	4.00	3.32	1.75	0.20	3.00	40.77	329

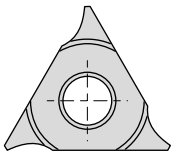
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

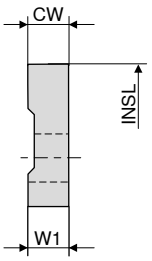
→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Milling inserts without profile, ground ready-for-use

System 300





Ti500

Size	CW +0,02 mm	INSL mm	W1 mm	Solid carbide W2 Article no. 50 851 ... £	
04	2.00	7.9	2.34	52.02	302
03	2.34	10.6	2.34	43.05	304
	3.00	10.6	3.00	46.07	306
02	3.50	17.5	3.50	39.23	312
	5.00	17.5	5.00	46.07	314
	6.00	17.5	6.00	49.75	316
01	4.00	23.0	4.00	48.37	322 1)
	6.50	23.0	6.50	48.37	324 1)

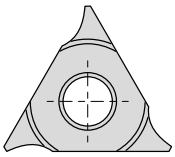
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

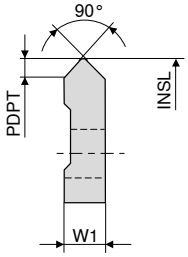
1) with circular milling cutter 50 800 090 PDPT = 3.0 mm

→ v_c/f_z Page 70

Milling inserts for chamfering and deburring

System 300





Ti500

Size	PDPT mm	INSL mm	W1 mm	Solid carbide W2 Article no. 50 857 ... £	
03	1.50	10.6	3.0	43.05	304
02	2.50	17.5	5.0	43.05	314
01	3.25	23.0	6.5	43.05	322 1)

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

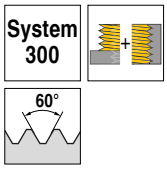
1) with circular milling cutter 50 800 090 PDPT = 3.0 mm

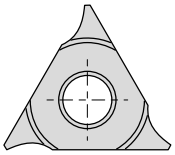
→ v_c/f_z Page 70

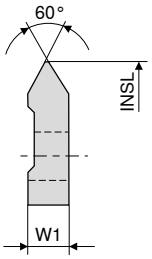
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Thread milling insert – Partial profile







Ti500

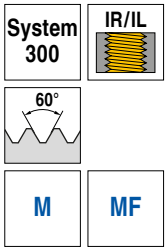
Solid carbide
W2

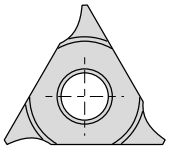
Size	TP	INSL	W1	Article no. 50 855 ...	
	mm	mm	mm	£	
02	1 - 3,5	17.5	3.5	48.37	314
01	1 - 4,0	23.0	4.0	48.37	324

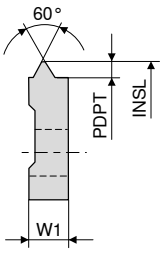
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

→ v_c/f_z Page 70

Thread milling insert – Full profile







Ti500

Solid carbide
W2

Size	TP	INSL	W1	PDPT	Article no. 50 859 ...		
	mm	mm	mm	mm	£		
03	1.0	10.6	2.34	0.578	58.72	304	
	1.5	10.6	2.34	0.864	58.72	308	
	2.0	10.6	2.34	1.159	58.72	310	
02	1.0	17.5	3.50	0.578	58.72	311	
	1.5	17.5	3.50	0.864	58.72	312	
	2.0	17.5	3.50	1.159	58.72	314	
	2.5	16.0	3.50	1.444	81.11	317	1)
	2.5	17.5	3.50	1.444	58.72	316	
	3.0	17.5	3.50	1.728	73.65	318	
01	1.0	23.0	4.00	0.578	61.14	320	
	1.5	23.0	4.00	0.864	61.14	322	
	2.0	23.0	4.00	1.159	61.14	324	
	2.5	23.0	4.00	1.444	61.14	326	
	3.0	23.0	4.00	1.728	61.14	328	
	3.5	23.0	4.00	2.023	61.14	330	
	4.0	23.0	4.00	2.308	61.14	332	
	4.5	23.0	6.50	2.602	70.12	334	
	5.0	23.0	6.50	2.887	70.12	336	
	6.0	23.0	6.50	3.467	70.12	338	2)

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

1) M20x2,5 – profile corrected

2) with circular milling cutter 50 800 090 PDPT = 3.0 mm

→ v_c/f_z Page 70

Thread milling insert – Full profile

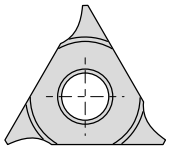
System 300

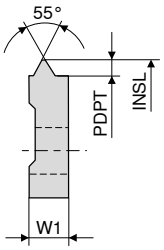
55°

G

BSW

BSF





Ti500

Solid carbide

W2

Size	TP	TPI	INSL	W1	PDPT	Article no. 50 858 ...	
	mm	1/"	mm	mm	mm	£	
02	1.814	14	17.5	3.5	1.162	58.72	314
	2.309	11	17.5	3.5	1.494	58.72	312
01	2.309	11	23.0	4.0	1.494	61.14	322

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	○

→ v_c/f_z Page 70

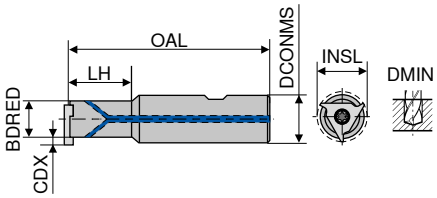
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Circular milling cutter

▲ size refers to milling inserts

System 300



HB

Size	INSL	CDX	LH	DCONMS $_{h6}$	OAL	BDRED	DMIN	torque moment	W1 Article no. 50 800 ...	
	mm	mm	mm	mm	mm	mm	mm	Nm	£	
04	7.9	0.35	17.2	10	57.20	7.1	8	0,9	145.26	015 [1]
03	10.6	1.60	17.2	10	57.20	7.4	11	0,9	149.29	020 [1]
	10.6	1.60	34.2	10	74.20	7.4	11	0,9	322.35	025 [2]
02	17.5	2.60	28.7	12	74.05	12.0	20	3,8	159.10	030
	17.5	2.60	63.7	12	108.70	12.0	20	3,8	340.89	045 [2]
01	23.0	3.45	38.5	16	87.00	16.1	25	5,5	167.13	050
	23.0	3.45	67.5	16	116.00	16.1	25	5,5	167.07	070
	23.0	3.00	88.5	16	137.00	17.0	25	5,5	359.29	090 [2]

1) without through coolant
2) carbide version

Spare parts for Article no.	Y7 Key D Article no. 80 950 ... £		2A Clamping screw Article no. 70 960 ... £	
50 800 050	T20 - IP	129	M5x15	234
50 800 070	T20 - IP	129	M5x15	234
50 800 090	T20 - IP	129	M5x15	234
50 800 030	T15 - IP	128	M4x12,3	233
50 800 045	T15 - IP	128	M4x12,3	233
50 800 020	T06 - IP	123	M2x9	232
50 800 025	T06 - IP	123	M2x9	232
50 800 015	T06 - IP	123	M2x9	232

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

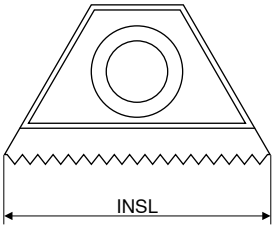
Thread milling insert

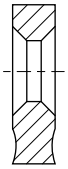
▲ can be used on both sides (except for INSL 10.4)

MWN

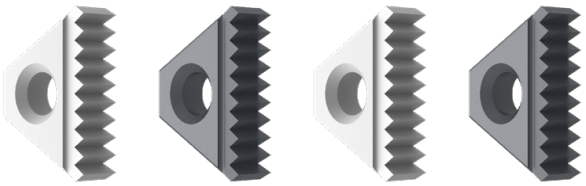
60°

M | MF





IR/IL | IR/IL TiAlN | ER/EL | ER/EL TiAlN



INSL	TP	Solid carbide W2 Article no. 50 890 ...		Solid carbide W2 Article no. 50 890 ...		Solid carbide W2 Article no. 50 891 ...		Solid carbide W2 Article no. 50 891 ...	
mm	mm	£		£		£		£	
10.4	0.50	83.83	100						
	0.75	83.83	101						
	1.00	66.83	102	86.14	302				
	1.25	66.83	103						
	1.50	66.83	104	86.14	304				
11.0	0.50	57.29	120						
	0.75	72.93	121						
	1.00	57.29	122	75.25	322				
	1.25	57.29	123						
	1.50	57.29	124	74.11	324				
16.0	0.50	85.42	140						
	0.75	68.13	141						
	1.00	68.13	142	93.13	342	68.13	142	88.03	342
	1.25	68.13	143			68.13	143		
	1.50	68.13	144	88.03	344	68.13	144	88.03	344
	1.75	68.13	145			68.13	145		
	2.00	68.13	146	88.03	346	68.13	146	88.03	346
27.0	1.00	130.03	162	160.51	362	130.03	162	160.51	362
	1.25	130.03	163			130.03	163		
	1.50	130.03	164	160.51	364	130.03	164	160.51	364
	1.75	130.03	165						
	2.00	130.03	166	160.51	366	130.03	166	160.51	366
	2.50	130.03	167			130.03	167		
	3.00	130.03	168	160.51	368	130.03	168	160.51	368
	3.50	130.03	169			130.03	169		
	4.00	130.03	170			130.03	170		

Steel	●	●	●	●
Stainless steel		●		●
Cast iron	●	●	●	●
Non ferrous metals	●	●	●	●
Heat resistant alloys				
Hardened materials				

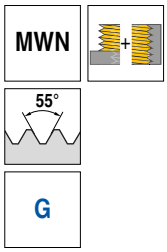
→ v_c/f_z Page 69

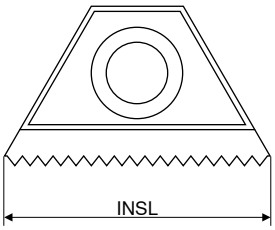
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

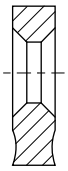
7

Thread milling insert

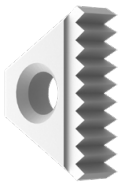
▲ can be used on both sides (except for INSL 10.4)

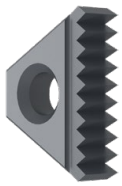






TiAlN





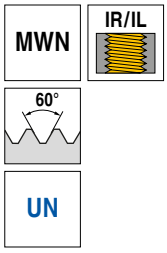
INSL	TPI	TP	Solid carbide W2 Article no. 50 895 ...		Solid carbide W2 Article no. 50 895 ...	
mm	1/"	mm	£		£	
10.4	19	1.337	66.83	100	86.14	300
16.0	14	1.814	68.13	142	86.14	342
	11	2.309	68.13	144	86.14	344
27.0	11	2.309	130.03	166	196.11	366

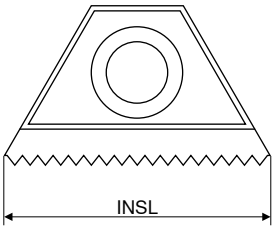
Steel	●	●
Stainless steel		●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys		
Hardened materials		

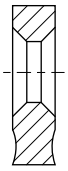
→ v_c/f_z Page 69

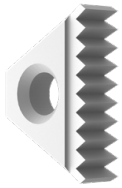
Thread milling insert

▲ can be used on both sides (except for INSL 10.4)









INSL	TPI	TP	Solid carbide W2 Article no. 50 892 ...	
mm	1/"	mm	£	
10.4	20	1.270	66.83	100
	18	1.411	66.83	102
16.0	16	1.588	68.13	144
	12	2.117	68.13	146
27.0	12	2.117	130.03	166
	8	3.175	130.03	168

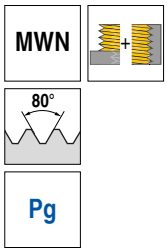
Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

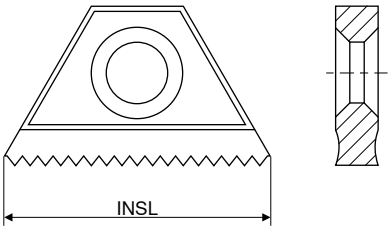
→ v_c/f_z Page 69

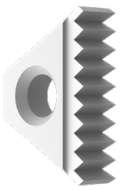
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread milling insert

▲ double sided







Solid carbide

W2

INSL mm	TPI 1/"	TP mm	Article no. 50 896 ... £	
11	18	1.411	69.90	122
16	18	1.411	81.80	142
	16	1.588	66.81	144

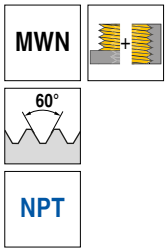
Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

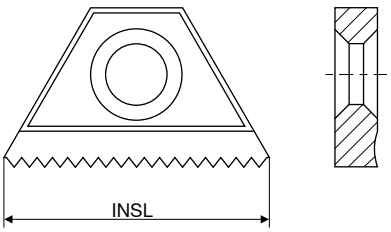
→ v_c/f_z Page 69

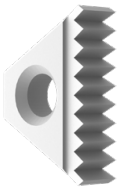
7

Thread milling insert

▲ double sided







Solid carbide

W2

INSL mm	TPI 1/"	TP mm	Article no. 50 897 ... £	
16	14.0	1.814	68.13	142
	11.5	2.209	68.13	144
27	11.5	2.209	130.03	164
	8.0	3.175	130.03	166

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

→ v_c/f_z Page 69

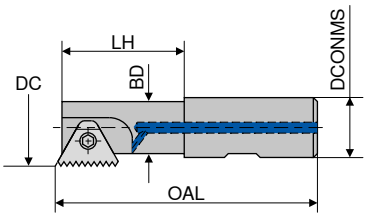
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Note! Thread milling inserts are marked R (right-hand thread) and L (left-hand thread). The standard tool holder cannot be used to produce a left-hand thread! Tool holder for left-hand thread available on special request.

Circular milling cutter

▲ INSL refers to milling inserts

MWN



B

INSL	BD	LH	DCONMS $_{h6}$	OAL	DC	torque moment	W1 Article no. 50 843 ...	
mm	mm	mm	mm	mm	mm	Nm	£	
10.4	6.8	12	12	69	9.0	0,9	205.23	101
	6.8	17	20	84	9.0	0,9	210.64	102
11.0	8.9	12	12	70	11.5	1,2	205.23	111
	8.9	20	20	85	11.5	1,2	210.64	112
16.0	13.6	22	16	90	17.0	2,5	231.04	161
	16.6	43	20	95	20.0	2,5	231.04	162
	18.6	25	25	125	22.0	2,5	288.64	163
27.0	24.0	52	25	110	30.0	9,0	292.62	271
	31.0	58	32	120	37.0	9,0	324.63	273
	24.0	92	25	150	30.0	9,0	348.01	272
	31.0	98	32	160	37.0	9,0	399.63	274

Pilot hole diameter for circular end mill 50 843 ...

BD	TP in mm									
	0.5 mm 48 G/"	0.75 mm 32 G/"	1.0 mm 24 G/"	1.25 mm 20 G/"	1.5 mm 16 G/"	2.0 mm 12 G/"	2.5 mm 10 G/"	3.0 mm 8 G/"	3.5 mm 7 G/"	4.0 mm 6 G/"
6.8	9.5	10	10.7	11.4	12					
8.9	12	12.5	13.2	13.9	14.5					
13.6	17.6	18.2	19	19.6	20	21				
16.6	20.7	21.4	22	22.6	23	24				
18.6	22.7	23.4	24	24.6	25	26				
24.0	30.7	31.4	32	32.8	33.5	34.6	36.6	39	42	45
31.0	38	38.6	39.5	40.4	41	42	44	46.5	49	52

Key D

Clamping screw

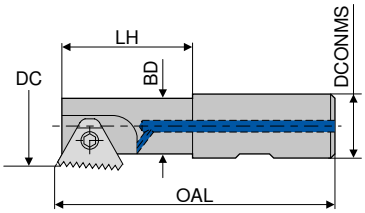
Spare parts INSL		Y7 Article no. 80 950 ... £		2A Article no. 70 950 ... £	
10.4	T07	10.30	109	M2,2x5,0	1.71	200
11	T08	10.30	110	M2,6x6,5	1.71	201
16	T10	12.05	112	UNC5-40 x 8	1.71	202
27	T25	13.49	115	M5x15	2.65	203

Circular milling cutter NPT

▲ INSL refers to milling inserts

MWN

NPT



B

W1

INSL mm	BD mm	Thread	LH mm	DCONMS h6 mm	OAL mm	DC mm	torque moment Nm	Article no. 50 844 ... £	
16	12.5	NPT 1/2	22	16	90	15.5	2,5	210.64	161
	15.0	NPT 3/4 - 1 1/4	23	20	85	19.0	2,5	231.04	162
27	24.0	NPT 1 1/2 - 2	52	25	110	30.0	9,0	292.62	271
	31.0	NPT > 2	58	32	120	37.0	9,0	324.63	272

7

Y7

Key D

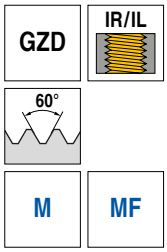
2A

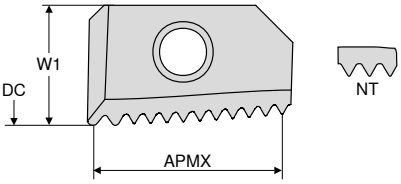
Clamping screw

Spare parts INSL		Article no. 80 950 ... £			Article no. 70 950 ... £	
16	T10	12.05	112	UNC5-40 x 8	1.71	202
27	T25	13.49	115	M5x15	2.65	203

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread milling insert





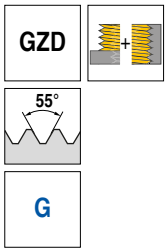
Solid carbide

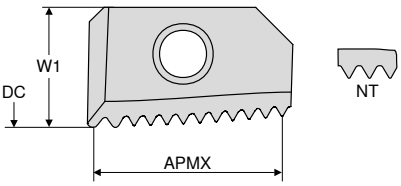
DC	TP	W1	APMX	NT	W2 Article no. 50 863 ...	
mm	mm	mm	mm		£	
12	1.0	7.5	12.0	13	56.45	300
	1.5	7.5	10.5	8	56.45	302
17	1.0	11.0	16.0	17	56.45	310
	1.5	11.0	16.5	12	56.45	312
	2.0	11.0	16.0	9	56.45	314
20	1.0	7.5	12.0	13	56.45	320
	1.5	7.5	10.5	8	56.45	322
25	1.0	11.0	16.0	17	56.45	330
	1.5	11.0	16.5	12	56.45	332
	2.0	11.0	16.0	9	56.45	334

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 70

Thread milling insert





Solid carbide

DC	TPI	W1	APMX	NT	W2 Article no. 50 864 ...	
mm	1/"	mm	mm		£	
12	14	7.5	9.07	6	56.45	300
17	14	11.0	16.33	10	73.65	312 [1]
	14	11.0	16.33	10	73.65	314 [2]
	11	11.0	16.16	8	73.65	310
25	14	11.0	16.33	10	73.65	332
	11	11.0	16.16	8	73.65	330

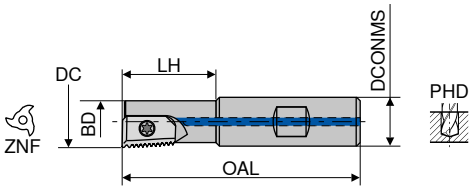
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

1) Thread: 5/8 – 3/4 – 7/8
2) 1/2" Profile corrected

→ v_c/f_z Page 70

Circular milling cutter

GZD



B

W1

DC	LH	DCONMS $_{h6}$	OAL	BD	ZNF	PHD	torque moment	Article no. 50 842 ...	
mm	mm	mm	mm	mm		mm	Nm	£	
12	18	16	74.0	9.4	1	14	1,1	173.49	121
17	30	16	79.0	13.7	1	19	3,8	191.63	171
20	32	20	83.0	17.5	3	22	1,1	230.40	201
25	50	25	107.6	21.7	3	26	3,8	285.46	251
	85	25	142.6	21.7	3	26	3,8	812.32	252 1)

1) heavy metal version with mounted head

7

Y7

Key D

2A

Clamping screw

Spare parts for Article no.		Article no. 80 950 ... £			Article no. 70 960 ... £	
50 842 121	T08 - IP	13.49	125	M2,5x6,5	3.79	244
50 842 171	T15 - IP	15.77	128	M4x7,5	3.79	245
50 842 201	T08 - IP	13.49	125	M2,5x6,5	3.79	244
50 842 251	T15 - IP	15.77	128	M4x7,5	3.79	245
50 842 252	T15 - IP	15.77	128	M4x7,5	3.79	245

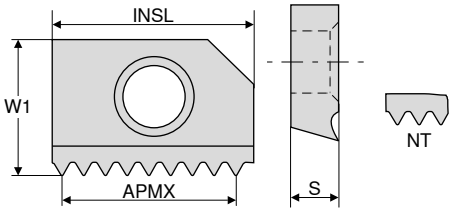
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread milling insert

GZG

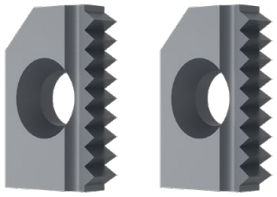
60°

M MF



ER/EL Ti500

IR/IL Ti500



INSL	TP	W1	APMX	S	NT	Solid carbide W2 Article no. 50 887 ...		Solid carbide W2 Article no. 50 885 ...	
mm	mm	mm	mm	mm		£		£	
14.5	0.50	10.0	13.50	3.18	28			89.77	350
	0.75	10.0	13.50	3.18	19			89.77	352
	1.00	10.0	13.00	3.18	14	67.70	304	52.02	354
	1.25	10.0	12.50	3.18	11			67.70	356
	1.50	10.0	12.00	3.18	9	67.70	308	52.02	358
	1.75	10.0	12.25	3.18	8			67.70	360
	2.00	10.0	12.00	3.18	7	67.70	312	52.02	362
	2.50	10.0	10.00	3.18	5			61.14	364
	2.50	10.0	10.00	3.18	5			61.14	366 [1]
15.0	3.00	10.5	12.00	3.18	5			73.65	370
	3.50	10.5	10.50	3.18	4			73.65	372
21.0	1.00	10.0	19.00	3.18	20			58.72	380
	1.50	10.0	19.50	3.18	14			58.72	382
	1.50	10.0	18.00	3.18	13	67.70	320		
	2.00	10.0	18.00	3.18	10			58.72	384
26.0	1.50	15.0	24.00	5.00	17			101.39	390
	2.00	15.0	24.00	5.00	13			101.39	392
	3.00	15.0	21.00	5.00	8			101.39	396
	3.50	15.0	20.00	5.00	7			149.33	398
	4.00	15.0	20.00	5.00	6			149.33	400

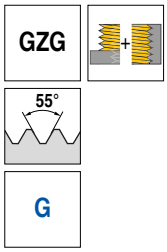
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys		
Hardened materials		

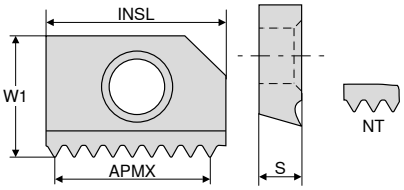
1) M20x2,5 – profile corrected

→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread milling insert





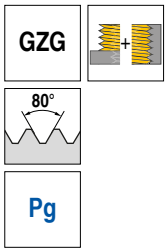
Solid carbide

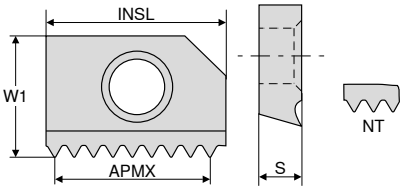
INSL	TPI	TP	W1	APMX	S	NT	W2 Article no. 50 888 ...	
mm	1/"	mm	mm	mm	mm		£	
14.5	18	1.411	10	11.28	3.18	9	78.02	310
	16	1.587	10	11.11	3.18	8	78.02	312
	14	1.814	10	12.69	3.18	8	56.45	314
	12	2.116	10	10.58	3.18	6	78.02	316
	11	2.309	10	11.54	3.18	6	56.45	318
21.0	14	1.814	10	18.14	3.18	11	67.70	320
	11	2.309	10	18.47	3.18	9	67.70	322
26.0	11	2.309	15	23.09	5.00	11	110.56	330

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

→ v_c/f_z Page 70

Thread milling insert





Solid carbide

INSL	TPI	TP	W1	APMX	S	NT	W2 Article no. 50 894 ...	
mm	1/"	mm	mm	mm	mm		£	
14.5	18	1.411	10	12.69	3.18	10	82.96	302
	16	1.587	10	11.11	3.18	8	82.96	304

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

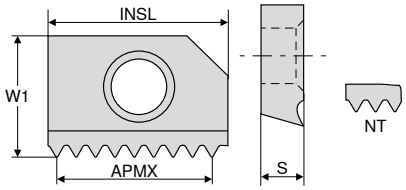
→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Thread milling insert

GZG | IR/IL | 60° | UN



Ti500

Solid carbide

INSL	TPI	TP	W1	APMX	S	NT	W2 Article no. 50 889 ...	
mm	1/"	mm	mm	mm	mm		£	
14.5	18	1.411	10	12.69	3.18	10	81.13	310
	16	1.587	10	12.70	3.18	9	85.13	312
21.0	16	1.587	10	19.05	3.18	13	101.45	320
	14	1.814	10	18.14	3.18	11	101.45	322
	12	2.116	10	18.04	3.18	10	101.45	324

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
Hardened materials	

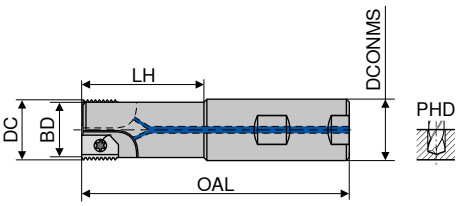
→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Circular milling cutter

▲ INSL refers to milling inserts

GZG



B

INSL	DC	LH	DCONMS h6	OAL	BD	ZNP	PHD	torque moment	W1 Article no. 50 841 ...	
mm	mm	mm	mm	mm	mm		mm	Nm	£	
	16	30.0	16	78	12.7	1	18.5	3,8	160.15	016
	16	50.0	16	98	12.7	1	18.5	3,8	252.92	017 1)
14.5	20	60.0	20	110	16.8	1	23.0	3,8	193.78	020
	25	48.2	25	106	21.5	2	30.0	3,8	279.41	025
	25	92.2	25	150	21.5	2	30.0	3,8	572.78	026 1)
	22	30.0	16	79	12.7	1	20.0	3,8	188.55	218
15.0	27	48.2	25	106	21.5	2	32.0	3,8	309.70	227
	27	60.0	20	110	16.8	1	26.0	3,8	208.18	222
	16	31.3	20	85	12.7	1	18.5	3,8	179.11	316
	22	32.8	25	92	18.7	1	26.0	3,8	184.06	322
21.0	22	62.8	25	122	18.7	1	26.0	3,8	591.71	323 1)
	28	38.3	32	102	24.7	2	35.0	3,8	353.00	328
	28	78.3	32	142	24.5	2	35.0	3,8	1,402.69	327 1)
26.0	18	48.5	25	107	20.0	1	30.0	3,8	223.62	125

1) heavy metal version

Key D

Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ... £			2A Article no. 70 960 ... £	
50 841 016	T15 - IP	15.77	128	M4x6,9	5.70	237
50 841 017	T15 - IP	15.77	128	M4x6,9	5.70	237
50 841 020	T15 - IP	15.77	128	M4x7,5	3.79	245
50 841 025	T15 - IP	15.77	128	M4x8	5.70	242
50 841 026	T15 - IP	15.77	128	M4x8	5.70	242
50 841 218	T15 - IP	15.77	128	M4x6,9	5.70	237
50 841 227	T15 - IP	15.77	128	M4x8	5.70	242
50 841 222	T15 - IP	15.77	128	M4x6,9	5.70	237
50 841 316	T15 - IP	15.77	128	M4x6,9	5.70	237
50 841 322	T15 - IP	15.77	128	M4x6,9	5.70	237
50 841 323	T15 - IP	15.77	128	M4x8	5.70	242
50 841 328	T15 - IP	15.77	128	M4x8	5.70	242
50 841 327	T15 - IP	15.77	128	M4x8	5.70	242
50 841 125	T15 - IP	15.77	128	M4x11,5	5.70	241

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

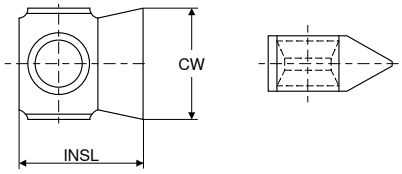
7

Thread milling insert – Partial profile

EAW

60°

M UN



TiN

Solid carbide

DC	TP	TPI	CW	INSL	W2 Article no. 50 867 ...	
mm	mm	1/"	mm	mm	£	
16,5	1,5 - 3,0	16 - 10	5	7.0	72.50	115
18	2,5 - 3,5	10 - 7	5	7.8	72.50	225

55° G

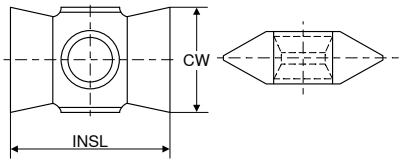
DC	TP	TPI	CW	INSL	W2 Article no. 50 868 ...	
mm	mm	1/"	mm	mm	£	
16,5	1.814	14	5	7	88.77	114

Thread milling insert – Partial profile

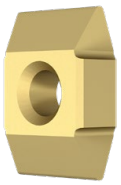
EAW

60°

M UN



TiN



Solid carbide

DC	TP	TPI	CW	INSL	W2 Article no. 50 860 ...	
mm	mm	1/"	mm	mm	£	
23,85	1,5 - 2,5	16 - 10	6.35	9.52	55.36	315
23,85	2,5 - 4,0	10 - 6	6.35	9.52	55.36	325
32,85	1,5 - 2,5	16 - 10	8.50	13.50	61.58	415
32,85	2,5 - 5,5	10 - 4,5	8.50	13.50	61.58	425

55° G

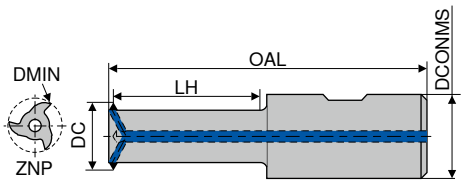
DC	TP	TPI	CW	INSL	W2 Article no. 50 861 ...	
mm	mm	1/"	mm	mm	£	
23,85	2.309	11	6.35	9.52	61.58	311
32,85	2.309	11	8.50	13.50	71.10	411

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	

→ v_c/f_z Page 69

Circular milling cutter

Scope of supply:
including key



DC	DMIN	TP	TPI	LH	DCONMS $_{h6}$	OAL	ZNP	torque moment	W1 Article no. 50 848 ...	
mm	mm	mm	1/"	mm	mm	mm		Nm	£	
16,5 / 18,0	17,5 / 19,0	1,5 - 3,0	16 - 10	60	20	114	2	0,9	438.71	**020**
23,85	25,5	1,5 - 4,0	24 - 6	90	32	154	3	0,9	517.15	**030**
32,85	35,0	1,5 - 5,5	16 - 4,5	115	32	179	3	2,5	536.76	**040**

7

Spare parts for Article no.	Y7 Article no. 80 950 ...			2A Article no. 70 950 ...		
		£			£	
50 848 020	T07 - IP	13.49	**124**	M2,5x8,5	9.47	**739**
50 848 030	T07 - IP	13.49	**124**	M2,5x8,5	9.47	**739**
50 848 040	T09 - IP	14.77	**126**	M3x11	9.47	**740**

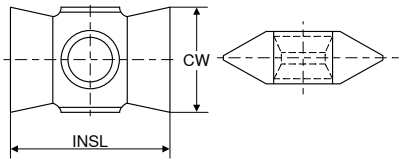
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread milling insert – Partial profile

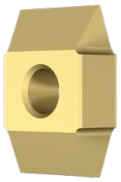
EWM

60°

M | UN



TiN



Solid carbide

DC	TP	TPI	CW	INSL	W2 Article no. 50 870 ...	
mm	mm	1/"	mm	mm	£	
40,25	1,5 - 3,0	16 - 9	9.5	15.50	70.89	**515**
40,25	3,0 - 6,0	9 - 4	9.5	15.50	70.89	**530**
52,55 / 66,55	1,5 - 3,0	16 - 9	12.5	19.00	76.81	**615**
52,55 / 66,55	3,0 - 6,0	9 - 4	12.5	19.00	76.81	**630**
92	6,0 - 8,0	4	14.3	28.58	125.52	**760**

55°

G

DC	TP	TPI	CW	INSL	W2 Article no. 50 871 ...	
mm	mm	1/"	mm	mm	£	
40,25	2.309	11	9.5	15.5	81.07	**511**
52,55	2.309	11	12.5	19.0	94.36	**611**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	

→ v_c/f_z Page 69

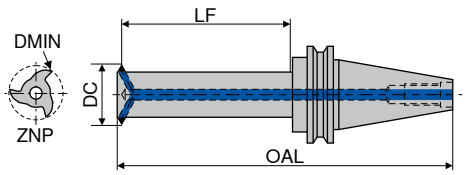
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Circular milling cutter

Scope of supply:

including key

EWM | IR/IL



DIN 69871

DC	DMIN	TP	TPI	LF	OAL	Adapter	ZNP	torque moment	W1 Article no. 50 849 ...	
mm	mm	mm	1/"	mm	mm			Nm	£	
40.25	43.0	1,5 - 6,0	16 - 4,0	145	280.5	SK 50	4	5,5	1,116.21	**148**
40.25	43.0	1,5 - 6,0	16 - 4,0	145	247.0	SK 40	4	5,5	1,077.13	**048**
52.55	56.0	1,5 - 6,0	16 - 4,0	195	279.6	SK 40	4	8,0	1,233.86	**064**
52.55	56.0	1,5 - 6,0	16 - 4,0	195	331.0	SK 50	4	8,0	1,272.96	**164**
66.55	70.5	1,5 - 6,0	16 - 4,0	260	398.0	SK 50	7	8,0	1,723.12	**080**
92.00	100.0	6,0 - 8,0	4,0	360	497.0	SK 50	7	8,0	2,036.45	**115**

Key D

Y7

Clamping screw

2A

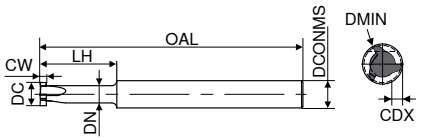
Spare parts DC		Y7 Article no. 80 950 ... £			2A Article no. 70 950 ... £	
40.25	T15 - IP	15.77	**128**	M4x13	9.47	**741**
52.55	T20 - IP	16.56	**129**	M5x15	9.47	**742**
66.55	T20 - IP	16.56	**129**	M5x15	9.47	**742**
92	T20 - IP	16.56	**129**	M5x15	9.47	**742**

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

MicroMill – Solid Carbide Circular End Milling Cutter

Micro Mill

CWX500



HA

Solid carbide

DC	CW ±0,02	CDX	LH	OAL	DN	DCONMS h6	ZEFP	DMIN	W1 Article no. 53 050 ...	
mm	mm	mm	mm	mm	mm	mm		mm	£	
5.8	0.7	0.8	15.2	58	3.8	6	3	6	60.86	070
	0.8	0.8	15.2	58	3.8	6	3	6	60.86	080
	0.9	0.8	15.2	58	3.8	6	3	6	60.86	090
	1.0	0.8	15.2	58	3.8	6	3	6	60.86	100
	1.5	0.8	15.2	58	3.8	6	3	6	60.86	150
7.8	0.7	1.2	25.4	68	5.0	8	3	8	76.78	170
	0.8	1.2	25.4	68	5.0	8	3	8	76.78	180
	0.9	1.2	25.4	68	5.0	8	3	8	76.78	190
	1.0	1.2	25.4	68	5.0	8	3	8	76.78	200
	1.5	1.2	25.4	68	5.0	8	3	8	76.78	250
	2.0	1.2	25.4	68	5.0	8	3	8	76.78	300

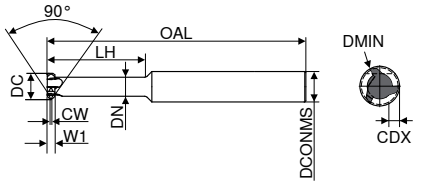
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 71

MicroMill – Solid Carbide Circular End Milling Cutter

Micro Mill

CWX500



HA

Solid carbide

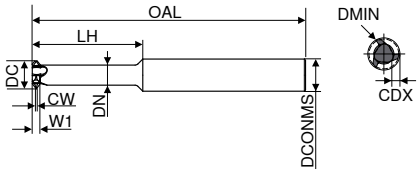
DC	W1	CW	CDX	LH	OAL	DN	DCONMS h6	ZEFP	DMIN	W1 Article no. 53 051 ...	
mm	mm	mm	mm	mm	mm	mm	mm		mm	£	
5.8	2	0.2	0.8	15	58	4.2	6	3	6	58.70	010
	2	0.2	0.8	25	68	4.2	6	3	6	74.51	020
7.8	2	0.2	1.2	25	68	5.0	8	3	8	90.45	110
	2	0.2	1.2	35	78	5.0	8	3	8	95.23	120

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 71

MicroMill – Solid Carbide Circular Thread Milling Cutter – Full profile

Micro Mill | IR/IL | 60° | M



CWX500

HA

Solid carbide

Thread	TP	DC	W1	CW	CDX	LH	OAL	DN	DCONMS h6	ZEFP	DMIN	W1 Article no. 53 052 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		mm	£	
M1,6	0.35	1.18	0.40	0.04	0.19	4.0	32	0.64	3	3	1.38	71.51	160
M1,8	0.35	1.38	0.50	0.04	0.19	5.0	32	0.70	3	3	1.58	70.68	180
M2	0.40	1.50	0.56	0.05	0.22	5.0	32	0.90	3	4	1.70	78.71	200
M2,5	0.45	1.95	0.60	0.06	0.25	6.0	32	1.15	3	4	2.15	77.85	250
M3	0.50	2.40	0.60	0.06	0.27	7.0	32	1.60	3	4	2.60	77.15	300
M3,5	0.60	2.80	0.74	0.08	0.33	8.0	32	1.80	3	4	3.00	75.46	350
M4	0.70	3.10	0.82	0.09	0.38	9.0	44	1.98	5	4	3.30	81.94	400
M5	0.80	3.60	0.98	0.10	0.43	10.0	44	2.20	5	4	3.80	79.54	500
M6	1.00	4.10	0.98	0.13	0.54	12.2	44	2.70	5	4	4.30	77.85	600

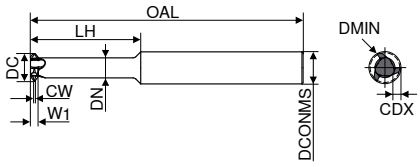
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 71

7

MicroMill – Solid Carbide Circular Thread Milling Cutter – Partial profile

Micro Mill | IR/IL | 60°



CWX500

HA

Solid carbide

TP	DC	W1	CW	CDX	LH	OAL	DN	DCONMS h6	ZEFP	DMIN	W1 Article no. 53 053 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm		mm	£	
0,5 - 1,5	5.8	2	0.06	0.91	15.2	58	3.5	6	3	6	63.50	010
0,5 - 1,5	7.8	2	0.06	0.91	25.4	68	5.5	8	3	8	84.09	110
1,0 - 2,0	7.8	2	0.12	1.19	25.4	68	5.0	8	3	8	84.09	120

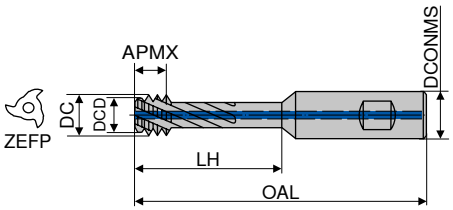
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 71

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Circular Thread Milling Cutter

UNI | ≤ 2xD | IR/IL | 60° | M



OSM

HB

Solid carbide

W1

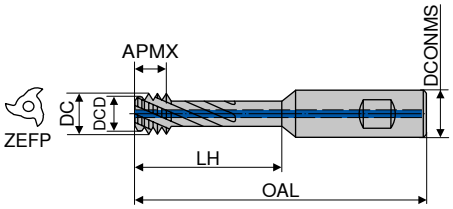
DC mm	Thread	TP mm	APMX mm	LH mm	DCONMS h6 mm	DCD mm	OAL mm	ZEFP	Article no. 50 815 ... £	
4.51	M6x1 - M7x1	1.00	4.1	16	8	3.41	60	3	374.79	060
6.23	M8x1,25 - M9x1,25	1.25	5.1	21	10	4.91	71	4	440.86	080
7.75	M10x1,5 - M11x1,5	1.50	6.0	26	10	6.11	76	4	424.18	100
9.16	M12x1,75	1.75	7.0	31	12	7.21	86	4	476.76	120

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 68

Circular Thread Milling Cutter

UNI | ≤ 3xD | IR/IL | 60° | M



OSM

HB

Solid carbide

W1

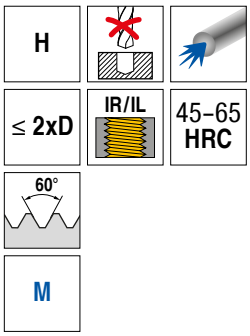
DC mm	Thread	TP mm	APMX mm	LH mm	DCONMS h6 mm	DCD mm	OAL mm	ZEFP	Article no. 50 821 ... £	
4.51	M6x1 - M7x1	1.00	4.1	23	8	3.41	65	3	545.76	060
6.23	M8x1,25 - M9x1,25	1.25	5.1	30	10	4.91	80	4	598.34	080
7.75	M10x1,5 - M11x1,5	1.50	6.0	37	10	6.11	85	4	604.89	100
9.16	M12x1,75	1.75	7.0	43	12	7.21	100	4	650.94	120
11.08	M14x2 - M16x2	2.00	8.1	57	16	8.91	113	4	693.62	140
14.38	M18x2,5 - M20x2,5	2.50	10.0	71	20	11.71	129	5	854.73	180

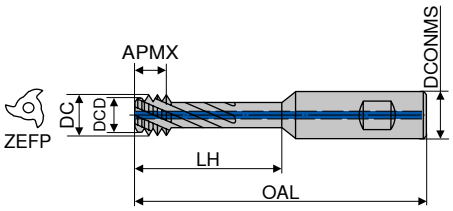
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
Hardened materials	

→ v_c/f_z Page 68

Circular Thread Milling Cutter

▲ note: left-hand cutting (M04)





Solid carbide

NEW W1

DC mm	Thread	TP mm	APMX mm	LH mm	DCONMS $_{h6}$ mm	DCD mm	OAL mm	ZEFP	Article no. 50 840 ... £	
2.3	M3x0,5	0.50	2.0	7.0	6	2.10	51	4	146.73	**030** 1)
3.0	M4x0,7	0.70	2.8	9.4	6	2.60	51	4	146.92	**040** 1)
3.8	M5x0,8	0.80	3.2	11.6	6	3.40	51	4	145.60	**050** 1)
4.6	M6x1 - M7x1	1.00	4.0	14.0	8	4.10	60	4	145.50	**060** 1)
6.2	M8x1,25 - M10x1,25	1.25	5.0	19.0	10	5.60	71	4	156.84	**080**
7.8	M10x1,5 - M12x1,5	1.50	6.0	25.0	10	7.00	76	4	168.93	**100**
9.2	M12x1,75	1.75	7.0	31.0	12	8.30	86	4	179.61	**120**
11.1	M14x2 - M16x2	2.00	8.0	36.0	16	10.04	98	4	196.33	**140**

Steel	
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	○
Hardened materials	●

1) without through coolant

→ v_c/f_z Page 68

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

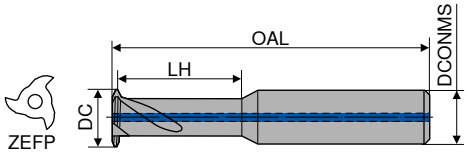
Caution: left-hand cutting (M04) → spindle rotation left!

7

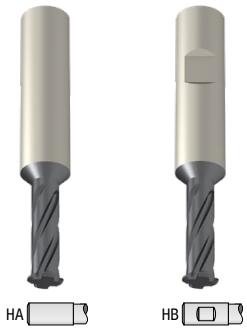
Thread Milling Cutter

▲ available on request: M1 / M1,1 / M1,2 / M1,4 / M1,6 / M1,7 / M1,8 / M2 / M2,2 / M2,3 / M2,5 / M2,6 / M3

HR | IR/IL | ≤ 3xD | 60° | M



OSM | OSM



Solid carbide | Solid carbide

W1 | W1

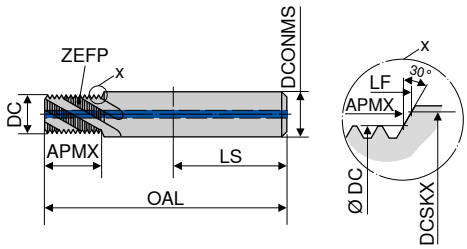
DC mm	Thread	TP mm	LH mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	Article no. 50 846 ... £		Article no. 50 847 ... £	
3.15	M4	0.70	9	6	55	3	329.04	**040**	333.11	**040**
4.00	M5	0.80	11	6	55	3	329.04	**050**	333.11	**050**
4.80	M6 - M7	1.00	16	8	60	3	337.02	**060**	340.80	**060**
6.40	M8 - M9	1.25	22	10	71	4	376.25	**080**	380.00	**080**
8.00	M10 - M12	1.50	26	10	76	4	380.00	**100**	383.95	**100**
9.60	M12	1.75	27	12	86	4	427.09	**120**	431.02	**120**

Steel	●	●
Stainless steel	●	●
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys	●	●
Hardened materials	●	●

→ v_c/f_z Page 68

Thread Milling Cutter with Chamfer Facet

SFSE | IR/IL | ≤ 2xD | 60° | M | TiAlN



Solid carbide

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	DCSKX mm	LF mm	ZEFP	W1 Article no. 50 811 ... £	
4.0	M5	0.80	62	11	36	8	5.3	11.16	3	277.17	050
4.7	M6	1.00	62	13	36	8	6.3	13.93	3	291.69	060
6.5	M8	1.25	74	18	40	10	8.3	18.62	3	320.66	080
8.0	M10	1.50	74	22	40	10			3	320.34	100 1)
10.0	M12	1.75	90	26	45	14	12.3	26.47	4	493.16	120
12.5	M16	2.00	100	35	48	16			4	585.27	160 2)

1) without chamfer
2) chamfer section at the front of the tool

60° | MF

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	DCSKX mm	LF mm	ZEFP	W1 Article no. 50 816 ... £	
6.5	M8x1	1.00	74	18	40	10	8.3	18.00	3	329.95	082
8.0	M10x1	1.00	74	22	40	10			3	321.40	102 1)
8.0	M10x1,25	1.25	74	22	40	10			3	320.34	103 1)
10.0	M12x1,25	1.25	90	26	45	14	12.3	26.61	4	493.16	123
10.0	M12x1,5	1.50	90	26	45	14	12.3	27.30	4	493.16	124
11.0	M14x1	1.00	100	31	48	16	14.3	32.70	4	585.27	142
11.0	M14x1,5	1.50	100	31	48	16	14.3	32.08	4	585.27	144
12.5	M16x1,5	1.50	100	35	48	16			4	588.18	164 2)

1) without chamfer
2) chamfer section at the front of the tool

55° | G

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	DCSKX mm	LF mm	ZEFP	W1 Article no. 50 818 ... £	
7.6	G 1/8-28	0.907	80	20	45	12	10.0	20.97	3	441.52	018
11.0	G 1/4-19	1.337	100	27	48	16	13.5	28.39	4	650.94	014
13.0	G 3/8-19	1.337	100	34	48	16			4	650.94	038 1)
16.0	G1/2-14	1.814	110	44	50	20			5	920.54	012 1)

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	

1) chamfer section at the front of the tool

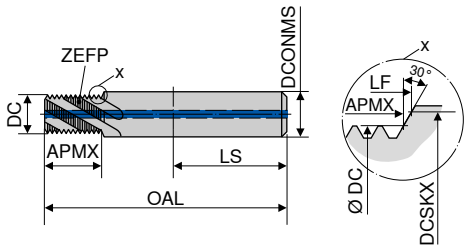
→ v_c/f_z Page 69

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Thread Milling Cutter with Chamfer Facet

SFSE | IR/IL | ≤ 2xD | 60° | UNC | TiAlN



Solid carbide

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	W1 Article no. 50 823 ... £	
4.7	UNC 1/4-20	1.270	62	14	36	8	6.65	15.14	3	291.69	014
6.1	UNC 5/16-18	1.411	74	17	40	10	8.25	18.23	3	364.39	516
7.6	UNC 3/8-16	1.588	80	21	45	12	9.83	22.05	3	437.24	038
8.8	UNC 7/16-14	1.814	90	24	45	14	11.43	25.21	3	542.57	716
10.1	UNC 1/2-13	1.954	90	26	45	14	13.00	27.67	4	542.57	012
11.4	UNC 9/16-12	2.117	100	31	48	16	14.61	32.15	4	650.94	916
12.7	UNC 5/8-11	2.309	100	34	48	16			4	650.94	058 1)
15.2	UNC 3/4-10	2.540	110	42	50	20	19.35	43.74	5	920.54	034

1) chamfer section at the front of the tool

60° | UNF

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	W1 Article no. 50 824 ... £	
4.7	UNF 1/4-28	0.907	62	14	36	8	6.65	15.59	3	301.79	014
6.1	UNF 5/16-24	1.058	74	17	40	10	8.25	18.05	3	357.93	516
7.6	UNF 3/8-24	1.058	80	21	45	12	9.83	22.30	3	437.24	038
8.8	UNF 7/16-20	1.270	90	24	45	14	11.43	25.49	3	542.57	716
10.1	UNF 1/2-20	1.270	90	26	45	14	13.00	28.46	4	542.57	012
11.4	UNF 9/16-18	1.411	100	31	48	16	14.61	33.03	4	650.94	916
12.7	UNF 5/8-18	1.411	100	34	48	16			4	670.65	058 1)
15.2	UNF 3/4-16	1.588	110	42	50	20	19.35	43.69	5	920.54	034

1) chamfer section at the front of the tool

60° | NPT

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	ZEFP	W1 Article no. 50 819 ... £	
5.8	NPT 1/16-27	0.941	62	10	36	8	3	373.29	116 1)
7.6	NPT 1/8-27	0.941	74	10	40	10	3	423.86	018 1)
10.1	NPT 1/4-18	1.411	90	15	45	14	3	621.43	014 1)
16.0	NPT 1/2-14	1.814	110	19	50	20	5	1,068.41	012 1)

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	

1) without chamfer

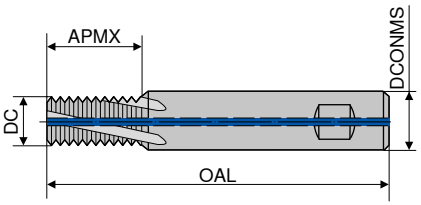
→ v_c/f_z Page 69

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread Milling Cutter with Chamfer Facet

- ▲ profile-corrected
- ▲ hard machining to Ø DC = 4 mm possible
- ▲ chamfer section at end of shank

SFSE | IR/IL | ≤ 2xD | 60° | M



Ti500

HB

Solid carbide

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	W8 Article no. 54 801 ... £	
4.00	M5	0.80	11	8	62	3	133.93	050 1)
4.80	M6	1.00	13	8	62	3	133.93	060 1)
6.50	M8	1.25	18	10	74	3	157.44	080
7.95	M10	1.50	22	12	80	3	186.78	100
9.90	M12	1.75	26	14	90	4	239.63	120
11.60	M14	2.00	31	16	100	4	274.92	140
11.95	M16	2.00	35	12	90	4	186.78	160 2)
13.95	M18	2.50	39	20	110	4	387.52	180
15.95	M20	2.50	44	16	100	4	274.92	200 2)

1) without through coolant
2) chamfer section at the front of the tool

60° | MF

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	W8 Article no. 54 803 ... £	
6.0	M8x1	1.00	18	10	74	3	157.44	080
8.0	M10x1	1.00	22	12	80	3	186.78	100
8.0	M10x1,25	1.25	22	12	80	3	186.78	101
9.9	M12x1	1.00	26	14	90	4	239.63	120
9.9	M12x1,25	1.25	26	14	90	4	239.63	121
9.9	M12x1,5	1.50	26	14	90	4	239.63	122
11.6	M14x1	1.00	31	16	100	4	274.92	140
11.6	M14x1,5	1.50	31	16	100	4	284.16	141
12.0	M16x1,5	1.50	35	12	90	4	186.78	160 1)
14.0	M18x1,5	1.50	39	20	110	4	396.93	180
16.0	M20x1,5	1.50	44	16	100	4	239.63	200 1)

1) chamfer section at the front of the tool

55° | G

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	W8 Article no. 54 805 ... £	
6.00	G 1/16-28	0.907	16	10	74	3	204.35	116
7.95	G 1/8-28	0.907	20	12	80	3	216.11	018
9.90	G 1/4-19	1.337	27	16	100	4	307.68	014
13.95	G 3/8-19	1.337	34	14	90	4	265.49	038 1)
15.95	G 1/2-14	1.814	43	16	100	4	284.16	012 1)
17.95	G 5/8-14	1.814	47	18	110	4	396.93	058 1)

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	●

1) chamfer section at the front of the tool

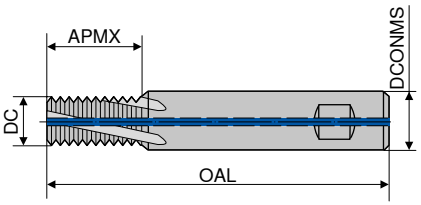
→ v_c/f_z Page 71

7

Thread Milling Cutter with Chamfer Facet

- ▲ profile-corrected
- ▲ hard machining to Ø DC = 4 mm possible
- ▲ chamfer section at end of shank

SFSE | IR/IL | ≤ 2xD | 60° | UNC | Ti500



HB

Solid carbide

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	W8 Article no. 54 811 ... £	
4.80	UNC 1/4-20	1.270	14	8	62	3	157.44	014 1)
5.95	UNC 5/16-18	1.411	18	10	74	3	176.25	516
7.95	UNC 3/8-16	1.588	22	12	80	3	213.76	038
7.95	UNC 7/16-14	1.814	22	14	90	3	260.79	716
9.90	UNC 1/2-13	1.954	27	14	90	4	265.49	012
11.80	UNC 9/16-12	2.117	31	16	100	4	317.10	916
12.70	UNC 5/8-11	2.309	34	14	90	4	265.49	058 2)
15.20	UNC 3/4-10	2.540	38	20	110	5	455.71	034

1) without through coolant
2) chamfer section at the front of the tool

60° | UNF

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	W8 Article no. 54 813 ... £	
4.80	UNF 1/4-28	0.907	14	8	62	3	157.44	014 1)
5.95	UNF 5/16-24	1.058	18	10	74	3	176.25	516
7.60	UNF 3/8-24	1.058	21	12	80	3	213.76	038
7.95	UNF 7/16-20	1.270	22	14	90	3	260.79	716
9.90	UNF 1/2-20	1.270	26	14	90	4	265.49	012
12.00	UNF 9/16-18	1.411	30	16	100	4	317.10	916
13.50	UNF 5/8-18	1.411	33	14	90	4	265.49	058 2)
17.00	UNF 3/4-16	1.588	38	20	110	5	455.71	034

1) without through coolant
2) chamfer section at the front of the tool

60° | NPT

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	W8 Article no. 54 809 ... £	
10.1	NPT 1/4-18	1.411	15	14	90	3	300.64	014 1)
12.8	NPT 3/8-18	1.411	15	16	100	4	361.78	038 1)
16.0	NPT 1/2-14	1.814	19	20	110	5	495.57	012 1)
18.5	NPT 3/4-14	1.814	19	20	110	5	495.57	034 1)

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	●

1) chamfer section at the front of the tool

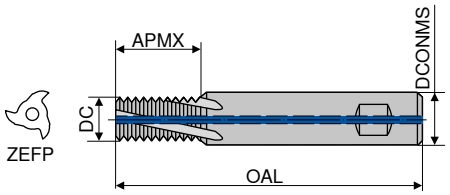
→ v_c/f_z Page 71

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread Milling Cutter

▲ available on request: M30, M36, M42, M48, M56, M64

SGF | IR/IL | ≤ 2xD | 60° | M



TiAlN

Solid carbide

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	W1 Article no. 50 825 ... £	
2.40	M3	0.50	6	4	42	3	244.93	030 [1]
3.15	M4	0.70	8	6	55	3	263.57	040
4.00	M5	0.80	10	6	55	3	263.57	050
4.80	M6	1.00	12	6	55	3	263.57	060
6.00	M8	1.25	16	6	63	3	270.07	080
8.00	M10	1.50	20	8	70	3	307.83	100
9.90	M12	1.75	24	10	80	4	373.29	120
11.60	M14	2.00	28	12	90	4	439.34	140
12.00	M16	2.00	32	12	90	4	437.24	160
14.00	M18	2.50	36	14	90	4	579.90	180
14.00	M22	2.50	44	14	95	4	807.83	220
14.00	M20	2.50	40	14	90	4	658.62	200

1) without through coolant

60° | MF

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	W1 Article no. 50 826 ... £	
3.35	M4x0,5	0.50	8	6	55	3	316.69	040
4.20	M5x0,5	0.50	10	6	55	3	316.69	050
5.00	M6x0,75	0.75	12	6	55	3	316.69	061
6.00	M8x0,75	0.75	16	6	63	3	316.69	081
6.00	M8x1	1.00	16	6	63	3	316.69	082
8.00	M10x1	1.00	20	8	70	3	316.69	102
10.00	M12x1	1.00	24	10	80	4	377.00	122
10.00	M12x1,5	1.50	24	10	80	4	377.00	124
10.00	M14x1,5	1.50	28	10	80	4	377.00	144
12.00	M16x1,5	1.50	32	12	90	4	460.94	164
14.00	M18x1,5	1.50	36	14	90	4	575.38	184
14.00	M20x1,5	1.50	40	14	90	4	575.62	204
14.00	M22x1,5	1.50	44	14	95	4	604.74	224
16.00	M24x1,5	1.50	36	16	90	5	673.02	244

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	

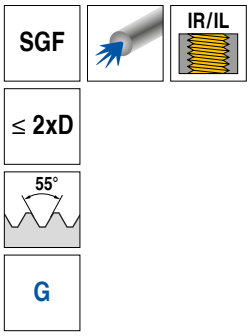
→ v_c/f_z Page 69

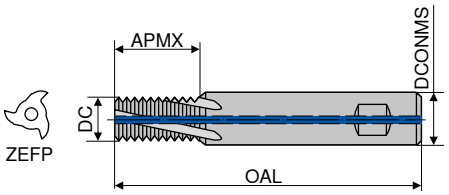
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Thread Milling Cutter

▲ available on request: M30, M36, M42, M48, M56, M64





Solid carbide

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	W1 Article no. 50 827 ... £	
8	G 1/8-28	0.907	19.5	8	70	3	323.28	**018**
11	G 1/4-19	1.337	26.5	12	90	4	464.85	**014**
12	G 3/8-19	1.337	33.0	12	90	4	464.85	**038**
14	G 1/2-14	1.814	42.0	14	95	4	638.57	**012**
16	G 3/4-14	1.814	34.0	16	90	5	685.88	**034**
16	G 1-11	2.309	33.0	16	90	5	712.53	**100**
16	G 5/8-14	1.814	34.0	16	90	5	696.98	**058**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	

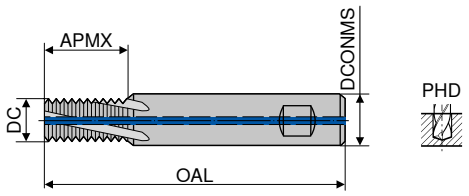
→ v_c/f_z Page 69

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread Milling Cutter

▲ profile corrected
▲ hard machining to Ø DC = 4 mm possible

SGF | IR/IL | ≤ 2xD | 60° | M | Ti500



Solid carbide

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	W8 Article no. 54 800 ... £	
2.40	M3	0.50	6.5	4	42	2	2.50	89.94	030 [1]
3.15	M4	0.70	9.0	6	55	3	3.30	89.94	040 [2]
4.00	M5	0.80	11.0	6	55	3	4.20	89.94	050 [2]
4.80	M6	1.00	13.0	6	55	3	5.00	89.94	060 [2]
6.00	M8	1.25	18.0	6	60	3	6.75	94.42	080
8.00	M10	1.50	21.0	8	70	3	8.50	114.16	100
9.90	M12	1.75	26.0	10	75	4	10.25	138.02	120
11.60	M14	2.00	30.0	12	85	4	12.00	159.81	140
12.00	M16	2.00	34.0	12	85	4	14.00	167.07	160
14.00	M18	2.50	40.0	14	90	4	15.50	197.85	180
16.00	M20	2.50	42.0	16	90	4	17.50	205.46	200

1) DIN 6535 HA shank / without through coolant
2) without through coolant

60° | MF

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	W8 Article no. 54 802 ... £	
4.0	M5	0.50	11	6	55	3	4.50	89.94	050 [1]
4.8	M6	0.75	13	6	55	3	5.25	89.94	060 [1]
6.0	M8	1.00	18	6	60	3	7.00	94.42	080
8.0	M10	1.25	21	8	70	3	8.75	114.16	100
9.9	M12	1.00	26	10	75	4	11.00	138.02	120
9.9	M12	1.25	26	10	75	4	10.75	138.02	121
9.9	M12	1.50	26	10	75	4	10.50	138.02	122
11.6	M14	1.00	30	12	85	4	13.00	159.81	140
11.6	M14	1.50	30	12	85	4	12.50	159.81	141
12.0	M16	1.50	34	12	85	4	14.50	167.07	160
14.0	M18	1.50	40	14	90	4	16.50	197.85	180
16.0	M20	1.50	42	16	90	4	18.50	205.46	200

1) DIN 6535 HA shank / without through coolant

55° | G

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	W8 Article no. 54 804 ... £	
8.0	G 1/8-28	0.907	21	8	70	3	8.80	129.71	018
9.9	G 1/4-19	1.337	26	10	75	4	11.80	146.99	014
14.0	G 3/8-19	1.337	40	14	90	4	15.25	171.21	038
16.0	G 1/2-14	1.814	42	16	90	4	19.00	207.51	012

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

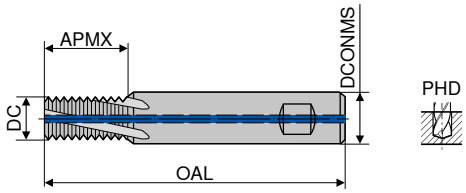
→ v_c/f_z Page 71

7

Thread Milling Cutter

▲ profile corrected

SGF | IR/IL | ≤ 2xD | 55° | BSW



Ti500

HB

Solid carbide

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	W8 Article no. 54 806 ... £	
6.0	BSW 5/16 - 18	1.411	18	6	60	3	6.50	108.95	516
6.0	BSW 3/8 - 16	1.588	18	6	60	3	7.90	110.67	038
8.0	BSW 7/16 - 14	1.814	21	8	70	3	9.25	130.75	716
8.0	BSW 1/2 - 12	2.117	21	8	70	3	10.50	130.87	012
9.9	BSW 5/8 - 11	2.309	26	10	75	4	13.50	152.53	058

55° | BSF

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	W8 Article no. 54 808 ... £	
6.0	BSF 5/16 - 22	1.155	18	6	60	3	6.8	110.67	516
6.0	BSF 3/8 - 20	1.270	18	6	60	3	8.3	110.67	038
8.0	BSF 7/16 - 18	1.411	21	8	70	3	9.7	130.75	716
8.0	BSF 1/2 - 16	1.588	21	8	70	3	11.1	130.75	012
9.9	BSF 5/8 - 14	1.814	26	10	75	4	14.0	152.53	058

60° | UNC

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	W8 Article no. 54 810 ... £	
4.80	UNC 1/4-20	1.270	13	6	55	3	5.1	105.01	014 [1]
6.00	UNC 5/16-18	1.411	18	6	60	3	6.6	124.51	516
7.95	UNC 3/8-16	1.588	21	8	70	3	8.0	129.71	038
7.95	UNC 7/16-14	1.814	21	8	70	3	9.4	130.75	716
9.90	UNC 1/2-13	1.954	26	10	75	4	10.8	151.15	012

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

1) DIN 6535 HA shank / without through coolant

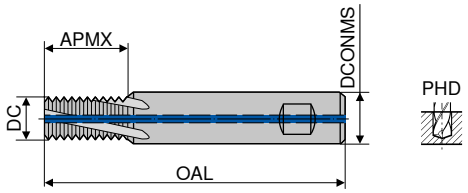
→ v_c/f_z Page 71

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Thread Milling Cutter

▲ profile corrected

SGF | IR/IL | ≤ 2xD | 60° | UNF



Ti500

HB

Solid carbide

W8

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	Article no. 54 812 ... £	
4.8	UNF 1/4-28	0.907	13	6	55	3	5.5	105.01	**014** [1]
6.0	UNF 5/16-24	1.058	18	6	60	3	6.9	108.95	**516**
8.0	UNF 3/8-24	1.058	21	8	70	3	8.5	130.87	**038**
8.0	UNF 7/16-20	1.270	21	8	70	3	9.9	130.87	**716**
9.9	UNF 1/2-20	1.270	26	10	75	4	11.5	129.71	**012**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

1) without through coolant

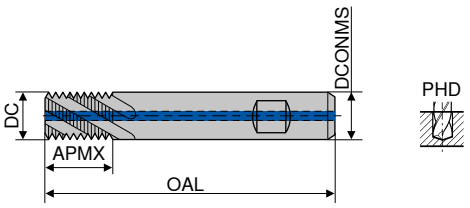
→ v_c/f_z Page 71

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

7

Thread Milling Cutter

SGF | IR/IL | ≤ 2xD | 60° | M



Ti500

HB

Solid carbide

W8

DC	TP	APMX	DCONMS h6	OAL	ZEFP	PHD	Article no. 54 832 ...
mm	mm	mm	mm	mm		mm	£	
8	0.50	12	8	70	3	10	342.21	**008**
8	0.75	12	8	70	3	11	342.21	**080**
10	1.00	16	10	75	4	14	346.25	**100**
10	1.50	16	10	75	4	14	346.25	**101**
12	1.00	20	12	85	4	16	422.73	**120**
12	1.50	20	12	85	4	16	422.73	**121**
12	2.00	20	12	85	4	18	422.73	**122**
16	1.00	25	16	90	5	22	571.68	**160**
16	1.50	25	16	90	5	22	523.37	**161**
16	2.00	25	16	90	5	22	579.72	**162**
16	3.00	25	16	90	5	24	587.77	**164**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
Hardened materials	●

→ v_c/f_z Page 70

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 72+73.**

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

7

Cutting data appoximate values

	UNI VHM OSM 2xD 50 815 ...			UNI VHM OSM 3xD 50 821 ...			H VHM 2xD 50 840 ...				HR VHM 50 846 ..., 50 847 ...		
Index	v_c m/min	Ø 6–10 f_z	Ø 12–20 f_z	v_c m/min	Ø 6–10 f_z	Ø 12–20 f_z	v_c m/min	Ø 3–5 f_z	Ø 6–10 f_z	Ø 12–16 f_z	v_c m/min	< 10 f_z	> 10 f_z
1.1	**200–250**	0,04–0,06	0,07–0,10	**150–200**	0,04–0,06	0,07–0,10							
1.2	**200–250**	0,04–0,06	0,07–0,10	**150–200**	0,04–0,06	0,07–0,10							
1.3	**200–250**	0,04–0,06	0,07–0,10	**150–200**	0,04–0,06	0,07–0,10							
1.4	**100–200**	0,02–0,04	0,04–0,07	**100–130**	0,02–0,04	0,04–0,07					**120–220**	0,02–0,04	0,04–0,07
1.5	**100–200**	0,02–0,04	0,04–0,07	**100–130**	0,02–0,04	0,04–0,07					**120–220**	0,02–0,04	0,04–0,07
1.6	**100–200**	0,02–0,04	0,04–0,07	**100–130**	0,02–0,04	0,04–0,07					**120–220**	0,02–0,04	0,04–0,07
1.7	**100–200**	0,02–0,04	0,04–0,07	**100–130**	0,02–0,04	0,04–0,07					**120–220**	0,02–0,04	0,04–0,07
1.8	**100–200**	0,02–0,04	0,04–0,07								**120–220**	0,02–0,04	0,04–0,07
1.9	**200–250**	0,04–0,06	0,07–0,10	**150–200**	0,04–0,06	0,07–0,10							
1.10	**100–200**	0,02–0,04	0,04–0,07	**100–130**	0,02–0,04	0,04–0,07					**120–220**	0,02–0,04	0,04–0,07
1.11	**100–200**	0,02–0,04	0,04–0,07								**120–220**	0,02–0,04	0,04–0,07
1.12	**100–200**	0,02–0,04	0,04–0,07								**120–220**	0,02–0,04	0,04–0,07
1.13	**100–200**	0,02–0,04	0,04–0,07								**120–220**	0,02–0,04	0,04–0,07
1.14	**100–200**	0,02–0,04	0,04–0,07								**120–220**	0,02–0,04	0,04–0,07
1.15	**100–200**	0,02–0,04	0,04–0,07								**120–220**	0,02–0,04	0,04–0,07
1.16	**100–200**	0,02–0,04	0,04–0,07								**120–220**	0,02–0,04	0,04–0,07
2.1	**100–200**	0,02–0,03	0,04–0,05	**80–160**	0,02–0,03	0,04–0,05					**60–120**	0,015–0,03	0,03–0,06
2.2	**100–200**	0,02–0,03	0,04–0,05	**80–160**	0,02–0,03	0,04–0,05					**60–120**	0,015–0,03	0,03–0,06
2.3	**100–200**	0,02–0,03	0,04–0,05								**60–120**	0,015–0,03	0,03–0,06
2.4	**100–200**	0,02–0,03	0,04–0,05								**60–120**	0,015–0,03	0,03–0,06
2.5	**100–200**	0,02–0,03	0,04–0,05	**80–160**	0,02–0,03	0,04–0,05					**60–120**	0,015–0,03	0,03–0,06
2.6	**100–200**	0,02–0,03	0,04–0,05	**80–160**	0,02–0,03	0,04–0,05					**60–120**	0,015–0,03	0,03–0,06
2.7	**100–200**	0,02–0,03	0,04–0,05								**60–120**	0,015–0,03	0,03–0,06
3.1	**200–300**	0,05–0,07	0,07–0,12	**160–240**	0,05–0,07	0,07–0,12							
3.2	**200–300**	0,05–0,07	0,07–0,12	**160–240**	0,05–0,07	0,07–0,12							
3.3	**200–300**	0,05–0,07	0,07–0,12	**160–240**	0,05–0,07	0,07–0,12							
3.4	**200–300**	0,05–0,07	0,07–0,12	**160–240**	0,05–0,07	0,07–0,12							
3.5	**150–220**	0,03–0,05	0,06–0,08	**120–160**	0,03–0,05	0,06–0,08							
3.6	**150–220**	0,03–0,05	0,06–0,08	**120–160**	0,03–0,05	0,06–0,08							
3.7	**150–220**	0,03–0,05	0,06–0,08	**120–160**	0,03–0,05	0,06–0,08							
3.8	**150–220**	0,03–0,05	0,06–0,08	**120–160**	0,03–0,05	0,06–0,08							
4.1													
4.2													
4.3													
4.4													
4.5	**220–250**	0,05–0,07	0,06–0,08	**180–200**	0,05–0,07	0,06–0,08							
4.6													
4.7													
4.8													
4.9											**60–80**	0,02–0,04	0,03–0,05
4.10											**60–80**	0,02–0,04	0,03–0,05
4.11	**250–300**	0,05–0,07	0,06–0,08	**200–240**	0,05–0,07	0,06–0,08							
4.12													
4.13													
4.14													
4.15	**250–300**	0,05–0,07	0,06–0,08	**180–200**	0,05–0,07	0,06–0,08					**400–500**	0,05–0,08	0,07–0,10
4.16	**250–300**	0,05–0,07	0,06–0,08	**180–200**	0,05–0,07	0,06–0,08							
4.17													
4.18	**50–80**	0,015–0,025	0,020–0,035								**40–60**	0,015–0,025	0,020–0,035
4.19	**100–200**	0,02–0,04	0,04–0,07								**120–220**	0,02–0,04	0,04–0,07
5.1	**200–250**	0,04–0,06	0,07–0,10	150–200	0,04–0,06	0,07–0,10							
5.2											**60–80**	0,02–0,03	0,03–0,04
5.3											**60–80**	0,02–0,03	0,03–0,04
5.4							40–80	0,005–0,015	0,015–0,03	0,02–0,05	**30–60**	0,01–0,02	0,02–0,03
5.5							40–80	0,005–0,015	0,015–0,03	0,02–0,05	**30–60**	0,01–0,02	0,02–0,03
5.6							60–100	0,005–0,015	0,02–0,04	0,03–0,06	**30–60**	0,01–0,02	0,02–0,03
5.7	**70–100**	0,02–0,03	0,04–0,05				80–120	0,005–0,015	0,02–0,04	0,03–0,06	**40–60**	0,01–0,02	0,02–0,03
5.8							40–80	0,005–0,015	0,015–0,03	0,02–0,05	**30–60**	0,01–0,02	0,02–0,03
5.9											**60–80**	0,02–0,03	0,03–0,04
5.10											**60–80**	0,02–0,03	0,03–0,04
5.11							40–80	0,005–0,015	0,015–0,03	0,02–0,05	**60–80**	0,02–0,03	0,03–0,04
6.1	**80–120**	0,02–0,04	0,04–0,06				**80–120**	0,005–0,015	0,03–0,06	0,03–0,06	**60–100**	0,02–0,04	0,03–0,06
6.2	**80–120**	0,02–0,04	0,04–0,06				**60–100**	0,005–0,015	0,02–0,04	0,02–0,04	**60–100**	0,02–0,04	0,03–0,06
6.3	**50–80**	0,015–0,025	0,020–0,035				**30–60**	0,005–0,01	0,01–0,03	0,01–0,03	**40–60**	0,015–0,025	0,020–0,035
6.4	**50–80**	0,015–0,025	0,020–0,035				**30–60**	0,005–0,01	0,005–0,015	0,005–0,02	**40–60**	0,015–0,025	0,020–0,035
6.5													

Cutting data appoximate values

	SFSE VHM TiAlN 50 811 ..., 50 816 ..., 50 818 ..., 50 819 ..., 50 823 ..., 50 824 ...			SGF VHM TiAlN 50 825 ..., 50 826 ..., 50 827 ...			MWN uncoated 50 890 ..., 50 891 ..., 50 892 ..., 50 895 ..., 50 896 ..., 50 897 ...		MWN TiAlN 50 890 ..., 50 891 ..., 50 895 ...		EAW / EWM 50 860 ..., 50 861 ..., 50 867 ..., 50 868 ..., 50 870 ..., 50 871 ...		
Index	v_c m/min	Ø 6–10 f_z	Ø 12–20 f_z	v_c m/min	Ø 6–10 f_z	Ø 12–20 f_z	v_c m/min	f_z	v_c m/min	f_z	v_c m/min	EAW f_z	EWM f_z
1.1	**100–200**	0,04–0,08	0,06–0,12	**80–150**	0,03–0,07	0,06–0,10	**50–100**	0,10–0,20	**100–200**	0,10–0,20	**250–500**	0,10–0,20	0,10–0,20
1.2	**100–200**	0,04–0,08	0,06–0,12	**80–150**	0,03–0,07	0,06–0,10	**50–100**	0,10–0,20	**100–200**	0,10–0,20	**250–500**	0,10–0,20	0,10–0,20
1.3	**100–200**	0,04–0,08	0,06–0,12	**80–150**	0,03–0,07	0,06–0,10	**50–100**	0,10–0,20	**100–200**	0,10–0,20	**250–500**	0,10–0,20	0,10–0,20
1.4	**40–80**	0,01–0,03	0,03–0,05	**40–60**	0,01–0,03	0,02–0,04	**40–70**	0,05–0,10	**80–140**	0,05–0,10	**150–250**	0,06–0,12	0,06–0,12
1.5	**40–80**	0,01–0,03	0,03–0,05	**40–60**	0,01–0,03	0,02–0,04	**40–70**	0,05–0,10	**80–140**	0,05–0,10	**150–250**	0,06–0,12	0,06–0,12
1.6	**40–80**	0,01–0,03	0,03–0,05	**40–60**	0,01–0,03	0,02–0,04	**40–70**	0,05–0,10	**80–140**	0,05–0,10	**150–250**	0,06–0,12	0,06–0,12
1.7	**40–80**	0,01–0,03	0,03–0,05	**40–60**	0,01–0,03	0,02–0,04	**40–70**	0,05–0,10	**80–140**	0,05–0,10	**150–250**	0,06–0,12	0,06–0,12
1.8	**40–80**	0,01–0,03	0,03–0,05										
1.9	**100–200**	0,04–0,08	0,06–0,12	**80–150**	0,03–0,07	0,06–0,10	**50–100**	0,10–0,20	**100–200**	0,10–0,20	**250–500**	0,10–0,20	0,10–0,20
1.10	**40–80**	0,01–0,03	0,03–0,05	**40–60**	0,01–0,03	0,02–0,04	**40–70**	0,05–0,10	**80–140**	0,05–0,10	**150–250**	0,06–0,12	0,06–0,12
1.11	**40–80**	0,01–0,03	0,03–0,05								**150–250**	0,06–0,12	0,06–0,12
1.12	**40–80**	0,01–0,03	0,03–0,05								**150–250**	0,06–0,12	0,06–0,12
1.13	**40–80**	0,01–0,03	0,03–0,05								**150–250**	0,06–0,12	0,06–0,12
1.14	**40–80**	0,01–0,03	0,03–0,05								**150–250**	0,06–0,12	0,06–0,12
1.15	**40–80**	0,01–0,03	0,03–0,05								**150–250**	0,06–0,12	0,06–0,12
1.16	**40–80**	0,01–0,03	0,03–0,05								**150–250**	0,06–0,12	0,06–0,12
2.1	**60–100**	0,02–0,06	0,05–0,08	**60–100**	0,02–0,06	0,05–0,08			**100–200**	0,02–0,05	**60–120**	0,03–0,09	0,03–0,09
2.2	**60–100**	0,02–0,06	0,05–0,08	**60–100**	0,02–0,06	0,05–0,08			**100–200**	0,02–0,05	**60–120**	0,03–0,09	0,03–0,09
2.3	**60–100**	0,02–0,06	0,05–0,08	**60–100**	0,02–0,06	0,05–0,08			**100–200**	0,02–0,05	**60–120**	0,03–0,09	0,03–0,09
2.4	**60–100**	0,02–0,06	0,05–0,08	**60–100**	0,02–0,06	0,05–0,08			**100–200**	0,02–0,05	**60–120**	0,03–0,09	0,03–0,09
2.5	**60–100**	0,02–0,06	0,05–0,08	**60–100**	0,02–0,06	0,05–0,08			**100–200**	0,02–0,05	**60–120**	0,03–0,09	0,03–0,09
2.6	**60–100**	0,02–0,06	0,05–0,08	**60–100**	0,02–0,06	0,05–0,08			**100–200**	0,02–0,05	**60–120**	0,03–0,09	0,03–0,09
2.7	**60–100**	0,02–0,06	0,05–0,08	**60–100**	0,02–0,06	0,05–0,08			**100–200**	0,02–0,05	**60–120**	0,03–0,09	0,03–0,09
3.1	**100–200**	0,04–0,08	0,08–0,14	**100–200**	0,04–0,08	0,08–0,14	**70–120**	0,10–0,15	**100–180**	0,10–0,15	**200–350**	0,10–0,20	0,10–0,20
3.2	**100–200**	0,04–0,08	0,08–0,14	**100–200**	0,04–0,08	0,08–0,14	**70–120**	0,10–0,15	**100–180**	0,10–0,15	**200–350**	0,10–0,20	0,10–0,20
3.3	**100–200**	0,04–0,08	0,08–0,14	**100–200**	0,04–0,08	0,08–0,14	**70–120**	0,10–0,15	**100–180**	0,10–0,15	**200–350**	0,10–0,20	0,10–0,20
3.4	**100–200**	0,04–0,08	0,08–0,14	**100–200**	0,04–0,08	0,08–0,14	**70–120**	0,10–0,15	**100–180**	0,10–0,15	**200–350**	0,10–0,20	0,10–0,20
3.5	**80–150**	0,03–0,06	0,05–0,08	**80–150**	0,03–0,06	0,05–0,08	**50–100**	0,08–0,12	**80–150**	0,08–0,12	**150–250**	0,04–0,12	0,04–0,12
3.6	**80–150**	0,03–0,06	0,05–0,08	**80–150**	0,03–0,06	0,05–0,08	**50–100**	0,08–0,12	**80–150**	0,08–0,12	**150–250**	0,04–0,12	0,04–0,12
3.7	**80–150**	0,03–0,06	0,05–0,08	**80–150**	0,03–0,06	0,05–0,08	**50–100**	0,08–0,12	**80–150**	0,08–0,12	**150–250**	0,04–0,12	0,04–0,12
3.8	**80–150**	0,03–0,06	0,05–0,08	**80–150**	0,03–0,06	0,05–0,08	**50–100**	0,08–0,12	**80–150**	0,08–0,12	**150–250**	0,04–0,12	0,04–0,12
4.1	**275–300**	0,06–0,09	0,08–0,10	**275–300**	0,06–0,09	0,08–0,10	**100–200**	0,10–0,20	**200–250**	0,10–0,20	**400–500**	0,08–0,15	0,08–0,15
4.2	**275–300**	0,06–0,09	0,08–0,10	**275–300**	0,06–0,09	0,08–0,10	**100–200**	0,10–0,20	**200–250**	0,10–0,20	**400–500**	0,08–0,15	0,08–0,15
4.3	**225–275**	0,05–0,07	0,06–0,08	**225–275**	0,05–0,07	0,06–0,08	**100–200**	0,10–0,20	**200–250**	0,10–0,20	**400–500**	0,08–0,15	0,08–0,15
4.4	**200–225**	0,04–0,06	0,05–0,07	**200–225**	0,04–0,06	0,05–0,07	**100–200**	0,10–0,20	**200–250**	0,10–0,20	**300–400**	0,06–0,10	0,06–0,10
4.5	**180–200**	0,03–0,05	0,04–0,06	**180–200**	0,03–0,05	0,04–0,06			**150–200**	0,08–0,10	**300–400**	0,06–0,10	0,06–0,10
4.6	**275–300**	0,06–0,09	0,08–0,10	**275–300**	0,06–0,09	0,08–0,10	**100–200**	0,12–0,15	**200–250**	0,12–0,15	**400–500**	0,08–0,15	0,08–0,15
4.7	**275–300**	0,06–0,09	0,08–0,10	**275–300**	0,06–0,09	0,08–0,10	**100–200**	0,12–0,15	**200–250**	0,12–0,15	**400–500**	0,08–0,15	0,08–0,15
4.8	**275–300**	0,06–0,09	0,08–0,10	**275–300**	0,06–0,09	0,08–0,10			**200–250**	0,03–0,06	**400–500**	0,08–0,15	0,08–0,15
4.9	**60–80**	0,02–0,03	0,03–0,04	**50–70**	0,02–0,03	0,03–0,04			**40–80**	0,12–0,15	**150–200**	0,08–0,12	0,08–0,12
4.10	**60–80**	0,02–0,03	0,03–0,04	**50–70**	0,02–0,03	0,03–0,04			**40–80**	0,12–0,15	**150–200**	0,08–0,12	0,08–0,12
4.11	**200–225**	0,04–0,06	0,05–0,07	**200–225**	0,04–0,06	0,05–0,07	**70–120**	0,04–0,08	**100–150**	0,04–0,08	**400–500**	0,08–0,15	0,08–0,15
4.12	**275–300**	0,06–0,09	0,08–0,10	**275–300**	0,06–0,09	0,08–0,10	**90–180**	0,08–0,10	**150–200**	0,08–0,10	**400–500**	0,08–0,15	0,08–0,15
4.13	**350–450**	0,10–0,13	0,12–0,15	**350–450**	0,10–0,13	0,12–0,15	**180–250**	0,15–0,20	**250–300**	0,15–0,20	**600–800**	0,15–0,25	0,15–0,25
4.14	**300–400**	0,10–0,13	0,12–0,15	**300–400**	0,10–0,13	0,12–0,15	**100–200**	0,12–0,15	**200–250**	0,12–0,15	**600–800**	0,15–0,25	0,15–0,25
4.15	**180–200**	0,04–0,06	0,05–0,07	**180–200**	0,04–0,06	0,05–0,07			**100–150**	0,04–0,08	**150–200**	0,08–0,12	0,08–0,12
4.16	**200–225**	0,04–0,06	0,05–0,07	**200–225**	0,04–0,06	0,05–0,07			**100–130**	0,04–0,08	**400–500**	0,08–0,15	0,08–0,15
4.17	**100–200**	0,04–0,08	0,08–0,14	**100–200**	0,04–0,08	0,08–0,14							
4.18													
4.19	**40–80**	0,01–0,03	0,03–0,05								**150–250**	0,08–0,12	0,08–0,12
5.1	**100–200**	0,04–0,08	0,06–0,12	**80–150**	0,03–0,07	0,06–0,10					**250–500**	0,10–0,20	0,10–0,20
5.2	**50–80**	0,02–0,04	0,03–0,05	**50–80**	0,02–0,04	0,03–0,05					**50–100**	0,02–0,08	0,02–0,08
5.3	**50–80**	0,02–0,04	0,03–0,05								**50–100**	0,02–0,08	0,02–0,08
5.4													
5.5													
5.6													
5.7													
5.8													
5.9	**50–80**	0,02–0,04	0,03–0,05	**50–80**	0,02–0,04	0,03–0,05					**50–100**	0,02–0,08	0,02–0,08
5.10	**50–80**	0,02–0,04	0,03–0,05	**50–80**	0,02–0,04	0,03–0,05					**50–100**	0,02–0,08	0,02–0,08
5.11	**50–80**	0,02–0,04	0,03–0,05	**50–80**	0,02–0,04	0,03–0,05					**50–100**	0,02–0,08	0,02–0,08
6.1													
6.2													
6.3													
6.4													
6.5													

7

Cutting data appoximate values

	SGF VHM Ti500			GZG / GZD				Polygon		System 300		
	54 832 ...			50 863 ..., 50 864 ..., 50 887 ..., 50 885 ..., 50 888 ..., 50 889 ..., 50 894 ...				50 872 ..., 50 874 ..., 50 875 ..., 50 876 ..., 50 879 ..., 50 880 ..., 50 881 ..., 50 882 ..., 50 883 ..., 50 884 ..., 50 886 ...		50 851 ..., 50 852 ..., 50 853 ..., 50 855 ..., 50 857 ..., 50 858 ..., 50 859 ...		
	Ti500	size		uncoated	Ti500	size		Ti500		uncoated	Ti500	
Index	v_c m/min	8 mm f_z	10–16 mm f_z	v_c m/min	v_c m/min	12–17 mm f_z	20–26 mm f_z	v_c m/min	f_z	v_c m/min	v_c m/min	f_z
1.1	80–250	0,04–0,07	0,05–0,15		180–260	0,1–0,3	0,05–0,3	150–200	0,05–0,25		120–180	0,05–0,12
1.2	80–250	0,04–0,07	0,05–0,15		180–260	0,1–0,3	0,05–0,3	150–200	0,05–0,25		120–180	0,05–0,12
1.3	80–250	0,04–0,07	0,05–0,15		180–260	0,1–0,3	0,05–0,3	100–150	0,05–0,25		120–180	0,05–0,12
1.4	60–120	0,04–0,07	0,05–0,10		180–220	0,1–0,3	0,05–0,3	100–150	0,05–0,25		100–120	0,05–0,12
1.5	60–100	0,04–0,07	0,05–0,10		180–260	0,1–0,3	0,05–0,3	150–200	0,05–0,25		120–180	0,05–0,12
1.6	60–120	0,04–0,07	0,05–0,10		180–220	0,1–0,3	0,05–0,3	100–150	0,05–0,25		100–120	0,05–0,12
1.7	80–200	0,04–0,07	0,05–0,10		180–260	0,1–0,3	0,05–0,3	100	0,05–0,25		120–180	0,05–0,12
1.8	40–100	0,03–0,05	0,04–0,06		100–150	0,1–0,2	0,05–0,2	100	0,05–0,25		80–100	0,05–0,12
1.9	60–100	0,04–0,07	0,05–0,10		180–260	0,1–0,3	0,05–0,3	100	0,05–0,25		100–120	0,05–0,12
1.10	60–120	0,04–0,07	0,05–0,10		100–150	0,1–0,2	0,05–0,2	120	0,05–0,25		100–120	0,05–0,12
1.11	40–100	0,03–0,05	0,04–0,06		100–150	0,1–0,2	0,05–0,2	100	0,05–0,25		80–100	0,05–0,12
1.12	40–100	0,03–0,05	0,04–0,06		100–150	0,1–0,2	0,05–0,2	100	0,05–0,25		80–100	0,05–0,12
1.13	40–100	0,03–0,05	0,04–0,06		100–150	0,1–0,2	0,05–0,2	100	0,05–0,25		80–100	0,05–0,12
1.14	40–100	0,03–0,05	0,04–0,06		100–120	0,1–0,2	0,05–0,2	100	0,05–0,25		80–100	0,05–0,12
1.15	40–100	0,03–0,05	0,04–0,06		100–150	0,1–0,2	0,05–0,2	100	0,05–0,25		80–100	0,05–0,12
1.16	40–100	0,03–0,05	0,04–0,06		100–150	0,1–0,2	0,05–0,2	100	0,05–0,25		80–100	0,05–0,12
2.1	50–150	0,04–0,07	0,05–0,12		130–180	0,1–0,3	0,05–0,3				120–150	0,05–0,12
2.2	50–150	0,04–0,07	0,05–0,12		130–180	0,1–0,3	0,05–0,3				120–150	0,05–0,12
2.3	50–150	0,04–0,07	0,05–0,12		130–180	0,1–0,3	0,05–0,3	120	0,05–0,25		100–120	0,05–0,12
2.4	50–150	0,04–0,07	0,05–0,12		130–180	0,1–0,3	0,05–0,3	120	0,05–0,25		100–120	0,05–0,12
2.5	50–150	0,04–0,07	0,05–0,12		130–180	0,1–0,3	0,05–0,3	120	0,05–0,25		120–180	0,05–0,12
2.6	50–150	0,04–0,07	0,05–0,12		130–180	0,1–0,3	0,05–0,3	180	0,05–0,25		120–180	0,05–0,12
2.7	50–150	0,04–0,07	0,05–0,12		130–180	0,1–0,3	0,05–0,3				80–100	0,05–0,12
3.1	80–200	0,04–0,07	0,05–0,15	100–150	130–200	0,1–0,3	0,05–0,3	180	0,05–0,25	80–120	120–180	0,05–0,12
3.2	80–200	0,04–0,07	0,05–0,15	80–120	130–200	0,1–0,3	0,05–0,3	120	0,05–0,25	80–120	120–180	0,05–0,12
3.3	80–200	0,04–0,07	0,05–0,15		130–200	0,1–0,3	0,05–0,3	180	0,05–0,25	80–120	120–180	0,05–0,12
3.4	80–200	0,04–0,07	0,05–0,15		130–200	0,1–0,3	0,05–0,3	180	0,05–0,25	80–120	120–180	0,05–0,12
3.5	80–160	0,04–0,07	0,05–0,15		130–200	0,1–0,3	0,05–0,3	180	0,05–0,25	80–120	120–180	0,05–0,12
3.6	80–160	0,04–0,07	0,05–0,15		130–200	0,1–0,3	0,05–0,3	120	0,05–0,25	80–120	120–180	0,05–0,12
3.7	80–160	0,04–0,07	0,05–0,15		130–200	0,1–0,3	0,05–0,3	180	0,05–0,25	80–120	120–180	0,05–0,12
3.8	80–160	0,04–0,07	0,05–0,15		130–200	0,1–0,3	0,05–0,3	120	0,05–0,25	80–120	120–180	0,05–0,12
4.1	250–500	0,05–0,08	0,07–0,2	300–400	400–600	0,1–0,3	0,05–0,3	400	0,15–0,4	400–500		0,05–0,25
4.2	250–500	0,05–0,08	0,07–0,2	300–400	400–600	0,1–0,3	0,05–0,3	400	0,15–0,4	300–400		0,05–0,25
4.3	250–500	0,05–0,08	0,07–0,2					300	0,15–0,4			
4.4	250–500	0,05–0,08	0,07–0,2					250	0,15–0,4			
4.5	180–250	0,05–0,07	0,06–0,12									
4.6	250–300	0,05–0,07	0,06–0,08					500	0,15–0,4		300–500	0,05–0,25
4.7												
4.8								120	0,05–0,15			
4.9												
4.10												
4.11	250–300	0,05–0,07	0,06–0,08					400	0,15–0,4		200–300	0,05–0,25
4.12								400	0,15–0,4			
4.13	350–450	0,08–0,1						500	0,15–0,4		300–500	0,05–0,25
4.14	80–400	0,05–0,1	0,08–0,25					500	0,15–0,4		300–500	0,05–0,25
4.15	180–200	0,02–0,04	0,03–0,04									
4.16												
4.17								500	0,15–0,4		300–500	0,05–0,25
4.18												
4.19												
5.1												
5.2								120	0,05–0,25		80–120	0,05–0,12
5.3								120	0,05–0,25		80–120	0,05–0,12
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10								80	0,01–0,08		70–100	0,01–0,05
5.11	40–60	0,03–0,05	0,04–0,1					60	0,01–0,08		60–90	0,01–0,05
6.1	40–60	0,03–0,05	0,04–0,1								80–100	0,03–0,1
6.2	40–60	0,03–0,05	0,04–0,1					100	0,05–0,15		80	0,03–0,1
6.3								100	0,05–0,10			
6.4												
6.5												

Cutting data appoximate values

	SFSE / SGF VHM Ti500 54 800 ..., 54 801 ..., 54 802 ..., 54 803 ..., 54 804 ..., 54 805 ..., 54 806 ..., 54 808 ..., 54 809 ..., 54 810 ..., 54 811 ..., 54 812 ..., 54 813 ...				MiniMill 53 006 ..., 53 007 ..., 53 008 ..., 53 009 ..., 53 010 ..., 53 011 ..., 53 012 ..., 53 013 ..., 53 015 ...			MicroMill 53 050 ..., 53 051 ..., 53 052 ..., 53 053 ...	
Index	v_c m/min	Ø 2,4 + 3,15 f_z	Ø 4 f_z	Ø 4,8–16 f_z	v_c m/min	f_z (drilling)	f_z (threading)	v_c m/min	f_z (drilling)
1.1	**80–250**	0,03–0,04	0,03–0,06	0,05–0,15	**80–200**	0,03–0,10	0,10–0,25	**60–200**	0,02–0,05
1.2	**80–250**	0,03–0,04	0,03–0,06	0,05–0,15	**80–200**	0,03–0,10	0,10–0,25	**60–200**	0,02–0,05
1.3	**80–250**	0,03–0,04	0,03–0,06	0,05–0,15	**80–200**	0,03–0,10	0,10–0,25	**60–200**	0,02–0,05
1.4	**60–120**	0,01–0,02	0,01–0,03	0,05–0,10	**60–180**	0,03–0,08	0,10–0,15	**60–160**	0,01–0,04
1.5	**60–120**	0,01–0,02	0,01–0,03	0,05–0,10	**60–180**	0,03–0,08	0,10–0,15	**60–160**	0,02–0,05
1.6	**60–120**	0,01–0,02	0,01–0,03	0,05–0,10	**60–180**	0,03–0,08	0,10–0,15	**60–160**	0,01–0,04
1.7	**80–200**	0,03–0,04	0,03–0,06	0,05–0,10	**60–160**	0,03–0,10	0,10–0,20	**50–140**	0,02–0,05
1.8	**40–100**	0,01–0,02	0,03–0,05	0,04–0,06	**60–160**	0,02–0,07	0,10–0,20	**50–140**	0,007–0,03
1.9	**60–120**	0,01–0,02	0,04–0,07	0,05–0,10	**60–160**	0,03–0,10	0,10–0,20	**50–140**	0,02–0,05
1.10	**60–120**	0,01–0,02	0,04–0,07	0,05–0,10	**60–160**	0,03–0,10	0,10–0,20	**50–140**	0,01–0,04
1.11	**40–100**	0,01–0,02	0,03–0,05	0,04–0,06	**60–160**	0,02–0,08	0,10–0,20	**50–140**	0,007–0,03
1.12	**40–100**	0,01–0,02	0,03–0,05	0,04–0,06	**30–100**	0,02–0,07	0,10–0,20	**10–60**	0,007–0,03
1.13	**40–100**	0,01–0,02	0,03–0,05	0,04–0,06	**30–100**	0,02–0,07	0,10–0,20	**10–60**	0,007–0,03
1.14	**40–100**	0,01–0,02	0,03–0,05	0,04–0,06	**30–100**	0,02–0,07	0,10–0,20	**10–60**	0,007–0,03
1.15	**40–100**	0,01–0,02	0,03–0,05	0,04–0,06	**30–100**	0,02–0,07	0,10–0,20	**10–60**	0,007–0,03
1.16	**40–100**	0,01–0,02	0,03–0,05	0,04–0,06	**30–100**	0,02–0,07	0,10–0,20	**10–60**	0,007–0,03
2.1	**50–150**	0,03–0,04	0,03–0,04	0,05–0,12	**80–120**	0,03–0,08	0,10–0,25	**60–120**	0,01–0,04
2.2	**50–150**	0,03–0,04	0,03–0,04	0,05–0,12	**80–120**	0,03–0,10	0,10–0,25	**60–120**	0,02–0,05
2.3	**50–150**	0,03–0,04	0,03–0,04	0,05–0,12	**80–120**	0,02–0,07	0,10–0,25	**60–120**	0,007–0,03
2.4	**50–150**	0,03–0,04	0,03–0,04	0,05–0,12	**80–120**	0,02–0,07	0,10–0,25	**60–120**	0,007–0,03
2.5	**50–150**	0,03–0,04	0,03–0,04	0,05–0,12	**80–120**	0,02–0,07	0,10–0,25	**60–120**	0,007–0,03
2.6	**50–150**	0,03–0,04	0,03–0,04	0,05–0,12	**80–120**	0,02–0,07	0,10–0,25	**60–120**	0,007–0,03
2.7	**50–150**	0,03–0,04	0,03–0,04	0,05–0,12	**80–120**	0,02–0,07	0,10–0,25	**60–120**	0,007–0,03
3.1	**100–200**	0,03–0,07	0,03–0,07	0,04–0,08	**100–170**	0,03–0,10	0,2–0,3	**70–170**	0,02–0,05
3.2	**100–200**	0,03–0,07	0,03–0,07	0,04–0,08	**100–170**	0,03–0,10	0,2–0,3	**70–170**	0,02–0,05
3.3	**100–200**	0,03–0,07	0,03–0,07	0,04–0,08	**100–170**	0,03–0,10	0,2–0,3	**70–170**	0,02–0,05
3.4	**100–200**	0,03–0,07	0,03–0,07	0,04–0,08	**100–170**	0,03–0,10	0,2–0,3	**70–170**	0,02–0,05
3.5	**100–200**	0,03–0,07	0,03–0,07	0,04–0,08	**100–170**	0,03–0,10	0,2–0,3	**70–170**	0,02–0,05
3.6	**100–200**	0,03–0,07	0,03–0,07	0,04–0,08	**100–170**	0,03–0,10	0,2–0,3	**70–170**	0,02–0,05
3.7	**100–200**	0,03–0,07	0,03–0,07	0,04–0,08	**100–170**	0,03–0,10	0,2–0,3	**70–170**	0,02–0,05
3.8	**100–200**	0,03–0,07	0,03–0,07	0,04–0,08	**100–170**	0,03–0,10	0,2–0,3	**70–170**	0,02–0,05
4.1	**250–500**	0,05–0,07	0,05–0,07	0,06–0,12	**250–800**	0,04–0,15	0,05–0,2	**100–600**	0,02–0,07
4.2	**250–500**	0,05–0,07	0,05–0,07	0,06–0,12	**250–800**	0,04–0,15	0,05–0,2	**100–600**	0,02–0,07
4.3	**250–500**	0,05–0,07	0,05–0,07	0,06–0,12	**250–800**	0,04–0,15	0,05–0,2	**100–600**	0,02–0,07
4.4	**250–500**	0,05–0,07	0,05–0,07	0,06–0,12	**250–800**	0,04–0,15	0,05–0,2	**100–600**	0,02–0,07
4.5	**180–250**	0,05–0,07	0,05–0,07	0,06–0,12	**250–800**	0,04–0,15	0,05–0,2	**100–600**	0,02–0,07
4.6	**250–300**	0,05–0,07	0,05–0,07	0,06–0,08	**200–500**	0,04–0,15	0,05–0,2	**100–300**	0,02–0,07
4.7					**200–500**	0,04–0,15	0,05–0,2	**100–300**	0,02–0,07
4.8					**200–500**	0,04–0,15	0,05–0,2	**100–300**	0,02–0,07
4.9					**200–500**	0,04–0,15	0,05–0,2	**100–300**	0,02–0,07
4.10					**200–500**	0,04–0,15	0,05–0,2	**100–300**	0,02–0,07
4.11	**250–300**	0,05–0,07	0,05–0,07	0,06–0,08	**150–180**	0,04–0,15	0,05–0,2	**120–180**	0,02–0,07
4.12					**150–180**	0,04–0,15	0,05–0,2	**120–180**	0,02–0,07
4.13	**350–450**	0,08–0,1	0,08–0,1	0,1–0,12	**20–100**	0,04–0,15	0,05–0,2	**10–50**	0,02–0,1
4.14	**300–400**	0,08–0,1	0,08–0,1	0,1–0,12	**20–100**	0,04–0,15	0,05–0,2	**10–50**	0,02–0,1
4.15	**180–200**	0,02–0,04	0,02–0,04	0,03–0,04	**20–100**	0,04–0,15	0,05–0,2	**10–50**	0,02–0,07
4.16					**20–100**	0,02–0,10	0,05–0,2	**10–50**	0,02–0,05
4.17					**20–100**	0,04–0,15	0,05–0,2	**10–50**	0,02–0,07
4.18					**20–100**	0,02–0,10	0,05–0,2	**10–50**	0,02–0,05
4.19					**20–100**	0,02–0,10	0,05–0,2	**10–50**	0,02–0,05
5.1					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.2					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.3	**60–80**	0,02–0,04	0,02–0,04	0,03–0,04	10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.4					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.5					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.6					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.7					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.8					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.9					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.10					10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
5.11	**50–80**	0,01–0,03	0,01–0,03	0,01–0,03	10–100	0,005–0,05	0,05–0,1	**10–60**	0,007–0,02
6.1	**40–60**		0,03–0,05	0,03–0,05	10–60	0,002–0,05		**10–40**	0,007–0,02
6.2	**40–50**		0,03–0,05	0,03–0,05	10–60	0,002–0,05		**10–40**	0,007–0,02
6.3	**30–40**		0,02–0,04	0,02–0,04	10–60	0,002–0,05		**10–40**	0,007–0,02
6.4								**10–40**	0,007–0,02
6.5									

7

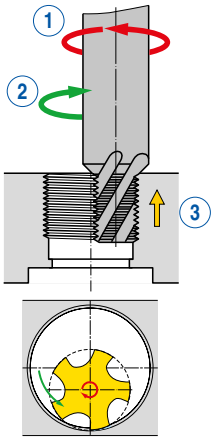
Milling Procedures

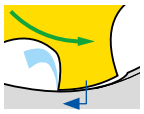
Climb milling

Characteristics:

1. Tool rotation direction „right“
2. Toolpath counter clockwise
3. Feed direction „outwards“

Right hand thread





When climb milling, the chip thickness at the end of cut is always 0 (h = 0)

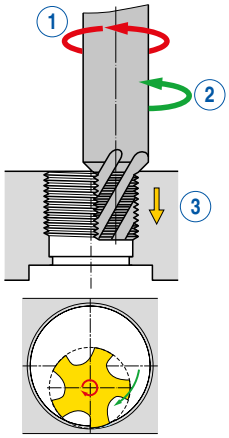
h = 0

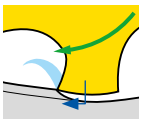
Conventional milling

Characteristics:

1. Tool rotation direction „right“
2. Toolpath clockwise
3. Feed direction „inwards“

Right hand thread

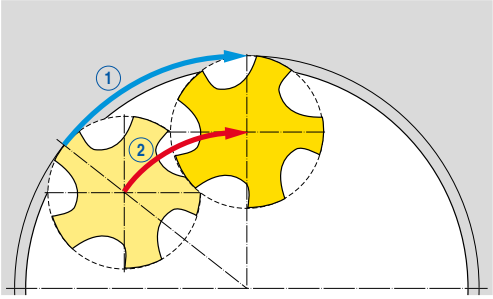




When conventional milling, the chip thickness at the end of cut is always at maximum (h = max)

h = max

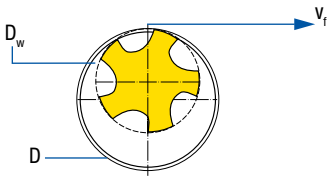
Feed rate calculation



1. Peripheral feedrate v_f
2. Centerline feedrate v_{fm}

Peripheral feedrate v_f

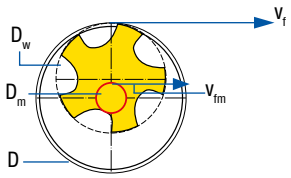
$$v_f = n \cdot f_z \cdot z \quad \text{mm/min.}$$



D_w = Effective diameter in mm
n = RPM in min^{-1}
f_z = Feed per tooth in mm

Centerline feedrate v_{fm}

$$v_{fm} = \frac{v_f \cdot (D - D_w)}{D} \quad \text{mm/min.}$$



z = Number of cutting edges (radial)
D = Nominal thread diameter = external profile diameter in mm
D_m = Centre path diameter ($D - D_w$) in mm

Tips for the User

With thread milling there are two different programme possibilities with the feed motion of the tool.

On the one hand the machine controls the feed at the diameter of the tool, on the other hand the feed control is the tool center line.
In order to ascertain which method the machine control uses, the following method should be employed:

- enter the thread milling routine into the control
- enter a safety margin into the program, so that the tool runs in air
- run the program through and check the operating time
- compare the actual time with the calculated theoretical time

If the time is longer than the calculated time the feed is controlling the tool center line.
If the time is shorter than the calculated time the feed is controlling the diameter of the tool.

Numeric calculation of cutting data for thread milling

$$n = \frac{v_c \cdot 1000}{d \cdot \pi}$$

$$v_c = \frac{d \cdot \pi \cdot n}{1000}$$

$$v_f = f_z \cdot z \cdot n$$

$$n = \frac{v_f}{f_z \cdot z}$$

$$f_z = \frac{v_f}{z \cdot n}$$

Milling – external contour

$$v_{fm} = \frac{v_f \cdot (D + d)}{D}$$

$$v_f = \frac{D \cdot v_{fm}}{(D + d)}$$

Milling – internal contour

$$v_{fm} = \frac{v_f \cdot (D - d)}{D}$$

$$v_f = \frac{D \cdot v_{fm}}{(D - d)}$$

Helical plunging

$$U_{arc} = 0{,}25 \cdot v_{fm}$$

Ramping in the arc

$$U_{arc} = v_{fm}$$

n	=	rpm	rev./min.
v_c	=	cutting speed	m/min
d	=	tool diameter	mm
D	=	nominal thread-Ø	mm
v_f	=	feed rate at the diameter	mm/min.
v_{fm}	=	feed rate at the centre	mm/min.
U_{arc}	=	programmed ramping feed rate	mm/min.
f_z	=	feed per tooth	mm
z	=	number of cutting edges of the cutter	piece

7

Correction values for the internal thread milling

The cutting edge diameter of the thread milling cutter which is entered into the machine control, can be calculated as follows:

half the cutter Ø – 0.05 x pitch p

Example: M30x3
Cutter-Ø: 20 mm

$$Ø\frac{20}{2} - (0.05 \cdot 3) = \underline{9.85\ mm}$$

9.85 mm is the cutting radius to be entered into the machine control

Thread types

M	Metric ISO standard thread
MF	Metric ISO fine thread
G	Whitworth thread
UNF	Unified fine thread
NPT	American taper pipe thread
BSF	Whitworth fine thread
BSW	Whitworth thread
Pg	Steel conduit thread
UN	Unified thread
Tr	Trapezoidal thread

Tool types

EAW	Thread milling cutter with solid carbide inserts and weldon flat
EWM	Thread milling cutter with solid carbide inserts and SK adaptor
GZD	Thread milling cutter with carbide inserts and Weldon flat
GZG	Thread milling cutter with carbide inserts and Weldon flat
HR	Single point thread milling cutter
SFSE	Thread milling cutter with chamfer facet
Mini Mill	Circular milling cutter with solid carbide insert
MWN	Thread milling cutter with carbide inserts and Weldon flat
Polygon	Circular milling cutter with polygon insert seat
SGF	Thread milling cutter
Micro Mill	Solid Carbide Circular End Milling Cutter
System 300	Circular milling cutter with solid carbide insert
UNI	Thread milling cutter for universal application

Coatings

TiN
- ▲ TiN coating
- ▲ maximum application temperature: 450 °C

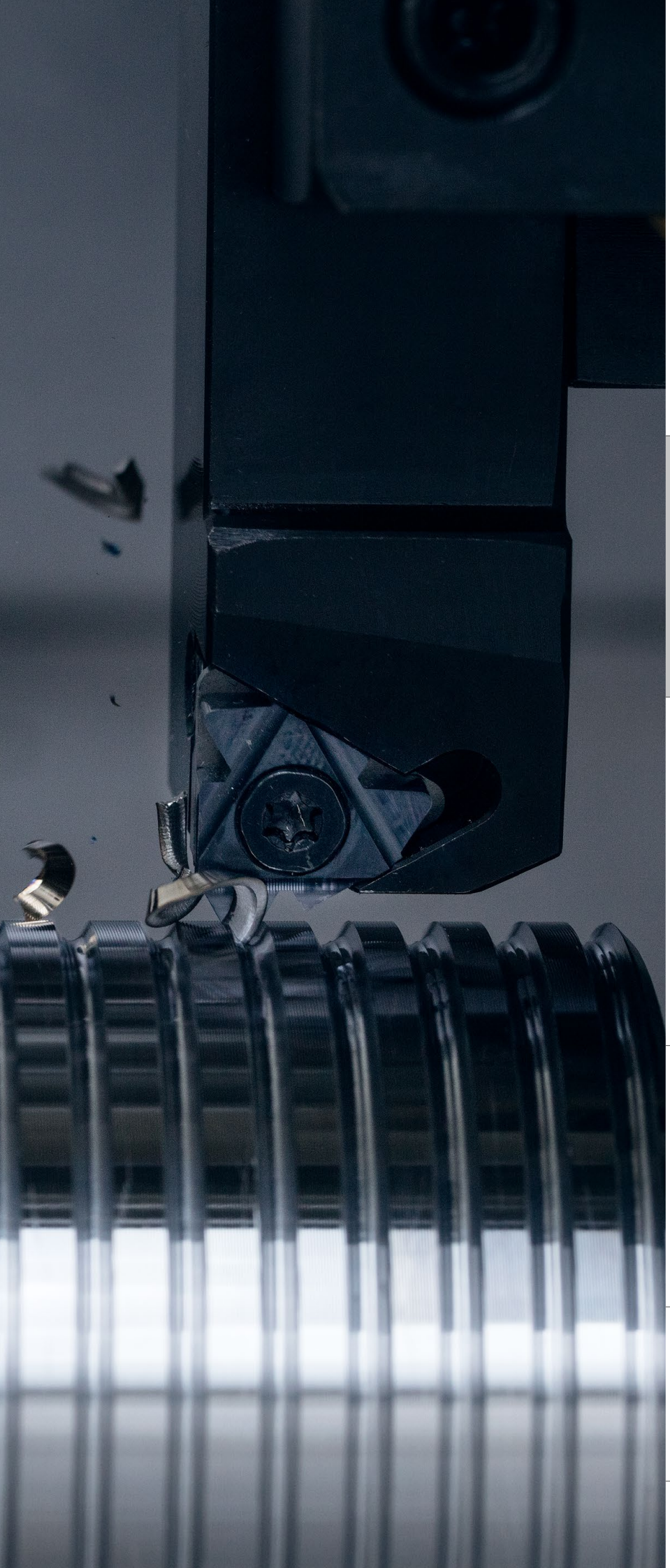
TiAlN
- ▲ TiAlN multilayer coating
- ▲ maximum application temperature: 900 °C

Ti500
- ▲ TiAlN-coating
- ▲ maximum application temperature: 500 °C

CWX500
- ▲ carbide, TiAlN-coated
- ▲ ISO | **K30**
- ▲ the universal carbide grade for almost all materials

OSM
- ▲ hard material layer and anti-friction layer
- ▲ for use in high-strength steels

TiCN
- ▲ TiCN multilayer coating
- ▲ maximum application temperature: 450 °C



Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

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Thread turning methods	43
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WNT Designation Key	45
Grade description and profile explanation	46

WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Toolfinder

TC threading system (external thread)

M	BSW
Full profile Partial profile	Full profile Partial profile

→ Chapter 11 – Grooving tools

TC threading system (internal thread)

M	BSW
Full profile Partial profile	Full profile Partial profile

→ Chapter 11 – Grooving tools

MiniCut

M	G	Tr
Full profile Partial profile	Partial profile	Partial profile

→ Chapter 12 – Miniature turning tools

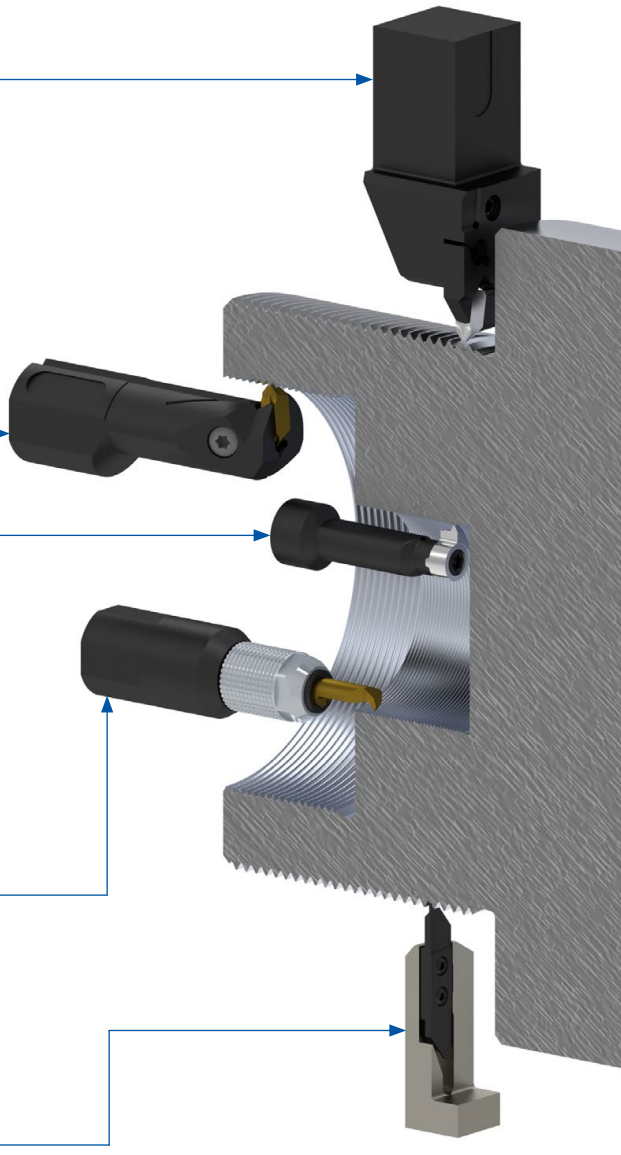
UltraMini

M	MF	G	Tr
Full profile Partial profile	Full profile Partial profile	Partial profile	Partial profile

→ Chapter 12 – Miniature turning tools

VertiClamp/System 25

→ Sliding head tooling catalogue, Chapter 3 – Turning



Symbol explanation

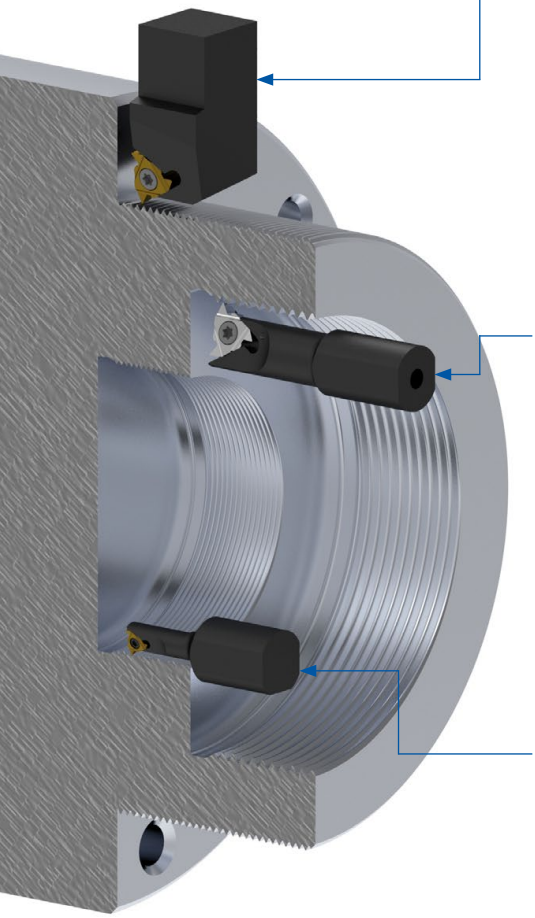
Flank angle

- 30° — Flank angle 30° (Trapezoidal thread)
- 30° — Flank angle 30° (Round thread)
- 55° — Flank angle 55°
- 60° — Flank angle 60°
- 80° — Flank angle 80° (Conduit thread)

● = **Main Application**
○ = Extended application

Threading

- **M** — ISO metric coarse thread DIN 13
- **MF** — ISO Metric fine thread DIN 13
- **MJ** — Metric thread for the aerospace industry DIN ISO 5855
- **BSW** — British Whitworth thread BS 84
- **UN** — American unified thread BS 1580 (ASME B 1.1)
- **UNC** — American unified thread (coarse) BS 1580 (ASME B 1.1)
- **UNF** — American unified thread (fine) BS 1580 (ASME B 1.1)
- **UNEF** — American unified thread (extra fine) BS 1580 (ASME B 1.1)
- **NPT** — American pipe thread ANSI/ASME B 1.20.3
- **Tr** — Trapezoidal thread DIN 103
- **Rd** — Round Thread DIN 405
- **Pg** — Conduit Threads DIN 40430



Standard external thread turning

Full profile

M	MJ	BSW	UN	UNC	UNF	UNEF	NPT	Tr	Rd	Pg
4+5	9	11+12	15+16	15+16	15+16	15+16	19	21	23	25

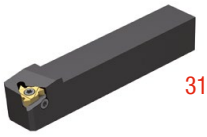
Partial profile

60°	55°
27	29

Multi-cutting edge

M
8

Suitable holder



31

Standard internal thread turning

Full profile

M	MJ	BSW	UN	UNC	UNF	UNEF	NPT	Tr	Rd	Pg
6+7	10	13+14	17+18	17+18	17+18	17+18	20	22	24	26

Partial profile

60°	55°
28	30

Suitable holder

32+33

Mini 06

Full profile

M	BSW
34	34

Partial profile

60°	55°
35	35

Mini 08

Full profile

M
36

Partial profile

60°	55°
36	37

Suitable holder

38

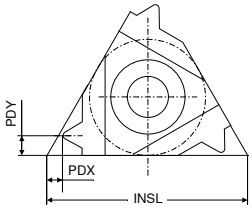
Information on the different thread profiles can be found on → **Page 46.**

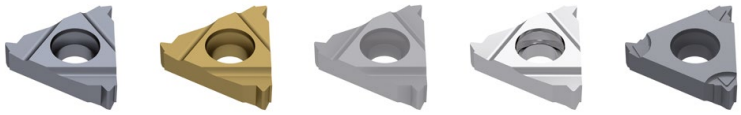
Right hand external thread turning insert

- Full profile
- CCN7525 grade with sintered chip breaker for universal application

M | MF | 60°

CCN20 | CWN1525 | HCN2525 | CWK20 | CCN7525





Designation	TP	INSL	PDX	PDY	ER X3 Article no. 71 220 ...		ER X3 Article no. 71 220 ...		ER X3 Article no. 71 220 ...		ER Y1 Article no. 71 220 ...		ER X3 Article no. 71 220 ...	
	mm	mm	mm	mm	£		£		£		£		£	
11 ER 0,35	0.35	11	0.8	0.4	23.14	**204**					16.92	**604**		
11 ER 0,4	0.40	11	0.7	0.4	23.14	**206**					16.92	**606**		
11 ER 0,45	0.45	11	0.7	0.4	23.14	**208**					16.92	**608**		
11 ER 0,5	0.50	11	0.6	0.6	23.14	**209**					16.92	**609**		
11 ER 0,6	0.60	11	0.6	0.6	23.14	**210**					16.92	**610**		
11 ER 0,7	0.70	11	0.6	0.6	23.14	**211**					16.92	**611**		
11 ER 0,75	0.75	11	0.6	0.6	23.14	**212**					16.92	**612**		
11 ER 0,8	0.80	11	0.6	0.6	23.14	**213**					16.92	**613**		
11 ER 1,0	1.00	11	0.7	0.7	23.14	**214**					16.92	**614**		
11 ER 1,25	1.25	11	0.8	0.9	23.14	**216**					16.92	**616**		
11 ER 1,5	1.50	11	0.8	1.0	23.14	**218**					16.92	**618**		
11 ER 1,75	1.75	11	0.8	1.1	23.14	**220**					16.92	**620**		
16 ER 0,35	0.35	16	0.8	0.4	23.95	**234**			21.81	**734**	17.52	**634**		
16 ER 0,4	0.40	16	0.7	0.4	23.95	**236**			21.81	**736**	17.52	**636**		
16 ER 0,45	0.45	16	0.7	0.4	23.95	**238**					17.52	**638**		
16 ER 0,5	0.50	16	0.6	0.6	23.95	**240**	14.97	**140**	16.99	**740**	17.52	**640**	16.99	**940**
16 ER 0,7	0.70	16	0.6	0.6	23.95	**241**	16.57	**141**	17.54	**741**	17.52	**641**		
16 ER 0,75	0.75	16	0.6	0.6	23.95	**242**	15.56	**142**	16.99	**742**	17.52	**642**	16.99	**942**
16 ER 0,8	0.80	16	0.6	0.6	23.95	**243**	15.56	**143**	16.99	**743**	17.52	**643**	16.99	**943**
16 ER 1,0	1.00	16	0.7	0.7	23.95	**244**	14.53	**144**	16.57	**744**	17.05	**644**	16.57	**944**
16 ER 1,25	1.25	16	0.8	0.9	23.95	**246**	14.53	**146**	16.57	**746**	17.52	**646**	16.57	**946**
16 ER 1,5	1.50	16	0.8	1.0	23.95	**248**	14.53	**148**	16.57	**748**	17.05	**648**	16.57	**948**
16 ER 1,75	1.75	16	0.9	1.2	23.95	**250**	14.53	**150**	16.57	**750**	17.52	**650**		
16 ER 2,0	2.00	16	1.0	1.3	23.95	**252**	14.53	**152**	16.57	**752**	17.52	**652**	16.57	**952**
16 ER 2,5	2.50	16	1.1	1.5	23.95	**254**	14.53	**154**	16.57	**754**	17.52	**654**	16.57	**954**
16 ER 3,0	3.00	16	1.2	1.6	23.95	**256**	14.53	**156**	16.57	**756**	17.52	**656**	16.57	**956**
22 ER 3,5	3.50	22	1.6	2.3	33.08	**270**	22.68	**170**	24.95	**770**	28.79	**670**		
22 ER 4,0	4.00	22	1.6	2.3	33.08	**272**	23.66	**172**	26.31	**772**	28.79	**672**		
22 ER 4,5	4.50	22	1.7	2.4	33.08	**274**	25.52	**174**	27.79	**774**	28.79	**674**		
22 ER 5,0	5.00	22	1.7	2.5	33.08	**276**	25.52	**176**	27.79	**776**	28.79	**676**		
22 ER 5,5	5.50	22	1.7	2.6			25.52	**178**						
22 ER 5,5	5.50	22	1.9	2.7	33.08	**278**					28.79	**678**		
22 EN 5,5	5.50	22	2.3	11.0	33.08	**282** [1]					28.79	**682** [1]		
22 ER 6,0	6.00	22	1.9	2.7			25.52	**180**	27.79	**780**				
22 ER 6,0	6.00	22	2.0	2.9	33.08	**280**					28.79	**680**		
22 EN 6,0	6.00	22	2.6	11.0	33.08	**284** [1]					28.79	**684** [1]		

Steel	●	●	○		●
Stainless steel	●	○	●		●
Cast iron		●	○	●	●
Non ferrous metals	○	●	○	●	○
Heat resistant alloys			○	○	●

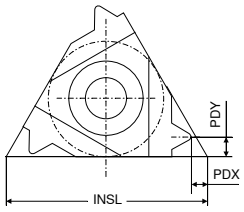
1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

→ v_c Page 42

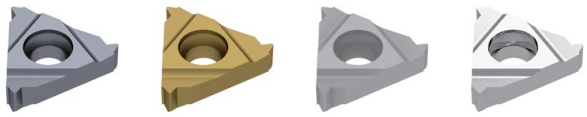
Left hand external thread turning insert

▲ Full profile

M | MF | 60°



CCN20 | CWN1525 | HCN2525 | CWK20



Designation	TP	INSL	PDX	PDY	EL X3 Article no. 71 222 ...		EL X3 Article no. 71 222 ...		EL X3 Article no. 71 222 ...		EL Y1 Article no. 71 222 ...	
	mm	mm	mm	mm	£		£		£		£	
11 EL 0,35	0.35	11	0.8	0.4	23.14	**204**					16.92	**604**
11 EL 0,4	0.40	11	0.7	0.4	23.14	**206**					16.92	**606**
11 EL 0,45	0.45	11	0.7	0.4	23.14	**208**					16.92	**608**
11 EL 0,5	0.50	11	0.6	0.6	23.14	**209**					16.92	**609**
11 EL 0,6	0.60	11	0.6	0.6	23.14	**210**					16.92	**610**
11 EL 0,7	0.70	11	0.6	0.6	23.14	**211**					16.92	**611**
11 EL 0,75	0.75	11	0.6	0.6	23.14	**212**					16.92	**612**
11 EL 0,8	0.80	11	0.6	0.6	23.14	**213**					16.92	**613**
11 EL 1,0	1.00	11	0.7	0.7	23.14	**214**					16.92	**614**
11 EL 1,25	1.25	11	0.8	0.9	23.14	**216**					16.92	**616**
11 EL 1,5	1.50	11	0.8	1.0	23.14	**218**					16.92	**618**
11 EL 1,75	1.75	11	0.8	1.1	23.14	**220**					16.92	**620**
16 EL 0,35	0.35	16	0.8	0.4	23.95	**234**					17.52	**634**
16 EL 0,4	0.40	16	0.7	0.4	23.95	**236**					17.52	**636**
16 EL 0,45	0.45	16	0.7	0.4	23.95	**238**					17.52	**638**
16 EL 0,5	0.50	16	0.6	0.6	23.95	**240**					17.52	**640**
16 EL 0,7	0.70	16	0.6	0.6	23.95	**241**					17.52	**641**
16 EL 0,75	0.75	16	0.6	0.6	23.95	**242**					17.52	**642**
16 EL 0,8	0.80	16	0.6	0.6	23.95	**243**					17.52	**643**
16 EL 1,0	1.00	16	0.7	0.7	23.95	**244**	15.55	**144**	17.44	**744**	17.05	**644**
16 EL 1,25	1.25	16	0.8	0.9	23.95	**246**	16.54	**146**			17.52	**646**
16 EL 1,5	1.50	16	0.8	1.0	23.95	**248**	15.55	**148**	17.44	**748**	17.05	**648**
16 EL 1,75	1.75	16	0.9	1.2	23.95	**250**			20.35	**750**	17.52	**650**
16 EL 2,0	2.00	16	1.0	1.3	23.95	**252**	16.54	**152**			17.52	**652**
16 EL 2,5	2.50	16	1.1	1.5	23.95	**254**					17.52	**654**
16 EL 3,0	3.00	16	1.2	1.6	23.95	**256**	21.36	**156**			17.52	**656**
22 EL 3,5	3.50	22	1.6	2.3	33.08	**270**					28.79	**670**
22 EL 4,0	4.00	22	1.6	2.3	33.08	**272**					28.79	**672**
22 EL 4,5	4.50	22	1.7	2.4	33.08	**274**					28.79	**674**
22 EL 5,0	5.00	22	1.7	2.5	33.08	**276**					28.79	**676**
22 EL 5,5	5.50	22	1.9	2.7	33.08	**278**					28.79	**678**
22 EL 6,0	6.00	22	2.0	2.9	33.08	**280**					28.79	**680**

Steel	●	●	○	
Stainless steel	●	○	●	
Cast iron		●	○	●
Non ferrous metals	○	●	○	●
Heat resistant alloys			○	○

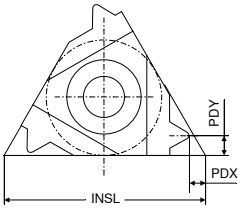
→ v_c Page 42

8

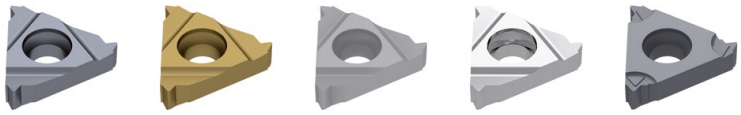
Right hand internal thread turning insert

- Full profile
- CCN7525 grade with sintered chip breaker for universal application

M | MF | 60°



CCN20 | CWN1525 | HCN2525 | CWK20 | CCN7525



Designation	TP	INSL	PDX	PDY	IR X3 Article no. 71 224 ...		IR X3 Article no. 71 224 ...		IR X3 Article no. 71 224 ...		IR Y1 Article no. 71 224 ...		IR X3 Article no. 71 224 ...	
	mm	mm	mm	mm	£		£		£		£		£	
11 IR 0,35	0.35	11	0.8	0.3	23.95	**204**					17.52	**604**		
11 IR 0,4	0.40	11	0.8	0.4	23.95	**206**					17.52	**606**		
11 IR 0,45	0.45	11	0.8	0.4	23.95	**208**					17.52	**608**		
11 IR 0,5	0.50	11	0.6	0.6	23.95	**210**					17.52	**610**		
11 IR 0,7	0.70	11	0.6	0.6	23.95	**211**					17.52	**611**		
11 IR 0,75	0.75	11	0.6	0.6	23.95	**212**					17.52	**612**	20.35	**912**
11 IR 0,8	0.80	11	0.6	0.6	23.95	**213**			24.86	**713**	17.52	**613**		
11 IR 1,0	1.00	11	0.6	0.6									16.57	**914**
11 IR 1,0	1.00	11	0.6	0.7	23.95	**214**	14.53	**114**	16.57	**714**	17.05	**614**		
11 IR 1,25	1.25	11	0.8	0.9	23.95	**216**					17.52	**616**		
11 IR 1,5	1.50	11	0.8	0.9									16.57	**918**
11 IR 1,5	1.50	11	0.8	1.0	23.95	**218**	14.53	**118**	16.57	**718**	17.05	**618**		
11 IR 1,75	1.75	11	0.9	1.1	23.95	**220**					17.52	**620**		
11 IR 2,0	2.00	11	0.8	0.9			14.53	**122**	16.57	**722**				
11 IR 2,0	2.00	11	0.9	1.1	23.95	**222**					17.52	**622**		
11 IR 2,5	2.50	11	0.8	1.2			16.54	**124**	17.97	**724**				
11 IR 2,5	2.50	11	0.9	1.1	23.95	**224**					17.52	**624**		
16 IR 0,35	0.35	16	0.8	0.4	23.95	**234**					17.52	**634**		
16 IR 0,4	0.40	16	0.7	0.4	23.95	**236**					17.52	**636**		
16 IR 0,45	0.45	16	0.7	0.4	23.95	**238**					17.52	**638**		
16 IR 0,5	0.50	16	0.6	0.6	23.95	**240**					17.52	**640**		
16 IR 0,7	0.70	16	0.6	0.6	23.95	**241**					17.52	**641**		
16 IR 0,75	0.75	16	0.6	0.6	23.95	**242**	18.25	**142**	20.35	**742**	17.52	**642**		
16 IR 0,8	0.80	16	0.6	0.6	23.95	**243**					17.52	**643**		
16 IR 1,0	1.00	16	0.6	0.7			14.53	**144**	16.57	**744**			16.57	**944**
16 IR 1,0	1.00	16	0.7	0.7	23.95	**244**					17.05	**644**		
16 IR 1,25	1.25	16	0.8	0.9	23.95	**246**			17.44	**746**	17.52	**646**	17.44	**946**
16 IR 1,5	1.50	16	0.8	1.0	23.95	**248**	14.53	**148**	16.57	**748**	17.05	**648**	16.57	**948**
16 IR 1,75	1.75	16	0.9	1.2	23.95	**250**			20.35	**750**	17.52	**650**		
16 IR 2,0	2.00	16	1.0	1.3	23.95	**252**	14.53	**152**	16.57	**752**	17.52	**652**	16.57	**952**
16 IR 2,5	2.50	16	1.1	1.5	23.95	**254**	14.53	**154**	16.57	**754**	17.52	**654**	16.57	**954**
16 IR 3,0	3.00	16	1.1	1.5	23.95	**256**	14.53	**156**	16.57	**756**	17.52	**656**	16.57	**956**
22 IR 3,5	3.50	22	1.6	2.3	33.08	**270**	23.66	**170**	26.31	**770**	28.79	**670**		
22 IR 4,0	4.00	22	1.6	2.3	33.08	**272**	23.66	**172**	26.31	**772**	28.79	**672**		
22 IR 4,5	4.50	22	1.6	2.4			25.52	**174**	27.79	**774**				
22 IR 4,5	4.50	22	1.7	2.4	33.08	**274**					28.79	**674**		
22 IR 5,0	5.00	22	1.6	2.3			25.52	**176**						
22 IR 5,0	5.00	22	1.7	2.5	33.08	**276**					28.79	**676**		
22 IR 5,5	5.50	22	1.6	2.3			28.78	**178**						
22 IR 5,5	5.50	22	1.9	2.7	33.08	**278**					28.79	**678**		
22 IN 5,5	5.50	22	2.3	11.0	33.08	**282** [1]					28.79	**682** [1]		
22 IR 6,0	6.00	22	1.6	2.4			25.52	**180**						
22 IR 6,0	6.00	22	2.0	2.9	33.08	**280**					28.79	**680**		
22 IN 6,0	6.00	22	2.6	11.0	33.08	**284** [1]					28.79	**684** [1]		

Steel	●	●	○		●
Stainless steel	●	○	●		●
Cast iron		●	○	●	●
Non ferrous metals	○	●	○	●	○
Heat resistant alloys			○	○	●

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

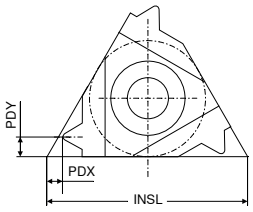
→ v_c Page 42

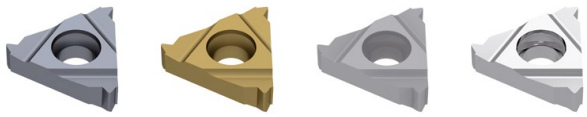
Left hand internal thread turning insert

▲ Full profile

M | MF | 60°

CCN20 | CWN1525 | HCN2525 | CWK20





Designation	TP	INSL	PDX	PDY	IL X3 Article no. 71 226 ...		IL X3 Article no. 71 226 ...		IL X3 Article no. 71 226 ...		IL Y1 Article no. 71 226 ...	
	mm	mm	mm	mm	£		£		£		£	
11 IL 0,35	0.35	11	0.8	0.3	23.95	**204**					17.52	**604**
11 IL 0,4	0.40	11	0.8	0.4	23.95	**206**					17.52	**606**
11 IL 0,45	0.45	11	0.8	0.4	23.95	**208**					17.52	**608**
11 IL 0,5	0.50	11	0.6	0.6	23.95	**210**					17.52	**610**
11 IL 0,7	0.70	11	0.6	0.6	23.95	**211**					17.52	**611**
11 IL 0,75	0.75	11	0.6	0.6	23.95	**212**					17.52	**612**
11 IL 0,8	0.80	11	0.6	0.6	23.95	**213**					17.52	**613**
11 IL 1,0	1.00	11	0.6	0.7	23.95	**214**					17.05	**614**
11 IL 1,25	1.25	11	0.8	0.9	23.95	**216**					17.52	**616**
11 IL 1,5	1.50	11	0.8	1.0	23.95	**218**					17.05	**618**
11 IL 1,75	1.75	11	0.9	1.1	23.95	**220**					17.52	**620**
11 IL 2,0	2.00	11	0.9	1.1	23.95	**222**					17.52	**622**
11 IL 2,5	2.50	11	0.9	1.1	23.95	**224**					17.52	**624**
16 IL 0,35	0.35	16	0.8	0.4	23.95	**234**					17.52	**634**
16 IL 0,4	0.40	16	0.7	0.4	23.95	**236**					17.52	**636**
16 IL 0,45	0.45	16	0.7	0.4	23.95	**238**					17.52	**638**
16 IL 0,5	0.50	16	0.6	0.6	23.95	**240**					17.52	**640**
16 IL 0,7	0.70	16	0.6	0.6	23.95	**241**					17.52	**641**
16 IL 0,75	0.75	16	0.6	0.6	23.95	**242**					17.52	**642**
16 IL 0,8	0.80	16	0.6	0.6	23.95	**243**					17.52	**643**
16 IL 1,0	1.00	16	0.6	0.7			21.36	**144**				
16 IL 1,0	1.00	16	0.7	0.7	23.95	**244**					17.05	**644**
16 IL 1,25	1.25	16	0.8	0.9	23.95	**246**					17.52	**646**
16 IL 1,5	1.50	16	0.8	1.0	23.95	**248**	18.39	**148**	20.35	**748**	17.05	**648**
16 IL 1,75	1.75	16	0.9	1.2	23.95	**250**					17.52	**650**
16 IL 2,0	2.00	16	1.0	1.3	23.95	**252**	16.54	**152**			17.52	**652**
16 IL 2,5	2.50	16	1.1	1.5	23.95	**254**					17.52	**654**
16 IL 3,0	3.00	16	1.2	1.6	23.95	**256**					17.52	**656**
22 IL 3,5	3.50	22	1.6	2.3	33.08	**270**					28.79	**670**
22 IL 4,0	4.00	22	1.6	2.3	33.08	**272**					28.79	**672**
22 IL 4,5	4.50	22	1.7	2.4	33.08	**274**					28.79	**674**
22 IL 5,0	5.00	22	1.7	2.5	33.08	**276**					28.79	**676**
22 IL 5,5	5.50	22	1.9	2.7	33.08	**278**					28.79	**678**
22 IL 6,0	6.00	22	2.0	2.9	33.08	**280**					28.79	**680**

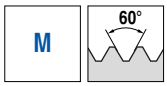
Steel	●	●	○	
Stainless steel	●	○	●	
Cast iron		●	○	●
Non ferrous metals	○	●	○	●
Heat resistant alloys			○	○

→ v_c Page 42

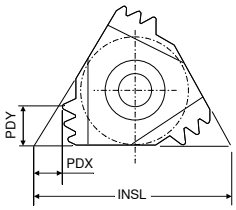
8

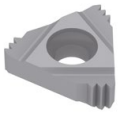
Right hand external thread turning insert

▲ Multi edge insert



HCN2525





Designation	TP	INSL	PDX	PDY	NT	ER X3 Article no. 71 221 ...	
	mm	mm	mm	mm		£	
16 ER 1,0 3M	1.0	16	1.7	2.5	3	35.06	**700**
16 ER 1,5 2M	1.5	16	1.5	2.3	2	34.43	**702**

Steel	○
Stainless steel	●
Cast iron	○
Non ferrous metals	○
Heat resistant alloys	○

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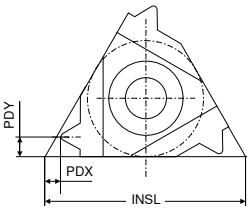
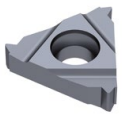
Right hand external thread turning insert

▲ Full profile

MJ 60°

CCN20 CWK20





Designation	TP	INSL	PDX	PDY	ER X3 Article no. 71 286 ...		ER Y1 Article no. 71 286 ...	
	mm	mm	mm	mm	£		£	
11 ER 1,0	1.00	11	0.7	0.8	31.80	**214**	25.51	**614**
11 ER 1,25	1.25	11	0.8	0.9	31.80	**216**	25.51	**616**
11 ER 1,5	1.50	11	0.8	1.0	31.80	**218**	25.51	**618**
11 ER 2,0	2.00	11	0.9	1.0	31.80	**222**	25.51	**622**
16 ER 1,0	1.00	16	0.7	0.8	31.80	**244**	25.51	**644**
16 ER 1,25	1.25	16	0.8	0.9	31.80	**246**	25.51	**646**
16 ER 1,5	1.50	16	0.8	1.0	31.80	**248**	25.51	**648**
16 ER 2,0	2.00	16	1.0	1.3	31.80	**252**	25.51	**652**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

→ v_c Page 42

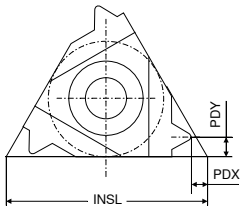
8

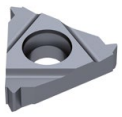
Left hand external thread turning insert

▲ Full profile

MJ 60°

CCN20 CWK20





Designation	TP	INSL	PDX	PDY	EL X3 Article no. 71 287 ...		EL Y1 Article no. 71 287 ...	
	mm	mm	mm	mm	£		£	
11 EL 1,0	1.00	11	0.7	0.8	31.80	**214**	25.51	**614**
11 EL 1,25	1.25	11	0.8	0.9	31.80	**216**	25.51	**616**
11 EL 1,5	1.50	11	0.8	1.0	31.80	**218**	25.51	**618**
11 EL 2,0	2.00	11	0.9	1.0	31.80	**222**	25.51	**622**
16 EL 1,0	1.00	16	0.7	0.8	31.80	**244**	25.51	**644**
16 EL 1,25	1.25	16	0.8	0.9	31.80	**246**	25.51	**646**
16 EL 1,5	1.50	16	0.8	1.0	31.80	**248**	25.51	**648**
16 EL 2,0	2.00	16	1.0	1.3	31.80	**252**	25.51	**652**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

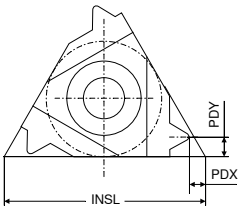
→ v_c Page 42

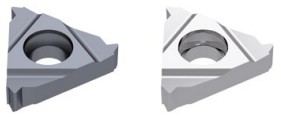
Right hand internal thread turning insert

▲ Full profile

MJ 60°

CCN20 CWK20





Designation	TP	INSL	PDX	PDY	IR X3 Article no. 71 284 ...		IR Y1 Article no. 71 284 ...	
	mm	mm	mm	mm	£		£	
11 IR 1,0	1.00	11	0.7	0.8	31.80	**214**	25.51	**614**
11 IR 1,25	1.25	11	0.8	0.9	31.80	**216**	25.51	**616**
11 IR 1,5	1.50	11	0.8	1.0	31.80	**218**	25.51	**618**
11 IR 2,0	2.00	11	0.9	1.0	31.80	**222**	25.51	**622**
16 IR 1,0	1.00	16	0.7	0.8	31.80	**244**	25.51	**644**
16 IR 1,25	1.25	16	0.8	0.9	31.80	**246**	25.51	**646**
16 IR 1,5	1.50	16	0.8	1.0	31.80	**248**	25.51	**648**
16 IR 2,0	2.00	16	1.0	1.3	31.80	**252**	25.51	**652**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

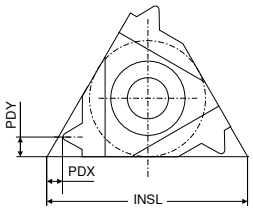
→ v_c Page 42

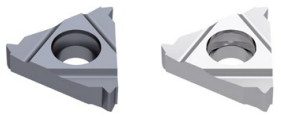
Left hand internal thread turning insert

▲ Full profile

MJ 60°

CCN20 CWK20





Designation	TP	INSL	PDX	PDY	IL X3 Article no. 71 285 ...		IL Y1 Article no. 71 285 ...	
	mm	mm	mm	mm	£		£	
11 IL 1,0	1.00	11	0.7	0.8	31.80	**214**	25.51	**614**
11 IL 1,25	1.25	11	0.8	0.9	31.80	**216**	25.51	**616**
11 IL 1,5	1.50	11	0.8	1.0	31.80	**218**	25.51	**618**
11 IL 2,0	2.00	11	0.9	1.0	31.80	**222**	25.51	**622**
16 IL 1,0	1.00	16	0.7	0.8	31.80	**244**	25.51	**644**
16 IL 1,25	1.25	16	0.8	0.9	31.80	**246**	25.51	**646**
16 IL 1,5	1.50	16	0.8	1.0	31.80	**248**	25.51	**648**
16 IL 2,0	2.00	16	1.0	1.3	31.80	**252**	25.51	**652**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

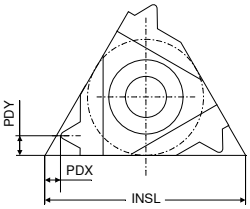
→ v_c Page 42

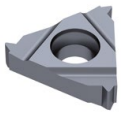
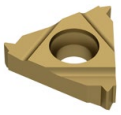
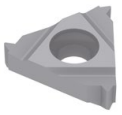
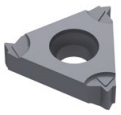
Right hand external thread turning insert

▲ Full profile

▲ CCN7525 grade with sintered chip breaker for universal application

BSW | 55°



CCN20	CWN1525	HCN2525	CWK20	CCN7525
				

Designation	TPI	INSL	PDX	PDY	ER X3 Article no. 71 228 ... £		ER X3 Article no. 71 228 ... £		ER X3 Article no. 71 228 ... £		ER Y1 Article no. 71 228 ... £		ER X3 Article no. 71 228 ... £	
	1/"	mm	mm	mm										
11 ER 72	72.0	11	0.7	4.0	23.14	**202**					16.92	**602**		
11 ER 60	60.0	11	0.7	4.0	23.14	**204**					16.92	**604**		
11 ER 56	56.0	11	0.7	4.0	23.14	**206**					16.92	**606**		
11 ER 48	48.0	11	0.6	0.6	23.14	**208**					16.92	**608**		
11 ER 40	40.0	11	0.6	0.6	23.14	**210**					16.92	**610**		
11 ER 36	36.0	11	0.6	0.6	23.14	**212**					16.92	**612**		
11 ER 32	32.0	11	0.6	0.6	23.14	**214**					16.92	**614**		
11 ER 28	28.0	11	0.6	0.7	23.14	**216**					16.92	**616**		
11 ER 26	26.0	11	0.7	0.8	23.14	**218**					16.92	**618**		
11 ER 24	24.0	11	0.7	0.8	23.14	**220**					16.92	**620**		
11 ER 22	22.0	11	0.8	0.9	23.14	**222**					16.92	**622**		
11 ER 20	20.0	11	0.8	0.9	23.14	**224**					16.92	**624**		
11 ER 19	19.0	11	0.8	1.0	23.14	**226**					16.92	**626**		
11 ER 18	18.0	11	0.8	1.0	23.14	**228**					16.92	**628**		
11 ER 16	16.0	11	0.9	1.1	23.14	**230**					16.92	**630**		
11 ER 14	14.0	11	0.9	1.1	23.14	**232**					16.92	**632**		
16 ER 40	40.0	16	0.6	0.6	23.95	**240**					17.52	**640**		
16 ER 36	36.0	16	0.6	0.6	23.95	**242**					17.52	**642**		
16 ER 32	32.0	16	0.6	0.6	23.95	**244**					17.52	**644**		
16 ER 28	28.0	16	0.6	0.7	23.95	**246**	18.82	**146**	20.92	**746**	17.52	**646**		
16 ER 26	26.0	16	0.7	0.7					24.95	**748**				
16 ER 26	26.0	16	0.7	0.8	23.95	**248**					17.52	**648**		
16 ER 24	24.0	16	0.7	0.8	23.95	**250**					17.52	**650**		
16 ER 22	22.0	16	0.8	0.9	23.95	**252**					17.52	**652**		
16 ER 20	20.0	16	0.8	0.9	23.95	**254**			24.95	**754**	17.52	**654**		
16 ER 19	19.0	16	0.8	1.0	23.95	**256**	16.95	**156**	19.05	**756**	17.52	**656**	19.05	**956**
16 ER 18	18.0	16	0.8	1.0	23.95	**258**					17.52	**658**		
16 ER 16	16.0	16	0.9	1.1	23.95	**260**	20.67	**160**	22.80	**760**	17.52	**660**		
16 ER 14	14.0	16	1.0	1.2	23.95	**262**	16.95	**162**	19.05	**762**	17.52	**662**	19.05	**962**
16 ER 12	12.0	16	1.1	1.4	23.95	**264**	20.67	**164**	22.80	**764**	17.52	**664**		
16 ER 11	11.0	16	1.1	1.5	23.95	**266**	16.95	**166**	19.05	**766**	17.52	**666**	19.05	**966**
16 ER 10	10.0	16	1.1	1.5	23.95	**268**					17.52	**668**		
16 ER 9	9.0	16	1.2	1.7	23.95	**270**					17.52	**670**		
16 ER 8	8.0	16	1.2	1.5	23.95	**272**					17.52	**672**		
22 ER 7	7.0	22	1.6	2.3	33.08	**280**					28.79	**680**		
22 ER 6	6.0	22	1.6	2.3	33.08	**282**					28.79	**682**		
22 ER 5	5.0	22	1.7	2.4	33.08	**284**					28.79	**684**		
22 EN 4,5	4.5	22	2.3	11.0	33.08	**290** [1]					28.79	**690** [1]		
22 EN 4	4.0	22	1.8	11.0	33.08	**292** [1]					28.79	**692** [1]		

Steel	●	●	○		●
Stainless steel	●	○	●		●
Cast iron		●	○	●	●
Non ferrous metals	○	●	○	●	○
Heat resistant alloys			○	○	●

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

→ v_c Page 42

8

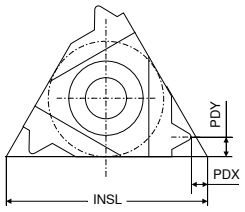
Left hand external thread turning insert

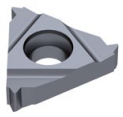
▲ Full profile

BSW

CCN20

CWK20





Designation	TPI	INSL	PDX	PDY	EL X3 Article no. 71 229 ...		EL Y1 Article no. 71 229 ...	
	1/"	mm	mm	mm	£		£	
11 EL 72	72	11	0.7	4.0	23.14	**202**	16.92	**602**
11 EL 60	60	11	0.7	4.0	23.14	**204**	16.92	**604**
11 EL 56	56	11	0.7	4.0	23.14	**206**	16.92	**606**
11 EL 48	48	11	0.6	0.6	23.14	**208**	16.92	**608**
11 EL 40	40	11	0.6	0.6	23.14	**210**	16.92	**610**
11 EL 36	36	11	0.6	0.6	23.14	**212**	16.92	**612**
11 EL 32	32	11	0.6	0.6	23.14	**214**	16.92	**614**
11 EL 28	28	11	0.6	0.7	23.14	**216**	16.92	**616**
11 EL 26	26	11	0.7	0.8	23.14	**218**	16.92	**618**
11 EL 24	24	11	0.7	0.8	23.14	**220**	16.92	**620**
11 EL 22	22	11	0.8	0.9	23.14	**222**	16.92	**622**
11 EL 20	20	11	0.8	0.9	23.14	**224**	16.92	**624**
11 EL 19	19	11	0.8	1.0	23.14	**226**	16.92	**626**
11 EL 18	18	11	0.8	1.0	23.14	**228**	16.92	**628**
11 EL 16	16	11	0.9	1.1	23.14	**230**	16.92	**630**
11 EL 14	14	11	0.9	1.1	23.14	**232**	16.92	**632**
16 EL 40	40	16	0.6	0.6	23.95	**240**	17.52	**640**
16 EL 36	36	16	0.6	0.6	23.95	**242**	17.52	**642**
16 EL 32	32	16	0.6	0.6	23.95	**244**	17.52	**644**
16 EL 28	28	16	0.6	0.7	23.95	**246**	17.52	**646**
16 EL 26	26	16	0.7	0.8	23.95	**248**	17.52	**648**
16 EL 24	24	16	0.7	0.8	23.95	**250**	17.52	**650**
16 EL 22	22	16	0.8	0.9	23.95	**252**	17.52	**652**
16 EL 20	20	16	0.8	0.9	23.95	**254**	17.52	**654**
16 EL 19	19	16	0.8	1.0	23.95	**256**	17.52	**656**
16 EL 18	18	16	0.8	1.0	23.95	**258**	17.52	**658**
16 EL 16	16	16	0.9	1.1	23.95	**260**	17.52	**660**
16 EL 14	14	16	1.0	1.2	23.95	**262**	17.52	**662**
16 EL 12	12	16	1.1	1.4	23.95	**264**	17.52	**664**
16 EL 11	11	16	1.1	1.5	23.95	**266**	17.52	**666**
16 EL 10	10	16	1.1	1.5	23.95	**268**	17.52	**668**
16 EL 9	9	16	1.2	1.7	23.95	**270**	17.52	**670**
16 EL 8	8	16	1.2	1.5	23.95	**272**	17.52	**672**
22 EL 7	7	22	1.6	2.3	35.84	**280**	28.79	**680**
22 EL 6	6	22	1.6	2.3	35.84	**282**	28.79	**682**
22 EL 5	5	22	1.7	2.4	30.65	**284**	28.79	**684**

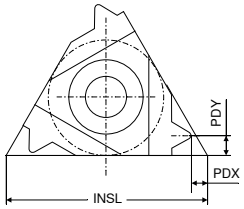
Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

→ v_c Page 42

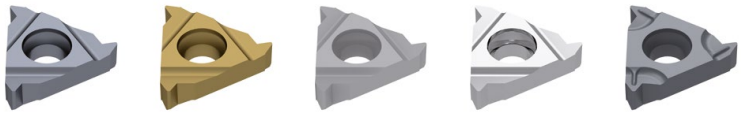
Right hand internal thread turning insert

- Full profile
- CCN7525 grade with sintered chip breaker for universal application

BSW



CCN20 | CWN1525 | HCN2525 | CWK20 | CCN7525



Designation	TPI	INSL	PDX	PDY	IR X3 Article no. 71 230 ... £		IR X3 Article no. 71 230 ... £		IR X3 Article no. 71 230 ... £		IR Y1 Article no. 71 230 ... £		IR X3 Article no. 71 230 ... £	
	1/"	mm	mm	mm										
11 IR 48	48	11	0.6	0.6	23.95	**206**					17.52	**606**		
11 IR 40	40	11	0.6	0.6	23.95	**208**					17.52	**608**		
11 IR 36	36	11	0.6	0.6	23.95	**210**					17.52	**610**		
11 IR 32	32	11	0.6	0.6	23.95	**212**					17.52	**612**		
11 IR 28	28	11	0.6	0.7	23.95	**214**					17.52	**614**		
11 IR 26	26	11	0.7	0.8	23.95	**216**					17.52	**616**		
11 IR 24	24	11	0.7	0.8	23.95	**218**					17.52	**618**		
11 IR 22	22	11	0.8	0.9	23.95	**220**					17.52	**620**		
11 IR 20	20	11	0.8	0.9	23.95	**222**					17.52	**622**		
11 IR 19	19	11	0.8	0.9									19.91	**924**
11 IR 19	19	11	0.8	1.0	23.95	**224**	17.80	**124**	19.91	**724**	17.52	**624**		
11 IR 18	18	11	0.8	1.0	23.95	**226**					17.52	**626**		
11 IR 16	16	11	0.9	1.1	23.95	**228**					17.52	**628**		
11 IR 14	14	11	0.8	0.9									19.91	**930**
11 IR 14	14	11	0.9	1.1	23.95	**230**	17.80	**130**	19.91	**730**	17.52	**630**		
16 IR 40	40	16	0.6	0.6	23.95	**240**					17.52	**640**		
16 IR 36	36	16	0.6	0.6	23.95	**242**					17.52	**642**		
16 IR 32	32	16	0.6	0.6	23.95	**244**					17.52	**644**		
16 IR 28	28	16	0.6	0.7	23.95	**246**					17.52	**646**		
16 IR 26	26	16	0.7	0.8	23.95	**248**					17.52	**648**		
16 IR 24	24	16	0.7	0.8	23.95	**250**					17.52	**650**		
16 IR 22	22	16	0.8	0.9	23.95	**252**					17.52	**652**		
16 IR 20	20	16	0.8	0.9	23.95	**254**					17.52	**654**		
16 IR 19	19	16	0.8	1.0	23.95	**256**					17.52	**656**		
16 IR 18	18	16	0.8	1.0	23.95	**258**					17.52	**658**		
16 IR 16	16	16	0.9	1.1	23.95	**260**			24.95	**760**	17.52	**660**		
16 IR 14	14	16	1.0	1.2	23.95	**262**	16.95	**162**	19.05	**762**	17.52	**662**	19.05	**962**
16 IR 12	12	16	1.1	1.4	23.95	**264**					17.52	**664**		
16 IR 11	11	16	1.1	1.5	23.95	**266**	16.95	**166**	19.05	**766**	17.52	**666**	19.05	**966**
16 IR 10	10	16	1.1	1.5	23.95	**268**					17.52	**668**		
16 IR 9	9	16	1.2	1.7	23.95	**270**					17.52	**670**		
16 IR 8	8	16	1.2	1.5	23.95	**272**					17.52	**672**		
22 IR 7	7	22	1.6	2.3	33.08	**280**					28.79	**680**		
22 IR 6	6	22	1.6	2.3	33.08	**282**					28.79	**682**		
22 IR 5	5	22	1.7	2.4	33.08	**284**					28.79	**684**		

Steel	●	●	○		●
Stainless steel	●	○	●		●
Cast iron		●	○	●	●
Non ferrous metals	○	●	○	●	○
Heat resistant alloys			○	○	●

→ v_c Page 42

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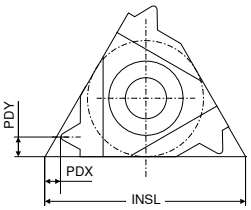
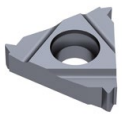
Left hand internal thread turning insert

▲ Full profile

BSW 55°

CCN20 CWK20





Designation	TPI	INSL	PDX	PDY	IL X3 Article no. 71 231 ... £		IL Y1 Article no. 71 231 ... £	
	1/"	mm	mm	mm				
11 IL 48	48	11	0.6	0.6	23.95	**206**	17.52	**606**
11 IL 40	40	11	0.6	0.6	23.95	**208**	17.52	**608**
11 IL 36	36	11	0.6	0.6	23.95	**210**	17.52	**610**
11 IL 32	32	11	0.6	0.6	23.95	**212**	17.52	**612**
11 IL 28	28	11	0.6	0.7	23.95	**214**	17.52	**614**
11 IL 26	26	11	0.7	0.8	23.95	**216**	17.52	**616**
11 IL 24	24	11	0.7	0.8	23.95	**218**	17.52	**618**
11 IL 22	22	11	0.8	0.9	23.95	**220**	17.52	**620**
11 IL 20	20	11	0.8	0.9	23.95	**222**	17.52	**622**
11 IL 19	19	11	0.8	1.0	23.95	**224**	17.52	**624**
11 IL 18	18	11	0.8	1.0	23.95	**226**	17.52	**626**
11 IL 16	16	11	0.9	1.1	23.95	**228**	17.52	**628**
11 IL 14	14	11	0.9	1.1	23.95	**230**	17.52	**630**
16 IL 40	40	16	0.6	0.6	23.95	**240**	17.52	**640**
16 IL 36	36	16	0.6	0.6	23.95	**242**	17.52	**642**
16 IL 32	32	16	0.6	0.6	23.95	**244**	17.52	**644**
16 IL 28	28	16	0.6	0.7	23.95	**246**	17.52	**646**
16 IL 26	26	16	0.7	0.8	23.95	**248**	17.52	**648**
16 IL 24	24	16	0.7	0.8	23.95	**250**	17.52	**650**
16 IL 22	22	16	0.8	0.9	23.95	**252**	17.52	**652**
16 IL 20	20	16	0.8	0.9	23.95	**254**	17.52	**654**
16 IL 19	19	16	0.8	1.0	23.95	**256**	17.52	**656**
16 IL 18	18	16	0.8	1.0	23.95	**258**	17.52	**658**
16 IL 16	16	16	0.9	1.1	23.95	**260**	17.52	**660**
16 IL 14	14	16	1.0	1.2	23.95	**262**	17.52	**662**
16 IL 12	12	16	1.1	1.4	23.95	**264**	17.52	**664**
16 IL 11	11	16	1.1	1.5	23.95	**266**	17.52	**666**
16 IL 10	10	16	1.1	1.5	23.95	**268**	17.52	**668**
16 IL 9	9	16	1.2	1.7	23.95	**270**	17.52	**670**
16 IL 8	8	16	1.2	1.5	23.95	**272**	17.52	**672**
22 IL 7	7	22	1.6	2.3	33.08	**280**	28.79	**680**
22 IL 6	6	22	1.6	2.3	33.08	**282**	28.79	**682**
22 IL 5	5	22	1.7	2.4	33.08	**284**	28.79	**684**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

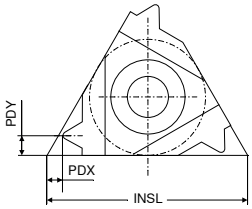
→ v_c Page 42

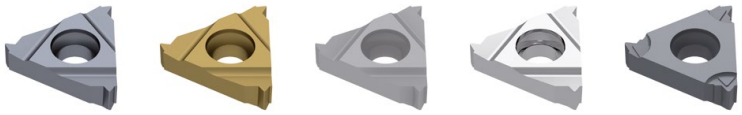
Right hand external thread turning insert

- Full profile
- CCN7525 grade with sintered chip breaker for universal application

UN | UNC | UNF | UNEF | 60°

CCN20 | CWN1525 | HCN2525 | CWK20 | CCN7525





Designation	TPI	INSL	PDX	PDY	ER X3 Article no. 71 264 ...		ER X3 Article no. 71 264 ...		ER X3 Article no. 71 264 ...		ER Y1 Article no. 71 264 ...		ER X3 Article no. 71 264 ...	
	1/"	mm	mm	mm	£		£		£		£		£	
11 ER 72	72.0	11	0.8	0.4	23.14	**202**					16.92	**602**		
11 ER 64	64.0	11	0.8	0.4	23.14	**204**					16.92	**604**		
11 ER 56	56.0	11	0.7	0.4	23.14	**206**					16.92	**606**		
11 ER 48	48.0	11	0.6	0.6	23.14	**208**					16.92	**608**		
11 ER 44	44.0	11	0.6	0.6	23.14	**210**					16.92	**610**		
11 ER 40	40.0	11	0.6	0.6	23.14	**212**					16.92	**612**		
11 ER 36	36.0	11	0.6	0.6	23.14	**214**					16.92	**614**		
11 ER 32	32.0	11	0.6	0.6	23.14	**216**					16.92	**616**		
11 ER 28	28.0	11	0.6	0.7	23.14	**218**					16.92	**618**		
11 ER 27	27.0	11	0.7	0.8	23.14	**220**					16.92	**620**		
11 ER 24	24.0	11	0.7	0.8	23.14	**222**					16.92	**622**		
11 ER 20	20.0	11	0.8	0.9	23.14	**224**					16.92	**624**		
11 ER 18	18.0	11	0.8	1.0	23.14	**226**					16.92	**626**		
11 ER 16	16.0	11	0.9	1.1	23.14	**228**					16.92	**628**		
11 ER 14	14.0	11	0.9	1.1	23.14	**230**					16.92	**630**		
16 ER 72	72.0	16	0.8	0.4	23.95	**232**					17.52	**632**		
16 ER 64	64.0	16	0.8	0.4	23.95	**234**					17.52	**634**		
16 ER 56	56.0	16	0.7	0.4	23.95	**236**					17.52	**636**		
16 ER 48	48.0	16	0.6	0.6	23.95	**238**					17.52	**638**		
16 ER 44	44.0	16	0.6	0.6	23.95	**240**					17.52	**640**		
16 ER 40	40.0	16	0.6	0.6	23.95	**242**					17.52	**642**		
16 ER 36	36.0	16	0.6	0.6	23.95	**244**					17.52	**644**		
16 ER 32	32.0	16	0.6	0.6	23.95	**246**			24.41	**746**	17.52	**646**		
16 ER 28	28.0	16	0.6	0.7	23.95	**248**			22.80	**748**	17.52	**648**		
16 ER 27	27.0	16	0.7	0.8	23.95	**250**					17.52	**650**		
16 ER 24	24.0	16	0.7	0.8	23.95	**252**	18.82	**152**	20.92	**752**	17.52	**652**		
16 ER 20	20.0	16	0.8	0.9	23.95	**254**	17.80	**154**	19.91	**754**	17.52	**654**	19.91	**954**
16 ER 18	18.0	16	0.8	1.0	23.95	**256**	18.82	**156**	20.92	**756**	17.52	**656**		
16 ER 16	16.0	16	0.9	1.1	23.95	**258**	17.80	**158**	19.91	**758**	17.52	**658**	19.91	**958**
16 ER 14	14.0	16	1.0	1.2	23.95	**260**	18.82	**160**	20.92	**760**	17.52	**660**		
16 ER 13	13.0	16	1.0	1.3	23.95	**262**					17.52	**662**		
16 ER 12	12.0	16	1.1	1.4	23.95	**264**	18.82	**164**	20.92	**764**	17.52	**664**		
16 ER 11,5	11.5	16	1.1	1.5	23.95	**266**					17.52	**666**		
16 ER 11	11.0	16	1.1	1.5	23.95	**268**	23.23	**168**			17.52	**668**		
16 ER 10	10.0	16	1.1	1.5	23.95	**270**					17.52	**670**		
16 ER 9	9.0	16	1.2	1.7	23.95	**272**					17.52	**672**		
16 ER 8	8.0	16	1.1	1.1									24.95	**974**
16 ER 8	8.0	16	1.1	1.5			23.23	**174**						
16 ER 8	8.0	16	1.2	1.6	23.95	**274**					17.52	**674**		
22 ER 7	7.0	22	1.6	2.3	33.08	**276**					28.79	**676**		
22 ER 6	6.0	22	1.6	2.3	33.08	**278**					28.79	**678**		
22 ER 5	5.0	22	1.7	2.5	33.08	**280**					28.79	**680**		
22 EN 4,5	4.5	22	2.0	11.0	33.08	**282** [1]					28.79	**682** [1]		
22 EN 4	4.0	22	2.0	11.0	33.08	**284** [1]					28.79	**684** [1]		

Steel	●	●	○		●
Stainless steel	●	○	●		●
Cast iron		●	○	●	●
Non ferrous metals	○	●	○	●	○
Heat resistant alloys			○	○	●

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

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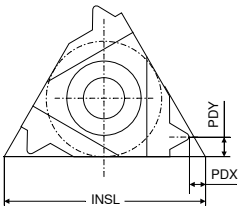
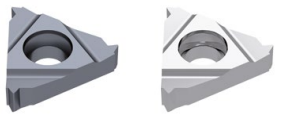
Left hand external thread turning insert

▲ Full profile

UN | UNC | UNF | UNEF | 60°

CCN20 | CWK20





Designation	TPI	INSL	PDX	PDY	EL X3 Article no. 71 266 ...		EL Y1 Article no. 71 266 ...	
	1/"	mm	mm	mm	£		£	
11 EL 72	72.0	11	0.8	0.4	23.14	**202**	16.92	**602**
11 EL 64	64.0	11	0.8	0.4	23.14	**204**	16.92	**604**
11 EL 56	56.0	11	0.7	0.4	23.14	**206**	16.92	**606**
11 EL 48	48.0	11	0.6	0.6	23.14	**208**	16.92	**608**
11 EL 44	44.0	11	0.6	0.6	23.14	**210**	16.92	**610**
11 EL 40	40.0	11	0.6	0.6	23.14	**212**	16.92	**612**
11 EL 36	36.0	11	0.6	0.6	23.14	**214**	16.92	**614**
11 EL 32	32.0	11	0.6	0.6	23.14	**216**	16.92	**616**
11 EL 28	28.0	11	0.6	0.7	23.14	**218**	16.92	**618**
11 EL 27	27.0	11	0.7	0.8	23.14	**220**	16.92	**620**
11 EL 24	24.0	11	0.7	0.8	23.14	**222**	16.92	**622**
11 EL 20	20.0	11	0.8	0.9	23.14	**224**	16.92	**624**
11 EL 18	18.0	11	0.8	1.0	23.14	**226**	16.92	**626**
11 EL 16	16.0	11	0.9	1.1	23.14	**228**	16.92	**628**
11 EL 14	14.0	11	0.9	1.1	23.14	**230**	16.92	**630**
16 EL 72	72.0	16	0.8	0.4	23.95	**232**	17.52	**632**
16 EL 64	64.0	16	0.8	0.4	23.95	**234**	17.52	**634**
16 EL 56	56.0	16	0.7	0.4	23.95	**236**	17.52	**636**
16 EL 48	48.0	16	0.6	0.6	23.95	**238**	17.52	**638**
16 EL 44	44.0	16	0.6	0.6	23.95	**240**	17.52	**640**
16 EL 40	40.0	16	0.6	0.6	23.95	**242**	17.52	**642**
16 EL 36	36.0	16	0.6	0.6	23.95	**244**	17.52	**644**
16 EL 32	32.0	16	0.6	0.6	23.95	**246**	17.52	**646**
16 EL 28	28.0	16	0.6	0.7	23.95	**248**	17.52	**648**
16 EL 27	27.0	16	0.7	0.8	23.95	**250**	17.52	**650**
16 EL 24	24.0	16	0.7	0.8	23.95	**252**	17.52	**652**
16 EL 20	20.0	16	0.8	0.9	23.95	**254**	17.52	**654**
16 EL 18	18.0	16	0.8	1.0	23.95	**256**	17.52	**656**
16 EL 16	16.0	16	0.9	1.1	23.95	**258**	17.52	**658**
16 EL 14	14.0	16	1.0	1.2	23.95	**260**	17.52	**660**
16 EL 13	13.0	16	1.0	1.3	23.95	**262**	17.52	**662**
16 EL 12	12.0	16	1.1	1.4	23.95	**264**	17.52	**664**
16 EL 11,5	11.5	16	1.1	1.5	23.95	**266**	17.52	**666**
16 EL 11	11.0	16	1.1	1.5	23.95	**268**	17.52	**668**
16 EL 10	10.0	16	1.1	1.5	23.95	**270**	17.52	**670**
16 EL 9	9.0	16	1.2	1.7	23.95	**272**	17.52	**672**
16 EL 8	8.0	16	1.2	1.6	23.95	**274**	17.52	**674**
22 EL 7	7.0	22	1.6	2.3	33.08	**276**	28.79	**676**
22 EL 6	6.0	22	1.6	2.3	33.08	**278**	28.79	**678**
22 EL 5	5.0	22	1.7	2.5	33.08	**280**	28.79	**680**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

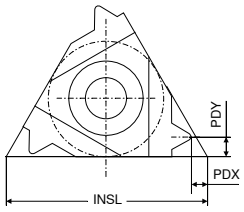
→ v_c Page 42

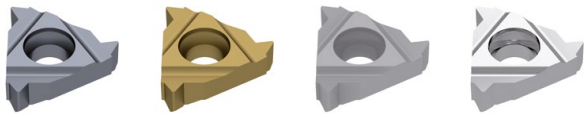
Right hand internal thread turning insert

▲ Full profile

UN | UNC | UNF | UNEF | 60°

CCN20 | CWN1525 | HCN2525 | CWK20





Designation	TPI	INSL	PDX	PDY	IR X3 Article no. 71 268 ...		IR X3 Article no. 71 268 ...		IR X3 Article no. 71 268 ...		IR Y1 Article no. 71 268 ...	
	1/"	mm	mm	mm	£		£		£		£	
11 IR 72	72.0	11	0.8	0.3	23.95	202					17.52	602
11 IR 64	64.0	11	0.8	0.4	23.95	204					17.52	604
11 IR 56	56.0	11	0.7	0.4	23.95	206					17.52	606
11 IR 48	48.0	11	0.6	0.6	23.95	208					17.52	608
11 IR 44	44.0	11	0.6	0.6	23.95	210					17.52	610
11 IR 40	40.0	11	0.6	0.6	23.95	212					17.52	612
11 IR 36	36.0	11	0.6	0.6	23.95	214					17.52	614
11 IR 32	32.0	11	0.6	0.6	23.95	216					17.52	616
11 IR 28	28.0	11	0.6	0.7	23.95	218					17.52	618
11 IR 27	27.0	11	0.7	0.8	23.95	220					17.52	620
11 IR 24	24.0	11	0.7	0.8	23.95	222					17.52	622
11 IR 20	20.0	11	0.8	0.9	23.95	224					17.52	624
11 IR 18	18.0	11	0.8	1.0	23.95	226					17.52	626
11 IR 16	16.0	11	0.9	1.1	23.95	228					17.52	628
11 IR 14	14.0	11	1.0	1.1	23.95	230					17.52	630
16 IR 72	72.0	16	0.8	0.3	23.95	232					17.52	632
16 IR 64	64.0	16	0.8	0.4	23.95	234					17.52	634
16 IR 56	56.0	16	0.7	0.4	23.95	236					17.52	636
16 IR 48	48.0	16	0.6	0.6	23.95	238					17.52	638
16 IR 44	44.0	16	0.6	0.6	23.95	240					17.52	640
16 IR 40	40.0	16	0.6	0.6	23.95	242					17.52	642
16 IR 36	36.0	16	0.6	0.6	23.95	244					17.52	644
16 IR 32	32.0	16	0.6	0.6	23.95	246					17.52	646
16 IR 28	28.0	16	0.6	0.7	23.95	248					17.52	648
16 IR 27	27.0	16	0.7	0.8	23.95	250					17.52	650
16 IR 24	24.0	16	0.7	0.8	23.95	252					17.52	652
16 IR 20	20.0	16	0.8	0.9	23.95	254					17.52	654
16 IR 18	18.0	16	0.8	1.0	23.95	256					17.52	656
16 IR 16	16.0	16	0.9	1.1	23.95	258					17.52	658
16 IR 14	14.0	16	1.0	1.2	23.95	260			24.95	760	17.52	660
16 IR 13	13.0	16	1.0	1.3	23.95	262					17.52	662
16 IR 12	12.0	16	1.1	1.4	23.95	264	18.82	164	20.92	764	17.52	664
16 IR 11,5	11.5	16	1.1	1.5	23.95	266					17.52	666
16 IR 11	11.0	16	1.1	1.5	23.95	268					17.52	668
16 IR 10	10.0	16	1.1	1.5	23.95	270					17.52	670
16 IR 9	9.0	16	1.2	1.7	23.95	272					17.52	672
16 IR 8	8.0	16	1.2	1.6	23.95	274					17.52	674
16 IR 8	8.0	16	1.1	1.5					24.95	774		
22 IR 7	7.0	22	1.6	2.3	33.08	276			32.66	776	28.79	676
22 IR 6	6.0	22	1.6	2.3	33.08	278					28.79	678
22 IR 5	5.0	22	1.7	2.5	33.08	280					28.79	680
22 IN 4,5	4.5	22	2.0	11.0	33.08	282 [1]					28.79	682 [1]
22 IN 4	4.0	22	2.0	11.0	33.08	284 [1]					28.79	684 [1]

Steel	●	●	○	
Stainless steel	●	○	●	
Cast iron		●	○	●
Non ferrous metals	○	●	○	●
Heat resistant alloys			○	○

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

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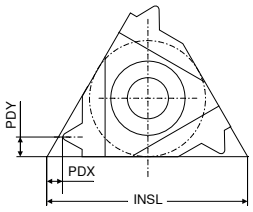
8

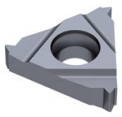
Left hand internal thread turning insert

▲ Full profile

UN | UNC | UNF | UNEF | 60°

CCN20 | CWK20





Designation	TPI	INSL	PDX	PDY	IL X3 Article no. 71 270 ...		IL Y1 Article no. 71 270 ...	
	1/"	mm	mm	mm	£		£	
11 IL 72	72.0	11	0.8	0.3	23.95	**202**	17.52	**602**
11 IL 64	64.0	11	0.8	0.4	23.95	**204**	17.52	**604**
11 IL 56	56.0	11	0.7	0.4	23.95	**206**	17.52	**606**
11 IL 48	48.0	11	0.6	0.6	23.95	**208**	17.52	**608**
11 IL 44	44.0	11	0.6	0.6	23.95	**210**	17.52	**610**
11 IL 40	40.0	11	0.6	0.6	23.95	**212**	17.52	**612**
11 IL 36	36.0	11	0.6	0.6	23.95	**214**	17.52	**614**
11 IL 32	32.0	11	0.6	0.6	23.95	**216**	17.52	**616**
11 IL 28	28.0	11	0.6	0.7	23.95	**218**	17.52	**618**
11 IL 27	27.0	11	0.7	0.8	23.95	**220**	17.52	**620**
11 IL 24	24.0	11	0.7	0.8	23.95	**222**	17.52	**622**
11 IL 20	20.0	11	0.8	0.9	23.95	**224**	17.52	**624**
11 IL 18	18.0	11	0.8	1.0	23.95	**226**	17.52	**626**
11 IL 16	16.0	11	0.9	1.1	23.95	**228**	17.52	**628**
11 IL 14	14.0	11	0.9	1.1	23.95	**230**	17.52	**630**
16 IL 72	72.0	16	0.8	0.3	33.22	**232**	17.52	**632**
16 IL 64	64.0	16	0.8	0.4	23.95	**234**	17.52	**634**
16 IL 56	56.0	16	0.7	0.4	23.95	**236**	17.52	**636**
16 IL 48	48.0	16	0.6	0.6	23.95	**238**	17.52	**638**
16 IL 44	44.0	16	0.6	0.6	23.95	**240**	17.52	**640**
16 IL 40	40.0	16	0.6	0.6	23.95	**242**	17.52	**642**
16 IL 36	36.0	16	0.6	0.6	23.95	**244**	17.52	**644**
16 IL 32	32.0	16	0.6	0.6	23.95	**246**	17.52	**646**
16 IL 28	28.0	16	0.6	0.7	23.95	**248**	17.52	**648**
16 IL 27	27.0	16	0.7	0.8	23.95	**250**	17.52	**650**
16 IL 24	24.0	16	0.7	0.8	23.95	**252**	17.52	**652**
16 IL 20	20.0	16	0.8	0.9	23.95	**254**	17.52	**654**
16 IL 18	18.0	16	0.8	1.0	23.95	**256**	17.52	**656**
16 IL 16	16.0	16	0.9	1.1	23.95	**258**	17.52	**658**
16 IL 14	14.0	16	1.0	1.2	23.95	**260**	17.52	**660**
16 IL 13	13.0	16	1.0	1.3	23.95	**262**	17.52	**662**
16 IL 12	12.0	16	1.1	1.4	23.95	**264**	17.52	**664**
16 IL 11,5	11.5	16	1.1	1.5	23.95	**266**	17.52	**666**
16 IL 11	11.0	16	1.1	1.5	23.95	**268**	17.52	**668**
16 IL 10	10.0	16	1.1	1.5	23.95	**270**	17.52	**670**
16 IL 9	9.0	16	1.2	1.7	23.95	**272**	17.52	**672**
16 IL 8	8.0	16	1.2	1.6	23.95	**274**	17.52	**674**
22 IL 7	7.0	22	1.6	2.3	33.08	**276**	28.79	**676**
22 IL 6	6.0	22	1.6	2.3	33.08	**278**	28.79	**678**
22 IL 5	5.0	22	1.7	2.5	33.08	**280**	28.79	**680**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

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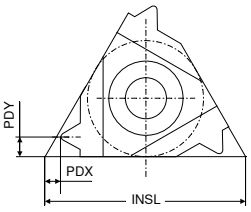
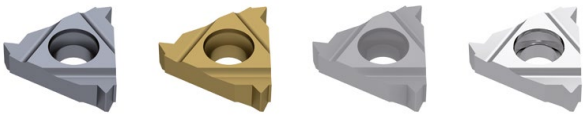
Right hand external thread turning insert

▲ Full profile

NPT 60°



CCN20 | CWN1525 | HCN2525 | CWK20



Designation	TPI	INSL	PDX	PDY	ER X3 Article no. 71 256 ... £		ER X3 Article no. 71 256 ... £		ER X3 Article no. 71 256 ... £		ER Y1 Article no. 71 256 ... £	
	1/"	mm	mm	mm								
16 ER 27	27.0	16	0.7	0.8	26.43	**240**					21.17	**640**
16 ER 18	18.0	16	0.8	1.0	26.43	**242**			24.66	**742**	21.17	**642**
16 ER 14	14.0	16	0.9	1.2	26.43	**244**	20.67	**144**	22.68	**744**	21.17	**644**
16 ER 11,5	11.5	16	1.1	1.5	26.43	**246**	22.51	**146**	24.66	**746**	21.17	**646**
16 ER 8	8.0	16	1.3	1.8	26.43	**248**					21.17	**648**

Steel	●	●	○	
Stainless steel	●	○	●	
Cast iron		●	○	●
Non ferrous metals	○	●	○	●
Heat resistant alloys			○	○

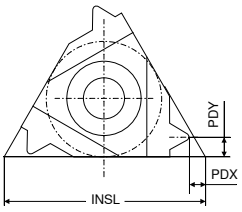
→ v_c Page 42

8

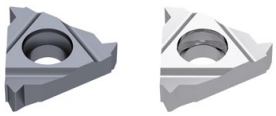
Left hand external thread turning insert

▲ Full profile

NPT 60°



CCN20 | CWK20



Designation	TPI	INSL	PDX	PDY	EL X3 Article no. 71 258 ... £		EL Y1 Article no. 71 258 ... £	
	1/"	mm	mm	mm				
16 EL 27	27.0	16	0.7	0.8	26.43	**240**	21.17	**640**
16 EL 18	18.0	16	0.8	1.0	26.43	**242**	21.17	**642**
16 EL 14	14.0	16	0.9	1.2	26.43	**244**	21.17	**644**
16 EL 11,5	11.5	16	1.1	1.5	26.43	**246**	21.17	**646**
16 EL 8	8.0	16	1.3	1.8	26.43	**248**	21.17	**648**

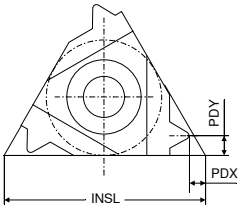
Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

→ v_c Page 42

Right hand internal thread turning insert

▲ Full profile
▲ CCN7525 grade with sintered chip breaker for universal application

NPT 60°



CCN20 | HCN2525 | CWK20 | CCN7525

Designation	TPI	INSL	PDX	PDY	IR X3 Article no. 71 260 ...		IR X3 Article no. 71 260 ...		IR Y1 Article no. 71 260 ...		IR X3 Article no. 71 260 ...	
	1/"	mm	mm	mm	£		£		£		£	
11 IR 27	27.0	11	0.7	0.8	26.43	**210**			21.17	**610**		
11 IR 18	18.0	11	0.8	1.0	26.43	**212**			21.17	**612**		
11 IR 14	14.0	11	0.9	1.1	26.43	**214**			21.17	**614**		
16 IR 27	27.0	16	0.7	0.8	26.43	**240**			21.17	**640**		
16 IR 18	18.0	16	0.8	1.0	26.43	**242**			21.17	**642**		
16 IR 14	14.0	16	0.9	1.2	26.43	**244**	26.08	**744**	21.17	**644**	26.08	**944**
16 IR 11,5	11.5	16	1.1	1.5	26.43	**246**			21.17	**646**	29.22	**946**
16 IR 8	8.0	16	1.3	1.8	26.43	**248**			21.17	**648**		

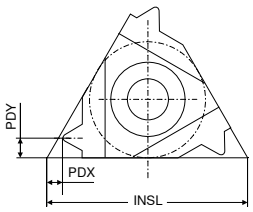
Steel	●	○		●
Stainless steel	●	●		●
Cast iron		○	●	●
Non ferrous metals	○	○	●	○
Heat resistant alloys		○	○	●

→ v_c Page 42

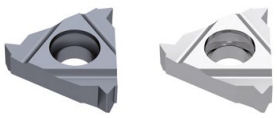
Left hand internal thread turning insert

▲ Full profile

NPT 60°



CCN20 | CWK20



Designation	TPI	INSL	PDX	PDY	IL X3 Article no. 71 262 ...		IL Y1 Article no. 71 262 ...	
	1/"	mm	mm	mm	£		£	
11 IL 27	27.0	11	0.7	0.8	26.43	**210**	21.17	**610**
11 IL 18	18.0	11	0.8	1.0	26.43	**212**	21.17	**612**
11 IL 14	14.0	11	0.9	1.1	26.43	**214**	21.17	**614**
16 IL 27	27.0	16	0.7	0.8	26.43	**240**	21.17	**640**
16 IL 18	18.0	16	0.8	1.0	26.43	**242**	21.17	**642**
16 IL 14	14.0	16	0.9	1.2	26.43	**244**	21.17	**644**
16 IL 11,5	11.5	16	1.1	1.5	26.43	**246**	21.17	**646**
16 IL 8	8.0	16	1.3	1.8	26.43	**248**	21.17	**648**

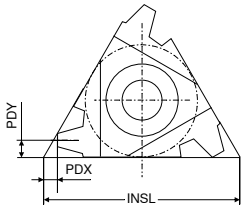
Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

→ v_c Page 42

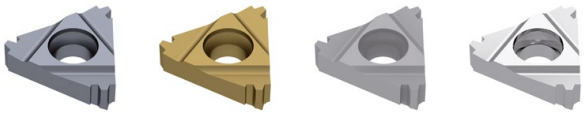
Right hand external thread turning insert

▲ Full profile
▲ Trapezoidal thread DIN 103

Tr | 30°



CCN20 | CWN1525 | HCN2525 | CWK20



Designation	TP mm	INSL mm	PDX mm	PDY mm	ER X3 Article no. 71 232 ...	£	ER X3 Article no. 71 232 ...	£	ER X3 Article no. 71 232 ...	£	ER Y1 Article no. 71 232 ...	£
16 ER 1,5	1.5	16	1.0	1.1	26.43	**240**					21.17	**640**
16 ER 2,0	2.0	16	1.1	1.3	26.43	**242**					21.17	**642**
16 ER 2,0	2.0	16	1.0	1.3			22.25	**142**	24.95	**742**		
16 ER 3,0	3.0	16	1.3	1.5	26.43	**244**	21.78	**144**			21.17	**644**
22 ER 4,0	4.0	22	1.7	1.9	37.78	**270**					33.27	**670**
22 ER 4,0	4.0	22	1.8	1.9			30.51	**170**	34.58	**770**		
22 ER 5,0	5.0	22	2.0	2.4			33.86	**172**				
22 ER 5,0	5.0	22	2.1	2.5	37.78	**272**					33.27	**672**
22 ER 6,0	6.0	22	2.3	2.7	37.78	**274**					33.27	**674**
22 EN 6,0	6.0	22	2.0	11.0	37.78	**276** [1]					33.27	**676** [1]
22 EN 7,0	7.0	22	2.3	11.0	37.78	**278** [1]					33.27	**678** [1]

Steel	●	●	○	
Stainless steel	●	○	●	
Cast iron		●	○	●
Non ferrous metals	○	●	○	●
Heat resistant alloys			○	○

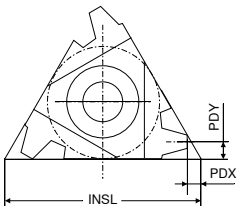
1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

→ v_c Page 42

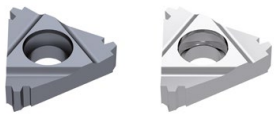
Left hand external thread turning insert

▲ Full profile
▲ Trapezoidal thread DIN 103

Tr | 30°



CCN20 | CWK20



Designation	TP mm	INSL mm	PDX mm	PDY mm	EL X3 Article no. 71 234 ...	£	EL Y1 Article no. 71 234 ...	£
16 EL 1,5	1.5	16	1.0	1.1	26.43	**240**	21.17	**640**
16 EL 2,0	2.0	16	1.1	1.3	26.43	**242**	21.17	**642**
16 EL 3,0	3.0	16	1.3	1.5	26.43	**244**	21.17	**644**
22 EL 4,0	4.0	22	1.7	1.9	37.78	**270**	33.27	**670**
22 EL 5,0	5.0	22	2.1	2.5	37.78	**272**	33.27	**672**
22 EL 6,0	6.0	22	2.3	2.7	37.78	**274**	33.27	**674**

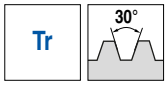
Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

→ v_c Page 42

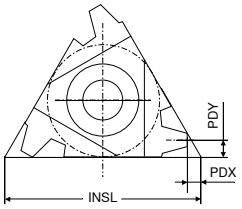
8

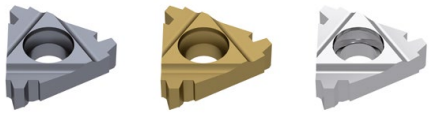
Right hand internal thread turning insert

▲ Full profile
▲ Trapezoidal thread DIN 103



CCN20 | CWN1525 | CWK20





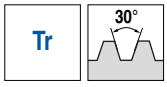
Designation	TP mm	INSL mm	PDX mm	PDY mm	IR X3 Article no. 71 236 ...	£	IR X3 Article no. 71 236 ...	£	IR Y1 Article no. 71 236 ...	£
11 IR 1,5	1.5	11	0.8	0.9	26.43	**210**			21.17	**610**
16 IR 1,5	1.5	16	1.0	1.1	26.43	**240**			21.17	**640**
16 IR 2,0	2.0	16	1.1	1.3	26.43	**242**			21.17	**642**
16 IR 3,0	3.0	16	1.3	1.5	26.43	**244**	24.70	**144**	21.17	**644**
22 IR 4,0	4.0	22	1.8	1.9			34.51	**170**		
22 IR 4,0	4.0	22	1.7	1.9	37.78	**270**			33.27	**670**
22 IR 5,0	5.0	22	2.0	2.4			36.46	**172**		
22 IR 5,0	5.0	22	2.1	2.5	37.78	**272**			33.27	**672**
22 IR 6,0	6.0	22	2.3	2.7	37.78	**274**			33.27	**674**
22 IN 6,0	6.0	22	2.0	11.0	37.78	**276** 1)			33.27	**676** 1)
22 IN 7,0	7.0	22	2.3	11.0	37.78	**278** 1)			33.27	**678** 1)
Steel					●		●			
Stainless steel					●		○			
Cast iron							●		●	
Non ferrous metals					○		●		●	
Heat resistant alloys									○	

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

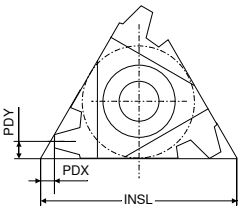
→ v_c Page 42

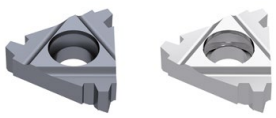
Left hand internal thread turning insert

▲ Full profile
▲ Trapezoidal thread DIN 103



CCN20 | CWK20



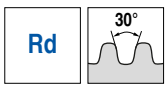


Designation	TP mm	INSL mm	PDX mm	PDY mm	IL X3 Article no. 71 238 ...	£	IL Y1 Article no. 71 238 ...	£
11 IL 1,5	1.5	11	0.8	0.9	26.43	**210**	21.17	**610**
16 IL 1,5	1.5	16	1.0	1.1	26.43	**240**	21.17	**640**
16 IL 2,0	2.0	16	1.1	1.3	26.43	**242**	21.17	**642**
16 IL 3,0	3.0	16	1.3	1.5	26.43	**244**	21.17	**644**
22 IL 4,0	4.0	22	1.7	1.9	37.78	**270**	33.27	**670**
22 IL 5,0	5.0	22	2.1	2.5	37.78	**272**	33.27	**672**
22 IL 6,0	6.0	22	2.3	2.7	37.78	**274**	33.27	**674**
Steel					●			
Stainless steel					●			
Cast iron							●	
Non ferrous metals					○		●	
Heat resistant alloys							○	

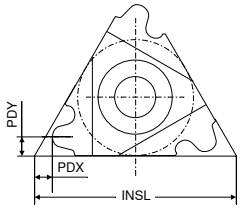
→ v_c Page 42

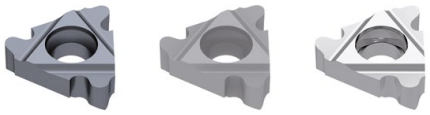
Right hand external thread turning insert

▲ Full profile
▲ Round thread DIN 405



CCN20 | HCN2525 | CWK20





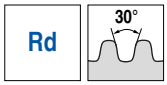
Designation	TPI	INSL	PDX	PDY	ER X3 Article no. 71 248 ...		ER X3 Article no. 71 248 ...		ER Y1 Article no. 71 248 ...	
	1/"	mm	mm	mm	£		£		£	
16 ER 10	10	16	1.1	1.2	26.43	**240**			21.17	**640**
16 ER 8	8	16	1.4	1.3	26.43	**242**			21.17	**642**
16 ER 6	6	16	1.5	1.7	26.43	**246**	27.18	**746**	21.17	**646**
22 ER 6	6	22	1.5	1.7	37.78	**270**			34.35	**670**
22 ER 4	4	22	2.2	2.3	37.78	**272**			34.35	**672**

Steel	●	○	
Stainless steel	●	●	
Cast iron		○	●
Non ferrous metals	○	○	●
Heat resistant alloys		○	○

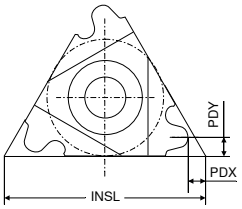
→ v_c Page 42

Left hand external thread turning insert

▲ Full profile
▲ Round thread DIN 405



CCN20 | CWK20



Designation	TPI	INSL	PDX	PDY	EL X3 Article no. 71 250 ...		EL Y1 Article no. 71 250 ...	
	1/"	mm	mm	mm	£		£	
16 EL 10	10	16	1.1	1.2	26.43	**240**	21.17	**640**
16 EL 8	8	16	1.4	1.3	26.43	**242**	21.17	**642**
16 EL 6	6	16	1.5	1.7	26.43	**246**	21.17	**646**
22 EL 6	6	22	1.5	1.7	37.78	**270**	34.35	**670**
22 EL 4	4	22	2.2	2.3	37.78	**272**	34.35	**672**

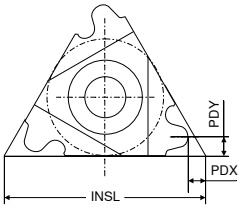
Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

→ v_c Page 42

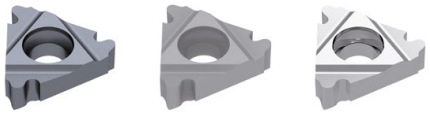
Right hand internal thread turning insert

▲ Full profile
▲ Round thread DIN 405

Rd | 30°



CCN20 | HCN2525 | CWK20



Designation	TPI	INSL	PDX	PDY	IR X3 Article no. 71 252 ...		IR X3 Article no. 71 252 ...		IR Y1 Article no. 71 252 ...	
	1/"	mm	mm	mm	£		£		£	
16 IR 10	10	16	1.1	1.2	26.43	**240**			21.17	**640**
16 IR 8	8	16	1.4	1.4	26.43	**242**			21.17	**642**
16 IR 6	6	16	1.4	1.5	26.43	**246**	29.35	**746**	21.17	**646**
22 IR 6	6	22	1.5	1.7	37.78	**270**			34.35	**670**
22 IR 4	4	22	2.2	2.3	37.78	**272**			34.35	**672**

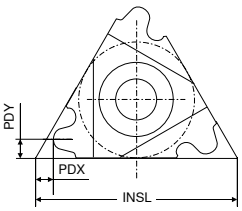
Steel	●	○	
Stainless steel	●	●	
Cast iron		○	●
Non ferrous metals	○	○	●
Heat resistant alloys		○	○

→ v_c Page 42

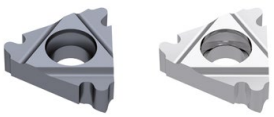
Left hand internal thread turning insert

▲ Full profile
▲ Round thread DIN 405

Rd | 30°



CCN20 | CWK20



Designation	TPI	INSL	PDX	PDY	IL X3 Article no. 71 254 ...		IL Y1 Article no. 71 254 ...	
	1/"	mm	mm	mm	£		£	
16 IL 10	10	16	1.1	1.2	26.43	**240**	21.17	**640**
16 IL 8	8	16	1.4	1.4	26.43	**242**	21.17	**642**
16 IL 6	6	16	1.4	1.5	26.43	**246**	21.17	**646**
22 IL 6	6	22	1.5	1.7	37.78	**270**	34.35	**670**
22 IL 4	4	22	2.2	2.3	37.78	**272**	34.35	**672**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

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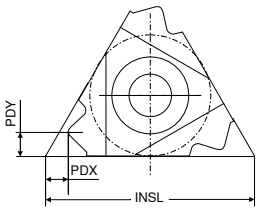
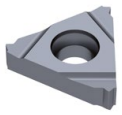
Right hand external thread turning insert

▲ Full profile
▲ Conduit thread DIN 40430

Pg | 80°



CCN20 | CWK20



Designation	TPI	INSL	PDX	PDY	ER X3 Article no. 71 240 ...		ER Y1 Article no. 71 240 ...	
	1/"	mm	mm	mm	£		£	
16 ER 20	20	16	0.8	0.8	26.43	**240**	21.17	**640**
16 ER 18	18	16	0.8	0.9	26.43	**242**	21.17	**642**
16 ER 16	16	16	0.8	1.0	26.43	**244**	21.17	**644**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

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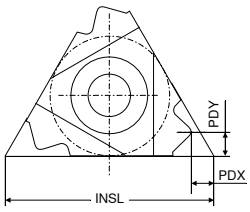
8

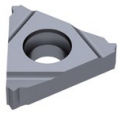
Left hand external thread turning insert

▲ Full profile
▲ Conduit thread DIN 40430

Pg | 80°



CCN20 | CWK20



Designation	TPI	INSL	PDX	PDY	EL X3 Article no. 71 242 ...		EL Y1 Article no. 71 242 ...	
	1/"	mm	mm	mm	£		£	
16 EL 20	20	16	0.8	0.8	26.43	**240**	21.17	**640**
16 EL 18	18	16	0.8	0.9	26.43	**242**	21.17	**642**
16 EL 16	16	16	0.8	1.0	26.43	**244**	21.17	**644**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

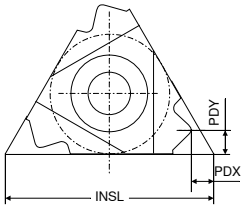
→ v_c Page 42

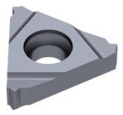
Right hand internal thread turning insert

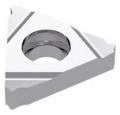
▲ Full profile
▲ Conduit thread DIN 40430

Pg | 80°

CCN20 | CWK20







Designation	TPI	INSL	PDX	PDY	IR X3 Article no. 71 244 ...	£	IR Y1 Article no. 71 244 ...	£
	1/"	mm	mm	mm				
11 IR 18	18	11	0.8	0.9	26.43	**238**	21.17	**638**
16 IR 18	18	16	0.8	0.9	26.43	**242**	21.17	**642**
16 IR 16	16	16	0.8	1.0	26.43	**244**	21.17	**644**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

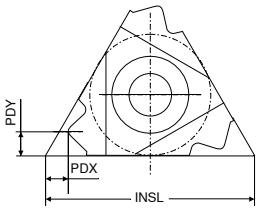
→ v_c Page 42

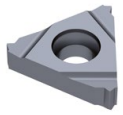
Left hand internal thread turning insert

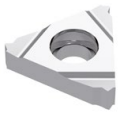
▲ Full profile
▲ Conduit thread DIN 40430

Pg | 80°

CCN20 | CWK20







Designation	TPI	INSL	PDX	PDY	IL X3 Article no. 71 246 ...	£	IL Y1 Article no. 71 246 ...	£
	1/"	mm	mm	mm				
11 IL 18	18	11	0.8	0.9	26.43	**238**	21.17	**638**
16 IL 18	18	16	0.8	0.9	26.43	**242**	21.17	**642**
16 IL 16	16	16	0.8	1.0	26.43	**244**	21.17	**644**

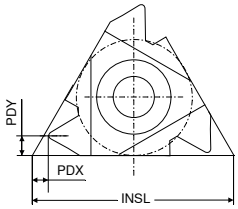
Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

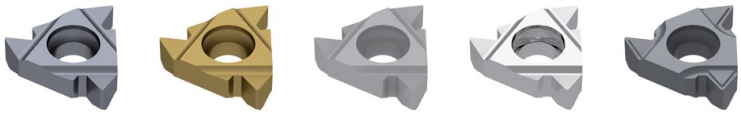
→ v_c Page 42

Right hand external thread turning insert

▲ Partial profile
▲ CCN7525 grade with sintered chip breaker for universal application

CCN20 | CWN1525 | HCN2525 | CWK20 | CCN7525





Designation	TP	INSL	PDX	PDY	ER X3 Article no. 71 206 ... £		ER X3 Article no. 71 206 ... £		ER X3 Article no. 71 206 ... £		ER Y1 Article no. 71 206 ... £		ER X3 Article no. 71 206 ... £	
	mm	mm	mm	mm										
16 ER A60	0,5 - 1,5	16	0.8	0.9	23.95	**240**	16.39	**140**	17.80	**740**	17.52	**640**	17.80	**940**
16 ER G60	1,75 - 3	16	1.2	1.7	23.95	**242**	17.54	**142**	19.47	**742**	17.52	**642**	19.47	**942**
16 ER AG60	0,5 - 3	16	1.2	1.7	23.95	**244**	15.99	**144**	17.25	**744**	17.52	**644**	17.25	**944**
22 ER N60	3,5 - 5	22	1.7	2.5	33.08	**270**	29.78	**170**			28.79	**670**		
22 EN U60	5,5 - 8	22	0.9	11.0	33.08	**272** [1]					28.79	**672** [1]		

Steel	●	●	○		●
Stainless steel	●	○	●		●
Cast iron		●	○	●	●
Non ferrous metals	○	●	○	●	○
Heat resistant alloys			○	○	●

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

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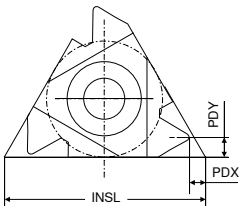
Left hand external thread turning insert

▲ Partial profile

CCN20 | CWK20



Designation	TP	INSL	PDX	PDY	EL X3 Article no. 71 208 ... £		EL Y1 Article no. 71 208 ... £	
	mm	mm	mm	mm				
16 EL A60	0,5 - 1,5	16	0.8	0.9	23.95	**240**	17.52	**640**
16 EL G60	1,75 - 3	16	1.2	1.7	23.95	**242**	17.52	**642**
16 EL AG60	0,5 - 3	16	1.2	1.7	23.95	**244**	17.52	**644**
22 EL N60	3,5 - 5	22	1.7	2.5	33.08	**270**	28.79	**670**

Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

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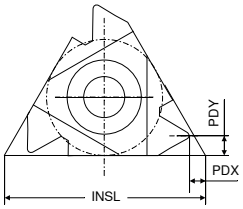
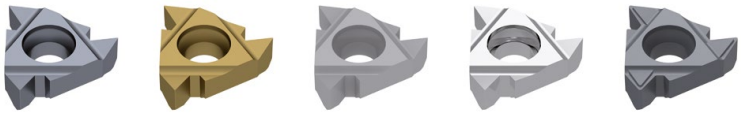
8

Right hand internal thread turning insert

▲ Partial profile
▲ CCN7525 grade with sintered chip breaker for universal application

CCN20 | CWN1525 | HCN2525 | CWK20 | CCN7525





Designation	TP	INSL	PDX	PDY	IR X3 Article no. 71 210 ... £		IR X3 Article no. 71 210 ... £		IR X3 Article no. 71 210 ... £		IR Y1 Article no. 71 210 ... £		IR X3 Article no. 71 210 ... £	
	mm	mm	mm	mm										
11 IR A60	0,5 - 1,5	11	0.8	0.9	23.95	**210**	16.54	**110**			17.52	**610**		
16 IR A60	0,5 - 1,5	16	0.8	0.9	23.95	**240**	21.67	**140**			17.52	**640**		
16 IR G60	1,75 - 3	16	1.2	1.7	23.95	**242**	17.54	**142**			17.52	**642**		
16 IR AG60	0,5 - 3	16	1.2	1.7	23.95	**244**	16.99	**144**	18.25	**744**	17.52	**644**	18.25	**944**
22 IR N60	3,5 - 5	22	1.7	2.5	33.08	**270**	28.61	**170**			28.79	**670**		
22 IN U60	5,5 - 8	22	0.9	11.0	33.08	**272** [1]					28.79	**672** [1]		
Steel					●		●		○					●
Stainless steel					●		○		●					●
Cast iron							●		○		●			●
Non ferrous metals					○		●		○		●			○
Heat resistant alloys									○		○			●

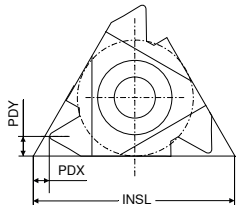
1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

→ v_c Page 42

Left hand internal thread turning insert

▲ Partial profile

CCN20 | CWK20



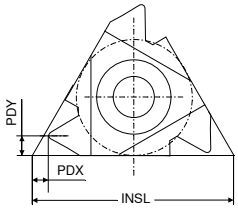
Designation	TP	INSL	PDX	PDY	IL X3 Article no. 71 212 ... £		IL Y1 Article no. 71 212 ... £	
	mm	mm	mm	mm				
11 IL A60	0,5 - 1,5	11	0.8	0.9	23.95	**210**	17.52	**610**
16 IL A60	0,5 - 1,5	16	0.8	0.9	23.95	**240**	17.52	**640**
16 IL G60	1,75 - 3	16	1.2	1.7	23.95	**242**	17.52	**642**
16 IL AG60	0,5 - 3	16	1.2	1.7	23.95	**244**	17.52	**644**
22 IL N60	3,5 - 5	22	1.7	2.5	33.08	**270**	27.54	**670**
Steel					●			
Stainless steel					●			
Cast iron							●	
Non ferrous metals					○		●	
Heat resistant alloys							○	

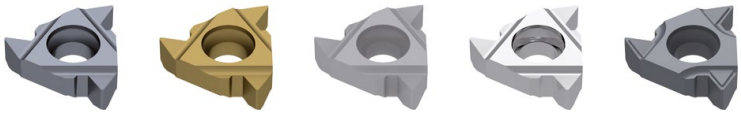
→ v_c Page 42

Right hand external thread turning insert

▲ Partial profile
▲ CCN7525 grade with sintered chip breaker for universal application

CCN20 | CWN1525 | HCN2525 | CWK20 | CCN7525





Designation	TPI	INSL	PDX	PDY	ER X3 Article no. 71 200 ... £		ER X3 Article no. 71 200 ... £		ER X3 Article no. 71 200 ... £		ER Y1 Article no. 71 200 ... £		ER X3 Article no. 71 200 ... £	
	1/"	mm	mm	mm										
16 ER A55	48 - 16	16	0.8	0.9	23.95	**240**	19.39	**140**	20.67	**740**	17.52	**640**	20.67	**940**
16 ER AG55	48 - 8	16	1.2	1.7	23.95	**244**	17.54	**144**	19.47	**744**	17.52	**644**	19.47	**944**
16 ER G55	14 - 8	16	1.2	1.7	23.95	**242**	19.39	**142**	21.36	**742**	17.52	**642**	21.36	**942**
22 ER N55	7 - 5	22	1.7	2.5	33.08	**270**	34.51	**170**	37.36	**770**	28.79	**670**		
22 EN U55	4,5 - 3,25	22	0.9	11.0	33.08	**272** 1)					28.79	**672** 1)		

Steel	●	●	○		●
Stainless steel	●	○	●		●
Cast iron		●	○	●	●
Non ferrous metals	○	●	○	●	○
Heat resistant alloys			○	○	●

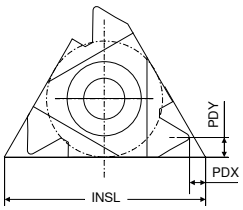
1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

→ v_c Page 42

Left hand external thread turning insert

▲ Partial profile

CCN20 | CWK20



Designation	TPI	INSL	PDX	PDY	EL X3 Article no. 71 202 ... £		EL Y1 Article no. 71 202 ... £	
	1/"	mm	mm	mm				
16 EL A55	48 - 16	16	0.8	0.9	23.95	**240**	17.52	**640**
16 EL AG55	48 - 8	16	1.2	1.7	23.95	**244**	17.52	**644**
16 EL G55	14 - 8	16	1.2	1.7	23.95	**242**	17.52	**642**
22 EL N55	7 - 5	22	1.7	2.5	33.08	**270**	28.79	**670**

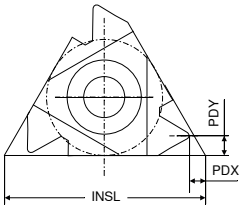
Steel	●	
Stainless steel	●	
Cast iron		●
Non ferrous metals	○	●
Heat resistant alloys		○

→ v_c Page 42

Right hand internal thread turning insert

▲ Partial profile
▲ CCN7525 grade with sintered chip breaker for universal application

CCN20 | CWN1525 | CWK20 | CCN7525



Designation	TPI	INSL	PDX	PDY	IR X3 Article no. 71 204 ...		IR X3 Article no. 71 204 ...		IR Y1 Article no. 71 204 ...		IR X3 Article no. 71 204 ...	
	1/"	mm	mm	mm	£		£		£		£	
11 IR A55	48 - 16	11	0.8	0.9	23.95	**210**			17.52	**610**		
16 IR A55	48 - 16	16	0.8	0.9	23.95	**240**			17.52	**640**		
16 IR AG55	48 - 8	16	1.2	1.7	23.95	**244**			17.52	**644**		
16 IR G55	14 - 8	16	1.2	1.7	23.95	**242**	19.39	**142**	17.52	**642**	21.36	**942**
22 IR N55	7 - 5	22	1.7	2.5	33.08	**270**			28.79	**670**		
22 IN U55	4,5 - 3,25	22	0.9	11.0	33.08	**272** 1)			28.79	**672** 1)		
Steel					●		●					●
Stainless steel					●		○					●
Cast iron							●		●			●
Non ferrous metals					○		●		●			○
Heat resistant alloys									○			●

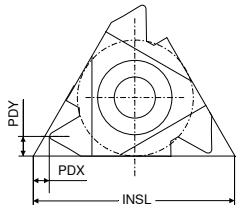
1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

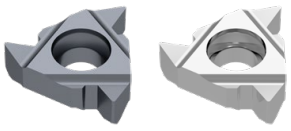
→ v_c Page 42

Left hand internal thread turning insert

▲ Partial profile

CCN20 | CWK20



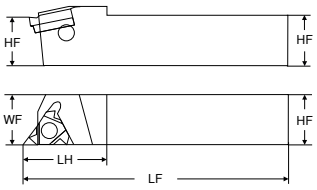


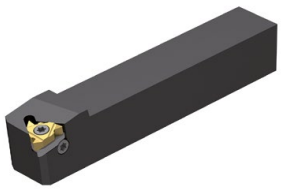
Designation	TPI	INSL	PDX	PDY	IL X3 Article no. 71 203 ...		IL Y1 Article no. 71 203 ...	
	1/"	mm	mm	mm	£		£	
11 IL A55	48 - 16	11	0.8	0.9	22.14	**210**	17.52	**610**
16 IL A55	48 - 16	16	0.8	0.9	22.14	**240**	17.52	**640**
16 IL AG55	48 - 8	16	1.2	1.7	22.14	**244**	17.52	**644**
16 IL G55	14 - 8	16	1.2	1.7	22.14	**242**	17.52	**642**
22 IL N55	7 - 5	22	1.7	2.5	31.14	**270**	28.79	**670**
Steel						●		
Stainless steel						●		
Cast iron								●
Non ferrous metals						○		●
Heat resistant alloys								○

→ v_c Page 42

Standard External Thread Turning Holder

▲ Tool Holder with Approach Angle ß = 1,5°





Illustrations show right-hand versions

Designation	HF mm	WF mm	LF mm	LH mm	Insert	Left-hand Y2 Article no. 71 281 ... £		Right-hand Y2 Article no. 71 280 ... £	
SE R/L 08 08 H11	8	11	100	16	11 ..	106.74	908 [2]	106.74	908 [2]
SE R/L 10 10 H11	10	12	100	18	11 ..	106.74	910 [2]	106.74	910 [2]
SE R/L 12 12 K11	12	12	125	20	11 ..	106.74	912 [2]	106.74	912 [2]
SE R/L 12 12 F16	12	16	80	22	16 ..	106.74	012	106.74	012
SE R/L 16 16 H16	16	16	100	25	16 ..	131.39	016	131.39	016
SE R/L 20 20 K16	20	20	125	30	16 ..	131.39	020	131.39	020
SE R/L 25 25 M16	25	25	150	30	16 ..	149.95	025	149.95	025
SE R/L 32 32 P16	32	32	170	30	16 ..	164.80	032	164.80	032
SE R/L 25 25 M22	25	25	150	32	22 ..	164.80	125	164.80	125
SE R 32 32 P22	32	32	170	34	22 ..			172.22	132
SE R 32 32 P22U	32	21	170	32	22 .N			172.22	232 [1]

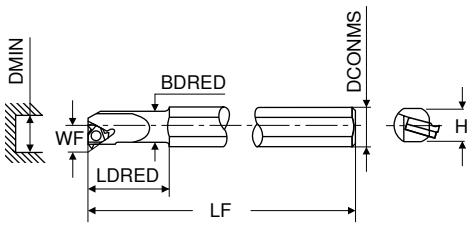
1) Neutral insert indicated by marking (N)
2) without shim

Spare parts for Article no.		Y2 Multi tooth shim Article no. 71 950 ... £			Y2 Shim Article no. 71 950 ... £		Y2 Screw-U Article no. 71 950 ... £			Y7 Key D Article no. 80 950 ... £		Y2 Clamping screw Article no. 71 950 ... £	
71 280 908 / 71 281 908									T08	10.30	110	2.03	230
71 280 910 / 71 281 910									T08	10.30	110	2.03	230
71 280 912 / 71 281 912									T08	10.30	110	2.03	230
71 280 012	ER 16 / IL 16	17.17	101	ER 16 / IL 16	13.96	121	1.97	234	T10	12.05	112	1.45	231
71 281 012	EL 16 / IR 16	17.17	108	EL 16 / IR 16	13.96	129	1.97	234	T10	12.05	112	1.45	231
71 280 016	ER 16 / IL 16	17.17	101	ER 16 / IL 16	13.96	121	1.97	234	T10	12.05	112	1.45	231
71 281 016	EL 16 / IR 16	17.17	108	EL 16 / IR 16	13.96	129	1.97	234	T10	12.05	112	1.45	231
71 280 020	ER 16 / IL 16	17.17	101	ER 16 / IL 16	13.96	121	1.97	234	T10	12.05	112	1.45	231
71 281 020	EL 16 / IR 16	17.17	108	EL 16 / IR 16	13.96	129	1.97	234	T10	12.05	112	1.45	231
71 280 025	ER 16 / IL 16	17.17	101	ER 16 / IL 16	13.96	121	1.97	234	T10	12.05	112	1.45	231
71 281 025	EL 16 / IR 16	17.17	108	EL 16 / IR 16	13.96	129	1.97	234	T10	12.05	112	1.45	231
71 280 032	ER 16 / IL 16	17.17	101	ER 16 / IL 16	13.96	121	1.97	234	T10	12.05	112	1.45	231
71 281 032	EL 16 / IR 16	17.17	108	EL 16 / IR 16	13.96	129	1.97	234	T10	12.05	112	1.45	231
71 280 125	ER 22 / IL 22	23.66	110	ER 22 / IL 22	22.25	137	2.44	235	T20	13.11	114	2.44	232
71 281 125	EL 22 / IR 22	23.66	115	EL 22 / IR 22	22.25	145	2.44	235	T20	13.11	114	2.44	232
71 280 132				ER 22 / IL 22	22.25	137	2.44	235	T20	13.11	114	2.44	232
71 280 232				ER 22U / IL 22U	22.25	153	2.44	235	T20	13.11	114	2.44	232

Shims for correction of helix angle see page → **Page 39.**

Standard Internal Thread Turning Holder

▲ Tool Holder with Approach Angle ß = 1,5°



Illustrations show right-hand versions

Designation	H	LF	LDRED	DCONMS	BDRED	WF	DMIN	Insert	Left-hand Y2 Article no. 71 283 ... £		Right-hand Y2 Article no. 71 282 ... £	
	mm	mm	mm	mm	mm	mm	mm					
SI R 0010 H11	9.0	100	25	10	9.5	7.4	12	11 ..			149.95	**011** [1]
SI R/L 0010 K11	14.0	125	25	16	10.0	7.4	12	11 ..	115.05	**010** [1]	115.05	**010** [1]
SI R 0013 L11	14.0	140	32	16	12.0	8.9	15	11 ..			123.23	**013** [1]
SI R/L 0013 M16	14.0	150	32	16	13.0	10.2	16	16 ..	125.30	**015** [1]	125.30	**015** [1]
SI R/L 0016 P16	18.0	170	40	20	15.0	11.7	19	16 ..	125.30	**016** [1]	125.30	**016** [1]
SI R/L 0020 P16	18.0	170	40	20	19.5	13.7	24	16 ..	147.72	**020**	147.72	**020**
SI R 0025 R16	22.6	200	40	25	24.5	16.2	29	16 ..			179.64	**026**
SI R/L 0032 S16	28.8	250	50	32	31.5	19.7	36	16 ..	193.00	**032**	193.00	**032**
SI R 0040 T16	36.0	300	50	40	39.5	23.7	44	16 ..			286.53	**040**
SI R 0020 P22	18.0	170	40	20	19.5	15.6	24	22 ..			139.71	**120** [1]
SI R/L 0025 R22	22.6	200	40	25	24.5	18.1	29	22 ..	161.82	**126**	179.64	**126**
SI R 0032 S22	28.8	250	50	32	31.5	21.6	38	22 ..			198.93	**132**
SI R 0040 T22	36.0	300	60	40	39.5	25.6	46	22 ..			293.95	**140**
SI R 0032 S22U	28.8	250	60	32	31.5	24.4	38	22 .N			175.79	**133** [2]

1) without shim
2) Neutral insert indicated by marking (N)

Multi tooth shim

Shim

Screw-U

Key D

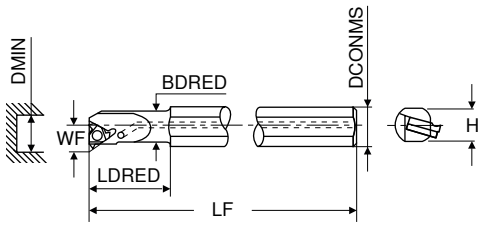
Clamping screw

Spare parts for Article no.		Y2 Article no. 71 950 ... £			Y2 Article no. 71 950 ... £		Y2 Article no. 71 950 ... £			Y7 Article no. 80 950 ... £		Y2 Article no. 71 950 ... £	
71 282 011									T08	10.30	**110**	2.03	**230**
71 282 010 / 71 283 010									T08	10.30	**110**	2.03	**230**
71 282 013									T08	10.30	**110**	2.03	**230**
71 282 015 / 71 283 015									T10	12.05	**112**	2.24	**236**
71 282 016 / 71 283 016									T10	12.05	**112**	2.24	**236**
71 282 020	EL 16 / IR 16	17.17	**108**	EL 16 / IR 16	13.96	**129**	1.97	**234**	T10	12.05	**112**	1.45	**231**
71 283 020	ER 16 / IL 16	17.17	**101**	ER 16 / IL 16	13.96	**121**	1.97	**234**	T10	12.05	**112**	1.45	**231**
71 282 026	EL 16 / IR 16	17.17	**108**	EL 16 / IR 16	13.96	**129**	1.97	**234**	T10	12.05	**112**	1.45	**231**
71 282 032	EL 16 / IR 16	17.17	**108**	EL 16 / IR 16	13.96	**129**	1.97	**234**	T10	12.05	**112**	1.45	**231**
71 283 032	ER 16 / IL 16	17.17	**101**	ER 16 / IL 16	13.96	**121**	1.97	**234**	T10	12.05	**112**	1.45	**231**
71 282 040	EL 16 / IR 16	17.17	**108**	EL 16 / IR 16	13.96	**129**	1.97	**234**	T10	12.05	**112**	1.45	**231**
71 282 120							1.97	**234**	T20	13.11	**114**	2.40	**237**
71 282 126	EL 22 / IR 22	23.66	**115**	EL 22 / IR 22	22.25	**145**	2.44	**235**	T20	13.11	**114**	2.44	**232**
71 283 126	ER 22 / IL 22	23.66	**110**	ER 22 / IL 22	22.25	**137**	2.44	**235**	T20	13.11	**114**	2.44	**232**
71 282 132	EL 22 / IR 22	23.66	**115**	EL 22 / IR 22	22.25	**145**	2.44	**235**	T20	13.11	**114**	2.44	**232**
71 282 140	EL 22 / IR 22	23.66	**115**	EL 22 / IR 22	22.25	**145**	2.44	**235**	T20	13.11	**114**	2.44	**232**

Shims for correction of helix angle see page → **Page 39.**

Standard Internal Thread Turning Holder with thro' coolant

▲ Tool Holder with Approach Angle ß = 1,5°



Illustrations show right-hand versions

Designation	H	LF	LDRED	DCONMS	BDRED	WF	DMIN	Insert	Left-hand Y2 Article no. 71 283 ... £		Right-hand Y2 Article no. 71 282 ... £	
	mm	mm	mm	mm	mm	mm	mm					
SI R 0010 M11CB	9.0	150	25	10	9.5	7.4	12	11 ..			470.61	510 [2]
SI R 0012 P11CB	11.0	170	30	12	11.5	8.4	15	11 ..			500.31	512 [2]
SI R/L 0010 K11B	14.0	125	25	16	10.0	7.4	12	11 ..	137.77	310	137.77	310
SI R/L 0013 M16B	14.0	150	32	16	13.0	10.2	16	16 ..	149.95	315	149.95	315
SI R 0016 P16B	18.0	170	40	20	16.0	11.7	19	16 ..			149.95	316
SI R 0020 P16B	18.0	170	40	20	19.5	13.7	24	16 ..			176.65	320 [1]
SI R/L 0032 S16B	28.8	250	50	32	31.5	19.7	36	16 ..	218.23	332 [1]	218.23	332 [1]

1) with shim seat
2) Carbide version

Spare parts for Article no.		Y2 Multi tooth shim Article no. 71 950 ... £			Y2 Shim Article no. 71 950 ... £		Y2 Screw-U Article no. 71 950 ... £			Y7 Key D Article no. 80 950 ... £		Y2 Clamping screw Article no. 71 950 ... £	
71 282 510									T08	10.30	110	2.03	230
71 282 512									T08	10.30	110	2.03	230
71 282 310 / 71 283 310									T08	10.30	110	2.03	230
71 282 315 / 71 283 315									T10	12.05	112	2.24	236
71 282 316									T10	12.05	112	2.24	236
71 282 320	EL 16 / IR 16	17.17	108	EL 16 / IR 16	13.96	129	1.97	234	T10	12.05	112	1.45	231
71 282 332	EL 16 / IR 16	17.17	108	EL 16 / IR 16	13.96	129	1.97	234	T10	12.05	112	1.45	231
71 283 332	ER 16 / IL 16	17.17	101	ER 16 / IL 16	13.96	121	1.97	234	T10	12.05	112	1.45	231

Shims for correction of helix angle see page → **Page 39.**

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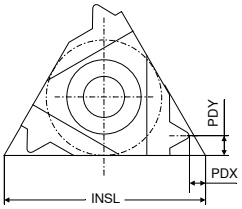
Right hand internal thread turning insert – Mini size 06

▲ Full profile
▲ Thread production from diameter 6mm

M | 60°



CWS80 | CCN1525 | CWN30

Designation	TP	PDX	PDY	INSL	HSS IR Y1 Article no. 71 276 ...		IR X3 Article no. 71 271 ...		IR Y1 Article no. 71 276 ...	
	mm	mm	mm	mm	£		£		£	
06 IR 0,5	0.50	0.9	0.5	6	26.57	**710**	22.80	**110**	26.57	**310**
06 IR 0,75	0.75	0.8	0.5	6	26.57	**712**	22.80	**112**	26.57	**312**
06 IR 1,0	1.00	0.7	0.6	6	25.01	**714**	22.80	**114**	25.01	**314**
06 IR 1,25	1.25	0.6	0.6	6	26.57	**716**	22.80	**116**	26.57	**316**

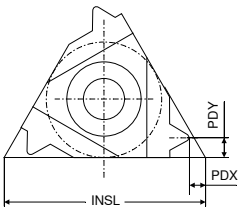
Steel	○	●	●
Stainless steel	●	●	●
Cast iron	○	●	○
Non ferrous metals	○	○	○
Heat resistant alloys			○

→ v_c Page 42

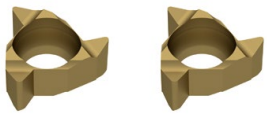
Right hand internal thread turning insert – Mini size 06

▲ Full profile
▲ Thread production from diameter 6mm

BSW | 55°



CWS80 | CWN30



Designation	TPI	PDX	PDY	INSL	HSS IR Y1 Article no. 71 278 ...		IR Y1 Article no. 71 278 ...	
	1/"	mm	mm	mm	£		£	
06 IR 26	26	0.6	0.6	6	26.57	**716**	26.57	**316**
06 IR 22	22	0.6	0.6	6	26.57	**720**	26.57	**320**
06 IR 20	20	0.6	0.6	6	26.57	**722**	26.57	**322**
06 IR 19	19	0.6	0.6	6	26.57	**724**	26.57	**324**
06 IR 18	18	0.6	0.6	6	26.57	**726**	26.57	**326**

Steel	○	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys		○

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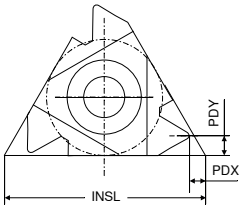
Right hand internal thread turning insert – Mini size 06

▲ Partial profile
▲ Thread production from diameter 6mm



CWS80 | CCN1525 | CWN30

Designation	TP	INSL	PDX	PDY	HSS IR Y1 Article no. 71 272 ... £		IR X3 Article no. 71 274 ... £		IR Y1 Article no. 71 272 ... £	
	mm	mm	mm	mm						
06 IR A60	0,5 - 1,25	6	0.6	0.6	26.57	**710**	22.80	**210**	26.57	**310**
Steel						○		●		●
Stainless steel						●		●		●
Cast iron						○		●		○
Non ferrous metals						○		○		○
Heat resistant alloys										○

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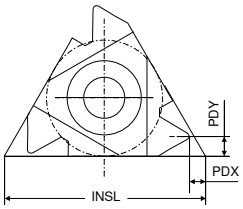
Right hand internal thread turning insert – Mini size 06

▲ Partial profile
▲ Thread production from diameter 6mm



CWS80 | CWN30

Designation	TPI	INSL	PDX	PDY	HSS IR Y1 Article no. 71 274 ... £		IR Y1 Article no. 71 274 ... £	
	1/"	mm	mm	mm				
06 IR A55	48 - 20	6	0.5	0.6	26.57	**710**	26.57	**310**
Steel						○		●
Stainless steel						●		●
Cast iron						○		○
Non ferrous metals						○		○
Heat resistant alloys								○

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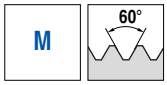
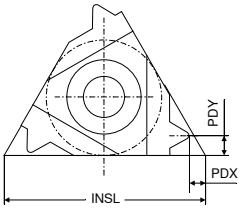
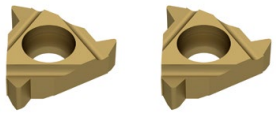
Right hand internal thread turning insert – Mini size 08

▲ Full profile
▲ Thread production from diameter 8mm





CWS80 CWN30



Designation	TP	PDX	PDY	INSL	HSS IR Y1 Article no. 71 277 ...		IR Y1 Article no. 71 277 ...	
	mm	mm	mm	mm	£		£	
08 IR 0,5	0.50	0.6	0.5	8	26.57	**710**	26.57	**310**
08 IR 0,75	0.75	0.6	0.5	8	26.57	**712**	26.57	**312**
08 IR 1,0	1.00	0.6	0.6	8	25.01	**714**	25.01	**314**
08 IR 1,25	1.25	0.6	0.7	8	26.57	**716**	26.57	**316**
08 IR 1,5	1.50	0.6	0.7	8	25.01	**718**	25.01	**318**
08 IR 1,75	1.75	0.6	0.8	8	26.57	**720**	26.57	**320**
08 IN 2,0	2.00	1.0	4.0	8	31.80	**784** 1)	31.80	**384** 1)

Steel	○	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys		○

1) Neutral version (N)

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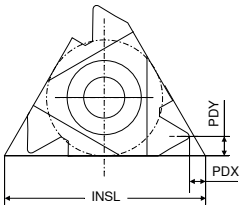
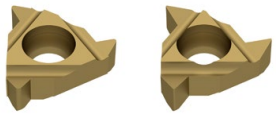
Right hand internal thread turning insert – Mini size 08

▲ Partial profile
▲ Thread production from diameter 8mm



CWS80 CWN30



Designation	TP	PDX	PDY	INSL	HSS IR Y1 Article no. 71 273 ...		IR Y1 Article no. 71 273 ...	
	mm	mm	mm	mm	£		£	
08 IR A60	0,5 - 1,5	0.6	0.7	8	26.57	**710**	26.57	**310**
08 IN M60	1,75 - 2,0	0.8	4.0	8	31.80	**772** 1)	31.80	**372** 1)

Steel	○	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys		○

1) Neutral version (N)

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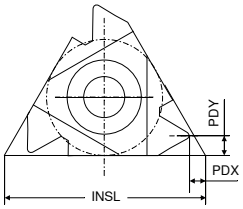
Right hand internal thread turning insert – Mini size 08

▲ Partial profile
▲ Thread production from diameter 8mm

CWS80 CWN30



Designation	TPI	INSL	PDX	PDY	HSS IR Y1 Article no. 71 275 ...		IR Y1 Article no. 71 275 ...	
	1/"	mm	mm	mm	£		£	
08 IR A55	48 - 16	8	0.6	0.7	26.57	**710**	26.57	**310**
08 IN M55	14 - 11	8	0.9	4.0	31.80	**772** 1)	31.80	**372** 1)
Steel						○		●
Stainless steel						●		●
Cast iron						○		○
Non ferrous metals						○		○
Heat resistant alloys								○

1) Neutral version (N)

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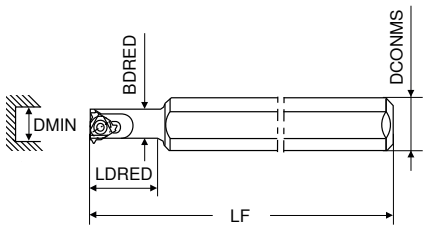
Right Hand Internal Thread Holder – Mini size 06



Designation	LF	LDRED	DCONMS	BDRED	DMIN	Insert	Right-hand Y2 Article no. 71 294 ... £	
	mm	mm	mm	mm	mm			
SI R 0005 H06	100	12	12	5.2	6	06 ..	190.68	**005**
SI R 0005 H06 C	100	25	6	5.2	6	06 ..	339.97	**105** 1)

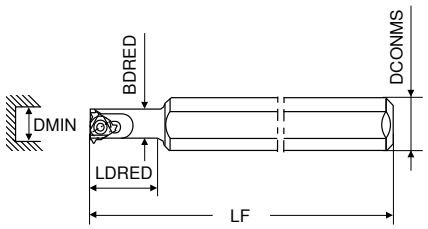
1) Solid Carbide Shank with Thro' Coolant

Key D

Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ... £		Y2 Article no. 71 950 ... £	
71 294 005	T06	11.15	**108**	3.29	**029**
71 294 105	T06	11.15	**108**	3.29	**029**

Right Hand Internal Thread Holder – Mini size 08



Designation	LF	LDRED	DCONMS	BDRED	DMIN	Insert	Right-hand Y2 Article no. 71 295 ... £	
	mm	mm	mm	mm	mm			
SI R 0007 K08	125	18	16	6.7	7.8	08 ..	190.68	**007**
SI R 0007 K08U	125	21	16	7.5	9.0	08 .N	217.01	**008** 1)
SI R 0007 K08C	125	30	8	6.5	7.8	08 ..	385.83	**107** 2)

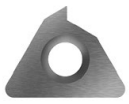
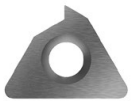
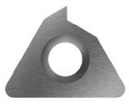
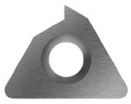
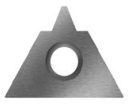
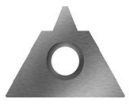
1) Neutral insert indicated by marking (N)
2) Solid Carbide Shank with Thro' Coolant

Key D

Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ... £		Y2 Article no. 71 950 ... £	
71 295 007	T06	11.15	**108**	3.29	**033**
71 295 008	T06	11.15	**108**	3.29	**033**
71 295 107	T06	11.15	**108**	3.29	**033**

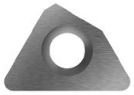
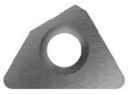
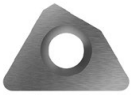
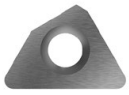
Shims for Standard Threading Inserts

Pitch-angle β	AE 16 ER 16 / IL 16 Y2 Article no. 71 950 ...		AI 16 EL 16 / IR 16 Y2 Article no. 71 950 ...		AE 22 ER 22 / IL 22 Y2 Article no. 71 950 ...		AI 22 EL 22 / IR 22 Y2 Article no. 71 950 ...		AE 22 U ER 22 / IL 22 Y2 Article no. 71 950 ...		AI 22 U EL 22 / IR 22 Y2 Article no. 71 950 ...	
	£		£		£		£		£		£	
+ 4,5°	13.55	118	13.55	126	21.59	134	21.59	142	22.25	150 [1]	22.25	158 [1]
+ 3,5°	13.55	119	13.55	127	21.59	135	21.59	143	22.25	151 [1]	22.25	159 [1]
+ 2,5°	13.55	120	13.55	128	21.59	136	21.59	144	22.25	152 [1]	22.25	160 [1]
+ 1,5°	13.96	121	13.96	129	22.25	137	22.25	145	22.25	153 [1]	22.25	161 [1]
+ 0,5°	13.55	122	13.55	130	21.59	138	21.59	146	22.25	154 [1]	22.25	162 [1]
0°	13.55	123	13.55	131	21.59	139	21.59	147				
- 0,5°	13.55	124	13.55	132	21.59	140	21.59	148	22.25	156 [1]	22.25	164 [1]
- 1,5°	13.55	125	13.55	133	21.59	141	21.59	149	22.25	157 [1]	22.25	165 [1]

1) Neutral version for tool holder identified by (U).

Shims for Multi-Tooth Threading Inserts

Pitch-angle β	AE 16 M ER 16 / IL 16 Y2 Article no. 71 950 ...		AI 16 M EL 16 / IR 16 Y2 Article no. 71 950 ...		AE 22 M ER 22 / IL 22 Y2 Article no. 71 950 ...		AI 22 M EL 22 / IR 22 Y2 Article no. 71 950 ...	
	£		£		£		£	
+ 1,5°	17.17	101	17.17	108	23.66	110	23.66	115

8

Pitch angle

Important Information about Standard Shims

- the pitch angle should be determined through calculation or by using the chart below
- the standard WNT threading holder is supplied with a 1.5° inclined insert seat and a shim without angular correction.
  Hence the WNT Tool holders are delivered with an angle of inclination β of 1.5°.

Without the appropriate correction of the helix angle, the following may occur

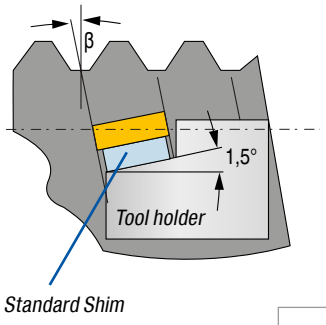
- the profile will be distorted.
- insufficient clearance angle.
- the tool life of the insert is greatly reduced.

Method 1: Calculation

Calculating the helix angle β:

$$\beta = \frac{20 \times TP}{DMIN}$$

20 = constant
β = Helix angle (°)
TP = Pitch (mm)
DMIN = Nominal diameter (mm)



Example calculation

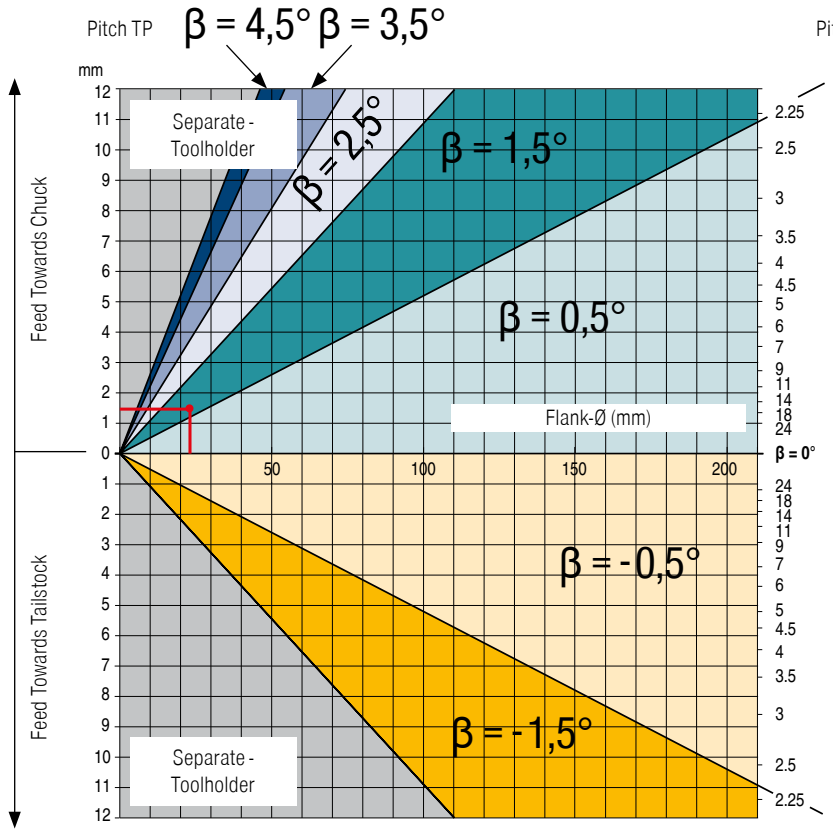
External thread M24 x 1.5
Feed towards chuck
DMIN = Nominal Ø: M24 = 24 mm
TP = Pitch: 1.5 mm

$$\beta = \frac{20 \times 1{,}5 \text{ mm}}{24 \text{ mm}}$$

β = 1,25°

Method 2: Diagram

From the flank Ø in the diagram, a line is drawn vertically upwards until it intersects with the line of the pitch of the thread to be produced. In the color-coded region in which it is now, a horizontal line to the edge of the chart indicates the appropriate factor.



calculated pitch angle β value	Shim
0,0°–0,99°	0,5°
1,0°–1,99°	1,5°
2,0°–2,99°	2,5°
3,0°–3,99°	3,5°
4,0°–4,99°	4,5°
0,0°–(-0,99°)	-0,5°
-1,0°–(-1,99°)	-1,5°

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

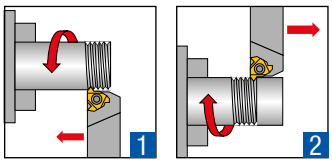
Cutting data appoximate values

	Mini CWN30	Mini CWS80	Mini CCN1525	CWN1525	HCN2525	CCN7525	CCN20	CWK20
Index	v_c in m/min							
1.1	**20–100**	30–50	**80–100**	**120–140**	190–210	**150–170**	**120–180**	
1.2	**20–100**	30–50	**80–100**	**120–140**	190–210	**150–170**	**140–200**	
1.3	**20–100**	30–50	**80–100**	**120–140**	190–210	**150–170**	**110–180**	
1.4	**20–80**	25–40	**60–80**	**70–90**	120–140	**90–110**	**100–155**	
1.5	**20–80**	25–40	**90–110**	**100–120**	160–180	**130–150**	**110–180**	
1.6	**20–80**	25–40	**90–110**	**100–120**	160–180	**130–150**	**100–155**	
1.7	**20–100**	30–50	**50–60**	**50–70**	70–90	**60–80**	**110–180**	
1.8	**20–80**	25–40	**50–60**	**50–70**	70–90	**60–80**	**80–135**	
1.9	**20–100**	25–40	**60–80**	**90–100**	120–140	**100–120**		
1.10	**20–80**	25–40	**50–60**	**50–60**	60–80	**50–70**		
1.11	**20–80**	25–40	**50–60**	**50–60**	60–80	**50–70**		
1.12	**20–80**	25–40	**50–60**	**50–60**	60–80	**50–70**	**80–135**	
1.13		25–40	**50–60**	**50–60**	60–80	**50–70**		
1.14			**50–60**	**50–60**	60–80	**50–70**		
1.15			**50–60**	**50–60**	60–80	**50–70**		
1.16			**50–60**	**50–60**	60–80	**50–70**		
2.1	**20–70**	**10–25**	**40–50**	50–70	**140–160**	**90–110**	**70–120**	
2.2	**20–70**	**10–25**	**40–50**	50–70	**140–160**	**90–110**	**70–120**	
2.3	**20–70**	**10–25**	**40–50**	50–70	**140–160**	**90–110**	**60–95**	
2.4	**20–70**	**10–25**	**40–50**	50–70	**140–160**	**90–110**	**60–95**	
2.5	**20–70**	**10–25**	**40–50**	50–70	**140–160**	**90–110**	**40–90**	
2.6	**20–70**	**10–25**	**40–50**	50–70	**140–160**	**90–110**	**70–100**	
2.7	**20–70**	**10–25**	**40–50**	50–70	**140–160**	**90–110**	**70–100**	
3.1	40–90	20–40	**60–80**	**90–110**	140–150	**120–130**		**70–100**
3.2	40–90	20–40	**60–80**	**90–110**	140–150	**120–130**		**70–100**
3.3	40–90	20–40	**60–80**	**90–110**	140–150	**120–130**		**70–100**
3.4	40–90	20–40	**60–80**	**90–110**	140–150	**120–130**		**70–100**
3.5	40–90	20–40	**50–70**	**80–100**	120–130	**100–110**		**70–100**
3.6	40–90	20–40	**50–70**	**80–100**	120–130	**100–110**		**70–100**
3.7	40–90	20–40	**50–70**	**80–100**	120–130	**100–110**		**70–100**
3.8	40–90	20–40	**50–70**	**80–100**	120–130	**100–110**		**70–100**
4.1	80–180	40–100	550–570	**600–650**	800–900			**100–250**
4.2	80–180	40–100	300–330	**480–520**	800–900			**100–250**
4.3	60–150		300–330	**480–520**	800–900			**100–250**
4.4	60–130		300–330	**480–520**	800–900			**100–250**
4.5	40–120		300–330	**480–520**	800–900			**100–250**
4.6	80–150	40–80	120–150	**200–220**	300–320		80–200	**100–250**
4.7	80–150	40–80	110–130	**180–200**	280–300		80–200	**100–250**
4.8	80–150	40–80	110–130	**160–180**	250–280		80–200	**100–250**
4.9	80–150	40–80	110–130	**160–180**	250–280		80–200	**100–250**
4.10	80–150	40–80	100–120	**150–170**	220–250		80–200	**100–250**
4.11	80–150	40–80	100–120	**180–200**	230–240		80–200	**100–250**
4.12	80–150		100–120	**180–200**	230–240		80–200	**100–250**
4.13			180–200	**250–300**				
4.14			180–200	**250–300**				
4.15			180–200	**250–300**				
4.16			60–80	**80–100**	120–150			**100–250**
4.17			60–80	**80–100**	120–150	100–120		**100–250**
4.18			60–80	**80–100**	120–150			**100–250**
4.19			60–80	**80–100**	120–150			**100–250**
5.1					45–55	**30–40**		
5.2					45–55	**30–40**		20–30
5.3					45–55	**30–40**		20–30
5.4					45–55	**30–40**		20–30
5.5					35–40	**25**		20–30
5.6					35–40	**25–35**		20–30
5.7					35–40	**25–35**		
5.8					35–40	**25–35**		
5.9	20–90				40–50	**35–45**		25–50
5.10	20–90				40–50	**35–45**		20–30
5.11	20–90				40–50	**35–45**		20–30
6.1					50–60	45–55	40–60	
6.2					45–55		40–60	
6.3					40–45			
6.4					35–45			
6.5								

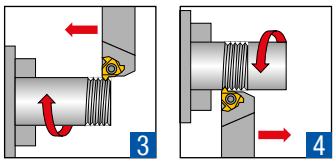
The cutting data depends extremely on the external conditions, the material and machine type. The indicated values are possible values which have to be increased or reduced according to the application conditions.

Thread turning methods

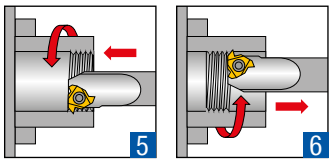
External right-hand thread



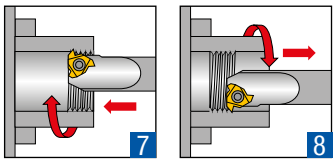
External left-hand thread



Internal right-hand thread



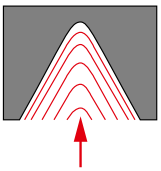
Internal left-hand thread



The machining examples 2, 4, 6 and 8 require negative shims!
These shims can be found on → **Page 39.**

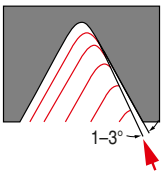
Thread infeed methods

Radial Infeed



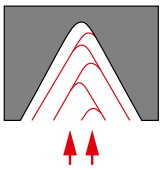
- for pitches less than 1.5 mm
- for short chipping materials
- for machining hardened materials
- simple and quick method

Flank infeed



- for pitches larger than 1.5 mm
- with radial penetration the effective cutting edge length is too large, which may lead to chattering
- with trapezoidal and ACME threads, chip flow on three sides can be problematic

Alternating infeed



- with large pitches
- for long chipping materials
- uniform wear of the cutting edges
- complicated programming process

8

Recommended number of cuts and cutting depths

Standard Threading Inserts

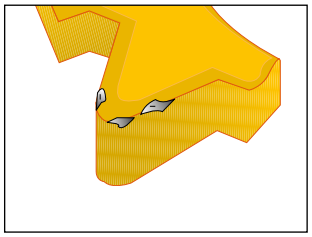
Pitch	**mm**	0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50	6,00	8,00
	TPI	48	32	24	20	16	14	12	10	8	7	6	5.5	5	4.5	4	3
Number of passes		4-6	4-7	4-8	5-9	6-10	7-12	7-12	8-14	9-16	10-18	11-18	11-19	12-20	12-20	12-20	15-24
Number of passes	**(CCN7525)**	3-4	3-4	3-5	4-6	5-6	6-8	6-8	8-10								
Number of passes	**Mini Inserts**	6-9	6-11	6-12	8-14	9-15	11-18	11-18									

Multi edge thread turning insert

Standard	Insert	Insert size		Pitch	Edges	Designation	Passes	Cutting depth per pass		
		IC	L mm					1	2	3
ISO external	M	3/8"	16	1,0 mm	3	3 ER 1.0 ISO 3M	2	0,38	0,25	
ISO external	M	3/8"	16	1,5 mm	2	3 ER 1.5 ISO 2M	3	0,42	0,30	0,20

Troubleshooting

Edge chipping



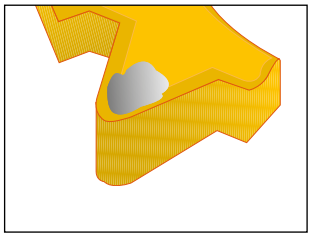
Cause

- Common in stainless materials
- Incorrect grade

Corrective measures

- Minimize tool overhang length
- Check that the insert is clamped
- Minimize vibration
- Use a tougher grade

Cratering



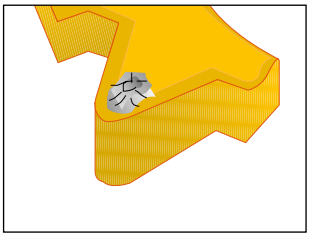
Cause

- Common in stainless materials
- Cutting speed too high
- Incorrect grade

Remedy

- Apply coolant
- Reduce depth of cut
- Use a harder grade

Built-up edge



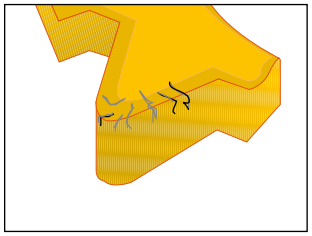
Cause

- Cutting speed too low
- Incorrect grade

Remedy

- Apply coolant
- Increase cutting speed
- Use a tougher grade

Thermal cracking



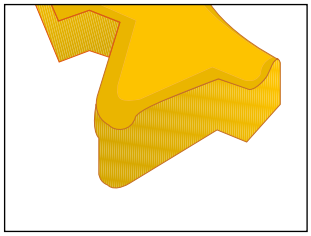
Cause

- Insufficient coolant
- Cutting speed too high
- Incorrect grade

Remedy

- Apply coolant
- Reduce cutting speed
- Use a tougher grade

Plastic deformation



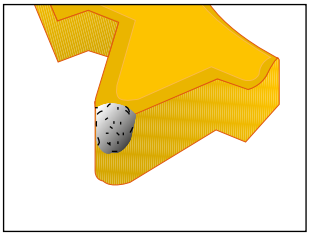
Cause

- Infeed too large
- Insufficient coolant
- Cutting speed too high
- Incorrect grade

Remedy

- Apply coolant
- Reduce depth of cut
- Reduce cutting speed
- Use a harder grade

Breakage



Cause

- Infeed too large
- Insufficient coolant
- Plastic deformation
- Instability
- Helix angle not appropriate
- Incorrect grade

Remedy

- Reduce depth of cut
- Check machine and tool stability
- Reduce cutting speed
- Check helix angle
- Use a tougher grade

WNT Designation Key

Inserts

16	E	R	AG 60	

Insert size

L	**I.C.**
06	5/32"
08	3/16"
11	1/4"
16	3/8"
22	1/2"

Insert

E	External
I	Internal

Cutting design

R	Right-hand
L	Left-hand
N	Neutral

Pitch

Full profile

	mm	G/Z
	0,35	72–4

Partial profile

	mm	G/Z
A	0,5–1,5	48–16
AG	0,5–3,0	48–8
M	1,7–2,0	14–11
G	1,75–3,0	14–8
N	3,5–5,0	7–5
U	5,5–8,0	4,5–3,5

Flank angle
55°
60°

Number of teeth

2M	Multi-tooth insert with 2 teeth
3M	Multi-tooth insert with 3 teeth

Example

16 ER AG 60
16 mm right hand – external insert with a pitch of 0.5-3.0 mm

Tool holder

SE	R	1212	F	16	

Tool holder

SE	External
SI	Internal

Cutting design

R	Right-hand
L	Left-hand

Shank cross-section

Example	
External holder square shank	1212 = 12 mm x 12 mm
Internal boring bar	0020 = 20 mm Diameter

Overall length

	mm
F	80
H	100
K	125
L	140
M	150
P	170
R	200
S	250
T	300

Insert size

L	**I.C.**
06	5/32"
08	3/16"
11	1/4"
16	3/8"
22	1/2"

Properties

B	Diameter
C	With thro' coolant
U	With carbide shank

Example

SE R 1212 F 16
Right hand holder with 12 x 12 mm square shank, overall length of 80 mm, only suitable for an 16 mm threading insert

Grade description

Universal

CCN7525
- Carbide, TiAlN-coated
- ISO | **P25** | **M25** | **K25** | N25 | **S25**
- The universal carbide grade with sintered chip breaker for medium to high cutting speeds

CWN30
- Carbide, TiN-coated
- ISO | **P30** | **M30**
- The coated carbide grade for machining steels and stainless steels at low cutting speeds

CCN1525
- Carbide, TiN-coated
- ISO | **P25** | **M25**
- The coated carbide grade for machining steels and stainless steels at low cutting speeds

Non-ferrous metals

CWK20
- Carbide, uncoated
- ISO | **N10** | **S10** | K10
- The wear-resistant carbide grade for machining aluminium and other non-ferrous metals

Steel

CCN20
- Carbide, TiAlN-coated
- ISO | **P20** | **M20**
- The all-round carbide grade for machining steels at low cutting speeds

CWN1525
- Carbide, TiN-coated
- ISO | **P25** | M25 | **K25** | **N25**
- The universal carbide grade for machining steels and non-ferrous metals at low cutting speeds

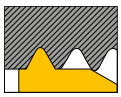
Stainless steel

HCN2525
- Carbide, TiAlN-coated
- ISO | P25 | **M25** | K25 | N25 | S25
- The coated carbide grade for machining stainless steels at high cutting speeds
- Also suitable for exotic materials

CWS80
- HSS, TiN-coated
- ISO | P | **M** | K | N
- The coated HSS grade for stainless machining at low cutting speeds
- Also suitable for exotic materials

Profile Type Description

Full profile



- Thread diameter must not be turned to final thread size
- a minimum infeed of 0.07 mm is necessary
- Insert can only be used only for a specific pitch

Advantages:
- High-quality thread
- No burr formation
- No rework
- In part longer service life

Partial profile

- Core diameter must be premachined to the finished size
- A minimum infeed of 0.07 mm is required

Advantages:
- One threading insert can be used to machine several pitches
- Threading insert can be used for any application
- Reduced stock requirements

Multi-Tooth Thread Turning Insert

- Thread diameter must not be turned to final thread size
- a minimum infeed of 0.07 mm is necessary
- Insert can only be used only for a specific pitch

Advantages:
- Fewer passes required
- Thread production in less time

Attention:
- Check there is sufficient thread run-out

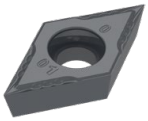
Mini Thread Turning Insert

- From a min. core hole diameter of Ø 6 mm or Ø 8 mm

Advantages:
- Special cutting materials for low cutting speeds
- 3 cutting edges for miniature applications

New products for machining technicians

NEW High precision finishing insert in “E” tolerance

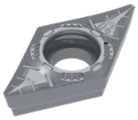


F05 – extremely sharp chip breaker ideal for fine finishing of superalloys and stainless steels.
New universal grade of the X7 line for machining almost all materials.

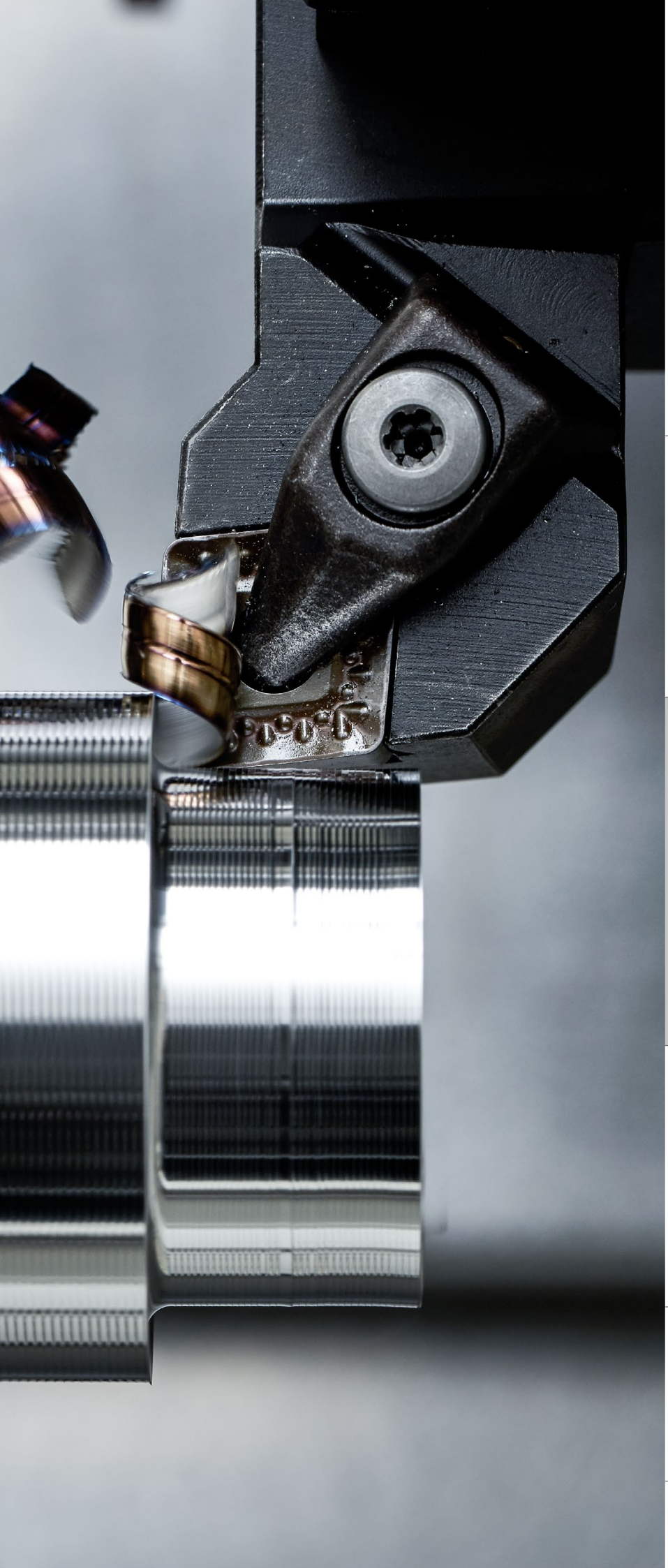
NEW New CBN grades CTB H15U and CTB H15C

Coated and uncoated CBN grade for smooth cutting from 32 HRC.

NEW Precision sintered insert with -29 chip breaker



Comprehensive aluminum turning insert with -29 chip breaker for medium to rough machining.
Uncoated and with proven AMZ coating.



Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools 9
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

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Toolfinder – positive inserts	6+7
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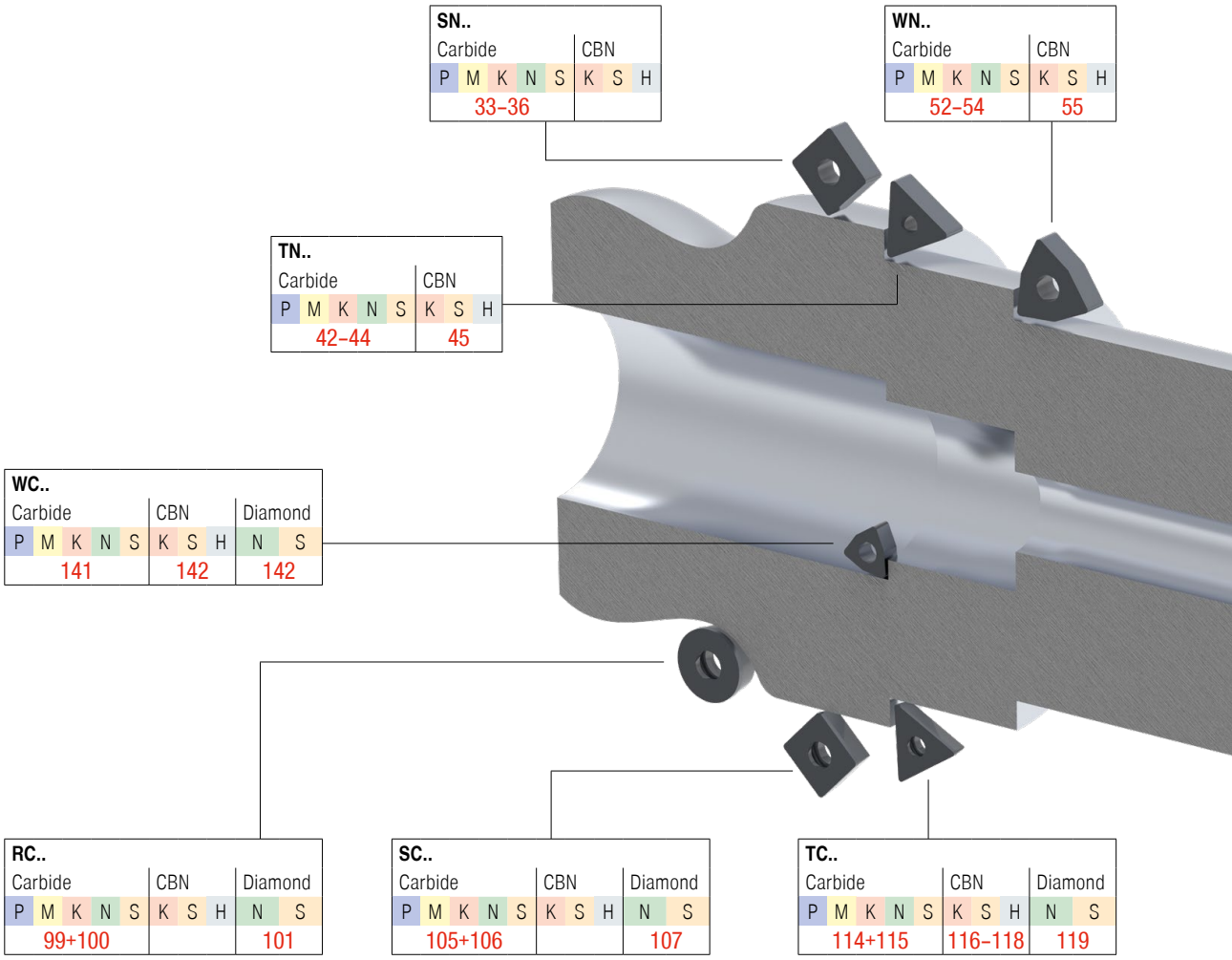
CERATIZIT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **CERATIZIT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Toolfinder – Application



Coding of the chip breakers

All new chip breakers are coded according to the following key:

-M50

Inserts – Basic Type	Application range	Material		Chip breaker width
	F = Fine	1 = Steel	5 = Heat Resistant alloys	1 = Narrow
0 | N = Negative Inserts	M = Medium	2 = Stainless steel	6 = Hard	
5 | P = Positive Inserts	R = Rough	3 = Cast Iron	7 = Universal	
		4 = Non Ferrous Metals		9 = Wide

-NM15

Detailed information on the chip breakers can be found in the technical appendix → **pages 168–175**

Symbol explanation

CTCP125

Carbide Grade

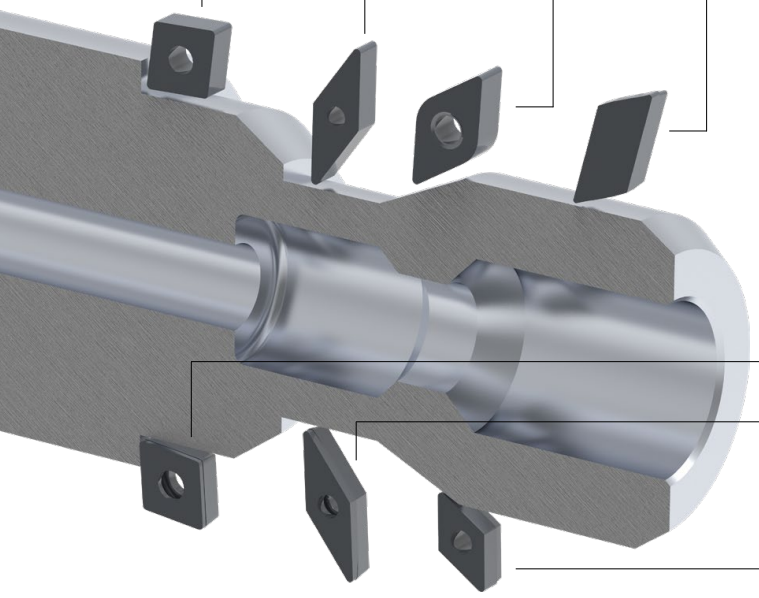
HCX1125

F	Fine Machining
M	Medium Machining
R	Rough Machining

	Smooth cut
	Irregular cutting depth
	Interrupted cut

A detailed overview of grades can be found in the technical appendix on → **page 186**

9



CN..

Carbide					CBN		
P	M	K	N	S	K	S	H
8–13					14+15		

DN..

Carbide					CBN		
P	M	K	N	S	K	S	H
22–26					27		

VN..

Carbide					CBN		
P	M	K	N	S	K	S	H
49+50							

KN..

Carbide					CBN		
P	M	K	N	S	K	S	H
32							

CC..

Carbide					CBN			Diamond	
P	M	K	N	S	K	S	H	N	S
59–62					63–67			68–70	

VC..

Carbide					CBN			Diamond	
P	M	K	N	S	K	S	H	N	S
126–128					129–131			132+133	

DC..

Carbide					CBN			Diamond	
P	M	K	N	S	K	S	H	N	S
80–82					83–87			88–90	

Toolfinder – negative inserts

				Steel P	Stainless steel M	Cast iron K	Non ferrous metals N	Heat resistant alloys S	Geometry CN..	DN..	KN..	SN..	TN..	VN..	WN..
Main application: **Steel and cast iron**	sharp ▲ stable ▼	Fine	-CF / -CF20 (-CF / -NF12)	●	○	○			8	22					52
			-F40	●	○	○								49	
			-F50 (-NF15)	●	○	○		○	8	22		33	42	49	52
			-TFQ	●	○	○			8+9	22+23					52
		Medium	-42	●	○			○	9						
			-XU	●	○	○			9	23				49	53
			-M40	●	○	○								49	
			-M50 (-NM15)	●	○	●		○	9+10	23+24		33	42	49	53
			-TMQ	●	○	○			10	24					53
			-M70 | -11, -12 (-NM19)	●	○	●		○	10+11	24	32	33+34	42+43		53
		Rough	.NMA			●			11	24		34+35	43		54
			-R28 (-NR14)	●	○	○		○	11	24		35	43		
			-R58 (-NR17)	●	○	○		○	12	24+25		35	43		
			-R88 (-NR19)	●	○	○		○	12			36			
Main application: **Stainless**	sharp ▲ stable ▼	Fine	-F30 (-NF23)	○	●				12	25		36	44	49	54
		Medium	-42	○	●			●	13						
			-M30 (-NM23)	○	●			○	13	25		36	44	49	54
			-M42	○	●			●	13	25		36	44		54
			-M60 (-NM26)	○	●			○	13	25		36	44		54
			-M70 (-NM19)	○	●			●	13	25		36	44		54
Main application: **Heat-resistant**	sharp ▲ stable ▼	Fine	-F32		●	○	○	●	13	25				49	
		Medium	-M34		○			●	13	26		36	44	49+50	54
			-M42	○	●	○	○	●	13	26			44		54
			-M52		○	○	○	●	13	26		36	44		54
			Suitable tool holders						16–19	28+29	32	37–40	46+47	51	56
			Suitable boring bars						20+21	30+31		41	48		57+58

Toolfinder – negative inserts

Main application				Cast iron K	Sintered steels P	Heat-resistant S	Hardened H	Geometry CN..	DN..	KN..	SN..	TN..	VN..	WN..
Cast iron, sintered steels, heat resistant, hardened	Fine	CTBS10U (PBC10) CTBS20C (PBC15-S)		●	●	●		14	27			45		55
		CTBH15U CTBH15C	< 32 HRC				●	14	27					
		CTBH21U (PBC25)	52–65 HRC				●	15	27			45		55
		CTBH20C (PBC25-S)	48–62 HRC											
		CTBH40U (PBC40)	54–65 HRC				●	15	27			45		55
		CTBH40C (PBC40-S)	48–65 HRC											
		Suitable tool holders						16–19	28+29			46+47		56
		Suitable boring bars						20+21	30+31			48		57+58

9

Toolfinder – positive inserts

					Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Geometry								
					P	M	K	N	S	CC..	DC..	RC..	SC..	SP..	TC..	TP..	VC..	WC..
Main application: **Steel and cast iron**	sharp ↕ stable	Fine	-CF05 (-PF14)		●	○	○			59	80		105		114		126	
		Fine	-SF (-ZF)		●	○	○		○	59+60	80		105		114		126	
		Medium	-CF55 (-PF15)		●	○	○			60	80		105		114		126	
		Medium	-SMF		●	○	●		○	60	80	99	105		114+115		126+127	
		Medium	-SM (-ZM)		●	○	●		○	60	80+81	99	105		115		127	
		Medium	-SMQ		●	○	○			60+61	81							
		Medium	EN, EL, ER		●	○	●		○				105	113		123		
Main application: **Stainless**	sharp ↕ stable	Fine	-SF (-ZF)		○	●			●	61	81						127	141
		Fine	-F43		○	●			●	61	81				115			
		Fine	-M81			●		○		61	81						127	
		Medium	-M25 (-PF23)		○	●				61	81				115		127	
		Medium	-SM (-ZM)		○	●			●	61	81		105		115		127	
		Medium	-M55 (-PF26)		○	●				61	81		106		115		127	
Main application: **Non-ferrous metals**	sharp ↕ stable	Fine	-23P				○	●	○	61	82							
		Medium	-25P		○	○	○	●	○	61	82		106				127	
		Medium	-25Q		○	○	○	●	○	61	82						128	
		Medium	-27 (-AL)		○	○	○	●	○	61+62	82	99+100	106		115		128	
		Medium	-29		○	○	○	●	○	62	82						128	
		Diamond	-CB1					●	○	69+70	89+90	101	107		119		133	
		Diamond	-CB2					●	○	69+70	90	101	107		119		133	
		Diamond	-CB3					●	○	70	90		107		119		133	
		Diamond	Smooth					●	○	68+69	88–90				119		132	142
			Suitable tool holders							71–74	91–93	102–104	108–110		120+121	124	134–137	
			Suitable boring bars							75–79	94–98		111+112		122	125	138–140	143

Toolfinder – positive inserts

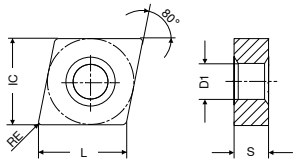
Main application					Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Geometry CC..	DC..	RC..	SC..	SP..	TC..	TP..	VC..	WC..
Heat-resistant (sharp → stable)	Fine	-F05 (-F05)			●	●	o	o	●		82						128	
		-F23 (-F23)				●	o	o	●	62	82						128	

Main application					Cast iron K	Sintered steels P	Heat-resistant S	Hardened H									
Cast iron, sintered steels, heat resistant, hardened	Fine	CTBS10U (PBC10) CTBS20C (PBC15-S)			●	●	●		63+64	83+84				116		129+130	142
		CTBH15U CTBH15C	< 32 HRC					●	65	85				116–118		129+130	142
		CTBH21U (PBC25)	52–65 HRC					●	66	85–87				117+118		130+131	142
		CTBH20C (PBC25-S)	48–62 HRC														
		CTBH40U (PBC40)	54–65 HRC					●	67	85–87				117+118		130+131	142
		CTBH40C (PBC40-S)	48–65 HRC														
				Suitable tool holders					71–74	91–93	102–104	108–110		120+121	124	134–137	
				Suitable boring bars					75–79	94–98		111+112		122	125	138–140	143

9

CNMG / CNMA / CNMM / CNGP

Designation	L	S	D1	IC
	mm	mm	mm	mm
CNMG 0903..	9.7	3.18	3.81	9.52
CN.. 1204..	12.9	4.76	5.16	12.70
CNM. 1606..	16.1	6.35	6.35	15.87
CNM. 1906..	19.3	6.35	7.94	19.05
CNMM 2509..	25.8	9.52	9.12	25.40



CNMG

		-CF TCM10	-CF20 CTEP110	-F50 CTCP115	-F50 CTCP125	-F50 CTCP135	-TFQ CTEP110	-TFQ CTCP115
		-CF CWC10	-NF12 DCC1110	-NF15 HCX1115	-NF15 HCX1125	-NF15 HCR1135	-TFQ DCC1110	-TFQ HCX1115
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		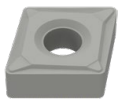	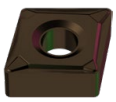					
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ISO	RE	Article no. 70 101 ...	Article no. 76 101 ...	Article no. 76 132 ...	Article no. 76 132 ...	Article no. 76 132 ...	Article no. 76 110 ...	Article no. 76 110 ...
	mm	£	£	£	£	£	£	£
090304EN	0.4			6.75 316	6.77 516	6.75 716		
090308EN	0.8			6.75 318	6.77 518	6.75 718		
120404EN	0.4	8.80 904	9.19 028	10.38 328	10.38 528	10.38 728	10.68 028	11.90 328
120408EN	0.8	8.80 908	9.19 030	10.38 330	10.38 530	10.38 730	10.68 030	11.90 330
120412EN	1.2			10.38 332	10.38 532	10.38 732	10.68 032	11.90 320
Steel		●	●	●	●	●	●	●
Stainless steel			○	○	○	○	○	○
Cast iron		○	○	○	○		○	○
Non ferrous metals								
Heat resistant alloys						○		

CNMG

		-TFQ CTCP125		-42 CTCP135		-XU CTCP115		-XU CTCP125		-M50 CTCK110		-M50 CTCK120		-M50 CTCP115	
		-TFQ HCX1125		-42 HCR1135		-XU HCX1115		-XU HCX1125		-NM15 DCX3110		-NM15 HCF3120		-NM15 HCX1115	
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				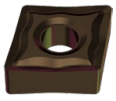		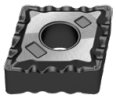				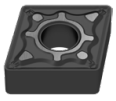		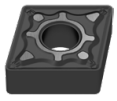		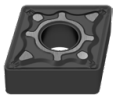	
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120404EN	0.4	11.90	528			10.42	328	10.42	528	10.38	028			10.38	328
120408EN	0.8	11.90	530	10.38	730	10.42	330	10.42	530	10.38	030	10.38	530	10.38	330
120412EN	1.2	11.90	532			10.42	332	10.42	532	10.38	032	10.38	532	10.38	320
120416EN	1.6													10.38	334
160608EN	0.8													16.78	342
160612EN	1.2													16.78	344
160616EN	1.6													16.78	346
Steel		●		●		●		●		●		●		●	
Stainless steel		○		○		○		○		○				○	
Cast iron		○				○		○		●		●		○	
Non ferrous metals															
Heat resistant alloys				○											

9

CNMG

		-M50 CTCP125		-M50 CTCP135		-TMQ CTCP115		-TMQ CTCP125		-M70 CTCK110		-M70 CTCK120		-M70 CTCP115	
		-NM15 HCX1125		-NM15 HCR1135		-TMQ HCX1115		-TMQ HCX1125		-NM19 DCX3110		-NM19 HCF3120		-NM19 HCX1115	
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		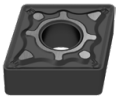		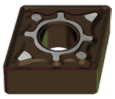		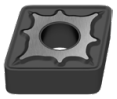		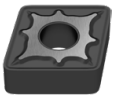		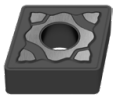		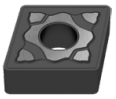		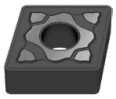	
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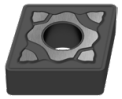
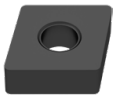
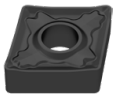
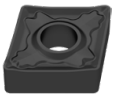
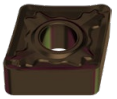
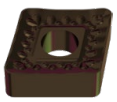
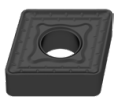
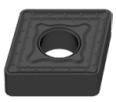
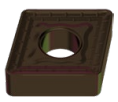
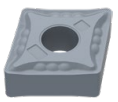
		CNMG		CNMG		CNMG		CNMG		CNMG		CNMG		CNMG	
		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08	
ISO	RE	Article no. 76 135 ...		Article no. 76 135 ...		Article no. 76 196 ...		Article no. 76 196 ...		Article no. 70 119 ...		Article no. 70 119 ...		Article no. 76 119 ...	
	mm	£		£		£		£		£		£		£	
120404EN	0.4	10.38	528	10.38	728										
120408EN	0.8	10.38	530	10.38	730			11.90	530	10.38	030	10.38	530	10.38	330
120412EN	1.2	10.38	532	10.38	732	11.90	320	11.90	532	10.38	032	10.38	532	10.38	320
120416EN	1.6	10.38	534	10.38	734					10.38	034	10.38	534	10.38	334
160608EN	0.8	16.78	542	16.78	742					16.78	042	16.78	542	16.78	342
160612EN	1.2	16.78	544	16.78	744					16.78	044	16.78	544	16.78	344
160616EN	1.6	16.78	546	16.78	746					16.78	046	16.78	546	16.78	346
160624EN	2.4													16.78	348
190608EN	0.8													23.70	354
190612EN	1.2									23.70	056	23.70	556	23.70	356
190616EN	1.6									23.70	058	23.70	558	23.70	358
190624EN	2.4													23.70	360
Steel		●		●		●		●		●		●		●	
Stainless steel		○		○		○		○		○				○	
Cast iron		○				○		○		●		●		○	
Non ferrous metals															
Heat resistant alloys				○											

CNMG / CNMA / CNMM

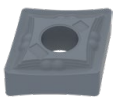
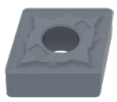
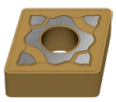
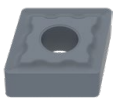
	-M70 CTCP125	-M70 CTCP135	CTCK110	CTCK120	-R28 CTCP115	-R28 CTCP125	-R28 CTCP135
	-NM19 HCX1125	-NM19 HCR1135	DCX3110	HCF3120	-NR14 HCX1115	-NR14 HCX1125	-NR14 HCR1135
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	M	M	R	R	R	R	R
	CNMG	CNMG	CNMA	CNMA	CNMM	CNMM	CNMM
	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 76 119 ... £	Article no. 76 119 ... £	Article no. 70 100 ... £	Article no. 70 100 ... £	Article no. 76 114 ... £	Article no. 76 114 ... £	Article no. 76 114 ... £
120404EN 0.4			10.38 028	10.38 528			
120408EN 0.8	10.38 530	10.38 730	10.38 030	10.38 530	10.57 330	10.57 530	
120412EN 1.2	10.38 532	10.38 732	10.38 032	10.38 532	10.57 332	10.57 532	10.57 732
120416EN 1.6	10.38 534	10.38 734	10.38 034	10.38 534	10.57 334	10.57 534	10.57 734
160608EN 0.8	16.78 542	16.78 742	16.78 042	16.78 542			
160612EN 1.2	16.78 544	16.78 744	16.78 044	16.78 544	16.78 344	16.78 544	16.78 744
160616EN 1.6	16.78 546	16.78 746	16.78 046	16.78 546	16.78 346	16.78 546	16.78 746
160624EN 2.4	16.78 548	16.78 748					
190608EN 0.8	23.70 554	23.70 754					
190612EN 1.2	23.70 556	23.70 756	23.70 056	23.70 556	23.70 356	23.70 556	23.70 756
190616EN 1.6	23.70 558	23.70 758	23.70 058	23.73 558	23.70 358	23.70 558	23.70 758
190624EN 2.4	23.70 560	23.70 760			23.70 360	23.70 560	23.70 760
250924EN 2.4					54.71 38400	54.71 58400	54.71 78400
Steel	●	●			●	●	●
Stainless steel	○	○			○	○	○
Cast iron	○		●	●	○	○	
Non ferrous metals							
Heat resistant alloys		○					○

9

CNMM / CNMG

		-R58 CTCP115		-R58 CTCP125		-R58 CTCP135		-R88 CTCP115		-R88 CTCP125		-R88 CTCP135		-F30 CTPM125	
		-NR17 HCX1115		-NR17 HCX1125		-NR17 HCR1135		-NR19 HCX1115		-NR19 HCX1125		-NR19 HCR1135		-NF23 HCN2125	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
															
		R		R		R		R		R		R		F	
		CNMM		CNMM		CNMM		CNMM		CNMM		CNMM		CNMG	
		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08	
ISO	RE	Article no. 76 115 ...		Article no. 76 115 ...		Article no. 76 115 ...		Article no. 76 133 ...		Article no. 76 133 ...		Article no. 76 133 ...		Article no. 75 010 ...	
	mm	£		£		£		£		£		£		£	
120404EN	0.4													10.38	280
120408EN	0.8	10.57	330	10.57	530	10.57	730							10.38	230
120412EN	1.2	10.57	332	10.57	532	10.57	732								
120416EN	1.6	10.57	334	10.57	534	10.57	734								
160612EN	1.2	16.78	344	16.78	544	16.78	744								
160616EN	1.6	16.78	346	16.78	546	16.78	746								
160624EN	2.4	16.78	348	16.78	548	16.78	748								
160624SN	2.4							16.78	348	16.78	548	16.78	748		
190612EN	1.2	23.70	356	23.70	556	23.70	756								
190616EN	1.6	23.70	358	23.70	558	23.70	758								
190616SN	1.6							23.70	358	23.70	558	23.70	758		
190624EN	2.4	23.70	360	23.70	524	23.70	760								
190624SN	2.4							23.70	360	23.70	560	23.70	760		
250924EN	2.4	54.71	384	54.71	584	54.71	784								
250924SN	2.4							54.71	384	54.71	584	54.71	784		
Steel		●		●		●		●		●		●		○	
Stainless steel		○		○		○		○		○		○		●	
Cast iron		○		○				○		○					
Non ferrous metals															
Heat resistant alloys						○						○			

CNMG / CNGP

		-42 CTC2135	-M30 CTPM125	-M42 CTC2135	-M60 CTPM125	-M70 CTC2135	-F32 CTP2120	-M34 CTP5110
		-42 CWN2135	-NM23 HCN2125	-M42 CWN2135	-NM26 HCN2125	-NM19 CWN2135	-F32 CCN2120	-M34 HCN5110
			DRAGONSKIN		DRAGONSKIN			DRAGONSKIN
								
		M	M	M	M	M	F	M
		CNMG	CNMG	CNMG	CNMG	CNMG	CNGP	CNMG
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE	Article no. 70 103 ...	Article no. 75 011 ...	Article no. 70 130 ...	Article no. 75 012 ...	Article no. 70 119 ...	Article no. 70 102 ...	Article no. 75 003 ...
	mm	£	£	£	£	£	£	£
120402FN	0.2						13.94 602	
120404EN	0.4			9.30 404				9.77 428
120404FN	0.4						13.94 604	
120408EN	0.8	9.30 462	10.38 230	9.30 408	10.38 230	9.30 430		9.77 430
120408FN	0.8						13.94 608	
120412EN	1.2		10.38 232	9.30 410	10.38 232	9.30 432		9.77 432
120416EN	1.6		10.38 234		10.38 234			
160612EN	1.2					16.78 442		
190612EN	1.2					23.70 456		
190616EN	1.6					23.70 458		
Steel		○	○	○	○	○		
Stainless steel		●	●	●	●	●	●	○
Cast iron							○	
Non ferrous metals							○	
Heat resistant alloys		●	○	●	○	●	●	●

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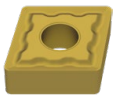
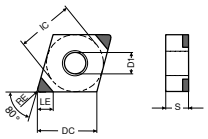
CNMG

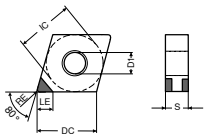
		-M34 CTP5115	-M42 CTP2120	-M52 CTP2120
		-M34 HCN5115	-M42 CCN2120	-M52 CCN2120
		DRAGONSKIN		
				
		M	M	M
		CNMG	CNMG	CNMG
		1A/08	1A/08	1A/08
ISO	RE	Article no. 75 003 ...	Article no. 70 130 ...	Article no. 70 117 ...
	mm	£	£	£
120404EN	0.4	9.77 528	9.30 604	9.30 604
120408EN	0.8	9.77 530	9.30 608	9.30 608
120412EN	1.2	9.77 532		
120416EN	1.6	9.77 534		
Steel				
Stainless steel		○	○	○
Cast iron			○	○
Non ferrous metals			○	○
Heat resistant alloys		●	●	●

CNGA

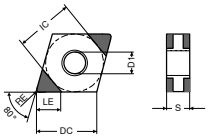
Designation	L	S	D1	IC
	mm	mm	mm	mm
CNGA 1204..	12.9	4.76	5.13	12.7



-B

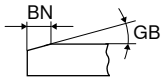


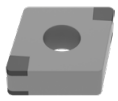
-K (-2SC)



-L (-4SC)

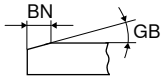
CNGA



	-K CTBS20C	-L CTBS20C	-B CTBH15C	-B CTBH15C
	-2SC PBC15-S	-4SC PBC15-S		
				
	F	F	F	F
	CBN CNGA	CBN CNGA	CBN CNGA	CBN CNGA
	Y0	Y0	NEW Y0	NEW Y0
ISO	Article no. 71 400 ...	Article no. 71 401 ...	Article no. 71 003 ...	Article no. 71 005 ...
	£	£	£	£
120404SN		84.59 122		
120404SN		84.59 132		
120404SN	54.73 142			
120404SN			79.70 32814	
120404SN		84.59 152		
120404SN	54.73 162			
120404SN			79.70 32829	
120404SN	54.73 182	84.59 182		
120404RN			79.70 22800	
120408SN		84.59 124		
120408SN		84.59 134		
120408SN	54.73 144			
120408SN			79.70 33014	
120408SN		84.59 154		
120408SN	54.73 164			
120408SN			79.70 33029	
120408SN	54.73 184	84.59 184		
120408RN			79.70 23000	
120412SN		84.59 126		
120412SN		84.59 136		
120412SN	54.73 146			
120412SN				79.70 33214
120412SN		84.59 156		
120412SN	54.73 166			
120412SN				79.70 33229
120412SN	54.73 186	84.59 186		
120412RN				79.70 23200

Cast iron	●	●		
Sintered steels	●	●		
Heat resistant alloys	●	●		
hardened < 45 HRC			●	●
hardened 46–55 HRC			●	●
hardened 56–60 HRC			●	●
hardened 61–65 HRC				

CNGA



ISO	RE	GB	BN	LE	-K CTBH20C -2SC PBC25-S		-L CTBH20C -4SC PBC25-S		-K CTBH40C -2SC PBC40-S		-L CTBH40C -4SC PBC40-S	
	mm	°	mm	mm	F CBN CNGA Y0 Article no. 71 400 ... £		F CBN CNGA Y0 Article no. 71 401 ... £		F CBN CNGA Y0 Article no. 71 400 ... £		F CBN CNGA Y0 Article no. 71 401 ... £	
120404TN	0.4	15	0.09	2.8	54.73	222						
120404SN	0.4	20	0.09	2.8							84.59	332
120404SN	0.4	20	0.11	2.8			84.59	242				
120404TN	0.4	25	0.11	2.8	54.73	252						
120404SN	0.4	25	0.11	2.8					54.73	352	84.59	352
120404SN	0.4	25	0.13	2.8			84.59	262				
120404FN	0.4			2.8	54.73	212						
120404SN	0.4	30	0.14	2.8							84.59	372
120404SN	0.4	35	0.14	2.8					54.73	382		
120408TN	0.8	15	0.09	2.5	54.73	224						
120408TN	0.8	20	0.09	2.5	54.73	234						
120408SN	0.8	20	0.09	2.5							84.59	334
120408SN	0.8	20	0.11	2.5			84.59	244				
120408TN	0.8	25	0.11	2.5	54.73	254						
120408SN	0.8	25	0.11	2.5					54.73	354	84.59	354
120408SN	0.8	25	0.13	2.5			84.59	264			84.59	364
120408SN	0.8	30	0.14	2.5			84.59	274			84.59	374
120408SN	0.8	35	0.14	2.5					54.73	384		
120408EN	0.8			2.5					54.73	314		
120412TN	1.2	15	0.09	2.2	54.73	226						
120412SN	1.2	20	0.09	2.2							84.59	336
120412SN	1.2	20	0.11	2.2			84.59	246				
120412TN	1.2	25	0.11	2.2	54.73	256						
120412SN	1.2	25	0.11	2.2					54.73	356	84.59	356
120412SN	1.2	25	0.13	2.2			84.59	266			84.59	366
120412SN	1.2	30	0.14	2.2							84.59	376
120412SN	1.2	35	0.14	2.2					54.73	386		
120412FN	1.2			2.2	54.73	216						

Cast iron				
Sintered steels				
Heat resistant alloys				
hardened < 45 HRC				
hardened 46–55 HRC	●	●	●	●
hardened 56–60 HRC	●	●	●	●
hardened 61–65 HRC			●	●

For fast and efficient determination of the most appropriate edge preparation CNGA test inserts are available. → **Page 161**

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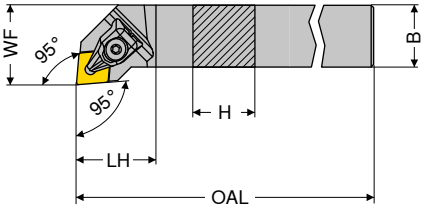
MaxiLock-D – DCLN 95° – Toolholder with top clamping



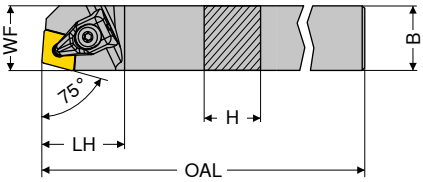
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 509 ...		Right-hand 2A/24 Article no. 70 508 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
DCLN R/L 1616 H09	16	16	100	23	20	2	CN.. 0903	69.39	**516**	69.39	**516**
DCLN R/L 2020 K09	20	20	125	24	25	2	CN.. 0903	77.31	**520**	77.31	**520**
DCLN R/L 2020 K12	20	20	125	32	25	4	CN.. 1204	77.31	**620**	77.31	**620**
DCLN R/L 2525 M12	25	25	150	32	32	4	CN.. 1204	79.97	**625**	79.97	**625**
DCLN R/L 3225 P12	32	25	170	32	32	4	CN.. 1204	85.79	**632**	85.79	**632**
DCLN R/L 2525 M16	25	25	150	38	32	6,5	CN.. 1606	79.97	**725**	79.97	**725**
DCLN R/L 3232 P16	32	32	170	36	40	6,5	CN.. 1606	108.00	**732**	108.00	**732**
DCLN R/L 3232 P19	32	32	170	42	40	6,5	CN.. 1906	108.00	**832**	108.00	**832**
DCLN R/L 4040 S19	40	40	250	42	50	6,5	CN.. 1906	134.27	**940**	134.27	**940**
DCLN R/L 4040 S25	40	40	250	60	50	6,5	CN.. 2509	134.27	**440**	134.27	**440**

Tool holders with HSK-T or PSC interface can be found in → **Chapter 16.**

Spare parts for Article no.	2A/28 XPress type Article no. 70 950 ... £		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Carbide type C Article no. 70 950 ... £	
70 508 516 / 70 509 516	21.91	**823**	T09 - IP	14.77 **126**	M3x7 - IP	2.85 **819**	6.47	**848**
70 508 520 / 70 509 520	21.91	**823**	T09 - IP	14.77 **126**	M3x7 - IP	2.85 **819**	6.47	**848**
70 508 620 / 70 509 620	21.61	**824**	T15 - IP	15.77 **128**	M4,5x12 - IP	2.71 **820**	7.17	**810**
70 508 625 / 70 509 625	21.61	**824**	T15 - IP	15.77 **128**	M4,5x12 - IP	2.71 **820**	7.17	**810**
70 508 632 / 70 509 632	21.61	**824**	T15 - IP	15.77 **128**	M4,5x12 - IP	2.71 **820**	7.17	**810**
70 508 725 / 70 509 725	24.26	**825**	T20 - IP	16.56 **129**	M5x14 - IP	3.85 **821**	10.95	**814**
70 508 732 / 70 509 732	24.26	**825**	T20 - IP	16.56 **129**	M5x14 - IP	3.85 **821**	10.95	**814**
70 508 832 / 70 509 832	26.54	**826**	T20 - IP	16.56 **129**	M5x14 - IP	3.85 **821**	11.74	**816**
70 508 940 / 70 509 940	26.54	**826**	T20 - IP	16.56 **129**	M5x14 - IP	3.85 **821**	11.74	**816**
70 508 440 / 70 509 440	41.34	**827**	T25 - IP	19.11 **130**	M6x16 - IP	7.31 **822**	22.50	**625**

MaxiLock-D – DCBN 75° – Toolholder with top clamping

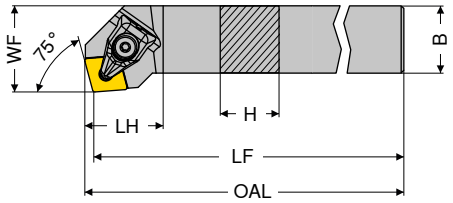


Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 501 ... £		Right-hand 2A/24 Article no. 70 500 ... £	
	mm	mm	mm	mm	mm	Nm					
DCBN R/L 2525 M12	25	25	150	32	22	4	CN.. 1204	77.31	**825**	77.31	**825**

Spare parts	2A/28 XPress type Article no. 70 950 ... £		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Carbide type C Article no. 70 950 ... £	
for Article no.								
70 501 825 / 70 500 825	21.61	**824**	T15 - IP	15.77 **128**	M4,5x12 - IP	2.71	**820**	7.17 **810**

MaxiLock-D – DCKN 75° – Toolholder with top clamping



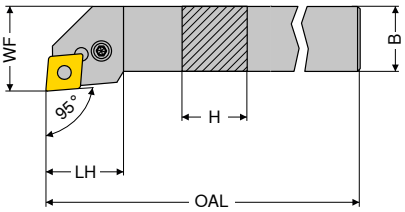
Illustrations show right-hand versions

ISO designation	H	B	OAL	LF	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 505 ... £		Right-hand 2A/24 Article no. 70 504 ... £	
	mm	mm	mm	mm	mm	mm	Nm					
DCKN R/L 2525 M12	25	25	152.9	150	28.9	32	4	CN.. 1204	77.31	**825**	77.31	**825**

Spare parts	2A/28 XPress type Article no. 70 950 ... £		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Carbide type C Article no. 70 950 ... £	
for Article no.								
70 505 825 / 70 504 825	21.61	**824**	T15 - IP	15.77 **128**	M4,5x12 - IP	2.71	**820**	7.17 **810**

9

MaxiLock-N – PCLN 95° – Toolholder with lever clamping



Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 509 ...		Right-hand 2A/24 Article no. 70 508 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
PCLN R/L 1616 H12	16	16	100	26.2	20	4	CN.. 1204	69.39	016	69.39	016
PCLN R/L 2020 K12	20	20	125	27.5	25	4	CN.. 1204	77.31	020	77.31	020
PCLN R/L 2525 M12	25	25	150	28.1	32	4	CN.. 1204	79.97	025	79.97	025
PCLN R/L 3225 P12	32	25	170	28.1	32	4	CN.. 1204	85.79	032	85.79	032
PCLN R/L 2525 M16	25	25	150	32.7	32	4	CN.. 1606	79.97	125	79.97	125
PCLN R/L 3232 P16	32	32	170	32.6	40	4	CN.. 1606	108.00	132	108.00	132
PCLN R/L 3232 P19	32	32	170	38.0	40	8	CN.. 1906	108.00	232	108.00	232
PCLN R/L 4040 S25	40	40	250	50.0	50	8	CN.. 2509	134.27	340	134.27	340

Key I

Shim

Assembly pin

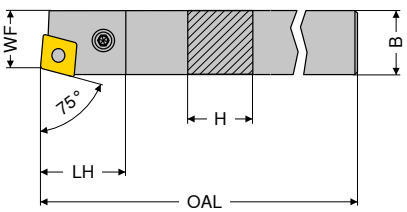
Lever

Clamping screw

Carbide type C

Spare parts for Article no.		Key I 2A/28 Article no. 70 950 ...		Shim 2A/28 Article no. 70 950 ...		Assembly pin 2A/28 Article no. 70 950 ...		Lever 2A/28 Article no. 70 950 ...		Clamping screw 2A/28 Article no. 70 950 ...		Carbide type C 2A/28 Article no. 70 950 ...	
		£		£		£		£		£		£	
70 508 016 / 70 509 016	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	7.17	233
70 508 020 / 70 509 020	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	7.17	233
70 508 025 / 70 509 025	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	7.17	233
70 508 032 / 70 509 032	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	7.17	233
70 508 125 / 70 509 125	SW3	2.23	176	1.02	391	1.11	394	11.35	385	3.45	388	11.35	380
70 508 132 / 70 509 132	SW3	2.23	176	1.02	391	1.11	394	11.35	385	3.45	388	11.35	380
70 508 232 / 70 509 232	SW4	2.34	396	1.60	392	1.11	395	17.37	386	3.45	389	17.46	381
70 508 340 / 70 509 340	SW5	3.35	265	1.02	621	1.72	623	23.48	620	2.07	622	22.50	624

MaxiLock-N – PCBN 75° – Toolholder with lever clamping



Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 501 ...		Right-hand 2A/24 Article no. 70 500 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
PCBN R/L 2525 M12	25	25	150	27.70	22	4	CN.. 1204	77.31	025	77.31	025
PCBN R 2525 M16	25	25	150	31.81	22	4	CN.. 1606			77.31	125
PCBN R/L 3232 P19	32	32	170	38.00	27	8	CN.. 1906	108.00	032	108.00	032

Key I

Shim

Assembly pin

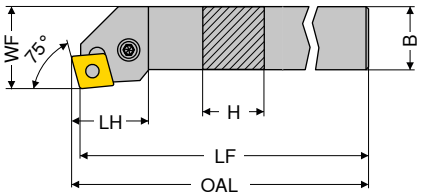
Lever

Clamping screw

Carbide type C

Spare parts for Article no.		Key I 2A/28 Article no. 70 950 ...		Shim 2A/28 Article no. 70 950 ...		Assembly pin 2A/28 Article no. 70 950 ...		Lever 2A/28 Article no. 70 950 ...		Clamping screw 2A/28 Article no. 70 950 ...		Carbide type C 2A/28 Article no. 70 950 ...	
		£		£		£		£		£		£	
70 500 025 / 70 501 025	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	7.17	233
70 500 125	SW3	2.23	176	1.02	391	1.11	394	11.35	385	3.45	388	11.35	380
70 500 032 / 70 501 032	SW4	2.34	396	1.60	392	1.11	395	17.37	386	3.45	389	17.46	381

MaxiLock-N – PCKN 75° – Toolholder with lever clamping



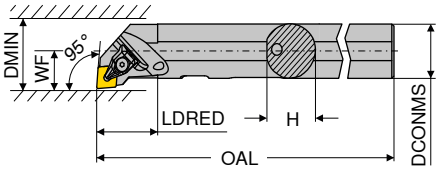
Illustrations show right-hand versions

ISO designation	H	B	OAL	LF	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 505 ... £		Right-hand 2A/24 Article no. 70 504 ... £	
	mm	mm	mm	mm	mm	mm	Nm					
PCKN R/L 2525 M12	25	25	153.07	150	31.4	32	4	CN.. 1204	77.31	**025**	77.31	**025**

Spare parts		2A/28 Key I Article no. 70 950 ... £		2A/28 Shim Article no. 70 950 ... £		2A/28 Assembly pin Article no. 70 950 ... £		2A/28 Lever Article no. 70 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Carbide type C Article no. 70 950 ... £	
for Article no.													
70 505 025 / 70 504 025	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.18	**209**	7.17	**233**

9

MaxiLock-D – DCLN 95° – Boring bar with top clamping



Illustrations show right-hand versions

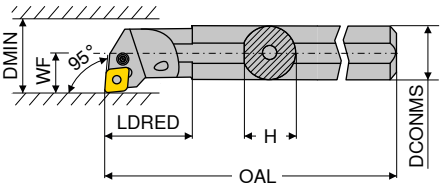
ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 557 ... £		Right-hand 2A/24 Article no. 70 556 ... £	
A20Q DCLN R/L 09	20	19	180	35	13	25	2	CN.. 0903	181.27	**720**	181.27	**720**
A25R DCLN R/L 12	25	24	200	36	17	32	4	CN.. 1204	202.00	**825**	202.00	**825**
A32S DCLN R/L 12	32	31	250	40	22	40	4	CN.. 1204	208.91	**832**	208.91	**832**
A40T DCLN R/L 12	40	39	300	45	27	50	4	CN.. 1204	232.73	**840**	232.73	**840**

Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts for Article no.	2A/28 XPress type Article no. 70 950 ... £		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Carbide type C Article no. 70 950 ... £	
70 556 720 / 70 557 720	21.91	**823**	T09 - IP	14.77	**126**	M3x7 - IP	2.85	**819**	6.47	**848**
70 556 825 / 70 557 825	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**		
70 556 832 / 70 557 832	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**810**
70 556 840 / 70 557 840	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**810**

MaxiLock-N – PCLN 95° – Boring bar with lever clamping

- A... = with thro' coolant
- S... = without thro' coolant



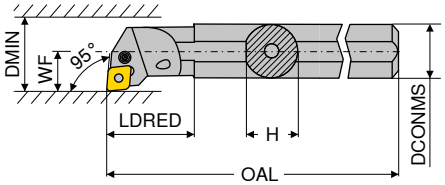
Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 557 ... £		Right-hand 2A/24 Article no. 70 556 ... £	
A25R PCLN R/L 12	25	23	200	36.0	17	32	4	CN.. 1204	202.00	**225**	202.00	**225**
S25T PCLN R/L 12	25	23	300	22.0	17	32	4	CN.. 1204	202.00	**025**	202.00	**025**
A32S PCLN R/L 12	32	30	250	50.0	22	40	4	CN.. 1204	208.91	**232**	208.91	**232**
S32U PCLN R/L 12	32	30	350	24.1	22	40	4	CN.. 1204	208.91	**032**	208.91	**032**
A40T PCLN R/L 12	40	38	300	60.0	27	50	4	CN.. 1204	232.73	**240**	232.73	**240**
S40V PCLN R/L 12	40	38	400	24.1	27	50	4	CN.. 1204	232.73	**040**	232.73	**040**
S50W PCLN R/L 16	50	47	450	31.0	35	63	4	CN.. 1606	288.00	**050**	288.00	**050**

Spare parts for Article no.		2A/28 Key I Article no. 70 950 ... £		2A/28 Shim Article no. 70 950 ... £		2A/28 Assembly pin Article no. 70 950 ... £		2A/28 Lever Article no. 70 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Carbide type C Article no. 70 950 ... £	
70 556 225 / 70 557 225	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.89	**205**	7.17	**233**
70 556 025 / 70 557 025	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.89	**205**	7.17	**233**
70 556 232 / 70 557 232	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.89	**205**	7.17	**233**
70 556 032 / 70 557 032	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.89	**205**	7.17	**233**
70 556 240 / 70 557 240	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.18	**209**	7.17	**233**
70 556 040 / 70 557 040	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.18	**209**	7.17	**233**
70 556 050 / 70 557 050	SW3	2.23	**176**	1.02	**391**	1.11	**394**	11.35	**385**	3.45	**388**	11.35	**380**

MaxiLock-N – PCLN 95° – Boring bar with lever clamping

▲ with carbide core



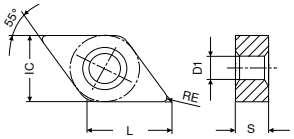
Illustrations show right-hand versions

ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 559 ...		Right-hand 2A Article no. 70 558 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
E-A25R PCLN R/L 12	25	23	200	40	17	31	4	CN.. 1204	645.09	**025**	645.09	**025**
E-A32S PCLN R/L 12	32	30	250	50	22	39	4	CN.. 1204	851.55	**032**	851.55	**032**
E-A40T PCLN R/L 12	40	38	300	60	27	48	4	CN.. 1204	1,016.36	**040**	1,016.36	**040**

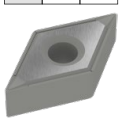
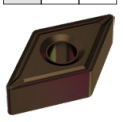
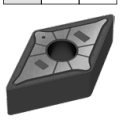
Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Carbide type C Article no. 70 950 ...	
for Article no.		£		£		£		£		£		£	
70 558 025 / 70 559 025	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.89	**205**	7.17	**233**
70 558 032 / 70 559 032	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.89	**205**	7.17	**233**
70 558 040 / 70 559 040	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.18	**209**	7.17	**233**

DNMG / DNMA / DNMM / DNGP

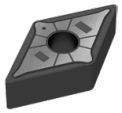
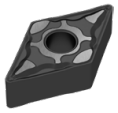
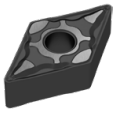
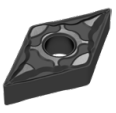
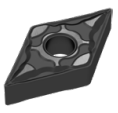
Designation	L	S	D1	IC
	mm	mm	mm	mm
DNMG 1104..	11.6	4.76	3.81	9.52
DN.. 1504..	15.5	4.76	5.16	12.70
DN.. 1506..	15.5	6.35	5.16	12.70



DNMG

		-CF TCM10	-CF20 CTEP110	-F50 CTCP115	-F50 CTCP125	-F50 CTCP135	-TFQ CTEP110	-TFQ CTCP115
		-CF CWC10	-NF12 DCC1110	-NF15 HCX1115	-NF15 HCX1125	-NF15 HCR1135	-TFQ DCC1110	-TFQ HCX1115
			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		F	F	F	F	F	F	F
		CERMET DNMG 1A/78	CERMET DNMG 1A/78	DNMG 1A/08	DNMG 1A/08	DNMG 1A/08	CERMET DNMG 1A/78	DNMG 1A/08
ISO	RE	Article no. 70 155 ...	Article no. 76 102 ...	Article no. 76 134 ...	Article no. 76 134 ...	Article no. 76 134 ...	Article no. 76 153 ...	Article no. 76 153 ...
	mm	£	£	£	£	£	£	£
110402EN	0.2			11.08 302	11.08 502	11.08 702		
110404EN	0.4	10.57 904	11.08 004	11.08 304	11.08 504	11.08 704		
110408EN	0.8		11.08 006	11.08 306	11.08 506	11.08 706		
110412EN	1.2			11.08 308	11.08 508	11.08 708		
150404EN	0.4			13.43 316	13.43 516	13.43 716		
150408EN	0.8			13.43 318	13.43 518	13.43 718		
150412EN	1.2			13.43 320	13.43 520	13.43 720		
150604EN	0.4	13.85 914	14.55 028	14.55 328	14.55 528	14.55 728	16.17 028	16.78 32800
150608EN	0.8		14.55 030	14.55 330	14.55 530	14.55 730	16.17 030	16.78 330
150612EN	1.2		14.55 032	14.55 332	14.55 532	14.55 732		
Steel		●	●	●	●	●	●	●
Stainless steel			○	○	○	○	○	○
Cast iron		○	○	○	○		○	○
Non ferrous metals								
Heat resistant alloys						○		

DNMG

		-TFQ CTCP125	-XU CTCP115	-XU CTCP125	-M50 CTCK110	-M50 CTCK120	-M50 CTCP115	-M50 CTCP125
		-TFQ HCX1125	-XU HCX1115	-XU HCX1125	-NM15 DCX3110	-NM15 HCF3120	-NM15 HCX1115	-NM15 HCX1125
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
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		DNMG	DNMG	DNMG	DNMG	DNMG	DNMG	DNMG
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE	Article no. 76 153 ...	Article no. 76 291 ...	Article no. 76 291 ...	Article no. 70 133 ...	Article no. 70 133 ...	Article no. 76 136 ...	Article no. 76 136 ...
	mm	£	£	£	£	£	£	£
110404EN	0.4						11.08 304	11.08 504
110408EN	0.8						11.08 306	11.08 506
110412EN	1.2						11.08 308	11.08 508
150404EN	0.4						13.43 316	13.43 514
150408EN	0.8				13.43 018	13.43 518	13.43 318	13.43 518
150412EN	1.2				13.43 020	13.43 520	13.43 320	13.43 516
150416EN	1.6						13.43 322	13.43 522
150604EN	0.4	16.78 528	14.55 328	14.55 528			14.55 328	14.55 528
150608EN	0.8	16.78 530	14.55 330	14.55 530	14.55 030	14.55 530	14.55 330	14.55 530
150612EN	1.2		14.55 332	14.55 532	14.55 032	14.55 532	14.55 332	14.55 532
150616EN	1.6						14.55 334	14.55 534
Steel		●	●	●	●	●	●	●
Stainless steel		○	○	○	○		○	○
Cast iron		○	○	○	●	●	○	○
Non ferrous metals								
Heat resistant alloys								

9

DNMG

	-M50 CTCP135	-TMQ CTCP125	-M70 CTCK110	-M70 CTCK120	-M70 CTCP115	-M70 CTCP125	-M70 CTCP135
	-NM15 HCR1135	-TMQ HCX1125	-NM19 DCX3110	-NM19 HCF3120	-NM19 HCX1115	-NM19 HCX1125	-NM19 HCR1135
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	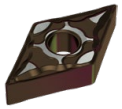	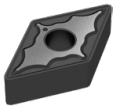	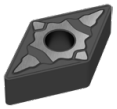	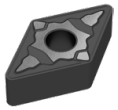	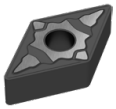	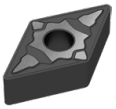	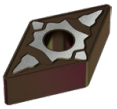
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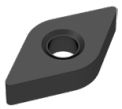
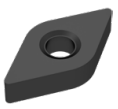
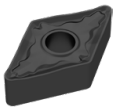
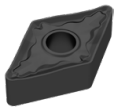
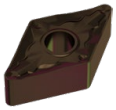
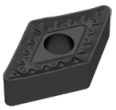
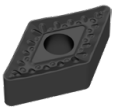
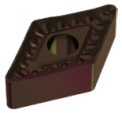
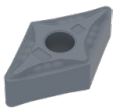
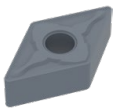
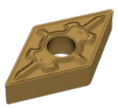
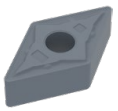
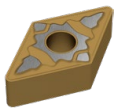
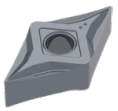
	DNMG	DNMG	DNMG	DNMG	DNMG	DNMG	DNMG
	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 76 136 ... £	Article no. 76 197 ... £	Article no. 70 263 ... £	Article no. 70 263 ... £	Article no. 76 263 ... £	Article no. 76 263 ... £	Article no. 76 263 ... £
110404EN 0.4	11.08 704						
110408EN 0.8	11.08 706				11.08 306	11.08 506	11.08 706
110412EN 1.2	11.08 708				11.08 308	11.08 508	11.08 708
150404EN 0.4	13.43 716						
150408EN 0.8	13.43 718		13.43 018	13.43 518	13.43 318	13.43 518	13.43 718
150412EN 1.2	13.43 720		13.43 020	13.43 520	13.43 320	13.43 520	13.43 720
150416EN 1.6	13.43 722				13.43 322	13.43 522	13.43 722
150604EN 0.4	14.55 728						
150608EN 0.8	14.55 730	16.78 530	14.55 030	14.55 530	14.55 330	14.55 530	14.55 730
150612EN 1.2	14.55 732	16.78 532	14.55 032	14.55 532	14.55 332	14.55 532	14.55 732
150616EN 1.6	14.55 734		14.55 034	14.55 534	14.55 334	14.55 534	14.55 734
Steel	●	●	●	●	●	●	●
Stainless steel	○	○	○		○	○	○
Cast iron		○	●	●	○	○	
Non ferrous metals							
Heat resistant alloys	○						○

DNMA / DNMM

	CTCK110	CTCK120	-R28 CTCP115	-R28 CTCP125	-R28 CTCP135	-R58 CTCP115	-R58 CTCP125
	DCX3110	HCF3120	-NR14 HCX1115	-NR14 HCX1125	-NR14 HCR1135	-NR17 HCX1115	-NR17 HCX1125
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	R	R	R	R	R	R	R
	DNMA	DNMA	DNMM	DNMM	DNMM	DNMM	DNMM
	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 70 156 ... £	Article no. 70 156 ... £	Article no. 76 165 ... £	Article no. 76 165 ... £	Article no. 76 165 ... £	Article no. 76 166 ... £	Article no. 76 166 ... £
150408EN 0.8	13.43 018	13.43 518					
150412EN 1.2	13.43 020	13.43 520					
150608EN 0.8	14.55 030	14.55 530					
150612EN 1.2	14.55 032	14.55 532	14.55 332	14.55 532	14.55 732	14.55 332	14.55 532
150616EN 1.6			14.55 334	14.55 534	14.55 734	14.55 334	14.55 534
Steel			●	●	●	●	●
Stainless steel			○	○	○	○	○
Cast iron	●	●	○	○		○	○
Non ferrous metals							
Heat resistant alloys					○		

DNMM / DNMG / DNGP

		-R58 CTCP135	-F30 CTPM125	-M30 CTPM125	-M42 CTC2135	-M60 CTPM125	-M70 CTC2135	-F32 CTP2120
		-NR17 HCR1135	-NF23 HCN2125	-NM23 HCN2125	-M42 CWN2135	-NM26 HCN2125	-NM19 CWN2135	-F32 CCN2120
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN		
								
		R	F	M	M	M	M	F
		DNMM	DNMG	DNMG	DNMG	DNMG	DNMG	DNGP
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE	Article no. 76 166 ...	Article no. 75 013 ...	Article no. 75 014 ...	Article no. 70 158 ...	Article no. 75 015 ...	Article no. 70 263 ...	Article no. 70 118 ...
	mm	£	£	£	£	£	£	£
110404EN	0.4		11.08 204		11.08 600			
110408EN	0.8		11.08 206	11.08 206	11.08 602		11.08 406	
110412EN	1.2			11.08 208				
150402FN	0.2							17.79 602
150404EN	0.4				13.43 614			
150404FN	0.4							17.79 604
150408EN	0.8				13.43 618			
150408FN	0.8							17.79 608
150602FN	0.2							19.43 610
150604EN	0.4		14.55 228		14.55 620			
150604FN	0.4							19.43 612
150608EN	0.8		14.55 230	14.55 230	14.55 622	14.55 230		
150608FN	0.8							19.43 614
150612EN	1.2	14.55 732		14.55 232		14.55 232		
150616EN	1.6	14.55 734						

Steel	●	○	○	○	○	○	
Stainless steel	○	●	●	●	●	●	●
Cast iron							○
Non ferrous metals							○
Heat resistant alloys	○		○	●	○	●	●

9

DNMG

		-M34 CTP5110		-M34 CTP5115		-M42 CTP2120		-M52 CTP2120	
		-M34 HCN5110		-M34 HCN5115		-M42 CCN2120		-M52 CCN2120	
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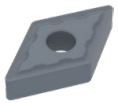
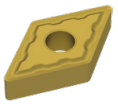
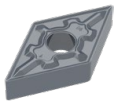
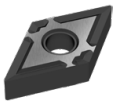
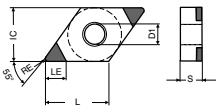
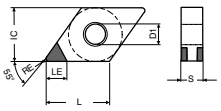
									
		M		M		M		M	
		DNMG		DNMG		DNMG		DNMG	
		1A/08		1A/08		1A/08		1A/08	
ISO	RE	Article no. 75 004 ...		Article no. 75 004 ...		Article no. 70 158 ...		Article no. 70 119 ...	
	mm	£		£		£		£	
150404EN	0.4	14.03	416	14.03	516	13.43	604		
150408EN	0.8	14.03	418	14.03	518				
150412EN	1.2	14.03	420	14.03	520				
150604EN	0.4					14.55	610	14.55	612
150608EN	0.8	15.36	430	15.36	530	14.55	612	14.55	614
150612EN	1.2	15.36	432	15.36	532				
Steel									
Stainless steel		○		○		○		○	
Cast iron						○		○	
Non ferrous metals						○		○	
Heat resistant alloys		●		●		●		●	

DNGA

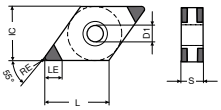
Designation	L	S	D1	IC
	mm	mm	mm	mm
DNGA 1506..	15.5	6.35	5.16	12.7



-B

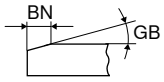


-K (-2SC)



-L (-4SC)

DNGA

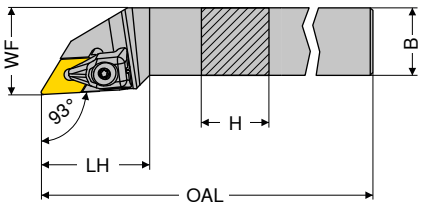


ISO	RE	GB	BN	LE	-L CTBS20C -4SC PBC15-S F CBN DNGA Y0 Article no. 71 403 ...		-B CTBH15C F CBN DNGA NEW Y0 Article no. 71 017 ...		-K CTBH20C -2SC PBC25-S F CBN DNGA Y0 Article no. 71 402 ...		-L CTBH20C -4SC PBC25-S F CBN DNGA Y0 Article no. 71 403 ...		-K CTBH40C -2SC PBC40-S F CBN DNGA Y0 Article no. 71 402 ...		-L CTBH40C -4SC PBC40-S F CBN DNGA Y0 Article no. 71 403 ...	
	mm	°	mm	mm	£		£		£		£		£		£	
150604SN	0.4	10	0.09	2.8	84.59	122										
150604TN	0.4	15	0.09	2.8					54.73	222						
150604SN	0.4	15	0.09	2.8	84.59	132										
150604SN	0.4	15	0.11	2.8			79.70	32814								
150604SN	0.4	20	0.09	2.8	84.59	152									84.59	332
150604SN	0.4	20	0.11	2.8							84.59	242				
150604TN	0.4	25	0.11	2.8					54.73	252						
150604SN	0.4	25	0.11	2.8									54.73	352	84.59	352
150604SN	0.4	25	0.13	2.8			79.70	32829			84.59	262				
150604FN	0.4			2.8					54.73	212						
150604SN	0.4	30	0.14	2.8											84.59	372
150604SN	0.4	30	0.18	2.8	84.59	182										
150604SN	0.4	35	0.14	2.8									54.73	382		
150608FN	0.8			2.6					54.73	214						
150608SN	0.8	10	0.09	2.6	84.59	124										
150608SN	0.8	15	0.09	2.6	84.59	134										
150608TN	0.8	15	0.09	2.6					54.73	224						
150608SN	0.8	15	0.11	2.6			79.70	33014								
150608SN	0.8	20	0.09	2.6	84.59	154									84.59	334
150608SN	0.8	20	0.11	2.6							84.59	244				
150608TN	0.8	25	0.11	2.6					54.73	254						
150608SN	0.8	25	0.11	2.6									54.73	354	84.59	354
150608SN	0.8	25	0.13	2.6			79.70	33029			84.59	264			84.59	364
150608SN	0.8	30	0.14	2.6							84.59	274			84.59	374
150608SN	0.8	30	0.18	2.6	84.59	184										
150608SN	0.8	35	0.14	2.6									54.73	384		
150612SN	1.2	15	0.11	2.8			79.70	33214								
150612SN	1.2	25	0.13	2.8			79.70	33229								

Cast iron	●						
Sintered steels	●						
Heat resistant alloys	●						
hardened < 45 HRC		●					
hardened 46–55 HRC		●	●	●	●	●	
hardened 56–60 HRC		●	●	●	●	●	
hardened 61–65 HRC					●	●	

9

MaxiLock-D – DDJN 93° – Toolholder with top clamping



Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 541 ...	£	Right-hand 2A/24 Article no. 70 540 ...	£
	mm	mm	mm	mm	mm	Nm					
DDJN R/L 1616 H11	16	16	100	33	20	2	DN.. 1104	69.39	**816**	69.39	**816**
DDJN R/L 2020 K11	20	20	125	33	25	2	DN.. 1104	77.31	**820**	77.31	**820**
DDJN R/L 2525 M11	25	25	150	33	32	2	DN.. 1104	79.97	**825**	79.97	**825**
DDJN R/L 2020 K15	20	20	125	40	25	4	DN.. 1504 / 1506	77.31	**720**	77.31	**720**
DDJN R/L 2525 M15	25	25	150	40	32	4	DN.. 1504 / 1506	79.97	**725**	79.97	**725**
DDJN R/L 3225 P15	32	25	170	40	32	4	DN.. 1504 / 1506	85.79	**832**	85.79	**832**

Tool holders with HSK-T or PSC interface can be found in → **Chapter 16.**

When using DN.. 1504 indexable inserts, use insert seat article no. 70 950 40000.

XPress type

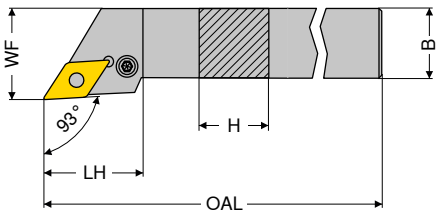
Key D

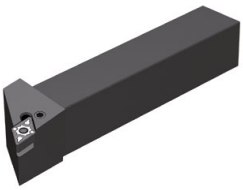
Clamping screw

Solid Carbide Seat D

Spare parts for Article no.		2A/28 Article no. 70 950 ... £		Y7 Article no. 80 950 ... £			2A/28 Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £	
70 541 816 / 70 540 816		26.15	**835**	T09 - IP	14.77	**126**	M3x7 - IP	2.85	**819**	3.21	**808**
70 541 820 / 70 540 820		26.15	**835**	T09 - IP	14.77	**126**	M3x7 - IP	2.85	**819**	3.21	**808**
70 541 825 / 70 540 825		26.15	**835**	T09 - IP	14.77	**126**	M3x7 - IP	2.85	**819**	3.21	**808**
70 541 720 / 70 540 720		21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**811**
70 541 725 / 70 540 725		21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**811**
70 541 832 / 70 540 832		21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**811**

MaxiLock-N – PDJN 93° – Toolholder with lever clamping





Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 541 ...	£	Right-hand 2A/24 Article no. 70 540 ...	£
	mm	mm	mm	mm	mm	Nm					
PDJN R/L 1616 H11	16	16	100	30.0	20	3	DN.. 1104	69.39	**116**	69.39	**116**
PDJN R/L 2020 K11	20	20	125	30.0	25	3	DN.. 1104	77.31	**120**	77.31	**120**
PDJN R/L 2525 M11	25	25	150	30.0	32	3	DN.. 1104	79.97	**125**	79.97	**125**
PDJN R/L 2020 K15	20	20	125	34.9	25	3,2	DN.. 1506	77.31	**020**	77.31	**020**
PDJN R/L 2525 M15	25	25	150	35.4	32	3,2	DN.. 1506	79.97	**025**	79.97	**025**
PDJN R/L 3225 P15	32	25	170	35.4	32	3,2	DN.. 1506	85.79	**032**	85.79	**032**

Key I

Shim

Assembly pin

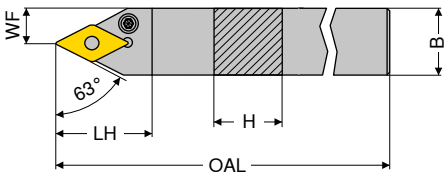
Lever

Clamping screw

Solid Carbide Seat D

Spare parts for Article no.			2A/28 Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £	
70 541 116 / 70 540 116	SW2,5		2.23	**175**	1.87	**122**	1.11	**191**	13.61	**121**	2.90	**208**	6.55	**120**
70 541 120 / 70 540 120	SW2,5		2.23	**175**	1.87	**122**	1.11	**191**	13.61	**121**	2.90	**208**	6.55	**120**
70 541 125 / 70 540 125	SW2,5		2.23	**175**	1.87	**122**	1.11	**191**	13.61	**121**	2.90	**208**	6.55	**120**
70 541 020 / 70 540 020	SW3		2.23	**176**	1.60	**198**	1.11	**192**	12.44	**188**	3.45	**388**	7.17	**236**
70 541 025 / 70 540 025	SW3		2.23	**176**	1.60	**198**	1.11	**192**	12.44	**188**	3.45	**388**	7.17	**236**
70 541 032 / 70 540 032	SW3		2.23	**176**	1.60	**198**	1.11	**192**	12.44	**188**	3.45	**388**	7.17	**236**

MaxiLock-N – PDNN 63° – Toolholder with lever clamping

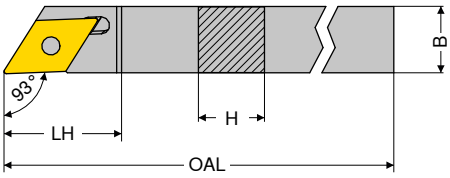


Illustrations show right-hand versions

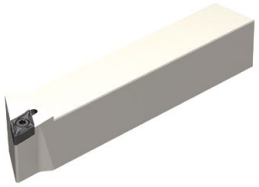
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 537 ...		Right-hand 2A/24 Article no. 70 536 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
PDNN R/L 2525 M11	25	25	150	30.0	12.5	3	DN.. 1104	79.97	**125**	79.97	**125**
PDNN R/L 2525 M15	25	25	150	36.5	12.5	3,2	DN.. 1506	79.97	**025**	79.97	**025**

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat D Article no. 70 950 ...	
for Article no.		£		£		£		£		£		£	
70 537 125 / 70 536 125	SW2,5	2.23	**175**	1.87	**122**	1.11	**191**	13.61	**121**	2.90	**208**	6.55	**120**
70 537 025 / 70 536 025	SW3	2.23	**176**	1.60	**198**	1.11	**192**	12.44	**188**	3.45	**388**	7.17	**236**

MaxiLock-S – SDJN 93° – Toolholder with screw clamping



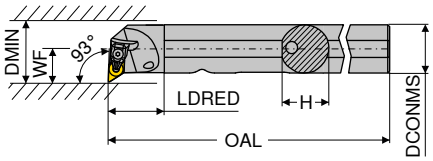
Illustrations show right-hand versions



ISO designation	H	B	OAL	LH	torque moment	Insert	Left-hand X0 Article no. 70 699 ...		Right-hand X0 Article no. 70 698 ...	
	mm	mm	mm	mm	Nm		£		£	
SDJN R/L 1012 H11	10	12	100	21.3	3,2	DNGU 1104	203.60	**010**	203.60	**010**
SDJN R/L 1212 H11	12	12	100	21.3	3,2	DNGU 1104	203.60	**012**	203.60	**012**
SDJN R/L 1616 K11	16	16	125	21.3	3,2	DNGU 1104	235.79	**016**	235.79	**016**
SDJN R/L 2020 K11	20	20	125	21.3	3,2	DNGU 1104	224.63	**020**	224.63	**020**
SDJN R/L 2525 M11	25	25	150	21.3	3,2	DNGU 1104	264.60	**025**	264.60	**025**

Spare parts		Y7 Key D Article no. 80 950 ...			2A Clamping screw Article no. 72 950 ...	
for Article no.		£			£	
70 699 010 / 70 698 010	T15 - IP	15.77	**128**	M4x11	4.36	**007**
70 699 012 / 70 698 012	T15 - IP	15.77	**128**	M4x11	4.36	**007**
70 699 016 / 70 698 016	T15 - IP	15.77	**128**	M4x11	4.36	**007**
70 699 020 / 70 698 020	T15 - IP	15.77	**128**	M4x11	4.36	**007**
70 699 025 / 70 698 025	T15 - IP	15.77	**128**	M4x11	4.36	**007**

MaxiLock-D – DDUN 93° – Boring bar with top clamping



Illustrations show right-hand versions

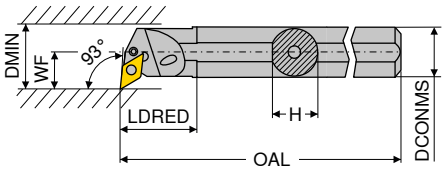
ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 569 ...	£	Right-hand 2A/24 Article no. 70 568 ...	£
	mm	mm	mm	mm	mm	mm	Nm					
A25R DDUN R/L 11	25	24	200	30	17	32	2	DN.. 1104	202.00	**725**	202.00	**725**
A32S DDUN R/L 11	32	31	250	40	22	40	2	DN.. 1104	208.91	**732**	208.91	**732**
A40T DDUN R/L 15	40	39	300	45	27	50	4	DN.. 1506	232.73	**840**	232.73	**840**

Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts		2A/28 XPress type Article no. 70 950 ...	£		Y7 Key D Article no. 80 950 ...	£		2A/28 Clamping screw Article no. 70 950 ...	£		2A/28 Solid Carbide Seat D Article no. 70 950 ...	£	
for Article no.													
70 568 725 / 70 569 725		26.15	**835**	T09 - IP		14.77	**126**	M3x7 - IP		2.85	**819**	3.21	**808**
70 568 732 / 70 569 732		26.15	**835**	T09 - IP		14.77	**126**	M3x7 - IP		2.85	**819**	3.21	**808**
70 568 840 / 70 569 840		21.61	**824**	T15 - IP		15.77	**128**	M4,5x12 - IP		2.71	**820**	7.17	**811**

MaxiLock-N – PDUN 93° – Boring bar with lever clamping

- A... = with thro' coolant
- S... = without thro' coolant



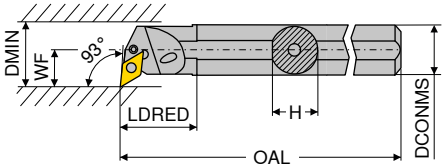
Illustrations show right-hand versions

ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 569 ...	£	Right-hand 2A/24 Article no. 70 568 ...	£
	mm	mm	mm	mm	mm	mm	Nm					
A20Q PDUN R/L 11	20	18.5	180	36	16.0	28	3	DN.. 1104	181.27	**120**	181.27	**120**
A25R PDUN R/L 11	25	23.0	200	36	18.5	32	3	DN.. 1104	202.00	**125**	202.00	**125**
A32S PDUN R/L 11	32	30.0	250	36	22.0	40	3	DN.. 1104	208.91	**132**	208.91	**132**
A32S PDUN R/L 15	32	30.0	250	50	22.0	40	3,2	DN.. 1506	208.91	**232**	208.91	**232**
A40T PDUN R/L 15	40	38.0	300	60	27.0	50	3,2	DN.. 1506	232.73	**240**	232.73	**240**
S50W PDUN R/L 15	50	47.0	450	31	35.0	63	3,2	DN.. 1506	288.00	**050**	288.00	**050**

Spare parts		2A/28 Key I Article no. 70 950 ...	£		2A/28 Shim Article no. 70 950 ...	£		2A/28 Assembly pin Article no. 70 950 ...	£		2A/28 Lever Article no. 70 950 ...	£		2A/28 Clamping screw Article no. 70 950 ...	£		2A/28 Solid Carbide Seat D Article no. 70 950 ...	£	
for Article no.																			
70 568 120 / 70 569 120	SW2,5	2.23	**175**								13.61	**125**		1.97	**126**				
70 568 125 / 70 569 125	SW2,5	2.23	**175**	1.87	**122**		1.11	**191**		13.61	**121**		2.90	**208**		6.55	**120**		
70 568 132 / 70 569 132	SW2,5	2.23	**175**	1.87	**122**		1.11	**191**		13.61	**121**		2.90	**208**		6.55	**120**		
70 568 232 / 70 569 232	SW3	2.23	**176**	1.60	**198**		1.11	**192**		12.44	**188**		3.18	**209**		7.17	**236**		
70 568 240 / 70 569 240	SW3	2.23	**176**	1.60	**198**		1.11	**192**		12.44	**188**		3.18	**209**		7.17	**236**		
70 568 050 / 70 569 050	SW3	2.23	**176**	1.60	**198**		1.11	**192**		12.44	**188**		3.45	**388**		7.17	**236**		

MaxiLock-N – PDUN 93° – Boring bar with lever clamping

▲ with carbide core



Illustrations show right-hand versions

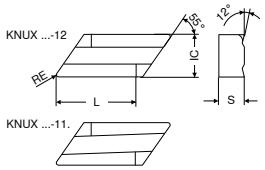
ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 563 ...		Right-hand 2A Article no. 70 562 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
E-A25R PDUN R/L 11	25	23	200	40	17	31	3	DN.. 1104	645.09	**025**	645.09	**025**
E-A32S PDUN R/L 15	32	30	250	50	22	39	3,2	DN.. 1506	851.55	**032**	851.55	**032**
E-A40T PDUN R/L 15	40	38	300	60	27	48	3,2	DN.. 1506	1,016.36	**040**	1,016.36	**040**

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat D Article no. 70 950 ...	
for Article no.		£		£		£		£		£		£	
70 562 025 / 70 563 025	SW2,5	2.23	**175**	1.87	**122**	1.11	**191**	13.61	**121**	2.90	**208**	6.55	**120**
70 562 032 / 70 563 032	SW3	2.23	**176**	1.60	**198**	1.11	**192**	12.44	**188**	3.45	**388**	7.17	**236**
70 562 040 / 70 563 040	SW3	2.23	**176**	1.60	**198**	1.11	**192**	12.44	**188**	3.45	**388**	7.17	**236**

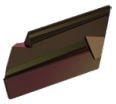
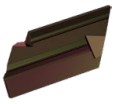
9

KNUX

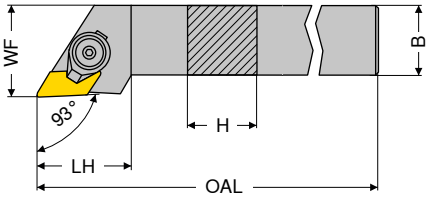
Designation	L	S	IC
	mm	mm	mm
KNUX 1604..	16	4.76	9.52



KNUX

		-11 CTCK110	-11 CTCK120	-11 CTCP135	-12 CTCP135
		-11 DCX3110	-11 HCF3120	-11 HCR1135	-12 HCR1135
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		F	F	F	M
		KNUX	KNUX	KNUX	KNUX
		1A/13	1A/13	1A/13	1A/13
ISO	RE	Article no. 70 240 ...	Article no. 70 240 ...	Article no. 76 240 ...	Article no. 76 242 ...
	mm	£	£	£	£
160405EL	0.5	13.43 002	13.43 552	13.43 702	13.43 702
160405ER	0.5	13.43 000	13.43 500	13.43 700	13.43 700
160410EL	1.0			13.43 706	13.43 706
160410ER	1.0			13.43 704	13.43 704
Steel		●	●	●	●
Stainless steel		○		○	○
Cast iron		●	●		
Non ferrous metals					
Heat resistant alloys				○	○

Simplex – CKJN 93° – Toolholder with top clamping



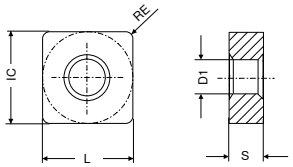
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/23 Article no. 70 799 ...	Right-hand 2A/23 Article no. 70 798 ...
	mm	mm	mm	mm	mm	Nm		£	£
CKJN R/L 2525 M16	25	25	150	35	32	7	KNUX 1604	128.00 025	128.00 025

		2A/28	2A/28	2A/28	2A/28	2A/28	2A/28	2A/28
		Clamp	Key I	Clamping screw	Countersunk head grooved pin	Carbide type C	Spring pin	Spring washer
Spare parts		Article no. 70 950 ...	Article no. 70 950 ...	Article no. 70 950 ...	Article no. 70 950 ...	Article no. 70 950 ...	Article no. 70 950 ...	Article no. 70 950 ...
for Article no.		£	£	£	£	£	£	£
70 798 025		15.49 612	2.34 396	5.08 615	1.00 603	10.25 613	2.23 616	1.00 617
70 799 025		15.49 618	2.34 396	5.08 615	1.00 603	10.25 614	2.23 616	1.00 617

SNMG / SNMA / SNMM

Designation	L	S	D1	IC
	mm	mm	mm	mm
SNMG 0903..	9.52	3.18	3.81	9.52
SNM. 1204..	12.70	4.76	5.16	12.70
SNM. 1506..	15.87	6.35	6.35	15.87
SNM. 1906..	19.05	6.35	7.94	19.05
SNMM 2507..	25.40	7.94	9.12	25.40
SNMM 2509..	25.40	9.52	9.12	25.40



SNMG

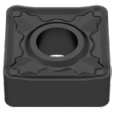
		-F50 CTCP115		-F50 CTCP125		-F50 CTCP135		-M50 CTCP115		-M50 CTCP125		-M50 CTCP135		-M70 CTCK110	
		-NF15 HCX1115		-NF15 HCX1125		-NF15 HCR1135		-NM15 HCX1115		-NM15 HCX1125		-NM15 HCR1135		-NM19 DCX3110	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
		F		F		F		M		M		M		M	
		SNMG		SNMG		SNMG		SNMG		SNMG		SNMG		SNMG	
		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08	
ISO	RE	Article no. 76 140 ...		Article no. 76 140 ...		Article no. 76 140 ...		Article no. 76 137 ...		Article no. 76 137 ...		Article no. 76 137 ...		Article no. 70 225 ...	
	mm	£		£		£		£		£		£		£	
090308EN	0.8	6.75	306	6.75	506	6.75	706								
120404EN	0.4	10.57	316	10.57	516	10.57	716								
120408EN	0.8	10.57	318	10.57	518	10.57	718	10.57	318	10.57	518	10.57	718	10.57	018
120412EN	1.2	10.57	320	10.57	520	10.57	720	10.57	320	10.57	520	10.57	720	10.57	020
120416EN	1.6							10.57	322	10.57	522	10.57	722	10.57	022
150608EN	0.8							16.78	330	16.78	530	16.78	730		
150612EN	1.2							16.78	332	16.78	532	16.78	732	16.78	032
150616EN	1.6							16.78	334	16.78	534	16.78	734	16.78	034
190612EN	1.2													23.70	044
190616EN	1.6													23.70	046
Steel		●		●		●		●		●		●		●	
Stainless steel		○		○		○		○		○		○		○	
Cast iron		○		○				○		○				●	
Non ferrous metals															
Heat resistant alloys						○						○			

9

SNMG / SNMA

		-M70 CTCK120		-M70 CTCP115		-M70 CTCP125		-M70 CTCP135		CTCP125		CTCP135		CTCK110	
		-NM19 HCF3120		-NM19 HCX1115		-NM19 HCX1125		-NM19 HCR1135		HCX1125		HCR1135		DCX3110	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
		M		M		M		M		M		M		R	
		SNMG		SNMG		SNMG		SNMG		SNMG		SNMG		SNMA	
		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08	
ISO	RE	Article no. 70 225 ...		Article no. 76 225 ...		Article no. 76 225 ...		Article no. 76 225 ...		Article no. 76 116 ...		Article no. 76 116 ...		Article no. 70 114 ...	
	mm	£		£		£		£		£		£		£	
090308EN	0.8									6.75	506	6.75	706		
120408EN	0.8	10.57	518	10.57	318	10.57	518	10.57	718					10.57	018
120412EN	1.2	10.57	520	10.57	320	10.57	520	10.57	720					10.57	020
120416EN	1.6	10.57	522	10.57	322	10.57	522	10.57	722					10.57	022
150612EN	1.2	16.78	532	16.78	332	16.78	532	16.78	732					16.78	032
150616EN	1.6	16.78	534	16.78	334	16.78	534	16.78	734					16.78	034
190612EN	1.2	23.70	544	23.70	344	23.70	544	23.70	744					23.70	044
190616EN	1.6	23.70	546	23.70	346	23.70	546	23.70	746					23.70	046
190624EN	2.4			23.70	348	23.70	548	23.70	748						
Steel		●		●		●		●		●		●			
Stainless steel				○		○		○		○		○			
Cast iron		●		○		○				○				●	
Non ferrous metals															
Heat resistant alloys								○				○			

SNMA / SNMM

		CTCK120	-R28 CTCP115	-R28 CTCP125	-R28 CTCP135	-R58 CTCP115	-R58 CTCP125	-R58 CTCP135
		HCF3120	-NR14 HCX1115	-NR14 HCX1125	-NR14 HCR1135	-NR17 HCX1115	-NR17 HCX1125	-NR17 HCR1135
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		R	R	R	R	R	R	R
		SNMA	SNMM	SNMM	SNMM	SNMM	SNMM	SNMM
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE	Article no. 70 114 ...	Article no. 76 128 ...	Article no. 76 128 ...	Article no. 76 128 ...	Article no. 76 129 ...	Article no. 76 129 ...	Article no. 76 129 ...
	mm	£	£	£	£	£	£	£
120408EN	0.8	10.57 518				10.57 318	10.57 518	10.57 718
120412EN	1.2	10.57 520				10.57 320	10.57 520	10.57 720
120416EN	1.6	10.57 522						
150612EN	1.2	16.78 532	16.78 332	16.78 532	16.78 732	16.78 332	16.78 532	16.78 732
150616EN	1.6	16.78 534	16.78 334	16.78 534	16.78 734	16.78 334	16.78 534	16.78 734
190612EN	1.2	23.70 544				23.70 344	23.70 544	23.70 744
190616EN	1.6	23.70 546	23.70 346	23.70 546	23.70 746	23.70 346	23.70 546	23.70 746
190624EN	2.4					23.70 348	23.70 548	23.70 748
250724EN	2.4				46.58 760	46.58 360	46.58 560	46.58 760
250924EN	2.4		54.71 370	54.71 570	54.71 770	54.71 370	54.71 570	54.71 770
Steel			●	●	●	●	●	●
Stainless steel			○	○	○	○	○	○
Cast iron		●	○	○		○	○	
Non ferrous metals								
Heat resistant alloys					○			○

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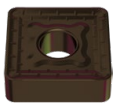
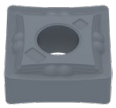
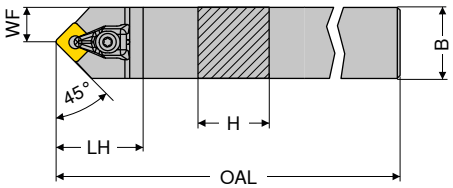
SNMM / SNMG

	-R88 CTCP115	-R88 CTCP125	-R88 CTCP135	-F30 CTPM125	-M30 CTPM125	-M42 CTC2135	-M60 CTPM125
	-NR19 HCX1115	-NR19 HCX1125	-NR19 HCR1135	-NF23 HCN2125	-NM23 HCN2125	-M42 CWN2135	-NM26 HCN2125
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN
							
	R	R	R	F	M	M	M
	SNMM	SNMM	SNMM	SNMG	SNMG	SNMG	SNMG
	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO RE mm	Article no. 76 130 ... £	Article no. 76 130 ... £	Article no. 76 130 ... £	Article no. 75 016 ... £	Article no. 75 017 ... £	Article no. 70 002 ... £	Article no. 75 018 ... £
120404EN 0.4				10.57 216			
120408EN 0.8				10.57 218	10.57 218	10.57 408	10.57 218
120412EN 1.2				10.57 220		10.57 412	10.57 210
120416EN 1.6							10.57 220
190616SN 1.6	23.70 346	23.70 546	23.70 746				
190624SN 2.4	23.70 348	23.70 548	23.70 748				
250724SN 2.4	46.58 36000	46.58 56000	46.58 760				
250924SN 2.4	54.71 37000	54.71 57000	54.71 770				
Steel	●	●	●	○	○	○	○
Stainless steel	○	○	○	●	●	●	●
Cast iron	○	○					
Non ferrous metals							
Heat resistant alloys			○		○	●	○

SNMG

	-M70 CTC2135	-M34 CTP5110	-M34 CTP5115	-M52 CTP2120
	-NM19 CWN2135	-M34 HCN5110	-M34 HCN5115	-M52 CCN2120
		DRAGONSKIN	DRAGONSKIN	
	M	M	M	M
	SNMG	SNMG	SNMG	SNMG
	1A/08	1A/08	1A/08	1A/08
ISO RE mm	Article no. 70 225 ... £	Article no. 75 005 ... £	Article no. 75 005 ... £	Article no. 70 129 ... £
120408EN 0.8	10.57 418	11.08 418	11.08 518	10.57 608
120412EN 1.2	10.57 420	11.08 420	11.08 520	
190616EN 1.6	23.70 446			
Steel	○			
Stainless steel	●	○	○	○
Cast iron				○
Non ferrous metals				○
Heat resistant alloys	●	●	●	●

MaxiLock-D – DSDN 45° – Toolholder with top clamping



ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Neutral 2A/24 Article no. 70 516 ...	
	mm	mm	mm	mm	mm	Nm		£	
DSDN N 2020 K12	20	20	125	38	10.3	4	SN.. 1204	77.31	**620**
DSDN N 2525 M12	25	25	150	38	12.5	4	SN.. 1204	79.97	**625**

Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...	
for Article no.	£		£		£		£	
70 516 620	21.61	**824**	T15 - IP	15.77 **128**	M4,5x12 - IP	2.71	**820**	7.17 **813**
70 516 625	21.61	**824**	T15 - IP	15.77 **128**	M4,5x12 - IP	2.71	**820**	7.17 **813**

MaxiLock-D – DSSN 45° – Toolholder with top clamping

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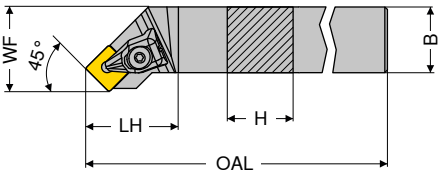
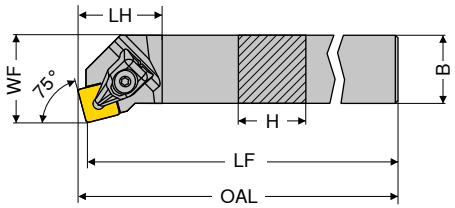


Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 513 ...		Right-hand 2A/24 Article no. 70 512 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
DSSN R/L 2020 K12	20	20	125	35	25	4	SN.. 1204	77.31	**620**	77.31	**620**
DSSN R/L 2525 M12	25	25	150	35	32	4	SN.. 1204	79.97	**625**	79.97	**625**
DSSN R/L 3225 P12	32	25	170	35	32	4	SN.. 1204	85.79	**632**	85.79	**632**

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...	
for Article no.	£		£		£		£	
70 512 620 / 70 513 620	21.61	**824**	T15 - IP	15.77 **128**	M4,5x12 - IP	2.71	**820**	7.17 **813**
70 512 625 / 70 513 625	21.61	**824**	T15 - IP	15.77 **128**	M4,5x12 - IP	2.71	**820**	7.17 **813**
70 512 632 / 70 513 632	21.61	**824**	T15 - IP	15.77 **128**	M4,5x12 - IP	2.71	**820**	7.17 **813**

MaxiLock-D – DSKN 75° – Toolholder with top clamping

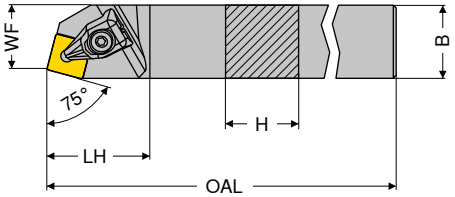


Illustrations show right-hand versions

ISO designation	H	B	OAL	LF	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 525 ...	£	Right-hand 2A/24 Article no. 70 524 ...	£
	mm	mm	mm	mm	mm	mm	Nm					
DSKN R/L 2525 M12	25	25	153.3	150	28	32	4	SN.. 1204	79.97	**625**	79.97	**625**

Spare parts	2A/28 XPress type Article no. 70 950 ...	£		Y7 Key D Article no. 80 950 ...	£		2A/28 Clamping screw Article no. 70 950 ...	£	2A/28 Solid Carbide support S Article no. 70 950 ...	£
for Article no.										
70 525 625 / 70 524 625	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**813**

MaxiLock-D – DSBN 75° – Toolholder with top clamping



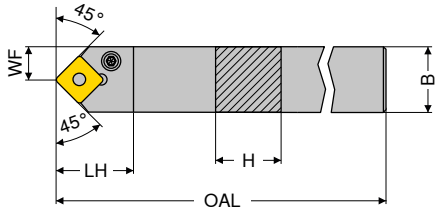
Illustrations show right-hand versions

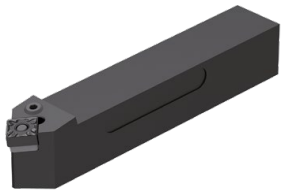
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 521 ...	£	Right-hand 2A/24 Article no. 70 520 ...	£
	mm	mm	mm	mm	mm	Nm					
DSBN R/L 2020 K12	20	20	125	35	17	4	SN.. 1204	77.31	**620**	77.31	**620**
DSBN R/L 2525 M12	25	25	150	35	22	4	SN.. 1204	79.97	**625**	79.97	**625**
DSBN R/L 2525 M15	25	25	150	42	22	6,5	SN.. 1506	79.97	**725**	79.97	**725**
DSBN R/L 3232 P15	32	32	170	42	27	6,5	SN.. 1506	108.00	**832**	108.00	**832**
DSBN R/L 3232 P19	32	32	170	48	27	6,5	SN.. 1906	108.00	**732**	108.00	**732**
DSBN R/L 4040 S19	40	40	250	48	35	6,5	SN.. 1906	134.27	**840**	134.27	**840**
DSBN R/L 4040 S25	40	40	250	57	35	6,5	SN.. 2507 / SN.. 2509	134.27	**940**	134.27	**940**

When using SN.. 2509 indexable inserts, use insert seat article no. 70 950 40100.

Spare parts	2A/28 XPress type Article no. 70 950 ...	£		Y7 Key D Article no. 80 950 ...	£		2A/28 Clamping screw Article no. 70 950 ...	£	2A/28 Solid Carbide support S Article no. 70 950 ...	£
for Article no.										
70 521 620 / 70 520 620	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**813**
70 521 625 / 70 520 625	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**813**
70 521 725 / 70 520 725	24.26	**825**	T20 - IP	16.56	**129**	M5x14 - IP	3.85	**821**	10.95	**833**
70 521 832 / 70 520 832	24.26	**825**	T20 - IP	16.56	**129**	M5x14 - IP	3.85	**821**	10.95	**833**
70 521 732 / 70 520 732	26.54	**826**	T20 - IP	16.56	**129**	M5x14 - IP	3.85	**821**	11.74	**817**
70 521 840 / 70 520 840	26.54	**826**	T20 - IP	16.56	**129**	M5x14 - IP	3.85	**821**	11.74	**817**
70 521 940 / 70 520 940	41.34	**827**	T25 - IP	19.11	**130**	M6x16 - IP	7.31	**822**	21.91	**818**

MaxiLock-N – PSDN 45° – Toolholder with lever clamping





ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Neutral 2A/24 Article no. 70 516 ...	
	mm	mm	mm	mm	mm	Nm		£	
PSDN N 1616 H09	16	16	100	21.0	8.3	3	SNM. 0903	69.39	016
PSDN N 2020 K12	20	20	125	27.6	10.3	4	SNM. 1204	77.31	020
PSDN N 2525 M12	25	25	150	27.6	12.8	4	SNM. 1204	79.97	025
PSDN N 3225 P19	32	25	170	40.4	12.5	8	SNM. 1906	85.79	03200
PSDN N 4040 S25	40	40	250	48.8	20.0	8	SNM. 2507 / 2509	134.27	04000

When using SN.. 2509 indexable inserts, use insert seat article no. 70 950 40200.

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...	
for Article no.		£		£		£		£		£		£	
70 516 016	SW2,5	2.23	175	1.60	197	1.11	191	11.35	185	2.90	208	5.55	229
70 516 020	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	5.55	230
70 516 025	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	5.55	230
70 516 03200	SW4	2.34	396	1.60	392	1.11	395	17.37	386	3.45	389	17.46	383
70 516 04000	SW5	3.35	265	1.02	621	1.72	623	23.48	620	2.07	622	35.92	27600

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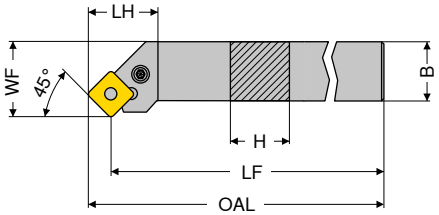
MaxiLock-N – PSSN 45° – Toolholder with lever clamping



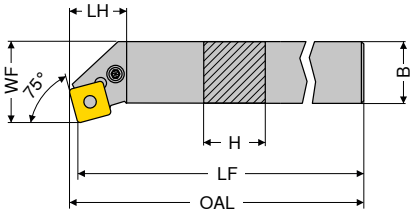
Illustrations show right-hand versions

ISO designation	H	B	OAL	LF	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 513 ...		Right-hand 2A/24 Article no. 70 512 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
PSSN R/L 1616 H09	16	16	106.7	100	21.2	20	3	SNM. 0903	69.39	016	69.39	016
PSSN R/L 2020 K12	20	20	134.0	125	29.3	25	4	SNM. 1204	77.31	020	77.31	020
PSSN R/L 2525 M12	25	25	159.0	150	29.3	32	4	SNM. 1204	79.97	025	79.97	025
PSSN R/L 3225 P12	32	25	179.0	170	32.0	32	4	SNM. 1204	85.79	032	85.79	032
PSSN R 2525 M15	25	25	161.2	150	29.3	32	4	SNM. 1506			79.97	125
PSSN R 3232 P15	32	32	181.2	170	32.0	40	4	SNM. 1506			108.00	132
PSSN R/L 3232 P19	32	32	183.5	170	40.2	40	8	SNM. 1906	108.00	232	108.00	232
PSSN R 4040 S25	40	40	268.0	250	48.8	50	8	SNM. 2507 / 2509			131.73	04000

When using SN.. 2509 indexable inserts, use insert seat article no. 70 950 40200.

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...	
for Article no.		£		£		£		£		£		£	
70 512 016 / 70 513 016	SW2,5	2.23	175	1.60	197	1.11	191	11.35	185	2.90	208	5.55	229
70 512 020 / 70 513 020	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	5.55	230
70 512 025 / 70 513 025	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	5.55	230
70 512 032 / 70 513 032	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	5.55	230
70 512 125	SW3	2.23	176	1.02	391	1.11	394	11.35	385	3.45	388	11.35	382
70 512 132	SW3	2.23	176	1.02	391	1.11	394	11.35	385	3.45	388	11.35	382
70 512 232 / 70 513 232	SW4	2.34	396	1.60	392	1.11	395	17.37	386	3.45	389	17.46	383
70 512 04000	SW5	3.35	265	1.02	621	1.72	623	23.48	620	2.07	622	35.92	27600

MaxiLock-N – PSKN 75° – Toolholder with lever clamping

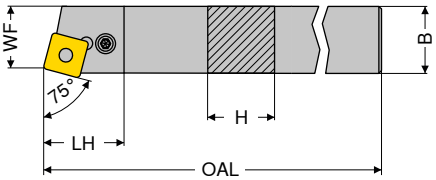


Illustrations show right-hand versions

ISO designation	H	LF	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 525 ...		Right-hand 2A/24 Article no. 70 524 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
PSKN R/L 1616 H09	16	100	16	102.5	18.7	20	3	SNM. 0903	69.39	016	69.39	016
PSKN R/L 2020 K12	20	125	20	128.3	22.7	25	4	SNM. 1204	77.31	020	77.31	020
PSKN R/L 2525 M12	25	150	25	153.3	22.7	32	4	SNM. 1204	79.97	025	79.97	025

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...	
for Article no.		£		£		£		£		£		£	
70 525 016 / 70 524 016	SW2,5	2.23	175	1.60	197	1.11	191	11.35	185	2.90	208	5.55	229
70 525 020 / 70 524 020	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	5.55	230
70 525 025 / 70 524 025	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	5.55	230

MaxiLock-N – PSBN 75° – Toolholder with lever clamping



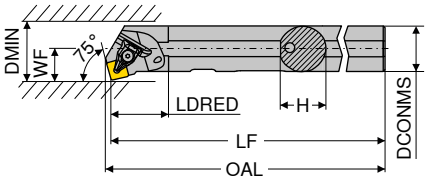
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 521 ...		Right-hand 2A/24 Article no. 70 520 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
PSBN R/L 2020 K12	20	20	125	27.5	17	4	SNM. 1204	77.31	020	77.31	020
PSBN R/L 2525 M12	25	25	150	27.5	22	4	SNM. 1204	79.97	025	79.97	025
PSBN R/L 3225 P12	32	25	170	32.0	22	4	SNM. 1204	85.79	032	85.79	032
PSBN R/L 3232 P15	32	32	170	32.0	27	4	SNM. 1506	108.00	132	108.00	132
PSBN R/L 3232 P19	32	32	170	39.2	27	8	SNM. 1906	108.00	232	108.00	232
PSBN R/L 4040 S19	40	40	250	39.2	35	8	SNM. 1906	134.27	04000	134.27	04000
PSBN R/L 4040 S25	40	40	250	48.0	35	8	SNM. 2507 / 2509	134.27	14000	134.27	14000

When using SN.. 2509 indexable inserts, use insert seat article no. 70 950 40200.

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...	
for Article no.		£		£		£		£		£		£	
70 520 020 / 70 521 020	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	5.55	230
70 520 025 / 70 521 025	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	5.55	230
70 520 032 / 70 521 032	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	5.55	230
70 520 132 / 70 521 132	SW3	2.23	176	1.02	391	1.11	394	11.35	385	3.45	388	11.35	382
70 520 232 / 70 521 232	SW4	2.34	396	1.60	392	1.11	395	17.37	386	3.45	389	17.46	383
70 520 04000 / 70 521 04000	SW4	2.34	396	1.60	392	1.11	395	17.37	386	3.45	389	17.46	383
70 520 14000 / 70 521 14000	SW5	3.35	265	1.02	621	1.72	623	23.48	620	2.07	622	35.92	27600

MaxiLock-D – DSKN 75° – Boring bar with top clamping

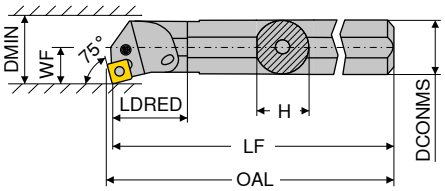


Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	LF mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 561 ... £		Right-hand 2A/24 Article no. 70 560 ... £	
A32S DSKN R/L 12	32	31	250	254.2	40	22	40	4	SN.. 1204	208.91	**832**	208.91	**832**

Spare parts	2A/28 XPress type Article no. 70 950 ... £		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide support S Article no. 70 950 ... £	
for Article no.								
70 561 832 / 70 560 832	21.61	**824**	T15 - IP	15.77 **128**	M4,5x12 - IP	2.71 **820**	7.17	**813**

MaxiLock-N – PSKN 75° – Boring bar with lever clamping



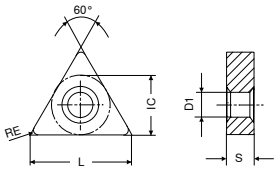
Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	LF mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 561 ... £		Right-hand 2A/24 Article no. 70 560 ... £	
A25R PSKN R/L 12	25	23	200	203	15.5	17	32	4	SNM. 1204	202.00	**225**	202.00	**225**
A32S PSKN R/L 12	32	30	250	253	16.0	22	40	4	SNM. 1204	208.91	**232**	208.91	**232**
A40T PSKN R/L 12	40	38	300	303	23.0	27	50	4	SNM. 1204	232.73	**240**	232.73	**240**

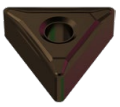
Spare parts		2A/28 Key I Article no. 70 950 ... £		2A/28 Shim Article no. 70 950 ... £		2A/28 Assembly pin Article no. 70 950 ... £		2A/28 Lever Article no. 70 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide support S Article no. 70 950 ... £	
for Article no.													
70 561 225 / 70 560 225	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.89	**205**	5.55	**230**
70 561 232 / 70 560 232	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.89	**205**	5.55	**230**
70 561 240 / 70 560 240	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.18	**209**	5.55	**230**

TNMG / TNMA / TNMM

Designation	L	S	D1	IC
	mm	mm	mm	mm
TNMG 1103..	11.0	3.18	2.26	6.35
TNM. 1604..	16.5	4.76	3.81	9.52
TNM. 2204..	22.0	4.76	5.16	12.70



TNMG

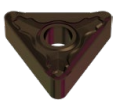
	-CF20 CTEP110	-F50 CTCP115	-F50 CTCP125	-F50 CTCP135	-M50 CTCP115	-M50 CTCP125	-M50 CTCP135
	-NF12 DCC1110	-NF15 HCX1115	-NF15 HCX1125	-NF15 HCR1135	-NM15 HCX1115	-NM15 HCX1125	-NM15 HCR1135
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	F	F	F	F	M	M	M
	CERMET TNMG 1A/78	TNMG 1A/08	TNMG 1A/08	TNMG 1A/08	TNMG 1A/08	TNMG 1A/08	TNMG 1A/08
ISO / RE	Article no. 76 149 ...	Article no. 76 146 ...	Article no. 76 146 ...	Article no. 76 146 ...	Article no. 76 138 ...	Article no. 76 138 ...	Article no. 76 138 ...
mm	£	£	£	£	£	£	£
110304EN 0.4		5.85 **304**	5.85 **504**	5.85 **704**			
110308EN 0.8		5.85 **306**	5.85 **506**	5.85 **706**			
160404EN 0.4	9.19 **016**	9.27 **316**	9.27 **516**	9.27 **716**	9.27 **316**	9.27 **516**	9.27 **716**
160408EN 0.8	9.19 **018**	9.27 **318**	9.27 **518**	9.27 **718**	9.27 **318**	9.27 **518**	9.27 **718**
160412EN 1.2	9.19 **020**	9.27 **320**	9.27 **520**	9.27 **720**	9.27 **320**	9.27 **520**	9.27 **720**
220408EN 0.8					12.51 **330**	12.51 **530**	12.51 **730**
220412EN 1.2					12.51 **332**	12.51 **532**	12.51 **732**
Steel	●	●	●	●	●	●	●
Stainless steel	o	o	o	o	o	o	o
Cast iron	o	o	o		o	o	
Non ferrous metals							
Heat resistant alloys				o			o

TNMG

		-M70 CTCK110	-M70 CTCK120	-M70 CTCP115	-M70 CTCP125	-M70 CTCP135	CTCP125	CTCP135
		-NM19 DCX3110	-NM19 HCF3120	-NM19 HCX1115	-NM19 HCX1125	-NM19 HCR1135	HCX1125	HCR1135
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		M	M	M	M	M	M	M
		TNMG	TNMG	TNMG	TNMG	TNMG	TNMG	TNMG
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE	Article no. 70 155 ...	Article no. 70 155 ...	Article no. 76 155 ...	Article no. 76 155 ...	Article no. 76 155 ...	Article no. 76 142 ...	Article no. 76 142 ...
	mm	£	£	£	£	£	£	£
110302EN	0.2							5.85 702
160404ER	0.4						9.27 516	9.27 716
160408EL	0.8						9.27 518	
160408EN	0.8	9.27 018	9.27 518	9.27 318	9.27 518	9.27 718		
160408ER	0.8						9.27 517	9.27 717
160412EN	1.2	9.27 020	9.27 520	9.27 320	9.27 520	9.27 720		
220404EN	0.4				12.51 528			
220408EN	0.8	12.51 030	12.51 530	12.51 330	12.51 530	12.51 730		
220412EN	1.2	12.51 032	12.51 532	12.51 332	12.51 532	12.51 732		
220416EN	1.6	12.51 034	12.51 534	12.51 334	12.51 534	12.51 734		
Steel		●	●	●	●	●	●	●
Stainless steel		○		○	○	○	○	○
Cast iron		●	●	○	○		○	
Non ferrous metals								
Heat resistant alloys						○		○

9

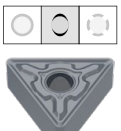
TNMA / TNMM

		CTCK110	CTCK120	-R28 CTCP115	-R28 CTCP125	-R28 CTCP135	-R58 CTCP115	-R58 CTCP125
		DCX3110	HCF3120	-NR14 HCX1115	-NR14 HCX1125	-NR14 HCR1135	-NR17 HCX1115	-NR17 HCX1125
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		R	M	R	R	R	R	R
		TNMA	TNMA	TNMM	TNMM	TNMM	TNMM	TNMM
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE	Article no. 70 134 ...	Article no. 70 134 ...	Article no. 76 154 ...	Article no. 76 154 ...	Article no. 76 154 ...	Article no. 76 152 ...	Article no. 76 152 ...
	mm	£	£	£	£	£	£	£
160408EN	0.8	9.27 018	9.27 518					
160412EN	1.2	9.27 020	9.27 520					
160416EN	1.6	9.27 022	9.27 522					
220408EN	0.8	12.51 030	12.51 530					
220412EN	1.2	12.51 032	12.51 532				12.51 332	12.51 532
220416EN	1.6	12.51 034	12.51 534	12.51 334	12.51 534	12.51 734		
Steel				●	●	●	●	●
Stainless steel				○	○	○	○	○
Cast iron		●	●	○	○		○	○
Non ferrous metals								
Heat resistant alloys						○		

TNMM / TNMG

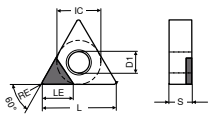
	-R58 CTCP135	-F30 CTPM125	-M30 CTPM125	-M42 CTC2135	-M60 CTPM125	-M70 CTC2135	-M34 CTP5115
	-NR17 HCR1135	-NF23 HCN2125	-NM23 HCN2125	-M42 CWN2135	-NM26 HCN2125	-NM19 CWN2135	-M34 HCN5115
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN		DRAGONSKIN
	R	F	M	M	M	M	M
	TNMM	TNMG	TNMG	TNMG	TNMG	TNMG	TNMG
	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 76 152 ... £	Article no. 75 019 ... £	Article no. 75 020 ... £	Article no. 70 148 ... £	Article no. 75 021 ... £	Article no. 70 155 ... £	Article no. 75 006 ... £
160404EN 0.4		9.27 216		9.19 404			
160408EN 0.8		9.27 218	9.27 218	9.19 408	9.27 218	9.19 418	9.19 516
160412EN 1.2			9.27 220		9.27 220		
220404EN 0.4							13.23 528
220408EN 0.8							13.23 530
220412EN 1.2	12.51 732						
220416EN 1.6							13.23 534
Steel	●	○	○	○	○	○	
Stainless steel	○	●	●	●	●	●	○
Cast iron							
Non ferrous metals							
Heat resistant alloys	○		○	●	○	●	●

TNMG

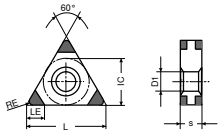
	-M42 CTP2120	-M52 CTP2120
	-M42 CCN2120	-M52 CCN2120
		
	M	M
	TNMG	TNMG
	1A/08	1A/08
ISO / RE mm	Article no. 70 148 ... £	Article no. 70 152 ... £
160404EN 0.4		9.19 604
160408EN 0.8	9.19 608	9.19 608
Steel		
Stainless steel	○	○
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●

TNGA

Designation	L	S	D1	IC
	mm	mm	mm	mm
TNGA 1103..	11.0	3.18	2.26	6.35
TNGA 1604..	16.5	4.76	3.81	9.52

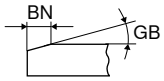


-A



-M (-6SC)

TNGA



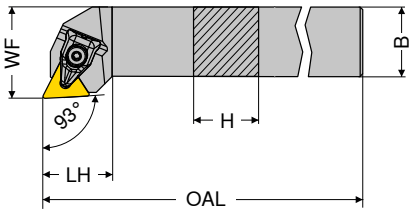
ISO	RE	GB	BN	LE	-A CTBH21U PBC25 F CBN TNGA Y0 Article no. 71 108 ... £		-M CTBH20C -6SC PBC25-S F CBN TNGA Y0 Article no. 71 404 ... £		-A CTBH40U PBC40 F CBN TNGA Y0 Article no. 71 108 ... £		-M CTBH40C -6SC PBC40-S F CBN TNGA Y0 Article no. 71 404 ... £	
	mm	°	mm	mm								
110304TN	0.4	20	0.14	2.8	52.75	500						
110308FN	0.8			2.5					52.75	802 [1]		
110308TN	0.8	20	0.14	2.5	52.75	502						
160404FN	0.4			3.5	52.75	404 [1]			52.75	804 [1]		
160404TN	0.4	15	0.09	2.8			128.25	222				
160404SN	0.4	20	0.09	2.8							128.25	332
160404SN	0.4	20	0.11	2.8			128.25	242			128.25	342
160404TN	0.4	20	0.14	3.5	52.75	504						
160404SN	0.4	25	0.11	2.8							128.25	352
160404TN	0.4	25	0.11	2.8			128.25	252				
160404TN	0.4	25	0.12	3.5					52.75	904		
160404FN	0.4			2.8			128.25	212				
160404SN	0.4	25	0.13	2.8			128.25	262				
160404SN	0.4	30	0.14	2.8							128.25	372
160404SN	0.4	35	0.14	2.8							128.25	382
160408TN	0.8	15	0.09	2.5			128.25	224				
160408SN	0.8	15	0.09	2.5							128.25	324
160408SN	0.8	20	0.09	2.5							128.25	334
160408TN	0.8	20	0.09	2.5			128.25	234				
160408SN	0.8	20	0.11	2.5			128.25	244			128.25	344
160408TN	0.8	20	0.14	3.0	52.75	506						
160408SN	0.8	25	0.11	2.5							128.25	354
160408TN	0.8	25	0.11	2.5			128.25	254				
160408TN	0.8	25	0.12	3.0					52.75	906		
160408SN	0.8	25	0.13	2.5			128.25	264			128.25	364
160408SN	0.8	30	0.14	2.5							128.25	374
160408SN	0.8	35	0.14	2.5							128.25	384
160408FN	0.8			2.5			128.25	214				
160408FN	0.8			3.0	52.75	406 [1]						
160408EN	0.8			2.5							128.25	314
160412TN	1.2	15	0.09	2.2			128.25	226				
160412SN	1.2	20	0.09	2.2							128.25	336
160412SN	1.2	20	0.11	2.2			128.25	246			128.25	346
160412SN	1.2	25	0.11	2.2							128.25	356
160412TN	1.2	25	0.11	2.2			128.25	256				
160412SN	1.2	25	0.13	2.2			128.25	266			128.25	366
160412SN	1.2	30	0.14	2.2							128.25	376
160412SN	1.2	35	0.14	2.2							128.25	386
160412FN	1.2			2.2			128.25	216				

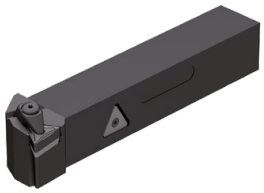
Cast iron				
Sintered steels				
Heat resistant alloys				
hardened < 45 HRC				
hardened 46–55 HRC	●	●	●	●
hardened 56–60 HRC	●	●	●	●
hardened 61–65 HRC			●	●

1) Machining to 60 HRC

9

MaxiLock-D – DTJN 93° – Toolholder with top clamping





Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 591 ...		Right-hand 2A/24 Article no. 70 590 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
DTJN R/L 2020 K16	20	20	125	23	25	2	TNM. 1604	77.31	**820**	77.31	**820**
DTJN R/L 2525 M16	25	25	150	24	32	2	TNM. 1604	79.97	**825**	79.97	**825**

XPress type

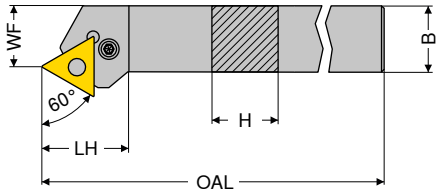
Key D

Clamping screw

Solid Carbide Seat T

Spare parts for Article no.	2A/28 Article no. 70 950 ... £		Y7 Article no. 80 950 ... £		2A/28 Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £	
70 590 820 / 70 591 820	21.91	**823**	T09 - IP	14.77 **126**	M3x7 - IP	2.85 **819**	6.31	**847**
70 590 825 / 70 591 825	21.91	**823**	T09 - IP	14.77 **126**	M3x7 - IP	2.85 **819**	6.31	**847**

MaxiLock-N – PTTN 60° – Toolholder with lever clamping



Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 529 ...		Right-hand 2A/24 Article no. 70 528 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
PTTN R/L 2020 K16	20	20	125	25.9	17	3	TNM. 1604	77.31	**020**	77.31	**020**
PTTN R/L 2525 M22	25	25	150	32.7	22	4	TNM. 2204	79.97	**025**	79.97	**025**

Key I

Shim

Assembly pin

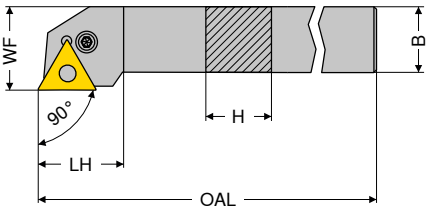
Lever

Clamping screw

Solid Carbide Seat T

Spare parts for Article no.		2A/28 Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £	
70 529 020 / 70 528 020	SW2,5	2.23	**175**	1.60	**197**	1.11	**191**	11.35	**185**	2.90	**208**	6.31	**225**
70 529 025 / 70 528 025	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.18	**209**	9.03	**226**

MaxiLock-N – PTGN 90° – Toolholder with lever clamping



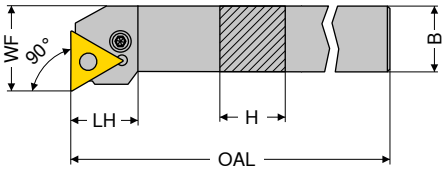
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 533 ...		Right-hand 2A/24 Article no. 70 532 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
PTGN R/L 1616 H16	16	16	100	20	20	3	TNM. 1604	69.39	016	69.39	016
PTGN R/L 2020 K16	20	20	125	20	25	3	TNM. 1604	77.31	020	77.31	020
PTGN R/L 2525 M16	25	25	150	22	32	3	TNM. 1604	79.97	025	79.97	025
PTGN R/L 3225 P16	32	25	170	22	32	3	TNM. 1604	85.79	032	85.79	032
PTGN R/L 2525 M22	25	25	150	29	32	4	TNM. 2204	79.97	125	79.97	125
PTGN R/L 3232 P22	32	32	170	29	40	4	TNM. 2204	108.00	132	108.00	132

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat T Article no. 70 950 ...	
for Article no.		£		£		£		£		£		£	
70 532 016 / 70 533 016	SW2,5	2.23	175	1.60	197	1.11	191	11.35	185	2.90	208	6.31	225
70 532 020 / 70 533 020	SW2,5	2.23	175	1.60	197	1.11	191	11.35	185	2.90	208	6.31	225
70 532 025 / 70 533 025	SW2,5	2.23	175	1.60	197	1.11	191	11.35	185	2.90	208	6.31	225
70 532 032 / 70 533 032	SW2,5	2.23	175	1.60	197	1.11	191	11.35	185	2.90	208	6.31	225
70 532 125 / 70 533 125	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	9.03	226
70 532 132 / 70 533 132	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	9.03	226

9

MaxiLock-N – PTFN 90° – Toolholder with lever clamping



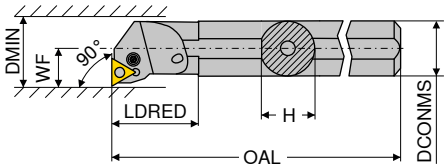
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 535 ...		Right-hand 2A/24 Article no. 70 534 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
PTFN R/L 1616 H16	16	16	100	19.7	20	3	TNM. 1604	69.39	016	69.39	016
PTFN R/L 2020 K16	20	20	125	20.2	25	3	TNM. 1604	77.31	020	77.31	020
PTFN R/L 2525 M16	25	25	150	20.2	32	3	TNM. 1604	79.97	025	79.97	025
PTFN R/L 2525 M22	25	25	150	25.2	32	4	TNM. 2204	79.97	125	79.97	125
PTFN R/L 3225 P22	32	25	170	25.2	32	4	TNM. 2204	85.79	132	85.79	132

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat T Article no. 70 950 ...	
for Article no.		£		£		£		£		£		£	
70 534 016 / 70 535 016	SW2,5	2.23	175	1.60	197	1.11	191	11.35	185	2.90	208	6.31	225
70 534 020 / 70 535 020	SW2,5	2.23	175	1.60	197	1.11	191	11.35	185	2.90	208	6.31	225
70 534 025 / 70 535 025	SW2,5	2.23	175	1.60	197	1.11	191	11.35	185	2.90	208	6.31	225
70 534 125 / 70 535 125	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	9.03	226
70 534 132 / 70 535 132	SW3	2.23	176	1.60	198	1.11	192	11.45	187	3.18	209	9.03	226

MaxiLock-N – PTFN 90° – Boring bar with lever clamping

▲ A... = with thro' coolant
▲ S... = without thro' coolant



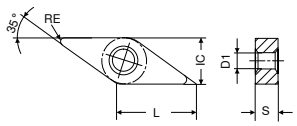
Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 565 ... £		Right-hand 2A/24 Article no. 70 564 ... £	
A16M PTFN R/L 11	16	15.0	150	14.0	11	20	2,2	TNM. 1103	134.27	**216**	134.27	**216**
A20Q PTFN R/L 11	20	18.5	180	14.0	13	25	2,2	TNM. 1103	181.27	**220**	181.27	**220**
A25R PTFN R/L 16	25	23.0	200	17.5	17	32	3	TNM. 1604	202.00	**225**	202.00	**225**
A32S PTFN R/L 16	32	30.0	250	18.0	22	40	3	TNM. 1604	208.91	**232**	208.91	**232**
A40T PTFN R/L 22	40	38.0	300	27.0	27	50	4	TNM. 2204	232.73	**240**	232.73	**240**
S50W PTFN R 22	50	47.0	450	35.0	35	63	4	TNM. 2204			288.00	**050**

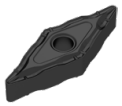
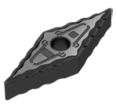
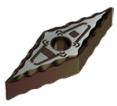
Spare parts for Article no.	2A/28 Key I Article no. 70 950 ... £		2A/28 Shim Article no. 70 950 ... £		2A/28 Assembly pin Article no. 70 950 ... £		2A/28 Lever Article no. 70 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide Seat T Article no. 70 950 ... £	
70 564 216 / 70 565 216	2.23	**177**					11.45	**184**	1.93	**207**		
70 564 220 / 70 565 220	2.23	**177**					11.45	**184**	1.93	**207**		
70 564 225 / 70 565 225	2.23	**175**	1.60	**197**	1.11	**191**	11.35	**185**	2.90	**208**	6.31	**225**
70 564 232 / 70 565 232	2.23	**175**	1.60	**197**	1.11	**191**	11.35	**185**	2.90	**208**	6.31	**225**
70 564 240 / 70 565 240	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.18	**209**	9.03	**226**
70 564 050	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.18	**209**	9.03	**226**

VNMG / VNGP

Designation	L	S	D1	IC
	mm	mm	mm	mm
VN.. 1604..	16.6	4.76	3.81	9.52

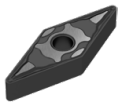
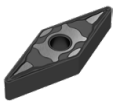
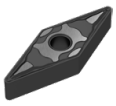
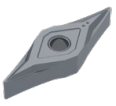


VNMG

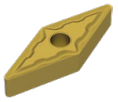
		-F40 CTCP125	-F50 CTCP115	-F50 CTCP125	-F50 CTCP135	-XU CTCP115	-XU CTCP125	-M40 CTCP125
		-F40 HCX1125	-NF15 HCX1115	-NF15 HCX1125	-NF15 HCR1135	-XU HCX1115	-XU HCX1125	-M40 HCX1125
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		F	F	F	F	M	M	M
		VNMG	VNMG	VNMG	VNMG	VNMG	VNMG	VNMG
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE	Article no. 76 000 ...	Article no. 76 156 ...	Article no. 76 156 ...	Article no. 76 156 ...	Article no. 76 294 ...	Article no. 76 294 ...	Article no. 76 001 ...
	mm	£	£	£	£	£	£	£
160404EN	0.4	18.71 516	18.71 316	18.71 516	18.71 716	18.67 316	18.67 516	18.71 516
160408EN	0.8	18.71 518	18.71 318	18.71 518	18.71 718	18.67 318	18.67 518	18.71 518
Steel		●	●	●	●	●	●	●
Stainless steel		○	○	○	○	○	○	○
Cast iron		○	○	○		○	○	○
Non ferrous metals								
Heat resistant alloys					○			

9

VNMG / VNGP

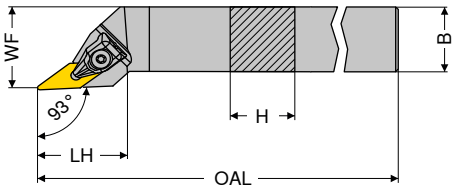
		-M50 CTCK120	-M50 CTCP115	-M50 CTCP125	-F30 CTPM125	-M30 CTPM125	-F32 CTP2120	-M34 CTP5110
		-NM15 HCF3120	-NM15 HCX1115	-NM15 HCX1125	-NF23 HCN2125	-NM23 HCN2125	-F32 CCN2120	-M34 HCN5110
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN
								
		M	M	M	F	M	F	M
		VNMG	VNMG	VNMG	VNMG	VNMG	VNGP	VNMG
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE	Article no. 70 131 ...	Article no. 76 131 ...	Article no. 76 131 ...	Article no. 75 022 ...	Article no. 75 023 ...	Article no. 70 167 ...	Article no. 75 009 ...
	mm	£	£	£	£	£	£	£
160402FN	0.2						24.92 602	
160404EN	0.4		18.71 316	18.71 516	18.71 216			17.79 416
160404FN	0.4						24.92 604	
160408EN	0.8	18.71 518	18.71 318	18.71 518	18.71 218	18.71 218		17.79 418
160412EN	1.2	18.71 520	18.71 320	18.71 520				17.79 420
Steel		●	●	●	○	○		
Stainless steel			○	○	●	●	●	○
Cast iron		●	○	○			○	
Non ferrous metals							○	
Heat resistant alloys						○	●	●

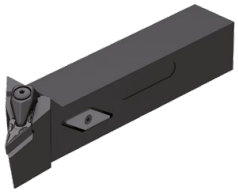
VNMG



ISO	RE mm	-M34 CTP5115	-M34 HCN5115
		DRAGONSKIN	
		M	
		VNMG	
		1A/08	
		Article no. 75 009 ...	
		£	
160404EN	0.4	17.79	516
160408EN	0.8	17.79	518
160412EN	1.2	17.79	520
Steel			
Stainless steel			○
Cast iron			
Non ferrous metals			
Heat resistant alloys			●

MaxiLock-D – DVJN 93° – Toolholder with top clamping





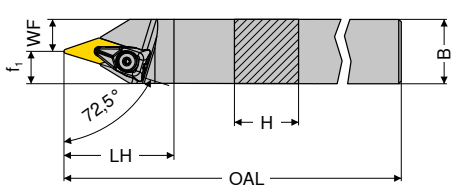
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 503 ...	£	Right-hand 2A/24 Article no. 70 502 ...	£
	mm	mm	mm	mm	mm	Nm					
DVJN R/L 2020 K16	20	20	125	39	25	2	VN.. 1604	88.94	**620**	88.94	**620**
DVJN R/L 2525 M16	25	25	150	39	32	2	VN.. 1604	94.36	**725**	94.36	**725**

Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts	2A/28 XPress type Article no. 70 950 ...	£		Y7 Key D Article no. 80 950 ...	£		2A/28 Clamping screw Article no. 70 950 ...	£		2A/28 Solid Carbide Seat V Article no. 70 950 ...	£	
for Article no.												
70 502 620 / 70 503 620	26.15	**835**	T09 - IP	14.77	**126**	M3x7 - IP	2.85	**819**		5.08	**806**	
70 502 725 / 70 503 725	26.15	**835**	T09 - IP	14.77	**126**	M3x7 - IP	2.85	**819**		5.08	**806**	

MaxiLock-D – DVVN 72.5° – Toolholder with top clamping



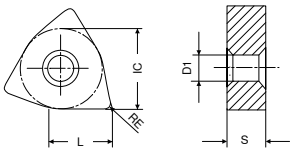
ISO designation	H	B	OAL	LH	WF	f_1	torque moment	Insert	Neutral 2A/24 Article no. 70 506 ...	£	
	mm	mm	mm	mm	mm	mm	Nm				
DVVN N 2020 K16	20	20	125	43	7.5	12.5	2	VN.. 1604	88.94	**620**	
DVVN N 2525 M16	25	25	150	43	12.5	12.5	2	VN.. 1604	94.36	**625**	

Spare parts	2A/28 XPress type Article no. 70 950 ...	£		Y7 Key D Article no. 80 950 ...	£		2A/28 Clamping screw Article no. 70 950 ...	£		2A/28 Solid Carbide Seat V Article no. 70 950 ...	£	
for Article no.												
70 506 620	26.15	**835**	T09 - IP	14.77	**126**	M3x7 - IP	2.85	**819**		5.08	**806**	
70 506 625	26.15	**835**	T09 - IP	14.77	**126**	M3x7 - IP	2.85	**819**		5.08	**806**	

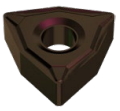
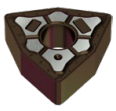
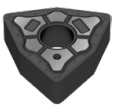
9

WNMG / WNMA

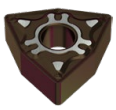
Designation	L	S	D1	IC
	mm	mm	mm	mm
WNMG 0604..	6.5	4.76	3.81	9.52
WNM. 0804..	8.6	4.76	5.16	12.70



WNMG

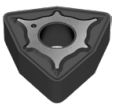
		-CF20 CTEP110	-F50 CTCP115	-F50 CTCP125	-F50 CTCP135	-TFQ CTEP110	-TFQ CTCP115	-TFQ CTCP125
		-NF12 DCC1110	-NF15 HCX1115	-NF15 HCX1125	-NF15 HCR1135	-TFQ DCC1110	-TFQ HCX1115	-TFQ HCX1125
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		F	F	F	F	F	F	F
		CERMET WNMG 1A/78	WNMG 1A/08	WNMG 1A/08	WNMG 1A/08	CERMET WNMG 1A/78	WNMG 1A/08	WNMG 1A/08
ISO	RE mm	Article no. 76 171 ... £	Article no. 76 157 ... £	Article no. 76 157 ... £	Article no. 76 157 ... £	Article no. 76 177 ... £	Article no. 76 177 ... £	Article no. 76 177 ... £
060404EN	0.4	8.80 004	9.05 304	9.05 504	9.05 704		10.47 304	10.47 514
060408EN	0.8	8.80 006	9.05 306	9.05 506	9.05 706	10.47 006	10.47 306	10.47 506
080404EN	0.4		11.39 316	11.39 516	11.39 716	13.11 016		
080408EN	0.8	11.39 018	11.39 318	11.39 518	11.39 718	13.11 018	13.11 318	13.11 518
080412EN	1.2		11.39 320	11.39 520	11.39 720		13.11 320	13.11 520
Steel		●	●	●	●	●	●	●
Stainless steel		○	○	○	○	○	○	○
Cast iron		○	○	○		○	○	○
Non ferrous metals								
Heat resistant alloys					○			

WNMG

ISO	RE mm	-XU CTCP115	-XU CTCP125	-M50 CTCK110	-M50 CTCK120	-M50 CTCP115	-M50 CTCP125	-M50 CTCP135
		-XU HCX1115	-XU HCX1125	-NM15 DCX3110	-NM15 HCF3120	-NM15 HCX1115	-NM15 HCX1125	-NM15 HCR1135
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		M	M	M	M	M	M	M
		WNMG	WNMG	WNMG	WNMG	WNMG	WNMG	WNMG
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
		Article no. 76 295 ...	Article no. 76 295 ...	Article no. 70 139 ...	Article no. 70 139 ...	Article no. 76 139 ...	Article no. 76 139 ...	Article no. 76 139 ...
		£	£	£	£	£	£	£
060404EN	0.4					9.05 304	9.05 504	9.05 704
060408EN	0.8					9.05 306	9.05 506	9.05 706
060412EN	1.2					9.05 308	9.05 508	9.05 708
080404EN	0.4	11.40 316	11.40 516			11.39 316	11.39 516	11.39 716
080408EN	0.8	11.40 318	11.40 518	11.39 018	11.39 518	11.39 318	11.39 518	11.39 718
080412EN	1.2	11.40 320	11.40 520	11.39 020	11.39 520	11.39 320	11.39 520	11.39 720
080416EN	1.6					11.39 322	11.39 522	11.39 722
Steel		●	●	●	●	●	●	●
Stainless steel		○	○	○		○	○	○
Cast iron		○	○	●	●	○	○	
Non ferrous metals								
Heat resistant alloys								○

9

WNMG

ISO	RE mm	-TMQ CTCP115	-TMQ CTCP125	-M70 CTCK110	-M70 CTCK120	-M70 CTCP115	-M70 CTCP125	-M70 CTCP135
		-TMQ HCX1115	-TMQ HCX1125	-NM19 DCX3110	-NM19 HCF3120	-NM19 HCX1115	-NM19 HCX1125	-NM19 HCR1135
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		M	M	M	M	M	M	M
		WNMG	WNMG	WNMG	WNMG	WNMG	WNMG	WNMG
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
		Article no. 76 198 ...	Article no. 76 198 ...	Article no. 70 273 ...	Article no. 70 273 ...	Article no. 76 273 ...	Article no. 76 273 ...	Article no. 76 273 ...
		£	£	£	£	£	£	£
060408EN	0.8					9.05 306	9.05 506	9.05 706
060412EN	1.2					9.05 308	9.05 508	9.05 708
080408EN	0.8	13.11 31800	13.11 518	11.39 018	11.39 518	11.39 318	11.39 518	11.39 718
080412EN	1.2	13.11 320	13.11 520	11.39 020	11.39 520	11.39 320	11.39 520	11.39 720
080416EN	1.6			11.39 022	11.39 522	11.39 322	11.39 522	11.39 722
Steel		●	●	●	●	●	●	●
Stainless steel		○	○	○		○	○	○
Cast iron		○	○	●	●	○	○	
Non ferrous metals								
Heat resistant alloys								○

WNMA / WNMG

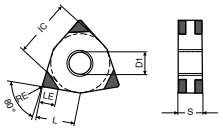
		CTCK110		CTCK120		-F30 CTPM125		-M30 CTPM125		-M42 CTC2135		-M60 CTPM125		-M70 CTC2135	
		DCX3110		HCF3120		-NF23 HCN2125		-NM23 HCN2125		-M42 CWN2135		-NM26 HCN2125		-NM19 CWN2135	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN				DRAGONSKIN			
		R		R		F		M		M		M		M	
		WNMA		WNMA		WNMG		WNMG		WNMG		WNMG		WNMG	
		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08	
ISO	RE	Article no. 70 169 ...		Article no. 70 169 ...		Article no. 75 024 ...		Article no. 75 025 ...		Article no. 70 178 ...		Article no. 75 026 ...		Article no. 70 273 ...	
	mm	£		£		£		£		£		£		£	
060404EN	0.4					9.05	204			8.80	400				
060408EN	0.8					9.05	206	9.05	206	8.80	402	9.05	206		
060412EN	1.2							9.05	208			9.05	208		
080404EN	0.4					11.39	216			11.39	404				
080408EN	0.8	11.39	018	11.39	518	11.39	218	11.39	218	11.39	406	11.39	218	11.39	418
080412EN	1.2	11.39	020	11.39	520			11.39	220	11.39	408	11.39	220		
080416EN	1.6	11.39	022	11.39	522										
Steel						○		○		○		○		○	
Stainless steel						●		●		●		●		●	
Cast iron		●		●											
Non ferrous metals															
Heat resistant alloys								○		●		○		●	

WNMG

		-M34 CTP5110		-M34 CTP5115		-M42 CTP2120		-M52 CTP2120	
		-M34 HCN5110		-M34 HCN5115		-M42 CCN2120		-M52 CCN2120	
		DRAGONSKIN		DRAGONSKIN					
		M		M		M		M	
		WNMG		WNMG		WNMG		WNMG	
		1A/08		1A/08		1A/08		1A/08	
ISO	RE	Article no. 75 008 ...		Article no. 75 008 ...		Article no. 70 178 ...		Article no. 70 179 ...	
	mm	£		£		£		£	
060404EN	0.4							8.80	604
060408EN	0.8							8.80	608
080404EN	0.4							11.39	612
080408EN	0.8	11.90	418	11.90	518	11.39	608	11.39	614
080412EN	1.2	11.90	420	11.90	520				
Steel									
Stainless steel		○		○		○		○	
Cast iron						○		○	
Non ferrous metals						○		○	
Heat resistant alloys		●		●		●		●	

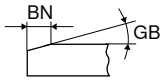
WNGA

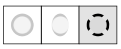
Designation	L	S	D1	IC
	mm	mm	mm	mm
WNGA 0804..	8.5	4.76	5.13	12.7



-M (-6SC)

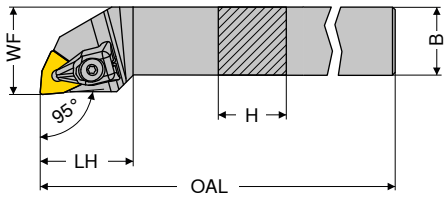
WNGA



	-M CTBS20C	-M CTBH20C	-M CTBH40C
	-6SC PBC15-S	-6SC PBC25-S	-6SC PBC40-S
			
	F	F	F
	CBN WNGA	CBN WNGA	CBN WNGA
	Y0	Y0	Y0
ISO	Article no. 71 405 ...	Article no. 71 405 ...	Article no. 71 405 ...
	£	£	£
080404SN	125.05 122		
080404SN	125.05 132		
080404SN	125.05 152		125.05 332
080404SN		125.05 242	
080404SN			125.05 352
080404SN		125.05 262	
080404SN			125.05 372
080408SN	125.05 124		
080408SN	125.05 134		
080408SN	125.05 154		125.05 334
080408SN		125.05 244	
080408SN			125.05 354
080408SN		125.05 264	125.05 364
080408SN	125.05 174		
080408SN		125.05 274	125.05 376
Cast iron	●		
Sintered steels	●		
Heat resistant alloys	●		
hardened < 45 HRC			
hardened 46–55 HRC		●	●
hardened 56–60 HRC		●	●
hardened 61–65 HRC			●

9

MaxiLock-D – DWLN 95° – Toolholder with top clamping



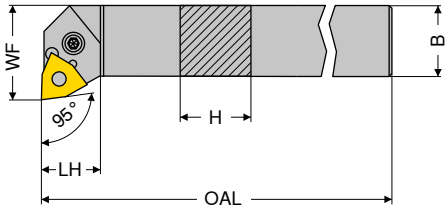
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 543 ...	£	Right-hand 2A/24 Article no. 70 542 ...	£
	mm	mm	mm	mm	mm	Nm					
DWLN R/L 1616 H06	16	16	100	25	20	2	WN.. 0604	69.39	716	69.39	716
DWLN R/L 2020 K06	20	20	125	27	25	2	WN.. 0604	77.31	720	77.31	720
DWLN R/L 2525 M06	25	25	150	27	32	2	WN.. 0604	79.97	725	79.97	725
DWLN R/L 2020 K08	20	20	125	34	25	4	WN.. 0804	77.31	620	77.31	620
DWLN R/L 2525 M08	25	25	150	34	32	4	WN.. 0804	79.97	625	79.97	625

Tool holders with HSK-T or PSC interface can be found in → **Chapter 16.**

Spare parts	2A/28 XPress type Article no. 70 950 ...	£		Y7 Key D Article no. 80 950 ...	£		2A/28 Clamping screw Article no. 70 950 ...	£		2A/28 Solid Carbide Seat W Article no. 70 950 ...	£	
for Article no.												
70 543 716 / 70 542 716	21.91	823		T09 - IP	14.77	126	M3x7 - IP	2.85	819	3.09	807	
70 543 720 / 70 542 720	21.91	823		T09 - IP	14.77	126	M3x7 - IP	2.85	819	3.09	807	
70 543 725 / 70 542 725	21.91	823		T09 - IP	14.77	126	M3x7 - IP	2.85	819	3.09	807	
70 543 620 / 70 542 620	21.61	824		T15 - IP	15.77	128	M4,5x12 - IP	2.71	820	9.03	812	
70 543 625 / 70 542 625	21.61	824		T15 - IP	15.77	128	M4,5x12 - IP	2.71	820	9.03	812	

MaxiLock-N – PWLN 95° – Toolholder with lever clamping

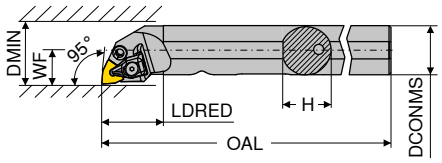


Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 543 ...	£	Right-hand 2A/24 Article no. 70 542 ...	£
	mm	mm	mm	mm	mm	Nm					
PWLN R/L 1616 H06	16	16	100	20	22.5	3	WNMG 0604	69.39	116	69.39	116
PWLN R/L 2020 K06	20	20	125	26	25.0	3	WNMG 0604	77.31	120	77.31	120
PWLN R/L 2525 M06	25	25	150	19	32.0	3	WNMG 0604	79.97	125	79.97	125
PWLN R/L 2020 K08	20	20	125	22	25.0	4	WNMG 0804	77.31	020	77.31	020
PWLN R/L 2525 M08	25	25	150	22	32.0	4	WNMG 0804	79.97	025	79.97	025
PWLN R/L 3225 P08	32	25	170	22	32.0	4	WNMG 0804	85.79	032	85.79	032

Spare parts		2A/28 Key I Article no. 70 950 ...	£		2A/28 Shim Article no. 70 950 ...	£		2A/28 Assembly pin Article no. 70 950 ...	£		2A/28 Lever Article no. 70 950 ...	£		2A/28 Clamping screw Article no. 70 950 ...	£		2A/28 Solid Carbide Seat W Article no. 70 950 ...	£	
for Article no.																			
70 542 116 / 70 543 116	SW2,5	2.23	175		1.87	122		1.11	191		11.35	185		2.90	208		6.55	127	
70 542 120 / 70 543 120	SW2,5	2.23	175		1.87	122		1.11	191		11.35	185		2.90	208		6.55	127	
70 542 125 / 70 543 125	SW2,5	2.23	175		1.87	122		1.11	191		11.35	185		2.90	208		6.55	127	
70 542 020 / 70 543 020	SW3	2.23	176		1.60	198		1.11	192		11.45	187		3.18	209		7.93	235	
70 542 025 / 70 543 025	SW3	2.23	176		1.60	198		1.11	192		11.45	187		3.18	209		7.93	235	
70 542 032 / 70 543 032	SW3	2.23	176		1.60	198		1.11	192		11.45	187		3.18	209		7.93	235	

MaxiLock-D – DWLN 95° – Boring bar with top clamping



Illustrations show right-hand versions

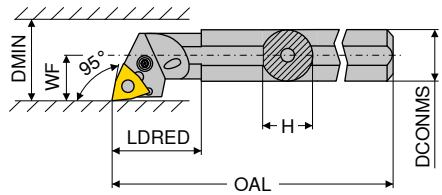
ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 573 ...		Right-hand 2A/24 Article no. 70 572 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
A25R DWLN R/L 06	25	24	200	32	17	32	2	WN.. 0604	202.00	**725**	202.00	**725**
A32S DWLN R/L 08	32	31	250	40	22	40	4	WN.. 0804	208.91	**732**	208.91	**732**
A40T DWLN R 08	40	39	300	45	27	50	4	WN.. 0804			232.73	**640**

Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts for Article no.	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...			2A/28 Clamping screw Article no. 70 950 ...		2A/28 Hydrant Article no. 70 950 ...		2A/28 Solid Carbide Seat W Article no. 70 950 ...	
	£			£			£		£		£	
70 572 725 / 70 573 725	21.91	**823**	T09 - IP	14.77	**126**	M3x7 - IP	2.85	**819**	18.95	**834**	3.09	**807**
70 572 732 / 70 573 732	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	18.95	**834**	9.03	**812**
70 572 640	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	18.95	**834**	9.03	**812**

9

MaxiLock-N – PWLN 95° – Boring bar with lever clamping



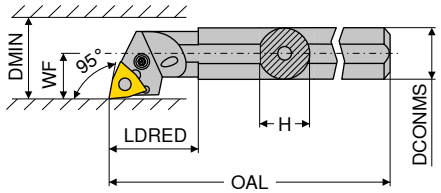
Illustrations show right-hand versions

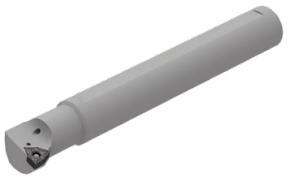
ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 573 ...		Right-hand 2A/24 Article no. 70 572 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
A16M PWLN R/L 06	16	15	150	20	11	20	3	WNMG 0604	164.09	**116**	164.09	**116**
A20Q PWLN R/L 06-1	20	19	180	30	13	25	3	WNMG 0604	181.27	**121**	181.27	**121**
A25R PWLN R/L 06	25	23	200	25	17	32	3	WNMG 0604	202.00	**125**	202.00	**125**
A32S PWLN R/L 06	32	30	250	50	22	40	3	WNMG 0604	208.91	**132**	208.91	**132**
A25R PWLN R/L 08	25	23	200	40	17	31	4	WNMG 0804	202.09	**225**	202.09	**225**
A32S PWLN R/L 08	32	30	250	50	22	40	4	WNMG 0804	208.91	**032**	208.91	**032**
A40T PWLN R/L 08	40	39	300	60	27	50	4	WNMG 0804	232.73	**040**	232.73	**040**

Spare parts for Article no.		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat W Article no. 70 950 ...	
		£		£		£		£		£		£	
70 572 116 / 70 573 116	SW2	2.23	**177**					13.61	**129**	3.85	**217**		
70 572 121 / 70 573 121	SW2	2.23	**177**					13.61	**129**	3.85	**217**		
70 572 125 / 70 573 125	SW2,5	2.23	**175**	1.87	**122**	1.11	**191**	11.35	**185**	2.90	**208**	6.55	**127**
70 572 132 / 70 573 132	SW2,5	2.23	**175**	1.87	**122**	1.11	**191**	11.35	**185**	2.90	**208**	6.55	**127**
70 572 225 / 70 573 225	SW3	2.23	**176**					11.45	**187**	3.89	**205**		
70 572 032 / 70 573 032	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.18	**209**	7.93	**235**
70 572 040 / 70 573 040	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.18	**209**	7.93	**235**

MaxiLock-N – PWLN 95° – Boring bar with lever clamping

▲ with carbide core





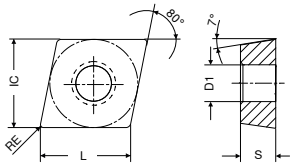
Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A Article no. 70 567 ... £		Right-hand 2A Article no. 70 566 ... £	
E-A16M PWLN R/L 06	16	15	150	24	11	20	3	WNMG 0604	582.18	**016**	582.18	**016**
E-A20Q PWLN R/L 06	20	18	180	29	13	27	3	WNMG 0604	622.36	**020**	622.36	**020**
E-A25R PWLN R/L 06	25	23	200	40	17	31	3	WNMG 0604	645.09	**025**	645.09	**025**
E-A25R PWLN R/L 08	25	23	200	40	17	31	4	WNMG 0804	645.09	**125**	645.09	**125**
E-A32S PWLN R/L 08	32	30	250	50	22	39	4	WNMG 0804	851.55	**032**	851.55	**032**
E-A40T PWLN R/L 08	40	38	300	60	27	48	4	WNMG 0804	1,016.36	**040**	1,016.36	**040**

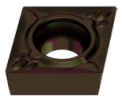
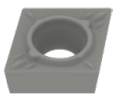
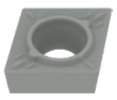
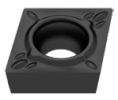
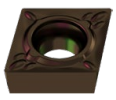
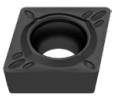
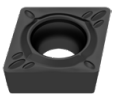
Spare parts for Article no.		2A/28 Key I Article no. 70 950 ... £		2A/28 Shim Article no. 70 950 ... £		2A/28 Assembly pin Article no. 70 950 ... £		2A/28 Lever Article no. 70 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide Seat W Article no. 70 950 ... £	
70 566 016 / 70 567 016	SW2	2.23	**177**					13.61	**129**	3.85	**217**		
70 566 020 / 70 567 020	SW2	2.23	**177**					13.61	**129**	3.85	**217**		
70 566 025 / 70 567 025	SW2,5	2.23	**175**	1.87	**122**	1.11	**191**	11.35	**185**	2.90	**208**	6.55	**127**
70 566 125 / 70 567 125	SW3	2.23	**176**					11.45	**187**	3.18	**209**		
70 566 032 / 70 567 032	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.18	**209**	7.93	**235**
70 566 040 / 70 567 040	SW3	2.23	**176**	1.60	**198**	1.11	**192**	11.45	**187**	3.18	**209**	7.93	**235**

CCGT / CCMT / CCXT

Designation	L	S	D1	IC
	mm	mm	mm	mm
CC.T 0602..	6.4	2.38	2.8	6.35
CC.T 09T3..	9.7	3.97	4.4	9.52
CC.T 1204..	12.9	4.76	5.5	12.70



CCGT / CCMT

	-CF05 CTEP110	-SF TCM10	-SF TCM407	-SF CTCP125	-SF CTCP135	-SF CTCP115	-SF CTCP125
	-PF14 DCC1110	-ZF CWC10	-ZF CWC407	-ZF HCX1125	-ZF HCR1135	-ZF HCX1115	-ZF HCX1125
	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
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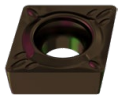
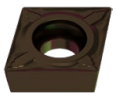
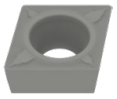
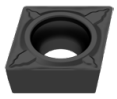
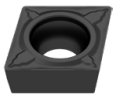
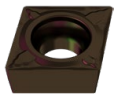
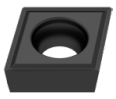
	CERMET CCGT 1A/78	CERMET CCGT 1A/78	CERMET CCGT 1A/78	CCGT 1A/08	CCGT 1A/08	CCMT 1A/08	CCMT 1A/08
ISO / RE mm	Article no. 76 247 ... £	Article no. 70 251 ... £	Article no. 70 251 ... £	Article no. 76 251 ... £	Article no. 76 251 ... £	Article no. 76 253 ... £	Article no. 76 253 ... £
060202EN 0.2	12.60 002	12.21 900	12.21 850	12.60 502	12.60 702		
060204EN 0.4	12.60 004	12.21 902	12.21 852			7.07 304	7.07 504
09T302EN 0.2	13.43 014	12.60 904	12.60 854				
09T304EN 0.4	13.43 016	12.60 906				8.82 316	8.82 516
09T308EN 0.8	13.43 018	12.60 908				8.82 318	8.82 518
120404EN 0.4		15.76 910					12.42 528
120408EN 0.8							12.42 530
Steel	●	●	●	●	●	●	●
Stainless steel	○			○	○	○	○
Cast iron	○	○	○	○		○	○
Non ferrous metals							
Heat resistant alloys					○		

9

CCMT / CCGT

		-SF CTCP135	-CF55 CTEP110	-SMF TCM10	-SMF CTCP115	-SMF CTCP125	-SMF CTCP135	-SM CTCP125
		-ZF HCR1135	-PF15 DCC1110	-SMF CWC10	-SMF HCX1115	-SMF HCX1125	-SMF HCR1135	-ZM HCX1125
		DRAGONSKIN	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
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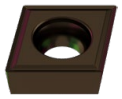
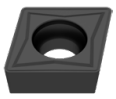
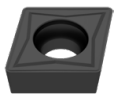
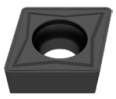
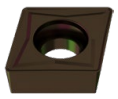
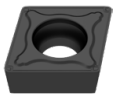
ISO	RE	Article no. 76 253 ...	Article no. 76 248 ...	Article no. 70 249 ...	Article no. 76 249 ...	Article no. 76 249 ...	Article no. 76 249 ...	Article no. 76 250 ...
	mm	£	£	£	£	£	£	£
060202EN	0.2							12.60 502
060204EN	0.4	7.07 704	6.85 004	6.62 900		7.07 504	7.07 704	
060208EN	0.8					7.07 506		
09T304EN	0.4	8.82 716	8.80 016	8.21 904	8.82 316	8.82 516	8.82 716	
09T308EN	0.8		8.80 018	8.21 906	8.82 318	8.82 518		
120404EN	0.4		12.42 028			12.42 528		
120408EN	0.8				12.42 330		12.42 730	
Steel		●	●	●	●	●	●	●
Stainless steel		○	○		○	○	○	○
Cast iron			○	○	○	○		○
Non ferrous metals								
Heat resistant alloys		○					○	

CCGT / CCMT

		-SM CTCP135	-SM CTCK110	-SM CTCK120	-SM CTCP115	-SM CTCP125	-SM CTCP135	-SMQ CTCP115
		-ZM HCR1135	-ZM DCX3110	-ZM HCF3120	-ZM HCX1115	-ZM HCX1125	-ZM HCR1135	-SMQ HCX1115
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
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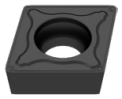
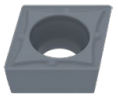
ISO	RE	Article no. 76 250 ...	Article no. 70 252 ...	Article no. 70 252 ...	Article no. 76 252 ...	Article no. 76 252 ...	Article no. 76 252 ...	Article no. 76 194 ...
	mm	£	£	£	£	£	£	£
060202EN	0.2	12.60 702						
060204EN	0.4		7.07 004	7.07 554	7.07 304	7.07 504	7.07 704	
060208EN	0.8		7.07 006	7.07 506	7.07 306		7.07 706	
09T304EN	0.4		8.82 016	8.82 516	8.82 316	8.82 516	8.82 716	9.92 31600
09T308EN	0.8		8.82 018	8.82 518	8.82 318	8.82 518	8.82 718	9.92 31800
09T312EN	1.2		8.82 020	8.82 520				
120404EN	0.4		12.42 028	12.42 528	12.42 328	12.42 528	12.42 728	13.94 32800
120408EN	0.8		12.42 030	12.42 530	12.42 330	12.42 530	12.42 730	13.94 330
120412EN	1.2					12.42 532		
Steel		●	●	●	●	●	●	●
Stainless steel		○	○		○	○	○	○
Cast iron			●	●	○	○		○
Non ferrous metals								
Heat resistant alloys		○					○	

CCMT / CCXT

		-SMQ CTCP125	-SF CTC2135	-F43 CTC2135	-M81 CWN2120	-M25 CTPM125	-SM CTC2135	-M55 CTPM125
		-SMQ HCX1125	-ZF CWN2135	-F43 CWN2135		-PF23 HCN2125	-ZM CWN2135	-PF26 HCN2125
		DRAGONSKIN				DRAGONSKIN		DRAGONSKIN
								
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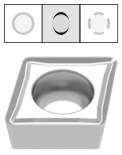
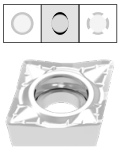
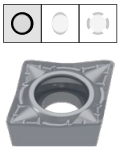
		CCMT	CCMT	CCMT	CCXT	CCMT	CCMT	CCMT
		1A/08	1A/08	1A/08	1A	1A/08	1A/08	1A/08
ISO	RE	Article no. 76 194 ...	Article no. 70 253 ...	Article no. 70 185 ...	Article no. 70 254 ...	Article no. 75 210 ...	Article no. 70 252 ...	Article no. 75 211 ...
	mm	£	£	£	£	£	£	£
060202FN	0.2				8.76 100			
060204EN	0.4		6.85 460			7.07 204	6.85 670	7.07 204
060204FN	0.4				8.76 102			
09T302FN	0.2				8.57 104			
09T304EN	0.4	9.92 516	8.80 464	8.80 460		8.82 216	8.80 674	8.82 216
09T304FN	0.4				8.57 106			
09T308EN	0.8	9.92 518		8.80 462		8.82 218	8.80 676	8.82 218
09T308FN	0.8				8.57 108			
120404EN	0.4	13.94 528					12.42 678	12.42 228
120408EN	0.8	13.94 530					12.42 680	12.42 230
Steel		●	○	○		○	○	○
Stainless steel		○	●	●	●	●	●	●
Cast iron		○						
Non ferrous metals					○			
Heat resistant alloys			●	●			●	

9

CCGT

		-23P H216T	-25P H210T	-25P AMZ	-25Q H210T	-25Q AMZ	-27 H10T	-27 CWN15
		-23P CWK26	-25P CWK20	-25P AMZ	-25Q CWK20	-25Q AMZ	-AL CWK15	-AL CWN15
								
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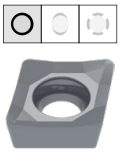
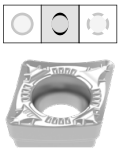
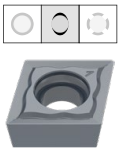
		CCGT	CCGT	CCGT	CCGT	CCGT	CCGT	CCGT
		1A/90	1A/90	1A/90	1A/90	1A	1A/90	1A
ISO	RE	Article no. 70 255 ...	Article no. 70 248 ...	Article no. 70 248 ...	Article no. 70 248 ...	Article no. 70 248 ...	Article no. 70 254 ...	Article no. 70 254 ...
	mm	£	£	£	£	£	£	£
060202FN	0.2	9.92 652	9.92 636	11.80 556			9.29 600	11.79 300
060204FN	0.4	9.92 654	9.92 638	11.80 558	10.78 678	14.25 618	9.29 602	11.79 302
09T302FN	0.2		10.38 639	12.10 539			9.92 604	12.19 304
09T304FN	0.4	10.38 656	10.38 640	12.10 560	11.39 680	14.94 620	9.92 606	12.19 306
09T308FN	0.8	10.38 658	10.38 641	12.10 541	11.39 681	14.94 621	9.92 608	12.19 308
120402FN	0.2		12.10 643				11.59 610	14.15 310
120404FN	0.4		12.10 642	15.45 562	13.43 682	16.80 622	11.59 612	14.15 312
120408FN	0.8		12.10 644	15.45 564	13.43 686	16.80 626	11.59 614	14.15 314
Steel				○		○		
Stainless steel				○		○		○
Cast iron		○	○	○	○	○	○	
Non ferrous metals		●	●	●	●	●	●	●
Heat resistant alloys		○	○		○		○	

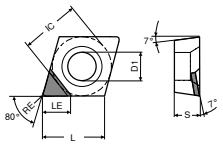
CCGT / CCMT

ISO	RE mm	-27 AMZ -AL AMZ		-29 H216T		-29 AMZ		-F23 CTP2120 -F23 CCN2120	
									
		M		M		M		F	
		CCGT		CCMT		CCMT		CCGT	
		1A/90		NEW 1A/90		NEW 1A/90		1A/08	
		Article no. 70 254 ...		Article no. 70 245 ...		Article no. 70 245 ...		Article no. 70 191 ...	
	mm	£		£		£		£	
060200FN	0.0							12.60	600
060201FN	0.1							12.60	602
060202FN	0.2	11.29	450						
060204EN	0.4			7.15	60400	8.55	40400		
060204FN	0.4	11.29	452						
09T300FN	0.0							14.55	604
09T301FN	0.1							14.55	606
09T302FN	0.2	11.59	454						
09T304EN	0.4			7.61	61600	8.83	41600		
09T304FN	0.4	11.59	456						
09T308EN	0.8			7.61	61800	8.83	41800		
09T308FN	0.8	11.59	458						
120402FN	0.2	14.45	460						
120404FN	0.4	14.45	462						
120408FN	0.8	14.45	464						

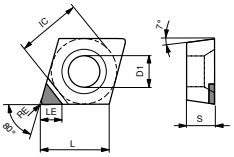
Steel		○				○			
Stainless steel		○				○		●	
Cast iron		○		○		○		○	
Non ferrous metals		●		●		●		○	
Heat resistant alloys				○				●	

CCGW / CCGT

Designation	L	S	D1	IC
	mm	mm	mm	mm
CCG. 0602..	6.40	2.38	2.8	6.35
CCGW 09T3..	9.70	3.97	4.4	9.52
CCGW 1204..	12.90	4.76	5.5	12.70



CCGT -A



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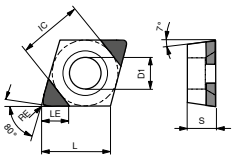
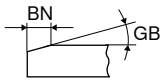


CCGW-Q-B / -B
(CCGW -2MC / -2Q)

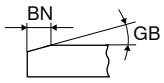
CCGW / CCGT



	-A CTBS10U	-A CTBS10U	-B CTBS20C	-Q-B CTBS20C
	PBC10	PBC10	-2MC PBC15-S	-2Q PBC15-S
	F	F	F	F
	CBN CCGW	CBN CCGT	CBN CCGW	CBN CCGW
	Y0	Y0	Y0	Y0
ISO	Article no. 71 120 ...	Article no. 71 124 ...	Article no. 71 161 ...	Article no. 71 162 ...
RE mm / GB ° / BN mm / LE mm	£	£	£	£
060202SN 0.2 10 0.09 3.4				73.32 120
060202SN 0.2 15 0.11 3.4				73.32 130
060202TN 0.2 20 0.14 3.4	62.03 300			
060202TN 0.2 20 0.15 3.4				73.32 140
060202SN 0.2 20 0.16 3.4			73.32 150	73.32 150
060202TN 0.2 25 0.17 3.4			73.32 160	73.32 160
060202FN 0.2 3.4	62.03 200	76.10 200		
060202EN 0.2 3.4			73.32 110	73.32 110
060204SN 0.4 10 0.09 3.1			73.32 121	73.32 121
060204SN 0.4 15 0.11 3.1			73.32 131	73.32 131
060204TN 0.4 20 0.14 3.1	62.03 302			
060204TN 0.4 20 0.15 3.1			73.32 141	73.32 141
060204SN 0.4 20 0.16 3.1			73.32 151	73.32 151
060204TN 0.4 25 0.17 3.1			73.32 161	73.32 161
060204SN 0.4 25 0.18 3.1				73.32 171
060204FN 0.4 3.1	62.03 202	76.10 202		
060208SN 0.8 10 0.09 2.8			73.32 122	
060208SN 0.8 15 0.11 2.8			73.32 132	
060208TN 0.8 20 0.15 2.8			73.32 142	
060208TN 0.8 25 0.17 2.8			73.32 162	
060208SN 0.8 25 0.18 2.8			73.32 172	
060208SN 0.8 30 0.18 2.8			73.32 182	
060208EN 0.8 2.8			73.32 112	
09T302SN 0.2 10 0.09 3.4			73.32 123	
09T302SN 0.2 15 0.11 3.4			73.32 133	
09T302SN 0.2 20 0.16 3.4			73.32 153	
09T302TN 0.2 25 0.17 3.4			73.32 163	
09T302SN 0.2 25 0.18 3.4			73.32 173	
09T302EN 0.2 3.4			73.32 113	
Cast iron	●	●	●	●
Sintered steels	●	●	●	●
Heat resistant alloys	●	●	●	●
hardened < 45 HRC				
hardened 46–55 HRC				
hardened 56–60 HRC				
hardened 61–65 HRC				

9

CCGW / CCGT

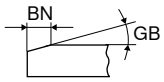


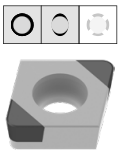
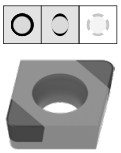
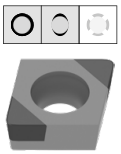
	-A CTBS10U	-A CTBS10U	-B CTBS20C	-Q-B CTBS20C
	PBC10	PBC10	-2MC PBC15-S	-2Q PBC15-S
	F	F	F	F
	CBN CCGW	CBN CCGT	CBN CCGW	CBN CCGW
	Y0	Y0	Y0	Y0
	Article no. 71 120 ...	Article no. 71 124 ...	Article no. 71 161 ...	Article no. 71 162 ...
	£	£	£	£

ISO	RE mm	GB °	BN mm	LE mm								
09T304EN	0.4			3.1					73.32	114		
09T304SN	0.4	10	0.09	3.1					73.32	124	73.32	124
09T304SN	0.4	15	0.11	3.1					73.32	134	73.32	134
09T304TN	0.4	20	0.14	2.8	62.03	304						
09T304TN	0.4	20	0.15	3.1					73.32	144	73.32	144
09T304SN	0.4	20	0.16	3.1					73.32	154	73.32	154
09T304TN	0.4	25	0.17	3.1					73.32	164	73.32	164
09T304SN	0.4	25	0.18	3.1					73.32	174	73.32	174
09T304SN	0.4	30	0.18	3.1					73.32	184		
09T304FN	0.4			2.8	62.03	204						
09T308SN	0.8	10	0.09	2.8					73.32	125	73.32	125
09T308SN	0.8	15	0.11	2.8							73.32	135
09T308TN	0.8	20	0.14	2.5	62.03	306						
09T308TN	0.8	20	0.15	2.8					73.32	145	73.32	145
09T308SN	0.8	20	0.16	2.8					73.32	155	73.32	155
09T308TN	0.8	25	0.17	2.8					73.32	165	73.32	165
09T308SN	0.8	25	0.18	2.8					73.32	175		
09T308SN	0.8	30	0.18	2.8					73.32	185		
09T308FN	0.8			2.5	62.03	206						
09T308EN	0.8			2.8							73.32	115
120404FN	0.4			3.1	52.75	208						
120404TN	0.4	20	0.14	3.1	52.75	308						
120408FN	0.8			2.8	52.75	210						
120408TN	0.8	20	0.14	2.8	52.75	310						

Cast iron	●	●	●	●
Sintered steels	●	●	●	●
Heat resistant alloys	●	●	●	●
hardened < 45 HRC				
hardened 46–55 HRC				
hardened 56–60 HRC				
hardened 61–65 HRC				

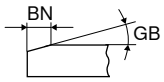
CCGW



					-B CTBH15U		-B CTBH15C		-Q-B CTBH15C	
										
					F		F		F	
					CBN CCGW		CBN CCGW		CBN CCGW	
					NEW Y0		NEW Y0		NEW Y0	
ISO	RE	GB	BN	LE	Article no. 71 001 ...		Article no. 71 000 ...		Article no. 71 002 ...	
	mm	°	mm	mm	£		£		£	
060202SN	0.2	15	0.11	3.4	82.40	**30214**	79.70	**30214**		
060202EN	0.2			3.4	82.40	**00200**	79.70	**00200**		
060204SN	0.4	15	0.11	3.1	82.40	**30414**	79.70	**30414**		
060204SN	0.4	25	0.13	3.1	82.40	**30429**	79.70	**30429**		
060204EN	0.4			3.1	82.40	**00400**	79.70	**00400**		
060208EN	0.8			2.8	82.40	**00600**	79.70	**00600**		
060208SN	0.8	15	0.11	2.8	82.40	**30614**	79.70	**30614**		
060208SN	0.8	25	0.13	2.8	82.40	**30629**	79.70	**30629**		
09T302SN	0.2	15	0.11	3.4			79.70	**31414**		
09T302SN	0.2	25	0.13	3.4			79.70	**31429**		
09T304SN	0.4	15	0.11	3.1			79.70	**31614**	92.45	**31614**
09T304SN	0.4	25	0.13	3.1			79.70	**31629**	79.70	**31629**
09T308SN	0.8	15	0.11	2.8			79.70	**31814**	79.70	**31814**
09T308SN	0.8	25	0.13	2.8			79.70	**31829**	79.70	**31829**
Cast iron										
Sintered steels										
Heat resistant alloys										
hardened < 45 HRC					●		●		●	
hardened 46–55 HRC					●		●		●	
hardened 56–60 HRC					●		●		●	
hardened 61–65 HRC										

9

CCGW / CCGT



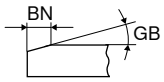
	-A CTBH21U	-A CTBH21U	-B CTBH21U	-Q-B CTBH21U	-B CTBH20C	-Q-B CTBH20C
	PBC25	PBC25	-2S PBC25	-2Q PBC25	-2MC PBC25-S	-2Q PBC25-S
	F	F	F	F	F	F
	CBN CCGW	CBN CCGT	CBN CCGW	CBN CCGW	CBN CCGW	CBN CCGW
	Y0	Y0	Y0	Y0	Y0	Y0
ISO	Article no. 71 120 ...	Article no. 71 124 ...	Article no. 71 121 ...	Article no. 71 123 ...	Article no. 71 161 ...	Article no. 71 162 ...

ISO	RE mm	GB °	BN mm	LE mm	-A CTBH21U PBC25 £		-A CTBH21U PBC25 £		-B CTBH21U -2S PBC25 £		-Q-B CTBH21U -2Q PBC25 £		-B CTBH20C -2MC PBC25-S £		-Q-B CTBH20C -2Q PBC25-S £	
060202SN	0.2	10	0.09	3.4									73.32	230	73.32	230
060202SN	0.2	15	0.11	3.4											73.32	240
060202SN	0.2	20	0.09	3.4									73.32	250		
060202TN	0.2	20	0.14	3.4	62.03	500										
060202TN	0.2	25	0.14	3.4									73.32	260		
060202EN	0.2			3.4											73.32	220
060202SN	0.2	25	0.15	3.4									73.32	270		
060202FN	0.2			3.4	62.03	400 1)	76.10	400							73.32	210
060204EN	0.4			3.1									73.32	221		
060204SN	0.4	10	0.09	3.1									73.32	231	73.32	231
060204SN	0.4	15	0.11	3.1									73.32	241	73.32	241
060204SN	0.4	20	0.09	3.1									73.32	251	73.32	251
060204TN	0.4	20	0.14	3.1	62.03	502										
060204TN	0.4	25	0.14	3.1									73.32	261	73.32	261
060204FN	0.4			3.1	62.03	402 1)	76.10	402								
060204SN	0.4	25	0.15	3.1									73.32	271		
060208SN	0.8	10	0.09	2.8									73.32	232		
060208SN	0.8	20	0.09	2.8									73.32	252		
060208TN	0.8	25	0.14	2.8									73.32	262		
060208SN	0.8	30	0.18	2.8									73.32	282		
060208FN	0.8			2.8									73.32	212		
09T302SN	0.2	10	0.09	3.4									73.32	233		
09T302SN	0.2	15	0.11	3.4									73.32	243		
09T302SN	0.2	20	0.09	3.4									73.32	253		
09T302SN	0.2	25	0.15	3.4									73.32	273		
09T304SN	0.4	10	0.09	3.1									73.32	234		
09T304SN	0.4	15	0.11	3.1									73.32	244		
09T304SN	0.4	20	0.09	3.1									73.32	254		
09T304TN	0.4	20	0.14	2.8	62.03	504										
09T304TN	0.4	20	0.14	3.1					103.14	502	85.72	502				
09T304TN	0.4	25	0.14	3.1									73.32	264		
09T304SN	0.4	25	0.15	3.1									73.32	274		
09T304SN	0.4	30	0.18	3.1									73.32	284		
09T304EN	0.4			3.1									73.32	224		
09T304FN	0.4			3.1					103.14	402 1)						
09T304FN	0.4			2.8	62.03	404 1)										
09T308SN	0.8	10	0.09	2.8									73.32	235	73.32	235
09T308SN	0.8	15	0.11	2.8									73.32	245	73.32	245
09T308SN	0.8	20	0.09	2.8											73.32	255
09T308TN	0.8	20	0.14	2.8					103.14	504	85.72	504				
09T308TN	0.8	20	0.14	2.5	62.03	506										
09T308TN	0.8	25	0.14	2.8									73.32	265	73.32	265
09T308SN	0.8	25	0.15	2.8									73.32	275		
09T308FN	0.8			2.5	62.03	406 1)										
09T308EN	0.8			2.8											73.32	225
09T308FN	0.8			2.8					103.14	404 1)	85.72	404 1)			73.32	215
120404TN	0.4	20	0.14	3.1	52.75	508										
120408TN	0.8	20	0.14	2.8	52.75	510										

	-A CTBH21U PBC25	-A CTBH21U PBC25	-B CTBH21U -2S PBC25	-Q-B CTBH21U -2Q PBC25	-B CTBH20C -2MC PBC25-S	-Q-B CTBH20C -2Q PBC25-S
Cast iron						
Sintered steels						
Heat resistant alloys						
hardened < 45 HRC						
hardened 46–55 HRC	●	●	●	●	●	●
hardened 56–60 HRC	●	●	●	●	●	●
hardened 61–65 HRC						

1) Machining to 60 HRC

CCGW / CCGT



	-A CTBH40U	-A CTBH40U	-B CTBH40U	-Q-B CTBH40U	-B CTBH40C	-Q-B CTBH40C
	PBC40	PBC40	-2S PBC40	-2Q PBC40	-2MC PBC40-S	-2Q PBC40-S
	F	F	F	F	F	F
	CBN CCGW Y0	CBN CCGT Y0	CBN CCGW Y0	CBN CCGW Y0	CBN CCGW Y0	CBN CCGW Y0
ISO	Article no. 71 120 ...	Article no. 71 124 ...	Article no. 71 121 ...	Article no. 71 123 ...	Article no. 71 161 ...	Article no. 71 162 ...

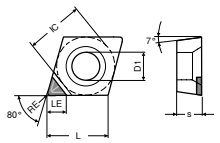
ISO	RE mm	GB °	BN mm	LE mm	71 120 ... £		71 124 ... £		71 121 ... £		71 123 ... £		71 161 ... £		71 162 ... £	
060202TN	0.2	20	0.09	3.4									73.32	320		
060202SN	0.2	20	0.09	3.4											73.32	330
060202SN	0.2	25	0.09	3.4									73.32	350	73.32	350
060202TN	0.2	25	0.11	3.4									73.32	340	73.32	340
060202TN	0.2	25	0.12	3.4	62.69	900										
060202TN	0.2	30	0.14	3.4									73.32	360	73.32	360
060202FN	0.2			3.4	62.69	800	76.10	800								
060204SN	0.4	20	0.09	3.1									73.32	331		
060204SN	0.4	25	0.09	3.1									73.32	351	73.32	351
060204TN	0.4	25	0.11	3.1									73.32	341	73.32	341
060204TN	0.4	25	0.12	3.1	62.69	902										
060204TN	0.4	30	0.14	3.1									73.32	361	73.32	361
060204SN	0.4	30	0.16	3.1									73.32	371	73.32	371
060204SN	0.4	35	0.17	3.1									73.32	381	73.32	381
060204FN	0.4			3.1	62.69	802	76.10	802								
060208TN	0.8	20	0.09	2.8									73.32	322		
060208SN	0.8	25	0.09	2.8									73.32	352		
060208TN	0.8	25	0.11	2.8									73.32	342		
060208TN	0.8	30	0.14	2.8									73.32	362		
060208SN	0.8	30	0.16	2.8									73.32	372		
060208SN	0.8	35	0.17	2.8									73.32	382		
09T302TN	0.2	20	0.09	3.4									73.32	323		
09T302SN	0.2	25	0.09	3.4									73.32	353		
09T302TN	0.2	25	0.11	3.4									73.32	343		
09T302SN	0.2	30	0.16	3.4									73.32	373		
09T302SN	0.2	35	0.17	3.4									73.32	383		
09T304SN	0.4	20	0.09	3.1									73.32	334	73.32	334
09T304TN	0.4	20	0.09	3.1									73.32	324	73.32	324
09T304SN	0.4	25	0.09	3.1									73.32	354	73.32	354
09T304TN	0.4	25	0.11	3.1									73.32	344	73.32	344
09T304TN	0.4	25	0.12	3.1					103.14	902	85.72	902				
09T304TN	0.4	25	0.12	2.8	62.69	904										
09T304TN	0.4	30	0.14	3.1									73.32	364	73.32	364
09T304SN	0.4	30	0.16	3.1									73.32	374		
09T304EN	0.4			3.1									73.32	314		
09T304SN	0.4	35	0.17	3.1									73.32	384		
09T304FN	0.4			3.1					103.14	802	85.72	802				
09T304FN	0.4			2.8	62.69	804										
09T308SN	0.8	20	0.09	2.8									73.32	335	73.32	335
09T308TN	0.8	20	0.09	2.8									73.32	325	73.32	325
09T308SN	0.8	25	0.09	2.8									73.32	355	73.32	355
09T308TN	0.8	25	0.11	2.8									73.32	345	73.32	345
09T308TN	0.8	25	0.12	2.8					103.14	904	85.72	904				
09T308TN	0.8	25	0.12	2.5	62.69	906										
09T308TN	0.8	30	0.14	2.8									73.32	365	73.32	365
09T308SN	0.8	30	0.16	2.8											73.32	375
09T308SN	0.8	35	0.17	2.8									73.32	385		
09T308FN	0.8			2.8					103.14	804	85.72	804				
09T308FN	0.8			2.5	62.69	806										
09T308EN	0.8			2.8											73.32	315
120404FN	0.4			3.1	52.75	808										
120404TN	0.4	25	0.12	3.1	52.75	908										
120408TN	0.8	25	0.12	2.8	52.75	910										

Cast iron						
Sintered steels						
Heat resistant alloys						
hardened < 45 HRC						
hardened 46–55 HRC	●	●	●	●	●	●
hardened 56–60 HRC	●	●	●	●	●	●
hardened 61–65 HRC	●	●	●	●	●	●

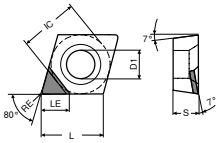
9

CCGW / CCGT

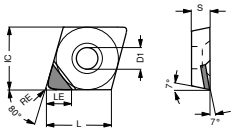
Designation	L	S	D1	IC
	mm	mm	mm	mm
CCG. 0602..	6,45	2,38	2,8	6,35
CCG. 09T3..	9,70	3,97	4,4	9,52
CCG. 1204..	12,90	4,76	5,5	12,70



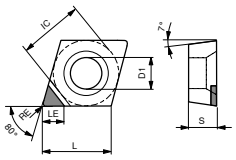
CCGW -Q-A



CCGT -A

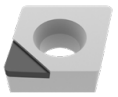
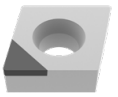
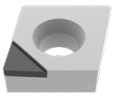


CCGT -Q-A

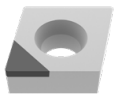
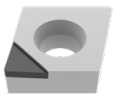


CCGW -A

CCGW / CCGT

	-A CTDMD05	-A CTDPD20	-A CTDPD20	-Q-A CTDPD20	-Q-A CTDPD20
	MDC	PDC	PDC	-2Q PDC	-2Q PDC
					
	F	F	F	F	F
	DIAMOND CCGW	DIAMOND CCGW	DIAMOND CCGT	DIAMOND CCGW	DIAMOND CCGT
	Y0	Y0	Y0	Y0	Y0
ISO	Article no. 71 120 ...	Article no. 71 120 ...	Article no. 71 124 ...	Article no. 71 125 ...	Article no. 71 126 ...
RE / LE	£	£	£	£	£
mm / mm					
060201FN 0.1 3.4					98.64 101
060202FN 0.2 2.5	346.11 050				
060202FN 0.2 3.3				98.64 102	98.64 102
060202FN 0.2 3.4		97.26 100	91.24 100		
060204FN 0.4 2.5	346.11 052				
060204FN 0.4 3.1					98.64 104
060204FN 0.4 3.2		97.26 102	91.24 102	98.64 104	
09T301FN 0.1 4.5				98.61 111	98.61 111
09T302FN 0.2 4.4				98.61 112	98.61 112
09T304FN 0.4 2.5	353.00 054				
09T304FN 0.4 4.2				98.61 114	98.61 114
09T304FN 0.4 4.3		100.46 104	93.41 104		
09T308FN 0.8 2.5	353.00 056				
09T308FN 0.8 4.1		100.46 106	93.41 106		
120402FN 0.2 4.4				102.27 122	102.27 122
120404FN 0.4 4.2				102.27 124	102.27 124
120404FN 0.4 4.3		78.24 108	78.24 108		
120408FN 0.8 4.1		78.24 110	78.24 110		
Steel					
Stainless steel					
Cast iron					
Non ferrous metals	●	●	●	●	●
Heat resistant alloys	○				

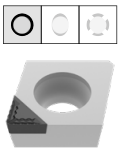
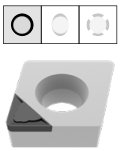
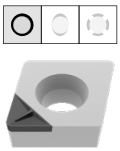
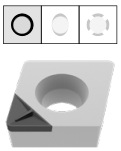
CCGT / CCGW

			-A-CB1 CTDPD20		-A-CB1 CTDPD20		-Q-A CTDPS30		-Q-A CTDPS30		-A-CB2 CTDPS30		-A-Q-CB2 CTDPS30	
			-CB1 PDC		-Q-CB1 PDC		-2Q PDC-S		-2Q PDC-S		-CB2 PDC-S		-Q-CB2 PDC-S	
														
			F		F		F		F		M		M	
			DIAMOND CCGT		DIAMOND CCGT		DIAMOND CCGW		DIAMOND CCGT		DIAMOND CCGT		DIAMOND CCGT	
			Y0		Y0		Y0		Y0		Y0		Y0	
ISO	RE	LE	Article no. 71 300 ...		Article no. 71 305 ...		Article no. 71 125 ...		Article no. 71 126 ...		Article no. 71 301 ...		Article no. 71 306 ...	
	mm	mm	£		£		£		£		£		£	
060202FN	0.2	3.3					98.64	152	98.64	152				
060202EN	0.2	3.3											101.43	202
060202EN	0.2	3.4									88.31	202		
060202FN	0.2	3.4	88.31	102										
060204FN	0.4	3.1			101.43	104								
060204EN	0.4	3.1											101.43	204
060204EN	0.4	3.2									88.31	204		
060204FN	0.4	3.2	88.31	104										
060208EN	0.8	3.0									92.18	208		
09T302FN	0.2	4.4					98.61	162	98.61	162				
09T302EN	0.2	4.4											102.70	212
09T302EN	0.2	4.5									91.53	212		
09T302FN	0.2	4.5	86.84	112										
09T304FN	0.4	4.2			102.70	114								
09T304EN	0.4	4.2											102.70	214
09T304EN	0.4	4.3									91.53	214		
09T304FN	0.4	4.3	86.84	114										
09T308EN	0.8	4.1									99.19	218		
09T308FN	0.8	4.1	94.08	118										
120402FN	0.2	4.4							102.27	172				
120402EN	0.2	4.4											105.22	222
120404EN	0.4	4.2											105.22	224
120404FN	0.4	4.2			105.22	124			102.27	174				
120404EN	0.4	4.3									92.10	224		
120404FN	0.4	4.3	92.10	124										
120408EN	0.8	4.1									95.80	228		
120408FN	0.8	4.1	95.80	128										

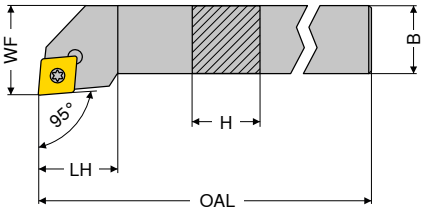
Steel														
Stainless steel														
Cast iron														
Non ferrous metals			●		●		●		●		●		●	
Heat resistant alloys							○		○		○		○	

9

CCGT

			-A-CB3 CTDPU20		-A-CB1 CTDCD10		-A-CB2 CTDCD10		-A-Q-CB2 CTDCD10	
			-CB3 PDC-S		-CB1 CVD		-CB2 CVD		-Q-CB2 CVD	
										
			R DIAMOND CCGT Y0		F DIAMOND CCGT Y0		M DIAMOND CCGT Y0		M DIAMOND CCGT Y0	
ISO	RE	LE	Article no. 71 302 ...		Article no. 71 300 ...		Article no. 71 301 ...		Article no. 71 306 ...	
	mm	mm	£		£		£		£	
060202FN	0.2	2.4			112.07	302				
060204EN	0.4	2.1							119.32	304
060204FN	0.4	2.2			112.07	304				
060204EN	0.4	2.2					112.07	304		
060204EN	0.4	3.2	70.28	204						
09T304EN	0.4	2.1							125.19	314
09T304FN	0.4	2.2			115.71	314				
09T304EN	0.4	2.2					115.71	314		
09T304EN	0.4	4.3	70.28	214						
09T308EN	0.8	4.1	76.77	218						
120404EN	0.4	2.1							122.96	324
120408EN	0.8	2.1					130.23	328		
Steel										
Stainless steel										
Cast iron										
Non ferrous metals				●		●		●		●
Heat resistant alloys				○						

MaxiLock-S – SCLC 95° – Toolholder with screw clamping



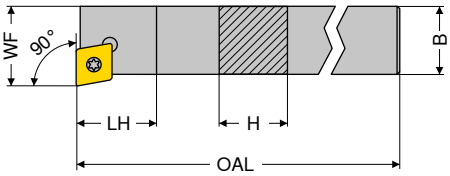
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 653 ... £		Right-hand 2A/24 Article no. 70 652 ... £	
	mm	mm	mm	mm	mm	Nm					
SCLC R/L 0808 D06	8	8	60	9	10	1,2	CC.. 0602	55.38	**008**	55.38	**008**
SCLC R/L 1010 E06	10	10	70	9	12	1,2	CC.. 0602	58.72	**010**	58.72	**010**
SCLC R/L 1212 F09	12	12	80	15	16	3,2	CC.. 09T3	58.72	**012**	58.72	**012**
SCLC R/L 1616 H09	16	16	100	17	20	3,2	CC.. 09T3	72.73	**016**	72.73	**016**
SCLC R/L 2020 K09	20	20	125	17	25	3,2	CC.. 09T3	77.31	**020**	77.31	**020**
SCLC R/L 1616 H12	16	16	100	20	20	5	CC.. 1204	72.73	**116**	72.73	**116**
SCLC R/L 2020 K12	20	20	125	20	25	5	CC.. 1204	77.31	**120**	77.31	**120**
SCLC R/L 2525 M12	25	25	150	20	32	5	CC.. 1204	79.97	**125**	79.97	**125**
SCLC R/L 3225 P12	32	25	170	20	32	5	CC.. 1204	83.13	**132**	83.13	**132**

Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts for Article no.	Y7 Key D Article no. 80 950 ... £		2A/28 Combination Key Article no. 70 950 ... £		2A Clamping screw Article no. 70 950 ... £		2A/28 Carbide type C Article no. 70 950 ... £		2A/28 Threaded sleeve Article no. 70 950 ... £	
70 653 008 / 70 652 008	10.30	**110**			2.15	**112**				
70 653 010 / 70 652 010	10.30	**110**			2.15	**112**				
70 653 012 / 70 652 012	12.26	**113**			2.85	**113**				
70 653 016 / 70 652 016			7.53	**398**	2.85	**113**	8.79	**165**	4.22	**171**
70 653 020 / 70 652 020			7.53	**398**	2.85	**113**	8.79	**165**	4.22	**171**
70 653 116 / 70 652 116			7.53	**398**	2.34	**114**	11.25	**166**	4.22	**170**
70 653 120 / 70 652 120			7.53	**398**	2.34	**114**	11.25	**166**	4.22	**170**
70 653 125 / 70 652 125			7.53	**398**	2.34	**114**	11.25	**166**	4.22	**170**
70 653 132 / 70 652 132			7.53	**398**	2.34	**114**	11.25	**166**	4.22	**170**

MaxiLock-S – SCFC 90° – Toolholder with screw clamping

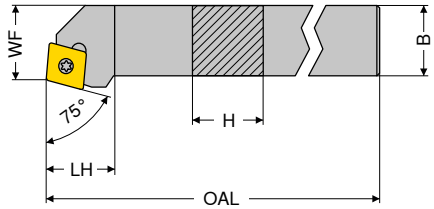


Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 761 ...		Right-hand 2A/24 Article no. 70 760 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
SCFC R/L 0808 D06	8	8	60	10	10	1,2	CC.. 0602	55.38	008	55.38	008
SCFC R/L 1010 E06	10	10	70	10	12	1,2	CC.. 0602	58.72	010	58.72	010
SCFC R/L 1212 F09	12	12	80	13	16	3,2	CC.. 09T3	58.72	012	58.72	012
SCFC R/L 1616 H09	16	16	100	13	20	3,2	CC.. 09T3	72.73	016	72.73	016
SCFC R/L 2020 K12	20	20	125	17	25	5	CC.. 1204	77.31	020	77.31	020

Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		2A/28 Carbide type C Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.	£		£		£		£		£	
70 761 008 / 70 760 008	10.30	110			2.15	112				
70 761 010 / 70 760 010	10.30	110			2.15	112				
70 761 012 / 70 760 012	12.26	113			2.85	113				
70 761 016 / 70 760 016			7.53	398	2.85	113	8.79	165	4.22	171
70 761 020 / 70 760 020			7.53	398	2.34	114	11.25	166	4.22	170

MaxiLock-S – SCRC 75° – Toolholder with screw clamping

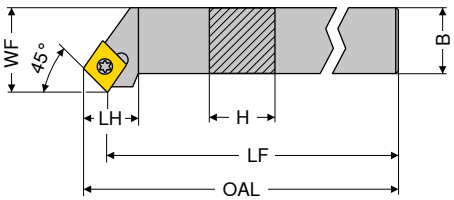


Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 649 ...		Right-hand 2A/24 Article no. 70 648 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
SCRC R 1010 E06	10	10	70	10	11	1,2	CC.. 0602			58.72	010
SCRC R/L 1212 F09	12	12	80	16	13	3,2	CC.. 09T3	58.72	012	58.72	012
SCRC R/L 1616 H09	16	16	100	17	17	3,2	CC.. 09T3	72.73	016	72.73	016
SCRC R/L 2020 K09	20	20	125	17	22	3,2	CC.. 09T3	77.31	020	77.31	020
SCRC R/L 2020 K12	20	20	125	20	22	5	CC.. 1204	77.31	120	77.31	120
SCRC R/L 2525 M12	25	25	150	20	27	5	CC.. 1204	79.97	125	79.97	125

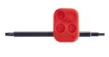
Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		2A/28 Carbide type C Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.	£		£		£		£		£	
70 648 010	10.30	110			2.15	112				
70 649 012 / 70 648 012	12.26	113			2.85	113				
70 649 016 / 70 648 016			7.53	398	2.85	113	8.79	165	4.22	171
70 649 020 / 70 648 020			7.53	398	2.85	113	8.79	165	4.22	171
70 649 120 / 70 648 120			7.53	398	2.34	114	11.25	166	4.22	170
70 649 125 / 70 648 125			7.53	398	2.34	114	11.25	166	4.22	170

MaxiLock-S – SCSC 45° – Toolholder with screw clamping



Illustrations show right-hand versions

ISO designation	H	B	OAL	LF	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 641 ...		Right-hand 2A/24 Article no. 70 640 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
SCSC R 1616 H12	16	16	109.1	100	20	20	5	CC.. 1204			72.73	016
SCSC R/L 2020 K12	20	20	134.1	125	20	25	5	CC.. 1204	77.31	020	77.31	020
SCSC R/L 2525 M12	25	25	159.1	150	20	32	5	CC.. 1204	79.97	025	79.97	025


Combination Key

Clamping screw

Carbide type C

Threaded sleeve

Spare parts for Article no.		2A/28 Article no. 70 950 ... £			2A/28 Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £			2A/28 Article no. 70 950 ... £	
70 640 016	T15/SW	7.53	398	M4,5x12	2.34	114	11.25	166	M4,5	4.22	170
70 641 020 / 70 640 020	T15/SW	7.53	398	M4,5x12	2.34	114	11.25	166	M4,5	4.22	170
70 641 025 / 70 640 025	T15/SW	7.53	398	M4,5x12	2.34	114	11.25	166	M4,5	4.22	170

MaxiLock-S – SCAC 90° – Toolholder with screw clamping

▲ for sliding head lathes

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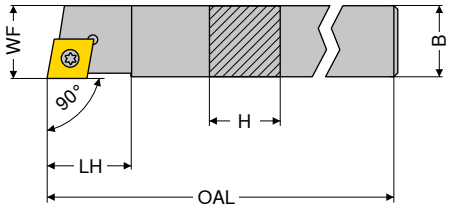


Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 757 ...		Right-hand 2A/24 Article no. 70 756 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
SCAC R/L 0808 K06	8	8	125	9	8	1,2	CC.. 0602	58.72	108	58.72	108
SCAC R/L 0808 D06	8	8	60	9	8	1,2	CC.. 0602	55.38	008	55.38	008
SCAC R/L 1010 M06	10	10	150	9	10	1,2	CC.. 0602	58.72	110	58.72	110
SCAC R/L 1010 E06	10	10	70	9	10	1,2	CC.. 0602	58.72	010	58.72	010
SCAC R/L 1212 M09	12	12	150	13	12	3,2	CC.. 09T3	65.68	112	65.68	112
SCAC R/L 1212 F09	12	12	80	13	12	3,2	CC.. 09T3	58.72	012	58.72	012
SCAC R/L 1414 M09	14	14	150	13	14	3,2	CC.. 09T3	65.68	114	65.68	114
SCAC R/L 1616 H09	16	16	100	13	16	3,2	CC.. 09T3	72.73	116	72.73	116
SCAC R/L 2020 K12	20	20	125	17	20	5	CC.. 1204	77.31	120	77.31	120

Key D

Combination Key

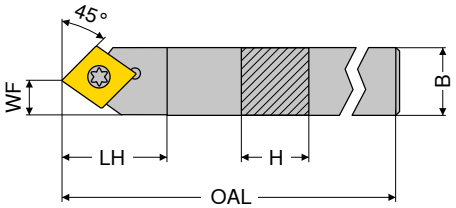
Clamping screw

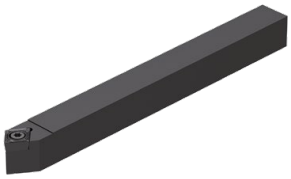
Carbide type C

Threaded sleeve

Spare parts for Article no.	Y7 Article no. 80 950 ... £		2A/28 Article no. 70 950 ... £		2A Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £	
70 756 108 / 70 757 108	10.30	110			2.15	112				
70 756 008 / 70 757 008	10.30	110			2.15	112				
70 756 110 / 70 757 110	10.30	110			2.15	112				
70 756 010 / 70 757 010	10.30	110			2.15	112				
70 756 112 / 70 757 112	12.26	113			2.85	113				
70 756 012 / 70 757 012	12.26	113			2.85	113				
70 756 114 / 70 757 114	12.26	113			2.85	113				
70 756 116 / 70 757 116			7.53	398	2.85	113	8.79	165	4.22	171
70 756 120 / 70 757 120			7.53	398	2.34	114	11.25	166	4.22	170

MaxiLock-S – SCDC 45° – Toolholder with screw clamping



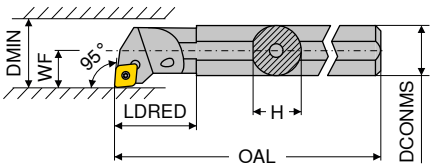


ISO designation	H mm	B mm	OAL mm	LH mm	WF mm	torque moment Nm	Insert	Neutral 2A/24 Article no. 70 752 ... £	
SCDC L 0808 K06	8	8	125	13	4	1,2	CC.. 0602	58.72	**008**
SCDC L 1010 M06	10	10	150	13	5	1,2	CC.. 0602	58.72	**010**
SCDC L 1212 M09	12	12	150	18	6	3,2	CC.. 09T3	65.68	**012**
SCDC L 1414 M09	14	14	150	18	7	3,2	CC.. 09T3	65.68	**014**

Spare parts for Article no.		Y7 Key D Article no. 80 950 ... £			2A Clamping screw Article no. 70 950 ... £	
70 752 008	T08	10.30	**110**	M2,5x6	2.15	**112**
70 752 010	T08	10.30	**110**	M2,5x6	2.15	**112**
70 752 012	T15	12.26	**113**	M3,5x11	2.85	**113**
70 752 014	T15	12.26	**113**	M3,5x11	2.85	**113**

MaxiLock-S – SCLC 95° – Boring bar with screw clamping

▲ A... = with thro' coolant
▲ S... = without thro' coolant



Illustrations show right-hand versions

ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 717 ...		Right-hand 2A/24 Article no. 70 716 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
S08H SCLC R/L 06	8	7.2	100		5	11	1,2	CC.. 0602	87.79	008	87.79	008
A08F SCLC R/L 06	8	7.6	80	17	5	11	1,2	CC.. 0602	87.79	208	87.79	208
A10H SCLC R/L 06	10	9.5	100	19	7	13	1,2	CC.. 0602	87.79	210	87.79	210
S10K SCLC R/L 06	10	9.0	125		7	13	1,2	CC.. 0602	87.79	010	87.79	010
A12K SCLC R/L 06	12	11.5	125	22	9	16	1,2	CC.. 0602	87.79	212	87.79	212
S12Q SCLC R/L 06	12	11.0	180		9	16	1,2	CC.. 0602	87.79	012	87.79	012
A16M SCLC R/L 06	16	14.0	150	50	9	18	1,2	CC.. 0602	89.70	116	89.70	116
S16R SCLC R/L 09	16	14.5	200		11	20	3,2	CC.. 09T3	89.70	016	89.70	016
A16M SCLC R/L 09	16	15.0	150	29	11	20	3,2	CC.. 09T3	89.70	216	89.70	216
A20Q SCLC R/L 09	20	18.5	180	32	13	25	3,2	CC.. 09T3	111.82	220	111.82	220
S20S SCLC R/L 09	20	18.0	250		13	25	3,2	CC.. 09T3	111.82	020	111.82	020
S25T SCLC R/L 09	25	23.0	300		17	32	3,2	CC.. 09T3	128.55	025	128.55	025
A25R SCLC R/L 09	25	23.0	200	36	17	32	3,2	CC.. 09T3	128.55	225	128.55	225
A32S SCLC R/L 12	32	30.0	250	50	22	40	5	CC.. 1204	176.73	232	176.73	232
A40T SCLC R/L 12	40	38.0	300	60	27	50	5	CC.. 1204	212.18	240	212.18	240

Tool holders with HSK-T or PSC interface can be found in→ **Chapter 16.**

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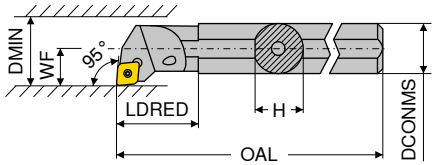
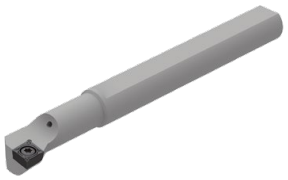
Spare parts for Article no.	Y7 Key D Article no. 80 950 ... £		2A/28 Combination Key Article no. 70 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Carbide type C Article no. 70 950 ... £		2A/28 Threaded sleeve Article no. 70 950 ... £	
70 716 008 / 70 717 008	10.30	110			2.34	116				
70 716 208 / 70 717 208	10.30	110			2.34	116				
70 716 210 / 70 717 210	10.30	110			2.34	116				
70 716 010 / 70 717 010	10.30	110			2.34	116				
70 716 212 / 70 717 212	10.30	110			2.34	116				
70 716 012 / 70 717 012	10.30	110			2.34	116				
70 716 116 / 70 717 116	10.30	110			2.34	116				
70 716 016 / 70 717 016	12.26	113			2.85	110				
70 716 216 / 70 717 216	12.26	113			2.85	110				
70 716 220 / 70 717 220	12.26	113			2.85	304				
70 716 020 / 70 717 020	12.26	113			2.85	110				
70 716 025 / 70 717 025	12.26	113			2.85	113				
70 716 225 / 70 717 225	12.26	113			2.85	304				
70 716 232 / 70 717 232			7.53	398	2.34	114	11.25	166	4.22	170
70 716 240 / 70 717 240			7.53	398	2.34	114	11.25	166	4.22	170

MaxiLock-S – SCLC 95° – Boring bar with screw clamping

▲ with carbide core



Illustrations show right-hand versions



ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A Article no. 70 719 ...	£		Right-hand 2A Article no. 70 718 ...	£	
E-A08F SCLC R/L 06	8	7.5	80	18	6	12	1,2	CC.. 0602		161.09	**208**		161.09	**208**
E-A10H SCLC R/L 06	10	9.0	100	20	7	14	1,2	CC.. 0602		161.09	**210**		161.09	**210**
E-A12K SCLC R/L 06	12	11.0	125	20	9	18	1,2	CC.. 0602		173.55	**212**		173.55	**212**
E-A16M SCLC R/L 09	16	15.0	150	28	11	22	3,2	CC.. 09T3		294.55	**216**		294.55	**216**
E-A20Q SCLC R/L 09	20	18.0	180	38	13	26	3,2	CC.. 09T3		364.18	**220**		364.18	**220**
E-A25R SCLC R/L 09	25	23.0	200	38	17	34	3,2	CC.. 09T3		462.27	**225**		462.27	**225**
E-A32S SCLC R/L 12	32	30.0	250	43	22	39	5	CC.. 1204		727.36	**232**		727.36	**232**

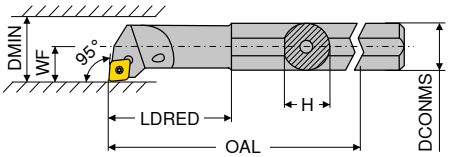
Key D

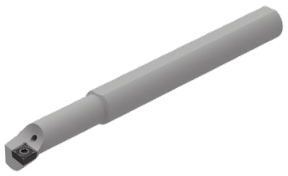
Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ...	£		2A/28 Article no. 70 950 ...	£	
70 718 208 / 70 719 208	T08		10.30	**110**	M2,5x5	2.34	**116**
70 718 210 / 70 719 210	T08		10.30	**110**	M2,5x5	2.34	**116**
70 718 212 / 70 719 212	T08		10.30	**110**	M2,5x5	2.34	**116**
70 718 216 / 70 719 216	T15		12.26	**113**	M4x9,5	2.85	**449**
70 718 220 / 70 719 220	T15		12.26	**113**	M4x9,5	2.85	**449**
70 718 225 / 70 719 225	T15		12.26	**113**	M4x9,5	2.85	**449**
70 718 232 / 70 719 232	T15		12.26	**113**	M4x11	3.09	**174**

MaxiLock-S – SCLC 95° – Boring bar with screw clamping

▲ with carbide core





Illustrations show right-hand versions

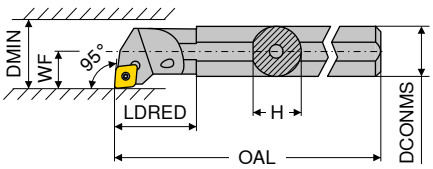
ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A Article no. 70 719 ... £		Right-hand 2A Article no. 70 718 ... £	
E-A0608F SCLC R/L 06	8	7.5	100	25	4	8	1,2	CC.. 0602	173.55	**308**	173.55	**308**
E-A0810H SCLC R/L 06	10	9.0	110	32	6	12	1,2	CC.. 0602	173.55	**310**	173.55	**310**
E-A1012K SCLC R/L 06	12	11.0	125	38	7	14	1,2	CC.. 0602	173.55	**312**	173.55	**312**
E-A1216M SCLC R/L 06	16	15.0	150	50	9	18	1,2	CC.. 0602	173.55	**316**	173.55	**316**

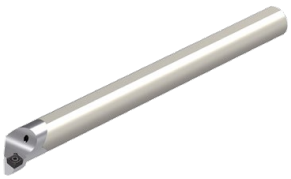
Spare parts for Article no.	Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £	
70 718 308 / 70 719 308	10.30	**110**	2.34	**116**
70 718 310 / 70 719 310	10.30	**110**	2.34	**116**
70 718 312 / 70 719 312	10.30	**110**	2.34	**116**
70 718 316 / 70 719 316	10.30	**110**	2.34	**116**

9

MaxiLock-S – SCLC 95° – Boring bar with screw clamping

▲ Type: Solid carbide



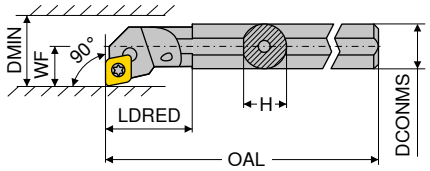


Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 719 ... £		Right-hand 2A/24 Article no. 70 718 ... £	
E08H SCLC R/L 06	8	7.6	100		5	11	1,2	CC.. 0602	199.64	**008**	199.64	**008**
E10K SCLC R/L 06	10	9.0	125	22	7	13	1,2	CC.. 0602	230.64	**010**	230.64	**010**
E12Q SCLC R/L 06	12	11.5	180	26	9	16	1,2	CC.. 0602	302.91	**012**	302.91	**012**
E16R SCLC R/L 09	16	15.0	200	34	11	20	3,2	CC.. 09T3	395.82	**016**	395.82	**016**
E20S SCLC R/L 09	20	18.5	250	38	13	25	3,2	CC.. 09T3	494.45	**020**	494.45	**020**
E25T SCLC R/L 09	25	23.0	300	43	17	32	3,2	CC.. 09T3	871.91	**025**	871.91	**025**

Spare parts for Article no.		Y7 Key D Article no. 80 950 ... £			2A/28 Clamping screw Article no. 70 950 ... £	
70 719 008 / 70 718 008	T08	10.30	**110**	M2,5x5	2.34	**116**
70 719 010 / 70 718 010	T08	10.30	**110**	M2,5x5	2.34	**116**
70 719 012 / 70 718 012	T08	10.30	**110**	M2,5x5	2.34	**116**
70 719 016 / 70 718 016	T15	12.26	**113**	M3,5x7,2	2.85	**110**
70 719 020 / 70 718 020	T15	12.26	**113**	M3,5x8,6	2.85	**304**
70 719 025 / 70 718 025	T15	12.26	**113**	M3,5x11	2.85	**113**

MaxiLock-S – SCFC 90° – Boring bar with screw clamping



Illustrations show right-hand versions

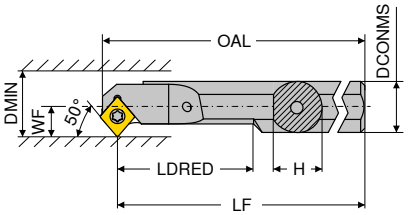
ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 793 ... £		Right-hand 2A/24 Article no. 70 792 ... £	
A08F SCFC R/L 06	8	7.6	80	17	5	11	1,2	CC.. 0602	87.79	**208**	87.79	**208**
A10H SCFC R/L 06	10	9.5	100	19	7	13	1,2	CC.. 0602	87.79	**210**	87.79	**210**
A12K SCFC R/L 06	12	11.5	125	22	9	16	1,2	CC.. 0602	87.79	**212**	87.79	**212**

Key D — Y7

Clamping screw — 2A/28

Spare parts for Article no.		Article no. 80 950 ... £			Article no. 70 950 ... £	
70 792 208 / 70 793 208	T08	10.30	**110**	M2,5x5	2.34	**116**
70 792 210 / 70 793 210	T08	10.30	**110**	M2,5x5	2.34	**116**
70 792 212 / 70 793 212	T08	10.30	**110**	M2,5x5	2.34	**116**

MaxiLock-S – SCMC 50° – Boring bar with screw clamping



Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LF mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A Article no. 70 723 ... £		Right-hand 2A Article no. 70 722 ... £	
A08H SCMC R/L 06	8	7	104.15	100	20	5.5	10.5	1,2	CC.. 0602	87.79	**208**	87.79	**208**
A10H SCMC R/L 06	10	9	114.15	110	26	6.0	11.0	1,2	CC.. 0602	87.79	**210**	87.79	**210**
A12K SCMC R/L 06	12	11	129.15	125	32	7.0	13.0	1,2	CC.. 0602	87.79	**212**	87.79	**212**
A16M SCMC R/L 06	16	14	154.15	150	40	9.0	16.0	1,2	CC.. 0602	89.70	**216**	89.70	**216**

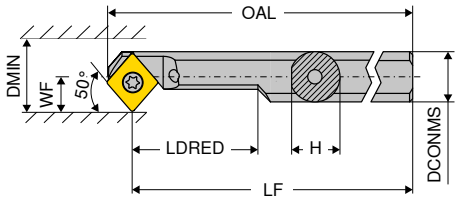
Key D — Y7

Clamping screw — 2A/28

Spare parts for Article no.		Article no. 80 950 ... £			Article no. 70 950 ... £	
70 723 208 / 70 722 208	T08	10.30	**110**	M2,5x5	2.34	**116**
70 723 210 / 70 722 210	T08	10.30	**110**	M2,5x5	2.34	**116**
70 723 212 / 70 722 212	T08	10.30	**110**	M2,5x5	2.34	**116**
70 723 216 / 70 722 216	T08	10.30	**110**	M2,5x5	2.34	**116**

MaxiLock-S – SCMC 50° – Boring bar with screw clamping

▲ with carbide core



Illustrations show right-hand versions

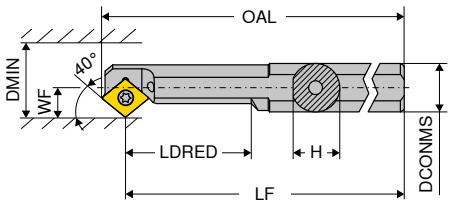
ISO designation	DCONMS mm	H mm	OAL mm	LF mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A Article no. 70 707 ... £		Right-hand 2A Article no. 70 706 ... £	
E-A0608H SCMC R/L 06	8	7.5	104.15	100	20	5.5	10.5	1,2	CC.. 0602	173.55	**008**	173.55	**008**
E-A0810H SCMC R/L 06	10	9.0	114.15	110	26	6.0	11.0	1,2	CC.. 0602	173.55	**010**	173.55	**010**
E-A1012K SCMC R/L 06	12	11.0	129.15	125	32	7.0	13.0	1,2	CC.. 0602	173.55	**012**	173.55	**012**
E-A1216M SCMC R/L 06	16	15.0	154.15	150	40	9.0	16.0	1,2	CC.. 0602	173.55	**016**	173.55	**016**

Spare parts for Article no.	Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £	
70 706 008 / 70 707 008	10.30	**110**	2.34	**116**
70 706 010 / 70 707 010	10.30	**110**	2.34	**116**
70 706 012 / 70 707 012	10.30	**110**	2.34	**116**
70 706 016 / 70 707 016	10.30	**110**	2.34	**116**

9

MaxiLock-S – SCXC 40° – Boring bar with screw clamping

▲ with carbide core



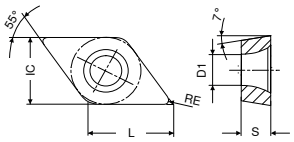
Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LF mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A Article no. 70 715 ... £		Right-hand 2A Article no. 70 714 ... £	
E-A0608H SCXC R/L 06	8	7.5	105	100	20	5	9.5	1,2	CC.. 0602	173.55	**008**	173.55	**008**
E-A0810H SCXC R/L 06	10	9.0	115	110	26	6	11.0	1,2	CC.. 0602	173.55	**010**	173.55	**010**
E-A1012K SCXC R/L 06	12	11.0	130	125	32	7	13.0	1,2	CC.. 0602	173.55	**012**	173.55	**012**
E-A1216M SCXC R/L 06	16	15.0	155	150	40	9	16.0	1,2	CC.. 0602	173.55	**016**	173.55	**016**

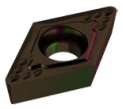
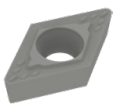
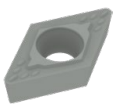
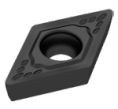
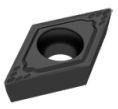
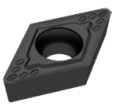
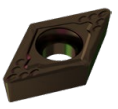
Spare parts for Article no.	Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £	
70 714 008 / 70 715 008	10.30	**110**	2.34	**116**
70 714 010 / 70 715 010	10.30	**110**	2.34	**116**
70 714 012 / 70 715 012	10.30	**110**	2.34	**116**
70 714 016 / 70 715 016	10.30	**110**	2.34	**116**

DCGT / DCMT / DCXT / DCET

Designation	L	S	D1	IC
	mm	mm	mm	mm
DC.T 0702..	7.75	2.38	2.8	6.35
DC.T 11T3..	11.60	3.97	4.4	9.52



DCGT / DCMT

	-CF05 CTEP110	-SF TCM10	-SF TCM407	-SF CTCP125	-SF CTCP115	-SF CTCP125	-SF CTCP135
	-PF14 DCC1110	-ZF CWC10	-ZF CWC407	-ZF HCX1125	-ZF HCX1115	-ZF HCX1125	-ZF HCR1135
	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
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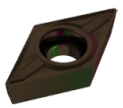
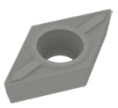
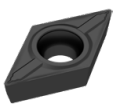
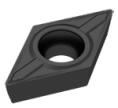
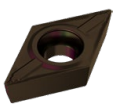
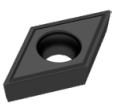
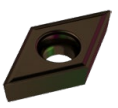
	CERMET DCGT 1A/78	CERMET DCGT 1A/78	CERMET DCGT 1A/78	DCGT 1A/08	DCMT 1A/08	DCMT 1A/08	DCMT 1A/08
ISO / RE mm	Article no. 76 245 ... £	Article no. 70 257 ... £	Article no. 70 257 ... £	Article no. 76 257 ... £	Article no. 76 259 ... £	Article no. 76 259 ... £	Article no. 76 259 ... £
070201EN 0.1		12.21 898					
070202EN 0.2	12.60 002	12.21 900		12.60 502			
070204EN 0.4	12.60 004	12.21 902	12.21 852		7.07 304	7.07 504	7.07 704
11T302EN 0.2	16.68 014	15.56 904	15.56 854				
11T304EN 0.4	16.68 016	15.56 906	15.56 856		9.94 316	9.94 516	9.94 716
11T308EN 0.8	16.68 018	15.56 908	15.56 858		9.94 318	9.94 518	9.94 718
Steel	●	●	●	●	●	●	●
Stainless steel	○			○	○	○	○
Cast iron	○	○	○	○	○	○	
Non ferrous metals							
Heat resistant alloys							○

DCMT / DCGT

	-CF55 CTEP110	-SMF TCM10	-SMF CTCP115	-SMF CTCP125	-SMF CTCP135	-SM CTCP125	-SM CTCP135
	-PF15 DCC1110	-SMF CWC10	-SMF HCX1115	-SMF HCX1125	-SMF HCR1135	-ZM HCX1125	-ZM HCR1135
	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	F	F	F	F	F	M	M
	CERMET DCMT 1A/78	CERMET DCMT 1A/78	DCMT 1A/08	DCMT 1A/08	DCMT 1A/08	DCGT 1A/08	DCGT 1A/08
ISO / RE mm	Article no. 76 246 ... £	Article no. 70 265 ... £	Article no. 76 265 ... £	Article no. 76 265 ... £	Article no. 76 265 ... £	Article no. 76 256 ... £	Article no. 76 256 ... £
070202EN 0.2	7.15 002	6.62 898				12.60 502	12.60 702
070204EN 0.4	7.15 004	6.62 900		7.07 504	7.07 704		
070208EN 0.8					7.07 706		
11T304EN 0.4	9.92 016	9.29 904	9.94 316	9.94 516	9.94 716		
11T308EN 0.8	9.92 018	9.29 906	9.94 318	9.94 518	9.94 718		
Steel	●	●	●	●	●	●	●
Stainless steel	○		○	○	○	○	○
Cast iron	○	○	○	○		○	
Non ferrous metals							
Heat resistant alloys					○		○

DCMT

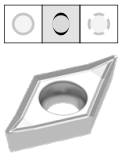
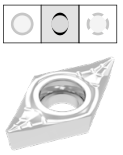
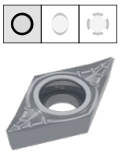
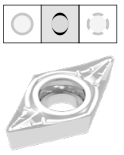
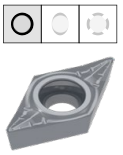
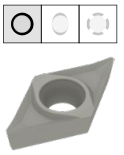
ISO	RE mm	-SM CTCK110 -ZM DCX3110 DRAGONSKIN		-SM CTCK120 -ZM HCF3120 DRAGONSKIN		-SM CTCP115 -ZM HCX1115 DRAGONSKIN		-SM CTCP125 -ZM HCX1125 DRAGONSKIN		-SM CTCP135 -ZM HCR1135 DRAGONSKIN		-SMQ CTCP115 -SMQ HCX1115 DRAGONSKIN		-SMQ CTCP125 -SMQ HCX1125 DRAGONSKIN	
		M DCMT 1A/08		M DCMT 1A/08		M DCMT 1A/08		M DCMT 1A/08		M DCMT 1A/08		M DCMT 1A/08		M DCMT 1A/08	
		Article no. 70 258 ...		Article no. 70 258 ...		Article no. 76 258 ...		Article no. 76 258 ...		Article no. 76 258 ...		Article no. 76 195 ...		Article no. 76 195 ...	
		£		£		£		£		£		£		£	
070204EN	0.4	7.07	004	7.07	554	7.07	304	7.07	504	7.07	704	8.06	304	8.06	504
070208EN	0.8	7.07	006	7.07	506	7.07	306	7.07	506	7.07	706				
11T304EL	0.4													11.08	516
11T304EN	0.4	9.94	016	9.94	516	9.94	316	9.94	516	9.94	716			11.08	515
11T304ER	0.4													11.08	517
11T308EN	0.8	9.94	018	9.94	518	9.94	318	9.94	518	9.94	718			11.08	518
11T312EN	1.2							9.94	520						
Steel		●		●		●		●		●		●		●	
Stainless steel		○				○		○		○		○		○	
Cast iron		●		●		○		○				○		○	
Non ferrous metals															
Heat resistant alloys										○					

9

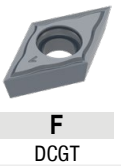
DCGT / DCMT / DCXT

ISO	RE mm	-SF CTC2135 -ZF CWN2135		-SF CTC2135 -ZF CWN2135		-F43 CTC2135 -F43 CWN2135		-M81 CWN2120		-M25 CTPM125 -PF23 HCN2125 DRAGONSKIN		-SM CTC2135 -ZM CWN2135		-M55 CTPM125 -PF26 HCN2125 DRAGONSKIN	
		F DCGT 1A/08		F DCMT 1A/08		F DCMT 1A/08		M DCXT 1A		F DCMT 1A/08		M DCMT 1A/08		F DCMT 1A/08	
		Article no. 70 257 ...		Article no. 70 259 ...		Article no. 70 186 ...		Article no. 70 260 ...		Article no. 75 213 ...		Article no. 70 258 ...		Article no. 75 214 ...	
		£		£		£		£		£		£		£	
070202EN	0.2	12.60	440			6.85	400			7.07	202				
070202FN	0.2							8.95	100						
070204EN	0.4			6.85	440	6.85	402			7.07	204	6.85	440	7.07	204
070204FN	0.4							8.95	102						
070208EN	0.8											6.85	442	7.07	206
11T302EN	0.2					9.92	404			9.92	214				
11T302FN	0.2							9.30	104						
11T304EN	0.4			9.92	444	9.92	406			9.94	216	9.92	444	9.94	216
11T304FN	0.4							9.30	106						
11T308EN	0.8			9.92	446	9.92	408			9.94	218	9.92	448	9.94	218
11T308FN	0.8							9.30	108						
Steel		○		○		○				○		○		○	
Stainless steel		●		●		●		●		●		●		●	
Cast iron															
Non ferrous metals								○							
Heat resistant alloys		●		●		●						●			

DCGT

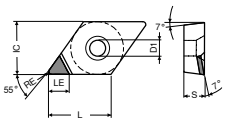
ISO	RE	-23P H216T	-25P H210T	-25P AMZ	-25Q H210T	-25Q AMZ	-27 H10T	-27 CWN15
		-23P CWK26	-25P CWK20	-25P AMZ	-25Q CWK20	-25Q AMZ	-AL CWK15	-AL CWN15
								
		F	F	F	M	M	M	M
		DCGT	DCGT	DCGT	DCGT	DCGT	DCGT	DCGT
		1A/90	1A/90	1A/90	1A/90	1A	1A/90	1A
		Article no. 70 261 ...	Article no. 70 263 ...	Article no. 70 263 ...	Article no. 70 263 ...	Article no. 70 263 ...	Article no. 70 260 ...	Article no. 70 260 ...
	mm	£	£	£	£	£	£	£
070202FN	0.2		8.94 632	10.68 552			8.45 600	10.81 300
070204FN	0.4	8.94 654	8.94 634	10.68 554			8.45 602	10.81 302
11T302FN	0.2		11.08 635	12.92 535			10.57 604	12.78 304
11T304FL	0.4				12.10 670	15.43 620		
11T304FN	0.4	11.08 664	11.08 636	12.92 556	12.10 660	15.43 610	10.57 606	12.78 306
11T304FR	0.4				12.10 680	15.43 630		
11T308FL	0.8				12.10 672	15.43 622		
11T308FN	0.8	11.08 666	11.08 638	12.92 558	12.10 662	15.43 612	10.57 608	12.78 308
11T308FR	0.8				12.10 682	15.43 642		
Steel				○		○		
Stainless steel				○		○		○
Cast iron		○	○	○	○	○	○	
Non ferrous metals		●	●	●	●	●	●	●
Heat resistant alloys		○	○		○		○	

DCGT / DCMT / DCET

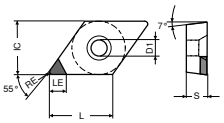
ISO	RE	-27 AMZ	-29 H216T	-29 AMZ	-F05 CTPX710	-F23 CTP2120
		-AL AMZ				-F23 CCN2120
						
		M	M	M	F	F
		DCGT	DCMT	DCMT	DCET	DCGT
		1A/90	NEW 1A/90	NEW 1A/90	NEW 1H/17	1A/08
		Article no. 70 260 ...	Article no. 70 246 ...	Article no. 70 246 ...	Article no. 76 254 ...	Article no. 70 192 ...
	mm	£	£	£	£	£
0702005FN	0.05				15.24 10200	
070200FN	0.00					12.60 600
0702015FN	0.15				15.24 10600	
070201FN	0.10				15.24 10400	12.60 602
070202FN	0.20	10.26 450			15.24 10800	
070204EN	0.40		6.47 60400	7.96 40400		
070204FN	0.40	10.26 452				
11T3005FN	0.05				20.20 11400	
11T300FN	0.00					16.98 604
11T3015FN	0.15				20.20 11800	
11T301FN	0.10				20.20 11600	16.98 606
11T302FN	0.20	12.42 454			20.20 12000	
11T304EN	0.40		8.73 61600	9.95 41600		
11T304FN	0.40	12.42 456				
11T304N	0.40				20.20 12200	
11T308EN	0.80		8.73 61800	9.95 41800		
11T308FN	0.80	12.42 458				
Steel		○		○	●	
Stainless steel		○		○	●	●
Cast iron		○	○	○	○	○
Non ferrous metals		●	●	●	○	○
Heat resistant alloys			○		●	●

DCGW / DCGT

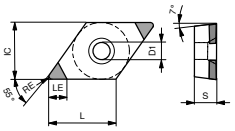
Designation	L	S	D1	IC
	mm	mm	mm	mm
DCG. 0702..	7.75	2.38	2.8	6.35
DCG. 11T3..	11.60	3.97	4.4	9.52



DCGT -A

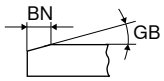


DCGW -A



DCGW-B

DCGW / DCGT



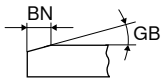
	-A CTBS10U	-A CTBS10U	-A CTBS10U	-B CTBS10U	-B CTBS10U	-B CTBS20C
	PBC10	PBC10	PBC10	-2S PBC10	-2S PBC10	-2MC PBC15-S
	F	F	F	F	F	F
	CBN DCGW	CBN DCGW	CBN DCGT	CBN DCGW	CBN DCGW	CBN DCGW
	Y0	Y0	Y0	Y0	Y0	Y0

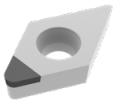
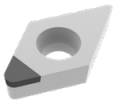
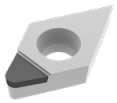
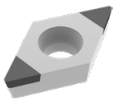
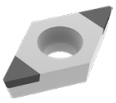
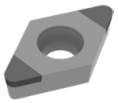
ISO	RE	GB	BN	LE	Article no. 71 130 ...		Article no. 71 130 ...		Article no. 71 134 ...		Article no. 71 131 ...		Article no. 71 131 ...		Article no. 71 163 ...	
	mm	°	mm	mm	£		£		£		£		£		£	
070202SN	0.2	10	0.09	3.9											73.32	120
070202SN	0.2	15	0.11	3.9											73.32	130
070202TN	0.2	20	0.14	3.9			52.75	300								
070202TN	0.2	20	0.15	3.9											73.32	140
070202SN	0.2	20	0.16	3.9											73.32	150
070202TN	0.2	25	0.17	3.9											73.32	160
070202FN	0.2			3.9	52.75	200			63.92	200						
070204SN	0.4	10	0.09	3.5											73.32	121
070204SN	0.4	15	0.11	3.5											73.32	131
070204TN	0.4	20	0.14	3.5			52.75	302								
070204TN	0.4	20	0.15	3.5											73.32	141
070204SN	0.4	20	0.16	3.5											73.32	151
070204TN	0.4	25	0.17	3.5											73.32	161
070204SN	0.4	30	0.18	3.5											73.32	181
070204FN	0.4			3.5	52.75	202			63.92	202						
070208SN	0.8	15	0.11	3.0											73.32	132
070208TN	0.8	20	0.14	3.0			52.75	304								
070208TN	0.8	20	0.15	3.0											73.32	142
070208SN	0.8	20	0.16	3.0											73.32	152
070208TN	0.8	25	0.17	3.0											73.32	162
070208SN	0.8	25	0.18	3.0											73.32	172
070208EN	0.8			3.0											73.32	112
070208FN	0.8			3.0	52.75	204			63.92	204						
11T302SN	0.2	15	0.11	3.9											73.32	133
11T302TN	0.2	20	0.14	3.9			52.75	306					81.11	300		
11T302TN	0.2	20	0.15	3.9											73.32	143
11T302SN	0.2	20	0.16	3.9											73.32	153

Cast iron	●	●	●	●	●	●
Sintered steels	●	●	●	●	●	●
Heat resistant alloys	●	●	●	●	●	●
hardened < 45 HRC						
hardened 46–55 HRC						
hardened 56–60 HRC						
hardened 61–65 HRC						

9

DCGW / DCGT



					-A CTBS10U PBC10		-A CTBS10U PBC10		-A CTBS10U PBC10		-B CTBS10U -2S PBC10		-B CTBS10U -2S PBC10		-B CTBS20C -2MC PBC15-S	
																
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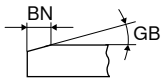
					Y0		Y0		Y0		Y0		Y0		Y0	
ISO	RE	GB	BN	LE	Article no. 71 130 ...		Article no. 71 130 ...		Article no. 71 134 ...		Article no. 71 131 ...		Article no. 71 131 ...		Article no. 71 163 ...	
	mm	°	mm	mm	£		£		£		£		£		£	
11T302TN	0.2	25	0.17	3.9											73.32	163
11T302FN	0.2			3.9	52.75	206			65.82	206	81.11	200				
11T302EN	0.2			3.9											73.32	113
11T304SN	0.4	10	0.09	3.5											73.32	124
11T304TN	0.4	20	0.14	3.5			52.75	308					81.11	302		
11T304TN	0.4	20	0.15	3.5											73.32	144
11T304SN	0.4	20	0.16	3.5											73.32	154
11T304TN	0.4	25	0.17	3.5											73.32	164
11T304SN	0.4	25	0.18	3.5											73.32	174
11T304SN	0.4	30	0.18	3.5											73.32	184
11T304FN	0.4			3.5	52.75	208			65.82	208	81.11	202				
11T308SN	0.8	15	0.11	3.0											73.32	135
11T308TN	0.8	20	0.14	3.0			52.75	310					81.11	304		
11T308TN	0.8	20	0.15	3.0											73.32	145
11T308SN	0.8	20	0.16	3.0											73.32	155
11T308TN	0.8	25	0.17	3.0											73.32	165
11T308SN	0.8	30	0.18	3.0											73.32	185
11T308FN	0.8			3.0	52.75	210			65.82	210	81.11	204				
11T308EN	0.8			3.0											73.32	115
Cast iron					●		●		●		●		●		●	
Sintered steels					●		●		●		●		●		●	
Heat resistant alloys					●		●		●		●		●		●	
hardened < 45 HRC																
hardened 46–55 HRC																
hardened 56–60 HRC																
hardened 61–65 HRC																

DCGW / DCGT



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													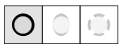		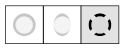	
					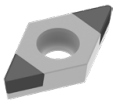		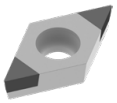		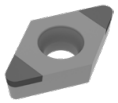		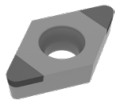		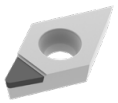		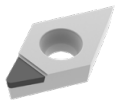	
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					NEW Y0		NEW Y0		NEW Y0		NEW Y0		Y0		Y0	
ISO	RE	GB	BN	LE	Article no. 71 008 ...		Article no. 71 012 ...		Article no. 71 007 ...		Article no. 71 009 ...		Article no. 71 134 ...		Article no. 71 134 ...	
	mm	°	mm	mm	£		£		£		£		£		£	
070202EN	0.2			3.9	87.68	00200			79.70	00200						
070202SN	0.2	15	0.11	3.9	82.40	30214			79.70	30214						
070202FN	0.2			3.9									63.92	400	63.92	800
070204EN	0.4			3.5	82.40	00400			79.70	00400						
070204SN	0.4	15	0.11	3.5	82.40	30414			79.70	30414						
070204SN	0.4	25	0.13	3.5	82.40	30429			79.70	30429						
070204FN	0.4			3.5									63.92	402	63.92	802
070208SN	0.8	15	0.11	3.0			82.40	30614			79.70	30614				
070208SN	0.8	25	0.13	3.0			82.40	30629			79.70	30629				
070208EN	0.8			3.0			82.40	00600			79.70	00600				
11T302SN	0.2	15	0.11	3.9					79.70	31414						
11T302RN	0.2			3.9					79.70	21400						
11T302SN	0.2	25	0.13	3.9					79.70	31429						
11T302FN	0.2			3.9									65.82	406	65.82	806
11T304SN	0.4	15	0.11	3.5					79.70	31614						
11T304SN	0.4	25	0.13	3.5					79.70	31629						
11T304RN	0.4			3.5					79.70	21600						
11T304FN	0.4			3.5									65.82	408	65.82	808
11T308RN	0.8			3.0							79.70	21800				
11T308SN	0.8	15	0.11	3.0							79.70	31814				
11T308SN	0.8	25	0.13	3.0							79.70	31829				
11T308FN	0.8			3.0									65.82	410	65.82	810
Cast iron																
Sintered steels																
Heat resistant alloys																
hardened < 45 HRC					●		●		●		●					
hardened 46–55 HRC					●		●		●		●		●		●	
hardened 56–60 HRC					●		●		●		●		●		●	
hardened 61–65 HRC															●	

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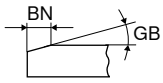
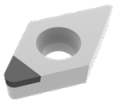
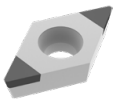
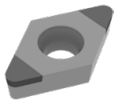
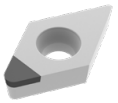
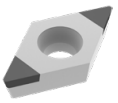
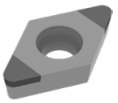
DCGW



ISO	RE	GB	BN	LE	-A CTBH21U PBC25		-B CTBH21U -2S PBC25		-B CTBH20C -2MC PBC25-S		-A CTBH40U PBC40		-B CTBH40U -2S PBC40		-B CTBH40C -2MC PBC40-S	
																
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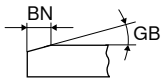
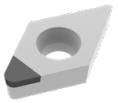
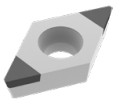
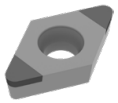
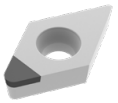
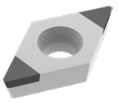
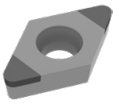
					CBN DCGW		CBN DCGW		CBN DCGW		CBN DCGW		CBN DCGW		CBN DCGW	
					Y0		Y0		Y0		Y0		Y0		Y0	
	RE	GB	BN	LE	Article no. 71 130 ...		Article no. 71 131 ...		Article no. 71 163 ...		Article no. 71 130 ...		Article no. 71 131 ...		Article no. 71 163 ...	
	mm	°	mm	mm	£		£		£		£		£		£	
070202FN	0.2			3.9	52.75	400 [1]					52.75	800				
070202SN	0.2	10	0.09	3.9					73.32	230						
070202SN	0.2	15	0.11	3.9					73.32	240						
070202SN	0.2	20	0.09	3.9					73.32	250						
070202TN	0.2	20	0.09	3.9											73.32	320
070202TN	0.2	20	0.14	3.9	52.75	500										
070202SN	0.2	25	0.09	3.9											73.32	350
070202TN	0.2	25	0.11	3.9											73.32	340
070202TN	0.2	25	0.12	3.9							52.75	900				
070202TN	0.2	25	0.14	3.9					73.32	260						
070202TN	0.2	30	0.14	3.9											73.32	360
070202SN	0.2	30	0.16	3.9											73.32	370
070202SN	0.2	35	0.17	3.9											73.32	380
070202EN	0.2			3.9											73.32	310
070204SN	0.4	10	0.09	3.5					73.32	231						
070204SN	0.4	15	0.11	3.5					73.32	241						
070204SN	0.4	20	0.09	3.5					73.32	251					73.32	331
070204TN	0.4	20	0.14	3.5	52.75	502										
070204SN	0.4	25	0.09	3.5											73.32	351
070204TN	0.4	25	0.11	3.5											73.32	341
070204TN	0.4	25	0.12	3.5							52.75	902				
070204TN	0.4	25	0.14	3.5					73.32	261						
070204SN	0.4	25	0.15	3.5					73.32	271						
070204TN	0.4	30	0.14	3.5											73.32	361
070204SN	0.4	30	0.16	3.5											73.32	371
070204SN	0.4	35	0.17	3.5											73.32	381
070204FN	0.4			3.5	52.75	402 [1]			73.32	211	52.75	802				
070208SN	0.8	10	0.09	3.0					73.32	232						
070208SN	0.8	20	0.09	3.0					73.32	252					73.32	332
070208TN	0.8	20	0.14	3.0	52.75	504										
070208SN	0.8	25	0.09	3.0											73.32	352
070208TN	0.8	25	0.11	3.0											73.32	342
070208TN	0.8	25	0.12	3.0							52.75	904				
070208TN	0.8	25	0.14	3.0					73.32	262						
070208TN	0.8	30	0.14	3.0											73.32	362
070208SN	0.8	30	0.16	3.0											73.32	372
070208SN	0.8	35	0.17	3.0											73.32	382
070208FN	0.8			3.0	52.75	404 [1]			73.32	212	52.75	804				
070208EN	0.8			3.0					73.32	222					73.32	312
11T302FN	0.2			3.9	52.75	406 [1]	81.11	400 [1]			52.75	806	81.11	800 [1]		
11T302SN	0.2	15	0.09	3.9					73.32	233						
11T302SN	0.2	15	0.11	3.9					73.32	243						
11T302SN	0.2	20	0.09	3.9					73.32	253						
11T302TN	0.2	20	0.09	3.9											73.32	323

Cast iron						
Sintered steels						
Heat resistant alloys						
hardened < 45 HRC						
hardened 46–55 HRC	●	●	●	●	●	●
hardened 56–60 HRC	●	●	●	●	●	●
hardened 61–65 HRC				●	●	●

1) Machining to 60 HRC

DCGW



ISO	RE	GB	BN	LE	-A CTBH21U PBC25		-B CTBH21U -2S PBC25		-B CTBH20C -2MC PBC25-S		-A CTBH40U PBC40		-B CTBH40U -2S PBC40		-B CTBH40C -2MC PBC40-S	
																
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					CBN DCGW		CBN DCGW		CBN DCGW		CBN DCGW		CBN DCGW		CBN DCGW	
					Y0		Y0		Y0		Y0		Y0		Y0	
	RE	GB	BN	LE	Article no. 71 130 ...		Article no. 71 131 ...		Article no. 71 163 ...		Article no. 71 130 ...		Article no. 71 131 ...		Article no. 71 163 ...	
	mm	°	mm	mm	£		£		£		£		£		£	
11T302TN	0.2	20	0.14	3.9	52.75	**506**	81.11	**500**								
11T302SN	0.2	25	0.09	3.9											73.32	**353**
11T302TN	0.2	25	0.11	3.9											73.32	**343**
11T302TN	0.2	25	0.12	3.9							52.75	**906**	81.11	**900**		
11T302TN	0.2	25	0.14	3.9					73.32	**263**						
11T302SN	0.2	25	0.15	3.9					73.32	**273**						
11T302TN	0.2	30	0.14	3.9											73.32	**363**
11T302SN	0.2	35	0.17	3.9											73.32	**383**
11T302EN	0.2			3.9											73.32	**313**
11T304FN	0.4			3.5	52.75	**408** 1)	81.11	**402** 1)	73.32	**214**	52.75	**808**	81.11	**802** 1)		
11T304SN	0.4	10	0.09	3.5					73.32	**234**						
11T304SN	0.4	15	0.11	3.5					73.32	**244**						
11T304SN	0.4	20	0.09	3.5					73.32	**254**					73.32	**334**
11T304TN	0.4	20	0.09	3.5											73.32	**324**
11T304TN	0.4	20	0.14	3.5	52.75	**508**	81.11	**502**								
11T304SN	0.4	25	0.09	3.5											73.32	**354**
11T304TN	0.4	25	0.11	3.5											73.32	**344**
11T304TN	0.4	25	0.12	3.5							52.75	**908**	81.11	**902**		
11T304TN	0.4	25	0.14	3.5					73.32	**264**						
11T304SN	0.4	25	0.15	3.5					73.32	**274**						
11T304TN	0.4	30	0.14	3.5											73.32	**364**
11T304SN	0.4	30	0.16	3.5											73.32	**374**
11T304SN	0.4	30	0.18	3.5					73.32	**284**						
11T304SN	0.4	35	0.17	3.5											73.32	**384**
11T304EN	0.4			3.5					73.32	**224**					73.32	**314**
11T308SN	0.8	15	0.11	3.0					73.32	**245**						
11T308SN	0.8	20	0.09	3.0					73.32	**255**					73.32	**335**
11T308TN	0.8	20	0.09	3.0											73.32	**325**
11T308TN	0.8	20	0.14	3.0	52.75	**510**	81.11	**504**								
11T308SN	0.8	25	0.09	3.0											73.32	**355**
11T308TN	0.8	25	0.11	3.0											73.32	**345**
11T308TN	0.8	25	0.12	3.0							52.75	**910**	81.11	**904**		
11T308TN	0.8	25	0.14	3.0					73.32	**265**						
11T308TN	0.8	30	0.14	3.0											73.32	**365**
11T308SN	0.8	30	0.16	3.0											73.32	**375**
11T308SN	0.8	30	0.18	3.0					73.32	**285**						
11T308SN	0.8	35	0.17	3.0											73.32	**385**
11T308EN	0.8			3.0					73.32	**225**						
11T308FN	0.8			3.0	52.75	**410** 1)	81.11	**404** 1)	73.32	**215**			81.11	**804** 1)		

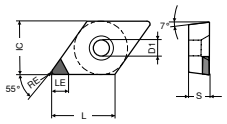
Cast iron												
Sintered steels												
Heat resistant alloys												
hardened < 45 HRC												
hardened 46–55 HRC					●		●		●		●	
hardened 56–60 HRC					●		●		●		●	
hardened 61–65 HRC											●	

1) Machining to 60 HRC

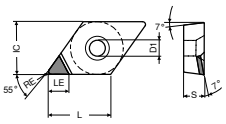
9

DCGW / DCGT

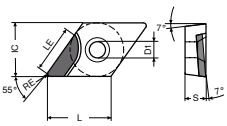
Designation	L	S	D1	IC
	mm	mm	mm	mm
DCG. 0702..	7.75	2.38	2.8	6.35
DCG. 11T3..	11.60	3.97	4.4	9.52



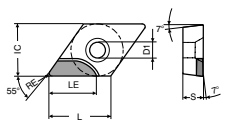
DCGW -A



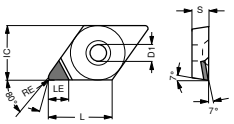
DCGT -A



DCGT-L

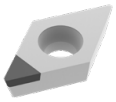
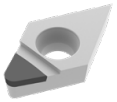
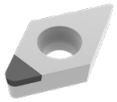
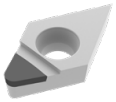
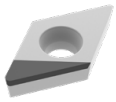
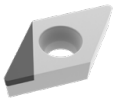


DCGT-R



DCGT -Q-A (-2Q)

DCGW / DCGT

			-A CTDMD05	-A CTDMD05	-A CTDPD20	-A CTDPD20	-A CTDPD20	-A CTDPD20
			MDC	MDC	PDC	PDC	PDC	PDC
								
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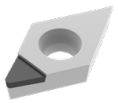
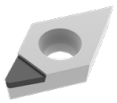
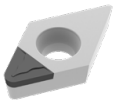
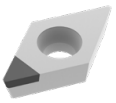
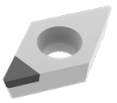
			DIAMOND DCGW	DIAMOND DCGT	DIAMOND DCGW	DIAMOND DCGT	DIAMOND DCGT	DIAMOND DCGT
			Y0	Y0	Y0	Y0	Y0	Y0
ISO	RE	LE	Article no. 71 130 ...	Article no. 71 134 ...	Article no. 71 130 ...	Article no. 71 134 ...	Article no. 71 135 ...	Article no. 71 136 ...
	mm	mm	£	£	£	£	£	£
070202FN	0.2	2.5		406.61 050				
070202FN	0.2	3.7			77.85 100	77.85 100		
070204FN	0.4	2.5		406.61 052				
070204FN	0.4	3.4			77.85 102	77.85 102		
070204FRR	0.4	5.5					108.09 102	
070204FLL	0.4	5.5						108.09 102
070208FN	0.8	2.5		406.61 054				
070208FN	0.8	3.0			77.85 104	77.85 104		
070208FRR	0.8	5.0					108.09 104	
070208FLL	0.8	5.0						108.09 104
11T302FN	0.2	2.5		406.61 056				
11T302FN	0.2	3.0	376.80 056					
11T302FN	0.2	4.7			79.66 106	79.66 106		
11T304FN	0.4	2.5		406.61 058				
11T304FN	0.4	3.0	376.80 058					
11T304FN	0.4	4.3			79.66 108	79.66 108		
11T304FRR	0.4	7.5					116.66 108	
11T304FLL	0.4	7.5						116.66 108
11T308FN	0.8	2.5		406.61 060				
11T308FN	0.8	4.0			79.66 110	79.66 110		
11T308FRR	0.8	7.0					116.66 110	
11T308FLL	0.8	7.0						116.66 110
Steel								
Stainless steel								
Cast iron								
Non ferrous metals			●	●	●	●	●	●
Heat resistant alloys			○	○				

DCGT / DCGW

			-Q-A CTDPD20		-Q-A CTDPD20		-A-CB1 CTDPD20		-Q-A CTDPS30		-Q-A CTDPS30	
			-2Q PDC		-2Q PDC		-CB1 PDC		-2Q PDC-S		-2Q PDC-S	
												
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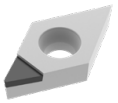
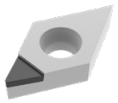
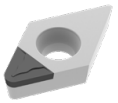
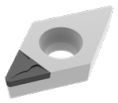
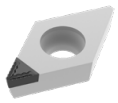
ISO	RE	LE	Article no. 71 144 ...		Article no. 71 145 ...		Article no. 71 310 ...		Article no. 71 138 ...		Article no. 71 139 ...	
	mm	mm	£		£		£		£		£	
070202FN	0.2	3.7					92.10	102				
070204FL	0.4	3.0			96.91	104						
070204FR	0.4	3.0	96.91	104								
070204FN	0.4	3.4					92.10	104				
070208FN	0.8	3.0					101.43	108				
11T302FR	0.2	4.0							102.27	162		
11T302FN	0.2	4.7					94.08	112				
11T304FR	0.4	4.0	102.27	114					102.27	164		
11T304FL	0.4	4.0			102.27	114					102.27	164
11T304FN	0.4	4.3					94.08	114				
11T308FN	0.8	4.0					108.99	118				

Steel												
Stainless steel												
Cast iron												
Non ferrous metals			●		●		●		●		●	
Heat resistant alloys									○		○	

9

DCGT

ISO	RE	LE	-Q-A CTDPS30 -2Q PDC-S		-Q-A CTDPS30 -2Q PDC-S		-A-CB1 CTDPS30 -CB1 PDC-S		-A-CB2 CTDPS30 -CB2 PDC-S		-A-CB3 CTDPU20 -CB3 PDC-S	
												
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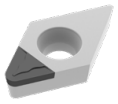
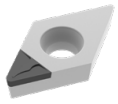
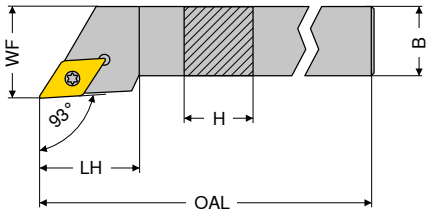
			Article no. 71 144 ...		Article no. 71 145 ...		Article no. 71 310 ...		Article no. 71 311 ...		Article no. 71 312 ...	
	mm	mm	£		£		£		£		£	
070201FL	0.1	3.0			96.91	151						
070202FL	0.2	3.0			96.91	152						
070202FR	0.2	3.0	96.91	152								
070202FN	0.2	3.7					92.10	202				
070202EN	0.2	3.7							92.10	202		
070204FN	0.4	3.4					92.10	204				
070204EN	0.4	3.4							92.10	204	73.53	204
070208EN	0.8	3.0							101.43	208		
11T301FL	0.1	4.0			102.27	161						
11T301FR	0.1	4.0	102.27	161								
11T302FR	0.2	4.0	102.27	162								
11T302FL	0.2	4.0			102.27	162						
11T302FN	0.2	4.7					94.08	212				
11T302EN	0.2	4.7							99.19	212		
11T304FN	0.4	4.3					94.08	214				
11T304EN	0.4	4.3							99.19	214	77.85	214
11T308EN	0.8	4.0							108.99	218	87.58	218
11T308FN	0.8	4.0					108.99	218				
Steel												
Stainless steel												
Cast iron												
Non ferrous metals			●		●		●		●		●	
Heat resistant alloys			○		○		○		○		○	

DCGT

ISO	RE	LE	-A-CB1 CTDCD10 -CB1 CVD		-A-CB2 CTDCD10 -CB2 CVD	
						
			F DIAMOND DCGT Y0		M DIAMOND DCGT Y0	
			Article no. 71 310 ...		Article no. 71 311 ...	
	mm	mm	£		£	
070202FN	0.2	2.6	113.98	302		
070204FN	0.4	2.3	113.98	304		
070204EN	0.4	2.3			113.98	304
070208EN	0.8	2.0			122.96	308
11T304EN	0.4	2.3			115.71	314
11T304FN	0.4	2.3	115.71	314		
11T308EN	0.8	2.0			129.68	318
11T308FN	0.8	2.0	129.68	318		
Steel						
Stainless steel						
Cast iron						
Non ferrous metals			●		●	
Heat resistant alloys						

MaxiLock-S – SDJC 93° – Toolholder with screw clamping



Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 685 ...		Right-hand 2A/24 Article no. 70 684 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
SDJC R/L 0808 D07	8	8	60	13.0	10	1,2	DC.. 0702	55.38	008	55.38	008
SDJC R/L 1010 E07	10	10	70	13.0	12	1,2	DC.. 0702	58.72	010	58.72	010
SDJC R/L 1212 F07	12	12	80	14.5	16	1,2	DC.. 0702	58.72	012	58.72	012
SDJC R/L 1616 H11	16	16	100	20.0	20	3,2	DC.. 11T3	72.73	016	72.73	016
SDJC R/L 2020 K11	20	20	125	20.5	25	3,2	DC.. 11T3	77.31	020	77.31	020
SDJC R/L 2525 M11	25	25	150	21.5	32	3,2	DC.. 11T3	79.97	025	79.97	025
SDJC R/L 3225 P11	32	25	170	21.5	32	3,2	DC.. 11T3	83.13	032	83.13	032

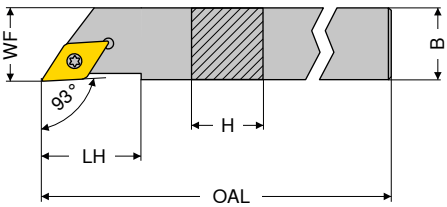
Tool holders with HSK-T or PSC interface can be found in → **Chapter 16.**

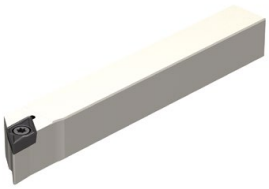
Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat D Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
Insert	£		£		£		£		£	
DC.. 0702	10.30	110			2.15	112				
DC.. 11T3			7.53	398	2.85	113	6.81	106	4.22	171

9

MaxiLock-S – SDJC 93° – Toolholder with screw clamping

▲ for sliding head lathes



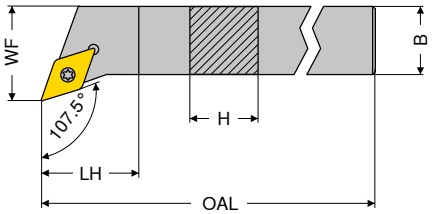


Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand X0 Article no. 70 685 ...		Right-hand X0 Article no. 70 684 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
SDJC R/L 0808 H07	8	8	100	13.0	8	1,2	DC.. 0702	177.01	108	177.01	108
SDJC R/L 1010 H07	10	10	100	13.0	10	1,2	DC.. 0702	177.01	110	177.01	110
SDJC R/L 1212 H07	12	12	100	14.5	12	1,2	DC.. 0702	198.01	112	198.01	112
SDJC R/L 1616 K07	16	16	125	33.0	16	1,2	DC.. 0702	219.53	116	219.53	116
SDJC R/L 1212 H11	12	12	100	22.0	12	3,2	DC.. 11T3	198.01	212	198.01	212
SDJC R/L 1616 K11	16	16	125	33.0	16	3,2	DC.. 11T3	219.53	216	219.53	216

Spare parts		Y7 Key D Article no. 80 950 ...		2A Clamping screw Article no. 72 950 ...	
Insert		£		£	
DC.. 0702	T08	10.30	110	4.36	002
DC.. 11T3	T15	12.26	113	4.36	006

MaxiLock-S – SDHC 107.5° – Toolholder with screw clamping



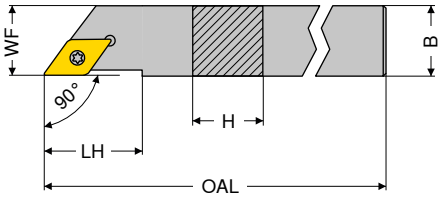
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 689 ...		Right-hand 2A/24 Article no. 70 688 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
SDHC R/L 1010 E07	10	10	70	5.5	12	1,2	DC.. 0702	58.72	**010**	58.72	**010**
SDHC R/L 1212 F07	12	12	80	12.0	16	1,2	DC.. 0702	58.72	**012**	58.72	**012**
SDHC R/L 1616 H11	16	16	100	10.4	20	3,2	DC.. 11T3	72.73	**016**	72.73	**016**
SDHC R/L 2020 K11	20	20	125	14.0	32	3,2	DC.. 11T3	77.31	**020**	77.31	**020**
SDHC R/L 2525 M11	25	25	150	20.0	32	3,2	DC.. 11T3	79.97	**025**	79.97	**025**

Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat D Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.	£		£		£		£		£	
70 689 010 / 70 688 010	10.30	**110**			2.15	**112**				
70 689 012 / 70 688 012	10.30	**110**			2.15	**112**				
70 689 016 / 70 688 016			7.53	**398**	2.85	**113**	6.81	**106**	4.22	**171**
70 689 020 / 70 688 020			7.53	**398**	2.85	**113**	6.81	**106**	4.22	**171**
70 689 025 / 70 688 025			7.53	**398**	2.85	**113**	6.81	**106**	4.22	**171**

MaxiLock-S – SDAC 90° – Toolholder with screw clamping

▲ for sliding head lathes

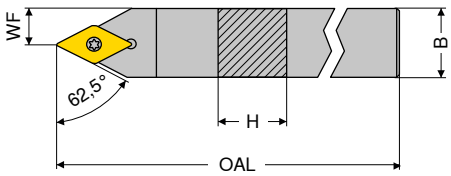


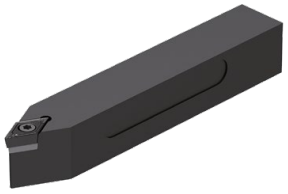
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 789 ...		Right-hand 2A/24 Article no. 70 788 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
SDAC R/L 0808 K07	8	8	125	14	8	1,2	DC.. 0702	58.72	**008**	58.72	**008**
SDAC R/L 1010 M07	10	10	150	14	10	1,2	DC.. 0702	58.72	**010**	58.72	**010**
SDAC R/L 1212 M07	12	12	150	14	12	1,2	DC.. 0702	65.68	**012**	65.68	**012**
SDAC R/L 1414 M11	14	14	150	21	14	3,2	DC.. 11T3	65.68	**014**	65.68	**014**

Spare parts		Y7 Key D Article no. 80 950 ...			2A Clamping screw Article no. 70 950 ...	
for Article no.		£			£	
70 788 008 / 70 789 008	T08	10.30	**110**	M2,5x6	2.15	**112**
70 788 010 / 70 789 010	T08	10.30	**110**	M2,5x6	2.15	**112**
70 788 012 / 70 789 012	T08	10.30	**110**	M2,5x6	2.15	**112**
70 788 014 / 70 789 014	T15	12.26	**113**	M3,5x11	2.85	**113**

MaxiLock-S – SDNC 62.5° – Toolholder with screw clamping



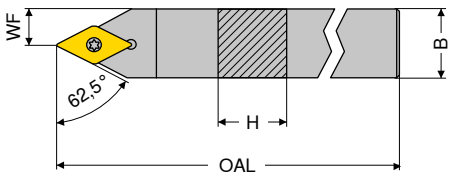


ISO designation	H mm	B mm	OAL mm	WF mm	torque moment Nm	Insert	Neutral 2A/24 Article no. 70 680 ... £	
SDNC N 0808 D07	8	8	60	4.0	1,2	DC.. 0702	55.38	008
SDNC N 1010 E07	10	10	70	5.0	1,2	DC.. 0702	58.72	010
SDNC N 1212 F07	12	12	80	6.0	1,2	DC.. 0702	58.72	012
SDNC N 1616 H11	16	16	100	8.0	3,2	DC.. 11T3	72.73	016
SDNC N 2020 K11	20	20	125	10.0	3,2	DC.. 11T3	77.31	020
SDNC N 2525 M11	25	25	150	12.5	3,2	DC.. 11T3	79.97	025

Spare parts for Article no.	Y7 Key D Article no. 80 950 ... £		2A/28 Combination Key Article no. 70 950 ... £		2A Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide Seat D Article no. 70 950 ... £		2A/28 Threaded sleeve Article no. 70 950 ... £	
70 680 008	10.30	110			2.15	112				
70 680 010	10.30	110			2.15	112				
70 680 012	10.30	110			2.15	112				
70 680 016			7.53	398	2.85	113	6.81	106	4.22	171
70 680 020			7.53	398	2.85	113	6.81	106	4.22	171
70 680 025			7.53	398	2.85	113	6.81	106	4.22	171

9

MaxiLock-S – SDNC 62.5° – Toolholder with screw clamping

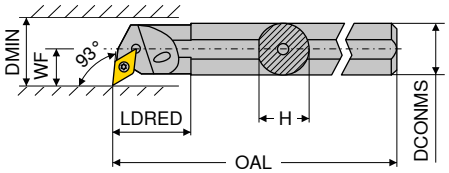


ISO designation	H mm	B mm	OAL mm	WF mm	torque moment Nm	Insert	Neutral 2A/24 Article no. 70 784 ... £	
SDNC N 0808 K07	8	8	125	4	1,2	DC.. 0702	55.38	008
SDNC N 1010 M07	10	10	150	5	1,2	DC.. 0702	58.72	010
SDNC N 1212 M07	12	12	150	6	1,2	DC.. 0702	65.68	012
SDNC N 1414 M11	14	14	150	7	3,2	DC.. 11T3	65.68	014

Spare parts for Article no.		Y7 Key D Article no. 80 950 ... £			2A Clamping screw Article no. 70 950 ... £	
70 784 008	T08	10.30	110	M2,5x6	2.15	112
70 784 010	T08	10.30	110	M2,5x6	2.15	112
70 784 012	T08	10.30	110	M2,5x6	2.15	112
70 784 014	T15	12.26	113	M3,5x11	2.85	113

MaxiLock-S – SDUC 93° – Boring bar with screw clamping

▲ A... = with thro' coolant
▲ S... = without thro' coolant



Illustrations show right-hand versions

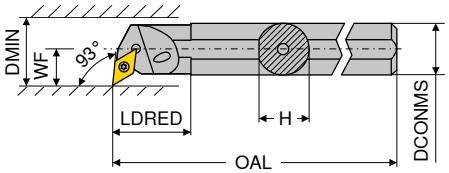
ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 737 ... £		Right-hand 2A/24 Article no. 70 736 ... £	
S12Q SDUC R/L 07	12	11.0	180		9	17	1,2	DC.. 0702	87.79	**012**	87.79	**012**
A12K SDUC R/L 07	12	11.5	125	22	9	16	1,2	DC.. 0702	87.79	**212**	87.79	**212**
A16M SDUC R/L 07	16	15.0	150	29	11	20	1,2	DC.. 0702	89.70	**216**	89.70	**216**
S16R SDUC R/L 07	16	15.0	200		11	21	1,2	DC.. 0702	89.70	**016**	89.70	**016**
A20Q SDUC R/L 07	20	18.5	180	32	13	25	1,2	DC.. 0702	111.82	**220**	111.82	**220**
S20S SDUC R 07	20	18.0	250		13	25	1,2	DC.. 0702			111.82	**020**
S20S SDUC R 11	20	18.0	250		13	25	3,2	DC.. 11T3			111.82	**120**
A20Q SDUC R/L 11	20	18.5	180	32	13	25	3,2	DC.. 11T3	111.82	**320**	111.82	**320**
A25R SDUC R/L 11	25	23.0	200	36	17	32	3,2	DC.. 11T3	128.55	**325**	128.55	**325**
S25T SDUC R/L 11	25	23.0	300		17	32	3,2	DC.. 11T3	128.55	**125**	128.55	**125**
A32S SDUC R/L 11	32	30.0	250	50	22	40	3,2	DC.. 11T3	176.73	**332**	176.73	**332**
S32U SDUC R 11	32	30.0	350		22	40	3,2	DC.. 11T3			176.73	**132**
A40T SDUC R/L 11	40	38.0	300	60	27	50	3,2	DC.. 11T3	212.18	**340**	212.18	**340**

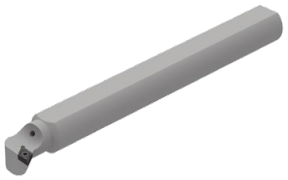
Tool holders with HSK-T or PSC interface can be found in → **Chapter 16.**

Spare parts for Article no.	Y7 Key D Article no. 80 950 ... £		2A/28 Combination Key Article no. 70 950 ... £		2A Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide Seat D Article no. 70 950 ... £		2A/28 Threaded sleeve Article no. 70 950 ... £	
70 736 012 / 70 737 012	10.30	**110**			2.15	**112**				
70 736 212 / 70 737 212	10.30	**110**			2.15	**112**				
70 736 216 / 70 737 216	10.30	**110**			2.15	**112**				
70 736 016 / 70 737 016	10.30	**110**			2.15	**112**				
70 736 220 / 70 737 220	10.30	**110**			2.15	**112**				
70 736 020	10.30	**110**			2.15	**112**				
70 736 120	12.26	**113**			2.85	**110**				
70 736 320 / 70 737 320	12.26	**113**			2.85	**110**				
70 736 325 / 70 737 325	12.26	**113**			2.85	**113**				
70 736 125 / 70 737 125			7.53	**398**	2.85	**113**	6.81	**106**	4.22	**171**
70 736 332 / 70 737 332			7.53	**398**	2.85	**113**	6.81	**106**	4.22	**171**
70 736 132			7.53	**398**	2.85	**113**	6.81	**106**	4.22	**171**
70 736 340 / 70 737 340			7.53	**398**	2.85	**113**	6.81	**106**	4.22	**171**

MaxiLock-S – SDUC 93° – Boring bar with screw clamping

▲ with carbide core





Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A Article no. 70 739 ... £		Right-hand 2A Article no. 70 738 ... £	
E-A10H SDUC R/L 07	10	9	100	28	8	13	1,2	DC.. 0702	163.09	**210**	163.09	**210**
E-A12K SDUC R/L 07	12	11	125	18	9	18	1,2	DC.. 0702	163.09	**212**	163.09	**212**
E-A16M SDUC R/L 07	16	15	150	30	11	22	1,2	DC.. 0702	259.27	**216**	259.27	**216**
E-A20Q SDUC R/L 07	20	18	180	38	13	26	1,2	DC.. 0702	325.09	**220**	325.09	**220**
E-A20Q SDUC R/L 11	20	18	180	38	13	26	3,2	DC.. 11T3	344.18	**320**	344.18	**320**
E-A25R SDUC R/L 11	25	23	200	38	17	34	3,2	DC.. 11T3	495.73	**225**	495.73	**225**
E-A32S SDUC R/L 11	32	30	250	43	22	39	3,2	DC.. 11T3	727.36	**232**	727.36	**232**

Key D

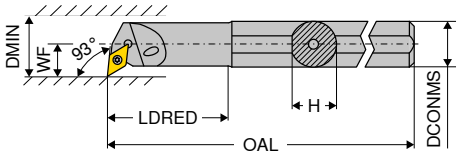
Clamping screw

Spare parts for Article no.	Y7 Article no. 80 950 ... £		2A Article no. 70 950 ... £	
70 738 210 / 70 739 210	10.30	**110**	2.15	**112**
70 738 212 / 70 739 212	10.30	**110**	2.15	**112**
70 738 216 / 70 739 216	10.30	**110**	2.15	**112**
70 738 220 / 70 739 220	10.30	**110**	2.15	**112**
70 738 320 / 70 739 320	12.26	**113**	2.85	**449**
70 738 225 / 70 739 225	12.26	**113**	2.85	**449**
70 738 232 / 70 739 232	12.26	**113**	2.85	**449**

9

MaxiLock-S – SDUC 93° – Boring bar with screw clamping

▲ with carbide core



Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A Article no. 70 739 ... £		Right-hand 2A Article no. 70 738 ... £	
E-A0810H SDUC R/L 07	10	9	100	22	7	12.5	1,2	DC.. 0702	203.09	**410**	203.09	**410**
E-A1012K SDUC R/L 07	12	11	125	28	9	15.5	1,2	DC.. 0702	203.09	**412**	203.09	**412**
E-A1216M SDUC R/L 07	16	15	150	36	11	19.5	1,2	DC.. 0702	203.09	**416**	203.09	**416**

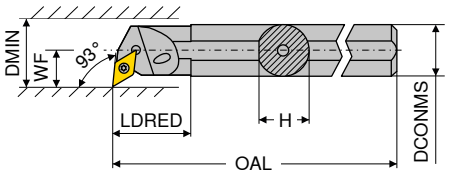
Key D

Clamping screw

Spare parts for Article no.	Y7 Article no. 80 950 ... £		2A Article no. 70 950 ... £	
70 738 410 / 70 739 410	10.30	**110**	2.15	**112**
70 738 412 / 70 739 412	10.30	**110**	2.15	**112**
70 738 416 / 70 739 416	10.30	**110**	2.15	**112**

MaxiLock-S – SDUC 93° – Boring bar with screw clamping

▲ Type: Solid carbide

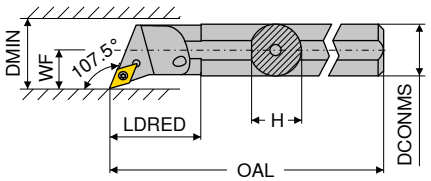


Illustrations show right-hand versions

ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 739 ... £		Right-hand 2A/24 Article no. 70 738 ... £	
	mm	mm	mm	mm	mm	mm	Nm					
E12Q SDUC R/L 07	12	11.5	180	26	9	16	1,2	DC.. 0702	302.91	**012**	302.91	**012**
E16R SDUC R/L 07	16	15.0	200	34	11	20	1,2	DC.. 0702	395.82	**016**	395.82	**016**
E20S SDUC R/L 11	20	18.5	250	38	13	25	3,2	DC.. 11T3	494.45	**120**	494.45	**120**
E25T SDUC R/L 11	25	23.0	300	43	17	32	3,2	DC.. 11T3	871.91	**125**	871.91	**125**

Spare parts	Y7 Key D Article no. 80 950 ... £		2A Clamping screw Article no. 70 950 ... £	
for Article no.				
70 739 012 / 70 738 012	10.30	**110**	2.15	**112**
70 739 016 / 70 738 016	10.30	**110**	2.15	**112**
70 739 120 / 70 738 120	12.26	**113**	2.85	**304**
70 739 125 / 70 738 125	12.26	**113**	2.85	**113**

MaxiLock-S – SDQC 107.5° – Boring bar with screw clamping



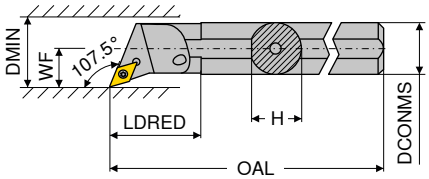
Illustrations show right-hand versions

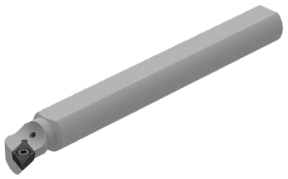
ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 741 ... £		Right-hand 2A Article no. 70 740 ... £	
	mm	mm	mm	mm	mm	mm	Nm					
A10H SDQC R/L 07	10	9.0	100	22	7	12.5	1,2	DC.. 0702	87.79	**210**	87.79	**210**
A12K SDQC R/L 07	12	11.5	125	22	9	16.0	1,2	DC.. 0702	87.79	**212**	87.79	**212**
A16M SDQC R/L 07	16	15.0	150	29	11	20.0	1,2	DC.. 0702	89.70	**216**	89.70	**216**
A20Q SDQC R/L 07	20	18.5	180	32	13	25.0	1,2	DC.. 0702	111.82	**220**	111.82	**220**
A25R SDQC R/L 11	25	23.0	200	36	17	32.0	3,2	DC.. 11T3	128.55	**225**	128.55	**225**
A32S SDQC R/L 11	32	30.0	250	50	22	40.0	3,2	DC.. 11T3	176.73	**232**	176.73	**232**
A40T SDQC R/L 11	40	38.0	300	60	27	50.0	3,2	DC.. 11T3	212.18	**240**	212.18	**240**

Spare parts	Y7 Key D Article no. 80 950 ... £		2A/28 Combination Key Article no. 70 950 ... £		2A Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide Seat D Article no. 70 950 ... £		2A/28 Threaded sleeve Article no. 70 950 ... £	
for Article no.										
70 740 210 / 70 741 210	10.30	**110**			2.15	**112**				
70 740 212 / 70 741 212	10.30	**110**			2.15	**112**				
70 740 216 / 70 741 216	10.30	**110**			2.15	**112**				
70 740 220 / 70 741 220	10.30	**110**			2.15	**112**				
70 740 225 / 70 741 225			7.53	**398**	2.85	**113**	6.81	**106**	4.22	**171**
70 740 232 / 70 741 232			7.53	**398**	2.85	**113**	6.81	**106**	4.22	**171**
70 740 240 / 70 741 240			7.53	**398**	2.85	**113**	6.81	**106**	4.22	**171**

MaxiLock-S – SDQC 107.5° – Boring bar with screw clamping

▲ with carbide core





Illustrations show right-hand versions

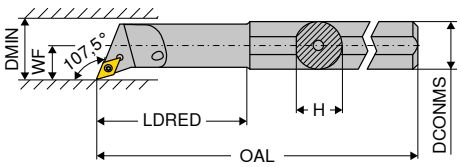
ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 751 ...		Right-hand 2A Article no. 70 750 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
E-A12K SDQC R/L 07	12	11	125	24	9	18	1,2	DC.. 0702	163.09	**012**	163.09	**012**
E-A16M SDQC R/L 07	16	15	150	30	11	22	1,2	DC.. 0702	278.36	**016**	278.36	**016**
E-A20Q SDQC R/L 07	20	18	180	38	13	26	1,2	DC.. 0702	325.09	**020**	325.09	**020**
E-A20Q SDQC R/L 11	20	18	180	38	13	26	3,2	DC.. 11T3	344.18	**120**	344.18	**120**
E-A25R SDQC R/L 11	25	23	200	38	17	34	3,2	DC.. 11T3	550.09	**025**	550.09	**025**
E-A32S SDQC R/L 11	32	30	250	43	22	39	3,2	DC.. 11T3	727.36	**032**	727.36	**032**

Spare parts for Article no.	Y7 Key D Article no. 80 950 ...		2A Clamping screw Article no. 70 950 ...	
	£		£	
70 750 012 / 70 751 012	10.30	**110**	2.15	**112**
70 750 016 / 70 751 016	10.30	**110**	2.15	**112**
70 750 020 / 70 751 020	10.30	**110**	2.15	**112**
70 750 120 / 70 751 120	12.26	**113**	2.85	**449**
70 750 025 / 70 751 025	12.26	**113**	2.85	**449**
70 750 032 / 70 751 032	12.26	**113**	2.85	**449**

9

MaxiLock-S – SDQC 107.5° – Boring bar with screw clamping

▲ with carbide core

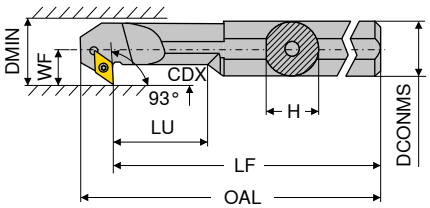


Illustrations show right-hand versions

ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 751 ...		Right-hand 2A Article no. 70 750 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
E-A0810H SDQC R/L 07	10	9	100	22	7	12.5	1,2	DC.. 0702	203.09	**210**	203.09	**210**
E-A1012K SDQC R/L 07	12	11	125	28	9	15.5	1,2	DC.. 0702	203.09	**212**	203.09	**212**
E-A1216M SDQC R/L 07	16	15	150	36	11	19.5	1,2	DC.. 0702	203.09	**216**	203.09	**216**

Spare parts for Article no.	Y7 Key D Article no. 80 950 ...		2A Clamping screw Article no. 70 950 ...	
	£		£	
70 750 210 / 70 751 210	10.30	**110**	2.15	**112**
70 750 212 / 70 751 212	10.30	**110**	2.15	**112**
70 750 216 / 70 751 216	10.30	**110**	2.15	**112**

MaxiLock-S – SDXC 93° – Boring bar with screw clamping



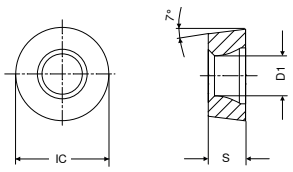
Illustrations show right-hand versions

ISO designation	DCONMS	H	LF	OAL	LU	WF	DMIN	CDX	torque moment	Insert	Left-hand 2A/24 Article no. 70 733 ... £		Right-hand 2A/24 Article no. 70 732 ... £	
	mm	mm	mm	mm	mm	mm	mm	mm	Nm					
A12K SDXC R/L 07	12	11.5	125	137.0	24	9	16	4.5	1,2	DC.. 0702	87.79	**212**	87.79	**212**
A16M SDXC R/L 07	16	15.0	150	162.0	36	11	20	4.5	1,2	DC.. 0702	89.70	**216**	89.70	**216**
A20Q SDXC R/L 11	20	18.5	180	196.5	40	13	25	6.5	3,2	DC.. 11T3	111.82	**220**	111.82	**220**
A25R SDXC R/L 11	25	23.0	200	216.8	50	17	32	9.5	3,2	DC.. 11T3	128.55	**225**	128.55	**225**

Spare parts for Article no.	Y7 Key D Article no. 80 950 ... £		2A Clamping screw Article no. 70 950 ... £	
70 733 212 / 70 732 212	10.30	**110**	2.15	**112**
70 733 216 / 70 732 216	10.30	**110**	2.15	**112**
70 733 220 / 70 732 220	12.26	**113**	2.85	**304**
70 733 225 / 70 732 225	12.26	**113**	2.85	**304**

RCMT / RCGT

Designation	S	D1	IC
	mm	mm	mm
RCGT 0602..	2.38	2.8	6
RCGT 0803..	3.18	3.4	8
RC.T 1003..	3.18	4.0	10
RCMT 1204..	4.76	4.9	12
RCMT 1606..	6.35	5.3	16
RCMT 2006..	6.35	6.5	20
RCMT 2507..	7.94	7.2	25



RCMT / RCGT

ISO	RE	-SMF CTCK110		-SM CTCP125		-SM CTCP135		-SM CTCP115		-SM CTCP125		-SM CTCP135		-27 H10T	
		-SMF DCX3110		-ZM HCX1125		-ZM HCR1135		-ZM HCX1115		-ZM HCX1125		-ZM HCR1135		-AL CWK15	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN			
		F		M		M		M		M		M		M	
		RCMT		RCGT		RCGT		RCMT		RCMT		RCMT		RCGT	
		1A/08		1A/08		1A/08		1A/08		1A/08		1A/08		1A/90	
		Article no. 70 188 ...		Article no. 76 262 ...		Article no. 76 262 ...		Article no. 76 264 ...		Article no. 76 264 ...		Article no. 76 264 ...		Article no. 70 266 ...	
	mm	£		£		£		£		£		£		£	
0602MOEN	3.0			7.34	502	7.34	702								
0602MOFN	3.0													5.48	600
0803MOEN	4.0			8.17	512	8.17	712								
0803MOFN	4.0													6.12	602
1003MOFN	5.0													6.12	604
1003MOSN	5.0									7.07	514	7.07	714		
1204MOSN	6.0							8.38	328	8.38	526	8.38	726		
1606MOEN	8.0	16.48	038												
1606MOSN	8.0							16.48	340	16.48	538	16.48	738		
2006MOSN	10.0									22.68	550	22.68	750		
2507MOSN	12.5							36.53	36200	36.53	562	36.53	762		
Steel		●		●		●		●		●		●			
Stainless steel		○		○		○		○		○		○			
Cast iron		●		○				○		○				○	
Non ferrous metals														●	
Heat resistant alloys						○						○		○	

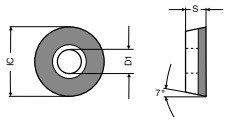
9

RCGT

		-27 CWN15 / -AL CWN15		-27 AMZ / -AL AMZ	
		M		M	
		RCGT		RCGT	
		1A		1A/90	
ISO	RE mm	Article no. 70 266 ...		Article no. 70 266 ...	
		£		£	
0602MOFN	3	7.30	300		
0803MOFN	4	7.30	302	7.15	502
Steel					○
Stainless steel			○		○
Cast iron					○
Non ferrous metals			●		●
Heat resistant alloys					

RCGT

Designation	S	D1	IC
	mm	mm	mm
RCGT 0602..	2.38	2.8	6
RCGT 10T3..	3.97	4.4	10



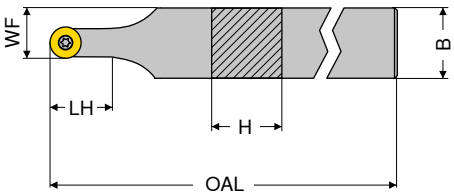
RCGT-F

RCGT

ISO	RE	LE	-F-CB1 CTDPD20 -CB1 PDC		-F-CB1 CTDPS30 -CB1 PDC-S		-F-CB2 CTDPS30 -CB2 PDC-S	
			F DIAMOND RCGT Y0		F DIAMOND RCGT Y0		M DIAMOND RCGT NEW Y0	
	mm	mm	Article no. 71 315 ... £		Article no. 71 315 ... £		Article no. 71 316 ... £	
0602M0EN	3	6					223.02	202
0602M0FN	3	6	223.02	102	223.02	202		
10T3M0EN	5	10					293.17	204
10T3M0FN	5	10	293.17	104	293.17	204		
Steel								
Stainless steel								
Cast iron								
Non ferrous metals				●		●		●
Heat resistant alloys						○		○

9

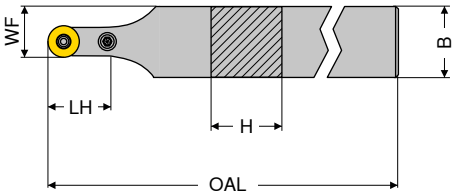
MaxiLock-S – SRDC 0° – Toolholder with screw clamping



ISO designation	H mm	B mm	OAL mm	LH mm	WF mm	torque moment Nm	Insert	Neutral 2A/24 Article no. 70 708 ... £	
SRDC N 1212 F06	12	12	80	12.4	9.0	1,2	RC.. 0602 M0	66.91	**012**
SRDC N 1616 H06	16	16	100	12.4	11.0	1,2	RC.. 0602 M0	69.39	**016**
SRDC N 2020 K06	20	20	125	12.4	13.0	1,2	RC.. 0602 M0	77.31	**020**
SRDC N 2525 M06	25	25	150	12.4	15.5	1,2	RC.. 0602 M0	79.97	**025**
SRDC N 1616 H08	16	16	100	16.4	12.0	1,8	RC.. 0803 M0	69.39	**116**
SRDC N 2020 K08	20	20	125	16.4	14.0	1,8	RC.. 0803 M0	77.31	**120**
SRDC N 2525 M08	25	25	150	16.4	16.5	1,8	RC.. 0803 M0	79.97	**125**
SRDC N 1616 H10	16	16	100	20.3	13.0	3,2	RC.. 1003 M0	69.39	**216**
SRDC N 2020 K10	20	20	125	20.3	15.0	3,2	RC.. 1003 M0	77.31	**220**
SRDC N 2525 M10	25	25	150	20.3	17.5	3,2	RC.. 1003 M0	79.97	**225**

Spare parts for Article no.	Y7 Key D Article no. 80 950 ... £		2A/28 Combination Key Article no. 70 950 ... £		2A Clamping screw Article no. 70 950 ... £		2A/28 Solid carbide support R Article no. 70 950 ... £		2A/28 Threaded sleeve Article no. 70 950 ... £	
70 708 012	10.30	**110**			2.15	**112**				
70 708 016	10.30	**110**			2.15	**112**				
70 708 020	10.30	**110**			2.15	**112**				
70 708 025	10.30	**110**			2.15	**112**				
70 708 116	10.30	**110**			2.34	**115**				
70 708 120	10.30	**110**			2.34	**115**				
70 708 125	10.30	**110**			2.34	**115**				
70 708 216			7.53	**398**	2.85	**113**	11.25	**117**	4.22	**171**
70 708 220			7.53	**398**	2.85	**113**	11.25	**117**	4.22	**171**
70 708 225			7.53	**398**	2.85	**113**	11.25	**117**	4.22	**171**

MaxiLock-N – PRDC 0° – Toolholder with lever clamping



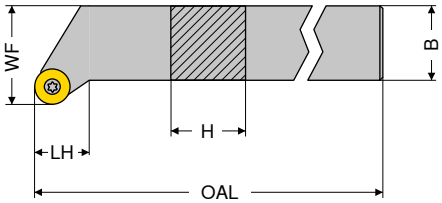
ISO designation	H mm	B mm	OAL mm	LH mm	WF mm	torque moment Nm	Insert	Neutral 2A/24 Article no. 70 544 ... £	
PRDC N 2525 M12	25	25	150	24	18.5	3	RCMT 1204	79.97	**025**
PRDC N 3225 P12	32	25	170	24	18.5	3	RCMT 1204	85.79	**032**
PRDC N 3225 P16	32	25	170	28	20.5	4	RCMT 1606	85.79	**132**
PRDC N 3225 P20	32	32	170	32	26.0	5	RCMT 2006	105.91	**23200**
PRDC N 4040 S25	40	40	250	42	32.5	6	RCMT 2507	131.73	**04000**

Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts for Article no.		2A/28 Key I Article no. 70 950 ... £		2A/28 Shim Article no. 70 950 ... £		2A/28 Assembly pin Article no. 70 950 ... £		2A/28 Lever Article no. 70 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Solid carbide support R Article no. 70 950 ... £	
70 544 025	SW2,5	2.23	**175**	1.60	**197**	1.11	**191**	14.11	**178**	2.90	**208**	6.45	**215**
70 544 032	SW2,5	2.23	**175**	1.60	**197**	1.11	**191**	14.11	**178**	2.90	**208**	6.45	**215**
70 544 132	SW3	2.23	**176**	1.25	**196**	1.11	**192**	14.60	**387**	3.18	**390**	11.45	**384**
70 544 23200	SW2	2.23	**177**	1.02	**391**	1.11	**394**	13.85	**28100**	3.13	**28500**	15.49	**27400**
70 544 04000	SW4	2.34	**396**	1.60	**392**	1.11	**395**	17.05	**28400**	6.80	**28600**	29.05	**27500**

9

MaxiLock-S – SRGC – Toolholder with screw clamping



Illustrations show right-hand versions

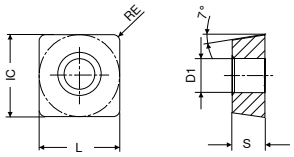
ISO designation	H mm	B mm	OAL mm	LH mm	WF mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 713 ... £		Right-hand 2A/24 Article no. 70 712 ... £	
SRGC R/L 1212 F06	12	12	80	10.0	16	1,2	RC.. 0602 M0	66.91	**012**	66.91	**012**
SRGC R 1616 H06	16	16	100	10.0	20	1,2	RC.. 0602 M0			69.39	**016**
SRGC R/L 2020 K06	20	20	125	11.5	25	1,2	RC.. 0602 M0	77.31	**020**	77.31	**020**
SRGC R/L 2525 M06	25	25	150	15.0	32	1,2	RC.. 0602 M0	79.97	**025**	79.97	**025**
SRGC R/L 1616 H08	16	16	100	11.0	20	1,8	RC.. 0803 M0	69.39	**116**	69.39	**116**
SRGC R 2020 K08	20	20	125	13.0	25	1,8	RC.. 0803 M0			77.31	**120**
SRGC R/L 2525 M08	25	25	150	16.0	32	1,8	RC.. 0803 M0	79.97	**125**	79.97	**125**
SRGC R/L 1616 H10	16	16	100	12.0	20	3,2	RC.. 1003 M0	69.39	**216**	69.39	**216**
SRGC R/L 2020 K10	20	20	125	13.5	25	3,2	RC.. 1003 M0	77.31	**220**	77.31	**220**
SRGC R/L 2525 M10	25	25	150	17.0	32	3,2	RC.. 1003 M0	79.97	**225**	79.97	**225**

Spare parts for Article no.		2A Clamping screw Article no. 70 950 ... £		2A/28 Solid carbide support R Article no. 70 950 ... £			2A/28 Threaded sleeve Article no. 70 950 ... £	
70 712 012 / 70 713 012	M2,5x6	2.15	**112**					
70 712 016	M2,5x6	2.15	**112**					
70 712 020 / 70 713 020	M2,5x6	2.15	**112**					
70 712 025 / 70 713 025	M2,5x6	2.15	**112**					
70 712 116 / 70 713 116	M3x7,3	2.34	**115**					
70 712 120	M3x7,3	2.34	**115**					
70 712 125 / 70 713 125	M3x7,3	2.34	**115**					
70 712 216 / 70 713 216	M3,5x11	2.85	**113**	11.25	**117**	M3,5	4.22	**171**
70 712 220 / 70 713 220	M3,5x11	2.85	**113**	11.25	**117**	M3,5	4.22	**171**
70 712 225 / 70 713 225	M3,5x11	2.85	**113**	11.25	**117**	M3,5	4.22	**171**

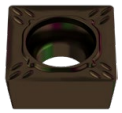
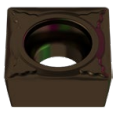
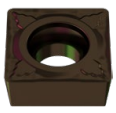
Spare parts for Article no.		Y7 Key D Article no. 80 950 ... £			2A/28 Combination Key Article no. 70 950 ... £	
70 712 012 / 70 713 012	T08	10.30	**110**			
70 712 016	T08	10.30	**110**			
70 712 020 / 70 713 020	T08	10.30	**110**			
70 712 025 / 70 713 025	T08	10.30	**110**			
70 712 116 / 70 713 116	T08	10.30	**110**			
70 712 120	T08	10.30	**110**			
70 712 125 / 70 713 125	T08	10.30	**110**			
70 712 216 / 70 713 216				T15/SW	7.53	**398**
70 712 220 / 70 713 220				T15/SW	7.53	**398**
70 712 225 / 70 713 225				T15/SW	7.53	**398**

SCGT / SCMT / SCMX

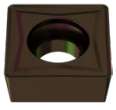
Designation	L	S	D1	IC
	mm	mm	mm	mm
SC.T 09T3..	9.52	3.97	4.4	9.52
SC.. 1204..	12.70	4.76	5.5	12.70



SCGT / SCMT

	-CF05 CTEP110	-SF TCM10	-SF TCM407	-SF CTCP125	-CF55 CTEP110	-SMF CTCP115	-SMF CTCP135
	-PF14 DCC1110	-ZF CWC10	-ZF CWC407	-ZF HCX1125	-PF15 DCC1110	-SMF HCX1115	-SMF HCR1135
	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	F	F	F	F	F	F	F
	CERMET SCGT	CERMET SCGT	CERMET SCGT	SCMT	CERMET SCMT	SCMT	SCMT
	1A/78	1A/78	1A/78	1A/08	1A/78	1A/08	1A/08
ISO / RE mm	Article no. 76 261 ... £	Article no. 70 271 ... £	Article no. 70 271 ... £	Article no. 76 269 ... £	Article no. 76 260 ... £	Article no. 76 267 ... £	Article no. 76 267 ... £
09T304EN 0.4	13.73 004	12.60 902		8.82 504	8.80 004	8.82 304	
09T308EN 0.8	13.73 006	12.60 904	12.60 852	8.82 506	8.80 006	8.82 306	
120408EN 0.8				12.42 518			12.42 718
Steel	●	●	●	●	●	●	●
Stainless steel	○			○	○	○	○
Cast iron	○	○	○	○	○	○	
Non ferrous metals							
Heat resistant alloys							○

SCMT / SCMX

	-SM CTCK110	-SM CTCK120	-SM CTCP115	-SM CTCP125	-SM CTCP135	CTCP135	-SM CTC2135
	-ZM DCX3110	-ZM HCF3120	-ZM HCX1115	-ZM HCX1125	-ZM HCR1135	HCR1135	-ZM CWN2135
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
							
	M	M	M	M	M	M	M
	SCMT	SCMT	SCMT	SCMT	SCMT	SCMX	SCMT
	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 70 268 ... £	Article no. 70 268 ... £	Article no. 76 268 ... £	Article no. 76 268 ... £	Article no. 76 268 ... £	Article no. 76 182 ... £	Article no. 70 268 ... £
09T304EN 0.4	8.82 004	8.82 504	8.82 304	8.82 504	8.82 704		
09T308EN 0.8	8.82 006	8.82 506	8.82 306	8.82 506	8.82 706		8.80 442
120408EN 0.8	12.42 018	12.42 518	12.42 318	12.42 518	12.42 718	11.29 718	12.42 444
120412EN 1.2	12.42 020	12.42 520		12.42 520			
Steel	●	●	●	●	●	●	○
Stainless steel	○		○	○	○	○	●
Cast iron	●	●	○	○			
Non ferrous metals							
Heat resistant alloys					○	○	●

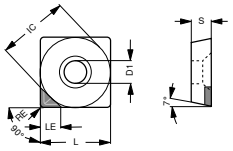
9

SCMT / SCGT

		-M55 CTPM125		-25P H210T		-25P AMZ		-27 H10T		-27 CWN15	
		-PF26 HCN2125		-25P CWK20		-25P AMZ		-AL CWK15		-AL CWN15	
		DRAGONSKIN									
		F		F		F		M		M	
		SCMT		SCGT		SCGT		SCGT		SCGT	
		1A/08		1A/90		1A/90		1A/90		1A	
ISO	RE	Article no. 75 216 ...		Article no. 70 283 ...		Article no. 70 283 ...		Article no. 70 270 ...		Article no. 70 270 ...	
	mm	£		£		£		£		£	
09T304FN	0.4							9.92	600	12.19	300
09T308EN	0.8	8.82	206								
09T308FN	0.8							9.92	602	12.19	302
120408EN	0.8	12.42	218								
120408FN	0.8			12.10	634	14.35	554	11.59	604	14.45	304
Steel		○				○					
Stainless steel		●				○				○	
Cast iron				○		○		○			
Non ferrous metals				●		●		●		●	
Heat resistant alloys				○				○			

SCGT

Designation	L	S	D1	IC
	mm	mm	mm	mm
SCGT 09T3..	9.52	3.97	4.4	9.52



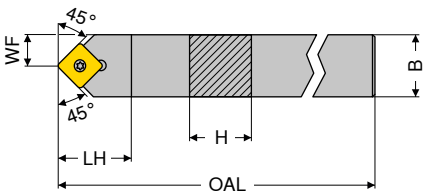
SCGT-A

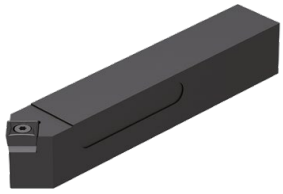
SCGT

	-A-CB1 CTDPD20	-A-CB2 CTDPS30	-A-CB3 CTDPU20
	-CB1 PDC	-CB2 PDC-S	-CB3 PDC-S
	F	M	R
	DIAMOND SCGT	DIAMOND SCGT	DIAMOND SCGT
	Y0	NEW Y0	Y0
ISO	Article no. 71 320 ...	Article no. 71 321 ...	Article no. 71 322 ...
RE / LE mm	£	£	£
09T304EN 0.4 4.4		101.43 214	81.10 214
09T304FN 0.4 4.4	101.43 114		
09T308EN 0.8 4.3		108.99 218	87.58 218
09T308FN 0.8 4.3	108.99 118		
Steel			
Stainless steel			
Cast iron			
Non ferrous metals	●	●	●
Heat resistant alloys		○	○

9

MaxiLock-S – SSDC 45° – Toolholder with screw clamping

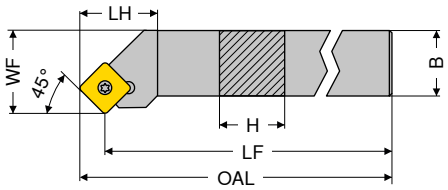




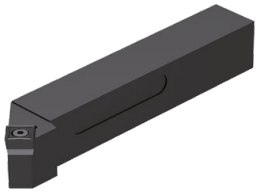
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Neutral 2A/24 Article no. 70 656 ...	
	mm	mm	mm	mm	mm	Nm		£	
SSDC N 1212 F09	12	12	80	16	6.0	3,2	SC.. 09T3..	58.72	**012**
SSDC N 1616 H09	16	16	100	20	8.0	3,2	SC.. 09T3..	72.73	**016**
SSDC N 2020 K09	20	20	125	20	10.0	3,2	SC.. 09T3..	77.31	**020**
SSDC N 1616 H12	16	16	100	25	8.0	5	SC.. 1204..	72.73	**116**
SSDC N 2020 K12	20	20	125	25	10.0	5	SC.. 1204..	77.31	**120**
SSDC N 2525 M12	25	25	150	25	12.5	5	SC.. 1204..	79.97	**125**

Spare parts	Y7 Key D		2A/28 Combination Key		2A/28 Clamping screw		2A/28 Solid Carbide support S		2A/28 Threaded sleeve	
	Article no. 80 950 ...		Article no. 70 950 ...		Article no. 70 950 ...		Article no. 70 950 ...		Article no. 70 950 ...	
for Article no.	£		£		£		£		£	
70 656 012	12.26	**113**			2.85	**113**				
70 656 016			7.53	**398**	2.85	**113**	8.79	**167**	4.22	**171**
70 656 020			7.53	**398**	2.85	**113**	8.79	**167**	4.22	**171**
70 656 116			7.53	**398**	2.34	**114**	11.25	**168**	4.22	**170**
70 656 120			7.53	**398**	2.34	**114**	11.25	**168**	4.22	**170**
70 656 125			7.53	**398**	2.34	**114**	11.25	**168**	4.22	**170**

MaxiLock-S – SSSC 45° – Toolholder with screw clamping



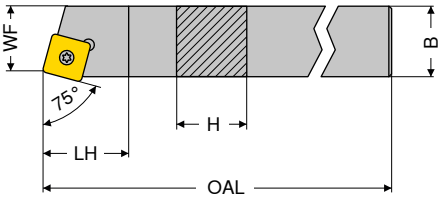
Illustrations show right-hand versions



ISO designation	H	B	LF	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 661 ...		Right-hand 2A/24 Article no. 70 660 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
SSSC R/L 1212 F09	12	12	80	86.40	18	16	3,2	SC.. 09T3..	58.72	**012**	58.72	**012**
SSSC R/L 1616 H09	16	16	100	106.40	20	20	3,2	SC.. 09T3..	72.73	**016**	72.73	**016**
SSSC R/L 2020 K09	20	20	125	131.40	20	25	3,2	SC.. 09T3..	77.31	**020**	77.31	**020**
SSSC R/L 1616 H12	16	16	100	108.63	25	20	5	SC.. 1204..	72.73	**116**	72.73	**116**
SSSC R/L 2020 K12	20	20	125	133.63	25	25	5	SC.. 1204..	77.31	**120**	77.31	**120**
SSSC R/L 2525 M12	25	25	150	158.63	25	32	5	SC.. 1204..	79.97	**125**	79.97	**125**
SSSC R 3225 P12	32	25	170	178.63	25	32	5	SC.. 1204..			83.13	**132**

Spare parts	Y7 Key D		2A/28 Combination Key		2A/28 Clamping screw		2A/28 Solid Carbide support S		2A/28 Threaded sleeve	
	Article no. 80 950 ...		Article no. 70 950 ...		Article no. 70 950 ...		Article no. 70 950 ...		Article no. 70 950 ...	
for Article no.	£		£		£		£		£	
70 661 012 / 70 660 012	12.26	**113**			2.85	**113**				
70 661 016 / 70 660 016			7.53	**398**	2.85	**113**	8.79	**167**	4.22	**171**
70 661 020 / 70 660 020			7.53	**398**	2.85	**113**	8.79	**167**	4.22	**171**
70 661 116 / 70 660 116			7.53	**398**	2.34	**114**	11.25	**168**	4.22	**170**
70 661 120 / 70 660 120			7.53	**398**	2.34	**114**	11.25	**168**	4.22	**170**
70 661 125 / 70 660 125			7.53	**398**	2.34	**114**	11.25	**168**	4.22	**170**
70 660 132			7.53	**398**	2.34	**114**	11.25	**168**	4.22	**170**

MaxiLock-S – SSBC 75° – Toolholder with screw clamping



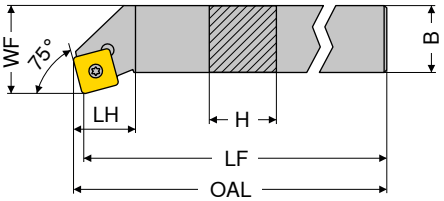
Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 665 ...		Right-hand 2A/24 Article no. 70 664 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
SSBC R/L 1616 H09	16	16	100	20	13	3,2	SC.. 09T3..	72.73	**016**	72.73	**016**
SSBC R 2020 K09	20	20	125	20	17	3,2	SC.. 09T3..			77.31	**020**
SSBC R/L 2020 K12	20	20	125	20	17	5	SC.. 1204..	77.31	**120**	77.31	**120**
SSBC R/L 2525 M12	25	25	150	20	22	5	SC.. 1204..	79.97	**125**	79.97	**125**

Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.	£		£		£		£		£	
70 665 016 / 70 664 016	12.26	**113**	7.53	**398**	2.85	**113**	8.79	**167**	4.22	**171**
70 664 020	12.26	**113**	7.53	**398**	2.85	**113**	8.79	**167**	4.22	**171**
70 665 120 / 70 664 120	12.26	**113**	7.53	**398**	2.34	**114**	11.25	**168**	4.22	**170**
70 665 125 / 70 664 125	12.26	**113**	7.53	**398**	2.34	**114**	11.25	**168**	4.22	**170**

9

MaxiLock-S – SSKC 75° – Toolholder with screw clamping

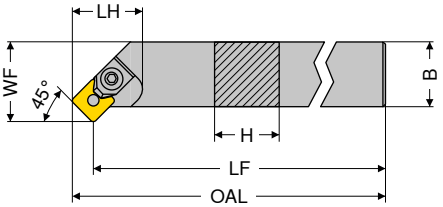


Illustrations show right-hand versions

ISO designation	H	B	LF	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 669 ...		Right-hand 2A/24 Article no. 70 668 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
SSKC R/L 1616 H09	16	16	100	102.3	22	20	3,2	SC.. 09T3..	72.73	**016**	72.73	**016**
SSKC R/L 2020 K09	20	20	125	127.3	22	25	3,2	SC.. 09T3..	77.31	**020**	77.31	**020**
SSKC R 2020 K12	20	20	125	127.3	23	25	5	SC.. 1204..			77.31	**120**
SSKC R 2525 M12	25	25	150	153.3	23	32	5	SC.. 1204..			79.97	**125**

Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.	£		£		£		£		£	
70 668 016 / 70 669 016	12.26	**113**	7.53	**398**	2.85	**113**	8.79	**167**	4.22	**171**
70 668 020 / 70 669 020	12.26	**113**	7.53	**398**	2.85	**113**	8.79	**167**	4.22	**171**
70 668 120	12.26	**113**	7.53	**398**	2.34	**114**	11.25	**168**	4.22	**170**
70 668 125	12.26	**113**	7.53	**398**	2.34	**114**	11.25	**168**	4.22	**170**

MaxiLock-P – MSSC 45° – Toolholder with top clamping

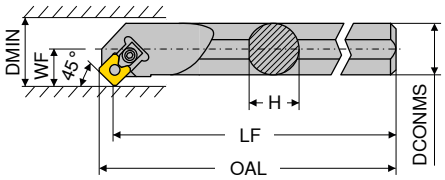


Illustrations show right-hand versions

ISO designation	H	B	LF	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 589 ...		Right-hand 2A/24 Article no. 70 588 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
MSSC R/L 2020 K12	20	20	125	133.65	32	25	5	SCMX 1204	83.97	**020**	83.97	**020**
MSSC R/L 2525 M12	25	25	150	158.65	28	32	5	SCMX 1204	87.03	**025**	87.03	**025**
MSSC R/L 3225 P12	32	25	170	178.65	28	32	5	SCMX 1204	89.70	**032**	89.70	**032**

Spare parts for Article no.		Y7 Key D Article no. 80 950 ...		2A/28 Dowel pin Article no. 70 950 ...		2A/28 Clamping Element Article no. 70 950 ...		2A/28 Wedge Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...	
		£		£		£		£		£	
70 588 020 / 70 589 020	T20	13.11	**114**	3.72	**153**	10.86	**159**	6.81	**150**	11.05	**140**
70 588 025 / 70 589 025	T20	13.11	**114**	3.72	**153**	10.86	**159**	6.81	**150**	11.05	**140**
70 588 032 / 70 589 032	T20	13.11	**114**	3.72	**153**	10.86	**159**	6.81	**150**	11.05	**140**

MaxiLock-P – MSSC 45° – Boring bar with top clamping



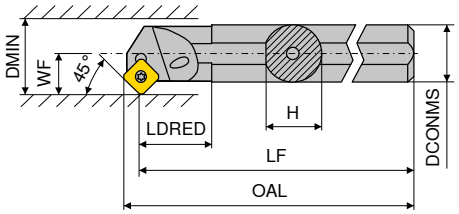
Illustrations show right-hand versions

ISO designation	DCONMS	H	LF	OAL	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 625 ...	£		Right-hand 2A/24 Article no. 70 624 ...	£	
	mm	mm	mm	mm	mm	mm	Nm							
S32S MSSC R/L 12	32	30	250	258	22	40	5	SCMX 1204		205.45	032		205.45	032

Spare parts		Y7 Key D Article no. 80 950 ...	£		2A/28 Dowel pin Article no. 70 950 ...	£		2A/28 Clamping Element Article no. 70 950 ...	£		2A/28 Wedge Article no. 70 950 ...	£		2A/28 Solid Carbide support S Article no. 70 950 ...	£	
for Article no.																
70 625 032 / 70 624 032	T20		13.11	114		4.57	155		10.86	163		6.81	150		11.05	147

MaxiLock-S – SSSC 45° – Boring bar with screw clamping

- A... = with thro' coolant
- S... = without thro' coolant

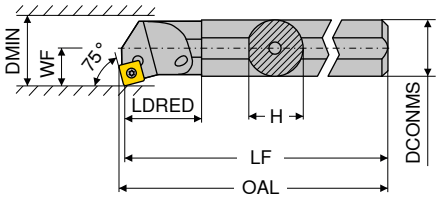


Illustrations show right-hand versions

ISO designation	DCONMS	H	LF	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 721 ...	£		Right-hand 2A/24 Article no. 70 720 ...	£	
	mm	mm	mm	mm	mm	mm	mm	Nm							
S16R SSSC R 09	16	15.00	200	206.0	13.97	11	20	3,2	SC.. 09T3..				89.70	016	
A16M SSSC R/L 09	16	15.25	150	156.0	29.00	11	20	3,2	SC.. 09T3..	89.70	216		89.70	216	
A20Q SSSC R/L 09	20	19.00	180	186.0	32.00	13	25	3,2	SC.. 09T3..	111.82	220		111.82	220	
A25R SSSC R/L 09	25	24.50	200	206.0	36.00	17	32	3,2	SC.. 09T3..	128.55	225		128.55	225	
A32S SSSC R/L 12	32	31.00	250	258.3	50.00	22	40	5	SC.. 1204..	176.73	232		176.73	232	
A40T SSSC R/L 12	40	39.00	300	308.1	60.00	27	50	5	SC.. 1204..	212.18	240		212.18	240	

Spare parts	Y7 Key D Article no. 80 950 ...	£		2A/28 Combination Key Article no. 70 950 ...	£		2A/28 Clamping screw Article no. 70 950 ...	£		2A/28 Solid Carbide support S Article no. 70 950 ...	£		2A/28 Threaded sleeve Article no. 70 950 ...	£	
for Article no.															
70 720 016		12.26	113					2.85	110						
70 720 216 / 70 721 216		12.26	113					2.85	110						
70 720 220 / 70 721 220		12.26	113					2.85	304						
70 720 225 / 70 721 225		12.26	113					2.85	304						
70 720 232 / 70 721 232					7.53	398		2.34	114		11.25	168		4.22	170
70 720 240 / 70 721 240					7.53	398		2.34	114		11.25	168		4.22	170

MaxiLock-S – SSKC 75° – Boring bar with screw clamping



Illustrations show right-hand versions

ISO designation	DCONMS	H	LF	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 725 ... £		Right-hand 2A/24 Article no. 70 724 ... £	
	mm	mm	mm	mm	mm	mm	mm	Nm					
A16M SSKC R/L 09	16	15.0	150	152.4	29	11	20	3,2	SC.. 09T3..	89.70	**216**	89.70	**216**
A20Q SSKC R/L 09	20	18.5	180	182.4	32	13	25	3,2	SC.. 09T3..	111.82	**220**	111.82	**220**
A25R SSKC R/L 09	25	23.0	200	202.4	36	17	32	3,2	SC.. 09T3..	128.55	**225**	128.55	**225**

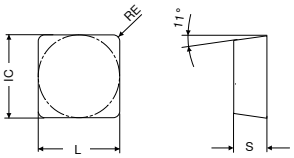
Key D

Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ... £			2A/28 Article no. 70 950 ... £	
70 724 216 / 70 725 216	T15	12.26	**113**	M3,5x7,2	2.85	**110**
70 724 220 / 70 725 220	T15	12.26	**113**	M3,5x8,6	2.85	**304**
70 724 225 / 70 725 225	T15	12.26	**113**	M3,5x8,6	2.85	**304**

SPMR / SPUN

Designation	L	S	IC
	mm	mm	mm
SPUN 0903..	9.52	3.18	9.52
SP.. 1203..	12.70	3.18	12.70



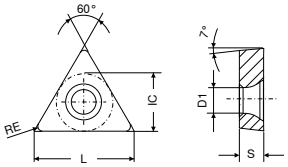
SPMR / SPUN

ISO	RE	CTCP135 HCR1135 DRAGONSKIN		CTCP135 HCR1135 DRAGONSKIN	
		M		M	
		SPMR		SPUN	
		1A/11		1A/08	
		Article no. 76 208 ...		Article no. 76 206 ...	
	mm	£		£	
090304EN	0.4	6.75	704		
120304EN	0.4	9.79	716		
120308EN	0.8	9.79	718	8.17	718
120308ER	0.8	10.17	720		
Steel		●		●	
Stainless steel		○		○	
Cast iron					
Non ferrous metals					
Heat resistant alloys		○		○	

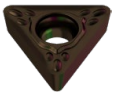
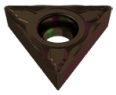
9

TCGT / TCMT

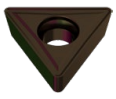
Designation	L	S	D1	IC
	mm	mm	mm	mm
TCMT 0902..	9.6	2.38	2.50	5.56
TC.T 1102..	11.0	2.38	2.80	6.35
TC.T 16T3..	16.5	3.97	4.40	9.52
TCMT 2204..	22.0	4.76	5.16	12.70



TCGT / TCMT

		-CF05 CTEP110	-SF TCM10	-SF CTCP125	-CF55 CTEP110	-SMF TCM10	-SMF CTCP115
		-PF14 DCC1110	-ZF CWC10	-ZF HCX1125	-PF15 DCC1110	-SMF CWC10	-SMF HCX1115
		DRAGONSKIN		DRAGONSKIN	DRAGONSKIN		DRAGONSKIN
							
		F	F	F	F	F	F
		CERMET TCGT	CERMET TCGT	TCMT	CERMET TCMT	CERMET TCMT	TCMT
		1A/78	1A/78	1A/08	1A/78	1A/78	1A/08
ISO	RE	Article no. 76 272 ...	Article no. 70 273 ...	Article no. 76 275 ...	Article no. 76 266 ...	Article no. 70 284 ...	Article no. 76 284 ...
	mm	£	£	£	£	£	£
110202EN	0.2	12.31 **014**	11.39 **900**				
110204EN	0.4	12.31 **016**	11.39 **902**	6.95 **516**	7.02 **016**	6.62 **902**	
110208EN	0.8	12.31 **018**		6.95 **518**			6.95 **318**
16T304EN	0.4	15.60 **028**	14.45 **906**	10.04 **528**			10.04 **328**
16T308EN	0.8			10.04 **530**	9.73 **030**		10.04 **330**
Steel		●	●	●	●	●	●
Stainless steel		○		○	○		○
Cast iron		○	○	○	○	○	○
Non ferrous metals							
Heat resistant alloys							

TCMT / TCGT

		-SMF CTCP135	-SM CTCP135	-SM CTCK110	-SM CTCK120	-SM CTCP115	-SM CTCP125	-SM CTCP135
		-SMF HCR1135	-ZM HCR1135	-ZM DCX3110	-ZM HCF3120	-ZM HCX1115	-ZM HCX1125	-ZM HCR1135
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		F	M	M	M	M	M	M
		TCMT	TCGT	TCMT	TCMT	TCMT	TCMT	TCMT
		1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO	RE	Article no. 76 284 ...	Article no. 76 270 ...	Article no. 70 274 ...	Article no. 70 274 ...	Article no. 76 274 ...	Article no. 76 274 ...	Article no. 76 274 ...
	mm	£	£	£	£	£	£	£
090204EN	0.4						6.95 504	6.95 704
110202EN	0.2		12.31 714					
110204EN	0.4			6.95 016	6.95 516	6.95 316	6.95 516	6.95 716
110208EN	0.8	6.95 718		6.95 018	6.95 518	6.95 318		6.95 718
16T304EN	0.4			10.04 028	10.04 528	10.04 328	10.04 528	10.04 728
16T308EN	0.8			10.04 030	10.04 530	10.04 330	10.04 530	10.04 730
16T312EN	1.2			10.04 032	10.04 532			
220408EN	0.8						14.45 542	14.45 742
Steel		●	●	●	●	●	●	●
Stainless steel		○	○	○		○	○	○
Cast iron				●	●	○	○	
Non ferrous metals								
Heat resistant alloys		○	○					○

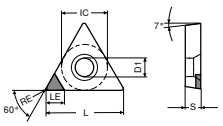
9

TCMT / TCGT

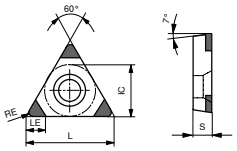
		-F43 CTC2135	-M25 CTPM125	-SM CTC2135	-M55 CTPM125	-27 H10T	-27 CWN15
		-F43 CWN2135	-PF23 HCN2125	-ZM CWN2135	-PF26 HCN2125	-AL CWK15	-AL CWN15
			DRAGONSKIN		DRAGONSKIN		
		F	F	M	F	M	M
		TCMT	TCMT	TCMT	TCMT	TCGT	TCGT
		1A/08	1A/08	1A/08	1A/08	1A/90	1A
ISO	RE	Article no. 70 187 ...	Article no. 75 217 ...	Article no. 70 274 ...	Article no. 75 218 ...	Article no. 70 276 ...	Article no. 70 276 ...
	mm	£	£	£	£	£	£
090204EN	0.4			6.85 398	6.95 204		
110202FN	0.2					9.92 600	12.19 300
110204EN	0.4	6.85 400	6.95 216	6.85 402	6.95 216		
110204FN	0.4					9.92 602	12.19 302
16T302FN	0.2					11.69 604	14.45 304
16T304EN	0.4	9.55 402	10.04 228				
16T304FN	0.4					11.69 606	14.45 306
16T308EN	0.8	9.55 404	10.04 230	9.55 396	10.04 230		
16T308FN	0.8					11.69 608	14.45 308
Steel		○	○	○	○		
Stainless steel		●	●	●	●		○
Cast iron						○	
Non ferrous metals						●	●
Heat resistant alloys		●		●		○	

TCGW

Designation	L	S	D1	IC
	mm	mm	mm	mm
TCGW 0902..	9.6	2.38	2.5	5.56
TCGW 1102..	11.0	2.38	2.8	6.35
TCGW 16T3..	16.5	3.97	4.4	9.52

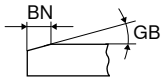


TCGW-A



TCGW-C

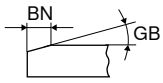
TCGW



ISO	RE	GB	BN	LE	-A CTBS10U PBC10 F CBN TCGW Y0 Article no. 71 140 ... £		-C CTBS20C -3MC PBC15-S F CBN TCGW Y0 Article no. 71 164 ... £		-C CTBH15U F CBN TCGW NEW Y0 Article no. 71 028 ... £		-C CTBH15U F CBN TCGW NEW Y0 Article no. 71 029 ... £	
	mm	°	mm	mm								
090202SN	0.2	10	0.09	2.6			90.20	120				
090202SN	0.2	15	0.11	2.6			90.20	130			94.70	30214
090202TN	0.2	20	0.14	3.8	54.78	300						
090202TN	0.2	20	0.15	2.6			90.20	140				
090202SN	0.2	20	0.16	2.6			90.20	150				
090202EN	0.2			2.6							94.70	00200
090204SN	0.4	10	0.09	2.2			90.20	121				
090204SN	0.4	15	0.11	2.2			90.20	131	94.70	30414		
090204TN	0.4	20	0.14	3.5	54.78	302						
090204SN	0.4	20	0.16	2.2			90.20	151				
090204TN	0.4	25	0.17	2.2			90.20	161				
090204FN	0.4			3.5	54.78	202						
090204EN	0.4			2.2			90.20	111	94.70	00400		
090208SN	0.8	10	0.09	1.8			90.20	122				
090208SN	0.8	15	0.11	1.8			90.20	132	94.70	30614		
090208TN	0.8	20	0.15	1.8			90.20	142				
090208TN	0.8	25	0.17	1.8			90.20	162				
090208EN	0.8			1.8					94.70	00600		
110202SN	0.2	10	0.09	2.9			90.20	123				
110202SN	0.2	15	0.11	2.9			90.20	133				
110202TN	0.2	20	0.14	3.8	52.75	306						
110202TN	0.2	20	0.15	2.9			90.20	143				
110202SN	0.2	20	0.16	2.9			90.20	153				
110202FN	0.2			3.8	52.75	206						
110204SN	0.4	10	0.09	2.5			90.20	124				
110204SN	0.4	15	0.11	2.5			90.20	134				
110204TN	0.4	20	0.14	3.5	52.75	308						
110204TN	0.4	20	0.15	2.5			90.20	144				
110204SN	0.4	20	0.16	2.5			90.20	154				
110204TN	0.4	25	0.17	2.5			90.20	164				
110204FN	0.4			3.5	52.75	208						
110204EN	0.4			2.5			90.20	114				
110208SN	0.8	10	0.09	2.1			90.20	125				
110208SN	0.8	15	0.11	2.1			90.20	135				
110208TN	0.8	20	0.14	3.0	52.75	310						
110208TN	0.8	20	0.15	2.1			90.20	145				
110208TN	0.8	25	0.17	2.1			90.20	165				
110208FN	0.8			3.0	52.75	210						
16T304SN	0.4	10	0.09	3.2			90.20	126				
16T304SN	0.4	15	0.11	3.2			90.20	136				
16T308SN	0.8	10	0.09	2.7			90.20	127				
16T308SN	0.8	15	0.11	2.7			90.20	137				
16T308SN	0.8	20	0.16	2.7			90.20	157				
16T308TN	0.8	25	0.17	2.7			90.20	167				
16T308EN	0.8			2.7			90.20	117				

Cast iron	●	●		
Sintered steels	●	●		
Heat resistant alloys	●	●		
hardened < 45 HRC			●	●
hardened 46–55 HRC			●	●
hardened 56–60 HRC			●	●
hardened 61–65 HRC				

TCGW

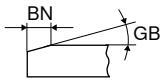


ISO	RE	GB	BN	LE	-C CTBH15C	-C CTBH15C	-A CTBH21U PBC25	-C CTBH20C -3MC PBC25-S	-A CTBH40U PBC40	-C CTBH40C -3MC PBC40-S
					F	F	F	F	F	F
					CBN TCGW	CBN TCGW	CBN TCGW	CBN TCGW	CBN TCGW	CBN TCGW
					NEW Y0	NEW Y0	Y0	Y0	Y0	Y0
					Article no. 71 027 ...	Article no. 71 034 ...	Article no. 71 140 ...	Article no. 71 164 ...	Article no. 71 140 ...	Article no. 71 164 ...
	mm	°	mm	mm	£	£	£	£	£	£
090202FN	0.2			2.6				90.20 210		
090202SN	0.2	15	0.11	2.6		92.45 30214				
090202SN	0.2	20	0.09	2.6				90.20 250		90.20 330
090202TN	0.2	20	0.09	2.6						90.20 320
090202TN	0.2	20	0.14	3.8			54.78 500			
090202TN	0.2	25	0.11	2.6						90.20 340
090202TN	0.2	25	0.12	3.8					54.78 900	
090202EN	0.2			2.6		92.45 00200		90.20 220		
090202FN	0.2			3.8			54.78 400			
090204SN	0.4	15	0.11	2.2	92.45 30414			90.20 241		
090204TN	0.4	20	0.09	2.2						90.20 321
090204TN	0.4	20	0.14	3.5			54.78 502			
090204SN	0.4	25	0.09	2.2						90.20 351
090204TN	0.4	25	0.11	2.2						90.20 341
090204TN	0.4	25	0.12	3.5					54.78 902	
090204EN	0.4			2.2	92.45 00400			90.20 221		
090204FN	0.4			3.5			54.78 402		54.78 802	
090204TN	0.4	25	0.14	2.2				90.20 261		
090204SN	0.4	25	0.15	2.2				90.20 271		
090204TN	0.4	30	0.14	2.2						90.20 361
090204SN	0.4	30	0.16	2.2						90.20 371
090208SN	0.8	10	0.09	1.8				90.20 232		
090208SN	0.8	15	0.11	1.8	92.45 30614			90.20 242		
090208SN	0.8	20	0.09	1.8				90.20 252		
090208TN	0.8	20	0.14	1.8						90.20 362
090208TN	0.8	20	0.14	3.0			54.78 504			
090208SN	0.8	25	0.09	1.8						90.20 352
090208TN	0.8	25	0.11	1.8						90.20 342
090208TN	0.8	25	0.12	3.0					54.78 904	
090208EN	0.8			1.8	92.45 00600					90.20 312
110202SN	0.2	15	0.11	2.9		92.45 31414				
110202SN	0.2	20	0.09	2.9				90.20 253		90.20 333
110202TN	0.2	20	0.09	2.9						90.20 323
110202TN	0.2	20	0.14	3.8			52.75 506			
110202TN	0.2	25	0.11	2.9						90.20 343
110202TN	0.2	25	0.12	3.8					52.75 906	
110202EN	0.2			2.9				90.20 223		
110202FN	0.2			2.9				90.20 213		
110202FN	0.2			3.8			52.75 406		52.75 806	
110202SN	0.2	25	0.13	2.9		92.45 31429				
110202TN	0.2	30	0.14	2.9						90.20 363
110204FN	0.4			2.5				90.20 214		
110204SN	0.4	10	0.09	2.5				90.20 234		
110204EN	0.4			2.5				90.20 224		

Cast iron						
Sintered steels						
Heat resistant alloys						
hardened < 45 HRC	●	●				
hardened 46–55 HRC	●	●	●	●	●	●
hardened 56–60 HRC	●	●	●	●	●	●
hardened 61–65 HRC					●	●

9

TCGW

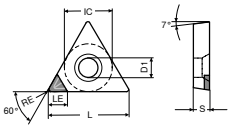


ISO	RE	GB	BN	LE	-C CTBH15C	-C CTBH15C	-A CTBH21U PBC25	-C CTBH20C -3MC PBC25-S	-A CTBH40U PBC40	-C CTBH40C -3MC PBC40-S
					F	F	F	F	F	F
					CBN TCGW	CBN TCGW	CBN TCGW	CBN TCGW	CBN TCGW	CBN TCGW
					NEW Y0	NEW Y0	Y0	Y0	Y0	Y0
					Article no. 71 027 ...	Article no. 71 034 ...	Article no. 71 140 ...	Article no. 71 164 ...	Article no. 71 140 ...	Article no. 71 164 ...
	mm	°	mm	mm	£	£	£	£	£	£
110204SN	0.4	15	0.11	2.5		92.45 31614		90.20 244		
110204TN	0.4	20	0.09	2.5						90.20 324
110204TN	0.4	20	0.14	3.5			52.75 508			
110204SN	0.4	25	0.09	2.5						90.20 354
110204TN	0.4	25	0.11	2.5						90.20 344
110204TN	0.4	25	0.12	3.5					52.75 908	
110204SN	0.4	25	0.13	2.5		92.45 31629				
110204TN	0.4	25	0.14	2.5				90.20 264		
110204FN	0.4			3.5					52.75 808	
110204SN	0.4	25	0.15	2.5				90.20 274		
110204TN	0.4	30	0.14	2.5						90.20 364
110204SN	0.4	30	0.16	2.5						90.20 374
110208SN	0.8	10	0.09	2.1				90.20 235		
110208SN	0.8	15	0.11	2.1	92.45 31814			90.20 245		
110208SN	0.8	20	0.09	2.1				90.20 255		
110208TN	0.8	20	0.09	2.1						90.20 325
110208TN	0.8	20	0.14	3.0			52.75 510			
110208SN	0.8	25	0.09	2.1						90.20 355
110208TN	0.8	25	0.12	3.0					52.75 910	
110208EN	0.8			2.1						90.20 315
110208SN	0.8	25	0.13	2.1	92.45 31829					
110208TN	0.8	25	0.14	2.1				90.20 265		
110208TN	0.8	30	0.14	2.1						90.20 365
110208SN	0.8	30	0.16	2.1						90.20 375
110208FN	0.8			3.0			52.75 410			
16T304SN	0.4	20	0.09	3.2				90.20 256		90.20 336
16T304SN	0.4	25	0.09	3.2						90.20 356
16T304TN	0.4	25	0.11	3.2						90.20 346
16T304SN	0.4	25	0.15	3.2				90.20 276		
16T304TN	0.4	30	0.14	3.2						90.20 366
16T304SN	0.4	35	0.17	3.2						90.20 386
16T304FN	0.4			3.2				90.20 216		
16T304EN	0.4			3.2				90.20 226		
16T308SN	0.8	15	0.11	2.7				90.20 247		
16T308SN	0.8	20	0.09	2.7						90.20 337
16T308SN	0.8	25	0.09	2.7						90.20 357
16T308TN	0.8	25	0.11	2.7						90.20 347
16T308TN	0.8	25	0.14	2.7				90.20 267		
16T308SN	0.8	25	0.15	2.7				90.20 277		
16T308TN	0.8	30	0.14	2.7						90.20 367
16T308SN	0.8	30	0.16	2.7						90.20 377
16T308SN	0.8	30	0.18	2.7				90.20 287		
16T308EN	0.8			2.7				90.20 227		90.20 317

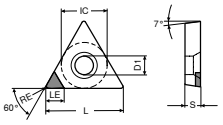
Cast iron							
Sintered steels							
Heat resistant alloys							
hardened < 45 HRC	●	●					
hardened 46–55 HRC	●	●	●	●	●	●	
hardened 56–60 HRC	●	●	●		●	●	
hardened 61–65 HRC					●	●	

TCGW / TCGT

Designation	L	S	D1	IC
	mm	mm	mm	mm
TCG. 0902..	9.6	2.38	2.5	5.56
TCG. 1102..	11.0	2.38	2.8	6.35
TCG. 16T3..	16.5	3.97	4.4	9.52



TCGT-A-CB



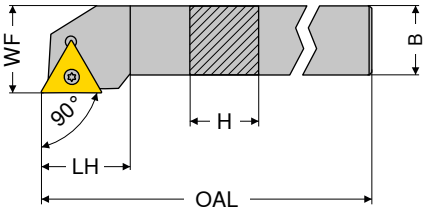
TCGW-A

TCGW / TCGT

ISO	RE	LE	-A CTDPD20		-A-CB1 CTDPD20		-A-CB2 CTDPS30		-A-CB3 CTDPU20	
			PDC		-CB1 PDC		-CB2 PDC-S		-CB3 PDC-S	
			F		F		M		R	
			DIAMOND TCGW		DIAMOND TCGT		DIAMOND TCGT		DIAMOND TCGT	
			Y0		Y0		Y0		Y0	
	mm	mm	Article no. 71 140 ...		Article no. 71 325 ...		Article no. 71 326 ...		Article no. 71 327 ...	
			£		£		£		£	
090202FN	0.2	3.7	79.66	100	88.31	112				
090202EN	0.2	3.7					88.31	212		
090204FN	0.4	3.4	79.66	102	88.31	114				
090204EN	0.4	3.4					88.31	214		
090208FN	0.8	3.0	79.66	104						
110202FN	0.2	3.7	76.12	106	92.10	122				
110202EN	0.2	3.7					92.10	222		
110204FN	0.4	3.4	76.12	108	92.10	124				
110204EN	0.4	3.4					92.10	224	73.53	224
110208FN	0.8	3.0	76.12	110						
16T304FN	0.4	4.6	79.66	112	92.18	134				
16T304EN	0.4	4.6					92.18	234		
16T308FN	0.8	4.2	79.66	114						
16T308EN	0.8	4.2							77.85	238
Steel										
Stainless steel										
Cast iron										
Non ferrous metals				●		●		●		●
Heat resistant alloys								○		○

9

MaxiLock-S – STGC 90° – Toolholder with screw clamping



Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 677 ...		Right-hand 2A/24 Article no. 70 676 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
STGC R/L 1010 E09	10	10	70	12	12	1	TC.. 0902	58.72	**010**	58.72	**010**
STGC R/L 1212 F11	12	12	80	15	16	1,2	TC.. 1102	58.72	**012**	58.72	**012**
STGC R/L 1616 H16	16	16	100	22	20	3,2	TC.. 16T3	72.73	**016**	72.73	**016**
STGC R/L 2020 K16	20	20	125	22	25	3,2	TC.. 16T3	77.31	**020**	77.31	**020**
STGC R/L 2525 M16	25	25	150	22	32	3,2	TC.. 16T3	79.97	**025**	79.97	**025**

Key D

Combination Key

Clamping screw

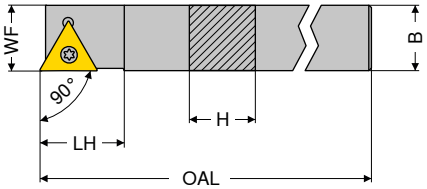
Solid Carbide Seat T

Threaded sleeve

Spare parts for Article no.	Y7 Article no. 80 950 ... £		2A/28 Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £	
70 676 010 / 70 677 010	10.30	**109**			2.34	**111**				
70 676 012 / 70 677 012	10.30	**110**			2.15	**112**				
70 676 016 / 70 677 016			7.53	**398**	2.85	**113**	7.05	**169**	4.22	**171**
70 676 020 / 70 677 020			7.53	**398**	2.85	**113**	7.05	**169**	4.22	**171**
70 676 025 / 70 677 025			7.53	**398**	2.85	**113**	7.05	**169**	4.22	**171**

MaxiLock-S – STAC 90° – Toolholder with screw clamping

▲ for sliding head lathes



Illustrations show right-hand versions

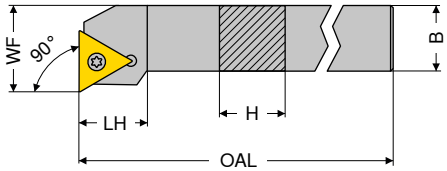
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 769 ...		Right-hand 2A/24 Article no. 70 768 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
STAC R/L 1010 K09	10	10	125	12	10	1	TC.. 0902	58.72	**010**	58.72	**010**
STAC R/L 1212 K11	12	12	125	15	12	1,2	TC.. 1102	65.68	**012**	65.68	**012**
STAC R 1414 K11	14	14	125	15	14	1,2	TC.. 1102			65.68	**014**

Key D

Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ... £			2A/28 Article no. 70 950 ... £	
70 769 010 / 70 768 010	T07	10.30	**109**	M2,2x5	2.34	**111**
70 769 012 / 70 768 012	T08	10.30	**110**	M2,5x6	2.15	**112**
70 768 014	T08	10.30	**110**	M2,5x6	2.15	**112**

MaxiLock-S – STFC 90° – Toolholder with screw clamping



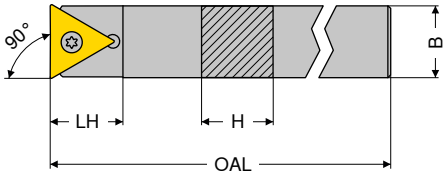
Illustrations show right-hand versions

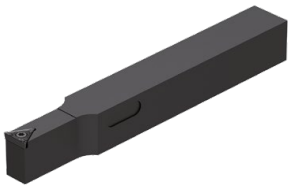
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 673 ...		Right-hand 2A/24 Article no. 70 672 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
STFC R/L 1212 F11	12	12	80	15	16	1,2	TC.. 1102	58.72	**012**	58.72	**012**
STFC R/L 1616 H16	16	16	100	20	20	3,2	TC.. 16T3	72.73	**016**	72.73	**016**
STFC R/L 2020 K16	20	20	125	20	25	3,2	TC.. 16T3	77.31	**020**	77.31	**020**
STFC R/L 2525 M16	25	25	150	20	32	3,2	TC.. 16T3	79.97	**025**	79.97	**025**

Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat T Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.	£		£		£		£		£	
70 673 012 / 70 672 012	10.30	**110**			2.15	**112**				
70 673 016 / 70 672 016			7.53	**398**	2.85	**113**	7.05	**169**	4.22	**171**
70 673 020 / 70 672 020			7.53	**398**	2.85	**113**	7.05	**169**	4.22	**171**
70 673 025 / 70 672 025			7.53	**398**	2.85	**113**	7.05	**169**	4.22	**171**

9

MaxiLock-S – STCC 90° – Toolholder with screw clamping



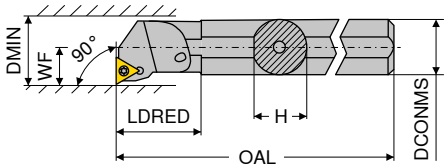


ISO designation	H	B	OAL	LH	torque moment	Insert	Neutral 2A/24 Article no. 70 782 ...	
	mm	mm	mm	mm	Nm		£	
STCC N 0808 K09	8	8	125	11	1	TC.. 0902	55.38	**008**
STCC N 1010 K11	10	10	125	15	1,2	TC.. 1102	58.72	**010**
STCC N 1212 K11	12	12	125	15	1,2	TC.. 1102	65.68	**012**
STCC N 1414 K11	14	14	125	21	1,2	TC.. 1102	65.68	**014**
STCC N 1616 K11	16	16	125	24	1,2	TC.. 1102	72.73	**016**

Spare parts		Y7 Key D Article no. 80 950 ...			2A/28 Clamping screw Article no. 70 950 ...	
for Article no.		£			£	
70 782 008	T07	10.30	**109**	M2,2x5	2.34	**111**
70 782 010	T08	10.30	**110**	M2,5x6	2.15	**112**
70 782 012	T08	10.30	**110**	M2,5x6	2.15	**112**
70 782 014	T08	10.30	**110**	M2,5x6	2.15	**112**
70 782 016	T08	10.30	**110**	M2,5x6	2.15	**112**

MaxiLock-S – STFC 90° – Boring bar with screw clamping

▲ A... = with thro' coolant
▲ S... = without thro' coolant



Illustrations show right-hand versions

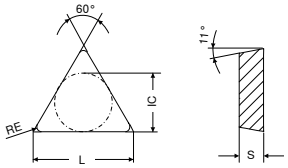
ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/24 Article no. 70 729 ... £		Right-hand 2A/24 Article no. 70 728 ... £	
A10H STFC R/L 09	10	9.5	100	19	7	13	1	TC.. 0902	87.79	210	87.79	210
A12K STFC R/L 11	12	11.5	125	22	9	16	1,2	TC.. 1102	87.79	212	87.79	212
A16M STFC R/L 11	16	15.0	150	29	11	20	1,2	TC.. 1102	89.70	216	89.70	216
S16R STFC R 11	16	15.0	200		11	21	1,2	TC.. 1102			89.70	016
A20Q STFC R/L 11	20	18.5	180	32	13	25	1,2	TC.. 1102	111.82	220	111.82	220
S20S STFC R 11	20	18.0	250		13	25	1,2	TC.. 1102			111.82	020
A25R STFC R/L 16	25	24.0	200	36	17	32	3,2	TC.. 16T3	128.55	225	128.55	225
A32S STFC R/L 16	32	31.0	250	50	22	40	3,2	TC.. 16T3	176.73	232	176.73	232
A40T STFC R/L 16	40	39.0	300	60	27	50	3,2	TC.. 16T3	212.18	240	212.18	240

Spare parts for Article no.		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide Seat T Article no. 70 950 ... £			2A/28 Threaded sleeve Article no. 70 950 ... £	
70 729 210 / 70 728 210	M2,2x5	2.34	111					
70 729 212 / 70 728 212	M2,5x6	2.15	112					
70 729 216 / 70 728 216	M2,5x6	2.15	112					
70 728 016	M2,5x6	2.15	112					
70 729 220 / 70 728 220	M2,5x6	2.15	112					
70 728 020	M2,5x6	2.15	112					
70 729 225 / 70 728 225	M3,5x11	2.85	113	7.05	169	M3,5	4.22	171
70 729 232 / 70 728 232	M3,5x11	2.85	113	7.05	169	M3,5	4.22	171
70 729 240 / 70 728 240	M3,5x11	2.85	113	7.05	169	M3,5	4.22	171

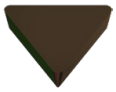
Spare parts for Article no.		Y7 Key D Article no. 80 950 ... £			2A/28 Combination Key Article no. 70 950 ... £	
70 729 210 / 70 728 210	T07	10.30	109			
70 729 212 / 70 728 212	T08	10.30	110			
70 729 216 / 70 728 216	T08	10.30	110			
70 728 016	T08	10.30	110			
70 729 220 / 70 728 220	T08	10.30	110			
70 728 020	T08	10.30	110			
70 729 225 / 70 728 225				T15/SW	7.53	398
70 729 232 / 70 728 232				T15/SW	7.53	398
70 729 240 / 70 728 240				T15/SW	7.53	398

TPMR / TPUN

Designation	L	S	IC
	mm	mm	mm
TPMR 1103..	11.0	3.18	6.35
TPMR 1603..	16.5	3.18	9.52
TPUN 2204..	22.0	4.76	12.70

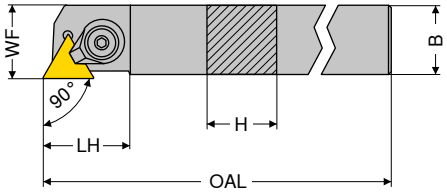


TPMR / TPUN

		CTCK110	CTCP135	CTCP135	CTCP135
		DCX3110	HCR1135	HCR1135	HCR1135
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		M	M	M	M
		TPMR	TPMR	TPMR	TPUN
		1A/11	1A/11	1A/08	1A/13
ISO	RE	Article no. 70 189 ...	Article no. 76 228 ...	Article no. 76 232 ...	Article no. 76 212 ...
	mm	£	£	£	£
110304EL	0.4			9.44 706	
110304EN	0.4		6.47 702		5.15 702
110304ER	0.4			9.44 704	
110308EN	0.8		6.47 704		
160304EL	0.4			12.00 714	
160304EN	0.4		8.45 706		6.75 720
160304ER	0.4			12.00 712	
160308EL	0.8			12.00 718	
160308EN	0.8	8.45 008	8.45 708		6.75 722
160308ER	0.8			12.00 716	
160312EN	1.2				6.75 724
220408EN	0.8				12.09 742
220412EN	1.2				12.09 744
Steel		●	●	●	●
Stainless steel		○	○	○	○
Cast iron		●			
Non ferrous metals					
Heat resistant alloys			○	○	○

9

Simplex – CTAP 90° – Toolholder with top clamping



Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/23 Article no. 70 797 ...		Right-hand 2A/23 Article no. 70 796 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
CTAP R/L 2020 K16	20	20	125	30	20.5	10	TP.. 1603	82.07	**020**	82.07	**020**
CTAP R/L 2525 M16	25	25	150	30	20.5	10	TP.. 1603	84.36	**025**	84.36	**025**

2A/28 Clamp

2A/28 Key I

2A/28 Clamping screw

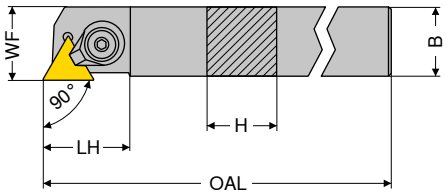
2A/28 Countersunk head grooved pin

2A/28 Solid Carbide Seat T

2A/28 Spring washer

Spare parts for Article no.	Article no. 70 950 ... £			Article no. 70 950 ... £			Article no. 70 950 ... £		Article no. 70 950 ... £		Article no. 70 950 ... £		Article no. 70 950 ... £	
70 796 020 / 70 797 020	8.06	**601**	SW4	2.34	**396**	M8x20	4.70	**604**	1.00	**603**	9.03	**602**	1.00	**605**
70 796 025 / 70 797 025	8.06	**601**	SW4	2.34	**396**	M8x20	4.70	**604**	1.00	**603**	9.03	**602**	1.00	**605**

Simplex – CTGP 90° – Toolholder with top clamping



Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/23 Article no. 70 797 ...		Right-hand 2A/23 Article no. 70 796 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
CTGP R 1010 E11	10	10	70	16.5	12	5	TP.. 1103			72.64	**010**
CTGP R/L 1212 F11	12	12	80	16.5	16	5	TP.. 1103	72.64	**012**	72.64	**012**

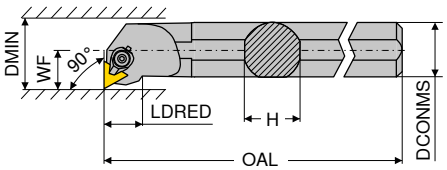
2A/28 Clamp

Y7 Key D

2A/28 Clamping screw

Spare parts for Article no.	Article no. 70 950 ... £			Article no. 80 950 ... £			Article no. 70 950 ... £	
70 796 010	4.70	**600**	T15	12.26	**113**	M4x10	1.72	**477**
70 797 012 / 70 796 012	4.70	**600**	T15	12.26	**113**	M4x10	1.72	**477**

Simplex – CTFP 90° – Boring bar with top clamping



Illustrations show right-hand versions

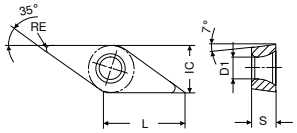
ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A/23 Article no. 70 795 ... £		Right-hand 2A/23 Article no. 70 794 ... £	
S12Q CTFP R/L 11	12	11.0	180	15	9	16	5	TP.. 1103	97.27	**012**	97.27	**012**
S16R CTFP R/L 11	16	14.5	200	15	11	20	5	TP.. 1103	97.27	**016**	97.27	**016**
S20S CTFP R/L 11	20	18.0	250	15	13	25	5	TP.. 1103	118.73	**020**	118.73	**020**
S25T CTFP R/L 16	25	23.0	300	20	17	32	10	TP.. 1603	140.09	**025**	140.09	**025**
S32U CTFP R/L 16	32	30.0	350	20	22	40	10	TP.. 1603	190.00	**032**	190.00	**032**

Spare parts for Article no.	2A/28 Clamp Article no. 70 950 ... £			Y7 Key D Article no. 80 950 ... £			2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Countersunk head grooved pin Article no. 70 950 ... £		2A/28 Solid Carbide Seat T Article no. 70 950 ... £	
70 794 012 / 70 795 012	4.70	**600**	T15	12.26	**113**	M4x10	1.72	**477**				
70 794 016 / 70 795 016	4.70	**600**	T15	12.26	**113**	M4x10	1.72	**477**				
70 794 020 / 70 795 020	4.70	**600**	T15	12.26	**113**	M4x10	1.72	**477**				
70 794 025 / 70 795 025	7.93	**606**	T20	13.11	**114**	M6x16,2	4.70	**596**	1.00	**603**	9.03	**602**
70 794 032 / 70 795 032	7.93	**606**	T20	13.11	**114**	M6x16,2	4.70	**596**	1.00	**603**	9.03	**602**

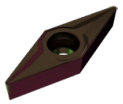
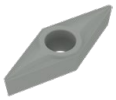
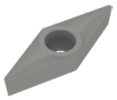
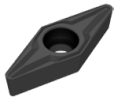
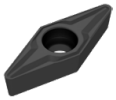
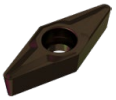
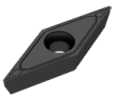
9

VCGT / VCMT / VCXT / VCET

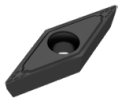
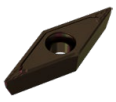
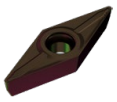
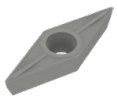
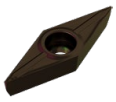
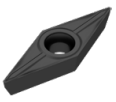
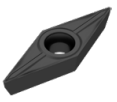
Designation	L	S	D1	IC
	mm	mm	mm	mm
VCET 1103..	11.1	3.18	2.8	6.35
VC.T 1103..	11.1	3.18	2.9	6.35
VC.T 1604..	16.6	4.76	4.4	9.52
VCGT 2205..	22.1	5.56	5.5	12.70



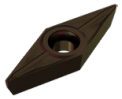
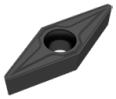
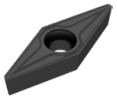
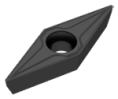
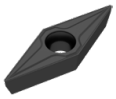
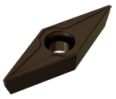
VCGT / VCMT

	-CF05 CTEP110	-SF TCM407	-SF TCM10	-SF CTCP115	-SF CTCP125	-SF CTCP135	-SF CTCP115
	-PF14 DCC1110	-ZF CWC407	-ZF CWC10	-ZF HCX1115	-ZF HCX1125	-ZF HCR1135	-ZF HCX1115
	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	F	F	F	F	F	F	F
	CERMET VCGT	CERMET VCGT	CERMET VCGT	VCGT	VCGT	VCGT	VCMT
	1A/78	1A/78	1A/78	1A/08	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 76 276 ... £	Article no. 70 277 ... £	Article no. 70 277 ... £	Article no. 76 277 ... £	Article no. 76 277 ... £	Article no. 76 277 ... £	Article no. 76 279 ... £
110301EN 0.1			13.94 892				
110302EN 0.2	15.27 014	13.94 844	13.94 894	14.55 314	14.55 514	14.55 714	
110304EN 0.4	15.27 016	13.94 846	13.94 896	14.55 316	14.55 516	14.55 716	
110308EN 0.8				14.55 318	14.55 518	14.55 718	
160404EN 0.4	18.21 028	17.60 850	17.60 900				14.55 328
160408EN 0.8	18.21 030		17.60 902				14.55 330
Steel	●	●	●	●	●	●	●
Stainless steel	○			○	○	○	○
Cast iron	○	○	○	○	○		○
Non ferrous metals							
Heat resistant alloys						○	

VCMT / VCGT

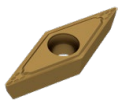
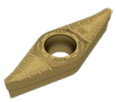
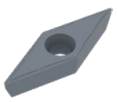
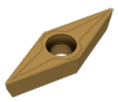
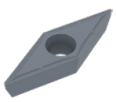
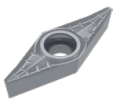
	-SF CTCP125	-SF CTCP135	-CF55 CTEP110	-SMF TCM10	-SMF CTCP135	-SMF CTCP115	-SMF CTCP125
	-ZF HCX1125	-ZF HCR1135	-PF15 DCC1110	-SMF CWC10	-SMF HCR1135	-SMF HCX1115	-SMF HCX1125
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	F	F	F	F	F	F	F
	VCMT	VCMT	CERMET VCMT	CERMET VCMT	VCGT	VCMT	VCMT
	1A/08	1A/08	1A/78	1A/78	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 76 279 ... £	Article no. 76 279 ... £	Article no. 76 292 ... £	Article no. 70 288 ... £	Article no. 76 285 ... £	Article no. 76 288 ... £	Article no. 76 288 ... £
110302EN 0.2					14.55 714		
110304EN 0.4			11.85 016	11.19 896		12.51 316	12.51 516
160404EN 0.4	14.55 528	14.55 728	14.55 028	13.85 900		14.55 328	14.55 528
160408EN 0.8	14.55 530		14.55 030	13.85 902		14.55 330	14.55 530
Steel	●	●	●	●	●	●	●
Stainless steel	○	○	○		○	○	○
Cast iron	○		○	○		○	○
Non ferrous metals							
Heat resistant alloys		○			○		

VCMT / VCGT

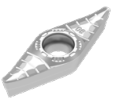
	-SMF CTCP135	-SM CTCK110	-SM CTCK120	-SM CTCP115	-SM CTCP125	-SM CTCP135	-SF CTC2135
	-SMF HCR1135	-ZM DCX3110	-ZM HCF3120	-ZM HCX1115	-ZM HCX1125	-ZM HCR1135	-ZF CWN2135
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
							
	F	M	M	M	M	M	F
	VCMT	VCMT	VCMT	VCMT	VCMT	VCMT	VCGT
	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08	1A/08
ISO / RE mm	Article no. 76 288 ... £	Article no. 70 278 ... £	Article no. 70 278 ... £	Article no. 76 278 ... £	Article no. 76 278 ... £	Article no. 76 278 ... £	Article no. 70 277 ... £
110302EN 0.2							14.55 444
110304EN 0.4	12.51 716						14.55 446
160404EN 0.4	14.55 728	14.55 028	14.55 528	14.55 328	14.55 528	14.55 728	
160406EN 0.6				14.55 329			
160408EN 0.8	14.55 730	14.55 030	14.55 530	14.55 330	14.55 530	14.55 730	
160412EN 1.2		14.55 032	14.55 532	14.55 33200	14.55 53200	14.55 732	
Steel	●	●	●	●	●	●	○
Stainless steel	○	○		○	○	○	●
Cast iron		●	●	○	○		
Non ferrous metals							
Heat resistant alloys	○					○	●

9

VCMT / VCXT / VCGT

	-SF CTC2135	-M81 CWN2120	-M25 CTPM125	-SM CTC2135	-M55 CTPM125	-25P H210T	-25P AMZ
	-ZF CWN2135		-PF23 HCN2125	-ZM CWN2135	-PF26 HCN2125	-25P CWK20	-25P AMZ
			DRAGONSKIN		DRAGONSKIN		
							
	F	M	F	M	F	F	F
	VCMT	VCXT	VCMT	VCMT	VCMT	VCGT	VCGT
	1A/08	1A	1A/08	1A/08	1A/08	1A/90	1A/90
ISO / RE mm	Article no. 70 279 ... £	Article no. 70 280 ... £	Article no. 75 219 ... £	Article no. 70 278 ... £	Article no. 75 220 ... £	Article no. 70 282 ... £	Article no. 70 282 ... £
110302FN 0.2						13.73 638	15.76 538
110304FN 0.4						13.73 640	15.76 540
160404EN 0.4	14.55 440		14.55 228	14.55 440	14.55 228		
160404FN 0.4		13.86 112				16.78 642	19.54 562
160408EN 0.8				14.55 442	14.55 230		
160408FN 0.8		13.86 114				16.78 644	19.54 564
160412FN 1.2						16.78 646	19.54 566
220530FN 3.0						22.68 648	26.04 568
Steel	○		○	○	○		○
Stainless steel	●	●	●	●	●		○
Cast iron						○	○
Non ferrous metals		○				●	●
Heat resistant alloys	●			●		○	

VCGT / VCMT

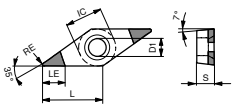
ISO	RE mm	-25Q H210T -25Q CWK20	-25Q AMZ -25Q AMZ	-27 H10T -AL CWK15	-27 CWN15 -AL CWN15	-27 AMZ -AL AMZ	-29 H216T	-29 AMZ
								
		M	M	M	M	M	M	M
		VCGT	VCGT	VCGT	VCGT	VCGT	VCMT	VCMT
		1A/90	1A	1A/90	1A	1A/90	NEW 1A/90	NEW 1A/90
		Article no. 70 282 ...	Article no. 70 282 ...	Article no. 70 280 ...	Article no. 70 280 ...	Article no. 70 280 ...	Article no. 70 247 ...	Article no. 70 247 ...
		£	£	£	£	£	£	£
110302FN	0.2			13.11 606	15.43 306	15.36 456		
110304FL	0.4	15.27 670	18.58 620					
110304FN	0.4			13.11 608	15.43 308	15.36 458		
110304FR	0.4	15.27 680	18.58 630					
110308FN	0.8			13.11 610	15.43 310			
160404EN	0.4						12.31 62800	14.75 42800
160404FN	0.4			15.97 612	18.18 312	18.62 462		
160408EN	0.8						12.31 63000	14.75 43000
160408FN	0.8			15.97 614	18.18 314	18.62 464		
160412EN	1.2						12.31 63200	14.75 43200
160412FN	1.2			15.97 616	18.18 316			
220530FN	3.0			21.67 618				
Steel			○			○		○
Stainless steel			○		○	○		○
Cast iron		○	○	○		○	○	○
Non ferrous metals		●	●	●	●	●	●	●
Heat resistant alloys		○		○			○	

VCET / VCGT

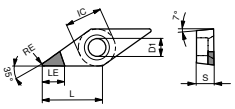
ISO	RE mm	-F05 CTPX710 DRAGONSKIN	-F23 CTP2120 -F23 CCN2120
		F	F
		VCET	VCGT
		NEW 1H/17	1A/08
		Article no. 76 255 ...	Article no. 70 193 ...
		£	£
110300FN	0.00		14.55 600
1103015FN	0.15	21.17 11800	
110301FN	0.10	21.17 11600	14.55 602
113005FN	0.05	21.17 11400	
11302FN	0.20	21.17 12000	
11304FN	0.40	21.17 12200	
160401FN	0.10		18.62 606
Steel		●	
Stainless steel		●	●
Cast iron		○	○
Non ferrous metals		○	○
Heat resistant alloys		●	●

VCGW

Designation	L	S	D1	IC
	mm	mm	mm	mm
VCGW 1103..	11.1	3.18	2.9	6.35
VCGW 1604..	16.6	4.76	4.4	9.52

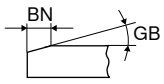


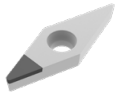
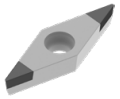
-B (-2MC)



-A

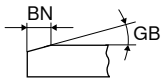
VCGW

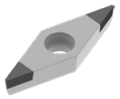


ISO	RE	GB	BN	LE	-A CTBS10U PBC10		-B CTBS20C -2MC PBC15-S		-B CTBH15U		-B CTBH15C	
												
					F		F		F		F	
					CBN VCGW		CBN VCGW		CBN VCGW		CBN VCGW	
					Y0		Y0		NEW Y0		NEW Y0	
					Article no. 71 160 ...		Article no. 71 165 ...		Article no. 71 036 ...		Article no. 71 035 ...	
	mm	°	mm	mm	£		£		£		£	
110302SN	0.2	15	0.11	3.4					82.40	32014	79.70	32014
110302TN	0.2	20	0.14	4.7	69.43	300						
110302SN	0.2	25	0.13	3.4					82.40	32029	79.70	32029
110302FN	0.2			4.7	69.43	200						
110302EN	0.2			3.4					82.40	02000	79.70	02000
110304SN	0.4	10	0.09	3.1			73.32	121				
110304SN	0.4	15	0.11	3.1			73.32	131	82.40	32214	79.70	32214
110304TN	0.4	20	0.14	4.5	69.43	302						
110304TN	0.4	20	0.15	3.1			73.32	141				
110304SN	0.4	20	0.16	3.1			73.32	151				
110304SN	0.4	25	0.13	3.1							79.70	32229
110304SN	0.4	25	0.18	3.1			73.32	171				
110304FN	0.4			4.5	69.43	202						
110304EN	0.4			3.1					82.40	02200	79.70	02200
110308SN	0.8	10	0.09	2.5			73.32	122				
110308SN	0.8	15	0.11	2.5			73.32	132	82.40	32414	79.70	32414
110308TN	0.8	20	0.14	4.2	69.43	304						
110308SN	0.8	20	0.16	2.5			73.32	152				
110308SN	0.8	25	0.13	3.1					82.40	32229		
110308SN	0.8	25	0.13	2.5					82.40	32429	79.70	32429
110308TN	0.8	25	0.17	2.5			73.32	162				
110308SN	0.8	25	0.18	2.5			73.32	172				
110308FN	0.8			4.2	69.43	204						
110308EN	0.8			2.5			73.32	112	82.40	02400	79.70	02400
160402SN	0.2	15	0.11	3.4					82.40	33614	79.70	33614
160402TN	0.2	20	0.14	5.3	69.43	305						
160404SN	0.2	25	0.13	3.4					82.40	33629		
160402RN	0.2			3.4							79.70	23600
160402FN	0.2			5.3	69.43	205						
160402SN	0.2	25	0.13	3.4							79.70	33629
160404SN	0.4	10	0.09	3.1			73.32	125				
160404SN	0.4	15	0.11	3.1			73.32	135	82.40	33814	79.70	33814
160404TN	0.4	20	0.14	5.0	69.43	306						
160404TN	0.4	20	0.15	3.1			73.32	145				
160404SN	0.4	20	0.16	3.1			73.32	155				
160404RN	0.4			3.4					82.40	23600		
160404SN	0.4	25	0.13	3.1					82.40	33829	79.70	33829
160404SN	0.4	25	0.18	3.1			73.32	175				
160404FN	0.4			5.0	69.43	206						
160404RN	0.4			3.1					82.40	23800	79.70	23800
Cast iron					●		●					
Sintered steels					●		●					
Heat resistant alloys					●		●					
hardened < 45 HRC									●		●	
hardened 46–55 HRC									●		●	
hardened 56–60 HRC									●		●	
hardened 61–65 HRC												

9

VCGW



	-A CTBS10U	-B CTBS20C	-B CTBH15U	-B CTBH15C
	PBC10	-2MC PBC15-S		
				
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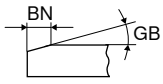
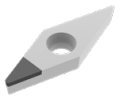
	CBN VCGW	CBN VCGW	CBN VCGW	CBN VCGW
	Y0	Y0	NEW Y0	NEW Y0

ISO	RE mm	GB °	BN mm	LE mm	Article no. 71 160 ... £		Article no. 71 165 ... £		Article no. 71 036 ... £		Article no. 71 035 ... £	
160408SN	0.8	10	0.09	2.5			73.32	**126**				
160408SN	0.8	15	0.11	2.5			73.32	**136**	82.40	**34014**	79.70	**34014**
160408TN	0.8	20	0.14	4.4	69.43	**308**						
160408SN	0.8	20	0.16	2.5			73.32	**156**				
160408SN	0.8	25	0.13	2.5					82.40	**34029**	79.70	**34029**
160408TN	0.8	25	0.17	2.5			73.32	**166**				
160408SN	0.8	25	0.18	2.5			73.32	**176**				
160408EN	0.8			2.5			73.32	**116**				
160408FN	0.8			4.4	69.43	**208**						
160408RN	0.8			2.5					82.40	**24000**	79.70	**24000**
Cast iron					●		●					
Sintered steels					●		●					
Heat resistant alloys					●		●					
hardened < 45 HRC									●		●	
hardened 46–55 HRC									●		●	
hardened 56–60 HRC									●		●	
hardened 61–65 HRC												

VCGW



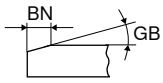
	-A CTBH21U	-B CTBH20C	-A CTBH40U	-B CTBH40C
	PBC25	-2MC PBC25-S	PBC40	-2MC PBC40-S
				
	F	F	F	F
	CBN VCGW	CBN VCGW	CBN VCGW	CBN VCGW
	Y0	Y0	Y0	Y0

ISO	RE mm	GB °	BN mm	LE mm	Article no. 71 160 ... £		Article no. 71 165 ... £		Article no. 71 160 ... £		Article no. 71 165 ... £	
110302TN	0.2	20	0.14	4.7	69.43	**500**						
110302TN	0.2	25	0.12	4.7					69.43	**900**		
110302FN	0.2			4.7	69.43	**400** [1]			69.43	**800**		
110304FN	0.4			4.5	69.43	**402** [1]			69.43	**802**		
110304SN	0.4	20	0.09	3.1			73.32	**251**			73.32	**331**
110304TN	0.4	20	0.14	4.5	69.43	**502**						
110304SN	0.4	25	0.09	3.1							73.32	**351**
110304TN	0.4	25	0.11	3.1							73.32	**341**
110304TN	0.4	25	0.12	4.5					69.43	**902**		
Cast iron												
Sintered steels												
Heat resistant alloys												
hardened < 45 HRC												
hardened 46–55 HRC					●		●		●		●	
hardened 56–60 HRC					●		●		●		●	
hardened 61–65 HRC									●		●	

1) Machining to 60 HRC

→ v_c Page 160–167
Continued on next page

VCGW



ISO	RE	GB	BN	LE	-A CTBH21U PBC25 F CBN VCGW Y0 Article no. 71 160 ... £		-B CTBH20C -2MC PBC25-S F CBN VCGW Y0 Article no. 71 165 ... £		-A CTBH40U PBC40 F CBN VCGW Y0 Article no. 71 160 ... £		-B CTBH40C -2MC PBC40-S F CBN VCGW Y0 Article no. 71 165 ... £	
	mm	°	mm	mm								
110304EN	0.4			3.1			73.32	221				
110304FN	0.4			3.1			73.32	211				
110304TN	0.4	25	0.14	3.1			73.32	261				
110304SN	0.4	25	0.15	3.1			73.32	271				
110304TN	0.4	30	0.14	3.1							73.32	361
110304SN	0.4	35	0.17	3.1							73.32	381
110308FN	0.8			4.2	69.43	404 [1]			69.43	804		
110308SN	0.8	15	0.11	2.5			73.32	242				
110308SN	0.8	20	0.09	2.5			73.32	252			73.32	332
110308TN	0.8	20	0.14	4.2	69.43	504						
110308SN	0.8	25	0.09	2.5							73.32	352
110308TN	0.8	25	0.11	2.5							73.32	342
110308TN	0.8	25	0.14	2.5			73.32	262				
110308SN	0.8	25	0.15	2.5			73.32	272				
110308TN	0.8	30	0.14	2.5							73.32	362
110308SN	0.8	30	0.16	2.5							73.32	372
110308SN	0.8	30	0.18	2.5			73.32	282				
110308SN	0.8	35	0.17	2.5							73.32	382
110308EN	0.8			2.5			73.32	222			73.32	312
160402FN	0.2			5.3	69.43	405 [1]			69.43	805		
160402TN	0.2	20	0.14	5.3	69.43	505						
160402TN	0.2	25	0.12	5.3					69.43	905		
160404FN	0.4			5.0	69.43	406 [1]			69.43	806		
160404SN	0.4	20	0.09	3.1			73.32	255			73.32	335
160404TN	0.4	20	0.14	5.0	69.43	506						
160404SN	0.4	25	0.09	3.1							73.32	355
160404TN	0.4	25	0.11	3.1							73.32	345
160404TN	0.4	25	0.12	5.0					69.43	906		
160404FN	0.4			3.1			73.32	215				
160404EN	0.4			3.1			73.32	225				
160404TN	0.4	25	0.14	3.1			73.32	265				
160404TN	0.4	30	0.14	3.1							73.32	365
160404SN	0.4	35	0.17	3.1							73.32	385
160408FN	0.8			4.4	69.43	408 [1]			69.43	808		
160408SN	0.8	15	0.11	2.5			73.32	246				
160408SN	0.8	20	0.09	2.5			73.32	256			73.32	336
160408TN	0.8	20	0.14	4.4	69.43	508						
160408SN	0.8	25	0.09	2.5							73.32	356
160408TN	0.8	25	0.11	2.5							73.32	346
160408TN	0.8	25	0.12	4.4					69.43	908		
160408TN	0.8	25	0.14	2.5			73.32	266				
160408SN	0.8	25	0.15	2.5			73.32	276				
160408TN	0.8	30	0.14	2.5							73.32	366
160408SN	0.8	30	0.16	2.5							73.32	376
160408SN	0.8	30	0.18	2.5			73.32	286				
160408SN	0.8	35	0.17	2.5							73.32	386
160408EN	0.8			2.5			73.32	226			73.32	316
160412TN	1.2	20	0.14	3.9	69.43	510						

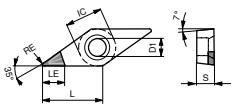
Cast iron				
Sintered steels				
Heat resistant alloys				
hardened < 45 HRC				
hardened 46–55 HRC	●	●	●	●
hardened 56–60 HRC	●	●	●	●
hardened 61–65 HRC			●	●

1) Machining to 60 HRC

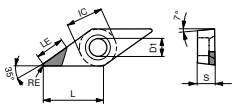
9

VCGW / VCGT

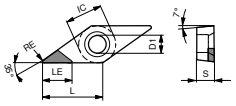
Designation	L	S	D1	IC
	mm	mm	mm	mm
VCG. 1103..	11.1	3.18	2.9	6.35
VCG. 1604..	16.6	4.76	4.4	9.52



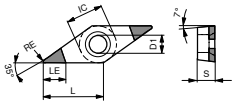
VCGT -A



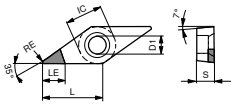
VCGT-L



VCGT-R

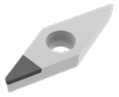
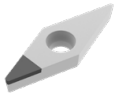
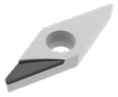
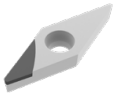


-B (-2MC)

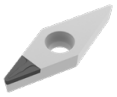
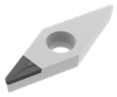
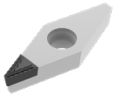
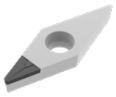


VCGW -A

VCGW / VCGT

	-A CTDMD05	-A CTDPD20	-A CTDPD20	-A CTDPD20	-A CTDPD20
	MDC	PDC	PDC	PDC	PDC
					
	F	F	F	F	F
	DIAMOND VCGW	DIAMOND VCGW	DIAMOND VCGT	DIAMOND VCGT	DIAMOND VCGT
	Y0	Y0	Y0	Y0	Y0
ISO	Article no. 71 160 ...	Article no. 71 160 ...	Article no. 71 062 ...	Article no. 71 063 ...	Article no. 71 064 ...
RE mm / LE mm	£	£	£	£	£
110302FN 0.2 3.0	420.55 050				
110302FN 0.2 4.6		88.03 100	91.24 100		
110304FN 0.4 3.0	420.55 052				
110304FN 0.4 3.9		88.03 102	91.24 102		
110304FRR 0.4 6.5				116.66 102	
110304FLL 0.4 6.5					116.66 102
110308FN 0.8 3.3		91.24 104	91.24 104		
110308FRR 0.8 6.0				116.66 104	
110308FLL 0.8 6.0					116.66 104
160402FN 0.2 5.9		92.93 105	99.80 105		
160404FN 0.4 5.5		94.78 106	99.80 106		
160404FRR 0.4 7.5				125.23 106	
160404FLL 0.4 7.5					125.23 106
160408FN 0.8 5.0		99.80 108	99.80 108		
160408FRR 0.8 7.0				125.23 108	
160408FLL 0.8 7.0					125.23 108
160412FN 1.2 4.5		108.09 110	114.91 110		
160412FRR 1.2 7.0				133.51 110	
160412FLL 1.2 7.0					133.51 110
Steel					
Stainless steel					
Cast iron					
Non ferrous metals	●	●	●	●	●
Heat resistant alloys	○				

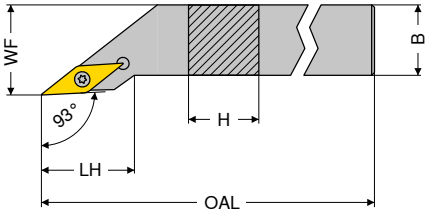
VCGT

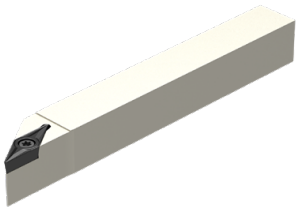
			-A-CB1 CTDPD20		-A-CB1 CTDPS30		-A-CB2 CTDPS30		-A-CB3 CTDPU20		-A-CB1 CTDCD10		-A-CB2 CTDCD10	
			-CB1 PDC		-CB1 PDC-S		-CB2 PDC-S		-CB3 PDC-S		-CB1 CVD		-CB2 CVD	
														
			F DIAMOND VCGT Y0		F DIAMOND VCGT Y0		M DIAMOND VCGT Y0		R DIAMOND VCGT Y0		F DIAMOND VCGT Y0		M DIAMOND VCGT Y0	
ISO	RE	LE	Article no. 71 330 ...		Article no. 71 330 ...		Article no. 71 331 ...		Article no. 71 332 ...		Article no. 71 330 ...		Article no. 71 331 ...	
	mm	mm	£		£		£		£		£		£	
110302FN	0.2	3.0									142.80	312		
110302EN	0.2	3.0											142.80	312
110302EN	0.2	4.6					115.71	212						
110302FN	0.2	4.6	119.32	112										
110304FN	0.4	3.0									142.80	314		
110304EN	0.4	3.0											142.80	314
110304EN	0.4	3.9					119.32	214	99.48	214				
110304FN	0.4	3.9	119.32	114	119.32	214								
160404EN	0.4	3.0											142.84	334
160404EN	0.4	5.5					129.68	234	103.80	234				
160404FN	0.4	5.5	129.68	134	129.68	234								
160408EN	0.8	3.0											159.10	338
160408EN	0.8	5.0					142.80	238						
160408FN	0.8	5.0	142.80	138	142.80	238								
160412EN	1.2	4.5					151.84	242						

Steel								
Stainless steel								
Cast iron								
Non ferrous metals	●		●		●		●	
Heat resistant alloys			○		○		○	

9

MaxiLock-S – SVJC 93° – Toolholder with screw clamping





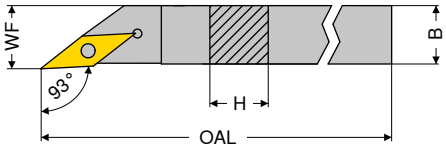
Illustrations show right-hand versions

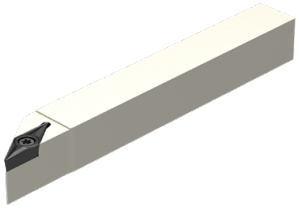
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 697 ...		Right-hand 2A/24 Article no. 70 696 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
SVJC R/L 1212 F11	12	12	80	21.5	16	1,2	VC.. 1103	72.06	012	72.06	012
SVJC R/L 1616 H11	16	16	100	21.5	20	1,2	VC.. 1103	79.97	016	79.97	016
SVJC R/L 2020 K11	20	20	125	23.0	25	1,2	VC.. 1103	91.73	020	91.73	020
SVJC R/L 2525 M11	25	25	150	25.5	32	1,2	VC.. 1103	98.36	025	98.36	025
SVJC R/L 2020 K16	20	20	125	29.5	25	3,2	VC.. 1604	91.73	120	91.73	120
SVJC R/L 2525 M16	25	25	150	32.5	32	3,2	VC.. 1604	98.36	125	98.36	125
SVJC R/L 3225 P16	32	25	170	32.5	32	3,2	VC.. 1604	106.09	132	106.09	132

Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat V Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
Insert	£		£		£		£		£	
VC.. 1103	10.30	110			2.15	112				
VC.. 1604			7.53	398	2.85	113	9.15	107	4.22	171

MaxiLock-S – SVJC 93° – Toolholder with screw clamping



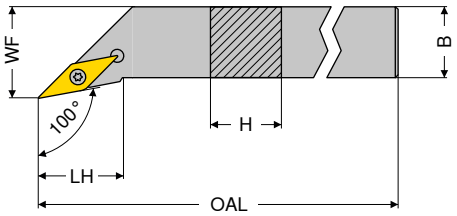


Illustrations show right-hand versions

ISO designation	H	B	OAL	WF	torque moment	Insert	Left-hand X0 Article no. 70 697 ...		Right-hand X0 Article no. 70 696 ...	
	mm	mm	mm	mm	Nm		£		£	
SVJC R/L 0808 H11	8	8	100	8	1,2	VC.. 1103	182.23	008	182.23	008
SVJC R/L 1010 H11	10	10	100	10	1,2	VC.. 1103	182.23	010	182.23	010
SVJC R/L 1212 H11	12	12	100	12	1,2	VC.. 1103	216.67	112	216.67	112
SVJC R/L 1616 K11	16	16	125	16	1,2	VC.. 1103	227.24	116	227.24	116

Spare parts	Y7 Key D Article no. 80 950 ...		2A Clamping screw Article no. 70 950 ...	
Insert	£		£	
VC.. 1103	10.30	110	2.15	112

MaxiLock-S – SVZC 100° – Toolholder with screw clamping

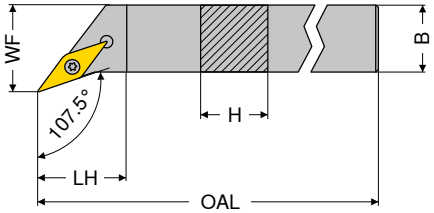


Illustrations show right-hand versions

ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 701 ...		Right-hand 2A/24 Article no. 70 700 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
SVZC R/L 2525 M16	25	25	150	28.5	32	3,2	VC.. 1604	98.36	025	98.36	025

Spare parts		2A/28 Combination Key Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat V Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.		£		£		£		£	
70 701 025 / 70 700 025	T15/SW	7.53	398	M3,5x11	2.85	113	9.15	107	M3,5	4.22	171

MaxiLock-S – SVHC 107.5° – Toolholder with screw clamping



Illustrations show right-hand versions

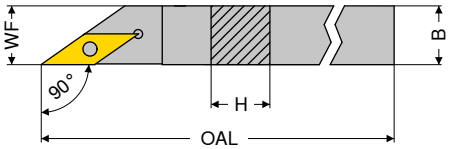
ISO designation	H	B	OAL	LH	WF	torque moment	Insert	Left-hand 2A/24 Article no. 70 705 ...		Right-hand 2A/24 Article no. 70 704 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
SVHC R/L 1212 F11	12	12	80	11.4	16	1,2	VC.. 1103	72.06	012	72.06	012
SVHC R/L 1616 H11	16	16	100	11.4	20	1,2	VC.. 1103	79.97	016	79.97	016
SVHC R/L 2020 K11	20	20	125	14.6	25	1,2	VC.. 1103	91.73	020	91.73	020
SVHC R/L 2525 M11	25	25	150	20.9	32	1,2	VC.. 1103	98.36	025	98.36	025
SVHC R/L 2020 K16	20	20	125	13.2	25	3,2	VC.. 1604	91.73	120	91.73	120
SVHC R/L 2525 M16	25	25	150	19.6	32	3,2	VC.. 1604	98.36	125	98.36	125
SVHC R/L 3225 P16	32	25	170	19.6	32	3,2	VC.. 1604	106.09	132	106.09	132
SVHC R/L 2525 M22	25	25	150	19.6	32	5	VC.. 2205	98.36	225	98.36	225
SVHC R/L 3225 P22	32	25	170	19.6	32	5	VC.. 2205	106.09	232	106.09	232

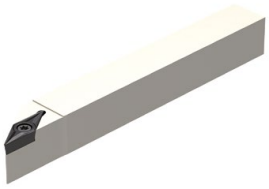
Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts		Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat V Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.		£		£		£		£		£	
70 704 012 / 70 705 012		10.30	110			2.15	112				
70 704 016 / 70 705 016		10.30	110			2.15	112				
70 704 020 / 70 705 020		10.30	110			2.15	112				
70 704 025 / 70 705 025		10.30	110			2.15	112				
70 704 120 / 70 705 120				7.53	398	2.85	113	9.15	107	4.22	171
70 704 125 / 70 705 125				7.53	398	2.85	113	9.15	107	4.22	171
70 704 132 / 70 705 132				7.53	398	2.85	113	9.15	107	4.22	171
70 704 225 / 70 705 225				7.53	398	2.34	114	12.14	109	4.22	170
70 704 232 / 70 705 232				7.53	398	2.34	114	12.14	109	4.22	170

MaxiLock-S – SVAC 90° – Toolholder with screw clamping

▲ for sliding head lathes





Illustrations show right-hand versions

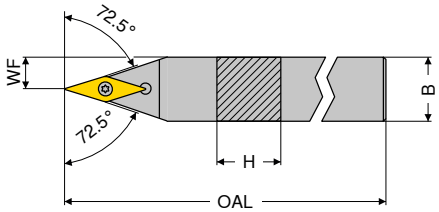
ISO designation	H mm	B mm	OAL mm	WF mm	torque moment Nm	Insert	Left-hand X0 Article no. 70 695 ...	£		Right-hand X0 Article no. 70 694 ...	£	
SVAC R/L 0808 H11	8	8	100	8	1,2	VC.. 1103		182.23	008		182.23	008
SVAC R/L 1010 H11	10	10	100	10	1,2	VC.. 1103		182.23	010		182.23	010
SVAC R/L 1212 H11	12	12	100	12	1,2	VC.. 1103		216.67	012		216.67	012

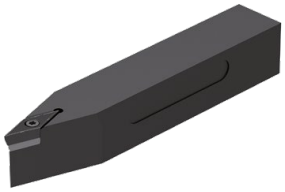
Key D

Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ...	£		2A Article no. 70 950 ...	£	
70 694 008 / 70 695 008	T08		10.30	110	M2,5x6	2.15	112
70 694 010 / 70 695 010	T08		10.30	110	M2,5x6	2.15	112
70 694 012 / 70 695 012	T08		10.30	110	M2,5x6	2.15	112

MaxiLock-S – SVVC 72.5° – Toolholder with screw clamping





ISO designation	H mm	B mm	OAL mm	WF mm	torque moment Nm	Insert	Neutral 2A/24 Article no. 70 692 ...	£	
SVVC N 1212 F11	12	12	80	6.0	1,2	VC.. 1103		72.06	012
SVVC N 1616 H11	16	16	100	8.0	1,2	VC.. 1103		79.97	016
SVVC N 2020 K11	20	20	125	10.0	1,2	VC.. 1103		91.73	020
SVVC N 2525 M11	25	25	150	12.5	1,2	VC.. 1103		98.36	025
SVVC N 2020 K16	20	20	125	10.0	3,2	VC.. 1604		91.73	120
SVVC N 2525 M16	25	25	150	12.5	3,2	VC.. 1604		98.36	125
SVVC N 3225 P16	32	25	170	12.5	3,2	VC.. 1604		106.09	132

Key D

Combination Key

Clamping screw

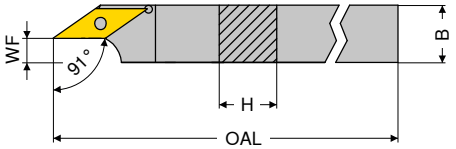
Solid Carbide Seat V

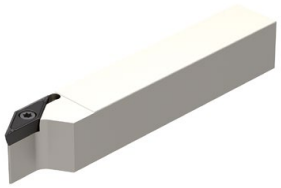
Threaded sleeve

Spare parts for Article no.	Y7 Article no. 80 950 ...	£		2A/28 Article no. 70 950 ...	£		2A Article no. 70 950 ...	£		2A/28 Article no. 70 950 ...	£		2A/28 Article no. 70 950 ...	£	
70 692 012		10.30	110					2.15	112						
70 692 016		10.30	110					2.15	112						
70 692 020		10.30	110					2.15	112						
70 692 025		10.30	110					2.15	112						
70 692 120					7.53	398		2.85	113		9.15	107		4.22	171
70 692 125					7.53	398		2.85	113		9.15	107		4.22	171
70 692 132					7.53	398		2.85	113		9.15	107		4.22	171

MaxiLock-S – SVXC 91° – Toolholder with screw clamping

▲ for sliding head lathes





Illustrations show right-hand versions

ISO designation	H	B	OAL	WF	torque moment	Insert	Left-hand X0 Article no. 70 691 ...		Right-hand X0 Article no. 70 690 ...	
	mm	mm	mm	mm	Nm		£		£	
SVXC R/L 1010 H11	10	10	100	3.4	1,2	VC.. 1103	182.23	**010**	182.23	**010**
SVXC R/L 1212 H11	12	12	100	5.4	1,2	VC.. 1103	216.67	**012**	216.67	**012**
SVXC R/L 1616 K11	16	16	125	8.9	1,2	VC.. 1103	227.24	**016**	240.60	**016**
SVXC R/L 2020 K16	20	20	125	10.4	3,2	VC.. 1604	261.91	**020**	261.91	**020**

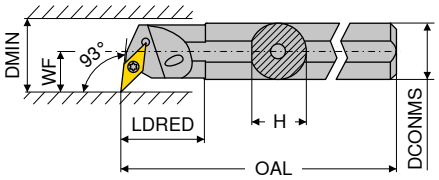
Key D

Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ... £		2A Article no. 70 950 ... £	
70 691 010 / 70 690 010	T08	10.30	**110**	M2,5x6	2.15	**112**
70 691 012 / 70 690 012	T08	10.30	**110**	M2,5x6	2.15	**112**
70 691 016 / 70 690 016	T08	10.30	**110**	M2,5x6	2.15	**112**
70 691 020 / 70 690 020	T15	12.26	**113**	M3,5x11	2.85	**113**

9

MaxiLock-S – SVUC 93° – Boring bar with screw clamping



Illustrations show right-hand versions

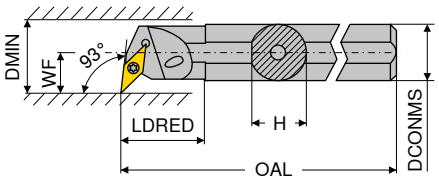
ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 745 ...		Right-hand 2A/24 Article no. 70 744 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
A16M SVUC R/L 11	16	15.0	150	29	11	20	1,2	VC.. 1103	114.45	**216**	114.45	**216**
A20Q SVUC R/L 11	20	18.5	180	32	13	25	1,2	VC.. 1103	131.91	**220**	131.91	**220**
A25R SVUC R/L 11	25	23.0	200	36	17	32	1,2	VC.. 1103	161.64	**225**	161.64	**225**
A32S SVUC R/L 16	32	30.0	250	50	22	40	3,2	VC.. 1604	193.91	**232**	193.91	**232**
A40T SVUC R/L 16	40	38.0	300	60	27	50	3,2	VC.. 1604	225.00	**240**	225.00	**240**

Tool holders with HSK-T interface can be found in → **Chapter 16.**

Spare parts	Y7 Key D Article no. 80 950 ...		2A/28 Combination Key Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat V Article no. 70 950 ...		2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.	£		£		£		£		£	
70 744 216 / 70 745 216	10.30	**110**			2.15	**112**				
70 744 220 / 70 745 220	10.30	**110**			2.15	**112**				
70 744 225 / 70 745 225	10.30	**110**			2.15	**112**				
70 744 232 / 70 745 232			7.53	**398**	2.85	**113**	9.15	**107**	4.22	**171**
70 744 240 / 70 745 240			7.53	**398**	2.85	**113**	9.15	**107**	4.22	**171**

MaxiLock-S – SVUC 93° – Boring bar with screw clamping

▲ with carbide core



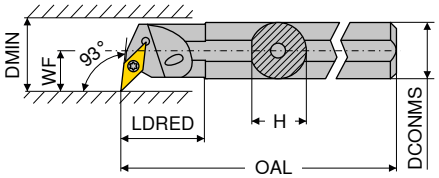
Illustrations show right-hand versions

ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 747 ...		Right-hand 2A Article no. 70 746 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
E-A16M SVUC R/L 11	16	15	150	16.5	11	21	1,2	VC.. 1103	296.45	**216**	296.45	**216**
E-A20Q SVUC R/L 11	20	18	180	20.5	13	25	1,2	VC.. 1103	422.27	**220**	422.27	**220**
E-A25R SVUC R/L 11	25	23	200	25.5	17	31	1,2	VC.. 1103	716.82	**225**	716.82	**225**
E-A25R SVUC R/L 16	25	23	200	25.5	17	31	3,2	VC.. 1604	716.82	**325**	716.82	**325**
E-A32S SVUC R/L 16	32	30	250	32.5	22	39	3,2	VC.. 1604	773.09	**232**	773.09	**232**

Spare parts	Y7 Key D Article no. 80 950 ...		2A Clamping screw Article no. 70 950 ...	
for Article no.	£		£	
70 746 216 / 70 747 216	10.30	**110**	2.15	**112**
70 746 220 / 70 747 220	10.30	**110**	2.15	**112**
70 746 225 / 70 747 225	10.30	**110**	2.15	**112**
70 746 325 / 70 747 325	12.26	**113**	2.85	**449**
70 746 232 / 70 747 232	12.26	**113**	2.85	**449**

MaxiLock-S – SVUC 93° – Boring bar with screw clamping

▲ Type: Solid carbide



Illustrations show right-hand versions

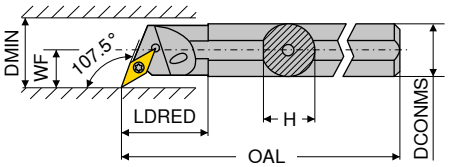
ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 747 ...		Right-hand 2A/24 Article no. 70 746 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
E16R SVUC R/L 11	16	15.0	200	34	11	20	1,2	VC.. 1103	438.27	**016**	438.27	**016**
E20S SVUC R/L 11	20	18.5	250	38	13	25	1,2	VC.. 1103	519.82	**020**	519.82	**020**
E25T SVUC R/L 11	25	23.0	300	43	17	32	1,2	VC.. 1103	910.00	**025**	910.00	**025**

Key D

Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ... £		2A Article no. 70 950 ... £	
70 746 016 / 70 747 016	T08	10.30	**110**	M2,5x6	2.15 **112**
70 746 020 / 70 747 020	T08	10.30	**110**	M2,5x6	2.15 **112**
70 746 025 / 70 747 025	T08	10.30	**110**	M2,5x6	2.15 **112**

MaxiLock-S – SVQC 107.5° – Boring bar with screw clamping



Illustrations show right-hand versions

ISO designation	DCONMS	H	OAL	LDRED	WF	DMIN	torque moment	Insert	Left-hand 2A/24 Article no. 70 749 ...		Right-hand 2A/24 Article no. 70 748 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
A16M SVQC R/L 11	16	15.0	150	29	11	20	1,2	VC.. 1103	114.45	**216**	114.45	**216**
A20Q SVQC R/L 11	20	18.5	180	32	13	25	1,2	VC.. 1103	131.91	**220**	131.91	**220**
A25R SVQC R/L 11	25	23.0	200	36	17	32	1,2	VC.. 1103	161.64	**225**	161.64	**225**
A32S SVQC R/L 16	32	30.0	250	50	22	40	3,2	VC.. 1604	193.91	**232**	193.91	**232**
A40T SVQC R/L 16	40	38.0	300	60	27	50	3,2	VC.. 1604	225.00	**240**	225.00	**240**

Tool holders with HSK-T or PSC interface can be found in→ **Chapter 16.**

Key D

Combination Key

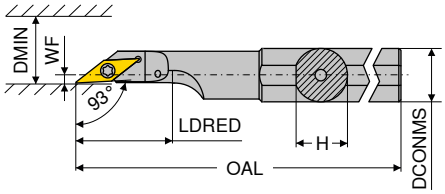
Clamping screw

Solid Carbide Seat V

Threaded sleeve

Spare parts for Article no.	Y7 Article no. 80 950 ... £		2A/28 Article no. 70 950 ... £		2A Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £		2A/28 Article no. 70 950 ... £	
70 748 216 / 70 749 216	10.30	**110**			2.15	**112**				
70 748 220 / 70 749 220	10.30	**110**			2.15	**112**				
70 748 225 / 70 749 225	10.30	**110**			2.15	**112**				
70 748 232 / 70 749 232			7.53	**398**	2.85	**113**	9.15	**107**	4.22	**171**
70 748 240 / 70 749 240			7.53	**398**	2.85	**113**	9.15	**107**	4.22	**171**

MaxiLock-S – SVJC 93° – Boring bar with screw clamping



Illustrations show right-hand versions

ISO designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 2A Article no. 70 727 ... £		Right-hand 2A Article no. 70 726 ... £	
A16M SVJC R/L 11	16	15	150	30	2	22	1,2	VC.. 1103	103.91	**216**	103.91	**216**
A20M SVJC R/L 11	20	19	150	38	2	25	1,2	VC.. 1103	103.91	**220**	103.91	**220**
A25M SVJC R/L 16	25	24	150	44	2	28	3,2	VC.. 1604	103.91	**225**	103.91	**225**

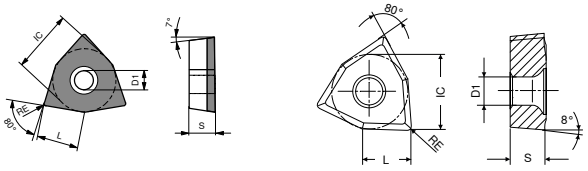
Key D

Clamping screw

Spare parts for Article no.	Y7 Article no. 80 950 ... £		2A Article no. 70 950 ... £	
70 727 216 / 70 726 216	10.30	**110**	2.15	**112**
70 727 220 / 70 726 220	10.30	**110**	2.15	**112**
70 727 225 / 70 726 225	12.26	**113**	3.09	**174**

WCGT / WCGW

Designation	L	S	D1	IC
	mm	mm	mm	mm
WCGW 0201..	2.70	1.58	2.3	3.97
WCGT 0201..	2.71	1.59	2.1	3.97



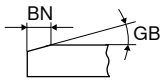
WCGW

WCGT

		-SF TCM10	-SF CTPP430	-SF H216T
		-ZF CWC10	-ZF HCN2430	-ZF CWK26
			DRAGONSKIN	
		F	F	F
		CERMET		
		WCGT	WCGT	WCGT
		1A/78	1A/08	1A/08
ISO	RE	Article no. 70 287 ...	Article no. 70 287 ...	Article no. 70 287 ...
	mm	£	£	£
020102EN	0.2	14.75 900	15.88 450	12.13 600
020104EN	0.4	14.75 902	15.88 452	12.13 602
Steel		●	●	
Stainless steel			●	
Cast iron		○	○	○
Non ferrous metals			○	●
Heat resistant alloys			●	○

9

WCGW



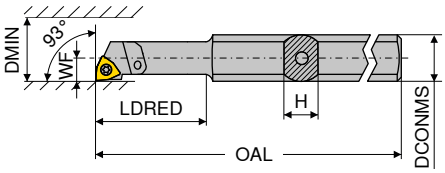
ISO	RE	GB	BN	LE	-F CTBS10U PBC10 F CBN WCGW Y0 Article no. 71 154 ... £		-F CTBH15U F CBN WCGW NEW Y0 Article no. 71 037 ... £		-F CTBH21U PBC25 F CBN WCGW Y0 Article no. 71 154 ... £		-F CTBH40U PBC40 F CBN WCGW Y0 Article no. 71 154 ... £	
	mm	°	mm	mm								
020102EN	0.2			2.7			159.55	**00200**				
020102SN	0.2	15	0.11	2.7			159.55	**30214**				
020102TN	0.2	20	0.14	2.7					200.91	**500**		
020102TN	0.2	25	0.12	2.7							200.91	**900**
020102FN	0.2			2.7	200.91	**200**			200.91	**400** [1]	200.91	**800**
020104SN	0.4	15	0.11	2.7			159.55	**30414**				
020104TN	0.4	20	0.14	2.7					200.91	**502**		
020104FN	0.4			2.7					200.91	**402** [1]		
020104EN	0.4			2.7			159.55	**00400**				
020104TN	0.4	25	0.12	2.7							200.91	**902**
Cast iron					●							
Sintered steels					●							
Heat resistant alloys					●							
hardened < 45 HRC							●					
hardened 46–55 HRC							●		●		●	
hardened 56–60 HRC							●		●		●	
hardened 61–65 HRC											●	

1) Machining to 60 HRC

WCGW

ISO	RE	LE	-F CTDPD20 PDC F DIAMOND WCGW Y0 Article no. 71 154 ... £	
	mm	mm		
020102FN	0.2	2.7	199.17	**100**
020104FN	0.4	2.7	199.17	**102**
Steel				
Stainless steel				
Cast iron				
Non ferrous metals			●	
Heat resistant alloys				

MaxiLock-S – SWUC 93° – Boring bar with screw clamping



Illustrations show right-hand versions

ISO designation	H	OAL	LDRED	WF	DCONMS	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 731 ...		Right-hand 2A Article no. 70 730 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
A0508H SWUC R/L 02	7	100	24	2.9	8	5.8	0,4	WC.. 0201..	125.82	**005**	125.82	**005**
A0608H SWUC R/L 02	7	100	24	3.9	8	7.8	0,4	WC.. 0201..	125.82	**006**	125.82	**006**
SET							0,4	WC.. 0201..	227.82	**999**	227.82	**999**

Set includes boring bars 70 731 005 and 70 731 006 or 70 730 005 and 70 730 006

Key D

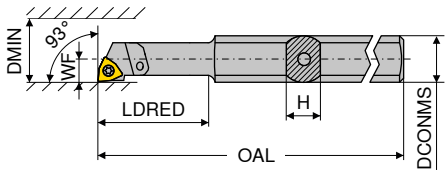
Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ... £		2A/28 Article no. 70 950 ... £	
70 731 005 / 70 730 005	T06	11.15	**108**	M1,8x3,4	3.35 **334**
70 731 006 / 70 730 006	T06	11.15	**108**	M1,8x3,4	3.35 **334**

9

MaxiLock-S – SWUC 93° – Boring bar with screw clamping

▲ with carbide core



Illustrations show right-hand versions

ISO designation	H	OAL	LDRED	WF	DCONMS	DMIN	torque moment	Insert	Left-hand 2A Article no. 70 743 ...		Right-hand 2A Article no. 70 742 ...	
	mm	mm	mm	mm	mm	mm	Nm		£		£	
E-A0508H SWUC R/L 02	7	100	24	2.9	8	5.8	0,4	WC.. 0201..	140.09	**005**	140.09	**005**
E-A0608H SWUC R/L 02	7	100	24	3.9	8	7.8	0,4	WC.. 0201..	140.09	**006**	140.09	**006**
SET							0,4	WC.. 0201..	278.36	**999**	278.36	**999**

Set includes boring bars 70 743 005 and 70 743 006 or 70 742 005 and 70 742 006

Key D

Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ... £		2A/28 Article no. 70 950 ... £	
70 743 005 / 70 742 005	T06	11.15	**108**	M1,8x3,4	3.35 **334**
70 743 006 / 70 742 006	T06	11.15	**108**	M1,8x3,4	3.35 **334**

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data values for fine machining (F)

Chip breaker:	-CF	-F32	-CF20	-F30	-F40	//	-F23	-M25	-F43	-SF	-SMF	-CF05	-CF55
Chip breaker:	(-CF)	(-F32)	(-NF12)	(-NF23)	(-F40)	//	(-F23)	(-PF23)	(-F43)	(-ZF)	(-SMF)	(-PF14)	(-PF15)

	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN			
	CTEP110 (DCC1110)	TCM407 (CWC407)	TCM10 (CWC10)	CTCK110 (DCX3110)	CTCK120 (HCF3120)	CTCP115 (HCX1115)	CTCP125 (HCX1125)	CTCP135 (HCR1135)	CTPM125 (HCN2125)	CTPX710 (CTPX710)	CTP2120 (CCN2120)	CTC2135 (CWN2135)
Index	v_c in m/min											
1.1	**300–370**	**290–340**	**230–270**	**270–340**	**230 –280**	**260–350**	**200–270**	**180–220**	120–260	**120–170**		170–220
1.2	**400–520**	**340–430**	**280–350**	**270–350**	**230 –310**	**280–360**	**230–280**	**190–240**	130–220	**140–200**		190–230
1.3	**350–400**	**300–370**	**280–350**	**250–340**	**210–280**	**220–350**	**240–290**	**170–210**	130–250	**110–160**		160–200
1.4	**300–370**	**240–310**	**170–330**	**250–330**	**210–270**	**240–320**	**200–270**	**180–220**	130–220	**90–150**		170–230
1.5	**400–440**	**230–280**	**180–340**	**240–320**	**200–260**	**230–300**	**220–260**	**160–210**	100–180	**90–150**		150–200
1.6	**350–410**	**230–270**	**170–320**	**230–310**	**190–270**	**210–270**	**210–250**	**170–230**	100–180	**100–130**		160–220
1.7	**250–300**	**250–310**	**180–280**	**200–280**	**160–230**	**240–320**	**210–280**	**170–210**	60–180	**80–140**		150–200
1.8	**300–360**	**230–290**	**160–250**	**210–270**	**170–220**	**200–280**	**190–240**	**150–190**	60–180	**80–130**		140–180
1.9	**200–320**			**230–310**	**190–260**	**200–300**	**170–240**	**170–200**	80–180	**80–120**		170–200
1.10	**250–320**	**250–310**	**180–270**	**230–290**	**190 –240**	**220–280**	**180–240**	**150–200**	100–180	**80–120**		140–170
1.11	**240–310**	**230–290**	**170–250**	**220–290**	**180–240**	**200–270**	**170–240**	**140–180**	100–180	**80–140**		140–180
1.12	**240–310**	**270–320**	**190–270**	**250–310**	**210–260**	**210–300**	**200–270**	**160–200**	80–180	**130–220**		160–200
1.13				**210–270**	**170–220**	**180–270**	**170–240**	**140–190**	60–180	**80–120**		130–180
1.14				**220–280**	**180–230**	**180–250**	**180–230**	**130–180**	80–180	**70–130**		130–180
1.15	**260–310**	**210–250**	**170–250**	**200–290**	**170–240**	**160–250**	**150–230**	**120–160**	80–150	**70–130**		120–160
1.16	**260–310**	**210–250**	**170–250**	**200–280**	**170–230**	**150–240**	**140–220**	**120–170**	80–150	**70–100**		110–160
2.1	250–320			190–310		200–280	200–280	160–210	**200–280**	**90–260**	**190–260**	**160–240**
2.2	250–320			190–320		200–280	200–280	160–210	**200–280**	**80–240**	**200–250**	**180–250**
2.3	300–350			180–300		190–260	190–260	130–200	**190–260**	**70–240**	**190–240**	**150–240**
2.4	210–250			200–300		190 -240	190–240	120–200	**190–240**	**40–220**	**140–210**	**160–230**
2.5								100–150	**100–220**	**60–230**	**110–190**	**150–230**
2.6	210–250							60–80	**100–220**	**40–170**	**80–160**	**120–170**
2.7	210–250							60–80	**40–100**	**40–160**	**80–140**	**120–160**
3.1	340–480			**260–310**	**220–260**	220–280	200–260			140–240	140–180	
3.2	260–360			**260–330**	**230–280**	200–270	190–250			100–190	110–170	
3.3	360–520	280–430	220–300	**330–450**	**320–410**	180–250	170–240			130–260	130–180	
3.4	300–400	250–380	180–250	**350–460**	**340–420**	180–260	140–190			100–250	160–240	
3.5	330–500	250–400	250–350	**380–460**	**360– 420**	260–320	240–290			160–240	160–230	
3.6	180–320	180–320	160–250	**270–370**	**250–330**	200– 320	170–290			130–200	130–190	
3.7	330–500	250–400	250–350	**350–430**	**320– 390**	240–320	240–290			150–240	150–220	
3.8	180–320	180–320	160–250	**260–350**	**240–310**	210–320	170–290			140–210	140–180	
4.1										300–3200	100–600	
4.2										200–2800	100–600	
4.3										400–2000	100–400	
4.4										40–2000	100–400	
4.5										200–1200	100–400	
4.6										250–1000	100–400	
4.7										200–1000	100–400	
4.8										200–1000	100–400	
4.9										200–1000	100–400	
4.10										200–1000	100–400	
4.11										150–800		
4.12										150–500		
4.13										100–250		
4.14										80–200		
4.15										80–220		
4.16												
4.17												
4.18										80–120		
4.19										100–140		
5.1								20–40		**30–140**	**15–30**	**20–40**
5.2								20–40		**30–110**	**15–40**	**20–40**
5.3								8–25		**30–110**	**20–35**	**15–35**
5.4								8–25		**30–110**	**13–30**	**15–35**
5.5								4–15		**30–110**	**15–35**	**8–25**
5.6								4–15		**30–110**	**15–35**	**4–15**
5.7								4–15		**30–110**	**60–100**	**4–15**
5.8								4–12		**30–110**	**20–40**	**4–15**
5.9								80–130		**30–140**	**80–140**	**80–130**
5.10								15–35		30–140	**25–45**	**15–35**
5.11								15–35		30–120	**25–45**	**15–35**
6.1												
6.2												
6.3												
6.4												
6.5												

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

9

Cutting data values for medium machining (M)

Chip breaker:	-M30	-M36	-M50	-M60	-M34	-M40	-42	-M42	-M52	-M70 // -M55	-SM	-SMQ	-M81
Chip breaker:	(-NM23)	(-XU)	(-NM15)	(-NM26)	(-M34)	(-M40)	(-42)	(-M42)	(-M52)	(-NM19) // (-PF26)	(-ZM)	(-SMQ)	(-M81)
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN					DRAGONSKIN	DRAGONSKIN	
	CTCK110 (DCX3110)	CTCK120 (HCF3120)	CTCP115 (HCX1115)	CTCP125 (HCX1125)	CTCP135 (HCR1135)	CTPM125 (HCN2125)	CTP2120 (CCN2120)	CTC2135 (CWN2135)	CWN2120 (CWN2120)		CTP5110 (HCN5110)	CTP5115 (HCN5115)	
Index	v_c in m/min												
1.1	**260–330**	**220–270**	**250–340**	**200–260**	**170–210**	120-250		170-210					
1.2	**260–340**	**220–300**	**270–350**	**230–280**	**180–230**	120-220		180-230					
1.3	**230–320**	**190–260**	**220–350**	**240–290**	**160–200**	120-250		150-220					
1.4	**240–310**	**200–250**	**240–310**	**200–250**	**170–210**	130-200		170-210					
1.5	**230–310**	**190–250**	**230–300**	**210–250**	**150–200**	100-170		150-200					
1.6	**220–300**	**180–260**	**210–270**	**190–240**	**160–220**	100-170		150-210					
1.7	**190–270**	**150–210**	**240–300**	**200–270**	**160–200**	50- 160		150-200					
1.8	**190–250**	**150–200**	**190–270**	**180–230**	**140–180**	50- 160		130-170					
1.9	**210–290**	**170–240**	**190–280**	**160–220**	**160–190**	60- 160		160-190					
1.10	**210–270**	**170–220**	**200–260**	**180–230**	**140–190**	100-180		130-170					
1.11	**210–280**	**170–230**	**180–260**	**170–240**	**130–170**	80-180		130-170					
1.12	**230–290**	**190–240**	**200–280**	**190–260**	**150–200**	70-170		150-190					
1.13	**190–260**	**150–210**	**180–250**	**170–230**	**130–180**	60-170		120-180					
1.14	**210–270**	**170–220**	**170–230**	**170–210**	**120–160**	70-160		120-170					
1.15	**180–270**	**150–220**	**150–240**	**130–220**	**110–150**	60-120		100-150					
1.16	**180–260**	**150–210**	**130–220**	**130–220**	**110–150**	60-120		100-150					
2.1	150-270		200-280	200-280	150-210	**120–280**	**180–240**	**150–230**	**130–200**		180-260	180-260	
2.2	150-260		200-280	200-280	150-200	**120–280**	**180–230**	**170–250**	**120–220**		170-240	170-240	
2.3	140-250		190-260	190-260	120-200	**120–260**	**170–220**	**140–220**	**100–160**		170-220	170-220	
2.4	160-260		190 -240	190-240	110-190	**120–240**	**130–210**	**140–210**	**80–180**		130-220	130-220	
2.5					90-150	**100–220**	**100–180**	**120–210**	**90–140**		100-170	100-170	
2.6					60-80	**100–220**	**70–140**	**100–140**	**80–150**		80-150	80-150	
2.7					60-80	**40–100**	**70–110**	**100–140**	**80–120**		80-150	80-150	
3.1	**220–280**	**170–240**	140-240	120-210			120-170						
3.2	**210–270**	**170–230**	160-250	160-200			100-150						
3.3	**300–350**	**260–310**	150-220	150-200			120-170						
3.4	**270–330**	**230–320**	140-200	130-190			150-240						
3.5	**290–370**	**250–330**	200-260	160-230			150-220						
3.6	**250–310**	**210–270**	180-240	150-210			110-170						
3.7	**290–370**	**250–330**	180-280	160-230			140-220						
3.8	**250–370**	**210–330**	160-260	150-210			120-170						
4.1							100-600		400-2000				
4.2							100-600		400-2000				
4.3							100-400		400-2000				
4.4							100-400		200-1200				
4.5							100-400		200-1000				
4.6							100-400		250-1000				
4.7							100-400		250-1000				
4.8							100-400		250-1000				
4.9							100-400		250-1000				
4.10							100-400		250-1000				
4.11									150-800				
4.12									150-800				
4.13													
4.14													
4.15													
4.16													
4.17													
4.18													
4.19													
5.1					20-40		**15–30**	**20–40**			**30–120**		
5.2					20-40		**15–40**	**20–40**				**30–90**	
5.3					8-25		**20–35**	**15–35**				**30–90**	
5.4					8-25		**13–30**	**15–35**				**30–90**	
5.5					4-15		**15–35**	**8–25**				**30–90**	
5.6					4-15		**15–35**	**4–15**				**30–90**	
5.7					4-15		**60–100**	**4–15**				**30–90**	
5.8					4-12		**20–40**	**4–15**			**30–120**		
5.9					80-130	80-130	**80–140**	**80–130**			**30–120**		
5.10					15-35	25-45	**25–45**	**15–35**			**30–120**		
5.11					15-35		**25–45**	**15–35**			**30–120**		
6.1													
6.2													
6.3													
6.4													
6.5													

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data values for rough machining (R)

Chip breaker: .NMA -R28 -R58 -R88
Chip breaker: (.NMA) (-NR14) (-NR17) (-NR19)

	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
	CTCK110 (DCX3110)	CTCK120 (HCF3120)	CTCP115 (HCX1115)	CTCP125 (HCX1125)	CTCP135 (HCR1135)
Index	v_c in m/min				
1.1			**220–320**	**180–240**	**160–200**
1.2			**270–350**	**230–280**	**170–220**
1.3			**220–350**	**240–290**	**150–190**
1.4			**240–310**	**180–250**	**160–200**
1.5			**230–300**	**200–240**	**140–190**
1.6			**210–270**	**190–240**	**150–210**
1.7			**240–300**	**180–260**	**150–190**
1.8			**190–270**	**150–210**	**130–170**
1.9			**190–280**	**140–200**	**150–180**
1.10			**200–260**	**170–220**	**130–180**
1.11			**180–260**	**160–220**	**120–160**
1.12			**200–280**	**170–240**	**140–190**
1.13			**180–250**	**160–230**	**120–170**
1.14			**170–230**	**150–190**	**110–150**
1.15			**150–240**	**150–210**	**100–140**
1.16			**130–220**	**150–190**	**100–140**
2.1			200–280	200–280	140–200
2.2			200–280	200–280	140–190
2.3			190–260	190–260	110–190
2.4			190 –240	190–240	100–180
2.5					80–150
2.6					55–75
2.7					55–75
3.1	**220–280**	**170–240**	140–220	130–180	
3.2	**210–270**	**170–230**	160–230	120–170	
3.3	**300–350**	**260–310**	150–200	130–180	
3.4	**270–330**	**230–320**	140–180	100–160	
3.5	**290–370**	**250–330**	200–240	150–200	
3.6	**250–310**	**210–270**	180–220	130–180	
3.7	**290–370**	**250–330**	180–260	150–200	
3.8	**250–370**	**210–330**	160–240	130–180	
4.1					
4.2					
4.3					
4.4					
4.5					
4.6					
4.7					
4.8					
4.9					
4.10					
4.11					
4.12					
4.13					
4.14					
4.15					
4.16					
4.17					
4.18					
4.19					
5.1					20–40
5.2					20–40
5.3					8–25
5.4					8–25
5.5					4–15
5.6					4–15
5.7					4–15
5.8					4–12
5.9					80–130
5.10					15–35
5.11					15–35
6.1					
6.2					
6.3					
6.4					
6.5					

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

9

Cutting data values for aluminum-chip breakers

Chip breaker:	-23P	-25P	-25Q	-27	-29
Chip breaker:	(-23P)	(-25P)	(-25Q)	(-AL)	(-29)

	H10T (CWK15)	H210T (CWK20)	H216T (CWK26)	AMZ (AMZ)	CWN15 (CWN15)
Index	v_c in m/min				
1.1				90–140	
1.2				110–160	
1.3				90–130	
1.4				80–120	
1.5				80–120	
1.6				90–110	
1.7				90–110	
1.8				70–90	
1.9				90–110	
1.10				70–90	
1.11				70–90	
1.12				70–110	
1.13				150–200	
1.14					
1.15				70–110	
1.16				70–110	
2.1				100–150	80–140
2.2					80–140
2.3					70–120
2.4					40–60
2.5					60–100
2.6				90–140	40–60
2.7					40–60
3.1	120–160	140–200	120–160	180–220	
3.2	90–140	100–160	90–140	140–180	
3.3	130–170	160–200	130–170	160–220	
3.4	90–130	110–150	90–130	120–180	
3.5	140–200	160–220	140–200	180–240	
3.6	120–160	140–180	120–160	160–200	
3.7	140–200	160–220	140–200	180–240	
3.8	120–160	140–180	120–160	160–200	
4.1	**300–2500**	**300–3200**	**300–2500**	**300–3200**	**300–3200**
4.2	**200–2500**	**400–1500**	**200–2000**	**200–2800**	**200–2800**
4.3	**400–2000**	**300–1000**	**400–1500**	**400–2000**	**400–2000**
4.4	**400–1800**	**200–500**	**400–1500**	**40–2000**	**40–2000**
4.5	**200–1000**	**200–500**	**200–800**	**200–1200**	**200–1200**
4.6	**150–300**	**150–400**	**150–300**	**250–1000**	**250–1000**
4.7	**250–600**	**250–800**	**150–400**	**200–1000**	**200–1000**
4.8	**150–400**	**250–800**	**150–400**	**200–1000**	**200–1000**
4.9	**150–400**	**250–800**	**150–400**	**200–1000**	**200–1000**
4.10	**150–400**	**250–800**	**150–400**	**200–1000**	**200–1000**
4.11	**150–300**	**200–800**	**200–600**	**150–800**	**150–800**
4.12	**130–350**	**150–400**	**150–400**	**150–500**	**150–500**
4.13	**100–200**	**80–320**	**100–200**	**100–250**	**100–250**
4.14	**80–180**	**80–320**	**80–180**	**80–200**	**80–200**
4.15	**60–150**	**80–200**	**60–150**	**80–220**	**80–220**
4.16					
4.17					
4.18	**60–140**				
4.19		**100–140**	**100–140**		
5.1		25–40	30–45		
5.2		25–40	20–35		
5.3		25–40	20–35		
5.4		20–30	15–25		
5.5		25–40	15–25		
5.6		20–30	15–25		
5.7		20–30	15–25		
5.8		15–25	15–25		
5.9	60–120	80–140	60–120		
5.10	30–80	40–100	30–80		
5.11	30–80	40–100	30–80		
6.1					
6.2					
6.3					
6.4					
6.5					

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data for machining non ferrous metals with carbide inserts

	Material group	Material examples			Machinability of aluminium alloys *	Comments	Cutting speed v_c in m/min
N	Pure aluminium	non hardenable	Al 99,5	W7	5	▲ Snarl chips ▲ Possibly bad surface ▲ Excessive built-up edge ▲ Long tool life ▲ Use coolant emulsion	300–3200
			Al 99,5	F13	4		
			Al 99	W8	5		
			Al 99	F14	4		
	Aluminium wrought alloys	non hardenable	Al Mn	W10	5	▲ Snarl, continuous or fragmented chip ▲ Large feed rates necessary for good swarf control ▲ Built-up edge ▲ Long tool life ▲ Emulsion coolant is advantageous	300–2500
			Al Mn	F16	4		
			Al Mg 1	W10	5		
			Al Mg 1	F19	4		
			Al Mg 3	W18	4		
			Al Mg 3	F25	3		
			Al Mg 5	W25	4		
			AL Mg 5	F28	2		
			Al Mg 4,5 Mn	W27	4		
			Al Mg 4,5 Mn	G35	3		
		hardenable	Al Mg Si 0,5	W	4	▲ Good swarf control with higher feed rates	200–2000
			Al Mg Si 0,5	F13-25	3		
			Al Mg Si 1	W	4		
			Al Mg Si 1	F21-30	3		
			Al Mg Si Pb	F20-28	2	▲ Very good swarf control ▲ No built up edge ▲ Very good surface quality	
			Al Cu Si Pb	F28-37	1		
			Al Cu Mg Pb	F34-37	1		
			Al Cu Mg 1	W	3	▲ Good swarf control ▲ Good surface quality ▲ Little built-up edge	
			Al Cu Mg 1	F33-40	2		
			Al Cu Mg 2	W	3		
			Al Cu Mg 2	F40-47	2		
			Al Cu Si Mn	W	3		
			Al Cu Si Mn	F43-46	2		
			Al Zn Mg Cu 1,5	F50-52	2		
			Al Sn 6 Cu		1		
	Cast Aluminium Alloys	non hardenable	G-Al Si 12		3	▲ Good swarf control ▲ Built-up edge ▲ Higher Si content results in lower tool life	Si content < 12 % 400–1500
			G-Al Si 10 Mg		3		
			G-Al Si 5 Mg		2		Si content ~ 12.5 % 300–1000
			G-Al Si 7 Mg (9 Mg)		2		
			G-Al Si Cu 3		2	▲ High wear of the carbide	Si content > 13 % 200–500
			G-Al Si 6 Cu 4		2		
			G-Al Mg 3 (Mg 5)		2	▲ Good swarf control ▲ Good surface quality ▲ Long tool life	200–1500
			G-Al Mg 9		2		
			G-Al Mg 10		2		
			G-Al Mg 3 Si (5 Si)		2		
			G-Al Cu 4 Ti (Mg)		2		
			G-Al Si 12 Cu Mg Ni		2		
	Copper wrought alloys		Cu Ag				300–1200
			Cu As				
			Cu Cd				
			Cu Cd Sn				
			Cu Mg				
			Cu Mn				
		brass	Cu Zn Al				300–1000
		bronze	Cu Sn				300–800
			Cu Sn Zn				
			Cu Ni				
			Cu Ni Fe				
			Cu Al				
	Non metal materials	Duroplastics					80–320
		Fibre-reinforced plastics					
		hard rubber					

* 1 = good machinability, 5 = bad machinability

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

9

Cutting data standard values for negative inserts

	Designation	-NF12 (Cermet)						-F50 (-NF15)					
		f			a_p			f			a_p		
		min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
		mm/rev.			mm			mm/rev.			mm		
	CN.. 090304							0,06	**0,15**	0,25	0,2	**0,5**	1,5
	CN.. 090308							0,10	**0,20**	0,30	0,4	**1,0**	2,0
	CN.. 120404	0,05	**0,15**	0,25	0,3	**0,5**	1,5	0,06	**0,15**	0,25	0,2	**0,6**	1,5
	CN.. 120408	0,07	**0,15**	0,25	0,3	**0,5**	1,5	0,10	**0,20**	0,30	0,4	**1,0**	2,0
	CN.. 120412							0,14	**0,25**	0,35	0,6	**1,4**	2,6
	CN.. 120416												
	CN.. 160608												
	CN.. 160612												
	CN.. 160616												
	CN.. 160624												
	CN.. 190608												
	CN.. 190612												
	CN.. 190616												
	CN.. 190624												
	CN.. 250924												
	DN.. 110402							0,04	**0,10**	0,20	0,1	**0,4**	2,3
	DN.. 110404	0,05	**0,15**	0,25	0,3	**0,5**	1,5	0,06	**0,15**	0,25	0,2	**0,6**	1,5
	DN.. 110408	0,07	**0,15**	0,25	0,3	**0,5**	1,5	0,10	**0,20**	0,30	0,4	**1,0**	2,0
	DN.. 110412							0,14	**0,25**	0,35	0,6	**1,4**	2,6
	DN.. 150404							0,06	**0,15**	0,25	0,2	**0,6**	1,5
	DN.. 150408							0,10	**0,20**	0,30	0,4	**1,0**	2,0
	DN.. 150412							0,14	**0,25**	0,35	0,6	**1,4**	2,6
	DN.. 150416												
	DN.. 150604	0,05	**0,15**	0,25	0,3	**0,5**	1,5	0,06	**0,15**	0,25	0,2	**0,6**	1,5
	DN.. 150608	0,07	**0,15**	0,25	0,3	**0,5**	1,5	0,10	**0,20**	0,30	0,4	**1,0**	2,0
	DN.. 150612	0,10	**0,20**	0,30	0,5	**0,7**	1,5	0,14	**0,25**	0,35	0,6	**1,4**	2,6
	DN.. 150616												
	SN.. 090308							0,10	**0,20**	0,30	0,4	**1,0**	2,0
	SN.. 120404							0,06	**0,15**	0,25	0,2	**0,6**	1,5
	SN.. 120408							0,10	**0,20**	0,30	0,4	**1,0**	2,0
	SN.. 120412							0,14	**0,25**	0,35	0,6	**1,4**	2,6
	SN.. 120416												
	SN.. 150608												
	SN.. 150612												
	SN.. 150616												
	SN.. 190612												
	SN.. 190616												
	SN.. 190624												
	SN.. 250724												
	SN.. 250924												
	TN.. 110304							0,06	**0,15**	0,25	0,2	**0,6**	1,5
	TN.. 110308							0,10	**0,20**	0,30	0,4	**1,0**	2,0
	TN.. 160404	0,05	**0,15**	0,25	0,3	**0,5**	1,5	0,06	**0,15**	0,25	0,2	**0,6**	1,5
	TN.. 160408	0,07	**0,15**	0,25	0,3	**0,5**	1,5	0,10	**0,20**	0,30	0,4	**1,0**	2,0
	TN.. 160412	0,10	**0,20**	0,30	0,5	**0,7**	1,5	0,14	**0,25**	0,35	0,6	**1,4**	2,6
	TN.. 220404												
	TN.. 220408												
	TN.. 220412												
	TN.. 220416												
	VN.. 160404							0,06	**0,15**	0,25	0,2	**0,6**	1,5
	VN.. 160408							0,10	**0,20**	0,30	0,4	**1,0**	2,0
	VN.. 160412												
	WN.. 060404	0,05	**0,15**	0,25	0,3	**0,5**	1,5	0,06	**0,15**	0,25	0,2	**0,6**	1,5
	WN.. 060408	0,07	**0,15**	0,25	0,3	**0,5**	1,5	0,10	**0,20**	0,30	0,4	**1,0**	2,0
	WN.. 060412												
	WN.. 080404							0,06	**0,15**	0,25	0,2	**0,6**	1,5
	WN.. 080408	0,07	**0,15**	0,25	0,3	**0,5**	1,5	0,10	**0,20**	0,30	0,4	**1,0**	2,0
	WN.. 080412							0,14	**0,25**	0,35	0,6	**1,4**	2,6
	WN.. 080416												

sharp ◄——————————————————————► stable

The data shows reference values. An adjustment to the actual conditions may be required.

Designation	-TFQ (-TFQ)						-XU (-XU)						-M50 (-NM15)					
	f			a_p			f			a_p			f			a_p		
	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.
	mm/rev.			mm			mm/rev.			mm			mm/rev.			mm		
CN.. 090304																		
CN.. 090308																		
CN.. 120404	0,10	**0,15**	0,35	0,4	**1,0**	3,0	0,08	**0,15**	0,25	0,3	**1,5**	2,5	0,10	**0,20**	0,30	0,4	**2,0**	5,0
CN.. 120408	0,10	**0,25**	0,50	0,5	**1,5**	4,0	0,13	**0,25**	0,35	0,6	**2,0**	3,0	0,15	**0,25**	0,40	0,6	**2,0**	5,0
CN.. 120412	0,15	**0,30**	0,70	0,8	**2,0**	5,0	0,15	**0,30**	0,45	0,9	**2,0**	3,5	0,20	**0,30**	0,50	1,0	**2,0**	5,0
CN.. 120416													0,25	**0,40**	0,60	1,4	**2,0**	5,0
CN.. 160608													0,15	**0,25**	0,40	0,6	**3,0**	8,0
CN.. 160612													0,20	**0,30**	0,50	1,0	**3,0**	8,0
CN.. 160616													0,25	**0,40**	0,60	1,4	**3,0**	8,0
CN.. 160624																		
CN.. 190608																		
CN.. 190612																		
CN.. 190616																		
CN.. 190624																		
CN.. 250924																		
DN.. 110402																		
DN.. 110404													0,10	**0,20**	0,30	0,4	**1,5**	4,0
DN.. 110408													0,15	**0,25**	0,40	0,6	**1,5**	4,0
DN.. 110412													0,20	**0,30**	0,50	1,0	**1,5**	4,0
DN.. 150404													0,10	**0,20**	0,30	0,4	**2,0**	5,0
DN.. 150408													0,15	**0,25**	0,40	0,6	**2,0**	5,0
DN.. 150412													0,20	**0,30**	0,50	1,0	**2,0**	5,0
DN.. 150416													0,25	**0,40**	0,60	1,4	**2,0**	5,0
DN.. 150604	0,10	**0,15**	0,30	0,4	**1,0**	3,0	0,08	**0,15**	0,25	0,3	**1,5**	2,5	0,10	**0,20**	0,30	0,4	**2,0**	5,0
DN.. 150608	0,10	**0,25**	0,40	0,5	**1,5**	4,0	0,13	**0,25**	0,35	0,6	**2,0**	3,0	0,15	**0,25**	0,40	0,6	**2,0**	5,0
DN.. 150612							0,15	**0,25**	0,40	0,9	**2,0**	3,5	0,20	**0,30**	0,50	1,0	**2,0**	5,0
DN.. 150616													0,25	**0,40**	0,60	1,4	**2,0**	5,0
SN.. 090308																		
SN.. 120404																		
SN.. 120408													0,15	**0,25**	0,40	0,6	**2,0**	5,0
SN.. 120412													0,20	**0,30**	0,50	1,0	**2,0**	5,0
SN.. 120416													0,25	**0,40**	0,60	1,4	**2,0**	5,0
SN.. 150608													0,15	**0,25**	0,40	0,6	**3,0**	8,0
SN.. 150612													0,20	**0,30**	0,50	1,0	**3,0**	8,0
SN.. 150616													0,25	**0,40**	0,60	1,4	**3,0**	8,0
SN.. 190612																		
SN.. 190616																		
SN.. 190624																		
SN.. 250724																		
SN.. 250924																		
TN.. 110304																		
TN.. 110308																		
TN.. 160404													0,10	**0,20**	0,30	0,4	**2,0**	5,0
TN.. 160408													0,15	**0,25**	0,40	0,6	**2,0**	5,0
TN.. 160412													0,20	**0,30**	0,50	1,0	**2,0**	5,0
TN.. 220404																		
TN.. 220408													0,15	**0,25**	0,40	0,6	**3,0**	8,0
TN.. 220412													0,20	**0,30**	0,50	1,0	**3,0**	8,0
TN.. 220416																		
VN.. 160404							0,08	**0,15**	0,20	0,3	**1,0**	1,8	0,10	**0,20**	0,30	0,4	**1,0**	4,0
VN.. 160408							0,13	**0,20**	0,30	0,6	**1,5**	2,5	0,15	**0,25**	0,40	0,6	**1,0**	4,0
VN.. 160412													0,20	**0,30**	0,50	1,0	**1,0**	4,0
WN.. 060404	0,10	**0,18**	0,35	0,4	**0,8**	3,0							0,10	**0,20**	0,30	0,4	**1,0**	3,0
WN.. 060408	0,10	**0,20**	0,50	0,5	**1,5**	3,0							0,15	**0,25**	0,40	0,6	**1,0**	3,0
WN.. 060412													0,20	**0,30**	0,50	1,0	**1,0**	3,0
WN.. 080404							0,08	**0,15**	0,25	0,3	**1,5**	2,5	0,10	**0,20**	0,30	0,4	**1,5**	4,0
WN.. 080408	0,10	**0,25**	0,50	0,5	**1,5**	4,0	0,13	**0,22**	0,35	0,6	**2,0**	3,0	0,15	**0,25**	0,40	0,6	**1,5**	4,0
WN.. 080412	0,15	**0,30**	0,70	0,8	**2,0**	5,0	0,15	**0,25**	0,45	0,9	**2,0**	3,5	0,20	**0,30**	0,50	1,0	**1,5**	4,0
WN.. 080416													0,25	**0,40**	0,60	1,4	**1,5**	4,0

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Information on the cutting data of chip breakers not included in this overview, can be found on → **Page 168–175**

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Cutting data standard values for negative inserts

	Designation	-TMQ (-TMQ)						-M70 (-NM19)					
		f			a_p			f			a_p		
		min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
		mm/rev.			mm			mm/rev.			mm		
	CN.. 090304												
	CN.. 090308												
	CN.. 120404												
	CN.. 120408	0,20	**0,40**	0,65	0,8	**3,0**	5,0	0,20	**0,30**	0,45	0,8	**3,0**	6,0
	CN.. 120412	0,25	**0,50**	0,85	1,0	**3,0**	6,0	0,25	**0,40**	0,60	1,2	**3,0**	6,0
	CN.. 120416							0,30	**0,45**	0,70	1,6	**3,0**	6,0
	CN.. 160608							0,20	**0,30**	0,45	0,8	**4,0**	8,0
	CN.. 160612							0,25	**0,40**	0,60	1,2	**4,0**	8,0
	CN.. 160616							0,30	**0,45**	0,70	1,6	**4,0**	8,0
	CN.. 160624							0,40	**0,70**	1,20	2,4	**4,0**	8,0
	CN.. 190608							0,20	**0,30**	0,45	0,8	**4,5**	9,0
	CN.. 190612							0,25	**0,40**	0,60	1,2	**4,5**	9,0
	CN.. 190616							0,30	**0,45**	0,70	1,6	**4,5**	9,0
	CN.. 190624							0,40	**0,70**	1,20	2,4	**4,5**	9,0
	CN.. 250924							0,40	**0,70**	1,20	2,4	**6,0**	13,0
	DN.. 110402												
	DN.. 110404												
	DN.. 110408							0,20	**0,25**	0,45	0,8	**2,0**	5,0
	DN.. 110412							0,25	**0,35**	0,60	1,2	**2,0**	5,0
	DN.. 150404												
	DN.. 150408							0,20	**0,25**	0,45	0,8	**2,5**	6,0
	DN.. 150412							0,25	**0,35**	0,60	1,2	**2,5**	6,0
	DN.. 150416							0,30	**0,40**	0,70	1,6	**2,5**	6,0
	DN.. 150604												
	DN.. 150608	0,15	**0,30**	0,50	0,8	**2,5**	5,0	0,20	**0,25**	0,45	0,8	**2,5**	6,0
	DN.. 150612	0,20	**0,40**	0,60	1,0	**3,0**	5,0	0,25	**0,35**	0,60	1,2	**2,5**	6,0
	DN.. 150616							0,30	**0,40**	0,70	1,6	**2,5**	6,0
	SN.. 090308												
	SN.. 120404												
	SN.. 120408							0,20	**0,30**	0,50	0,8	**3,0**	6,0
	SN.. 120412							0,25	**0,40**	0,65	1,2	**3,0**	6,0
	SN.. 120416							0,30	**0,45**	0,70	1,6	**3,0**	6,0
	SN.. 150608												
	SN.. 150612							0,25	**0,40**	0,65	1,2	**4,0**	8,0
	SN.. 150616							0,30	**0,45**	0,75	1,6	**4,0**	8,0
	SN.. 190612							0,25	**0,40**	0,65	1,2	**4,5**	9,0
	SN.. 190616							0,30	**0,45**	0,75	1,6	**4,5**	9,0
	SN.. 190624							0,40	**0,70**	1,20	2,4	**4,5**	9,0
	SN.. 250724												
	SN.. 250924							0,40	**0,70**	1,20	2,4	**6,0**	13,0
	TN.. 110304												
	TN.. 110308												
	TN.. 160404												
	TN.. 160408							0,20	**0,25**	0,45	0,8	**2,5**	6,0
	TN.. 160412							0,25	**0,35**	0,60	1,2	**2,5**	6,0
	TN.. 220404							0,15	**0,20**	0,30	0,4	**3,0**	7,0
	TN.. 220408							0,20	**0,25**	0,45	0,8	**3,0**	7,0
	TN.. 220412							0,25	**0,35**	0,60	1,2	**3,0**	7,0
	TN.. 220416							0,30	**0,40**	0,70	1,6	**3,0**	7,0
	VN.. 160404												
	VN.. 160408												
	VN.. 160412												
	WN.. 060404												
	WN.. 060408							0,20	**0,30**	0,45	0,8	**2,0**	4,0
	WN.. 060412							0,25	**0,40**	0,60	1,2	**2,0**	4,0
	WN.. 080404												
	WN.. 080408	0,20	**0,30**	0,65	0,8	**3,0**	5,0	0,20	**0,30**	0,45	0,8	**2,5**	5,0
	WN.. 080412	0,25	**0,40**	0,85	1,0	**3,0**	6,0	0,25	**0,40**	0,60	1,2	**2,5**	5,0
	WN.. 080416							0,30	**0,45**	0,70	1,6	**2,5**	5,0

sharp ◄——————————————————————► stable

The data shows reference values. An adjustment to the actual conditions may be required.

Designation	-R28 (-NR14)						-R58 (-NR17)						-R88 (-NR19)					
	f			a_p			f			a_p			f			a_p		
	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.
	mm/rev.			mm			mm/rev.			mm			mm/rev.			mm		
CN.. 090304																		
CN.. 090308																		
CN.. 120404																		
CN.. 120408	0,25	**0,35**	0,55	0,8	**3,0**	7,0	0,25	**0,45**	0,70	1,0	**3,0**	7,0						
CN.. 120412	0,30	**0,45**	0,70	1,0	**3,0**	7,0	0,30	**0,55**	0,85	1,5	**3,0**	7,0						
CN.. 120416	0,30	**0,60**	0,90	1,5	**3,0**	7,0	0,35	**0,65**	1,00	2,0	**3,0**	7,0						
CN.. 160608																		
CN.. 160612	0,30	**0,45**	0,70	1,0	**4,0**	9,0	0,30	**0,55**	0,85	1,5	**4,0**	9,0						
CN.. 160616	0,35	**0,60**	0,90	1,5	**4,0**	9,0	0,35	**0,65**	1,00	2,0	**4,0**	9,0						
CN.. 160624							0,40	**0,75**	1,20	2,5	**4,0**	9,0	0,40	**0,70**	1,20	2,0	**5,0**	9,0
CN.. 190608																		
CN.. 190612	0,30	**0,45**	0,70	1,0	**5,5**	12,0	0,35	**0,55**	0,85	1,5	**5,5**	12,0						
CN.. 190616	0,35	**0,60**	0,90	1,5	**5,5**	12,0	0,40	**0,65**	1,00	2,0	**5,5**	12,0	0,40	**0,70**	1,00	2,0	**5,0**	12,0
CN.. 190624	0,35	**0,65**	1,00	2,0	**5,5**	12,0	0,40	**0,75**	1,20	2,5	**5,5**	12,0	0,40	**0,70**	1,20	2,0	**5,0**	12,0
CN.. 250924							0,45	**0,80**	1,30	2,5	**8,0**	16,0	0,60	**1,00**	1,50	3,5	**10,0**	18,0
DN.. 110402																		
DN.. 110404																		
DN.. 110408																		
DN.. 110412																		
DN.. 150404																		
DN.. 150408																		
DN.. 150412																		
DN.. 150416																		
DN.. 150604																		
DN.. 150608																		
DN.. 150612	0,25	**0,45**	0,70	1,0	**2,5**	6,0	0,30	**0,50**	0,80	1,5	**2,5**	6,0						
DN.. 150616	0,30	**0,60**	0,85	1,5	**2,5**	6,0	0,35	**0,60**	0,90	2,0	**2,5**	6,0						
SN.. 090308																		
SN.. 120404																		
SN.. 120408							0,25	**0,45**	0,70	1,0	**3,0**	7,0						
SN.. 120412							0,30	**0,55**	0,85	1,5	**3,0**	7,0						
SN.. 120416																		
SN.. 150608																		
SN.. 150612	0,30	**0,35**	0,70	1,0	**4,0**	9,0	0,30	**0,55**	0,85	1,5	**4,0**	9,0						
SN.. 150616	0,35	**0,60**	0,90	1,5	**4,0**	9,0	0,35	**0,65**	1,00	2,0	**4,0**	9,0						
SN.. 190612							0,35	**0,55**	0,85	1,5	**5,5**	12,0						
SN.. 190616	0,35	**0,60**	0,90	1,5	**5,5**	12,0	0,40	**0,65**	1,00	2,0	**5,5**	12,0	0,40	**0,70**	1,00	2,0	**5,0**	12,0
SN.. 190624							0,40	**0,75**	1,20	2,0	**5,5**	12,0	0,40	**0,70**	1,20	2,0	**5,0**	12,0
SN.. 250724	0,35	**0,65**	1,00	2,0	**7,0**	16,0	0,45	**0,80**	1,30	2,5	**8,0**	16,0	0,60	**1,00**	1,50	3,5	**10,0**	18,0
SN.. 250924	0,35	**0,65**	1,00	2,0	**7,0**	16,0	0,45	**0,80**	1,30	2,5	**8,0**	16,0	0,60	**1,00**	1,50	3,5	**10,0**	18,0
TN.. 110304																		
TN.. 110308																		
TN.. 160404																		
TN.. 160408																		
TN.. 160412																		
TN.. 220404																		
TN.. 220408																		
TN.. 220412							0,30	**0,50**	0,80	1,5	**3,0**	7,0						
TN.. 220416	0,30	**0,55**	0,85	1,5	**3,0**	7,0												
VN.. 160404																		
VN.. 160408																		
VN.. 160412																		
WN.. 060404																		
WN.. 060408																		
WN.. 060412																		
WN.. 080404																		
WN.. 080408																		
WN.. 080412																		
WN.. 080416																		

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Information on the cutting data of chip breakers not included in this overview, can be found on → **Page 168–175**

Cutting data standard values for negative inserts

	Designation	-F30 (-NF23)						-M30 (-NM23)					
		f			a_p			f			a_p		
		min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
		mm/rev.			mm			mm/rev.			mm		
	CN.. 090304												
	CN.. 090308												
	CN.. 120404	0,05	**0,15**	0,25	0,4	**1,0**	2,0						
	CN.. 120408	0,10	**0,22**	0,35	0,8	**1,5**	2,5	0,15	**0,25**	0,40	1,0	**2,0**	4,5
	CN.. 120412							0,20	**0,30**	0,50	1,2	**2,5**	5,0
	CN.. 120416							0,25	**0,35**	0,55	1,6	**2,5**	5,0
	CN.. 160608												
	CN.. 160612												
	CN.. 160616												
	CN.. 160624												
	CN.. 190608												
	CN.. 190612												
	CN.. 190616												
	CN.. 190624												
	CN.. 250924												
	DN.. 110402												
	DN.. 110404	0,05	**0,15**	0,25	0,4	**1,0**	2,0						
	DN.. 110408	0,10	**0,20**	0,35	0,8	**1,5**	2,5	0,15	**0,25**	0,40	1,0	**2,0**	4,5
	DN.. 110412							0,20	**0,30**	0,50	1,2	**2,0**	4,5
	DN.. 150404												
	DN.. 150408												
	DN.. 150412												
	DN.. 150416												
	DN.. 150604	0,05	**0,15**	0,25	0,4	**1,0**	2,0						
	DN.. 150608	0,10	**0,20**	0,35	0,8	**1,5**	2,5	0,15	**0,25**	0,40	1,0	**2,0**	5,5
	DN.. 150612							0,20	**0,30**	0,50	1,2	**2,0**	5,5
	DN.. 150616												
	SN.. 090308												
	SN.. 120404	0,10	**0,15**	0,30	0,4	**1,0**	2,0						
	SN.. 120408	0,15	**0,20**	0,40	0,8	**1,5**	2,5	0,20	**0,25**	0,45	1,0	**2,0**	4,5
	SN.. 120412	0,15	**0,20**	0,40	1,2	**1,8**	2,5	0,25	**0,30**	0,50	1,2	**2,0**	5,0
	SN.. 120416												
	SN.. 150608												
	SN.. 150612												
	SN.. 150616												
	SN.. 190612												
	SN.. 190616												
	SN.. 190624												
	SN.. 250724												
	SN.. 250924												
	TN.. 110304												
	TN.. 110308												
	TN.. 160404	0,05	**0,15**	0,25	0,4	**1,0**	2,0						
	TN.. 160408	0,10	**0,15**	0,35	0,8	**1,5**	2,5	0,15	**0,25**	0,40	1,0	**2,0**	4,5
	TN.. 160412							0,20	**0,30**	0,50	1,2	**2,0**	4,5
	TN.. 220404												
	TN.. 220408												
	TN.. 220412												
	TN.. 220416												
	VN.. 160404	0,08	**0,10**	0,20	0,4	**1,0**	2,0						
	VN.. 160408	0,10	**0,15**	0,30	0,8	**1,5**	2,5	0,15	**0,25**	0,40	1,0	**1,5**	4,0
	VN.. 160412												
	WN.. 060404	0,05	**0,15**	0,25	0,4	**1,0**	2,0						
	WN.. 060408	0,10	**0,20**	0,30	0,8	**1,5**	2,5	0,15	**0,25**	0,40	1,0	**1,5**	3,5
	WN.. 060412							0,20	**0,30**	0,45	1,2	**1,5**	4,0
	WN.. 080404	0,05	**0,15**	0,25	0,4	**1,0**	2,0						
	WN.. 080408	0,10	**0,20**	0,35	0,8	**1,5**	2,5	0,15	**0,25**	0,40	1,0	**2,0**	4,5
	WN.. 080412							0,20	**0,30**	0,50	1,2	**2,0**	5,0
	WN.. 080416												

sharp ◄——————————————————————► stable

The data shows reference values. An adjustment to the actual conditions may be required.

Designation	-M60 (-NM26)						-M34 (-M34)					
	f			a_p			f			a_p		
	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.
	mm/rev.			mm			mm/rev.			mm		
CN.. 090304												
CN.. 090308												
CN.. 120404							0,08	**0,12**	0,18	1,0	**1,5**	3,0
CN.. 120408	0,25	**0,30**	0,50	1,5	**2,5**	6,0	0,10	**0,15**	0,35	1,0	**1,8**	3,5
CN.. 120412	0,30	**0,35**	0,55	2,0	**3,0**	6,0	0,13	**0,20**	0,40	1,5	**2,0**	4,0
CN.. 120416	0,30	**0,40**	0,60	2,0	**3,0**	6,0	0,15	**0,25**	0,45	2,0	**3,0**	4,5
CN.. 160608												
CN.. 160612	0,30	**0,35**	0,55	2,0	**3,0**	8,0						
CN.. 160616												
CN.. 160624												
CN.. 190608												
CN.. 190612												
CN.. 190616												
CN.. 190624												
CN.. 250924												
DN.. 110402												
DN.. 110404												
DN.. 110408												
DN.. 110412												
DN.. 150404							0,08	**0,12**	0,18	0,8	**1,2**	2,5
DN.. 150408							0,10	**0,15**	0,30	1,0	**1,8**	3,5
DN.. 150412							0,13	**0,20**	0,38	1,5	**2,0**	4,0
DN.. 150416												
DN.. 150604												
DN.. 150608	0,25	**0,30**	0,45	1,5	**2,5**	6,0	0,10	**0,15**	0,30	1,0	**1,8**	3,5
DN.. 150612	0,30	**0,40**	0,55	1,5	**2,5**	6,0	0,13	**0,20**	0,38	1,5	**2,0**	4,0
DN.. 150616												
SN.. 090308												
SN.. 120404												
SN.. 120408	0,30	**0,35**	0,50	1,5	**2,0**	6,0	0,15	**0,25**	0,40	1,0	**2,0**	4,0
SN.. 120412	0,30	**0,40**	0,55	2,0	**2,5**	6,0	0,15	**0,25**	0,45	1,5	**2,5**	4,5
SN.. 120416	0,30	**0,40**	0,60	2,0	**2,5**	6,0						
SN.. 150608												
SN.. 150612												
SN.. 150616												
SN.. 190612												
SN.. 190616												
SN.. 190624												
SN.. 250724												
SN.. 250924												
TN.. 110304												
TN.. 110308												
TN.. 160404												
TN.. 160408	0,25	**0,25**	0,45	1,5	**2,5**	5,0	0,10	**0,15**	0,35	1,0	**2,0**	4,0
TN.. 160412	0,30	**0,30**	0,55	2,0	**2,5**	5,5						
TN.. 220404							0,10	**0,15**	0,35	1,0	**2,0**	4,0
TN.. 220408							0,13	**0,20**	0,40	1,5	**2,5**	4,0
TN.. 220412												
TN.. 220416							0,15	**0,25**	0,45	2,0	**2,5**	4,5
VN.. 160404							0,07	**0,10**	0,18	0,8	**1,2**	2,0
VN.. 160408							0,10	**0,15**	0,20	1,0	**1,5**	2,5
VN.. 160412							0,13	**0,18**	0,25	1,5	**1,8**	3,0
WN.. 060404												
WN.. 060408	0,25	**0,30**	0,45	1,5	**2,0**	4,0						
WN.. 060412	0,30	**0,35**	0,50	2,0	**2,5**	4,5						
WN.. 080404												
WN.. 080408	0,25	**0,30**	0,50	1,5	**2,0**	5,0	0,10	**0,15**	0,35	1,0	**2,0**	4,0
WN.. 080412	0,30	**0,35**	0,55	2,0	**2,5**	5,5	0,13	**0,20**	0,40	1,5	**2,0**	4,0
WN.. 080416												

sharp ◄——————————————————————► stable

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Information on the cutting data of chip breakers not included in this overview, can be found on → **Page 168–175**

Cutting data values for positive inserts

	Designation	-CF05 (-PF14)						-SF (-ZF)					
		f			a_p			f			a_p		
		min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
		mm/rev.			mm			mm/rev.			mm		
	CC.. 060200							0,02	**0,035**	0,05	0,1	**0,4**	1,5
	CC.. 060201							0,02	**0,035**	0,05	0,2	**0,4**	1,5
	CC.. 060202	0,03	**0,08**	0,12	0,1	**0,3**	1,3	0,03	**0,1**	0,15	0,2	**0,4**	1,5
	CC.. 060204	0,05	**0,10**	0,12	0,1	**0,3**	1,3	0,05	**0,1**	0,2	0,2	**0,6**	1,5
	CC.. 060208							0,05	**0,125**	0,2	0,2	**1**	1,5
	CC.. 09T300							0,02	**0,035**	0,05	0,2	**0,75**	2
	CC.. 09T301							0,02	**0,035**	0,05	0,2	**0,75**	2
	CC.. 09T302	0,03	**0,08**	0,12	0,1	**0,3**	1,3	0,05	**0,075**	0,1	0,2	**0,75**	2
	CC.. 09T304	0,05	**0,10**	0,22	0,2	**0,4**	1,3	0,05	**0,12**	0,2	0,2	**0,75**	2
	CC.. 09T308	0,06	**0,13**	0,25	0,2	**0,4**	1,3	0,05	**0,125**	0,25	0,4	**1**	2
	CC.. 09T312												
	CC.. 120402							0,05	**0,075**	0,1	0,2	**0,8**	2,5
	CC.. 120404							0,05	**0,12**	0,2	0,2	**1**	2,5
	CC.. 120408							0,08	**0,15**	0,25	0,4	**1**	2,5
	CC.. 120412							0,08	**0,15**	0,25	0,4	**1,5**	2,5
	DC.. 0702005												
	DC.. 070201												
	DC.. 0702015												
	DC.. 070202	0,03	**0,08**	0,12	0,1	**0,3**	1,3	0,03	**0,1**	0,15	0,1	**0,4**	1,5
	DC.. 070204	0,05	**0,10**	0,22	0,2	**0,4**	1,3	0,05	**0,12**	0,2	0,2	**0,6**	1,5
	DC.. 070208												
	DC.. 11T3005												
	DC.. 11T301												
	DC.. 11T3015												
	DC.. 11T302	0,03	**0,08**	0,12	0,1	**0,3**	1,3						
	DC.. 11T304	0,05	**0,10**	0,22	0,2	**0,4**	1,3	0,05	**0,12**	0,2	0,2	**0,7**	2
	DC.. 11T308	0,06	**0,13**	0,25	0,2	**0,4**	1,3	0,08	**0,15**	0,25	0,4	**1**	2
	DC.. 11T312												
	RC.. 0602M0												
	RC.. 0803M0												
	RC.. 1003M0												
	RC.. 1204M0												
	RC.. 1606M0												
	RC.. 2006M0												
	RC.. 2507M0												
	SC.. 09T304	0,05	**0,10**	0,22	0,2	**0,4**	1,3	0,05	**0,12**	0,2	0,2	**0,7**	2
	SC.. 09T308	0,06	**0,13**	0,25	0,2	**0,4**	1,3	0,08	**0,15**	0,25	0,4	**1**	2
	SC.. 120408							0,08	**0,15**	0,25	0,4	**1**	2,5
	SC.. 120412												
	TC.. 090204												
	TC.. 110202	0,03	**0,08**	0,12	0,1	**0,3**	1,3						
	TC.. 110204	0,05	**0,10**	0,22	0,2	**0,4**	1,3	0,05	**0,12**	0,2	0,2	**0,7**	2
	TC.. 110208	0,06	**0,13**	0,25	0,2	**0,4**	1,3	0,08	**0,15**	0,25	0,4	**1**	2
	TC.. 16T302												
	TC.. 16T304	0,05	**0,10**	0,22	0,2	**0,4**	1,3	0,05	**0,12**	0,2	0,2	**0,8**	2,5
	TC.. 16T308							0,08	**0,15**	0,25	0,4	**1**	2,5
	TC.. 16T312												
	TC.. 220408												
	VC.. 1103005												
	VC.. 110301												
	VC.. 1103015												
	VC.. 110302	0,03	**0,06**	0,12	0,1	**0,3**	1,3	0,02	**0,08**	0,15	0,1	**0,4**	1,5
	VC.. 110304	0,05	**0,08**	0,22	0,2	**0,4**	1,3	0,05	**0,1**	0,2	0,2	**0,6**	1,5
	VC.. 110308							0,08	**0,12**	0,22	0,4	**1**	1,5
	VC.. 160402												
	VC.. 160404	0,05	**0,08**	0,22	0,2	**0,4**	1,3	0,05	**0,1**	0,2	0,2	**0,7**	2
	VC.. 160408	0,06	**0,10**	0,22	0,2	**0,4**	1,3	0,08	**0,12**	0,22	0,4	**1**	2
	VC.. 160412												
	VC.. 220530												
	WC.. 020102							0,02	**0,075**	0,1	0,1	**0,4**	1
	WC.. 020104							0,02	**0,1**	0,2	0,1	**0,6**	1,5

sharp ◄——————————————————————► stable

The data shows reference values. An adjustment to the actual conditions may be required.

Designation	-CF55 (-PF15)						-SMF (-SMF)						-SM (-ZM)					
	f			a_p			f			a_p			f			a_p		
	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.
	mm/rev.			mm			mm/rev.			mm			mm/rev.			mm		
CC.. 060200																		
CC.. 060201																		
CC.. 060202													0,04	**0,12**	0,2	0,2	**0,6**	2,5
CC.. 060204	0,05	**0,12**	0,22	0,2	**0,5**	1,3	0,07	**0,15**	0,25	0,3	**0,7**	2	0,08	**0,17**	0,3	0,4	**0,8**	2,5
CC.. 060208							0,1	**0,17**	0,27	0,6	**1**	2	0,12	**0,2**	0,35	0,8	**1**	2,5
CC.. 09T300																		
CC.. 09T301																		
CC.. 09T302																		
CC.. 09T304	0,05	**0,12**	0,22	0,2	**0,5**	1,3	0,07	**0,15**	0,25	0,3	**0,8**	2,5	0,08	**0,17**	0,3	0,4	**1**	3
CC.. 09T308	0,06	**0,15**	0,25	0,2	**0,5**	1,3	0,1	**0,17**	0,27	0,6	**1**	2,5	0,12	**0,2**	0,35	0,8	**1,2**	3
CC.. 09T312													0,15	**0,22**	0,4	1,2	**1,5**	3
CC.. 120402																		
CC.. 120404	0,05	**0,12**	0,22	0,2	**0,5**	1,3	0,07	**0,15**	0,25	0,3	**1**	3	0,08	**0,17**	0,3	0,4	**1,2**	3,5
CC.. 120408							0,1	**0,17**	0,27	0,6	**1,2**	3	0,12	**0,2**	0,35	0,8	**1,5**	3,5
CC.. 120412													0,15	**0,22**	0,4	1,2	**2**	3,5
DC.. 0702005																		
DC.. 070201																		
DC.. 0702015																		
DC.. 070202	0,03	**0,10**	0,12	0,1	**0,4**	1,3							0,04	**0,12**	0,2	0,2	**0,6**	2,5
DC.. 070204	0,05	**0,12**	0,22	0,2	**0,5**	1,3	0,07	**0,15**	0,25	0,3	**0,7**	2	0,08	**0,17**	0,3	0,4	**0,8**	2,5
DC.. 070208							0,1	**0,17**	0,27	0,6	**1**	2	0,12	**0,2**	0,3	0,8	**1**	2,5
DC.. 11T3005																		
DC.. 11T301																		
DC.. 11T3015																		
DC.. 11T302																		
DC.. 11T304	0,05	**0,12**	0,22	0,2	**0,5**	1,3	0,07	**0,15**	0,25	0,3	**0,8**	2,5	0,8	**0,17**	0,3	0,4	**1**	3
DC.. 11T308	0,06	**0,15**	0,25	0,2	**0,5**	1,3	0,1	**0,17**	0,27	0,6	**1,2**	2,5	0,12	**0,2**	0,35	0,8	**1,2**	3
DC.. 11T312													0,15	**0,22**	0,4	1,2	**1,7**	3
RC.. 0602M0													0,2	**0,3**	0,5	0,2	**0,5**	1,5
RC.. 0803M0													0,2	**0,3**	0,6	0,2	**0,6**	2
RC.. 1003M0													0,25	**0,4**	0,7	0,2	**0,7**	2,5
RC.. 1204M0													0,3	**0,5**	0,8	0,2	**0,8**	3
RC.. 1606M0							0,15	**0,3**	0,6	0,25	**2**	3,5	0,4	**0,6**	1	0,3	**1**	3,5
RC.. 2006M0													0,5	**0,8**	1,2	0,4	**1,2**	4
RC.. 2507M0													0,6	**0,9**	1,4	0,6	**2**	5
SC.. 09T304	0,05	**0,12**	0,22	0,2	**0,5**	1,3	0,07	**0,15**	0,25	0,3	**0,8**	2,5	0,08	**0,17**	0,3	0,4	**1**	3
SC.. 09T308	0,06	**0,15**	0,25	0,2	**0,5**	1,3	0,1	**0,17**	0,27	0,6	**1**	2,5	0,12	**0,2**	0,35	0,8	**1,2**	3
SC.. 120408							0,1	**0,17**	0,27	0,6	**1,2**	3	0,12	**0,2**	0,35	0,8	**1,5**	3,5
SC.. 120412													0,15	**0,22**	0,4	1,2	**2**	3,5
TC.. 090204													0,08	**0,12**	0,2	0,4	**0,8**	2
TC.. 110202													0,08	**0,1**	0,2	0,4	**0,6**	3
TC.. 110204	0,05	**0,12**	0,22	0,2	**0,5**	1,3							0,12	**0,2**	0,35	0,8	**1,2**	3
TC.. 110208							0,1	**0,17**	0,27	0,6	**1**	2,5	0,12	**0,2**	0,35	0,8	**1,2**	3
TC.. 16T302																		
TC.. 16T304							0,07	**0,15**	0,25	0,3	**1**	3	0,08	**0,17**	0,3	0,4	**1,2**	3,5
TC.. 16T308	0,06	**0,15**	0,25	0,2	**0,5**	1,3	0,1	**0,17**	0,27	0,6	**1,2**	3	0,12	**0,2**	0,35	0,8	**1,5**	3,5
TC.. 16T312													0,15	**0,22**	0,4	1,2	**1,7**	3,5
TC.. 220408													0,12	**0,2**	0,35	0,8	**2,5**	6
VC.. 1103005																		
VC.. 110301																		
VC.. 1103015																		
VC.. 110302							0,05	**0,1**	0,18	0,2	**0,5**	2						
VC.. 110304	0,05	**0,10**	0,22	0,2	**0,5**	1,3	0,07	**0,15**	0,23	0,3	**0,7**	2						
VC.. 110308																		
VC.. 160402																		
VC.. 160404	0,05	**0,10**	0,22	0,2	**0,5**	1,3	0,07	**0,15**	0,23	0,3	**0,8**	2,5	0,08	**0,17**	0,25	0,4	**1**	3
VC.. 160408	0,06	**0,12**	0,22	0,2	**0,5**	1,3	0,1	**0,17**	0,27	0,6	**1**	2,5	0,12	**0,2**	0,3	0,8	**1,2**	3
VC.. 160412													0,15	**0,22**	0,32	1,2	**1,5**	3
VC.. 220530																		
WC.. 020102																		
WC.. 020104																		

sharp ◄——————————————————————————————► stable

Information on the cutting data of chip breakers not included in this overview, can be found on → **Page 168–175**

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Cutting data values for positive inserts

	Designation	-SMQ (-SMQ)						-M25 (-PF23)					
		f			a_p			f			a_p		
		min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
		mm/rev.			mm			mm/rev.			mm		
	CC.. 060200												
	CC.. 060201												
	CC.. 060202												
	CC.. 060204							0,06	**0,13**	0,20	0,2	**1,1**	2,0
	CC.. 060208												
	CC.. 09T300												
	CC.. 09T301												
	CC.. 09T302												
	CC.. 09T304	0,10	**0,25**	0,4	0,4	**2**	4	0,06	**0,14**	0,22	0,2	**1,2**	2,2
	CC.. 09T308	0,15	**0,30**	0,5	0,8	**2**	4	0,10	**0,20**	0,30	0,4	**1,8**	3,2
	CC.. 09T312												
	CC.. 120402												
	CC.. 120404	0,10	**0,25**	0,4	0,4	**2**	4						
	CC.. 120408	0,15	**0,30**	0,5	0,8	**2**	4						
	CC.. 120412												
	DC.. 0702005												
	DC.. 070201												
	DC.. 0702015												
	DC.. 070202							0,04	**0,09**	0,13	0,1	**0,9**	1,6
	DC.. 070204	0,10	**0,18**	0,25	0,4	**1,5**	3	0,06	**0,12**	0,18	0,2	**1,1**	2,0
	DC.. 070208												
	DC.. 11T3005												
	DC.. 11T301												
	DC.. 11T3015												
	DC.. 11T302							0,04	**0,10**	0,16	0,1	**1,1**	2,0
	DC.. 11T304	0,10	**0,25**	0,4	0,4	**2**	4	0,06	**0,14**	0,22	0,2	**1,2**	2,2
	DC.. 11T308	0,15	**0,30**	0,5	0,8	**2**	4	0,10	**0,20**	0,30	0,4	**1,8**	3,2
	DC.. 11T312												
	RC.. 0602M0												
	RC.. 0803M0												
	RC.. 1003M0												
	RC.. 1204M0												
	RC.. 1606M0												
	RC.. 2006M0												
	RC.. 2507M0												
	SC.. 09T304												
	SC.. 09T308												
	SC.. 120408												
	SC.. 120412												
	TC.. 090204												
	TC.. 110202												
	TC.. 110204							0,06	**0,13**	0,20	0,2	**1,2**	2,2
	TC.. 110208												
	TC.. 16T302												
	TC.. 16T304							0,06	**0,14**	0,22	0,2	**1,6**	3,0
	TC.. 16T308							0,10	**0,20**	0,30	0,4	**1,9**	3,4
	TC.. 16T312												
	TC.. 220408												
	VC.. 1103005												
	VC.. 110301												
	VC.. 1103015												
	VC.. 110302												
	VC.. 110304												
	VC.. 110308												
	VC.. 160402												
	VC.. 160404							0,06	**0,13**	0,20	0,2	**1,2**	2,2
	VC.. 160408							0,10	**0,15**	0,25	0,4	**1,4**	3,0
	VC.. 160412												
	VC.. 220530												
	WC.. 020102												
	WC.. 020104												

sharp ◄——————————————————————————► stable

The data shows reference values. An adjustment to the actual conditions may be required.

Designation	-M55 (-PF26)						-F05					
	f			a_p			f			a_p		
	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.	min.	Recom-mended	max.
	mm/rev.			mm			mm/rev.			mm		
CC.. 060200												
CC.. 060201												
CC.. 060202												
CC.. 060204	0,06	**0,13**	0,20	0,4	**1,5**	2,6						
CC.. 060208												
CC.. 09T300												
CC.. 09T301												
CC.. 09T302												
CC.. 09T304	0,08	**0,16**	0,24	0,4	**1,7**	3,0						
CC.. 09T308	0,12	**0,24**	0,35	0,8	**2,4**	4,0						
CC.. 09T312												
CC.. 120402												
CC.. 120404	0,08	**0,18**	0,28	0,4	**2,2**	4,0						
CC.. 120408	0,12	**0,26**	0,40	0,8	**2,8**	4,8						
CC.. 120412												
DC.. 0702005							0,02	**0,025**	0,04	0,1	**1**	2
DC.. 070201							0,02	**0,03**	0,05	0,1	**1**	2
DC.. 0702015							0,02	**0,04**	0,075	0,1	**1**	2
DC.. 070202							0,02	**0,05**	0,1	0,1	**1**	2
DC.. 070204	0,06	**0,14**	0,22	0,4	**1,3**	2,2						
DC.. 070208	0,08	**0,16**	0,24	0,8	**1,6**	2,4						
DC.. 11T3005							0,02	**0,025**	0,04	0,1	**1,25**	2,5
DC.. 11T301							0,02	**0,03**	0,05	0,1	**1,25**	2,5
DC.. 11T3015							0,02	**0,04**	0,075	0,1	**1,25**	2,5
DC.. 11T302							0,02	**0,075**	0,1	0,1	**1,25**	2,5
DC.. 11T304	0,08	**0,16**	0,24	0,4	**1,7**	3,0	0,02	**0,1**	0,25	0,1	**1,25**	2,5
DC.. 11T308	0,12	**0,24**	0,35	0,8	**2,4**	4,0						
DC.. 11T312												
RC.. 0602M0												
RC.. 0803M0												
RC.. 1003M0												
RC.. 1204M0												
RC.. 1606M0												
RC.. 2006M0												
RC.. 2507M0												
SC.. 09T304	0,12	**0,24**	0,35	0,8	**2,4**	4,0						
SC.. 09T308	0,12	**0,26**	0,40	0,8	**2,8**	4,8						
SC.. 120408												
SC.. 120412												
TC.. 090204	0,06	**0,12**	0,18	0,4	**1,3**	2,2						
TC.. 110202												
TC.. 110204	0,06	**0,14**	0,22	0,4	**1,4**	2,4						
TC.. 110208												
TC.. 16T302												
TC.. 16T304												
TC.. 16T308	0,12	**0,24**	0,35	0,8	**2,6**	4,4						
TC.. 16T312												
TC.. 220408												
VC.. 1103005							0,02	**0,025**	0,04	0,1	**1,25**	2,5
VC.. 110301							0,02	**0,03**	0,05	0,1	**1,25**	2,5
VC.. 1103015							0,02	**0,04**	0,075	0,1	**1,25**	2,5
VC.. 110302							0,02	**0,075**	0,1	0,1	**1,25**	2,5
VC.. 110304							0,02	**0,15**	0,25	0,1	**1,25**	2,5
VC.. 110308												
VC.. 160402												
VC.. 160404	0,08	**0,14**	0,20	0,4	**1,7**	3,0						
VC.. 160408	0,12	**0,21**	0,30	0,8	**2,1**	3,4						
VC.. 160412												
VC.. 220530												
WC.. 020102												
WC.. 020104												

sharp ◄——————————————————————► stable

Information on the cutting data of chip breakers not included in this overview, can be found on → **Page 168–175**

9

Cutting data standard values for diamond cutting materials CTD PD20 / PS30 / PU20 / CD10

Material group			a_p = 0,04–0,4 mm Surface roughness R_z in µm 2,5–5,0	a_p = 0,04–0,4 mm Surface roughness R_z in µm 5,0–10	a_p = 0,4–1,0 mm Surface roughness R_z in µm 2,5–5,0	a_p = 0,4–1,0 mm Surface roughness R_z in µm 5,0–10	a_p = 0,4–2,5 mm Surface roughness R_z in µm 2,5–5,0	a_p = 0,4–2,5 mm Surface roughness R_z in µm 5,0–10
			CTD ...	CTD ...	CTD ...	CTD ...	CTD ...	CTD ...
Aluminium wrought alloys without Si f=0.05–0.5 mm/rev.	○	Grade v_c in m/min	PD20 / PU20 / CD10 **400–2500**	PD20 / PU20 / CD10 **400–2500**	PD20 / PU20 / CD10 **400–2000**	PD20 / PU20 / CD10 **400–2000**	PD20 / PU20 / CD10 **400–1600**	PD20 / PU20 / CD10 **400–1600**
	◔	Grade v_c in m/min		PD20 / CD10 **400–2500**		PD20 / CD10 **400–2000**		PD20 / CD10 **400–1600**
	◌	Grade v_c in m/min	PD20 / PU20 **400–2500**	PD20 / PU20 **400–2500**	PD20 / PU20 **400–2000**	PD20 / PU20 **400–2000**	PD20 / PU20 **400–1600**	PD20 / PU20 **400–1600**
Aluminium cast alloys Si=2–12 % f=0.05–0.5 mm/rev.	○	Grade v_c in m/min	PS30 / PU20 / CD10 **600–2000**	PS30 / PU20 / CD10 **600–2200**	PS30 / PU20 / CD10 **600–1800**	PS30 / PU20 / CD10 **600–2000**	PS30 / PU20 / CD10 **600–1500**	PS30 / PU20 / CD10 **600–1800**
	◔	Grade v_c in m/min	PD20 / PU20 / CD10 **400–2000**	PD20 / PU20 / CD10 **400–2200**	PD20 / PU20 / CD10 **400–1800**	PS30 / PU20 / CD10 **600–2000**	PS30 / PU20 / CD10 **400–1500**	PS30 / PU20 / CD10 **400–1800**
	◌	Grade v_c in m/min	PS30 **600–2000**	PS30 **600–2200**	PS30 **600–1800**	PS30 **600–2000**	PS30 **600–1500**	
Aluminium cast alloys Si=12–20 % f=0.05–0.5 mm/rev.	○	Grade v_c in m/min	PU20 / CD10 **800-1200**	PU20 / CD10 **400–1800**	PU20 / CD10 **700–1000**	PU20 / CD10 **400–1500**	PU20 / CD10 **600–900**	PU20 / CD10 **400–1200**
	◔	Grade v_c in m/min		PU20 / CD10 **600–1800**		PU20 / CD10 **600–1500**		PU20 / CD10 **600–1200**
	◌	Grade v_c in m/min		PU20 **600–1800**		PU20 **600–1500**		
Copper and copper wrought alloys f=0.05–0.5 mm/rev.	○	Grade v_c in m/min	PD20 / PU20 / CD10 **400–1800**	PD20 / PU20 / CD10 **300–1600**	PD20 / PU20 / CD10 **400–1600**	PS30 / PU20 / CD10 **300–1600**	PD20 / PU20 / CD10 **400–1400**	PD20 / PU20 / CD10 **400–1500**
	◔	Grade v_c in m/min	PU20 / CD10 **300–1500**	PD20 / PU20 / CD10 **300–1500**	PD20 / PU20 / CD10 **400–1600**	PS30 / PU20 / CD10 **300–1500**	PD20 / PU20 / CD10 **400–1500**	PD20 / PU20 / CD10 **300–1400**
	◌	Grade v_c in m/min		PD20 / PU20 **300–1800**		PS30 / PU20 **300–1700**	PD20 / PU20 **300–1600**	PS30 / PU20 **200–1300**
Plastic materials without reinforcement (acrylic glass) f=0.05–0.7 mm/rev.	○	Grade v_c in m/min		PD20 / CD10 **400–1200**		PD20 / CD10 **300–1000**		PD20 / CD10 **200–1000**
	◔	Grade v_c in m/min		PD20 / CD10 **300–1200**		PD20 / CD10 **200–1000**		PS30 / CD10 **200–900**
	◌	Grade v_c in m/min		PD20 / CD10 **400–1200**		PD20 / CD10 **300–1000**		PD20 / CD10 **200–1000**
Plastic materials with reinforcement (glass-fibre, carbon-fibre reinforced) f=0.05–0.7 mm/rev.	○	Grade v_c in m/min	PS30 / PU20 / CD10 **500–1000**		PS30 / PU20 / CD10 **400–900**	PS30 / PU20 / CD10 **300–900**	PS30 / PU20 / CD10 **300–800**	PS30 / PU20 / CD10 **200–1200**
	◔	Grade v_c in m/min	PS30 / PU20 / CD10 **400–900**		PS30 / PU20 / CD10 **300–800**	PS30 / PU20 / CD10 **200–900**	PS30 / PU20 / CD10 **200–800**	PS30 / PU20 / CD10 **200–1400**
	◌	Grade v_c in m/min	PU20 **500–1000**		PU20 **400–800**	PU20 **300–1000**	PU20 **300–800**	

○ **Smooth cut**	◔ **Irregular cutting depth**	◌ **Interrupted cut**

Application range of CBN grades

Cutting material grade	Cutting material designation		Properties		Application range	Interrupted cut	Material suitability/ ISO hardness			
	New	Old	PcBN content	Main binder			K	S	H	Sintered steels
High PcBN content	**CTB S10U**	PBC 10	95 %		Grey cast iron, sintered steels, super alloys	Smooth to medium interrupted cut	10	10		10
	CTB S20C	PBC 15-S	90 %		Spheroidal graphite cast iron, sintered steels, super alloys		20	20		20
Low PcBN content	**CTB H15C**	–	40 %	TiN	32 HRC and above	Smooth cut			15	
	CTB H15U	–	40 %	TiN		Smooth to slightly interrupted cut			15	
	CTB H20C	PBC 25-S	65 %	TiCN	48–62 HRC				20	
	CTB H21U	PBC 25	65 %	TiCN	52–65 HRC				20	
	CTB H40C	PBC 40-S	55 %	TiN	48–65 HRC	Interrupted cut			40	
	CTB H40U	PBC 40	65 %	TiN	54–65 HRC				40	

9

CBN – The Next Generation

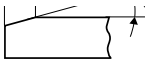
The ‚Sandwich' Technology

The singular system (patent), to apply CBN segments on a tungsten carbide base in a single process reduces the edge price significantly and opens up the possibility for the development of different CBN grades.

Specialized edge preperations! To achieve the highest efficiency for each application, the new CBN sandwich inserts are available with up to 8 edge preperations.

CBN Test Insert

The type CNGA test insert was specifically used, in order to identify the **quickest and most effective** type.
The insert is manufactured with four edge preperations for trial. The cutting edge with highest performance gives the correct chamfer style.



Article No.	Designation	Chamfers (BN x GB)				Price / £
71 499 ...						
290	CNGA 120408-X-**CTB S20C**	**A** F (sharp)	**B** 009B (0,09mm x 10°)	**C** 009C (0,09mm x 15°)	**E** 009D (0,09mm x 20°)	81.45
292	CNGA 120408-X-**CTB H20C**	**B** 009C (0,09mm x 15°)	**C** 009D (0,09mm x 20°)	**E** 011E (0,11mm x 25°)	**G** 014F (0,14mm x 30°)	81.45
294	CNGA 120408-X-**CTB H40C**	**C** 009D (0,09mm x 20°)	**E** 011E (0,11mm x 25°)	**G** 014F (0,14mm x 30°)	**H** 014G (0,14mm x 35°)	81.45

Cutting data values for CBN inserts

			CTB S10U (PBC 10)					
	Cutting edges code negative insert*		**EN** (A)			**F**		
	Cutting edges code positive insert*		**EN** (A)			**TN–D** (F)		
Index	**Material**	**Strength**	v_c	f	a_p	v_c	f	a_p
	Sintered steels (< HV300)		150–350	0,02–0,25	0,02–0,4	100–220	0,08–0,35	0,1–0,4
	General sintered steel (> HV300)		250–750	0,02–0,25	0,02–0,4	210–550	0,08–0,35	0,1–0,4
	High density sintered steel (> HV600)		200–700	0,02–0,25	0,02–0,4	150–400	0,08–0,35	0,1–0,4
3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	900–1600	0,02–0,25	0,05–0,25	700–1200	0,08–0,35	0,08–0,4
3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	900–1600	0,02–0,25	0,05–0,25	700–1200	0,08–0,35	0,08–0,4
3.3	Cast iron with spheroidal graphite	300–500 N/mm²	1000–1750	0,02–0,25	0,02–0,25	800–1250	0,08–0,35	0,08–0,4
3.4	Cast iron with spheroidal graphite	500–900 N/mm²	1000–1750	0,02–0,25	0,02–0,25	800–1250	0,08–0,35	0,08–0,4
3.5	White malleable cast iron	270–450 N/mm²						
3.6	White malleable cast iron	500–650 N/mm²						
3.7	Black malleable cast iron	300–450 N/mm²						
3.8	Black malleable cast iron	500–800 N/mm²						
5.1	Pure nickel							
5.2	Nickel alloys							
5.3	Nickel alloys	< 850 N/mm²						
5.4	Nickel molybdenum alloys		300–700	0,02–0,25	0,02–0,4	250–400	0,08–0,35	0,08–0,4
5.5	Nickel-chromium alloys	< 1300 N/mm²	300–700	0,02–0,25	0,02–0,4	250–400	0,08–0,35	0,08–0,4
5.6	Cobalt Chrome Alloys	< 1300 N/mm²	300–700	0,02–0,25	0,02–0,4	250–400	0,08–0,35	0,08–0,4
5.7	Heat resistant alloys	< 1300 N/mm²	300–700	0,02–0,25	0,02–0,4	250–400	0,08–0,35	0,08–0,4
5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	300–700	0,02–0,25	0,02–0,4	250–400	0,08–0,35	0,08–0,4
5.9	Pure titanium	< 900 N/mm²						
5.10	Titanium alloys	< 700 N/mm²						
5.11	Titanium alloys	< 1200 N/mm²						

			CTB S20C (PBC 15S)					
	Cutting edges code negative insert*		**SN–C** (D)			**SN–D** (E)		
	Cutting edges code positive insert*		**TN–D**			**SN–D**		
Index	**Material**	**Strength**	v_c	f	a_p	v_c	f	a_p
	Sintered steels (< HV300)		130–300	0,05–0,35	0,06–0,4	120–250	0,06–0,35	0,08–0,4
	General sintered steel (> HV300)		250–600	0,05–0,35	0,06–0,4	220–580	0,06–0,35	0,08–0,4
	High density sintered steel (> HV600)		180–550	0,05–0,35	0,06–0,4	170–510	0,06–0,35	0,08–0,4
3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	650–1100	0,05–0,35	0,06–0,4	600–1000	0,06–0,35	0,08–0,5
3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	650–1100	0,05–0,35	0,06–0,4	600–1000	0,06–0,35	0,08–0,5
3.3	Cast iron with spheroidal graphite	300–500 N/mm²	750–1300	0,05–0,35	0,06–0,4	700–1250	0,06–0,35	0,08–0,5
3.4	Cast iron with spheroidal graphite	500–900 N/mm²	750–1300	0,05–0,35	0,06–0,4	700–1250	0,06–0,35	0,08–0,5
3.5	White malleable cast iron	270–450 N/mm²						
3.6	White malleable cast iron	500–650 N/mm²						
3.7	Black malleable cast iron	300–450 N/mm²						
3.8	Black malleable cast iron	500–800 N/mm²						
5.1	Pure nickel							
5.2	Nickel alloys							
5.3	Nickel alloys	< 850 N/mm²						
5.4	Nickel molybdenum alloys		180–500	0,05–0,4	0,06–0,4	180–450	0,06–0,5	0,08–0,5
5.5	Nickel-chromium alloys	< 1300 N/mm²	180–500	0,05–0,4	0,06–0,4	180–450	0,06–0,5	0,08–0,5
5.6	Cobalt Chrome Alloys	< 1300 N/mm²	180–500	0,05–0,4	0,06–0,4	180–450	0,06–0,5	0,08–0,5
5.7	Heat resistant alloys	< 1300 N/mm²	180–500	0,05–0,4	0,06–0,4	180–450	0,06–0,5	0,08–0,5
5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	180–500	0,05–0,4	0,06–0,4	180–450	0,06–0,5	0,08–0,5
5.9	Pure titanium	< 900 N/mm²						
5.10	Titanium alloys	< 700 N/mm²						
5.11	Titanium alloys	< 1200 N/mm²						

* Note chamfer width: The wider the chamfer, the more stable the cutting edge.

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data values for CBN inserts

CTB S20C (PBC 15S)								
EN (A)			**SN–B** (B)			**SN–C** (C)		
EN (A)			**SN–B** (B)			**SN–C** (C)		
v_c	f	a_p	v_c	f	a_p	v_c	f	a_p
150–350	0,02–0,25	0,02–0,4	150–350	0,04–0,25	0,03–0,4	150–350	0,05–0,25	0,06–0,4
250–750	0,02–0,25	0,02–0,4	250–700	0,04–0,25	0,03–0,4	250–650	0,05–0,25	0,06–0,4
200–700	0,02–0,25	0,02–0,4	200–700	0,04–0,25	0,03–0,4	200–600	0,05–0,25	0,06–0,4
800–1450	0,02–0,25	0,05–0,25	700–1400	0,04–0,25	0,05–0,25	650–1300	0,05–0,25	0,06–0,4
800–1450	0,02–0,25	0,05–0,25	700–1400	0,04–0,25	0,05–0,25	650–1300	0,05–0,25	0,06–0,4
900–1600	0,02–0,25	0,05–0,25	800–1600	0,04–0,25	0,05–0,25	780–1400	0,05–0,25	0,06–0,4
900–1600	0,02–0,25	0,05–0,25	800–1600	0,04–0,25	0,05–0,25	780–1400	0,05–0,25	0,06–0,4
200–600	0,02–0,25	0,02–0,4	200–550	0,04–0,25	0,03–0,4	200–550	0,05–0,25	0,06–0,4
200–600	0,02–0,25	0,02–0,4	200–550	0,04–0,25	0,03–0,4	200–550	0,05–0,25	0,06–0,4
200–600	0,02–0,25	0,02–0,4	200–550	0,04–0,25	0,03–0,4	200–550	0,05–0,25	0,06–0,4
200–600	0,02–0,25	0,02–0,4	200–550	0,04–0,25	0,03–0,4	200–550	0,05–0,25	0,06–0,4
200–600	0,02–0,25	0,02–0,4	200–550	0,04–0,25	0,03–0,4	200–550	0,05–0,25	0,06–0,4

CTB S20C (PBC 15S)								
SN–D (F)			**SN–E** (G)			**SN–F** (H)		
TN–E			**SN–E**			**SN–F**		
v_c	f	a_p	v_c	f	a_p	v_c	f	a_p
100–220	0,08–0,35	0,1–0,4	100–200	0,1–0,35	0,1–0,4	80–150	0,12–0,35	0,12–0,4
210–550	0,08–0,35	0,1–0,4	200–520	0,1–0,35	0,1–0,4	180–480	0,12–0,35	0,12–0,4
150–400	0,08–0,35	0,1–0,4	130–350	0,1–0,35	0,1–0,4	80–250	0,12–0,35	0,12–0,4
550–1000	0,08–0,35	0,08–0,4	550–950	0,1–0,35	0,1–0,4	500–850	0,12–0,35	0,12–0,4
550–1000	0,08–0,35	0,08–0,4	550–950	0,1–0,35	0,1–0,4	500–850	0,12–0,35	0,12–0,4
700–1200	0,08–0,35	0,08–0,4	700–1100	0,1–0,35	0,1–0,4	650–1000	0,12–0,35	0,12–0,4
700–1200	0,08–0,35	0,08–0,4	700–1100	0,1–0,35	0,1–0,4	650–1000	0,12–0,35	0,12–0,4
150–350	0,08–0,35	0,08–0,4	150–320	0,1–0,35	0,1–0,4	130–300	0,12–0,35	0,12–0,4
150–350	0,08–0,35	0,08–0,4	150–320	0,1–0,35	0,1–0,4	130–300	0,12–0,35	0,12–0,4
150–350	0,08–0,35	0,08–0,4	150–320	0,1–0,35	0,1–0,4	130–300	0,12–0,35	0,12–0,4
150–350	0,08–0,35	0,08–0,4	150–320	0,1–0,35	0,1–0,4	130–300	0,12–0,35	0,12–0,4
150–350	0,08–0,35	0,08–0,4	150–320	0,1–0,35	0,1–0,4	130–300	0,12–0,35	0,12–0,4

CCGW 120404 FN-...

CTB H15U / CT		
FN (A) / **FN** (A)		
FN (A) / **FN** (A)		
1,6 - 6,4		
v_c	f	a_p
0-240	0,03-0,15	0,06
240	0,03-0,15	0,0
	0,03-0,15	

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Cutting data values for CBN inserts

					CTB H15U / CTB H15C (BHT02RU / BHT02R)					
		Cutting edges code negative insert*			FN (A) / FN (A)			EN (B) / EN (B)		
		Cutting edges code positive insert*			FN (A) / FN (A)			EN (B) / EN (B)		
			Ra (theo.)		1,6 – 6,4			1,0 – 3,2		
Index	Material	Strength			v_c	f	a_p	v_c	f	a_p
6.1		< 45 HRC	x		160–240	0,03–0,15	0,06–0,3	160–240	0,03–0,15	0,06–0,3
6.2		46–55 HRC	x		160–240	0,03–0,15	0,06–0,3	160–240	0,03–0,15	0,06–0,3
6.3	Tempered steel	56–60 HRC	x		160–240	0,03–0,15	0,06–0,3	160–240	0,03–0,15	0,06–0,3
6.4		61–65 HRC								
6.5		65–70 HRC								

					CTB H21U / CTB H20C (PBC 25 / PBC 25S)					
		Cutting edges code negative insert*			FN (A) / FN (A)			TN-C (B)		
		Cutting edges code positive insert*			EN (A) / FN (A)			EN (B)		
			Ra (theo.)		1,6 – 6,4			1,0 – 4,5		
Index	Material	Strength			v_c	f	a_p	v_c	f	a_p
6.1		< 45 HRC								
6.2		46–55 HRC	x		300–380	0,04–0,25	0,05–0,5	280–350	0,04–0,15	0,05–0,5
6.3	Tempered steel	56–60 HRC	x		300–380	0,04–0,25	0,05–0,5	280–350	0,04–0,15	0,05–0,5
6.4		61–65 HRC								
6.5		65–70 HRC								

					CTB H21U / CTB H20C (PBC 25 / PBC 25S)					
		Cutting edges code negative insert*			TN-E (F)/ SN-E (F)			SN-F (G)		
		Cutting edges code positive insert*			TN-E (F)			SN-E (G)		
			Ra (theo.)		0,35 – 1,6			0,2 – 0,8		
Index	Material	Strength			v_c	f	a_p	v_c	f	a_p
6.1		< 45 HRC								
6.2		46–55 HRC	x		210–260	0,05–0,15	0,1–0,5	180–230	0,06–0,20	0,1–0,5
6.3	Tempered steel	56–60 HRC	x		210–260	0,05–0,15	0,1–0,5	180–230	0,06–0,20	0,1–0,5
6.4		61–65 HRC								
6.5		65–70 HRC								

					CTB H40U / CTB H40C (PBC 40 / PBC 40S)					
		Cutting edges code negative insert*			FN (A) / EN (A)			SN-C (B)		
		Cutting edges code positive insert*			FN (A) / EN (A)			TN-D (B)		
			Ra (theo.)		1,0 – 3,2			0,8 – 3,0		
Index	Material	Strength			v_c	f	a_p	v_c	f	a_p
6.1		< 45 HRC								
6.2		46–55 HRC	x		190–250	0,03–0,15	0,03–0,5	180–240	0,04–0,15	0,03–0,5
6.3	Tempered steel	56–60 HRC	x		190–250	0,03–0,15	0,03–0,5	180–240	0,04–0,15	0,03–0,5
6.4		61–65 HRC	x		190–250	0,03–0,15	0,03–0,5	180–240	0,04–0,15	0,03–0,5
6.5		65–70 HRC								

					CTB H40U / CTB H40C (PBC 40 / PBC 40S)					
		Cutting edges code negative insert*			SN-E (F)			SN-F (G)		
		Cutting edges code positive insert*			TN-F (F)			SN-F (G)		
			Ra (theo.)		0,4 – 1,0			0,2 – 0,8		
Index	Material	Strength			v_c	f	a_p	v_c	f	a_p
6.1		< 45 HRC								
6.2		46–55 HRC	x		180–230	0,05–0,25	0,1–0,5	130–200	0,04–0,15	0,1–0,5
6.3	Tempered steel	56–60 HRC	x		180–230	0,05–0,25	0,1–0,5	130–200	0,04–0,15	0,1–0,5
6.4		61–65 HRC	x		180–230	0,05–0,25	0,1–0,5	130–200	0,04–0,15	0,1–0,5
6.5		65–70 HRC								

* Note chamfer width: The wider the chamfer, the more stable the cutting edge.

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data values for CBN inserts

CTB H15U / CTB H15C (BHT02RU / BHT02R)								
SN-C (D) / **SN-C** (D)			**SN-E** (F) / **SN-E** (F)			**RN / RN** (Rounded chamfer)		
SN-C (D) / **SN-C** (D)			**SN-E** (F) / **SN-E** (F)			**RN / RN** (Rounded chamfer)		
0,5 – 1,6			0,1 – 0,8			0,1 – 0,8		
v_c	f	a_p	v_c	f	a_p	v_c	f	a_p
140–200	0,06–0,2	0,08–0,3	120–180	0,06–0,25	0,1–0,4	130–210	0,06–0,2	0,08–0,3
140–200	0,06–0,2	0,08–0,3	120–180	0,06–0,25	0,1–0,4	130–210	0,06–0,2	0,08–0,3
140–200	0,06–0,2	0,08–0,3	120–180	0,06–0,25	0,1–0,4	130–210	0,06–0,2	0,08–0,3

CTB H21U / CTB H20C (PBC 25 / PBC 25S)								
TN-D (C)			**TN-D** (D) / **SN-D** (D)			**TN-E** (E)		
SN-B (C)			**TN-D** (D) / **SN-C** (D)			**SN-D** (E)		
0,8 – 3,0			0,5 – 2,0			0,35 – 2,5		
v_c	f	a_p	v_c	f	a_p	v_c	f	a_p
270–330	0,06–0,25	0,05–0,5	250–320	0,06–0,25	0,08–1,0	220–290	0,05–0,15	0,08–0,5
270–330	0,06–0,25	0,05–0,5	250–320	0,06–0,25	0,08–1,0	220–290	0,05–0,15	0,08–0,5

CTB H21U / CTB H20C (PBC 25 / PBC 25S)		
SN-G (H)		
SN-F (H)		
0,1 – 0,5		
v_c	f	a_p
160–200	0,05–0,12	0,1–0,5
160–200	0,05–0,12	0,1–0,5

CTB H40U / CTB H40C (PBC 40 / PBC 40S)								
SN-D (C)			**SN-D** (D)			**EN-T** (E)/ **SN-E** (E)		
SN-D (C)			**TN-D** (D)			**EN-T** (E)/ **SN-E** (E)		
0,8 – 2,0			0,5 – 1,6			0,5 – 1,6		
v_c	f	a_p	v_c	f	a_p	v_c	f	a_p
160–220	0,04–0,15	0,03–0,5	150–210	0,04–0,25	0,08–0,5	140–200	0,05–0,15	0,08–0,5
160–220	0,04–0,15	0,03–0,5	150–210	0,04–0,25	0,08–0,5	140–200	0,05–0,15	0,08–0,5
160–220	0,04–0,15	0,03–0,5	150–210	0,04–0,25	0,08–0,5	140–200	0,05–0,15	0,08–0,5

CTB H40U / CTB H40C (PBC 40 / PBC 40S)		
SN-G (H)		
SN-G (H)		
0,1 – 0,5		
v_c	f	a_p
120–190	0,04–0,12	0,1–0,5
120–190	0,04–0,12	0,1–0,5
120–190	0,04–0,12	0,1–0,5

CCGW 120404 FN –...

CTB H15U / CT		
FN (A) / **FN** (A)		
FN (A) / **FN** (A)		
1,6 – 6,4		
v_c	f	a_p
0–240	0,03–0,15	0,06
240	0,03–0,15	0,0
	0,03–0,15	

9

Diamond as a cutting material

Ensures

- optimal surface quality
- burr-free workpieces
- high service lives
- lowest cutting forces
- high Process Security

Complete programme of roughing, finishing and wiper inserts for machining aluminium, non ferrous metals, plastics, ...

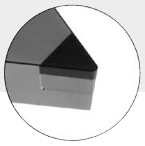
The cutting materials

	CTD CD10 (CVD)	CTD PD20 (PKD)	CTD PU20 (PKD)	CTD CD10 (CVD)
	Fine grain Size (N10)	Fine grain grade (N20)	Coarse grain grade (N20)	Coarse grain Size (N30)
Properties	▲ perfect sharp edges ▲ no cutting pressure ▲ very close tolerances ▲ highest abrasion resistance with highest toughness ▲ very high heat conductivity	▲ high sharpness ▲ lower cutting pressure than PDC-S ▲ close tolerance ▲ lower abrasion resistance with increased toughness	▲ very sharp cutting edge ▲ reduced cutting pressure ▲ tight tolerances ▲ very high level of wear resistance and toughness	▲ high sharpness ▲ lower cutting pressure ▲ close tolerance ▲ lower abrasion resistance than with the PDC, with increased toughness
Material	suitable for superfinishing and semi-finishing of all non ferrous metals and NE-composite materials with small to high levels of abrasiveness	suitable for fine machining of all NE materials with low abrasiveness	suitable for finishing to roughing non-ferrous metals and non-ferrous materials with highly abrasive alloying element. High chip removal on fibre-reinforced plastics such as CFRP and GFRP.	suitable for fine machining of all NE-materials and non-ferrous metals with low to very high levels of abrasiveness

Cutting Geometries

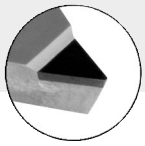
Neutral rake angle:

- higher cuting force
- higher temperature
- improved surface quality
- for stable workpieces



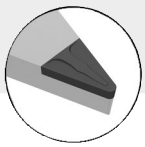
Positive rake angle:

- lower cutting force
- lower temperature
- reduction in surface quality
- for unstable workpieces
- improved accuracy



CB chip breaker geometries:

- reliable chip control
- ideal for low-alloy aluminium
- for F | M | R applications

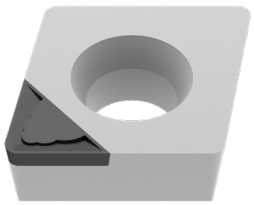


Notes on diamond usage

- coolant is not generally needed, however it facilitates chip removal
- note the chemical reaction to carbide-forming elements (PCD)
- note the thermal interaction and critical temperature:
  PCD: 600 °C, CVD: 700 °C
  Depending on the material, use cooling.

Cutting data standard values for the CB chip breaker geometries

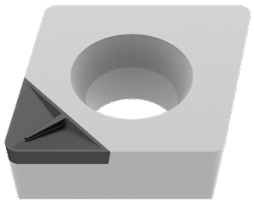
-CB1



3D-Chip Breaker -CB1				
Corner Radius	a_p in mm		f_z in mm/rev.	
	min.	max.	min.	max.
0,1 mm	0,05	0,30	0,02	0,05
0,2 mm	0,06	0,40	0,03	0,08
0,4 mm	0,10	0,80	0,04	0,15
0,8 mm	0,15	1,00	0,08	0,20
1,2 mm	0,30	1,50	0,12	0,25

- Finish and Superfinish
- Extremely sharp cutting edge geometry
- Depth of Cut a_p: 0,05–1,5 mm
- Smallest cutting pressure for highest accuracies
- For machining of thin-walled and unstable workpieces

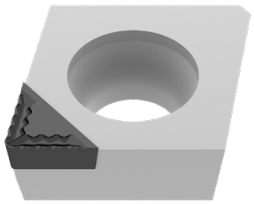
-CB2



3D-Chip Breaker -CB2				
Corner Radius	a_p in mm		f_z in mm/rev.	
	min.	max.	min.	max.
0,2 mm	0,50	0,80	0,08	0,12
0,4 mm	0,60	1,50	0,08	0,20
0,8 mm	0,70	1,50	0,15	0,30
1,2 mm	0,80	2,00	0,20	0,40

- Semi-finish and Finish machining
- Negative edge preperation
- Cutting Depth a_p: 0,5–2,0 mm
- High surface quality and tight tolerances
- Machining of solid workpieces under stable conditions

-CB3



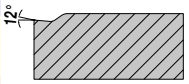
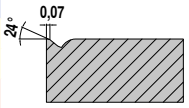
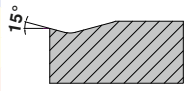
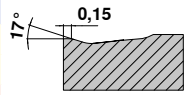
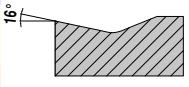
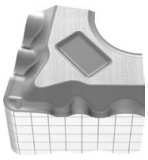
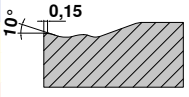
3D-Chip Breaker -CB3				
Corner Radius	a_p in mm		f_z in mm/rev.	
	min.	max.	min.	max.
0,4 mm	1,00	3,00	0,10	0,20
0,8 mm	1,00	3,00	0,15	0,35

- Medium and rough machining
- Highly aggressive chip breaker
- Cutting depth a_p: 1,0–3,0 mm
- Stable component conditions necessary
- Cooling must be ensured

Standard chip breakers / application notes

Negative

Main application steel and cast iron, secondary application stainless steels

	Model	Smooth cut ○	Irregular cutting depth ◌	Interrupted cut ◌	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
-CF / -CF20 (-CF / -NF12) ▲ Fine finishing ▲ Sharp cutting edge for low cutting forces ▲ Good chip control even at small depths of cut	 F	**CTEP110 / TCM10 (DCC1110 / CWC10)** CTEP110 / TCM10 (DCC1110 / CWC10) CTEP110 / TCM10 (DCC1110 / CWC10)			 12°		CN.. DN.. TN.. WN..
					0,30–1,50	0,07–0,25	
-F40 (-F40) ▲ Fine turning chip breaker for machining steels ▲ Good chip control ▲ Ideal for copy turning work	 F	**CTCP125 (HCX1125)** CTCP125 (HCX1125) CTCP125 (HCX1125)	**CTCP125 (HCX1125)** CTCP125 (HCX1125) CTCP125 (HCX1125)		 24° 0,07		VN..
					0,50–2,00	0,10–0,30	
-F50 (-NF15) ▲ Fine turning chip breaker for fine machining ▲ Steel and stainless steels ▲ Excellent chip control ▲ High surface quality	 F	**CTCP125 (HCX1125)** CTCP115 / CTCP125 (HCX115 / HCX1125)	**CTCP115 / CTCP125 / CTCP135 (HCX1115 / HCX1125 / HCX1135)** CTCP125 / CTCP135 (HCX1125 / HCX1135)	**CTCP135 (HCX1135)** CTCP135 (HCX1135)	 15°		CN.. DN.. SN.. TN.. VN.. WN..
					0,10–2,60	0,06–0,35	
-TFQ (-TFQ) ▲ Wiper geometry ▲ Finishing to medium machining ▲ Very high feedrate ▲ High surface quality	 F	**CTEP110 / CTCP115 (DCC1110 / HCX1115)** CTEP110 / CTCP115 (DCC1110 / HCX 1115) CTEP110 / CTCP115 (DCC1110 / HCX 1115)	**CTCP115 / CTCP125 (HCX1115 / HCX1125)** CTCP115 / CTCP125 (HCX1115 / HCX1125) CTCP115 / CTCP125 (HCX1115 / HCX1125)		 17° 0,15		CN.. DN.. WN..
					0,50–5,00	0,10–0,60	
-42 (-42) ▲ Extremely soft-cutting chip breaker ▲ For small and medium widths of cut ▲ Suitable for thin-walled parts	 F M	**CTC2135 (CWN2135)** CTC2135 (CWN2135) **CTC2135 (CWN2135)**	**CTC2135 (CWN2135)** CTC2135 (CWN2135) **CTC2135 (CWN2135)**		 16°		CN..
					0,50–4,50	0,05–0,35	
-XU (-XU) ▲ Finishing to light roughing ▲ Universal chip breaker ▲ Copy turning ▲ Excellent chip formation ▲ Low cutting forces	 M	**CTCP115 / CTCP125 (HCX1115 / HCX1125)** CTCP125 (HCX1125) CTCP115 (HCX1115)	CTCP115 / **CTCP125** (HCX1115 / **HCX1125**) CTCP125 (HCX1125) CTCP115 / CTCP125 (HCX1115 / HCX1125)	CTCP125 (HCX1125)	 10° 0,15		CN.. DN.. VN.. WN..
					0,40–4,50	0,12–0,40	

Standard chip breakers / application notes

Negative

Main application steel and cast iron, secondary application stainless steels

Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
-M40 (-M40) ▲ Stable geometry ▲ Medium feed rates ▲ Can be used for any application ▲ Good chip control	**CTCP125 (HCX1125)** CTCP125 (HCX1125) CTCP125 (HCX1125)	**CTCP125 (HCX1125)** CTCP125 (HCX1125) CTCP125 (HCX1125)		0,50–3,00	0,10–0,35	VN..
M						
-M50 (-NM15) ▲ Medium machining ▲ First choice for steel machining ▲ Universal application ▲ Wide range of applications	**CTCP115 / CTCP125 / CTCK110 / CTCK120 (HCX1115 / HCX1125 / DCX3110 / HCF3120)** CTCP125 (HCX1125) **CTCP115 / CTCP125 / CTCK110 / CTCK120 (HCX1115 / HCX1125 / DCX3110 / HCF3120)**	CTCP115 / **CTCP125 (HCX1115 / HCX1125)** CTCP125 (HCX1125) CTCP115 / **CTCP125 / CTCK110 / CTCK120** (HCX1115 / **HCX1125 / DCX3110 / HCF3120)**	**CTCP125 (HCX1125)** **CTCP125 / CTCK120 (HCX1125 / HCF3120)**	0,50–5,00	0,12–0,40	CN.. DN.. SN.. TN.. VN.. WN..
M						
-TMQ (-TMQ) ▲ Wiper geometry ▲ Light to medium rough machining ▲ Very high feedrate ▲ High surface quality	**CTCP115 (HCX1115)** CTCP125 (HCX1125) CTCP125 (HCX1125)	**CTCP125 (HCX1125)** CTCP125 (HCX1125) CTCP125 (HCX1125)		0,80–6,00	0,20–0,85	CN.. DN.. WN..
M						
-M70 (-NM19) ▲ Light to medium rough machining ▲ Cast crust and forging skin ▲ Stable cutting edge ▲ Interrupted cut ▲ Raw materials and forgings	**CTCK110 / CTCK120 / CTCP115 (DCX3110 / HCF3120 / HCX1115)** **CTCP125 / CTC2135 (HCX1125 / CWN2135)** **CTCK110 / CTCK120 / CTCP115** / CTCP125 **(DCX3110 / HCF3120 / HCX1115 /** HCX1125)	CTCP115 / **CTCP125** (HCX1115 / **HXC1125)** **CTC2135 /** CTCP135 **CWN2135 /** HCR1135 **CTCK120 /** CTCP125 **(HCF3120 /** HCX1125)	**CTCP125 / CTCP135 (HCX1125 / HCR1135)** CTCP135 / **CTC2135** HCR1135 / **CWN2135** **CTCP125 /** CTCK120 **(HCX1125 /** HCF3120)	1,50–4,50	0,20–0,80	CN.. DN.. SN.. TN.. WN..
M **R**	CTC2135 / CTCP125 (CWN2135 / HCX1125)	CTC2135 / CTCP125 (CWN2135 / HCX1125)				
.NMA ▲ Rough machining ▲ Stable cutting edge ▲ For short-chipping materials ▲ First choice for grey cast iron	**CTCK110 (DCX3110)**	**CTCK110 / CTCK120 (DCX3110 / HFC3120)**	**CTCK120 HFC3120**	1,50–4,50	0,20–0,80	CN.. DN.. SN.. TN.. WN..
R						
-R28 (-NR14) ▲ Single sided roughing geometry ▲ Longitudinal, face and copy turning ▲ Varying depths of cut ▲ Steels with low tensile strength (800 N/mm²) ▲ Good chip control	**CTCP115** / CTCP125 **(HCX1115** / HCX1125) **CTCP115 / CTCP125 (HCX1115 / HCX1125)** CTCP115 (HCX1115) CTCP125 / CTCP135 (HCX1125 / HCR1135)	**CTCP115 / CTCP135 / CTCP125 (HCX1115 / HCR1135 / HCX1125)** **CTCP125 / CTCP135 (HCX1125 / HCR1135)** CTCP115 / CTCP125 (HCX1115 / HCX1125) CTCP135 (HCR1135)	**CTCP135 (HCR1135)** **CTCP135 (HCR1135)** CTCP125 (HCX1125) CTCP135 (HCR1135)	1,00–12,00	0,25–0,80	CN.. DN.. SN..
R						

9

Standard chip breakers / application notes

Negative

Main application steel and cast iron, secondary application stainless steels

Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
-R58 (-NR17) ▲ Single sided roughing geometry ▲ Longitudinal and face turning ▲ Light interrupted cut ▲ Low cutting forces ▲ Unstable machines	**CTCP115** / CTCP125 **(HCX1115** / HCX1125)	**CTCP115 / CTCP135 / CTCP125** **(HCX1115 / HCR1135 / HCX1125)**	**CTCP135** **(HCR1135)**			CN.. DN.. SN.. TN..
	CTCP115 / CTCP125 **(HCX1115 / HCX1125)**	**CTCP125 / CTCP135** **(HCX1125 / HCR1135)**	**CTCP135** **(HCR1135)**	20° 0,35		
	CTCP115 (HCX1115)	CTCP115 / CTCP125 (HCX1115 / HCX1125)	CTCP125 (HCX1125)			
R	CTCP125 / CTCP135 (HCX1125 / HCR1135)	CTCP135 (HCR1135)	CTCP135 (HCR1135)	1,50–12,00	0,30–1,20	
-R88 (-NR19) ▲ Single sided roughing geometry ▲ Longitudinal and face turning ▲ High feedrate ▲ Large depths of cut ▲ Heavily interrupted cut	**CTCP115** / CTCP125 **(HCX1115** / HCX1125)	CTCP115 / CTCP125 / CTCP135 (HCX1115 / HCX1125 / HCR1135)	**CTCP135** **(HCR1135)**			SN..
	CTCP115 / CTCP125 (HCX1115 / HCX1125)	CTCP115 / CTCP125 (HCX1115 / HCX1125)	CTCP135 (HCR1135)	20° 0,5		
	CTCP115 **HCX1115**	**CTCP115** / CTCP125 **(HCX1115** / HCX1125)	**CTCP125** **(HCX1125)**			
R	CTCP125 / CTCP135 (HCX1125 / HCR1135)	CTCP135 (HCR1135)	CTCP135 (HCR1135)	3,50–16,00	0,50–1,50	

Negative

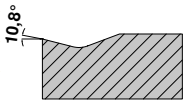
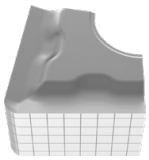
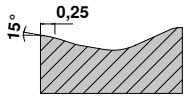
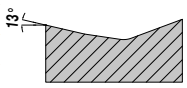
Main application stainless steels, secondary application steel and super alloys

Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
-F30 (-NF23) ▲ Finishing of stainless steels ▲ Continous cut ▲ High surface quality ▲ Good swarf control	CTPM125 (HCN2125)	CTPM125 (HCN2125)				CN.. DN.. SN.. TN.. VN.. WN..
	CTPM125 **(HCN2125)**	**CTPM125** **(HCN2125)**		15°		
F				0,08–2,5	0,10–0,35	
-M30 (-NM23) ▲ Option for stainless steel machining ▲ Good swarf control ▲ Little edg build up ▲ Low cutting forces ▲ Little built-up edge ▲ Applicable on unstable machines	CTPM125 (HCN2125)	CTPM125 (HCN2125)	CTPM125 (HCN2125)			CN.. DN.. SN.. TN.. VN.. WN..
	CTPM125 **(HCN2125)**	**CTPM125** **(HCN2125)**	**CTPM125** **(HCN2125)**	15° 0,25		
F **M**	CTPM125 (HCN2125)	CTPM125 (HCN2125)		1,00-4,50	0,15-0,40	
-M42 (-M42) ▲ For medium machining of stainless steels ▲ Also by application on general steels and superalloys	**CTP2120 / CTC2135** **(CCN2120 / CWN2135)**	**CTP2120 / CTC2135** **(CCN2120 / CWN2135)**	**CTC2135** **(CWN2135)**			CN.. DN.. SN.. TN.. WN..
				20° 0,3		
M	**CTP2120 / CTC2135** **(CCN2120 / CWN2135)**	**CTP2120 / CTC2135** **(CCN2120 / CWN2135)**		1,00–4,00	0,20–0,40	
-M60 (-NM26) ▲ Light to medium roughing ▲ Stable cutting edge ▲ Interrupted cut ▲ Forged skin and cast crust	CTPM125 (HCN2125)	CTPM125 (HCN2125)	CTPM125 (HCN2125)			CN.. DN.. SN.. TN.. WN..
	CTPM125 **(HCN2125)**	**CTPM125** **(HCN2125)**	**CTPM125** **(HCN2125)**	18° 0,3		
M **R**		CTPM125 (HCN2125)	CTPM125 (HCN2125)	1,50–6,00	0,25–0,50	

Standard chip breakers / application notes

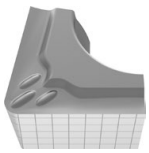
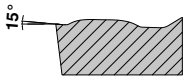
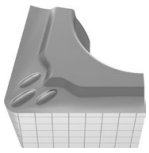
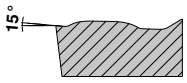
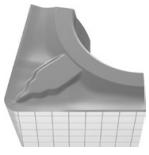
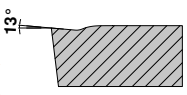
Negative

Main application super alloys, secondary application stainless steels

Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
-F32 (-F32) ▲ Streamlined geometry for finishing superalloys ▲ For finishing stainless steels F	**CTP2120 (CCN2120)** CTP2120 (CCN2120) **CTP2120 (CCN2120)**	**CTP2120 (CCN2120)** CTP2120 (CCN2120)		 0,05–4,0	0,05–0,25	CN.. DN.. VN..
-M34 (-M34) ▲ First choice for superalloys ▲ Light cutting geometry ▲ Little built-up edge ▲ Low cutting forces  M	**CTP5110 / CTP5115 (HCN5110 / HCN5115)** **CTP5110 / CTP5115 (HCN5110 / HCN5115)**	**CTP5110 / CTP5115 (HCN5110 / HCN5115)** **CTP5110 / CTP5115 (HCN5110 / HCN5115)**		 0,80–3,0	0,10–0,30	CN.. DN.. SN.. VN.. WN..
-M52 (-M52) ▲ Universal geometry for machining superalloys and stainless steels M	**CTP2120 (CCN2120)** **CTP2120 (CCN2120)**	**CTP2120 (CCN2120)** CTP2120 (CCN2120)		 1,50–4,00	0,20–0,38	CN.. DN.. SN.. TN.. WN..

Positive

Main application steel and cast iron, secondary application stainless steels and super alloys

Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
-CF05 (-PF14) ▲ Fine finishing ▲ For all common steel materials, stainless steels and GGG ▲ Good swarf control ▲ High surface quality  F	**CTEP110 / TCM407 (DCC1110 / CWC407)** CTEP110 (DCC1110) CTEP110 (DCC1110)	TCM10 / TCM407 (CWC10 / CWC407) TCM10 / TCM407 (CWC10 / CWC407)		 0,20–1,30	0,06–0,25	CC.. DC.. SC.. TC.. VC..
-SF (-ZF) ▲ Finishing / contour turning ▲ Good swarf control ▲ High surface quality ▲ Low cutting forces  F	CTC2135 / **CTCP115** (CWN2135 / **HCX1115**) CTC2135 / **CTCP125** (CWN2135 / **HCX1125**) CTC2135 / CTCP125 (CWN2135 / HCX1125)	**CTCP125 (HCX1125)** CTCP125 / **CTC2135** (HCX1125 / **CWN2135**) **CTCP125 (HCX1125)** CTC2135 (CWN2135)	**CTCP125 / CTCP135 (HCX1125 / HCR1135)** **CTC2135 (CWN2135)** **CTCP125 (HCX1125)**	 0,05–2,50	0,05–0,25	CC.. DC.. SC.. TC.. VC.. WC..
-CF55 (-PF15) ▲ Finishing to medium machining ▲ Suitable for general and stainless steels ▲ Low cutting forces ▲ Good swarf control ▲ High surface quality  F M	**CTEP110 (DCC1110)** CTEP110 (DCC1110) CTEP110 (DCC1110)	**TCM10 /** CTEP110 **(CWC10 /** DCC1110) CTEP110 (DCC1110) CTEP110 (DCC1110)		 0,20–1,30	0,06–0,25	CC.. DC.. SC.. TC.. VC..

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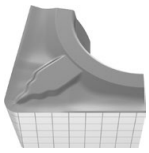
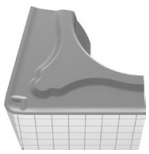
Standard chip breakers / application notes

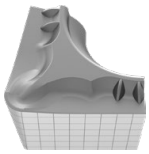
Positive

Main application steel and cast iron, secondary application stainless steels and super alloys

Model	Smooth cut	Irregular cutting depth	Interrupted cut	sectional illustration a_p mm	sectional illustration f mm	Geometry
-SMF (-SMF) ▲ Finishing to medium machining ▲ Low cutting forces ▲ Good swarf control ▲ High surface quality	**CTEP110 /** CTCP115 **(DCC1110 /** HCX1115) CTCP115 / CTCP125 / CTEP110 (HCX1115 / HCX1125 / DCC1110) CTEP110 (DCC1110)	**TCM10 /** CTCP125 / CTCP115 **(CWC10 /** HCX1125 / HCX1115) CTCP125 / CTCP135 (HCX1125 / HCR1135)	CTCP135 HCR1135 CTCP135 HCR1135	13°		CC.. DC.. SC.. TC.. VC..
 **F** **M**	CTCP115 / CTCP135 (HCX1115 / HCR1135)	CTCP135 HCR1135		0,20–1,30	0,06–0,25	
-SM (-ZM) ▲ Medium machining ▲ Universal application ▲ Stable cutting edge ▲ Varying depths of cut ▲ Wide range of applications	**CTCP115 / CTCP125** **(HCX1115 / HCX1125)** **CTCP125** **(HCX1125)** **CTCP115 /** CTCK110 / CTCK120 **(HCX1115 /** DCX3110 / HCF3120)	**CTCP125 / CTCP135 /** CTCP115 **(HCX1125 / HCR1135 /** HCX1115) **CTCP125 / CTCP135** **(HCX1125 / HCR1135)** **CTCP125 /** CTCK110 / CTCK120 **(HCX1125 /** DCX3110 / HCF3120)	**CTCP125 / CTCP135** **(HCX1125 / HCR1135)** **CTCP135** **(HCR1135)** CTCK120 / CTCP125 HCF3120 / HCX1125	15° 0,1		CC.. DC.. RC.. SC.. TC.. VC..
 M	CTCP115 / CTCP125 (HCX1115 / HCX1125)	CTCP135 HCR1135		0,05–5,00	0,15–0,45	
-SMQ (-SMQ) ▲ Positive wiper geometry ▲ Finishing to medium machining ▲ Very high feedrate ▲ High surface quality	**CTCP115** **(HCX1115)** **CTCP115** **(HCX1115)** CTCP125 / CTCP115 (HCX1125 / HCX1115)	CTCP125 (HCX1125) CTCP125 (HCX1125) CTCP125 (HCX1125)	CTCP125 (HCX1125) CTCP125 (HCX1125)	15° 0,2		CC.. DC..
 **M**				1,00–4,00	0,15–0,45	

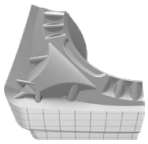
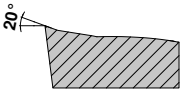
Positive

Main application stainless steels

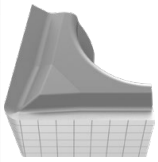
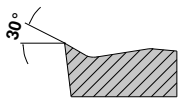
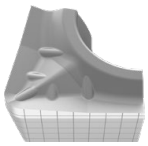
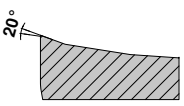
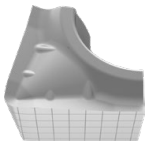
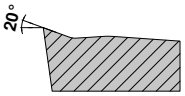
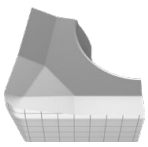
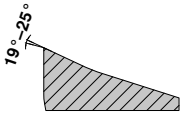
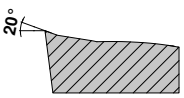
Model						
-F43 (-F43) ▲ For the light to medium machining of all stainless steels, general steels and superalloys	CTC2135 (CWN2135) **CTC2135** **(CWN2135)**	CTC2135 (CWN2135) **CTC2135** **(CWN2135)**	CTC2135 (CWN2135) **CTC2135** **(CWN2135)**	10° 0,06		CC.. DC.. TC..
 **F**	CTC2135 (CWN2135)	CTC2135 (CWN2135)		0,50 –2,50	0,05–0,25	
-M25 (-PF23) ▲ First choice for medium machining of stainless steels ▲ High surface quality ▲ Little built-up edge	CTPM125 (HCN2125) **CTPM125** **(HCN2125)**	CTPM125 (HCN2125) **CTPM125** **(HCN2125)**		10° 0,1–0,15		CC.. DC.. TC.. VC..
 F **M**				0,40–3,20	0,10–0,30	
-M55 (-PF26) ▲ First choice for medium machining to roughing of stainless steels ▲ Smooth to lightly interrupted cut ▲ Good swarf control ▲ Stable cutting edge	CTPM125 (HCN2125) **CTPM125** **(HCN2125)**	CTPM125 (HCN2125) **CTPM125** **(HCN2125)**	CTPM125 (HCN2125) CTPM125 (HCN2125)	16° 0,15-0,2		CC.. DC.. SC.. TC.. VC..
 M	CTPM125 (HCN2125)	CTPM125 (HCN2125)		0,40–4,80	0,06–0,35	

Standard chip breakers / application notes

Positive

Main application		Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
Main application stainless steels	-M81 (-M81) ▲ Directly pressed insert ▲ Positive rake angle ▲ Good swarf control ▲ For medium to rough machining	 **M**	**CWN2120 (CWN2120)** CWN2120 (CWN2120)	CWN2120 (CWN2120)	CWN2120 (CWN2120)	 1,00–6,00	0,25–0,60	CC.. DC.. VC..

Positive

Main application		Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
Main application non-ferrous metals, secondary application stainless steels, steels, super alloys, cast iron	-23P (-23P) ▲ Low adhesion ▲ Good chip control with soft aluminium alloys	 **F**	H216T (CWK26) H216T (CWK26) H216T (CWK26)	H216T (CWK26) H216T (CWK26) H216T (CWK26)	H216T (CWK26)	 0,2–4,0	0,05–0,3	CC.. DC..
	-25P (-25P) ▲ Sharp cutting edge ▲ Good swarf control on soft aluminium alloys ▲ Low adhesion	 **F** **M**	AMZ (AMZ) AMZ (AMZ) **AMZ (AMZ)** **H216T (CWK26)** **AMZ (AMZ)**	AMZ (AMZ) AMZ (AMZ) **AMZ (AMZ)** **H216T (CWK26)** **AMZ (AMZ)**	**H216T (CWK26)**	 0,50–4,50	0,05–0,60	CC.. DC.. SC.. VC..
	-25Q (-25Q) ▲ Wiper geometry ▲ High feed rates ▲ High surface quality ▲ Good swarf control on soft aluminium alloys ▲ Low adhesion	 **M**	H210T / AMZ (CWK20 / AMZ) **H210T / AMZ (CWK20 / AMZ)** **H210T / AMZ (CWK20 / AMZ)** **H210T / AMZ (CWK20 / AMZ)**	H210T / AMZ (CWK20 / AMZ) **H210T / AMZ (CWK20 / AMZ)** **H210T / AMZ (CWK20 / AMZ)** **H210T / AMZ (CWK20 / AMZ)**	**H210T / AMZ (CWK20 / AMZ)**	 0,05–6,50	0,05–0,60	CC.. DC.. VC..
	-27 (-27) ▲ The universal Alu geometry ▲ Sharp cutting edge ▲ Extremely positive rake angle ▲ Low adhesion ▲ High feed rates	 **M** **R**	AMZ (AMZ) AMZ (AMZ) **AMZ (AMZ)** **H10T (CWK15)**	AMZ (AMZ) AMZ (AMZ) **AMZ (AMZ)** **H10T (CWK15)**	**H216T (CWK26)** **H10T (CWK15)**	 1,00–10,00	0,10–0,75	CC.. DC.. RC.. SC.. TC.. VC..
	-29 (-29) ▲ Direct sintered aluminium geometry ▲ Positive rake angle ▲ Good chip control ▲ For medium to rough machining	 **F** **R**	AMZ (AMZ) AMZ (AMZ) **AMZ (AMZ)** **H216T / AMZ (CWK26 / AMZ)**	AMZ (AMZ) AMZ (AMZ) **AMZ (AMZ)** **H216T / AMZ (CWK26 / AMZ)**	**H216T (CWK26)** **H216T (CWK26)**	 1,00–6,00	0,25–0,60	CC.. DC.. VC..

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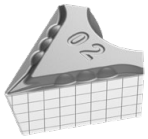
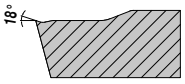
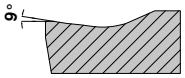
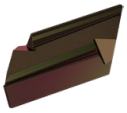
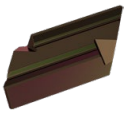
Standard chip breakers / application notes

Positive

Main application super alloys and stainless steels, secondary application steels and non-ferrous metals	Model	Smooth cut ○	Irregular cutting depth ◔	Interrupted cut ◌	Sectional illustration a_p mm	Sectional illustration f mm	Geometry
-F05 (-F05) ▲ Maximum tolerance class ▲ Outstanding chip control, even with the smallest cutting depths ▲ Very low cutting forces	 **F**	**CTPX710**					DC.. VC..
		CTPX710					
		CTPX710					
		CTPX710			0,10–2,50	0,02–0,25	
		CTPX710					
-F23 (-F23) ▲ Fine finishing (ground edge) ▲ Very high surface quality ▲ High repeatability ▲ Low depths of cut	 **F**						CC.. DC.. VC..
		CTP2120 (CCN2120)	**CTP2120 (CCN2120)**				
		CTP2120 (CCN2120)					
		CTP2120 (CCN2120)			0,10–2,00	0,06–0,13	
		CTP2120 (CCN2120)	**CTP2120 (CCN2120)**				

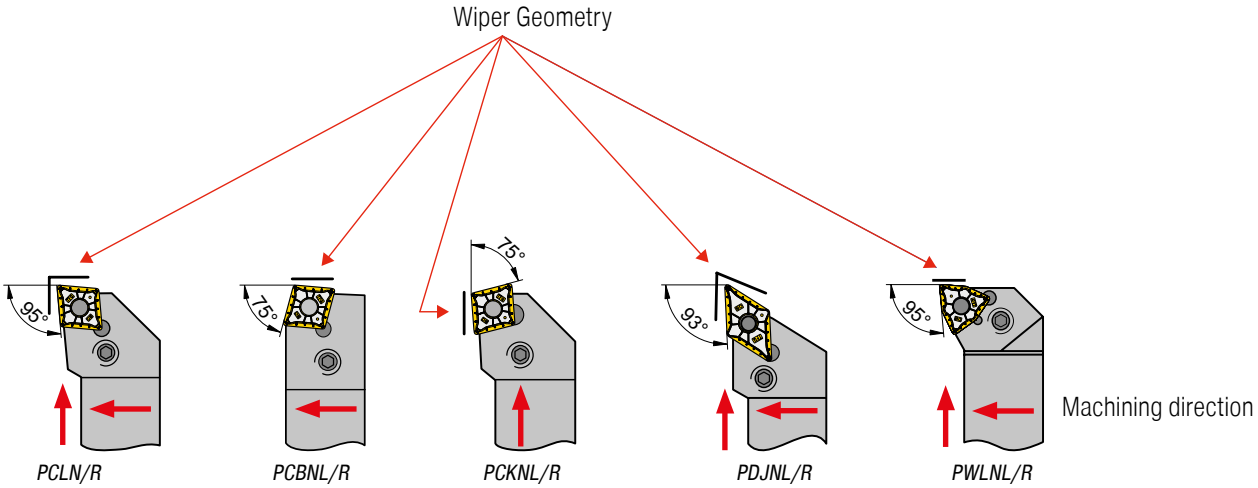
Supplementary chip breakers / application notes

Negative	Model	Smooth cut ○	Irregular cutting depth ◌	Interrupted cut ◌
-11 (-11) ▲ For copy machining in finishing operations ▲ On general steels, stainless steels and cast iron ▲ Can be used on less powerful machines	 **F**		**CTCP125 (HCX1125)**	**CTCP135 (HCR1135)**
-12 (-12) ▲ For copy machining in the medium machining range ▲ On general steels, stainless steels and cast iron	 **M**		**CTCP125 (HCX1125)**	**CTCP135 (HCR1135)**
-EN (-EN) ▲ Universal chip breaker for general steels	 **M**	**CTCP115 HCX1115** CTCP125 (HCX1125) **CTCK110 DCX3110**	**CTCP125 (HCX1125)** CTCP135 (HCR1135) **CTCK120 HCF3120**	**CTCP135 (HCR1135)** CTCP135 (HCR1135) CTCP125 (HCX1125)
-ER|EL (-ER|EL) ▲ A problem solver for unstable conditions ▲ Can be used on less powerful machines ▲ Can be used for general steels and on stainless materials as a secondary application	 **M**		**CTCP125 (HCX1125)**	**CTCP135 (HCR1135)**

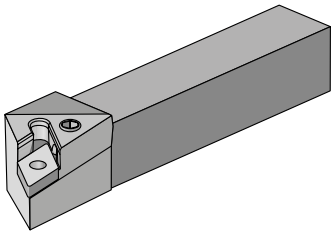
9

Masterfinish – wiper geometry – notes

Through the use of indexable inserts with wiper edge (-TFQ; -TMQ; -SMQ; -25Q) high quality surfaces can be produced economically.

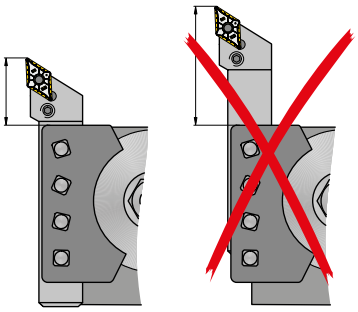


All turning inserts with wiper cutting edge are clamped in standard ISO tool holders

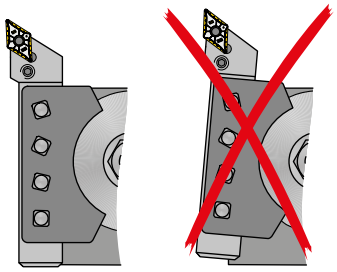


Check toolholder:

- Insert seat
- Shim
- Clamping Lever



Short tool overhang



Ensure correct tool alignment

Feed rate guide values for surface finish quality

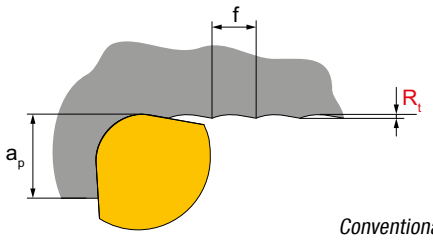
Roughness range R_z in µm	$R_{t\,max.}$	Corresponds to R_a	Roughness index	ISO 1302	Corner radius r_ε in mm and feed rate f in mm/rev.			
					r_ε = 0,4	r_ε = 0,8	r_ε = 1,2	r_ε = 1,6
63–100	R_t100	12,5–25	N11	25		0,51	0,69	0,88
40–63	R_t63	6,3–25	N10	12,5	0,27	0,43	0,56	0,68
31,5–40	R_t40	4,9–6,3	N9	6,3	0,25	0,37	0,49	0,57
25–31,5	R_t31,5	4,0–4,9			0,22	0,32	0,41	0,47
16–25	R_t25	2,5–4,0	N8	3,2	0,20	0,28	0,36	0,39
10–16	R_t16	1,6–2,5			0,15	0,22	0,29	0,31
6,3–10	R_t10	1,0–1,6	N7	1,6	0,10	0,13	0,18	0,20

Masterfinish – wiper geometry – functional principle

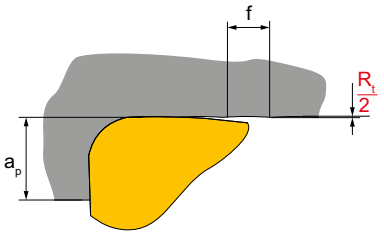
Relationship of feed rate to surface roughness

Improved Surface Quality

With the same feed rate an insert with wiper cutting edge reaches a roughness value R_t which is many times better than a conventional insert.



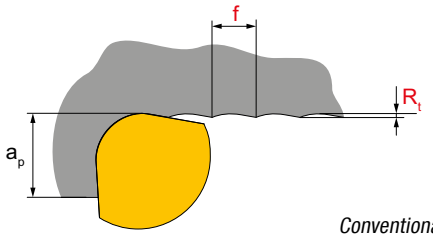
Conventional



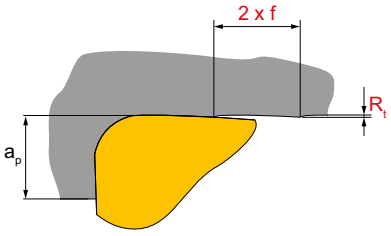
-TFQ

Shorter machining time

To achieve the same R_t-value as with a standard insert, double the feed rate can be applied for the insert with wiper cutting edge
(= shorter production time per component!))



Conventional



-TFQ

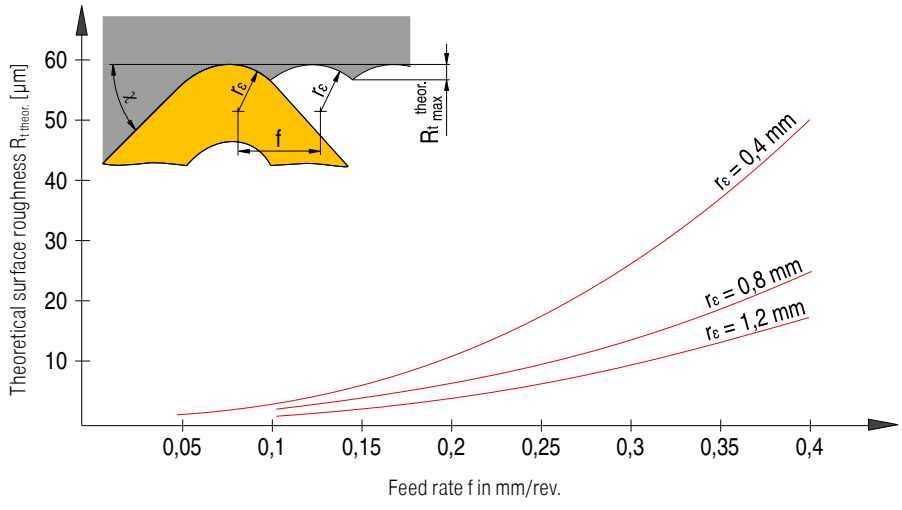
Theoretical Surface Quality

The maximum theoretical surface roughness with turning $Rt_{theor.}$ is the combination of feed rate and corner radius:

$$Rt_{theor.} = \left(r_\varepsilon - \sqrt{r_\varepsilon^2 - \frac{f^2}{4}}\right) \cdot 1000$$

or approximately:

$$Rt_{theor.} = \frac{125 \cdot f^2}{r\varepsilon} \quad [\mu m]$$



9

ISO designation system for inserts

Indexable inserts – metric

C	N	M	G	12	04	08	E	N	-	M50
1	2	3	4	5	6	7	8	9		13

Indexable inserts – inch

C	N	M	G	4	3	2	E	N	-	M50
1	2	3	4	5	6	7	8	9		13

Indexable inserts, CBN, ceramic – metric

C	N	G	A	12	04	08	S	N	-	020D	_	B	3	-	Q
1	2	3	4	5	6	7	8	9		10		11	12		13

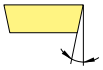
Indexable inserts, CBN, ceramic – inch

C	N	G	A	4	3	2	S	N	-	020D	_	B	3	-	Q
1	2	3	4	5	6	7	8	9		10		11	12		13

1 Insert shape

V	35°	Included angle
D	55°	
E	75°	
C	80°	
M	86°	
K	55°	Included angle
B	82°	
A	85°	
L	90°	Other shapes
P	108°	
H	120°	
O	135°	
R	-	
S	90°	
T	60°	
W	80°	

2 Clearance angle



	α		α
A	3°	F	25°
B	5°	G	30°
C	7°	N	0°
D	15°	P	11°
E	20°		

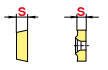
O — Clearance angles not included within the standard for which particular information is necessary.

3 Tolerances

	IC±		BS		S	
	mm	inch	mm	inch	mm	inch
A	0,025	.0010	0,005	.0002	0,025	.001
F	0,013	.0005	0,005	.0002	0,025	.001
C	0,025	.0010	0,013	.0005	0,025	.001
H	0,013	.0005	0,013	.0005	0,025	.001
E	0,025	.0010	0,025	.0010	0,025	.001
G	0,025	.0010	0,025	.0010	0,13	.005
J	0,05-0,15*	.002-.006*	0,005	.0002	0,025	.001
K	0,05-0,15*	.002-.006*	0,013	.0005	0,025	.001
L	0,05-0,15*	.002-.006*	0,025	.0010	0,025	.001
M	0,05-0,15*	.002-.006*	0,05-0,20*	.003-.008*	0,13	.005
N	0,05-0,15*	.002-.006*	0,05-0,20*	.003-.008*	0,025	.001
U	0,08-0,25*	.003-.010*	0,13-0,38*	.005-.015*	0,13	.005

* Depends on insert size

6 Insert thickness



		Code	
mm	inch	mm	inch
1,59	1/16	01	1
2,38	3/32	02	
3,18	1/8	03	2
3,97	5/32	T3	
4,76	3/16	04	3
5,56	7/32	05	
6,35	1/4	06	4
7,94	5/16	07	5
9,52	3/8	09	6

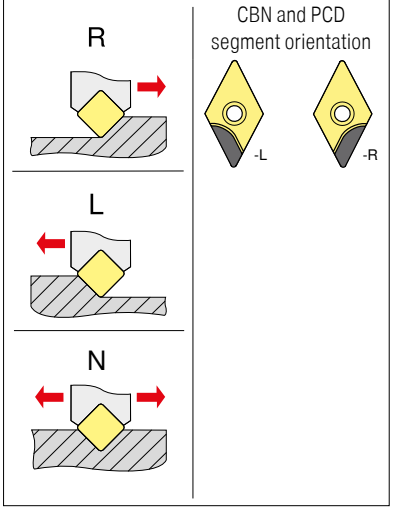
7 Corner radius

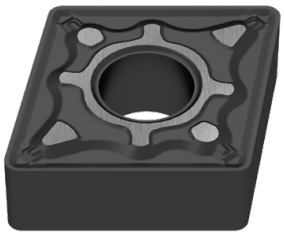
		Code		RN **00** RC **MO**
mm	inch	mm	inch	
≤ 0,05	.0015	00	X0	
0,1	.004	01	0	
0,2	.008	02	.5	
0,4	1/64	04	1	
0,8	1/32	08	2	
1,2	3/64	12	3	
1,6	1/16	16	4	
2,0	5/64	20	5	
2,4	3/32	24	6	
2,8	7/64	28	7	
3,2	1/8	32	8	

8 Cutting edge

F	Sharp
E	Honed
T	Chamfered
S	Chamfered and honed
K	Double-chamfered
P	Double-chamfered and honed
R	Round chamfer

9 Direction of cut





4 Characteristics

N	
R	
F	
A	
M, P	
G, P	
W	
T	
Q	
U	
B	
H	
C	
J	
X	Special version

inch

Change at inscribed circle IK < 1/4"

IK > 1/4"	IK < 1/4"
N / R / F	E
A / M / G	D
X	X

5 Cutting length

Type	ISO	ANSI	L mm	L inch	IC mm	IC inch
C	06	2	6,4	.250	6,35	.250
	09	3	9,7	.382	9,525	.375
	12	4	12,9	.508	12,70	.500
	16	5	16,1	.634	15,875	.625
	19	6	19,3	.760	19,05	.750
	25	8	25,8	1.016	25,4	1.000
	32	12	35,24	1.269	31,75	1.250
S	06	2	6,35	.250	6,35	.250
	09	3	9,525	.375	9,525	.375
	12	4	12,7	.500	12,7	.500
	15	5	15,875	.625	15,875	.625
	19	6	19,05	.750	19,05	.750
	25	8	25,4	1.000	25,4	1.000
	31	10	31,75	1.250	31,75	1.250
D	07	2	7,7	.303	6,35	.250
	11	3	11,6	.457	9,525	.375
	15	4	15,5	.610	12,70	.500
V	11	2	11,1	.437	6,35	.250
	16	3	16,6	.653	9,525	.375
	22	4	22,10	.870	12,70	.500

* inch version

Type	ISO	ANSI	L mm	L inch	IC mm	IC inch
T	06	1.2	6,9	.272	3,97	.156
	09	1.8	9,6	.378	5,56	.219
	11	2	11,0	.433	6,35	.250
	16	3	16,5	.650	9,525	.375
	22	4	22,	.079	12,70	.039
	27	5	27,5	1.083	15,875	.625
	33	6	33,0	1.299	19,05	.750
W	06	3	6,5	.256	9,525	.375
	08	4	8,7	.331	12,70	.039
	10	5	10,9	.429	15,875	.625
R	06	2	6,35	.250	6,35	.250
	08	-	8,0	.315	8,0	.315
	09	3	9,52	.375	9,52	.375
	10	-	10,0	.394	10,0	.394
	12*	-	12,0	.472	12,0	.472
	12	4	12,7	.488	12,70	.488
	15	5	15,875	.625	15,875	.625
	16	-	16,0	.630	16,0	.630
	19	6	19,05	.750	19,05	.750
	25	8	25,0	.984	25,0	.984
	25*	-	25,4	1.000	25,4	1.000
	31	10	31,75	1.250	31,75	1.250
	32	-	32,0	1.260	32,0	1.260

9

10 Chamfer type

T / S K / P [1]

	mm	inch		
015	0,15	.006	A	05°
020	0,20	.008	B	10°
025	0,25	.010	C	15°
050	0,50	.020	D	20°
075	0,75	.030	E	25°
100	1,00	.040	F	30°
			G	35°

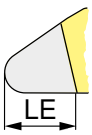
1) Two letters are assigned for double-chamfered cutting edges
e.g. BE =
chamfer angle 1 (y_1) = 10°
chamfer angle 2 (y_2) = 25°

11 Number of cutting edges

Single sided		Complete insert thickness	
A		T	
B		U	
C		V	
D		W	
G		X	
H		Y	

Double sided		Entire clamping flat	
K		S	
L		F	
M		E	
N			
P			
Q			

12 Segment length



Approx. specification in mm

13 Chip breaker designation

You can find a comprehensive chip breaker overview on
→ **page 168–175**

ISO designation system for tool holders

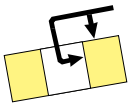
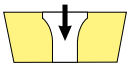
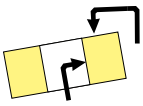
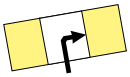
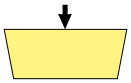
	P	C	L	N	R	20	20	K	12	- T
	1	2	3	4	5	6	7	8	9	10
UT50	- P	C	L	N	R				-12	
0	1	2	3	4	5	6	7	8	9	10
HSK-T63	- D	C	L	N	R				-12	
0	1	2	3	4	5	6	7	8	9	10

0 System/size

UT = UTS
according to ISO 26622
UT40 = UTS 40 mm
UT50 = UTS 50 mm
UT63 = UTS 63 mm

HSK-T
according to ISO 12164
HSK-T63 = 63 mm
HSK-T100 = 100 mm

1 Tool holder

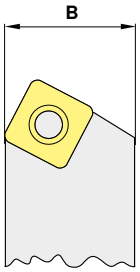
D  Retained from above and via bore	**S**  Retained via centre screw
M  Retained from above and via bore	**P**  Retained via the bore
C  Retained from above	**X** Special version

2 Insert shape

V	35°	Included angle
D	55°	
E	75°	
C	80°	
M	86°	
K	55°	Included angle
B	82°	
A	85°	
L	90°	Other shapes
P	108°	
H	120°	
O	135°	
R	-	
S	90°	
T	60°	
W	80°	

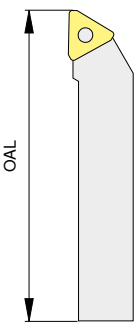
6 Shank height

7 Shank width



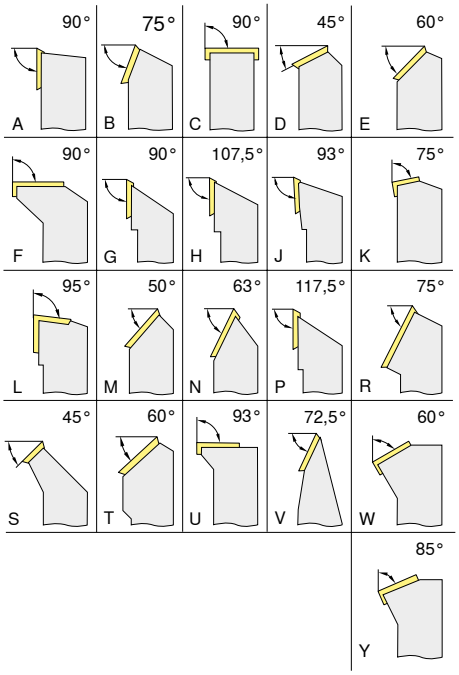
8 Tool length

OAL mm	OAL inch		OAL mm	OAL inch	
32	4.000	**A**	160	4.500	**N**
40	4.500	**B**	170	5.500	**P**
50	5.000	**C**	180	–	**Q**
60	6.000	**D**	200	6.000	**R**
70	7.000	**E**	250	7.000	**S**
80	8.000	**F**	300	8.000	**T**
90	5.500	**G**	350	5.500	**U**
100	5.625	**H**	400	3.500	**V**
110	5.300	**J**	450	3.500	**W**
125	14.000	**K**	500	3.750	**Y**
140	6.800	**L**	Special version		**X**
150	4.400	**M**			



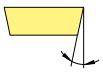
3

Style



4

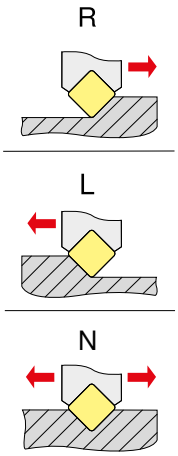
Clearance angle



	α		α
A	3°	**F**	25°
B	5°	**G**	30°
C	7°	**N**	0°
D	15°	**P**	11°
E	20°		
O	Clearance angles not included within the standard for which particular information is necessary.		

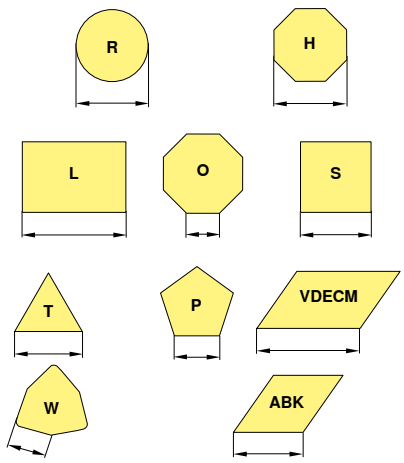
5

Direction of cut



9

Cutting length



10

Manufacturer specification

T = Toggle
Special length (mm)
Insert thickness (deviating from standard)
Special version (X..)
Machine manufacturer (specific)

ISO designation system for boring bars

		A	25	R		P	C	L	N	R	12	
		1	2	3		4	5	6	7	8	9	10
UT40	-		25	G	-	P	C	L	N	R	-	12
0		1	2	3		4	5	6	7	8	9	10
HSK-T63	-		50	Q	-	D	C	L	N	R	-	12
0		1	2	3		4	5	6	7	8	9	10

0 System/size

UT = UTS
according to ISO 26622
UT40 = UTS 40 mm
UT50 = UTS 50 mm
UT63 = UTS 63 mm

HSK-T
according to ISO 12164
HSK-T63 = 63 mm
HSK-T100 = 100 mm

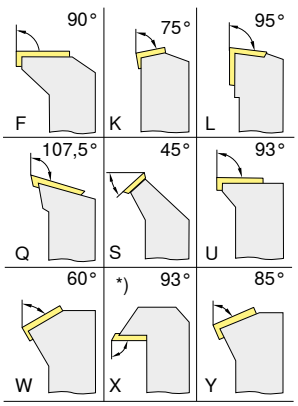
1 Shank type

S	Steel shank	**E**	As C with coolant hole
A	Steel shank with coolant hole	**F**	As C with antivibration system
B	Steel shank with antivibration system	**G**	As C with coolant hole and antivibration system
D	Steel shank with coolant hole and antivibration system	**H**	Heavy metal
C	Carbide shank with steel head	**J**	Heavy metal with coolant hole

5 Insert shape

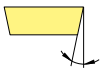
V	35°	Included angle
D	55°	
E	75°	
C	80°	
M	86°	
K	55°	Included angle
B	82°	
A	85°	
L	90°	Other shapes
P	108°	
H	120°	
O	135°	
R	-	
S	90°	
T	60°	
W	80°	

6 Style



*) CERATIZIT factory standard

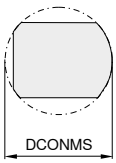
7 Clearance angle



	α		α
A	3°	**F**	25°
B	5°	**G**	30°
C	7°	**N**	0°
D	15°	**P**	11°
E	20°		
O	Clearance angles not included within the standard for which particular information is necessary.		

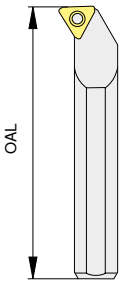
2 Shank diameter

DCONMS mm	DCONMS inch
08	A two-digit figure indicating the boring bar diameter in 1/16 of an inch.
10	
12	
16	
20	
25	
32	
40	
50	
60	

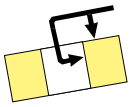
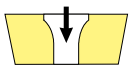
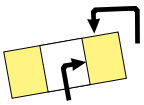
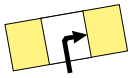
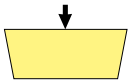


3 Tool length

OAL mm	OAL inch	
80	3	F
100	3,5	H
110	4	J
125	4,5	K
140	5	L
150	5,5	M
160	6	N
170	6,5	P
180	6,75	Q
200	7	R
250	8	S
300	10	T
350	12	U
400	14	V
450	16	W
500	18	Y
	20	
Special version		X



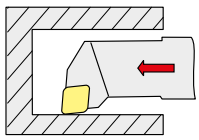
4 Clamping method

D  Retained from above and via bore	**S**  Retained via centre screw
M  Retained from above and via bore	**P**  Retained via the bore
C  Retained from above	**X** Special version

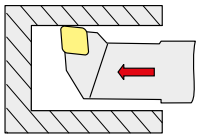
9

8 Direction of cut

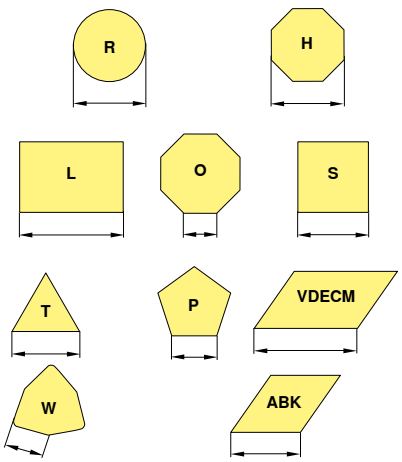
R



L



9 Cutting length



10 Manufacturer specification

T = Toggle
Special length (mm)
Insert thickness (deviating from standard)
Special version (X..)
Machine manufacturer (specific)

Types of wear

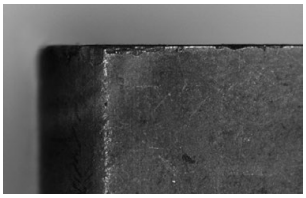
Wear on clearance face

Abrasion on flank: normal wear after a certain machining time

Cause
- Too high cutting speed
- Carbide grade with too low wear resistance
- Feed rate not adapted

Remedy
- Reduce cutting speed
- Use grade with higher wear resistance
- Adapt feed rate to cutting speed and cutting depth

Edge chipping

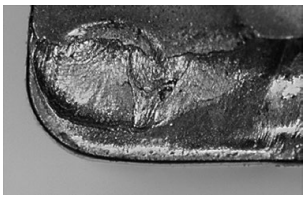


Through excessive mechanical stress at the cutting edge fracture and chipping can occur.

Cause
- Grade with too high wear resistance
- Vibration
- Too high cutting speed and / or feed rate
- Interrupted cut
- Swarf damage

Remedy
- Use tougher grade
- Use negative cutting edge geometry with chip groove
- Improve stability (tool, work piece)

Cratering

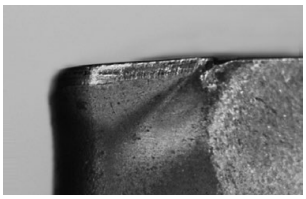


The hot chip which is being evacuated causes cratering at the rake face of the cutting edge.

Cause
- Too high cutting speed and / or feed rate
- Rake angle too shallow
- Grade with insufficient wear resistance
- Insufficient coolant supply

Remedy
- Reduce cutting speed and / or feed rate
- Use grade with higher wear resistance
- Increase coolant quantity and / or pressure, optimise coolant supply
- Use grade which is more resistant to cratering

Plastic deformation

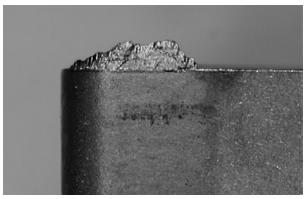


High machining temperature and simultaneous mechanical stress can lead to plastic deformation.

Cause
- Too high machining temperature resulting in softening of substrate
- Damage of coating
- Grade with insufficient wear resistance
- Insufficient coolant supply

Remedy
- Reduce cutting speed
- Use grade with higher wear resistance
- Provide cooling

Built-up edge

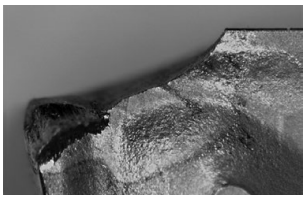


Built-up material / edges occur when the chip is not evacuated properly due to insufficient cutting temperature.

Cause
- Insufficient cutting speed
- Rake angle too shallow
- Wrong cutting material
- Lack of cooling / lubrication

Remedy
- Increase cutting speed
- Increase rake angle
- Apply TiN coating
- Use emulsion with higher concentration

Insert breakage

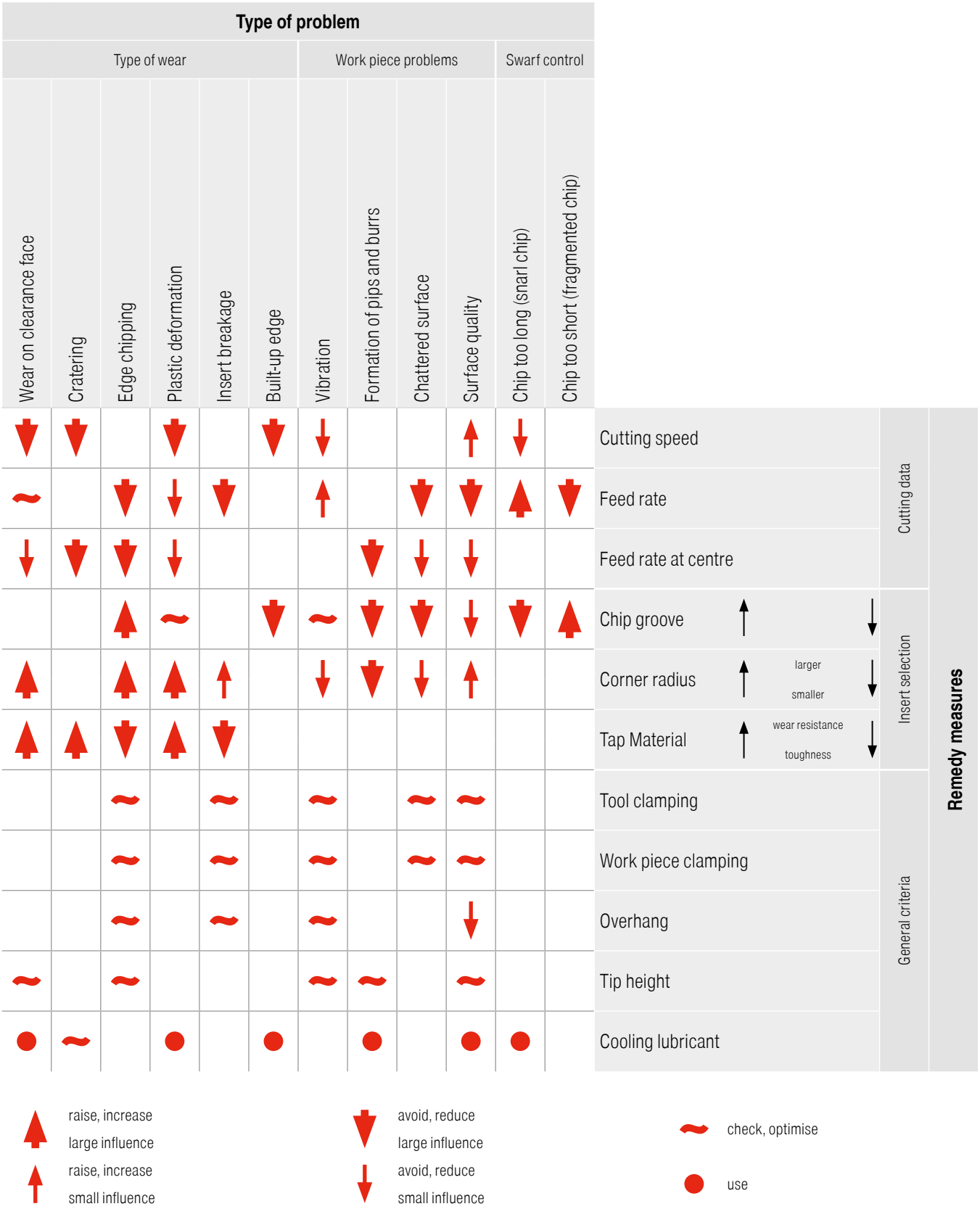


Excessive stress of the insert causes breakage.

Cause
- Excessive stress of cutting material
- Lack of stability
- Clearance angle too small

Remedy
- Use tougher grade
- Use protective edge chamfer
- Increase edge hone
- Use geometry with higher stability

Recommendation for Optimum Results



Grades Overview

	Grade designation	Standard designation	ISO application range	Steel P	Stainless steel M	Cast iron K	Non ferrous metals N	Heat resistant alloys S
	Turning							
Main application: **Steel and cast iron**	CTEP110 (DCC1110)	HC-P10 HC-M10 HC-K05		●	○	○		
	CTCK110 (DCX3110)	HC-P05 HC-K10		●	○	●		
	CTCK120 (HCF3120)	HC-P10 HC-K20		●		●		
	CTCP115 (HCX1115)	HC-P15 HC-M10 HC-K25		●	○	○		
	CTCP125 (HCX1125)	HC-P25 HC-M20 HC-K30		●	○	○		
	CTCP135 (HCR1135)	HC-P35 HC-M25 HC-S25		●	○			○
Main application: **Stainless**	CWN2120	HC-M20 HC-N20			●		○	
	CTPM125 (HCN2125)	HC-P35 HC-M25		○	●			○
	CTC2135 (CWN2135)	HC-P35 HC-M20 HC-S20		○	●			●
Main application: **Non-ferrous metals**	H210T (CWK20)	HW-K10 HW-N10 HW-S10				○	●	○
	H216T (CWK26)	HW-K15 HW-N15 HW-S15				○	●	○
	H10T (CWK15)	HW-K15 HW-N15 HW-S15				○	●	○
	AMZ	HC-P15 HC-M15 HC-K20 HC-N20		○	○	○	●	
	CWN15	HC-M20 HC-N20			○		●	
Main application: **Heat-resistant**	CTPX710	HC-P10 HC-M10 HC-K10 HC-N10 HC-S15		●	●	○	○	●
	CTP5110 (HCN5110)	HC-N10 HC-S10			○			●
	CTP5115 (HCN5115)	HC-N15 HC-S15			○			●
	CTP2120 (CCN2120)	HC-P20 HC-M20 HC-K15 HC-N20 HC-S20			●	○	○	●

ISO application range: 01 05 10 15 20 25 30 35 40 45 50

● **Main Application**
○ Extended application

wear-resistant v_c+ ⟷ v_c− tough

Grade description

TCM407 / CWC407
- Cermet, uncoated
- ISO | **P10** | M05 | K05
- The uncoated cermet grade for super-fine finishing steel materials

CTEP110 / DCC1110
- Cermet, TiCN-Al_2O_3-coated
- ISO | **P10** | M10 | K05
- The cermet grade with reserves of toughness for finish machining at high cutting speeds

TCM10 / CWC10
- Cermet, uncoated
- ISO | **P15** | **M10** | K10
- The uncoated cermet grade for finish machining stainless and hardened steel
- Particularly wear resistant thanks to high heat resistance

CTCP115 / HCX1115
- Carbide, TiCN-Al_2O_3-coated
- ISO | **P15** | M10 | **K25**
- The wear-resistant high-performance grade for stable conditions and a continuous cut

CTCP125 / HCX1125
- Carbide, TiCN-Al_2O_3-coated
- ISO | **P25** | M20 | **K30**
- The first choice for universal machining of steels

CTCP135 / HCR1135
- Carbide, TiCN-Al_2O_3-coated
- ISO | **P35** | M25 | S25
- The tough alternative for heavily interrupted cut and unstable conditions

CTP2120 / CCN2120
- Carbide, TiAlN-coated
- ISO | **M20** | K20 | N20 | **S20**
- The universal carbide grade for stainless steel and super alloys

CWN2120 / CWN2120
- Carbide, TiN-coated
- ISO | **M20** | K20 | N20
- The universal carbide grade for machining stainless steel

CTPM125 / HCN2125
- ISO | **P35** | **M25** | S25
- The universal carbide grade with maximum toughness, without affecting the necessary hot hardness and wear resistance for stainless machining

CTC2135 / CWN2135
- Carbide, TiCN-TiNB-coated
- ISO | P35 | **M30** | S35
- The turning grade for general stainless machining

CTCK110 / DCX3110
- Carbide, TiCN-Al_2O_3-coated
- ISO | P05 | **K10**
- The wear-resistant grade for machining cast iron materials at high cutting speeds in a continuous cut

CTCK120 / HCF3120
- Carbide, TiCN-Al_2O_3-coated
- ISO | P10 | **K20**
- The grade for cast iron machining, with high toughness reserves for difficult conditions and interrupted cuts

H10T / CWK15
- Carbide, uncoated
- ISO | **K15** | **N15**
- The uncoated carbide grade for machining aluminium and other non-ferrous metals

H210T / CWK20
- Carbide, uncoated
- ISO | **N10** | **S10** | K10
- The wear-resistant carbide grade for machining aluminium and other non-ferrous metals

H216T / CWK26
- Carbide, uncoated
- ISO | **K15** | **N15**
- The uncoated carbide grade for machining aluminium and other non-ferrous metals
- Also highly suitable for HSC machining

CWN15 / CWN15
- Carbide, TiN-coated
- ISO | **K15**
- Special carbide grade for abrasive aluminium alloys

AMZ / AMZ
- Carbide, TiAlN-coated
- ISO | P10 | K10 | **N10** | S10
- The coated carbide grade for aluminium machining

CTP5110 / HCN5110
- Carbide, TiAlN-coated
- ISO | M15 | **S15**
- The alternative for machining heat-resistant materials

CTP5115 / HCN5115
- Carbide, TiAlN-TiN-coated
- ISO | M15 | **S15**
- The first choice for machining heat-resistant materials

CTPX710
- Carbide, AlTiN-coated
- ISO | **P10** | **M10** | K10 | N10 | **S15**
- Universal multi-material grade from the X7 line for highest machining requirements

Grade description

C	T	C	P	1	2	5
H	C	X	1	1	2	5

(Example)

Main application – material

1|P	Steel
2|M	Stainless steel
3|K	Cast iron
4|N	Light and non ferrous metals
5|S	Super alloys, titanium
6|H	Hard materials
7|X	Universal application

Application

1	Turning
2	Milling
3	Grooving
4	Drilling
5	Thread turning
6	Others
7	Several processes

Degree of hardness

05	ISO 05
10	ISO 10
15	ISO 15
	...

Programme Extension

EcoCut – Mini Ø 2–3.5 mm

DRAGONSKIN

→ Page 5

EcoCut adapter Mini

→ Page 6

EcoCut – Mini adapter with coolant connection thread

→ Page 7

Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut 10
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

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Toolfinder	3
Overview EcoCut Mini and EcoCut Inserts	4
Product programme	5–14
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EcoCut Classic Cutting Data	17+18
EcoCut ProfileMaster Cutting Data	19+20
Cutting Data	21+22
EcoCut Classic chip breaker characteristics	23
EcoCut Classic as a Boring Tool	24
Application information	25–29
Grade overview and application	30+31

CERATIZIT \ Performance

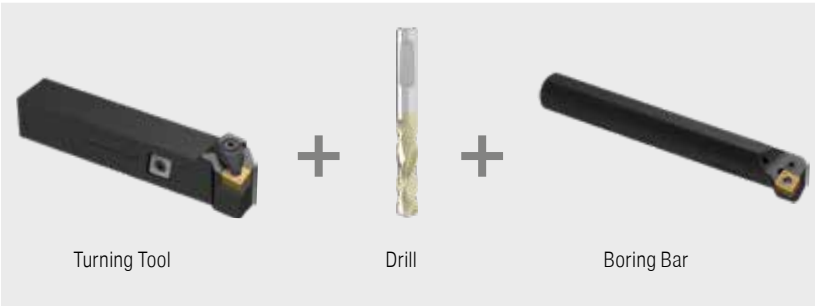
Premium quality tools for high performance.

The premium quality tools from the **CERATIZIT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

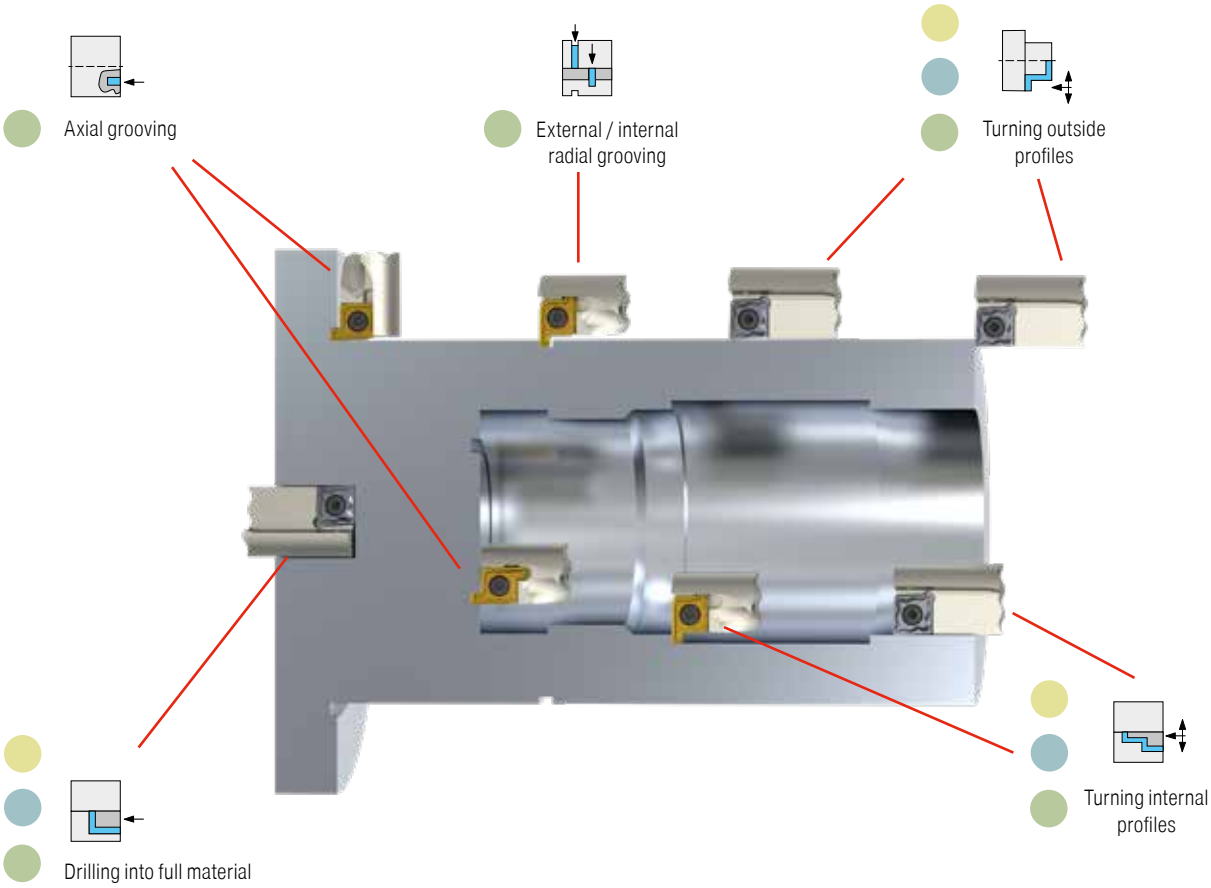
More productive thanks to EcoCut – continous cost savings

Advantages with EcoCut

- reduced machining time
- reduced need for tool positions
- generates flat bottom of hole
- less programming
- lower set-up costs / reduced setting time
- time savings due to fewer tool changes



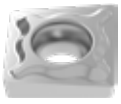
Toolfinder



	Tools:			Applications					Pages
	Dimension	Hole Ø mm	max. hole depth mm						
EcoCut Mini	2,25xD	2–8	4,5–18	✓	✓	✓			5
	4xD	2–8	8–32	✓	✓	✓			5
EcoCut Classic	1,5xD	8–32	12–48	✓	✓	✓			9
	2,25xD	8–32	18–72	✓	✓	✓			10
	3xD	8–32	24–96	✓	✓	✓			11
EcoCut ProfileMaster	1,5xD	10–32	15–48	✓	✓	✓	✓	✓	13
	2,25xD	10–32	22,5–72	✓	✓	✓	✓	✓	14
EcoCut HSK-T	2,25xD	25–32	56,2–72	✓	✓	✓			see → **Chapter 16, Adapters.**

EcoCut tools are suitable for off-centre drilling.
This permits certain deviations from the nominal tool diameter to be achieved → **For details, see the technical information.**

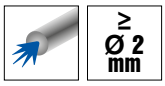
Overview EcoCut Mini and EcoCut Inserts

Type	Smooth cut	Irregular cutting depth	Interrupted cut	Grade	Steel	Stainless steel	Cast iron	Non ferrous metals	Heat resistant alloys	Tempered steel	Radius RE in mm	coated	uncoated	Pages
EcoCut Mini														
DRAGONSKIN	○	◌	◌	CTPP435 / HCN1435	●	●	○		●		0,1–0,2	■		5
	○	◌	◌	CTWN425 / CWK4425			○	●			0,1–0,2		□	5
EcoCut Classic														
DRAGONSKIN	○	◌	◌	CTCP425 / HCR1425	●	○	●				0,2–0,8	■		8
DRAGONSKIN	○	◌	◌	CTCP435 / HCR1435	●	○	●				0,2–0,8	■		8
DRAGONSKIN	○	◌	◌	CTPP430 / HCN2430	●	●	○	○	●		0,2–0,8	■		8
	○	◌	◌	H216T / CWK26			●	●			0,2–0,8		□	8
	○	◌	◌	H210T / CWK20			○	●	●		0,2–0,8		□	8
EcoCut ProfileMaster														
DRAGONSKIN	○	◌	◌	CTPP430 / HCN2430	●	●	○	○	●		0,4	■		12

● = **Main Application**
○ = Extended application

EcoCut – Mini

▲ Drilling and turning tool for small diameters



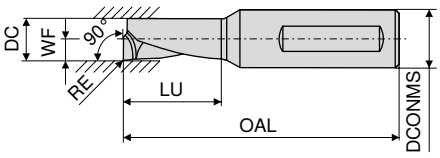
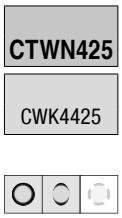
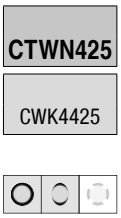


Diagram shows right hand version





Designation	DC	DCONMS	OAL	LU	WF	RE	Solid carbide Left-hand 2B/20 Article no. 70 805 ...		Solid carbide Right-hand 2B/20 Article no. 70 804 ...		Solid carbide Left-hand 2B/20 Article no. 70 805 ...		Solid carbide Right-hand 2B/20 Article no. 70 804 ...	
	mm	mm	mm	mm	mm	mm	£		£		£		£	
ECM 02 R/L 2,25D	2.0	4	28	4.50	1.00	0.1	46.33	320	46.33	320				
ECM 02 R/L 2,25D AL	2.0	4	28	4.50	1.00	0.1					40.85	420	40.85	420
ECM 02 R/L 4,00D	2.0	4	31	8.00	1.00	0.1	48.60	321	48.60	321				
ECM 02 R/L 4,00D AL	2.0	4	31	8.00	1.00	0.1					42.83	421	42.83	421
ECM 02,5 R/L 2,25D	2.5	4	29	5.63	1.25	0.1	47.75	325	47.75	325				
ECM 02,5 R/L 2,25D AL	2.5	4	29	5.63	1.25	0.1					42.07	425	42.07	425
ECM 02,5 R/L 4,00D	2.5	4	33	10.00	1.25	0.1	50.11	326	50.11	326				
ECM 02,5 R/L 4,00D AL	2.5	4	33	10.00	1.25	0.1					44.15	426	44.15	426
ECM 03 R/L 2,25D	3.0	4	31	6.75	1.50	0.1	49.25	330	49.25	330				
ECM 03 R/L 2,25D AL	3.0	4	31	6.75	1.50	0.1					43.40	430	43.40	430
ECM 03 R/L 4,00D	3.0	4	35	12.00	1.50	0.1	51.72	331	51.72	331				
ECM 03 R/L 4,00D AL	3.0	4	35	12.00	1.50	0.1					45.57	431	45.57	431
ECM 03,5 R/L 2,25D	3.5	4	32	7.88	1.75	0.1	51.15	335	51.15	335				
ECM 03,5 R/L 2,25D AL	3.5	4	32	7.88	1.75	0.1					45.10	435	45.10	435
ECM 03,5 R/L 4,00D	3.5	4	37	14.00	1.75	0.1	53.70	336	53.70	336				
ECM 03,5 R/L 4,00D AL	3.5	4	37	14.00	1.75	0.1					47.36	436	47.36	436
ECM 04 R/L 2,25D	4.0	6	35	9.00	2.00	0.2	54.32	300	54.32	300				
ECM 04 R/L 2,25D AL	4.0	6	35	9.00	2.00	0.2					47.85	450	47.85	450
ECM 04 R/L 4,00D	4.0	6	41	16.00	2.00	0.2	57.02	301	57.02	301				
ECM 04 R/L 4,00D AL	4.0	6	41	16.00	2.00	0.2					50.25	451	50.25	451
ECM 05 R/L 2,25D	5.0	6	37	11.25	2.50	0.2	56.20	302	56.20	302				
ECM 05 R/L 2,25D AL	5.0	6	37	11.25	2.50	0.2					49.20	452	49.20	452
ECM 05 R/L 4,00D	5.0	6	45	20.00	2.50	0.2	58.80	303	58.80	303				
ECM 05 R/L 4,00D AL	5.0	6	45	20.00	2.50	0.2					51.60	453	51.60	453
ECM 06 R/L 2,25D	6.0	8	38	13.50	3.00	0.2	57.65	306	57.65	306				
ECM 06 R/L 2,25D AL	6.0	8	38	13.50	3.00	0.2					50.87	456	50.87	456
ECM 06 R/L 4,00D	6.0	8	49	24.00	3.00	0.2	60.56	312	60.56	312				
ECM 06 R/L 4,00D AL	6.0	8	49	24.00	3.00	0.2					53.17	462	53.17	462
ECM 07 R/L 2,25D	7.0	8	42	15.75	3.50	0.2	59.43	308	59.43	308				
ECM 07 R/L 2,25D AL	7.0	8	42	15.75	3.50	0.2					52.44	458	52.44	458
ECM 07 R/L 4,00D	7.0	8	53	28.00	3.50	0.2	62.55	314	62.55	314				
ECM 07 R/L 4,00D AL	7.0	8	53	28.00	3.50	0.2					54.84	464	54.84	464
ECM 08 R/L 2,25D	8.0	8	45	18.00	4.00	0.2	61.40	310	61.40	310				
ECM 08 R/L 2,25D AL	8.0	8	45	18.00	4.00	0.2					53.90	460	53.90	460
ECM 08 R/L 4,00D	8.0	8	57	32.00	4.00	0.2	64.32	316	64.32	316				
ECM 08 R/L 4,00D AL	8.0	8	57	32.00	4.00	0.2					56.50	466	56.50	466

Steel	●	●		
Stainless steel	●	●		
Cast iron	○	○	○	○
Non ferrous metals			●	●
Heat resistant alloys	●	●		

→ v_c Page 22

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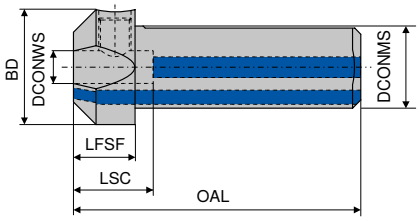
EcoCut – Adapter Mini



2B/20

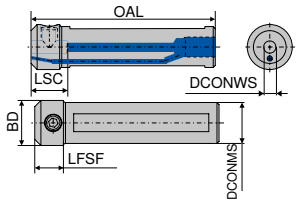
Designation	DCONWS	DCONMS	BD	OAL	LFSF	LSC	Article no. 70 800 ...	
	mm	mm	mm	mm	mm	mm	£	
EC-ADX16-04	4	16.00	22	59.0	14	18	171.64	**716**
EC-ADX12-04-E	4	19.05	25	63.5	14	18	171.64	**719**
EC-ADX20-04	4	20.00	25	64.0	14	18	171.64	**720**
EC-ADX16-06	6	16.00	22	59.0	14	18	171.64	**976**
EC-ADX12-06-E	6	19.05	25	63.5	14	18	171.64	**986**
EC-ADX20-06	6	20.00	25	64.0	14	18	171.64	**996**
EC-ADX16-08	8	16.00	22	59.0	14	18	171.64	**978**
EC-ADX12-08-E	8	19.05	25	63.5	14	18	171.64	**988**
EC-ADX20-08	8	20.00	25	64.0	14	18	171.64	**998**

2A/28

Clamping screw

Spare parts for Article no.		Article no. 70 950 ...	
		£	
70 800 716	M5x10 ISO 4026	2.71	**867**
70 800 719	M5x10 ISO 4026	2.71	**867**
70 800 720	M5x10 ISO 4026	2.71	**867**
70 800 976	M8x1x8 - SW4	2.71	**123**
70 800 986	M8x1x8 - SW4	2.71	**123**
70 800 996	M8x1x8 - SW4	2.71	**123**
70 800 978	M8x1x8 - SW4	2.71	**123**
70 800 988	M8x1x8 - SW4	2.71	**123**
70 800 998	M8x1x8 - SW4	2.71	**123**

EcoCut – Mini adapter with coolant connection thread



Designation	DCONWS	DCONMS	BD	OAL	LFSF	LSC		2B/20 Article no. 70 801 ...	
	mm	mm	mm	mm	mm	mm	Thread	£	
ECA 16-04	4	16.00	20.0	75	14	18	G 1/8	91.64	**716**
ECA 0750-04	4	19.05	20.0	100	14	18	G 1/8	93.55	**719**
ECA 20-04	4	20.00	19.6	90	14	18	G 1/8	93.55	**720**
ECA 22-04	4	22.00	21.6	110	14	18	G 1/8	96.36	**722**
ECA 25-04	4	25.00	24.6	110	14	18	G 1/8	97.27	**725**
ECA 1000-04	4	25.40	25.0	110	14	18	G 1/8	97.27	**726**
ECA 16-06	6	16.00	22.0	75	14	18	G 1/8	91.64	**816**
ECA 0750-06	6	19.05	22.0	100	14	18	G 1/8	93.55	**819**
ECA 20-06	6	20.00	22.0	90	14	18	G 1/8	93.55	**820**
ECA 22-06	6	22.00	21.6	110	14	18	G 1/8	96.36	**822**
ECA 25-06	6	25.00	24.6	110	14	18	G 1/8	97.27	**825**
ECA 1000-06	6	25.40	25.0	110	14	18	G 1/8	97.27	**826**
ECA 16-08	8	16.00	22.0	75	14	18	G 1/8	91.64	**916**
ECA 0750-08	8	19.05	22.0	100	14	18	G 1/8	93.55	**919**
ECA 20-08	8	20.00	22.0	90	14	18	G 1/8	93.55	**920**
ECA 22-08	8	22.00	21.6	110	14	18	G 1/8	96.36	**922**
ECA 25-08	8	25.00	24.6	110	14	18	G 1/8	97.27	**925**
ECA 1000-08	8	25.40	25.0	110	14	18	G 1/8	97.27	**926**

2A/28

Clamping screw

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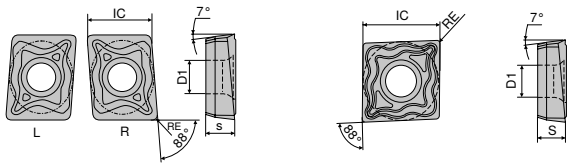
Spare parts for Article no.		Article no. 70 950 ... £	
70 801 716	M5X8 - DIN 913	1.36	**13200**
70 801 719	M5X8 - DIN 913	1.36	**13200**
70 801 720	M5X8 - DIN 913	1.36	**13200**
70 801 722	M5X8 - DIN 913	1.36	**13200**
70 801 725	M5x10 ISO 4026	2.71	**867**
70 801 726	M5x10 ISO 4026	2.71	**867**
70 801 816	M8x1x8 - SW4	2.71	**123**
70 801 819	M8x1x8 - SW4	2.71	**123**
70 801 820	M8x1x8 - SW4	2.71	**123**
70 801 822	M8x1x8 - SW4	2.71	**123**
70 801 825	M8x1x8 - SW4	2.71	**123**
70 801 826	M8x1x8 - SW4	2.71	**123**
70 801 916	M8x1x8 - SW4	2.71	**123**
70 801 919	M8x1x8 - SW4	2.71	**123**
70 801 920	M8x1x8 - SW4	2.71	**123**
70 801 922	M8x1x8 - SW4	2.71	**123**
70 801 925	M8x1x8 - SW4	2.71	**123**
70 801 926	M8x1x8 - SW4	2.71	**123**

XCNT / XCET

Designation	S	D1	IC
	mm	mm	mm
XC.T 0401..	1.80	2.10	4.5
XC.T 0502..	2.10	2.25	5.8
XC.T 0602..	2.38	2.50	6.5
XC.T 0703..	3.18	2.80	7.6
XC.T 0803..	3.18	3.40	8.5
XC.T 09T3..	3.97	3.40	9.6
XC.T 10T3..	3.97	4.40	10.6
XC.T 1304..	4.76	5.30	13.5
XC.T 1705..	5.56	5.30	17.5



XCNT / XCET

	CTCP425	-M50Q CTCP425	CTCP435	CTPP430	-27P H216T	-27Q H210T
	HCR1425	-M50Q HCR1425	HCR1435	HCN2430	-ALP CWK26	-ALQ CWK20
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		
	XCNT	XCNT	XCNT	XCNT	XCET	XCET
	1D/19	1D/19	1D/19	1D/19	1D/19	1D/19
ISO	RE	Article no. 70 386 ...	Article no. 70 386 ...	Article no. 70 386 ...	Article no. 70 386 ...	Article no. 70 286 ...	Article no. 70 286 ...
	mm	£	£	£	£	£	£
040102EL	0.2	14.07 720		14.07 820	14.07 920		
040102ER	0.2	14.07 722		14.07 822	14.07 922		
040102FL	0.2					15.75 620	16.37 120
040102FR	0.2					15.75 622	16.37 122
040104EL	0.4	14.07 700	14.68 750	14.07 800	14.07 900		
040104ER	0.4	14.07 702	14.68 752	14.07 802	14.07 902		
040104FL	0.4					15.75 600	16.37 100
040104FR	0.4					15.75 602	16.37 102
050202EN	0.2	14.07 723		14.07 823	14.07 923		
050202FN	0.2					15.75 623	16.37 123
050204EN	0.4	14.07 703	14.68 753	14.07 803	14.07 903		
050204FN	0.4					15.75 603	16.37 103
060202EN	0.2	14.07 724		14.07 824	14.07 924		
060202FN	0.2					15.75 624	16.37 124
060204EN	0.4	14.07 704	14.68 754	14.07 804	14.07 904		
060204FN	0.4					15.75 604	16.37 104
070304EN	0.4	14.07 705	14.68 755	14.07 805	14.07 905		
070304FN	0.4					15.75 605	16.37 105
080304EN	0.4	14.28 706	14.91 756	14.28 806	14.28 906		
080304FN	0.4					15.96 606	16.57 106
09T304EN	0.4	14.49 707	15.22 757	14.49 807	14.49 907		
09T304FN	0.4					16.05 607	16.68 107
10T304EN	0.4	15.22 708	15.85 758	15.22 808	15.22 908		
10T304FN	0.4					16.37 608	17.21 108
10T308EN	0.8	15.22 738	15.85 788	15.22 838	15.22 938		
10T308FN	0.8					16.37 628	17.21 128
130404EN	0.4	17.41 710	18.24 760	17.41 810	17.41 910		
130404FN	0.4					20.03 610	20.85 110
130408EN	0.8	17.41 740	18.24 790	17.41 840	17.41 940		
130408FN	0.8					20.03 611	20.85 111
170508EN	0.8	18.35 712	19.29 762	18.35 812	18.35 912		
170508FN	0.8					20.32 612	21.36 112

Steel	●	●	●	●		
Stainless steel	○	○	○	●		
Cast iron	●	●	●	○	●	●
Non ferrous metals				○	●	●
Heat resistant alloys				●		●

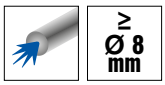
→ v_c Page 22

EcoCut – Classic 1.5xD

▲ Drilling and turning tool

Scope of supply:

Toolholder with 1 clamping screw + 2 spare screws and screwdriver



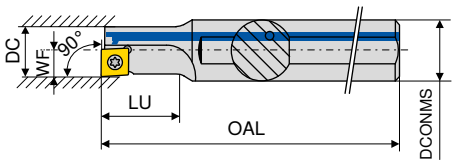


Diagram shows right hand version

Left-hand

Right-hand

Designation	DC	DCONMS	OAL	LU	WF	torque moment	Insert	2B/20 Article no. 70 805 ...		2B/20 Article no. 70 804 ...	
	mm	mm	mm	mm	mm	Nm		£		£	
ECC 08 L 1,5D 04	8	12	80	12.0	4.0	0,4	XC.T 0401..EL	144.64	**008** [2]		
ECC 08 R 1,5D 04	8	12	80	12.0	4.0	0,4	XC.T 0401..ER			144.64	**008** [1]
ECC 10 R/L 1,5D 05	10	12	90	15.0	5.0	0,7	XC.T 0502..	144.64	**010**	144.64	**010**
ECC 12 R/L 1,5D 06	12	16	100	18.0	6.0	1,0	XC.T 0602..	147.00	**012**	147.00	**012**
ECC 14 R/L 1,5D 07	14	16	110	21.0	7.0	1,2	XC.T 0703..	150.55	**014**	150.55	**014**
ECC 16 R/L 1,5D 08	16	20	125	24.0	8.0	2,2	XC.T 0803..	152.91	**016**	152.91	**016**
ECC 18 R/L 1,5D 09	18	25	135	27.0	9.0	2,2	XC.T 09T3..	176.36	**018**	176.36	**018**
ECC 20 R/L 1,5D 10	20	25	150	30.0	10.0	3,2	XC.T 10T3..	198.82	**020**	198.82	**020**
ECC 25 R/L 1,5D 13	25	32	180	37.5	12.5	5,0	XC.T 1304..	229.27	**025**	229.27	**025**
ECC 32 R/L 1,5D 17	32	40	200	48.0	16.0	5,0	XC.T 1705..	259.91	**032**	259.91	**032**

1) Note! Right-hand insert on right-hand tool → **Page 26**
2) Note! Left-hand insert on left-hand tool → **Page 26**

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Key D

Clamping screw

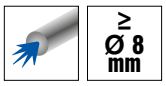
Spare parts for Article no.		Y7 Article no. 80 950 ...			2A/28 Article no. 70 950 ...	
		£			£	
70 805 008	T06 - IP	13.68	**123**	M1,8x3,6 - IP	3.35	**862**
70 804 008	T06 - IP	13.68	**123**	M1,8x3,6 - IP	3.35	**862**
70 805 010 / 70 804 010	T06 - IP	13.68	**123**	M2x4,3 - IP	2.98	**863**
70 805 012 / 70 804 012	T07 - IP	13.49	**124**	M2,2x5 - IP	2.89	**856**
70 805 014 / 70 804 014	T08 - IP	13.49	**125**	M2,5x6 - IP	3.72	**857**
70 805 016 / 70 804 016	T09 - IP	14.77	**126**	M3x7 - IP	2.85	**819**
70 805 018 / 70 804 018	T09 - IP	14.77	**126**	M3x7 - IP	2.85	**819**
70 805 020 / 70 804 020	T15 - IP	15.77	**128**	M3,5x8,6 - IP	2.85	**859**
70 805 025 / 70 804 025	T20 - IP	16.56	**129**	M4,5x10,5 - IP	2.85	**864**
70 805 032 / 70 804 032	T20 - IP	16.56	**129**	M4,5x10,5 - IP	2.85	**864**

EcoCut – Classic 2.25xD

▲ Drilling and turning tool

Scope of supply:

Toolholder with 1 clamping screw + 2 spare screws and screwdriver



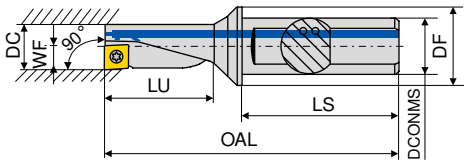


Diagram shows right hand version

Designation	DC	DCONMS	DF	OAL	LU	LS	WF	torque moment	Insert	Left-hand 2B/20 Article no. 70 805 ...		Right-hand 2B/20 Article no. 70 804 ...	
	mm	mm	mm	mm	mm	mm	mm	Nm		£		£	
ECC 08 L 2,25D 04	8	10	12	60.0	18.0	38	4.0	0,4	XC.T 0401..EL	215.18	108 [2]		
ECC 08 R 2,25D 04	8	10	12	60.0	18.0	38	4.0	0,4	XC.T 0401..ER			215.18	108 [1]
ECC 10 R/L 2,25D 05	10	12	16	69.5	22.5	42	5.0	0,7	XC.T 0502..	215.18	110	215.18	110
ECC 12 R/L 2,25D 06	12	16	20	78.0	27.0	45	6.0	1,0	XC.T 0602..	221.09	112	221.09	112
ECC 14 R/L 2,25D 07	14	16	20	83.5	31.5	45	7.0	1,2	XC.T 0703..	225.91	114	225.91	114
ECC 16 R/L 2,25D 08	16	20	25	94.0	36.0	50	8.0	2,2	XC.T 0803..	230.64	116	230.64	116
ECC 18 R/L 2,25D 09	18	25	32	109.5	40.5	56	9.0	2,2	XC.T 09T3..	254.09	118	254.09	118
ECC 20 R/L 2,25D 10	20	25	32	111.0	45.0	56	10.0	3,2	XC.T 10T3..	276.55	120	276.55	120
ECC 25 R/L 2,25D 13	25	32	40	129.0	56.5	60	12.5	5,0	XC.T 1304..	321.09	125	321.09	125
ECC 32 R/L 2,25D 17	32	40	50	158.0	72.0	70	16.0	5,0	XC.T 1705..	361.00	132	361.00	132

1) Note! Right-hand insert on right-hand tool → **Page 26**
2) Note! Left-hand insert on left-hand tool → **Page 26**

Y7

Key D

2A/28

Clamping screw

Spare parts for Article no.		Article no. 80 950 ... £			Article no. 70 950 ... £	
70 805 108	T06 - IP	13.68	123	M1,8x3,6 - IP	3.35	862
70 804 108	T06 - IP	13.68	123	M1,8x3,6 - IP	3.35	862
70 805 110 / 70 804 110	T06 - IP	13.68	123	M2x4,3 - IP	2.98	863
70 805 112 / 70 804 112	T07 - IP	13.49	124	M2,2x5 - IP	2.89	856
70 805 114 / 70 804 114	T08 - IP	13.49	125	M2,5x6 - IP	3.72	857
70 805 116 / 70 804 116	T09 - IP	14.77	126	M3x7 - IP	2.85	819
70 805 118 / 70 804 118	T09 - IP	14.77	126	M3x7 - IP	2.85	819
70 805 120 / 70 804 120	T15 - IP	15.77	128	M3,5x8,6 - IP	2.85	859
70 805 125 / 70 804 125	T20 - IP	16.56	129	M4,5x10,5 - IP	2.85	864
70 805 132 / 70 804 132	T20 - IP	16.56	129	M4,5x10,5 - IP	2.85	864

The EcoCut Classic 2.25xD is also available as a Monoblock HSK-T version. See → **Chapter 16, Adapters.**

EcoCut – Classic 3xD – Heavy metal

▲ Drilling and turning tool
▲ vibration-damped

Scope of supply:

Toolholder with 1 clamping screw + 2 spare screws and screwdriver

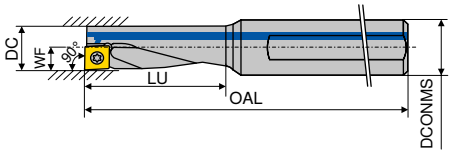


Diagram shows right hand version

Left-hand

Right-hand

Designation	DC	DCONMS	OAL	LU	WF	torque moment	Insert	2B/20 Article no. 70 805 ... £		2B/20 Article no. 70 804 ... £	
	mm	mm	mm	mm	mm	Nm					
ECC 08 L 3,00D 04 H	8	12	80	24	4.0	0,4	XC.T 0401..EL	530.64	**608** [2]		
ECC 08 R 3,00D 04 H	8	12	80	24	4.0	0,4	XC.T 0401..ER			530.64	**608** [1]
ECC 10 R/L 3,00D 05 H	10	12	85	30	5.0	0,7	XC.T 0502..	533.00	**610**	533.00	**610**
ECC 12 R/L 3,00D 06 H	12	16	95	36	6.0	1,0	XC.T 0602..	575.27	**612**	575.27	**612**
ECC 14 R/L 3,00D 07 H	14	16	100	42	7.0	1,2	XC.T 0703..	588.64	**614**	588.64	**614**
ECC 16 R/L 3,00D 08 H	16	20	110	48	8.0	2,2	XC.T 0803..	645.45	**616**	645.45	**616**
ECC 18 R/L 3,00D 09 H	18	25	125	54	9.0	2,2	XC.T 09T3..	781.36	**618**	781.36	**618**
ECC 20 R/L 3,00D 10 H	20	25	130	60	10.0	3,2	XC.T 10T3..	797.18	**620**	797.18	**620**
ECC 25 R/L 3,00D 13 H	25	32	150	75	12.5	5,0	XC.T 1304..	1,015.45	**625**	1,015.45	**625**
ECC 32 R/L 3,00D 17 H	32	40	185	96	16.0	5,0	XC.T 1705..	1,329.09	**632**	1,329.09	**632**

1) Note! Right-hand insert on right-hand tool → **Page 26**
2) Note! Left-hand insert on left-hand tool → **Page 26**

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Y7

Key D

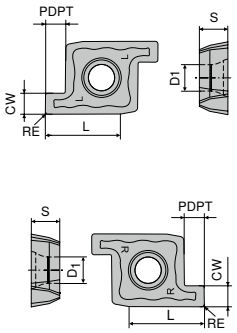
2A/28

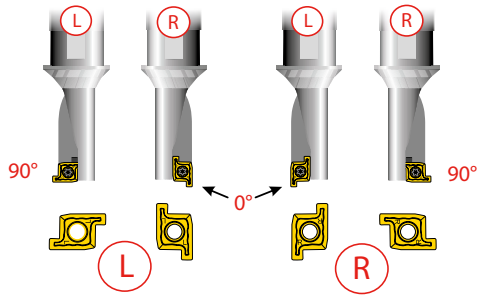
Clamping screw

Spare parts for Article no.		Article no. 80 950 ... £			Article no. 70 950 ... £	
70 805 608	T06 - IP	13.68	**123**	M1,8x3,6 - IP	3.35	**862**
70 804 608	T06 - IP	13.68	**123**	M1,8x3,6 - IP	3.35	**862**
70 805 610 / 70 804 610	T06 - IP	13.68	**123**	M2x4,3 - IP	2.98	**863**
70 805 612 / 70 804 612	T07 - IP	13.49	**124**	M2,2x5 - IP	2.89	**856**
70 805 614 / 70 804 614	T08 - IP	13.49	**125**	M2,5x6 - IP	3.72	**857**
70 805 616 / 70 804 616	T09 - IP	14.77	**126**	M3x7 - IP	2.85	**819**
70 805 618 / 70 804 618	T09 - IP	14.77	**126**	M3x7 - IP	2.85	**819**
70 805 620 / 70 804 620	T15 - IP	15.77	**128**	M3,5x8,6 - IP	2.85	**859**
70 805 625 / 70 804 625	T20 - IP	16.56	**129**	M4,5x10,5 - IP	2.85	**864**
70 805 632 / 70 804 632	T20 - IP	16.56	**129**	M4,5x10,5 - IP	2.85	**864**

PM-R / PM-L

Designation	CW	PDPT	L	S	D1
	mm	mm	mm	mm	mm
PM 10 G 201504	2.0	1.5	5.0	2.10	2.1
PM 12 G 201804	2.0	1.8	6.0	2.30	2.5
PM 16 G 252004	2.5	2.0	8.0	2.80	3.4
PM 20 G 302504	3.0	2.5	10.0	3.70	4.0
PM 25 G 353004	3.5	3.0	12.5	4.50	4.4
PM 32 G 404004	4.0	4.0	16.0	5.60	6.0





PM-R / PM-L

	-M20 CTPP430	-M20 CTPP430
	-M20 HCN2430	-M20 HCN2430
	DRAGONSKIN	DRAGONSKIN
	PM-R	PM-L
	1F/P2	1F/P2
ISO	Article no. 70 289 ...	Article no. 70 289 ...
RE	£	£
mm		
PM 10 G 201504	0.4	15.15 511	15.15 510
PM 12 G 201804	0.4	15.27 516	15.27 515
PM 16 G 252004	0.4	15.45 521	15.45 520
PM 20 G 302504	0.4	16.17 526	16.17 525
PM 25 G 353004	0.4	18.00 531	18.00 530
PM 32 G 404004	0.4	19.43 536	19.43 535
Steel		●	●
Stainless steel		●	●
Cast iron		○	○
Non ferrous metals		○	○
Heat resistant alloys		●	●

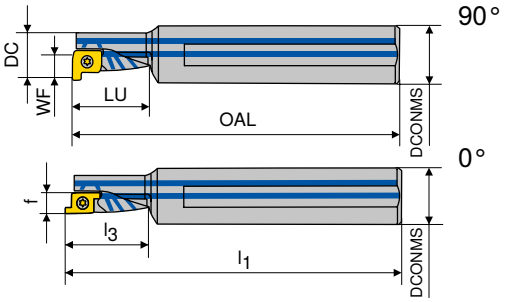
→ v_c Page 22

EcoCut – ProfileMaster 1.5xD

▲ Drilling, turning and grooving tool

Scope of supply:

Toolholder with one clamping screw and one screwdriver



Diagrams show right hand versions

Designation	DC	DCONMS	OAL	LU	WF	l_1 (0°)	l_3 (0°)	f (0)°	torque moment	Insert	Left-hand 2G/P1 Article no. 70 821 ...		Right-hand 2G/P1 Article no. 70 820 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	Nm		£		£	
PMC 10 R/L 1,5D	10	12	80	15.0	5.0				0,4	PM 10R/L	155.91	**010** 1)	155.91	**010** 1)
PMC 12 R/L 1,5D	12	16	90	18.0	6.0				1,0	PM 12R/L	161.64	**012** 1)	161.64	**012** 1)
PMC 16 R/L 1,5D	16	20	125	24.0	8.0	127.3	26.3	5.7	2,2	PM 16R/L	171.00	**016**	171.00	**016**
PMC 20 R/L 1,5D	20	25	150	30.0	10.0	152.8	32.8	7.2	2,2	PM 20R/L	211.00	**020**	211.00	**020**
PMC 25 R/L 1,5D	25	32	180	37.5	12.5	183.3	40.8	9.2	3,2	PM 25R/L	239.82	**025**	239.82	**025**
PMC 32 R/L 1,5D	32	40	200	48.0	16.0	204.3	52.3	11.7	5,0	PM 32R/L	274.27	**032**	274.27	**032**

1) only usable as 90° version

10

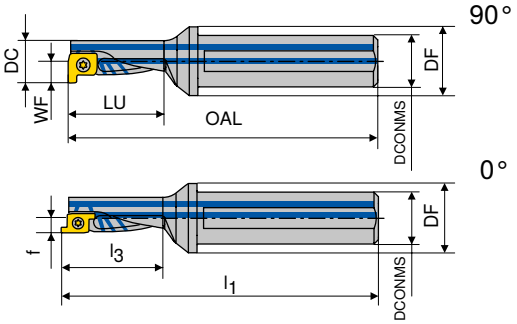
Spare parts for Article no.	Y7 Key D Article no. 80 950 ...			2A/28 Clamping screw Article no. 70 950 ...		
		£			£	
70 820 010 / 70 821 010	T06 - IP	13.68	**123**	M1,8x3,6 - IP	3.35	**862**
70 820 012 / 70 821 012	T07 - IP	13.49	**124**	M2,2x4,2 - IP	2.89	**137**
70 820 016 / 70 821 016	T09 - IP	14.77	**126**	M3x5,7 - IP	2.85	**008**
70 820 020 / 70 821 020	T15 - IP	15.77	**128**	M3x5,7 - IP	2.85	**009**
70 820 025 / 70 821 025	T15 - IP	15.77	**128**	M3,5x8,6 - IP	2.85	**859**
70 820 032 / 70 821 032	T20 - IP	16.56	**129**	M5x10,8 - IP	7.42	**010**

EcoCut – ProfileMaster 2.25xD

▲ Drilling, turning and grooving tool

Scope of supply:

Toolholder with one clamping screw and one screwdriver



Diagrams show right hand versions

Designation	DC	DCONMS	DF	OAL	LU	WF	l_1 (0°)	l_3 (0°)	f (0)°	torque moment	Insert	Left-hand 2G/P1 Article no. 70 821 ...		Right-hand 2G/P1 Article no. 70 820 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	Nm		£		£	
PMC 10 R/L 2,25D	10	12	18	72.4	22.5	5.0				0,4	PM 10R/L	229.36	110 1)	229.36	110 1)
PMC 12 R/L 2,25D	12	16	22	78.0	27.0	6.0				1,0	PM 12R/L	234.18	112 1)	234.18	112 1)
PMC 16 R/L 2,25D	16	20	28	96.5	36.0	8.0	98.8	38.3	5.7	2,2	PM 16R/L	246.73	116	246.73	116
PMC 20 R/L 2,25D	20	25	35	111.0	45.0	10.0	113.8	47.8	7.2	2,2	PM 20R/L	294.82	120	294.82	120
PMC 25 R/L 2,25D	25	32	44	132.6	56.3	12.5	135.9	59.6	9.2	3,2	PM 25R/L	338.55	125	338.55	125
PMC 32 R/L 2,25D	32	40	54	158.0	72.0	16.0	162.3	76.3	11.7	5,0	PM 32R/L	379.82	132	379.82	132

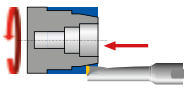
1) only usable as 90° version

Spare parts for Article no.	Y7 Key D Article no. 80 950 ...			2A/28 Clamping screw Article no. 70 950 ...		
		£			£	
70 820 110 / 70 821 110	T06 - IP	13.68	123	M1,8x3,6 - IP	3.35	862
70 820 112 / 70 821 112	T07 - IP	13.49	124	M2,2x4,2 - IP	2.89	137
70 820 116 / 70 821 116	T09 - IP	14.77	126	M3x5,7 - IP	2.85	008
70 820 120 / 70 821 120	T15 - IP	15.77	128	M3x5,7 - IP	2.85	009
70 820 125 / 70 821 125	T15 - IP	15.77	128	M3,5x8,6 - IP	2.85	859
70 820 132 / 70 821 132	T20 - IP	16.56	129	M5x10,8 - IP	7.42	010

Depth of cut and feed rate for EcoCut Mini

Turning

2.25xD

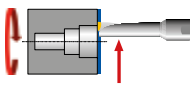


EcoCut Mini Size	Depth of cut a_p in mm									
	0,25	0,5	0,75	1,0	1,5	2,0	2,5	3,0	3,5	4,0
	Feed rate f in mm/rev.									
ECM 02..	0,02–0,07	0,02–0,07								
ECM 02,5..	0,02–0,07	0,02–0,07	0,02–0,05							
ECM 03..	0,02–0,07	0,02–0,07	0,02–0,05	0,02–0,05						
ECM 03,5..	0,02–0,07	0,02–0,07	0,02–0,05	0,02–0,05	0,02–0,05					
ECM 04..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,07	0,01–0,05				
ECM 05..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,02–0,06	0,01–0,04			
ECM 06..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,02–0,06	0,01–0,04		
ECM 07..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,02–0,06	0,01–0,04	
ECM 08..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,02–0,06	0,01–0,04

4xD

EcoCut Mini Size	Depth of cut a_p in mm									
	0,25	0,5	0,75	1,0	1,5	2,0	2,5	3,0	3,5	4,0
	Feed rate f in mm/rev.									
ECM 02..	0,02–0,05	0,01–0,05								
ECM 02,5..	0,02–0,05	0,01–0,05								
ECM 03..	0,02–0,05	0,02–0,05	0,01–0,05							
ECM 03,5..	0,02–0,05	0,02–0,05	0,02–0,05	0,01–0,05						
ECM 04..	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,01–0,05					
ECM 05..	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,085	0,02–0,06	0,01–0,04				
ECM 06..	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,085	0,02–0,06	0,01–0,04				
ECM 07..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,03–0,08	0,02–0,06	0,01–0,04			
ECM 08..	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,1	0,04–0,095	0,03–0,8	0,02–0,06	0,01–0,04		

Face turning

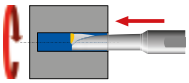


EcoCut Mini Size	2,25xD		4xD	
	$a_{p\,max.}$ in mm	f in mm/rev.	$a_{p\,max.}$ in mm	f in mm/rev.
ECM 02..	0,30	0,01–0,05	0,30	0,01–0,03
ECM 02,5..	0,30	0,01–0,05	0,30	0,01–0,03
ECM 03..	0,50	0,01–0,06	0,50	0,01–0,04
ECM 03,5..	0,50	0,01–0,06	0,50	0,01–0,04
ECM 04..	0,70	0,03–0,07	0,70	0,02–0,05
ECM 05..	0,70	0,03–0,07	0,70	0,02–0,05
ECM 06..	0,70	0,03–0,07	0,70	0,02–0,05
ECM 07..	1,00	0,04–0,08	1,00	0,03–0,06
ECM 08..	1,00	0,04–0,08	1,00	0,03–0,06

Depth of cut and feed rate for EcoCut Mini

Drilling

Feed rate



EcoCut Mini Size	2,25xD	4xD
	f in mm/rev.	f in mm/rev.
ECM 02..	0,0025–0,0075	0,0025–0,005
ECM 02,5..	0,0025–0,010	0,0025–0,005
ECM 03..	0,0025–0,0125	0,0025–0,010
ECM 03,5..	0,0025–0,0150	0,0025–0,010
ECM 04..	0,005–0,030	0,005–0,0125
ECM 05..	0,005–0,030	0,005–0,015
ECM 06..	0,005–0,030	0,005–0,020
ECM 07..	0,005–0,035	0,005–0,025
ECM 08..	0,005–0,040	0,005–0,030

max. bore depth

EcoCut Mini Size	2,25xD	4xD
	Max. hole depth in mm	Max. hole depth in mm
ECM 02..	4,50	8,0
ECM 02,5..	5,63	10,0
ECM 03..	6,75	12,0
ECM 03,5..	7,88	14,0
ECM 04..	9,0	16,0
ECM 05..	11,25	20,0
ECM 06..	13,5	24,0
ECM 07..	15,75	28,0
ECM 08..	18,0	32,0

Depth of cut and feed rate for EcoCut Classic

Turning

1.5xD

EcoCut Classic Size	Depth of cut a_p in mm											
	1	2	3	4	5	6	7	8	9	10	12	14
	Feed rate f in mm/rev.											
ECC 08	0,06–0,12	0,06–0,12	0,04–0,10	0,02–0,08								
ECC 10	0,07–0,15	0,07–0,15	0,05–0,13	0,04–0,11	0,02–0,09							
ECC 12	0,08–0,16	0,08–0,16	0,08–0,16	0,06–0,14	0,04–0,12	0,02–0,10						
ECC 14	0,09–0,18	0,09–0,18	0,09–0,18	0,09–0,18	0,07–0,16	0,05–0,14	0,02–0,11					
ECC 16	0,10–0,20	0,10–0,20	0,10–0,20	0,10–0,20	0,08–0,18	0,06–0,16	0,04–0,14	0,02–0,12				
ECC 18	0,11–0,22	0,11–0,22	0,11–0,22	0,11–0,22	0,11–0,22	0,09–0,20	0,07–0,18	0,05–0,16	0,03–0,13			
ECC 20	0,12–0,24	0,12–0,24	0,12–0,24	0,12–0,24	0,12–0,24	0,11–0,23	0,09–0,21	0,07–0,19	0,05–0,17	0,03–0,15		
ECC 25	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,11–0,24	0,09–0,22	0,07–0,20	0,03–0,16	
ECC 32	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,14–0,30	0,15–0,30	0,15–0,30	0,13–0,28	0,11–0,26	0,07–0,22	0,03–0,18

Feed f may be increased by 50–75 % when using M50Q and ALQ.

2.25xD

EcoCut Classic Size	Depth of cut a_p in mm										
	1,0	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	7,0
	Feed rate f in mm/rev.										
ECC 08	0,06–0,12	0,04–0,10	0,02–0,08								
ECC 10	0,07–0,15	0,05–0,13	0,03–0,11	0,02–0,09							
ECC 12	0,08–0,16	0,08–0,16	0,06–0,14	0,04–0,12	0,02–0,10						
ECC 14	0,09–0,18	0,09–0,18	0,07–0,16	0,05–0,14	0,04–0,13	0,02–0,11					
ECC 16	0,10–0,20	0,10–0,20	0,09–0,19	0,07–0,17	0,05–0,15	0,03–0,13					
ECC 18	0,11–0,22	0,11–0,22	0,11–0,22	0,09–0,20	0,07–0,18	0,05–0,16	0,03–0,14				
ECC 20	0,12–0,24	0,12–0,24	0,12–0,24	0,12–0,24	0,10–0,22	0,08–0,20	0,06–0,18	0,04–0,16			
ECC 25	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,13–0,26	0,12–0,25	0,10–0,23	0,08–0,21	0,06–0,19	0,04–0,17	
ECC 32	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,14–0,29	0,12–0,27	0,10–0,25	0,08–0,23	0,05–0,20

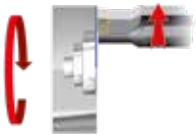
Feed f may be increased by 50–75 % when using M50Q and ALQ.

3xD

EcoCut Classic Size	Depth of cut a_p in mm								
	1,0	2,0	2,5	3,0	3,5	4,0	5,0	6,0	7,0
	Feed rate f in mm/rev.								
ECC 08	0,05–0,10	0,02–0,06							
ECC 10	0,06–0,11	0,03–0,07							
ECC 12	0,06–0,12	0,04–0,10	0,02–0,08						
ECC 14	0,07–0,13	0,05–0,11	0,02–0,09						
ECC 16	0,07–0,15	0,06–0,14	0,04–0,12	0,02–0,09					
ECC 18	0,08–0,16	0,08–0,16	0,06–0,14	0,04–0,12					
ECC 20	0,09–0,18	0,09–0,18	0,09–0,18	0,07–0,16	0,05–0,14	0,03–0,12			
ECC 25	0,10–0,19	0,10–0,19	0,10–0,19	0,08–0,17	0,06–0,15	0,03–0,13			
ECC 32	0,11–0,22	0,11–0,22	0,11–0,22	0,11–0,22	0,09–0,20	0,07–0,18	0,03–0,14		

Depth of cut and feed rate for EcoCut Classic

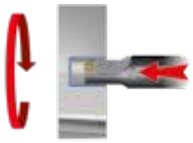
Face turning



EcoCut Classic Size	1,5xD		2,25xD		3xD	
	a_p in mm	f in mm/rev.	a_p in mm	f in mm/rev.	a_p in mm	f in mm/rev.
ECC 08	2,00	0,05–0,10	1,90	0,04–0,09	1,10	0,04–0,07
ECC 10	2,50	0,06–0,12	2,20	0,05–0,10	1,20	0,04–0,09
ECC 12	3,00	0,07–0,14	2,60	0,06–0,12	1,40	0,05–0,11
ECC 14	3,50	0,08–0,16	3,00	0,07–0,14	1,60	0,06–0,12
ECC 16	4,00	0,09–0,18	3,40	0,08–0,16	1,90	0,06–0,13
ECC 18	4,50	0,10–0,20	3,80	0,09–0,18	2,00	0,07–0,14
ECC 20	5,00	0,11–0,22	4,20	0,10–0,20	2,20	0,08–0,15
ECC 25	6,00	0,12–0,24	5,00	0,11–0,22	2,60	0,09–0,18
ECC 32	8,00	0,13–0,27	6,00	0,12–0,25	3,00	0,10–0,20

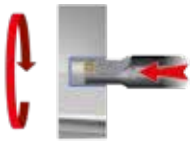
Drilling

Feed rate



EcoCut Classic Size	1,5xD	2,25xD	3xD
	f in mm/rev.	f in mm/rev.	f in mm/rev.
ECC 08	0,01–0,04	0,01–0,04	0,01–0,02
ECC 10	0,01–0,05	0,01–0,05	0,01–0,03
ECC 12	0,01–0,05	0,01–0,05	0,01–0,04
ECC 14	0,01–0,07	0,01–0,07	0,01–0,05
ECC 16	0,02–0,08	0,02–0,08	0,02–0,06
ECC 18	0,03–0,09	0,03–0,09	0,03–0,07
ECC 20	0,03–0,10	0,03–0,10	0,03–0,08
ECC 25	0,03–0,12	0,03–0,12	0,04–0,09
ECC 32	0,05–0,15	0,05–0,15	0,05–0,11

max. bore depth



EcoCut Classic Size	1,5xD	2,25xD	3xD
	Max. hole depth in mm	Max. hole depth in mm	Max. hole depth in mm
ECC 08	12,0	18,0	24,0
ECC 10	15,0	22,5	30,0
ECC 12	18,0	27,0	36,0
ECC 14	21,0	31,5	42,0
ECC 16	24,0	36,0	48,0
ECC 18	27,0	40,5	54,0
ECC 20	30,0	45,0	60,0
ECC 25	37,5	56,5	75,0
ECC 32	48,0	72,0	96,0

Depth of cut and feed rate for EcoCut ProfileMaster 90°

Turning

1,5xD

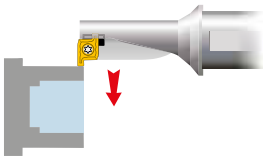
EcoCut ProfileMaster Size	Depth of cut a_p in mm							
	1	2	3	4	5	6	7	8
	Feed rate f in mm/rev.							
PMC 10	0,07–0,20	0,05–0,17	0,02–0,12					
PMC 12	0,07–0,20	0,05–0,17	0,02–0,12					
PMC 16	0,10–0,25	0,07–0,23	0,05–0,21	0,02–0,17				
PMC 20	0,12–0,27	0,10–0,26	0,007–0,24	0,05–0,20	0,02–0,14			
PMC 25	0,15–0,30	0,15–0,30	0,13–0,28	0,10–0,26	0,05–0,22	0,02–0,18		
PMC 32	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,10–0,27	0,07–0,24	0,05–0,21	0,02–0,15

2,25xD

EcoCut ProfileMaster Size	Depth of cut a_p in mm							
	1	2	3	4	5	6	7	8
	Feed rate f in mm/rev.							
PMC 10	0,07–0,19	0,02–0,13						
PMC 12	0,07–0,19	0,02–0,13						
PMC 16	0,10–0,25	0,07–0,21	0,02–0,13					
PMC 20	0,12–0,27	0,07–0,24	0,05–0,19					
PMC 25	0,15–0,30	0,10–0,27	0,07–0,23	0,02–0,15				
PMC 32	0,15–0,30	0,15–0,30	0,10–0,27	0,07–0,23	0,02–0,15			

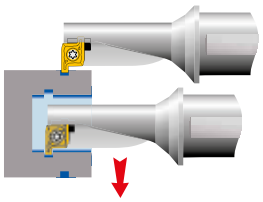
Face turning

1.5xD and 2.25xD



EcoCut ProfileMaster Size	Depth of cut a_p in mm					
	1,0	1,5	2,0	2,5	3,0	3,5
	Feed rate f in mm/rev.					
PMC 10	0,02–0,15	0,02–0,15				
PMC 12	0,02–0,15	0,02–0,15				
PMC 16	0,05–0,20	0,05–0,20	0,05–0,20			
PMC 20	0,08–0,22	0,08–0,22	0,08–0,22	0,08–0,22		
PMC 25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	
PMC 32	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25

Internal + external – radial grooving

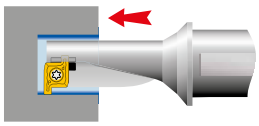


EcoCut ProfileMaster Size	1,5xD
	f in mm/rev.
PMC 10	0,01–0,08
PMC 12	0,02–0,10
PMC 16	0,04–0,15
PMC 20	0,04–0,16
PMC 25	0,07–0,20
PMC 32	0,08–0,22

EcoCut ProfileMaster Size	2,25xD
	f in mm/rev.
PMC 10	0,01–0,08
PMC 12	0,02–0,10
PMC 16	0,04–0,15
PMC 20	0,04–0,16
PMC 25	0,07–0,20
PMC 32	0,08–0,22

Drilling

Feed and max. hole depth



EcoCut ProfileMaster Size	1,5xD	
	f in mm/rev.	Max. hole depth in mm
PMC 10	0,01–0,05	15,0
PMC 12	0,01–0,06	18,0
PMC 16	0,02–0,09	24,0
PMC 20	0,03–0,10	30,0
PMC 25	0,04–0,12	37,5
PMC 32	0,04–0,14	48,0

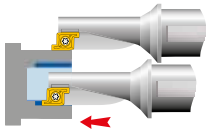
EcoCut ProfileMaster Size	2,25xD	
	f in mm/rev.	Max. hole depth in mm
PMC 10	0,01–0,05	22,5
PMC 12	0,01–0,06	27,0
PMC 16	0,02–0,09	36,0
PMC 20	0,03–0,10	45,0
PMC 25	0,04–0,12	56,3
PMC 32	0,04–0,14	72,0

Depth of cut and feed rate for EcoCut ProfileMaster 0°

EcoCut ProfileMaster Sizes 10 and 12 can not be used as 0° version.

Turning

1,5xD



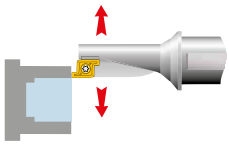
EcoCut ProfileMaster Size	Depth of cut a_p in mm					
	1,0	1,5	2,0	2,5	3,0	3,5
	Feed rate f in mm/rev.					
PMC 16	0,04–0,20	0,04–0,20	0,04–0,20			
PMC 20	0,06–0,22	0,06–0,22	0,06–0,22	0,06–0,22		
PMC 25	0,08–0,25	0,08–0,25	0,08–0,25	0,08–0,25	0,08–0,25	
PMC 32	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28

2,25xD

EcoCut ProfileMaster Size	Depth of cut a_p in mm					
	1,0	1,5	2,0	2,5	3,0	3,5
	Feed rate f in mm/rev.					
PMC 16	0,04–0,20	0,04–0,20	0,04–0,20			
PMC 20	0,06–0,22	0,06–0,22	0,06–0,22	0,06–0,22		
PMC 25	0,08–0,25	0,08–0,25	0,08–0,25	0,08–0,25	0,08–0,25	
PMC 32	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28	0,10–0,28

Face turning

1,5xD

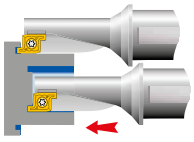


EcoCut ProfileMaster Size	Depth of cut a_p in mm						
	1,0	1,5	2,0	2,5	3,0	3,5	4,0
	Feed rate f in mm/rev.						
PMC 16	0,05–0,20	0,05–0,20	0,05–0,20				
PMC 20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20			
PMC 25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25		
PMC 32	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25

2,25xD

EcoCut ProfileMaster Size	Depth of cut a_p in mm						
	1,0	1,5	2,0	2,5	3,0	3,5	4,0
	Feed rate f in mm/rev.						
PMC 16	0,05–0,20	0,05–0,20	0,05–0,20				
PMC 20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20			
PMC 25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25		
PMC 32	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25

Axial grooving external + internal



EcoCut ProfileMaster Size	1,5xD
	Feed rate f in mm/rev.
PMC 16	0,02–0,12
PMC 20	0,04–0,14
PMC 25	0,06–0,18
PMC 32	0,08–0,20

EcoCut ProfileMaster Size	2,25xD
	Feed rate f in mm/rev.
PMC 16	0,02–0,12
PMC 20	0,04–0,14
PMC 25	0,06–0,18
PMC 32	0,08–0,20

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

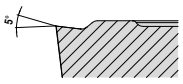
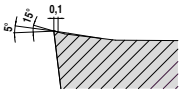
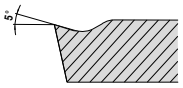
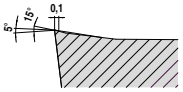
Cutting data appoximate values

	EcoCut Mini CTWN425 (CWK4425)	EcoCut Mini CTPP435 (HCN1435)	EcoCut Classic CTCP425 (HCR1425)	EcoCut Classic CTCP435 (HCR1435)	EcoCut Classic CTPP430 (HCN2430)	EcoCut Classic H210T (CWK20)	EcoCut Classic H216T (CWK26)	EcoCut ProfileMaster CTPP430 (HCN 2430)
Index	v_c in m/min							
1.1		**80–160**	**120–250**	**120–240**	**120–220**			**120–220**
1.2		**80–230**	**150–300**	**150–300**	**120–250**			**120–250**
1.3		**80–230**	**120–220**	**120–220**	**80–180**			**80–180**
1.4		**80–230**	**100–200**	**100–180**	**60–160**			**60–160**
1.5		**60–130**	**120–220**	**110–200**	**80–180**			**80–180**
1.6		**60–120**	**100–180**	**100–180**	**60–160**			**60–160**
1.7		**60–120**	**120–200**	**100–180**	**80–180**			**80–180**
1.8		**50–100**	**80–150**	**70–140**	**60–130**			**60–130**
1.9		**60–120**	**110–190**	**80–150**	**80–180**			**80–180**
1.10		**50–150**	**100–180**	**100–180**	**60–170**			**60–170**
1.11		**50–150**	**80–150**	**50–150**	**80–150**			**80–150**
1.12		**80–140**	**90–150**	**80–150**	**60–150**			**60–150**
1.13		**60–120**	**70–150**	**60–140**	**60–150**			**60–150**
1.14								
1.15		**50–150**	**80–150**	**80–150**	**60–150**			**60–150**
1.16		**50–150**	**80–150**	**80–150**	**60–150**			**60–150**
2.1		**50–200**	100–200	100–180	**50–160**			**50–160**
2.2		**50–180**	120–220	100–200	**50–180**			**50–180**
2.3		**50–180**	120–200	100–200	**50–150**			**50–150**
2.4		**50–180**	100–200	100–180	**50–160**			**50–160**
2.5		**50–100**			**50–130**			**50–130**
2.6		**50–80**			**50–120**			**50–120**
2.7		**50–80**			**50–120**			**50–120**
3.1	100–150	100–170	**130–280**	**120–250**	120–200	140–200	**100–150**	120–200
3.2	100–150	100–170	**130–280**	**120–250**	100–180	100–160	**100–150**	100–180
3.3	100–140	100–160	**120–280**	**110–250**	120–200	160–200	**100–140**	120–200
3.4	100–140	100–160	**120–280**	**110–250**	100–180	110–150	**100–140**	100–180
3.5	100–160	100–180	**110–280**	**100–250**	90–160	160–220	**100–160**	90–160
3.6	100–160	100–170	**110–280**	**100–250**	70–150	140–180	**100–160**	70–150
3.7	100–160	100–170	**110–280**	**100–250**	90–160	160–220	**100–160**	90–160
3.8	100–160	100–170	**110–280**	**100–250**	70–150	140–180	**100–160**	70–150
4.1	**100–2000**				100–2000	**300–3000**	**100–500**	100–2000
4.2	**100–1500**				100–1500	**200–2500**	**100–500**	100–1500
4.3	**100–1500**				100–1500	**400–2000**	**100–300**	100–1500
4.4	**100–1300**				100–1300	**200–1000**	**100–300**	100–1300
4.5	**100–600**				100–600	**250–800**	**100–300**	100–600
4.6	**100–300**				100–300	**150–400**	**100–300**	100–300
4.7	**100–500**				100–500	**200–400**	**100–500**	100–500
4.8	**100–500**				100–500	**150–400**	**100–300**	100–500
4.9	**100–500**				100–500	**150–400**	**100–300**	100–500
4.10	**100–500**				100–500	**150–400**	**100–300**	100–500
4.11	**100–500**				100–500	**200–800**	**100–500**	100–500
4.12	**100–290**				100–290	**150–600**	**100–300**	100–290
4.13	**90–200**				90–200	**150–280**	**120–200**	90–200
4.14	**60–160**				60–160	**100–220**	**80–180**	60–160
4.15	**50–140**				50–140	**80–200**	**60–150**	50–140
4.16								
4.17								
4.18								
4.19								
5.1		**20–50**			**20–90**	**30–50**		**20–90**
5.2		**15–25**			**20–90**	**15–30**		**20–90**
5.3		**15–25**			**20–80**	**15–25**		**20–80**
5.4		**10–20**			**20–80**	**15–25**		**20–80**
5.5		**10–20**			**20–80**	**15–25**		**20–80**
5.6		**10–20**			**20–90**	**15–30**		**20–90**
5.7		**10–20**			**20–80**	**15–25**		**20–80**
5.8		**10–20**			**20–80**	**15–25**		**20–80**
5.9		**50–120**			**40–100**	**80–140**		**40–100**
5.10		**30–50**			**30–90**	**40–100**		**30–90**
5.11		**30–50**				**30–60**		
6.1								
6.2								
6.3								
6.4								
6.5								

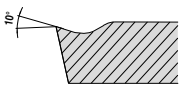
The cutting data depends largely on the external conditions, e.g. stability of the tools and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Chip Breakers Overview

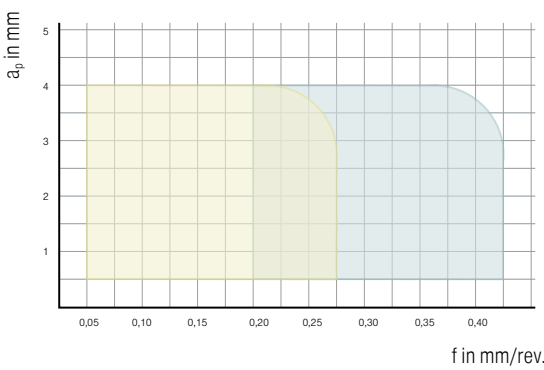
EcoCut Classic

	Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration f mm
-EN ▲ Universal geometry ▲ Excellent chip breakage ▲ Positive cutting edge ▲ Low to medium feeds		**CTCP425 (HCR1425)** **CTCP435 (HCR1435)** **CTCP425 (HCR1425)** CTPP430 (HCN2430)	**CTCP435 (HCR1435)** **CTPP430 (HCN2430)** **CTCP435 (HCR1435)** CTPP430 (HCN2430)	**CTPP430 (HCN2430)** **CTPP430 (HCN2430)** CTPP430 (HCN2430)	 0,05–0,75
-M50Q ▲ With wiper geometry ▲ Excellent surface qualities ▲ Good chip formation ▲ Medium to high feeds		**CTCP425 (HCR1425)** CTCP425 (HCR1425) **CTCP425 (HCR1425)** 	**CTCP425 (HCR1425)** CTCP425 (HCR1425) 	 	 0,2–0,425
-27P ▲ Positive cutting edge ▲ Periphery ground ▲ Polished rake face ▲ First choice for non-ferrous metals		 **H216T (CWK 26)** 	 **H216T (CWK 26)** 	 **H216T (CWK 26)** 	 0,1–0,4
-ALQ ▲ With wiper geometry ▲ Extremely positive geometry ▲ Periphery ground ▲ Low adhesion		 **H210T (CWK 20)** 	 **H210T (CWK 20)** 	 	 0,2–0,5

EcoCut ProfileMaster

-M20 ▲ Positive geometry ▲ Universal application ▲ Low to medium feeds		CTPP430 (HCN2430) **CTPP430 (HCN2430)** CTPP430 (HCN2430) CTPP430 (HCN2430) **CTPP430 (HCN2430)**	**CTPP430 (HCN2430)** **CTPP430 (HCN2430)** CTPP430 (HCN2430) CTPP430 (HCN2430) CTPP430 (HCN2430)	**CTPP430 (HCN2430)** **CTPP430 (HCN2430)** CTPP430 (HCN2430) CTPP430 (HCN2430) 	 0,05–0,25

Application area of -EN and -M50Q chip breakers



EcoCut Classic 2.25xD – ECC16 – XCNT 080304

= -M50Q

= Standard

10

EcoCut Classic – Application as the most stable boring tool

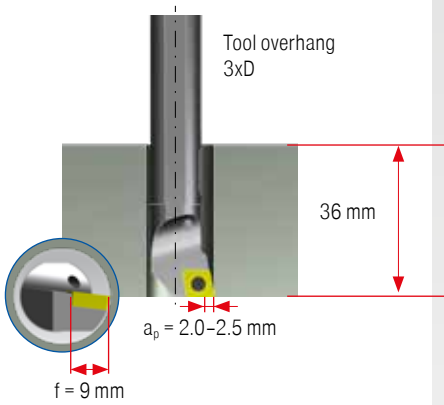
EcoCut can be used not only as a multifunctional tool. In comparison with a boring bar EcoCut used as a pure boring tool gives the user enormous benefits.

Example: Machining bores, 16 mm diameter by 36 mm depth

Differences in the tool

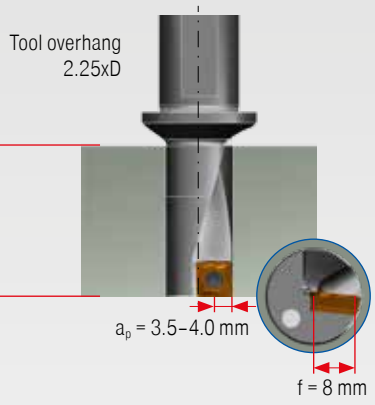
Boring Bar

A12K SCFCR 06



EcoCut Classic

ECC 16R-2.25D 08



Your Advantages

Large, stable toolholder

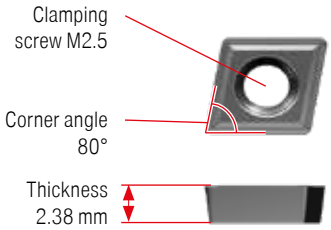
- Absorption of high cutting forces
- Low vibration
- Chip Booster for perfect cooling and chip evacuation

Benefits

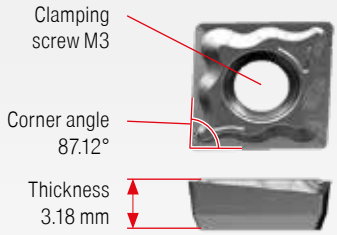
- High surface quality
- Perfect chip control
- Max. process security

Differences in the insert

CCMT 060204



XCNT 080304



Large and stable insert

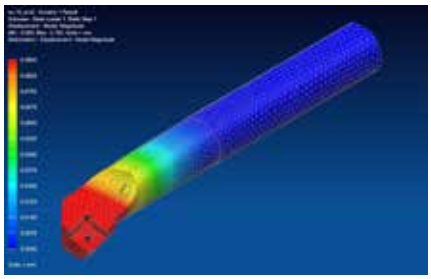
- Increased process security
- Enables large depths of cut
- Higher cutting data
- Higher tool life

Benefits

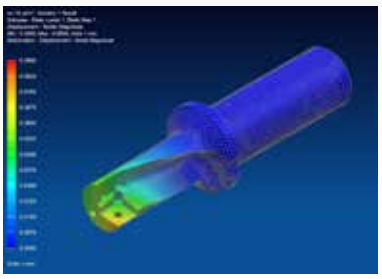
- Reduction in machining time
- Increased productivity
- Reduced tooling costs

Stability Comparison

Calculation using FEM
A load of 1000 N on the insert seat corresponds to an approx. a_p of 2.0 mm and f 0.2 mm



Deflection 0.19mm

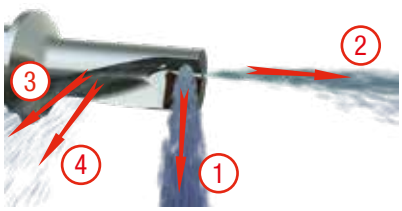


Deflection 0.08mm

Practical experience shows:

- Reduced machining time by up to **75 %**
- Increase in tool life by **400 %** possible

Innovative chip removal – Chip-Booster



EcoCut tools are equipped with a unique coolant and chip removal system.

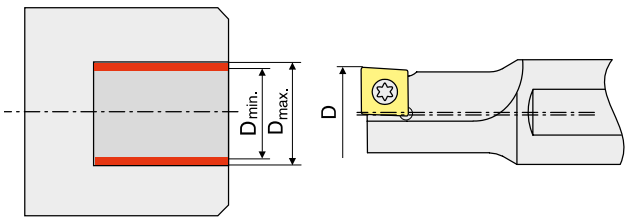
1. Cooling of the indexable insert
2. General coolant stream
3. Chip booster for improved chip transport
4. Chip booster prevents chips from getting stuck between tool and workpiece

For maximum chip transport efficiency when drilling, coolant pressure must be 3–6 bar minimum (optimal 7–10 bar).

Application Tips

Drilling Off centre

Due to the special construction of the EcoCut tool and insert, off-centre drilling is possible.
Deviations from the tool nominal Ø,
can be achieved (see adjacent table).



ProfileMaster 0°
Not suitable for drilling!

EcoCut Mini	Tool nominal-Ø	Work piece bore Ø	
	D in mm	$D_{min.}$ in mm	$D_{max.}$ in mm
ECM 02 L/R - ...D	2	1,95	2,1
ECM 02,5 L/R - ...D	2,5	2,45	2,6
ECM 03 L/R - ...D	3	2,95	3,15
ECM 03,5 L/R - ...D	3,5	3,45	3,65
ECM 04 R/L - ...D	4	3,90	4,20
ECM 05 R/L - ...D	5	4,90	5,20
ECM 06 R/L - ...D	6	5,90	6,20
ECM 07 R/L - ...D	7	6,90	7,20
ECM 08 R/L - ...D	8	7,90	8,20

EcoCut Classic	Tool nominal-Ø	Work piece bore Ø	
	D in mm	$D_{min.}$ in mm	$D_{max.}$ in mm
ECC 08 R/L - ... 04	8	7,85	8,30
ECC 10 R/L - ... 05	10	9,85	10,50
ECC 12 R/L - ... 06	12	11,85	12,50
ECC 14 R/L - ... 07	14	13,85	14,50
ECC 16 R/L - ... 08	16	15,85	16,50
ECC 18 R/L - ... 09	18	17,85	18,50
ECC 20 R/L - ... 10	20	19,80	20,50
ECC 25 R/L - ... 13	25	24,80	25,80
ECC 32 R/L - ... 17	32	31,80	33,00

EcoCut ProfileMaster	Tool nominal-Ø	Work piece bore Ø	
	D in mm	$D_{min.}$ in mm	$D_{max.}$ in mm
PM 10R/L ...	10	9,85	12
PM 12R/L ...	12	11,85	15
PM 16R/L ...	16	15,85	19
PM 20R/L ...	20	19,80	24
PM 25R/L ...	25	24,80	29
PM 32R/L ...	32	31,80	38

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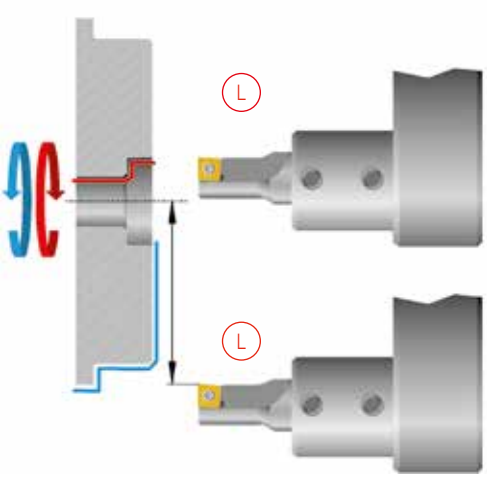
Machining over centre

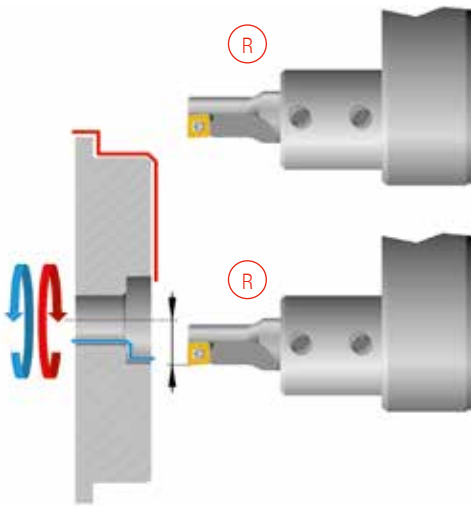
Problem

In case of insufficient movement of the machine across the centre line, the external diameter can not be machined with the same tool.



Solution

Use a right hand EcoCut tool.

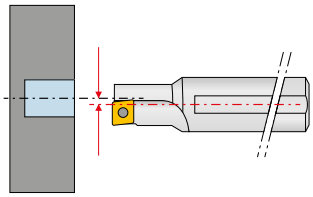


Application Tips

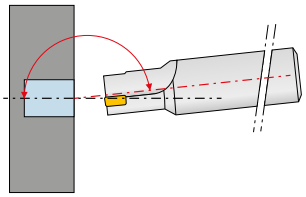
With axial displacement there is the danger of collision!

Problems

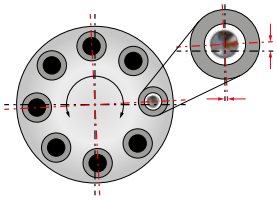
Displacement in x-direction:



Angular error:



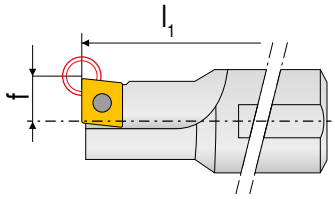
Turret position error:



Remedy

When pre-setting the tool:

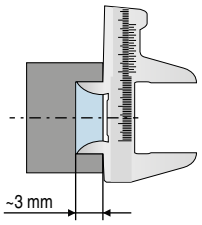
- Definition as an internal turning tool for programming



- Enter the tool nominal Ø as bore target Ø

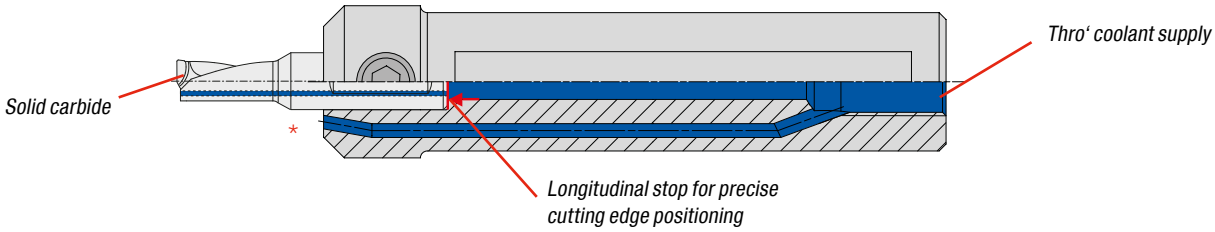
At the machine:

- Make measuring cut, approx. 3 mm deep
- Measure drilled diameter produced



- If necessary correct drilling Ø
- Start machining

EcoCut Mini adapter – Design



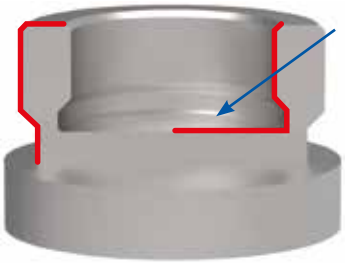
* Cross-section rotated by 90° for clarity

Mounting of the insert for EcoCut Classic

For tools up to Ø 8 mm right and left handed inserts are required.
From Ø 10–32 mm mm neutral inserts are used.

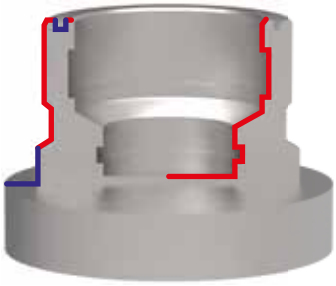
Note!
Ensure correct installation position.

EcoCut ProfileMaster – the highlight with regard to efficiency



Right hand tools

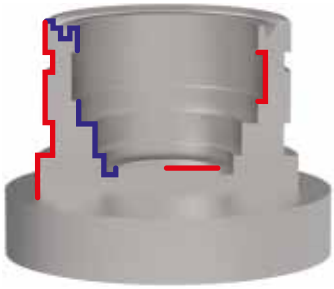
Right hand insert



Right hand tools

Left hand insert

Right hand insert



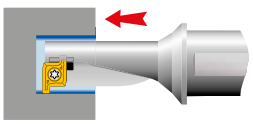
Left hand tool

Right hand tools

Right hand insert

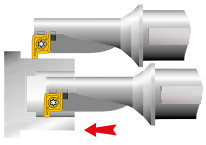
10

Version 90°



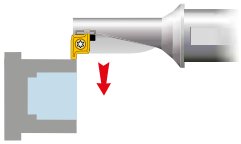
Drilling into solid material with flat bottom hole

Drilling

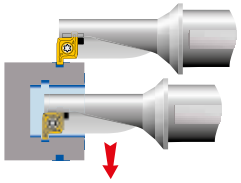


Turning External Diameters

Turning Internal Diameters



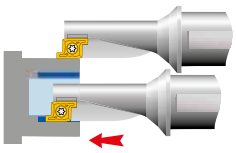
Turning Profiles



External radial grooving

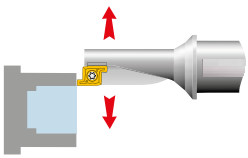
Internal radial grooving

Version 0°

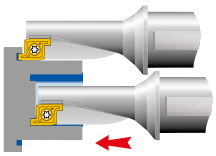


Turning External Diameters

Turning Internal Diameters



Turning Profiles



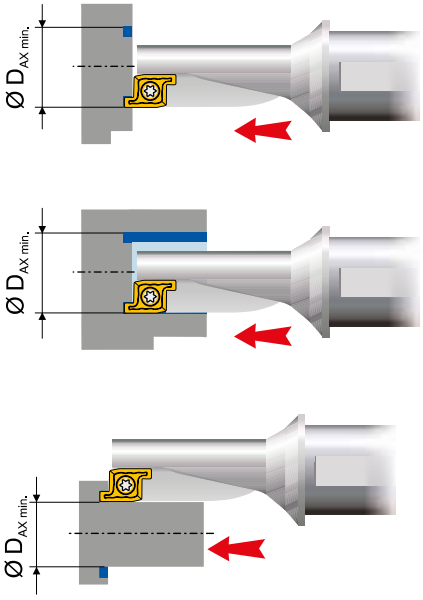
Axial grooving external

Axial grooving internal

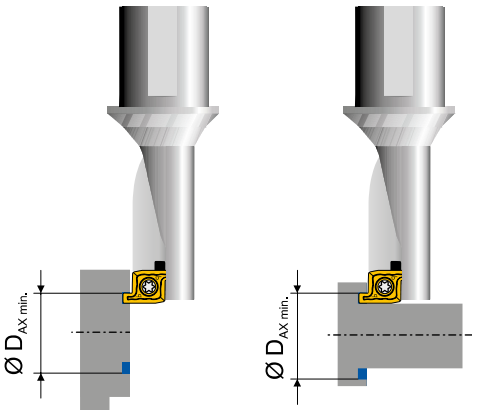
For maximum chip transport efficiency when drilling, coolant pressure must be 3–6 bar minimum (optimal 7–10 bar).

EcoCut ProfileMaster – Axial Grooving

0° (from Ø 16 mm)

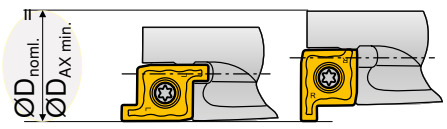


90°



EcoCut ProfileMaster	$ØD_{noml.}$ mm	$ØD_{AX\ min.}$ mm	$ØD_{AX\ max.}$ mm
PM 10R/L 1,5D	10	10	> 10
PM 10R/L 2,25D	10	10	> 10
PM 12R/L 1,5D	12	12	> 12
PM 12R/L 2,25D	12	12	> 12
PM 16R/L 1,5D	16	16	> 16
PM 16R/L 2,25D	16	16	> 16
PM 20R/L 1,5D	20	20	> 20
PM 20R/L 2,25D	20	20	> 20
PM 25R/L 1,5D	25	25	> 25
PM 25R/L 2,25D	25	25	> 25
PM 32R/L 1,5D	32	32	> 32
PM 32R/L 2,25D	32	32	> 32

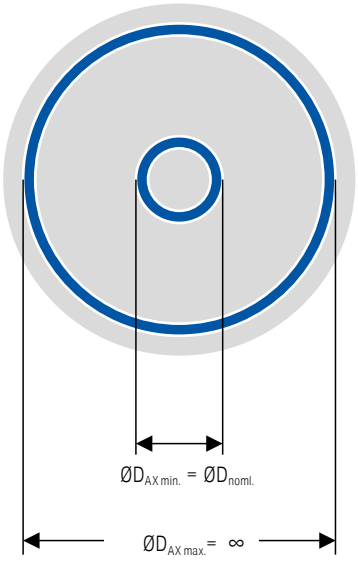
$ØD_{AX\ min.}$ = $ØD_{noml.}$



$ØD_{noml.}$ = Nominal tool diameter

$ØD_{AX\ min.}$ = Smallest diameter for axial grooving

$ØD_{AX\ max.}$ = Largest diameter for axial grooving



Application Tips

Recommendation for Optimum Results

Type of problem										
Type of wear				Work piece problems		Swarf control				
Edge breakage	Built-up edge	Wear on clearance face	Plastic deformation	Vibration	Surface quality	Chip too long (snarl chip)	Chip too short (fragmented chip)	Remedy measures		
	↑	↓	↓	↓	↑	↓		Cutting data	Cutting speed	
↓		~	↓	↑	↓	↑	↓		Feed rate	
↑		↑	↑	↓	↑			Insert selection	Corner radius	larger ↑ ↓ smaller
↓		↑	↑						Tap Material	wear resistance ↑ ↓ toughness
~				~	~			General criteria	Tool clamping	
~				~	~				Work piece clamping	
~				~	↓				Overhang	
~		~		~	~				Tip height	
	●	●	●		●	●			Cooling lubricant	

↑ raise, increase large influence
↑ raise, increase small influence
↓ avoid, reduce large influence
↓ avoid, reduce small influence
~ control, optimize
● use

10

Grades Overview

EcoCut Classic

CTCP425 / HCR1425

- Carbide, Ti+Al_2O_3-coated
- ISO | **P25** | **K30** | M20
- The wear-resistant choice for steel and cast iron materials under stable conditions and at high cutting speeds

CTCP435 / HCR1435

- Carbide, Ti+Al_2O_3-coated
- ISO | **P35** | **K40** | M30
- The reliable choice for steel and cast iron materials under unstable conditions

CTPP430 / HCN2430

- Carbide, TiAlN-coated
- ISO | **P30** | **M25** | **S25** | K30 | N25
- The universal high-performance grade for steel, austenitic steel and heat-resistant alloys

H210T / CWK20

- Carbide, uncoated
- ISO | **N10** | **S10** | K10
- The wear-resistant carbide grade for machining aluminium and other non-ferrous metals

H216T / CWK26

- Carbide, uncoated
- ISO | **K15** | **N15**
- The uncoated carbide grade for machining aluminium and other non-ferrous metals
- Also highly suitable for HSC machining

EcoCut Mini

CTPP435 / HCN1435

- Carbide, TiAlN-coated
- ISO **I P35 I M30 I S30** | K30
- The universal high-performance grade for steel, austenitic steel and heat-resistant alloys

CTWN425 / CWK4425

- Carbide, uncoated
- ISO | **N25** | K20
- The uncoated carbide grade for machining aluminium and other non-ferrous metals

EcoCut ProfileMaster

CTPP430 / HCN2430

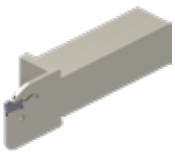
- Carbide, TiAlN-coated
- ISO | **P30** | **M25** | **S25** | K30 | N25
- The universal high-performance grade for steel, austenitic steel and heat-resistant alloys

Application

Grade designation	Standard designation	Steel P	Stainless steel M	Cast iron K	Non ferrous metals N	Heat resistant alloys S	Tempered steel H
EcoCut Mini							
CTWN425 (CWK4425)	HW-N25				●		
	HW-K20			○			
CTPP435 DRAGONSKIN (HCN1435)	HC-P35	●					
	HC-M30		●				
	HC-S30					●	
	HC-K30			○			
EcoCut Classic							
CTCP425 DRAGONSKIN (HCR1425)	HC-P25	●					
	HC-M20		○				
	HC-K30			●			
CTCP435 DRAGONSKIN (HCR1435)	HC-P35	●					
	HC-M30		○				
	HC-K40			●			
CTPP430 DRAGONSKIN (HCN2430)	HC-P30	●					
	HC-M25		●				
	HC-S25					●	
	HC-K30			○			
	HC-N25				○		
H216T (CWK26)	HW-N15				●		
	HW-K15			●			
H210T (CWK20)	HW-N10				●		
	HW-S10					●	
	HW-K10			○			
EcoCut ProfileMaster							
CTPP430 DRAGONSKIN (HCN2430)	HC-P30	●					
	HC-M25		●				
	HC-S25					●	
	HC-N25			○			
	HC-K30				○		

10

New products for machining technicians



NEW MonoClamp – Radial Monoholder SX-DC

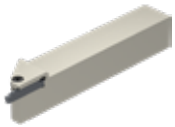
DirectCooling – dual cooling of the grooving insert via the rake face and flank. For grooving and parting off up to a diameter of 80 mm.

20

NEW MonoClamp – Radial Monoholder SX

Proven single-edged grooving and turning system with a completely updated design. Elastic insert clamping with assembly key.

21



NEW MonoClamp – Axial Monoholder AX

For axial grooves from a diameter of 10 mm. Suitable for 0° and 90° versions with groove depths up to 15 mm.

77+78

Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

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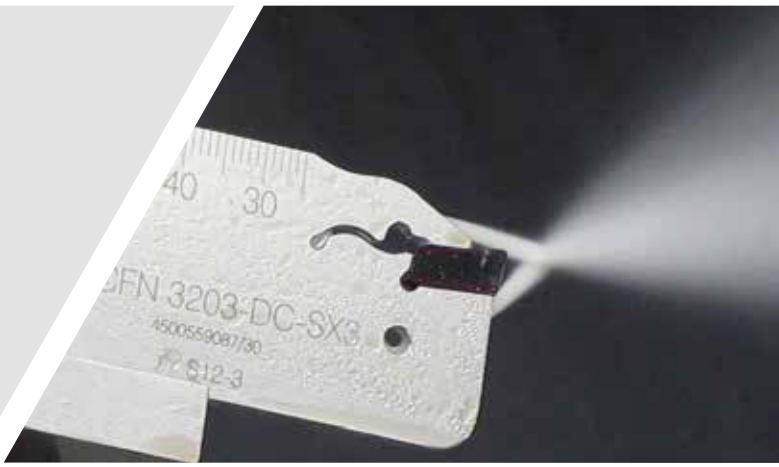
CERATIZIT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **CERATIZIT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Advantages of the DirectCooling blade

- The best machining results, even with reduced pump output
  Highest flow volume of all thro' coolant blades on the market
- User friendly
  Reinforced blades without sealing screw
- Process-secure spare part for easy handling and a long service life
  Single-piece sealing screw made from steel (for standard blades)



Symbol explanation

Grooving

Turning

Face turning

Axial grooving

Main Application

Extended application

Repeatability

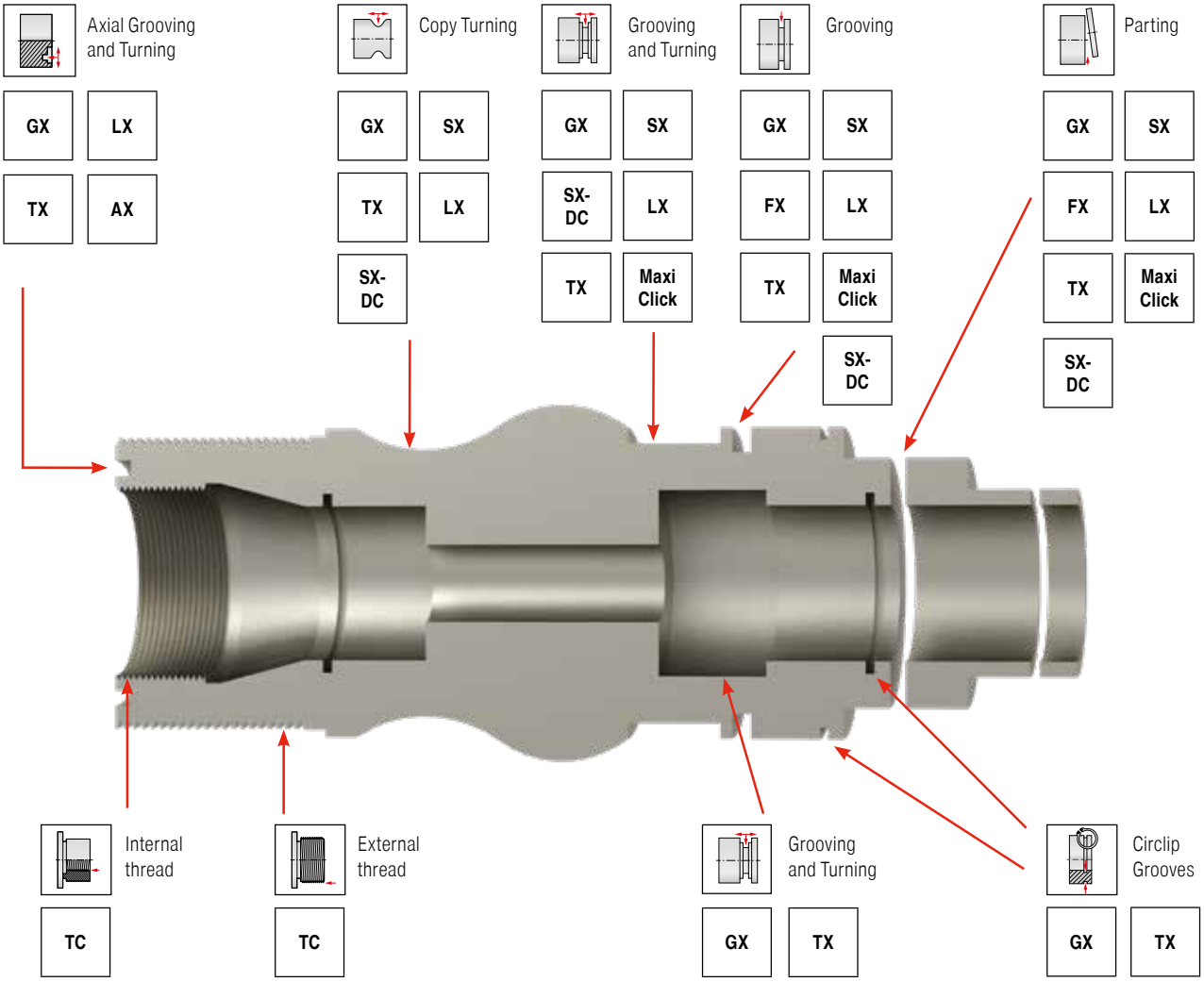
F	M	R

F: Fine Machining
M: Medium Machining
R: Rough Machining

Smooth cut
Irregular cutting depth
Interrupted cut

CTCP325
HCR1325
Carbide Grade

Toolfinder – System Overview

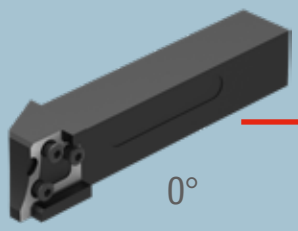


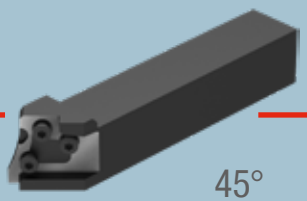
System Description

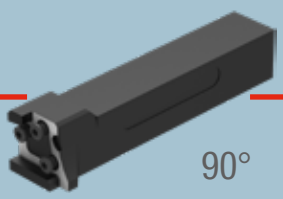
		Pages
SX	The single edged SX grooving system is even more versatile with the -M3 chip breaker. Besides grooving / parting with the -F2, -M2, or -27P chip breakers, the SX -M3 type also allows copying turning operations with the highest chip control. With this additional option, the SX grooving system can cover all areas of grooving making it a universal grooving tool. Available as a Modular or Mono system.	8–21
SX-DC	Our tried-and-tested single-edged SX grooving system is now available with targeted DirectCooling (DC) thro' coolant supply. The coolant is guided through two coolant holes – one above and one below the grooving insert – straight to the point where it will be most effective: the cutting edge itself.	14–21
FX	A single-edged grooving system with a variety of specialized chip geometries. From fine machining in unstable parts through to high-performance machining under stable conditions. Available as a Modular or Mono system.	22–29
GX	Double edged grooving system for grooving, parting off, turning and for producing circlip grooves. Available in sizes GX 09, GX 16 and GX 24. Available as a Modular or Mono system.	30–60
TX	Three-edged system for parting, grooving, axial grooving, radial grooving, and fine turning. Positive ground cutting geometries, with a very soft cut with minimum cutting forces. Universally applicable for almost all materials. Available as a Monosystem.	61–70
LX	Single edged system for extreme applications starting from a cutting width of 8.0 mm. The LX system is for use in stable conditions. Available as a Modular or Mono system.	71–74
AX	Double-edged Axial grooving system for grooving and groove turning with high precision. Due to the three different depths (5 mm, 10 mm and 15 mm) stable tools are available for each application.	75–78
TC	Double-edged thread turning system for the production of external and internal threads. Advantage is the use without pitch angle correction and in narrow or difficult areas of application. Available as a Modular or Mono system.	79–87
Maxi Click	Five-edged grooving system for grooving and parting.	88–92

Toolfinder – External Machining

ModularClamp


93 0°


94 45°


95 90°

GX 09

38

39

GX 16

38

39

Deep Radial Grooving, Parting and Turning

Axial Grooving and Face Turning

Deep Axial Grooving and Face Turning

GX 24

53

55

56

GX 09

Circlip grooves

35

Cutting width
CW = 0,5–3,15 mm (H13)

Radius grooves

Standard
36

CRE = 0,8–1,2 mm

Grooving and Turning

-F2
30

Standard
31

-M40
32

Cutting width
CW = 2,0–3,5 mm

GX 16

Circlip grooves

35

Cutting width
CW = 0,5–5,15 mm (H13)

Radius grooves

Standard
36

-27P
37

CRE = 0,8–3,0 mm

Grooving and Turning

-F2
30

Standard
31

-M40
32

-M1
33

-27P
34

Cutting width
CW = 2,0–6,0 mm

GX 24

Radial, axial and deep axial grooving and parting, face turning and turning

-F2
46

-E
47

-M1
48

-M40
49

-27P
51

Cutting width
CW = 2,0–6,0 mm

-M3
50

-27P
52

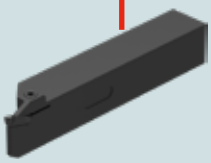
CRE = 1,5–4,0 mm

MonoClamp

GX 09

42

GX 16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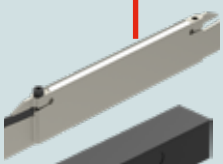
GX 24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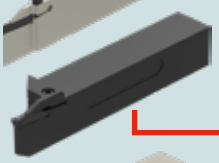
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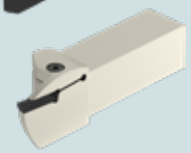
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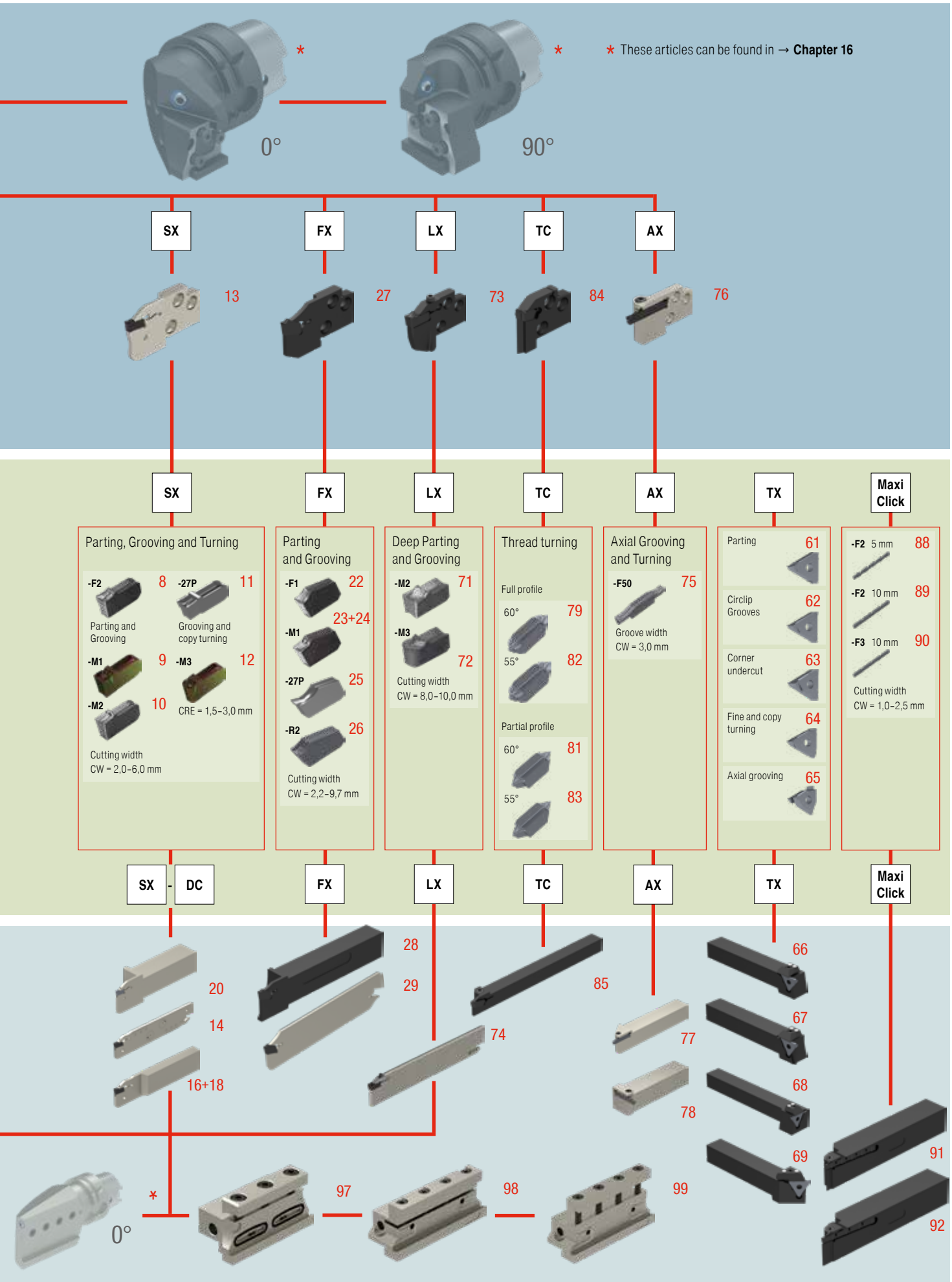
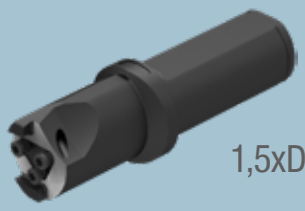

* These articles can be found in → Chapter 16
0°
90°
SX
FX
LX
TC
AX
13
27
73
84
76
SX
FX
LX
TC
AX
TX
Maxi Click
Parting, Grooving and Turning
-F2 8
Parting and Grooving
-27P 11
Grooving and copy turning
-M1 9
-M3 12
-M2 10
CRE = 1,5–3,0 mm
Cutting width CW = 2,0–6,0 mm
Parting and Grooving
-F1 22
23+24
-M1
-27P 25
-R2 26
Cutting width CW = 2,2–9,7 mm
Deep Parting and Grooving
-M2 71
-M3 72
Cutting width CW = 8,0–10,0 mm
Thread turning
Full profile
60° 79
55° 82
Partial profile
60° 81
55° 83
Axial Grooving and Turning
-F50 75
Groove width CW = 3,0 mm
Parting 61
Circlip Grooves 62
Corner undercut 63
Fine and copy turning 64
Axial grooving 65
-F2 5 mm 88
-F2 10 mm 89
-F3 10 mm 90
Cutting width CW = 1,0–2,5 mm
SX - DC
FX
LX
TC
AX
TX
Maxi Click
20
14
16+18
28
29
74
85
77
78
66
67
68
69
91
92
0°
97
98
99

11

Toolfinder – Internal Machining

ModularClamp



96

1,5xD

GX 09

40

41

GX 16

40

41

GX 09

Circlip grooves

35

Cutting width
CW = 0,5–3,15 mm (H13)

Radius grooves

Standard

36

CRE = 0,8–1,2 mm

Grooving and Turning

-F2

30

Standard

31

-M40

32

Cutting width
CW = 2,0–3,5 mm

GX 16

Circlip grooves

35

Cutting width
CW = 0,5–5,15 mm (H13)

Radius grooves

Standard

36

-27P

37

CRE = 0,8–3,0 mm

Grooving and Turning

-F2

30

Standard

31

-M40

32

-M1

33

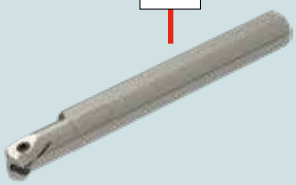
-27P

34

Cutting width
CW = 2,0–6,0 mm

MonoClamp

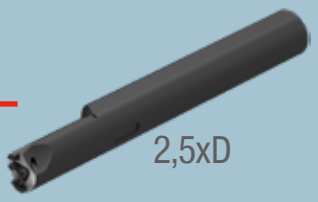
GX 09



44

GX 16

45


96

2,5xD

GX 24

54

TC

86

GX 24

Radial, axial and deep axial grooving and parting, face turning and turning

-M1 48

-M40 49

-E 47

-F2 46

-27P 51

Cutting width
CW = 2,0–6,0 mm

-M3 50

-27PF 52

CRE = 1,5–4,0 mm

TC

Thread turning

Partial profile 60° 81

Full profile 60° 80

Full profile 55° 82

Partial profile 55° 83

TX

Parting 61

Circlip Grooving Inserts 62

For corner relief 63

Fine and copy turning 64

Axial grooving 65

GX 24

59

TC

87

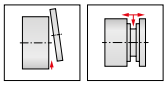
TX

70

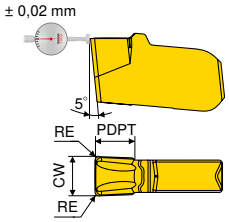
11

Insert SX

▲ High Precision polished geometry



F	M	R



-F2 CTCP325	-F2 CTCP335	-F2 CTPP345	-F2 CTP1340
-F2 HCR1325	-F2 HCR1335	-F2 HCN1345	-F2 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	CW +/-0,02 mm	RE +/-0,05 mm	PDPT mm	for tool holder	1C/72 Article no. 70 346 ... £		1C/72 Article no. 70 346 ... £		1C/72 Article no. 70 346 ... £		1C/72 Article no. 70 346 ... £	
SX E2.00 N 0.20	2	0.2	1.5	-SX2					16.37	822	16.37	622
SX E3.00 N 0.30	3	0.3	2.0	-SX3	17.60	923	17.60	523	17.60	823	17.60	623
SX E4.00 N 0.40	4	0.4	2.5	-SX4					18.62	824	18.62	624

Steel	●	●	●	●
Stainless steel	○	○	●	●
Cast iron	●	●		●
Non ferrous metals				○
Heat resistant alloys			○	●
hardened materials	○			

→ v_c Page 101
→ Application recommendation on page 107

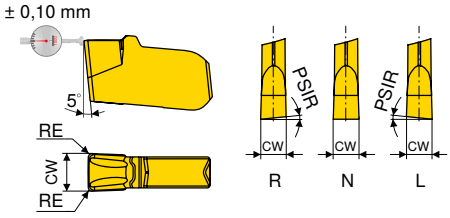
Internal machining *External machining*

→ 13 → 14–19 → 20+21

Insert SX

▲ Specially developed geometry with negative edge-chamfers available in right, left and neutral types

F	M	R



-M1 CTCP325	-M1 CTCP335	-M1 CTPP345	-M1 CTP1340
-M1 HCR1325	-M1 HCR1335	-M1 HCN1345	-M1 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	IH	CW +/-0,05 mm	RE +/-0,05 mm	PSIR	for tool holder	1C/72 Article no. 70 342 ... £		1C/72 Article no. 70 342 ... £		1C/72 Article no. 70 342 ... £		1C/72 Article no. 70 342 ... £	
SX E2.00 L 6	L	2	0.2	6°	-SX2							10.98	612
SX E3.00 L 6	L	3	0.2	6°	-SX3	11.69	913					11.69	613
SX E4.00 L 6	L	4	0.3	6°	-SX4							12.31	614
SX E2.00 N 0.20	N	2	0.2		-SX2	10.98	922			10.98	822	10.98	622
SX E3.00 N 0.20	N	3	0.2		-SX3	11.69	923	11.69	523	11.69	823	11.69	623
SX E4.00 N 0.30	N	4	0.3		-SX4	12.31	924	12.31	524	12.31	824	12.31	624
SX E5.00 N 0.30	N	5	0.3		-SX5	13.11	925			13.11	825	13.11	625
SX E6.00 N 0.40	N	6	0.4		-SX6	14.14	926			14.14	826	14.14	626
SX E2.00 R 6	R	2	0.2	6°	-SX2							10.98	602
SX E3.00 R 6	R	3	0.2	6°	-SX3	11.69	903					11.69	603
SX E4.00 R 6	R	4	0.3	6°	-SX4							12.31	604

Steel	●	●	●	●
Stainless steel	○	○	●	●
Cast iron	●	●		●
Non ferrous metals				○
Heat resistant alloys			○	●
hardened materials	○			

→ v_c Page 101
→ Application recommendation on page 108

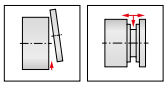
Note: reduce feed rate by 20–50 % with R/L version!

Internal machining *External machining*

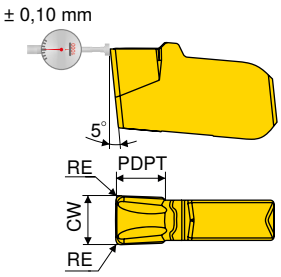
→ 13 → 14–19 → 20+21

Insert SX

▲ All purpose geometry for parting, grooving & turning.



F	M	R



-M2 CTCP325	-M2 CTCP335	-M2 CTPP345	-M2 CTP1340
-M2 HCR1325	-M2 HCR1335	-M2 HCN1345	-M2 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	CW +/-0,05	RE +/-0,05	PDPT	for tool holder	1C/72 Article no. 70 343 ...	£	1C/72 Article no. 70 343 ...	£	1C/72 Article no. 70 343 ...	£	1C/72 Article no. 70 343 ...	£
	mm	mm	mm									
SX E2.00 N 0.20	2	0.2	1.5	-SX2	10.98	**922**	10.98	**522**	10.98	**822**	10.98	**622**
SX E3.00 N 0.30	3	0.3	2.0	-SX3	11.69	**923**	11.69	**523**	11.69	**823**	11.69	**623**
SX E4.00 N 0.40	4	0.4	2.5	-SX4	12.31	**924**	12.31	**524**	12.31	**824**	12.31	**624**
SX E5.00 N 0.40	5	0.4	2.7	-SX5	13.11	**925**	13.11	**525**	13.11	**825**	13.11	**625**
SX E6.00 N 0.50	6	0.5	3.0	-SX6	14.14	**926**	14.14	**526**	14.14	**826**	14.14	**626**

Steel	●	●	●	●
Stainless steel	○	○	●	●
Cast iron	●	●		●
Non ferrous metals				○
Heat resistant alloys			○	●
hardened materials	○			

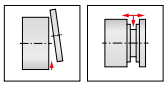
→ v_c Page 101
→ Application recommendation on page 107

Internal machining | *External machining*

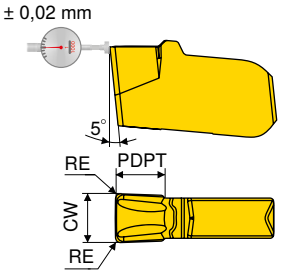
→ 13 | → 14–19 | → 20+21

Insert SX

- Insert with highly positive cutting edge geometry and sharp cutting edge
- Specialist for aluminum and other soft long-chipping non-ferrous metals



F	M	R



-27P
H216T

-ALP
CWK26

1C/72

Designation	CW +/-0,02 mm	RE +/-0,05 mm	PDPT mm	for tool holder	Article no. 70 349 ... £	
SX E2.00 N 0.20	2	0.2	2.0	-SX2	13.02	**122**
SX E3.00 N 0.30	3	0.3	2.5	-SX3	13.94	**123**
SX E4.00 N 0.40	4	0.4	3.0	-SX4	14.75	**124**

Steel	
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c Page 101
→ Application recommendation on page 107

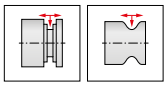
Internal machining | *External machining*

→ 13 → 14–19 → 20+21

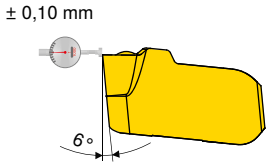
11

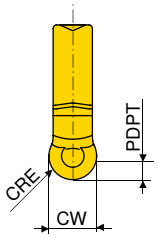
Radius Grooving Insert SX

- For grooving and copy turning
- Very good chip control



F	M	R





-M3 CTCP335	-M3 CTP1340
-M3 HCR1335	-M3 CCN1340
DRAGONSKIN	DRAGONSKIN

Designation	CW +/-0,05	CRE	PDPT	for tool holder	1C/72 Article no. 70 344 ...		1C/72 Article no. 70 344 ...	
	mm	mm	mm		£		£	
SX R3.00 N 1.50	3	1.5	1.5	-SX3	12.42	531	12.42	631
SX R4.00 N 2.00	4	2.0	2.0	-SX4	13.11	532	13.11	632
SX R5.00 N 2.50	5	2.5	2.5	-SX5	13.85	533	13.85	633
SX R6.00 N 3.00	6	3.0	3.0	-SX6			15.05	634

Steel	●	●
Stainless steel	○	●
Cast iron	●	●
Non ferrous metals		○
Heat resistant alloys		●
hardened materials		

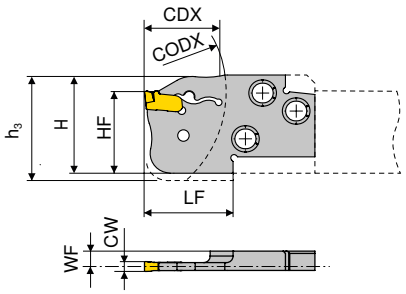
→ v_c Page 101
→ Application recommendation on page 108

Internal machining | *External machining*

→ 13 → 14–19 → 20+21

ModularClamp MSS – Radial grooving module SX

▲ For parting, grooving and finish turning



Illustrations show right-hand versions

Designation	HF mm	CW mm	WF mm	LF mm	H mm	h_3 mm	CODX mm	CDX mm	for grooving inserts	Left-hand 2C/71 Article no. 70 897 ... £		Right-hand 2C/71 Article no. 70 896 ... £	
E20 R/L 20-SX2	20	2	3.57	22	24	27	60	20	SX .2..	78.07	**020**	78.07	**020**
E20 R/L 20-SX3	20	3	3.20	22	24	27	60	20	SX .3..	78.07	**120**	78.07	**120**
E25 R/L 20-SX2	25	2	5.07	22	30		75	20	SX .2..	78.65	**025**	78.65	**025**
E25 R/L 25-SX3	25	3	4.70	27	30		75	25	SX .3..	78.65	**125**	78.65	**125**
E25 R/L 35-SX3	25	3	4.70	37	30		75	35	SX .3..	79.40	**225**	79.40	**225**
E25 R/L 25-SX4	25	4	4.30	27	30		75	25	SX .4..	78.65	**325**	78.65	**325**
E25 R/L 35-SX4	25	4	4.30	37	30		75	35	SX .4..	79.40	**425**	79.40	**425**
E32 R/L 35-SX3	32	3	4.70	37	38		96	35	SX .3..	80.84	**032**	80.84	**032**
E32 R/L 35-SX4	32	4	4.30	37	38		96	35	SX .4..	80.84	**132**	80.84	**132**

2A/28

Ejector SX

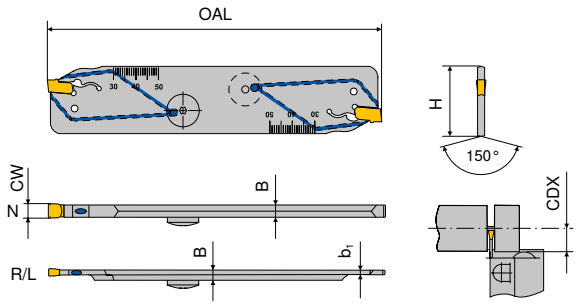
Spare parts for grooving inserts		Article no. 70 950 ... £	
SX .2..	SX 2-3	24.17	**836**
SX .3..	SX 2-3	24.17	**836**
SX .4..	SX 4-6	24.66	**837**

→ 8–12 → 93–95 → **Chapter 16**

Please order SX assembly key separately if required.

11

MonoClamp – Radial Blade SX-DC Standard



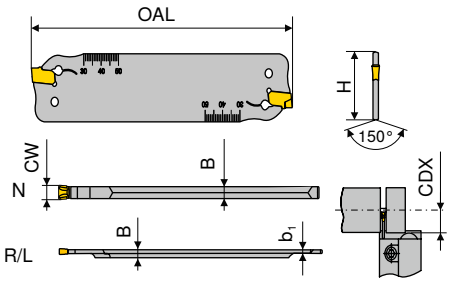
Designation	CW mm	H mm	B mm	OAL mm	b_1 mm	CDX mm	for grooving inserts	R/L/N	2A/25 Article no. 70 884 ... £	
XLCF L 2602-DC-SX2	2	26	2.4	110	1.6	25	SX .2..	L	137.27	**712**
XLCF L 3202-DC-SX2	2	32	2.4	150	1.6	26	SX .2..	L	148.73	**702**
XLCF R 2602-DC-SX2	2	26	2.4	110	1.6	25	SX .2..	R	137.27	**512**
XLCF R 3202-DC-SX2	2	32	2.4	150	1.6	26	SX .2..	R	148.73	**502**
XLCF N 2603-DC-SX3	3	26	2.5	110		35	SX .3..	N	137.27	**613**
XLCF N 3203-DC-SX3	3	32	2.5	150		50	SX .3..	N	148.73	**603**
XLCF N 2604-DC-SX4	4	26	3.3	110		40	SX .4..	N	137.27	**614**
XLCF N 3204-DC-SX4	4	32	3.3	150		50	SX .4..	N	148.73	**604**
XLCF N 3205-DC-SX5	5	32	4.3	150		55	SX .5..	N	148.73	**605**
XLCF N 3206-DC-SX6	6	32	5.2	150		60	SX .6..	N	148.73	**606**

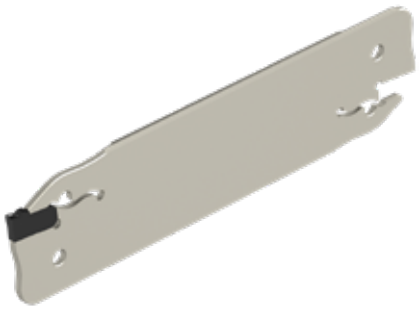
Spare parts for grooving inserts		Y7 Key D Article no. 80 950 ... £			2A/28 Ejector SX Article no. 70 950 ... £			2A/28 Sealing screw Article no. 70 950 ... £	
SX .2..	T15 - IP	15.77	**128**	SX 2-3	24.17	**836**	M4 x 3	11.72	**450**
SX .3..	T15 - IP	15.77	**128**	SX 2-3	24.17	**836**	M4 x 3	11.72	**450**
SX .4..	T15 - IP	15.77	**128**	SX 4-6	24.66	**837**	M4 x 3	11.72	**450**
SX .5..	T15 - IP	15.77	**128**	SX 4-6	24.66	**837**	M4 x 3	11.72	**450**
SX .6..	T15 - IP	15.77	**128**	SX 4-6	24.66	**837**	M4 x 3	11.72	**450**

→ 8-12 → 97 → **Chapter 16** → **Chapter 16**

Please order SX assembly key separately if required.

MonoClamp – Radial Blade SX Standard





2A/25

Designation	CW mm	H mm	B mm	OAL mm	b_1 mm	CDX mm	for grooving inserts	R/L/N	Article no. 70 884 ... £	
XLCF L 2602-SX2	2	26	2.4	110	1.5	25	SX .2..	L	80.45	**212**
XLCF L 3202-SX2	2	32	2.4	150	1.5	25	SX .2..	L	84.17	**202**
XLCF R 2602-SX2	2	26	2.4	110	1.5	25	SX .2..	R	80.45	**012**
XLCF R 3202-SX2	2	32	2.4	150	1.5	25	SX .2..	R	84.17	**002**
XLCF N 2603-SX3	3	26	2.4	110		35	SX .3..	N	80.45	**113**
XLCF N 3203-SX3	3	32	2.4	150		50	SX .3..	N	84.17	**103**
XCLF N 2604-SX4	4	26	3.2	110		40	SX .4..	N	80.45	**114**
XLCF N 3204-SX4	4	32	3.2	150		50	SX .4..	N	84.17	**104**
XLCF N 3205-SX5	5	32	4.2	150		55	SX .5..	N	84.17	**105**
XLCF N 3206-SX6	6	32	5.2	150		60	SX .6..	N	84.17	**106**

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Ejector SX

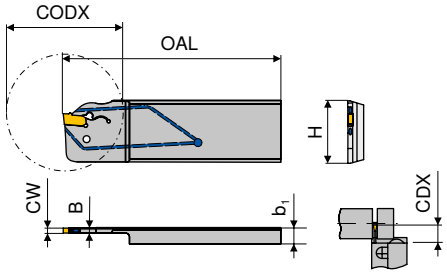
Spare parts for grooving inserts		Article no. 70 950 ... £	
SX .2..	SX 2-3	24.17	**836**
SX .3..	SX 2-3	24.17	**836**
SX .4..	SX 4-6	24.66	**837**
SX .5..	SX 4-6	24.66	**837**
SX .6..	SX 4-6	24.66	**837**

→ 8-12 → 98+99 → **Chapter 16** → **Chapter 16**

Please order SX assembly key separately if required.

11

MonoClamp – Radial Blade SX-DC reinforced



Illustrations show right-hand versions

2A/25

Designation	CW	H	B	OAL	b_1	CODX	CDX	for grooving inserts	R/L/N	Article no. 70 879 ...	
	mm	mm	mm	mm	mm	mm	mm			£	
XLCF L 2608-DC-SX3	3	26	2.5	110	8	66	33	SX .3..	L	137.27	**713**
XLCF L 3208-DC-SX3	3	32	2.5	110	8	66	33	SX .3..	L	148.73	**703**
XLCF R 2608-DC-SX3	3	26	2.5	110	8	66	33	SX .3..	R	137.27	**513**
XLCF R 3208-DC-SX3	3	32	2.5	110	8	66	33	SX .3..	R	148.73	**503**

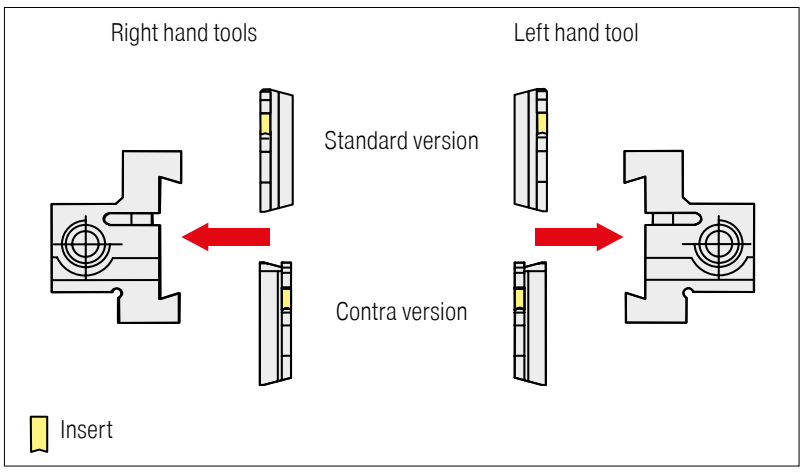
2A/28

Ejector SX

Spare parts for grooving inserts		Article no. 70 950 ...	
		£	
SX .2..	SX 2-3	24.17	**836**
SX .3..	SX 2-3	24.17	**836**
SX .4..	SX 4-6	24.66	**837**

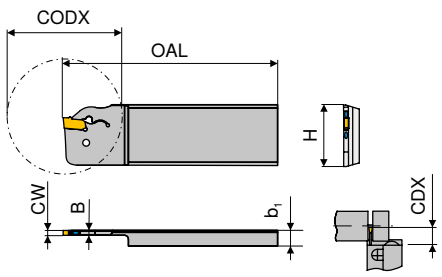
→ 8–12 → 97 → **Chapter 16** → **Chapter 16**

Correct Tool Selection



Please order SX assembly key separately if required.

MonoClamp – Radial Blade SX reinforced



Illustrations show right-hand versions

2A/25

Designation	CW mm	H mm	B mm	OAL mm	b_1 mm	CODX mm	CDX mm	for grooving inserts	R/L/N	Article no. 70 879 ... £	
XLCF L 2608-SX2	2	26	1.5	110	8	44	22	SX .2..	L	123.18	**212** 1)
XLCF L 2608-SX3	3	26	2.5	110	8	44	22	SX .3..	L	123.18	**213** 1)
XLCF L 3208-SX3	3	32	2.5	110	8	66	33	SX .3..	L	115.82	**203**
XLCF L 3208-SX4	4	32	3.4	110	8	66	33	SX .4..	L	115.82	**204**
XLCF R 2608-SX2	2	26	1.5	110	8	44	22	SX .2..	R	123.18	**012** 1)
XLCF R 2608-SX3	3	26	2.5	110	8	44	22	SX .3..	R	123.18	**013** 1)
XLCF R 3208-SX3	3	32	2.5	110	8	66	33	SX .3..	R	115.82	**003**
XLCF R 3208-SX4	4	32	3.4	110	8	66	33	SX .4..	R	115.82	**004**

1) can be used in both directions

2A/28

Ejector SX

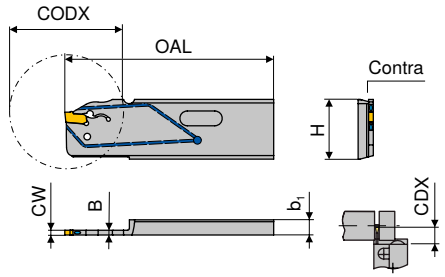
Spare parts for grooving inserts		Article no. 70 950 ... £	
SX .2..	SX 2-3	24.17	**836**
SX .3..	SX 2-3	24.17	**836**
SX .4..	SX 4-6	24.66	**837**

→ 8–12 → 98+99 → **Chapter 16** → **Chapter 16**

Please order SX assembly key separately if required.

11

MonoClamp – SX-DC reinforced Contra radial blade



Illustrations show right-hand versions

2A/25

Designation	CW mm	H mm	B mm	OAL mm	b_1 mm	CODX mm	CDX mm	for grooving inserts	R/L/N	Article no. 70 877 ... £	
XLCF L 3208C-DC-SX3	3	32	2.5	110	8	66	33	SX .3..	L	148.73	**703**
XLCF R 3208C-DC-SX3	3	32	2.5	110	8	66	33	SX .3..	R	148.73	**503**

2A/28

Ejector SX

Spare parts for grooving inserts		Article no. 70 950 ... £	
SX .3..	SX 2-3	24.17	**836**

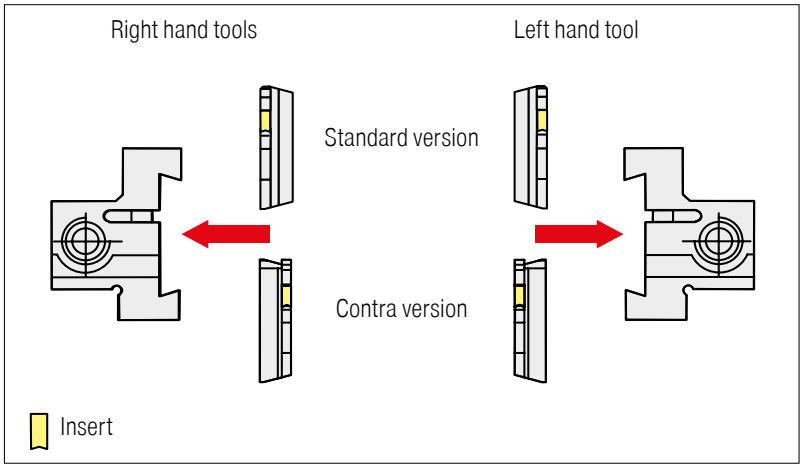
→ 8–12

→ 97

→ **Chapter 16**

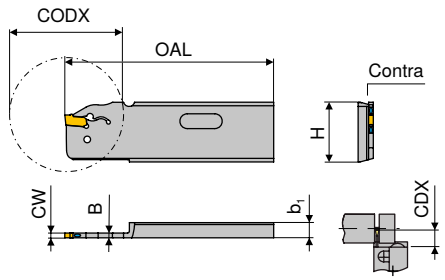
→ **Chapter 16**

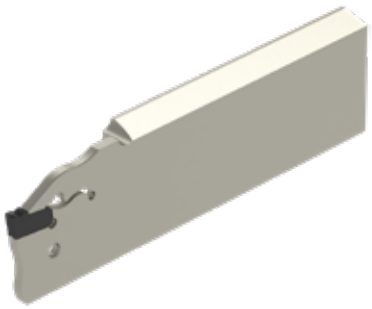
Correct Tool Selection



Please order SX assembly key separately if required.

MonoClamp – SX reinforced Contra radial blade





Illustrations show right-hand versions

2A/25

Designation	CW mm	H mm	B mm	OAL mm	b_1 mm	CODX mm	CDX mm	for grooving inserts	R/L/N	Article no. 70 877 ... £	
XLCF L 3208C-SX3	3	32	2.5	110	8	66	33	SX .3..	L	115.82	**203**
XLCF R 3208C-SX3	3	32	2.5	110	8	66	33	SX .3..	R	115.82	**003**

2A/28

Ejector SX

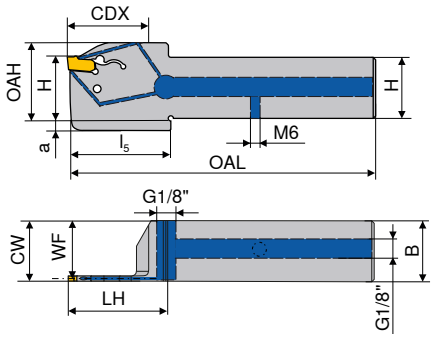
Spare parts for grooving inserts		Article no. 70 950 ... £	
SX .3..	SX 2-3	24.17	**836**

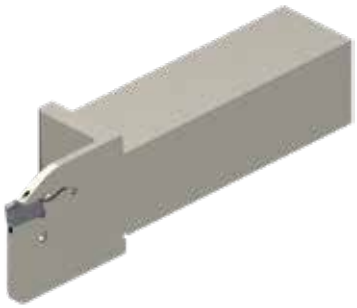
→ 8–12 | → 98+99 | → **Chapter 16** | → **Chapter 16**

Please order SX assembly key separately if required.

11

MonoClamp – Radial Monoholder SX-DC





Illustrations show right-hand versions

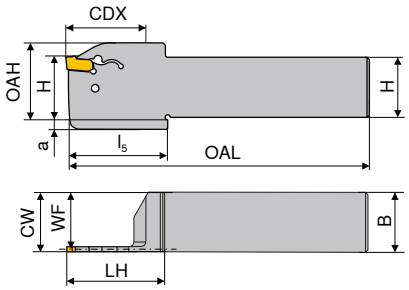
Designation	H mm	B mm	CW mm	WF mm	OAL mm	LH mm	l_5 mm	OAH mm	CDX mm	a mm	for grooving inserts	Left-hand NEW 2C/71 Article no. 70 847 ... £		Right-hand NEW 2C/71 Article no. 70 847 ... £	
E12 R/L 0022-1212X-K-DC-SX2	12	12	2	11.2	71	27	28	22	22	5	SX .2..	132.82	21201	132.82	21200
E16 R/L 0026-1616X-K-DC-SX2	16	16	2	15.2	87	32	33	26	26	4	SX .2..	140.36	21601	140.36	21600
E20 R/L 0026-2020X-K-DC-SX2	20	20	2	19.2	102	32	33	31	26	5	SX .2..	159.00	22001	159.00	22000
E25 R/L 0033-2525X-K-DC-SX2	25	25	2	24.2	126	41	42	36	33	5	SX .2..	171.18	22501	171.18	22500
E16 R/L 0026-1616X-K-DC-SX3	16	16	3	14.8	87	32	33	26	26	4	SX .3..	140.36	31601	140.36	31600
E20 R/L 0026-2020X-K-DC-SX3	20	20	3	18.8	102	32	33	31	26	5	SX .3..	159.00	32001	159.00	32000
E25 R/L 0026-2525X-K-DC-SX3	25	25	3	23.8	117	33		31	26		SX .3..	171.18	32501	171.18	32500
E25 R/L 0033-2525X-K-DC-SX3	25	25	3	23.8	126	41	42	36	33	5	SX .3..	171.18	32601	171.18	32600
E20 R/L 0033-2020X-K-DC-SX4	20	20	4	18.3	109	39	40	32	33	5	SX .4..	159.00	42001	159.00	42000
E25 R/L 0033-2525X-K-DC-SX4	25	25	4	23.3	126	41	42	36	33	5	SX .4..	171.18	42501	171.18	42500
E25 R/L 0040-2525X-K-DC-SX4	25	25	4	23.3	133	48	49	38	40	6	SX .4..	171.18	42601	171.18	42600
E25 R/L 0040-2525X-K-DC-SX5	25	25	5	22.9	133	48	49	38	40	6	SX .5..	171.18	52501	171.18	52500
E25 R/L 0040-2525X-K-DC-SX6	25	25	6	22.4	133	48	49	38	40	6	SX .6..	171.18	62501	171.18	62500

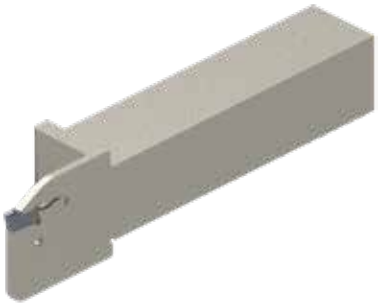
Spare parts for grooving inserts		2A/28 Ejector SX Article no. 70 950 ... £			2A/28 Coolant screw plug Article no. 70 950 ... £	
SX .2..	SX 2-3	24.17	836	G 1/8"	3.24	294
SX .3..	SX 2-3	24.17	836	G 1/8"	3.24	294
SX .4..	SX 4-6	24.66	837	G 1/8"	3.24	294
SX .5..	SX 4-6	24.66	837	G 1/8"	3.24	294
SX .6..	SX 4-6	24.66	837	G 1/8"	3.24	294

→ 8–12

Please order SX assembly key separately if required.

MonoClamp – Radial Monoholder SX





Illustrations show right-hand versions

Designation	H mm	B mm	CW mm	WF mm	OAL mm	LH mm	l_5 mm	OAH mm	CDX mm	a mm	for grooving inserts	Left-hand NEW 2C/71 Article no. 70 846 ... £		Right-hand NEW 2C/71 Article no. 70 846 ... £	
E12 R/L 0022-1212K-K-SX2	12	12	2	11.2	125	27	28	22	22	5	SX .2..	89.80	**21201**	89.80	**21200**
E16 R/L 0026-1616K-K-SX2	16	16	2	15.2	125	33	33	26	26	4	SX .2..	91.64	**21601**	91.64	**21600**
E20 R/L 0026-2020K-K-SX2	20	20	2	19.2	125	33	33	31	26	5	SX .2..	107.55	**22001**	107.55	**22000**
E25 R/L 0033-2525M-K-SX2	25	25	2	24.2	150	42	42	36	33	5	SX .2..	114.09	**22501**	114.09	**22500**
E16 R/L 0026-1616K-K-SX3	16	16	3	14.8	125	33	33	26	26	4	SX .3..	91.64	**31601**	91.64	**31600**
E20 R/L 0026-2020K-K-SX3	20	20	3	18.8	125	31	33	31	26	5	SX .3..	107.55	**32001**	107.55	**32000**
E25 R/L 0026-2525M-K-SX3	25	25	3	23.8	150	33		31	26		SX .3..	114.09	**32501**	114.09	**32500**
E25 R/L 0033-2525M-K-SX3	25	25	3	23.8	150	42	42	36	33	5	SX .3..	114.09	**32601**	114.09	**32600**
E20 R/L 0033-2020K-K-SX4	20	20	4	18.3	125	40	40	32	33	5	SX .4..	107.55	**42001**	107.55	**42000**
E25 R/L 0033-2525M-K-SX4	25	25	4	23.3	150	42	42	36	33	5	SX .4..	114.09	**42501**	114.09	**42500**
E25 R/L 0040-2525M-K-SX4	25	25	4	23.3	150	49	49	38	40	6	SX .4..	114.09	**42601**	114.09	**42600**
E25 R/L 0040-2525M-K-SX5	25	25	5	22.9	150	49	49	38	40	6	SX .5..	114.09	**52501**	114.09	**52500**
E25 R/L 0040-2525M-K-SX6	25	25	6	22.4	150	49	49	38	40	6	SX .6..	114.09	**62501**	114.09	**62500**

2A/28

Ejector SX

Spare parts for grooving inserts		Article no. 70 950 ... £	
SX .2..	SX 2-3	24.17	**836**
SX .3..	SX 2-3	24.17	**836**
SX .4..	SX 4-6	24.66	**837**
SX .5..	SX 4-6	24.66	**837**
SX .6..	SX 4-6	24.66	**837**

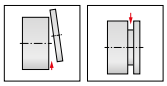
→ 8-12

Please order SX assembly key separately if required.

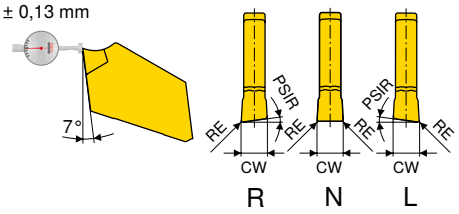
11

Insert FX

- ▲ Excellent cutting geometry with low cutting forces
- ▲ Very good swarf control also with low feed rates
- ▲ Reduced built-up edge



F	M	R



-F1 CTCP325	-F1 CTPP345	-F1 CTP1340
-F1 HCR1325	-F1 HCN1345	-F1 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	IH	CW $_{-0,1}$ mm	RE $_{+/-0,05}$ mm	PSIR	for tool holder	1A/15 Article no. 70 331 ... £		1A/15 Article no. 70 331 ... £		1A/15 Article no. 70 331 ... £	
FX 2.2 L 5-F1	L	2.2	0.15	5°	-FX 2.2			12.51	847	12.51	647
FX 3.1 L 5-F1	L	3.1	0.20	5°	-FX 3.1			12.51	851	12.51	651
FX 3.1 L 8-F1	L	3.1	0.20	8°	-FX 3.1			12.51	855		
FX 2.2 N 0.15-F1	N	2.2	0.15		-FX 2.2	12.51	998	12.51	848	12.51	648
FX 3.1 N 0.40-F1	N	3.1	0.40		-FX 3.1	12.51	906	12.51	856	12.51	656
FX 3.1 N 0.20-F1	N	3.1	0.20		-FX 3.1	12.51	902	12.51	852	12.51	652
FX 4.1 N 0.20-F1	N	4.1	0.20		-FX 4.1			13.43	860	13.43	660
FX 4.1 N 0.50-F1	N	4.1	0.50		-FX 4.1			13.43	864		
FX 2.2 R 5-F1	R	2.2	0.15	5°	-FX 2.2			12.51	849	12.51	649
FX 3.1 R 8-F1	R	3.1	0.20	8°	-FX 3.1			12.51	857		
FX 3.1 R 5-F1	R	3.1	0.20	5°	-FX 3.1			12.51	853	12.51	653
Steel						●		●		●	
Stainless steel						○		●		●	
Cast iron						●				●	
Non ferrous metals										○	
Heat resistant alloys								○		●	
hardened materials						○					

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→ Application recommendation on page 109

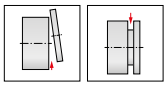
Note: reduce feed rate by 20–50 % with R/L version!

Internal machining *External machining*

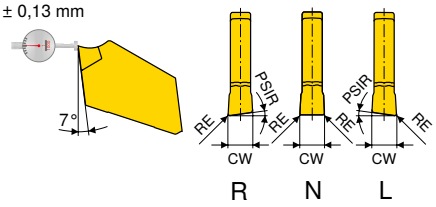
→ 27 → 29 → 28

Insert FX

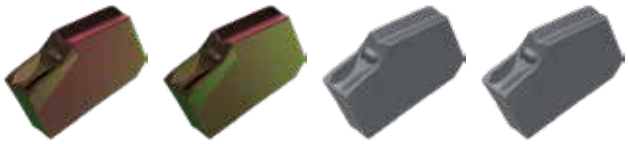
▲ Narrow version



F	M	R



-M1 CTCP325	-M1 CTCP335	-M1 CTPP345	-M1 CTP1340
-M1 HCR1325	-M1 HCR1335	-M1 HCN1345	-M1 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	IH	CW $_{-0,1}$ mm	RE $_{+/-0,05}$ mm	PSIR	for tool holder	1A/15 Article no. 70 330 ... £		1A/15 Article no. 70 330 ... £		1A/15 Article no. 70 330 ... £		1A/15 Article no. 70 330 ... £	
FX 2.2 L 4-M1	L	2.2	0.1	4°	-FX 2.2			12.51	550	12.51	800	12.51	600
FX 2.2 N 0.10-M1	N	2.2	0.1		-FX 2.2	12.51	902	12.51	552	12.51	802	12.51	602
FX 2.2 R 4-M1	R	2.2	0.1	4°	-FX 2.2			12.51	554	12.51	804	12.51	604

Steel	●	●	●	●
Stainless steel	○	○	●	●
Cast iron	●	●		●
Non ferrous metals				○
Heat resistant alloys			○	●
hardened materials	○			

→ v_c Page 101
→ Application recommendation on page 109

Note: reduce feed rate by 20–50 % with R/L version!

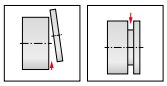
11

Internal machining *External machining*

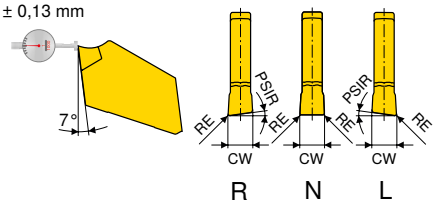
→ 27 → 29 → 28

Insert FX

▲ Wide version



F	M	R



-M1 CTCP325	-M1 CTCP335	-M1 CTPP345	-M1 CTP1340
-M1 HCR1325	-M1 HCR1335	-M1 HCN1345	-M1 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	IH	CW +/-0,05 mm	RE +/-0,05 mm	PSIR	for tool holder	1A/15 Article no. 70 332 ... £		1A/15 Article no. 70 332 ... £		1A/15 Article no. 70 332 ... £		1A/15 Article no. 70 332 ... £	
FX 3.1 L 6-M1	L	3.1	0.15	6°	-FX 3.1	12.51	900	12.51	550	12.51	800	12.51	600
FX 4.1 L 6-M1	L	4.1	0.20	6°	-FX 4.1			13.43	556	13.43	806	13.43	606
FX 3.1 N 0.15-M1	N	3.1	0.15		-FX 3.1	12.51	902	12.51	552	12.51	802	12.51	602
FX 4.1 N 0.20-M1	N	4.1	0.20		-FX 4.1	13.43	908	13.43	558	13.43	808	13.43	608
FX 5.1 N 0.25-M1	N	5.1	0.25		-FX 5.1	14.35	914	14.35	564	14.35	814	14.35	614
FX 6.5 N 0.30-M1	N	6.5	0.30		-FX 6.5	14.75	920	14.75	570			14.75	620
FX 8.2 N 0.40-M1	N	8.2	0.40		blades XLCEN 4608	16.78	924	16.78	574			16.78	624
FX 9.7 N 0.40-M1	N	9.7	0.40		blades XLCEN 4609	24.31	926	24.31	576			24.31	626
FX 3.1 R 6-M1	R	3.1	0.15	6°	-FX 3.1	12.51	904	12.51	554	12.51	804	12.51	604
FX 4.1 R 6-M1	R	4.1	0.20	6°	-FX 4.1			13.43	560	13.43	810	13.43	610
FX 5.1 R 6-M1	R	5.1	0.25	6°	-FX 5.1					14.35	816		

Steel							●		●		●		●
Stainless steel							○		○		●		●
Cast iron							●		●				●
Non ferrous metals													○
Heat resistant alloys											○		●
hardened materials							○						

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→ Application recommendation on page 109

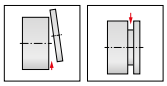
Note: reduce feed rate by 20–50 % with R/L version!

Internal machining *External machining*

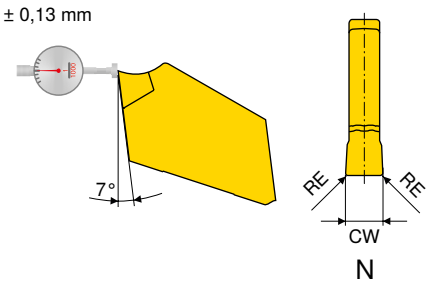
→ 27 → 29 → 28

Insert FX

- Insert with highly positive cutting edge geometry and sharp cutting edge
- Reduced built-up edge



F	M	R



-27P
H216T

-ALP
CWK26

1A/90

Designation	IH	CW $_{-0,1}$ mm	RE $_{+/-0,05}$ mm	for tool holder	Article no. 70 334 ...	£
FX 2.2 N 0.10	N	2.2	0.10	-FX 2.2	11.69	**650**
FX 3.1 N 0.15	N	3.1	0.15	-FX 3.1	11.69	**652**
FX 4.1 N 0.15	N	4.1	0.15	-FX 4.1	12.51	**654**

Steel	
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

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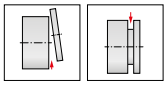
→ Application recommendation on page 109

Internal machining	*External machining*						
	→ 27	→ 29	→ 28				

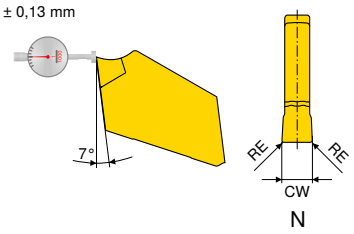
11

Insert FX

- Insert with excellent swarf control for a wide range of feed rates
- Very stable cutting edge



F	M	R



-R2 CTCP325	-R2 CTPP345	-R2 CTP1340
-R2 HCR1325	-R2 HCN1345	-R2 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	IH	CW -0,1 mm	RE +/-0,05 mm	for tool holder	1A/15 Article no. 70 335 ... £		1A/15 Article no. 70 335 ... £		1A/15 Article no. 70 335 ... £	
FX 3.1 N 0.40-R2	N	3.1	0.4	-FX 3.1	12.51	**902**	12.51	**852**	12.51	**652**
FX 4.1 N 0.50-R2	N	4.1	0.5	-FX 4.1	13.43	**908**	13.43	**858**	13.43	**658**

Steel	●	●	●
Stainless steel	○	●	●
Cast iron	●		●
Non ferrous metals			○
Heat resistant alloys		○	●
hardened materials	○		

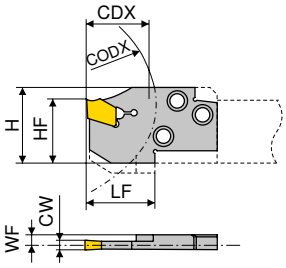
→ v_c Page 101
→ Application recommendation on page 109

Internal machining *External machining*

→ 27 → 29 → 28

ModularClamp MSS – Radial grooving module FX short/long

▲ For parting and grooving



Illustrations show right-hand versions

Designation	HF	CW	WF	LF	H	CODX	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 876 ... £		Right-hand 2C/71 Article no. 70 875 ... £	
	mm	mm	mm	mm	mm	mm	mm					
E20 R/L 20-FX 2.2	23	2.2	3.58	22	27	60	20	FX 2.2 ..	78.07	**020**	78.07	**020**
E20 R/L 20-FX 3.1	23	3.1	3.20	22	27	60	20	FX 3.1 ..	78.07	**120**	78.07	**120**
E20 R/L 20-FX 4.1	23	4.1	2.80	22	27	60	20	FX 4.1 ..	78.07	**220**	78.07	**220**
E25 R/L 20-FX 2.2	25	2.2	5.08	22	30	75	20	FX 2.2 ..	78.65	**025**	78.65	**025**
E25 R/L 25-FX 3.1	25	3.1	4.70	27	30	75	25	FX 3.1 ..	78.65	**125**	78.65	**125**
E25 R/L 25-FX 4.1	25	4.1	4.30	27	30	75	25	FX 4.1 ..	78.65	**225**	78.65	**225**
E25 R/L 25-FX 5.1	25	5.1	3.90	27	30	75	25	FX 5.1 ..	78.65	**325**	78.65	**325**
E25 R/L 25-FX 6.5	25	6.5	3.30	27	30	75	25	FX 6.5 ..	78.65	**425**	78.65	**425**
E25 R/L 35-FX 3.1	25	3.1	4.70	37	30	75	35	FX 3.1 ..	79.40	**525**	79.40	**525**
E25 R/L 35-FX 4.1	25	4.1	4.30	37	30	75	35	FX 4.1 ..	79.40	**625**	79.40	**625**
E25 R/L 35-FX 5.1	25	5.1	3.90	37	30	75	35	FX 5.1 ..	79.40	**725**	79.40	**725**
E25 R/L 35-FX 6.5	25	6.5	3.30	37	30	75	35	FX 6.5 ..	79.40	**825**	79.40	**825**
E32 R/L 32-FX 3.1	32	3.1	4.70	34	38	96	32	FX 3.1 ..	80.84	**032**	80.84	**032**
E32 R/L 32-FX 4.1	32	4.1	4.30	34	38	96	32	FX 4.1 ..	80.84	**132**	80.84	**132**
E32 R/L 32-FX 5.1	32	5.1	3.90	34	38	96	32	FX 5.1 ..	80.84	**232**	80.84	**232**
E32 R/L 32-FX 6.5	32	6.5	3.30	34	38	96	32	FX 6.5 ..	80.84	**332**	80.84	**332**
E32 R/L 45-FX 3.1	32	3.1	4.70	47	38	96	45	FX 3.1 ..	82.17	**432**	82.17	**432**
E32 R/L 45-FX 4.1	32	4.1	4.30	47	38	96	45	FX 4.1 ..	82.17	**532**	82.17	**532**
E32 R/L 45-FX 5.1	32	5.1	3.90	47	38	96	45	FX 5.1 ..	82.17	**632**	82.17	**632**
E32 R/L 45-FX 6.5	32	6.5	3.30	47	38	96	45	FX 6.5 ..	82.17	**732**	82.17	**732**

11

2A/28

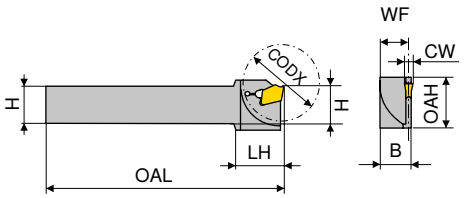
Ejector

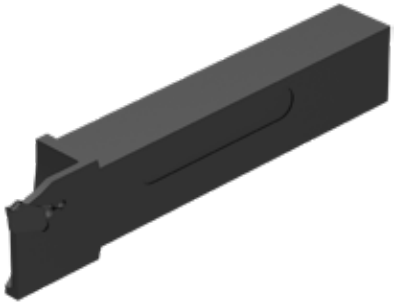
Spare parts for grooving inserts	Article no. 70 950 ... £	
FX 2.2 ..	3.95	**375**
FX 3.1 ..	3.95	**376**
FX 4.1 ..	3.95	**376**
FX 5.1 ..	3.95	**376**
FX 6.5 ..	3.95	**376**

→ 22–26 → 93–95 → **Chapter 16**

MonoClamp – Radial Monoholder FX

Scope of supply:
Blade and ejector





Illustrations show right-hand versions

Designation	H	B	OAL	LH	OAH	CW	WF	CODX	for grooving inserts	Left-hand 2A/25 Article no. 70 837 ... £		Right-hand 2A/25 Article no. 70 836 ... £	
	mm	mm	mm	mm	mm	mm	mm	mm					
XLCE R/L 1010 M-FX2.2	10	10	150	19.4	21	2.2	9.18	30	FX 2.2 ..	90.27	**101**	90.27	**101**
XLCE R/L 1212 F-FX2.2	12	12	80	21.0	21	2.2	11.18	30	FX 2.2 ..	90.27	**102**	85.79	**102**
XLCE R/L 1212 M-FX2.2	12	12	150	19.4	21	2.2	11.18	30	FX 2.2 ..	90.27	**103**	90.27	**103**
XLCE R/L 1414 M-FX2.2	14	14	150	19.4	21	2.2	13.18	30	FX 2.2 ..	93.00	**104**	93.00	**104**
XLCE R/L 1612 H-FX2.2	16	12	100	21.0	21	2.2	11.18	30	FX 2.2 ..	85.79	**105**	85.79	**105**
XLCF R/L 1612 H-FX3.1	16	12	100	21.4	25	3.1	10.80	35	FX 3.1 ..	85.79	**106**	85.79	**106**
XLCF R/L 2016 K-FX3.1	20	16	125	26.4	26	3.1	14.80	40	FX 3.1 ..	95.73	**107**	95.73	**107**
XLCF R/L 2520 M-FX3.1	25	20	150	35.2	34	3.1	18.80	50	FX 3.1 ..	98.36	**108**	98.36	**108**
XLCF R/L 2016 K-FX4.1	20	16	125	26.4	26	4.1	14.40	40	FX 4.1 ..	95.73	**109**	95.73	**109**
XLCF R/L 2520 M-FX4.1	25	20	150	35.2	34	4.1	18.40	50	FX 4.1 ..	98.36	**110**	98.36	**110**

2A/28

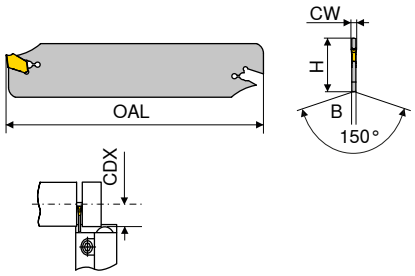
Ejector

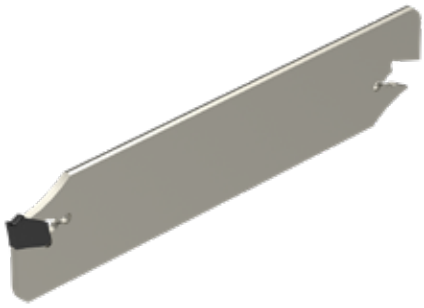
Spare parts for grooving inserts	Article no. 70 950 ... £	
FX 2.2 ..	3.95	**375**
FX 3.1 ..	3.95	**376**
FX 4.1 ..	3.95	**376**

→ 22–26

MonoClamp – Radial Blade FX

Scope of supply:
Blade and ejector





2A/25

Designation	H	B	OAL	CW	CDX	for grooving inserts	Article no. 70 832 ...	
	mm	mm	mm	mm	mm		£	
XLCEN 2602 J 22 FX	26	1.65	110	2.2	25	FX 2.2 ..	73.59	**101**
XLCFN 2603 J 31 FX	26	2.40	110	3.1	35	FX 3.1 ..	72.06	**102**
XLCFN 2604 J 41 FX	26	3.20	110	4.1	40	FX 4.1 ..	72.06	**103**
XLCEN 3202 M 22 FX	32	1.65	150	2.2	30	FX 2.2 ..	73.59	**004**
XLCFN 3203 M 31 FX	32	2.40	150	3.1	50	FX 3.1 ..	74.74	**104**
XLCFN 3204 M 41 FX	32	3.20	150	4.1	50	FX 4.1 ..	80.65	**105**
XLCFN 3205 M 51 FX	32	4.00	150	5.1	55	FX 5.1 ..	88.45	**106**
XLCFN 3206 M 65 FX	32	5.20	150	6.5	55	FX 6.5 ..	95.73	**107**
XLCEN 4608 S 82 FX	46	6.80	250	8.2	80	FX 8.2 ..	228.45	**108**
XLCEN 4609 S 97 FX	46	8.00	250	9.7	80	FX 9.7 ..	228.45	**109**

2A/28

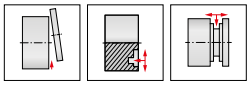
Ejector

Spare parts for grooving inserts	Article no. 70 950 ... £	
FX 2.2 ..	3.95	**375**
FX 3.1 ..	3.95	**376**
FX 4.1 ..	3.95	**376**
FX 5.1 ..	3.95	**376**
FX 6.5 ..	3.95	**376**
FX 8.2 ..	4.95	**377**
FX 9.7 ..	4.95	**377**

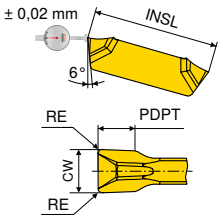
→ 22–26 → 98+99

Insert GX 09/16

▲ Insert with ground periphery
▲ Suitable also for parting off tubes and thin-walled workpieces



F	M	R



-F2 CTP1340

-F2 CCN1340

DRAGONSKIN

Designation	INSL mm	CW +/-0,02 mm	RE +/-0,05 mm	PDPT mm	for tool holder	1C/72 Article no. 70 360 ... £	
GX 09-1 E2.00 N 0.20	9	2.0	0.2	1.5	GX 09-1	23.55	**600**
GX 09-1 E2.50 N 0.20	9	2.5	0.2	1.5	GX 09-1	23.55	**602**
GX 09-2 E3.00 N 0.30	9	3.0	0.3	2.0	GX 09-2	23.55	**604**
GX 16-1 E2.00 N 0.20	16	2.0	0.2	2.5	GX 16-1	23.95	**650**
GX 16-2 E3.00 N 0.30	16	3.0	0.3	3.0	GX 16-2	23.95	**652**
GX 16-3 E4.00 N 0.40	16	4.0	0.4	3.5	GX 16-3	26.22	**654**
GX 16-3 E5.00 N 0.40	16	5.0	0.4	3.5	GX 16-3	26.22	**656**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	

→ v_c Page 101
→ Application recommendation on page 103

Internal machining

→ 40+41

→ 44+45

External machining

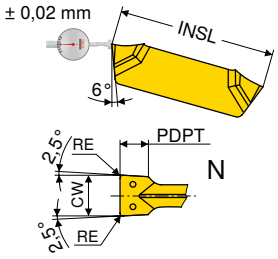
→ 38+39

→ 42+43

Insert GX 09/16 – Standard

▲ Suitable for parting thin-walled workpieces

F	M	R



CTCP325	CTCP335	CTP1340
HCR1325	HCR1335	CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	INSL	CW +/-0,02	RE +/-0,05	PDPT	for tool holder	1C/72 Article no. 70 350 ...		1C/72 Article no. 70 350 ...		1C/72 Article no. 70 350 ...	
	mm	mm	mm	mm		£		£		£	
GX 09-1 E2.00 N 0.20	9	2.0	0.2	1.5	GX 09-1	23.55	**984**			23.55	**634**
GX 09-1 E2.50 N 0.20	9	2.5	0.2	1.5	GX 09-1	23.55	**988**			23.55	**638**
GX 09-2 E3.00 N 0.30	9	3.0	0.3	2.0	GX 09-2	23.55	**992**			23.55	**642**
GX 16-1 E2.00 N 0.20	16	2.0	0.2	2.5	GX 16-1	23.95	**900**	23.95	**500**	23.95	**600**
GX 16-1 E2.50 N 0.20	16	2.5	0.2	2.5	GX 16-1	23.95	**904**	23.95	**504**	23.95	**604**
GX 16-2 E3.00 N 0.30	16	3.0	0.3	3.0	GX 16-2	23.95	**908**	23.95	**508**	23.95	**608**
GX 16-2 E3.00 N 0.50	16	3.0	0.5	3.0	GX 16-2	23.95	**910**				
GX 16-2 E3.50 N 0.30	16	3.5	0.3	3.0	GX 16-2	23.95	**912**	23.95	**512**	23.95	**612**
GX 16-3 E4.00 N 0.60	16	4.0	0.6	3.5	GX 16-3	26.22	**918**				
GX 16-3 E4.00 N 0.40	16	4.0	0.4	3.5	GX 16-3	26.22	**916**	26.22	**516**	26.22	**616**
GX 16-3 E5.00 N 0.40	16	5.0	0.4	3.5	GX 16-3	26.22	**924**	26.22	**524**	26.22	**624**
GX 16-4 E6.00 N 0.50	16	6.0	0.5	4.0	GX 16-4	27.67	**928**			27.67	**628**
GX 16-4 E6.00 N 0.80	16	6.0	0.8	4.0	GX 16-4	27.67	**930**				
Steel						●		●		●	
Stainless steel						○		○		●	
Cast iron						●		●		●	
Non ferrous metals										○	
Heat resistant alloys										●	
hardened materials						○					

→ v_c Page 101
→ Application recommendation on page 103

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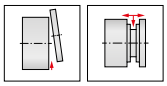
Internal machining *External machining*

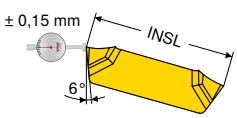
→ 40+41 → 44+45 → 38+39 → 42+43

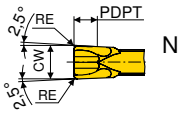
Insert GX 09/16

▲ Very good swarf control



F	M	R





-M40 CTCP325	-M40 CTPP345	-M40 CTP1340
-M40 HCR1325	-M40 HCN1345	-M40 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	INSL mm	CW +/-0,05 mm	RE +/-0,05 mm	PDPT mm	for tool holder	1C/72 Article no. 70 351 ... £		1C/72 Article no. 70 351 ... £		1C/72 Article no. 70 351 ... £	
GX 09-1 E2.00 N 0.20	9	2	0.2	1.5	GX 09-1	15.38	**986**	15.38	**886**	15.38	**686**
GX 09-2 E3.00 N 0.30	9	3	0.3	2.0	GX 09-2	15.38	**994**	15.38	**894**	15.38	**694**
GX 16-1 E2.00 N 0.20	16	2	0.2	2.5	GX 16-1	15.58	**902**	15.58	**802**	15.58	**602**
GX 16-2 E3.00 N 0.30	16	3	0.3	3.0	GX 16-2	15.58	**910**	15.58	**810**	15.58	**610**
GX 16-3 E4.00 N 0.40	16	4	0.4	3.5	GX 16-3	17.35	**918**	17.35	**818**	17.35	**618**
GX 16-3 E5.00 N 0.40	16	5	0.4	3.5	GX 16-3	19.11	**926**	19.11	**826**	19.11	**626**
GX 16-4 E6.00 N 0.50	16	6	0.5	4.0	GX 16-4	20.85	**930**	20.85	**830**	20.85	**630**

Steel	●	●	●
Stainless steel	○	●	●
Cast iron	●		●
Non ferrous metals			○
Heat resistant alloys		○	●
hardened materials	○		

→ v_c Page 101
→ Application recommendation on page 103

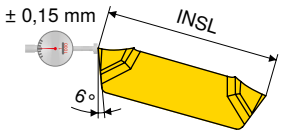
Internal machining | *External machining*

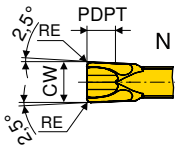
→ 40+41 | → 44+45 | → 38+39 | → 42+43

Insert GX 16

▲ Very good swarf control

F	M	R





-M1 CTCP325	-M1 CTPP345	-M1 CTP1340
-M1 HCR1325	-M1 HCN1345	-M1 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	INSL	CW +/-0,05	RE +/-0,05	PDPT	for tool holder	1C/72 Article no. 70 362 ... £		1C/72 Article no. 70 362 ... £		1C/72 Article no. 70 362 ... £	
	mm	mm	mm	mm							
GX 16-1 E2.00 N 0.20	16	2	0.2	2.0	GX 16-1			15.58	**800**	15.58	**600**
GX 16-2 E3.00 N 0.20	16	3	0.2	2.5	GX 16-2	15.58	**902**	15.58	**802**	15.58	**602**
GX 16-3 E4.00 N 0.30	16	4	0.3	3.0	GX 16-3	17.35	**904**			17.35	**604**

Steel	●	●	●
Stainless steel	○	●	●
Cast iron	●		●
Non ferrous metals			○
Heat resistant alloys		○	●
hardened materials	○		

→ v_c Page 101
→ Application recommendation on page 104

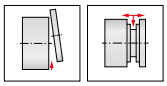
Internal machining | *External machining*

→ 40+41 | → 45 | → 38+39 | → 43

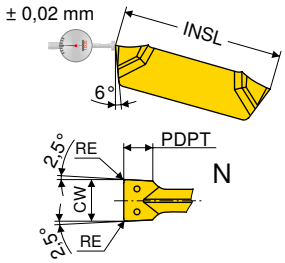
11

Insert GX 16

▲ Insert with highly positive cutting edge geometry and sharp cutting edge
▲ Ground periphery



F	M	R



-27P
H216T

-ALP
CWK26

1C/72

Designation	INSL mm	CW +/-0,02 mm	RE +/-0,05 mm	PDPT mm	for tool holder	Article no. 70 350 ... £	
GX 16-1 E2.00 N 0.20	16	2	0.2	2.5	GX 16-1	18.17	**650**
GX 16-2 E3.00 N 0.30	16	3	0.3	3.0	GX 16-2	18.17	**658**
GX 16-3 E4.00 N 0.40	16	4	0.4	3.5	GX 16-3	19.82	**670**
GX 16-4 E6.00 N 0.50	16	6	0.5	4.0	GX 16-4	20.85	**678**

Steel	
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c Page 101
→ Application recommendation on page 103

Internal machining

→ 40+41

→ 45

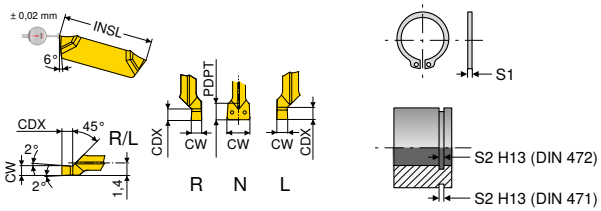
External machining

→ 38+39

→ 43

Circlip groove insert GX 09/16 – Standard

F	M	R



Designation	IH	INSL	s_1	s_2	CW +/-0,02	RE +/-0,05	CDX	PDPT	for tool holder	1C/72 Article no. 70 352 ... £		1C/72 Article no. 70 352 ... £	
		mm	mm	mm	mm	mm	mm	mm					
GX 09-1 S0.60 L	L	9	0.40	0.50	0.60		0.75		R/L 02-GX 09-1			23.55	679
GX 09-1 S0.80 L	L	9	0.60	0.70	0.80		0.94		R/L 02-GX 09-1			23.55	681
GX 09-1 S0.90 L	L	9	0.70	0.80	0.90		1.04		R/L 02-GX 09-1			23.55	683
GX 09-1 S1.00 L	L	9	0.80	0.90	1.00		1.14		R/L 02-GX 09-1			23.55	684
GX 09-1 S1.20 L	L	9	1.00	1.10	1.20		1.34		R/L 02-GX 09-1			23.55	686
GX 09-1 S1.40 L	L	9	1.20	1.30	1.40		1.53		R/L 02-GX 09-1			23.55	688
GX 09-1 S1.70 L	L	9	1.50	1.60	1.70		1.82		R/L 02-GX 09-1			23.55	690
GX 16-2 S0.60 L	L	16	0.40	0.50	0.60		0.75		R/L 03-GX 16-2			23.95	607
GX 16-2 S0.80 L	L	16	0.60	0.70	0.80		0.94		R/L 03-GX 16-2			23.95	609
GX 16-2 S0.90 L	L	16	0.70	0.80	0.90		1.04		R/L 03-GX 16-2			23.95	611
GX 16-2 S1.00 L	L	16	0.80	0.90	1.00		1.14		R/L 03-GX 16-2			23.95	612
GX 16-2 S1.20 L	L	16	1.00	1.10	1.20		1.34		R/L 03-GX 16-2			23.95	614
GX 16-2 S1.40 L	L	16	1.20	1.30	1.40		1.53		R/L 03-GX 16-2			23.95	616
GX 16-2 S1.70 L	L	16	1.50	1.60	1.70		1.82		R/L 03-GX 16-2			23.95	618
GX 16-2 S1.95 L	L	16	1.75	1.85	1.95		2.07		R/L 03-GX 16-2			23.95	620
GX 16-2 S2.25 L	L	16	2.00	2.15	2.25		2.36		R/L 03-GX 16-2			23.95	622
GX 09-1 S1.95 N	N	9	1.75	1.85	1.95	0.1		2.0	GX 09-1	23.55	692		
GX 09-1 S2.25 N	N	9	2.00	2.15	2.25	0.1		2.0	GX 09-1	23.55	694		
GX 09-2 S2.75 N	N	9	2.50	2.65	2.75	0.1		2.0	GX 09-2	23.55	696		
GX 09-2 S3.25 N	N	9	3.00	3.15	3.25	0.1		2.0	GX 09-2	23.55	698		
GX 16-2 S2.75 N	N	16	2.50	2.65	2.75	0.1		3.0	GX 16-2	23.95	624		
GX 16-2 S3.25 N	N	16	3.00	3.15	3.25	0.1		3.0	GX 16-2	23.95	626		
GX 16-3 S4.25 N	N	16	4.00	4.15	4.25	0.2		3.5	GX 16-3	26.22	628		
GX 16-4 S5.25 N	N	16	5.00	5.15	5.25	0.2		4.0	GX 16-4	27.67	630		
GX 09-1 S0.60 R	R	9	0.40	0.50	0.60		0.75		R/L 02-GX 09-1			23.55	670
GX 09-1 S0.80 R	R	9	0.60	0.70	0.80		0.94		R/L 02-GX 09-1			23.55	672
GX 09-1 S0.90 R	R	9	0.70	0.80	0.90		1.04		R/L 02-GX 09-1			23.55	674
GX 09-1 S1.00 R	R	9	0.80	0.90	1.00		1.14		R/L 02-GX 09-1			23.55	676
GX 09-1 S1.20 R	R	9	1.00	1.10	1.20		1.34		R/L 02-GX 09-1			23.55	678
GX 09-1 S1.40 R	R	9	1.20	1.30	1.40		1.53		R/L 02-GX 09-1			23.55	680
GX 09-1 S1.70 R	R	9	1.50	1.60	1.70		1.82		R/L 02-GX 09-1			23.55	682
GX 16-2 S0.60 R	R	16	0.40	0.50	0.60		0.75		R/L 03-GX 16-2			23.95	695
GX 16-2 S0.80 R	R	16	0.60	0.70	0.80		0.94		R/L 03-GX 16-2			23.95	697
GX 16-2 S0.90 R	R	16	0.70	0.80	0.90		1.04		R/L 03-GX 16-2			23.95	699
GX 16-2 S1.00 R	R	16	0.80	0.90	1.00		1.14		R/L 03-GX 16-2			23.95	600
GX 16-2 S1.20 R	R	16	1.00	1.10	1.20		1.34		R/L 03-GX 16-2			23.95	602
GX 16-2 S1.40 R	R	16	1.20	1.30	1.40		1.53		R/L 03-GX 16-2			23.95	604
GX 16-2 S1.70 R	R	16	1.50	1.60	1.70		1.82		R/L 03-GX 16-2			23.95	606
GX 16-2 S1.95 R	R	16	1.75	1.85	1.95		2.07		R/L 03-GX 16-2			23.95	608
GX 16-2 S2.25 R	R	16	2.00	2.15	2.25		2.36		R/L 03-GX 16-2			23.95	610

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 101
→ Application recommendation on page 104

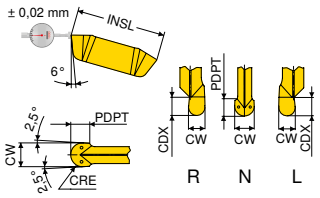
Attention – applies only to internal machining:
Right-hand insert → left-hand module or monobloc boring bar
Left-hand insert → right-hand module or monobloc boring bar

Internal machining *External machining*

→ 40+41 → 44+45 → 38+39 → 42+43

Radius groove insert GX 09/16

F	M	R



CTCP325	CTCP325	CTP1340
HCR1325	HCR1325	CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	IH	INSL	CW +/-0,02	CRE	PDPT	CDX	for tool holder	1C/72 Article no. 70 354 ...	£		1C/72 Article no. 70 354 ...	£		1C/72 Article no. 70 354 ...	£	
		mm	mm	mm	mm	mm										
GX 09-1 R0.80 L	L	9	1.6	0.8		1.78	R/L 02-GX 09-1	28.39	**988**							
GX 16-2 R0.80 L	L	16	1.6	0.8		1.78	R/L 03-GX 16-2	29.11	**912**							
GX 16-2 R1.00 L	L	16	2.0	1.0		2.18	R/L 03-GX 16-2	29.11	**916**							
GX 16-2 R1.20 L	L	16	2.4	1.2		2.58	R/L 03-GX 16-2	29.11	**920**							
GX 09-1 R1.00 N	N	9	2.0	1.0	1.0		GX 09-1				28.39	**992**				
GX 09-1 R1.20 N	N	9	2.4	1.2	1.2		GX 09-1				28.39	**996**				
GX 16-2 R1.50 N	N	16	3.0	1.5	1.5		GX 16-2				29.11	**924**		29.11	**624**	
GX 16-3 R2.00 N	N	16	4.0	2.0	2.0		GX 16-3				31.60	**928**		31.60	**628**	
GX 16-3 R2.50 N	N	16	5.0	2.5	2.5		GX 16-3				31.60	**932**		31.60	**632**	
GX 16-4 R3.00 N	N	16	6.0	3.0	3.0		GX 16-4				33.05	**936**		33.05	**636**	
GX 09-1 R0.80 R	R	9	1.6	0.8		1.78	R/L 02-GX 09-1	28.39	**984**							
GX 16-2 R0.80 R	R	16	1.6	0.8		1.78	R/L 03-GX 16-2	29.11	**900**							
GX 16-2 R1.00 R	R	16	2.0	1.0		2.18	R/L 03-GX 16-2	29.11	**904**							
GX 16-2 R1.20 R	R	16	2.4	1.2		2.58	R/L 03-GX 16-2	29.11	**908**							

Steel	●	●	●
Stainless steel	○	○	●
Cast iron	●	●	●
Non ferrous metals			○
Heat resistant alloys			●
hardened materials	○	○	

→ v_c Page 101
→ Application recommendation on page 104

Attention – applies only to internal machining:
Right-hand insert → left-hand module or monobloc boring bar
Left-hand insert → right-hand module or monobloc boring bar

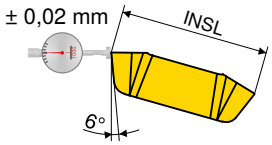
Internal machining *External machining*

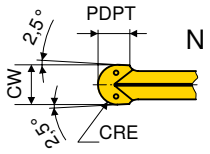
→ 40+41 → 44+45 → 38+39 → 42+43

Radius groove insert GX 16

▲ Insert with highly positive cutting edge geometry and sharp cutting edge
▲ Ground periphery

F	M	R





-27P
H216T

-ALP
CWK26

1C/72

Designation	INSL mm	CW +/-0,02 mm	CRE mm	PDPT mm	for tool holder	Article no. 70 354 ...	£	
GX 16-2 R1.50 N	16	3	1.5	1.5	GX 16-2		21.88	**674**
GX 16-3 R2.00 N	16	4	2.0	2.0	GX 16-3		23.65	**678**
GX 16-3 R2.50 N	16	5	2.5	2.5	GX 16-3		23.65	**682**

Steel	
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c Page 101
→ Application recommendation on page 104

Internal machining | *External machining*

→ 40+41

→ 45

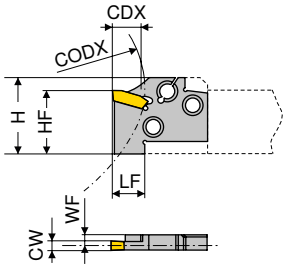
→ 38+39

→ 43

11

ModularClamp MSS – Radial grooving module GX 09/16

- For circlip grooves = 2,75 mm
- For radius grooves up to = 1,2 mm
- For external recessing



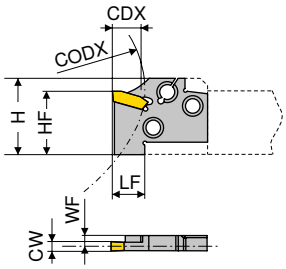
Illustrations show right-hand versions

Designation	CW	WF	LF	HF	H	CODX	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 871 ...		Right-hand 2C/71 Article no. 70 870 ...	
	mm	mm	mm	mm	mm	mm	mm		£		£	
E12 R/L 02-GX 09-1	<1,95	3.15	8	12	14.5	36	2	GX 09-1 ..R/L	77.21	**112**	77.21	**112**
E16 R/L 02-GX 09-1	<1,95	3.15	8	16	19.5	48	2	GX 09-1 ..R/L	78.07	**116**	78.07	**116**
E20 R/L 03-GX 16-2	<2,75	3.40	13	20	24.0	60	3	GX 16-2 ..R/L	78.07	**120**	78.07	**120**
E25 R/L 03-GX 16-2	<2,75	4.90	13	25	30.0	75	3	GX 16-2 ..R/L	78.65	**125**	78.65	**125**
E32 R/L 03-GX 16-2	<2,75	4.90	13	32	38.0	96	3	GX 16-2 ..R/L	79.40	**132**	79.40	**132**

→ 30–37 → 93–95 → **Chapter 16**

ModularClamp MSS – Radial grooving module GX 09/16

- For grooving and turning
- For circlip grooves = 5,25 mm
- For radius grooves up to = 2,5 mm
- For external recessing



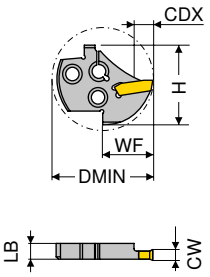
Illustrations show right-hand versions

Designation	CW	WF	LF	HF	H	CODX	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 866 ... £		Right-hand 2C/71 Article no. 70 865 ... £	
	mm	mm	mm	mm	mm	mm	mm					
E12 R/L 07-GX 09-1	2,00 - 2,75	3.15	8	12	14.5	36	7	GX 09-1 ..N	77.21	**012**	77.21	**012**
E12 R/L 07-GX 09-2	2,76 - 3,75	3.15	8	12	14.5	36	7	GX 09-2 ..N	77.21	**112**	77.21	**112**
E16 R/L 07-GX 09-1	2,00 - 2,75	3.15	8	16	19.5	48	7	GX 09-1 ..N	78.07	**016**	78.07	**016**
E16 R/L 07-GX 09-2	2,76 - 3,75	3.15	8	16	19.5	48	7	GX 09-2 ..N	78.07	**116**	78.07	**116**
E20 R/L 12-GX 16-1	2,00 - 2,75	3.75	13	20	24.0	60	12	GX 16-1 ..N	78.07	**020**	78.07	**020**
E20 R/L 12-GX 16-2	2,76 - 3,75	3.40	13	20	24.0	60	12	GX 16-2 ..N	78.07	**120**	78.07	**120**
E20 R/L 12-GX 16-3	3,76 - 5,00	2.93	13	20	24.0	60	12	GX 16-3 ..N	78.07	**220**	78.07	**220**
E25 R/L 12-GX 16-1	2,00 - 2,75	5.25	13	25	30.0	75	12	GX 16-1 ..N	78.65	**025**	78.65	**025**
E25 R/L 12-GX 16-2	2,76 - 3,75	4.90	13	25	30.0	75	12	GX 16-2 ..N	78.65	**125**	78.65	**125**
E25 R/L 12-GX 16-3	3,76 - 5,00	4.43	13	25	30.0	75	12	GX 16-3 ..N	78.65	**225**	78.65	**225**
E25 R/L 12-GX 16-4	5,01 - 6,50	3.80	13	25	30.0	75	12	GX 16-4 ..N	78.65	**325**	78.65	**325**
E32 R/L 12-GX 16-2	2,76 - 3,75	4.90	13	32	38.0	96	12	GX 16-2 ..N	79.40	**132**	79.40	**132**
E32 R/L 12-GX 16-3	3,76 - 5,00	4.43	13	32	38.0	96	12	GX 16-3 ..N	79.40	**232**	79.40	**232**
E32 R/L 12-GX 16-4	5,01 - 6,50	3.80	13	32	38.0	96	12	GX 16-4 ..N	79.40	**332**	79.40	**332**

→ 30–37 → 93–95 → **Chapter 16**

ModularClamp MSS – Radial Grooving module GX 09/16 for Internal machining

- For circlip grooves = 2,75 mm
- For radius grooves up to = 1,2 mm



Illustrations show right-hand versions

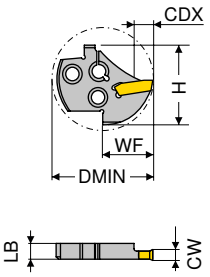
Designation	CW	LB	WF	H	CDX	DMIN	for grooving inserts	Left-hand 2C/71 Article no. 70 886 ... £		Right-hand 2C/71 Article no. 70 885 ... £	
	mm	mm	mm	mm	mm	mm					
I16 R/L 02-GX 09-1	<1,95	3.8	10.0	16.4	2	20	GX 09-1 ..R/L	78.07	**016**	78.07	**016**
I20 R/L 02-GX 09-1	<1,95	3.8	12.0	20.3	2	25	GX 09-1 ..R/L	78.07	**020**	78.07	**020**
I25 R/L 02-GX 09-1	<1,95	3.8	15.5	24.9	2	32	GX 09-1 ..R/L	78.65	**025**	78.65	**025**
I32 R/L 03-GX 16-2	<2,75	5.9	20.0	32.2	3	40	GX 16-2 ..R/L	79.40	**032**	79.40	**032**
I40 R/L 03-GX 16-2	<2,75	5.9	24.5	39.6	3	50	GX 16-2 ..R/L	80.07	**040**	80.07	**040**

Right hand module → left hand insert only
Left hand module → right hand insert only

→ 30–37 → 96

ModularClamp MSS – Radial Grooving module 09/16 for Internal machining

- For circlip grooves = 5,25 mm
- For radius grooves up to = 2,5 mm



Illustrations show right-hand versions

Designation	CW	LB	WF	H	CDX	DMIN	for grooving inserts	Left-hand 2C/71 Article no. 70 881 ... £		Right-hand 2C/71 Article no. 70 880 ... £	
	mm	mm	mm	mm	mm	mm					
I16 R/L 04-GX 09-1	2,00 - 2,75	3.8	10.0	16.4	4	20	GX 09-1 ..N	78.07	**017**	78.07	**017**
I16 R/L 04-GX 09-2	2,76 - 3,75	3.8	10.0	16.4	4	20	GX 09-2 ..N	78.07	**117**	78.07	**117**
I20 R/L 05-GX 09-1	2,00 - 2,75	3.8	12.0	20.3	5	25	GX 09-1 ..N	78.07	**021**	78.07	**021**
I20 R/L 05-GX 09-2	2,76 - 3,75	3.8	12.0	20.3	5	25	GX 09-2 ..N	78.07	**121**	78.07	**121**
I25 R/L 06-GX 09-1	2,00 - 2,75	3.8	15.5	24.9	6	32	GX 09-1 ..N	78.65	**026**	78.65	**026**
I25 R/L 06-GX 09-2	2,76 - 3,75	3.8	15.5	24.9	6	32	GX 09-2 ..N	78.65	**126**	78.65	**126**
I32 R/L 09-GX 16-1	2,00 - 2,75	5.9	20.0	32.2	9	40	GX 16-1 ..N	79.40	**033**	79.40	**033**
I32 R/L 09-GX 16-2	2,76 - 3,75	5.9	20.0	32.2	9	40	GX 16-2 ..N	79.40	**133**	79.40	**133**
I32 R/L 09-GX 16-3	3,76 - 5,00	5.9	20.0	32.2	9	40	GX 16-3 ..N	79.40	**233**	79.40	**233**
I32 R/L 09-GX 16-4	5,01 - 6,50	5.9	20.0	32.2	9	40	GX 16-4 ..N	79.40	**333**	79.40	**333**
I40 R/L 10-GX 16-1	2,00 - 2,75	5.9	24.5	39.6	10	50	GX 16-1 ..N	80.07	**041**	80.07	**041**
I40 R/L 10-GX 16-2	2,76 - 3,75	5.9	24.5	39.6	10	50	GX 16-2 ..N	80.07	**141**	80.07	**141**
I40 R/L 10-GX 16-3	3,76 - 5,00	5.9	24.5	39.6	10	50	GX 16-3 ..N	80.07	**241**	80.07	**241**
I40 R/L 10-GX 16-4	5,01 - 6,50	5.9	24.5	39.6	10	50	GX 16-4 ..N	80.07	**341**	80.07	**341**

→ 30–37 → 96

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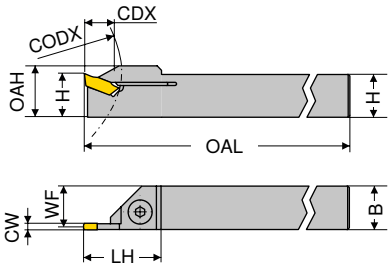
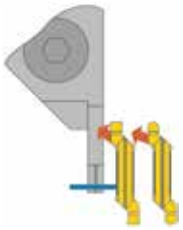
MonoClamp – Radial Monoholder GX 09



Illustrations show right-hand versions

Designation	H	B	CW	WF	OAH	OAL	LH	CODX	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 863 ... £		Right-hand 2C/71 Article no. 70 862 ... £	
	mm	mm	mm	mm	mm	mm	mm	mm	mm					
E10 R/L 00-1010M-GX09	10	10	2,00 - 3,50	9.35	12	150	18	30	7	GX 09 ..	112.27	**010**	112.27	**010**

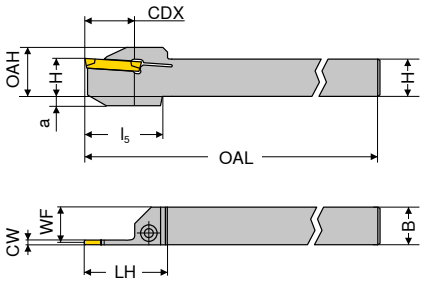
When using „R“ or „L“ tools the tool must be modified at the end face to ensure cutting clerance.



Spare parts for grooving inserts		Y7 Key D Article no. 80 950 ... £			2A/28 Clamping screw Article no. 70 950 ... £	
GX 09 ..	T15	12.26	**113**	M4x11	9.40	**442**

→ 30–36

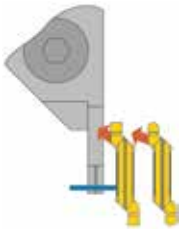
MonoClamp – Radial Monoholder GX 16



Illustrations show right-hand versions

Designation	H mm	B mm	CW mm	WF mm	OAH mm	OAL mm	LH mm	l_5 mm	a mm	CDX mm	for grooving inserts	Left-hand 2C/71 Article no. 70 889 ... £		Right-hand 2C/71 Article no. 70 888 ... £	
E12 R/L 0012-1212K-GX16-1	12	12	2,00 - 2,75	11.35	17	125	26	24	4	12	GX 16-1	82.84	**212**	82.84	**212**
E12 R/L 0012-1212K-GX16-2	12	12	2,76 - 3,75	11.00	17	125	26	24	4	12	GX 16-2	82.84	**312**	82.84	**312**
E16 R/L 0012-1616K-GX16-1	16	16	2,00 - 2,75	15.35	21	125	26	24	4	12	GX 16-1	88.45	**216**	88.45	**216**
E16 R/L 0012-1616K-GX16-2	16	16	2,76 - 3,75	15.00	21	125	26	24	4	12	GX 16-2	88.45	**316**	88.45	**316**
E16 R/L 0012-1616K-GX16-3	16	16	3,76 - 5,00	14.53	21	125	26	24	4	12	GX 16-3	88.45	**416**	88.45	**416**
E20 R/L 0012-2020K-GX16-1	20	20	2,00 - 2,75	19.35	25	125	26			12	GX 16-1	101.82	**220**	101.82	**220**
E20 R/L 0012-2020K-GX16-2	20	20	2,76 - 3,75	19.00	25	125	26			12	GX 16-2	101.82	**320**	101.82	**320**
E20 R/L 0012-2020K-GX16-3	20	20	3,76 - 5,00	18.53	25	125	26			12	GX 16-3	101.82	**420**	101.82	**420**
E25 R/L 0012-2525M-GX16-2	25	25	2,76 - 3,75	24.00	30	150	26			12	GX 16-2	108.27	**325**	108.27	**325**
E25 R/L 0012-2525M-GX16-3	25	25	3,76 - 5,00	23.53	30	150	26			12	GX 16-3	108.27	**425**	108.27	**425**

When using „R“ or „L“ tools the tool must be modified at the end face to ensure cutting clerance.

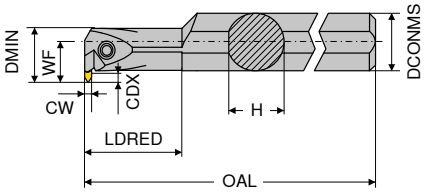


11

Spare parts for grooving inserts		Y7 Key D Article no. 80 950 ... £			2A/28 Clamping screw Article no. 70 950 ... £	
GX 16-1	T15	12.26	**113**	M3,5x14	3.72	**160**
GX 16-2	T15	12.26	**113**	M3,5x14	3.72	**160**
GX 16-3	T15	12.26	**113**	M3,5x14	3.72	**160**

→ 30–37

MonoClamp – Radial Mono-boring bars GX 09

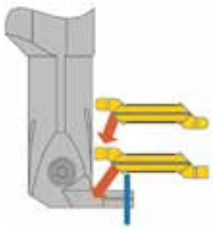


Illustrations show right-hand versions

Designation	H	DCONMS	DMIN	CW	CDX	WF	OAL	LDRED	for grooving inserts	Left-hand 2C/71 Article no. 70 859 ... £		Right-hand 2C/71 Article no. 70 858 ... £	
	mm	mm	mm	mm	mm	mm	mm	mm					
I12 R/L 90-2,5D-GX09	15.25	16	16	2,00 - 3,75	3	11	150	30	GX 09 ..	137.64	**012**	137.64	**012**

Right hand boring bar→ left hand insert only
Left hand boring bar→ right hand insert only

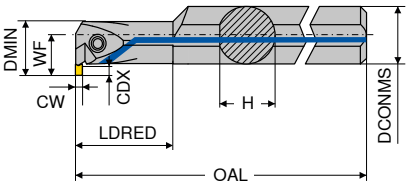
When using „R“ or „L“ tools the insert support seat requires modification to prevent the insert fouling.



Spare parts for grooving inserts		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £	
GX 09 ..	T15	12.26	**113**	M3,5x12,5	8.15 **441**

→ 30–36

MonoClamp – Radial Mono-boring bars GX 16

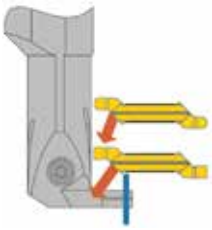


Illustrations show right-hand versions

Designation	H	DCONMS	DMIN	CW	CDX	WF	OAL	LDRED	for grooving inserts	Left-hand 2C/71 Article no. 70 893 ... £		Right-hand 2C/71 Article no. 70 892 ... £	
	mm	mm	mm	mm	mm	mm	mm	mm					
I16 R/L 90-2.0D-GX16-1	15.25	16	20.5	2,00 - 2,75	5.0	13.5	150	32	GX 16-1	121.18	**516**	121.18	**516**
I16 R/L 90-2.0D-GX16-2	15.25	16	20.5	2,76 - 3,75	5.0	13.5	150	32	GX 16-2	121.18	**616**	121.18	**616**
I20 R/L 90-2.0D-GX16-2	19.00	20	25.0	2,76 - 3,75	5.5	15.5	180	40	GX 16-2	130.91	**620**	130.91	**620**
I25 R/L 90-2.0D-GX16-2	24.00	25	32.0	2,76 - 3,75	8.0	20.5	200	50	GX 16-2	152.18	**625**	152.18	**625**
I25 R/L 90-2.0D-GX16-3	24.00	25	32.0	3,76 - 5,00	10.0	22.5	200	50	GX 16-3	152.18	**725**	152.18	**725**
I32 R/L 90-2.0D-GX16-2	31.00	32	42.0	2,76 - 3,75	11.0	27.5	250	64	GX 16-2	176.91	**632**	176.91	**632**
I32 R/L 90-2.0D-GX16-3	31.00	32	42.0	3,76 - 5,00	11.0	27.5	250	64	GX 16-3	176.91	**732**	176.91	**732**

Right hand boring bar→ left hand insert only
Left hand boring bar→ right hand insert only

When using „R“ or „L“ tools the insert support seat requires modification to prevent the insert fouling.



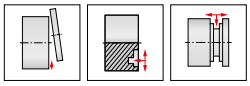
11

Spare parts for grooving inserts		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £	
GX 16-1	T15	12.26	**113**	M4x14	7.80	**403**
GX 16-2	T15	12.26	**113**	M4x14	7.80	**403**
GX 16-3	T15	12.26	**113**	M4x14	7.80	**403**

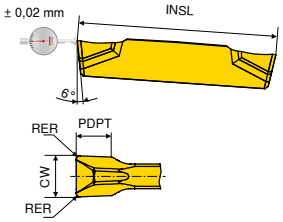
→ 30–37

Insert GX 24

▲ Insert with ground periphery
▲ Suitable also for parting off tubes and thin-walled workpieces



F	M	R



-F2 CTCP325	-F2 CTPP345	-F2 CTP1340
-F2 HCR1325	-F2 HCN1345	-F2 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	INSL	CW +/-0,02	RE +/-0,05	PDPT	for tool holder	1C/72 Article no. 70 350 ... £		1C/72 Article no. 70 350 ... £		1C/72 Article no. 70 350 ... £	
	mm	mm	mm	mm							
GX 24-2 E3.00 N 0.30	24	3.0	0.3	2.5	GX 24-2	24.67	**962**	24.67	**862**	24.67	**662**
GX 24-2 E3.50 N 0.30	24	3.5	0.3	2.5	GX 24-2			24.67	**864**		
GX 24-3 E4.00 N 0.40	24	4.0	0.4	3.0	GX 24-3	26.63	**966**	26.63	**866**	26.63	**666**
GX 24-3 E5.00 N 0.40	24	5.0	0.4	3.5	GX 24-3	29.22	**970**	29.22	**870**	29.22	**671**
GX 24-4 E6.00 N 0.50	24	6.0	0.5	4.0	GX 24-4			32.11	**872**	32.11	**672**

Steel	●	●	●
Stainless steel	○	●	●
Cast iron	●		●
Non ferrous metals			○
Heat resistant alloys		○	●
hardened materials	○		

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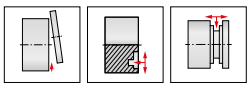
→ Application recommendation on page 103

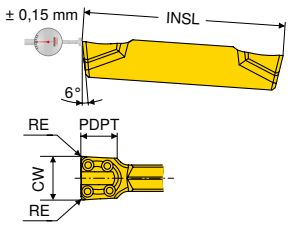
Internal machining *External machining*

→ 54 → 59 → 53–56 → 57 → 58 → 60

Insert GX 24 -E



F	M	R



Designation	INSL	CW +/-0,05	RE +/-0,05	PDPT	for tool holder	1C/72 Article no. 70 350 ...		1C/72 Article no. 70 350 ...		1C/72 Article no. 70 350 ...		1C/72 Article no. 70 350 ...	
	mm	mm	mm	mm		£		£		£		£	
GX 24-2 E3.00 N 0.30	24	3	0.3	2.5	GX 24-2	16.61	**932**	16.61	**532**	16.37	**832**	16.61	**632**
GX 24-3 E4.00 N 0.40	24	4	0.4	3.0	GX 24-3	18.17	**936**	18.17	**536**	18.17	**836**	18.17	**636**
GX 24-3 E5.00 N 0.40	24	5	0.4	3.0	GX 24-3	19.82	**940**	19.82	**540**	19.82	**840**	19.82	**640**
GX 24-4 E6.00 N 0.50	24	6	0.5	3.5	GX 24-4	21.78	**944**	21.78	**544**	21.78	**844**	21.78	**644**

Steel	●	●	●	●
Stainless steel	○	○	●	●
Cast iron	●	●		●
Non ferrous metals				○
Heat resistant alloys			○	●
hardened materials	○			

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→ Application recommendation on page 103

Internal machining | *External machining*

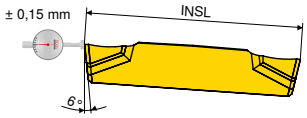
→ 54 | → 59 | → 53–56 | → 57 | → 58 | → 60

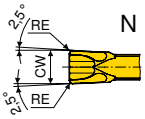
11

Insert GX 24

▲ Very good swarf control

F	M	R





-M1 CTCP325	-M1 CTPP345	-M1 CTP1340
-M1 HCR1325	-M1 HCN1345	-M1 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	INSL	CW +/-0,05	RE +/-0,05	for tool holder	1C/72 Article no. 70 363 ... £		1C/72 Article no. 70 363 ... £		1C/72 Article no. 70 363 ... £	
	mm	mm	mm							
GX 24-1 E2.00 N 0.20	24	2	0.2	GX 24-1	16.61	**900**	16.61	**800**	16.61	**600**
GX 24-2 E3.00 N 0.20	24	3	0.2	GX 24-2	16.61	**902**	16.61	**802**	16.61	**602**
GX 24-3 E4.00 N 0.30	24	4	0.3	GX 24-3	18.17	**904**	18.17	**804**	18.17	**604**

Steel	●	●	●
Stainless steel	○	●	●
Cast iron	●		●
Non ferrous metals			○
Heat resistant alloys		○	●
hardened materials	○		

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→ Application recommendation on page 104

Internal machining *External machining*

→ 54

→ 59

→ 53–56

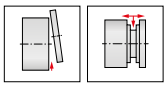
→ 57

→ 58

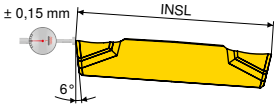
→ 60

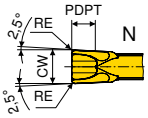
Insert GX 24

▲ Very good swarf control



F	M	R





-M40 CTCP325	-M40 CTPP345	-M40 CTP1340
-M40 HCR1325	-M40 HCN1345	-M40 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	INSL	CW +/-0,05	RE +/-0,05	PDPT	for tool holder	1C/72 Article no. 70 364 ...		1C/72 Article no. 70 364 ...		1C/72 Article no. 70 364 ...	
	mm	mm	mm	mm		£		£		£	
GX 24-2 E3.00 N 0.30	24	3	0.3	3.5	GX 24-2	16.61	**900**	16.61	**800**	16.61	**600**
GX 24-3 E4.00 N 0.40	24	4	0.4	4.0	GX 24-3	18.17	**902**	18.17	**802**	18.17	**602**
GX 24-3 E5.00 N 0.40	24	5	0.4	4.0	GX 24-3	19.82	**904**	19.82	**804**	19.82	**604**
GX 24-4 E6.00 N 0.50	24	6	0.5	4.0	GX 24-4	21.78	**906**	21.78	**806**	21.78	**606**
Steel							●		●		●
Stainless steel							○		●		●
Cast iron							●				●
Non ferrous metals											○
Heat resistant alloys									○		●
hardened materials							○				

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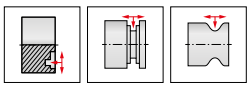
→ Application recommendation on page 103

Internal machining *External machining*

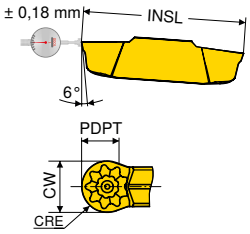
→ 54 → 59 → 53–56 → 57 → 58 → 60

11

Radius groove insert GX 24



F	M	R



-M3 CTCP325	-M3 CTCP335
-M3 HCR1325	-M3 HCR1335
DRAGONSKIN	DRAGONSKIN

Designation	INSL	CW +/-0,05	CRE	PDPT	for tool holder	1C/72 Article no. 70 354 ...		1C/72 Article no. 70 354 ...	
	mm	mm	mm	mm		£		£	
GX 24-2 R1.50 N	24.4	3	1.5	1.5	GX 24-2	22.09	**952**	22.09	**552**
GX 24-3 R2.00 N	24.4	4	2.0	2.5	GX 24-3	23.65	**954**	23.65	**554**
GX 24-3 R2.50 N	24.4	5	2.5	3.0	GX 24-3	24.67	**956**	24.67	**556**
GX 24-4 R3.00 N	24.4	6	3.0	4.0	GX 24-4	26.53	**958**	26.53	**558**

Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals		
Heat resistant alloys		
hardened materials	○	

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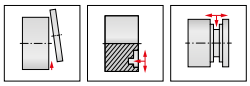
Internal machining | *External machining*

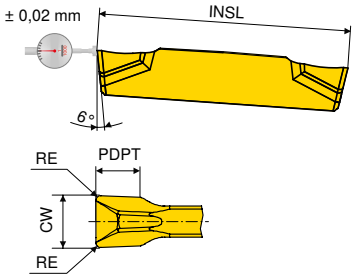
→ 54 | → 59 | → 53–56 | → 57 | → 58 | → 60

Insert GX 24

▲ Insert with highly positive cutting edge geometry and sharp cutting edge
▲ ground periphery



F	M	R



-27P
H216T

-ALP
CWK26

1C/72

Designation	INSL	CW +/-0,02	RE +/-0,05	PDPT	for tool holder	Article no. 70 350 ...	
	mm	mm	mm	mm		£	
GX 24-2 E3.00 N 0.30	24	3	0.3	2.5	GX 24-2	19.82	**682**
GX 24-3 E4.00 N 0.40	24	4	0.4	3.0	GX 24-3	21.78	**684**
GX 24-3 E5.00 N 0.40	24	5	0.4	3.5	GX 24-3	22.71	**686**
GX 24-4 E6.00 N 0.50	24	6	0.5	4.0	GX 24-4	23.55	**688**

Steel	
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

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→ Application recommendation on page 103

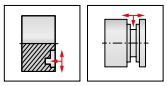
Internal machining *External machining*

→ 54 → 59 → 53–56 → 57 → 58 → 60

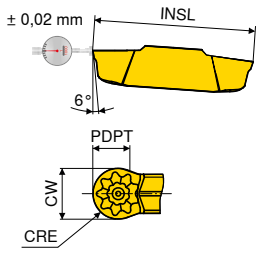
11

Radius grooving insert GX 24

- ▲ Insert with highly positive cutting edge geometry and sharp cutting edge
- ▲ Ground periphery



F	M	R



-27PF
H216T

-ALP-F
CWK26

1C/72

Designation	INSL mm	CW +/-0,02 mm	CRE mm	PDPT mm	for tool holder	Article no. 70 353 ... £	
GX 24-4 R3.00 N	25.4	6	3	4	GX 24-4	29.62	**500**
GX 24-5 R4.00 N	25.4	8	4	5	GX 24-5	31.27	**506**

Steel	
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

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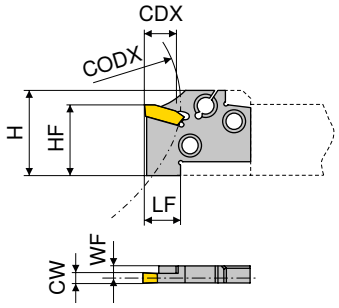
→ Application recommendation on page 104

Internal machining | *External machining*

→ 54 | → 59 | → 53–56 | → 57 | → 58 | → 60

ModularClamp MSS – Radial grooving module GX 24

▲ For deep radial parting and grooving
▲ For turning



Illustrations show right-hand versions

Designation	CW	WF	LF	HF	H	CODX	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 868 ... £		Right-hand 2C/71 Article no. 70 867 ... £	
	mm	mm	mm	mm	mm	mm	mm					
E20 R/L 21-GX 24-1	2,00 - 2,75	3.85	22	20	24	60	21	GX 24-1	78.07	**020**	78.07	**020**
E20 R/L 21-GX 24-2	3	3.40	22	20	24	60	21	GX 24-2	78.07	**120**	78.07	**120**
E25 R/L 21-GX 24-1	2,00 - 2,75	5.10	22	25	30	75	21	GX 24-1	78.65	**025**	78.65	**025**
E25 R/L 21-GX 24-2	3	4.90	22	25	30	75	21	GX 24-2	78.65	**125**	78.65	**125**
E25 R/L 21-GX 24-3	4/5	4.43	22	25	30	75	21	GX 24-3	78.65	**225**	78.65	**225**
E25 R/L 21-GX 24-4	6	3.80	22	25	30	75	21	GX 24-4	78.65	**325**	78.65	**325**
E25 R/L 21-GX 24-5	8	2.95	22	25	30	75	21	GX 24-5	78.65	**425**	78.65	**425**
E32 R/L 21-GX 24-3	4/5	4.43	22	32	38	96	21	GX 24-3	79.40	**232**	79.40	**232**
E32 R/L 21-GX 24-4	6	3.80	22	32	38	96	21	GX 24-4	79.40	**332**	79.40	**332**

→ 46–52 → 93–95 → **Chapter 16**

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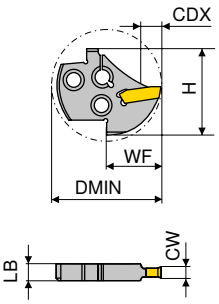
ModularClamp MSS – Radial Grooving module GX 24 for Internal machining

▲ For grooving and turning



Neutral

Designation	CW	LB	WF	H	CDX	DMIN	for grooving inserts	2C/71 Article no. 70 880 ...	
	mm	mm	mm	mm	mm	mm		£	
I40 N 19-GX 24-2	2,76 - 3,75	6.2	33.5	40.7	19	60	GX 24-2 ..N	90.91	**340**
I40 N 19-GX 24-3	3,76 - 5,00	6.2	33.5	40.7	19	60	GX 24-3 ..N	90.91	**440**
I40 N 19-GX 24-4	5,01 - 6,50	6.2	33.5	40.7	19	60	GX 24-4 ..N	90.91	**540**

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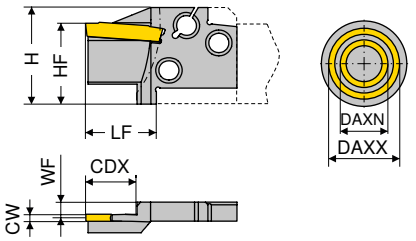
ModularClamp MSS – Axial grooving module GX 24 short

- For axial grooving
- For face turning



Illustrations show right-hand versions

Designation	DAXN	DAXX	CW	WF	LF	HF	H	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 891 ... £		Right-hand 2C/71 Article no. 70 890 ... £	
	mm	mm	mm	mm	mm	mm	mm	mm					
E20 R/L 14-GX 24-2 A	50	70	3	3.40	22	20	24	14	GX 24-2	101.36	**100**	101.36	**100**
E20 R/L 14-GX 24-2 A	70	100	3	3.40	22	20	24	14	GX 24-2	101.36	**102**	101.36	**102**
E20 R/L 14-GX 24-2 A	100	150	3	3.40	22	20	24	14	GX 24-2	101.36	**104**	101.36	**104**
E25 R/L 15-GX 24-2 A	50	70	3	4.90	22	25	30	15	GX 24-2	102.27	**200**	102.27	**200**
E25 R/L 15-GX 24-2 A	70	100	3	4.90	22	25	30	15	GX 24-2	102.27	**202**	102.27	**202**
E25 R/L 15-GX 24-2 A	100	150	3	4.90	22	25	30	15	GX 24-2	102.27	**204**	102.27	**204**
E25 R/L 15-GX 24-3 A	50	70	4/5	4.43	22	25	30	15	GX 24-3	102.27	**206**	102.27	**206**
E25 R/L 15-GX 24-3 A	70	100	4/5	4.43	22	25	30	15	GX 24-3	102.27	**208**	102.27	**208**
E25 R/L 15-GX 24-3 A	100	150	4/5	4.43	22	25	30	15	GX 24-3	102.27	**210**	102.27	**210**
E25 R/L 15-GX 24-3 A	150	300	4/5	4.43	22	25	30	15	GX 24-3	102.27	**212**	102.27	**212**
E25 R/L 15-GX 24-4 A	50	70	6	3.80	22	25	30	15	GX 24-4	102.27	**214**	102.27	**214**
E25 R/L 15-GX 24-4 A	70	100	6	3.80	22	25	30	15	GX 24-4	102.27	**216**	102.27	**216**
E25 R/L 15-GX 24-4 A	100	150	6	3.80	22	25	30	15	GX 24-4	102.27	**218**	102.27	**218**
E25 R/L 15-GX 24-4 A	150	300	6	3.80	22	25	30	15	GX 24-4	102.27	**220**	102.27	**220**
E32 R/L 15-GX 24-3 A	70	100	4/5	4.43	22	32	38	15	GX 24-3	103.09	**300**	103.09	**300**
E32 R/L 15-GX 24-3 A	100	150	4/5	4.43	22	32	38	15	GX 24-3	103.09	**302**	103.09	**302**
E32 R/L 15-GX 24-3 A	150	300	4/5	4.43	22	32	38	15	GX 24-3	103.09	**304**	103.09	**304**
E32 R/L 15-GX 24-4 A	70	100	6	3.80	22	32	38	15	GX 24-4	103.09	**306**	103.09	**306**
E32 R/L 15-GX 24-4 A	100	150	6	3.80	22	32	38	15	GX 24-4	103.09	**308**	103.09	**308**
E32 R/L 15-GX 24-4 A	150	300	6	3.80	22	32	38	15	GX 24-4	103.09	**310**	103.09	**310**
E32 R/L 15-GX 24-4 A	300	900	6	3.80	22	32	38	15	GX 24-4	103.09	**312**	103.09	**312**

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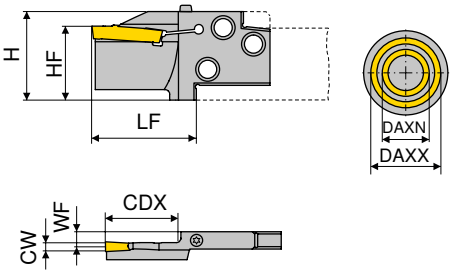
ModularClamp MSS – Axial grooving module GX 24 long

- For axial grooving
- For face turning



Illustrations show right-hand versions

Designation	DAXN	DAXX	CW	WF	LF	HF	H	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 895 ... £		Right-hand 2C/71 Article no. 70 894 ... £	
	mm	mm	mm	mm	mm	mm	mm	mm					
E25 R/L 21-GX 24-3 AS	50	70	4/5	4.53	35	25	30	21	GX 24-3	104.36	**200**	104.36	**200**
E25 R/L 21-GX 24-3 AS	70	100	4/5	4.53	35	25	30	21	GX 24-3	104.36	**202**	104.36	**202**
E25 R/L 21-GX 24-3 AS	100	150	4/5	4.53	35	25	30	21	GX 24-3	104.36	**204**	104.36	**204**
E25 R/L 21-GX 24-3 AS	150	300	4/5	4.53	35	25	30	21	GX 24-3	104.36	**206**	104.36	**206**
E25 R/L 25-GX 24-4 AS	50	70	6	3.90	35	25	30	25	GX 24-4	104.36	**210**	104.36	**210**
E25 R/L 25-GX 24-4 AS	70	100	6	3.90	35	25	30	25	GX 24-4	104.36	**212**	104.36	**212**
E25 R/L 25-GX 24-4 AS	100	150	6	3.90	35	25	30	25	GX 24-4	104.36	**214**	104.36	**214**
E25 R/L 25-GX 24-4 AS	150	300	6	3.90	35	25	30	25	GX 24-4	104.36	**216**	104.36	**216**

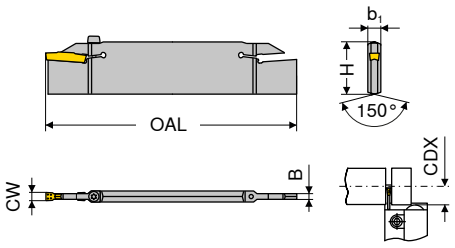
Axial modules version „GX 24 long“ can be clamped on both sides.

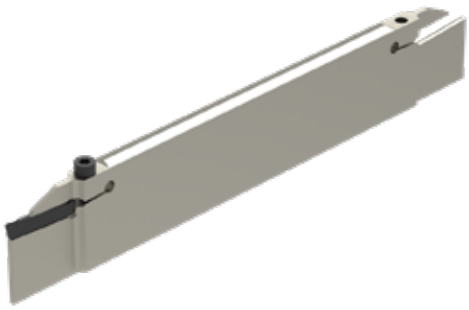
Spare parts for grooving inserts		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £	
GX 24-3	T15	12.26	**113**	M3,5x14	3.72	**160**
GX 24-4	T15	12.26	**113**	M3,5x14	3.72	**160**

→ 46–52 → 93–95 → **Chapter 16**

MonoClamp – Radial Blade GX 24

Scope of supply:
Blade incl. clamping screw and tightening wrench





Designation	CW	H	B	b_1	OAL	CDX	for grooving inserts	2A/25 Article no. 70 834 ...	
	mm	mm	mm	mm	mm	mm		£	
XLCF N 3203-GX24-1S	2	32	1.05	6.2	180	21	GX 24-1	76.16	**102**
XLCF N 3203-GX24-2S	3	32	2.10	6.2	180	21	GX 24-2	77.31	**103**
XLCF N 3204-GX24-3S	4/5	32	3.05	6.2	180	21	GX 24-3	82.45	**104**
XLCF N 3206-GX24-4S	6	32	4.20	6.2	180	21	GX 24-4	97.45	**106**

Spare parts		Y7 Article no. 80 950 ...			2A/28 Article no. 70 950 ...	
		Key D			Clamping screw	
for grooving inserts		£			£	
GX 24-1	T15	12.26	**113**	M3,5x14	3.72	**160**
GX 24-2	T15	12.26	**113**	M3,5x14	3.72	**160**
GX 24-3	T15	12.26	**113**	M3,5x14	3.72	**160**
GX 24-4	T15	12.26	**113**	M3,5x14	3.72	**160**

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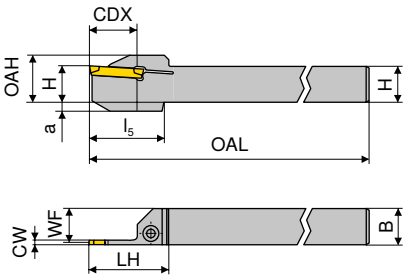
MonoClamp – Radial Monoholder GX 24



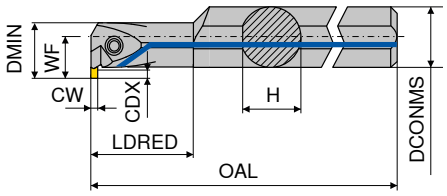
Illustrations show right-hand versions

Designation	H mm	B mm	CW mm	WF mm	OAH mm	OAL mm	LH mm	l_5 mm	CDX mm	a mm	for grooving inserts	Left-hand 2C/71 Article no. 70 863 ... £		Right-hand 2C/71 Article no. 70 862 ... £	
E16 R/L 0021-1616K-GX24-1	16	16	2,00 - 2,75	15.20	21	125	35	32	21	4	GX 24-1	95.09	**160**	95.09	**160**
E16 R/L 0021-1616K-GX24-2	16	16	2,76 - 3,75	15.00	21	125	35	32	21	4	GX 24-2	95.09	**016**	95.09	**016**
E20 R/L 0021-2020K-GX24-1	20	20	2,00 - 2,75	19.20	25	125	35		21		GX 24-1	109.45	**200**	109.45	**200**
E20 R/L 0021-2020K-GX24-2	20	20	2,76 - 3,75	19.00	25	125	35		21		GX 24-2	109.45	**020**	109.45	**020**
E20 R/L 0021-2020K-GX24-3	20	20	3,76 - 5,00	18.53	25	125	35		21		GX 24-3	109.45	**120**	109.45	**120**
E25 R/L 0021-2525M-GX24-2	25	25	2,76 - 3,75	24.00	30	150	35		21		GX 24-2	117.00	**025**	117.00	**025**
E25 R/L 0021-2525M-GX24-3	25	25	3,76 - 5,00	23.53	30	150	35		21		GX 24-3	117.00	**125**	117.00	**125**
E25 R/L 0021-2525M-GX24-4	25	25	5,01 - 6,50	22.90	30	150	35		21		GX 24-4	117.00	**225**	117.00	**225**
E32 R/L 0021-3225P-GX24-2	32	25	2,76 - 3,75	24.00	37	170	35		21		GX 24-2	125.00	**032**	125.00	**032**
E32 R/L 0021-3225P-GX24-3	32	25	3,76 - 5,00	23.53	37	170	35		21		GX 24-3	125.00	**132**	125.00	**132**
E32 R/L 0021-3225P-GX24-4	32	25	5,01 - 6,50	22.90	37	170	35		21		GX 24-4	125.00	**232**	125.00	**232**

Spare parts for grooving inserts	Y7 Key D Article no. 80 950 ...	£		2A/28 Clamping screw Article no. 70 950 ...	£	
GX 24-1	T20	13.11	**114**	M4x18	4.33	**204**
GX 24-2	T20	13.11	**114**	M4x18	4.33	**204**
GX 24-3	T20	13.11	**114**	M4x18	4.33	**204**
GX 24-4	T20	13.11	**114**	M4x18	4.33	**204**

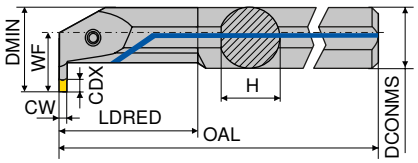
→ 46–52

MonoClamp – Radial Mono-boring bars GX 24



Designation	H	DCONMS	DMIN	CW	CDX	WF	OAL	LDRED	for grooving inserts	Left-hand 2C/71 Article no. 70 895 ...		Right-hand 2C/71 Article no. 70 894 ...	
	mm	mm	mm	mm	mm	mm	mm	mm		£		£	
I32 R/L 90-2.0D-GX24-2	31.0	32	42	2,76 - 3,75	11	27.5	250	64	GX 24-2	176.91	**132**	176.91	**132**
I32 R/L 90-2.0D-GX24-3	31.0	32	42	3,76 - 5,00	11	27.5	250	64	GX 24-3	176.91	**232**	176.91	**232**
I40 R/L 90-2.0D-GX24-3	38.5	40	53	3,76 - 5,00	12	32.5	300	80	GX 24-3	219.82	**240**	219.82	**240**

MonoClamp – Radial Mono-boring bars GX 24



Designation	H	DCONMS	DMIN	CW	CDX	WF	OAL	LDRED	for grooving inserts	Left-hand 2C/71 Article no. 70 895 ...		Right-hand 2C/71 Article no. 70 894 ...	
	mm	mm	mm	mm	mm	mm	mm	mm		£		£	
I32 R/L 90-2.0D-GX24-4	31.0	32	47	5,01 - 6,50	17.5	30.4	250	64	GX 24-4	176.91	**332**	176.91	**332**
I40 R/L 90-2.0D-GX24-4	38.5	40	57	5,01 - 6,50	17.5	34.4	300	80	GX 24-4	219.82	**340**	219.82	**340**

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Spare parts for grooving inserts	Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...	
	£		£	
GX 24-2	13.11	**114**	5.20	**404**
GX 24-3	13.11	**114**	5.20	**404**
GX 24-4	13.11	**114**	5.20	**404**

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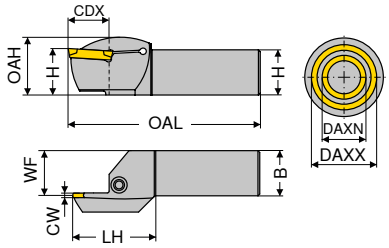
MonoClamp – Axial Monoholder GX24



Illustrations show right-hand versions

Designation	H	B	CW	WF	DAXN	DAXX	OAH	OAL	LH	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 904 ... £		Right-hand 2C/71 Article no. 70 903 ... £	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm					
E25 R/L 0012-2525X-GX24-2	25	25	3	24.7	40	45	32	115	45	12	GX 24-2	119.18	**200**	119.18	**200**
E25 R/L 0012-2525X-GX24-2	25	25	3	24.7	45	50	32	115	45	12	GX 24-2	119.18	**202**	119.18	**202**
E25 R/L 0016-2525X-GX24-2	25	25	3	24.7	50	60	32	115	45	16	GX 24-2	119.18	**204**	119.18	**204**
E25 R/L 0019-2525X-GX24-2	25	25	3	24.7	60	75	32	115	45	19	GX 24-2	119.18	**206**	119.18	**206**
E25 R/L 0019-2525X-GX24-2	25	25	3	24.7	75	100	32	115	45	19	GX 24-2	119.18	**208**	119.18	**208**
E25 R/L 0022-2525X-GX24-2	25	25	3	24.7	100	130	32	115	45	22	GX 24-2	119.18	**210**	119.18	**210**
E25 R/L 0022-2525X-GX24-2	25	25	3	24.7	130	180	32	115	45	22	GX 24-2	119.18	**212**	119.18	**212**
E25 R/L 0022-2525X-GX24-2	25	25	3	24.7	180	300	32	115	45	22	GX 24-2	119.18	**214**	119.18	**214**
E25 R/L 0012-2525X-GX24-3	25	25	4+5	24.2	40	45	32	115	45	12	GX 24-3	119.18	**230**	119.18	**230**
E25 R/L 0012-2525X-GX24-3	25	25	4+5	24.2	45	50	32	115	45	12	GX 24-3	119.18	**232**	119.18	**232**
E25 R/L 0020-2525X-GX24-3	25	25	4+5	24.2	50	60	32	115	45	20	GX 24-3	119.18	**234**	119.18	**234**
E25 R/L 0020-2525X-GX24-3	25	25	4+5	24.2	60	75	32	115	45	20	GX 24-3	119.18	**236**	119.18	**236**
E25 R/L 0022-2525X-GX24-3	25	25	4+5	24.2	75	100	32	115	45	22	GX 24-3	119.18	**238**	119.18	**238**
E25 R/L 0022-2525X-GX24-3	25	25	4+5	24.2	100	150	32	115	45	22	GX 24-3	119.18	**240**	119.18	**240**
E25 R/L 0022-2525X-GX24-3	25	25	4+5	24.2	150	300	32	115	45	22	GX 24-3	119.18	**242**	119.18	**242**
E25 R/L 0020-2525X-GX24-4	25	25	6	23.2	40	50	32	115	45	20	GX 24-4	119.18	**260**	119.18	**260**
E25 R/L 0022-2525X-GX24-4	25	25	6	23.2	50	70	32	115	45	22	GX 24-4	119.18	**262**	119.18	**262**
E25 R/L 0025-2525X-GX24-4	25	25	6	23.2	70	100	32	115	45	25	GX 24-4	119.18	**264**	119.18	**264**
E25 R/L 0025-2525X-GX24-4	25	25	6	23.2	100	150	32	115	45	25	GX 24-4	119.18	**266**	119.18	**266**
E25 R/L 0025-2525X-GX24-4	25	25	6	23.2	150	300	32	115	45	25	GX 24-4	119.18	**268**	119.18	**268**

Key D

Clamping screw

Spare parts for grooving inserts	Y7 Article no. 80 950 ...	£		2A/28 Article no. 70 950 ...	£	
GX 24-2	T15 - IP	15.77	**128**	M5x18	8.67	**865**
GX 24-3	T15 - IP	15.77	**128**	M5x18	8.67	**865**
GX 24-4	T15 - IP	15.77	**128**	M5x18	8.67	**865**

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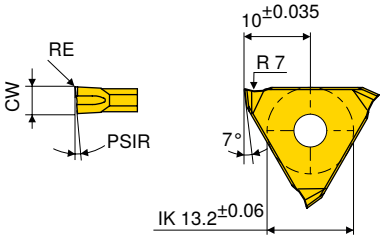
TX Insert for parting

- Cutting depth 5.0 mm
- Cutting width 1.99–2.79 mm



CWX500

CWX500

Illustrations show right-hand versions

Designation	CW -0,05	RE	PSIR	for tool holder	Left-hand Y6 Article no. 73 302 ... £		Right-hand Y6 Article no. 73 301 ... £	
	mm	mm						
TX R/L 0518.00.1	1.99	0.1	5°	R/L 207 .. . / 780 .. . 1	46.09	**204**	44.83	**204**
TX R/L 0521.00.2	2.29	0.1	5°	R/L 207 .. . / 780 .. . 2	44.36	**206**	46.29	**206**
TX R/L 0526.00.2	2.79	0.1	5°	R/L 207 .. . / 780 .. . 2	44.36	**208**	46.29	**208**

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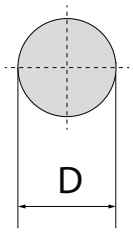
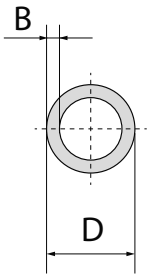
Grooving depth

Full material



max. 10 mm

Pipe



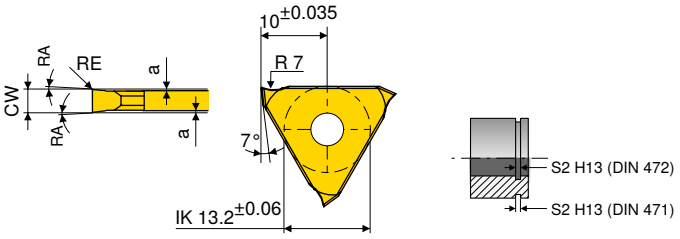
D ≥ 50 mm: Wall thickness B = approx. 5 mm
D ≤ 50 mm: Wall thickness B = approx. 4 mm

Internal machining	*External machining*
	→ 66–70

11

TX insert for circlip grooves

▲ For circlip grooves according to DIN 471 / 472



CWX500

Designation	s_2 mm	CW $_{-0,05}$ mm	RE mm	RA	a $_{+/-0,02}$ mm	for tool holder	Neutral Y6 Article no. 73 300 ... £	
TX N 0050.00.1	0.50	0.57	0.1	1	0.07	R/L .. .1	30.63	**204**
TX N 0060.00.1	0.60	0.67	0.1	1	0.07	R/L .. .1	30.63	**206**
TX N 0070.00.1	0.70	0.77	0.1	1	0.08	R/L .. .1	30.63	**208**
TX N 0080.00.1	0.80	0.87	0.1	1	0.08	R/L .. .1	30.63	**210**
TX N 0090.00.1	0.90	0.97	0.1	1	0.08	R/L .. .1	30.63	**212**
TX N 0100.00.1	1.00	1.07	0.1	1	0.09	R/L .. .1	30.63	**214**
TX N 0110.00.1	1.10	1.24	0.1	3	0.15	R/L .. .1	30.63	**216**
TX N 0130.00.1	1.30	1.44	0.1	3	0.15	R/L .. .1	30.63	**218**
TX N 0160.00.1	1.60	1.74	0.1	3	0.20	R/L .. .1	30.63	**220**
TX N 0185.00.1	1.85	1.99	0.1	3	0.20	R/L .. .1	30.63	**222**
TX N 0215.00.2	2.15	2.29	0.1	3	0.20	R/L .. .2	30.63	**224**
TX N 0265.00.2	2.65	2.79	0.1	3	0.20	R/L .. .2	30.63	**226**
TX N 0315.00.3	3.15	3.29	0.1	3	0.20	R/L .. .3	34.94	**228**
TX N 0415.00.4	4.15	4.29	0.1	3	0.20	R/L .. .4	35.13	**230**
TX N 0515.00.4	5.15	5.29	0.1	3	0.20	R/L .. .4	36.25	**232**

→ v_c Page 102

Internal machining

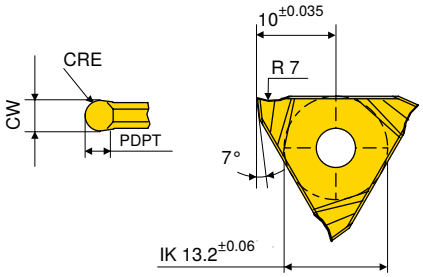
→ 70

External machining

→ 66-69

Radial TX insert for corner recessing

▲ Full radius for cutting width 0.5–5.0 mm



CWX500

Neutral

Y6

Designation	CRE	CW +/-0,05	PDPT	for tool holder	Article no. 73 304 ... £	
	mm	mm	mm			
TX N 0002.05.1	0.25	0.5	0.20	R/L .. .1	44.55	**212**
TX N 0005.10.1	0.50	1.0	0.35	R/L .. .1	44.55	**214**
TX N 0006.12.1	0.60	1.2	0.40	R/L .. .1	44.55	**216**
TX N 0008.16.1	0.80	1.6	0.55	R/L .. .1	44.55	**218**
TX N 0010.20.2	1.00	2.0	0.70	R/L .. .2	46.49	**204**
TX N 0012.25.2	1.25	2.5	0.85	R/L .. .2	51.53	**220**
TX N 0015.30.3	1.50	3.0	1.00	R/L .. .3	49.15	**206**
TX N 0020.40.4	2.00	4.0	1.20	R/L .. .4	48.81	**208**
TX N 0025.50.4	2.50	5.0	1.50	R/L .. .4	49.63	**210**

→ v_c Page 102

Internal machining

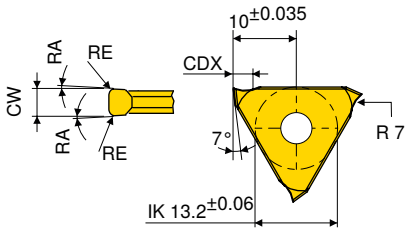
→ 70

External machining

→ 66–69

TX insert for fine and copy turning

CWX500



Designation	CW +0,03 mm	RE mm	RA	for tool holder	Neutral Y6 Article no. 73 303 ... £	
TX N 0150.02.1	1.5	0.2	3	R/L 207 .. . / 738 .. . / 660 .. . 1	38.23	**204**
TX N 0200.02.1	2.0	0.2	3	R/L 207 .. . / 738 .. . / 660 .. . 1	38.23	**206**
TX N 0200.04.1	2.0	0.4	3	R/L 207 .. . / 738 .. . / 660 .. . 1	39.26	**208**
TX N 0300.06.2	3.0	0.6	3	R/L 207 .. . / 738 .. . / 660 .. . 2	40.31	**212**
TX N 0300.08.2	3.0	0.8	3	R/L 207 .. . / 738 .. . / 660 .. . 2	40.31	**214**
TX N 0300.02.2	3.0	0.2	3	R/L 207 .. . / 738 .. . / 660 .. . 2	39.26	**210**
TX N 0400.02.3	4.0	0.2	3	R/L 207 .. . / 738 .. . / 660 .. . 3	40.66	**216**
TX N 0400.12.3	4.0	1.2	3	R/L 207 .. . / 738 .. . / 660 .. . 3	40.66	**220**
TX N 0400.08.3	4.0	0.8	3	R/L 207 .. . / 738 .. . / 660 .. . 3	40.66	**218**

→ v_c Page 102

Internal machining

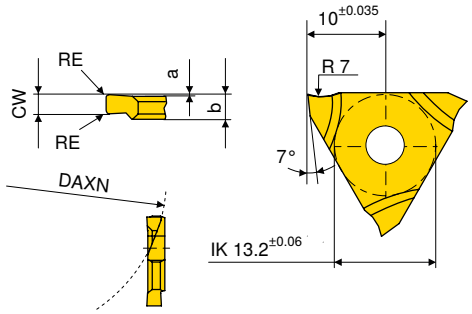
→ 70

External machining

→ 66-68

TX insert for axial grooving

- Up to cutting depth 3.5 mm
- Cutting width 1.5–5.0 mm
- Groove-Ø external $D_a \geq 20$ mm



CWX500

CWX500

Illustrations show right-hand versions

Designation	CW	b	a	DAXN	RE	for tool holder	Left-hand		Right-hand	
							Y6		Y6	
							Article no. 73 306 ...		Article no. 73 305 ...	
	mm	mm	mm	mm	mm		£		£	
TX R/L 2015.2.2	1.5	2.7	0.2	20	0.2	R/L 207 .. . 2	43.83	**204**	43.83	**204**
TX R/L 3020.2.2	2.0	2.7	0.2	30	0.2	R/L 207 .. . 2	43.83	**206**	43.83	**206**
TX R/L 3030.2.3	3.0	3.7	0.2	30	0.2	R/L 207 .. . 3	44.33	**208**	44.33	**208**
TX R/L 3040.2.4	4.0	4.3	0.2	30	0.2	R/L 207 .. . 4	44.83	**210**	44.83	**210**
TX R/L 3050.2.4	5.0	5.3	0.2	30	0.2	R/L 207 .. . 4	46.88	**212**	46.88	**212**

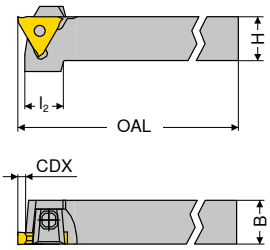
→ v_c Page 102

Internal machining	*External machining*
	→ 66

11

MonoClamp – Radial/Axial TX Grooving Holder 0°, 6 mm cutting depth

- For radial and axial grooving
- Cutting width 0.5–6.3 mm



Illustrations show right-hand versions

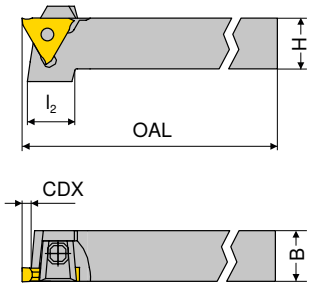
Designation	H	$B_{+/-0,1}$	OAL	l_2	CDX	for grooving inserts	Left-hand Y6 Article no. 73 501 ... £		Right-hand Y6 Article no. 73 500 ... £	
	mm	mm	mm	mm	mm					
R/L 207.1212.1	12	12	100	24	4	TX R/N/L ...1	195.90	**112**	193.78	**112**
R/L 207.1616.1	16	16	125	22	4	TX R/N/L ...1	174.80	**116**	172.95	**116**
R/L 207.2020.1	20	20	125	21	4	TX R/N/L ...1	135.55	**120**	134.12	**120**
R/L 207.2525.1	25	25	150		4	TX R/N/L ...1	142.59	**125**	141.14	**125**
R/L 207.3232.1	32	32	170		4	TX R/N/L ...1	165.72	**132**	164.05	**132**
R/L 207.1212.2	12	12	100	24	6	TX R/N/L ...2	195.90	**212**	193.78	**212**
R/L 207.1616.2	16	16	125	22	6	TX R/N/L ...2	174.80	**216**	172.95	**216**
R/L 207.2020.2	20	20	125	21	6	TX R/N/L ...2	135.55	**220**	134.12	**220**
R/L 207.2525.2	25	25	150		6	TX R/N/L ...2	142.59	**225**	141.14	**225**
R/L 207.3232.2	32	32	170		6	TX R/N/L ...2	165.72	**232**	164.05	**232**
R/L 207.1212.3	12	12	100	24	6	TX R/N/L ...3	195.90	**312**	193.78	**312**
R/L 207.1616.3	16	16	125	22	6	TX R/N/L ...3	174.80	**316**	172.95	**316**
R/L 207.2020.3	20	20	125	21	6	TX R/N/L ...3	135.55	**320**	134.12	**320**
R/L 207.2525.3	25	25	150		6	TX R/N/L ...3	142.59	**325**	141.14	**325**
R/L 207.3232.3	32	32	170		6	TX R/N/L ...3	165.72	**332**	164.05	**332**
R/L 207.1616.4	16	16	125	22	6	TX R/N/L ...4	174.80	**416**	174.80	**416**
R/L 207.2020.4	20	20	125	21	6	TX R/N/L ...4	135.55	**420**	135.55	**420**
R/L 207.2525.4	25	25	150		6	TX R/N/L ...4	142.59	**425**	142.59	**425**
R/L 207.3232.4	32	32	170		6	TX R/N/L ...4	165.72	**432**	165.72	**432**

Spare parts for grooving inserts		2A/28 Key I Article no. 70 950 ... £		Y6 right hand Article no. 73 950 ... £		Y6 left hand Article no. 73 950 ... £			Y6 Clamping screw Article no. 73 950 ... £			Y6 Guide pin Article no. 73 950 ... £	
TX R/N/L ...1	SW03	2.23	**176**	39.40	**020**			M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...1	SW03	2.23	**176**			39.40	**024**	M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...2	SW03	2.23	**176**			39.40	**024**	M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...2	SW03	2.23	**176**	39.40	**020**			M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...3	SW03	2.23	**176**			39.40	**024**	M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...3	SW03	2.23	**176**	39.40	**020**			M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...4	SW03	2.23	**176**			43.77	**026**	M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...4	SW03	2.23	**176**	43.77	**022**			M6x20	8.29	**028**	Ø 4x18	1.00	**030**

→ 61–65

MonoClamp – Radial TX Grooving holder 0°, 8 mm cutting depth

- For radial parting and grooving
- Cutting width 1.9–6.3 mm



Illustrations show right-hand versions

Designation	H	$B_{+/-0,1}$	OAL	l_2	CDX	for grooving inserts	Left-hand Y6 Article no. 73 503 ... £		Right-hand Y6 Article no. 73 502 ... £	
	mm	mm	mm	mm	mm					
R/L 780.2020.2	20	20	125	24	8	TX R/N/L ...2	144.45	**120**	144.45	**120**
R/L 780.2525.2	25	25	150		8	TX R/N/L ...2	152.44	**125**	152.44	**125**
R/L 780.3232.2	32	32	170		8	TX R/N/L ...2	181.97	**132**	181.97	**132**
R/L 780.2020.3	20	20	125	24	8	TX R/N/L ...3	144.45	**220**	144.45	**220**
R/L 780.2525.3	25	25	150		8	TX R/N/L ...3	152.44	**225**	152.44	**225**
R/L 780.3232.3	32	32	170		8	TX R/N/L ...3	181.97	**232**	181.97	**232**
R/L 780.2020.4	20	20	125	24	8	TX R/N/L ...4	144.45	**320**	144.45	**320**
R/L 780.2525.4	25	25	150		8	TX R/N/L ...4	152.44	**325**	152.44	**325**
R/L 780.3232.4	32	32	170		8	TX R/N/L ...4	181.97	**332**	181.97	**332**

Key I

right hand

left hand

Clamping screw

Guide pin

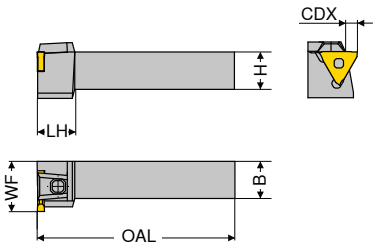
Spare parts for grooving inserts		2A/28 Article no. 70 950 ... £		Y6 Article no. 73 950 ... £		Y6 Article no. 73 950 ... £		Y6 Article no. 73 950 ... £			Y6 Article no. 73 950 ... £	
TX R/N/L ...2	SW03	2.23	**176**	39.40	**020**			M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...2	SW03	2.23	**176**			39.40	**024**	M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...3	SW03	2.23	**176**	39.40	**020**			M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...3	SW03	2.23	**176**			39.40	**024**	M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...4	SW03	2.23	**176**			43.77	**026**	M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...4	SW03	2.23	**176**	43.77	**022**			M6x20	8.29	**028**	Ø 4x18	1.00	**030**

→ 61–63

11

MonoClamp – Radial TX Grooving holder 90°, 6 mm cutting depth

- For radial grooving
- Cutting width 0.5–6.3 mm



Illustrations show right-hand versions

Designation	H	B +/-0,1	OAL	LH	WF +/-0,07	CDX	for grooving inserts	Left-hand Y6 Article no. 73 505 ... £		Right-hand Y6 Article no. 73 504 ... £	
	mm	mm	mm	mm	mm	mm					
R/L 738.2020.1	20	20	150	20	27	4	TX R/N/L ...1	168.70	**120**	168.70	**120**
R/L 738.2525.1	25	25	150		32	4	TX R/N/L ...1	162.43	**125**	174.80	**125**
R/L 738.2020.2	20	20	150	20	27	6	TX R/N/L ...2	168.70	**220**	168.70	**220**
R/L 738.2525.2	25	25	150		32	6	TX R/N/L ...2	174.80	**225**	174.80	**225**
R/L 738.2020.3	20	20	150	20	27	6	TX R/N/L ...3	171.66	**320**	168.70	**320**
R/L 738.2525.3	25	25	150		32	6	TX R/N/L ...3	174.80	**325**	174.80	**325**
R/L 738.2020.4	20	20	150	20	27	6	TX R/N/L ...4	168.70	**420**	164.21	**420**
R/L 738.2525.4	25	25	150		32	6	TX R/N/L ...4	174.80	**425**	174.80	**425**

Key I

right hand

left hand

Clamping screw

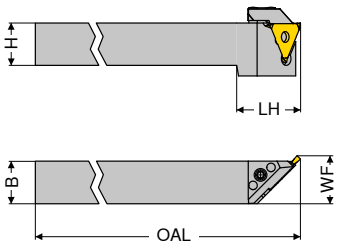
Guide pin

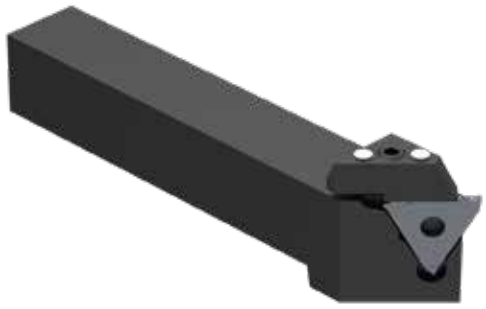
Spare parts for grooving inserts		2A/28 Article no. 70 950 ... £		Y6 Article no. 73 950 ... £		Y6 Article no. 73 950 ... £			Y6 Article no. 73 950 ... £			Y6 Article no. 73 950 ... £	
TX R/N/L ...1	SW03	2.23	**176**	39.40	**020**			M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...1	SW03	2.23	**176**			39.40	**024**	M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...2	SW03	2.23	**176**			39.40	**024**	M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...2	SW03	2.23	**176**	39.40	**020**			M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...3	SW03	2.23	**176**			39.40	**024**	M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...3	SW03	2.23	**176**	39.40	**020**			M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...4	SW03	2.23	**176**			43.77	**026**	M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...4	SW03	2.23	**176**	43.77	**022**			M6x20	8.29	**028**	Ø 4x18	1.00	**030**

→ 62–64

MonoClamp – Tool holder TX 45°

- For recessing
- Cutting width 1.9–6.3 mm





Illustrations show right-hand versions

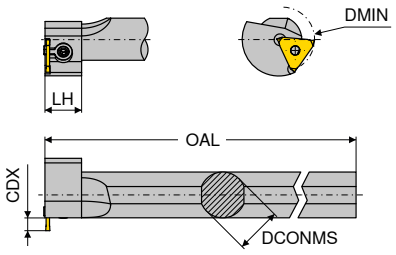
Designation	H	B +/-0,1	OAL	LH	for grooving inserts	Left-hand Y6 Article no. 73 507 ... £		Right-hand Y6 Article no. 73 506 ... £	
	mm	mm	mm	mm					
R/L 618.2020.2	20	20	125	30	TX R/N/L ...2	195.90	**120**	195.90	**120**
R/L 618.2525.2	25	25	150		TX R/N/L ...2	204.31	**125**	204.31	**125**
R/L 618.3232.2	32	32	170		TX R/N/L ...2	229.51	**132**	229.51	**132**
R/L 618.2020.3	20	20	125	30	TX R/N/L ...3	195.90	**220**	182.02	**220**
R/L 618.2525.3	25	25	150		TX R/N/L ...3	204.31	**225**	204.31	**225**
R/L 618.3232.3	32	32	170		TX R/N/L ...3	229.51	**232**	229.51	**232**
R/L 618.2020.4	20	20	125	30	TX R/N/L ...4	195.90	**320**	195.90	**320**
R/L 618.2525.4	25	25	150		TX R/N/L ...4	204.31	**325**	204.31	**325**
R/L 618.3232.4	32	32	170		TX R/N/L ...4	229.51	**332**	229.51	**332**

Spare parts for grooving inserts		2A/28 Key I Article no. 70 950 ... £		Y6 right hand Article no. 73 950 ... £		Y6 left hand Article no. 73 950 ... £			Y6 Clamping screw Article no. 73 950 ... £			Y6 Guide pin Article no. 73 950 ... £	
TX R/N/L ...2	SW03	2.23	**176**	57.08	**001**			M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...2	SW03	2.23	**176**			57.08	**005**	M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...3	SW03	2.23	**176**	57.08	**001**			M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...3	SW03	2.23	**176**			57.08	**005**	M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...4	SW03	2.23	**176**			57.08	**007**	M6x20	8.29	**028**	Ø 4x18	1.00	**030**
TX R/N/L ...4	SW03	2.23	**176**	57.08	**002**			M6x20	8.29	**028**	Ø 4x18	1.00	**030**

→ 62+63

MonoClamp – Radial Boring bar TX

- For radial internal grooving
- Cutting width 0,5–6,3 mm



Illustrations show right-hand versions

Designation	DCONMS $_{g7}$	DMIN	OAL	LH	CDX	for grooving inserts	Left-hand Y6 Article no. 73 511 ...		Right-hand Y6 Article no. 73 510 ...	
	mm	mm	mm	mm	mm		£		£	
R/L 660.0025.1	25	46	170	20	2	TX R/N/L ...1	238.32	**125**	233.75	**125**
R/L 660.0032.1	32	46	200	20	2	TX R/N/L ...1	284.99	**132**	289.57	**132**
R/L 660.0040.1	40	46	250		2	TX R/N/L ...1	284.99	**140**	284.22	**140**
R/L 660.0025.2	25	46	170	20	2	TX R/N/L ...2	234.18	**225**	233.75	**225**
R/L 660.0032.2	32	46	200	20	2	TX R/N/L ...2	284.99	**232**	289.57	**232**
R/L 660.0040.2	40	46	250		2	TX R/N/L ...2	284.99	**240**	284.22	**240**
R/L 660.0025.3	25	46	170	20	2	TX R/N/L ...3	234.18	**325**	233.75	**325**
R/L 660.0032.3	32	46	200	20	2	TX R/N/L ...3	284.99	**332**	289.57	**332**
R/L 660.0040.3	40	46	250		2	TX R/N/L ...3	284.99	**340**	284.22	**340**
R/L 660.0025.4	25	46	170	20	2	TX R/N/L ...4	234.18	**425**	233.75	**425**
R/L 660.0032.4	32	46	200	20	2	TX R/N/L ...4	284.99	**432**	289.57	**432**
R/L 660.0040.4	40	46	250		2	TX R/N/L ...4	284.99	**440**	284.22	**440**

Bore-Ø$_{min.}$ in mm	46	50	60	80	100	for grooving insert
$T_{max.}$ (mm)	2	3	4	4,5	5	TX R/N/L ...1
	2	3	4	4,5	5	TX R/N/L ...2
	2	3	4	4,5	5	TX R/N/L ...3
	2	3	4	4,5	5	TX R/N/L ...4

Clamping element

Key I

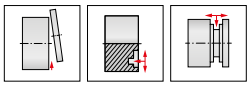
Clamping screw

Spare parts for grooving inserts	Y6 Article no. 73 950 ... Clamping element £		2A/28 Article no. 70 950 ... Key I £		Y6 Article no. 73 950 ... Clamping screw £	
TX R/N/L ...1	48.62	**011**	SW03	2.23 **176**	M6x30	8.29 **009**
TX R/N/L ...2	48.62	**011**	SW03	2.23 **176**	M6x30	8.29 **009**
TX R/N/L ...3	48.62	**011**	SW03	2.23 **176**	M6x30	8.29 **009**
TX R/N/L ...4	48.62	**011**	SW03	2.23 **176**	M6x30	8.29 **009**

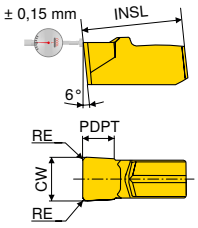
→ 62–64

Insert LX

- Grooving width 8 and 10 mm
- Axial grooving from Ø 500 mm onwards
- Internal grooving and turning, from Ø 200 mm onwards



F	M	R



-M2 CTCP325	-M2 CTCP335	-M2 CTP1340
-M2 HCR1325	-M2 HCR1335	-M2 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	INSL	CW -/+0,08	RE +/-0,1	PDPT	for tool holder	1A/15 Article no. 70 337 ...		1A/15 Article no. 70 337 ...		1A/15 Article no. 70 337 ...	
	mm	mm	mm	mm		£		£		£	
LXE 8.00N0.80-M2	19	8	0.8	5	E32 N ..-LX	17.08	**928**	17.08	**578**	17.08	**682**
LXE 10.00N0.80-M2	19	10	0.8	5	E32 N ..-LX	22.77	**932**	22.77	**582**	22.77	**678**
Steel						●		●		●	
Stainless steel						○		○		●	
Cast iron						●		●		●	
Non ferrous metals										○	
Heat resistant alloys										●	
hardened materials						○					

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→ Application recommendation on page 108

Internal machining

→ 73

External machining

→ 73

→ 74

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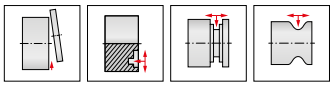
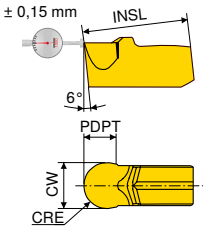
Radial Grooving Insert LX

- Grooving width 8 mm
- Axial grooving from Ø 500 mm
- Internal grooving and turning, from Ø 200 mm



F	M	R



-M3 CTCP325	-M3 CTCP335	-M3 CTP1340
-M3 HCR1325	-M3 HCR1335	-M3 CCN1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN

Designation	INSL	CW -/+0,08	CRE	PDPT	for tool holder	1A/15 Article no. 70 337 ...		1A/15 Article no. 70 337 ...		1A/15 Article no. 70 337 ...	
	mm	mm	mm	mm		£		£		£	
LXR 4.00N-M3	19	8	4	5	E32 N ..-LX	18.21	**908**	18.21	**518**	18.21	**618**

Steel	●	●	●
Stainless steel	○	○	●
Cast iron	●	●	●
Non ferrous metals			○
Heat resistant alloys			●
hardened materials	○		

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→ Application recommendation on page 108

Internal machining

→ 73

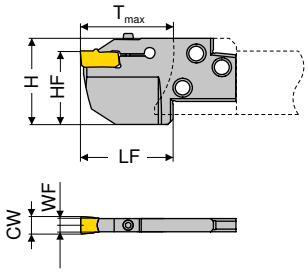
External machining

→ 73

→ 74

ModularClamp MSS – Axial and radial grooving module LX

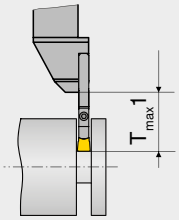
- Grooving width 8 and 10 mm
- Axial grooving from Ø 500 mm onwards
- Internal grooving and turning, from Ø 200 mm onwards



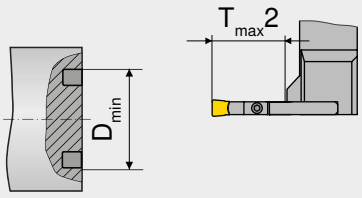
Neutral

Designation	CW	WF	LF	HF	H	T max. 1	T max. 2	T max. 3	for grooving inserts	2C/71 Article no. 70 835 ...	
	mm	mm	mm	mm	mm	mm	mm	mm		£	
E32 N 25-LX	8 / 10	3.4	27	32	44	25	19	14	LX ..	87.13	**032**
E32 N 32-LX	8 / 10	3.4	37	32	44	32	26	21	LX ..	87.13	**132**
E32 N 45-LX	8 / 10	3.4	47	32	44	45	39	34	LX ..	87.13	**232**

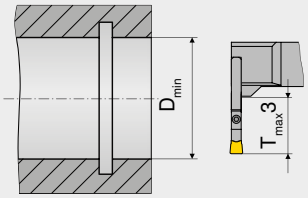
Radial grooving



Axial grooving D_{min} > 500 mm



Internal grooving D_{min} > 200 mm



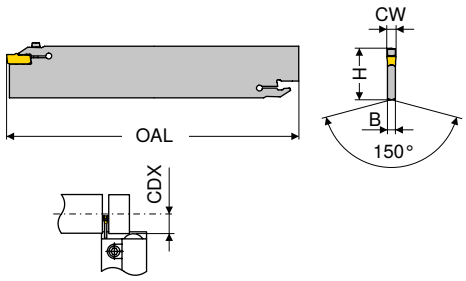
Spare parts		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £	
for grooving inserts					
LX ..	T20	13.11	**114**	M4x18	4.33 **204**

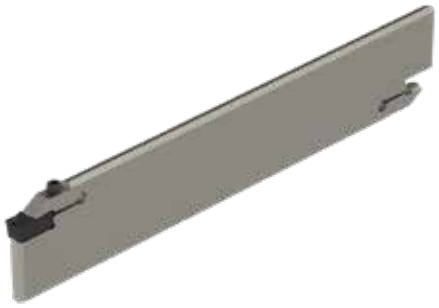
→ 71+72 → 93-95

11

MonoClamp – Blade LX

Scope of supply:
Blade incl. clamping screw and tightening wrench





Designation	H	B	OAL	CW	CDX	for grooving inserts	2A/25 Article no. 70 833 ... £	
	mm	mm	mm	mm	mm			
XLCEN 4608-LX	46	6.8	250	8/10	80	LX ..	228.45	**108**

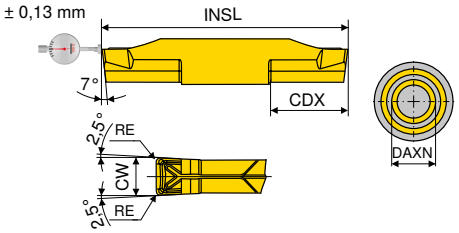
Spare parts		Y7 Key D Article no. 80 950 ... £			2A/28 Clamping screw Article no. 70 950 ... £	
for grooving inserts						
LX ..	T20	13.11	**114**	M4x18	4.33	**204**

→ 71+72 → 98+99 → **Chapter 16**

Grooving insert AX

- Very good chip control
- DAXN minimum groove diameter refers to the outside diameter

F	M	R



-F50 CTP1340

-F50 CCN1340

DRAGONSKIN

1C/72

Designation	IH	INSL mm	CW +/-0,02 mm	RE +/-0,05 mm	CDX mm	DAXN mm	for tool holder	Article no. 70 327 ... £	
AX 05 E3.00 N 0.30	N	24	3	0.3	5	10	E.. R/L.. -AX 05	24.99	**005**
AX 10 E3.00 N 0.30	N	34	3	0.3	10	20	E.. R/L.. -AX 10	25.92	**010**
AX 15 E3.00 N 0.30	N	44	3	0.3	15	30	E.. R/L.. -AX 15	27.25	**015**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	

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→ Application recommendation on page 109

Internal machining *External machining*

→ 76 → 77 → 78

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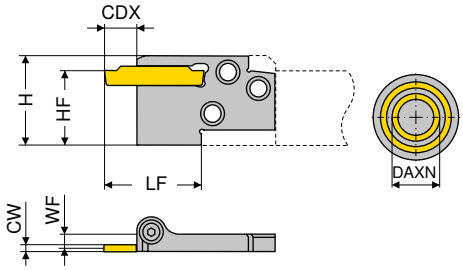
ModularClamp MSS – Axial grooving module AX

▲ For axial grooving and turning



Illustrations show right-hand versions

Designation	HF	CW	WF	LF	H	DAXN	CDX	for grooving inserts	Left-hand 2C/71 Article no. 70 827 ... £		Right-hand 2C/71 Article no. 70 828 ... £	
	mm	mm	mm	mm	mm	mm	mm					
E16 R/L 05-AX 05	16	3	2.5	24.0	20.5	10	5	AX05	85.79	**016**	85.79	**016**
E20 R/L 05-AX 05	20	3	3.1	28.0	25.0	10	5	AX05	85.79	**020**	85.79	**020**
E25 R/L 05-AX 05	25	3	4.6	27.5	30.0	10	5	AX05	86.75	**025**	86.75	**025**
E20 R/L 10-AX 10	20	3	3.1	33.0	25.0	20	10	AX10	85.79	**120**	85.79	**120**
E25 R/L 10-AX 10	25	3	4.6	32.5	30.0	20	10	AX10	86.75	**125**	86.75	**125**
E20 R/L 15-AX 15	20	3	3.1	44.0	25.0	30	15	AX15	85.79	**220**	85.79	**220**
E25 R/L 15-AX 15	25	3	4.6	43.5	30.0	30	15	AX15	86.75	**225**	86.75	**225**

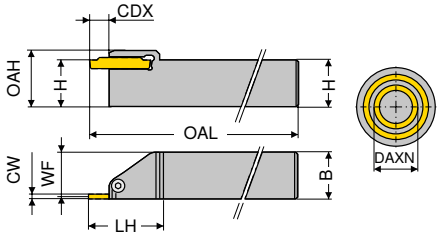
Key D

Clamping screw

Spare parts for Article no.		Y7 Article no. 80 950 ... £			2A/28 Article no. 70 950 ... £	
70 827 016 / 70 828 016	T15	12.26	**113**	M3,5x12,5	8.15	**441**
70 827 020 / 70 828 020	T15	12.26	**113**	M4x14	7.80	**403**
70 827 025 / 70 828 025	T20	13.11	**114**	M5x18	5.20	**404**
70 827 120 / 70 828 120	T15	12.26	**113**	M4x14	7.80	**403**
70 827 125 / 70 828 125	T20	13.11	**114**	M5x18	5.20	**404**
70 827 220 / 70 828 220	T15	12.26	**113**	M4x14	7.80	**403**
70 827 225 / 70 828 225	T20	13.11	**114**	M5x18	5.20	**404**

→ 75 → 93–95 → **Chapter 16**

MonoClamp – Axial AX Grooving Holder 0°, up to 15 mm groove depth



Illustrations show right-hand versions

Designation	H	B	OAL	LH	OAH	CDX	CW	WF	DAXN	for grooving inserts	Left-hand NEW 2C/71 Article no. 70 823 ...		Right-hand NEW 2C/71 Article no. 70 824 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		£		£	
E20 R/L 0005-2020-AX 05	20	20	140	28	25	5	3	18.7	10	AX05	120.09	**02000**	120.09	**02000**
E20 R/L 0010-2020-AX 10	20	20	140	38	25	10	3	18.7	20	AX10	120.09	**12000**	120.09	**12000**
E20 R/L 0015-2020-AX 15	20	20	140	49	25	15	3	18.7	30	AX15	120.09	**22000**	120.09	**22000**
E25 R/L 0005-2525-AX 05	25	25	160	28	30	5	3	23.7	10	AX05	128.64	**02500**	128.64	**02500**
E25 R/L 0010-2525-AX 10	25	25	160	38	30	10	3	23.7	20	AX10	128.64	**12500**	128.64	**12500**
E25 R/L 0015-2525-AX 15	25	25	160	49	30	15	3	23.7	30	AX15	128.64	**22500**	128.64	**22500**

Spare parts	Y7 Key D			2A/28 Clamping screw		
		Article no. 80 950 ...			Article no. 70 950 ...	
for Article no.		£			£	
70 824 02000 / 70 823 02000	T20	9.61	**106**	M5x18	5.20	**404**
70 824 12000 / 70 823 12000	T20	9.61	**106**	M5x18	5.20	**404**
70 824 22000 / 70 823 22000	T20	9.61	**106**	M5x18	5.20	**404**
70 824 02500 / 70 823 02500	T20	9.61	**106**	M5x18	5.20	**404**
70 824 12500 / 70 823 12500	T20	9.61	**106**	M5x18	5.20	**404**
70 824 22500 / 70 823 22500	T20	9.61	**106**	M5x18	5.20	**404**

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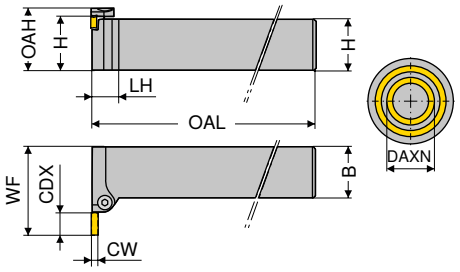
→ 75

MonoClamp – Axial AX Grooving Holder 90°, up to 15 mm groove depth



Illustrations show right-hand versions

Designation	H	B	WF	OAH	OAL	LH	CDX	DAXN	CW	Left-hand NEW 2C/71 Article no. 70 825 ... £		Right-hand NEW 2C/71 Article no. 70 826 ... £	
	mm	mm	mm	mm	mm	mm	mm	mm	mm				
E20 R/L 9005-2020-AX 05	20	20	28	25	110	12	5	10	3	120.09	**02000**	120.09	**02000**
E20 R/L 9010-2020-AX 10	20	20	38	25	110	13	10	20	3	120.09	**12000**	120.09	**12000**
E20 R/L 9015-2020-AX 15	20	20	49	25	110	13	15	30	3	120.09	**22000**	120.09	**22000**
E25 R/L 9005-2525-AX 05	25	25	33	30	140	12	5	10	3	128.64	**02500**	128.64	**02500**
E25 R/L 9010-2525-AX 10	25	25	43	30	110	13	10	20	3	128.64	**12500**	128.64	**12500**
E25 R/L 9015-2525-AX 15	25	25	49	30	140	13	15	30	3	128.64	**22500**	128.64	**22500**

Y7

Key D

2A/28

Clamping screw

Spare parts for Article no.		Article no. 80 950 ... £			Article no. 70 950 ... £	
70 825 22000 / 70 826 22000	T20	9.61	**106**	M5x18	5.20	**404**
70 825 12000 / 70 826 12000	T20	9.61	**106**	M5x18	5.20	**404**
70 825 02000 / 70 826 02000	T15	9.36	**105**	M4x14	7.80	**403**
70 825 22500 / 70 826 22500	T20	9.61	**106**	M5x18	5.20	**404**
70 825 12500 / 70 826 12500	T20	9.61	**106**	M5x18	5.20	**404**
70 825 02500 / 70 826 02500	T15	9.36	**105**	M4x14	7.80	**403**

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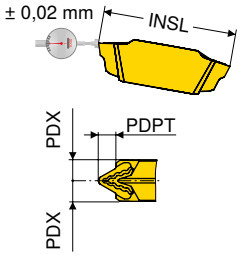
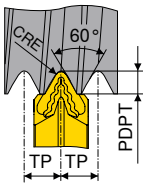
Threading inserts TC full profile – External thread 60°

F	M	R





CTPP520	CTPP535	-27P H216T
DPX1520	DPX1535	-ALP CWK26
DRAGONSKIN	DRAGONSKIN	

Designation	Size	TP	INSL	PDPT	PDX	CRE	for tool holder	1C/84 Article no. 70 357 ... £		1C/84 Article no. 70 357 ... £		1C/84 Article no. 70 357 ... £	
		mm	mm	mm	mm	mm							
TC 16-1 E 0.5 ISO	TC 16-1 ...	0.50	16	0.32	1.05	0.06	E.. R/L TC 16-1	19.82	**010**	19.82	**110**	16.00	**610**
TC 16-1 E 0.75 ISO	TC 16-1 ...	0.75	16	0.48	1.05	0.09	E.. R/L TC 16-1	19.82	**012**	19.82	**112**	16.00	**612**
TC 16-1 E 1.0 ISO	TC 16-1 ...	1.00	16	0.64	1.05	0.12	E.. R/L TC 16-1	19.82	**014**	19.82	**114**	16.00	**614**
TC 16-1 E 1.25 ISO	TC 16-1 ...	1.25	16	0.80	1.05	0.15	E.. R/L TC 16-1	19.82	**016**	19.82	**116**	16.00	**616**
TC 16-1 E 1.5 ISO	TC 16-1 ...	1.50	16	0.95	1.05	0.18	E.. R/L TC 16-1	19.82	**018**	19.82	**118**	16.00	**618**
TC 16-2 E 1.75 ISO	TC 16-2 ...	1.75	16	1.10	2.15	0.22	E.. R/L/N TC 16-2	19.82	**030**	19.82	**130**	16.00	**630**
TC 16-2 E 2.0 ISO	TC 16-2 ...	2.00	16	1.26	2.15	0.25	E.. R/L/N TC 16-2	19.82	**032**	19.82	**132**	16.00	**632**
TC 16-2 E 2.5 ISO	TC 16-2 ...	2.50	16	1.58	2.15	0.32	E.. R/L/N TC 16-2	19.82	**034**	19.82	**134**	16.00	**634**
TC 16-2 E 3.0 ISO	TC 16-2 ...	3.00	16	1.89	2.15	0.38	E.. R/L/N TC 16-2	19.82	**036**	19.82	**136**	16.00	**636**
TC 16-3 E 3.5 ISO	TC 16-3 ...	3.50	16	2.21	3.10	0.44	E25 N TC 16-3	19.82	**050**	19.82	**150**		
TC 16-3 E 4.0 ISO	TC 16-3 ...	4.00	16	2.53	3.10	0.50	E25 N TC 16-3	19.82	**052**	19.82	**152**		
TC 16-3 E 5.0 ISO	TC 16-3 ...	5.00	16	3.16	3.10	0.63	E25 N TC 16-3	19.82	**056**	19.82	**156**		

Steel	●	●	
Stainless steel	●	●	
Cast iron	●		●
Non ferrous metals	○	○	●
Heat resistant alloys	○	●	
hardened materials			

→ v_c Page 101
→ Application recommendation on page 110

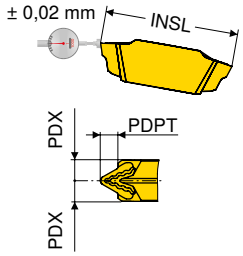
11

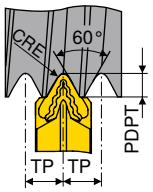
Internal machining *External machining*

→ 84 → 85

Threading inserts TC full profile – Internal thread 60°

F	M	R





CTPP535	CTPP520	-27P H216T
DPX1535	DPX1520	-ALP CWK26
DRAGONSKIN	DRAGONSKIN	

Designation	Size	TP	INSL	PDPT	PDX	CRE	for tool holder	1C/84 Article no. 70 358 ... £		1C/84 Article no. 70 358 ... £		1C/84 Article no. 70 358 ... £	
		mm	mm	mm	mm	mm							
TC 16-1 I 1.0 ISO	TC 16-1 ...	1.00	16	0.59	1.05	0.06	I32 R/L TC 16-1	19.82	**114**	19.82	**014**	16.00	**614**
TC 16-1 I 1.25 ISO	TC 16-1 ...	1.25	16	0.74	1.05	0.07	I32 R/L TC 16-1			19.82	**016**		
TC 16-1 I 1.5 ISO	TC 16-1 ...	1.50	16	0.89	1.05	0.09	I32 R/L TC 16-1	19.82	**118**	19.82	**018**	16.00	**618**
TC 16-2 I 1.75 ISO	TC 16-2 ...	1.75	16	1.02	2.15	0.11	I32 R/L TC 16-2			19.82	**030**		
TC 16-2 I 2.0 ISO	TC 16-2 ...	2.00	16	1.17	2.15	0.13	I32 R/L TC 16-2	19.82	**132**	19.82	**032**	16.00	**632**
TC 16-2 I 3.0 ISO	TC 16-2 ...	3.00	16	1.76	2.15	0.19	I32 R/L TC 16-2	19.82	**136**	19.82	**036**	16.00	**636**

Steel	●	●	
Stainless steel	●	●	
Cast iron		●	●
Non ferrous metals	○	○	●
Heat resistant alloys	●	○	
hardened materials			

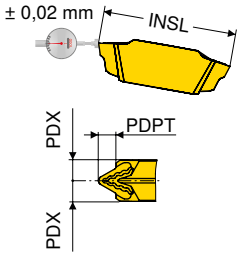
→ v_c Page 101
→ Application recommendation on page 110

Internal machining *External machining*

→ 86 → 87

Threading inserts TC partial profile 60°

F	M	R



CTPP535	CTPP520	-27P H216T
DPX1535	DPX1520	-ALP CWK26
DRAGONSKIN	DRAGONSKIN	

Designation	Size	TP	INSL	PDPT	PDX	CRE	for tool holder	1C/84 Article no. 70 355 ... £		1C/84 Article no. 70 355 ... £		1C/84 Article no. 70 355 ... £	
		mm	mm	mm	mm	mm							
TC 16-1 EI A 60	TC 16-1 ...	0,5 - 1,5	16	1.27	1.05	0.03	E/I.. R/L TC 16-1	19.82	**110**	19.82	**010**	16.00	**610**
TC 16-2 EI G 60	TC 16-2 ...	1,75 - 3,0	16	2.49	2.15	0.11	E/I.. R/L/N TC 16-2	19.82	**130**	19.82	**030**	16.00	**630**
TC 16-2 EI AG 60	TC 16-2 ...	0,5 - 3,0	16	2.57	2.15	0.03	E/I.. R/L/N TC 16-2	19.82	**132**	19.82	**032**	16.00	**632**
TC 16-3 EI N 60	TC 16-3 ...	3,5 - 5,0	16	4.11	3.10	0.22	E/I.. N TC 16-3	19.82	**150**	19.82	**050**	16.00	**650**

Steel	●	●			
Stainless steel	●	●			
Cast iron		●		●	
Non ferrous metals	○	○		●	
Heat resistant alloys	●	○			
hardened materials					

→ v_c Page 101
→ Application recommendation on page 110

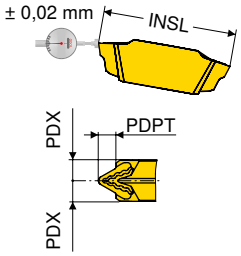
Internal machining *External machining*

→ 86 → 87 → 84 → 85

11

Threading inserts TC full profile 55°

F	M	R



CTPP520	CTPP535	-27P H216T
DPX1520	DPX1535	-ALP CWK26
DRAGONSKIN	DRAGONSKIN	

Designation	Size	TPI	INSL	PDPT	PDX	CRE	for tool holder	1C/84 Article no. 70 359 ... £		1C/84 Article no. 70 359 ... £		1C/84 Article no. 70 359 ... £	
		1/"	mm	mm	mm	mm							
TC 16-1 EI 28 W	TC 16-1 ...	28	16	0.60	1.05	0.12	E/I.. R/L TC 16-1	19.82	**010**	19.82	**110**		
TC 16-1 EI 20 W	TC 16-1 ...	20	16	0.84	1.05	0.17	E/I.. R/L TC 16-1	19.82	**016**				
TC 16-1 EI 19 W	TC 16-1 ...	19	16	0.88	1.05	0.17	E/I.. R/L TC 16-1	19.82	**018**	19.82	**118**	16.00	**618**
TC 16-1 EI 16 W	TC 16-1 ...	16	16	1.05	1.05	0.21	E/I.. R/L TC 16-1	19.82	**022**				
TC 16-2 EI 14 W	TC 16-2 ...	14	16	1.20	2.15	0.23	E/I.. R/L/N TC 16-2	19.82	**030**	19.82	**130**	16.00	**630**
TC 16-2 EI 12 W	TC 16-2 ...	12	16	1.40	2.15	0.27	E/I.. R/L/N TC 16-2			19.82	**132**		
TC 16-2 EI 11 W	TC 16-2 ...	11	16	1.53	2.15	0.30	E/I.. R/L/N TC 16-2	19.82	**034**	19.82	**134**	16.00	**634**

Steel	●	●	
Stainless steel	●	●	
Cast iron	●		●
Non ferrous metals	○	○	●
Heat resistant alloys	○	●	
hardened materials			

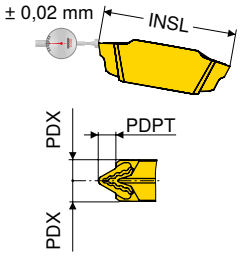
→ v_c Page 101
→ Application recommendation on page 110

Internal machining *External machining*

→ 86 → 87 → 84 → 85

Threading inserts TC partial profile 55°

F	M	R



Designation	Size	TPI	INSL	PDPT	PDX	CRE	for tool holder	1C/84 Article no. 70 356 ... £		1C/84 Article no. 70 356 ... £	
		1/"	mm	mm	mm	mm					
TC 16-1 EI A 55	TC 16-1 ...	28 - 16	16	1.39	1.05	0.12	E/I.. R/L TC 16-1	19.82	**110**	19.82	**010**
TC 16-2 EI AG 55	TC 16-2 ...	28 - 8	16	2.91	2.15	0.12	E/I.. R/L/N TC 16-2	19.82	**132**	19.82	**032**
TC 16-2 EI G 55	TC 16-2 ...	14 - 8	16	2.78	2.15	0.23	E/I.. R/L/N TC 16-2	19.82	**130**	19.82	**030**
TC 16-3 EI N 55	TC 16-3 ...	7 - 5	16	4.34	3.10	0.46	E/I.. N TC 16-3	19.82	**150**	19.82	**050**
Steel									●		●
Stainless steel									●		●
Cast iron											●
Non ferrous metals									○		○
Heat resistant alloys									●		○
hardened materials											

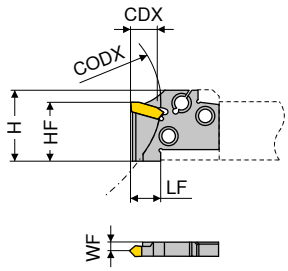
→ v_c Page 101
→ Application recommendation on page 110

Internal machining *External machining*

→ 86 → 87 → 84 → 85

11

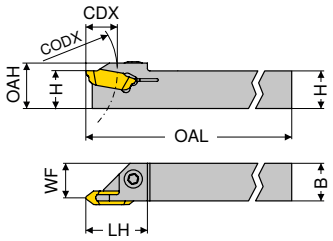
ModularClamp MSS – Threading module TC for external threads



Designation	TP	TPI	WF	HF	LF	H	CODX	CDX	for grooving inserts	Left-hand 2C/82 Article no. 70 872 ... £		Neutral 2C/82 Article no. 70 872 ... £		Right-hand 2C/82 Article no. 70 872 ... £	
	mm	1/"	mm	mm	mm	mm	mm	mm							
E20 R/L TC 16-1	0,5 - 1,5	28 - 16	3.45	13	20	24	60	8	TC 16-1 ...	78.07	**120**			78.07	**020**
E20 N TC 16-2	1,75 - 3,0	14 - 8	2.20	13	20	24		12	TC 16-2 ...			78.07	**220**		
E25 R/L TC 16-1	0,5 - 1,5	28 - 16	5.20	13	25	30	75	8	TC 16-1 ...	78.65	**125**			78.65	**025**
E25 R/L TC 16-2	1,75 - 3,0	14 - 8	4.10	13	25	30	75	10	TC 16-2 ...	78.65	**325**			78.65	**225**
E25 N TC 16-3	3,5 - 5,0	7 - 5	3.10	13	25	30		12	TC 16-3 ...			78.65	**425**		

→ 79–83 → 93–95 → **Chapter 16**

MonoClamp – Monobloc tool TC for external thread cutting



Illustrations show right-hand versions

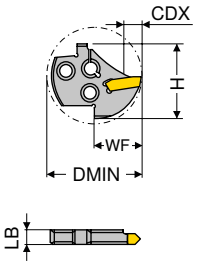
Designation	TP	TPI	H	B	OAL	LH	OAH	WF	CODX	for grooving inserts	Left-hand 2C/83 Article no. 70 883 ... £		Right-hand 2C/83 Article no. 70 882 ... £	
	mm	1/"	mm	mm	mm	mm	mm	mm	mm					
E12 R/L 00-1212 TC16	0,5 - 3	28 - 8	12	12	150	20	14.5	11	30	TC16-1/2..	115.82	**012**	115.82	**012**

Spare parts for grooving inserts		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £	
TC16-1/2..	T15	12.26	**113**	M4x11	9.40	**442**

→ 79–83

11

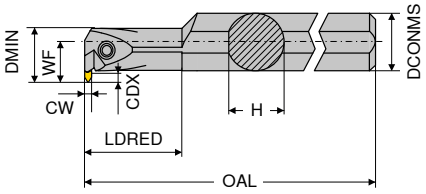
ModularClamp MSS – Threading module TC for internal threads



Designation	TP	TPI	LB	WF	H	DMIN	CDX	for grooving inserts	Left-hand 2C/82 Article no. 70 887 ... £		Neutral 2C/82 Article no. 70 887 ... £		Right-hand 2C/82 Article no. 70 887 ... £	
	mm	1/"	mm	mm	mm	mm	mm							
I32 R/L TC 16-1	0,5 - 1,5	28 - 16	6.2	5.2	32.2	40	7	TC 16-1 ...	79.40	**132**			79.40	**032**
I32 R/L TC 16-2	1,75 - 3,0	14 - 8	6.2	4.1	32.2	40	7	TC 16-2 ...	79.40	**332**			79.40	**232**
I32 N TC 16-3	3,5 - 5,0	7 - 5	6.2	3.1	32.2	40	7	TC 16-3 ...			79.40	**432**		

→ 79–83 → 96

MonoClamp – Monobloc Boring bar TC for internal thread cutting



Illustrations show right-hand versions

Designation	WF	DCONMS	H	OAL	LDRED	CDX	DMIN	for grooving inserts	Left-hand 2C/83 Article no. 70 857 ... £		Right-hand 2C/83 Article no. 70 856 ... £	
	mm	mm	mm	mm	mm	mm	mm					
I16 R/L 90-2D TC16	14.0	20	18	180	32	4	20	TC16-1/2..	126.09	**016**	126.09	**016**
I20 R/L 90-2D TC16	17.5	25	23	200	40	5	25	TC16-..	138.91	**020**	138.91	**020**
I25 R/L 90-2D TC16	22.0	32	30	250	50	6	32	TC16-..	157.18	**025**	157.18	**025**

Key D

Clamping screw

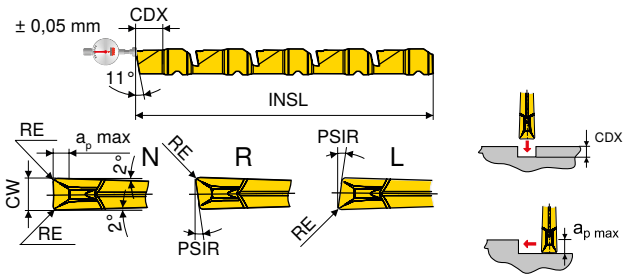
Spare parts for Article no.		Y7 Article no. 80 950 ... £		2A/28 Article no. 70 950 ... £	
70 857 016 / 70 856 016	T15	12.26	**113**	M4x14	7.80	**403**
70 857 020 / 70 856 020	T20	13.11	**114**	M5x18	5.20	**404**
70 857 025 / 70 856 025	T25	13.49	**115**	M6x20	3.85	**405**

→ 79–83

MaxiClick – Insert – Cutting depth 5 mm

▲ 5 cutting edges

F	M	R



-F2
CTP1340

-F2
CCN1340

DRAGONSKIN

1C/72

Designation	IH	CW mm	RE mm	PSIR	INSL mm	$a_{p\,max}$ mm	CDX mm	for tool holder	Article no. 70 338 ... £	
MC 05-5-1.00 L 07-F2	L	1.0	0.1	7°	59.2		5	MC 05 R/L	31.64	**250**
MC 05-5-1.50 L 07-F2	L	1.5	0.1	7°	59.2		5	MC 05 R/L	31.64	**260**
MC 05-5-1.00 N 0.10-F2	N	1.0	0.1		59.2	0.5	5	MC 05 R/L	31.64	**210**
MC 05-5-1.50 N 0.10-F2	N	1.5	0.1		59.2	1.0	5	MC 05 R/L	31.64	**220**
MC 05-5-1.00 R 07-F2	R	1.0	0.1	7°	59.2		5	MC 05 R/L	31.64	**230**
MC 05-5-1.50 R 07-F2	R	1.5	0.1	7°	59.2		5	MC 05 R/L	31.64	**240**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	

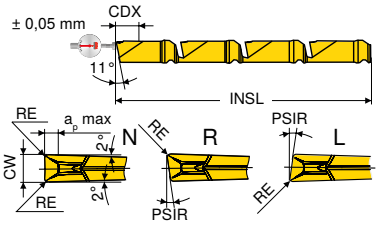
→ v_c Page 106

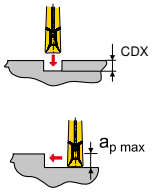
Internal machining	*External machining*							
		→ 91						

MaxiClick insert – Cutting depth 10 mm

▲ 4 cutting edges

F	M	R





-F2
CTP1340

-F2
CCN1340

DRAGONSKIN

1C/72

Designation	IH	CW mm	RE mm	PSIR	INSL mm	$a_{p\,max}$ mm	CDX mm	for tool holder	Article no. 70 339 ... £	
MC 10-4-1.50 L 07-F2	L	1.5	0.1	7°	59.2		10	MC 10 R/L	26.04	**270**
MC 10-4-2.00 L 07-F2	L	2.0	0.1	7°	59.2		10	MC 10 R/L	26.04	**280**
MC 10-4-2.50 L 07-F2	L	2.5	0.1	7°	59.2		10	MC 10 R/L	26.04	**290**
MC 10-4-1.50 N 0.10-F2	N	1.5	0.1		59.2	1.0	10	MC 10 R/L	26.04	**210**
MC 10-4-2.00 N 0.10-F2	N	2.0	0.1		59.2	1.5	10	MC 10 R/L	26.04	**220**
MC 10-4-2.50 N 0.10-F2	N	2.5	0.1		59.2	2.0	10	MC 10 R/L	26.04	**230**
MC 10-4-1.50 R 07-F2	R	1.5	0.1	7°	59.2		10	MC 10 R/L	26.04	**240**
MC 10-4-2.00 R 07-F2	R	2.0	0.1	7°	59.2		10	MC 10 R/L	26.04	**250**
MC 10-4-2.50 R 07-F2	R	2.5	0.1	7°	59.2		10	MC 10 R/L	26.04	**260**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	

→ v_c Page 106

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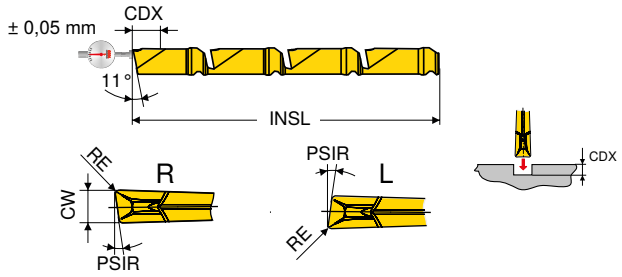
Internal machining *External machining*

→ 92

MaxiClick insert – Cutting depth 10 mm

▲ 4 cutting edges

F	M	R



-F3 CTP1340

-F3 CCN1340

DRAGONSKIN

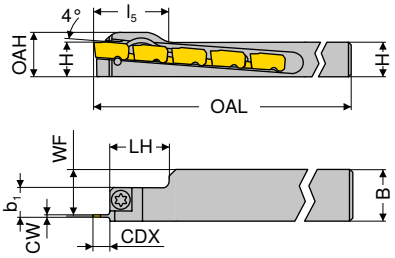
Designation	IH	CW mm	RE mm	PSIR	INSL mm	CDX mm	for tool holder	1C/72 Article no. 70 340 ... £	
MC 10-4-1.50 L 12-F3	L	1.5	0.1	12°	59.2	10	MC 10 R/L	26.04	**270**
MC 10-4-2.00 L 12-F3	L	2.0	0.1	12°	59.2	10	MC 10 R/L	26.04	**280**
MC 10-4-2.50 L 12-F3	L	2.5	0.1	12°	59.2	10	MC 10 R/L	26.04	**290**
MC 10-4-1.50 R 12-F3	R	1.5	0.1	12°	59.2	10	MC 10 R/L	26.04	**240**
MC 10-4-2.00 R 12-F3	R	2.0	0.1	12°	59.2	10	MC 10 R/L	26.04	**250**
MC 10-4-2.50 R 12-F3	R	2.5	0.1	12°	59.2	10	MC 10 R/L	26.04	**260**

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	

→ v_c Page 106

Internal machining	*External machining*
	→ 92

MaxiClick – Toolholder – Cutting depth 5 mm



Illustrations show right-hand versions

Designation	H mm	OAH mm	B mm	b_1 mm	CW mm	CDX mm	WF mm	OAL mm	LH mm	l_5 mm	for grooving inserts	Left-hand 2C/71 Article no. 70 873 ... £		Right-hand 2C/71 Article no. 70 873 ... £	
MC 05 R/L -1010K	10	13	10	10	1,00 - 1,50	5	8.5	125	23	27	MC 05	80.55	**210**	80.55	**110**
MC 05 R/L -1212K	12	15	12	12	1,00 - 1,50	5	10.5	125	23	27	MC 05	80.55	**212**	80.55	**112**
MC 05 R/L -1616K	16	19	16	12	1,00 - 1,50	5	14.5	125	23	20	MC 05	80.55	**216**	80.55	**116**
MC 05 R/L -2020K	20	23	20	12	1,00 - 1,50	5	18.8	125	23	20	MC 05	93.64	**220**	93.64	**120**
MC 05 R/L -2525M	25	28	25	12	1,00 - 1,50	5	23.5	150	23	21	MC 05	99.73	**225**	99.73	**125**

Spare parts for grooving inserts		2A/28 Key-T Article no. 70 950 ... £			2A/28 Clamping screw Article no. 70 950 ... £	
MC 05	T15	5.83	**738**	M4x11	3.09	**174**

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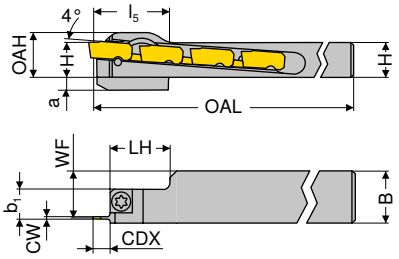
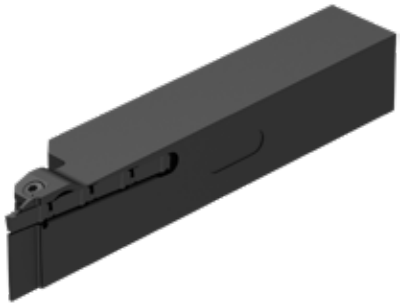
MaxiClick – Toolholder – Cutting depth 10 mm





Illustrations show right-hand versions

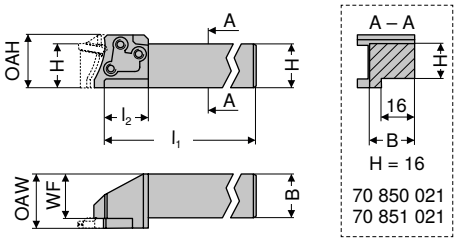
Designation	H mm	OAH mm	B mm	b_1 mm	a mm	CW mm	CDX mm	WF mm	OAL mm	LH mm	l_5 mm	for grooving inserts	Left-hand 2C/71 Article no. 70 874 ... £		Right-hand 2C/71 Article no. 70 874 ... £	
MC 10 R/L -1010K	10	13	10	10		1,50 - 2,50	10	8.5	125	28		MC 10	80.55	**210**	80.55	**110**
MC 10 R/L -1010K-S	10	13	10	10	6	1,50 - 2,50	10	8.5	125	28	27	MC 10	80.55	**410** 1)	80.55	**310** 1)
MC 10 R/L -1212K	12	15	12	12		1,50 - 2,50	10	10.5	125	28		MC 10	80.55	**212**	80.55	**112**
MC 10 R/L -1212K-S	12	15	12	12	4	1,50 - 2,50	10	10.5	125	28	27	MC 10	80.55	**412** 1)	80.55	**312** 1)
MC 10 R/L -1616K	16	19	16	12		1,50 - 2,50	10	14.5	125	28	20	MC 10	80.55	**216**	80.55	**116**
MC 10 R/L -2020K	20	23	20	12		1,50 - 2,50	10	18.8	125	28	20	MC 10	93.64	**220**	93.64	**120**
MC 10 R/L -2525M	25	28	25	12		1,50 - 2,50	10	23.5	150	28	21	MC 10	99.73	**225**	99.73	**125**

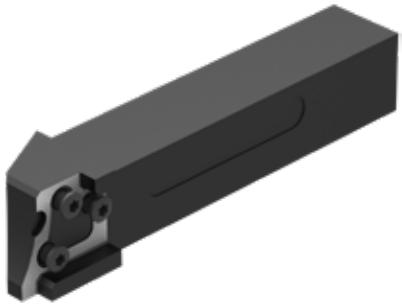
1) -S = strengthened variant

Spare parts for grooving inserts		2A/28 Key-T Article no. 70 950 ... £			2A/28 Clamping screw Article no. 70 950 ... £	
MC 10	T15	5.83	**738**	M4x11	3.09	**174**

→ 89+90

ModularClamp MSS – Tool holder 0°





Illustrations show right-hand versions

Designation	H	B	OAW	OAH	WF	l_1	l_2	for modules	Left-hand 2C/71 Article no. 70 851 ...		Right-hand 2C/71 Article no. 70 850 ...	
	mm	mm	mm	mm	mm	mm	mm		£		£	
E12 R/L 00-1212E	12	12	15.25	14.5	11.75	70	12	E12 R/L ...	119.27	**012**	119.27	**012**
E16 R/L 00-1616G	16	16	19.25	19.5	15.75	90	16	E16 R/L ...	120.45	**016**	120.45	**016**
E20 R/L 00-1620G	16	20	24.25	24.0	20.15	90	20	E20 R/L ...	121.55	**021** 1)	121.55	**021** 1)
E20 R/L 00-2020J	20	20	24.25	24.0	20.15	110	20	E20 R/L ...	121.55	**020**	121.55	**020**
E25 R/L 00-2525L	25	25	31.00	30.0	25.50	140	25	E25 R/L ...	124.09	**025**	124.09	**025**
E32 R/L 00-3225N	32	25	31.00	38.0	25.50	160	32	E32 R/L ...	127.45	**032**	127.45	**032**

1) see view A-A

Spare parts for Article no.		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £	
70 851 012 / 70 850 012	T08	10.30	**110**	M2,5x10	6.45 **440**
70 851 016 / 70 850 016	T15	12.26	**113**	M3,5x12,5	8.15 **441**
70 851 021 / 70 850 021	T15	12.26	**113**	M4x14	7.80 **403**
70 851 020 / 70 850 020	T15	12.26	**113**	M4x14	7.80 **403**
70 851 025 / 70 850 025	T20	13.11	**114**	M5x18	5.20 **404**
70 851 032 / 70 850 032	T25	13.49	**115**	M6x20	3.85 **405**

Module Overview

→ 4+5

ModularClamp Holder with HSK-T interface can be found in → **Chapter 16.**

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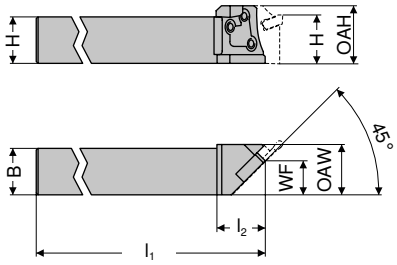
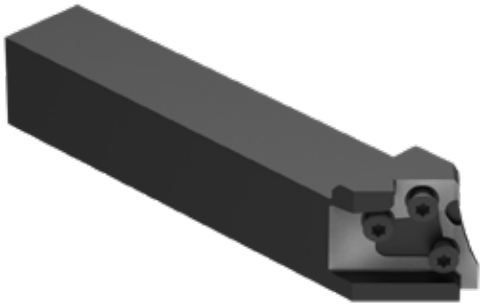
ModularClamp MSS – Tool holder 45°





Illustrations show right-hand versions

Designation	H mm	B mm	OAW mm	OAH mm	WF mm	l_1 mm	l_2 mm	for modules	Left-hand 2C/71 Article no. 70 853 ... £		Right-hand 2C/71 Article no. 70 852 ... £	
E20 R/L 45-2020J	20	20	21.5	24	14.5	110	20	E20 R/L ...	121.55	**020**	121.55	**020**
E25 R/L 45-2525L	25	25	26.0	30	18.0	140	25	E25 R/L ...	124.09	**025**	124.09	**025**

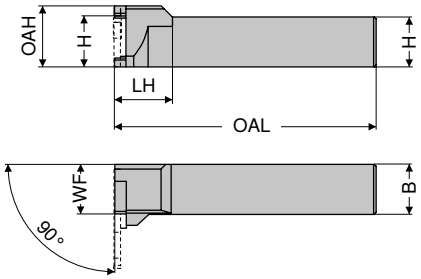
For right hand holder → left hand module only
For left hand holder → right hand module only

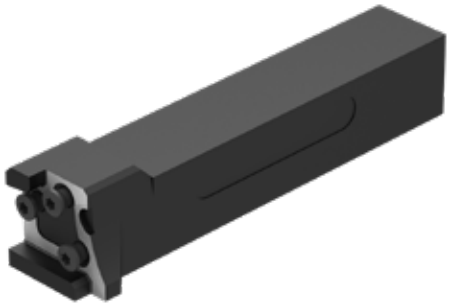
Spare parts for Article no.		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £	
70 853 020 / 70 852 020	T15	12.26	**113**	M4x11	9.40	**442**	M4x14	7.80	**403**
70 853 025 / 70 852 025	T20	13.11	**114**	M5x13,5	9.77	**513**	M5x18	5.20	**404**

Module Overview

→ 4+5

ModularClamp MSS – Tool holder 90°





Illustrations show right-hand versions

Designation	H	B	OAH	WF	OAL	LH	for modules	Left-hand 2C/71 Article no. 70 855 ...		Right-hand 2C/71 Article no. 70 854 ...	
	mm	mm	mm	mm	mm	mm		£		£	
E20 R/L 90-2020J	20	20	24	20	110	20	E20 R/L ...	121.55	**020**	121.55	**020**
E25 R/L 90-2525L	25	25	30	25	140	28	E25 R/L ...	124.09	**025**	124.09	**025**
E32 R/L 90-3225N	32	25	38	32	160	34	E32 R/L ...	127.45	**032**	127.45	**032**

For right hand holder → left hand module only
For left hand holder → right hand module only

Spare parts for Article no.		Y7 Key D Article no. 80 950 ... £			2A/28 Clamping screw Article no. 70 950 ... £	
70 855 020 / 70 854 020	T15	12.26	**113**	M4x14	7.80	**403**
70 855 025 / 70 854 025	T20	13.11	**114**	M5x18	5.20	**404**
70 855 032 / 70 854 032	T25	13.49	**115**	M6x20	3.85	**405**

Module Overview

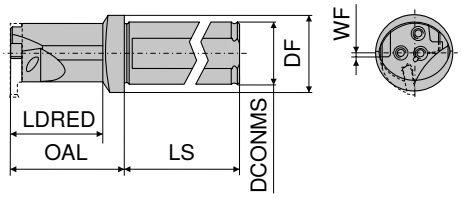
→ 4+5

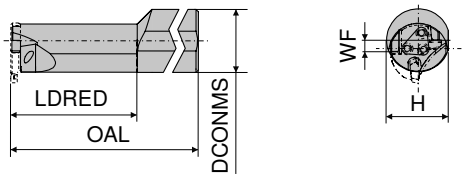
ModularClamp Holder with HSK-T interface can be found in → **Chapter 16.**

11

ModularClamp MSS – Boring bars GX / TC

▲ With internal coolant supply





Illustrations show right-hand versions

	Designation	DCONMS	DF	WF	H	OAL	LDRED	LS	for modules	Left-hand 2C/71 Article no. 70 861 ... £		Right-hand 2C/71 Article no. 70 860 ... £	
		mm	mm	mm	mm	mm	mm	mm					
≤ 1,5xD	I16 R/L 90-1,5 D-N	20	25	1.0		32	24	50	I 16 R/L	133.09	017	133.09	017
	I20 R/L 90-1,5 D-N	20	25	1.0		37	30	50	I 20 R/L	163.09	021	163.09	021
	I25 R/L 90-1,5 D-N	25	32	1.5		46	38	56	I 25 R/L	186.91	026	186.91	026
	I32 R/L 90-1,5 D-N	32	40	2.0		59	48	60	I 32 R/L	241.00	033 1)	241.00	033 1)
	I40 R/L 90-1,5 D-N	40	50	2.5		72	60	70	I 40 R/L/N	300.55	041	300.55	041
≤ 2,5xD	I16 R/L 90-2,5 D-N	20		4.5	19.0	180	40		I 16 R/L	143.45	117	143.45	117
	I20 R/L 90-2,5 D-N	25		6.0	24.0	200	50		I 20 R/L	174.45	121	174.45	121
	I25 R/L 90-2,5 D-N	32		7.0	31.0	250	63		I 25 R/L	199.64	126	199.64	126
	I32 R/L 90-2,5 D-N	40		9.5	38.0	300	80		I 32 R/L	260.36	133 1)	260.36	133 1)
	I40 R/L 90-2,5 D-N	50		11.5	48.5	350	100		I 40 R/L/N	331.55	141	331.55	141

1) with 2 clamping surfaces

Spare parts for modules		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £	
I 16 R/L	T08	10.30	110	M2,5x10	6.45	440
I 20 R/L	T10	12.05	112	M3x11	6.68	444
I 25 R/L	T15	12.26	113	M3,5x12,5	8.15	441
I 32 R/L	T20	13.11	114	M4,5x17	7.42	445
I 40 R/L/N	T20	13.11	114	M5x18	5.20	404

Module Overview

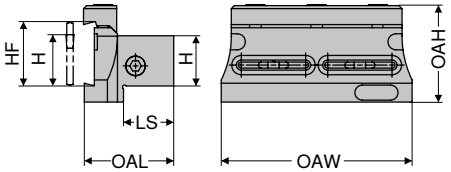
→ 6+7

ModularClamp Holder with HSK-T interface can be found in → **Chapter 16.**

Split clamping block for blades DC

Scope of supply:

Complete clamping block, but without blade



Designation	H	HF	OAH	LS	OAL	OAW	for blades	2A/25 Article no. 70 829 ...
	mm	mm	mm	mm	mm	mm		£
SBN 2020-26-DC	20	26	43.0	20	40.0	82	XLC.. 26..	217.27 **020**
SBN 2020-32-DC	20	32	43.0	20	40.0	95	XLC.. 32..	217.27 **120**
SBN 2525-32-DC	25	32	48.5	25	44.5	95	XLC.. 32..	224.09 **025**
SBN 3232-32-DC	32	32	52.0	32	51.0	95	XLC.. 32..	234.55 **032**

Spare parts		2A/28 Coolant screw plug Article no. 70 950 ...			2A/28 Clamping rail Article no. 70 950 ...			2A/28 Clamping screw Article no. 70 950 ...	
for Article no.		£			£			£	
70 829 020	G 1/8"	3.24	**294**	CU70	29.36	**290**	M6x12	2.02	**861**
70 829 120	G 1/8"	3.24	**294**	CU85	29.36	**291**	M6x12	2.02	**861**
70 829 025	G 1/8"	3.24	**294**	CU85	29.36	**291**	M6x12	2.02	**861**
70 829 032	G 1/8"	3.24	**294**	CU85	29.36	**291**	M6x12	2.02	**861**

		2A/28 Key I Article no. 70 950 ...			2A/28 O-Ring Article no. 70 950 ...			2A/28 O-Ring Article no. 70 950 ...	
for Article no.		£			£			£	
70 829 020	SW5	3.35	**265**	19x2,5	3.91	**293**			
70 829 120	SW5	3.35	**265**	19x2,5	3.91	**293**	23x2,5	3.91	**292**
70 829 025	SW5	3.35	**265**				23x2,5	3.91	**292**
70 829 032	SW5	3.35	**265**				23x2,5	3.91	**292**

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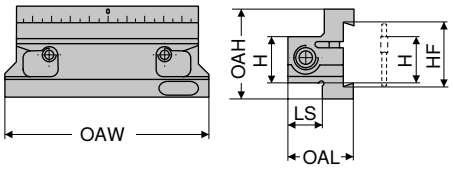
Clamping block for blades GX/LX/FX/SX

Scope of supply:
Clamping block complete, but without blade and coolant set



Designation	H	HF	OAH	LS	OAL	OAW	for blades	2A/25 Article no. 70 830 ...	
	mm	mm	mm	mm	mm	mm		£	
SBN 2020-26-K	20	26	39	20	33.0	90	XLC.. 26..	149.18	**020**
SBN 2520-32-K	25	32	48	20	36.0	110	XLC.. 32..	149.18	**025**
SBN 3229-32-K	32	32	48	29	44.5	120	XLC.. 32..	152.45	**032**
SBN 3229-46-K	32	46	70	29	52.0	150	XLC.. 46..	252.36	**132**
SBN 4037-46-K	40	46	70	37	60.0	150	XLC.. 46..	306.36	**140**

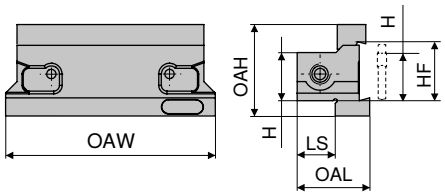
Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Cooling agent set Article no. 70 950 ...			2A/28 clamping screw Article no. 70 950 ...	
for blades		£		£			£	
XLC.. 26..	SW5	3.35	**265**	37.99	**278**	M6x25	1.87	**269**
XLC.. 32..	SW5	3.35	**265**	37.99	**278**	M6x25	1.87	**269**
XLC.. 46..	SW6	4.70	**266**	37.00	**279**	M8x35	1.87	**282**

Clamping Block for Blades with HSK-T interface can be found in → **Chapter 16.**

Split clamping block for blades GX/LX/FX/SX

Scope of supply:

Clamping block complete, but without blade and coolant set



Designation	H	HF	OAH	LS	OAL	OAW	for blades	2A/25 Article no. 70 831 ...	
	mm	mm	mm	mm	mm	mm		£	
SBN 2020-26-KS	20	26	39	20	35.0	90	XLC.. 26..	181.27	**020**
SBN 2520-32-KS	25	32	48	20	38.0	110	XLC.. 32..	186.91	**025**
SBN 3229-32-KS	32	32	48	29	46.5	120	XLC.. 32..	193.91	**032**

Spare parts for blades		2A/28 Key l Article no. 70 950 ... £		2A/28 Cooling agent set Article no. 70 950 ... £			2A/28 clamping screw Article no. 70 950 ... £	
XLC.. 26..	SW5	3.35	**265**	37.99	**278**	M6x25	1.87	**269**
XLC.. 32..	SW5	3.35	**265**	37.99	**278**	M6x25	1.87	**269**

Clamping Block for Blades with HSK-T interface can be found in → **Chapter 16.**

11

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data values for grooving inserts GX/LX/FX/SX/AX/TC/MaxiClick

	DRAGONSKIN CTCP325 (HCR1325)	DRAGONSKIN CTCP335 (HCR1335)	DRAGONSKIN CTPP345 (HCN1345)	DRAGONSKIN CTPP520 (DPX1520)	DRAGONSKIN CTPP535 (DPX1535)	DRAGONSKIN CTP1340 (CCN1340)	H216T (CWK26)
Index	v_c in m/min.						
1.1	**130–260**	**110–190**	**80–150**	**150–200**	**80–150**	**80–180**	
1.2	**150–300**	**130–250**	**110–190**	**150–240**	**110–170**	**120–250**	
1.3	**130–260**	**110–190**	**80–150**	**100–200**	**80–150**	**60–150**	
1.4	**140–240**	**80– 170**	**70–140**	**130–180**	**70–130**	**120–200**	
1.5	**150–300**	**70–170**	**70–140**	**140–220**	**70–130**	**80–180**	
1.6	**130–200**	**70–170**	**60–180**	**100–160**	**60–170**	**60–150**	
1.7	**150–230**	**110–220**	**70–130**	**140–190**	**70–130**	**80–180**	
1.8	**100–180**	**90–210**	**60–110**	**100–150**	**60–110**	**50–120**	
1.9	**120–180**	**90–180**	**70–130**	**120–170**	**60–100**	**80–150**	
1.10	**120–180**	**70–160**	**60–110**	**120–170**	**70–120**	**50–120**	
1.11	**100–160**	**70–160**	**60–110**	**100–150**	**60–110**	**50–120**	
1.12	**100–160**	**70–160**	**60–110**	**100–150**	**60–110**	**50–120**	
1.13	**60–110**				**60–110**		
1.14	**60–110**						
1.15	**60–110**	**70–160**	**60–100**	**60–100**	**60–100**	**50–120**	
1.16	**60–110**	**70–160**	**60–100**	**60–100**	**60–100**	**50–120**	
2.1	140–230	120–200	**100–180**	**110–180**	**50–150**	**50–200**	
2.2	140–230	120–190	**100–180**	**110–180**	**50–140**	**50–180**	
2.3	120–210	120–170	**80–150**	**70–140**	**50–130**	**50–180**	
2.4	60–110	60–90	**60–90**	**70–100**	**50–80**	**50–80**	
2.5	80–140	70–110	**70–110**	**70–100**	**50–90**	**50–100**	
2.6	80–140	70–110	**70–110**	**70–100**	**50–90**	**50–100**	
2.7	60–110	60–90	**60–90**		**50–80**	**50–80**	
3.1	**120–210**	**90–180**		**180–220**		**100–200**	**110–180**
3.2	**100–170**	**80–150**		**140–180**		**80–160**	**90–150**
3.3	**130–210**	**100–160**		**160–200**		**90–190**	**110–180**
3.4	**100–170**	**70–140**		**120–180**		**70–160**	**80–140**
3.5	**120–250**	**100–200**		**180–240**		**110–230**	**100–200**
3.6	**90–190**	**80–150**		**160–200**		**80–160**	**70–160**
3.7	**120–240**	**100–200**		**180–240**		**110–230**	**100–200**
3.8	**90–190**	**80–150**		**160–200**		**80–160**	**70–160**
4.1				100–1000	100–500	100–500	**100–800**
4.2				100–800	100–500	100–500	**80–800**
4.3				100–500	100–500	100–500	**50–500**
4.4				100–500	100–300	100–300	
4.5				100–350	100–300	100–200	
4.6					100–300	100–300	**80–300**
4.7					100–300	100–300	**200–600**
4.8					100–300	100–300	**150–400**
4.9					100–300	100–300	**150–400**
4.10					100–300	100–300	**150–400**
4.11				80–250	100–500	100–500	**200–600**
4.12					100–370	100–370	**200–600**
4.13							
4.14				80–500	80–180	80–180	**80–500**
4.15				80–200	60–150	60–150	**60–150**
4.16							
4.17							
4.18							
4.19							
5.1				25–45			
5.2			20–40	20–40	**20–35**	**20–35**	
5.3			20–30	15–25	**20–40**	**20–40**	
5.4			20–30	15–25	**20–40**	**20–40**	
5.5				10–20	**15–25**	**15–25**	
5.6				10–20	**15–25**	**15–25**	
5.7				10–20	**10–20**	**10–20**	
5.8				10–20	**10–20**	**10–20**	
5.9					**50–120**	**50–120**	
5.10					**30–50**	**30–50**	
5.11					**30–50**	**30–50**	
6.1	10–20						
6.2	10–20						
6.3							
6.4							
6.5							

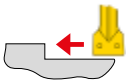
Cutting data values for TX grooving inserts

	CWX 500		
Index	v_c m/min.	f mm/rev.	Coolant
1.1	**80–200**	0,03–0,1	Emulsion
1.2	**80–200**	0,03–0,1	Emulsion
1.3	**80–200**	0,03–0,1	Emulsion
1.4	**80–160**	0,03–0,1	Emulsion
1.5	**80–160**	0,03–0,1	Emulsion
1.6	**80–160**	0,03–0,1	Emulsion
1.7	**80–160**	0,03–0,1	Emulsion
1.8	**80–150**	0,03–0,1	Emulsion
1.9	**80–200**	0,03–0,1	Emulsion
1.10	**70–140**	0,03–0,07	Emulsion
1.11	**70–140**	0,03–0,07	Emulsion
1.12	**70–140**	0,03–0,07	Emulsion
1.13	**40–60**	0,03–0,07	Emulsion
1.14	**40–60**	0,03–0,07	Emulsion
1.15	**40–60**	0,03–0,07	Emulsion
1.16	**40–60**	0,03–0,07	Emulsion
2.1	**80–160**	0,02–0,06	Emulsion
2.2	**80–160**	0,02–0,06	Emulsion
2.3	**80–160**	0,02–0,06	Emulsion
2.4	**20–85**	0,02–0,06	Emulsion
2.5	**20–75**	0,02–0,06	Emulsion
2.6	**20–65**	0,02–0,06	Emulsion
2.7	**20–65**	0,02–0,06	Emulsion
3.1	**30–180**	0,03–0,1	Emulsion
3.2	**30–150**	0,03–0,1	Emulsion
3.3	**30–180**	0,03–0,1	Emulsion
3.4	**30–120**	0,03–0,1	Emulsion
3.5	**30–90**	0,03–0,1	Emulsion
3.6	**20–80**	0,03–0,1	Emulsion
3.7	**30–90**	0,03–0,1	Emulsion
3.8	**20–80**	0,03–0,1	Emulsion
4.1	**120–600**	0,05–0,12	Petroleum
4.2	**120–600**	0,05–0,12	Petroleum
4.3	**100–450**	0,05–0,12	Petroleum
4.4	**70–300**	0,05–0,12	Petroleum
4.5	**60–150**	0,05–0,12	Petroleum
4.6	**60–150**	0,05–0,12	Petroleum
4.7	**100–180**	0,05–0,12	Petroleum
4.8	**90–180**	0,05–0,12	Petroleum
4.9	**80–180**	0,05–0,12	Emulsion
4.10	**80–180**	0,05–0,12	Emulsion
4.11	**120–220**	0,05–0,12	Emulsion
4.12	**70–150**	0,05–0,12	Emulsion
4.13	**80–180**	0,05–0,12	Emulsion
4.14	**80–180**	0,05–0,12	Emulsion
4.15	**80–180**	0,05–0,12	Emulsion
4.16	**80–180**	0,05–0,12	Emulsion
4.17	**80–180**	0,05–0,12	Emulsion
4.18	**80–180**	0,05–0,12	Emulsion
4.19	**80–180**	0,05–0,12	Emulsion
5.1	**30–80**	0,01–0,04	Emulsion
5.2	**18–75**	0,01–0,04	Emulsion
5.3	**18–75**	0,01–0,04	Emulsion
5.4	**18–40**	0,01–0,04	Emulsion
5.5	**18–40**	0,01–0,04	Emulsion
5.6	**18–40**	0,01–0,04	Emulsion
5.7	**15–30**	0,01–0,04	Emulsion
5.8	**15–30**	0,01–0,04	Emulsion
5.9	**15–30**	0,01–0,04	Emulsion
5.10	**100–150**	0,01–0,04	Emulsion
5.11	**100–150**	0,01–0,04	Emulsion
6.1			
6.2			
6.3			
6.4			
6.5			

GX – Speeds and Feeds

GX Standard / GX-E

Turning



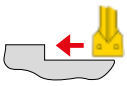
Parting / Grooving

	Depth of Cut a_p in mm							
GX Standard / GX-E	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**GX Standard / GX-E**
Cutting width in mm	Feed rate f in mm/rev.							Feed rate f in mm/rev.
2	0,10–0,15	0,05–0,15	0,05–0,12	0,05–0,10				0,05–0,20
3	0,10–0,17	0,05–0,17	0,05–0,17	0,05–0,15	0,05–0,12			0,10–0,25
4	0,10–0,20	0,07–0,20	0,07–0,20	0,07–0,20	0,07–0,17	0,07–0,15		0,10–0,25
5	0,10–0,25	0,10–0,25	0,07–0,25	0,07–0,25	0,07–0,22	0,07–0,20		0,10–0,30
6	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,25	0,15–0,22	0,15–0,35

When axial grooving reduce feed by 40 %.

GX-F2

Turning



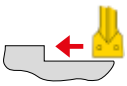
Parting / Grooving

	Depth of Cut a_p in mm								
GX-F2	**0,50**	**0,75**	**1,00**	**1,25**	**1,50**	**1,75**	**2,00**	**2,25**	**2,50**	**GX-F2**
Cutting width in mm	Feed rate f in mm/rev.									Feed rate f in mm/rev.
2	0,03–0,15	0,03–0,15	0,03–0,15	0,03–0,10						0,05–0,15
3	0,04–0,17	0,04–0,17	0,04–0,17	0,04–0,15	0,04–0,13	0,04–0,12				0,075–0,20
4	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,17	0,05–0,15			0,10–0,25
5	0,07–0,20	0,07–0,20	0,07–0,20	0,07–0,20	0,07–0,20	0,07–0,20	0,07–0,17	0,07–0,15		0,10–0,30
6	0,10–0,23	0,10–0,23	0,10–0,23	0,10–0,23	0,10–0,23	0,10–0,23	0,10–0,23	0,10–0,19	0,10–0,15	0,15–0,325

When axial grooving reduce feed by 40 %.

GX-M40

Turning



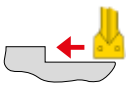
Parting / Grooving

	Depth of Cut a_p in mm								
GX-M40	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**	**GX-M40**
Cutting width in mm	Feed rate f in mm/rev.								Feed rate f in mm/rev.
2	0,10–0,20	0,05–0,20	0,05–0,17	0,05–0,15					0,05–0,15
3	0,10–0,22	0,10–0,22	0,10–0,21	0,10–0,20	0,10–0,17				0,075–0,20
4	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,22	0,10–0,17			0,10–0,25
5	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,27	0,10–0,23	0,10–0,20		0,10–0,30
6	0,10–0,35	0,10–0,35	0,10–0,35	0,10–0,35	0,10–0,32	0,10–0,27	0,10–0,23	0,10–0,20	0,15–0,325

When axial grooving reduce feed by 40 %.

GX-27P

Turning



Parting / Grooving

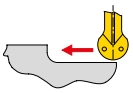
	Depth of Cut a_p in mm								
GX-27P	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**	**GX-27P**
Cutting width in mm	Feed rate f in mm/rev.								Feed rate f in mm/rev.
2	0,05–0,23	0,05–0,23	0,05–0,23	0,05–0,20					0,05–0,20
3	0,05–0,25	0,05–0,25	0,05–0,25	0,05–0,25	0,05–0,20				0,05–0,25
4	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,25			0,05–0,30
5	0,10–0,35	0,10–0,35	0,10–0,35	0,10–0,35	0,10–0,35	0,10–0,32	0,10–0,30		0,10–0,35
6	0,10–0,40	0,10–0,40	0,10–0,40	0,10–0,40	0,10–0,40	0,10–0,36	0,10–0,33	0,10–0,30	0,10–0,40

When axial grooving reduce feed by 40 %.

GX – Depths of cut and feed rates

GX-M3

Turning



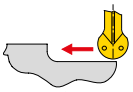
Parting / Grooving

	Depth of Cut a_p in mm							
GX-M3	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**
Radius RE in mm	Feed rate f in mm/rev.							
1,5	0,15–0,35	0,15–0,35	0,15–0,30					
2	0,15–0,40	0,15–0,40	0,15–0,40	0,15–0,30				
2,5	0,15–0,50	0,15–0,50	0,15–0,50	0,15–0,40	0,15–0,35			
3	0,20–0,70	0,20–0,70	0,20–0,70	0,20–0,60	0,20–0,50	0,20–0,40		

GX-M3
Feed rate f in mm/rev.
0,05–0,20
0,10–0,25
0,10–0,25
0,10–0,35

GX-27P Full Radius

Turning



Parting / Grooving

	Depth of Cut a_p in mm							
GX-27P Full Radius	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**
Radius RE in mm	Feed rate f in mm/rev.							
1,5	0,10–0,45	0,05–0,45	0,05–0,40					
2	0,15–0,50	0,10–0,50	0,10–0,50	0,10–0,40				
2,5	0,15–0,60	0,10–0,60	0,10–0,60	0,10–0,50	0,10–0,45			
3	0,25–0,70	0,20–0,70	0,15–0,70	0,15–0,70	0,15–0,65	0,15–0,60	0,15–0,55	
4	0,25–0,80	0,20–0,80	0,15–0,80	0,15–0,80	0,15–0,80	0,15–0,80	0,15–0,75	0,15–0,70

GX-27P Full Radius
Feed rate f in mm/rev.
0,05–0,15
0,075–0,20
0,10–0,25
0,10–0,30
0,15–0,35

GX-M1

Parting / Grooving

GX-M1	
Cutting width in mm	Feed rate f in mm/rev.
2	0,05–0,15
3	0,10–0,20
4	0,10–0,25

GX Radius grooving inserts

Parting / Grooving

GX Radius grooving insert	
Radius RE in mm	Feed rate f in mm/rev.
0,80	0,05–0,10
1,00	0,05–0,15
1,20	0,05–0,15

GX circlip grooving

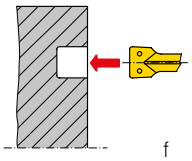
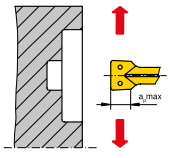
Grooving

GX circlip grooves	
Cutting width in mm	Feed rate f in mm/rev.
0,60–1,70	0,02–0,09
1,95–2,25	0,05–0,10
2,75–3,25	0,05–0,12

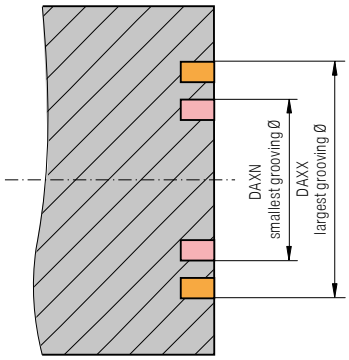
Feed guide and machining instructions for axial grooving and face turning with GX 24 axial

Approximate feed rates

GX

Designation	 f in mm/rev.	 f in mm/rev.	a_p max mm
GX 24-2 E 3.00 ..	0,05–0,15	0,05–0,20	2,5
GX 24-3 E 4.00 ..	0,05–0,15	0,05–0,25	3,0
GX 24-3 E 5.00 ..	0,05–0,15	0,10–0,25	3,0
GX 24-4 E 6.00 ..	0,05–0,20	0,10–0,30	3,5

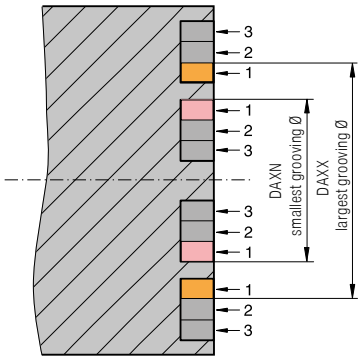
Axial grooving



It is only possible to plunge within the fixed diameter range of the axial grooving module or monoholder (e.g. 50–70 mm).

Important: The indicated diameter range is always valid for the external diameter of the groove!

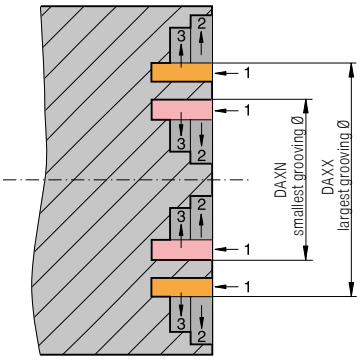
Axial grooving – Groove widening



In case of face turning it is possible to widen the groove above and below the diameter range indicated on the Axial grooving module or monoholder.

Important: Only the first groove must lie within the diameter range of the axial grooving module or axial monoholder. The depth of the widening groove must not be larger than the depth of the original groove.

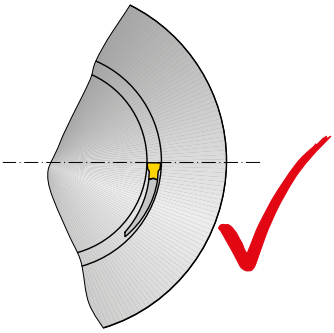
Axial grooving and face turning



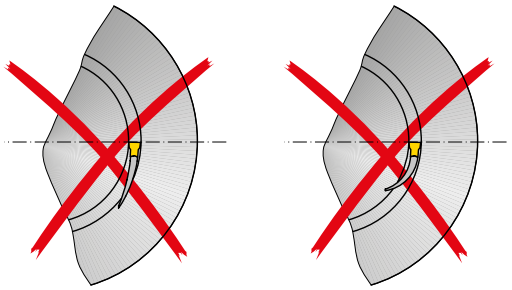
Groove widening by face turning in the diameter range above and below the values specified for the Axial grooving module and Axial monoholder are possible.

Important: Only the first groove must lie within the diameter range of the module.

Attention: The diameter of face grooves must lie within the diameter range indicated on the axial grooving module and axial monoholder. Not following this range will result in the tool being damaged or destroyed.



Correct Axial mono holder



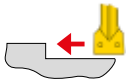
Incorrect Axial mono holder

11

MaxiClick – Depths of cut and feed rates

MaxiClick 05

Turning



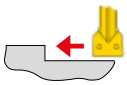
	Depth of Cut a_p in mm		
MaxiClick 05	**0,25**	**0,50**	**0,75**
Cutting width in mm	Feed rate f in mm/rev.		
1	0,02–0,15	0,02–0,10	
1,5	0,02–0,20	0,02–0,20	0,02–0,14

Parting / Grooving

MaxiClick 05
Feed rate f in mm/rev.
0,03–0,10
0,03–0,11

MaxiClick 10

Turning

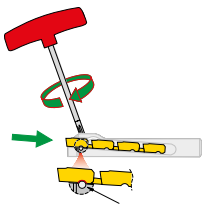


	Depth of Cut a_p in mm				
MaxiClick 10	**0,50**	**0,75**	**1,00**	**1,25**	**1,50**
Cutting width in mm	Feed rate f in mm/rev.				
1,5	0,02–0,20	0,02–0,15	0,02–0,10		
2	0,02–0,20	0,02–0,20	0,02–0,14	0,02–0,10	
2,5	0,02–0,20	0,02–0,20	0,02–0,17	0,02–0,13	0,02–0,10

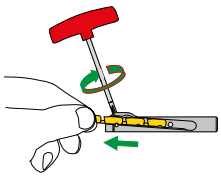
Parting / Grooving

MaxiClick 10
Feed rate f in mm/rev.
0,03–0,11
0,03–0,12
0,03–0,15

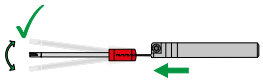
MaxiClick – System function

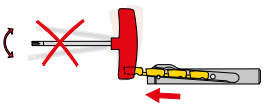


correct insert location in the seat

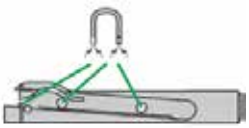


Withdraw cutting insert





Worn-out cutting edge is broken off towards the left or right side

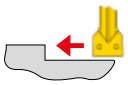


Magnets prevent the cutting insert from falling out of the tool holder during positioning

SX – Depths of cut and feed rates

SX-F2

Turning



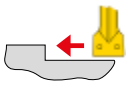
Parting / Grooving

	Depth of Cut a_p in mm								
SX-F2	**0,50**	**0,75**	**1,00**	**1,25**	**1,50**	**1,75**	**2,00**	**2,25**	**2,50**
Cutting width in mm	Feed rate f in mm/rev.								
2	0,03–0,15	0,03–0,15	0,03–0,15	0,03–0,10					
3	0,04–0,17	0,04–0,17	0,04–0,17	0,04–0,15	0,04–0,13	0,04–0,12			
4	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,20	0,05–0,17	0,05–0,15		

SX-F2
Feed rate f in mm/rev.
0,05–0,15
0,075–0,20
0,10–0,25

SX-M2

Turning



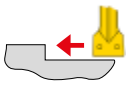
Parting / Grooving

	Depth of Cut a_p in mm							
SX-M2	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**
Cutting width in mm	Feed rate f in mm/rev.							
2	0,05–0,17	0,05–0,13	0,05–0,10					
3	0,07–0,20	0,07–0,20	0,07–0,18	0,07–0,15				
4	0,10–0,25	0,10–0,25	0,10–0,25	0,10–0,22	0,10–0,18			
5	0,12–0,27	0,12–0,27	0,12–0,27	0,12–0,25	0,12–0,22			
6	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,30	0,15–0,25	0,15–0,20		

SX-M2
Feed rate f in mm/rev.
0,05–0,15
0,075–0,20
0,10–0,25
0,10–0,30
0,15–0,35

SX-27P

Turning



Parting / Grooving

	Depth of Cut a_p in mm							
SX-27P	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**
Cutting width in mm	Feed rate f in mm/rev.							
2	0,05–0,23	0,05–0,23	0,05–0,23	0,05–0,20				
3	0,05–0,25	0,05–0,25	0,05–0,25	0,05–0,25	0,05–0,20			
4	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,30	0,10–0,25		

SX-27P
Feed rate f in mm/rev.
0,05–0,20
0,05–0,25
0,05–0,30

SX/LX – Depths of cut and feed rates

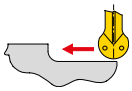
SX-M1

Parting / Grooving

SX-M1	
Cutting width in mm	Feed rate f in mm/rev.
2	0,05–0,15
3	0,10–0,20
4	0,10–0,25
5	0,15–0,30
6	0,15–0,35

SX-M3

Turning



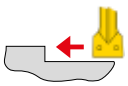
Parting / Grooving

	Depth of Cut a_p in mm							
SX-M3	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**
Radius in mm	Feed rate f in mm/rev.							
1,5	0,15–0,35	0,15–0,35	0,15–0,30					
2	0,15–0,40	0,15–0,40	0,15–0,40	0,15–0,30				
2,5	0,15–0,50	0,15–0,50	0,15–0,50	0,15–0,40	0,15–0,35			
3	0,20–0,70	0,20–0,70	0,20–0,70	0,20–0,60	0,20–0,50	0,20–0,40		

SX-M3
Feed rate f in mm/rev.
0,05–0,20
0,10–0,25
0,10–0,25
0,10–0,35

LX-M2

Turning



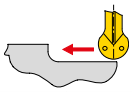
Parting / Grooving

	Depth of Cut a_p in mm							
LX-M2	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**
Cutting width in mm	Feed rate f in mm/rev.							
8	0,17–0,45	0,17–0,45	0,17–0,45	0,17–0,45	0,17–0,40	0,17–0,37	0,17–0,35	
10	0,20–0,50	0,20–0,50	0,20–0,50	0,20–0,50	0,20–0,46	0,20–0,42	0,20–0,38	0,20–0,35

LX-M2
Feed rate f in mm/rev.
0,20–0,50
0,20–0,50

LX-M3

Turning



Parting / Grooving

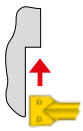
	Depth of Cut a_p in mm							
LX-M3	**0,5**	**1,0**	**1,5**	**2,0**	**2,5**	**3,0**	**3,5**	**4,0**
Radius in mm	Feed rate f in mm/rev.							
4	0,25–0,80	0,25–0,80	0,25–0,80	0,25–0,80	0,25–0,80	0,25–0,70	0,25–0,60	0,25–0,50

LX-M3
Feed rate f in mm/rev.
0,15–0,35

AX/FX – Depths of cut and feed rates

AX-F50

Face turning



	Depth of Cut a_p in mm			
AX-F50	**0,5**	**1,0**	**1,5**	**2,3**
Size	Feed rate f in mm/rev.			
AX 05	0,03–0,10	0,03–0,10		
AX 10	0,03–0,13	0,03–0,13	0,03–0,135	
AX 15	0,03–0,15	0,03–0,15	0,03–0,15	0,03–0,15

Axial grooving

1. Plunging	
Feed rate f in mm/rev.	Feed rate f in mm/rev.
0,025–0,080	0,025–0,20
0,025–0,065	0,05–0,25
0,025–0,050	0,05–0,30

FX-F1

Parting / Grooving

FX-F1	
Cutting width in mm	Feed rate f in mm/rev.
2,2	0,025–0,10
3,1	0,05–0,15
4,1	0,05–0,20

FX-M1

Parting / Grooving

FX-M1	
Cutting width in mm	Feed rate f in mm/rev.
2,20	0,05–0,15
3,10	0,08–0,18
4,10	0,10–0,20
5,10	0,15–0,28
6,50	0,15–0,33
8,20	0,20–0,40
9,70	0,20–0,40

FX-27P

Parting / Grooving

FX-27P	
Cutting width in mm	Feed rate f in mm/rev.
2,20	0,01–0,10
3,10	0,015–0,125
4,10	0,05–0,15

FX-R2

Grooving

FX-R2	
Cutting width in mm	Feed rate f in mm/rev.
3,10	0,10–0,275
4,10	0,15–0,35

11

TC – Reference values for profile depth and number of passes

All listed values are guide values for steel machining

Metric ISO 60° external thread

Pitch in mm	0,5	0,75	1,0	1,25	1,5	1,75	2,0	2,5	3,0	3,5	4,0	4,5	5,0
Number/cuts	4–6	4–7	4–8	5–9	6–10	7–11	8–12	9–14	10–18	10–18	12–20	12–20	12–20
Thread profile depth in mm	0,32	0,48	0,64	0,8	0,95	1,10	1,26	1,58	1,89	2,21	2,53	2,84	3,16

Metric ISO 60° internal thread

Pitch in mm	0,5	0,75	1,0	1,25	1,5	1,75	2,0	2,5	3,0	3,5	4,0	4,5	5,0
Number/cuts	4–6	4–7	4–8	5–9	6–10	7–11	8–12	9–14	10–18	10–18	12–20	12–20	12–20
Thread profile depth in mm	0,30	0,45	0,59	0,74	0,89	1,02	1,17	1,46	1,76	2,02	2,35	2,64	2,93

Whitworth 55° external and internal thread

TPI	28	26	24	20	19	18	16	14	12	11	10	9	8	7	6	5
Number/cuts	5–8	5–8	5–9	5–9	6–10	6–10	7–11	8–12	9–14	9–14	10–17	10–18	10–18	12–20	12–20	12–20
Thread profile depth in mm	0,60	0,65	0,70	0,84	0,88	0,93	1,05	1,20	1,40	1,53	1,68	1,87	2,11	2,41	2,81	3,37

Partial profile 60° external and internal thread

External	TC 16-2EI-AG60																
	TC 16-1EI-A60									TC 16-2EI-G60				TC 16-3EI-N60			
Pitch in mm	0,5	0,75	1,0	1,25	1,5	1,75	2,0	2,5	3,0	1,75	2,0	2,5	3,0	3,5	4,0	4,5	5,0
Number/cuts	4–6	4–7	5–9	6–10	7–11	8–12	9–14	10–15	12–19	8–12	9–14	10–15	12–20	12–20	13–21	14–22	14–22
Thread profile depth in mm	0,33	0,52	0,71	0,90	1,09	1,28	1,47	1,84	2,22	1,23	1,42	1,79	2,17	2,45	2,83	3,21	3,59

Internal	TC 16-2EI-AG60																
	TC 16-1EI-A60									TC 16-2EI-G60				TC 16-3EI-N60			
Pitch in mm	0,5	0,75	1,0	1,25	1,5	1,75	2,0	2,5	3,0	1,75	2,0	2,5	3,0	3,5	4,0	4,5	5,0
Number/cuts	4–6	4–7	5–9	6–10	7–11	8–12	9–14	10–15	12–19	8–12	9–14	10–15	12–20	12–20	13–21	14–22	14–22
Thread profile depth in mm	0,27	0,44	0,60	0,76	0,92	1,09	1,25	1,57	1,90	1,04	1,20	1,52	1,85	2,07	2,40	2,72	3,05

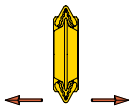
Partial profile 55° external and internal thread

External	TC 16-2EI-AG55												
	TC 16-1EI-A55												
TPI	28	26	24	20	19	18	16	14	12	11	10	9	8
Number/cuts	5–8	5–8	6–9	6–9	7–12	7–12	8–14	9–14	10–16	10–16	11–18	12–20	12–20
Thread profile depth in mm	0,66	0,72	0,79	0,95	1,01	1,07	1,21	1,39	1,63	1,79	1,97	2,20	2,48

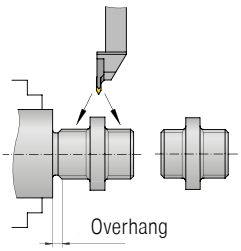
Internal	TC 16-2EI-G55						TC 16-3EI-N55		
TPI	14	12	11	10	9	8	7	6	5
Number/cuts	8–12	9–14	10–15	11–18	12–20	12–20	12–20	12–20	14–22
Thread profile depth in mm	1,22	1,46	1,56	1,80	2,03	2,31	2,40	2,89	3,56

Comparison threading system with TC and conventional

TC

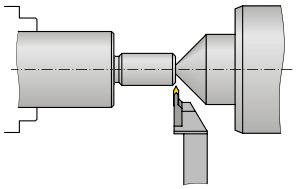


- Neutral configuration of insert makes operation in both directions possible
- Only one threading insert per pitch for partial profile and Whitworth thread; only two threading inserts (internal – external) per pitch for ISO threads
- Reduced stock holding
- Good chip formation due to chip breaker with rake angle + 10°

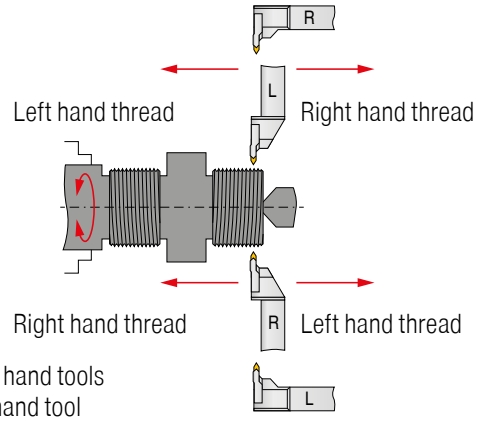


Greater efficiency through:

- Shorter operating time
- Less tool changing
- High stability wih small overhang
- Material saving
- Thread turning between shoulders
- Fewer tools and indexable inserts



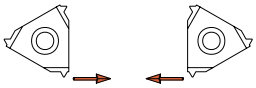
- Very good access to workpiece, therefore use of tailstock also possible with small thread diameters



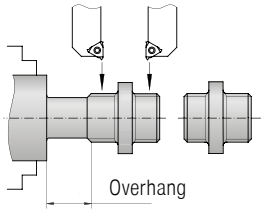
R = Right hand tools
L = Left hand tool

- Ease of use, as the tools have no pitch angle correction they can be used in both directions

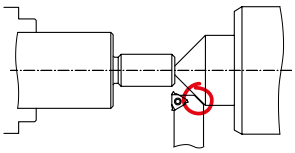
Conventional



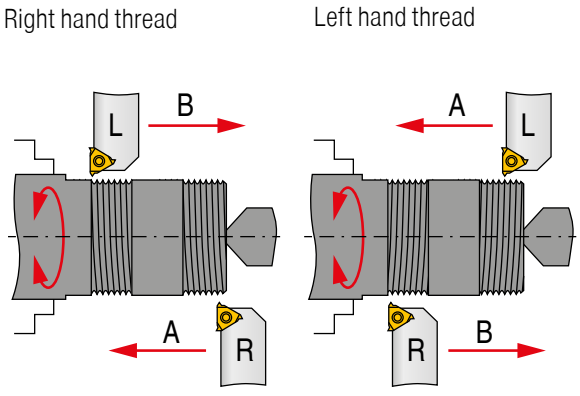
- Right-hand and left-hand version of indexable insert, therefore operation only in one direction
- For every pitch 4 threading inserts are necessary (right – left, internal – external)



- For this machining method 2 tools are required
- Additional material and stability loss with large overhang



- Poor accessibility
- Collision danger

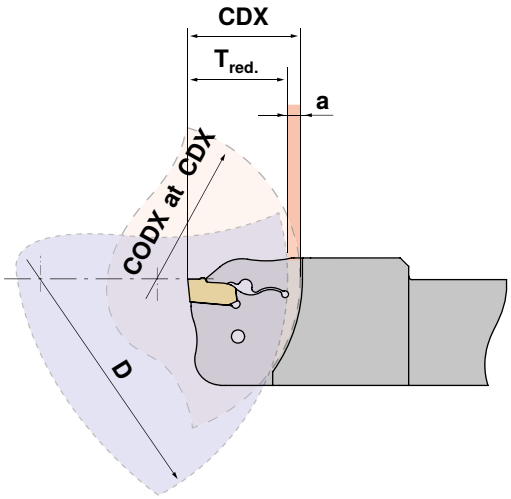


- With conventional thread turning the correction of the helix angle is necessary, therefore a high degree of application know-how is required
- Can only be operated in one direction

11

ModularClamp

GX | SX | LX | FX



The ModularClamp grooving modules are matched according to size on a particular workpiece diameter CODX. If the diameter of the workpiece is greater than CODX of the grooving Modules, this reduces the achievable penetration depth by the dimension „a“. The extent of reduction can be determined with the following table.

CDX	maximum plunge depth in mm
CDOX	maximum workpiece Ø with full penetration depth in mm
a	Reduction amount in mm

$T_{red.} = CDX - a$

Grooving depth reduction

	Reduction a (mm) of the maximum grooving depth (CDX)																
Size		0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0
E12	35	40	45	60	75	115	>250										
E16	50	55	60	70	80	100	130	200	>420								
E20	60	65	70	75	85	95	110	130	165	220	>330						
E25	75	80	85	90	100	110	125	140	160	190	240	320	>500				
E32	95	100	105	110	120	125	135	145	160	180	200	225	270	320	400	530	>800
	Workpiece diameter D (mm)																

Maximum workpiece diameter (CODX) with full penetration depth (CDX) in mm

Calculation example:

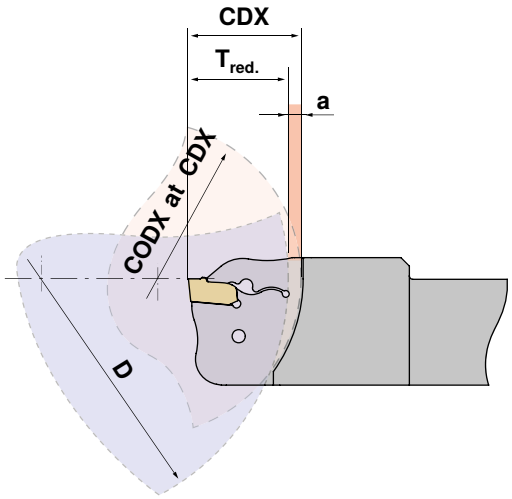
E25R**21**-GX24-3

Size 25 — CDX = 21 mm, Ø 75 mm

D = Ø 100 mm	CDX–a = $T_{red.}$ 21–2 = 19 mm

MonoClamp

SX



Depending on the groove width and shank size, the MonoClamp tools are designed for use with a specific workpiece diameter CDOX. If the workpiece diameter is larger than the CDOX of the grooving module, the achievable groove depth is reduced by the dimension „a“. The extent of the reduction is determined using the following table.

CDX maximum plunge depth in mm
CDOX maximum workpiece Ø with full penetration depth in mm
a Reduction amount in mm

$T_{red.} = CDX - a$

Grooving depth reduction

	Reduction a (mm) of the maximum grooving depth (CDX)																
Shank	0	0,5	1	1,5	2	2,5	3	3,5	4	4,5	5	5,5	6	6,5	7	7,5	8
E12R/L0022...	44	70	80	95	115	150	225	>450									
E16R/L0026...	52	90	105	125	155	210	305	>600									
E20R/L0026...	52	110	125	140	160	195	240	320	475	>950							
E20R/L0033...	66	110	125	140	160	195	240	320	475	>950							
E25R/L0026...	52	140	160	190	235	310	465	>930									
E25R/L0033...	66	155	175	200	230	275	340	450	675	>1350							
E25R/L0040...	80	155	175	200	230	275	340	450	675	>1350							
	Workpiece diameter D (mm)																

Maximum workpiece diameter (CODX) with full penetration depth (CDX) in mm

Calculation example:

E25R0033...

CDX = 33 mm, Ø 66 mm

D = Ø 200 mm	CDX–a = $T_{red.}$ 33–1,5 = 31,5 mm

Clamping Method – SX-System

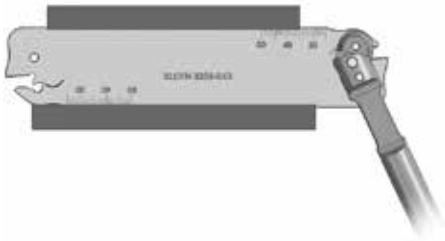
System function – inserting and removing the cutting inserts

Precision system for internal and external grooving.

The key has been designed in such a way that it will not stress the material beyond its 'elastic limit'.

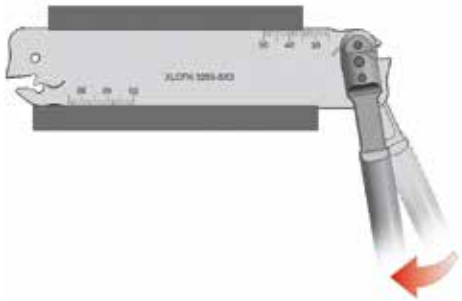
With this alternate system the material always remains in its flexible range and provides a substantial increase in tool life.

1



Locate wrench into blade with pins located in two holes

2

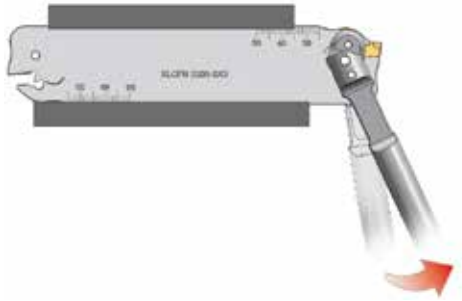


Movement of the fitting key in the direction of the insert seat opens the tool.

3

Load the grooving insert into position and press against the seat.

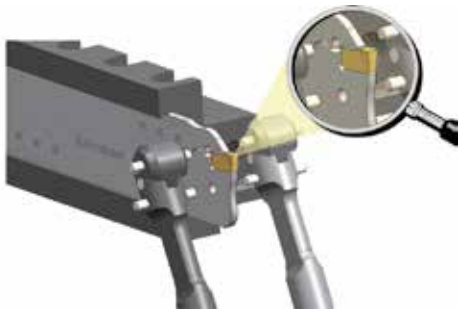
4



Moving the key forward causes the insert seat to close and clamp the insert.

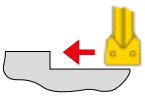
When changing the inserts, always maintain tension on the key!

The clamp is designed so that the wrench can be inserted from both sides of the blade according to the accessibility.



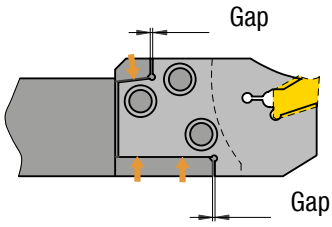
Maximum blade projection when turning

Blade	max. overhang
SX 2 – SX 3	25 mm
SX 4 – SX 5	30 mm
SX 6	35 mm



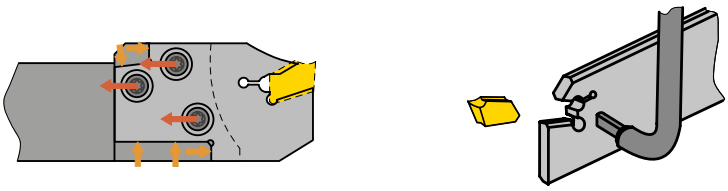
Clamping function – ModularClamp-Module

Module unclamped



- Gap between module and support face for axial clamping

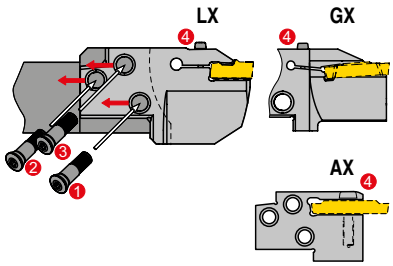
Module clamped



- Axial clamping with support face
- Connection free from play, therefore maximum stability

GX LX AX

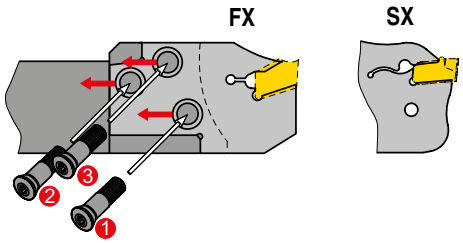
Active insert clamping



Clamping screws 1, 2 and 3 are used to clamp the modules.
The insert is clamped in the module via the additional screw 4.

FX SX

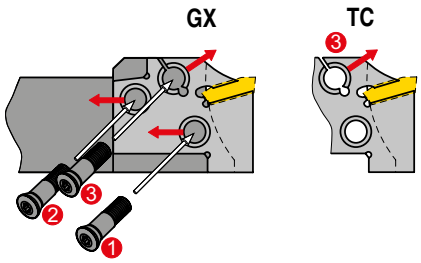
Self clamping of the insert



Clamping screws 1, 2 and 3 are used for clamping the module.
The insert is self-clamping.

GX TC

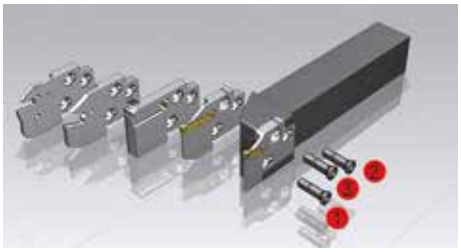
Active insert clamping



Clamping screws 1 and 2 are used for clamping the module.
Important: first tighten clamp screws 1 and 2.
Then clamp the insert with screw 3.

Torque Moment ModularClamp Module Screws

ModularClamp – Tool holder



Order for the pre-and tightening of the screws!

ModularClamp – Tool holder	Screw	Torx	Torque	
			Nm	in.lbs
E12..	M2,5x10	T08	1,2	10,6
E16..	M3,5x12,5	T15	3,2	28,3
E20..	M4x14	T15	4,0	35,4
E25..	M5x18	T20	5,0	44,3
E32..	M6x20	T25	6,0	53,1

ModularClamp – Boring bar

Order for the pre-and tightening of the screws!

ModularClamp – Boring bar	Screw	Torx	Torque	
			Nm	in.lbs
I16..	M2,5x10	T08	1,2	10,6
I20..	M3x11	T10	2,0	17,7
I25..	M3,5x12,5	T15	3,2	28,3
I32..	M4,5x17	T20	4,0	35,4
I40..	M5x18	T20	5,0	44,3

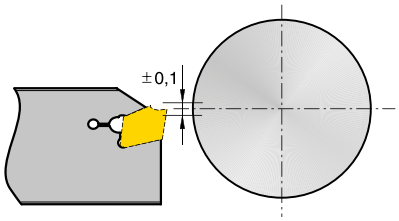
Tightening torque for the insert clamping

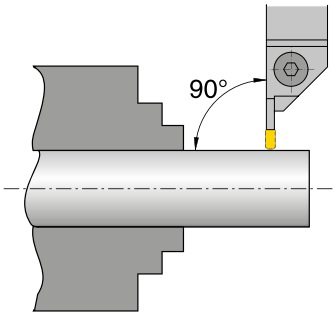
Recommended tightening torque

Grooving systems	Screw	Torx	Torque	
			Nm	in.lbs
GX / AX / LX	M3,5	T15	3,2	28,3
	M4,0	T15/T20	4,0	35,4
	M5,0	T20	5,0	44,3

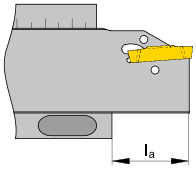
General references

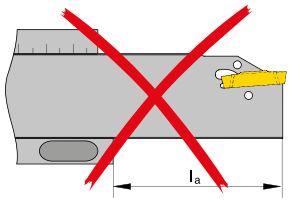
Tool position

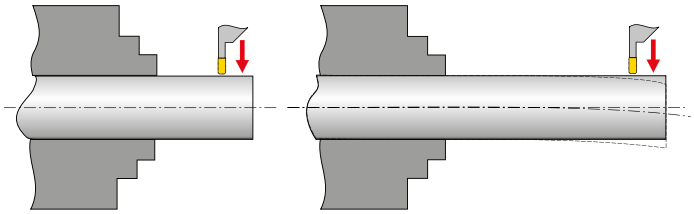




Tool overhang

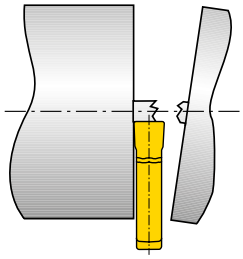




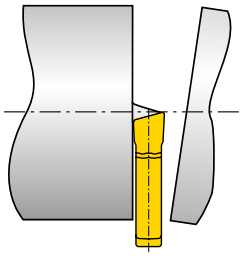


As a rule of thumb: Overhang l_a should not be greater than 8xs (Groove width).

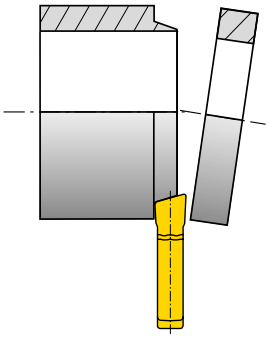
References for Parting off



From Ø 5 mm on, reduce feed „f“ by approx. 50 %. No parting across centre (risk of breakage).

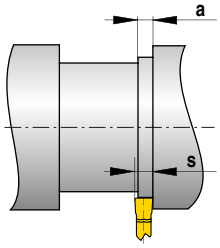


For parting pip-free, use R or L inserts. In order to minimize lateral deflection reduce feed by approx. 20–50 %.

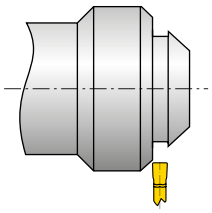


In order to prevent ring formation, use R or L inserts. Reduce feed „f“ because of lateral deflection by approx. 20–50 %.

References for grooving

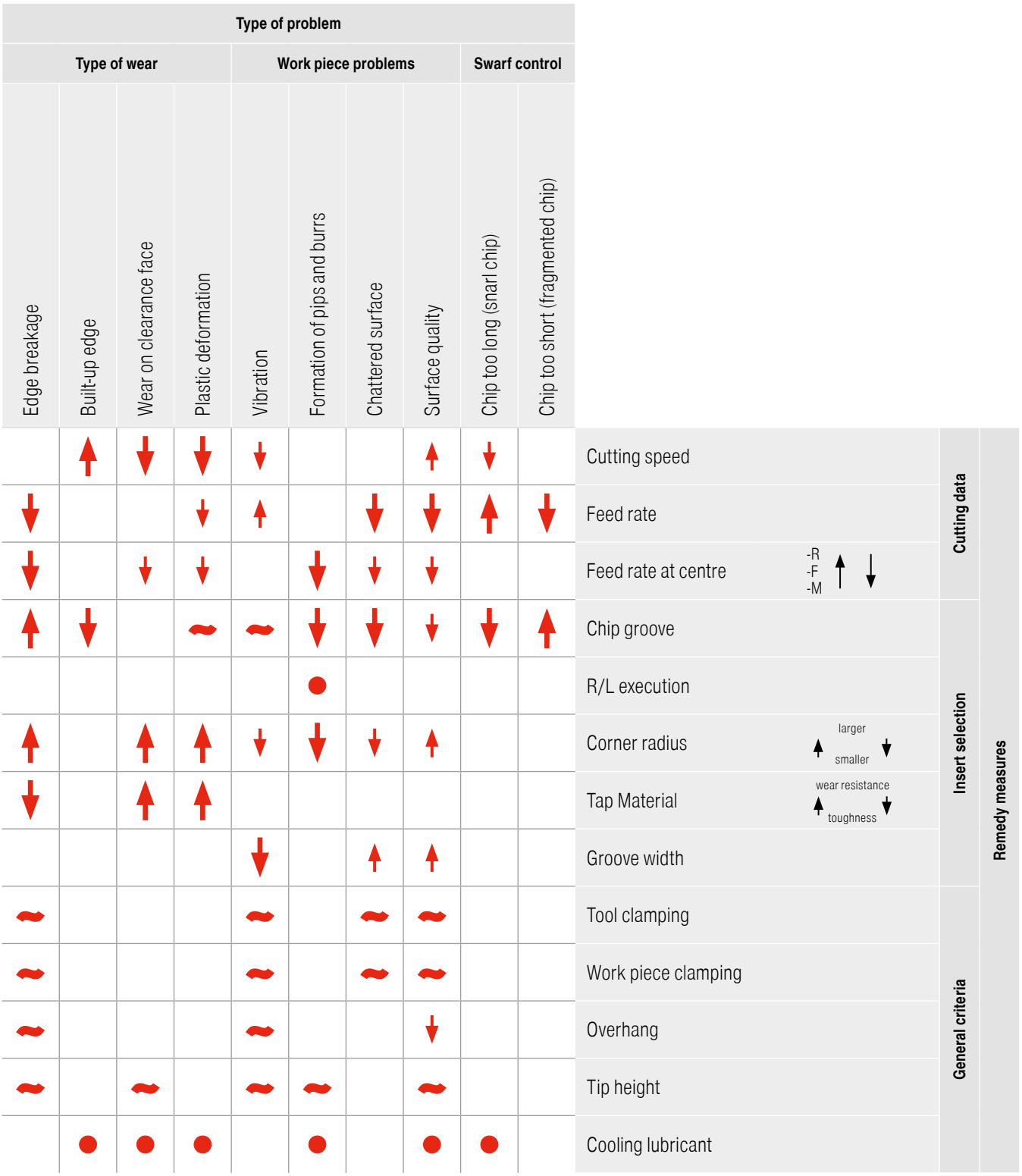


When grooving with an axial displacement the width **„a“** should amount to at least 70 % of the grooving width **„s“**.



When grooving oblique surfaces the feed should be reduced by approx. 20–50 % until fully engaged.

Trouble shooting guide for grooving FX/SX/GX/LX



raise, increase large influence

raise, increase small influence

avoid, reduce large influence

avoid, reduce small influence

check, optimise

use

Trouble shooting guide for TC threading

Type of problem												
Type of wear				Workpiece				Swarf control				
Wear on clearance face	Break out cut	Plastic deformation	Built-up edge	Formation of a shoulder at the external thread Ø	Profile	Surface quality	Chatter marks, vibrations	Chip too thick	Chip too thin	Chip shape (snarl chip)		
↓		↓	↑			↑	↓				Cutting speed	Cutting data / Remedy measures
a, b	a, b		a, b	a, b		a, b	a, b	a, b		a, b	Feed (a – over the flanks; b – Alternating flanks)	Cutting data / Remedy measures
↑	↓	↓		↓	↓	↓	↓	↓	↑	~	Feed (Cutting depth)	Cutting data / Remedy measures
↓	↑	↑		~	~	↑	~	↑	↓	↓	Number of passes	Cutting data / Remedy measures
				●	●	●					Spring cut (Air cut)	Cutting data / Remedy measures
			●			●	●			●	Chip groove	Indexable insert selection / Remedy measures
↑	↓	↑									Tap Material (wear resistance ↑ / toughness ↓)	Indexable insert selection / Remedy measures
				●	●	●					Full profile	Indexable insert selection / Remedy measures
											Partial profile	Indexable insert selection / Remedy measures
	~					~	~				Stable tool holder / insert	Various criteria / Remedy measures
	~					~	~				Stable workpiece	Various criteria / Remedy measures
	↓					↓	↓				Overhang	Various criteria / Remedy measures
~	~	~			~	~	~				Tip height	Various criteria / Remedy measures
●	●	●	●	●		●					Cooling lubricant	Various criteria / Remedy measures

↑ raise, increase large influence
↑ raise, increase small influence
↓ avoid, reduce large influence
↓ avoid, reduce small influence
~ check, optimise
● use

11

Wear causes

Wear on clearance face

Abrasion on the flank, normal wear after a given operation time.

Cause

- cutting speed too high
- grade with too low wear resistance
- insufficient coolant

Remedy

- Reduce the cutting speed
- select a more wear resistant grade
- Improve/check coolant feed

Edge chipping

Excessive mechanical stress on the cutting edge causing carbide particles to break out.

Cause

- too hard grade
- vibration
- too high feed and depth of cut
- chip impact

Remedy

- use tougher grade
- use negative geometry with chip breaker
- reduce overhang, check center height
- stabilize the cutting edge

Cratering

The outgoing hot chip causes cratering of the insert on the clamping surface.

Cause

- too high cutting speed, feed, or both
- too low rake angle
- grade with too low wear resistance
- incorrectly supplied cooling

Remedy

- Reduce cutting speed and / or feed
- Check coolant flow and / or increase pressure
- Use harder grade

Plastic deformation

Large mechanical load produces high temperature machining, this can lead to plastic deformation.

Cause

- too high operating temperature, thus softening the base material
- unsuitable grade
- inadequate coolant supply

Remedy

- Reduce the cutting speed
- select a more wear resistant grade
- use coolant

Built-up edge

Weld deposits of material on the cutting edge occurs when the chip does not flow caused by low average temperature.

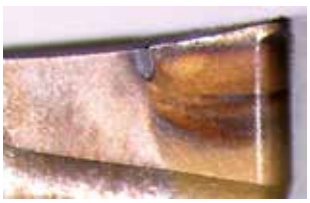
Cause

- too low cutting speed
- too low rake angle
- Incorrect grade
- lack of cooling / lubrication

Remedy

- Increase the cutting speed
- Increase rake angle
- Use TiN coating
- increase coolant strength

Notch wear



Contraction at maximum cutting depth.

Cause

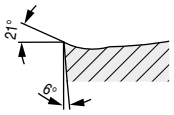
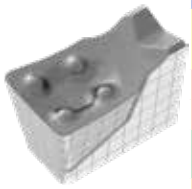
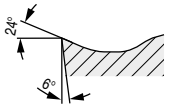
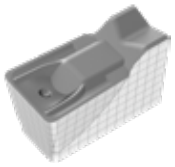
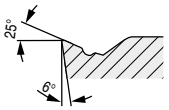
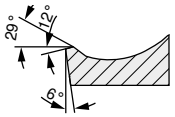
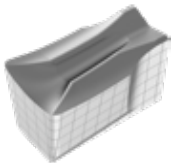
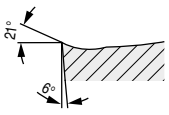
- Oxidation at the cutting edge
- Too high a temperature at the edge

Remedy

- Use different cutting depths
- Reduce cutting speed
- Improve/check coolant feed

Chip breakers / Applications

System GX

		smooth cut	irregular cut	interrupted cut	Model	f in mm/rev.
-F2 ▲ very positive geometry ▲ honed cutting edge ▲ low feed rates ▲ low cutting forces ▲ first choice for stainless materials		**CTCP325 (HCR1325)** **CTP1340 (CCN1340)** CTCP325 (HCR1325) CTP1340 (CCN1340)	**CTP1340 (CCN1340)** **CTP1340/CTPP345 (CCN1340/HCN1345)** CTP1340 (CCN1340) CTP1340 (CCN1340)	**CTPP345 (HCN1345)** **CTPP345 (HCN1345)** CTPP345 (HCN1345)		0,05–0,15
-Standard / -E ▲ positive geometry ▲ low-medium feed rates ▲ low cutting forces ▲ universal application ▲ first choice for axial grooving		**CTCP325 (HCR1325)** **CTP1340 (CCN1340)** CTCP325 (HCR1325) CTP1340 (CCN1340)	**CTCP335/CTP1340 (HCR1335/CCN1340)** **CTP1340/CTPP345 (CCN1340/HCN1345)** **CTCP335/CTP1340 (HCR1335/CCN1340)** CTP1340 (CCN1340)	CTPP345 (HCN1345) CTPP345 (HCN1345) **CTP1340 (CCN1340)** CTPP345 (HCN1345)		0,05–0,17
-M40 ▲ stable geometry ▲ medium feed rates ▲ universal application ▲ good chip control		**CTCP325 (HCR1325)** CTP1340 (CCN1340) **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTP1340 (CCN1340)** CTP1340/CTPP345 (CCN1340/HCN1345) **CTCP325/CTP1340 (HCR1325/CCN1340)** CTP1340 (CCN1340)	**CTPP345 (HCN1345)** CTPP345 (HCN1345) **CTP1340 (CCN1340)** CTPP345 (HCN1345)		0,075–0,20
-M1 ▲ very stable cutting edge ▲ medium-high feed rates ▲ for intterrupted cut ▲ for high tensile materials ▲ first choice for parting off		**CTCP325 (HCR1325)** CTP1340 (CCN1340) **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTP1340 (CCN1340)** CTP1340/CTPP345 (CCN1340/HCN1345) **CTCP325/CTP1340 (HCR1325/CCN1340)** CTP1340 (CCN1340)	**CTPP345 (HCN1345)** CTPP345 (HCN1345) **CTP1340 (CCN1340)** CTPP345 (HCN1345)		0,1–0,20
-27P ▲ very positive geometry ▲ ground periphery ▲ sharp cutting edge ▲ polished chip breaker ▲ first choice for non-ferrous metals		 H216T (CWK26) 	 H216T (CWK26) 	 H216T (CWK26) 		0,05–0,25

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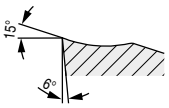
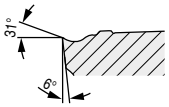
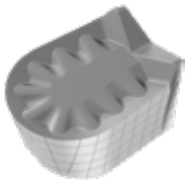
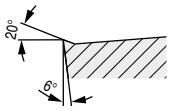
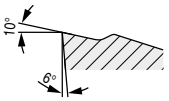
Chip breakers / Applications

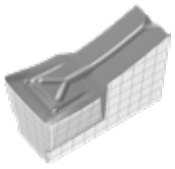
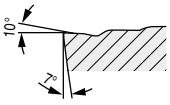
System GX

		smooth cut	irregular cut	interrupted cut	Model	f in mm/rev.
Standard – Radius ▲ positive geometry ▲ honed cutting edge ▲ low-medium feed rates ▲ low cutting forces ▲ Radius grooving/copy turning		**CTCP325 (HCR1325)** **CTP1340 (CCN1340)** CTCP325 (HCR1325) CTP1340 (CCN1340)	**CTCP325/CTP1340 (HCR1325/CCN1340)** **CTP1340 (CCN1340)** **CTCP325/CTP1340 (HCR1325/CCN1340)** CTP1340 (CCN1340)	**CTP1340 (CCN1340)** CTP1340 (CCN1340) **CTP1340 (CCN1340)**		0,05–0,20
-M3 – Radius ▲ stable geometry ▲ medium-high feed rates ▲ high surface quality ▲ Radius grooving/copy turning		**CTCP325 (HCR1325)** CTCP335 (HCR1335) **CTCP325 (HCR1325)**	**CTCP325/CTCP335 HCR1325/HCR1335** CTCP335 (HCR1335) **CTCP325/CTCP335 (HCR1325/HCR1335)**	**CTCP335 (HCR1335)** **CTCP335 (HCR1335)**		0,07–0,20
-27P – Radius ▲ very positive geometry ▲ ground periphery ▲ sharp cutting edge ▲ polished chip breaker ▲ first choice for non-ferrous metals		**H216T (CWK26)**	**H216T (CWK26)**	**H216T (CWK26)**		0,05–0,30

Circlip grooving

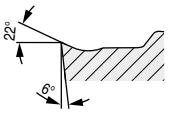
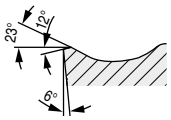
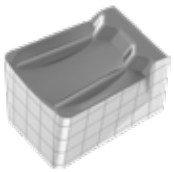
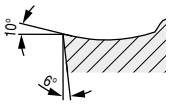
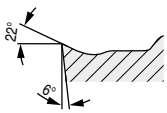
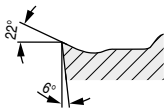
Standard ▲ positive geometry ▲ honed cuttign edge ▲ low feed rates ▲ small corner radius ▲ Circlip grooves		**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** **CCN1340 (CCN1340)** CTP1340 (CCN1340) CTP1340 (CCN1340)	**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTP1340 (CCN1340) CTP1340 (CCN1340)			0,05–0,30

System AX

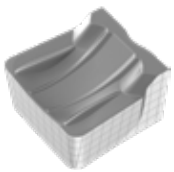
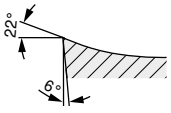
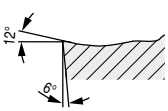
-F50 ▲ positive geometry ▲ honed cuttign edge ▲ low feed rates ▲ small corner radius ▲ Circlip grooves		**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** **CCN1340 (CCN1340)** CTP1340 (CCN1340) CTP1340 (CCN1340)	**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** **CCN1340 (CCN1340)** CTP1340 (CCN1340) CTP1340 (CCN1340)			0,025–0,125

Chip breakers / Applications

System SX

		smooth cut	irregular cut	interrupted cut	Model	f in mm/rev.
-F2 ▲ very positive geometry ▲ honed cutting edge ▲ low feed rates ▲ low cutting forces ▲ first choice for stainless materials		**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTCP325 (HCR1325) CTP1340 (CCN1340)	**CTP1340 (CCN1340)** **CTP1340/CTPP345 (CCN1340/HCN1345)** CTP1340 (CCN1340) CTP1340/CTPP345 (CCN1340/HCN1345)	**CTPP345 (HCN1345)** **CTPP345 (HCN1345)** 		0,05–0,15
-M1 ▲ very stable cutting edge ▲ medium-high feed rates ▲ for intterrupted cut ▲ for high tensile materials ▲ first choice for parting off		**CTCP325 (HCR1325)** CTCP335 (HCR1335) **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTCP335/CTP1340 (HCR1335/CCN1340)** CTP1340 (CCN1340) **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTPP345 (HCN1345)** CTPP345 (HCN1345) **CTCP325 (HCR1325)** CTPP345 (HCN1345)		0,10–0,20
-M2 ▲ stable geometry ▲ medium feed rates ▲ universal application ▲ good chip control		**CTCP325 (HCR1325)** CTCP335 (HCR1335) CTCP325 (HCR1325) CTP1340 (CCN1340)	**CTCP335/CTP1340 (HCR1335/CCN1340)** CTP1340 (CCN1340) CTCP325 (HCR1325) CTP1340 (CCN1340)	**CTPP345 (HCN1345)** CTPP345 (HCN1345) CTCP335 (HCR1335) CTPP345 (HCN1345)		0,075–0,20
-27P ▲ very positive geometry ▲ ground periphery ▲ sharp cutting edge ▲ polished chip breaker ▲ first choice for non-ferrous metals		 H216T (CWK26) 	 H216T (CWK26) 	 H216T (CWK26) 		0,05–0,25
-M3 – Radius ▲ stable geometry ▲ medium-high feed rates ▲ high surface quality ▲ Radius grooving / Copy turning		**CTCP335 (HCR1335)** **CTCP335 (HCR1335)** **CTCP335 (HCR1335)** CTP1340 (CCN1340)	**CTCP335/CTP1340 (HCR1335/CCN1340)** **CTCP335/CTP1340 (HCR1335/CCN1340)** **CTCP335/CTP1340 (HCR1335/CCN1340)** CTP1340 (CCN1340)	**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTP1340 (CCN1340)		0,05–0,20

System LX

-M2 ▲ stable geometry ▲ medium feed rates ▲ universal application ▲ good chip control		**CTCP325 (HCR1325)** CTCP335 (HCR1335) **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTCP335/CTP1340 (HCR1335/CCN1340)** CTP1340 (CCN1340) **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTCP335 (HCR1335)** CTP1340 (CCN1340) **CTCP335 (HCR1335)** CTP1340 (CCN1340)		0,20–0,50
-M3 – Radius ▲ stable geometry ▲ medium-high feed rates ▲ high surface quality ▲ Radius grooving/copy turning		**CTCP325 (HCR1325)** **CTCP335 (HCR1335)** **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTCP335/CTP1340 (HCR1335/CCN1340)** **CTCP335/CTP1340 (HCR1335/CCN1340)** **CTCP335/CTP1340 (HCR1335/CCN1340)** CTP1340 (CCN1340)	**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTP1340 (CCN1340)		0,15–0,35

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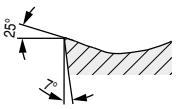
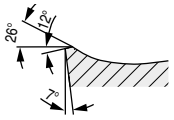
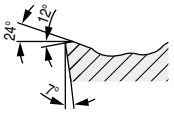
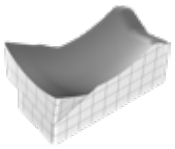
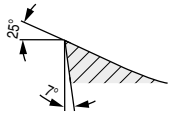
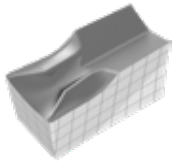
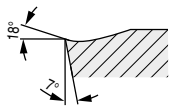
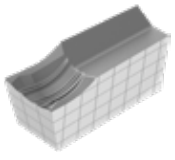
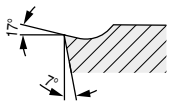
Chip breakers / Applications

System FX

		smooth cut	irregular cut	interrupted cut	Model	f in mm/rev.
-F1 ▲ very positive geometry ▲ low-medium feed rates ▲ low cutting forces ▲ good chip control ▲ low cutting edge build up		**CTCP325 (HCR1325)** **CTP1340 (CCN1340)** CTCP325 (HCR1325) CTP1340 (CCN1340)	**CTP1340 (CCN1340)** **CTP1340/CTPP345 (CCN1340/HCN1345)** CTCP325/CTP1340 (HCR1325/CCN1340) CTP1340/CTPP345 (CCN1340/HCN1345)	**CTPP345 (HCN1345)** **CTPP345 (HCN1345)** CTPP345 (HCN1345)		0,05–0,15
-M1 ▲ very stable cutting edge ▲ medium-high feed rates ▲ for intterrupted cut ▲ for high tensile materials ▲ first choice for parting off		**CTCP325 (HCR1325)** **CTCP335 (HCR1335)** CTCP325 (HCR1325) CTP1340 (CCN1340)	**CTCP335/CTP1340 (HCR1335/CCN1340)** **CTP1340 (CCN1340)** **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTPP345 (HCN1345)** CTPP345 (HCN1345) **CTCP325 (HCR1325)** CTPP345 (HCN1345)		0,08–0,20
-R2 ▲ very stable cutting edge ▲ high feed rates ▲ good chip control		**CTCP325 (HCR1325)** CTP1340 (CCN1340) **CTCP325 (HCR1325)** CTP1340 (CCN1340)	**CTP1340 (CCN1340)** CTP1340/CTPP345 (CCN1340/HCN1345) **CTCP325/CTP1340 (HCR1325/CCN1340)** CTP1340/CTPP345 (CCN1340/HCN1345)	**CTPP345 (HCN1345)** CTPP345 (HCN1345) CTPP345 (HCN1345)		0,10–0,27
-27P ▲ very positive geometry ▲ ground periphery ▲ sharp cutting edge ▲ polished chip breaker ▲ first choice for non-ferrous metals		 **H216T (CWK26)** 	 **H216T (CWK26)** 	 **H216T (CWK26)** 		0,03–0,13

System MC

-F2 ▲ very positive geometry ▲ honed cutting edge ▲ low feed rates ▲ low cutting forces ▲ first choice for stainless materials		**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTP1340 (CCN1340) CTP1340 (CCN1340) **CTP1340 (CCN1340)**	**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTP1340 (CCN1340) CTP1340 (CCN1340) **CTP1340 (CCN1340)**	**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTP1340 (CCN1340) 		0,05–0,10
-F3 ▲ very positive geometry ▲ honed cutting edge ▲ low feed rates ▲ low cutting forces ▲ reduced burrs / edge build up		**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTP1340 (CCN1340) CTP1340 (CCN1340) **CTP1340 (CCN1340)**	**CTP1340 (CCN1340)** **CTP1340 (CCN1340)** CTP1340 (CCN1340) CTP1340 (CCN1340) **CTP1340 (CCN1340)**	 		0,02–0,06

Example of Coding Grooving Tools

Grooving insert

GX	16	2	E	3.00	N	0.50
Grooving system (GX)	Insert length (16 mm)	Width class of the holder / module or support surface (2 mm)	Type of insert, application	Groove width (3.0 mm)	Insert seat N = Neutral L = Left Handed R = Right Handed	Corner radius size (0.5 mm)

Module

E	25	R	12	GX	16	2
Application E = external I = internal	Size (25 mm)	Module version R = Right Handed L = Left Handed	Maximum groove depth (12 mm)	Grooving system (GX)	Insert size (16 mm)	Width class 2

Basic holder

E	25	R	00	2525	L
Application E = external I = internal	Size (25 mm)	Holder version R = Right Handed L = Left Handed	Approach angle 0°	Shank type 25x25mm	Shank length L = (sh. ISO)

Monobloc tool holder

E	25	R	00	33	2525	M	K	DC	SX3
Application E = external I = internal	Size (25 mm)	Holder version R = Right Handed L = Left Handed	Approach angle 0°	Groove depth (33 mm)	Shank type 25x25 mm	Shank length M = (sh. ISO)	Insert clamping K = Key	Cooling system DC = DirectCooling	Grooving system/width (3.0 mm)

Compilation

Basic holder: **E25 R 00 - 2525L**

Module: **E25 R 12 - GX 16-2**

Grooving insert: **GX 16-2 E3.00 N 0.50**

Grades Overview

CTCP325

HCR1325

- Carbide, TiCN-Al_2O_3-coated
- ISO | **P25 I K30** | M20
- The wear-resistant solution for steel and cast iron materials at high cutting speeds

CTCP335

HCR1335

- Carbide, TiCN-Al_2O_3-coated
- ISO | **P35** | M30 | **K35**
- The reliable choice for machining steel and cast iron materials

CTPP345

HCN1345

- Carbide, TiAlTaN-coated
- ISO | **P45** | **M40** | S40
- The reliable solution for steel materials and austenitic steels under unstable conditions

CTP1340

CCN1340

- Carbide, TiAlTaN-coated
- ISO | **P30** | **M25** | **K30** | **S30** | N30
- The universal high-performance grade for steel materials, austenitic steel, cast iron materials and heat-resistant alloys

CTPP520

DPX1520

- Carbide, TiAlTaN-coated
- ISO | **P20** | **M15** | **K25** | N25 | S25
- The wear-resistant grade for wet machining of steels

CTPP535

DPX1535

- Carbide, AlTiN-coated
- ISO | **P35** | **M30** | **S30** | N30
- The tough thread turning grade for universal application

H216T

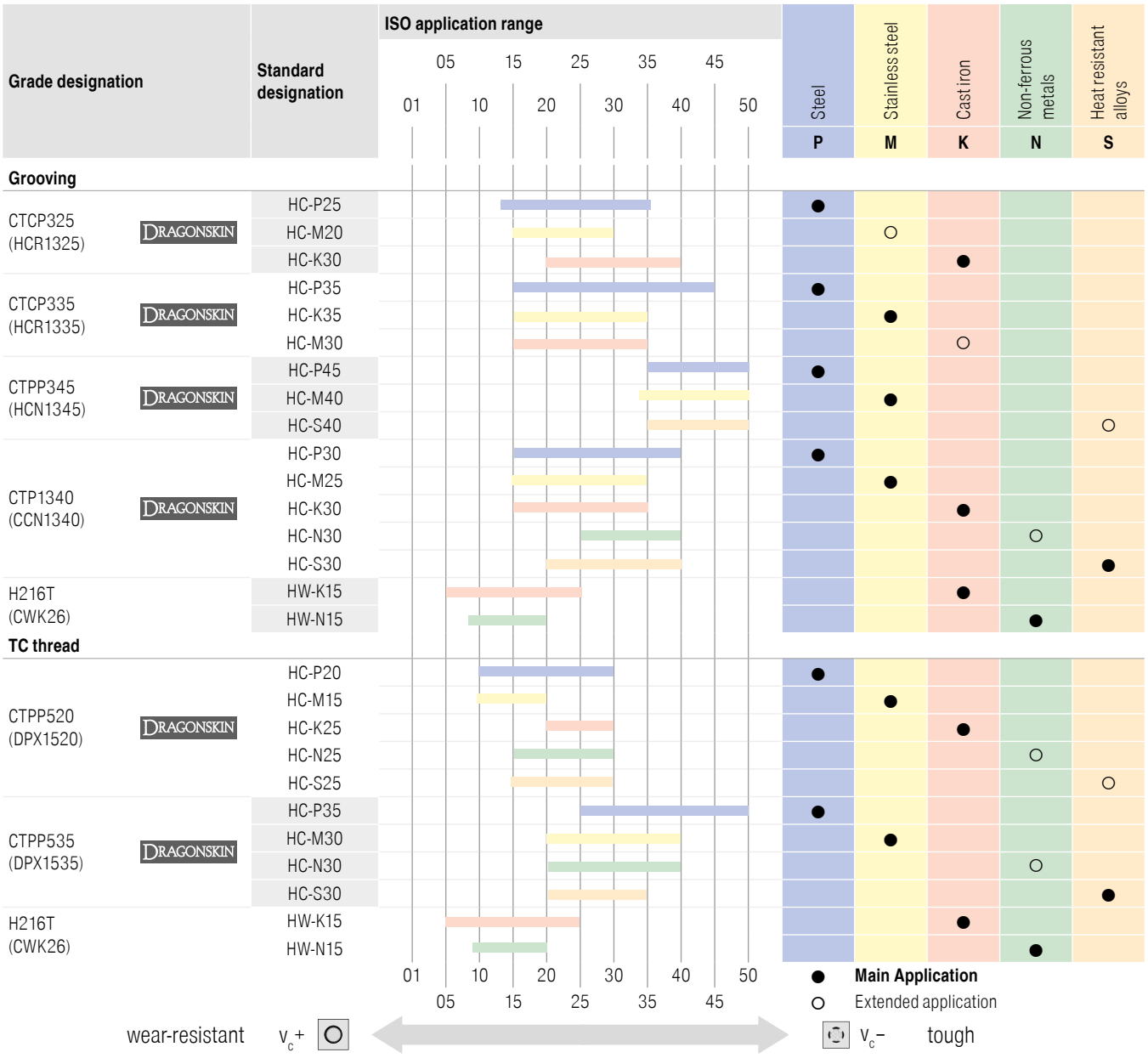
CWK26

- Carbide, uncoated
- ISO | **K15** | **N15**
- The uncoated carbide grade for machining aluminium and other non-ferrous metals
- Also highly suitable for HSC machining

CWX500

- Carbide, TiAlN-coated
- ISO | **K30**
- The universal carbide grade for almost all materials

Application



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Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools 12

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

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Technical Information	
Coatings and thread types	59–61
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WNT \ Performance

Premium quality tools for high performance.

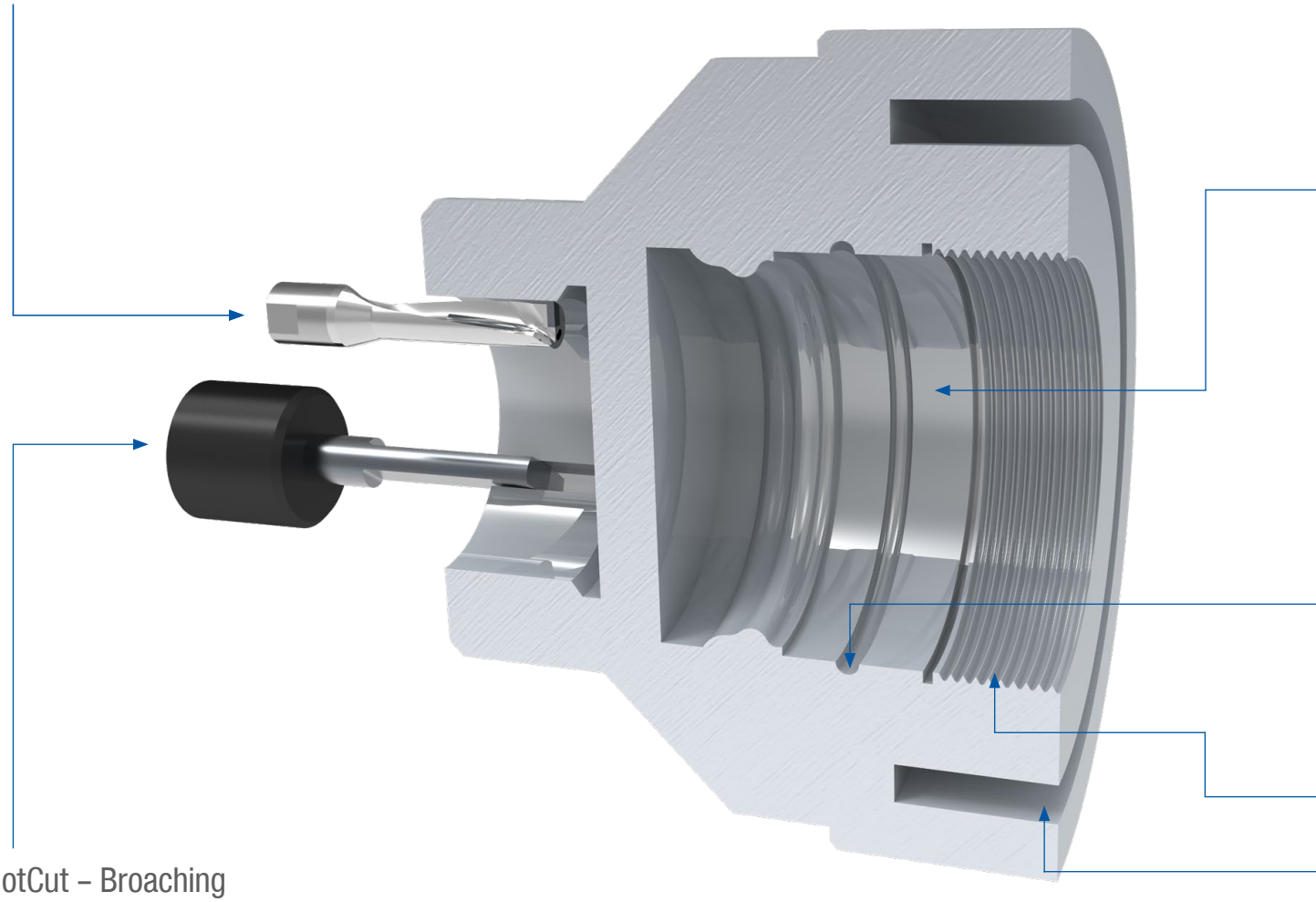
The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Toolfinder

EcoCut Mini

From Ø 2 mm

Inserts and tool holders can be found in → **Chapter 10 – EcoCut**



SlotCut – Broaching

Inserts + Holder DIN138	55–58

System overview

UltraMini

- from Ø 0.5 mm
- flexible system
- ground inserts
- high repeatability
- coolant supply to the cutting edge

MiniCut

- from Ø 7.8 mm
- stable three-rib interface
- easy handling
- coolant supply to the cutting edge
- precise cutting edge position

SlotCut

- broaching directly on the machine
- usable from Ø 6 mm
- low machine load
- variety of tolerance classes

Hole diameter in mm		UltraMini										MiniCut					
		≥ 0,5	≥ 2	≥ 2,4	≥ 2,8	≥ 3	≥ 4	≥ 5	≥ 6	≥ 8	≥ 16		≥ 8	≥ 9	≥ 11	≥ 14	≥ 16
Internal turning and profiling		4–7	4–7	4–7	4–7		4–7	4–7	4–7				36	36	36	36	36
Internal turning and profiling – hard turning			8		8		8	8	8				37		37	37	37
High-feed turning			10			10	10	10	10								
Turning and profile turning – super alloys			9		9		9	9	9								
Internal turning					11		11	11					38	38	38	38	38
Back boring						12	12	12	12				39	39	39	39	
Turning and chamfering								13	13				39	39	39	39	
Pre-parting and chamfering							13	13	13				40	40	40	40	40
Groove turning			14–16			14–16	14–16	14–16	14–16				41+42	40	40	40	40
Internal Undercuts			17		17		17	17	17				43	43	43	43	43
Groove and profile turning							18	18	18				44	44	44	44	44
Internal thread turning				19–22			19–22	19–22	19–22				45–48	45–48	45–48	45–48	45–48
Axial grooving								23–28	23–28	23–28	23–28		49+50	49+50	49+50	49+50	49+50
Suitable holder			31–35										51–54				
Sets			29+30										50				

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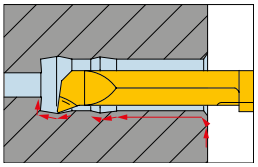
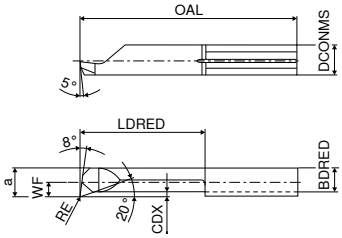
UltraMini – Inserts for internal turning and profiling





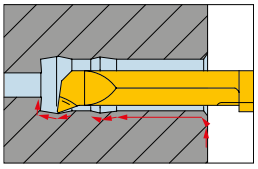
Illustrations show right-hand versions

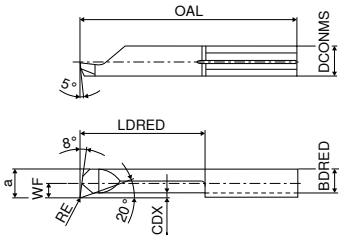
Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	RE	Standard tool holder	Left-hand Y5 Article no. 73 005 ...		Right-hand Y5 Article no. 73 004 ...		Left-hand Y5 Article no. 73 005 ...		Right-hand Y5 Article no. 73 004 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
R/L 050.05-2	4		0.5	0.4	20	2	0.03	0.32	0.02	645.00..-D	61.71	500	61.71	500				
R/L 050.06-2	4		0.6	0.5	20	2	0.05	0.40	0.04	645.00..-D	61.71	510	61.71	510				
R/L 050.06-3	4		0.6	0.5	20	3	0.05	0.40	0.04	645.00..-D	63.71	511	63.71	511				
R/L 050.08-4	4		0.8	0.7	20	4	0.05	0.60	0.04	645.00..-D					62.10	812	62.10	812
R/L 050.1-8	4		1.0	0.9	22	8	0.10	0.75	0.05	645.00..-D					61.51	813	61.51	813
R/L 050.15-5	4		1.5	1.3	19	5	0.10	1.15	0.05	645.00..-D	58.86	515	58.86	515				
R/L 050.15-10	4		1.5	1.3	24	10	0.10	1.15	0.05	645.00..-D	59.42	516	59.42	516				
R/L 050.15-12	4		1.5	1.3	26	12	0.10	1.15	0.05	645.00..-D					61.51	818	61.51	818
R/L 050.2-5	4		2.0	1.7	19	5	0.10	1.50	0.05	645.00..-D	50.02	520	45.89	520				
R/L 050.2-10	4		2.0	1.7	24	10	0.10	1.50	0.05	645.00..-D	50.60	521	50.02	521				
R/L 050.2-15	4		2.0	1.7	29	15	0.10	1.50	0.05	645.00..-D	54.32	522	49.60	522				
R/L 050.3-10	4	0.6	2.8	2.6	24	10	0.20	2.30	0.10	645.00..-D	54.32	531	52.74	531				
R/L 050.3-16	4	0.6	2.8	2.6	30	16	0.20	2.30	0.10	645.00..-D	59.57	530	57.86	530				
R/L 050.3-20	4	0.6	2.8	2.6	34	20	0.20	2.30	0.10	645.00..-D	56.58	532	57.78	532				
R/L 050.35-10	4	1.1	3.5	3.1	24	10	0.25	2.80	0.10	645.00..-D					48.65	835	48.65	835
R/L 050.35-16	4	1.1	3.5	3.1	30	16	0.25	2.80	0.10	645.00..-D					51.28	836	51.28	836
R/L 050.35-20	4	1.1	3.5	3.1	34	20	0.25	2.80	0.10	645.00..-D					61.62	837	61.62	837
R/L 050.35-24	4	1.1	3.5	3.1	38	24	0.25	2.80	0.10	645.00..-D					67.50	838	67.50	838
R/L 050.4-10	4	1.5	4.0	3.5	24	10	0.30	3.00	0.10	645.00..-D	54.59	541	52.01	541	49.89	841	49.89	841
R/L 050.4-16	4	1.5	4.0	3.5	30	16	0.30	3.00	0.10	645.00..-D	54.59	540	52.01	540	52.74	840	52.74	840
R/L 050.4-20	4	1.5	4.0	3.5	34	20	0.30	3.00	0.10	645.00..-D	55.78	542	55.44	542	58.99	842	58.99	842
R/L 050.4-24	4	1.5	4.0	3.5	38	24	0.30	3.00	0.10	645.00..-D	66.97	545	64.98	545	66.97	845	66.97	845
R/L 050.4-28	4	1.5	4.0	3.5	42	28	0.30	3.00	0.10	645.00..-D	74.54	546	71.16	546	74.54	846	74.54	846
R/L 050.5-10	5	1.9	5.0	4.4	25	10	0.50	3.80	0.15	645.00..-D	53.97	551	49.21	551	46.74	851	46.74	851
R/L 050.5-15	5	1.9	5.0	4.4	30	15	0.50	3.80	0.15	645.00..-D	54.80	552	52.43	552	49.89	852	49.89	852
R/L 050.5-20	5	1.9	5.0	4.4	35	20	0.50	3.80	0.15	645.00..-D	55.23	550	53.82	550	57.43	850	57.43	850
R/L 050.5-25	5	1.9	5.0	4.4	40	25	0.50	3.80	0.15	645.00..-D	63.61	553	60.80	553	64.98	853	64.98	853
R/L 050.5-30	5	1.9	5.0	4.4	45	30	0.50	3.80	0.15	645.00..-D	68.55	554	66.84	554	73.26	854	73.26	854
R/L 050.5-35	5	1.9	5.0	4.4	50	35	0.50	3.80	0.15	645.00..-D	81.23	556	77.59	556	81.23	856	81.23	856
R/L 050.5-40	5	1.9	5.0	4.4	55	40	0.50	3.80	0.15	645.00..-D					88.29	857	88.29	857
R/L 050.6-15	6	2.3	6.0	5.3	30	15	0.50	4.50	0.15	676.00..-D	56.14	561	51.46	561	49.89	861	49.89	861
R/L 050.6-22	6	2.3	6.0	5.3	37	22	0.50	4.50	0.15	676.00..-D	57.57	560	56.02	560	57.43	860	57.43	860
R/L 050.6-25	6	2.3	6.0	5.3	40	25	0.50	4.50	0.15	676.00..-D	65.15	562	59.57	562	64.98	862	64.98	862
R/L 050.6-30	6	2.3	6.0	5.3	45	30	0.50	4.50	0.15	676.00..-D	69.57	563	67.70	563	73.26	863	73.26	863
R/L 050.6-35	6	2.3	6.0	5.3	50	35	0.50	4.50	0.15	676.00..-D	81.23	564	77.59	564	81.23	864	81.23	864
R/L 050.6-42	6	2.3	6.0	5.3	57	42	0.50	4.50	0.15	676.00..-D	90.79	565	88.23	565	90.79	865	90.79	865
R/L 050.7-20	7	2.8	6.8	6.3	35	20	0.60	5.50	0.15	676.00..-D	58.86	572	57.16	572	56.62	872	56.62	872
R/L 050.7-25	7	2.8	6.8	6.3	40	25	0.60	5.50	0.15	676.00..-D	73.67	573	70.68	573	65.70	873	65.70	873
R/L 050.7-30	7	2.8	6.8	6.3	45	30	0.60	5.50	0.15	676.00..-D	73.40	574	71.68	574	72.96	874	72.96	874
R/L 050.7-35	7	2.8	7.0	6.3	50	35	0.60	5.50	0.15	676.00..-D	82.64	575	82.64	575	82.64	875	82.64	875
R/L 050.7-40	7	2.8	7.0	6.3	55	40	0.60	5.50	0.15	676.00..-D	92.06	576	92.06	576	92.06	876	92.06	876
R/L 050.7-45	7	2.8	7.0	6.3	60	45	0.60	5.50	0.15	676.00..-D	95.76	577	95.76	577	95.76	877	95.76	877
R/L 050.7-50	7	2.8	7.0	6.3	65	50	0.60	5.50	0.15	676.00..-D	105.02	578	105.02	578	105.02	878	105.02	878

Steel	●	●	●	●
Stainless steel	●	●	●	●
Cast iron	○	○	●	●
Non ferrous metals	○	○	●	●
Heat resistant alloys	○	○	●	●
hardened materials				

→ v_c Page 60

UltraMini – Inserts for internal turning and profiling





Illustrations show right-hand versions

Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	RE	Standard tool holder	Left-hand Y5 Article no. 73 005 ... £		Right-hand Y5 Article no. 73 004 ... £	
	mm	mm	mm	mm	mm	mm	mm	mm	mm					
R/L 050.2-5	4		2.0	1.7	19	5	0.1	1.5	0.05	645.00..-D	39.99	**020**	39.99	**020**
R/L 050.2-10	4		2.0	1.7	24	10	0.1	1.5	0.05	645.00..-D	41.91	**021**	41.91	**021**
R/L 050.2-15	4		2.0	1.7	29	15	0.1	1.5	0.05	645.00..-D	44.75	**022**	44.75	**022**
R/L 050.3-10	4	0.6	2.8	2.6	24	10	0.2	2.3	0.10	645.00..-D	42.34	**031**	42.34	**031**
R/L 050.3-16	4	0.6	2.8	2.6	30	16	0.2	2.3	0.10	645.00..-D	48.79	**030**	48.79	**030**
R/L 050.3-20	4	0.6	2.8	2.6	34	20	0.2	2.3	0.10	645.00..-D	50.00	**032**	50.00	**032**
R/L 050.4-10	4	1.5	4.0	3.5	24	10	0.3	3.0	0.10	645.00..-D	42.47	**041**	42.47	**041**
R/L 050.4-16	4	1.5	4.0	3.5	30	16	0.3	3.0	0.10	645.00..-D	44.05	**040**	44.05	**040**
R/L 050.4-20	4	1.5	4.0	3.5	34	20	0.3	3.0	0.10	645.00..-D	46.74	**042**	46.16	**042**
R/L 050.5-10	5	1.9	5.0	4.4	25	10	0.5	3.8	0.15	645.00..-D	42.77	**051**	42.77	**051**
R/L 050.5-15	5	1.9	5.0	4.4	30	15	0.5	3.8	0.15	645.00..-D	45.03	**052**	45.03	**052**
R/L 050.5-20	5	1.9	5.0	4.4	35	20	0.5	3.8	0.15	645.00..-D	46.60	**050**	46.60	**050**
R/L 050.5-25	5	1.9	5.0	4.4	40	25	0.5	3.8	0.15	645.00..-D	53.97	**053**	53.97	**053**
R 050.5-30	5	1.9	5.0	4.4	45	30	0.5	3.8	0.05	645.00..-D			59.21	**054**
L 050.5-30	5	1.9	5.0	4.4	45	30	0.5	3.8	0.15	645.00..-D	58.43	**054**		
R/L 050.6-15	6	2.3	6.0	5.3	30	15	0.5	4.5	0.15	676.00..-D	46.16	**061**	46.16	**061**
R/L 050.6-22	6	2.3	6.0	5.3	37	22	0.5	4.5	0.15	676.00..-D	46.97	**060**	46.97	**060**
R/L 050.6-25	6	2.3	6.0	5.3	40	25	0.5	4.5	0.15	676.00..-D	55.78	**062**	55.78	**062**
R/L 050.6-30	6	2.3	6.0	5.3	45	30	0.5	4.5	0.15	676.00..-D	60.14	**063**	59.28	**063**
R/L 050.7-20	7	2.8	6.8	6.3	35	20	0.6	5.5	0.15	676.00..-D	49.60	**072**	49.60	**072**
R/L 050.7-25	7	2.8	6.8	6.3	40	25	0.6	5.5	0.15	676.00..-D	56.62	**073**	56.62	**073**
R/L 050.7-30	7	2.8	6.8	6.3	45	30	0.6	5.5	0.15	676.00..-D	66.12	**074**	60.80	**074**

Steel	○	○
Stainless steel		
Cast iron	○	○
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

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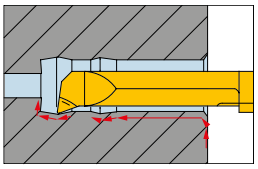
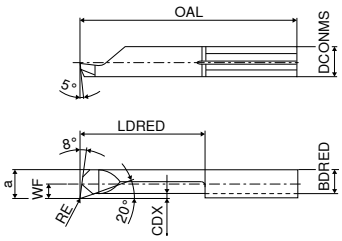
UltraMini – Inserts for internal turning and profiling

▲ with corner radius ≤ 0.05 mm





Illustrations show right-hand versions

Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	RE	Standard tool holder	Left-hand Y5 Article no. 73 021 ...		Right-hand Y5 Article no. 73 020 ...		Left-hand Y5 Article no. 73 023 ...		Right-hand Y5 Article no. 73 022 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
R/L 053.3-10	4	0.6	2.8	2.6	24	10	0.2	2.3	0.03	645.00..-D	53.87	**310**	53.87	**310**				
R/L 053.3-16	4	0.6	2.8	2.6	30	16	0.2	2.3	0.03	645.00..-D	56.71	**316**	56.71	**316**				
R/L 053.3-20	4	0.6	2.8	2.6	34	20	0.2	2.3	0.03	645.00..-D	65.99	**320**	65.99	**320**				
R/L 053.4-10	4	1.5	4.0	3.5	24	10	0.3	3.0	0.03	645.00..-D	53.87	**410**	53.87	**410**				
R/L 053.4-16	4	1.5	4.0	3.5	30	16	0.3	3.0	0.03	645.00..-D	56.71	**416**	56.71	**416**				
R/L 053.4-20	4	1.5	4.0	3.5	34	20	0.3	3.0	0.03	645.00..-D	64.14	**420**	64.14	**420**				
R/L 053.4-24	4	1.5	4.0	3.5	38	24	0.3	3.0	0.03	645.00..-D	70.98	**424**	70.98	**424**				
R/L 053.4-28	4	1.5	4.0	3.5	42	28	0.3	3.0	0.03	645.00..-D	77.17	**428**	77.17	**428**				
R/L 055.2-10	4		2.0	1.7	24	10	0.1	1.5	0.05	645.00..-D					54.39	**210**	54.39	**210**
R/L 055.2-15	4		2.0	1.7	29	15	0.1	1.5	0.05	645.00..-D					58.14	**215**	58.14	**215**
R/L 055.2-5	4		2.0	1.7	19	5	0.1	1.5	0.05	645.00..-D					53.87	**205**	53.87	**205**
R/L 055.3-10	4	0.6	2.8	2.6	24	10	0.2	2.3	0.05	645.00..-D					53.87	**310**	53.87	**310**
R/L 055.3-16	4	0.6	2.8	2.6	30	16	0.2	2.3	0.05	645.00..-D					56.71	**316**	56.71	**316**
R/L 055.3-20	4	0.6	2.8	2.6	34	20	0.2	2.3	0.05	645.00..-D					67.41	**320**	67.41	**320**
R/L 055.4-10	4	1.5	4.0	3.5	24	10	0.3	3.0	0.05	645.00..-D					53.87	**410**	53.87	**410**
R/L 055.4-16	4	1.5	4.0	3.5	30	16	0.3	3.0	0.05	645.00..-D					56.71	**416**	56.71	**416**
R/L 055.4-20	4	1.5	4.0	3.5	34	20	0.3	3.0	0.05	645.00..-D					64.14	**420**	64.14	**420**
R/L 055.4-24	4	1.5	4.0	3.5	38	24	0.3	3.0	0.05	645.00..-D					70.98	**424**	70.98	**424**
R/L 055.4-28	4	1.5	4.0	3.5	42	28	0.3	3.0	0.05	645.00..-D					77.17	**428**	77.17	**428**
R/L 055.5-10	5	1.9	5.0	4.4	25	10	0.5	3.8	0.05	645.00..-D					50.86	**510**	48.47	**510**
R/L 055.5-15	5	1.9	5.0	4.4	30	15	0.5	3.8	0.05	645.00..-D					53.87	**515**	53.87	**515**
R/L 055.5-20	5	1.9	5.0	4.4	35	20	0.5	3.8	0.05	645.00..-D					61.29	**520**	61.29	**520**
R/L 055.5-25	5	1.9	5.0	4.4	40	25	0.5	3.8	0.05	645.00..-D					67.80	**525**	67.80	**525**
R/L 055.5-30	5	1.9	5.0	4.4	45	30	0.5	3.8	0.05	645.00..-D					77.11	**530**	77.11	**530**
R/L 055.5-35	5	1.9	5.0	4.4	50	35	0.5	3.8	0.05	645.00..-D					85.22	**535**	85.22	**535**
R/L 055.6-15	6	2.3	6.0	5.3	30	15	0.5	4.5	0.05	676.00..-D					53.87	**615**	53.87	**615**
R/L 055.6-22	6	2.3	6.0	5.3	37	22	0.5	4.5	0.05	676.00..-D					59.98	**622**	59.98	**622**
R/L 055.6-25	6	2.3	6.0	5.3	40	25	0.5	4.5	0.05	676.00..-D					67.80	**625**	67.80	**625**
R/L 055.6-30	6	2.3	6.0	5.3	45	30	0.5	4.5	0.05	676.00..-D					77.11	**630**	77.11	**630**
R/L 055.6-35	6	2.3	6.0	5.3	50	35	0.5	4.5	0.05	676.00..-D					85.22	**635**	85.22	**635**
R/L 055.6-42	6	2.3	6.0	5.3	57	42	0.5	4.5	0.05	676.00..-D					92.97	**642**	92.97	**642**

Steel	●	●	●	●
Stainless steel	●	●	●	●
Cast iron	●	●	●	●
Non ferrous metals	●	●	●	●
Heat resistant alloys	●	●	●	●
hardened materials				

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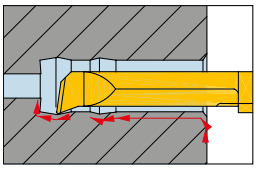
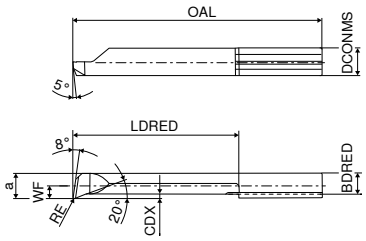
UltraMini – Inserts for internal turning and profiling

▲ with chip former

TiAlN TiAlN





Illustrations show right-hand versions

Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	RE	Standard tool holder	Left-hand Y5 Article no. 73 017 ...		Right-hand Y5 Article no. 73 016 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		£		£	
R/L 050.4-10C	4	1.5	4	3.5	24	10	0.3	3.0	0.2	645.00..-D	49.89	410	49.89	410
R/L 050.4-16C	4	1.5	4	3.5	30	16	0.3	3.0	0.2	645.00..-D	52.74	416	52.74	416
R/L 050.4-20C	4	1.5	4	3.5	34	20	0.3	3.0	0.2	645.00..-D	58.99	420	58.99	420
R/L 050.4-24C	4	1.5	4	3.5	38	24	0.3	3.0	0.2	645.00..-D	66.97	424	66.97	424
R/L 050.4-28C	4	1.5	4	3.5	42	28	0.3	3.0	0.2	645.00..-D	74.54	428	74.54	428
R/L 050.5-10C	5	1.9	5	4.4	25	10	0.5	3.8	0.2	645.00..-D	46.74	510	46.74	510
R/L 050.5-15C	5	1.9	5	4.4	30	15	0.5	3.8	0.2	645.00..-D	49.89	515	49.89	515
R/L 050.5-20C	5	1.9	5	4.4	35	20	0.5	3.8	0.2	645.00..-D	57.43	520	57.43	520
R/L 050.5-25C	5	1.9	5	4.4	40	25	0.5	3.8	0.2	645.00..-D	64.98	525	64.98	525
R/L 050.5-30C	5	1.9	5	4.4	45	30	0.5	3.8	0.2	645.00..-D	73.26	530	73.26	530
R/L 050.5-35C	5	1.9	5	4.4	50	35	0.5	3.8	0.2	645.00..-D	81.23	535	81.23	535
R/L 050.6-15C	6	2.3	6	5.3	30	15	0.5	4.5	0.2	676.00..-D	49.89	615	49.89	615
R/L 050.6-22C	6	2.3	6	5.3	37	22	0.5	4.5	0.2	676.00..-D	57.43	622	57.43	622
R/L 050.6-25C	6	2.3	6	5.3	40	25	0.5	4.5	0.2	676.00..-D	64.98	625	64.98	625
R/L 050.6-30C	6	2.3	6	5.3	45	30	0.5	4.5	0.2	676.00..-D	73.26	630	73.26	630
R/L 050.6-35C	6	2.3	6	5.3	50	35	0.5	4.5	0.2	676.00..-D	81.23	635	81.23	635
R/L 050.6-42C	6	2.3	6	5.3	57	42	0.5	4.5	0.2	676.00..-D	90.79	642	90.79	642
R/L 050.7-20C	7	2.8	7	6.3	35	20	0.6	5.5	0.2	676.00..-D	56.62	720	56.62	720
R/L 050.7-25C	7	2.8	7	6.3	40	25	0.6	5.5	0.2	676.00..-D	65.70	725	65.70	725
R/L 050.7-30C	7	2.8	7	6.3	45	30	0.6	5.5	0.2	676.00..-D	72.96	730	72.96	730
R/L 050.7-35C	7	2.8	7	6.3	50	35	0.6	5.5	0.2	676.00..-D	82.64	735	82.64	735
R/L 050.7-40C	7	2.8	7	6.3	55	40	0.6	5.5	0.2	676.00..-D	92.06	740	92.06	740
R/L 050.7-45C	7	2.8	7	6.3	60	45	0.6	5.5	0.2	676.00..-D	95.76	745	95.76	745
R/L 050.7-50C	7	2.8	7	6.3	65	50	0.6	5.5	0.2	676.00..-D	105.02	750	105.02	750

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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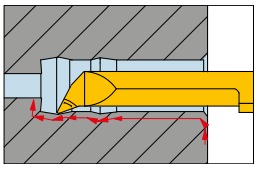
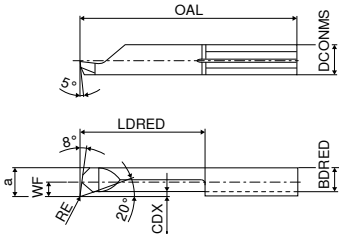
UltraMini – Inserts for internal turning and profiling – hard turning

▲ 46 to 65 HRC

TiAlN+ TiAlN+





Illustrations show right-hand versions

Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	RE	Standard tool holder	Left-hand Y5 Article no. 73 025 ...		Right-hand Y5 Article no. 73 024 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		£		£	
R/L 050.2-5	4		2.0	1.7	19	5	0.1	1.5	0.05	645.00..-D	74.22	**920**	74.22	**920**
R/L 050.2-10	4		2.0	1.7	24	10	0.1	1.5	0.05	645.00..-D	75.59	**921**	75.59	**921**
R/L 050.2-15	4		2.0	1.7	29	15	0.1	1.5	0.05	645.00..-D	78.43	**922**	78.43	**922**
R/L 050.3-10	4	0.6	2.8	2.6	24	10	0.2	2.3	0.10	645.00..-D	73.97	**931**	73.97	**931**
R/L 050.3-16	4	0.6	2.8	2.6	30	16	0.2	2.3	0.10	645.00..-D	77.09	**930**	77.09	**930**
R/L 050.3-20	4	0.6	2.8	2.6	34	20	0.2	2.3	0.10	645.00..-D	88.21	**932**	88.21	**932**
R/L 050.4-10	4	1.5	4.0	3.5	24	10	0.3	3.0	0.10	645.00..-D	73.97	**941**	73.97	**941**
R/L 050.4-16	4	1.5	4.0	3.5	30	16	0.3	3.0	0.10	645.00..-D	77.09	**940**	77.09	**940**
R/L 050.4-20	4	1.5	4.0	3.5	34	20	0.3	3.0	0.10	645.00..-D	84.87	**942**	84.87	**942**
R/L 050.4-24	4	1.5	4.0	3.5	38	24	0.3	3.0	0.10	645.00..-D	92.30	**945**	92.30	**945**
R/L 050.4-28	4	1.5	4.0	3.5	42	28	0.3	3.0	0.10	645.00..-D	100.20	**946**	100.20	**946**
R/L 050.5-10	5	1.9	5.0	4.4	25	10	0.5	3.8	0.15	645.00..-D	71.74	**951**	71.74	**951**
R/L 050.5-15	5	1.9	5.0	4.4	30	15	0.5	3.8	0.15	645.00..-D	75.09	**952**	75.09	**952**
R/L 050.5-20	5	1.9	5.0	4.4	35	20	0.5	3.8	0.15	645.00..-D	83.14	**950**	83.14	**950**
R/L 050.5-25	5	1.9	5.0	4.4	40	25	0.5	3.8	0.15	645.00..-D	91.30	**953**	91.30	**953**
R/L 050.5-30	5	1.9	5.0	4.4	45	30	0.5	3.8	0.15	645.00..-D	100.09	**954**	100.09	**954**
R/L 050.5-35	5	1.9	5.0	4.4	50	35	0.5	3.8	0.15	645.00..-D	108.50	**956**	108.50	**956**
R/L 050.6-15	6	2.3	6.0	5.3	30	15	0.5	4.5	0.15	676.00..-D	76.19	**961**	76.19	**961**
R/L 050.6-22	6	2.3	6.0	5.3	37	22	0.5	4.5	0.15	676.00..-D	84.24	**960**	84.24	**960**
R/L 050.6-25	6	2.3	6.0	5.3	40	25	0.5	4.5	0.15	676.00..-D	92.41	**962**	92.41	**962**
R/L 050.6-30	6	2.3	6.0	5.3	45	30	0.5	4.5	0.15	676.00..-D	101.19	**963**	101.19	**963**
R/L 050.6-35	6	2.3	6.0	5.3	50	35	0.5	4.5	0.15	676.00..-D	109.86	**964**	109.86	**964**
R/L 050.6-42	6	2.3	6.0	5.3	57	42	0.5	4.5	0.15	676.00..-D	119.64	**965**	119.64	**965**
R/L 050.7-20	7	2.8	6.8	6.3	35	20	0.6	5.5	0.15	676.00..-D	85.12	**972**	85.12	**972**
R/L 050.7-25	7	2.8	6.8	6.3	40	25	0.6	5.5	0.15	676.00..-D	93.77	**973**	93.77	**973**
R/L 050.7-30	7	2.8	6.8	6.3	45	30	0.6	5.5	0.15	676.00..-D	102.94	**974**	102.94	**974**
R/L 050.7-35	7	2.8	6.8	6.3	50	35	0.6	5.5	0.15	676.00..-D	111.60	**975**	111.60	**975**
R/L 050.7-40	7	2.8	6.8	6.3	55	40	0.6	5.5	0.15	676.00..-D	121.86	**976**	121.86	**976**
R/L 050.7-45	7	2.8	6.8	6.3	60	45	0.6	5.5	0.15	676.00..-D	127.68	**977**	127.68	**977**
R/L 050.7-50	7	2.8	6.8	6.3	65	50	0.6	5.5	0.15	676.00..-D	135.72	**978**	135.72	**978**

Steel		
Stainless steel		
Cast iron		
Non ferrous metals		
Heat resistant alloys		
hardened materials	●	●

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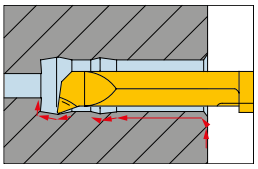
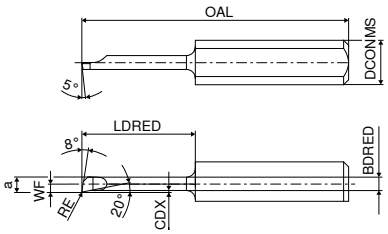
UltraMini – Inserts for internal turning and profiling

▲ Specially designed for super alloys





DPX 57S DRAGONSKIN

DPX 57S DRAGONSKIN

Illustrations show right-hand versions

Designation	DCONMS h6 mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	CDX mm	BDRED mm	RE mm	Standard tool holder	Left-hand Y5 Article no. 73 027 ... £		Right-hand Y5 Article no. 73 026 ... £	
R/L M050.05-2	4	0.20	0.5	0.40	20	2	0.02	0.02	0.02	645.00..-D	51.90	**052**	51.90	**052**
R/L M050.08-4	4	0.35	0.8	0.70	20	4	0.08	0.03	0.02	645.00..-D	52.98	**082**	52.98	**082**
R/L M050.1-5	4	0.40	1.0	0.90	20	5	0.05	0.05	0.02	645.00..-D	48.66	**102**	48.66	**102**
R/L M050.1-7	4	0.40	1.0	0.90	22	7	0.05	0.05	0.02	645.00..-D	50.82	**103**	50.82	**103**
R/L M050.15-5	4	0.60	1.5	1.15	19	5	0.08	0.08	0.02	645.00..-D	48.66	**151**	48.66	**151**
R/L M050.15-10	4	0.60	1.5	1.15	24	10	0.08	0.08	0.02	645.00..-D	50.82	**154**	50.82	**154**
R/L M050.2-5	4	0.80	2.0	1.70	19	5	0.08	0.08	0.02	645.00..-D	42.17	**201**	42.17	**201**
R/L M050.2-10	4	0.80	2.0	1.70	24	10	0.08	0.08	0.02	645.00..-D	43.25	**204**	43.25	**204**
R/L M050.25-5	4	0.20	2.5	2.20	19	5	0.10	0.10	0.02	645.00..-D	42.17	**251**	42.17	**251**
R/L M050.25-10	4	0.20	2.5	2.20	24	10	0.10	0.10	0.02	645.00..-D	43.25	**254**	43.25	**254**
R/L M050.3-10	4	0.60	3.0	2.60	24	10	0.15	0.15	0.02	645.00..-D	42.17	**304**	42.17	**304**
R/L M050.3-16	4	0.60	3.0	2.60	30	16	0.15	0.15	0.02	645.00..-D	44.33	**307**	44.33	**307**
R/L M050.35-10	4	1.10	3.5	3.10	24	10	0.17	0.17	0.02	645.00..-D	42.17	**350**	42.17	**350**
R/L M050.35-16	4	1.10	3.5	3.10	30	16	0.17	0.17	0.02	645.00..-D	44.33	**353**	44.33	**353**
R/L M050.35-20	4	1.10	3.5	3.10	34	20	0.17	0.17	0.02	645.00..-D	52.98	**354**	52.98	**354**
R/L M050.4-10	4	1.50	4.0	3.50	24	10	0.20	0.20	0.02	645.00..-D	42.17	**400**	42.17	**400**
R/L M050.4-16	4	1.50	4.0	3.50	30	16	0.20	0.20	0.02	645.00..-D	44.33	**403**	44.33	**403**
R/L M050.4-20	4	1.50	4.0	3.50	34	20	0.20	0.20	0.02	645.00..-D	49.74	**404**	49.74	**404**
R/L M050.4-24	4	1.50	4.0	3.50	38	24	0.20	0.20	0.02	645.00..-D	56.23	**406**	56.23	**406**

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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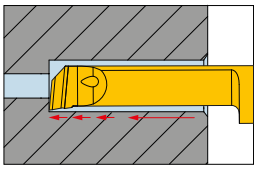
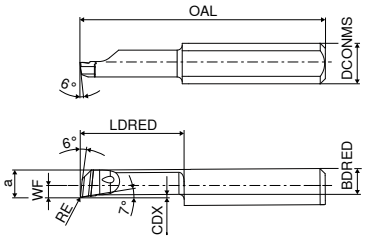
UltraMini – Inserts for internal turning

- ▲ with chip breaker
- ▲ high feed boring





DPX77S DRAGONSKIN

DPX77S DRAGONSKIN

Illustrations show right-hand versions

Designation	DCONMS h6 mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	CDX mm	BDRED mm	RE mm	Standard tool holder	Left-hand Y5 Article no. 73 001 ... £		Right-hand Y5 Article no. 73 000 ... £	
R/L X050.1-5	4		1.0	0.90	20	5	0.03	0.85	0.05	645.00..-D	44.66	**121**	44.66	**121**
R/L X050.15-7	4		1.5	1.35	22	7	0.05	1.25	0.10	645.00..-D	51.04	**233**	51.04	**233**
R/L X050.2-5	4		2.0	1.80	19	5	0.10	1.60	0.15	645.00..-D	38.83	**245**	38.83	**245**
R/L X050.2-10	4		2.0	1.80	24	10	0.10	1.60	0.05	645.00..-D	39.85	**215**	39.85	**215**
R/L X050.2-10	4		2.0	1.80	24	10	0.10	1.60	0.15	645.00..-D	39.85	**241**	39.85	**241**
R/L X050.3-10	4	0.7	3.0	2.70	24	10	0.15	2.55	0.05	645.00..-D	38.72	**341**	38.72	**341**
R/L X050.3-10	4	0.7	3.0	2.70	24	10	0.15	2.55	0.20	645.00..-D	38.72	**347**	38.72	**347**
R/L X050.3-16	4	0.7	3.0	2.70	30	16	0.15	2.55	0.05	645.00..-D	40.85	**371**	40.85	**371**
R/L X050.3-16	4	0.7	3.0	2.70	30	16	0.15	2.55	0.10	645.00..-D	40.85	**373**	40.85	**373**
R/L X050.3-16	4	0.7	3.0	2.70	30	16	0.15	2.55	0.20	645.00..-D	40.85	**377**	40.85	**377**
R/L X050.4-10	4	1.6	4.0	3.60	24	10	0.20	3.20	0.10	645.00..-D	38.72	**403**	38.72	**403**
R/L X050.4-10	4	1.6	4.0	3.60	24	10	0.20	3.20	0.20	645.00..-D	38.72	**407**	38.72	**407**
R/L X050.4-16	4	1.6	4.0	3.60	30	16	0.20	3.20	0.05	645.00..-D	40.85	**431**	40.85	**431**
R/L X050.4-16	4	1.6	4.0	3.60	30	16	0.20	3.20	0.10	645.00..-D	40.85	**433**	40.85	**433**
R/L X050.4-16	4	1.6	4.0	3.60	30	16	0.20	3.20	0.20	645.00..-D	40.85	**437**	40.85	**437**
R/L X050.4-24	4	1.6	4.0	3.60	38	24	0.20	3.20	0.10	645.00..-D	51.92	**463**	51.92	**463**
R/L X050.4-24	4	1.6	4.0	3.60	38	24	0.20	3.20	0.20	645.00..-D	51.92	**467**	51.92	**467**
R/L X050.5-15	5	2.1	5.0	4.60	30	15	0.30	4.05	0.05	645.00..-D	38.72	**511**	38.72	**511**
R/L X050.5-15	5	2.1	5.0	4.60	30	15	0.30	4.05	0.10	645.00..-D	38.72	**513**	38.72	**513**
R/L X050.5-15	5	2.1	5.0	4.60	30	15	0.30	4.05	0.20	645.00..-D	38.72	**517**	38.72	**517**
R/L X050.5-25	5	2.1	5.0	4.60	40	25	0.30	4.05	0.10	645.00..-D	50.47	**543**	50.47	**543**
R/L X050.5-25	5	2.1	5.0	4.60	40	25	0.30	4.05	0.20	645.00..-D	50.47	**547**	50.47	**547**
R/L X050.5-30	5	2.1	5.0	4.60	45	30	0.30	4.05	0.10	645.00..-D	57.08	**553**	57.08	**553**
R/L X050.5-30	5	2.1	5.0	4.60	45	30	0.30	4.05	0.20	645.00..-D	57.08	**557**	57.08	**557**
R/L X050.6-15	6	2.5	6.0	5.50	30	15	0.40	4.90	0.05	676.00..-D	38.72	**611**	38.72	**611**
R/L X050.6-15	6	2.5	6.0	5.50	30	15	0.40	4.90	0.10	676.00..-D	38.72	**613**	38.72	**613**
R/L X050.6-15	6	2.5	6.0	5.50	30	15	0.40	4.90	0.20	676.00..-D	38.72	**617**	38.72	**617**
R/L X050.6-22	6	2.5	6.0	5.50	37	22	0.40	4.90	0.20	676.00..-D	44.54	**637**	44.54	**637**
R/L X050.6-30	6	2.5	6.0	5.50	45	30	0.40	4.90	0.20	676.00..-D	57.08	**657**	57.08	**657**
R/L X050.6-35	6	2.5	6.0	5.50	50	35	0.40	4.90	0.20	676.00..-D	63.11	**667**	63.11	**667**
R/L X050.6-50	6	2.5	6.0	5.50	65	50	0.40	4.90	0.20	676.00..-D	78.57	**697**	78.57	**697**
R/L X050.7-25	7	3.0	7.0	6.50	40	25	0.50	5.90	0.20	676.00..-D	51.25	**747**	51.25	**747**
R/L X050.7-30	7	3.0	7.0	6.50	45	30	0.50	5.90	0.20	676.00..-D	57.75	**757**	57.75	**757**

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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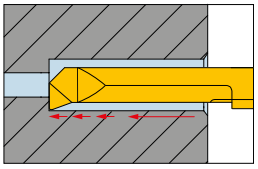
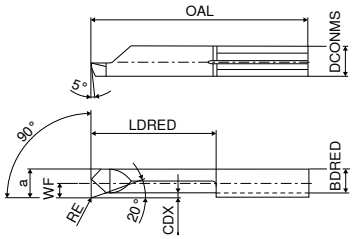
UltraMini – Inserts for internal turning





TiN

TiN

Illustrations show right-hand versions

Designation	DCONMS h6 mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	CDX mm	BDRED mm	RE mm	Standard tool holder	Left-hand Y5 Article no. 73 015 ... £		Right-hand Y5 Article no. 73 014 ... £	
R/L 090.3-10	4	0.6	2.8	2.6	24	10	0.2	2.3	0.2	645.00..-D	49.89	**541**	49.89	**541**
R/L 090.3-16	4	0.6	2.8	2.6	30	16	0.2	2.3	0.2	645.00..-D	52.87	**542**	52.87	**542**
R/L 090.4-10	4	1.5	4.0	3.5	24	10	0.3	3.0	0.2	645.00..-D	49.89	**545**	49.89	**545**
R/L 090.4-16	4	1.5	4.0	3.5	30	16	0.3	3.0	0.2	645.00..-D	52.87	**546**	52.87	**546**
R/L 090.5-10	5	1.9	5.0	4.4	25	10	0.5	3.8	0.2	645.00..-D	49.89	**550**	49.89	**550**
R/L 090.5-15	5	1.9	5.0	4.4	30	15	0.5	3.8	0.2	645.00..-D	52.87	**551**	52.87	**551**
R/L 090.5-20	5	1.9	5.0	4.4	35	20	0.5	3.8	0.2	645.00..-D	57.43	**552**	57.43	**552**

Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

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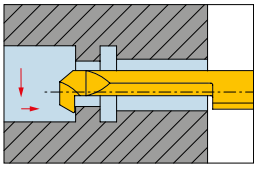
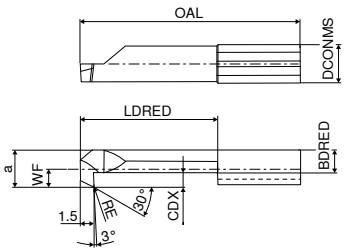
UltraMini – Inserts for back boring





Illustrations show right-hand versions

Designation	DCONMS h6 mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	CDX mm	BDRED mm	RE mm	Standard tool holder	Left-hand Y5 Article no. 73 013 ... £		Right-hand Y5 Article no. 73 012 ... £	
R/L 080.0003-15	4	0.6	3	2.6	29	15	0.5	2.0	0.10	645.00..-D	60.99	**542**	60.99	**542**
R/L 080.0003-20	4	0.6	3	2.6	34	20	0.5	2.0	0.10	645.00..-D	72.69	**544**	72.69	**544**
R/L 080.0004-15	4	1.5	4	3.5	29	15	0.8	2.4	0.15	645.00..-D	60.99	**546**	60.99	**546**
R/L 080.0004-25	4	1.5	4	3.5	39	25	0.8	2.4	0.15	645.00..-D	68.37	**548**	68.37	**548**
R/L 080.0005-20	5	1.9	5	4.4	35	20	1.0	3.3	0.20	645.00..-D	62.30	**554**	62.30	**554**
R/L 080.0005-30	5	1.9	5	4.4	45	30	1.0	3.3	0.20	645.00..-D	64.71	**558**	64.71	**558**
R/L 080.0006-20	6	2.3	6	5.3	35	20	1.8	3.4	0.20	676.00..-D	64.98	**564**	64.98	**564**
R/L 080.0006-30	6	2.3	6	5.3	45	30	1.8	3.4	0.20	676.00..-D	77.80	**568**	77.80	**568**
R/L 080.0007-20	7	2.7	7	6.3	35	20	2.5	3.8	0.20	676.00..-D	64.98	**574**	64.98	**574**
R/L 080.0007-30	7	2.7	7	6.3	45	30	2.5	3.8	0.20	676.00..-D	77.80	**578**	77.80	**578**

Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

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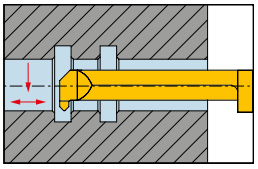
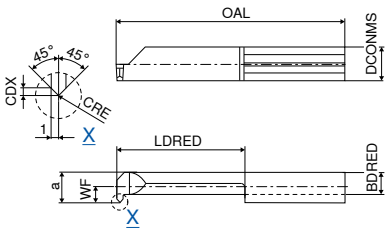
UltraMini – Inserts for internal turning and chamfering

TiN

TiN





Illustrations show right-hand versions

Designation	DCONMS h6 mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	CDX mm	BDRED mm	CRE mm	Standard tool holder	Left-hand Y5 Article no. 73 007 ... £		Right-hand Y5 Article no. 73 006 ... £	
R/L 060.5-15	5	1.9	5.0	4.4	30	15	0.7	3.3	0.2	645.00..-D	50.60	**551**	47.01	**551**
R/L 060.5-20	5	1.9	5.0	4.4	35	20	0.7	3.3	0.2	645.00..-D	52.55	**550**	52.32	**550**
R/L 060.7-20	7	2.7	6.8	6.3	35	20	0.7	3.8	0.2	676.00..-D	58.99	**570**	54.59	**570**

Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

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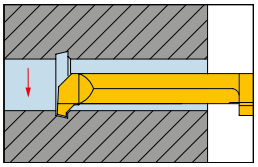
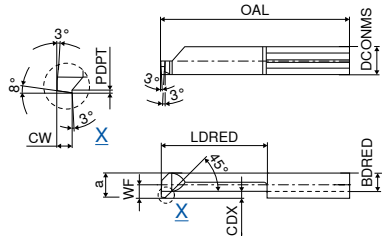
UltraMini – Inserts for internal chamfering for subsequent parting off

TiN

TiN





Illustrations show right-hand versions

Designation	DCONMS h6 mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	CDX mm	BDRED mm	CW mm	PDPT mm	Standard tool holder	Left-hand Y5 Article no. 73 009 ... £		Right-hand Y5 Article no. 73 008 ... £	
R/L 070.4-10	4	1.5	4	3.5	25	10	0.8	2.4	1	0.2	645.00..-D	52.37	**410**	52.37	**410**
R/L 070.4-16	4	1.5	4	3.5	30	16	0.8	2.4	1	0.2	645.00..-D	53.94	**416**	53.94	**416**
R/L 070.5-15	5	1.9	5	4.4	30	15	1.0	3.3	1	0.2	645.00..-D	51.73	**551**	51.73	**551**
R/L 070.5-20	5	1.9	5	4.4	35	20	1.0	3.3	1	0.2	645.00..-D	54.59	**550**	54.59	**550**
R/L 070.5-30	5	1.9	5	4.4	45	30	1.0	3.3	1	0.2	645.00..-D	72.91	**530**	72.91	**530**
R/L 070.6-30	6	2.3	6	5.3	45	30	1.0	4.2	1	0.2	676.00..-D	72.91	**630**	72.91	**630**
R/L 070.6-42	6	2.3	6	5.3	57	42	1.0	4.2	1	0.2	676.00..-D	85.29	**642**	85.29	**642**

Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

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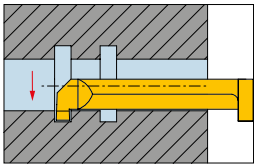
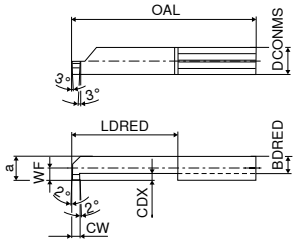
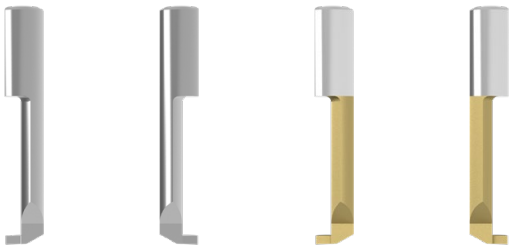
UltraMini – Inserts for Internal Grooving







Illustrations show right-hand versions

Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	CW	Standard tool holder	Left-hand Y5 Article no. 73 003 ...		Right-hand Y5 Article no. 73 002 ...		Left-hand Y5 Article no. 73 003 ...		Right-hand Y5 Article no. 73 002 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
R/L 004.0100-10	4	1.5	4.0	3.5	24	10	0.8	2.4	1.0	645.00..-D	38.91	040	38.91	040	47.39	540	46.33	540
R/L 004.0100-16	4	1.5	4.0	3.5	30	16	0.8	2.4	1.0	645.00..-D	48.60	041	48.60	041	58.14	541	56.58	541
R/L 004.0100-20	4	1.5	4.0	3.5	34	20	0.8	2.4	1.0	645.00..-D	52.45	042	52.45	042	62.72	542	60.99	542
R/L 005.0100-10	5	1.9	5.0	4.4	25	10	1.0	3.3	1.0	645.00..-D	38.59	150	38.59	150	48.47	650	45.58	650
R/L 005.0150-10	5	1.9	5.0	4.4	25	10	1.0	3.3	1.5	645.00..-D	38.59	154	38.59	154	48.47	654	47.18	654
R/L 005.0200-10	5	1.9	5.0	4.4	25	10	1.0	3.3	2.0	645.00..-D	38.59	158	38.59	158	48.47	658	47.18	658
R/L 005.0100-15	5	1.9	5.0	4.4	30	15	1.0	3.3	1.0	645.00..-D	45.58	151	45.58	151	56.02	651	53.40	651
R/L 005.0150-15	5	1.9	5.0	4.4	30	15	1.0	3.3	1.5	645.00..-D	45.58	155	45.58	155	56.02	655	53.40	655
R/L 005.0200-15	5	1.9	5.0	4.4	30	15	1.0	3.3	2.0	645.00..-D	45.58	159	45.58	159	56.02	659	53.40	659
R/L 005.0100-20	5	1.9	5.0	4.4	35	20	1.0	3.3	1.0	645.00..-D	52.45	051	52.45	051	60.80	551	60.45	551
R/L 005.0150-20	5	1.9	5.0	4.4	35	20	1.0	3.3	1.5	645.00..-D	52.45	052	52.45	052	60.80	552	60.45	552
R/L 005.0200-20	5	1.9	5.0	4.4	35	20	1.0	3.3	2.0	645.00..-D	52.45	053	52.45	053	60.80	553	60.45	553
R/L 005.0100-25	5	1.9	5.0	4.4	40	25	1.0	3.3	1.0	645.00..-D	58.99	152	58.99	152	68.84	652	66.97	652
R/L 005.0150-25	5	1.9	5.0	4.4	40	25	1.0	3.3	1.5	645.00..-D	58.99	156	58.99	156	68.84	656	66.97	656
R/L 005.0200-25	5	1.9	5.0	4.4	40	25	1.0	3.3	2.0	645.00..-D	58.99	250	58.99	250	69.26	750	67.41	750
R/L 005.0100-30	5	1.9	5.0	4.4	45	30	1.0	3.3	1.0	645.00..-D	66.56	153	66.56	153	76.67	653	74.54	653
R/L 005.0150-30	5	1.9	5.0	4.4	45	30	1.0	3.3	1.5	645.00..-D	66.56	157	66.56	157	76.67	657	74.54	657
R/L 005.0200-30	5	1.9	5.0	4.4	45	30	1.0	3.3	2.0	645.00..-D	66.56	251	66.56	251	77.11	751	75.11	751
R/L 005.0100-35	5	1.9	5.0	4.4	50	35	1.0	3.3	1.0	645.00..-D					85.22	680	81.36	680
R/L 006.0100-10	6	2.3	6.0	5.3	25	10	1.8	3.4	1.0	676.00..-D	40.47	160	40.47	160	47.82	660	46.42	660
R/L 006.0150-10	6	2.3	6.0	5.3	25	10	1.8	3.4	1.5	676.00..-D	40.47	164	40.47	164	47.82	664	44.46	664
R/L 006.0200-10	6	2.3	6.0	5.3	25	10	1.8	3.4	2.0	676.00..-D	40.47	168	40.47	168	47.82	668	46.42	668
R/L 006.0100-15	6	2.3	6.0	5.3	30	15	1.8	3.4	1.0	676.00..-D	48.16	161	48.16	161	55.23	661	53.82	661
R/L 006.0150-15	6	2.3	6.0	5.3	30	15	1.8	3.4	1.5	676.00..-D	48.16	165	48.16	165	55.23	665	53.82	665
R/L 006.0200-15	6	2.3	6.0	5.3	30	15	1.8	3.4	2.0	676.00..-D	48.16	169	48.16	169	55.23	669	53.82	669
R/L 006.0100-22	6	2.3	6.0	5.3	37	22	1.8	3.4	1.0	676.00..-D	52.87	061	52.87	061	61.37	561	60.87	561
R/L 006.0150-22	6	2.3	6.0	5.3	37	22	1.8	3.4	1.5	676.00..-D	52.87	062	52.87	062	61.37	562	60.87	562
R/L 006.0200-22	6	2.3	6.0	5.3	37	22	1.8	3.4	2.0	676.00..-D	52.87	063	52.87	063	61.37	563	60.87	563
R/L 006.0100-25	6	2.3	6.0	5.3	40	25	1.8	3.4	1.0	676.00..-D	60.87	162	60.87	162	69.26	662	67.41	662
R/L 006.0150-25	6	2.3	6.0	5.3	40	25	1.8	3.4	1.5	676.00..-D	60.87	166	60.87	166	69.26	666	67.41	666
R/L 006.0200-25	6	2.3	6.0	5.3	40	25	1.8	3.4	2.0	676.00..-D	60.87	260	60.87	260	69.26	760	67.41	760
R/L 006.0100-30	6	2.3	6.0	5.3	45	30	1.8	3.4	1.0	676.00..-D	68.84	163	68.84	163	77.11	663	75.11	663
R/L 006.0150-30	6	2.3	6.0	5.3	45	30	1.8	3.4	1.5	676.00..-D	68.84	167	68.84	167	77.11	667	75.11	667
R/L 006.0200-30	6	2.3	6.0	5.3	45	30	1.8	3.4	2.0	676.00..-D	68.84	261	68.84	261	77.11	761	75.11	761
R/L 006.0100-35	6	2.3	6.0	5.3	50	35	1.8	3.4	1.0	676.00..-D					85.22	682	81.36	682
R/L 006.0150-35	6	2.3	6.0	5.3	50	35	1.8	3.4	1.5	676.00..-D					85.22	684	81.36	684
R/L 006.0100-42	6	2.3	6.0	5.3	57	42	1.8	3.4	1.0	676.00..-D					94.05	685	91.35	685
R/L 007.0100-10	7	2.7	6.8	6.3	25	10	2.5	3.8	1.0	676.00..-D	40.89	070	40.89	070	48.24	570	47.18	570
R/L 007.0150-10	7	2.7	6.8	6.3	25	10	2.5	3.8	1.5	676.00..-D	40.89	075	40.89	075	48.24	575	47.18	575
R/L 007.0200-10	7	2.7	6.8	6.3	25	10	2.5	3.8	2.0	676.00..-D	40.89	170	40.89	170	48.24	670	47.18	670
R/L 007.0100-15	7	2.7	6.8	6.3	30	15	2.5	3.8	1.0	676.00..-D	48.60	071	48.60	071	55.78	571	54.39	571
R/L 007.0150-15	7	2.7	6.8	6.3	30	15	2.5	3.8	1.5	676.00..-D	48.60	076	48.60	076	55.78	576	54.39	576
R/L 007.0200-15	7	2.7	6.8	6.3	30	15	2.5	3.8	2.0	676.00..-D	48.60	171	48.60	171	55.78	671	52.02	671
R/L 007.0100-22	7	2.7	6.8	6.3	37	22	2.5	3.8	1.0	676.00..-D	55.59	072	55.59	072	62.77	572	62.13	572
R/L 007.0150-22	7	2.7	6.8	6.3	37	22	2.5	3.8	1.5	676.00..-D	55.59	077	55.59	077	62.77	577	62.13	577
R/L 007.0200-22	7	2.7	6.8	6.3	37	22	2.5	3.8	2.0	676.00..-D	55.59	172	55.59	172	62.77	672	62.13	672
R/L 007.0100-25	7	2.7	6.8	6.3	40	25	2.5	3.8	1.0	676.00..-D	59.98	073	59.98	073	69.99	573	68.12	573
R/L 007.0150-25	7	2.7	6.8	6.3	40	25	2.5	3.8	1.5	676.00..-D	59.98	078	59.98	078	69.99	578	68.12	578
R/L 007.0200-25	7	2.7	6.8	6.3	40	25	2.5	3.8	2.0	676.00..-D	59.98	173	59.98	173	69.99	673	67.13	673
R/L 007.0100-30	7	2.7	6.8	6.3	45	30	2.5	3.8	1.0	676.00..-D	69.99	074	69.99	074	77.17	574	76.38	574
R/L 007.0150-30	7	2.7	6.8	6.3	45	30	2.5	3.8	1.5	676.00..-D	69.99	079	69.99	079	77.17	579	73.94	579
R/L 007.0200-30	7	2.7	6.8	6.3	45	30	2.5	3.8	2.0	676.00..-D	70.41	174	62.59	174	77.17	674	71.68	674
R/L 007.0100-35	7	2.7	7.0	6.3	50	35	2.5	3.8	1.0	676.00..-D					86.07	688	83.66	688
R/L 007.0150-35	7	2.7	7.0	6.3	50	35	2.5	3.8	1.5	676.00..-D					86.07	690	83.66	690
R/L 007.0200-35	7	2.7	7.0	6.3	50	35	2.5	3.8	2.0	676.00..-D					86.07	692	83.66	692
R/L 007.0100-40	7	2.7	7.0	6.3	55	40	2.5	3.8	1.0	676.00..-D					95.48	700	92.77	700
R/L 007.0150-40	7	2.7	7.0	6.3	55	40	2.5	3.8	1.5	676.00..-D					95.48	702	92.77	702
R/L 007.0100-45	7	2.7	7.0	6.3	60	45	2.5	3.8	1.0	676.00..-D					103.60	712	100.77	712
R/L 007.0100-50	7	2.7	7.0	6.3	65	50	2.5	3.8	1.0	676.00..-D					111.01	714	107.73	714

Steel	○	○	●	●
Stainless steel			●	●
Cast iron	○	○	○	○
Non ferrous metals	●	●	○	○
Heat resistant alloys			○	○
hardened materials				

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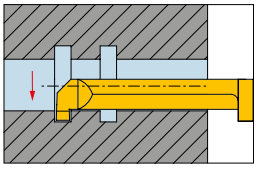
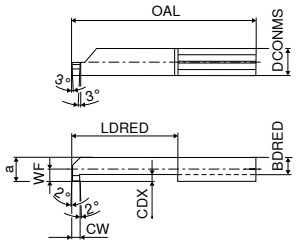
UltraMini – Inserts for Internal Grooving





TiAlN

TiAlN

Illustrations show right-hand versions

Designation	DCONMS h6 mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	CDX mm	BDRED mm	CW mm	Standard tool holder	Left-hand Y5 Article no. 73 003 ... £		Right-hand Y5 Article no. 73 002 ... £	
R/L 002.0050-5	4		2	1.8	19	5	0.4	1.2	0.5	645.00..-D	59.57	**820**	59.57	**820**
R/L 002.0050-10	4		2	1.8	24	10	0.4	1.2	0.5	645.00..-D	59.98	**821**	59.98	**821**
R/L 002.0050-15	4		2	1.8	29	15	0.4	1.2	0.5	645.00..-D	65.99	**822**	65.99	**822**
R/L 003.0070-5	4	0.7	3	2.7	19	5	0.6	1.9	0.7	645.00..-D	55.23	**830**	55.23	**830**
R/L 003.0070-10	4	0.7	3	2.7	24	10	0.6	1.9	0.7	645.00..-D	63.71	**831**	63.71	**831**
R/L 003.0070-16	4	0.7	3	2.7	30	16	0.6	1.9	0.7	645.00..-D	70.98	**832**	70.98	**832**

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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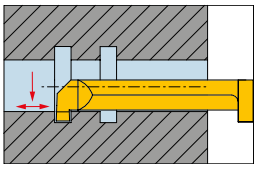
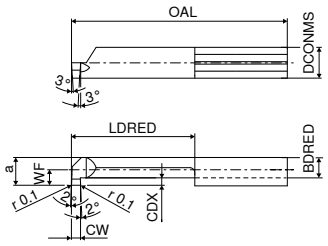
UltraMini – Inserts for Internal Grooving

▲ with corner radius





TiAlN

Left-hand

TiAlN

Right-hand

Illustrations show right-hand versions

Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	CW	Standard tool holder	Y5 Article no. 73 203 ...		Y5 Article no. 73 202 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		£		£	
R/L 004M0100-10	4	1.5	4.0	3.5	24	10	0.8	2.4	1.0	645.00..-D	50.93	800	50.93	800
R/L 004M0100-16	4	1.5	4.0	3.5	30	16	0.8	2.4	1.0	645.00..-D	58.14	802	58.14	802
R/L 004M0100-20	4	1.5	4.0	3.5	34	20	0.8	2.4	1.0	645.00..-D	64.04	804	64.04	804
R/L 005M0100-10	5	1.9	5.0	4.4	25	10	1.0	3.3	1.0	645.00..-D	48.07	806	48.07	806
R/L 005M0150-10	5	1.9	5.0	4.4	25	10	1.0	3.3	1.5	645.00..-D	48.07	816	48.07	816
R/L 005M0200-10	5	1.9	5.0	4.4	25	10	1.0	3.3	2.0	645.00..-D	48.07	826	48.07	826
R/L 005M0100-15	5	1.9	5.0	4.4	30	15	1.0	3.3	1.0	645.00..-D	55.10	808	55.10	808
R/L 005M0150-15	5	1.9	5.0	4.4	30	15	1.0	3.3	1.5	645.00..-D	55.10	818	55.10	818
R/L 005M0200-15	5	1.9	5.0	4.4	30	15	1.0	3.3	2.0	645.00..-D	55.10	828	55.10	828
R/L 005M0100-20	5	1.9	5.0	4.4	35	20	1.0	3.3	1.0	645.00..-D	61.57	810	61.57	810
R/L 005M0150-20	5	1.9	5.0	4.4	35	20	1.0	3.3	1.5	645.00..-D	61.57	820	61.57	820
R/L 005M0200-20	5	1.9	5.0	4.4	35	20	1.0	3.3	2.0	645.00..-D	61.57	830	61.57	830
R/L 005M0100-25	5	1.9	5.0	4.4	40	25	1.0	3.3	1.0	645.00..-D	66.88	812	66.88	812
R/L 005M0150-25	5	1.9	5.0	4.4	40	25	1.0	3.3	1.5	645.00..-D	66.88	822	66.88	822
R/L 005M0200-25	5	1.9	5.0	4.4	40	25	1.0	3.3	2.0	645.00..-D	66.88	832	66.88	832
R/L 005M0100-30	5	1.9	5.0	4.4	45	30	1.0	3.3	1.0	645.00..-D	74.12	814	74.12	814
R/L 005M0150-30	5	1.9	5.0	4.4	45	30	1.0	3.3	1.5	645.00..-D	74.12	824	74.12	824
R/L 005M0200-30	5	1.9	5.0	4.4	45	30	1.0	3.3	2.0	645.00..-D	74.12	834	74.12	834
R/L 006M0100-10	6	2.3	6.0	5.3	25	10	1.8	3.4	1.0	676.00..-D	48.07	836	48.07	836
R/L 006M0150-10	6	2.3	6.0	5.3	25	10	1.8	3.4	1.5	676.00..-D	48.07	846	48.07	846
R/L 006M0200-10	6	2.3	6.0	5.3	25	10	1.8	3.4	2.0	676.00..-D	48.07	856	48.07	856
R/L 006M0100-15	6	2.3	6.0	5.3	30	15	1.8	3.4	1.0	676.00..-D	55.10	838	55.10	838
R/L 006M0150-15	6	2.3	6.0	5.3	30	15	1.8	3.4	1.5	676.00..-D	55.10	848	55.10	848
R/L 006M0200-15	6	2.3	6.0	5.3	30	15	1.8	3.4	2.0	676.00..-D	55.10	858	55.10	858
R/L 006M0100-20	6	2.3	6.0	5.3	35	22	1.8	3.4	1.0	676.00..-D	61.57	840	61.57	840
R/L 006M0150-20	6	2.3	6.0	5.3	37	22	1.8	3.4	1.5	676.00..-D	61.57	850	61.57	850
R/L 006M0200-20	6	2.3	6.0	5.3	37	22	1.8	3.4	2.0	676.00..-D	61.57	860	61.57	860
R/L 006M0100-25	6	2.3	6.0	5.3	40	25	1.8	3.4	1.0	676.00..-D	66.88	842	66.88	842
R/L 006M0150-25	6	2.3	6.0	5.3	40	25	1.8	3.4	1.5	676.00..-D	66.88	852	66.88	852
R/L 006M0200-25	6	2.3	6.0	5.3	40	25	1.8	3.4	2.0	676.00..-D	66.88	862	66.88	862
R/L 006M0100-30	6	2.3	6.0	5.3	45	30	1.8	3.4	1.0	676.00..-D	74.12	844	74.12	844
R/L 006M0150-30	6	2.3	6.0	5.3	45	30	1.8	3.4	1.5	676.00..-D	74.12	854	74.12	854
R/L 006M0200-30	6	2.3	6.0	5.3	45	30	1.8	3.4	2.0	676.00..-D	74.12	864	74.12	864
R/L 007M0100-10	7	2.7	6.8	6.3	25	10	2.5	3.7	1.0	676.00..-D	48.07	866	48.07	866
R/L 007M0150-10	7	2.7	6.8	6.3	25	10	2.5	3.7	1.5	676.00..-D	48.07	876	48.07	876
R/L 007M0200-10	7	2.7	6.8	6.3	25	10	2.5	3.7	2.0	676.00..-D	48.07	886	48.07	886
R/L 007M0100-15	7	2.7	6.8	6.3	30	15	2.5	3.7	1.0	676.00..-D	55.10	868	55.10	868
R/L 007M0150-15	7	2.7	6.8	6.3	30	15	2.5	3.7	1.5	676.00..-D	55.10	878	55.10	878
R/L 007M0200-15	7	2.7	6.8	6.3	30	15	2.5	3.7	2.0	676.00..-D	55.10	888	55.10	888
R/L 007M0100-22	7	2.7	6.8	6.3	37	22	2.5	3.7	1.0	676.00..-D	61.57	870	61.57	870
R/L 007M0150-22	7	2.7	6.8	6.3	37	22	2.5	3.7	1.5	676.00..-D	61.57	880	61.57	880
R/L 007M0200-22	7	2.7	6.8	6.3	37	22	2.5	3.7	2.0	676.00..-D	61.57	890	61.57	890
R/L 007M0100-25	7	2.7	6.8	6.3	40	25	2.5	3.7	1.0	676.00..-D	66.88	872	66.88	872
R/L 007M0150-25	7	2.7	6.8	6.3	40	25	2.5	3.7	1.5	676.00..-D	66.88	882	66.88	882
R/L 007M0200-25	7	2.7	6.8	6.3	40	25	2.5	3.7	2.0	676.00..-D	66.88	892	66.88	892
R/L 007M0100-30	7	2.7	6.8	6.3	45	30	2.5	3.7	1.0	676.00..-D	74.68	874	74.68	874
R/L 007M0150-30	7	2.7	6.8	6.3	45	30	2.5	3.7	1.5	676.00..-D	74.68	884	74.68	884
R/L 007M0200-30	7	2.7	6.8	6.3	45	30	2.5	3.7	2.0	676.00..-D	74.68	894	74.68	894

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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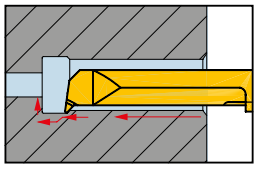
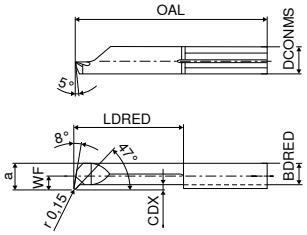
UltraMini – Inserts for internal undercuts





Illustrations show right-hand versions

Designation	DCONMS h6 mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	CDX mm	BDRED mm	Standard tool holder	Left-hand Y5 Article no. 73 011 ... £		Right-hand Y5 Article no. 73 010 ... £		Left-hand Y5 Article no. 73 011 ... £		Right-hand Y5 Article no. 73 010 ... £	
R/L 047.2-10	4		2.0	1.7	24	10	0.4	1.2	645.00..-D					56.09	**221**	56.09	**221**
R/L 047.3-15	4	0.6	2.8	2.6	29	15	0.6	1.9	645.00..-D					58.38	**231**	58.38	**231**
R/L 047.4-10	4	1.5	4.0	3.5	24	10	0.6	2.8	645.00..-D					53.46	**241**	53.46	**241**
R/L 047.T4-20	4	1.5	4.0	3.5	34	20	0.6	2.8	645.00..-D					62.70	**242**	62.70	**242**
R/L 047.4-20	4	1.5	4.0	3.5	34	20	0.3	3.0	645.00..-D	60.29	**542**	59.43	**542**				
R/L 047.5-15	5	1.9	5.0	4.4	30	15	0.8	3.5	645.00..-D					60.17	**251**	60.17	**251**
R/L 047.T5-25	5	1.9	5.0	4.4	40	25	0.8	3.5	645.00..-D					63.66	**252**	63.66	**252**
R/L 047.5-25	5	1.9	5.0	4.4	40	25	0.5	3.8	645.00..-D	59.98	**552**	59.98	**552**				
R/L 047.T6-22	6	2.3	6.0	5.3	37	22	1.8	3.4	676.00..-D					61.62	**262**	61.62	**262**
R/L 047.T6-30	6	2.3	6.0	5.3	45	30	1.8	3.4	676.00..-D					82.04	**263**	65.11	**263**
R/L 047.6-30	6	2.3	6.0	5.3	45	30	0.5	4.5	676.00..-D	61.37	**562**	62.30	**562**				

Steel	●	●	●	●
Stainless steel	●	●	●	●
Cast iron	○	○	●	●
Non ferrous metals	○	○	●	●
Heat resistant alloys	○	○	●	●
hardened materials				

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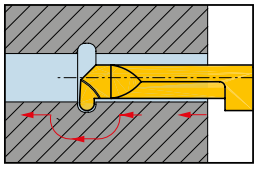
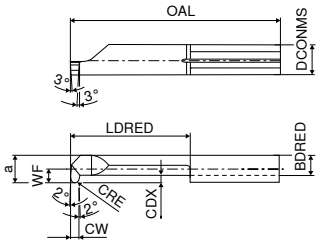
UltraMini – Inserts for internal grooving and turning





TiN

TiN

Illustrations show right-hand versions

Designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	CW	CRE	Standard tool holder	Left-hand Y5 Article no. 73 019 ...		Right-hand Y5 Article no. 73 018 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		£		£	
R/L 006-0.75-25	6	2.3	6.0	5.3	40	25	1.8	3.4	1.5	0.75	676.00..-D	63.28	**564**	63.28	**564**
R/L 006-0.50-25	6	2.3	6.0	5.3	40	25	1.8	3.4	1.0	0.50	676.00..-D	63.28	**562**	63.28	**562**
R/L 006-1.00-25	6	2.3	6.0	5.3	40	25	1.8	3.4	2.0	1.00	676.00..-D	63.28	**566**	62.30	**566**
R/L 005-1.00-20	5	1.9	5.0	4.4	35	20	1.0	3.3	2.0	1.00	645.00..-D	61.86	**556**	61.86	**556**
R/L 007-0.50-30	7	2.7	6.8	6.3	45	30	2.5	3.8	1.0	0.50	676.00..-D	65.26	**572**	62.22	**572**
R/L 005-0.75-20	5	1.9	5.0	4.4	35	20	1.0	3.3	1.5	0.75	645.00..-D	61.86	**554**	61.86	**554**
R/L 007-0.75-30	7	2.7	6.8	6.3	45	30	2.5	3.8	1.5	0.75	676.00..-D	65.26	**574**	65.26	**574**
R/L 005-0.50-20	5	1.9	5.0	4.4	35	20	1.0	3.3	1.0	0.50	645.00..-D	61.86	**552**	61.86	**552**
R/L 007-1.00-30	7	2.7	6.8	6.3	45	30	2.5	3.8	2.0	1.00	676.00..-D	65.26	**576**	65.26	**576**
R/L 004-0.50-16	4	1.5	4.0	3.5	30	16	0.8	2.4	1.0	0.50	645.00..-D	58.56	**541**	56.02	**541**
Steel													●		●
Stainless steel													●		●
Cast iron													○		○
Non ferrous metals													○		○
Heat resistant alloys													○		○
hardened materials															

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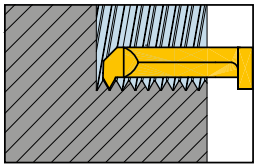
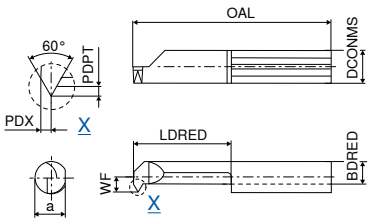
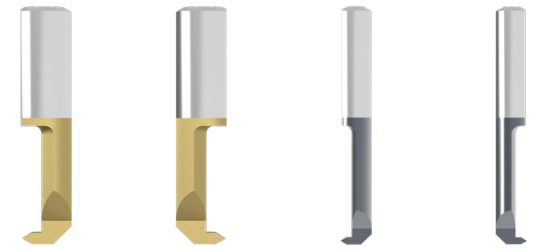
UltraMini – Inserts for internal threading (Partial profile)







Left-hand | Right-hand | Left-hand | Right-hand

Illustrations show right-hand versions

Designation	DCONMS $_{h6}$ mm	TP mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	BDRED mm	PDPT mm	PDX mm	Standard tool holder	Y5 Article no. 73 101 ... £		Y5 Article no. 73 100 ... £		Y5 Article no. 73 101 ... £		Y5 Article no. 73 100 ... £	
R/L 003.0105-8	4	0.50	0.30	2.4	2.3	22	8	1.8	0.27	0.33	645.00..-D					56.69	**551**	56.69	**551**
R/L 004.0408-15	4	0.80	1.75	4.0	3.5	30	15	2.4	0.43	0.45	645.00..-D					59.10	**552**	59.10	**552**
R/L 005.0510-15	5	1.00	1.90	4.8	4.4	30	15	3.3	0.55	0.55	645.00..-D	53.91	**545**	52.26	**545**				
R/L 005.0510-20	5	1.00	1.90	4.8	4.4	35	20	3.3	0.55	0.55	645.00..-D	54.66	**544**	54.44	**544**				
R/L 006.0612-15	6	1.25	2.30	6.0	5.3	30	15	3.4	0.68	0.65	676.00..-D	52.85	**547**	52.26	**547**				
R/L 006.0612-22	6	1.25	2.30	6.0	5.3	37	22	3.4	0.68	0.65	676.00..-D	55.38	**546**	54.04	**546**				
R/L 006.0815-15	6	1.50	2.30	6.0	5.3	30	15	3.4	0.81	0.75	676.00..-D	53.91	**549**	52.93	**549**				
R/L 006.0815-22	6	1.50	2.30	6.0	5.3	37	22	3.4	0.81	0.75	676.00..-D	55.38	**548**	54.04	**548**				
R/L 007.0815-15	7	1.50	2.70	7.0	6.3	30	15	3.8	0.81	0.75	676.00..-D	53.59	**550**	54.04	**550**				

Steel	●	●	●	●
Stainless steel	●	●	●	●
Cast iron	○	○	●	●
Non ferrous metals	○	○	●	●
Heat resistant alloys	○	○	●	●
hardened materials				

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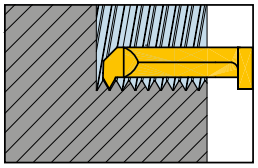
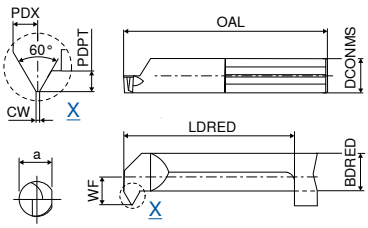
UltraMini – Inserts for Internal thread turning (Full profile)





TiAlN

Left-hand

TiAlN

Right-hand

Illustrations show right-hand versions

Designation	DCONMS h6 mm	TP mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	BDRED mm	PDPT mm	PDX mm	CW mm	Standard tool holder	Y5 Article no. 73 209 ... £		Y5 Article no. 73 208 ... £	
R/L 105.0408-15	5	0.80	1.9	4.8	4.4	30	15	3.3	0.43	0.50	0.10	645.00..-D	61.27	**799**	61.27	**799**
R/L 105.510-15	5	1.00	1.9	4.8	4.4	30	15	3.3	0.54	0.55	0.12	645.00..-D	56.62	**800**	56.62	**800**
R/L 106.612-15	6	1.25	2.3	6.0	5.3	30	15	3.4	0.67	0.65	0.15	676.00..-D	56.62	**802**	56.62	**802**
R/L 106.815-15	6	1.50	2.3	6.0	5.3	30	15	3.4	0.81	0.75	0.18	676.00..-D	56.62	**804**	56.62	**804**
R/L 106.815-15	7	1.50	2.7	7.0	6.3	30	15	3.8	0.81	0.75	0.18	676.00..-D	56.62	**806**	56.62	**806**

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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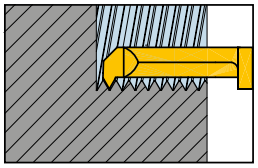
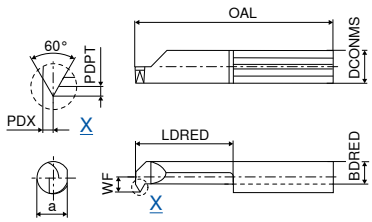
UltraMini – Inserts for internal thread turning (Partial profile)





Left-hand | Right-hand | Left-hand | Right-hand

Illustrations show right-hand versions

Designation	DCONMS h6	TP	WF	DMIN	a	OAL	LDRED	BDRED	PDPT	PDX	Standard tool holder	Y5 Article no. 73 103 ...		Y5 Article no. 73 102 ...		Y5 Article no. 73 103 ...		Y5 Article no. 73 102 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
R/L 004.0105-10	4	0.50	1.0	3.2	3.0	24	10	2.3	0.27	0.44	645.00..-D					55.86	509	55.86	509
R/L 004.0205-15	4	0.50	1.5	4.0	3.5	30	15	2.4	0.27	0.35	645.00..-D	55.83	510	55.83	510				
R/L 005.0205-15	5	0.50	1.9	5.0	4.4	30	15	3.3	0.27	0.35	645.00..-D	53.91	539	53.91	539				
R/L 005.0205-20	5	0.50	1.9	5.0	4.4	35	20	3.3	0.27	0.35	645.00..-D	54.66	540	54.66	540				
R/L 005.0407-15	5	0.75	1.9	5.0	4.4	30	15	3.3	0.40	0.45	645.00..-D	53.91	541	53.91	541				
R/L 005.0407-20	5	0.75	1.9	5.0	4.4	35	20	3.3	0.40	0.45	645.00..-D	54.66	542	54.66	542				
R/L 006.0510-15	6	1.00	2.3	6.0	5.3	30	15	3.4	0.55	0.55	676.00..-D	53.91	543	53.91	543				
R/L 006.0510-22	6	1.00	2.3	6.0	5.3	37	22	3.4	0.55	0.55	676.00..-D	55.38	544	55.38	544				

Steel	●	●	●	●
Stainless steel	●	●	●	●
Cast iron	○	○	●	●
Non ferrous metals	○	○	●	●
Heat resistant alloys	○	○	●	●
hardened materials				

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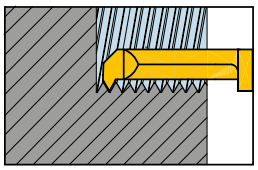
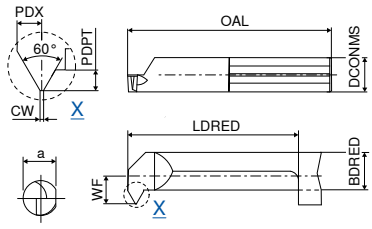
UltraMini – Inserts for Internal thread turning (Full profile)





Left-hand | Right-hand

Illustrations show right-hand versions

Designation	DCONMS h6	TP	WF	DMIN	a	OAL	LDRED	BDRED	PDPT	PDX	CW	Standard tool holder	Y5 Article no. 73 207 ...		Y5 Article no. 73 206 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		£		£	
R/L 104.0205-15	5	0.50	1.5	4	3.5	30	15	2.4	0.27	0.35	0.06	645.00..-D	59.68	800	59.68	800
R/L 105.0205-15	5	0.50	1.9	5	4.4	30	15	3.3	0.27	0.35	0.06	645.00..-D	56.62	802	56.62	802
R/L 105.0407-15	5	0.75	1.9	5	4.4	30	15	3.3	0.40	0.45	0.09	645.00..-D	56.62	804	56.62	804
R/L 106.0510-15	6	1.00	2.3	6	5.3	30	15	3.4	0.54	0.55	0.12	676.00..-D	56.62	806	56.62	806

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 60

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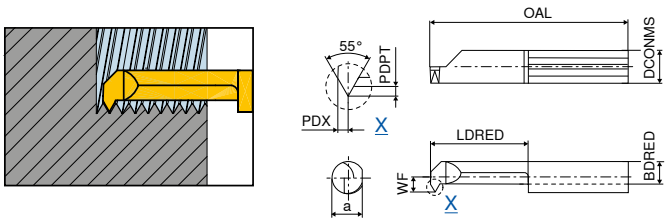
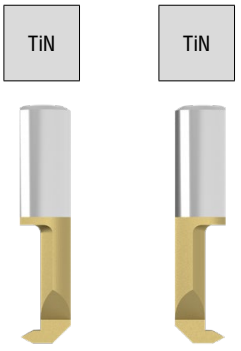
UltraMini – Inserts for internal thread turning (Partial profile)





Left-hand Right-hand

Illustrations show right-hand versions

Designation	DCONMS $_{h6}$ mm	TPI 1/"	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	BDRED mm	PDPT mm	PDX mm	Standard tool holder	Y5 Article no. 73 105 ... £		Y5 Article no. 73 104 ... £	
R/L 005.5548-15	5	48 - 24	1.9	4.8	4.4	30	15	3.3	0.40	0.45	645.00..-D	57.60	**552**	57.60	**552**
R/L 006.5548-15	6	48 - 24	2.3	6.0	5.3	30	15	3.4	0.40	0.45	676.00..-D	57.60	**562**	57.60	**562**
R/L 006.5524-15	6	24 - 16	2.3	6.0	5.3	30	15	3.4	0.81	0.75	676.00..-D	57.60	**563**	57.60	**563**
R/L 007.5524-15	7	24 - 16	2.7	7.0	6.3	30	15	3.8	0.81	0.75	676.00..-D	57.60	**572**	57.60	**572**

Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

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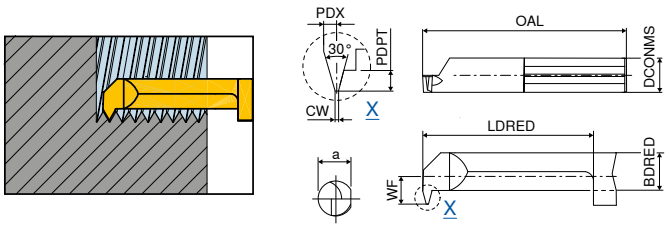
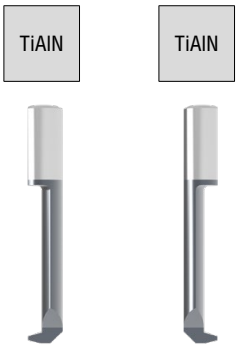
UltraMini – Inserts for internal thread turning (Partial profile)

▲ Trapezoidal thread DIN 103





Left-hand Right-hand

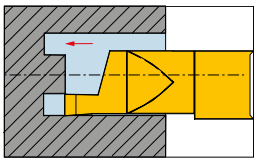
Illustrations show right-hand versions

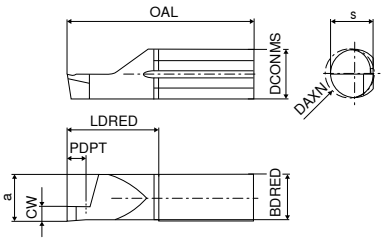
Designation	DCONMS $_{h6}$ mm	TP mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	BDRED mm	PDPT mm	PDX mm	CW mm	Standard tool holder	Y5 Article no. 73 211 ... £		Y5 Article no. 73 210 ... £	
R/L 007.1220-22	7	2	2.8	7	6.3	37	22	3.8	1.25	0.75	0.6	676.00..-D	76.64	**222**	76.64	**222**
R/L 007.1220-30	7	2	2.8	7	6.3	45	30	3.8	1.25	0.75	0.6	676.00..-D	92.61	**230**	92.61	**230**
R/L 007.1730-22	7	3	2.8	7	6.3	37	22	3.8	1.75	1.10	1.0	676.00..-D	76.64	**322**	76.64	**322**
R/L 007.1730-30	7	3	2.8	7	6.3	45	30	3.8	1.75	1.10	1.0	676.00..-D	92.61	**330**	92.61	**330**

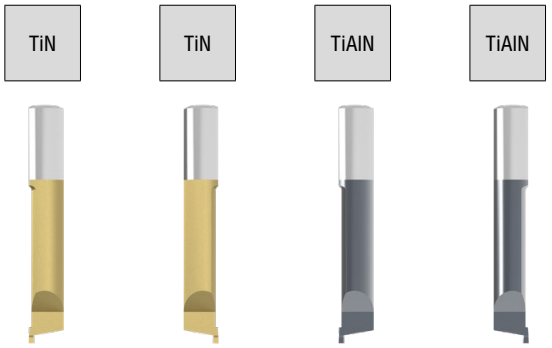
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 60

UltraMini – Inserts for axial grooving







Illustrations show right-hand versions

Designation	DCONMS h6	a	DAXN	s	OAL	LDRED	PDPT	BDRED	CW	Standard tool holder	Left-hand Y5 Article no. 73 051 ...		Right-hand Y5 Article no. 73 050 ...		Left-hand Y5 Article no. 73 053 ...		Right-hand Y5 Article no. 73 052 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
R/L 010.1006-10	6	5.2	6	5.3	26	11	1.5	4.9	1.0	676.00..-D	59.85	**561**	58.14	**561**	59.57	**561**	59.57	**561**
R/L 010.1506-10	6	5.2	6	5.3	26	11	2.0	4.9	1.5	676.00..-D	59.85	**563**	58.14	**563**	59.57	**563**	59.57	**563**
R/L 010.1008-10	7	5.9	8	6.3	26	11	1.5	5.6	1.0	676.00..-D	59.98	**571**	59.43	**571**	60.99	**571**	60.99	**571**
R/L 010.1008-20	7	5.9	8	6.3	35	20	1.5	5.6	1.0	676.00..-D	65.26	**671**	63.55	**671**	65.15	**671**	65.15	**671**
R/L 010.1008-30	7	5.9	8	6.3	45	30	1.5	5.6	1.0	676.00..-D	68.84	**771**	66.97	**771**	67.39	**771**	67.39	**771**
R/L 010.1508-10	7	5.9	8	6.3	26	11	2.5	5.6	1.5	676.00..-D	59.98	**573**	57.60	**573**	60.99	**573**	60.99	**573**
R/L 010.1508-20	7	5.9	8	6.3	35	20	2.5	5.6	1.5	676.00..-D	65.26	**673**	61.37	**673**	65.15	**673**	65.15	**673**
R/L 010.1508-30	7	5.9	8	6.3	45	30	2.5	5.6	1.5	676.00..-D	68.84	**773**	66.97	**773**	67.39	**773**	67.39	**773**
R/L 010.2008-10	7	5.9	8	6.3	26	11	3.0	5.6	2.0	676.00..-D	59.98	**575**	57.60	**575**	60.99	**575**	60.99	**575**
R/L 010.2008-20	7	5.9	8	6.3	35	20	3.0	5.6	2.0	676.00..-D	65.26	**675**	61.37	**675**	65.15	**675**	65.15	**675**
R/L 010.2008-30	7	5.9	8	6.3	45	30	3.0	5.6	2.0	676.00..-D	68.84	**775**	66.97	**775**	67.39	**775**	67.39	**775**
R/L 010.2508-10	7	5.9	8	6.3	26	11	3.5	5.6	2.5	676.00..-D	59.98	**577**	59.43	**577**	60.99	**577**	60.99	**577**
R/L 010.2508-20	7	5.9	8	6.3	35	20	3.5	5.6	2.5	676.00..-D	65.26	**677**	63.55	**677**	65.15	**677**	65.15	**677**
R/L 010.2508-30	7	5.9	8	6.3	45	30	3.5	5.6	2.5	676.00..-D	68.84	**777**	66.97	**777**	67.39	**777**	67.39	**777**
R/L 010.3008-10	7	5.9	8	6.3	26	11	3.5	5.6	3.0	676.00..-D	59.98	**579**	59.43	**579**	60.99	**579**	60.99	**579**
R/L 010.3008-20	7	5.9	8	6.3	35	20	3.5	5.6	3.0	676.00..-D	65.26	**679**	61.37	**679**	65.15	**679**	65.15	**679**
R/L 010.3008-30	7	5.9	8	6.3	45	30	3.5	5.6	3.0	676.00..-D	68.84	**779**	66.97	**779**	67.39	**779**	67.39	**779**

Steel	●	●	●	●
Stainless steel	●	●	●	●
Cast iron	○	○	●	●
Non ferrous metals	○	○	●	●
Heat resistant alloys	○	○	●	●
hardened materials				

→ v_c Page 60

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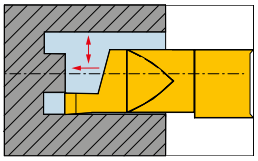
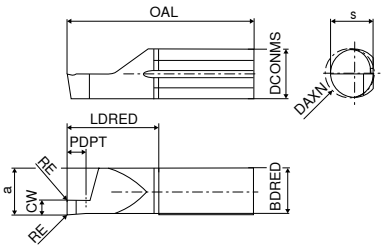
UltraMini – Inserts for axial grooving

▲ with corner radius





TiAlN

TiAlN

Illustrations show right-hand versions

Designation	DCONMS h6	a	DAXN	s	OAL	LDRED	PDPT	BDRED	CW	RE	Standard tool holder	Left-hand Y5 Article no. 73 253 ... £		Right-hand Y5 Article no. 73 252 ... £	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm					
R/L 510M1008-10	5	4.3	5	6.3	26	11	2	4.0	1.0	0.05	645.00..-D	72.68	**510**	72.68	**510**
R/L 510M1008-20	5	4.3	5	6.3	35	20	2	4.0	1.0	0.05	645.00..-D	76.75	**610**	76.75	**610**
R/L 510M1508-10	5	4.3	5	6.3	26	11	3	4.0	1.5	0.05	645.00..-D	72.68	**515**	72.68	**515**
R/L 510M1508-20	5	4.3	5	6.3	35	20	3	4.0	1.5	0.05	645.00..-D	76.75	**615**	76.75	**615**
R/L 510M2008-10	5	4.3	5	6.3	26	11	4	4.0	2.0	0.05	645.00..-D	72.68	**520**	72.68	**520**
R/L 510M2008-20	5	4.3	5	6.3	35	20	4	4.0	2.0	0.05	645.00..-D	76.75	**620**	76.75	**620**
R/L 010M1008-10	7	5.9	8	6.3	26	11	2	5.6	1.0	0.10	676.00..-D	67.26	**800**	67.26	**800**
R/L 010M1008-20	7	5.9	8	6.3	35	20	2	5.6	1.0	0.10	676.00..-D	71.05	**810**	71.05	**810**
R/L 010M1008-30	7	5.9	8	6.3	45	30	2	5.6	1.0	0.10	676.00..-D	74.29	**820**	74.29	**820**
R/L 010M1508-10	7	5.9	8	6.3	26	11	3	5.6	1.5	0.10	676.00..-D	67.26	**802**	67.26	**802**
R/L 010M1508-20	7	5.9	8	6.3	35	20	3	5.6	1.5	0.10	676.00..-D	71.05	**812**	71.05	**812**
R/L 010M1508-30	7	5.9	8	6.3	45	30	3	5.6	1.5	0.10	676.00..-D	74.29	**822**	74.29	**822**
R/L 010M2008-10	7	5.9	8	6.3	26	11	4	5.6	2.0	0.10	676.00..-D	67.26	**804**	67.26	**804**
R/L 010M2008-20	7	5.9	8	6.3	35	20	4	5.6	2.0	0.10	676.00..-D	71.05	**814**	71.05	**814**
R/L 010M2008-30	7	5.9	8	6.3	45	30	4	5.6	2.0	0.10	676.00..-D	74.29	**824**	74.29	**824**
R/L 010M2508-10	7	5.9	8	6.3	26	11	5	5.6	2.5	0.10	676.00..-D	67.26	**806**	67.26	**806**
R/L 010M2508-20	7	5.9	8	6.3	35	20	5	5.6	2.5	0.10	676.00..-D	71.05	**816**	71.05	**816**
R/L 010M2508-30	7	5.9	8	6.3	45	30	5	5.6	2.5	0.10	676.00..-D	74.29	**826**	74.29	**826**
R/L 010M3008-10	7	5.9	8	6.3	26	11	6	5.6	3.0	0.10	676.00..-D	67.26	**808**	67.26	**808**
R/L 010M3008-20	7	5.9	8	6.3	35	20	6	5.6	3.0	0.10	676.00..-D	71.05	**818**	71.05	**818**
R/L 010M3008-30	7	5.9	8	6.3	45	30	6	5.6	3.0	0.10	676.00..-D	74.29	**828**	74.29	**828**

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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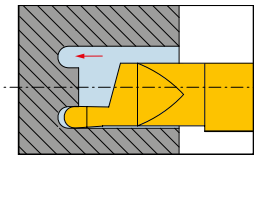
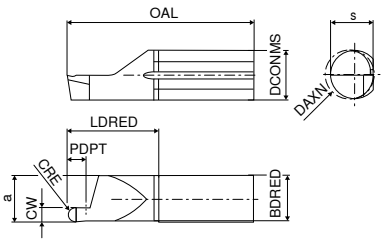
UltraMini – Inserts for axial grooving (Full radius)

TiAlN

TiAlN





Illustrations show right-hand versions

Designation	DCONMS h6 mm	a mm	DAXN mm	s mm	OAL mm	LDRED mm	PDPT mm	BDRED mm	CW mm	CRE mm	Standard tool holder	Left-hand Y5 Article no. 73 059 ... £		Right-hand Y5 Article no. 73 058 ... £	
R/L 610.1005-10	6	5.2	6	5.3	26	11	2	4.9	1.0	0.50	676.00..-D	73.98	**071**	73.98	**071**
R/L 610.1005-20	6	5.2	6	5.3	35	20	2	4.9	1.0	0.50	676.00..-D	78.32	**171**	78.32	**171**
R/L 610.1608-10	6	5.2	6	5.3	26	11	3	4.9	1.6	0.80	676.00..-D	73.98	**073**	73.98	**073**
R/L 610.1608-20	6	5.2	6	5.3	35	20	3	4.9	1.6	0.80	676.00..-D	78.32	**173**	78.32	**173**
R/L 610.2010-10	6	5.2	6	5.3	26	11	4	4.9	2.0	1.00	676.00..-D	73.98	**075**	73.98	**075**
R/L 610.2010-20	6	5.2	6	5.3	35	20	4	4.9	2.0	1.00	676.00..-D	78.32	**175**	78.32	**175**
R/L 610.2512-10	6	5.2	6	5.3	26	11	5	4.9	2.5	1.25	676.00..-D	73.98	**077**	73.98	**077**
R/L 610.2512-20	6	5.2	6	5.3	35	20	5	4.9	2.5	1.25	676.00..-D	78.32	**177**	78.32	**177**
R/L 610.3015-10	6	5.2	6	5.3	26	11	6	4.9	3.0	1.50	676.00..-D	73.98	**079**	73.98	**079**
R/L 610.3015-20	6	5.2	6	5.3	35	20	6	4.9	3.0	1.50	676.00..-D	78.32	**179**	78.32	**179**
R/L 010.1005-10	7	5.9	8	6.3	26	11	2	5.6	1.0	0.50	676.00..-D	70.98	**571**	70.98	**571**
R/L 010.1005-20	7	5.9	8	6.3	35	20	2	5.6	1.0	0.50	676.00..-D	75.11	**671**	75.11	**671**
R/L 010.1608-10	7	5.9	8	6.3	26	11	3	5.6	1.6	0.80	676.00..-D	70.98	**573**	70.98	**573**
R/L 010.1608-20	7	5.9	8	6.3	35	20	3	5.6	1.6	0.80	676.00..-D	75.11	**673**	75.11	**673**
R/L 010.2010-10	7	5.9	8	6.3	26	11	4	5.6	2.0	1.00	676.00..-D	70.98	**575**	70.98	**575**
R/L 010.2010-20	7	5.9	8	6.3	35	20	4	5.6	2.0	1.00	676.00..-D	75.11	**675**	75.11	**675**
R/L 010.2512-10	7	5.9	8	6.3	26	11	5	5.6	2.5	1.25	676.00..-D	70.98	**577**	70.98	**577**
R/L 010.2512-20	7	5.9	8	6.3	35	20	5	5.6	2.5	1.25	676.00..-D	75.11	**677**	75.11	**677**
R/L 010.3015-10	7	5.9	8	6.3	26	11	6	5.6	3.0	1.50	676.00..-D	70.98	**579**	70.98	**579**
R/L 010.3015-20	7	5.9	8	6.3	35	20	6	5.6	3.0	1.50	676.00..-D	75.11	**679**	75.11	**679**

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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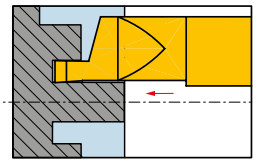
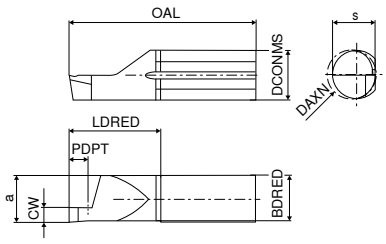
UltraMini – Inserts for axial grooving over a spigot





TiAlN

TiAlN

Illustrations show right-hand versions

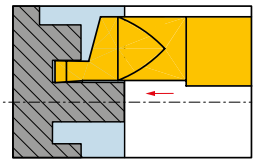
Designation	DCONMS h6 mm	a mm	DAXN mm	s mm	OAL mm	LDRED mm	PDPT mm	BDRED mm	CW mm	Standard tool holder	Left-hand Y5 Article no. 73 061 ... £		Right-hand Y5 Article no. 73 060 ... £	
R/L 620.1006-20	6	5.2	6	5.3	35	20	2	4.9	1.0	676.00..-D	75.11	561	75.11	561
R/L 620.1506-20	6	5.2	6	5.3	35	20	3	4.9	1.5	676.00..-D	75.11	563	75.11	563
R/L 620.2006-20	6	5.2	6	5.3	35	20	4	4.9	2.0	676.00..-D	75.11	565	75.11	565
R/L 620.2506-20	6	5.2	6	5.3	35	20	5	4.9	2.5	676.00..-D	75.11	567	75.11	567
R/L 620.3006-20	6	5.2	6	5.3	35	20	6	4.9	3.0	676.00..-D	75.11	569	75.11	569

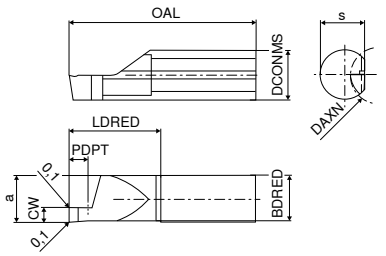
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 60

UltraMini – Inserts for axial grooving over a spigot

▲ with corner radius





TiAlN

TiAlN

Illustrations show right-hand versions

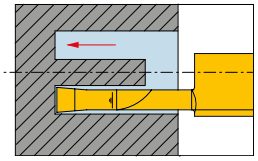
Designation	DCONMS h6 mm	a mm	DAXN mm	s mm	OAL mm	LDRED mm	PDPT mm	BDRED mm	CW mm	Standard tool holder	Left-hand Y5 Article no. 73 261 ... £		Right-hand Y5 Article no. 73 260 ... £	
R/L 620M1006-20	6	5.2	6	5.3	35	20	2	4.9	1.0	676.00..-D	71.83	800	71.83	800
R/L 620M1506-20	6	5.2	6	5.3	35	20	3	4.9	1.5	676.00..-D	71.83	802	71.83	802
R/L 620M2006-20	6	5.2	6	5.3	35	20	4	4.9	2.0	676.00..-D	71.83	804	71.83	804
R/L 620M2506-20	6	5.2	6	5.3	35	20	5	4.9	2.5	676.00..-D	71.83	806	71.83	806
R/L 620M3006-20	6	5.2	6	5.3	35	20	6	4.9	3.0	676.00..-D	71.83	808	71.83	808

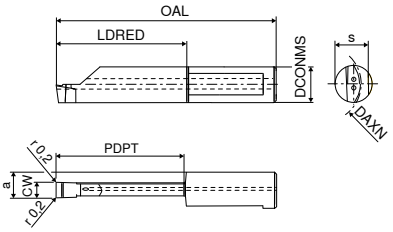
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 60

UltraMini – Inserts for axial grooving

- up to 100 bar
- dual cooling channel





TiAlN

TiAlN

Illustrations show right-hand versions

Designation	DCONMS $_{h6}$ mm	a mm	DAXN mm	s mm	OAL mm	LDRED mm	PDPT mm	CW mm	Standard tool holder	Left-hand Y5 Article no. 73 263 ... £		Right-hand Y5 Article no. 73 262 ... £	
R/L 012.0200-10	8	5.00	12	7.3	30	10	10	2.0	687.00..-D	66.46	**700**	66.46	**700**
R/L 012.0200-15	8	5.00	12	7.3	35	15	15	2.0	687.00..-D	67.75	**702**	67.75	**702**
R/L 012.0250-10	8	5.25	12	7.3	30	10	10	2.5	687.00..-D	66.46	**704**	66.46	**704**
R/L 012.0250-20	8	5.25	12	7.3	40	20	20	2.5	687.00..-D	68.96	**706**	68.96	**706**
R/L 016.0300-10	8	5.50	16	7.3	30	10	10	3.0	687.00..-D	94.23	**800**	94.23	**800**
R/L 016.0300-20	8	5.50	16	7.3	40	20	20	3.0	687.00..-D	96.73	**802**	96.73	**802**
R/L 020.0300-25	8	5.50	20	7.3	45	25	25	3.0	687.00..-D	98.05	**804**	98.05	**804**
R/L 020.0300-30	8	5.50	20	7.3	50	30	30	3.0	687.00..-D	98.05	**806**	98.05	**806**
R/L 020.0300-35	8	5.50	20	7.3	55	35	35	3.0	687.00..-D	100.32	**808**	100.32	**808**
R/L 020.0300-40	8	5.50	20	7.3	60	40	40	3.0	687.00..-D	100.32	**810**	100.32	**810**
R/L 016.0400-10	8	6.00	16	7.3	30	10	10	4.0	687.00..-D	94.23	**812**	94.23	**812**
R/L 016.0400-20	8	6.00	16	7.3	40	20	20	4.0	687.00..-D	96.73	**814**	96.73	**814**
R/L 020.0400-25	8	6.00	20	7.3	45	25	25	4.0	687.00..-D	98.05	**816**	98.05	**816**
R/L 020.0400-30	8	6.00	20	7.3	50	30	30	4.0	687.00..-D	98.05	**818**	98.05	**818**
R/L 020.0400-35	8	6.00	20	7.3	55	35	35	4.0	687.00..-D	100.32	**820**	100.32	**820**
R/L 020.0400-40	8	6.00	20	7.3	60	40	40	4.0	687.00..-D	100.32	**822**	100.32	**822**
R/L 020.0500.20	8	6.50	20	7.3	40	20	20	5.0	687.00..-D	94.23	**824**	94.23	**824**
R/L 020.0500.25	8	6.50	20	7.3	45	25	25	5.0	687.00..-D	95.38	**826**	95.38	**826**
R/L 020.0500.30	8	6.50	20	7.3	50	30	30	5.0	687.00..-D	95.38	**828**	95.38	**828**
R/L 020.0500.35	8	6.50	20	7.3	55	35	35	5.0	687.00..-D	98.05	**830**	98.05	**830**
R/L 020.0500.40	8	6.50	20	7.3	60	40	40	5.0	687.00..-D	95.34	**832**	95.34	**832**

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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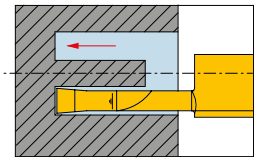
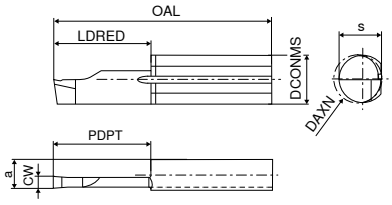
→ v_c Page 60

UltraMini – Inserts for axial grooving





TiN | TiN | TiAlN | TiAlN

Illustrations show right-hand versions

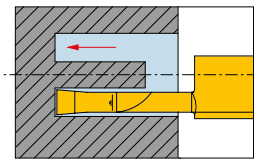
Designation	DCONMS h6 mm	a mm	DAXN mm	s mm	OAL mm	LDRED mm	PDPT mm	CW mm	Standard tool holder	Left-hand Y5 Article no. 73 055 ... £		Right-hand Y5 Article no. 73 054 ... £		Left-hand Y5 Article no. 73 057 ... £		Right-hand Y5 Article no. 73 056 ... £	
R/L 015.2515-20	7	5.9	15	6.3	35	20	20	2.5	676.00..-D	82.08	572	76.96	572	81.80	572	81.80	572
R/L 015.3015-20	7	5.9	15	6.3	35	20	20	3.0	676.00..-D	76.96	574	76.96	574	81.80	574	81.80	574
R/L 015.3015-30	7	5.9	15	6.3	45	30	30	3.0	676.00..-D	90.36	674	90.36	674	90.20	674	90.20	674

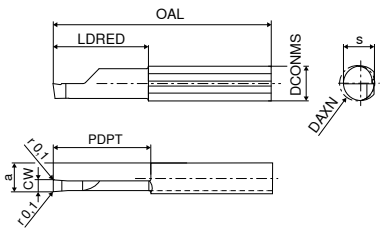
Steel	●	●	●	●
Stainless steel	●	●	●	●
Cast iron	○	○	●	●
Non ferrous metals	○	○	●	●
Heat resistant alloys	○	○	●	●
hardened materials				

→ v_c Page 60

UltraMini – Inserts for axial grooving

▲ with corner radius





TiAlN | TiAlN

Illustrations show right-hand versions

Designation	DCONMS h6 mm	a mm	DAXN mm	s mm	OAL mm	LDRED mm	PDPT mm	CW mm	Standard tool holder	Left-hand Y5 Article no. 73 257 ... £		Right-hand Y5 Article no. 73 256 ... £	
R/L 015M2515-20	7	5.9	8	6.3	35	20	20	2.5	676.00..-D	78.67	800	78.67	800
R/L 015M3015-20	7	5.9	8	6.3	35	20	20	3.0	676.00..-D	78.67	802	78.67	802
R/L 015M3015-30	7	5.9	8	6.3	45	30	30	3.0	676.00..-D	86.07	804	86.07	804

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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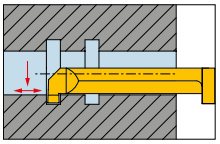
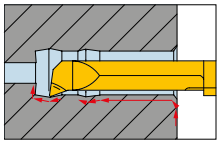
Set 1: Internal turning, grooving and chamfering, right hand

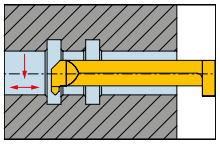
▲ extensive assortment of right-hand tools
▲ K10F – TiN



Grooving (E)



Profile turn (A)

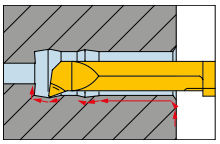


Chamfers (F)

Tool	Designation	Article No.	Bore Ø mm	Boring depth mm	Grooving depth mm	Groove width mm	Piece	fig.	Y5 Article no. 73 085 ... £	
Inserts	**R 004.0100-16**	**73 002 541**	4	16	0,8	1,0	1	E		
Inserts	**R 005.0150-20**	**73 002 552**	5	20	1,0	1,5	1	E		
Inserts	**R 005.0200-20**	**73 002 553**	5	20	1,0	2,0	1	E		
Inserts	**R 006.0150-22**	**73 002 562**	6	22	1,8	1,5	1	E		
Inserts	**R 006.0200-22**	**73 002 563**	6	22	1,8	2,0	1	E		
Inserts	**R 050.3-16**	**73 004 530**	3	16			1	A	953.18	999
Inserts	**R 050.4-16**	**73 004 540**	4	16			1	A		
Inserts	**R 050.5-20**	**73 004 550**	5	20			1	A		
Inserts	**R 050.6-22**	**73 004 560**	6	22			1	A		
Inserts	**R 060.5-20**	**73 006 550**	5	20			1	F		
Tool holder	**645.0016-D**	**73 080 164**					1			
Tool holder	**676.0016-D**	**73 080 166**					1			
Tightening Key	**110.645**	**70 950 175**					1			

Set 3: Internal Turning

▲ extensive assortment of right-hand tools
▲ K10F – TiN



Tool	Designation	Article No.	Bore Ø mm	Boring depth mm	Piece	Y5 Article no. 73 085 ... £	
Inserts	R 050.3-16	73 004 530	3	16	1		
Inserts	R 050.4-16	73 004 540	4	16	1		
Inserts	R 050.5-20	73 004 550	5	20	1	599.07	994
Inserts	R 050.6-22	73 004 560	6	22	1		
Tool holder	645.0016-D	73 080 164			1		
Tool holder	676.0016-D	73 080 166			1		
Tightening Key	110.645	70 950 175			1		

Set 4: Holder

Tool	Designation	Article No.	for cutting insert Ø mm	Piece	Y5 Article no. 73 085 ... £	
Tool holder	**645.0016-D**	**73 080 164**	3 / 4 / 5	1		
Tool holder	**676.0016-D**	**73 080 166**	6 / 7	1	373.50	990
Tightening Key	**110.645**	**70 950 175**		1		

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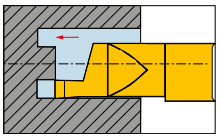
Set 6: Axial Grooving

- extensive assortment of right-hand tools
- K10F – TiN

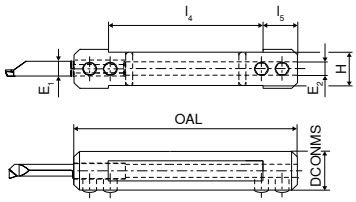


Tool	Designation	Article No.	Bore Ø mm	Boring depth mm	Grooving depth mm	Groove width mm	Piece	Y5 Article no. 73 085 ... £	
Inserts	**R 010.1008-10**	**73 050 571**	8	10	1,5	1,0	1		
Inserts	**R 010.1508-10**	**73 050 573**	8	10	2,5	1,5	1		
Inserts	**R 010.2008-10**	**73 050 575**	8	10	3,0	2,0	1	483.64	**996**
Inserts	**R 010.2508-20**	**73 050 677**	8	20	3,5	2,5	1		
Inserts	**R 010.3008-20**	**73 050 679**	8	20	3,5	3,0	1		
Tool holder	**676.0016-D**	**73 080 166**					1		
Tightening Key	**110.645**	**70 950 175**					1		

UltraMini – Standard tool holder for cutting inserts

- ▲ double ended
- ▲ Machining diameter from Ø 0.2 mm

Scope of supply:
Tool holder with allen key



Designation	Ø E_1 mm	Ø E_2 mm	DCONMS mm	OAL mm	l_4 mm	l_5 mm	H mm	Y5 Article no. 73 080 ... £	
645.0012-D	4	5	12.00	75	55	10	10.3	172.99	**163**
645.0016-D	4	5	16.00	75	55	10	14.0	181.70	**164**
645.001905-D	4	5	19.05	90	70	10	17.2	151.38	**170**
645.0020-D	4	5	20.00	90	70	10	18.0	195.67	**165**
645.0022-D	4	5	22.00	90	70	10	20.0	157.87	**171**
645.00254-D	4	5	25.40	95	75	10	23.4	167.60	**172**
676.0016-D	6	7	16.00	75	55	10	14.0	181.70	**166**
676.001905-D	6	7	19.05	90	70	10	17.2	151.38	**173**
676.0020-D	6	7	20.00	90	70	10	18.0	195.67	**167**
676.0022-D	6	7	22.00	90	70	10	20.0	157.87	**174**
676.00254-D	6	7	25.40	95	75	10	23.4	167.60	**175**
687.0016-D	7	8	16.00	75	55	10	14.0	210.72	**168**
687.0020-D	7	8	20.00	90	70	10	18.0	225.53	**169**

Key I

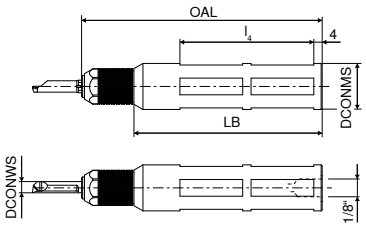
Clamping screw

Spare parts for Article no.		2A/28 Article no. 70 950 ... £		Y5 Article no. 73 082 ... £	
73 080 163	SW2,5	2.23	**175**	M5x4 6.99	**013**
73 080 164	SW2,5	2.23	**175**	M5x6 5.74	**001**
73 080 170	SW2,5	2.23	**175**	M5x6 5.74	**001**
73 080 165	SW2,5	2.23	**175**	M5x8 6.96	**008**
73 080 171	SW2,5	2.23	**175**	M5x8 6.96	**008**
73 080 172	SW2,5	2.23	**175**	M5x8 6.96	**008**
73 080 166	SW2,5	2.23	**175**	M5x6 5.74	**001**
73 080 173	SW2,5	2.23	**175**	M5x6 5.74	**001**
73 080 167	SW2,5	2.23	**175**	M5x8 6.96	**008**
73 080 174	SW2,5	2.23	**175**	M5x8 6.96	**008**
73 080 175	SW2,5	2.23	**175**	M5x8 6.96	**008**
73 080 168	SW2,5	2.23	**175**	M6x6 8.17	**014**
73 080 169	SW2,5	2.23	**175**	M6x6 8.17	**014**

UltraMini – Quick change tool holder for cutting inserts

Scope of supply:

Tool holder, lock nut and clamping wedge



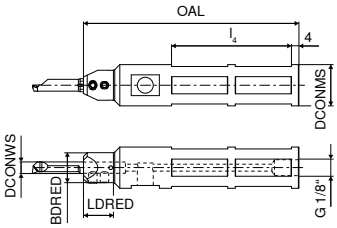
Designation	DCONWS mm	DCONMS g6 mm	OAL mm	LB mm	l_4 mm	Y5 Article no. 73 089 ... £	
UM600H.0012.4	4	12.00	115	90	64	326.55	124
UM600H.0016.4	4	16.00	115	90	64	296.27	164
UM600H.001905.4	4	19.05	115	90	64	317.90	194
UM600H.0020.4	4	20.00	115	90	64	313.58	204
UM600H.0022.4	4	22.00	115	90	64	318.98	224
UM600H.0025.4	4	25.00	115	90	64	325.47	254
UM600H.00254.4	4	25.40	115	90	64	331.96	264
UM600H.0028.4	4	28.00	115	90	64	331.96	284
UM600H.0012.5	5	12.00	115	90	64	326.55	125
UM600H.0016.5	5	16.00	115	90	64	296.27	165
UM600H.001905.5	5	19.05	115	90	64	317.90	195
UM600H.0020.5	5	20.00	115	90	64	313.58	205
UM600H.0022.5	5	22.00	115	90	64	318.98	225
UM600H.0025.5	5	25.00	115	90	64	325.47	255
UM600H.00254.5	5	25.40	115	90	64	331.96	265
UM600H.0028.5	5	28.00	115	90	64	331.96	285
UM600H.0012.6	6	12.00	115	90	64	326.55	126
UM600H.0016.6	6	16.00	115	90	64	296.27	166
UM600H.001905.6	6	19.05	115	90	64	317.90	196
UM600H.0020.6	6	20.00	115	90	64	313.58	206
UM600H.0022.6	6	22.00	115	90	64	318.98	226
UM600H.0025.6	6	25.00	115	90	64	325.47	256
UM600H.00254.6	6	25.40	115	90	64	331.96	266
UM600H.0028.6	6	28.00	115	90	64	331.96	286
UM600H.0012.7	7	12.00	115	90	64	326.55	127
UM600H.0016.7	7	16.00	115	90	64	296.27	167
UM600H.001905.7	7	19.05	115	90	64	317.90	197
UM600H.0020.7	7	20.00	115	90	64	313.58	207
UM600H.0022.7	7	22.00	115	90	64	318.98	227
UM600H.0025.7	7	25.00	115	90	64	325.47	257
UM600H.00254.7	7	25.40	115	90	64	331.96	267
UM600H.0028.7	7	28.00	115	90	64	331.96	287

Avoid pulling cuts. Ensure a suitable clamping force is used when using thro' coolant supply. Can be tightened using a key.

Spare parts DCONWS		Y5 Lock nut UM600H Article no. 73 950 ... £		Y5 Clamping wedge UM600H Article no. 73 950 ... £	
4	M4	73.53	104	47.58	111
5	M5	73.53	105	47.58	111
6	M6	73.53	106	47.58	111
7	M7	73.53	107	47.58	111

UltraMini – Toolholder for inserts

▲ Tool holder suitable for high coolant pressures



Designation	DCONWS mm	BDRED mm	DCONMS g6 mm	OAL mm	LDRED mm	l_4 mm	Y5 Article no. 73 088 ... £	
UMST.0016.4	4	16	16.00	115	24	42	349.26	**164**
UMST.001905.4	4	16	19.05	115	24	42	378.45	**194**
UMST.0020.4	4	16	20.00	115	24	42	356.83	**204**
UMST.0022.4	4	16	22.00	115	24	42	367.64	**224**
UMST.00254.4	4	16	25.40	115	24	42	378.45	**264**
UMST.0028.4	4	16	28.00	115	24	42	378.45	**284**
UMST.0016.5	5	16	16.00	115	24	42	349.26	**165**
UMST.001905.5	5	16	19.05	115	24	42	378.45	**195**
UMST.0020.5	5	16	20.00	115	24	42	356.83	**205**
UMST.0022.5	5	16	22.00	115	24	42	367.64	**225**
UMST.00254.5	5	16	25.40	115	24	42	378.45	**265**
UMST.0028.5	5	16	28.00	115	24	42	378.45	**285**
UMST.0016.6	6	16	16.00	115	24	42	349.26	**166**
UMST.001905.6	6	16	19.05	115	24	42	378.45	**196**
UMST.0020.6	6	16	20.00	115	24	42	356.83	**206**
UMST.0022.6	6	16	22.00	115	24	42	367.64	**226**
UMST.00254.6	6	16	25.40	115	24	42	378.45	**266**
UMST.0028.6	6	16	28.00	115	24	42	378.45	**286**
UMST.0016.7	7	16	16.00	115	24	42	349.26	**167**
UMST.001905.7	7	16	19.05	115	24	42	378.45	**197**
UMST.0020.7	7	16	20.00	115	24	42	356.83	**207**
UMST.0022.7	7	16	22.00	115	24	42	367.64	**227**
UMST.00254.7	7	16	25.40	115	24	42	378.45	**267**
UMST.0028.7	7	16	28.00	115	24	42	378.45	**287**
UMST.0016.8	8	16	16.00	115	24	42	349.26	**168**
UMST.001905.8	8	16	19.05	115	24	42	378.45	**198**
UMST.0020.8	8	16	20.00	115	24	42	356.83	**208**
UMST.0022.8	8	16	22.00	115	24	42	367.64	**228**
UMST.00254.8	8	16	25.40	115	24	42	378.45	**268**
UMST.0028.8	8	16	28.00	115	24	42	378.45	**288**

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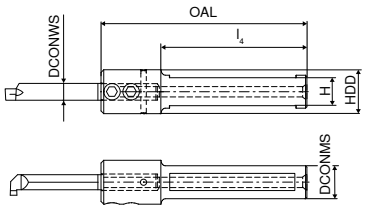
up to 150 bar

Spare parts DCONWS		Y7 Key D Article no. 80 950 ... £		Y5 Clamping screw Article no. 73 950 ... £	
4	T10	9.09	**104**	M5x0,5x6T10	10.81 **050**
5	T10	9.09	**104**	M5x0,5x6T10	10.81 **050**
6	T10	9.09	**104**	M5x0,5x6T10	10.81 **050**
7	T10	9.09	**104**	M5x0,5x6T10	10.81 **050**
8	T10	9.09	**104**	M5x0,5x6T10	10.81 **050**

UltraMini – Toolholder for inserts

▲ single ended

Scope of supply:
Tool holder with allen key



Designation	DCONWS mm	HDD mm	DCONMS mm	OAL mm	l_4 mm	H mm	Y5 Article no. 73 081 ... £	
640.0012-D	4	16	12	75	53	10.2	178.41	**264**
650.0012-D	5	16	12	75	53	10.2	178.41	**265**
660.0012-D	6	16	12	75	53	10.2	255.12	**266**
670.0012-D	7	16	12	75	53	10.2	255.12	**267**
680.0012-D	8	16	12	75	53	10.2	255.12	**268**

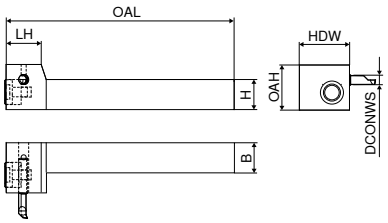
Key I

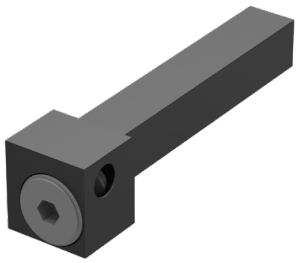
Clamping screw

Spare parts DCONWS	2A/28 Article no. 70 950 ... £		Y5 Article no. 73 082 ... £	
4	SW2,5	2.23 **175**	M5x0,5x6	4.60 **010**
5	SW2,5	2.23 **175**	M5x0,5x6	4.60 **010**
6	SW2,5	2.23 **175**	M5x0,5x6	4.60 **010**
7	SW2,5	2.23 **175**	M5x0,5x6	4.60 **010**
8	SW2,5	2.23 **175**	M5x0,5x6	4.60 **010**

UltraMini – Toolholder for inserts

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions

Designation	DCONWS mm	OAL mm	LH mm	B mm	HDW mm	H mm	OAH mm	Left-hand Y5 Article no. 73 083 ... £		Right-hand Y5 Article no. 73 084 ... £	
R/L .UHCM.1212.4	4	90	17	12	20	12	18	324.30	**124**	324.30	**124**
R/L .UHCM.1212.5	5	90	17	12	20	12	18	324.30	**125**	324.30	**125**
R/L .UHCM.1212.6	6	90	17	12	20	12	21	324.30	**126**	324.30	**126**
R/L .UHCM.1212.7	7	90	17	12	20	12	21	324.30	**127**	324.30	**127**

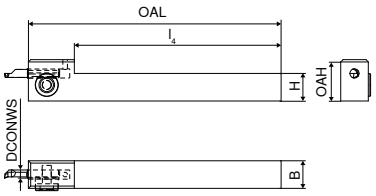
Y7 Clamping key – T

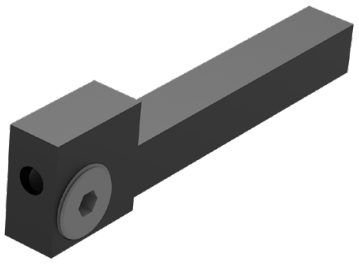
Y5 Clamping screw

Spare parts DCONWS		Article no. 80 397 ... £			Article no. 73 082 ... £	
4	SW5	6.09	**050**	UM 12	38.49	**011**
5	SW5	6.09	**050**	UM 12	38.49	**011**
6	SW5	6.09	**050**	UM 16	38.49	**012**
7	SW5	6.09	**050**	UM 16	38.49	**012**

UltraMini – Toolholder for inserts

Scope of supply:
Tool holder with allen key





Designation	DCONWS mm	OAL mm	l_4 mm	B mm	H mm	OAH mm	Y5 Article no. 73 086 ... £	
UM.1010.4	4	100	75	10	10	20	324.30	**104**
UM.1010.5	5	100	75	10	10	20	324.30	**105**
UM.1212.4	4	100	75	12	12	22	324.30	**124**
UM.1212.5	5	100	75	12	12	22	324.30	**125**
UM.1212.6	6	100	75	12	12	22	324.30	**126**

Y7 Clamping key – T

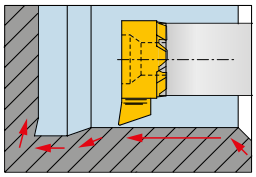
Y5 Clamping screw

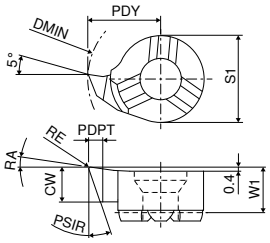
Spare parts DCONWS		Article no. 80 397 ... £			Article no. 73 082 ... £	
4	SW5	6.09	**050**	UM 12	38.49	**011**
5	SW5	6.09	**050**	UM 12	38.49	**011**
6	SW5	6.09	**050**	UM 16	38.49	**012**

12

MiniCut – Insert for turning and profiling

CWX500 CWX500





Illustrations show right-hand versions

Size	Designation	DMIN mm	CW mm	W1 mm	PDY mm	S1 mm	RE mm	PDPT mm	PSIR °	RA °	Left-hand Y5 Article no. 73 324 ...	£	Right-hand Y5 Article no. 73 322 ...	£
08	8,00. R/L .3,30.18°	7.8	3.3	3.5	4.65	6.0	0.20	0.6	18	8	37.06	033	37.06	033
	8,00. R/L .3,50.18°	7.8	3.5	3.5	4.65	6.0	0.05	0.6	18	8	40.25	035	40.25	035
	8,00. R/L .3,50.20°	7.8	3.5	3.5	4.65	6.0	0.20	0.6	20	20	38.92	135	38.92	135
09	9,00. R/L .3,60.18°	9.0	3.6	3.6	5.50	6.2	0.20	0.8	18	8	35.07	136	35.07	136
	9,00. R/L .3,60.20°	9.0	3.6	3.6	5.50	6.2	0.20	0.8	20	20	39.64	236	39.64	236
11	9,80. R/L .3,90.18°	9.8	3.9	4.2	5.50	8.0	0.20	1.0	18	8	37.06	139	37.06	139
	11,00. R/L .3,90.18°	11.0	3.9	4.2	6.70	8.0	0.20	1.0	18	8	36.65	339	36.65	339
	11,00. R/L .4,20.20°	11.0	4.2	4.2	6.70	8.0	0.20	1.0	20	20	39.64	342	39.64	342
14	14,00. R/L .5,00.18°	13.8	5.0	5.1	8.70	9.0	0.20	1.5	18	8	36.65	550	36.65	550
	14,00. R/L .5,30.20°	14.0	5.3	5.3	8.70	9.0	0.20	1.5	20	20	39.64	553	39.64	553
16	15,50. R/L .5,00.18°	15.5	5.0	5.4	9.70	11.0	0.20	1.5	18	8	40.05	750	40.05	750

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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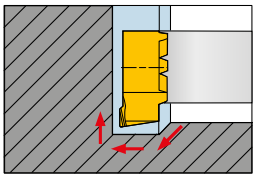
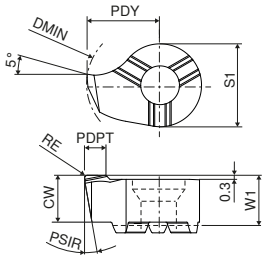
MiniCut – Insert for copy turning

▲ with chip breaker

CWX500 CWX500





Illustrations show right-hand versions

Size	Designation	DMIN mm	CW mm	W1 mm	PDY mm	S1 mm	RE mm	PDPT mm	PSIR °	Left-hand Y5 Article no. 73 388 ...	£	Right-hand Y5 Article no. 73 386 ...	£
08	8,00. R/L .3,40.10°	8	3.4	3.5	4.65	6.0	0.2	0.5	10	30.97	13400	30.97	13400
09	9,00. R/L .3,50.10°	9	3.5	3.6	5.50	6.2	0.2	0.5	10	32.27	136	32.27	136
11	11,00. R .4,10.10°	11	4.1	4.2	6.70	8.0	0.2	0.5	10	30.97	14100	30.97	14100

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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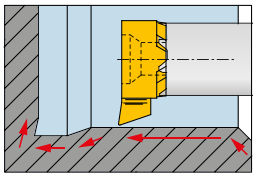
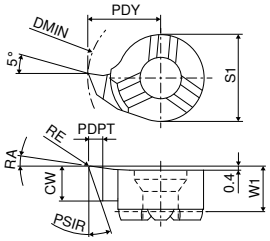
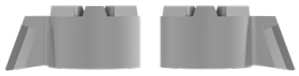
MiniCut – CBN insert for profiling – hard turning

▲ 56 to 65 HRC







Illustrations show right-hand versions

Size	Designation	DMIN mm	CW mm	W1 mm	PDY mm	S1 mm	RE mm	PDPT mm	PSIR °	RA °	Left-hand CBN Y5 Article no. 73 368 ... £		Right-hand CBN Y5 Article no. 73 366 ... £	
08	8,00. R/L .3,30.18°	7.8	3.3	3.5	4.65	6	0.2	0.39	18	8	167.56	033	167.56	033
11	11,00. R/L .3,90.18°	11.0	3.9	4.2	6.70	8	0.2	0.55	18	8	175.37	139	175.37	139
14	14,00. R/L .5,00.18°	13.8	5.0	5.3	8.70	9	0.2	0.69	18	8	185.81	550	185.81	550
16	16,00. R/L .5,00.18°	15.5	5.0	5.4	9.70	11	0.2	0.77	18	8	193.75	750	193.75	750

Steel		
Stainless steel		
Cast iron		
Non ferrous metals		
Heat resistant alloys		
hardened materials	●	●

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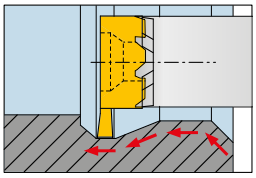
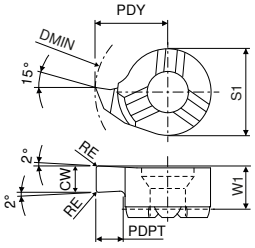
MiniCut – Internal turning insert

CWX500 CWX500





Illustrations show right-hand versions

Size	Designation	DMIN mm	CW +0.05 mm	PDPT mm	W1 mm	PDY mm	S1 mm	RE mm	CDX mm	Left-hand Y5 Article no. 73 316 ... £		Right-hand Y5 Article no. 73 314 ... £	
08	8,00. R/L .1,50.1,0	8	1.5	1.0	3.3	4.8	6.0	0.2	0.2	37.49	015	37.49	015
	8,00. R/L .2,00.1,0	8	2.0	1.0	3.3	4.8	6.0	0.2	0.2	35.78	020	35.78	020
09	9,00. R/L .1,50.2,0	9	1.5	2.0	3.6	5.5	6.2	0.2	0.2	38.32	115	38.32	115
	9,00. R/L .1,50.3,0	10	1.5	3.0	3.6	6.5	6.2	0.2	0.2	38.32	121	38.32	121
	9,00. R/L .2,00.2,0	9	2.0	2.0	3.6	5.5	6.2	0.2	0.2	33.98	120	33.98	120
	9,00. R/L .2,00.3,0	10	2.0	3.0	3.6	6.5	6.2	0.2	0.2	33.98	122	33.98	122
11	11,00. R/L .1,50.2,3	11	1.5	2.3	4.2	6.7	8.0	0.2	0.2	39.48	315	39.48	315
	11,00. R/L .2,00.2,3	11	2.0	2.3	4.2	6.7	8.0	0.2	0.2	37.06	320	37.06	320
14	14,00. R/L .1,50.4,0	14	1.5	4.0	5.3	9.0	9.0	0.2	0.2	36.19	515	36.19	515
	14,00. R/L .1,50,5,5	16	1.5	5.5	5.2	10.5	9.0	0.2	0.2	46.05	516	46.05	516
	14,00. R/L .1,50.6,5	17	1.5	6.5	5.2	11.5	9.0	0.2	0.2	46.05	517	46.05	517
	14,00. R/L .2,00.4,0	14	2.0	4.0	5.3	9.0	9.0	0.2	0.2	37.06	520	37.06	520
	14,00. R/L .2,00.5,5	16	2.0	5.5	5.2	10.5	9.0	0.2	0.2	46.05	521	46.05	521
	14,00. R/L .2,00.6,5	17	2.0	6.5	5.2	11.5	9.0	0.2	0.2	46.05	522	46.05	522
	14,00. R/L .2,50.5,5	16	2.5	5.5	5.2	10.5	9.0	0.2	0.2	46.05	525	46.05	525
	14,00. R/L .2,50.6,5	17	2.5	6.5	5.2	11.5	9.0	0.2	0.2	46.05	526	46.05	526
	14,00. R/L .3,00.5,5	16	3.0	5.5	5.2	10.5	9.0	0.2	0.2	46.05	530	46.05	530
	14,00. R/L .3,00.6,5	17	3.0	6.5	5.2	11.5	9.0	0.2	0.2	46.05	531	46.05	531
16	16,00. R/L .2,00.4,3	16	2.0	4.3	5.4	10.2	11.0	0.2	0.2	40.41	720	40.41	720

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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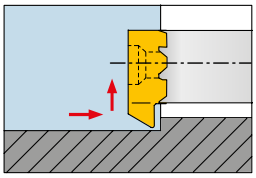
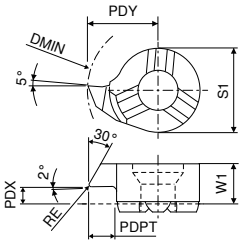
MiniCut – Back boring insert

CWX500 CWX500





Illustrations show right-hand versions

Size	Designation	DMIN mm	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	RE mm	CDX mm	Left-hand Y5 Article no. 73 332 ... £		Right-hand Y5 Article no. 73 330 ... £	
08	8,00. R/L .30°.1,3	7.8	1.3	3.50	1.0	4.65	6.0	0.2	0.6	42.64	013	42.64	013
09	9,00. R/L .30°.1,7	9.0	1.7	3.55	1.2	5.50	6.2	0.2	0.8	38.92	117	38.92	117
	9,00. R/L .30°.2,3	10.0	2.3	3.55	1.2	6.50	6.2	0.2	0.8	38.92	123	38.92	123
11	11,00. R/L .30°.2,3	11.0	2.3	4.30	1.6	6.70	8.0	0.2	1.0	41.75	323	41.75	323
14	14,00. R/L .30°.3,5	13.8	3.5	5.40	2.4	8.70	9.0	0.2	1.5	42.64	535	42.64	535

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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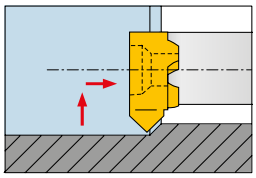
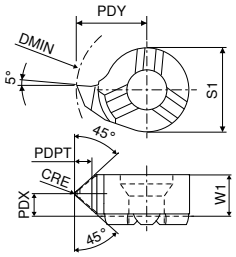
MiniCut – Internal turning and chamfering insert

CWX500 CWX500





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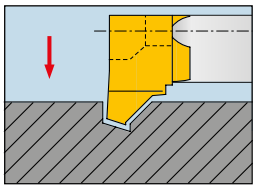
Illustrations show right-hand versions

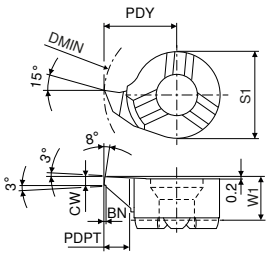
Size	Designation	DMIN mm	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	CRE mm	CDX mm	Left-hand Y5 Article no. 73 336 ... £		Right-hand Y5 Article no. 73 334 ... £	
08	8,00. R/L .45°.1,4	8	1.4	3.50	1.8	4.8	6.0	0.2	0.6	35.62	010	35.62	010
09	9,00. R/L .45°.1,3	9	1.3	3.55	1.8	5.5	6.2	0.2	0.8	33.38	110	33.38	110
11	11,00. R/L .45°.1,5	11	1.5	4.30	2.2	6.7	8.0	0.2	1.0	35.62	310	35.62	310
14	14,00. R/L .45°.1,5	14	1.5	5.40	2.8	9.0	9.0	0.2	1.2	38.48	510	38.48	510

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

→ v_c Page 60

MiniCut – Insert for pregrooving and chamfering





CWX500 CWX500

Illustrations show right-hand versions

Size	Designation	DMIN mm	CW mm	PDPT mm	W1 mm	PDY mm	S1 mm	BN mm	Left-hand Y5 Article no. 73 340 ... £		Right-hand Y5 Article no. 73 338 ... £	
08	8,00. R/L .1,00.45°	8	1	1.0	3.3	4.8	6.0	0.2	36.20	100	36.20	100
09	9,00. R/L .1,00.45°	9	1	1.5	3.6	5.5	6.2	0.2	34.48	215	34.48	215
11	11,00. R/L .1,00.45°	11	1	1.5	4.2	6.7	8.0	0.2	36.20	315	36.20	315
14	14,00. R/L .1,00.45°	14	1	1.5	5.3	9.0	9.0	0.2	36.20	515	36.20	515
16	16,00. R/L .1,00.45°	16	1	1.5	5.4	10.2	11.0	0.2	36.20	715	36.20	715

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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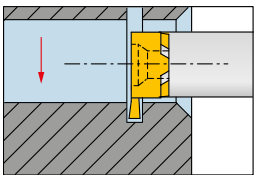
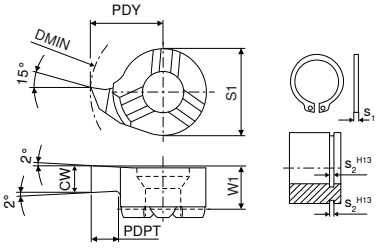
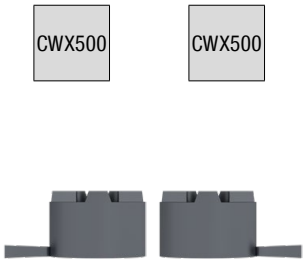
MiniCut – Grooving insert







Illustrations show right-hand versions

Size	Designation	DMIN	CW	PDPT	W1	S_1	$S_{2\ H13}$	PDY	S1	Left-hand Y5 Article no. 73 312 ...		Right-hand Y5 Article no. 73 310 ...	
		mm	mm	mm	mm	mm	mm	mm	mm	£		£	
08	8,00. R/L .0,73.1,0	8	0.73	1.0	3.3	0.6	0.7	4.8	6.0	32.02	073	32.02	073
	8,00. R/L .0,83.1,0	8	0.83	1.0	3.3	0.7	0.8	4.8	6.0	32.02	083	32.02	083
	8,00. R/L .0,93.1,0	8	0.93	1.0	3.3	0.8	0.9	4.8	6.0	32.02	093	32.02	093
	8,00. R/L .1,00.1,0	8	1.00	1.0	3.3			4.8	6.0	32.02	110	32.02	110
	8,00. R/L .1,20.1,0	8	1.20	1.0	3.3	1.0	1.1	4.8	6.0	32.02	112	32.02	112
	8,00. R/L .1,40.1,0	8	1.40	1.0	3.3	1.2	1.3	4.8	6.0	32.02	114	32.02	114
	8,00. R/L .1,50.1,0	8	1.50	1.0	3.3			4.8	6.0	32.02	115	32.02	115
	8,00. R/L .1,70.1,0	8	1.70	1.0	3.3	1.5	1.6	4.8	6.0	32.02	117	32.02	117
	8,00. R/L .2,00.1,0	8	2.00	1.0	3.3			4.8	6.0	32.02	120	32.02	120
09	9,00. R/L .0,73.1,2	9	0.73	1.2	3.6	0.6	0.7	5.5	6.2	31.23	173	31.23	173
	9,00. R/L .0,83.1,3	9	0.83	1.3	3.6	0.7	0.8	5.5	6.2	31.23	183	31.23	183
	9,00. R/L .0,93.1,5	9	0.93	1.5	3.6	0.8	0.9	5.5	6.2	31.23	193	31.23	193
	9,00. R/L .1,00.1,8	9	1.00	1.8	3.6			5.5	6.2	31.23	210	31.23	210
	9,00. R/L .1,20.1,8	9	1.20	1.8	3.6	1.0	1.1	5.5	6.2	31.23	212	31.23	212
	9,00. R/L .1,40.1,8	9	1.40	1.8	3.6	1.2	1.3	5.5	6.2	31.23	214	31.23	214
	9,00. R/L .1,50.1,8	9	1.50	1.8	3.6			5.5	6.2	31.23	215	31.23	215
	9,00. R/L .1,70.1,8	9	1.70	1.8	3.6	1.5	1.6	5.5	6.2	31.23	217	31.23	217
	9,00. R/L .2,00.1,8	9	2.00	1.8	3.6			5.5	6.2	31.23	220	31.23	220
	9,00. R/L .2,50.1,8	9	2.50	1.8	3.6			5.5	6.2	31.23	225	31.23	225
	9,00. R/L .3,00.1,8	9	3.00	1.8	3.6			5.5	6.2	31.23	230	31.23	230
11	11,00. R/L .0,73.1,2	11	0.73	1.2	4.2	0.6	0.7	6.7	8.0	32.02	373	32.02	373
	11,00. R/L .0,83.1,3	11	0.83	1.3	4.2	0.7	0.8	6.7	8.0	32.02	383	32.02	383
	11,00. R/L .0,93.1,5	11	0.93	1.5	4.2	0.8	0.9	6.7	8.0	32.02	393	32.02	393
	11,00. R/L .1,00.2,3	11	1.00	2.3	4.2			6.7	8.0	32.02	310	32.02	310
	11,00. R/L .1,20.2,3	11	1.20	2.3	4.2	1.0	1.1	6.7	8.0	32.02	312	32.02	312
	11,00. R/L .1,40.2,3	11	1.40	2.3	4.2	1.2	1.3	6.7	8.0	32.02	314	32.02	314
	11,00. R/L .1,50.2,3	11	1.50	2.3	4.2			6.7	8.0	32.02	315	32.02	315
	11,00. R/L .1,70.2,3	11	1.70	2.3	4.2	1.5	1.6	6.7	8.0	32.02	317	32.02	317
	11,00. R/L .2,00.2,3	11	2.00	2.3	4.2			6.7	8.0	32.02	320	32.02	320
	11,00. R/L .2,50.2,3	11	2.50	2.3	4.2			6.7	8.0	32.02	325	32.02	325
	11,00. R/L .3,00.2,3	11	3.00	2.3	4.2			6.7	8.0	32.02	330	32.02	330
14	14,00. R/L .0,73.1,2	14	0.73	1.2	5.3	0.6	0.7	9.0	9.0	32.02	573	32.02	573
	14,00. R/L .0,83.1,3	14	0.83	1.3	5.3	0.7	0.8	9.0	9.0	32.02	583	32.02	583
	14,00. R/L .0,93.1,5	14	0.93	1.5	5.3	0.8	0.9	9.0	9.0	32.02	593	32.02	593
	14,00. R/L .1,20.4,0	14	1.20	4.0	5.3	1.0	1.1	9.0	9.0	32.02	512	32.02	512
	14,00. R/L .1,40.4,0	14	1.40	4.0	5.3	1.2	1.3	9.0	9.0	32.02	514	32.02	514
	14,00. R/L .1,50.4,0	14	1.50	4.0	5.3			9.0	9.0	32.02	515	32.02	515
	14,00. R/L .1,70.4,0	14	1.70	4.0	5.3	1.5	1.6	9.0	9.0	32.02	517	32.02	517
	14,00. R/L .2,00.4,0	14	2.00	4.0	5.3			9.0	9.0	32.02	520	32.02	520
	14,00. R/L .2,50.4,0	14	2.50	4.0	5.3			9.0	9.0	32.02	525	32.02	525
	14,00. R/L .3,00.4,0	14	3.00	4.0	5.3			9.0	9.0	32.02	530	32.02	530
16	16,00. R/L .0,73.1,2	16	0.73	1.2	5.4	0.6	0.7	10.2	11.0	39.00	773	39.00	773
	16,00. R/L .0,83.1,3	16	0.83	1.3	5.4	0.7	0.8	10.2	11.0	39.00	783	39.00	783
	16,00. R/L .0,93.1,5	16	0.93	1.5	5.4	0.8	0.9	10.2	11.0	39.00	793	39.00	793
	16,00. R/L .1,20.4,3	16	1.20	4.3	5.4	1.0	1.1	10.2	11.0	35.23	712	35.23	712
	16,00. R/L .1,40.4,3	16	1.40	4.3	5.4	1.2	1.3	10.2	11.0	35.23	714	35.23	714
	16,00. R/L .1,50.4,3	16	1.50	4.3	5.4			10.2	11.0	35.23	715	35.23	715
	16,00. R/L .1,70.4,3	16	1.70	4.3	5.4	1.5	1.6	10.2	11.0	35.23	717	35.23	717
	16,00. R/L .2,00.4,3	16	2.00	4.3	5.4			10.2	11.0	35.23	720	35.23	720
	16,00. R/L .2,50.4,3	16	2.50	4.3	5.4			10.2	11.0	35.23	725	35.23	725
	16,00. R/L .3,00.4,3	16	3.00	4.3	5.4			10.2	11.0	35.23	730	35.23	730
	16,00. R/L .3,50.4,3	16	3.50	4.3	5.4			10.2	11.0	35.23	735	35.23	735
	16,00. R/L .4,00.4,3	16	4.00	4.3	5.4			10.2	11.0	35.23	740	35.23	740

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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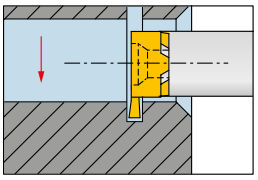
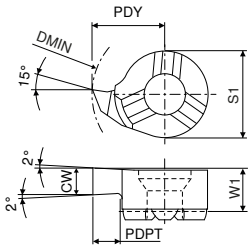
MiniCut – Grooving insert

▲ large groove depth ($T_{max.}$ 5.5 mm)

CWX500 CWX500





Illustrations show right-hand versions

Size	Designation	DMIN mm	CW +0,03 mm	PDPT mm	W1 mm	PDY mm	S1 mm	Left-hand Y5 Article no. 73 372 ... £		Right-hand Y5 Article no. 73 370 ... £	
14	14,00. R/L .1,50.5,5	16	1.5	5.5	5.2	10.5	9	37.18	715	37.18	715
	14,00. R/L .2,00.5,5	16	2.0	5.5	5.2	10.5	9	37.18	720	37.18	720
	14,00. R/L .2,50.5,5	16	2.5	5.5	5.2	10.5	9	37.18	725	37.18	725
	14,00. R/L .3,00.5,5	16	3.0	5.5	5.2	10.5	9	37.18	730	37.18	730

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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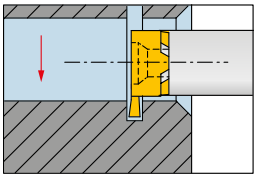
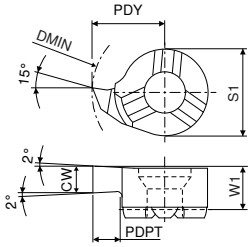
MiniCut – Grooving insert

▲ large groove depth ($T_{max.}$ 6.5 mm)

CWX500 CWX500





Illustrations show right-hand versions

Size	Designation	DMIN mm	CW +0,03 mm	PDPT mm	W1 mm	PDY mm	S1 mm	Left-hand Y5 Article no. 73 384 ... £		Right-hand Y5 Article no. 73 382 ... £	
14	14,00. R/L .1,50.6,5	17	1.5	6.5	5.2	11.5	9	37.18	515	37.18	515
	14,00. R/L .2,00.6,5	17	2.0	6.5	5.2	11.5	9	37.18	520	37.18	520
	14,00. R/L .2,50.6,5	17	2.5	6.5	5.2	11.5	9	37.18	525	37.18	525
	14,00. R/L .3,00.6,5	17	3.0	6.5	5.2	11.5	9	37.18	530	37.18	530

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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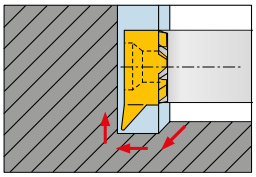
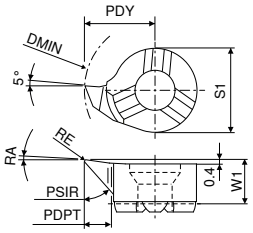
MiniCut – Internal undercut insert





CWX500 CWX500

Illustrations show right-hand versions

Size	Designation	DMIN mm	PDPT mm	W1 mm	PDY mm	S1 mm	RE mm	CDX mm	PSIR °	RA °	Left-hand Y5 Article no. 73 328 ... £		Right-hand Y5 Article no. 73 326 ... £	
08	8,00. R/L .30°.1,0	7.8	1.0	3.5	4.65	6.0	0.2	0.4	30	3	42.80	010	42.80	010
	8,00. R/L .47°.1,2	7.8	1.2	3.5	4.65	6.0	0.2	0.4	47	3	37.18	012	37.18	012
09	9,00. R/L .47°.1,5	9.0	1.5	3.6	5.50	6.2	0.2	0.5	47	3	34.48	115	34.48	115
11	11,00. R/L .30°.2,3	11.0	2.3	4.2	6.70	8.0	0.2	0.6	30	3	41.80	423	41.80	423
	11,00. R/L .47°.2,3	11.0	2.3	4.2	6.70	8.0	0.2	0.6	47	3	36.20	323	36.20	323
14	13,70. R/L .47°.3,0	13.7	3.0	5.3	8.70	9.0	0.2	0.8	47	3	37.18	530	37.18	530
	13,70. R/L .30°.4,0	13.7	4.0	5.3	8.70	9.0	0.2	0.8	30	3	42.80	540	42.80	540
16	15,80. R/L .30°.4,3	15.8	4.3	5.4	10.20	11.0	0.2	1.0	30	3	41.54	744	41.54	744

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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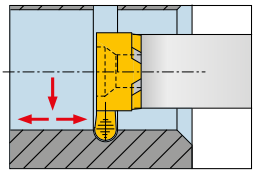
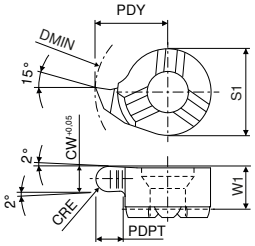
MiniCut – Full radius grooving and turning insert

CWX500 CWX500





Illustrations show right-hand versions

Size	Designation	DMIN mm	CW mm	PDPT mm	W1 mm	PDY mm	S1 mm	CRE mm	Left-hand Y5 Article no. 73 320 ... £		Right-hand Y5 Article no. 73 318 ... £	
08	8,00. R/L .0,80.1,0	8	0.8	1.0	3.3	4.8	6.0	0.4	39.91	008	39.91	008
	8,00. R/L .1,20.1,0	8	1.2	1.0	3.3	4.8	6.0	0.6	39.91	012	39.91	012
	8,00. R/L .1,80.1,0	8	1.8	1.0	3.3	4.8	6.0	0.9	39.91	018	39.91	018
	8,00. R/L .2,00.1,0	8	2.0	1.0	3.3	4.8	6.0	1.0	36.99	020	36.99	020
09	9,00. R/L .0,80.1,6	9	0.8	1.6	3.6	5.5	6.2	0.4	38.32	108	38.32	108
	9,00. R/L .1,20.1,6	9	1.2	1.6	3.6	5.5	6.2	0.6	38.32	112	38.32	112
	9,00. R/L .1,80.1,6	9	1.8	1.6	3.6	5.5	6.2	0.9	38.32	118	38.32	118
	9,00. R/L .2,00.1,6	9	2.0	1.6	3.6	5.5	6.2	1.0	38.32	120	38.32	120
11	11,00. R/L .0,80.2,3	11	0.8	2.3	4.2	6.7	8.0	0.4	40.41	308	40.41	308
	11,00. R/L .1,20.2,3	11	1.2	2.3	4.2	6.7	8.0	0.6	40.41	312	40.41	312
	11,00. R/L .1,60.2,3	11	1.6	2.3	4.2	6.7	8.0	0.8	38.32	316	38.32	316
	11,00. R/L .1,80.2,3	11	1.8	2.3	4.2	6.7	8.0	0.9	40.41	318	40.41	318
	11,00. R/L .2,00.2,3	11	2.0	2.3	4.2	6.7	8.0	1.0	40.41	320	40.41	320
	11,00. R/L .2,40.2,3	11	2.4	2.3	4.2	6.7	8.0	1.2	38.32	324	38.32	324
	11,00. R/L .3,00.2,3	11	3.0	2.3	4.2	6.7	8.0	1.5	40.41	330	40.41	330
14	14,00. R/L .0,80.4,0	14	0.8	4.0	5.3	9.0	9.0	0.4	39.89	508	39.89	508
	14,00. R/L .1,20.4,0	14	1.2	4.0	5.3	9.0	9.0	0.6	42.77	512	42.77	512
	14,00. R/L .1,80.4,0	14	1.8	4.0	5.3	9.0	9.0	0.9	42.77	518	42.77	518
	14,00. R/L .2,00.4,0	14	2.0	4.0	5.3	9.0	9.0	1.0	42.77	520	42.77	520
	14,00. R/L .2,20.4,0	14	2.2	4.0	5.3	9.0	9.0	1.1	42.77	522	42.77	522
	14,00. R/L .3,00.4,0	14	3.0	4.0	5.3	9.0	9.0	1.5	42.77	530	42.77	530
16	16,00. R/L .1,60.4,3	16	1.6	4.3	5.4	10.2	11.0	0.8	40.96	716	40.96	716
	16,00. R/L .1,80.4,3	16	1.8	4.3	5.4	10.2	11.0	0.9	43.21	718	43.21	718
	16,00. R/L .2,00.4,3	16	2.0	4.3	5.4	10.2	11.0	1.0	40.96	720	40.96	720
	16,00. R/L .2,20.4,3	16	2.2	4.3	5.4	10.2	11.0	1.1	43.21	722	43.21	722
	16,00. R/L .2,40.4,3	16	2.4	4.3	5.4	10.2	11.0	1.2	40.96	724	40.96	724
	16,00. R/L .3,00.4,3	16	3.0	4.3	5.4	10.2	11.0	1.5	43.21	730	43.21	730
	16,00. R/L .3,20.4,3	16	3.2	4.3	5.4	10.2	11.0	1.6	40.96	732	40.96	732
	16,00. R/L .4,00.4,3	16	4.0	4.3	5.4	10.2	11.0	2.0	43.21	740	43.21	740

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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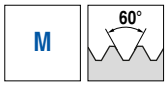
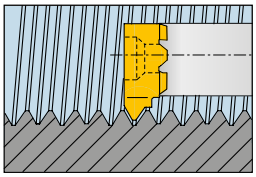
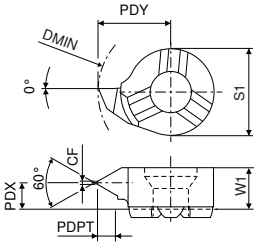
MiniCut – Threading insert (Partial profile)







Illustrations show right-hand versions

Size	Designation	DMIN mm	TP mm	CF mm	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	Left-hand Y5 Article no. 73 344 ... £		Right-hand Y5 Article no. 73 342 ... £	
08	8,00. R/L .0,5/0,75.60°	8	0,5 - 0,75	0.06	0.43	3.50	2.7	4.8	6.0	43.21	012	43.21	012
	8,00. R/L .1,0/1,25.60°	8	1,0 - 1,25	0.12	0.70	3.50	2.7	4.8	6.0	43.21	014	43.21	014
	8,00. R/L .1,5/1,75.60°	8	1,5 - 1,75	0.18	0.95	3.50	2.5	4.8	6.0	43.21	010	43.21	010
09	9,00. R/L .0,5/0,75.60°	9	0,5 - 0,75	0.06	0.27	3.55	3.2	5.5	6.2	40.96	112	40.96	112
	9,00. R/L .1,0/1,25.60°	9	1,0 - 1,25	0.12	0.54	3.55	3.0	5.5	6.2	40.96	114	40.96	114
	9,00. R/L .1,5/1,75.60°	9	1,5 - 1,75	0.18	0.81	3.55	2.8	5.5	6.2	40.96	116	40.96	116
	9,00. R/L .1,75/2,0.60°	9	1,75 - 2,0	0.20	0.95	3.55	2.6	5.5	6.2	40.96	118	40.96	118
	9,00. R/L .2,0/2,5.60°	9	2,0 - 2,5	0.25	1.08	3.55	2.5	5.5	6.2	40.96	120	40.96	120
	9,00. R/L .2,5/3,0.60°	9	2,5 - 3,0	0.31	1.35	3.55	2.1	5.5	6.2	40.96	122	40.96	122
	9,00. R/L .3,0/3,5.60°	9	3,0 - 3,5	0.37	1.62	3.55	1.9	5.5	6.2	40.96	124	40.96	124
11	11,00. R/L .0,5/0,75.60°	11	0,5 - 0,75	0.06	0.75	4.30	3.5	6.7	8.0	43.21	312	43.21	312
	11,00. R/L .1,0/1,25.60°	11	1,0 - 1,25	0.12	0.55	4.30	3.5	6.7	8.0	43.21	314	43.21	314
	11,00. R/L .1,5/1,75.60°	11	1,5 - 1,75	0.18	0.81	4.30	3.5	6.7	8.0	43.21	316	43.21	316
	11,00. R/L .2,0/2,5.60°	11	2,0 - 2,5	0.25	1.08	4.30	3.0	6.7	8.0	43.21	310	43.21	310
	11,00. R/L .2,5/3,0.60°	11	2,5 - 3,0	0.31	1.35	4.30	3.0	6.7	8.0	43.21	320	43.21	320
14	14,00. R/L .1,0/1,25.60°	14	1,0 - 1,25	0.12	0.55	5.40	4.7	9.0	9.0	43.21	512	43.21	512
	14,00. R/L .1,5/1,75.60°	14	1,5 - 1,75	0.18	0.81	5.40	4.5	9.0	9.0	43.21	514	43.21	514
	14,00. R/L .2,0/2,5.60°	14	2,0 - 2,5	0.25	1.08	5.40	4.2	9.0	9.0	43.21	510	43.21	510
	14,00. R/L .2,5/3,0.60°	14	2,5 - 3,0	0.31	1.35	5.40	4.7	9.0	9.0	43.21	520	43.21	520
16	16,00. R/L .1,0/1,25.60°	16	1,0 - 1,25	0.12	0.55	5.50	4.7	10.2	11.0	43.21	712	43.21	712
	16,00. R/L .1,5/1,75.60°	16	1,5 - 1,75	0.18	0.81	5.50	4.5	10.2	11.0	43.21	714	43.21	714
	16,00. R/L .2,0/2,5.60°	16	2,0 - 2,5	0.25	1.08	5.50	4.2	10.2	11.0	43.21	716	43.21	716
	16,00. R/L .2,5/3,0.60°	16	2,5 - 3,0	0.31	1.35	5.50	4.2	10.2	11.0	43.21	710	43.21	710

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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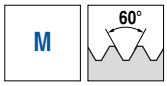
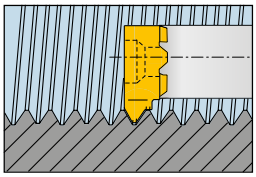
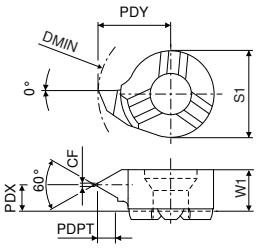
MiniCut – Threading insert (Full profile)







Illustrations show right-hand versions

Size	Designation	DMIN mm	TP mm	CF mm	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	Left-hand Y5 Article no. 73 348 ... £		Right-hand Y5 Article no. 73 346 ... £	
09	9,00. R/L .0,5.60°	9	0.50	0.06	0.27	3.55	3.25	5.5	6.2	45.65	405	45.65	405
	9,00. R/L .1,0.60°	9	1.00	0.12	0.54	3.55	3.00	5.5	6.2	45.65	410	45.65	410
	9,00. R/L .1,5.60°	9	1.50	0.18	0.81	3.55	2.80	5.5	6.2	45.65	415	45.65	415
	9,00. R/L .1,75.60°	9	1.75	0.20	0.95	3.55	2.70	5.5	6.2	45.65	418	45.65	418
	9,00. R/L .2,0.60°	9	2.00	0.25	1.08	3.55	2.60	5.5	6.2	45.65	420	45.65	420
	9,00. R/L .2,5.60°	9	2.50	0.31	1.35	3.55	2.50	5.5	6.2	45.65	425	45.65	425
	9,00. R/L .3,0.60°	9	3.00	0.37	1.62	3.55	2.20	5.5	6.2	45.65	430	45.65	430
11	11,00. R/L .1,0.60°	11	1.00	0.12	0.54	4.30	3.50	6.7	8.0	49.02	314	49.02	314
	11,00. R/L .1,5.60°	11	1.50	0.18	0.81	4.30	3.50	6.7	8.0	48.24	316	49.02	316
	11,00. R/L .2,0.60°	11	2.00	0.25	1.08	4.30	3.20	6.7	8.0	49.02	310	49.02	310
	11,00. R/L .2,5.60°	11	2.50	0.31	1.35	4.30	3.00	6.7	8.0	49.02	320	49.02	320
	11,00. R/L .3,0.60°	11	3.00	0.37	1.62	4.30	2.90	6.7	8.0	49.02	330	49.02	330
14	14,00. R/L .0,5.60°	14	0.50	0.06	0.27	5.40	3.50	9.0	9.0	49.63	510	49.63	510
	14,00. R/L .1,0.60°	14	1.00	0.12	0.54	5.40	3.50	9.0	9.0	45.18	512	45.18	512
	14,00. R/L .1,5.60°	14	1.50	0.18	0.81	5.40	3.30	9.0	9.0	45.18	514	45.18	514
	14,00. R/L .2,0.60°	14	2.00	0.25	1.08	5.40	4.20	9.0	9.0	45.18	610	45.18	610
	14,00. R/L .2,5.60°	14	2.50	0.31	1.35	5.40	4.70	9.0	9.0	45.18	520	45.18	520
16	16,00. R/L .1,0.60°	16	1.00	0.12	0.54	5.50	4.70	10.2	11.0	54.59	712	54.59	712
	16,00. R/L .1,5.60°	16	1.50	0.18	0.81	5.50	4.50	10.2	11.0	54.59	714	54.59	714
	16,00. R/L .2,0.60°	16	2.00	0.25	1.08	5.50	4.20	10.2	11.0	54.59	716	54.59	716
	16,00. R/L .2,5.60°	16	2.50	0.31	1.35	5.50	4.20	10.2	11.0	54.59	710	54.59	710
	16,00. R/L .3,0.60°	16	3.00	0.37	1.62	5.50	4.00	10.2	11.0	54.59	720	54.59	720
	16,00. R/L .3,5.60°	16	3.50	0.43	1.89	5.50	3.80	10.2	11.0	54.59	730	54.59	730
	16,00. R/L .4,0.60°	16	4.00	0.50	2.16	5.50	3.60	10.2	11.0	54.59	740	54.59	740

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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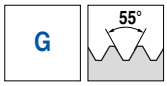
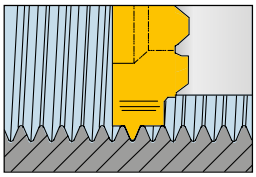
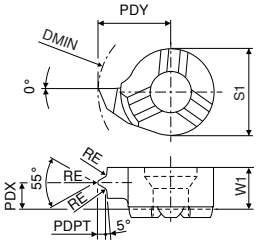
MiniCut – Threading insert (Full profile)







Illustrations show right-hand versions

Size	Designation	DMIN mm	TP mm	TPI 1/"	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	RE mm	Left-hand Y5 Article no. 73 352 ...	£	Right-hand Y5 Article no. 73 350 ...	£
11	11,00. R/L .1,814.55°	11	1.814	14	1.16	4.30	3.0	6.7	8	0.24	63.61	306	63.61	306
	11,00. R/L .1,337.55°	11	1.337	19	0.85	4.30	2.7	6.7	8	0.18	63.61	304	63.61	304
14	14,00. R/L .1,814.55°	14	1.814	14	1.16	5.35	3.6	9.0	9	0.24	62.77	506	62.77	506
	14,00. R/L .1,337.55°	14	1.337	19	0.85	5.35	3.8	9.0	9	0.18	62.77	504	62.77	504
16	16,00. R/L .2,309.55°	16	2.309	11	1.48	5.50	3.5	10.2	11	0.31	69.26	708	69.26	708
	16,00. R/L .1,814.55°	16	1.814	14	1.16	5.50	3.9	10.2	11	0.24	69.26	706	69.26	706

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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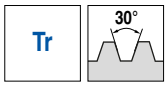
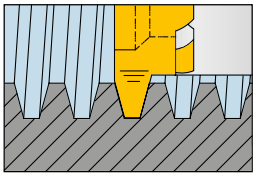
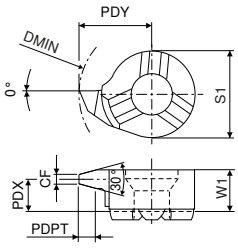
MiniCut – Threading insert (Partial profile)

▲ Trapezoidal thread DIN 103







Illustrations show right-hand versions

Size	Designation	DMIN mm	TP mm	CF mm	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	Left-hand Y5 Article no. 73 356 ... £		Right-hand Y5 Article no. 73 354 ... £	
09	9,00. R/L .1,5.30°	9	1.5	0.47	0.90	3.55	3.00	5.5	6.2	42.16	415	42.16	415
	9,00. R/L .2,0.30°	9	2.0	0.60	1.25	3.55	2.85	5.5	6.2	42.16	420	42.16	420
	9,00. R/L .3,0.30°	9	3.0	0.96	1.75	3.55	2.25	5.5	6.2	42.16	430	42.16	430
	9,00. R/L .4,0.30°	10	4.0	1.33	2.25	3.55	2.25	5.5	6.2	42.16	440	42.16	440
11	11,00. R/L .1,5.30°	11	1.5	0.47	0.90	4.30	3.70	6.7	8.0	44.62	315	44.62	315
	11,00. R/L .2,0.30°	11	2.0	0.60	1.25	4.30	3.50	6.7	8.0	44.62	320	44.62	320
	11,00. R/L .3,0.30°	11	3.0	0.96	1.75	4.30	3.20	6.7	8.0	44.62	330	44.62	330
	11,00. R/L .4,0.30°	11	4.0	1.33	2.25	3.95	2.60	6.7	8.0	42.64	340	42.64	340
14	14,00. R/L .2,0.30°	14	2.0	0.60	1.25	5.30	4.30	9.0	9.0	44.75	520	44.75	520
	14,00. R/L .3,0.30°	14	3.0	0.96	1.75	5.30	4.00	9.0	9.0	44.75	530	44.75	530
	14,00. R/L .4,0.30°	14	4.0	1.33	2.25	5.30	3.60	9.0	9.0	44.75	540	44.75	540
	14,00. R/L .5,0.30°	14	5.0	1.69	2.75	5.30	3.30	9.0	9.0	44.75	550	44.75	550
16	16,00. R/L .2,0.30°	16	2.0	0.60	1.25	5.50	4.50	9.7	11.0	51.73	720	51.73	720
	16,00. R/L .3,0.30°	16	3.0	0.96	1.75	5.50	4.30	9.7	11.0	51.73	730	51.73	730
	16,00. R/L .4,0.30°	16	4.0	1.33	2.25	5.50	4.00	9.7	11.0	51.73	740	51.73	740
	16,00. R/L .5,0.30°	16	5.0	1.69	2.75	5.50	3.55	9.7	11.0	48.36	750	48.36	750
	16,00. R/L .6,0.30°	16	6.0	1.92	3.50	5.50	3.30	10.2	11.0	45.23	760	45.23	760

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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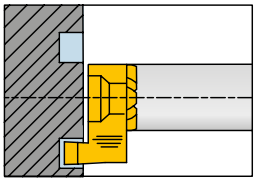
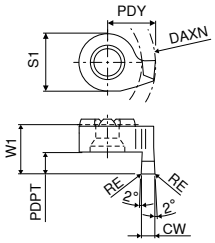
MiniCut – Axial grooving insert

CWX500 CWX500





Illustrations show right-hand versions

Size	Designation	DAXN mm	CW mm	PDPT mm	W1 mm	PDY mm	RE mm	S1 mm	Left-hand Y5 Article no. 73 364 ... £		Right-hand Y5 Article no. 73 362 ... £	
14	14,00. R/L .1,0.1,5	14	1.0	1.5	8.3	9		9	34.81	510	34.81	510
	14,00. R/L .1,5.2,5	14	1.5	2.5	8.3	9	0.2	9	34.81	515	34.81	515
	14,00. R/L .2,0.3,0	14	2.0	3.0	8.3	9	0.2	9	34.81	520	34.81	520
	14,00. R/L .2,0.5,0	14	2.0	5.0	10.3	9	0.2	9	40.41	620	40.41	620
	14,00. R/L .2,5.3,0	14	2.5	3.0	8.3	9	0.2	9	34.81	525	34.81	525
	14,00. R/L .2,5.5,0	14	2.5	5.0	10.3	9	0.2	9	40.41	625	40.41	625
	14,00. R/L .3,0.3,0	14	3.0	3.0	8.3	9	0.2	9	34.81	530	34.81	530
	14,00. R/L .3,0.5,0	14	3.0	5.0	10.3	9	0.2	9	40.41	630	40.41	630

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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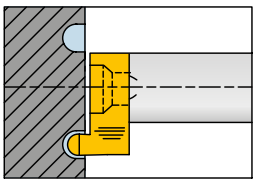
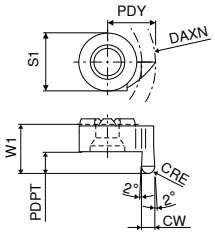
MiniCut – Full radius axial grooving insert

CWX500 CWX500





Illustrations show right-hand versions

Size	Designation	DAXN mm	CW mm	PDPT mm	W1 mm	PDY mm	CRE mm	S1 mm	Left-hand Y5 Article no. 73 376 ... £		Right-hand Y5 Article no. 73 374 ... £	
14	14,00. R/L . 1,0.1,5	14	1.0	1.5	8.3	9	0.5	9	40.25	510	40.25	510
	14,00. R/L . 1,6.2,5	14	1.6	2.5	8.3	9	0.8	9	40.25	516	40.25	516
	14,00. R/L . 2,0.3,0	14	2.0	3.0	8.3	9	1.0	9	40.25	520	40.25	520
	14,00. R/L . 2,5.3,0	14	2.5	3.0	8.3	9	1.2	9	40.25	525	40.25	525
	14,00. R/L . 3,0.3,0	14	3.0	3.0	8.3	9	1.5	9	40.25	530	40.25	530

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

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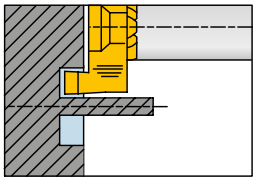
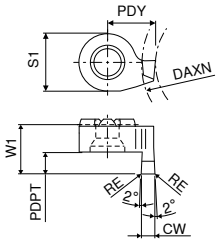
MiniCut – Axial grooving insert over a spigot

CWX500 CWX500





Illustrations show right-hand versions

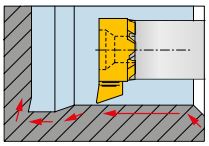
Size	Designation	DAXN mm	CW mm	PDPT mm	W1 mm	PDY mm	RE mm	S1 mm	Left-hand Y5 Article no. 73 360 ... £		Right-hand Y5 Article no. 73 358 ... £	
12	12,00. R/L .1,0.1,5	12	1.0	1.5	8.3	7.0		9	36.20	310	36.20	310
	12,00. R/L .1,5.2,5	12	1.5	2.5	8.3	7.5	0.2	9	37.06	315	37.06	315
	12,00. R/L .2,0.3,0	12	2.0	3.0	8.3	8.0	0.2	9	37.06	320	37.06	320
	12,00. R/L .2,0.5,0	12	2.0	5.0	10.3	8.0	0.2	9	43.20	420	43.20	420
	12,00. R/L .2,5.3,0	12	2.5	3.0	8.3	8.5	0.2	9	37.06	325	37.06	325
	12,00. R/L .2,5.5,0	12	2.5	5.0	10.3	8.5	0.2	9	43.20	425	43.20	425
	12,00. R/L .3,0.3,0	12	3.0	3.0	8.3	9.0	0.2	9	37.06	330	37.06	330
	12,00. R/L .3,0.5,0	12	3.0	5.0	10.3	9.0	0.2	9	43.20	430	43.20	430

Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials		

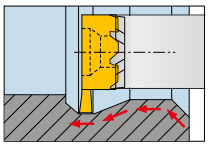
→ v_c Page 60

Set: MiniCut size 9

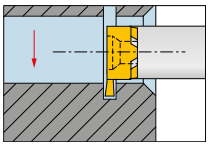
- ▲ Extensive range of size 9 inserts
- ▲ CWX 500



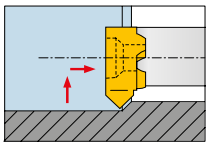
Profile turning (K)



Profile turn (A)



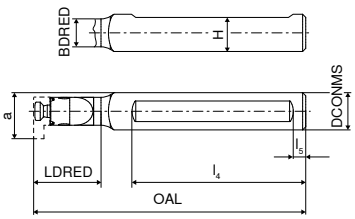
Grooving (E)

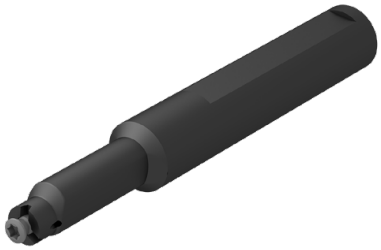


Chamfers (F)

Tool	Designation	Article number	Bore Ø mm	Width mm	Grooving depth mm	Piece	fig.	Y5 Article no. 73 528 ... £	
Grooving insert	**9,00. R .1,00.1,8**	**73 310 210**	9	1,00	1,8	1	E		
NC fine turning insert	**9,00. R .2,00.2,0**	**73 314 120**	9	2,0 +0,05	2,0	1	A		
Profiling insert	**9,00. R .3,60.10°**	**73 386 136**	9	3,6		1	K		
Profiling insert	**9,00. R .3,60.20°**	**73 322 236**	9	3,6		1	K	260.65	125
Chamfering insert	**9,00. R .45°.1,3**	**73 334 110**	9		1,3	1	F		
Tool holder	**9,00/16.N.25.1,0**	**73 522 125**				1			
Tightening Key		**70 950 105**				1			

MiniCut – Steel Tool holder





Size	Designation	a	DCONMS $_{f7}$	OAL	l_4	LDRED	BDRED	H	l_5	Y5 Article no. 73 522 ...	
		mm	mm	mm	mm	mm	mm	mm	mm	£	
08	8,00/16.N.12.1,0	7.8	16	80	60	12	6.0	15.0	5	191.50	012
	8,00/16.N.22.1,0	7.8	16	90	60	22	6.0	15.0	5	219.74	122
09	9,00/16.N.14.1,8	8.6	16	95	60	14	7.4	15.0	5	173.69	014
	9,00/16.N.25.1,8	8.6	16	105	60	25	7.4	15.0	5	199.15	125
11	11,00/16.N.16.2,3	10.7	16	97	60	16	8.0	14.5	5	191.50	016
	11,00/16.N.29.2,3	10.7	16	110	60	29	8.0	14.5	5	219.74	129
14	14,00/16.N.18.4,0	13.8	16	100	60	18	11.0	14.5	5	219.74	018
	14,00/16.N.38.4,0	13.8	16	120	60	38	11.0	14.5	5	219.74	138
16	16,00/16.N.22.4,3	15.7	16	100	60	22	11.0	14.5	5	191.50	022
	16,00/16.N.42.4,3	15.7	16	120	60	42	11.0	14.5	5	219.74	142

Spare parts

Size	Y7 Key D Article no. 80 950 ...		Y5 Clamping screw Article no. 73 082 ...	
	£		£	
08	T08 10.30	110	M2,6 7.14	002
09	T08 10.30	110	M2,6 7.14	002
11	T10 12.05	112	M3,5 7.14	003
14	T15 12.26	113	M4 7.14	004
16	T20 13.11	114	M5 7.14	005

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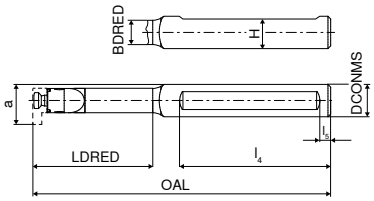
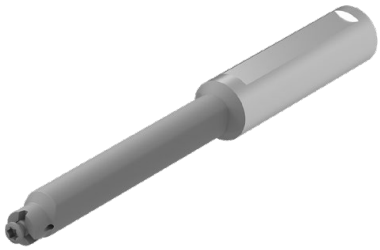
MiniCut – Solid Carbide Tool holder – vibration damped



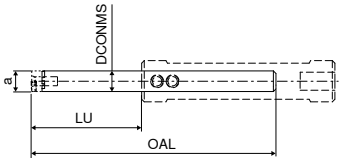


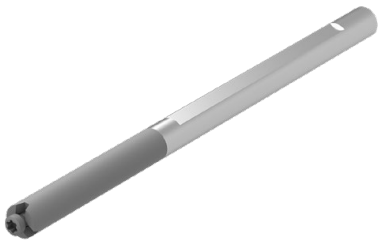
Size	Designation	a	DCONMS $_{f7}$	OAL	l_4	LDRED	BDRED	H	l_5	Y5 Article no. 73 520 ...	
		mm	mm	mm	mm	mm	mm	mm	mm	£	
08	8,00/12.N.21.1,0 HM	7.8	12	80	48	21	6.0	11.0	5	309.81	021
	8,00/12.N.30.1,0 HM	7.8	12	90	48	30	6.0	11.0	5	335.03	030
	8,00/12.N.42.1,0 HM	7.8	12	100	48	42	6.0	11.0	5	394.16	042
	8,00/12.N.50.1,0 HM	7.8	12	115	48	50	6.0	11.0	5	450.29	050
09	9,00/12.N.22.1,0 HM	8.6	12	90	60	22	7.4	11.0	5	311.34	222
	9,00/12.N.30.2,0 HM	8.6	12	98	60	30	7.4	11.0	5	363.22	230
	9,00/12.N.42.3,0 HM	8.6	12	110	60	42	7.4	11.0	5	408.63	242
	9,00/12.N.56.4,0 HM	8.6	12	122	60	56	7.4	11.0	5	462.68	256
11	11,00/12.N.29.2,3 HM	10.7	12	95	60	29	8.0	10.5	5	309.81	129
	11,00/12.N.42.2,3 HM	10.7	12	110	60	42	8.0	10.5	5	335.03	142
	11,00/12.N.56.2,3 HM	10.7	12	120	60	56	8.0	10.5	5	394.16	156
	11,00/12.N.64.2,3 HM	10.7	12	130	60	64	8.0	10.5	5	450.29	164
14	14,00/12.N.34.4,0 HM	13.8	12	100	60	34	11.0	10.5	5	377.05	234
	14,00/12.N.45.4,0 HM	13.8	12	110	60	45	11.0	10.5	5	424.92	245
	14,00/12.N.64.4,0 HM	13.8	12	130	60	64	11.0	10.5	5	501.02	264
	14,00/16.N.34.4,0 HM	13.8	16	100	60	34	11.0	14.5	5	441.90	334
	14,00/16.N.45.4,0 HM	13.8	16	110	60	45	11.0	14.5	5	503.75	345
	14,00/16.N.64.4,0 HM	13.8	16	130	60	64	11.0	14.5	5	579.41	364
	14,00/16.N.75.4,0 HM	13.8	16	145	60	75	11.0	14.5	5	618.99	375
16	16,00/12.N.40.4,3 HM	15.7	12	130	60	40	11.0	10.5	5	399.71	440
	16,00/12.N.56.4,3 HM	15.7	12	130	60	56	11.0	10.5	5	424.92	456
	16,00/12.N.80.4,3 HM	15.7	12	150	60	80	11.0	10.5	5	501.02	480
	16,00/16.N.40.4,3 HM	15.7	16	130	60	40	11.0	14.5	5	486.93	540
	16,00/16.N.56.4,3 HM	15.7	16	130	60	56	11.0	14.5	5	503.75	556
	16,00/16.N.80.4,3 HM	15.7	16	150	60	80	11.0	14.5	5	579.41	580

Spare parts

Size	Y7 Key D Article no. 80 950 ...			Y5 Clamping screw Article no. 73 082 ...		
		£			£	
08	T08	10.30	110	M2,6	7.14	002
09	T08	10.30	110	M2,6	7.14	002
11	T10	12.05	112	M3,5	7.14	003
14	T15	12.26	113	M4	7.14	004
16	T20	13.11	114	M5	7.14	005

MiniCut – HM – Flexoholder



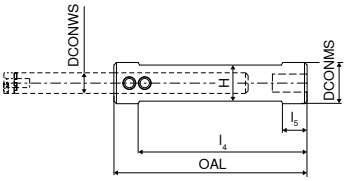


Size	Designation	DCONMS mm	OAL mm	LU mm	a mm	Y5 Article no. 73 525 ...	£	
08	8,0/6.N16/2	6	65	18	8		438.90	818
	8,0/6.N40/4	6	103	40	8		499.43	840
11	11,0/8.N20/2	8	79	20	11		555.65	120 1)
	11,0/8.N50/4	8	129	50	11		631.32	150 1)

1) with thro' coolant

Spare parts Size		Y7 Article no. 80 950 ... £			Y5 Article no. 73 082 ... £	
08	T08	10.30	110	M2,6	7.14	002
11	T10	12.05	112	M3,5	7.14	003

MiniCut – Base holder for solid carbide Flexoholder



Size	Designation	DCONWS mm	DCONMS mm	H mm	OAL mm	l_4 mm	l_5 mm	Y5 Article no. 73 526 ...	£	
08	8/16.75	6	16	14	75	55	10		263.77	816
	8/20.90	6	20	18	90	70	10		263.77	820
11	11/16.75	8	16	14	75	55	10		263.77	116
	11/20.90	8	20	18	90	70	10		263.77	120

Spare parts for Article no.		2A/28 Article no. 70 950 ... £			Y5 Article no. 73 082 ... £	
73 526 816	SW2,5	2.23	175	M5x0,5x6	4.60	010
73 526 820	SW2,5	2.23	175	M5x0,5x6	4.60	010
73 526 116	SW2,5	2.23	175	M5x0,5x4	4.60	009
73 526 120	SW2,5	2.23	175	M5x0,5x6	4.60	010

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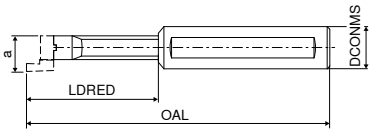
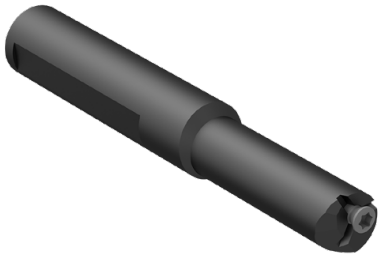
MiniCut – Steel holder

▲ for axial machining





Illustrations show right-hand versions

Size	Designation	a	DCONMS	OAL	LDRED	Left-hand Y5 Article no. 73 523 ... £		Right-hand Y5 Article no. 73 524 ... £	
		mm	mm	mm	mm				
14	14,0/16. R/L .25.1,0	13.5	16	90	25	235.67	025	235.67	025
	14,0/16. R/L .45.1,0	13.5	16	110	45	250.74	145	250.79	145

Spare parts

Key D

Y7 Article no. 80 950 ...

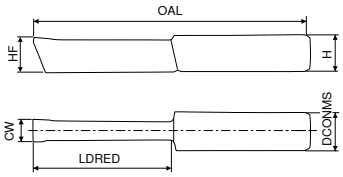
Clamping screw

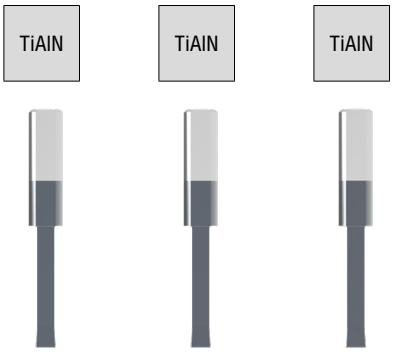
Y5 Article no. 73 082 ...

Size		£			£	
14	T15	12.26	113	M4	7.14	004

SlotCut – Inserts – DIN 138

▲ b_1 = Groove width





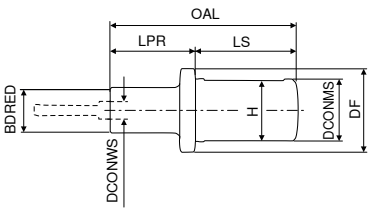
Designation	$b_{1\ P9/JS9/C11}$ mm	CW mm	HF mm	RE mm	OAL mm	LDRED mm	DAXN mm	$DCONMS_{h6}$ mm	H mm	clamping holder	Y5 Article no. 73 600 ... £		Y5 Article no. 73 601 ... £		Y5 Article no. 73 602 ... £	
NPU.0198.01.1	2	1.98	5.5	0.10	38	12.5	6	7	6.3	NHU					81.23	099
NPU.0200.01.1	2	2.01	5.5	0.10	38	12.5	6	7	6.3	NHU			81.23	099		
NPU.0210.03.1	2	2.10	5.5	0.35	38	12.5	6	7	6.3	NHU	81.23	098				
NPU.0298.01.1	3	2.98	6.2	0.10	38	12.5	7	7	6.3	NHU					81.23	100
NPU.0300.01.1	3	3.01	6.2	0.10	38	12.5	7	7	6.3	NHU			81.23	100		
NPU.0310.03.1	3	3.10	6.2	0.35	38	12.5	7	7	6.3	NHU	81.23	099				
NPU.0310.05.1	3	3.10	6.2	0.50	38	12.5	7	7	6.3	NHU	81.23	100				
NPU.0398.01.1	4	3.98	6.2	0.10	40	15.0	7	7	6.3	NHU					71.27	101
NPU.0398.02.2	4	3.98	6.2	0.20	50	25.0	7	7	6.3	NHU					93.50	102
NPU.0400.01.1	4	4.01	6.2	0.10	40	15.0	7	7	6.3	NHU			71.27	101		
NPU.0400.02.1	4	4.01	6.2	0.20	40	15.0	7	7	6.3	NHU			71.27	102		
NPU.0400.02.2	4	4.01	6.2	0.20	50	25.0	7	7	6.3	NHU			93.50	103		
NPU.0410.05.1	4	4.10	6.2	0.50	40	15.0	7	7	6.3	NHU	71.27	101				
NPU.0410.05.2	4	4.10	6.2	0.50	50	25.0	7	7	6.3	NHU	93.50	102				
NPU.0498.02.2	5	4.98	5.8	0.20	50	25.0	7	7	6.3	NHU					93.50	103
NPU.0500.02.2	5	5.01	5.8	0.20	50	25.0	8	7	6.3	NHU			93.50	104		

Tolerance **C 11** for 73 600 ..., Tolerance **JS 9** for 73 601 ..., Tolerance **P 9** for 73 602 ...

SlotCut – Toolholder for broaching inserts

Scope of supply:

Tool holder with clamping screw, without insert



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Designation	DCONWS mm	BDRED mm	$DCONMS_{g6}$ mm	DF mm	OAL mm	LS mm	LPR mm	H mm	Inserts	Y5 Article no. 73 610 ... £	
NHU.25	7	18	25	33	73	40	33	23	NPU	389.33	025
NHU.32	7	20	32	40	73	40	33	30	NPU	407.98	032

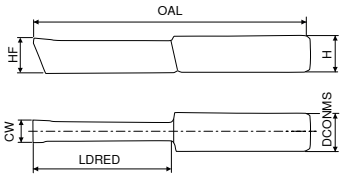
2A/28
Key I

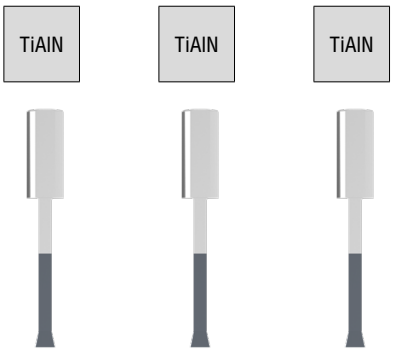
Y5
Clamping screw

Spare parts for Article no.		2A/28 Article no. 70 950 ... £		Y5 Article no. 73 082 ... £	
73 610 025	SW2,5	2.23	175	M5x6	5.74 001
73 610 032	SW2,5	2.23	175	M5x6	5.74 001

SlotCut – Inserts – DIN 138

▲ b_1 = Groove width





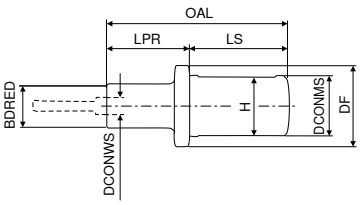
Designation	$b_{1\ JS9/P9/C11}$	CW	HF	RE	OAL	LDRED	DAXN	$DCONMS_{h6}$	H	clamping holder	Y5 Article no. 73 606 ...		Y5 Article no. 73 607 ...		Y5 Article no. 73 608 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm		£		£		£	
NP10.398.02.2	4	3.98	9	0.2	50	25	10	10	9.2	NH 10			114.01	**101**		
NP10.398.02.3	4	3.98	9	0.2	66	41	10	10	9.2	NH 10			142.50	**102**		
NP10.400.02.2	4	4.01	9	0.2	50	25	10	10	9.2	NH 10					114.01	**101**
NP10.400.02.3	4	4.01	9	0.2	66	41	10	10	9.2	NH 10					142.50	**102**
NP10.410.05.2	4	4.10	9	0.5	50	25	10	10	9.2	NH 10	114.01	**101**				
NP10.410.05.3	4	4.10	9	0.5	66	41	10	10	9.2	NH 10	142.50	**102**				
NP10.498.02.2	5	4.98	9	0.2	50	25	10	10	9.2	NH 10			114.01	**103**		
NP10.498.02.3	5	4.98	9	0.2	66	41	10	10	9.2	NH 10			142.50	**104**		
NP10.500.02.2	5	5.01	9	0.2	50	25	10	10	9.2	NH 10					114.01	**103**
NP10.500.02.3	5	5.01	9	0.2	66	41	10	10	9.2	NH 10					142.50	**104**
NP10.510.05.2	5	5.10	9	0.5	50	25	10	10	9.2	NH 10	114.01	**103**				
NP10.510.05.3	5	5.10	9	0.5	66	41	10	10	9.2	NH 10	142.50	**104**				

Tolerance **C 11** for 73 606 ..., Tolerance **P 9** for 73 607 ..., Tolerance **JS 9** for 73 608 ...

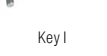
SlotCut – Toolholder for Cutting Inserts

Scope of supply:

Tool holder with clamping screw, without insert



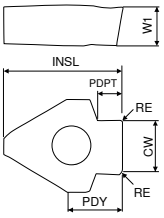
Designation	DCONWS	BDRED	$DCONMS_{g6}$	DF	OAL	LS	LPR	H	Inserts	Y5 Article no. 73 612 ...	
	mm	mm	mm	mm	mm	mm	mm	mm		£	
NH10.0025.1	10	20	25	33	73	40	33	23	NP10	443.18	**025**
NH10.0032.1	10	20	32	40	73	40	33	30	NP10	443.18	**032**

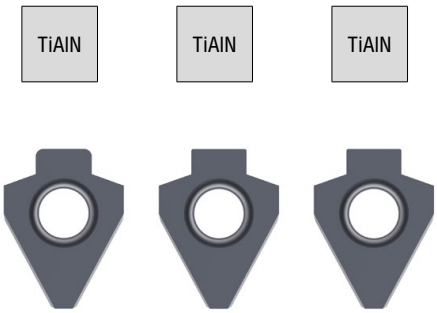


Spare parts for Article no.		Article no. 70 950 ... £			Article no. 70 950 ... £	
73 612 032	SW03	2.23	**176**	M6x5,5	7.14	**031**
73 612 025	SW03	2.23	**176**	M6x5,5	7.14	**031**

SlotCut – Inserts – DIN 138

▲ b_1 = Groove width





Designation	$b_{1\ P9/JS9/C11}$	CW	RE	PDY	INSL	PDPT	DAXN	W1	clamping holder	Y5 Article no. 73 603 ...		Y5 Article no. 73 604 ...		Y5 Article no. 73 605 ...	
	mm	mm	mm	mm	mm	mm	mm	mm		£		£		£	
NV15.0398.02	4	3.98	0.20	6.5	13.0	2.3	15	3.2	NHV 15					74.84	110
NV15.0401.02	4	4.01	0.20	6.5	13.0	2.3	15	3.2	NHV 15			74.84	110		
NV15.0410.050	4	4.10	0.50	6.5	13.0	2.2	15	3.2	NHV 15	74.84	108				
NV15.0498.02	5	4.98	0.20	6.5	13.0	2.8	15	3.2	NHV 15					74.84	111
NV15.0501.02	5	5.01	0.20	6.5	13.0	2.8	15	3.2	NHV 15			74.84	111		
NV15.0510.050	5	5.10	0.50	6.5	13.0	2.5	15	3.2	NHV 15	74.84	109				
NV15.0598.02	6	5.98	0.20	6.5	13.0	3.3	15	3.2	NHV 15					74.84	112
NV15.0601.02	6	6.01	0.20	6.5	13.0	3.3	15	3.2	NHV 15			74.84	112		
NV15.0612.085	6	6.12	0.85	6.5	13.0	2.6	15	3.2	NHV 15	74.84	110				
NPV.0498.02	5	4.98	0.20	8.0	17.3	2.7	22	5.3	NHV 22					72.69	100
NPV.0501.02	5	5.01	0.20	8.0	17.3	2.7	22	5.3	NHV 22			72.69	100		
NPV.0598.02	6	5.98	0.20	8.0	17.3	3.4	22	5.3	NHV 22					65.83	101
NPV.0601.02	6	6.01	0.20	8.0	17.3	3.4	22	5.3	NHV 22			65.83	101		
NPV.0612.085	6	6.12	0.85	8.0	17.3	2.6	22	5.3	NHV 22	65.83	101				
NPV.0713.085	7	7.13	0.85	8.0	17.3	3.3	22	5.3	NHV 22	65.83	102				
NPV.0798.02	8	7.98	0.20	8.0	17.3	4.1	22	5.3	NHV 22/30					65.83	102
NPV.0801.02	8	8.01	0.20	8.0	17.3	4.1	22	5.3	NHV 22/30			65.83	102		
NPV.0813.105	8	8.13	1.05	8.0	17.3	3.4	22	5.3	NHV 22/30	65.83	103				
NPV.0998.03	10	9.98	0.30	8.0	17.3	4.2	30	5.3	NHV 30					65.83	103
NPV.1001.03	10	10.01	0.30	8.0	17.3	4.2	30	5.3	NHV 30			65.83	103		
NPV.1013.105	10	10.13	1.05	10.9	20.2	4.2	40	5.3	NHV 38	65.83	104				
NPV.1197.03	12	11.97	0.30	10.9	20.2	5.7	40	5.3	NHV 38					72.69	104
NPV.1202.05	20	12.02	0.50	10.9	20.2	8.5	40	5.3	NHV 38			72.69	105		
NPV.1202.03	12	12.02	0.30	10.9	20.2	5.7	40	5.3	NHV 38			72.69	104		
NPV.1215.135	12	12.15	1.35	10.9	20.2	5.1	40	5.3	NHV 38	72.69	105				
NPV.1215.175	16	12.15	1.75	10.9	20.2	6.6	40	5.3	NHV 38	72.69	106				
NPV.1215.225	24	12.15	2.25	10.9	20.2	8.5	40	5.3	NHV 38	72.69	107				
NPV.1397.03	14	13.97	0.30	10.9	20.1	7.5	45	5.3	NHV 45					84.79	106
NPV.1402.03	14	14.02	0.30	10.9	20.1	7.5	45	5.3	NHV 45			84.79	106		
NPV.1597.03	16	15.97	0.30	10.9	20.1	7.5	45	5.3	NHV 45					84.79	107
NPV.1602.03	16	16.02	0.30	10.9	20.1	7.5	45	5.3	NHV 45			84.79	107		
NPV.1797.05	18	17.97	0.50	10.9	20.1	9.5	45	5.3	NHV 45					84.79	108
NPV.1802.05	18	18.02	0.50	10.9	20.1	9.5	45	5.3	NHV 45			84.79	108		
NPV.1997.05	20	19.97	0.50	10.9	20.1	10.0	45	5.3	NHV 45					84.79	109
NPV.2002.05	20	20.02	0.50	10.9	20.1	10.0	45	5.3	NHV 45			84.79	109		

Tolerance **C 11** for 73 603 ..., Tolerance **JS 9** for 73 604 ..., Tolerance **P 9** for 73 605 ...

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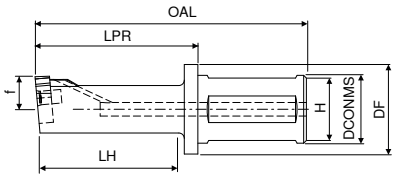
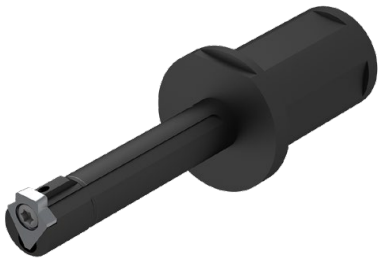
SlotCut – Toolholder for inserts

Scope of supply:
Tool holder with clamping screw, without insert

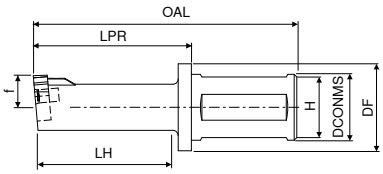


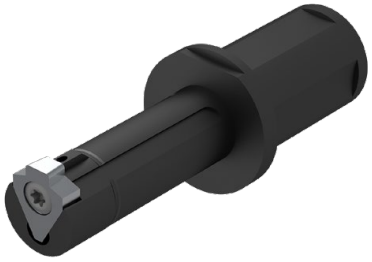


Designation	DCONMS g6	DAXN	DF	OAL	LH	LPR	H	f	Inserts	Y5 Article no. 73 613 ...	
	mm	mm	mm	mm	mm	mm	mm	mm		£	
NHV.15.1	25	15	33	75	25	35	23	8.4	NV15	380.51	**025**
NHV.15.2	25	15	33	90	40	50	23	8.4	NV15	417.27	**125**
NHV.15.3	25	15	33	110	60	70	23	8.4	NV15	475.65	**225**

SlotCut – Toolholder for inserts

Scope of supply:
Tool holder with clamping screw, without insert





Designation	DCONMS g6	DAXN	DF	OAL	LH	LPR	H	f	Inserts	Y5 Article no. 73 611 ...	
	mm	mm	mm	mm	mm	mm	mm	mm		£	
NHV.22	25	22	33	100	50	60	23	12.0	NPV	365.07	**025**
NHV.30	32	30	45	100	50	60	30	16.5	NPV	365.07	**032**
NHV.30	32	30	45	125	75	85	30	16.5	NPV	416.13	**532**
NHV.38	32	38	45	100	50	60	30	22.0	NPV	365.07	**132**
NHV.38	32	38	45	125	75	85	30	22.0	NPV	416.13	**632**
NHV.45	40	45	55	120	50	60	38	24.0	NPV	562.14	**040**
NHV.45	40	45	55	175	105	115	38	24.0	NPV	761.03	**140**
NHV.45	40	45	55	225	155	165	38	24.0	NPV	858.32	**240**

Key D

Clamping screw

Spare parts DCONMS g6		Y7 Article no. 80 950 ...			Y5 Article no. 73 082 ...	
		£			£	
25	T20	13.11	**114**	M5x13	7.50	**007**
32	T20	13.11	**114**	M5x13	7.50	**007**
40	T20	13.11	**114**	M5x13	7.50	**007**

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data appoximate values

Index	UltraMini K10F	UltraMini K10F-TiN	UltraMini K10-TiAN	UltraMini DPX 57S	MiniCut CWX500	UltraMini TiAlN+	MiniCut CBN
	v_c in m/min						
1.1	30–130	**30–180**	**80–200**	**80–200**	**80–200**		
1.2	30–130	**40–200**	**80–200**	**80–200**	**80–200**		
1.3	30–130	**40–180**	**80–200**	**80–200**	**80–200**		
1.4	15–90	**30–140**	**80–160**	**80–160**	**80–160**		
1.5	15–90	**30–100**		**80–140**			
1.6	15–90	**30–100**	**80–160**	**80–160**	**80–160**		
1.7	30–130	**30–100**	**80–160**	**80–160**	**80–160**		
1.8	15–90	**30–100**	**80–150**	**80–150**	**80–150**		
1.9	30–130	**40–200**	**80–200**	**80–200**	**80–200**		
1.10	15–90	**30–100**	**70–140**	**70–140**	**70–140**		
1.11	15–90	**30–100**	**70–140**	**70–140**	**70–140**		
1.12	15–90	**30–100**	**70–140**	**70–140**	**70–140**		
1.13							
1.14							
1.15	15–45	**30–100**					
1.16	15–45	**30–100**					
2.1		**30–100**	**80–160**	**80–160**	**80–160**		
2.2		**30–100**	**80–160**	**80–160**	**80–160**		
2.3		**30–100**	**80–160**	**80–160**	**80–160**		
2.4		**20–90**	**20–85**	**20–85**	**20–85**		
2.5		**20–65**	**20–75**	**20–75**	**20–75**		
2.6		**20–80**	**20–65**	**20–65**	**20–65**		
2.7		**20–80**	**20–65**	**20–65**	**20–65**		
3.1	30–110	70–150	**30–180**	**30–180**	**30–180**		
3.2	30–90	50–120	**30–150**	**30–150**	**30–150**		
3.3	25–110	30–130	**30–180**	**30–180**	**30–180**		
3.4	25–80	30–110	**30–120**	**30–120**	**30–120**		
3.5	30–110	30–100	**30–90**	**30–90**	**30–90**		
3.6	30–90	30–90	**20–80**	**20–80**	**20–80**		
3.7	30–110	30–100	**30–90**	**30–90**	**30–90**		
3.8	30–90	30–90	**20–80**	**20–80**	**20–80**		
4.1	**110–210**	100–600	**120–600**	**120–600**	**120–600**		
4.2	**90–200**	100–600	**120–600**	**120–600**	**120–600**		
4.3	**90–200**	100–500	**100–450**	**100–450**	**100–450**		
4.4	**50–140**	80–350	**70–300**	**70–300**	**70–300**		
4.5		80–200	**60–150**	**60–150**	**60–150**		
4.6	**50–140**	70–160	**60–150**	**60–150**	**60–150**		
4.7	**60–150**	80–180	**100–180**	**100–180**	**100–180**		
4.8	**50–140**	80–180	**90–180**	**90–180**	**90–180**		
4.9	**50–140**	80–180	**80–180**	**80–180**	**80–180**		
4.10	**50–140**	80–180	**80–180**	**80–180**	**80–180**		
4.11	**80–160**	100–200	**120–220**	**120–220**	**120–220**		
4.12	**50–120**	80–180	**70–150**	**70–150**	**70–150**		
4.13	**40–120**	70–160	**80–180**	**80–180**	**80–180**		
4.14							
4.15							
4.16							
4.17							
4.18	**15–70**						
4.19							
5.1		30–80	**30–80**	30–80	**30–80**		
5.2		18–75	**18–75**	18–75	**18–75**		
5.3		18–75	**18–75**	18–75	**18–75**		
5.4				40–70		**55–75**	
5.5		18–40	**18–40**	40–70	**18–40**	**55–75**	
5.6		18–40	**18–40**	40–70	**18–40**	**55–75**	
5.7		15–30	**15–30**	40–70	**15–30**	**55–75**	
5.8		15–30	**15–30**	40–70	**15–30**	**55–75**	
5.9		15–30	**15–30**	**70–150**	**15–30**		
5.10				**70–150**			
5.11				**70–150**			
6.1							
6.2						**70–100**	
6.3						**70–100**	**50**
6.4						**70–100**	**50**
6.5							

	UltraMini	MiniCut
	f in mm/rev.	
Internal turning and profiling	0,02–0,05	0,03–0,10
Internal turning and profiling – hard turning	0,02–0,06	0,03–0,10
Turning and profile turning – super alloys	0,02–0,08	
Internal turning	0,02–0,05	0,01–0,03
Back boring	0,02–0,04	0,03–0,10
Turning and chamfering	0,01–0,03	0,03–0,10
Pre-parting and chamfering	0,01–0,02	0,01–0,03
Groove turning	0,01–0,02	0,01–0,03
Internal Undercuts	0,01–0,03	0,03–0,08
Groove and profile turning	0,01–0,02	0,01–0,03
Axial grooving	0,02–0,05	0,02–0,05

The cutting data depends largely on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data standard values – 73 000 ... / 73 001 ...

Index	UltraMini DPX77S	Corner radius in mm			
		0,05	0,1	0,15	0,2
	v_c in m/min	f in mm/rev.			
1.1	80–200	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.2	80–200	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.3	80–200	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.4	80–160	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.5	80–140	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.6	80–160	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.7	80–160	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.8	80–150	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.9	80–200	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.10	70–140	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.11	70–140	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.12	70–140	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
1.13					
1.14					
1.15					
1.16					
2.1	80–160	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
2.2	80–160	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
2.3	80–160	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
2.4	20–85	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
2.5	20–75	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
2.6	20–65	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
2.7	20–65	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
3.1	30–180	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
3.2	30–150	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
3.3	30–180	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
3.4	30–120	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
3.5	30–90	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
3.6	20–80	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
3.7	30–90	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
3.8	20–80	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.1	120–600	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.2	120–600	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.3	100–450	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.4	70–300	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.5	60–150	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.6	60–150	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.7	100–180	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.8	90–180	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.9	80–180	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.10	80–180	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.11	120–220	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.12	70–150	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.13	80–180	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
4.14					
4.15					
4.16					
4.17					
4.18					
4.19					
5.1	30–80	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.2	18–75	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.3	18–75	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.4	40–70	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.5	40–70	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.6	40–70	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.7	40–70	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.8	40–70	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.9	40–70	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.10	40–70	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
5.11	40–70	0,015–0,03	0,02–0,06	0,02–0,08	0,02–0,12
6.1					
6.2					
6.3					
6.4					
6.5					

The cutting data depends largely on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

12

Broaching – Recommendations for Correct Use

SlotCut

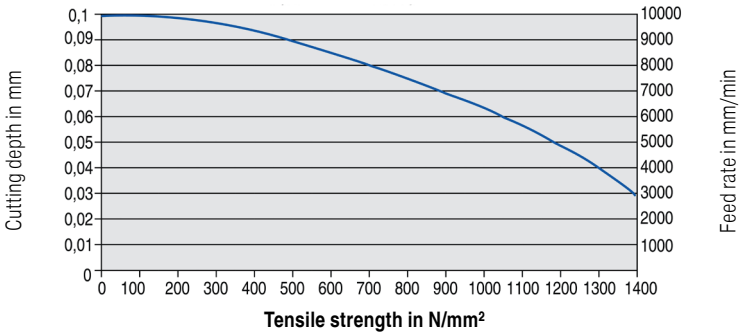
More and more often small and medium sized batch sizes are manufactured with precision grooves.

To directly machine such grooves in one set-up on one machine, it requires a special application of "Broaching" tools.

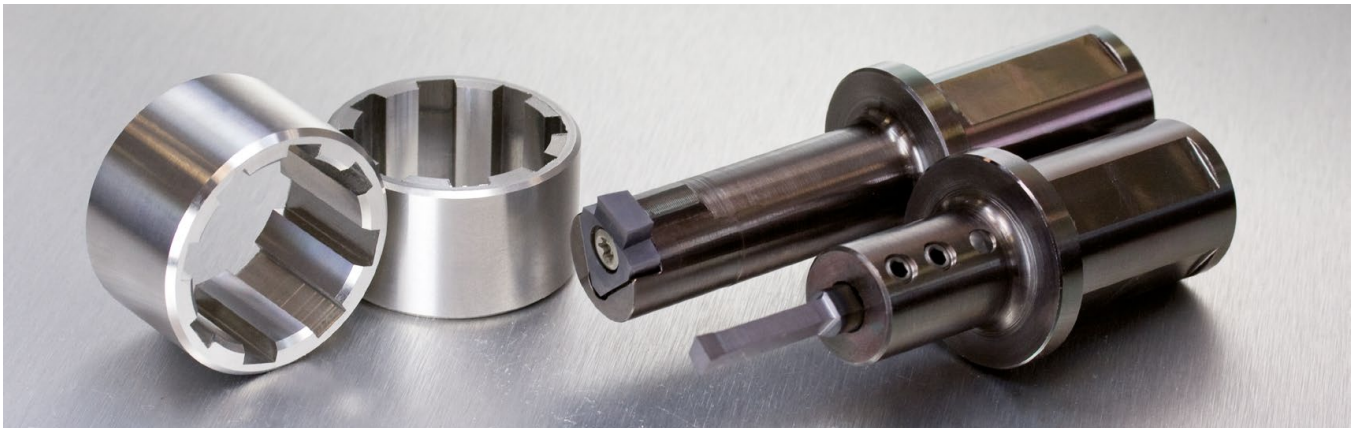
The SlotCut system can produce grooves with the most common groove tolerances.
To this end, there are four options. Two concepts are based on a solid carbide solution, which gives great success with small diameters.
For larger diameters, the concept with screw-on inserts is more suitable.

Broaching, on both lathes and machining centers is now economical, and provides highly accurate results in the shortest possible time.

Appoximate values when broaching



The data depends strongly on the conditions and represent only an appoximate value, factors such as machine stability, application and material may require adjustment of the data upward or downward.



Tips for the User

- Avoid interrupted cuts.
- Where possible, orientate the part so the groove is at the top, so the chips fall away!
- Ensure there is a relief at the end of the groove.
- Lift the tool out of the groove when retracting.
- Use coolant.
  This will increase tool life and surface quality.
- Adjustment of the tool is essential, therefore the tool diameter must be considered.

Symbol explanation

UltraMini

Internal turning and profiling

Back boring

Internal Undercuts

High-feed turning

Turning and chamfering

Groove and profile turning

Turning and profile turning – super alloys

Pre-parting and chamfering

Internal thread turning

Internal turning

Groove turning

Axial grooving

MiniCut

Internal turning and profiling

Pre-parting and chamfering

Internal thread turning

Internal turning

Groove turning

Axial grooving

Back boring

Internal Undercuts

Turning and chamfering

Groove and profile turning

Coatings

TiAlN+
- TiAlN multilayer coating
- Maximum application temperature: 1000 °C

TiN
- TiN coating
- Maximum application temperature: 450 °C

TiAlN
- TiAlN multilayer coating
- Maximum application temperature: 900 °C

CWX500
- Carbide, TiAlN-coated
- ISO | **K30**
- The universal carbide grade for almost all materials

DXP77S
- TiAlN+X-coating
- Maximum application temperature: 900 °C

DPX57S
- TiCrN coating
- Maximum application temperature: 900 °C

Thread types

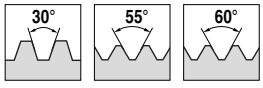
M Metric ISO standard thread

MF Metric ISO fine thread

G Whitworth thread

Tr Metric ISO trapezoidal fine thread

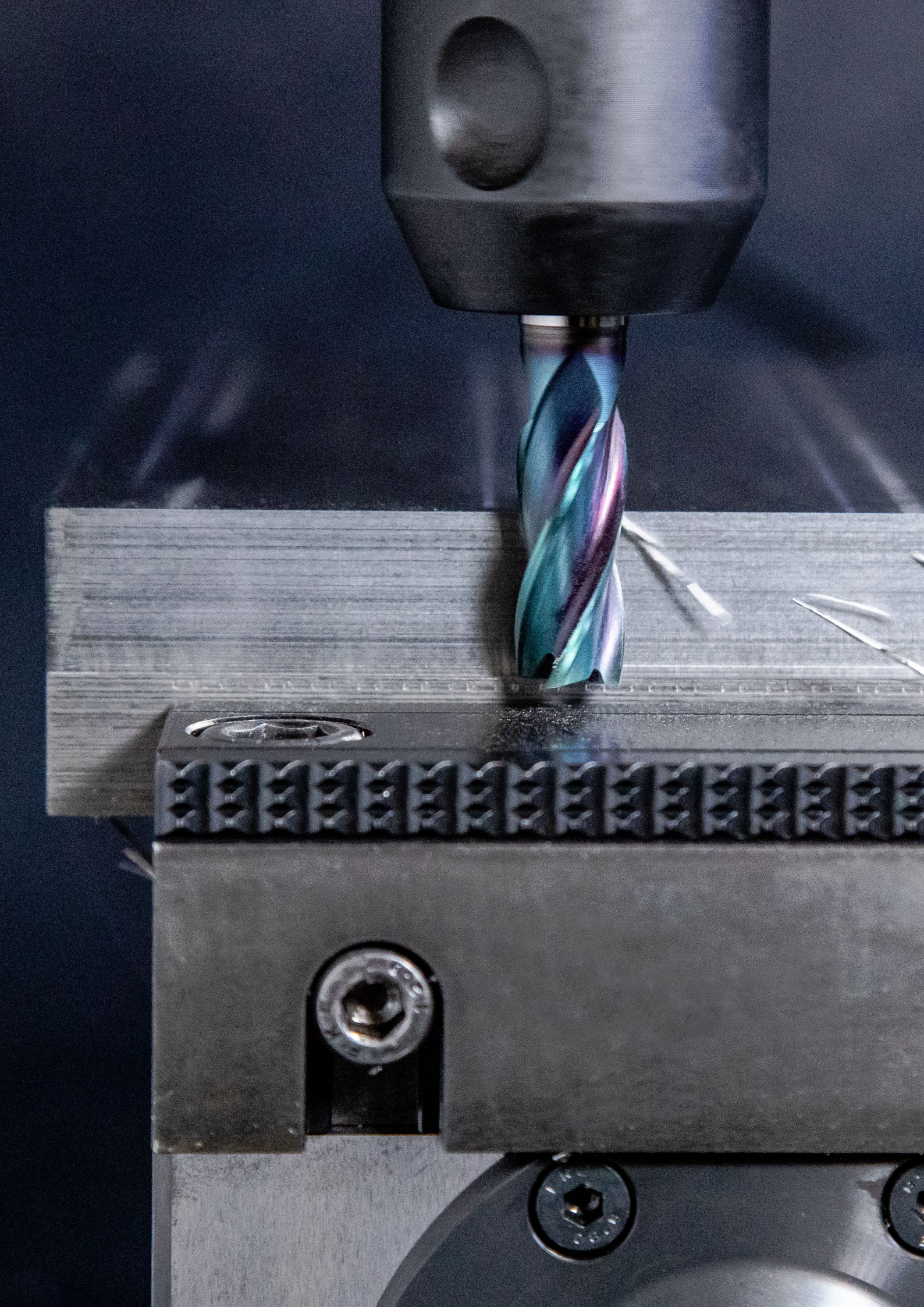
Thread flank angle

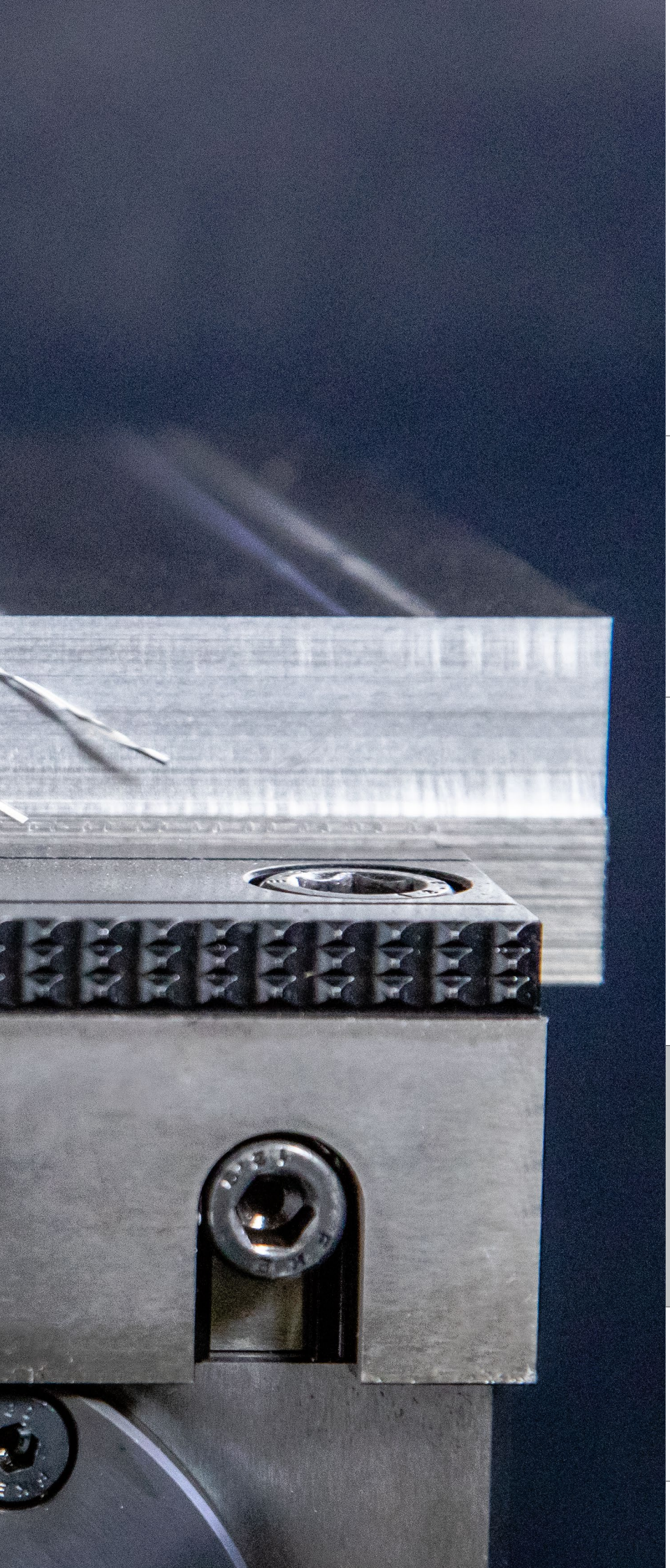


Coolant

with thro‘ coolant

12





Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

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Coating	47

WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Symbol explanation

Shank

Shank type

Length: extra short / short / medium / long / extra long

Cutting edge preparation

Sharp

Chamfer (CHW = chamfer width in mm)

Full Radius

Application

Machining example

The red arrows describe the possible feed directions

Number of teeth

Cutting geometry
λ_s = helix angle
γ_s = rake angle

● = **Main Application**

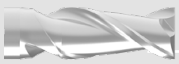
○ = Extended application

Toolfinder

softer — Material to machine — harder

Finish milling

W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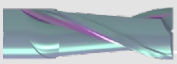
N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28+29

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33+34

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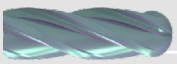
H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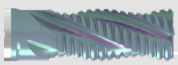
32

35+36

Rough and finish machining

NTI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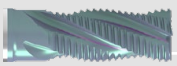
HS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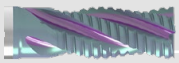
NF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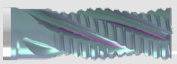
HF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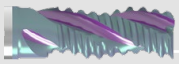
Rough machining

WR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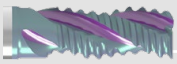
NR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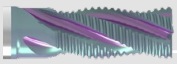
HR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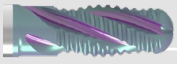
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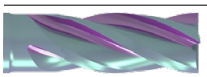
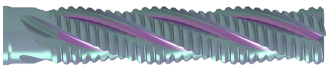
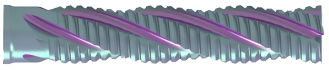
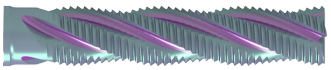
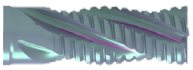
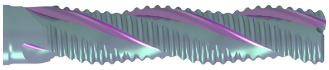
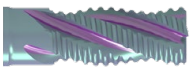
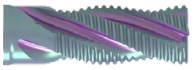
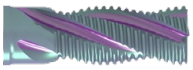
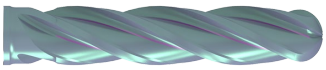
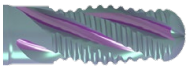
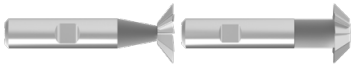
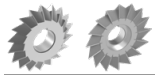
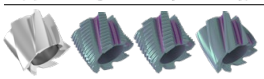
13

Overview HSS milling cutters

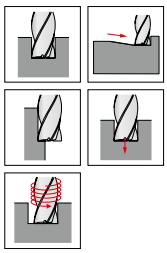
	Tool type	Number of teeth ZEFP	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Material, e.g. PM = Powdersteel	coated	uncoated	WNT \ Performance
Finishing cutter																		
	W	2	2–22				●			■					HSS-E		□	6
	W	3–4	2–40				●			■					HSS-E		□	7
	N	2	1–26	●	●	●	○	○		■					HSS-E	■	□	8+9
	N	3	1–10	●	●	●	○	○		■					HSS-E	■	□	10
	N	3	1,8–24,7	●	●	●	○	○		■					HSS-E	■	□	11+12
	N	4–5	4–25	○	●	○	●	●		■					HSS-E	■	□	13
	N	4–8	2–50	●	●	●	○	○		■					HSS-E	■	□	14+15
Rough and finish milling cutters																		
	NTI	4–6	6–40	○	●	○	○	●			■				PM	■		16
	NF	4–5	6–28	●	○	●	○	○		■					HSS-E	■		17
	HS	4–6	6–40	○		●		●			■				PM	■		18
	HF	4	6–25	●	○	●	○	○		■					PM	■		19
Rough milling cutters																		
	WR	3	6–32				●			■					HSS-E	■		20
	NR	3	6–25	●	○	●	○	○			■				HSS-E	■	□	21
	NR	4–6	6–40	●	○	●	○	○			■				HSS-E	■	□	22
	HR	4–6	6–32	●	●	●	○	○			■				PM	■		23
	HR	3–6	4–32	●	●	●	○	○			■				HSS-E	■	□	24

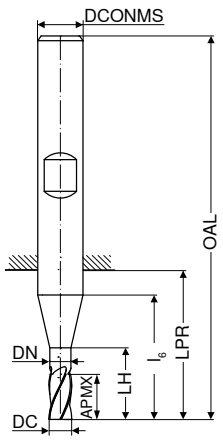
Overview HSS milling cutters

	Tool type	Number of teeth ZEFP	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Material, e.g. PM = Powdersteel	coated	uncoated	WNT \ Performance
Ball nose end milling cutters																		
	N	2	2–30	●	○	●	○	○	B				◐		HSS-E	■	□	25
	H	4–5	6–25	●	○	●	○	○	B				◐		HSS-E	■	□	26
	HR	4	6–20	●	○	●	○	○	B				◐		HSS-E	■		27
Form / Side and Face / Shell milling cutters																		
	N	6–10	11–60	●	○	●	○	○	B						HSS-E		□	28
	N	6–12	10,5–45,5	●	○	●	○	○	B						HSS-E		□	29
	NF	6–8	21–45	●	○	●	○	○	B						HSS-E		□	30
	N	4–6	1–16	●	○	●	○	○	B						HSS-E		□	31
	H	10	16–25	●	○	●	○	○	B						HSS-E		□	32
	N	14–28		●	○	●	○	○							HSS		□	33
		12–52		●	●	●	●	●							HSS-E		□	34–36
		6–12		●	●	●	●	○							HSS-E	■	□	37+38

13

Slot milling cutter HSS-E Co 8





DIN 844

U6

DC e8 mm	APMX mm	DN mm	LH mm	l6 mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 50 144 ... £	
2.0	7		7	13	15	51	6	2	27.79	**020**
2.5	8		8	14	16	52	6	2	26.51	**025**
3.0	8		8	14	16	52	6	2	25.87	**030**
3.5	10		10	16	18	54	6	2	29.22	**035**
4.0	11		11	17	19	55	6	2	26.51	**040**
4.5	11		11	17	19	55	6	2	30.32	**045**
5.0	13		13	19	21	57	6	2	27.18	**050**
5.5	13		13	19	21	57	6	2	30.99	**055**
6.0	13		13	19	21	57	6	2	27.18	**060**
6.5	16	6.0	22	24	26	66	10	2	36.91	**065**
7.0	16	6.5	22	24	26	66	10	2	34.87	**070**
8.0	19	7.5	25	27	29	69	10	2	31.22	**080**
9.0	19	8.5	26	27	29	69	10	2	39.70	**090**
10.0	22	9.5	30	30	32	72	10	2	37.93	**100**
12.0	26	11.5	36	36	38	83	12	2	43.62	**120**
14.0	26	11.5	36	36	38	83	12	2	50.59	**140**
16.0	32	15.0	42	42	44	92	16	2	55.64	**160**
18.0	32	15.0	42	42	44	92	16	2	70.77	**180**
20.0	38	19.0	52	52	54	104	20	2	86.88	**200**
22.0	38	19.0	52	52	54	104	20	2	126.32	**220**

Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

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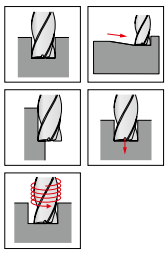
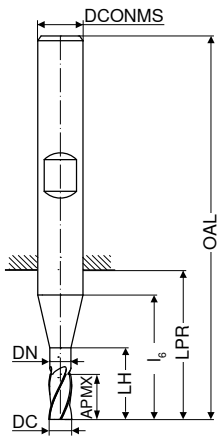
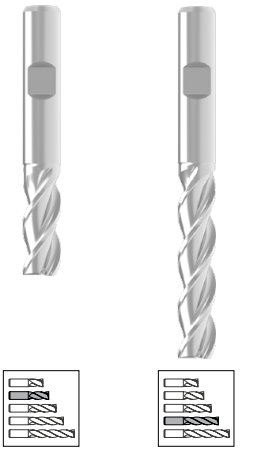
End milling cutter HSS-E Co 8







DIN 69844 | DIN 844

B | B

U8 | U8

DC k10 mm	APMX mm	DN mm	LH mm	l6 mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 50 120 ... £		Article no. 50 121 ... £	
2	7		7	13	15	51	6	3	33.50	020		
3	8		8	14	16	52	6	3	26.16	030		
3	12		12	18	20	56	6	3			32.41	030
4	11		11	17	19	55	6	3	26.51	040		
4	19		19	25	27	63	6	3			32.20	040
5	13		13	19	21	57	6	3	26.98	050		
5	24		24	30	32	68	6	3			32.20	050
6	13	5.5	19	19	21	57	6	3	27.40	060		
6	24	5.5	30	30	32	68	6	3			33.40	060
7	16	6.5	22	24	26	66	10	3	28.81	070		
7	30	6.5	36	38	40	80	10	3			42.29	070
8	19	7.5	25	27	29	69	10	3	30.95	080		
8	38	7.5	44	46	48	88	10	3			35.92	080
9	19	8.5	26	27	29	69	10	3	32.98	090		
9	38	8.5	45	46	48	88	10	3			48.09	090
10	22	9.5	30	30	32	72	10	3	33.98	100		
10	45	9.5	53	53	55	95	10	3			39.66	100
12	26	11.5	36	36	38	83	12	3	37.93	120		
12	53	11.5	63	63	65	110	12	3			44.75	120
14	26	11.5	36	36	38	83	12	3	44.04	140		
14	53	11.5	63	63	65	110	12	3			51.27	140
16	32	15.0	42	42	44	92	16	3	44.47	160		
16	63	15.0	73	73	75	123	16	3			52.02	160
18	32	15.0	42	42	44	92	16	3	73.40	180		
18	63	15.0	73	73	75	123	16	3			90.07	180
20	38	19.0	52	52	54	104	20	3	72.34	200		
20	75	19.0	89	89	91	141	20	3			84.84	200
22	38	19.0	52	52	54	104	20	3	99.95	220		
22	75	19.0	89	89	91	141	20	3			117.24	220
24	90	23.0	106	108	110	166	25	3			161.25	240
25	45	24.0	63	45	65	121	25	4	130.60	250		
25	90	24.0	108	108	110	166	25	4			152.97	250
28	90	24.0	108	108	110	166	25	4			185.22	280
30	90	24.0	108	108	110	166	25	4			220.23	300
32	106	31.0	123	123	126	186	32	4			241.74	320
36	106	31.0	123	123	126	186	32	4			354.31	360
40	125	38.0	142	142	147	217	40	4			428.82	400

Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 40–42

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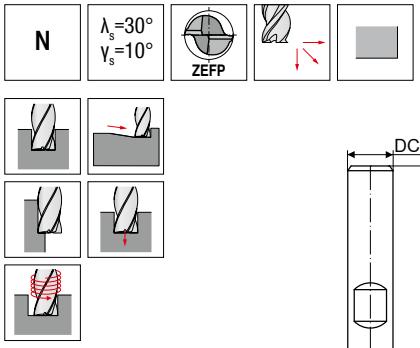
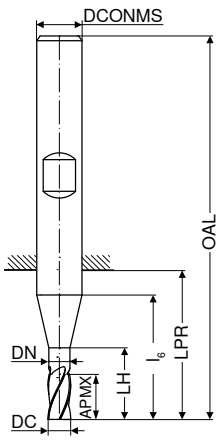
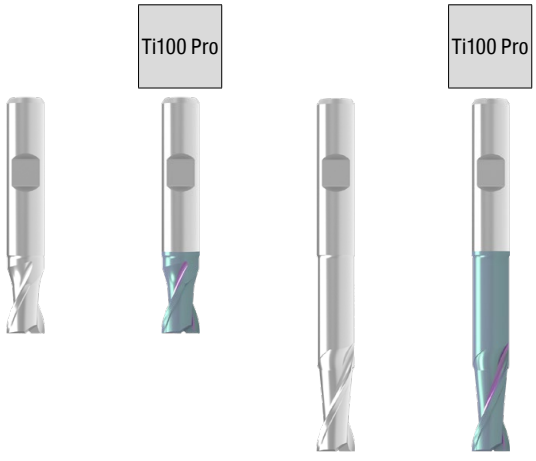
Slot milling cutter HSS-E Co 8







DC	Tol.	APMX	DN	LH	l_6	LPR	OAL	DCONMS $_{h6}$	ZEFP	DIN 327 B U8 Article no. 50 100 ... £		DIN 327 B U8 Article no. 54 025 ... £		Factory standard B U8 Article no. 50 122 ... £		Factory standard B U8 Article no. 54 020 ... £	
mm		mm	mm	mm	mm	mm	mm	mm									
1.00	h10	2.5		2.5	9	11	47	6	2	23.25	010 [1]	22.97	010 [1]				
1.50	h10	3.0		3.0	9	11	47	6	2	21.95	015 [1]	22.09	015 [1]				
1.80	h10	4.0		4.0	10	12	48	6	2	15.64	018	29.07	018				
2.00	e8	4.0		4.0	10	12	48	6	2	13.66	020	25.76	020				
2.50	e8	5.0		5.0	11	13	49	6	2	13.66	025	25.76	025				
2.80	h10	5.0		5.0	11	13	49	6	2	14.52	028	21.21	028				
3.00	e8	5.0		5.0	11	13	49	6	2	13.66	030	20.82	030				
3.00	e8	8.0		8.0	18	20	56	6	2					22.00	030	40.69	030
3.50	h10	6.0		6.0	12	14	50	6	2	13.66	035	19.47	035				
3.50	h10	10.0		10.0	21	23	59	6	2					26.31	035	43.73	035
3.80	h10	7.0		7.0	13	15	51	6	2	14.39	038	27.22	038				
4.00	e8	7.0		7.0	13	15	51	6	2	13.66	040	17.64	040				
4.00	e8	11.0		11.0	25	27	63	6	2					23.09	040	27.41	040
4.50	h10	7.0		7.0	13	15	51	6	2	15.56	045	19.47	045				
4.50	h10	11.0		11.0	25	27	63	6	2					28.61	045	30.51	045
4.80	h10	8.0		8.0	14	16	52	6	2	16.95	048	28.09	048				
5.00	e8	8.0		8.0	14	16	52	6	2	13.98	050	19.86	050				
5.00	e8	13.0		13.0	30	32	68	6	2					23.09	050	27.41	050
5.50	h10	8.0		8.0	14	16	52	6	2	15.56	055	20.74	055				
5.50	h10	13.0		13.0	30	32	68	6	2					28.61	055	30.51	055
5.75	h10	8.0		8.0	14	16	52	6	2	15.99	057	28.09	057				
6.00	e8	8.0	5.50	14.0	14	16	52	6	2	13.98	060	19.56	060				
6.00	e8	13.0	5.50	30.0	30	32	68	6	2					24.64	060	28.78	060
6.50	h10	10.0	6.00	16.0	18	20	60	10	2	18.69	065	25.49	065				
6.50	h10	16.0	6.35	36.0	38	40	80	10	2					33.98	065	37.97	065
6.75	h10	10.0	6.50	16.0	18	20	60	10	2	19.24	067	25.49	067				
7.00	e8	10.0	6.50	16.0	18	20	60	10	2	17.97	070	25.49	070				
7.00	e8	16.0	6.35	36.0	38	40	80	10	2					31.22	070	36.42	070
7.50	h10	10.0	7.00	16.0	18	20	60	10	2	19.39	075	25.57	075				
7.50	h10	16.0	7.35	36.0	38	40	80	10	2					33.98	075	37.97	075
7.75	h10	11.0	7.50	17.0	19	21	61	10	2	19.39	077	40.69	077				
8.00	e8	11.0	7.50	17.0	19	21	61	10	2	18.25	080	27.22	080				
8.00	e8	19.0	7.35	44.0	46	48	88	10	2					27.26	080	34.19	080
8.50	h10	11.0	8.00	18.0	19	21	61	10	2	23.54	085	28.78	085				
8.50	h10	19.0	8.35	45.0	46	48	88	10	2					36.47	085	40.08	085
8.70	h10	11.0	8.50	18.0	19	21	61	10	2	24.70	087	43.16	087				
9.00	h10	11.0	8.50	18.0	19	21	61	10	2	21.73	090	40.77	090				
9.00	h10	19.0	8.35	45.0	46	48	88	10	2					33.98	090	55.87	090
9.50	h10	11.0	9.00	18.0	19	21	61	10	2	23.23	095	41.61	095				
9.50	h10	19.0	9.35	45.0	46	48	88	10	2					55.50	095	54.14	095
9.70	h10	13.0	9.50	21.0	21	23	63	10	2	23.23	097	43.12	097				
10.00	e8	13.0	9.50	21.0	21	23	63	10	2	22.57	100	27.04	100				
10.00	e8	22.0	9.35	53.0	53	55	95	10	2					29.89	100	36.21	100
10.50	h10	13.0	10.00	21.0	23	25	70	12	2	41.11	105	43.49	105				
10.70	h10	13.0	10.50	21.0	23	25	70	12	2	44.54	107	46.11	107				
11.00	h10	13.0	10.50	21.0	23	25	70	12	2	30.22	110	39.32	110				
11.00	h10	22.0	10.50	53.0	55	57	102	12	2					38.94	110	43.77	110
11.50	h10	13.0	11.00	21.0	23	25	70	12	2	41.93	115	44.17	115				

Steel	●	●	●	●
Stainless steel	○	●	○	●
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

1) Factory standard

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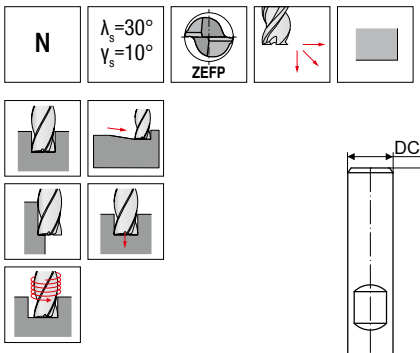
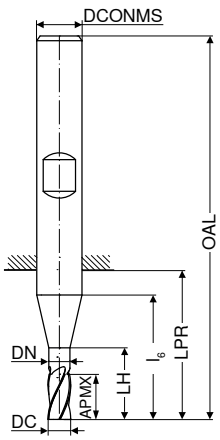
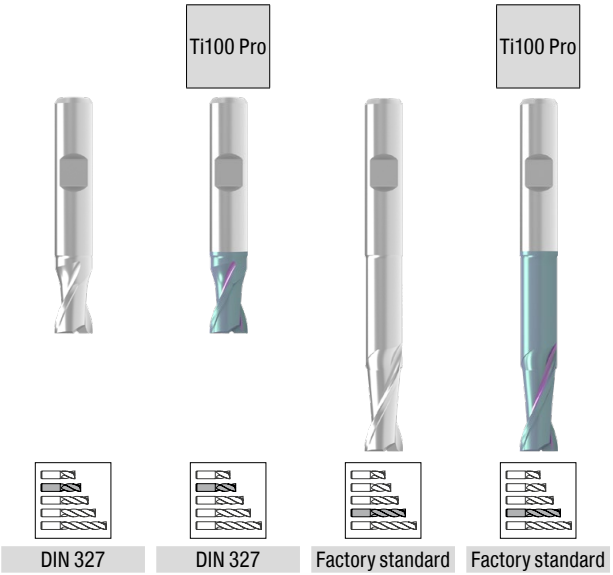
Continued on next page

Slot milling cutter HSS-E Co 8







DC	Tol.	APMX	DN	LH	l_6	LPR	OAL	DCONMS $_{h6}$	ZEFP	DIN 327 B U8 Article no. 50 100 ... £		DIN 327 B U8 Article no. 54 025 ... £		Factory standard B U8 Article no. 50 122 ... £		Factory standard B U8 Article no. 54 020 ... £	
mm		mm	mm	mm	mm	mm	mm	mm									
11.70	h10	16.0	11.50	26.0	26	28	73	12	2	32.41	117	46.70	117				
12.00	e8	16.0	11.50	26.0	26	28	73	12	2	27.96	120	35.36	120				
12.00	e8	26.0	11.50	63.0	63	65	110	12	2					33.91	120	41.55	120
12.70	h10	16.0	11.50	26.0	26	28	73	12	2	57.28	127	62.97	127				
13.00	h10	16.0	11.50	26.0	26	28	73	12	2	47.59	130	56.27	130				
13.00	h10	26.0	11.50	63.0	63	65	110	12	2					52.75	130	60.84	130
13.70	h10	16.0	11.50	26.0	26	28	73	12	2	39.71	137	52.69	137				
14.00	e8	16.0	11.50	26.0	26	28	73	12	2	34.87	140	47.16	140				
14.00	e8	26.0	11.50	63.0	63	65	110	12	2					42.77	140	55.79	140
14.70	h10	16.0	11.50	26.0	26	28	73	12	2	53.60	147						
15.00	h10	16.0	11.50	26.0	26	28	73	12	2	44.17	150	52.30	150				
15.00	h10	26.0	11.50	63.0	63	65	110	12	2					53.75	150	92.70	150
15.70	h10	19.0	15.00	29.0	29	31	79	16	2	45.05	157	72.34	157				
16.00	e8	19.0	15.00	29.0	29	31	79	16	2	42.88	160	50.76	160				
16.00	e8	32.0	15.00	73.0	73	75	123	16	2					51.19	160	61.78	160
16.70	h10	19.0	15.00	29.0	29	31	79	16	2	72.92	167						
17.00	h10	19.0	15.00	29.0	29	31	79	16	2	69.32	170	81.07	170				
17.00	h10	32.0	15.00	73.0	73	75	123	16	2					113.30	170	118.17	170
17.70	h10	19.0	15.00	29.0	29	31	79	16	2	53.60	177	80.78	177				
18.00	e8	19.0	15.00	29.0	29	31	79	16	2	52.87	180	61.91	180				
18.00	e8	32.0	15.00	73.0	73	75	123	16	2					68.73	180	84.45	180
19.00	h10	19.0	15.00	29.0	29	31	79	16	2	81.78	190	86.59	190				
19.00	h10	32.0	15.00	73.0	73	75	123	16	2					118.70	190	121.93	190
19.70	h10	22.0	19.00	36.0	36	38	88	20	2	65.36	197	95.13	197				
20.00	e8	22.0	19.00	36.0	36	38	88	20	2	61.47	200	74.58	200				
20.00	e8	38.0	19.00	89.0	89	91	141	20	2					67.39	200	85.89	200
21.70	h10	22.0	19.00	36.0	36	38	88	20	2	116.64	217	124.95	217				
22.00	e8	22.0	19.00	36.0	36	38	88	20	2	77.19	220	114.19	220				
22.00	e8	38.0	19.00	89.0	89	91	141	20	2					103.14	220	146.25	220
23.70	h10	26.0	23.00	42.0	44	46	102	25	2	151.78	237	150.51	237				
24.00	e8	26.0	23.00	42.0	44	46	102	25	2	86.14	240	142.26	240				
24.00	e8	45.0	23.00	106.0	108	110	166	25	2					127.99	240	227.07	240
24.70	h10	26.0	24.00	44.0	44	46	102	25	2	151.78	247	145.47	247				
25.00	e8	26.0	24.00	44.0	44	46	102	25	2	84.84	250	143.15	250				
25.00	e8	45.0	24.00	108.0	108	110	166	25	2					127.99	250	151.36	250
26.00	h10	26.0	24.00	44.0	44	46	102	25	2	105.75	260	158.91	260				

Steel	●	●	●	●
Stainless steel	○	●	○	●
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

1) Factory standard

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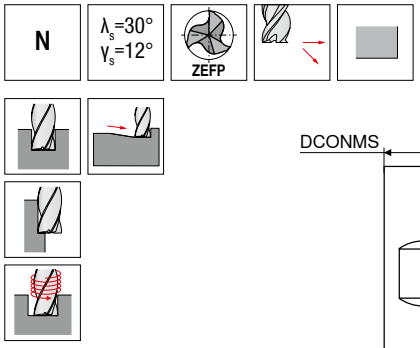
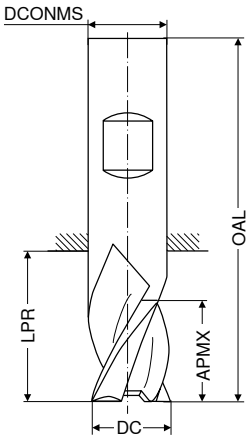
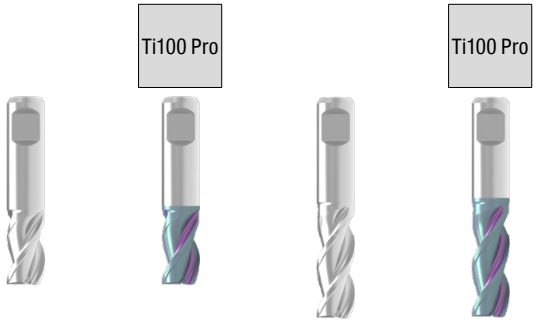
Throw-away milling cutter, HSS-E Co 8

▲ Shank similar to DIN 1835 B







DC e8	APMX	LPR	OAL	DCONMS h6	ZEFP	U6 Article no. 50 092 ...		U8 Article no. 54 014 ...		U6 Article no. 50 093 ...		U8 Article no. 54 042 ...	
mm	mm	mm	mm	mm		£		£		£		£	
1.00	2	8	34	6	3	12.10	010	15.56	010				
1.50	3	8	34	6	3	12.10	015	15.56	015				
1.50	4	10	35	6	3					13.93	015 1)	17.21	015 1)
1.80	3	8	34	6	3	12.10	018	15.56	018				
2.00	4	9	35	6	3	12.10	020	15.56	020				
2.00	7	12	38	6	3					13.93	020 1)	17.21	020
2.30	4	9	35	6	3	12.10	023	15.56	023				
2.50	5	10	36	6	3	12.10	025	15.56	025				
2.50	8	13	39	6	3					13.93	025 1)	17.21	025
2.80	5	10	36	6	3	12.10	028	15.56	028				
3.00	5	10	36	6	3	12.10	030	15.56	030				
3.00	8	13	39	6	3					13.93	030 1)	17.21	030
3.30	6	11	37	6	3	12.10	033	15.56	033				
3.50	6	11	37	6	3	12.10	035	15.56	035				
3.50	10	15	41	6	3					13.93	035 1)	17.21	035
3.80	7	12	38	6	3	12.10	038	15.56	038				
4.00	7	12	38	6	3	12.10	040	15.56	040				
4.00	11	16	42	6	3					13.93	040 1)	17.21	040
4.30	7	12	38	6	3	12.10	043	15.56	043				
4.50	7	12	38	6	3	12.10	045	15.56	045				
4.50	11	16	42	6	3					13.93	045 1)	17.21	045
4.80	8	13	39	6	3	12.10	048	15.56	048				
5.00	8	13	39	6	3	12.10	050	15.56	050				
5.00	13	18	44	6	3					13.93	050 1)	17.21	050
5.30	8	13	39	6	3	12.10	053	15.56	053				
5.50	8	13	39	6	3	12.10	055	15.56	055				
5.50	13	18	44	6	3					13.93	055 1)	17.21	055
5.75	8	13	39	6	3	12.10	057	15.56	057				
6.00	8	13	39	6	3	12.10	060	15.56	060				
6.00	13	18	44	6	3					13.93	060 1)	17.21	060
6.50	10	14	42	8	3	14.01	065	20.50	065				
6.50	16	20	48	8	3					16.71	065 1)	22.82	065
7.00	10	14	42	8	3	14.01	070	20.50	070				
7.00	16	20	48	8	3					16.71	070 1)	22.82	070
7.50	10	14	42	8	3	14.01	075	20.50	075				
7.50	16	20	48	8	3					16.71	075 1)	22.82	075
8.00	11	15	43	8	3	14.01	080	20.50	080				
8.00	19	23	51	8	3					16.71	080 1)	22.82	080
8.50	11	16	48	10	3	18.14	085	24.20	085				
8.50	19	24	56	10	3					21.01	085 1)	25.89	085
9.00	11	16	48	10	3	18.14	090	24.20	090				
9.00	19	24	56	10	3					21.01	090 1)	25.89	090
9.50	11	16	48	10	3	18.14	095	24.20	095				
9.50	19	24	56	10	3					21.01	095 1)	25.89	095
10.00	13	18	50	10	3	18.14	100	24.20	100				
10.00	22	27	59	10	3					21.01	100 1)	25.89	100

Steel	●	●	●	●
Stainless steel	○	●	○	●
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

1) Shank tolerance -0,025 / -0,0323

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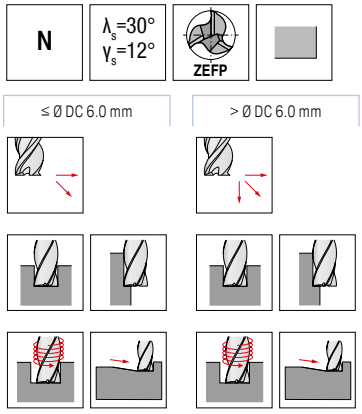
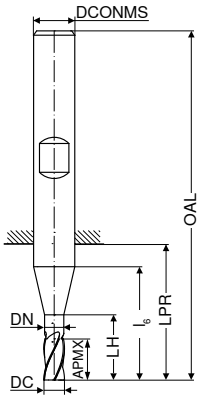
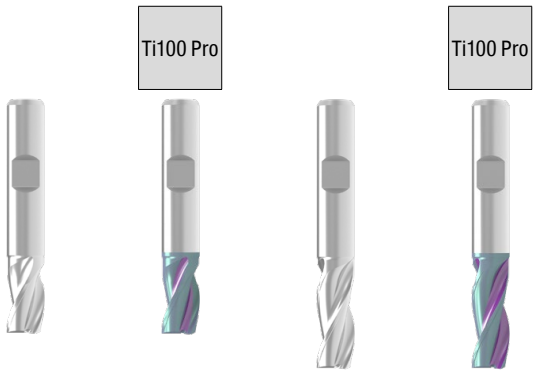
End milling cutter HSS-E Co 8

▲ Ø ≤ 6 mm, 3 teeth cutting to centre







DC	Tol.	APMX	DN	LH	l_6	LPR	OAL	DCONMS $_{h6}$	ZEFP	DIN 327 B U8 Article no. 50 105 ...		DIN 327 B U8 Article no. 54 021 ...		DIN 844 K B U8 Article no. 50 106 ...		DIN 844 K B U8 Article no. 54 016 ...	
mm		mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
1.80	h10	4		4	10	12	48	6	3	24.37	018	24.99	018				
2.00	e8	4		4	10	12	48	6	3	17.54	020	22.18	020				
2.50	e8	5		5	11	13	49	6	3	17.54	025	22.18	025				
2.80	h10	5		5	11	13	49	6	3	24.37	028	27.31	028				
2.80	h10	8		8	18	20	56	6	3					29.48	028 [1]	32.35	028 [1]
3.00	e8	5		5	11	13	49	6	3	17.54	030	22.18	030				
3.00	e8	8		8	14	16	52	6	3					21.46	030	26.83	030
3.50	h10	6		6	12	14	50	6	3	17.54	035	25.97	035				
3.50	h10	10		10	16	18	54	6	3					29.33	035	32.27	035
3.80	h10	7		7	13	15	51	6	3	24.37	038	27.41	038				
3.80	h10	11		11	25	27	63	6	3					29.48	038 [1]	32.35	038 [1]
4.00	e8	7		7	13	15	51	6	3	17.54	040	22.18	040				
4.00	e8	11		11	17	19	55	6	3					21.46	040	19.95	040
4.50	h10	7		7	13	15	51	6	3	17.54	045	25.97	045				
4.50	h10	11		11	17	19	55	6	3					29.48	045	22.58	045
4.80	h10	8		8	14	16	52	6	3	24.37	048	27.31	048				
5.00	e8	8		8	14	16	52	6	3	17.54	050	22.18	050				
5.00	e8	13		13	19	21	57	6	3					21.46	050	19.95	050
5.50	h10	8		8	14	16	52	6	3	17.54	055	25.97	055				
5.50	h10	13		13	19	21	57	6	3					29.33	055	22.58	055
5.75	h10	8		8	14	16	52	6	3	24.37	057	27.31	057				
6.00	e8	8	5.5	14	14	16	52	6	3	17.54	060	22.18	060				
6.00	e8	13	5.5	19	19	21	57	6	3					21.46	060	19.95	060
6.50	h10	10	6.0	16	18	20	60	10	3	27.95	065	31.20	065				
6.50	h10	16	6.0	22	24	26	66	10	3					37.22	065	41.55	065
6.75	h10	10	6.5	16	18	20	60	10	3	35.16	067	36.88	067				
7.00	e8	10	6.5	16	18	20	60	10	3	27.95	070	34.30	070				
7.00	e8	16	6.5	22	24	26	66	10	3					37.22	070	41.55	070
7.50	h10	10	7.0	16	18	20	60	10	3	27.95	075	36.21	075				
7.50	h10	16	7.0	22	24	26	66	10	3					38.76	075	42.22	075
7.75	h10	11	7.5	17	19	21	61	10	3	30.87	077	39.41	077				
8.00	e8	11	7.5	17	19	21	61	10	3	26.16	080	33.98	080				
8.00	e8	19	7.5	25	27	29	69	10	3					30.32	080	28.40	080
8.50	h10	11	8.0	18	19	21	61	10	3	26.16	085	36.21	085				
8.50	h10	19	8.0	26	27	29	69	10	3					46.09	085	47.47	085
8.70	h10	11	8.5	18	19	21	61	10	3	32.67	087	36.88	087				
9.00	h10	11	8.5	18	19	21	61	10	3	29.23	090	36.21	090				
9.00	h10	19	8.5	26	27	29	69	10	3					36.26	090	40.87	090
9.50	h10	11	9.0	18	19	21	61	10	3	29.23	095	36.21	095				
9.50	h10	19	9.0	26	27	29	69	10	3					39.70	095	40.08	095
9.70	h10	13	9.5	21	21	23	63	10	3	29.23	097	40.87	097				
10.00	e8	13	9.5	21	21	23	63	10	3	24.86	100	33.91	100				
10.00	e8	22	9.5	30	30	32	72	10	3					30.32	100	29.34	100
10.50	h10	13	10.0	21	23	25	70	12	3	44.97	105	46.40	105				
10.70	h10	13	10.5	21	23	25	70	12	3	46.09	107	46.97	107				
11.00	h10	13	10.5	21	23	25	70	12	3	33.98	110	37.58	110				

Steel	●	●	●	●
Stainless steel	○	●	○	●
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

1) Factory standard

→ v_c/f_z Page 40–42

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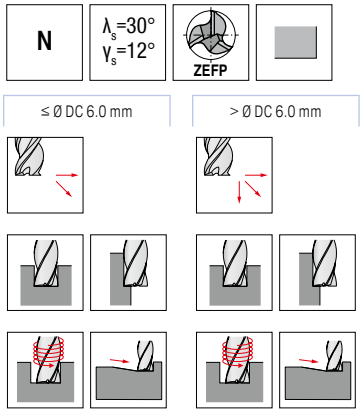
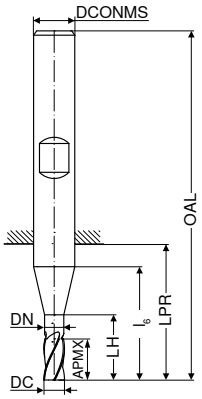
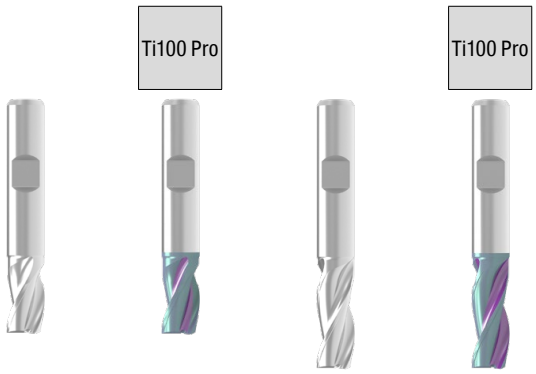
Continued on next page

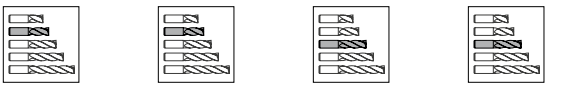
End milling cutter HSS-E Co 8

▲ Ø ≤ 6 mm, 3 teeth cutting to centre









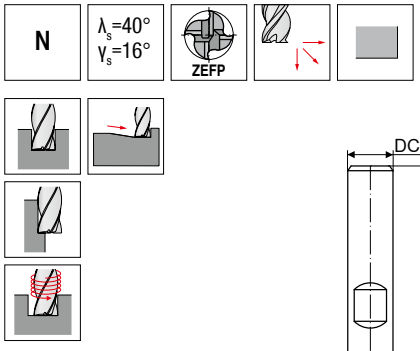
DC	Tol.	APMX	DN	LH	l_6	LPR	OAL	DCONMS $_{h6}$	ZEFP	DIN 327 B U8 Article no. 50 105 ...		DIN 327 B U8 Article no. 54 021 ...		DIN 844 K B U8 Article no. 50 106 ...		DIN 844 K B U8 Article no. 54 016 ...	
mm		mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
11.00	h10	22	10.5	30	32	34	79	12	3					42.34	110	47.16	110
11.50	h10	13	11.0	21	23	25	70	12	3	44.97	115	46.40	115				
11.50	h10	22	11.0	30	32	34	79	12	3					55.22	115	56.47	115
11.70	h10	16	11.5	26	26	28	73	12	3	38.88	117	45.63	117				
12.00	e8	16	11.5	26	26	28	73	12	3	32.54	120	38.94	120				
12.00	e8	26	11.5	36	36	38	83	12	3					36.12	120	32.73	120
12.70	h10	16	11.5	26	26	28	73	12	3	61.02	127	65.10	127				
13.00	h10	16	11.5	26	26	28	73	12	3	43.62	130	52.49	130				
13.00	h10	26	11.5	36	36	38	83	12	3					57.16	130	65.57	130
13.70	h10	16	11.5	26	26	28	73	12	3	50.99	137	53.58	137				
14.00	e8	16	11.5	26	26	28	73	12	3	43.62	140	47.36	140				
14.00	e8	26	11.5	36	36	38	83	12	3					48.41	140	39.91	140
15.00	h10	16	11.5	26	26	28	73	12	3	46.07	150	62.09	150				
15.00	h10	26	11.5	36	36	38	83	12	3					62.57	150	68.29	150
15.50	h10	32	15.0	42	42	44	92	16	3					75.82	155	78.75	155
15.70	h10	19	15.0	29	29	31	79	16	3	50.99	157	71.38	157				
16.00	e8	19	15.0	29	29	31	79	16	3	43.62	160	65.64	160				
16.00	e8	32	15.0	42	42	44	92	16	3					54.39	160	58.11	160
17.00	h10	19	15.0	29	29	31	79	16	3	73.05	170	83.38	170				
17.00	h10	32	15.0	42	42	44	92	16	3					94.91	170	104.97	170
17.70	h10	19	15.0	29	29	31	79	16	3	70.77	177	82.43	177				
18.00	e8	19	15.0	29	29	31	79	16	3	58.30	180	74.38	180				
18.00	e8	32	15.0	42	42	44	92	16	3					66.00	180	67.60	180
19.00	h10	19	15.0	29	29	31	79	16	3	88.27	190	94.13	190				
19.00	h10	32	15.0	42	42	44	92	16	3					100.59	190	109.63	190
19.50	h10	38	19.0	52	52	54	104	20	3					107.77	195	123.59	195
19.70	h10	22	19.0	36	36	38	88	20	3	77.69	197	94.13	197				
20.00	e8	22	19.0	36	36	38	88	20	3	68.28	200	86.59	200				
20.00	e8	38	19.0	52	52	54	104	20	3					76.37	200	70.41	200
21.70	h10	22	19.0	36	36	38	88	20	3	124.51	217	123.98	217				
22.00	e8	22	19.0	36	36	38	88	20	3	97.46	220	111.77	220				
22.00	e8	38	19.0	52	52	54	104	20	3					106.11	220	151.45	220
23.70	h10	26	23.0	42	44	46	102	25	3	150.53	237	157.66	237				
24.00	e8	26	23.0	42	44	46	102	25	3	113.88	240	138.02	240				
24.70	h10	26	24.0	44	44	46	102	25	3	161.73	247	157.66	247				

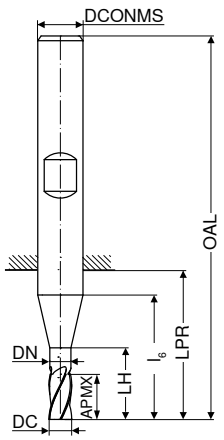
Steel	●	●	●	●
Stainless steel	○	●	○	●
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

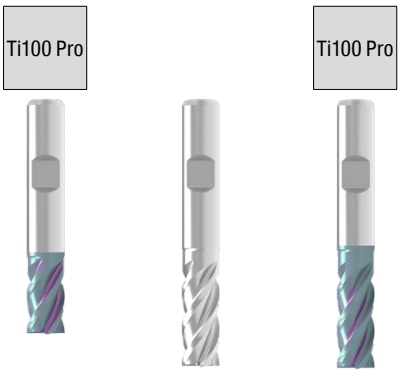
1) Factory standard

→ v_c/f_z Page 40–42

End milling cutter HSS-E Co 8







DC mm	Tol.	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP	Factory standard B U8 Article no. 54 017 ... £		DIN 844 B U8 Article no. 50 124 ... £		DIN 844 B U8 Article no. 54 011 ... £	
4	k10	11		11	17	19	55	6	4			29.51	040	37.14	040
5	k10	13		13	19	21	57	6	4			29.51	050	38.82	050
6	e8	8	5.5	14	14	16	52	6	4	18.01	060				
6	k10	13	5.5	19	19	21	57	6	4			32.11	060	39.87	060
8	e8	11	7.5	17	19	21	61	10	4	24.61	080				
8	k10	19	7.5	25	27	29	69	10	4			35.45	080	47.66	080
9	k10	19	8.5	26	27	29	69	10	4			40.84	090	52.20	090
10	e8	13	9.5	21	21	23	63	10	4	25.37	100				
10	k10	22	9.5	30	30	32	72	10	4			38.80	100	47.66	100
12	e8	16	11.5	26	26	28	73	12	4	30.79	120				
12	k10	26	11.5	36	36	38	83	12	4			44.62	120	62.47	120
14	e8	16	11.5	26	26	28	73	12	4	42.52	140				
14	k10	26	11.5	36	36	38	83	12	4			59.22	140	85.13	140
15	k10	26	11.5	36	36	38	83	12	4			64.08	150		
16	e8	19	15.0	29	29	31	79	16	4	44.36	160				
16	k10	32	15.0	42	42	44	92	16	4			60.57	160	87.31	160
17	k10	32	15.0	42	42	44	92	16	4			74.11	170	123.16	170
18	e8	19	15.0	29	29	31	79	16	4	51.62	180				
18	k10	32	15.0	42	42	44	92	16	4			82.40	180	121.48	180
20	e8	22	19.0	36	36	38	88	20	4	62.09	200				
20	k10	38	19.0	52	52	54	104	20	4			94.31	200	126.24	200
25	k10	45	24.0	63	63	65	121	25	5			146.66	250	198.15	250

Steel	○	○	○
Stainless steel	●	●	●
Cast iron	○	○	○
Non ferrous metals	●	●	●
Heat resistant alloys	●	●	●
hardened materials			

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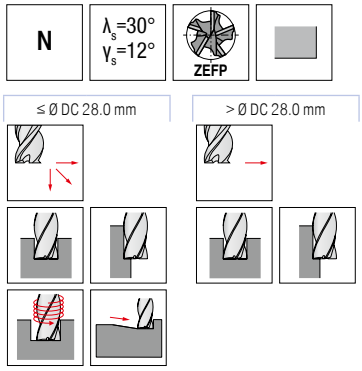
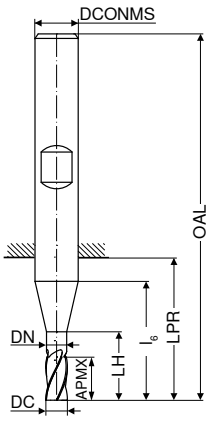
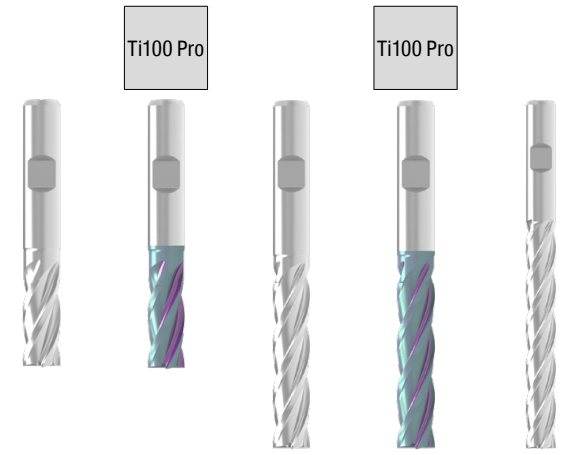
End milling cutter HSS-E Co 8

▲ > Ø 28,0 mm recessed centre







DC k10	APMX	DN	LH	l6	LPR	OAL	DCONMS h6	ZEFP	DIN 69844		DIN 69844		DIN 844		DIN 844		Factory standard	
									U8		U8		U8		U8		U6	
									Article no. 50 110 ...		Article no. 54 018 ...		Article no. 50 111 ...		Article no. 54 019 ...		Article no. 50 104 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£	
2.0	7		7	13	15	51	6	4	15.56	020	22.39	020						
2.5	8		8	14	16	52	6	4	15.56	025	22.39	025						
3.0	8		8	14	16	52	6	4	15.56	030	22.39	030						
3.0	12		12	18	20	56	6	4					25.72	030	29.65	030		
3.5	10		10	16	18	54	6	4	15.56	035	22.39	035						
4.0	11		11	17	19	55	6	4	15.56	040	22.14	040						
4.0	19		19	25	27	63	6	4					26.43	040	30.03	040		
4.5	11		11	17	19	55	6	4	15.56	045	22.39	045						
5.0	13		13	19	21	57	6	4	15.56	050	22.14	050						
5.0	24		24	30	32	68	6	4					23.23	050	30.03	050		
5.5	13		13	19	21	57	6	4	15.56	055	22.39	055						
6.0	13	5.5	19	19	21	57	6	4	15.56	060	22.51	060						
6.0	24	5.5	30	30	32	68	6	4					23.23	060	28.09	060		
6.0	56	5.5	62	62	64	100	6	4									54.87	060
6.5	16	6.0	22	24	26	66	10	4	19.82	065	36.63	065						
7.0	16	6.5	22	24	26	66	10	4	19.82	070	27.84	070						
7.0	30	6.5	36	38	40	80	10	4					33.86	070	43.68	070		
7.5	16	7.0	22	24	26	66	10	4	19.82	075	36.63	075						
8.0	19	7.5	25	27	29	69	10	4	19.23	080	31.19	080						
8.0	38	7.5	44	46	48	88	10	4					33.86	080	39.41	080		
8.0	70	7.5	73	73	75	115	10	4									65.10	080
8.5	19	8.0	26	27	29	69	10	4	19.82	085	29.09	085						
9.0	19	8.5	26	27	29	69	10	4	21.67	090	37.49	090						
9.0	38	8.5	45	46	48	88	10	4					33.86	090	46.70	090		
9.5	19	9.0	26	27	29	69	10	4	21.67	095	42.55	095						
10.0	22	9.5	30	30	32	72	10	4	21.67	100	32.91	100						
10.0	45	9.5	53	53	55	95	10	4					33.86	100	42.13	100		
10.0	75	9.5	79	79	81	121	10	4									78.46	100
10.5	22	10.0	30	32	34	79	12	4	33.86	105	48.13	105						
11.0	22	10.5	30	32	34	79	12	4	32.25	110	37.37	110						
11.0	45	10.5	53	55	57	102	12	4					44.17	110	50.84	110		
11.5	22	11.0	30	32	34	79	12	4	29.78	115	37.37	115						
12.0	26	11.5	36	36	38	83	12	4	29.78	120	35.88	120						
12.0	53	11.5	63	63	65	110	12	4					44.83	120	45.91	120		
12.0	85		85	85	85	130	12	4									85.13	120
13.0	26	11.5	36	36	38	83	12	4	42.29	130	51.21	130						
14.0	26	11.5	36	36	38	83	12	4	38.22	140	42.18	140						
14.0	53	11.5	63	63	65	110	12	4					51.61	140	54.34	140		

Steel	●	●	●	●	●
Stainless steel	○	●	○	●	○
Cast iron	●	●	●	●	●
Non ferrous metals	○	○	○	○	○
Heat resistant alloys hardened materials	○	○	○	○	○

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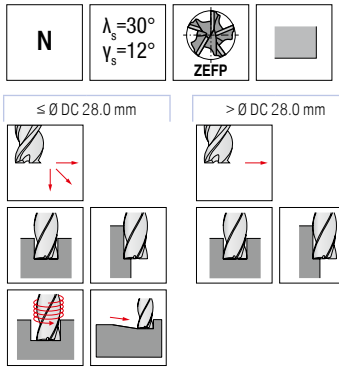
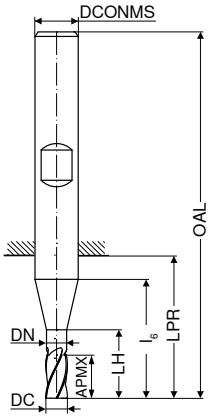
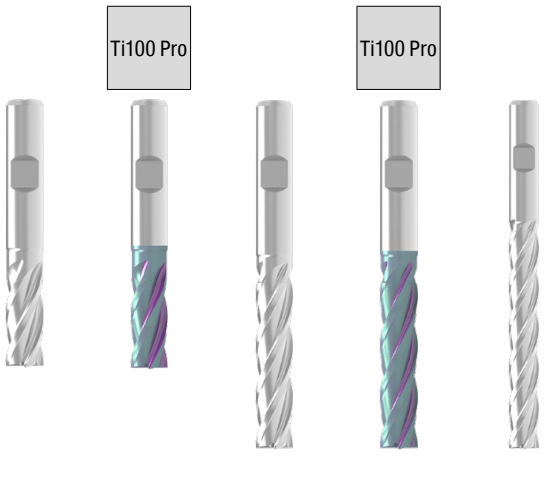
Continued on next page

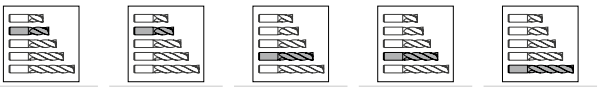
End milling cutter HSS-E Co 8

▲ > Ø 28,0 mm recessed centre









DC k10	APMX	DN	LH	l6	LPR	OAL	DCONMS h6	ZEFP	DIN 69844		DIN 69844		DIN 844		DIN 844		Factory standard	
									U8		U8		U8		U8		U6	
mm	mm	mm	mm	mm	mm	mm	mm		Article no. 50 110 ... £		Article no. 54 018 ... £		Article no. 50 111 ... £		Article no. 54 019 ... £		Article no. 50 104 ... £	
14.0	85		85	85	85	130	12	4									103.57	140
15.0	26	11.5	36	36	38	83	12	4	44.47	150	53.20	150						
15.0	53	11.5	63	63	65	110	12	4					46.66	150	73.97	150		
16.0	32	15.0	42	42	44	92	16	4	42.29	160	59.50	160						
16.0	63	15.0	73	73	75	123	16	4					62.69	160	73.69	160		
16.0	90	15.0	95	95	97	145	16	4									112.77	160
18.0	32	15.0	42	42	44	92	16	4	57.25	180	68.31	180						
18.0	63	15.0	73	73	75	123	16	4					76.79	180	88.81	180		
18.0	100	15.0	110	110	112	160	16	5									158.37	180
20.0	38	19.0	52	52	54	104	20	4	63.06	200	74.97	200						
20.0	75	19.0	89	89	91	141	20	4					74.82	200	99.95	200		
20.0	110	19.0	128	128	130	180	20	5									163.29	200
22.0	38	19.0	52	52	54	104	20	5	74.82	220	93.77	220						
22.0	75	19.0	89	89	91	141	20	5					97.93	220	143.82	220		
22.0	110	19.0	128	128	130	180	20	5									208.43	220
24.0	45	23.0	61	63	65	121	25	5	93.83	240	116.04	240						
24.0	90	23.0	106	108	110	166	25	5					122.60	240	201.53	240		
25.0	45	24.0	63	63	65	121	25	5	93.83	250	115.31	250						
25.0	90	24.0	108	108	110	166	25	5					122.60	250	200.38	250		
25.0	125	24.0	142	142	144	200	25	6									213.35	250
28.0	45	24.0	63	63	65	121	25	5	98.64	280	130.26	280						
28.0	90	24.0	108	108	110	166	25	5					152.12	280	236.99	280		
28.0	140	24.0	147	147	149	205	25	6									294.16	280
30.0	45	24.0	63	63	65	121	25	5	145.85	300	188.43	300						
30.0	90	24.0	108	108	110	166	25	5					170.24	300	259.63	300		
32.0	53	31.0	70	70	73	133	32	6	145.85	320								
32.0	53	31.0	70	70	73	133	32	5			149.59	320						
32.0	106	31.0	123	123	126	186	32	6					179.44	320	285.97	320		
32.0	160	31.0	167	167	170	230	32	6									355.04	320
36.0	53	31.0	70	70	73	133	32	6	186.93	360	249.04	360						
40.0	63	38.0	80	80	85	155	40	6	243.35	400	295.32	400						
40.0	125	38.0	142	142	147	217	40	6					324.52	400	352.70	400		
40.0	180	31.0	197	197	200	260	32	8									597.30	400
45.0	125	38.0	142	142	147	217	40	8					640.70	450	611.08	450		
50.0	150	48.0	172	172	172	252	50	8					780.56	500	753.92	500		

Steel	●	●	●	●	●
Stainless steel	○	●	○	●	○
Cast iron	●	●	●	●	●
Non ferrous metals	○	○	○	○	○
Heat resistant alloys	○	○	○	○	○
hardened materials					

→ v_c/f_z Page 40–42

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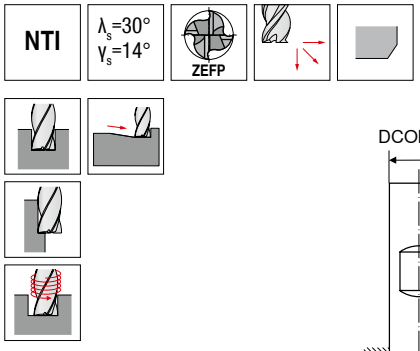
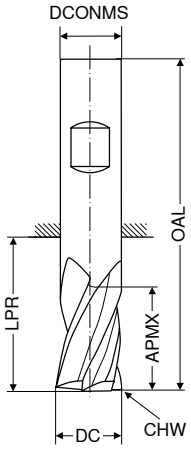
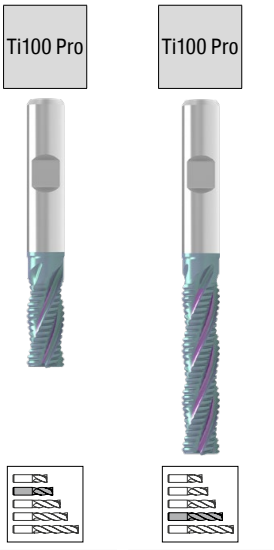
Powdersteel roughing finishing cutter





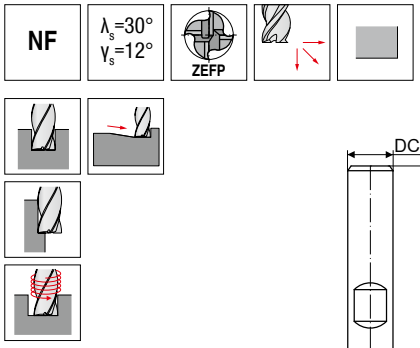


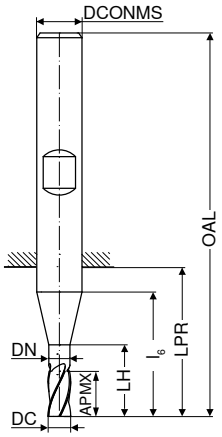
DC k12	APMX	LPR	OAL	DCONMS h6	CHW	ZEFP	DIN 69844 B U8 Article no. 54 007 ... £		DIN 844 B U8 Article no. 54 008 ... £	
mm	mm	mm	mm	mm	mm					
6	13	21	57	6	0.3	4	82.94	060		
6	24	32	68	6	0.3	4			121.16	060
7	16	26	66	10	0.3	4	119.70	070		
8	19	29	69	10	0.3	4	110.98	080		
8	38	48	88	10	0.3	4			143.38	080
9	19	29	69	10	0.5	4	127.99	090		
10	22	32	72	10	0.5	4	119.70	100		
10	45	55	95	10	0.5	4			150.21	100
12	26	38	83	12	0.7	4	122.90	120		
12	53	65	110	12	0.7	4			167.20	120
14	26	38	83	12	0.8	4	155.31	140		
14	53	65	110	12	0.8	4			199.75	140
16	32	44	92	16	0.8	4	175.93	160		
16	63	75	123	16	0.8	4			227.07	160
18	32	44	92	16	0.8	4	220.23	180		
18	63	75	123	16	0.8	4			288.21	180
20	38	54	104	20	0.8	4	233.76	200		
20	75	91	141	20	0.8	4			312.18	200
25	45	65	121	25	1.0	5	346.32	250		
25	90	110	166	25	1.0	4			506.40	250
30	90	110	166	25	1.3	5			796.21	300
32	53	73	133	32	1.3	6	463.68	320		
32	106	126	186	32	1.3	5			736.50	320
40	63	85	155	40	1.3	6	796.21	400		
40	125	147	217	40	1.3	6			1,145.71	400

Steel	○	○
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

→ v_c/f_z Page 40–42

Roughing-finishing milling cutter HSS-E Co 5





DIN 69844 | DIN 844

U8 | U8

DC k12 mm	APMX mm	DN mm	LH mm	l6 mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 54 028 ... £		Article no. 54 029 ... £	
6	13	5.5	19	19	21	57	6	4	33.02	060		
6	24	5.5	30	30	32	68	6	4			46.70	060
7	16	6.5	22	24	26	66	10	4	42.13	070		
8	19	7.5	25	27	29	69	10	4	40.39	080		
8	38	7.5	44	46	48	88	10	4			64.12	080
9	19	8.5	26	27	29	69	10	4	49.11	090		
10	22	9.5	30	30	32	72	10	4	46.01	100		
10	45	9.5	53	53	55	95	10	4			67.13	100
11	22	10.5	30	32	32	79	12	4	56.66	110		
11	45	10.5	53	55	57	102	12	4			81.07	110
12	26	11.5	36	36	38	83	12	4	51.35	120		
12	53	11.5	63	63	65	110	12	4			73.23	120
13	26	11.5	36	36	38	83	12	4	64.02	130		
14	26	11.5	36	36	38	83	12	4	58.60	140		
15	26	11.5	36	36	38	83	12	4	75.17	150		
15	53	11.5	63	63	65	110	12	4			103.64	150
16	32	15.0	42	42	44	92	16	4	75.54	160		
16	63	15.0	73	73	75	123	16	4			106.34	160
18	32	15.0	42	42	44	92	16	4	93.57	180		
20	38	19.0	52	52	54	104	20	4	100.92	200		
20	75	19.0	89	89	91	141	20	4			139.44	200
22	75	19.0	89	89	91	141	20	4			251.02	220
22	38	19.0	52	52	54	104	20	4	125.41	220		
25	90	24.0	108	108	110	166	25	4			271.92	250
25	45	24.0	63	63	65	121	25	4	154.29	250		
28	90	24.0	108	108	110	166	25	5			302.44	280

Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

→ v_c/f_z Page 40–42

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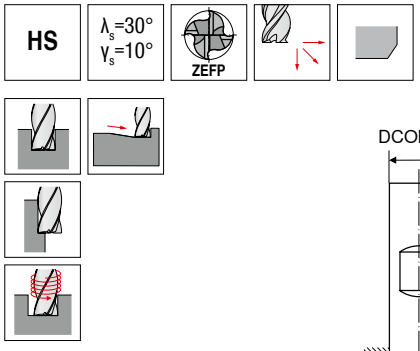
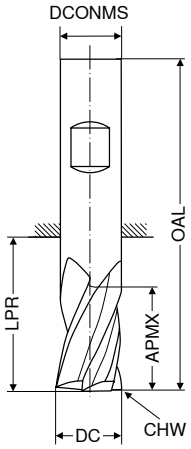
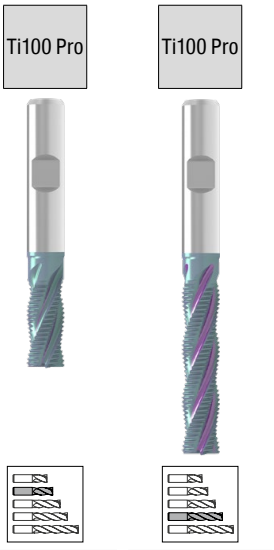
Powdersteel roughing finishing cutter







DIN 69844 | DIN 844

U8 | U8

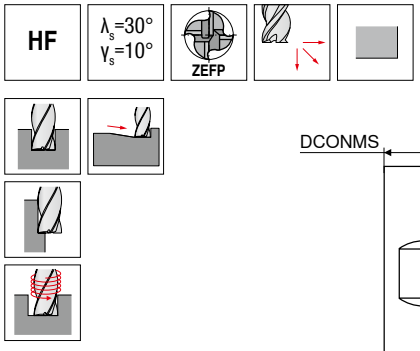
DC k12 mm	APMX mm	LPR mm	OAL mm	DCONMS h6 mm	CHW mm	ZEFP	Article no. 54 009 ... £		Article no. 54 012 ... £	
6	13	21	57	6	0.45	4	82.94	060		
6	24	32	68	6	0.45	4			121.16	060
8	19	29	69	10	0.45	4	110.98	080		
8	38	48	88	10	0.45	4			143.38	080
10	22	32	72	10	0.45	4	119.70	100		
10	45	55	95	10	0.45	4			150.21	100
12	26	38	83	12	0.45	4	122.90	120		
12	53	65	110	12	0.45	4			167.20	120
14	26	38	83	12	0.45	4	155.31	140		
14	53	65	110	12	0.45	4			199.75	140
16	32	44	92	16	0.60	4	175.93	160		
16	63	75	123	16	0.60	4			227.07	160
18	32	44	92	16	0.60	4	220.23	180		
18	63	75	123	16	0.60	4			288.21	180
20	38	54	104	20	0.60	4	233.76	200		
20	75	91	141	20	0.60	4			312.18	200
22	38	54	104	20	0.60	5	307.09	220		
25	45	65	121	25	0.75	5	346.32	250		
25	90	110	166	25	0.75	5			506.40	250
28	45	65	121	25	0.75	5	434.77	280		
28	90	110	166	25	0.75	5			763.95	280
30	45	65	121	25	0.75	5	502.91	300		
30	90	110	166	25	0.75	5			796.21	300
32	53	73	133	32	0.75	6	463.68	320		
32	106	126	186	32	0.75	5			736.50	320
40	63	85	155	40	0.90	6	796.21	400		

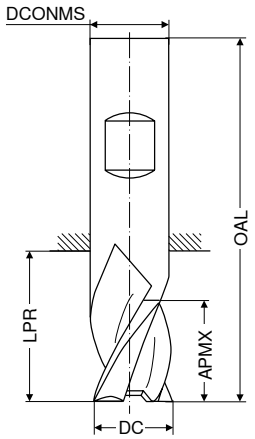
Steel	○	○
Stainless steel		
Cast iron	●	●
Non ferrous metals		
Heat resistant alloys	●	●
hardened materials		

→ v_c/f_z Page 40–42

Powdersteel roughing finishing cutter

HF | λ_s=30° γ_s=10° | ZEFP





Ti100 Pro

DIN 844

U8

DC $_{k12}$ mm	APMX mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP	£	Article no. 54 034 ...
6	13	21	57	6	4	38.61	**060**
8	19	29	69	10	4	52.63	**080**
10	22	32	72	10	4	54.79	**100**
12	26	38	83	12	4	60.51	**120**
14	26	38	83	12	4	68.81	**140**
16	32	44	92	16	4	91.42	**160**
18	32	44	92	16	4	125.80	**180**
20	38	54	104	20	4	115.71	**200**
25	45	65	121	25	4	174.74	**250**

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 40–42

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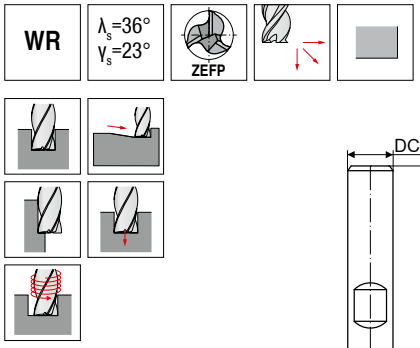
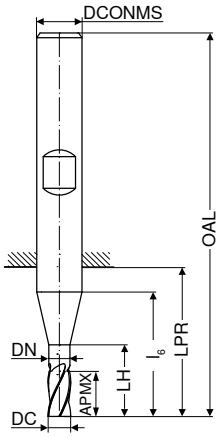
Rough milling cutter HSS-E Co 8





DIN 844

Factory standard

DC k12	APMX	DN	LH	l6	LPR	OAL	DCONMS h6	ZEFP	U8 Article no. 54 013 ...		U8 Article no. 54 010 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
6	13	5.5	19	19	21	57	6	3	65.42	060		
6	19	5.5	25	25	27	63	6	3			85.37	060
8	19	7.5	25	27	29	69	10	3	87.23	080		
8	28	7.5	34	36	38	78	10	3			102.57	080
10	22	9.5	30	30	32	72	10	3	97.20	100		
10	34	9.5	42	42	44	84	10	3			105.91	100
12	26	11.5	36	36	38	83	12	3	104.31	120		
12	40	11.5	50	50	52	97	12	3			119.70	120
16	32	15.0	42	42	44	92	16	3	145.13	160		
16	48	15.0	58	58	60	108	16	3			160.40	160
20	38	19.0	52	52	54	104	20	3	194.66	200		
20	56	19.0	70	70	72	122	20	3			228.52	200
25	45	24.0	63	63	65	121	25	3	279.78	250		
25	68	24.0	86	86	88	144	25	3			364.90	250
32	80	31.0	97	97	100	160	32	3			509.89	320

Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

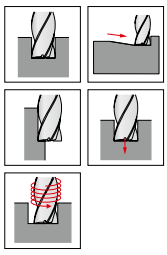
→ v_c/f_z Page 40–42

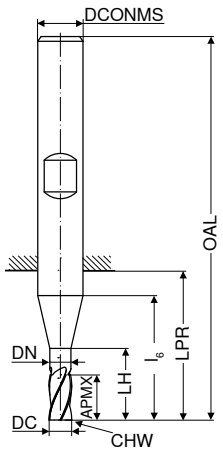
Rough milling cutter HSS-E Co 8

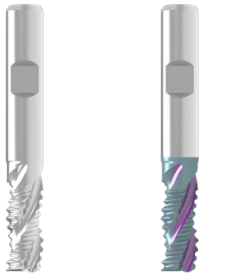
NR

λ_s=30°
γ_s=14°

ZEFP







Ti100 Pro

Ti100 Pro

DIN 69844 | DIN 69844 | DIN 844 | DIN 844

B | B | B | B

U8 | U8 | U8 | U8

DC $_{k12}$ mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	CHW mm	ZEFP	Article no. 50 153 ... £		Article no. 54 026 ... £		Article no. 50 157 ... £		Article no. 54 027 ... £	
6	13	5.5	19	19	21	57	6	0.5	3	39.28	**060**	40.01	**060**				
6	24	5.5	30	30	32	68	6	0.5	3					46.49	**060**	48.23	**060**
7	16	6.5	22	24	26	66	10	0.5	3	44.04	**070**	50.56	**070**				
8	19	7.5	25	27	29	69	10	0.7	3	44.62	**080**	51.04	**080**				
8	38	7.5	44	46	48	88	10	0.7	3					50.22	**080**	62.85	**080**
9	19	8.5	26	27	29	69	10	0.7	3	48.09	**090**	54.23	**090**				
9	38	8.5	45	46	48	88	10	0.7	3					55.93	**090**	65.10	**090**
10	22	9.5	30	30	32	72	10	0.7	3	44.47	**100**	51.62	**100**				
10	45	9.5	53	53	55	95	10	0.7	3					57.25	**100**	66.05	**100**
11	22	10.5	30	32	34	79	12	0.7	3	50.59	**110**	58.79	**110**				
11	45	10.5	53	55	55	102	12	0.7	3					63.48	**110**	74.28	**110**
12	26	11.5	36	36	38	83	12	0.7	3	51.61	**120**	62.28	**120**				
12	53	11.5	63	63	65	110	12	0.7	3					61.14	**120**	75.45	**120**
14	26	11.5	36	36	38	83	12	0.9	3	60.45	**140**	66.15	**140**				
14	53	11.5	63	63	65	110	12	0.9	3					74.82	**140**	85.02	**140**
15	26	11.5	36	36	38	83	12	0.9	3	62.93	**150**	68.01	**150**				
15	53	11.5	63	63	65	110	12	0.9	3					85.84	**150**	85.80	**150**
16	32	15.0	42	42	44	92	16	0.9	3	66.84	**160**	88.32	**160**				
16	63	15.0	73	73	75	123	16	0.9	3					84.25	**160**	114.87	**160**
18	32	15.0	42	42	44	92	16	0.9	3	83.84	**180**	101.51	**180**				
18	63	15.0	73	73	75	123	16	0.9	3					105.18	**180**	125.80	**180**
20	38	19.0	52	52	54	104	20	0.9	3	101.00	**200**	119.70	**200**				
20	75	19.0	89	89	91	141	20	0.9	3					121.73	**200**	146.71	**200**
25	45	24.0	63	63	65	121	25	0.9	3	142.94	**250**	174.41	**250**				
25	90	24.0	108	108	110	166	25	0.9	3					180.85	**250**	224.03	**250**

Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

→ v_c/f_z Page 40–42

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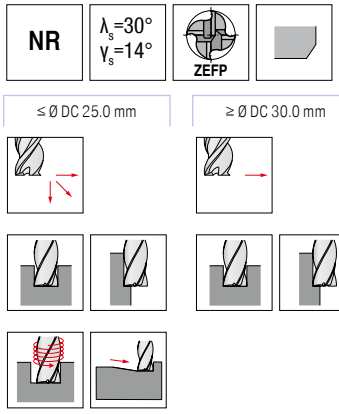
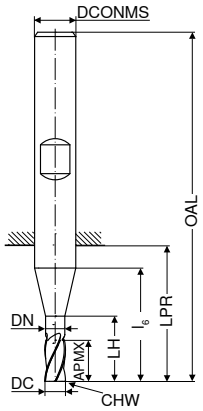
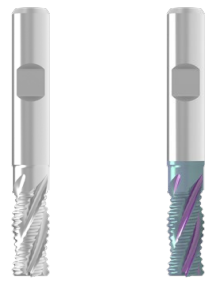
Rough milling cutter HSS-E Co 5

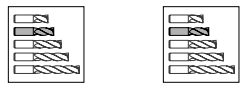
▲ > Ø 25,0 mm recessed centre





Ti100 Pro





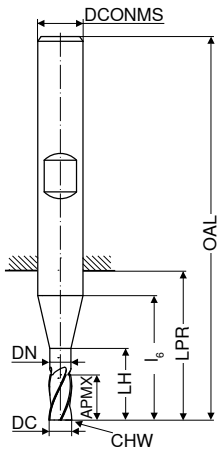
DC k12	APMX	DN	LH	l_6	LPR	OAL	DCONMS h6	CHW	ZEFP	DIN 69844 U8 Article no. 50 125 ...		DIN 69844 U8 Article no. 54 030 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm		£		£	
6	13	5.5	19	19	21	57	6	0.5	4	34.03	**060**	33.02	**060**
7	16	6.5	22	24	26	66	10	0.5	4	41.52	**070**	44.66	**070**
8	19	7.5	25	27	29	69	10	0.7	4	34.87	**080**	40.39	**080**
9	19	8.5	26	27	29	69	10	0.7	4	43.17	**090**	50.76	**090**
10	22	9.5	30	30	32	72	10	0.7	4	34.87	**100**	46.01	**100**
11	22	10.5	30	32	32	79	12	0.7	4	51.47	**110**	56.66	**110**
12	26	11.5	36	36	38	83	12	0.7	4	48.41	**120**	51.35	**120**
13	26	11.5	36	36	38	83	12	0.7	4			64.02	**130**
14	26	11.5	36	36	38	83	12	0.9	4	50.79	**140**	57.73	**140**
15	26	11.5	36	36	38	83	12	0.9	4			75.17	**150**
16	32	15.0	42	42	44	92	16	0.9	4	57.70	**160**	75.54	**160**
18	32	15.0	42	42	44	92	16	0.9	4	64.62	**180**	84.94	**180**
20	38	19.0	52	52	54	104	20	0.9	4	80.25	**200**	101.01	**200**
22	38	19.0	52	52	54	104	20	0.9	4			124.05	**220**
24	45	23.0	61	63	65	121	25	0.9	4			155.15	**240**
25	45	24.0	63	63	65	121	25	0.9	4	118.02	**250**	154.29	**250**
30	45	24.0	63	63	65	121	25	1.1	5			203.37	**300**
32	53	31.0	70	70	73	133	32	1.1	6			209.96	**320**
40	63	38.0	80	80	85	155	40	1.1	6			415.65	**400**

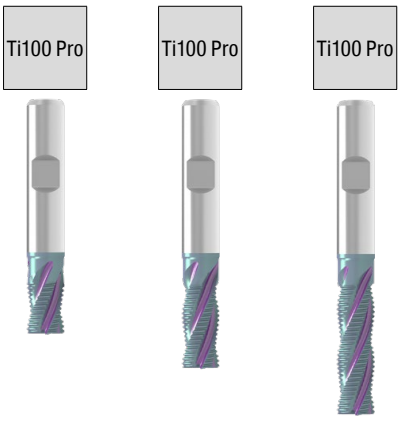
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

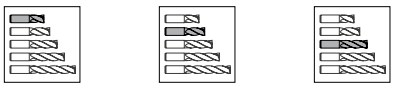
→ v_c/f_z Page 40–42

Powdersteel Fine rough milling cutter

HR | λ_s=30° γ_s=10° | ZEFP







DC $_{k12}$ mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	CHW mm	ZEFP	U8 Article no. 54 031 ... £		U8 Article no. 54 032 ... £		U8 Article no. 54 033 ... £	
6	8	5.5	14	14	16	52	6	0.35	4	48.90	060				
6	13	5.5	19	19	21	57	6	0.35	4			35.88	060		
8	11	7.5	17	19	21	61	10	0.45	4	54.47	080				
8	19	7.5	25	27	29	69	10	0.45	4			48.62	080		
8	28	7.5	34	36	38	78	10	0.45	4					62.69	080
10	13	9.5	21	21	23	63	10	0.45	4	55.30	100				
10	22	9.5	30	30	32	72	10	0.45	4			50.59	100		
10	34	9.5	42	42	44	84	10	0.45	4					77.19	100
12	16	11.5	26	26	28	73	12	0.60	4	66.11	120				
12	26	11.5	36	36	38	83	12	0.60	4			55.79	120		
12	40	11.5	50	50	52	97	12	0.60	4					91.53	120
14	16	11.5	26	26	28	73	12	0.60	4	84.78	140				
14	26	11.5	36	36	38	83	12	0.60	4			63.59	140		
14	40	11.5	50	50	52	97	12	0.60	4					116.12	140
16	19	15.0	29	29	31	79	16	0.70	4	91.42	160				
16	32	15.0	42	42	44	92	16	0.70	4			84.49	160		
16	48	15.0	58	58	60	108	16	0.70	4					149.32	160
18	19	15.0	29	29	31	79	16	0.70	4	110.94	180				
18	32	15.0	42	42	44	92	16	0.70	4			97.62	180		
18	48	15.0	58	58	60	108	16	0.70	4					188.34	180
20	22	19.0	36	36	38	88	20	0.70	4	123.48	200				
20	38	19.0	52	52	54	104	20	0.70	4			108.50	200		
20	56	19.0	70	70	72	122	20	0.70	4					227.23	200
22	22	19.0	36	36	38	88	20	0.70	4	166.87	220				
22	38	19.0	52	52	54	104	20	0.70	4			174.56	220		
22	56	19.0	70	70	72	122	20	0.70	4					284.94	220
25	26	24.0	44	44	46	102	25	0.70	4	195.29	250				
25	45	24.0	63	63	65	121	25	0.70	4			163.57	250		
25	68	24.0	86	86	88	144	25	0.70	4					332.78	250
28	26	24.0	44	44	46	102	25	0.90	5	271.86	280				
30	45	24.0	63	63	65	121	25	0.90	5			259.55	300		
32	32	31.0	49	49	52	112	32	0.90	6	330.99	320				
32	53	31.0	70	70	73	133	32	0.90	6			230.36	320		

Steel	●	●	●
Stainless steel	●	●	●
Cast iron	●	●	●
Non ferrous metals	○	○	○
Heat resistant alloys	○	○	○
hardened materials			

→ v_c/f_z Page 40–42

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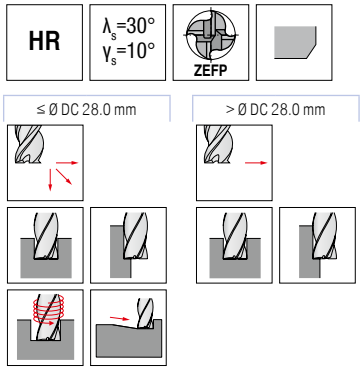
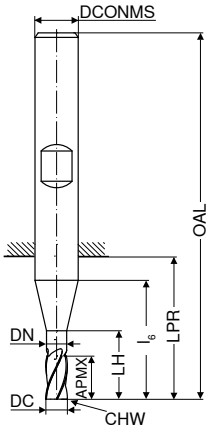
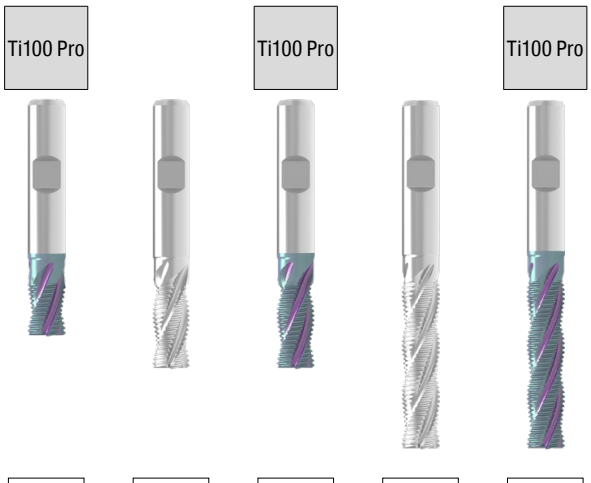
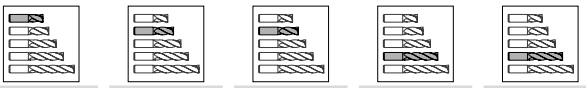
Fine profile milling cutter HSS-E Co 8

▲ > Ø 28,0 mm recessed centre







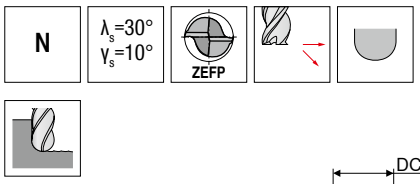


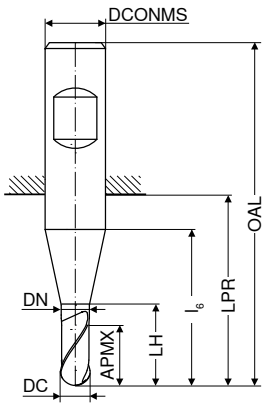
DC k12	APMX	DN	LH	l_6	LPR	OAL	DCONMS h6	CHW	ZEFP	Factory standard		DIN 69844		DIN 69844		DIN 844		DIN 844	
										B		B		B		B		B	
										U8		U8		U8		U8		U8	
										Article no. 54 022 ...		Article no. 50 140 ...		Article no. 54 023 ...		Article no. 50 141 ...		Article no. 54 024 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£	
4	11		11	17	19	55	6	0.35	3			42.07	040	45.77	040				
5	13		13	19	21	57	6	0.35	3			42.07	050	27.47	050				
6	8	5.5	14	14	16	52	6	0.35	4	34.96	060								
6	13	5.5	19	19	21	57	6	0.35	4			35.57	060	24.74	060				
6	24	5.5	30	30	32	68	6	0.35	4							61.86	060	47.31	060
8	11	7.5	17	19	21	61	10	0.45	4	40.97	080								
8	19	7.5	25	27	29	69	10	0.45	4			37.78	080	29.95	080				
8	38	7.5	44	46	48	88	10	0.45	4							72.09	080	66.00	080
10	13	9.5	21	21	23	63	10	0.45	4	37.48	100								
10	22	9.5	30	30	32	72	10	0.45	4			40.69	100	33.28	100				
10	45	9.5	53	53	55	95	10	0.45	4							77.19	100	68.82	100
12	16	11.5	26	26	28	73	12	0.60	4	44.75	120								
12	26	11.5	36	36	38	83	12	0.60	4			48.57	120	36.86	120				
12	53	11.5	63	63	65	110	12	0.60	4							86.06	120	75.54	120
14	16	11.5	26	26	28	73	12	0.60	4	59.47	140								
14	26	11.5	36	36	38	83	12	0.60	4			54.10	140	49.12	140				
14	53	11.5	63	63	65	110	12	0.60	4							93.55	140	99.04	140
16	19	15.0	29	29	31	79	16	0.70	4	60.63	160								
16	32	15.0	42	42	44	92	16	0.70	4			61.02	160	53.32	160				
16	63	15.0	73	73	75	123	16	0.70	4							112.61	160	109.65	160
18	19	15.0	29	29	31	79	16	0.70	4	80.30	180								
18	32	15.0	42	42	44	92	16	0.70	4			68.78	180	70.27	180				
18	63	15.0	73	73	75	123	16	0.70	4							130.33	180	129.42	180
20	22	19.0	36	36	38	88	20	0.70	4	81.64	200								
20	38	19.0	52	52	54	104	20	0.70	4			85.78	200	73.85	200				
20	75	19.0	89	89	91	141	20	0.70	4							154.27	200	142.37	200
22	38	19.0	52	52	54	114	20	0.70	4			109.31	220	95.15	220				
22	75	19.0	89	89	91	141	20	0.70	4							185.81	220	177.46	220
25	45	24.0	63	63	65	121	25	0.70	4			123.29	250	112.10	250				
25	90	24.0	108	108	110	166	25	0.70	4									283.15	250
28	45	24.0	63	63	65	121	25	0.90	5					132.75	280				
28	90	24.0	108	108	110	166	25	0.90	5									317.17	280
30	45	24.0	63	63	65	121	25	0.90	5					145.12	300				
30	90	24.0	108	108	110	166	25	0.90	5									331.20	300
32	53	31.0	70	70	73	133	32	0.90	6					162.94	320				
32	106	31.0	123	123	126	186	32	0.90	6									334.53	320

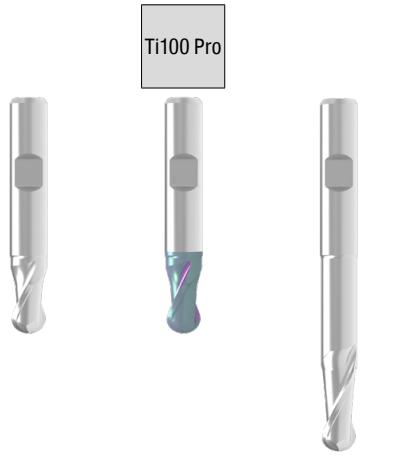
Steel	●	●	●	●	●
Stainless steel	●	○	●	○	●
Cast iron	●	●	●	●	●
Non ferrous metals	○	○	○	○	○
Heat resistant alloys	○	○	○	○	○
hardened materials					

→ v_c/f_z Page 40–42

Ball nosed end milling cutter HSS-E Co 8







DC h10	APMX	DN	LH	l6	LPR	OAL	DCONMS h6	ZEFP	Factory standard B U8 Article no. 50 320 ...		Factory standard B U8 Article no. 54 041 ...		Factory standard B U8 Article no. 50 321 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£	
2	4		4	10	12	48	6	2	33.35	020	31.47	020		
3	5		5	11	13	49	6	2	31.69	030	30.33	030		
3	8		8	18	20	56	6	2					36.91	030
4	7		7	13	15	51	6	2	31.69	040	30.33	040		
4	11		11	25	27	63	6	2					36.91	040
5	8		8	14	16	52	6	2	31.69	050	30.33	050		
5	13		13	30	32	68	6	2					37.94	050
6	8	5.50	14	14	16	52	6	2	31.40	060	30.22	060		
6	13	5.50	30	30	32	68	6	2					38.80	060
7	10	6.50	16	18	20	60	10	2	38.94	070	57.68	070		
7	16	6.35	36	38	40	80	10	2					46.07	070
8	11	7.50	17	19	21	61	10	2	34.74	080	53.60	080		
8	19	7.35	44	46	48	88	10	2					42.57	080
9	11	8.50	18	19	21	61	10	2	41.24	090	62.03	090		
9	19	8.35	45	46	48	88	10	2					47.89	090
10	13	9.50	21	21	23	63	10	2	39.59	100	40.08	100		
10	22	9.35	53	53	55	95	10	2					47.89	100
11	13	10.50	21	23	25	70	12	2	46.19	110				
11	22	10.50	53	55	57	102	12	2					53.33	110
12	16	11.50	26	26	28	73	12	2	44.54	120	46.11	120		
12	26	11.50	63	63	65	110	12	2					54.18	120
13	16	11.50	26	26	28	73	12	2	53.68	130	82.94	130		
14	16	11.50	26	26	28	73	12	2	51.61	140	59.17	140		
14	26	11.50	63	63	65	110	12	2					64.37	140
15	16	11.50	26	26	28	73	12	2	60.75	150	98.37	150		
15	26	11.50	63	63	65	110	12	2					81.53	150
16	19	15.50	29	29	31	79	16	2	63.23	160	100.68	160		
16	32	15.00	73	73	75	123	16	2					81.53	160
18	19	15.50	29	29	31	79	16	2	78.46	180	87.45	180		
18	32	15.00	73	73	75	123	16	2					102.27	180
20	22	19.00	36	36	38	88	20	2	83.70	201	91.05	201		
22	22	19.00	36	36	38	88	20	2	114.27	220				
24	26	23.00	42	44	46	102	25	2	109.31	240	181.88	240		
24	45	23.00	106	108	110	166	25	2					154.00	240
25	26	24.00	44	44	46	102	25	2	109.31	250				
25	45	24.00	108	108	110	166	25	2					144.41	250
26	26	24.00	44	44	46	102	25	2	149.85	260				
28	26	24.00	44	44	46	102	25	2	149.97	280				
30	26	24.00	44	44	46	102	25	2	163.85	300				
30	45	24.00	108	108	110	166	25	2					208.61	300

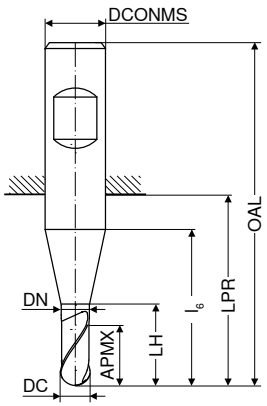
Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals	○	○	○
Heat resistant alloys	○	○	○
hardened materials			

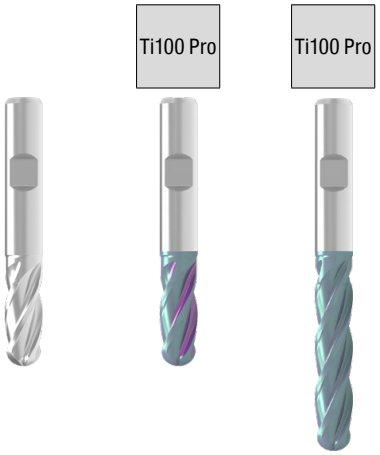
→ v_c/f_z Page 40–42

13

Ball nosed cutter HSS-E Co 8

H | λ_s=30° γ_s= 6° | ZEFP





DIN 1889 B | DIN 1889 B | DIN 1889 B

U8 | U8 | U8

DC $_{k12}$ mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP	Article no. 50 308 ... £		Article no. 54 038 ... £		Article no. 54 039 ... £	
6	13	5.5	19	19	21	57	6	4	89.11	**060**	68.47	**060**		
6	24	5.5	30	30	32	68	6	4					80.18	**060** [1]
8	19	7.5	25	27	29	69	10	4	109.31	**080**	89.77	**080**		
8	38	7.5	44	46	48	88	10	4					104.39	**080** [1]
10	22	9.5	30	30	32	72	10	4	120.24	**100**	96.36	**100**		
10	45	9.5	53	53	55	95	10	4					113.41	**100**
12	26	11.5	36	36	38	83	12	4	118.44	**120**	107.99	**120**		
12	53	11.5	63	63	65	110	12	4					128.14	**120**
16	32	15.0	42	42	44	92	16	4	176.83	**160**	155.94	**160**		
16	63	15.0	73	73	75	123	16	4					184.40	**160**
20	38	19.0	52	52	54	104	20	4			203.27	**200**		
20	75	19.0	89	89	91	141	20	4					249.47	**200**
25	45	24.0	63	63	65	121	25	5			263.21	**250**		

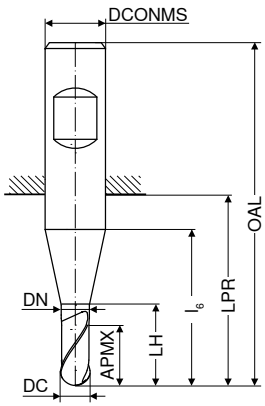
Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals	○	○	○
Heat resistant alloys	○	○	○
hardened materials			

1) Factory standard

→ v_c/f_z Page 40–42

Ball nosed fine rough milling cutter HSS-E Co 8

HR | λ_s=30° γ_s=10° | ZEFP



Ti100 Pro

DIN 1889 B

U8

DC $_{js14}$ mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP	Article no. 54 040 ... £	
6	13	5.5	19	19	21	57	6	4	80.18	**060**
8	19	7.5	25	27	29	69	10	4	98.87	**080**
10	22	9.5	30	30	32	72	10	4	99.27	**100**
12	26	11.5	36	36	38	83	12	4	115.35	**120**
16	32	15.0	42	42	44	92	16	4	170.64	**160**
20	38	19.0	52	52	54	104	20	4	208.23	**200**

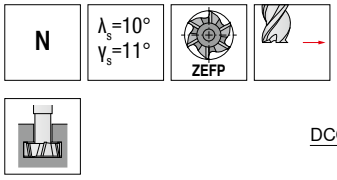
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

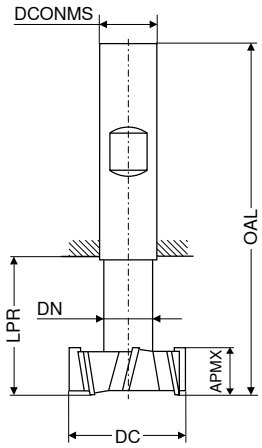
→ v_c/f_z Page 40–42

13

T-slot milling cutter HSS-E Co 5, cross pitched

▲ for slots according to DIN 650





DIN 851 A

B

U6

DC $_{d11}$ mm	APMX $_{d11}$ mm	DN $_{h12}$ mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP	Article no. 50 240 ... £	
11.0	4	4	13.5	53.5	10	6	88.03	**110**
12.5	6	5	17.0	57.0	10	6	85.84	**125**
16.0	8	7	22.0	62.0	10	6	97.20	**160**
18.0	8	8	25.0	70.0	12	6	110.44	**180**
19.0	9	8	26.0	71.0	12	6	140.78	**190** 1)
21.0	9	10	29.0	74.0	12	6	126.39	**210**
22.0	10	10	30.0	75.0	12	6	164.44	**220** 1)
25.0	11	12	34.0	82.0	16	8	148.61	**250**
28.0	12	13	37.0	85.0	16	8	200.47	**280** 1)
32.0	14	15	42.0	90.0	16	8	213.54	**320**
36.0	16	17	47.0	103.0	25	8	325.69	**360** 1)
40.0	18	19	52.0	108.0	25	10	435.25	**400**
45.0	20	21	57.0	113.0	25	10	463.25	**450** 1)
50.0	22	25	64.0	124.0	32	10	556.30	**500**
60.0	28	30	79.0	139.0	32	10	727.06	**600**

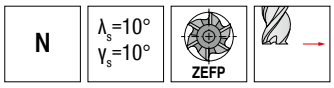
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

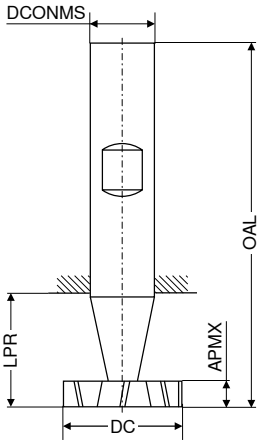
1) Factory standard

→ v_c/f_z Page 43

Slot milling cutter HSS-E Co 5, cross-pitched

▲ for slots according to DIN 6888
▲ CDX = $a_{p\,max.}$





DIN 850
B

U6

DC h12	APMX e8	LPR	OAL	DCONMS h6	CDX	ZEFP	Article no. 50 234 ...	
mm	mm	mm	mm	mm	mm		£	
10.5	2.0	14	50	6	3.25	6	66.11	**100**
10.5	2.5	14	50	6	3.15	6	66.11	**101**
10.5	3.0	14	50	6	3.15	6	66.11	**102**
13.5	2.0	16	56	10	4.45	6	66.05	**130** 1)
13.5	3.0	16	56	10	4.45	6	66.05	**132**
13.5	4.0	16	56	10	4.45	6	66.05	**133**
16.5	3.0	16	56	10	5.95	6	71.68	**161**
16.5	4.0	16	56	10	5.95	6	71.68	**162**
16.5	5.0	16	56	10	5.75	6	71.68	**163**
19.5	3.0	23	63	10	6.95	8	79.61	**190** 1)
19.5	4.0	23	63	10	6.95	8	79.61	**191**
19.5	5.0	23	63	10	6.75	8	79.61	**192**
22.5	4.0	23	63	10	8.25	8	93.92	**220** 1)
22.5	5.0	23	63	10	8.25	8	93.92	**221**
22.5	6.0	23	63	10	8.00	8	93.92	**222**
25.5	5.0	23	63	10	9.00	10	97.93	**250** 1)
25.5	6.0	23	63	10	9.00	10	97.93	**251**
28.5	6.0	23	63	10	10.00	10	136.46	**281**
28.5	8.0	23	63	10	10.00	10	136.46	**283**
32.5	6.0	26	71	12	12.00	10	139.26	**321** 1)
32.5	8.0	26	71	12	12.00	10	139.26	**322**
38.5	8.0	26	71	12	13.35	10	202.08	**381** 1)
45.5	10.0	26	71	12	16.85	12	246.85	**450**

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

1) Factory standard

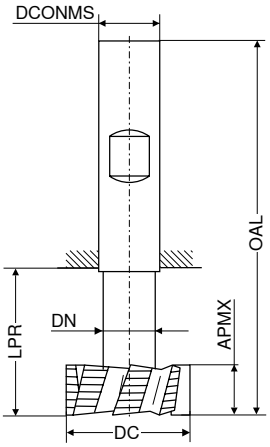
→ v_c/f_z Page 43

13

T-slot milling cutter HSS-E Co 5

▲ for slots according to DIN 650

NF | λ_s=20° γ_s=11° | ZEFP



DIN 851 A

B

U6

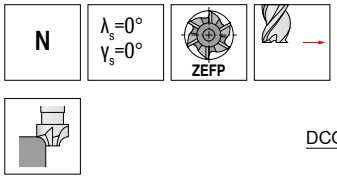
DC d11 mm	APMX mm	DN h12 mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 50 241 ... £	
21	9	10	29	74	12	6	184.16	**210**
22	10	10	30	75	12	6	217.36	**220** 1)
25	11	12	34	82	16	6	220.52	**250**
28	12	13	37	85	16	6	235.92	**280** 1)
32	14	15	42	90	16	6	304.77	**320**
36	16	17	47	103	25	6	376.87	**360** 1)
40	18	19	52	108	25	8	458.16	**400**
45	20	21	57	113	25	8	552.70	**450** 1)

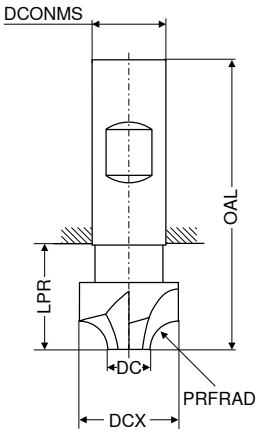
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

1) Factory standard

→ v_c/f_z Page 43

Quarter-round profile milling cutter HSS-E Co 5, concave





DIN 6518

B

U6

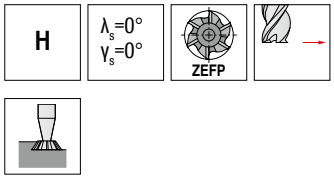
PRFRAD $_{H11}$ mm	DCX mm	DC mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP	Article no. 50 248 ... £	
1.0	8	6	20	60	10	4	74.30	**010**
1.5	9	6	20	60	10	4	78.01	**015**
2.0	10	6	20	60	10	4	74.30	**020**
2.5	11	6	20	60	10	4	78.01	**025**
3.0	12	6	15	60	12	4	78.01	**030**
4.0	14	6	15	60	12	4	83.67	**040**
5.0	16	6	15	60	12	4	99.23	**050**
6.0	20	8	19	67	16	4	115.64	**060**
8.0	24	8	23	71	16	4	136.52	**080**
9.0	26	8	29	85	25	4	189.96	**090**
10.0	28	8	29	85	25	4	172.60	**100**
12.0	34	10	34	90	25	4	247.37	**120**
15.0	46	16	44	100	25	6	461.51	**150**
16.0	48	16	44	100	25	6	484.59	**160**

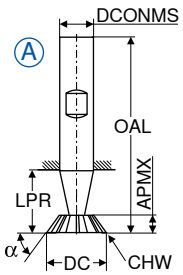
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

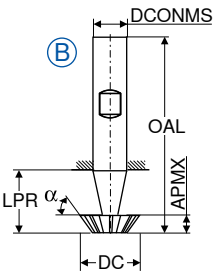
→ v_c/f_z Page 43

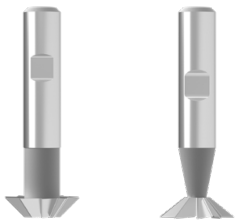
13

Single angle miling cutters HSS-E Co 5









α°	DC mm	APMX mm	LPR mm	OAL mm	DCONMS h6 mm	CHW mm	ZEFP	Fig.	DIN 1833 B U6 Article no. 50 246 ... £		DIN 1833 B U6 Article no. 50 245 ... £	
45	16	4.0	15	60	12	0.3	10	A			73.65	016
	16	4.0	15	60	12		10	B	84.17	016		
	20	5.0	18	63	12	0.3	10	A			110.87	020
	20	5.0	18	63	12		10	B	110.87	020		
	25	6.3	22	67	12	0.3	10	A			131.82	025
	25	6.3	22	67	12		10	B	131.82	025		
60	16	6.3	15	60	12	0.3	10	A			84.17	116
	16	6.3	15	60	12		10	B	84.17	116		
	20	8.0	18	63	12	0.3	10	A			110.87	120
	20	8.0	18	63	12		10	B	110.87	120		
	25	10.0	22	67	12	0.3	10	A			115.35	125
	25	10.0	22	67	12		10	B	131.82	125		
70	16	7.0	15	60	12	0.3	10	A			112.07	216 1)
	20	9.0	18	63	12	0.3	10	A			141.11	220 1)
	25	11.0	19	67	16	0.3	10	A			188.58	225 1)

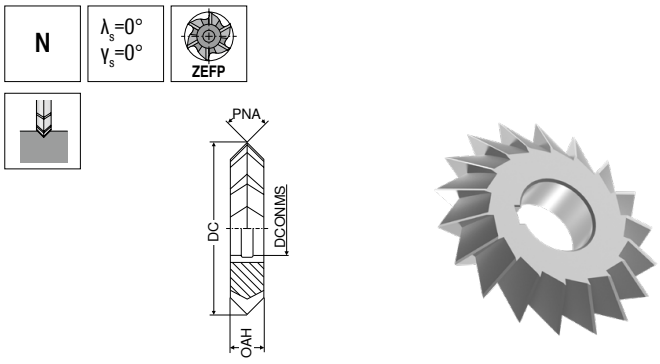
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

1) Factory standard

→ v_c/f_z Page 44

Double angle milling cutter HSS

▲ with keyway to DIN 138



DIN 847

U6

PNA °	DC mm	OAH mm	DCONMS mm	ZEFP	Article no. 50 360 ... £	
45	50	8	16	22	139.10	045
	63	10	22	24	173.49	145
	80	12	27	26	267.94	245
	100	18	32	28	401.43	345
60	50	10	16	18	139.10	060
	63	14	22	20	193.35	160
	80	18	27	22	310.95	260
	100	25	32	24	498.20	360
90	50	14	16	16	164.97	090
	63	20	22	18	210.32	190
	80	22	27	20	342.26	290
	100	32	32	24	571.91	390
120	50	14	16	16	186.10	120 1)
	63	20	22	16	264.42	121 1)

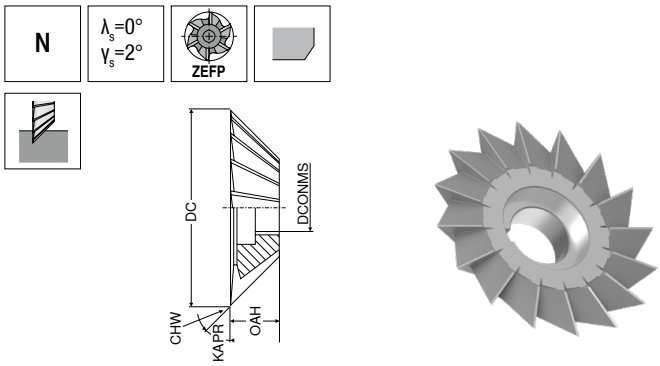
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

1) Factory standard

→ v_c/f_z Page 44

Shell type single angle milling cutter HSS

▲ with keyway to DIN 138



DIN 842 A

U6

KAPR °	DC mm	OAH mm	DCONMS mm	CHW mm	ZEFP	Article no. 50 362 ... £	
45	40	10	10	0.3	14	155.44	045
	50	13	13	0.3	16	213.69	145
	63	18	16	0.3	18	270.16	245
	80	22	22	0.3	20	381.53	345
	100	28	27	0.3	22	576.11	445
50	50	16	13	0.3	16	213.69	150
60	40	13	10	0.3	14	139.26	060
	50	16	13	0.3	16	171.05	160
	63	20	16	0.3	18	239.25	260
	80	25	22	0.3	20	383.83	360
	100	32	27	0.3	22	584.70	460
	125	40	32	0.3	28	985.04	560

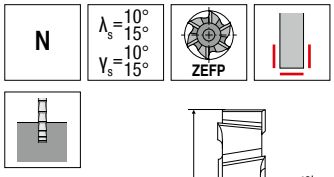
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

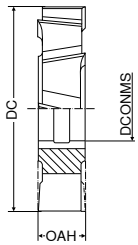
→ v_c/f_z Page 44

13

Side and face milling cutter HSS-E Co 5

▲ Coarse cross-pitched
▲ with keyway to DIN 138





DIN 885 A

U6

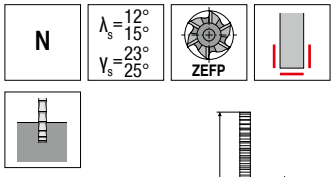
DC js16	OAH k11	DCONMS H7	ZEFP	Article no. 50 348 ...	
mm	mm	mm		£	
50	4	16	12	148.59	100
50	5	16	12	150.95	102
50	6	16	12	153.44	104
50	8	16	12	170.73	106
50	10	16	12	183.75	108
63	4	22	12	161.47	200
63	5	22	12	171.98	202
63	6	22	12	169.35	204
63	8	22	12	186.78	206
63	10	22	12	210.16	208
63	12	22	12	236.45	210
63	14	22	12	267.86	212
80	5	27	14	217.90	300
80	6	27	14	221.35	302
80	8	27	14	236.45	304
80	10	27	14	242.38	306
80	12	27	14	272.97	308
80	14	27	14	312.66	310
80	16	27	14	338.68	312
80	18	27	14	394.00	314
80	20	27	14	421.55	316
100	6	32	14	317.24	400
100	8	32	14	315.15	402
100	10	32	14	337.43	404
100	12	32	14	363.84	406
100	14	32	14	405.77	408
100	16	32	14	428.06	410
100	18	32	14	503.18	412
100	20	32	14	497.50	414
100	25	32	14	643.32	418
125	8	32	16	417.53	500
125	10	32	16	447.69	502
125	12	32	16	485.88	504
125	14	32	16	547.45	506
125	16	32	16	577.45	508
125	18	32	16	626.04	510
125	20	32	16	667.12	512
125	25	32	16	805.87	516
160	10	40	18	660.06	600
160	12	40	18	737.67	602
160	14	40	18	778.06	604
160	16	40	18	837.27	606
160	18	40	18	935.77	608
160	20	40	18	944.90	610
160	25	40	18	1,158.93	614
160	32	40	18	1,469.92	618

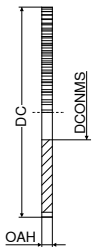
Steel	○
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 45

Narrow side and face milling cutter HSS-E Co 5

▲ Coarse cross-pitched
▲ with keyway to DIN 138





Factory standard

U6

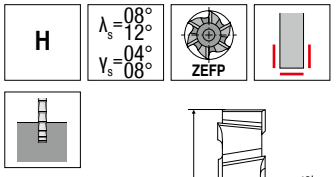
DC js16	OAH k11	DCONMS H7	ZEFP	Article no. 50 342 ...	
mm	mm	mm		£	
63	1.6	22	16	157.87	200
63	2.0	22	16	139.74	202
63	2.5	22	16	142.78	204
63	3.0	22	16	146.66	206
80	1.6	27	20	168.79	300
80	2.0	27	20	163.97	302
80	2.5	27	20	166.87	304
80	3.0	27	20	171.27	306
80	4.0	27	20	183.59	310
100	1.6	32	24	215.42	400
100	2.0	32	24	214.16	402
100	2.5	32	24	213.89	404
100	3.0	32	24	217.76	406
100	4.0	32	24	234.92	410
100	5.0	32	24	248.90	414
125	1.6	32	26	272.28	500
125	2.0	32	26	262.02	502
125	2.5	32	26	268.54	504
125	3.0	32	26	274.92	506
125	4.0	32	26	294.55	510
125	5.0	32	26	315.32	514
125	6.0	32	26	304.92	516
160	2.0	40	30	421.97	600
160	2.5	40	30	406.19	602
160	3.0	40	30	413.95	604
160	4.0	40	30	437.47	606
160	5.0	40	30	463.19	608
160	6.0	40	30	497.35	610
160	8.0	40	22	567.77	612

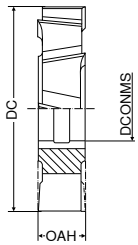
Steel	
Stainless steel	●
Cast iron	
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 45

Side and face milling cutter HSS-E Co 5

▲ Fine cross-pitched version
▲ with keyway to DIN 138





DIN 885 A

U6

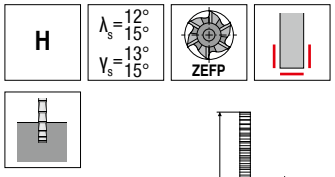
DC js16	OAH k11	DCONMS H7	ZEFP	Article no. 50 349 ...	
mm	mm	mm		£	
50	4	16	16	174.59	100
50	5	16	16	175.72	102
50	6	16	16	184.84	104
50	8	16	16	198.67	106
50	10	16	16	217.47	108
63	4	22	18	191.22	200
63	5	22	18	205.46	202
63	6	22	18	197.15	204
63	8	22	18	221.07	206
63	10	22	18	246.66	208
63	12	22	18	280.16	210
63	14	22	18	314.61	212
80	5	27	20	258.16	300
80	6	27	20	266.73	302
80	8	27	20	277.66	304
80	10	27	18	284.59	306
80	12	27	18	320.57	308
80	14	27	18	370.22	310
80	16	27	18	401.33	312
80	18	27	18	462.65	314
80	20	27	18	462.91	316
100	6	32	22	372.43	400
100	8	32	22	370.08	402
100	10	32	20	399.56	404
100	12	32	20	430.96	406
100	14	32	20	480.61	408
100	16	32	20	506.90	410
100	18	32	20	595.59	412
100	20	32	20	599.60	414
100	25	32	20	742.08	418
125	8	32	24	494.46	500
125	10	32	22	530.15	502
125	12	32	22	570.26	504
125	14	32	22	642.75	506
125	16	32	22	666.29	508
125	18	32	22	767.53	510
125	20	32	22	783.31	512
125	25	32	22	937.85	516
160	10	40	26	788.58	600
160	12	40	26	858.57	602
160	14	40	26	921.96	604
160	16	40	26	991.81	606
160	18	40	26	1,089.06	608
160	20	40	26	1,090.18	610
160	25	40	26	1,361.04	614
160	32	40	26	1,710.78	618

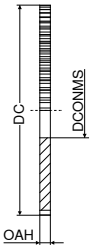
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 45

Narrow side and face milling cutter HSS-E Co 5

▲ Fine cross-pitched version
▲ with keyway to DIN 138





DIN 1834 A

U6

DC js16	OAH k11	DCONMS H7	ZEFP	Article no. 50 340 ...	
mm	mm	mm		£	
63	1.6	22	28	132.64	200
63	2.0	22	28	130.47	202
63	2.5	22	28	133.25	204
63	3.0	22	28	136.96	206
80	1.6	27	32	157.60	300
80	2.0	27	32	153.02	302
80	2.5	27	32	155.65	304
80	3.0	27	32	160.08	306
80	4.0	27	32	171.27	310
100	1.6	32	36	188.44	400
100	2.0	32	36	187.34	402
100	2.5	32	36	187.34	404
100	3.0	32	36	190.64	406
100	4.0	32	36	205.46	410
100	5.0	32	36	225.51	414
125	1.6	32	40	246.82	500
125	2.0	32	40	237.28	502
125	2.5	32	40	244.38	504
125	3.0	32	40	249.16	506
125	4.0	32	40	266.88	510
125	5.0	32	40	285.83	514
125	6.0	32	40	276.31	516
160	2.0	40	48	395.54	600
160	2.5	40	48	380.88	602
160	3.0	40	48	388.08	604
160	4.0	40	48	410.21	606
160	5.0	40	48	434.28	608
160	6.0	40	48	466.25	610
160	8.0	40	36	532.23	612

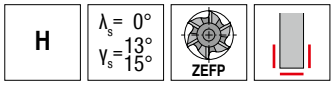
Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	

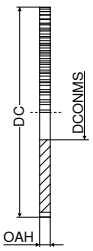
→ v_c/f_z Page 45

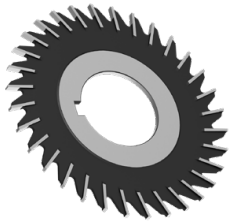
13

Narrow side and face milling cutter HSS-E Co 5

- straight cut
- with keyway to DIN 138







				DIN 1834 B	
				U6	
DC js16	OAH k11	DCONMS H7	ZEFP	Article no. 50 341 ...	
mm	mm	mm		£	
63	1.6	22	32	173.64	200
63	2.0	22	32	153.73	202
63	2.5	22	32	156.88	204
63	3.0	22	32	161.31	206
80	1.6	27	36	185.67	300
80	2.0	27	36	180.41	302
80	2.5	27	36	183.45	304
80	3.0	27	36	188.29	306
80	4.0	27	36	201.85	310
100	1.6	32	40	222.05	400
100	2.0	32	40	220.80	402
100	2.5	32	40	220.67	404
100	3.0	32	40	224.68	406
100	4.0	32	40	242.26	410
100	5.0	32	40	256.77	414
125	1.6	32	44	299.65	500
125	2.0	32	44	288.19	502
125	2.5	32	44	295.22	504
125	3.0	32	44	302.57	506
125	4.0	32	44	324.01	510
125	5.0	32	44	346.84	514
125	6.0	32	44	335.27	516
160	2.0	40	52	464.01	600
160	2.5	40	52	446.72	602
160	3.0	40	52	455.43	604
160	4.0	40	52	481.18	606
160	5.0	40	52	509.55	608
160	6.0	40	52	547.02	610
160	8.0	40	40	624.37	612

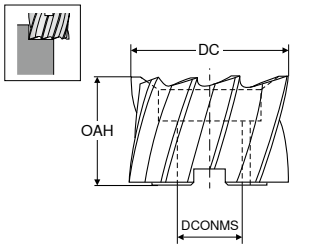
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

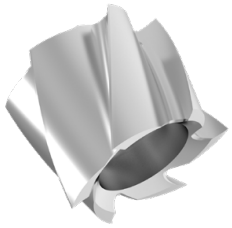
→ v_c/f_z Page 45

Face milling cutters HSS-E Co 5

▲ with keyway to DIN 138

W | λ_s=30° γ_s=24° | ZEFP





DC $_{k10}$	OAH	DCONMS	ZEFP	DIN 1880 U8 Article no. 50 255 ... £	
mm	mm	mm			
40	32	16	6	159.50	040
50	36	22	6	203.06	050
63	40	27	6	271.50	063
80	45	27	6	400.66	080
100	50	32	6	649.63	100

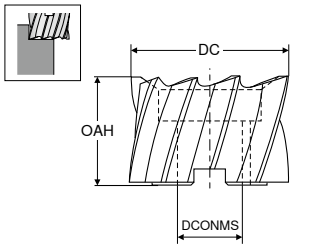
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

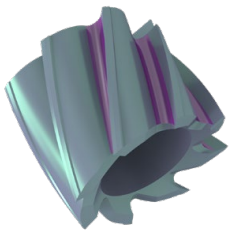
→ v_c/f_z Page 46+47

Face milling cutters HSS-E Co 5

▲ with keyway to DIN 138

N | λ_s=25° γ_s=10° | ZEFP | Ti100 Pro





DC $_{k10}$	OAH	DCONMS	ZEFP	DIN 1880 U8 Article no. 54 035 ... £	
mm	mm	mm			
40	32	16	8	222.42	040
50	36	22	8	272.81	050
63	40	27	8	251.43	063
80	45	27	10	390.86	080
100	50	32	12	655.03	100

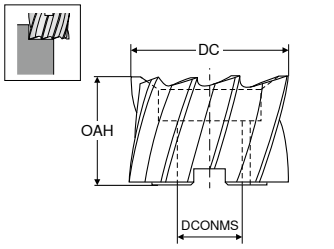
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

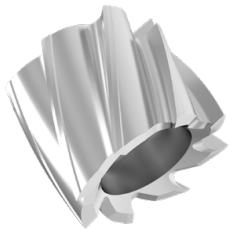
→ v_c/f_z Page 46+47

Face milling cutters HSS-E Co 5

▲ with keyway to DIN 138

N | λ_s=25° γ_s=10° | ZEFP





DC $_{k10}$	OAH	DCONMS	ZEFP	DIN 1880 U8 Article no. 50 250 ... £	
mm	mm	mm			
40	32	16	8	151.52	040
50	36	22	8	194.24	050
63	40	27	8	276.00	063
80	45	27	10	404.86	080
100	50	32	12	644.10	100

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

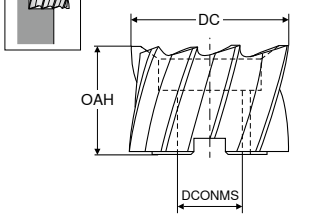
→ v_c/f_z Page 46+47

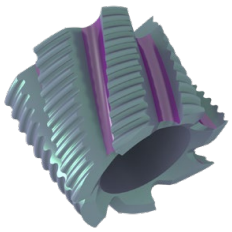
Roughing-finishing face milling cutters HSS-Co 5

▲ with keyway to DIN 138

▲ Manufacturing tolerance lies on the plus range of the tolerance js14

NF | λ_s=25° γ_s=12° | ZEFP | Ti100 Pro





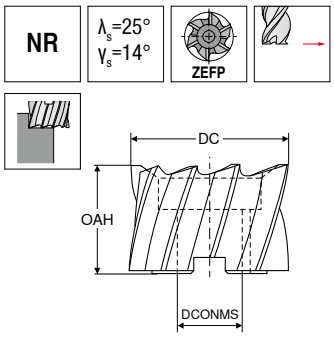
DC $_{js14}$	OAH	DCONMS	ZEFP	DIN 1880 U8 Article no. 54 036 ... £	
mm	mm	mm			
40	32	16	7	150.11	040
50	36	22	8	192.62	050
63	40	27	8	393.96	063
80	45	27	10	594.28	080
100	50	32	12	886.70	100

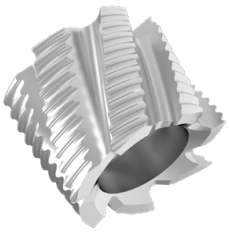
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 46+47

Roughing face milling cutters HSS-E Co 5

- with keyway to DIN 138
- Manufacturing tolerance lies on the plus range of the tolerance js14





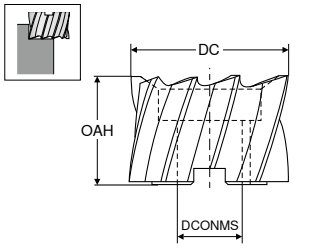
DC js14	OAH	DCONMS	ZEFP	DIN 1880 U8 Article no. 50 260 ... £	
mm	mm	mm			
40	32	16	7	154.39	040
50	36	22	8	204.75	050
63	40	27	8	274.08	063
80	45	27	10	378.52	080
100	50	32	12	574.22	100

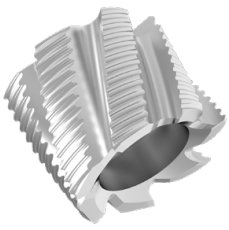
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 46+47

Roughing-finishing face milling cutters HSS-E Co 8

- with keyway to DIN 138
- Manufacturing tolerance lies on the plus range of the tolerance js14





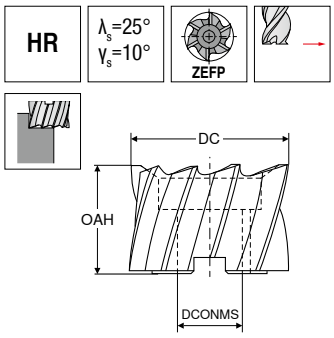
DC js14	OAH	DCONMS	ZEFP	DIN 1880 U8 Article no. 50 297 ... £	
mm	mm	mm			
40	32	16	7	154.39	040
50	36	22	8	204.75	050
63	40	27	8	274.08	063
80	45	27	10	378.52	080
100	50	32	12	587.71	100

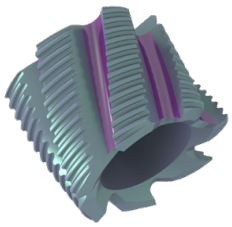
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 46+47

Roughing-finishing face milling cutters HSS-E Co 8

- with keyway to DIN 138
- Manufacturing tolerance lies on the plus range of the tolerance js14





DC js14	OAH	DCONMS	ZEFP	DIN 1880 U8 Article no. 54 037 ... £	
mm	mm	mm			
40	32	16	7	159.02	040
50	36	22	8	196.60	050
63	40	27	8	425.62	063
80	45	27	10	422.63	080
100	50	32	12	678.10	100

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 46+47

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data – slot and end milling cutters

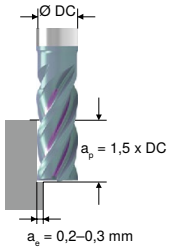
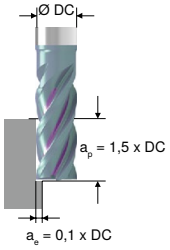
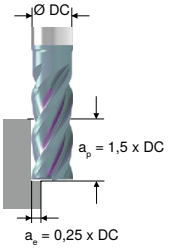
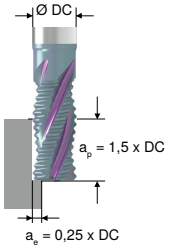
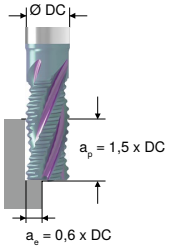
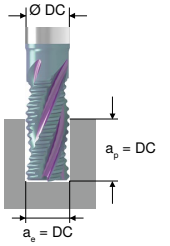
		uncoated	Ti100 Pro	Powder steel	● 1st choice		○ suitable
				Ti100 Pro			
Index	Kf f_z	v_c in m/min			Emulsion	Compressed air	MMS
1.1	1,2	30–40	60–80	65–90	●		
1.2	1,2	25–35	50–65	55–75	●		
1.3	1,2	20–30	45–55	50–65	●		
1.4	1	15–25	40–55	45–65	●		
1.5	1,2	20–30	45–55	50–60	●		
1.6	1	15–20	30–35	35–45	●		
1.7	1,2	20–30	40–55	45–65	●		
1.8	0,8	15–20	30–35	35–45	●		
1.9	1,2	20–30	45–55	50–60	●		
1.10	1	15–20	30–35	35–45	●		
1.11	0,8	15–20	30–35	35–45	●		
1.12	0,8	15–20	30–35	35–45	●		
1.13							
1.14							
1.15	0,8	12–18	25–30	30–40	●		
1.16	0,8	10–15	20–25	25–35	●		
2.1	1	10–15	20–30	25–35	●		
2.2	1	10–15	20–30	25–35	●		
2.3	1	8–12	15–25	20 -30	●		
2.4	0,9	7–10	15–20	20–30	●		
2.5	1	5–8	10–15	15–20	●		
2.6	1	10–15	20–30	25–35	●		
2.7							
3.1	1	18–25	35–45	40 -55	●		
3.2	1	18–25	25–30	30–40	●		
3.3	1	15–20	30–35	35–45	●		
3.4	1	15–20	30–35	35–45	●		
3.5	1	15–25	35–40	40–50	●		
3.6	1	15–20	35–40	40–50	●		
3.7	1	15–20	30–35	35–45	●		
3.8	0,8	12–18	25–30	30–40	●		
4.1	1,9	150–180	240–280	260–300	●		
4.2	1,9	100–130	130–160	150–180	●		
4.3	1,8		100–140	140–160	●		
4.4	1,7		60–130	80–150	●		
4.5							
4.6	1,2	30–50	60–80	80–100	●		
4.7	1,1		110–150	130–170	●		
4.8	0,9	5–10	10–15	20–25	●		
4.9							
4.10							
4.11	1,1		100–140	130–170	●		
4.12	1,1	80–120	120–150	140–180	●		
4.13	2	20–30	25–45	40–60	●		
4.14	2	30–40	50–70	70–90	●		
4.15							
4.16	1,8	90–120	140–170	160–190		●	
4.17	1		30–40	40–50		●	
4.18	1,1		10–20	15–25	●		
4.19							
5.1	1,1	5–10	10–15	15–20	●		
5.2							
5.3							
5.4							
5.5							
5.6							
5.7							
5.8							
5.9	1	10–15	15–25	25–35	●		
5.10	1,1	10–15	15–20	25–35	●		
5.11							
6.1							
6.2							
6.3							
6.4							
6.5							

For full slot milling reduce the cutting speed (v_c), indicated in this table by approx. 15–20 %!

Kf f_z = Correction factor for feed per tooth

Feed per tooth for HSS end mills

Appoximate values (in mm) for the feed per tooth (f_z)

	Peripheral milling										Full slot milling	
												
	f_z in mm		f_z in mm		f_z in mm		f_z in mm		f_z in mm		f_z in mm	
Ø DC mm	uncoated	coated	uncoated	coated	uncoated	coated	uncoated	coated	uncoated	coated	uncoated	coated
2	0,008	0,009	0,008	0,009	0,008	0,009						
3	0,011	0,012	0,010	0,012	0,009	0,010						
4	0,017	0,018	0,014	0,015	0,013	0,014	0,015	0,016	0,013	0,014	0,011	0,012
5	0,024	0,026	0,018	0,020	0,014	0,015	0,019	0,021	0,016	0,018	0,014	0,016
6	0,032	0,035	0,022	0,024	0,015	0,017	0,024	0,027	0,020	0,022	0,018	0,019
8	0,047	0,051	0,029	0,032	0,020	0,022	0,032	0,036	0,027	0,030	0,024	0,026
10	0,065	0,072	0,037	0,041	0,026	0,028	0,042	0,047	0,035	0,039	0,031	0,034
12	0,084	0,091	0,044	0,049	0,031	0,034	0,051	0,057	0,043	0,047	0,037	0,041
14	0,100	0,106	0,054	0,059	0,037	0,041	0,063	0,069	0,053	0,058	0,045	0,050
16	0,111	0,121	0,061	0,067	0,042	0,046	0,072	0,079	0,060	0,066	0,052	0,057
18	0,126	0,136	0,070	0,077	0,048	0,053	0,084	0,093	0,071	0,078	0,061	0,067
20	0,141	0,151	0,076	0,083	0,052	0,057	0,092	0,101	0,077	0,084	0,066	0,073
22	0,160	0,166	0,085	0,094	0,059	0,065	0,104	0,114	0,087	0,096	0,075	0,082
25	0,170	0,188	0,095	0,104	0,065	0,072	0,117	0,129	0,098	0,108	0,084	0,093
28	0,196	0,210	0,109	0,120	0,075	0,083	0,136	0,150	0,114	0,125	0,098	0,108
32	0,212	0,240	0,124	0,137	0,086	0,094	0,157	0,173	0,131	0,145	0,113	0,125
36	0,224	0,240	0,144	0,159	0,099	0,109	0,170	0,194	0,142	0,162	0,126	0,140
40	0,240	0,240	0,157	0,173	0,108	0,119	0,184	0,202	0,154	0,169	0,132	0,146
45	0,240	0,240	0,157	0,173	0,108	0,119	0,200	0,220	0,170	0,180	0,140	0,160
50	0,240	0,240	0,157	0,173	0,108	0,119	0,200	0,220	0,170	0,180	0,140	0,160

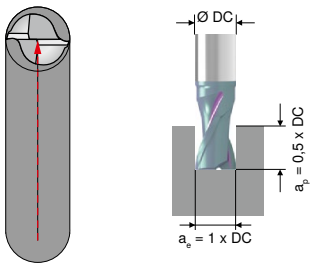
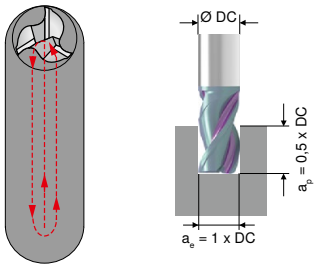
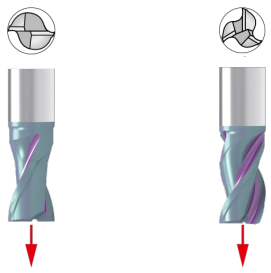
Attention:
In the case of uncoated milling cutters climb milling is preferred to conventional milling. When using coated milling cutters climb milling is necessary in order to achieve optimum results.

Feed rate correction:
Please multiply the f_z value in the table above with the corresponding **correction factor Kf f_z** from the table on → **page 40**.

In general the following is valid:
f_z (milling) = f_z x Kf f_z
f_z (drilling) = f_z (milling) ÷ no. of teeth

Feed per tooth when milling parallel key slots with HSS slot drills

Appoximate values (in mm) for the feed per tooth (f_z)

	Full slot milling (in one cut)		Profile slot milling (internal profile milling)				Circular ramping			
										
			Roughing cut		Finishing cut					
	f_z in mm		f_z in mm				f_z in mm			
Ø DC mm	uncoated	coated	uncoated	coated	uncoated	coated	uncoated	coated	uncoated	coated
2	0,005	0,006	0,005	0,006	0,008	0,009	0,003	0,003	0,002	0,002
3	0,009	0,010	0,009	0,010	0,015	0,016	0,004	0,005	0,003	0,003
4	0,012	0,013	0,012	0,013	0,022	0,024	0,006	0,007	0,004	0,004
5	0,016	0,017	0,016	0,017	0,030	0,033	0,008	0,009	0,005	0,006
6	0,020	0,022	0,020	0,022	0,039	0,043	0,010	0,011	0,007	0,007
8	0,026	0,029	0,026	0,029	0,055	0,061	0,013	0,014	0,009	0,010
10	0,034	0,037	0,034	0,037	0,075	0,082	0,017	0,019	0,011	0,012
12	0,040	0,044	0,040	0,044	0,093	0,101	0,020	0,022	0,013	0,015
14	0,049	0,054	0,049	0,054	0,117	0,118	0,024	0,027	0,016	0,018
16	0,056	0,062	0,056	0,062	0,135	0,135	0,028	0,031	0,019	0,021
18	0,065	0,072	0,065	0,072	0,151	0,151	0,033	0,036	0,022	0,024
20	0,071	0,078	0,071	0,078	0,167	0,167	0,035	0,039	0,024	0,026
22	0,080	0,088	0,080	0,088	0,184	0,184	0,040	0,044	0,027	0,029
25	0,089	0,098	0,089	0,098	0,208	0,208	0,044	0,049	0,030	0,033
28	0,103	0,113	0,103	0,113	0,233	0,233	0,051	0,056	0,034	0,037
32	0,118	0,130	0,118	0,130	0,260	0,260	0,060	0,065	0,040	0,043
36	0,130	0,143	0,130	0,143	0,260	0,260	0,060	0,065	0,040	0,043
40	0,130	0,143	0,130	0,143	0,260	0,260	0,060	0,065	0,040	0,043
45	0,130	0,143	0,130	0,143	0,260	0,260	0,060	0,065	0,040	0,043
50	0,130	0,143	0,130	0,143	0,260	0,260	0,060	0,065	0,040	0,043

Attention:
In the case of uncoated milling cutters climb milling is preferred to conventional milling. When using coated milling cutters climb milling is necessary in order to achieve optimum results.

Feed rate correction:
Please multiply the f_z value in the table above with the corresponding **correction factor Kf f_z** from the table on → **page 40.**

In general the following is valid:
f_z (milling) = f_z x Kf f_z
f_z (drilling) = f_z (milling) ÷ no. of teeth

Cutting data – form cutters

		50 241 ...			50 240 ...					50 234 ...					50 248 ...				● 1st choice		○ suitable
		Ø DC 21–25 mm	Ø DC 28–36 mm	Ø DC 40–45 mm	Ø DC 11–16 mm	Ø DC 18–22 mm	Ø DC 25–32 mm	Ø DC 36–45 mm	Ø DC 50–60 mm		Ø DC 10–17 mm	Ø DC 19–26 mm	Ø DC 28–33 mm	Ø DC 33–46 mm	Ø DC 8–11 mm	Ø DC 12–24 mm	Ø DC 26–34 mm	Ø DC 46–48 mm	Emulsion	Compressed air	MMS
Index	v_c m/min	f_z mm			f_z mm					v_c m/min	f_z mm				f_z mm						
1.1	28	0,07	0,1	0,12	0,015	0,03	0,03	0,03	0,04	28	0,02	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
1.2	28	0,07	0,1	0,12	0,015	0,03	0,03	0,03	0,04	28	0,02	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
1.3	28	0,07	0,1	0,12	0,015	0,03	0,03	0,03	0,04	28	0,02	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
1.4	28	0,07	0,1	0,12	0,015	0,03	0,03	0,03	0,04	28	0,02	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
1.5	28	0,07	0,1	0,12	0,015	0,03	0,03	0,03	0,04	28	0,02	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
1.6	22	0,06	0,08	0,1	0,015	0,03	0,03	0,03	0,04	22	0,02	0,03	0,035	0,045	0,025	0,055	0,08	0,1	●		
1.7	22	0,06	0,08	0,1	0,015	0,03	0,03	0,03	0,04	22	0,02	0,03	0,035	0,045	0,025	0,055	0,08	0,1	●		
1.8																					
1.9	20	0,06	0,08	0,1	0,015	0,03	0,03	0,03	0,04	20	0,02	0,03	0,035	0,045	0,025	0,055	0,08	0,1	●		
1.10																					
1.11																					
1.12																					
1.13																					
1.14																					
1.15																					
1.16																					
2.1	10	0,06	0,08	0,1	0,01	0,025	0,025	0,025	0,03	10	0,02	0,025	0,03	0,04	0,02	0,045	0,08	0,09	●		
2.2	10	0,06	0,08	0,1	0,01	0,025	0,025	0,025	0,03	10	0,02	0,025	0,03	0,04	0,02	0,045	0,08	0,09	●		
2.3	10	0,06	0,08	0,1	0,01	0,025	0,025	0,025	0,03	10	0,02	0,025	0,03	0,04	0,02	0,045	0,08	0,09	●		
2.4																					
2.5																					
2.6	10	0,06	0,08	0,1	0,01	0,025	0,025	0,025	0,03	10	0,02	0,025	0,03	0,04	0,02	0,045	0,08	0,09	●		
2.7																					
3.1	28	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	24	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
3.2																			●		
3.3	22	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	22	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
3.4	20	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	20	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
3.5	20	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	20	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
3.6	15	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	15	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12			
3.7	20	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	20	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
3.8	15	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	15	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12			
4.1	100	0,1	0,12	0,15	0,02	0,045	0,045	0,045	0,055	90	0,03	0,04	0,06	0,07	0,035	0,07	0,14	0,15			
4.2	100	0,1	0,12	0,15	0,02	0,045	0,045	0,045	0,055	90	0,03	0,04	0,06	0,07	0,035	0,07	0,14	0,15	●		
4.3	80	0,09	0,11	0,13	0,015	0,04	0,035	0,04	0,045	80	0,03	0,035	0,045	0,055	0,03	0,06	0,12	0,12	●		
4.4	60	0,09	0,11	0,13	0,015	0,04	0,035	0,04	0,045	60	0,03	0,035	0,045	0,055	0,03	0,06	0,12	0,12	●		
4.5																					
4.6	25	0,08	0,1	0,12	0,015	0,04	0,035	0,03	0,035	25	0,02	0,035	0,045	0,055	0,03	0,06	0,12	0,12	●		
4.7	20	0,08	0,1	0,12	0,015	0,04	0,035	0,03	0,035	20	0,02	0,035	0,045	0,055	0,03	0,06	0,12	0,12	●		
4.8																					
4.9																					
4.10																					
4.11	50	0,09	0,11	0,13	0,015	0,03	0,03	0,03	0,04	45	0,02	0,035	0,045	0,055	0,03	0,06	0,12	0,12	●		
4.12	25	0,09	0,11	0,13	0,015	0,03	0,03	0,03	0,04	25	0,02	0,035	0,045	0,055	0,03	0,06	0,12	0,12	●		
4.13	80	0,12	0,15	0,18	0,025	0,06	0,055	0,055	0,07	80	0,04	0,05	0,07	0,09	0,045	0,1	0,18	0,18	●		
4.14	65	0,12	0,15	0,18	0,025	0,06	0,055	0,055	0,07	65	0,04	0,05	0,07	0,09	0,045	0,1	0,18	0,18	●		
4.15																					
4.16	70	0,1	0,12	0,15	0,018	0,04	0,03	0,035	0,045	70	0,03	0,035	0,05	0,06	0,025	0,06	0,1	0,12	●		
4.17																					
4.18																					
4.19																					
5.1																					
5.2																					
5.3																					
5.4																					
5.5																					
5.6																					
5.7																					
5.8																					
5.9	20	0,06	0,08	0,1	0,012	0,025	0,025	0,025	0,035	20	0,015	0,025	0,035	0,045	0,02	0,05	0,07	0,09			
5.10																					
5.11																					
6.1																					
6.2																					
6.3																					
6.4																					
6.5																					

The cutting data depends largely on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

13

Cutting data – form cutters

		50 245 ... / 50 246 ...			50 360 ...					50 362 ...				● 1st choice		○ suitable
		Ø DC 16 mm a_e= 3,2	Ø DC 20 mm a_e= 4	Ø DC 25 mm a_e= 5		Ø DC 50 mm a_e= 5	Ø DC 63 mm a_e= 6,3	Ø DC 80 mm a_e= 8	Ø DC 100 mm a_e= 10	Ø DC 40–50 mm	Ø DC 63 mm	Ø DC 80 mm	Ø DC 100 mm			
Index	v_c m/min	f_z mm			v_c m/min	f_z mm				f_z mm				Emulsion	Compressed air	MMS
1.1	28	0,01	0,015	0,018	22	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
1.2	28	0,01	0,015	0,018	22	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
1.3	28	0,01	0,015	0,018	22	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
1.4	28	0,01	0,015	0,018	22	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
1.5	28	0,01	0,015	0,018	22	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
1.6	22	0,01	0,015	0,018	20	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
1.7	22	0,01	0,015	0,018	20	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
1.8																
1.9	20	0,01	0,015	0,015	20	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
1.10																
1.11																
1.12																
1.13																
1.14																
1.15																
1.16																
2.1	10	0,007	0,01	0,012	10	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
2.2	10	0,007	0,01	0,012	10	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
2.3	10	0,007	0,01	0,012	10	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
2.4																
2.5																
2.6	10	0,007	0,01	0,015										●		
2.7																
3.1	24	0,01	0,012	0,015	19	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
3.2					12	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
3.3	22	0,01	0,012	0,015	15	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
3.4	20	0,01	0,012	0,015	12	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
3.5	20	0,01	0,012	0,015	16	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
3.6	15	0,01	0,012	0,015												
3.7	20	0,01	0,012	0,015	13	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
3.8	15	0,01	0,012	0,015												
4.1	90	0,01	0,015	0,02												
4.2	90	0,01	0,015	0,02	70	0,012	0,015	0,02	0,024	0,008	0,012	0,014	0,018	●		
4.3	80	0,01	0,015	0,02	60	0,012	0,015	0,02	0,024	0,008	0,012	0,014	0,018	●		
4.4	60	0,01	0,015	0,02	60	0,012	0,015	0,02	0,024	0,008	0,012	0,014	0,018	●		
4.5																
4.6	25	0,01	0,015	0,02	18	0,01	0,012	0,015	0,018	0,005	0,008	0,01	0,012	●		
4.7	20	0,01	0,015	0,02	20	0,01	0,012	0,015	0,018	0,005	0,008	0,01	0,012	●		
4.8																
4.9																
4.10																
4.11	45	0,01	0,015	0,02	40	0,01	0,012	0,015	0,018	0,005	0,008	0,01	0,012	●		
4.12	25	0,01	0,015	0,015	20	0,01	0,012	0,015	0,018	0,005	0,008	0,01	0,012	●		
4.13	80	0,018	0,02	0,025	65	0,015	0,02	0,025	0,03	0,008	0,012	0,018	0,022	●		
4.14	65	0,018	0,02	0,025	60	0,015	0,02	0,025	0,03	0,008	0,012	0,018	0,022	●		
4.15																
4.16	70	0,01	0,015	0,0175	45	0,01	0,012	0,015	0,018	0,005	0,008	0,01	0,01	●		
4.17																
4.18																
4.19																
5.1																
5.2																
5.3																
5.4																
5.5																
5.6																
5.7																
5.8																
5.9	20	0,008	0,01	0,015	20	0,008	0,01	0,012	0,016	0,005	0,007	0,009	0,012	●		
5.10																
5.11																
6.1																
6.2																
6.3																
6.4																
6.5																

The cutting data depends largely on the external conditions, e.g. stability of the tools and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data – side and face cutters

		uncoated						● 1st choice		○ suitable
		Ø DC 50 mm	Ø DC 63 mm	Ø DC 80 mm	Ø DC 100 mm	Ø DC 125 mm	Ø DC 160 mm			
Index	v_c in m/min	f_z mm						Emulsion	Compressed air	MMS
1.1	30–40	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,095–0,11	0,1–0,12	●		
1.2	30–40	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,095–0,11	0,1–0,12	●		
1.3	30–40	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,095–0,11	0,1–0,12	●		
1.4	20–30	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
1.5	20–25	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,095–0,11	0,1–0,12	●		
1.6	15–30	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
1.7	20–25	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
1.8	10–15	0,03–0,04	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	●		
1.9	18–25	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
1.10	15–30	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
1.11	12–18	0,03–0,04	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	●		
1.12	15–20	0,03–0,04	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	●		
1.13										
1.14										
1.15	10–15	0,03–0,04	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	●		
1.16	10–15	0,03–0,04	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	●		
2.1	12–18	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
2.2	10–15	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
2.3	8–12	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
2.4	7–10	0,03–0,04	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	●		
2.5	5–8	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
2.6	10–15	0,03–0,04	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	●		
2.7										
3.1	20–30	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
3.2	18–25	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
3.3	18–25	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
3.4	15–20	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
3.5	25–35	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
3.6	18–25	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
3.7	25–35	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
3.8	18–25	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
4.1	150–180	0,06–0,075	0,075–0,09	0,009–0,1	0,01–0,12	0,12–0,135	0,135–0,15	●		
4.2	100–130	0,06–0,075	0,075–0,09	0,009–0,1	0,01–0,12	0,12–0,135	0,135–0,15	●		
4.3	80–100	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,095–0,11	0,1–0,12	●		
4.4	40–60	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,095–0,11	0,1–0,12	●		
4.5										
4.6	30–50	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,095–0,11	0,1–0,12	●		
4.7	90–110	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
4.8	5–10	0,03–0,04	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	●		
4.9										
4.10										
4.11	80–100	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
4.12	80–120	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
4.13	20–30	0,08–0,1	0,1–0,12	0,12–0,14	0,14–0,16	0,16–0,18	0,18–0,2	●		
4.14	30–40	0,08–0,1	0,1–0,12	0,12–0,14	0,14–0,16	0,16–0,18	0,18–0,2	●		
4.15										
4.16	90–120	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,095–0,11	0,1–0,12		●	
4.17										
4.18										
4.19										
5.1	5–10	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
5.2										
5.3										
5.4										
5.5										
5.6										
5.7										
5.8										
5.9	10–15	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
5.10	10–15	0,04–0,05	0,05–0,06	0,06–0,07	0,07–0,08	0,08–0,09	0,09–0,1	●		
5.11										
6.1										
6.2										
6.3										
6.4										
6.5										

Feed correction factor (Kf f_z) for side and face cutters in relation to the cutting depth (a_e)

a_e	Kf f_z
0,05 x DC	1,4
0,1 x DC	1,0
0,15 x DC	0,8
0,2 x DC	0,7
0,25 x DC	0,6

The indicated feed rates apply to straight pitched cutters with a cutting depth of 0.1 x DC! With cross-pitched cutters the feed rate is to be reduced by 50 %!

13

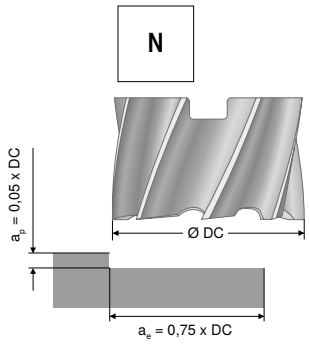
Cutting data – face mills

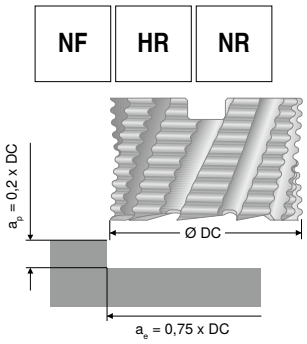
		uncoated	Ti100 Pro	● 1st choice		○ suitable
				Emulsion	Compressed air	MMS
Index	Kf f_z	v_c in m/min				
1.1	**1,2**	**25–30**	**50–60**	●		
1.2	**1,2**	**25–30**	**45–55**	●		
1.3	**1,2**	**25–30**	**45–55**	●		
1.4	**1**	**20–25**	**40–50**	●		
1.5	**1,2**	**20–25**	**40–50**	●		
1.6	**1**	**15–30**	**30–40**	●		
1.7	**1,2**	**20–25**	**40–50**	●		
1.8	**0,8**	**10–15**	**20–30**	●		
1.9	**1,2**	**18–25**	**35–45**	●		
1.10	**1**	**15–30**	**30–40**	●		
1.11	**0,8**	**12–18**	**25–35**	●		
1.12	**0,8**	**15–20**	**30–40**	●		
1.13						
1.14						
1.15	**0,8**	**10–15**	**20–30**	●		
1.16	**0,8**	**10–15**	**20–30**	●		
2.1	**1**	**12–18**	**20–25**	●		
2.2	**1**	**10–15**	**15–20**	●		
2.3	**1**	**8–12**	**20–25**	●		
2.4	**0,9**	**7–10**	**15–20**	●		
2.5	**1**	**5–8**	**10–15**	●		
2.6	**1**	**10–15**	**15–20**	●		
2.7						
3.1	**1**	**20–30**	**30–40**	●		
3.2	**1**	**18–25**	**30–35**	●		
3.3	**1**	**18–25**	**30–35**	●		
3.4	**1**	**15–20**	**25–30**	●		
3.5	**1**	**25–35**	**35–40**	●		
3.6	**1**	**18–25**	**30–35**	●		
3.7	**1**	**25–35**	**35–40**	●		
3.8	**1**	**18–25**	**30–35**	●		
4.1	**1,5**	**150–180**		●		
4.2	**1,5**	**100–130**		●		
4.3	**1,3**	**80–100**		●		
4.4	**1,3**	**40–60**		●		
4.5						
4.6	**1,2**	**30–50**	**60–80**	●		
4.7	**1,1**	**90–110**	**120–150**	●		
4.8	**0,9**	**5–10**	**10–15**	●		
4.9						
4.10						
4.11	**1,1**	**80–100**	**110–140**	●		
4.12	**1,1**	**80–120**	**120–150**	●		
4.13	**2**	**20–30**	**25–45**	●		
4.14	**2**	**30–40**	**50–70**	●		
4.15						
4.16	**1,3**	**90–120**	**120–140**		●	
4.17	**1**		**30–40**		●	
4.18	**1,1**		**15–25**	●		
4.19						
5.1	1,1	5–10	10–15	●		
5.2						
5.3						
5.4						
5.5						
5.6						
5.7						
5.8						
5.9	1	10–15	15–25	●		
5.10	1,1	10–15	15–20	●		
5.11	0,8		10–15	●		
6.1						
6.2						
6.3						
6.4						
6.5						

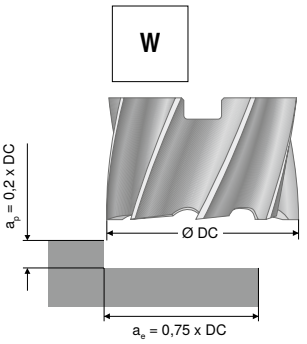
Kf f_z = Correction factor for feed per tooth

Feed per tooth for HSS face mills

Appoximate values (in mm) for the feed per tooth (f_z)







	f_z in mm		f_z in mm		f_z in mm
Ø DC mm	uncoated	Ti100 Pro	uncoated	Ti100 Pro	uncoated
40	0,049	0,054	0,064	0,070	0,060
50	0,055	0,060	0,071	0,078	0,066
63	0,061	0,067	0,079	0,087	0,074
80	0,065	0,071	0,084	0,092	0,078
100	0,059	0,065	0,076	0,084	0,071

Feed rate correction:
Please multiply the f_z value in the table above with the corresponding **correction factor Kf f_z** from the table on → **page 46**.

In general the following is valid:
f_z (milling) = f_z x Kf f_z
f_z (drilling) = f_z (milling) ÷ no. of teeth

Formula for cutting data calculation

Designation	Abbreviation	Unit	Formula
Number of revolutions	n	min^{-1}	$n = \frac{v_c \times 1000}{DC \times \pi}$
Cutting speed	v_c	m/min	$v_c = \frac{DC \times \pi \times n}{1000}$
Feed per tooth	f_z	mm	$f_z = \frac{v_f}{ZEFP \times n}$ $f_z = h_m \times \sqrt{\frac{DC}{a_e}}$
Feed per revolution	f	mm	$f = f_z \times ZEFP$
Feed rate	v_f	mm/min	$v_f = f_z \times ZEFP \times n$
Average chip thickness	h_m	mm	$h_m = f_z \times \sqrt{\frac{a_e}{DC}}$

ZEFP = Number of teeth
a_e = Cutting width (for side milling cutter cutting depth)
DC = Cutting diameter

Coating

Ti100 Pro

- ▲ Ti multilayer coating
- ▲ HV0.05 = 3500
- ▲ Coefficient of friction (against steel) = 0.7
- ▲ Maximum application temperature: 900 °C

13

New products for machining technicians

NEW MonsterMill – TCR

TCR

→ Page 23–27

High-performance milling cutter for machining titanium and heat-resistant materials

---

NEW MonsterMill – HCR

HCR

→ Page 28–33

The specialist for hardened steels

NEW CircularLine – CCR-Ti

CCR Ti

→ Page 46

Trochoidal milling cutter for titanium and heat-resistant materials

---

NEW CircularLine – CCR-H

CCR H

→ Page 47

Trochoidal milling cutter for hardened steels

NEW MultiChange – Torus cutter

AL

→ Page 119

High-volume milling cutter for aluminium machining

NEW MultiChange – Shoulder mill

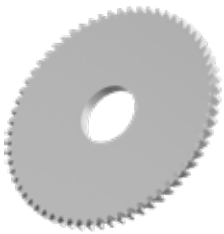
PCR UNI | PCR ALU

→ Page 120

PCR plunge milling cutter – now also with MultiChange interface

---

NEW Circular saw blades



→ Page 228–230

Solid drilling and bore machining

1 HSS drilling

2 Solid carbide drilling

3 Indexable insert drilling

4 Reaming and Countersinking

5 Spindle Tooling

Threading

6 Taps and thread formers

7 Circular and Thread Milling

8 Thread turning

Turning

9 Turning Tools

10 EcoCut

11 Grooving Tools

12 Miniature turning tools

Milling

13 HSS Milling Cutters

14 Solid Carbide milling cutters 14

15 Milling tools with indexable inserts

Tool Clamping

16 Adapters

17 Accessories

18 Material examples and article no. index

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WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

WNT \ Standard

Quality tools for standard applications.

The quality tools of the **WNT Standard** product line are high quality, powerful and reliable and enjoy the highest trust of our customers worldwide. Tools from this product line are the first choice for many standard applications and guarantee optimal results.

Symbol explanation

Shank

Shank type

Length: extra short / short / medium / long / extra long

Central internal coolant

Lateral internal coolant

Cutting edge preparation

Sharp

Chamfer (CHW = chamfer width in mm)

Radius

Full Radius

Application

High volume machining

High-feed milling

Hard materials

Machining example

The red arrows describe the possible feed directions

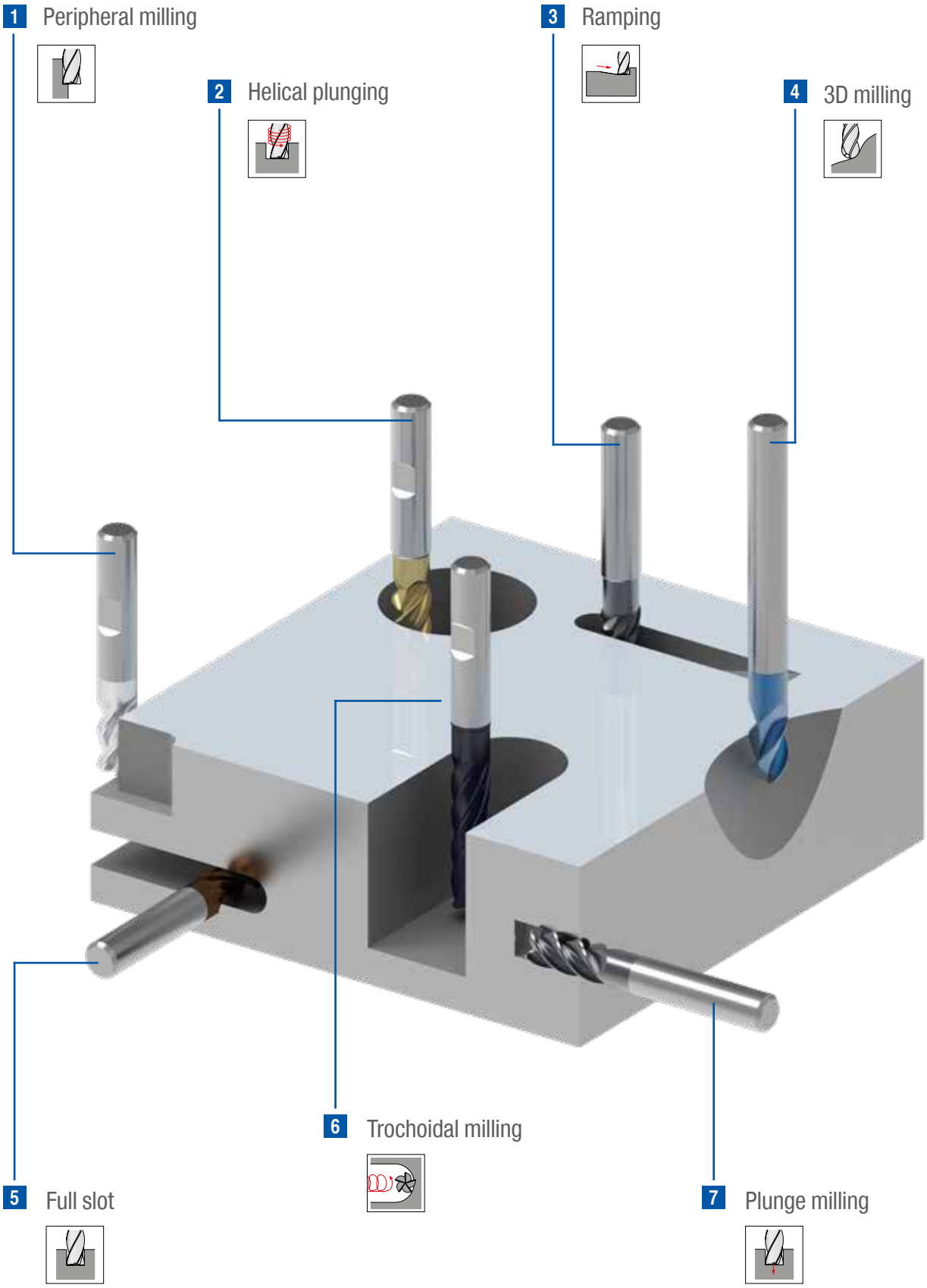
Number of teeth

Cutting geometry
λ_s = Helix Angle
γ_s = Rake Angle

Trochoidal milling

● = **Main Application**
○ = Extended application

Toolfinder for High Performance Milling Cutters



Toolfinder for High Performance Milling Cutters

	1 Peripheral milling	2 Helical plunging	3 Ramping	4 3D milling
Steel	S-Cut MonsterMill – SCR SilverLine	MCR MonsterMill – PCR	MCR MonsterMill – PCR	MonsterMill – SCR SilverLine
Stainless steel	S-Cut MonsterMill – ICR SilverLine	MonsterMill – PCR MonsterMill – ICR	MonsterMill – PCR MonsterMill – ICR	SilverLine
Cast iron	S-Cut MonsterMill – SCR SilverLine	MCR MonsterMill – PCR	MCR MonsterMill – PCR	MonsterMill – SCR SilverLine
Non-ferrous metals	AluLine	MonsterMill – PCR AluLine	MonsterMill – PCR AluLine	AluLine
Heat resistant alloys	MonsterMill – ICR MonsterMill – TCR	MonsterMill – ICR MonsterMill – TCR	MonsterMill – ICR MonsterMill – TCR	MonsterMill – TCR
Hardened steel < 55 HRC	BlueLine	BlueLine	BlueLine	BlueLine
Hardened steel > 55 HRC	MonsterMill – HCR	MonsterMill – HCR	MonsterMill – HCR	MonsterMill – HCR

MonsterMill – SCR
Page 13–20

▲ THE specialist for machining steel

SCR

HA
HB

ZEFP: 3–6
Ø DC mm: 3–20

MonsterMill – ICR
Page 21+22

▲ THE specialist for machining stainless steel

ICR

HB

ZEFP: 3–5
Ø DC mm: 1,5–20

MonsterMill – TCR
Page 23–27

▲ THE specialist for machining titanium

TCR

HB

ZEFP: 2–5
Ø DC mm: 2–20

MonsterMill – HCR
Page 28–33

▲ THE specialist for finish machining up to 70 HRC hardness

HCR

HA

ZEFP: 2–4
Ø DC mm: 0,2–12

MonsterMill – PCR
Page 34–36

▲ THE specialist for ramping and helical milling
▲ Available versions: PCR-UNI, PCR-ALU

PCR

HB

ZEFP: 4
Ø DC mm: 5–20

MonsterMill – MCR
Page 37

▲ THE specialist for rough machining

MCR

HB

ZEFP: 3–4
Ø DC mm: 1–20

	5 Full slot	6 Trochoidal milling	7 Plunge milling
	S-Cut MonsterMill – SCR SilverLine	CircularLine	MonsterMill – PCR
	S-Cut MonsterMill – ICR SilverLine	CircularLine	
	S-Cut MonsterMill – SCR SilverLine	CircularLine	MonsterMill – PCR
	AluLine	CircularLine	MonsterMill – PCR
	MonsterMill – ICR MonsterMill – TCR	CircularLine	
	BlueLine	CircularLine	
		CircularLine	

CircularLine
Page 38–47

- THE specialist for trochoidal milling
- Available versions: CCR-UNI, CCR-AL, CCR-Ti, CCR-H

CCR

HB

ZEFP: 4–6

Ø DC mm: 6–20

AluLine
Page 48–69

- THE specialist for machining non-ferrous metals

W

HA
HB

ZEFP: 2–6

Ø DC mm: 2–25

SilverLine
Page 70–81

- THE all-rounder for universal use

N

HA
HB

ZEFP: 3–6

Ø DC mm: 3–25

S-Cut
Page 82–87

- All-rounder with soft cut and low power consumption

SC UNI

HB

ZEFP: 4–5

Ø DC mm: 3–25

BlueLine
Page 88–113

- For all types of machining in hardened steels up to 65 HRC

H

HA
HB

ZEFP: 2–10

Ø DC mm: 0,1–20

14

Overview High Performance Milling Cutters

MonsterMill

	Tool type	Number of teeth ZEFP	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Tool design	coated	uncoated	WNT \ Performance
	SCR	4–6	3–20	●	○	●	○	○	○		■	■		■	HPC	■		13–18
	SCR	3–4	3–16	●	○	●	○	○	○				■	■	HPC	■		19
	SCR	4	3–16	●		●	○		○			■		■	HPC	■		20
	ICR	3–5	1,5–20	○	●	○	○	●	○		■			■	HPC	■		21+22
	TCR	4–5	4–20		○			●				■		■	HPC	■	□	23–25
	TCR	4	2–16		○			●					■	■		■	□	26
	TCR	2–5	2–16		○			●				■		■	HPC	■	□	27
	HCR	2–4	0,2–12	○					●			■		■		■		28–30
	HCR	2–4	0,2–12	○					●				■	■		■		31–33
	PCR UNI	4	5,7–20	●	○	●						■		■	HPC	■		34+35
	PCR ALU	4	5–20				●					■		■	HPC	■		36
	MCR	3–4	1–20	●	○	●	○	○	○		■			■	HPC	■		37

CircularLine

	CCR UNI	5–6	6–20	●	○	●		○			■	■		■	HPC	■		38–42
	CCR AL	4	6–20				●				■	■		■		■		43–45
	CCR Ti	5	6–20		○			●				■		■	HPC	■	□	46
	CCR H	6	6–20						●			■		■		■		47

Overview High Performance Milling Cutters

	Tool type	Number of teeth ZEFP	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Tool design	coated	uncoated	WNT \ Performance
AluLine																		
	W	2	2–20				● HA				■			■		■	□	48+49
	W	3	3–20				● HA			■				■		■	□	50+51
	W	3	3–20				● HA		HB		■			■	HPC	■		52–54
	W	3	5–20				● HA		HB			■		■			□	55+56
	W	3	3–20				● HA					■		■	HPC	■		57–59
	WF	3	5–20				● HA		HB			■		■		■		60
	WR	3	6–20				● HA		HB		■			■	HPC	■		61+62
	W	4	3–25				● HA		HB		■			■	HPC	■	□	63–67
	W	6	6–20				● HA			■				■	HPC	■		68
	W	2	3–20				● HA						■	■			□	69
SilverLine																		
	N	3	3–20	●	●	○	○	●	HB		■	■		■	HPC	■		70+71
	N	4	3–20	●	●	●	○	●	HB		■	■		■	HPC	■		72–77
	N	6	6–25	●	●	○	○	●	HA	■				■		■		78
	N	3	4–20	●	●	○	○	●	HA				■	■	HPC	■		79
	H	4	6–20	●		●	○		● HA			■		■	HPC	■		80+81
S-Cut																		
	SC UNI	4	3–25	●	●	●	○	○	○ HB	■	■	■		■	HPC	■		82–86
	SC UNI	5	6–20	●	●	●		○	HB		■			■	HPC	■		87

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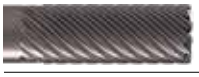
Overview High Performance Milling Cutters

	Tool type	Number of teeth ZEFP	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Tool design	coated	uncoated	WNT \ Performance
BlueLine																		
	H	2	0,2–3	● HA					●	■				■		■		88–90
	H	2	0,2–3	● HA					●				■	■		■		91–93
	H	2	0,4–3	● HA					●			■		■		■		94–97
	H	2	0,5–20	● HA					●		■			■		■		98
	H	4–6	1–20	● HA					● HB			■		■		■		99–101
	H	4–10	2–20	● HA					● HB	■		■		■		■		102+103
	H	2	0,1–20	● HA					● HB				■	■		■		104–108
	H	3	3–12	● HA					●				■	■		■		109
	H	4	2–20	○ HA					● HB				■	■		■		110
	H	2	0,5–16	● HA					● HB			■		■		■		111–113
Micro-Cutter																		
	N	2	0,2–2	● HA		●	●	●	●	■				■		■		114
	N	2	0,2–2	● HA		●	●	●	●				■	■		■		115+116
	N	2	0,5–2	● HA		●	●	●	●			■		■		■		117
MultiChange																		
	PDC	2	8–16				●				■						□	119
	AL	3	10–20				●					■				■		119
	PCR	4	9,7–20	●	○	●	●					■			HPC	■		120
	N	3–6	8–20	●	○	●	●		○	■	■	■	■		HPC	■		119–123

End Mills Overview

End Mills with Finishing Geometry

	Tool type	Number of teeth	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Tool design	coated	uncoated	WNT \ Standard
	W	2	0,2–25	HA			●		HB	■	■	■		■	HPC	■	□	124–132
	W	3	3–25	HA			●		HB	■		■		■	HPC	■	□	133–135
	W	4	6–20	HA			●		HB	■				■	HPC	■	□	136+137
	W	5–7	6–20	HA			●			■				■	HPC	■	□	138
	N	2	0,2–20	●	○	●	○	○	○	■	■			■		■	□	139–146
	N	3	3–20	○	●	○	○	●	HB	■				■			□	147
	N	3	0,5–20	●	●	●	●	●	○	■	■			■		■	□	148–152
	N	4	1,5–20	●	○	●	○	○	○	■	■			■	HPC	■	□	153–155
	N	4	3–25	●	○	●	○	○	○		■			■		■	□	156
	N	4	2–12	○	●	○	●	●	○			■		■	HPC	■		157
	N	4	3–20	●	○	●	○	○	○			■		■		■		158
	N	4	3–20	●	●	●	○	●	HB	■	■	■		■	HPC	■		159–163
	N	6–8	4–32	○	●	○	●	●	●		■	■		■		■	□	164–166
	N	5–13	4–25	○	●	○	○	●			■			■		■		167
	N	8–16	6–20	○	●	○	●	●	○	■				■		■		168
	H	4	4–20	●					○		■	■		■		■		169+170
	H	6–8	4–32	○	●	○	●	●	●	■	■			■		■		171+172

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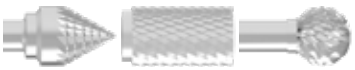
Overview of end milling, ball-nosed and torus cutters

	Tool type	Number of teeth ZEFP	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Tool design	coated	uncoated	WNT \ Standard
End Mills with Roughing and Finishing Geometry																		
	WF	4	5–20				●	○	HB							■		173
	NTR	3–4	6–20	●	○	●	○	○	○ HB							■		174
End Mills with Roughing Geometry																		
	WR	3	3–20				●		HA HB						HPC	■		175
	NR	4–6	4–25	●	●	●	○	●	HB							■		176–178
	HR	4–5	6–25	●	●	●		○	HA HB							■		179–181
Ball Nosed End Mills with Finishing Geometry																		
	W	2	0,2–20				●	○	HA						HPC	■	□	182–187
	N	2	0,1–20	●	○	●	○	○	○ HA HB							■	□	188–193
	N	2	1–12	●	○	●	○	○	○ HA							■		194
	N	2	3–20	●	●	○	○	●	HB						HPC	■		195
	N	4	3–20	●	●	○	●	●	○ HA HB						HPC	■		196–198
	H	2	0,2–20	●	○	●	○	○	○ HA							■		199–201
Ball Nosed End Mills with Roughing Geometry																		
	NR	4	6–20	●	○	●	○	○	HB							■		202
Torus Milling Cutters with Finishing Geometry																		
	W	2	0,2–12				●		HA							■		203–206
	W	2	2–12				●		HA							■		207
	W	4	4–12				●		HA							■		208+209
	N	2	0,5–16	●	○	●	○	○	○ HA							■		210
	H	2	0,2–12	●	○	●	○	○	○ HA							■		211–214
	H	4–8	3–16	●		○	○		● HA HB							■		215

Overview Special Milling Cutters

	Tool type	Number of teeth	Diameter in mm	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Tool design	coated	uncoated	WNT \ Performance / WNT \ Standard	
Intermediate Size Torus End Mills																			
	H	4	7–17	○ HA	●	○	●	●	○			■		■		■			216
High Feed Cutter																			
	N	4	6–16	● HA	○	○	○	○	●			■		■	HFC	■			217+218
Form / Chamfering and Die Sinking / Deburring Cutters																			
	W	1	3–6	○ HA	○	○	●	○									□		219
	N	4	4–12	● HB	○	●	○	○	○							■	□		220
	N	4	4–12	● HB	○	●	○	○	○							■	□		221
	N	4	3–12	● HA	○	●	○	○	○							■	□		222
	N	4	PRFRAD 0,5–6	● HA	○	●	○	○	○							■			223
	N	4–6	2–16	● HA	○	●	○	○	○ HB							■			224+225
			3–16	●	○	●	○	○	●								□		226+227
Circular saw blades																			
	NR	24–160	15–63	●	●	●	●	●	○								□		228–230

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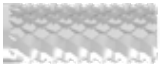
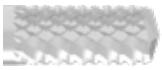
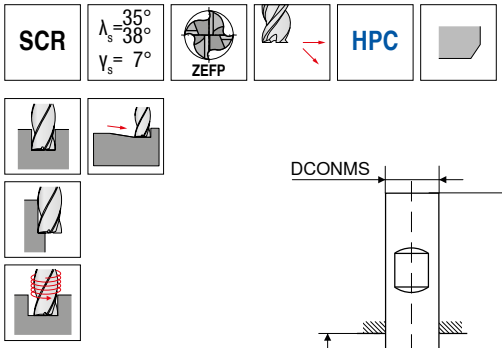
Overview Special Milling Cutters

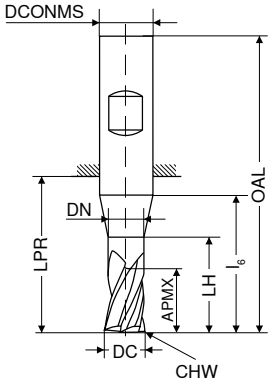
Plastics-, GFK-, CFK-Cutters

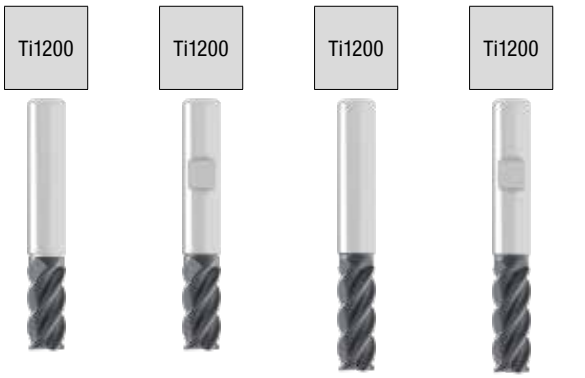
	Tool type	Number of teeth	Diameter in mm Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Sharp	Chamfer	Radius	Full Radius	Length	Tool design	coated	uncoated	WNT \ Standard
	W		2–20				●										□	232
	W		2–20				●										□	233
	W		2–20				●									■		234
	W		5–44				●			■						■		235+236
	W	2	2–12				●									■		237
	W	1	1,5–20				●										□	238
	W	1	1,5–12				●									■		239
	W	2	2–12				●									■		240
	W	3	3–20				●						■			■		241
	N	2	2–12	●	○	●	○	○									□	242

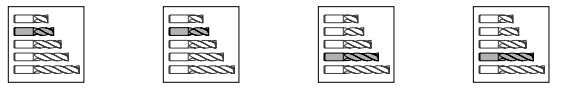
MonsterMill – End milling cutter

SCR | λ_s=35° γ_s= 7° | ZEFP | HPC









DIN 6527 | DIN 6527 | DIN 6527 | DIN 6527

HA | HB | HA | HB

V1 | V1 | V1 | V1

DC f8 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	Article no. 52 600 ... £		Article no. 52 601 ... £		Article no. 52 602 ... £		Article no. 52 603 ... £	
3.0	5	2.9	9	14	14	50	6	0.07	4	54.42	030	54.42	030				
3.0	8	2.9	14	20	22	58	6	0.07	4					54.42	030	54.42	030
3.5	5	3.4	9	14	14	50	6	0.07	4	54.42	035	54.42	035				
3.5	8	3.4	14	20	22	58	6	0.07	4					54.42	035	54.42	035
4.0	8	3.8	12	18	18	54	6	0.07	4	54.42	040	54.42	040				
4.0	11	3.8	18	20	22	58	6	0.07	4					54.42	040	54.42	040
4.5	9	4.3	12	18	18	54	6	0.07	4	55.61	045	55.61	045				
4.5	13	4.3	18	20	22	58	6	0.07	4					55.61	045	55.61	045
5.0	9	4.8	16	18	18	54	6	0.07	4	55.61	050	55.61	050				
5.0	13	4.8	19	20	22	58	6	0.07	4					55.61	050	55.61	050
5.5	9	5.3	16	18	18	54	6	0.07	4	53.76	055	53.76	055				
5.5	13	5.3	19	20	22	58	6	0.07	4					53.76	055	53.76	055
6.0	10	5.8		16	18	54	6	0.07	4	53.76	060	53.76	060				
6.0	13	5.8		20	22	58	6	0.07	4					53.76	060	53.76	060
6.5	12	6.3	18	20	23	59	8	0.07	4	71.55	065	71.55	065				
6.5	19	6.3	23	25	28	64	8	0.07	4					71.55	065	71.55	065
7.0	12	6.8	18	20	23	59	8	0.07	4	71.55	070	71.55	070				
7.0	19	6.8	23	25	28	64	8	0.07	4					71.55	070	71.55	070
7.5	12	7.3	18	20	23	59	8	0.12	4	71.55	075	71.55	075				
7.5	19	7.3	23	25	28	64	8	0.12	4					71.55	075	71.55	075
8.0	12	7.7		20	23	59	8	0.12	4	71.55	080	71.55	080				
8.0	19	7.7		25	28	64	8	0.12	4					71.55	080	71.55	080
8.5	15	8.2	22	24	27	67	10	0.20	4	93.41	085	93.41	085				
8.5	22	8.2	28	30	33	73	10	0.20	4					93.41	085	93.41	085
9.0	15	8.7	22	24	27	67	10	0.20	4	93.41	090	93.41	090				
9.0	22	8.7	28	30	33	73	10	0.20	4					93.41	090	93.41	090
9.5	15	9.2	22	24	27	67	10	0.20	4	93.41	095	93.41	095				
9.5	22	9.2	28	30	33	73	10	0.20	4					93.41	095	93.41	095
10.0	15	9.5		24	27	67	10	0.20	4	93.41	100	93.41	100				
10.0	22	9.5		30	33	73	10	0.20	4					93.41	100	93.41	100
11.0	18	10.5	24	26	28	73	12	0.20	4	147.71	110	147.71	110				
11.0	26	10.5	32	35	39	84	12	0.20	4					147.71	110	147.71	110
11.5	18	11.0	24	26	28	73	12	0.20	4	147.71	115	147.71	115				
11.5	26	11.0	32	35	39	84	12	0.20	4					147.71	115	147.71	115
12.0	18	11.5		26	28	73	12	0.20	4	147.71	120	147.71	120				
12.0	26	11.5		35	39	84	12	0.20	4					147.71	120	147.71	120
14.0	21	13.5		28	30	75	14	0.20	4	189.61	140	189.61	140				
14.0	26	13.5		35	39	84	14	0.20	4					189.61	140	189.61	140
15.0	24	14.5	30	32	35	83	16	0.20	4	234.27	150	234.27	150				
15.0	32	14.5	38	40	45	93	16	0.20	4					234.27	150	234.27	150
15.5	24	15.0	30	32	35	83	16	0.20	4	234.27	155	234.27	155				
15.5	32	15.0	38	40	45	93	16	0.20	4					234.27	155	234.27	155

Steel	●	●	●	●
Stainless steel	○	●	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

1) Cutter not suitable for full slot milling, use for finishing and trochoidal milling when slotting only!

→ v_c/f_z Page 244+245

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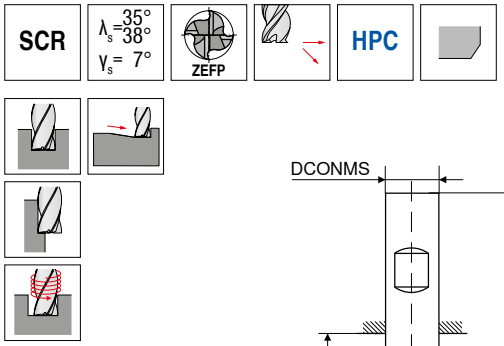
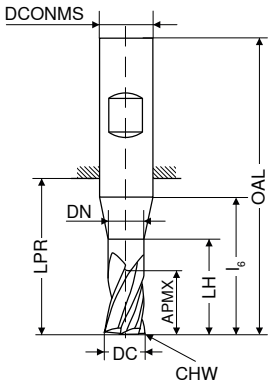
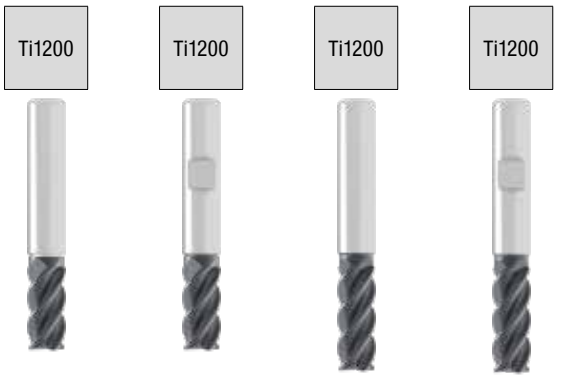
Continued on next page

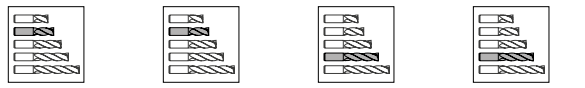
MonsterMill – End milling cutter

SCR | λ_s=35° γ_s= 7° | ZEFP | HPC









DIN 6527 | DIN 6527 | DIN 6527 | DIN 6527

HA | HB | HA | HB

V1 | V1 | V1 | V1

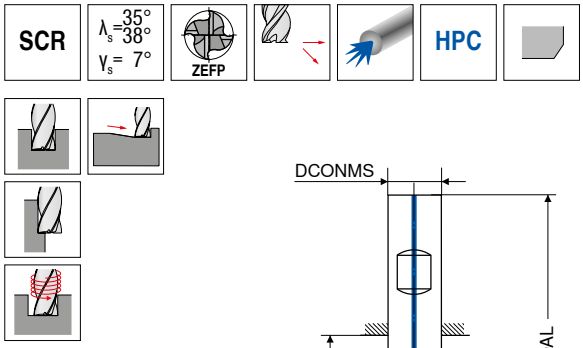
DC f8 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	Article no. 52 600 ... £		Article no. 52 601 ... £		Article no. 52 602 ... £		Article no. 52 603 ... £	
16.0	24	15.5		32	35	83	16	0.20	4	234.27	**160**	234.27	**160**				
16.0	24	15.5		32	35	83	16	0.20	5	246.54	**161** [1]	246.54	**161** [1]				
16.0	32	15.5		40	45	93	16	0.20	5					246.54	**161** [1]	246.54	**161** [1]
16.0	32	15.5		40	45	93	16	0.20	4					234.27	**160**	234.27	**160**
17.0	27	16.5	32	34	37	85	18	0.20	4	318.59	**170**	318.59	**170**				
17.0	32	16.5	48	50	52	100	18	0.20	4					318.59	**170**	318.59	**170**
18.0	27	17.5		34	37	85	18	0.20	4	318.59	**180**	318.59	**180**				
18.0	27	17.5		34	37	85	18	0.20	5	335.45	**181** [1]	335.45	**181** [1]				
18.0	32	17.5		50	52	100	18	0.20	5					335.45	**181** [1]	335.45	**181** [1]
18.0	32	17.5		50	52	100	18	0.20	4					318.59	**180**	318.59	**180**
19.0	30	18.5	38	40	43	93	20	0.30	4	361.41	**190**	361.41	**190**				
19.0	38	18.5	48	50	54	104	20	0.30	4					361.41	**190**	361.41	**190**
19.5	30	19.0	38	40	43	93	20	0.30	4	361.41	**195**	361.41	**195**				
19.5	38	19.0	48	50	54	104	20	0.30	4					361.41	**195**	361.41	**195**
20.0	30	19.5		40	43	93	20	0.30	4	361.41	**200**	361.41	**200**				
20.0	30	19.5		40	43	93	20	0.30	5	380.38	**201** [1]	380.38	**201** [1]				
20.0	38	19.5		50	54	104	20	0.30	5					380.38	**201** [1]	380.38	**201** [1]
20.0	38	19.5		50	54	104	20	0.30	4					361.41	**200**	361.41	**200**

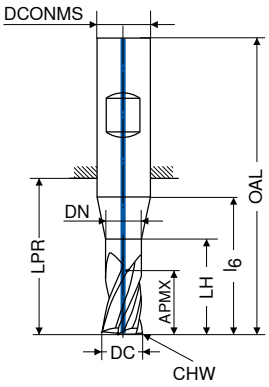
Steel	●	●	●	●
Stainless steel	○	●	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

1) Cutter not suitable for full slot milling, use for finishing and trochoidal milling when slotting only!

→ v_c/f_z Page 244+245

MonsterMill – End milling cutter





Ti1200

DIN 6527

HB

V1

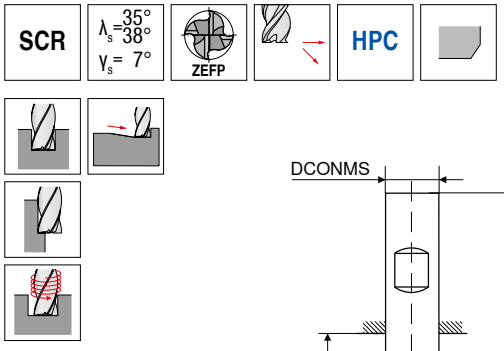
DC f8 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	Article no. 52 606 ... £	
3	8	2.9	14	20	22	58	6	0.07	4	66.68	**030**
4	11	3.8	18	20	22	58	6	0.07	4	66.68	**040**
5	13	4.8	19	20	22	58	6	0.07	4	67.86	**050**
6	13	5.8		20	22	58	6	0.07	4	66.01	**060**
8	19	7.7		25	28	64	8	0.12	4	86.18	**080**
10	22	9.5		30	33	73	10	0.20	4	110.67	**100**
12	26	11.5		35	39	84	12	0.20	4	175.51	**120**
14	26	13.5		35	39	84	14	0.20	4	241.78	**140**
16	32	15.5		40	45	93	16	0.20	4	296.46	**160**
18	32	17.5		50	52	100	18	0.20	4	410.17	**180**
20	38	19.5		50	54	104	20	0.30	4	475.79	**200**

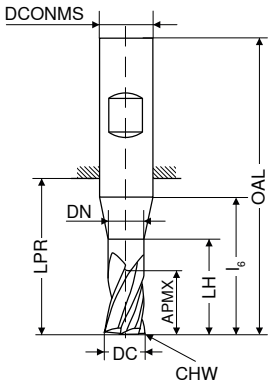
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

→ v_c/f_z Page 244+245

MonsterMill – End milling cutter

SCR | λ_s=35° γ_s= 7° | ZEFP | HPC





Factory standard | Factory standard

HB | HB

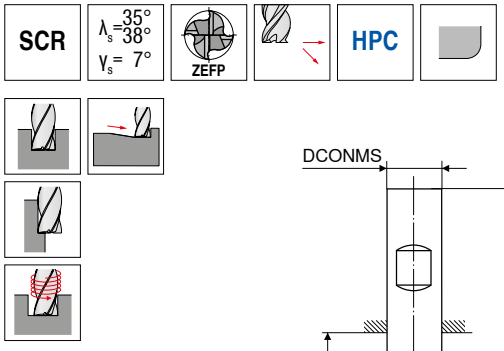
DC f8 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	V1 Article no. 52 604 ... £		V1 Article no. 52 605 ... £	
3	5	2.9	14	20	22	58	6	0.07	4	54.42	030		
3	5	2.9	19	23	26	62	6	0.07	4			63.52	030
4	8	3.8	18	20	22	58	6	0.07	4	54.42	040		
4	8	3.8	23	25	26	62	6	0.07	4			63.52	040
5	9	4.8	19	20	22	58	6	0.07	4	55.61	050		
5	9	4.8	24	25	26	62	6	0.07	4			64.71	050
6	10	5.8		20	22	58	6	0.07	4	53.76	060		
6	10	5.8		25	26	62	6	0.07	4			62.85	060
8	12	7.7		25	28	64	8	0.12	4	71.55	080		
8	12	7.7		30	32	68	8	0.12	4			83.01	080
10	15	9.5		30	33	73	10	0.20	4	93.41	100		
10	15	9.5		35	40	80	10	0.20	4			107.52	100
12	18	11.5		35	39	84	12	0.20	4	147.71	120		
12	18	11.5		45	48	93	12	0.20	4			169.18	120
14	21	13.5		35	39	84	14	0.20	4	189.61	140		
14	21	13.5		50	54	99	14	0.20	4			229.54	140
16	24	15.5		40	45	93	16	0.20	4	234.27	160		
16	24	15.5		40	45	93	16	0.20	5	246.54	161 [1]		
16	24	15.5		55	60	108	16	0.20	4			277.48	160
16	24	15.5		55	60	108	16	0.20	5			290.40	161 [1]
18	27	17.5		50	52	100	18	0.20	4	318.59	180		
18	27	17.5		50	52	100	18	0.20	5	335.45	181 [1]		
18	27	17.5		60	66	114	18	0.20	4			394.50	180
18	27	17.5		60	66	114	18	0.20	5			412.13	181 [1]
20	30	19.5		50	54	104	20	0.30	4	361.41	200		
20	30	19.5		50	54	104	20	0.30	5	380.38	201 [1]		
20	30	19.5		70	76	126	20	0.30	4			442.57	200
20	30	19.5		70	76	126	20	0.30	5			462.47	201 [1]

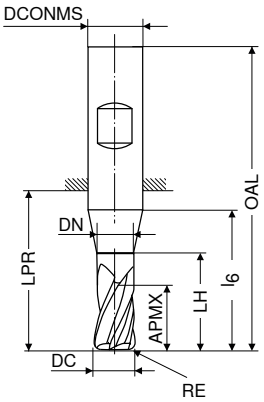
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	○

1) Cutter not suitable for full slot milling, use for finishing and trochoidal milling when slotting only!

→ v_c/f_z Page 244-247

MonsterMill – End milling cutter with corner radius





Ti1200

Factory standard

HB

V1

DC f8 mm	RE ±0,01 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h5 mm	ZEFP	Article no. 52 607 ... £	
3	0.10	8	2.9	14	20	22	58	6	4	61.68	030
3	0.30	8	2.9	14	20	22	58	6	4	61.68	031
3	0.50	8	2.9	14	20	22	58	6	4	61.68	032
4	0.10	11	3.8	18	20	22	58	6	4	61.68	040
4	0.40	11	3.8	18	20	22	58	6	4	61.68	041
4	0.50	11	3.8	18	20	22	58	6	4	61.68	042
5	0.10	13	4.8	19	20	22	58	6	4	62.99	050
5	0.50	13	4.8	19	20	22	58	6	4	62.99	051
5	1.00	13	4.8	19	20	22	58	6	4	62.99	052
6	0.10	13	5.8		20	22	58	6	4	61.00	060
6	0.50	13	5.8		20	22	58	6	4	61.00	061
6	1.00	13	5.8		20	22	58	6	4	61.00	062
8	0.15	19	7.7		25	28	64	8	4	81.03	080
8	0.50	19	7.7		25	28	64	8	4	81.03	081
8	1.00	19	7.7		25	28	64	8	4	81.03	082
8	2.00	19	7.7		25	28	64	8	4	81.03	083
10	0.15	22	9.5		30	33	73	10	4	105.95	100
10	0.50	22	9.5		30	33	73	10	4	105.95	101
10	1.00	22	9.5		30	33	73	10	4	105.95	102
10	1.50	22	9.5		30	33	73	10	4	105.95	103
10	2.00	22	9.5		30	33	73	10	4	105.95	104
12	0.20	26	11.5		35	39	84	12	4	167.47	120
12	0.50	26	11.5		35	39	84	12	4	167.47	121
12	1.00	26	11.5		35	39	84	12	4	167.47	122
12	1.50	26	11.5		35	39	84	12	4	167.47	123
12	2.00	26	11.5		35	39	84	12	4	167.47	124
14	1.00	26	13.5		35	39	84	14	4	215.02	140
16	0.30	32	15.5		40	45	93	16	4	265.63	160
16	0.50	32	15.5		40	45	93	16	4	265.63	161
16	1.00	32	15.5		40	45	93	16	4	265.63	162
16	2.00	32	15.5		40	45	93	16	4	265.63	163
16	4.00	32	15.5		40	45	93	16	4	265.63	164
20	0.30	38	19.5		50	54	104	20	4	409.78	200
20	0.50	38	19.5		50	54	104	20	4	409.78	201
20	1.00	38	19.5		50	54	104	20	4	409.78	202
20	2.00	38	19.5		50	54	104	20	4	409.78	203

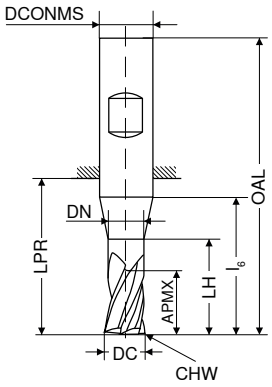
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

→ v_c/f_z Page 244+245

14

MonsterMill – End milling cutter

SCR | λ_s=35° γ_s= 7° | ZEFP | HPC



DIN 6527 | DIN 6527 | DIN 6527 | Factory standard

HA | HA | HB | HA

V1 | V1 | V2 | V1

DC f8	APMX	DN	LH	l_6	LPR	OAL	DCONMS h5	CHW	ZEFP	Article no. 52 608 ...	£	Article no. 52 608 ...	£	Article no. 52 608 ...	£	Article no. 52 608 ...	£
mm	mm	mm	mm	mm	mm	mm	mm	mm									
5	9	4.8	16	18	18	54	6	0.12	6	72.87	050						
5	13	4.8	19	20	22	58	6	0.12	6			72.87	051				
5	13	4.8	24	25	26	62	6	0.12	6							82.77	052
6	10	5.8		16	18	54	6	0.12	6	70.62	060						
6	13	5.8		20	22	58	6	0.12	6			70.62	061				
6	13	5.8		25	26	62	6	0.12	6							80.38	062
8	12	7.7		20	23	59	8	0.12	6	93.80	080						
8	19	7.7		25	28	64	8	0.12	6			93.80	081				
8	19	7.7		30	32	68	8	0.12	6							106.20	082
10	15	9.5		24	27	67	10	0.20	6	122.53	100						
10	22	9.5		30	33	73	10	0.20	6			122.53	101	122.53	103		
10	22	9.5		35	40	80	10	0.20	6							137.57	102
12	18	11.5		26	28	73	12	0.20	6	193.82	120						
12	26	11.5		35	39	84	12	0.20	6			193.82	121	193.82	123		
12	26	11.5		45	48	93	12	0.20	6							216.49	122
16	24	15.5		32	35	83	16	0.20	6	307.39	160						
16	32	15.5		40	45	93	16	0.20	6			307.39	161	307.39	163		
16	32	15.5		55	60	108	16	0.20	6							355.22	162
20	30	19.5		40	43	93	20	0.30	6	474.32	200						
20	38	19.5		50	54	104	20	0.30	6			474.32	201	474.32	203		
20	38	19.5		70	76	126	20	0.30	6							566.44	202

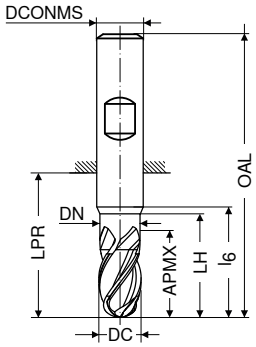
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

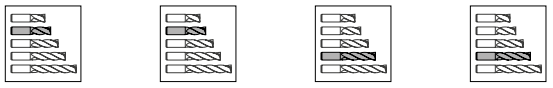
→ v_c/f_z Page 244–247

MonsterMill – Ball nosed cutter

▲ Radius accuracy: -0,015 mm for Ø ≤ 6,0 mm / -0,02 mm for Ø > 6,0 mm

SCR | λ_s=35° γ_s= 7° | ZEFP | HPC





DIN 6527 | DIN 6527 | DIN 6527 | DIN 6527

HA | HB | HA | HB

V2 | V2 | V2 | V2

DC f8 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h5 mm	ZEFP	Article no. 52 611 ... £		Article no. 52 611 ... £		Article no. 52 612 ... £		Article no. 52 612 ... £	
3	5	2.9	9	14	14	50	6	3	55.50	**030**						
3	8	2.9	14	20	22	58	6	3					57.64	**030**		
4	11	3.8	18	20	22	58	6	3					57.64	**040**		
4	8	3.8	12	18	18	54	6	3	55.50	**040**						
5	13	4.8	19	20	22	58	6	3					58.64	**050**		
5	9	4.8	16	18	18	54	6	3	56.50	**050**						
6	10	5.8		16	18	54	6	4	56.37	**060**	56.37	**061**				
6	13	5.8		20	22	58	6	4					58.59	**060**	58.59	**061**
8	19	7.7		25	28	64	8	4					77.81	**080**	77.81	**081**
8	12	7.7		20	23	59	8	4	74.96	**080**	74.96	**081**				
10	22	9.5		30	33	73	10	4					101.59	**100**	101.59	**101**
10	15	9.5		24	27	67	10	4	97.81	**100**	97.81	**101**				
12	26	11.5		35	39	84	12	4					161.08	**120**	161.08	**121**
12	18	11.5		26	28	73	12	4	154.58	**120**	154.58	**121**				
16	32	15.5		40	45	93	16	4					254.60	**160**	254.60	**161**
16	24	15.5		32	35	83	16	4	245.51	**160**	245.51	**161**				

Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

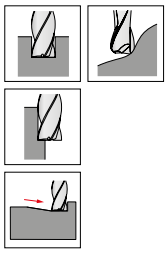
→ v_c/f_z Page 244+245

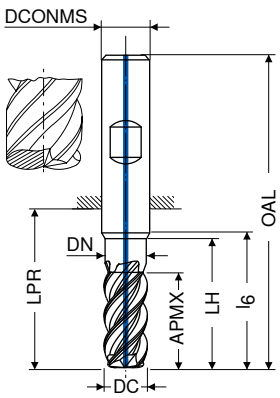
14

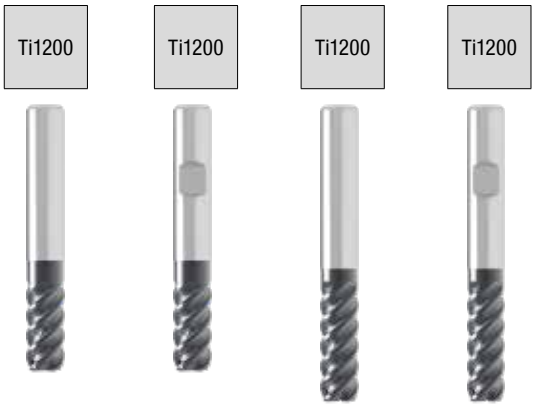
MonsterMill – Torus face milling cutter

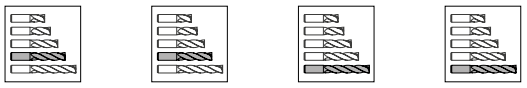
▲ r_{3D} = programmed corner radius

SCR | λ_s=45° γ_s= 7° | ZEFP | HPC | ≤ 60 HRC









DIN 6527 | DIN 6527 | DIN 6527 | DIN 6527

HA | HB | HA | HB

V2 | V2 | V2 | V2

LPR with Shank DIN 6535 HB

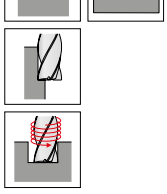
DC $_{-0,04}$ mm	r_{3D} mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	l_6 mm	DCONMS $_{h5}$ mm	t_{max} mm	ZEFP	Article no. 52 609 ... £		Article no. 52 609 ... £		Article no. 52 610 ... £		Article no. 52 610 ... £	
3	0.4	3	2.9	14.00	21	57	20	6	0.10	4	118.17	**030**	118.17	**031**				
4	0.5	4	3.8	18.00	21	57	20	6	0.15	4	121.13	**040**	121.13	**041**				
5	0.6	5	4.8	18.00	21	57	20	6	0.20	4	133.62	**050**	133.62	**051**				
6	0.8	13	5.8	19.90	21	57	20	6	0.20	4	122.74	**060**	122.74	**061**				
8	1.0	19	7.7	24.85	27	63	25	8	0.30	4	141.03	**080**	141.03	**081**				
8	1.0	19	7.7	29.85	32	68	30	8	0.30	4					167.01	**080**	167.01	**081**
10	1.2	22	9.5	29.75	32	72	30	10	0.40	4	167.01	**100**	167.01	**101**				
10	1.2	22	9.5	34.75	40	80	35	10	0.40	4					176.91	**100**	176.91	**101**
12	1.6	26	11.5	34.75	38	83	35	12	0.40	4	212.77	**120**	212.77	**121**				
12	1.6	26	11.5	44.75	47	93	45	12	0.40	4					232.58	**120**	232.58	**121**
16	2.2	32	15.5	39.75	44	92	40	16	0.50	4	335.27	**160**	335.27	**161**				
16	2.2	32	15.5	54.75	60	108	55	16	0.50	4					353.84	**160**	353.84	**161**

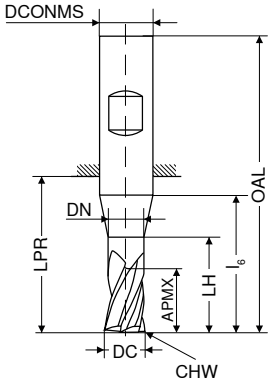
Steel	●	●	●	●
Stainless steel				
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys				
hardened materials	○	○	○	○

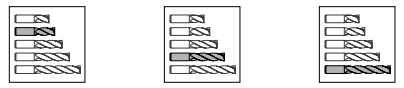
→ v_c/f_z Page 248–251

MonsterMill – End milling cutter

ICR | λ_s=40° γ_s=10° | ZEFP | HPC







DIN 6527 | Factory standard | Factory standard

HB | HB | HB

V1 | V1 | V1

DC $_{e8}$ mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	CHW mm	ZEFP	Article no. 52 784 ... £		Article no. 52 784 ... £		Article no. 52 784 ... £	
1.5	2.3	1.4	6	14	21	57	6	0.04	3	64.29	**017**				
2.0	3.0	1.9	8	15	21	57	6	0.04	3	64.29	**022**				
2.5	3.8	2.4	10	16	21	57	6	0.07	3	64.29	**027**				
3.0	5.0	2.9	14	18	21	57	6	0.07	3	64.29	**032**				
3.0	8.0	2.9	14	18	21	57	6	0.07	3			67.34	**034**		
3.0	5.0	2.9	19	23	26	62	6	0.07	3					67.34	**036**
4.0	8.0	3.8	18	20	21	57	6	0.07	3	64.29	**042**				
4.0	11.0	3.8	18	20	21	57	6	0.07	3			69.17	**044**		
4.0	8.0	3.8	23	25	26	62	6	0.07	3					69.17	**046**
5.0	9.0	4.8	19	20	21	57	6	0.12	3	64.29	**052**				
5.0	13.0	4.8	19	20	21	57	6	0.12	3			69.17	**054**		
5.0	9.0	4.8	24	25	26	62	6	0.12	3					69.17	**056**
6.0	10.0	5.8	20		21	57	6	0.12	4	93.52	**062**				
6.0	13.0	5.8	20		21	57	6	0.12	4			93.52	**064**		
6.0	10.0	5.8	25		26	62	6	0.12	4					93.52	**066**
8.0	12.0	7.7	25		27	63	8	0.12	4	110.46	**082**				
8.0	19.0	7.7	25		27	63	8	0.12	4			110.46	**084**		
8.0	12.0	7.7	30		32	68	8	0.12	4					110.46	**086**
10.0	15.0	9.5	30		32	72	10	0.20	4	141.84	**102**				
10.0	22.0	9.5	30		32	72	10	0.20	4			141.84	**104**		
10.0	15.0	9.5	35		40	80	10	0.20	4					141.84	**106**
12.0	18.0	11.5	35		38	83	12	0.20	4	202.20	**122**				
12.0	26.0	11.5	35		38	83	12	0.20	4			202.20	**124**		
12.0	18.0	11.5	45		48	93	12	0.20	4					202.20	**126**
14.0	21.0	13.5	35		38	83	14	0.20	4	266.54	**142**				
14.0	26.0	13.5	35		38	83	14	0.20	4			266.54	**144**		
14.0	21.0	13.5	50		54	99	14	0.20	4					279.87	**146**
16.0	24.0	15.5	40		44	92	16	0.20	4	277.79	**161**				
16.0	24.0	15.5	40		44	92	16	0.20	5	306.53	**162** [1]				
16.0	32.0	15.5	40		44	92	16	0.20	4			294.92	**163**		
16.0	32.0	15.5	40		44	92	16	0.20	5			306.53	**164** [1]		
16.0	24.0	15.5	55		60	108	16	0.20	4					304.10	**165**
16.0	24.0	15.5	55		60	108	16	0.20	5					306.53	**166** [1]
18.0	27.0	17.5	40		44	92	18	0.20	4	360.75	**181**				
18.0	27.0	17.5	40		44	92	18	0.20	5	403.98	**182** [1]				
18.0	32.0	17.5	40		44	92	18	0.20	4			381.89	**183**		
18.0	32.0	17.5	40		44	92	18	0.20	5			403.98	**184** [1]		
18.0	27.0	17.5	60		66	114	18	0.20	4					413.35	**185**
18.0	27.0	17.5	60		66	114	18	0.20	5					403.98	**186** [1]
20.0	30.0	19.5	50		54	104	20	0.30	4	419.97	**201**				
20.0	30.0	19.5	50		54	104	20	0.30	5	457.23	**202** [1]				
20.0	38.0	19.5	50		54	104	20	0.30	4			444.92	**203**		
20.0	38.0	19.5	50		54	104	20	0.30	5			480.07	**204** [1]		
20.0	30.0	19.5	70		76	126	20	0.30	4					469.97	**205**
20.0	30.0	19.5	70		76	126	20	0.30	5					480.07	**206** [1]

Steel	○	○	○
Stainless steel	●	●	●
Cast iron	○	○	○
Non ferrous metals	○	○	○
Heat resistant alloys	●	●	●
hardened materials	○	○	○

1) Cutter not suitable for full slot milling, use for finishing and trochoidal milling when slotting only!

→ v_c/f_z Page 252–257

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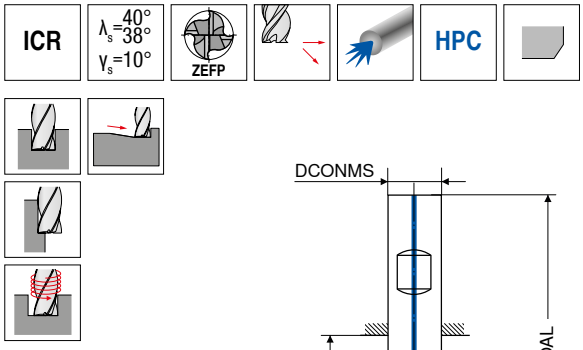
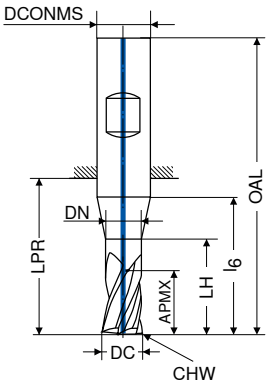
MonsterMill – End milling cutter

▲ with axial through coolant





DIN 6527

HB

V1

DC e8 mm	APMX mm	DN mm	LH mm	l6 mm	LPR mm	OAL mm	DCONMS h6 mm	CHW mm	ZEFP	Article no. 52 786 ... £	
3	8	2.9	14	18	21	57	6	0.07	3	74.12	**034**
4	11	3.8	18	20	21	57	6	0.07	3	74.12	**044**
5	13	4.8	19	20	21	57	6	0.12	3	77.63	**054**
6	13	5.8	20		21	57	6	0.12	4	101.79	**064**
8	19	7.7	25		27	63	8	0.12	4	122.14	**084**
10	22	9.5	30		32	72	10	0.20	4	152.00	**104**
12	26	11.5	35		38	83	12	0.20	4	218.49	**124**
14	26	13.5	35		38	83	14	0.20	4	299.26	**144**
16	32	15.5	40		44	92	16	0.20	4	337.02	**163**
16	32	15.5	40		44	92	16	0.20	5	327.75	**164** 1)
18	32	17.5	40		44	92	18	0.20	4	444.92	**183**
18	32	17.5	40		44	92	18	0.20	5	448.86	**184** 1)
20	38	19.5	50		54	104	20	0.30	4	525.26	**203**
20	38	19.5	50		54	104	20	0.30	5	498.75	**204** 1)

Steel	○
Stainless steel	●
Cast iron	○
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	○

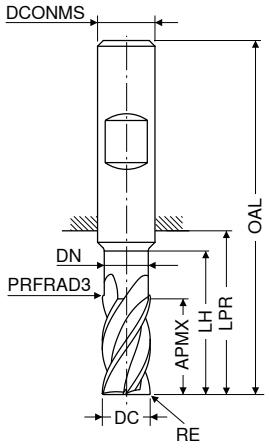
1) Cutter not suitable for full slot milling, use for finishing and trochoidal milling when slotting only!

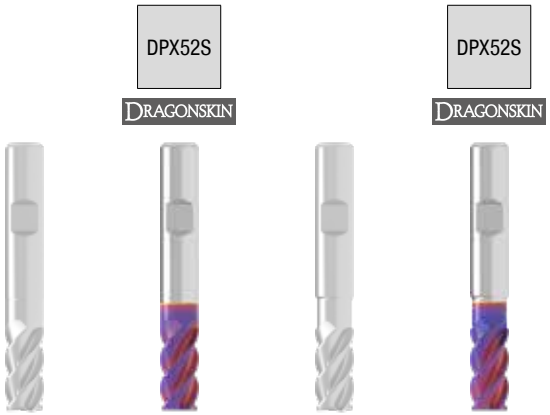
→ v_c/f_z Page 252–255

MonsterMill – End milling cutter with corner radius

▲ PRFRAD3 = 1 mm

TCR | λ_s=40° γ_s=10° | ZEFP | HPC





Factory standard | Factory standard | Factory standard | Factory standard

HB | HB | HB | HB

NEW V1 | NEW V1 | NEW V1 | NEW V1

DC e8	RE	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Article no. 52 503 ...		Article no. 52 504 ...		Article no. 52 505 ...		Article no. 52 506 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
4	0.1	11		14	21	57	6	4	56.85	04000	64.48	04000				
4	0.1	11	3.8	17	21	57	6	5					61.91	04000 [1)]	69.54	04000 [1)]
5	0.1	13	4.8	19	21	57	6	5					64.74	05000 [1)]	72.37	05000 [1)]
5	0.1	13		16	21	57	6	4	56.85	05000	64.48	05000				
6	0.1	13	5.8	19	21	57	6	5					64.74	06000 [1)]	72.37	06000 [1)]
6	0.1	13			21	57	6	4	56.85	06000	64.48	06000				
8	0.2	21	7.7	25	27	63	8	5					78.86	08000 [1)]	89.63	08000 [1)]
8	0.2	21			27	63	8	4	78.86	08000	89.63	08000				
10	0.2	22	9.7	30	32	72	10	5					113.40	10000 [1)]	126.68	10000 [1)]
10	0.2	22			32	72	10	4	95.83	10000	109.13	10000				
12	0.2	26	11.6	36	38	83	12	5					142.85	12000 [1)]	157.74	12000 [1)]
12	0.2	26			38	83	12	4	102.63	12000	117.67	12000				
16	0.3	36	15.5	42	44	92	16	5					197.01	16000 [1)]	215.48	16000 [1)]
16	0.3	36			44	92	16	4	178.18	16000	196.54	16000				
20	0.3	41	19.5	52	54	104	20	5					316.99	20000 [1)]	339.62	20000 [1)]
20	0.3	41			54	104	20	4	259.59	20000	282.23	20000				

Steel				
Stainless steel	○	○	○	○
Cast iron				
Non ferrous metals				
Heat resistant alloys	●	●	●	●
hardened materials				

1) Cutter not suitable for full slot milling, use for finishing and trochoidal milling when slotting only!

→ v_c/f_z Page 258+259

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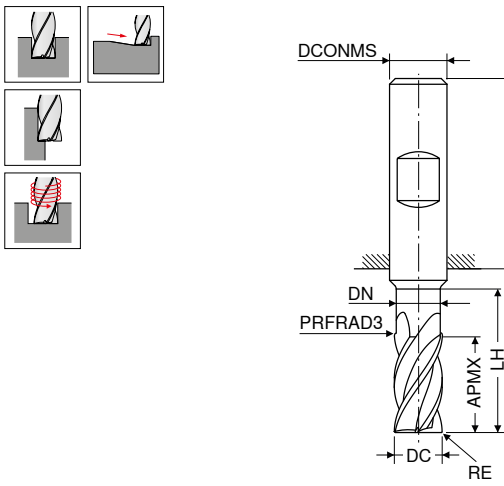
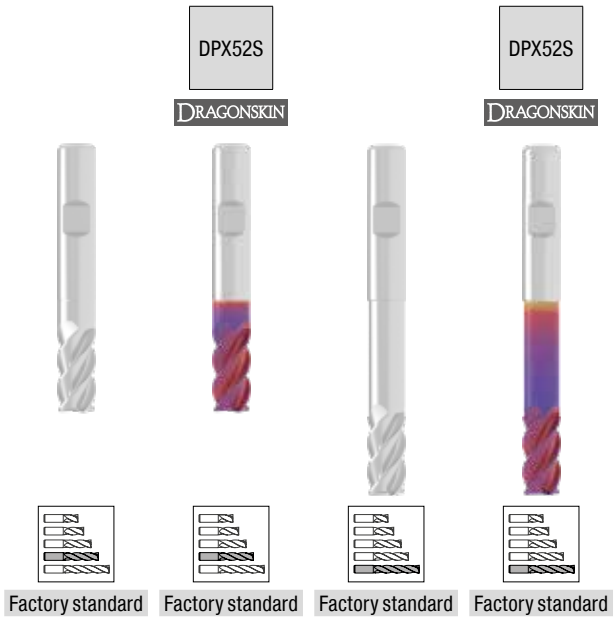
MonsterMill – End milling cutter with corner radius

▲ PRFRAD3 = 1 mm

TCR | λ_s=40° γ_s=10° | ZEFP | HPC





Factory standard | Factory standard | Factory standard | Factory standard

HB | HB | HB | HB

NEW V1 | NEW V1 | NEW V1 | NEW V1

DC e8	RE	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Article no. 52 507 ...	£	Article no. 52 508 ...	£	Article no. 52 507 ...	£	Article no. 52 508 ...	£
mm	mm	mm	mm	mm	mm	mm	mm									
4	0.4	8.5	3.8	20	26	62	6	4					59.66	04104	67.29	04104
4	0.5	8.5	3.8	20	26	62	6	4					59.66	04105	67.29	04105
4	0.8	8.5	3.8	20	26	62	6	4					59.66	04108	67.29	04108
4	0.2	11.0		14	21	57	6	4	56.85	04002	64.48	04002				
4	0.4	11.0		14	21	57	6	4	56.85	04004	64.48	04004				
4	0.5	11.0		14	21	57	6	4	56.85	04005	64.48	04005				
5	0.5	10.5	4.8	25	34	70	6	4					67.01	05105	74.64	05105
5	0.8	10.5	4.8	25	34	70	6	4					67.01	05108	74.64	05108
5	0.5	13.0		16	21	57	6	4	59.66	05005	67.29	05005				
5	1.0	13.0		16	21	57	6	4	59.66	05010	67.29	05010				
6	0.4	13.0			21	57	6	4	59.66	06004	67.29	06004				
6	0.5	13.0			21	57	6	4	59.66	06005	67.29	06005				
6	0.6	13.0			21	57	6	4	59.66	06006	67.29	06006				
6	0.6	13.0	5.8	30	34	70	6	4					70.99	06106	78.62	06106
6	0.8	13.0			21	57	6	4	59.66	06008	67.29	06008				
6	0.8	13.0	5.8	30	34	70	6	4					70.99	06108	78.62	06108
6	1.0	13.0	5.8	30	34	70	6	4					70.99	06110	78.62	06110
6	1.0	13.0			21	57	6	4	62.77	06010	70.40	06010				
6	1.5	13.0			21	57	6	4	62.77	06015	70.40	06015				
8	0.8	17.0	7.7	40	44	80	8	4					98.96	08108	109.70	08108
8	1.0	17.0	7.7	40	44	80	8	4					98.96	08110	109.70	08110
8	1.5	17.0	7.7	40	44	80	8	4					98.96	08115	109.70	08115
8	2.0	17.0	7.7	40	44	80	8	4					98.96	08120	109.70	08120
8	0.5	21.0			27	63	8	4	78.86	08005	89.63	08005				
8	0.8	21.0			27	63	8	4	78.86	08008	89.63	08008				
8	1.0	21.0			27	63	8	4	82.28	08010	93.02	08010				
8	1.2	21.0			27	63	8	4	82.28	08012	93.02	08012				
8	1.5	21.0			27	63	8	4	82.28	08015	93.02	08015				
8	2.0	21.0			27	63	8	4	82.28	08020	93.02	08020				
10	0.5	21.0	9.7	50	54	94	10	4					121.83	10105	135.11	10105
10	1.0	21.0	9.7	50	54	94	10	4					121.83	10110	135.11	10110
10	1.5	21.0	9.7	50	54	94	10	4					121.83	10115	135.11	10115
10	2.0	21.0	9.7	50	54	94	10	4					121.83	10120	135.11	10120
10	0.5	22.0			32	72	10	4	95.83	10005	109.13	10005				
10	1.0	22.0			32	72	10	4	98.96	10010	112.26	10010				
10	1.2	22.0			32	72	10	4	98.96	10012	112.26	10012				
10	1.5	22.0			32	72	10	4	98.96	10015	112.26	10015				
10	1.6	22.0			32	72	10	4	98.96	10016	112.26	10016				
10	2.0	22.0			32	72	10	4	98.96	10020	112.26	10020				
12	0.5	25.0	11.6	60	65	110	12	4					153.01	12105	167.91	12105
12	1.0	25.0	11.6	60	65	110	12	4					153.01	12110	167.91	12110
12	1.5	25.0	11.6	60	65	110	12	4					153.01	12115	167.91	12115
12	2.0	25.0	11.6	60	65	110	12	4					153.01	12120	167.91	12120

Steel				
Stainless steel	○	○	○	○
Cast iron				
Non ferrous metals				
Heat resistant alloys	●	●	○	○
hardened materials				

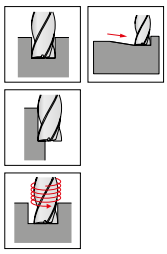
→ v_c/f_z Page 258+259

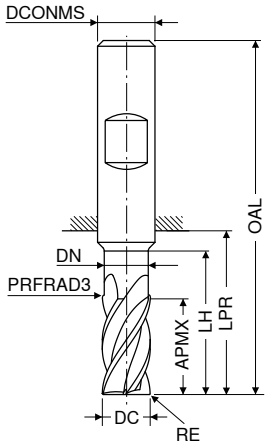
Continued on next page

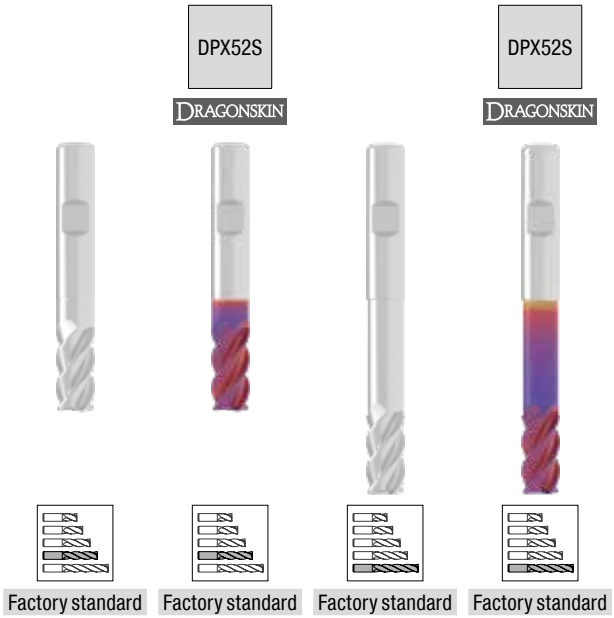
MonsterMill – End milling cutter with corner radius

▲ PRFRAD3 = 1 mm

TCR | λ_s=40° γ_s=10° | ZEFP | HPC







DC e8	RE	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Factory standard	Factory standard	Factory standard	Factory standard
									HB	HB	HB	HB
									NEW V1	NEW V1	NEW V1	NEW V1
									Article no. 52 507 ...	Article no. 52 508 ...	Article no. 52 507 ...	Article no. 52 508 ...
mm	mm	mm	mm	mm	mm	mm	mm		£	£	£	£
12	3.0	25.0	11.6	60	65	110	12	4			156.59 12130	171.60 12130
12	4.0	25.0	11.6	60	65	110	12	4			156.59 12140	171.60 12140
12	0.5	26.0			38	83	12	4	102.63 12005	117.67 12005		
12	1.0	26.0			38	83	12	4	106.04 12010	121.02 12010		
12	1.2	26.0			38	83	12	4	106.04 12012	121.02 12012		
12	1.5	26.0			38	83	12	4	106.04 12015	121.02 12015		
12	1.6	26.0			38	83	12	4	106.04 12016	121.02 12016		
12	2.0	26.0			38	83	12	4	106.04 12020	121.02 12020		
12	2.5	26.0			38	83	12	4	106.04 12025	121.02 12025		
12	3.0	26.0			38	83	12	4	106.04 12030	121.02 12030		
14	1.0	29.0	13.6	70	75	120	14	4			212.02 14110	230.38 14110
14	2.0	29.0	13.6	70	75	120	14	4			212.02 14120	230.38 14120
14	3.0	29.0	13.6	70	75	120	14	4			215.71 14130	234.07 14130
14	4.0	29.0	13.6	70	75	120	14	4			215.71 14140	234.07 14140
16	1.0	33.0	15.5	80	84	132	16	4			254.51 16110	272.87 16110
16	2.0	33.0	15.5	80	84	132	16	4			254.51 16120	272.87 16120
16	3.0	33.0	15.5	80	84	132	16	4			257.86 16130	276.22 16130
16	4.0	33.0	15.5	80	84	132	16	4			257.86 16140	276.22 16140
16	1.0	36.0			44	92	16	4	186.04 16010	204.40 16010		
16	1.6	36.0			44	92	16	4	186.04 16016	204.40 16016		
16	2.0	36.0			44	92	16	4	186.04 16020	204.40 16020		
16	2.5	36.0			44	92	16	4	186.04 16025	204.40 16025		
16	3.0	36.0			44	92	16	4	186.04 16030	204.40 16030		
16	3.2	36.0			44	92	16	4	190.54 16032	208.90 16032		
16	4.0	36.0			44	92	16	4	190.54 16040	208.90 16040		
18	1.0	38.0	17.5	90	94	142	18	4			331.65 18110	354.29 18110
18	2.0	38.0	17.5	90	94	142	18	4			331.65 18120	354.29 18120
18	3.0	38.0	17.5	90	94	142	18	4			335.35 18130	357.98 18130
18	4.0	38.0	17.5	90	94	142	18	4			335.35 18140	357.98 18140
20	2.0	41.0			54	104	20	4	259.59 20020	282.23 20020		
20	3.0	41.0			54	104	20	4	259.59 20030	282.23 20030		
20	4.0	41.0			54	104	20	4	264.33 20040	286.96 20040		
20	5.0	41.0			54	104	20	4	264.33 20050	286.96 20050		
20	6.3	41.0			54	104	20	4	268.02 20063	290.66 20063		
20	1.0	42.0	19.5	100	104	154	20	4			362.49 20110	385.12 20110
20	2.0	42.0	19.5	100	104	154	20	4			362.49 20120	385.12 20120
20	3.0	42.0	19.5	100	104	154	20	4			365.83 20130	388.47 20130
20	4.0	42.0	19.5	100	104	154	20	4			365.83 20140	388.47 20140

Steel				
Stainless steel	○	○	○	○
Cast iron				
Non ferrous metals				
Heat resistant alloys	●	●	○	○
hardened materials				

→ v_c/f_z Page 258+259

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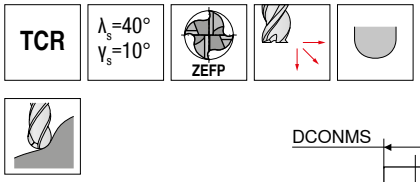
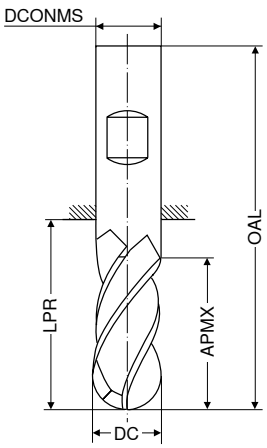
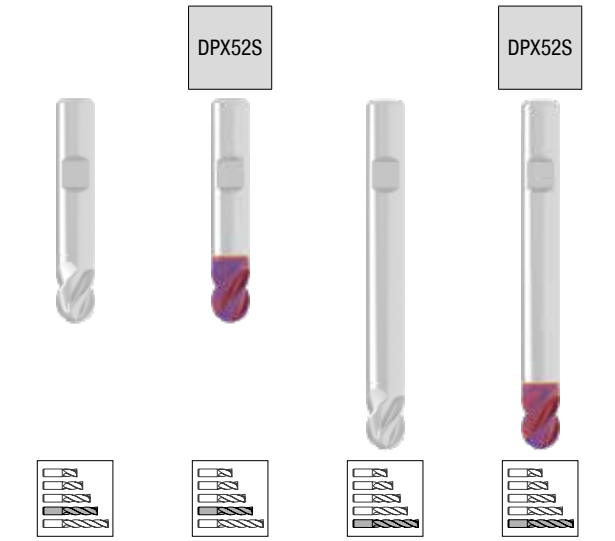
MonsterMill – Ball nosed cutter







DC e8 mm	APMX mm	LPR mm	OAL mm	DCONMS h5 mm	ZEFP	Factory standard HB	NEW V1 Article no. 52 513 ... £	Factory standard HB	NEW V1 Article no. 52 514 ... £	Factory standard HB	NEW V1 Article no. 52 513 ... £	Factory standard HB	NEW V1 Article no. 52 514 ... £
2	4	18	54	6	4	48.36	02000	59.66	02000				
2	4	44	80	6	4					70.40	02100	84.28	02100
3	5	44	80	6	4					70.40	03100	84.28	03100
3	5	18	54	6	4	48.36	03000	59.66	03000				
4	8	44	80	6	4					70.40	04100	84.28	04100
4	8	18	54	6	4	48.36	04000	59.66	04000				
5	9	44	80	6	4					74.64	05100	88.19	05100
5	9	18	54	6	4	52.32	05000	66.46	05000				
6	10	44	80	6	4					74.64	06100	88.19	06100
6	10	18	54	6	4	52.32	06000	66.46	06000				
8	12	64	100	8	4					76.03	08100	94.44	08100
8	12	22	58	8	4	58.23	08000	75.50	08000				
10	14	60	100	10	4					98.65	10100	121.02	10100
10	14	26	66	10	4	78.03	10000	99.79	10000				
12	16	55	100	12	4					126.91	12100	151.51	12100
12	16	28	73	12	4	100.10	12000	130.61	12000				
16	20	52	100	16	4					174.95	16100	216.87	16100
16	20	34	82	16	4	154.97	16000	195.97	16000				

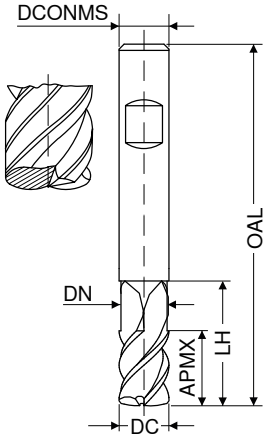
Steel				
Stainless steel	●	●	●	●
Cast iron				
Non ferrous metals				
Heat resistant alloys	●	●	●	●
hardened materials				

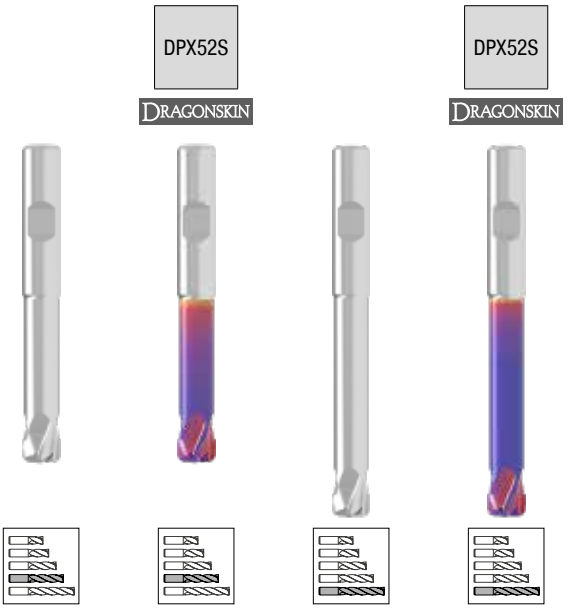
→ v_c/f_z Page 260+261

MonsterMill – Torus face milling cutter

▲ r_{3D} = programmed corner radius
▲ APMX does not correspond to the maximum cutting depth

TCR | λ_s=15° γ_s=10° | ZEFP | HPC





DIN 6527 | HB | NEW V1 | Article no. 52 511 ... | £

DIN 6527 | HB | NEW V1 | Article no. 52 512 ... | £

DIN 6527 | HB | NEW V1 | Article no. 52 511 ... | £

DIN 6527 | HB | NEW V1 | Article no. 52 512 ... | £

DC e8 mm	r_{3D} mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h5 mm	ZEFP	Article no. 52 511 ... £	Article no. 52 512 ... £	Article no. 52 511 ... £	Article no. 52 512 ... £
2	0.3	1.5	1.7	13	18	54	6	2	57.69 02000	65.32 02000		
2	0.3	1.5	1.7	18	39	75	6	2			61.65 02100	69.29 02100
3	0.3	1.5	2.7	15	18	54	6	2	57.69 03000	65.32 03000		
3	0.3	1.5	2.7	20	39	75	6	2			61.65 03100	69.29 03100
4	0.5	2.5	3.6	16	22	58	6	2	57.69 04000	65.32 04000		
4	0.5	2.5	3.6	24	49	85	6	2			64.74 04100	72.37 04100
5	0.5	3.5	4.6	18	29	65	6	4	62.48 05000	70.12 05000		
5	0.5	3.5	4.6	28	64	100	6	4			73.51 05100	81.14 05100
6	1.0	3.5	5.2	20	29	65	6	4	62.48 06000	70.12 06000		
6	1.0	3.5	5.2	28	64	100	6	4			73.51 06100	81.14 06100
8	1.5	4.8	7.0	24	34	70	8	5	73.22 08000	83.97 08000		
8	1.5	4.8	7.0	40	64	100	8	5			95.57 08100	106.28 08100
10	2.0	5.8	9.0	26	45	85	10	5	99.24 10000	112.54 10000		
10	2.0	5.8	9.0	48	60	100	10	5			135.11 10100	148.50 10100
12	2.0	6.8	11.0	30	48	93	12	5	135.11 12000	150.12 12000		
12	2.0	6.8	11.0	56	75	120	12	5			174.95 12100	189.96 12100
16	2.5	8.8	14.5	35	52	100	16	5	161.67 16000	180.15 16000		
16	2.5	8.8	14.5	65	102	150	16	5			212.94 16100	231.30 16100

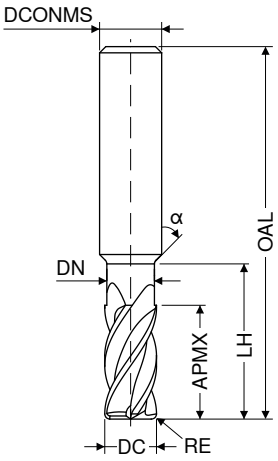
Steel				
Stainless steel	●	●	●	●
Cast iron				
Non ferrous metals				
Heat resistant alloys	●	●	●	●
hardened materials				

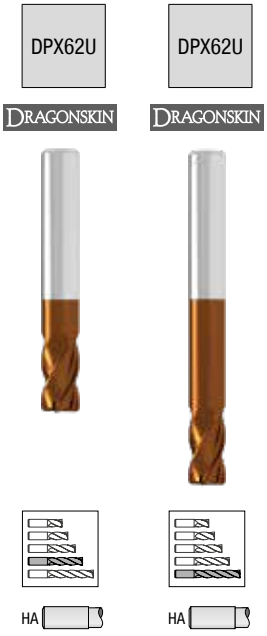
→ v_c/f_z Page 260+261

MonsterMill – Finish milling cutter with corner radius

- Radius accuracy +/- 0.01 mm
- T_x = maximum depth of cut
- DC Tolerance
  up to Ø 6 mm: 0 / -0.01 mm
  from Ø 6 mm: 0 / -0.02 mm

HCR | λ_s=30° γ_s=–3° | ZEFP | 54–70 HRC





DC	RE	APMX	DN	LH	α°	OAL	DCONMS $_{h5}$	T_x	ZEFP	NEW V1 Article no. 53 603 ...		NEW V1 Article no. 53 604 ...	
mm	mm	mm	mm	mm		mm	mm			£		£	
0.2	0.05	0.5		0.5	30	48	4	2,5 x DC	2	69.29	30205		
0.2	0.05	0.5	0.18	1.0	30	48	4	5 x DC	2	69.29	40205		
0.3	0.05	0.6	0.27	1.0	30	48	4	3,3 x DC	2	65.65	30305		
0.3	0.05	0.6	0.27	2.0	30	48	4	6,7 x DC	2	65.65	40305		
0.4	0.05	0.7	0.35	1.0	30	48	4	2,5 x DC	2	65.65	30405		
0.4	0.05	0.7	0.35	2.0	30	48	4	5 x DC	2	65.65	40405		
0.4	0.05	0.7	0.35	3.0	30	48	4	7,5 x DC	2	65.65	50405		
0.5	0.05	0.7	0.45	1.0	30	48	4	2 x DC	2	63.79	30505		
0.5	0.05	0.7	0.45	2.0	30	48	4	4 x DC	2	63.79	40505		
0.5	0.05	0.7	0.45	2.5	30	48	4	5 x DC	2	63.79	50505		
0.5	0.05	0.7	0.45	3.0	30	48	4	6 x DC	2	63.79	60505		
0.5	0.05	0.7	0.45	4.0	30	48	4	8 x DC	2	63.79	70505		
0.6	0.05	0.8	0.55	2.0	30	48	4	3,3 x DC	2	62.06	30605		
0.6	0.05	0.8	0.55	3.0	30	48	4	5 x DC	2	62.06	40605		
0.6	0.05	0.8	0.55	4.5	30	48	4	7,5 x DC	2	62.06	50605		
0.6	0.05	0.8	0.55	6.0	30	48	4	10 x DC	2			62.06	30605
0.8	0.05	1.0	0.75	2.0	30	48	4	2,5 x DC	2	62.06	30805		
0.8	0.05	1.0	0.75	4.0	30	48	4	5 x DC	2	62.06	40805		
0.8	0.05	1.0	0.75	6.0	30	48	4	7,5 x DC	2	62.06	50805		
0.8	0.05	1.0	0.75	8.0	30	48	4	10 x DC	2			64.02	30805
0.8	0.05	1.0	0.75	10.0	30	48	4	12,5 x DC	2			64.02	40805
1.0	0.10	1.5	0.95	2.0	30	48	4	2 x DC	4	70.25	31001		
1.0	0.10	1.5	0.95	4.0	30	48	4	4 x DC	4	71.74	41001		
1.0	0.10	1.5	0.95	6.0	30	48	4	6 x DC	4	71.74	51001		
1.0	0.10	1.5	0.95	8.0	30	48	4	8 x DC	4	73.56	61001		
1.0	0.10	1.5	0.95	10.0	30	48	4	10 x DC	4			73.56	31001
1.0	0.10	1.5	0.95	14.0	30	48	4	14 x DC	4			73.56	41001
1.5	0.10	2.0	1.45	4.0	30	48	4	2,7 x DC	4	71.37	31501		
1.5	0.10	2.0	1.45	6.0	30	48	4	4 x DC	4	72.99	41501		
1.5	0.10	2.0	1.45	10.0	30	48	4	6,7 x DC	4	72.99	51501		
1.5	0.10	2.0	1.45	12.0	30	48	4	8 x DC	4	74.59	61501		
1.5	0.10	2.0	1.45	15.0	30	60	4	10 x DC	4			75.49	31501
1.5	0.10	2.0	1.45	20.0	30	60	4	13,3 x DC	4			77.35	41501
2.0	0.20	2.5	1.90	4.0	30	48	4	2 x DC	4	71.37	32002		
2.0	0.20	2.5	1.90	6.0	30	48	4	3 x DC	4	72.99	42002		
2.0	0.20	2.5	1.90	8.0	30	48	4	4 x DC	4	72.99	52002		
2.0	0.20	2.5	1.90	10.0	30	48	4	5 x DC	4	72.99	62002		
2.0	0.20	2.5	1.90	12.0	30	48	4	6 x DC	4	74.59	72002		
2.0	0.20	2.5	1.90	16.0	30	60	4	8 x DC	4	75.49	82002		
2.0	0.20	2.5	1.90	20.0	30	60	4	10 x DC	4			77.35	32002
2.0	0.20	2.5	1.90	25.0	30	60	4	12,5 x DC	4			77.35	42002
3.0	0.20	3.5	2.90	8.0	30	60	6	2,7 x DC	4	81.53	33002		

Steel	○	○
hardened < 45 HRC	○	○
hardened 46–55 HRC	○	○
hardened 56–60 HRC	●	●
hardened 61–65 HRC	●	●
hardened 65–70 HRC	●	●

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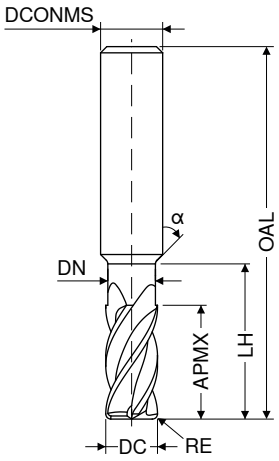
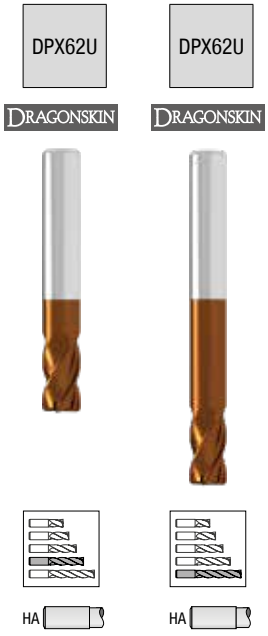
Continued on next page

MonsterMill – Finish milling cutter with corner radius

- Radius accuracy +/- 0.01 mm
- T_x = maximum depth of cut
- DC Tolerance
  up to Ø 6 mm: 0 / -0.01 mm
  from Ø 6 mm: 0 / -0.02 mm





DC	RE	APMX	DN	LH	α°	OAL	DCONMS $_{h5}$	T_x	ZEFP	NEW V1 Article no. 53 603 ...	NEW V1 Article no. 53 604 ...
mm	mm	mm	mm	mm		mm	mm			£	£
3.0	0.20	3.5	2.90	12.0	30	60	6	4 x DC	4	83.31 **43002**	
3.0	0.20	3.5	2.90	16.0	30	60	6	5,3 x DC	4	83.31 **53002**	
3.0	0.20	3.5	2.90	20.0	30	70	6	6,7 x DC	4	84.83 **63002**	
3.0	0.20	3.5	2.90	24.0	30	70	6	8 x DC	4	86.81 **73002**	
4.0	0.20	4.5	3.90	8.0	30	60	6	2 x DC	4	84.99 **34002**	
4.0	0.20	4.5	3.90	12.0	30	60	6	3 x DC	4	86.91 **44002**	
4.0	0.20	4.5	3.90	16.0	30	60	6	4 x DC	4	86.91 **54002**	
4.0	0.20	4.5	3.90	20.0	30	70	6	5 x DC	4	88.45 **64002**	
4.0	0.20	4.5	3.90	24.0	30	70	6	6 x DC	4	90.38 **74002**	
4.0	0.20	4.5	3.90	28.0	30	70	6	7 x DC	4	90.38 **84002**	
4.0	0.50	4.5	3.90	8.0	30	60	6	2 x DC	4	84.99 **34005**	
4.0	0.50	4.5	3.90	12.0	30	60	6	3 x DC	4	86.91 **44005**	
4.0	0.50	4.5	3.90	16.0	30	60	6	4 x DC	4	86.91 **54005**	
4.0	0.50	4.5	3.90	20.0	30	70	6	5 x DC	4	88.45 **64005**	
4.0	0.50	4.5	3.90	24.0	30	70	6	6 x DC	4	90.38 **74005**	
4.0	0.50	4.5	3.90	28.0	30	70	6	7 x DC	4	90.38 **84005**	
4.0	1.00	4.5	3.90	8.0	30	60	6	2 x DC	4	84.99 **34010**	
4.0	1.00	4.5	3.90	12.0	30	60	6	3 x DC	4	86.91 **44010**	
4.0	1.00	4.5	3.90	16.0	30	60	6	4 x DC	4	86.91 **54010**	
4.0	1.00	4.5	3.90	20.0	30	70	6	5 x DC	4	88.45 **64010**	
4.0	1.00	4.5	3.90	24.0	30	70	6	6 x DC	4	90.38 **74010**	
4.0	1.00	4.5	3.90	28.0	30	70	6	7 x DC	4	90.38 **84010**	
6.0	0.20	6.5	5.90	12.0		60	6	2 x DC	4	89.69 **36002**	
6.0	0.20	6.5	5.90	16.0		60	6	2,7 x DC	4	92.57 **46002**	
6.0	0.20	6.5	5.90	20.0		60	6	3,3 x DC	4	92.57 **56002**	
6.0	0.50	6.5	5.90	12.0		60	6	2 x DC	4	89.69 **36005**	
6.0	0.50	6.5	5.90	16.0		60	6	2,7 x DC	4	92.57 **46005**	
6.0	0.50	6.5	5.90	20.0		60	6	3,3 x DC	4	92.57 **56005**	
6.0	1.00	6.5	5.90	12.0		60	6	2 x DC	4	89.69 **36010**	
6.0	1.00	6.5	5.90	16.0		60	6	2,7 x DC	4	92.57 **46010**	
6.0	1.00	6.5	5.90	20.0		60	6	3,3 x DC	4	92.57 **56010**	
8.0	0.50	8.5	7.90	16.0		60	8	2 x DC	4	113.54 **38005**	
8.0	0.50	8.5	7.90	40.0		80	8	5 x DC	4	120.57 **48005**	
8.0	1.00	8.5	7.90	16.0		60	8	2 x DC	4	113.54 **38010**	
8.0	1.00	8.5	7.90	40.0		80	8	5 x DC	4	120.57 **48010**	
10.0	0.50	10.5	9.90	20.0		70	10	2 x DC	4	142.26 **10005**	
10.0	0.50	10.5	9.90	40.0		90	10	4 x DC	4	151.96 **10105**	
10.0	1.00	10.5	9.90	20.0		70	10	2 x DC	4	142.26 **10010**	
10.0	1.00	10.5	9.90	40.0		90	10	4 x DC	4	151.96 **10110**	
12.0	1.00	12.5	11.90	24.0		70	12	2 x DC	4	184.15 **12010**	
12.0	1.00	12.5	11.90	40.0		90	12	3,3 x DC	4	197.22 **12110**	

Steel	○	○
hardened < 45 HRC	○	○
hardened 46–55 HRC	○	○
hardened 56–60 HRC	●	●
hardened 61–65 HRC	●	●
hardened 65–70 HRC	●	●

→ v_c/f_z Page 264–269

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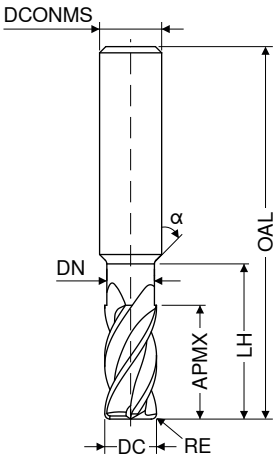
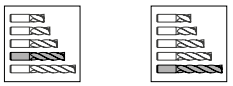
MonsterMill – Finish milling cutter with corner radius

- Radius accuracy +/- 0.02 mm
- T_x = maximum depth of cut
- DC Tolerance
  up to Ø 6 mm: 0 / -0.01 mm
  from Ø 6 mm: 0 / -0.02 mm

HCR | λ_s = 50° γ_s = -15° | ZEFP | 54–70 HRC





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DC mm	RE mm	APMX mm	DN mm	LH mm	α°	OAL mm	DCONMS $_{h5}$ mm	T_x	ZEFP	NEW V1 Article no. 53 605 ... £		NEW V1 Article no. 53 606 ... £	
1	0.03	2			30	48	4	2 x DC	4	74.83	410		
1	0.03	3	0.95	4	30	48	4	3 x DC	4			90.35	410
2	0.03	6	1.90	8	30	48	4	3 x DC	4			91.55	420
2	0.03	4			30	48	4	2 x DC	4	76.08	420		
3	0.03	6			30	60	6	2 x DC	4	88.09	030		
3	0.03	9	2.90	12	30	60	6	3 x DC	4			105.19	030
4	0.05	8			30	60	6	2 x DC	4	92.83	040		
4	0.05	12	3.90	16	30	60	6	3 x DC	4			107.71	040
6	0.05	12				60	6	2 x DC	4	89.09	060		
6	0.05	18	5.90	24		60	6	3 x DC	4			105.19	060
8	0.05	16				60	8	2 x DC	4	129.98	080		
8	0.05	24	7.90	32		70	8	3 x DC	4			148.58	080
10	0.05	20				70	10	2 x DC	4	157.29	100		
10	0.05	30	9.90	40		80	10	3 x DC	4			179.51	100
12	0.05	24				70	12	2 x DC	4	178.25	120		
12	0.05	36	11.90	44		90	12	3 x DC	4			205.51	120

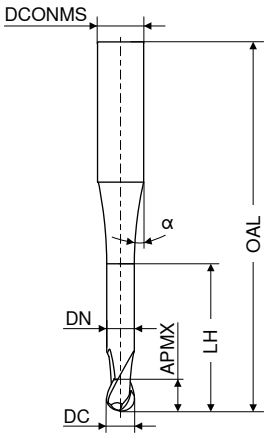
Steel	○	○
hardened < 45 HRC	○	○
hardened 46–55 HRC	○	○
hardened 56–60 HRC	●	●
hardened 61–65 HRC	●	●
hardened 65–70 HRC	●	●

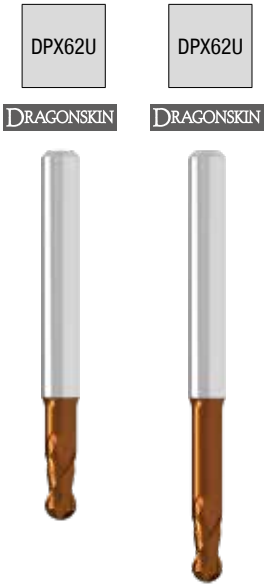
→ v_c/f_z Page 270

MonsterMill – Ball Nosed Cutter

- Radius accuracy: ±0.01 mm
- T_x = maximum depth of cut
- DC Tolerance
  up to Ø 6 mm: 0 / -0.01 mm
  from Ø 6 mm: 0 / -0.02 mm

HCR | λ_s=30° γ_s=–3° | ZEFP | 54–70 HRC





Factory standard | Factory standard

HA | HA

DC	APMX	DN	LH	α°	OAL	DCONMS $_{h5}$	T_x	ZEFP	NEW V1 Article no. 53 600 ...		NEW V1 Article no. 53 601 ...	
mm	mm	mm	mm		mm	mm			£		£	
0.2	0.5		0.5	30	48	4	2,5 x DC	2	69.29	**302**		
0.2	0.5	0.18	1.0	30	48	4	5 x DC	2	69.29	**402**		
0.3	0.5	0.27	1.0	30	48	4	3,3 x DC	2	65.65	**303**		
0.3	0.5	0.27	2.0	30	48	4	6,7 x DC	2	65.65	**403**		
0.4	0.5	0.35	1.0	30	48	4	2,5 x DC	2	65.65	**304**		
0.4	0.5	0.35	2.0	30	48	4	5 x DC	2	65.65	**404**		
0.4	0.5	0.35	3.0	30	48	4	7,5 x DC	2	65.65	**504**		
0.5	0.5	0.45	1.0	30	48	4	2 x DC	2	63.79	**305**		
0.5	0.5	0.45	2.0	30	48	4	4 x DC	2	63.79	**405**		
0.5	0.5	0.45	2.5	30	48	4	5 x DC	2	63.79	**505**		
0.5	0.5	0.45	3.0	30	48	4	6 x DC	2	63.79	**605**		
0.5	0.5	0.45	4.0	30	48	4	8 x DC	2	63.79	**705**		
0.6	0.6	0.55	2.0	30	48	4	3,3 x DC	2	63.79	**306**		
0.6	0.6	0.55	3.0	30	48	4	5 x DC	2	63.79	**406**		
0.6	0.6	0.55	4.5	30	48	4	7,5 x DC	2	63.79	**506**		
0.6	0.6	0.55	6.0	30	48	4	10 x DC	2			63.79	**306**
0.8	1.0	0.75	2.0	30	48	4	2,5 x DC	2	62.06	**308**		
0.8	1.0	0.75	4.0	30	48	4	5 x DC	2	62.06	**408**		
0.8	1.0	0.75	6.0	30	48	4	7,5 x DC	2	62.06	**508**		
0.8	1.0	0.75	8.0	30	48	4	10 x DC	2			62.06	**308**
0.8	1.0	0.75	10.0	30	48	4	12,5 x DC	2			62.06	**408**
1.0	1.5	0.95	2.0	30	48	4	2 x DC	2	59.98	**310**		
1.0	1.5	0.95	4.0	30	48	4	4 x DC	2	59.98	**410**		
1.0	1.5	0.95	6.0	30	48	4	6 x DC	2	59.98	**510**		
1.0	1.5	0.95	8.0	30	48	4	8 x DC	2	59.98	**610**		
1.0	1.5	0.95	10.0	30	48	4	10 x DC	2			59.98	**310**
1.0	1.5	0.95	14.0	30	48	4	14 x DC	2			61.85	**410**
1.5	1.5	1.45	4.0	30	48	4	2,7 x DC	2	60.96	**315**		
1.5	1.5	1.45	6.0	30	48	4	4 x DC	2	60.96	**415**		
1.5	1.5	1.45	8.0	30	48	4	5,3 x DC	2	60.96	**515**		
1.5	1.5	1.45	10.0	30	48	4	6,7 x DC	2	60.96	**615**		
1.5	1.5	1.45	15.0	30	60	4	10 x DC	2			62.06	**315**
1.5	1.5	1.45	20.0	30	60	4	13,3 x DC	2			62.94	**415**
2.0	2.5	1.90	4.0	30	48	4	2 x DC	2	60.96	**320**		

Steel	○	○
hardened < 45 HRC	○	○
hardened 46–55 HRC	○	○
hardened 56–60 HRC	●	●
hardened 61–65 HRC	●	●
hardened 65–70 HRC	●	●

→ v_c/f_z Page 262+263

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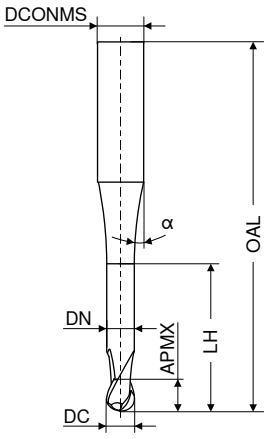
Continued on next page

MonsterMill – Ball Nosed Cutter

- Radius accuracy: ±0.01 mm
- T_x = maximum depth of cut
- DC Tolerance
  up to Ø 6 mm: 0 / -0.01 mm
  from Ø 6 mm: 0 / -0.02 mm

HCR | λ_s=30° γ_s=–3° | ZEFP | 54–70 HRC



Factory standard | Factory standard

HA | HA

DC	APMX	DN	LH	α°	OAL	DCONMS h5	T_x	ZEFP	NEW V1 Article no. 53 600 ... £		NEW V1 Article no. 53 601 ... £	
mm	mm	mm	mm		mm	mm						
2.0	2.5	1.90	6.0	30	48	4	3 x DC	2	60.96	**420**		
2.0	2.5	1.90	8.0	30	48	4	4 x DC	2	60.96	**520**		
2.0	2.5	1.90	10.0	30	48	4	5 x DC	2	62.06	**620**		
2.0	2.5	1.90	12.0	30	48	4	6 x DC	2	62.06	**720**		
2.0	2.5	1.90	16.0	30	60	4	8 x DC	2	63.07	**820**		
2.0	2.5	1.90	20.0	30	60	4	10 x DC	2			65.08	**320**
2.0	2.5	1.90	25.0	30	60	4	12,5 x DC	2			65.08	**420**
3.0	3.5	2.90	8.0	30	60	6	2,7 x DC	2	65.65	**330**		
3.0	3.5	2.90	12.0	30	60	6	4 x DC	2	65.65	**430**		
3.0	3.5	2.90	16.0	30	60	6	5,3 x DC	2	65.65	**530**		
3.0	3.5	2.90	20.0	30	70	6	6,7 x DC	2	67.18	**630**		
3.0	3.5	2.90	24.0	30	70	6	8 x DC	2	69.12	**730**		
4.0	4.5	3.90	8.0	30	60	6	2 x DC	2	65.65	**340**		
4.0	4.5	3.90	12.0	30	60	6	3 x DC	2	65.65	**440**		
4.0	4.5	3.90	16.0	30	60	6	4 x DC	2	65.65	**540**		
4.0	4.5	3.90	20.0	30	70	6	5 x DC	2	67.18	**640**		
4.0	4.5	3.90	24.0	30	70	6	6 x DC	2	69.12	**740**		
4.0	4.5	3.90	28.0	30	70	6	7 x DC	2	69.12	**840**		
6.0	6.5	5.90	12.0		60	6	2 x DC	2	65.65	**360**		
6.0	6.5	5.90	16.0		60	6	2,7 x DC	2	65.65	**460**		
6.0	6.5	5.90	20.0		60	6	3,3 x DC	2	65.65	**560**		
8.0	8.5	7.90	16.0		60	8	2 x DC	2	97.75	**380**		
8.0	8.5	7.90	40.0		80	8	5 x DC	2	104.81	**480**		
10.0	10.5	9.90	20.0	30	70	10	2 x DC	2	115.35	**100**		
10.0	10.5	9.90	40.0		90	10	4 x DC	2	125.05	**101**		
12.0	12.5	11.90	24.0		75	12	2 x DC	2	153.35	**120**		
12.0	12.5	11.90	40.0		90	12	3,3 x DC	2	163.76	**121**		

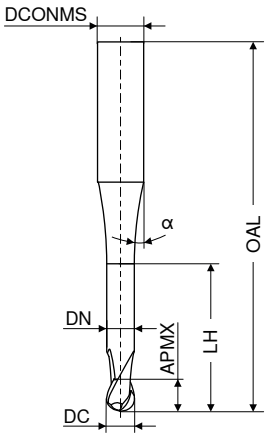
Steel	○	○
hardened < 45 HRC	○	○
hardened 46–55 HRC	○	○
hardened 56–60 HRC	●	●
hardened 61–65 HRC	●	●
hardened 65–70 HRC	●	●

→ v_c/f_z Page 262+263

MonsterMill – Ball nosed cutter

- Radius accuracy: ±0.01 mm
- T_x = maximum depth of cut
- DC Tolerance
  up to Ø 6 mm: 0 / -0.01 mm
  from Ø 6 mm: 0 / -0.02 mm

HCR | λ_s=30° γ_s=–3° | ZEFP | 54–70 HRC



DPX62U

DRAGONSKIN

Factory standard

HA

NEW V1

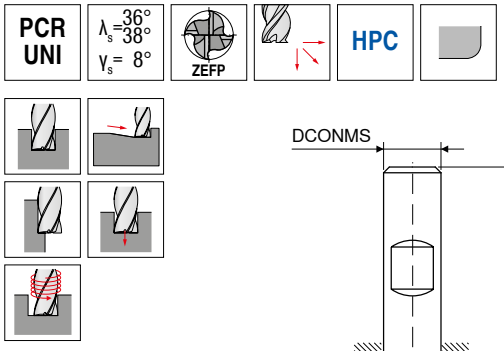
DC mm	APMX mm	DN mm	LH mm	α°	OAL mm	DCONMS $_{h5}$ mm	T_x	ZEFP	Article no. 53 602 ... £	
3	3.5	2.9	8	30	60	6	2,7 x DC	4	75.06	330
3	3.5	2.9	12	30	60	6	4 x DC	4	75.06	430
3	3.5	2.9	16	30	60	6	5,3 x DC	4	75.06	530
3	3.5	2.9	20	30	70	6	6,7 x DC	4	76.61	630
3	3.5	2.9	24	30	70	6	8 x DC	4	78.51	730
4	4.5	3.9	8	30	60	6	2 x DC	4	77.08	340
4	4.5	3.9	12	30	60	6	3 x DC	4	78.45	440
4	4.5	3.9	16	30	60	6	4 x DC	4	78.45	540
4	4.5	3.9	20	30	70	6	5 x DC	4	79.95	640
4	4.5	3.9	24	30	70	6	6 x DC	4	81.88	740
4	4.5	3.9	28	30	70	6	7 x DC	4	81.88	840
6	6.5	5.9	12		60	6	2 x DC	4	81.77	360
6	6.5	5.9	16		60	6	2,7 x DC	4	84.63	460
6	6.5	5.9	20		60	6	3,3 x DC	4	84.63	560
8	8.5	7.9	16		60	8	2 x DC	4	107.71	380
8	8.5	7.9	40		80	8	5 x DC	4	114.70	480
10	10.5	9.9	20		70	10	2 x DC	4	127.51	100
10	10.5	9.9	40		90	10	4 x DC	4	137.27	101
12	12.5	11.9	24		75	12	2 x DC	4	167.84	120
12	12.5	11.9	40		90	12	3,3 x DC	4	178.25	121

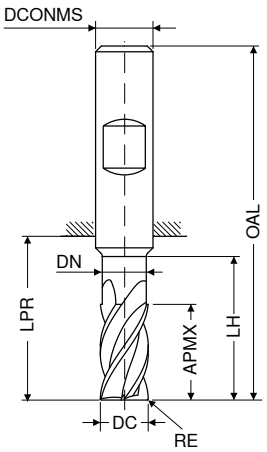
Steel	○
hardened < 45 HRC	○
hardened 46–55 HRC	○
hardened 56–60 HRC	●
hardened 61–65 HRC	●
hardened 65–70 HRC	●

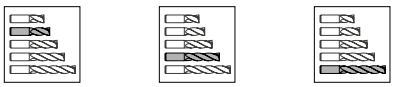
→ v_c/f_z Page 271

MonsterMill – Plunge milling cutter with corner radius

PCR UNI | λ_s=36° 38° γ_s= 8° | ZEFP | HPC







DIN 6527 | DIN 6527 | DIN 6527

HB | HB | HB

V1 | V1 | V1

DC f8	RE ±0,03	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 52 613 ...		Article no. 52 614 ...		Article no. 52 615 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£	
5.7	0.20	10			18	54	6	4	49.87	057				
5.7	0.20	13	5.5	19	21	57	6	4			50.12	057		
5.7	0.20	13	5.5	24	26	62	6	4					58.91	057
6.0	0.20	10			18	54	6	4	49.87	060				
6.0	0.20	13	5.8	19	21	57	6	4			52.23	060		
6.0	0.20	13	5.8	24	26	62	6	4					60.67	060
6.7	0.20	11			22	58	8	4	59.82	067				
6.7	0.20	16	6.5	25	27	63	8	4			59.19	067		
6.7	0.20	16	6.4	30	32	68	8	4					80.41	067
7.0	0.20	11			22	58	8	4	59.82	070				
7.0	0.20	16	6.8	25	27	63	8	4			59.19	070		
7.0	0.20	16	6.7	30	32	68	8	4					80.41	070
7.7	0.20	12			22	58	8	4	59.82	077				
7.7	0.20	19	7.5	25	27	63	8	4			60.93	077		
7.7	0.20	21	7.4	30	32	68	8	4					80.41	077
8.0	0.20	12			22	58	8	4	59.82	080				
8.0	0.20	19	7.8	25	27	63	8	4			63.05	080		
8.0	0.20	21	7.7	30	32	68	8	4					84.03	080
8.7	0.32	13			26	66	10	4	77.73	087				
8.7	0.32	19	8.5	30	32	72	10	4			88.54	087		
8.7	0.32	22	8.4	38	40	80	10	4					100.47	087
9.0	0.32	13			26	66	10	4	77.73	090				
9.0	0.32	19	8.8	30	32	72	10	4			88.54	090		
9.0	0.32	22	8.7	38	40	80	10	4					100.47	090
9.7	0.32	14			26	66	10	4	77.73	097				
9.7	0.32	22	9.5	30	32	72	10	4			88.54	097		
9.7	0.32	22	9.4	38	40	80	10	4					100.47	097
10.0	0.32	14			26	66	10	4	77.73	100				
10.0	0.32	22	9.8	30	32	72	10	4			84.19	100		
10.0	0.32	22	9.7	38	40	80	10	4					95.67	100
11.7	0.32	16			28	73	12	4	101.47	117				
11.7	0.32	26	11.5	36	38	83	12	4			113.41	117		
11.7	0.32	26	11.3	46	48	93	12	4					137.28	117
12.0	0.32	16			28	73	12	4	101.47	120				
12.0	0.32	26	11.8	36	38	83	12	4			108.18	120		
12.0	0.32	26	11.6	46	48	93	12	4					130.70	120
13.7	0.32	18			30	75	14	4	128.08	137				
13.7	0.32	26	13.5	36	38	83	14	4			134.30	137		
13.7	0.32	26	13.3	52	54	99	14	4					165.64	137
14.0	0.32	18			30	75	14	4	128.08	140				
14.0	0.32	26	13.8	36	38	83	14	4			139.27	140		

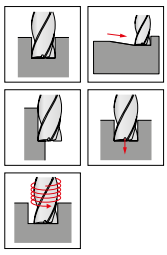
Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals			
Heat resistant alloys			
hardened materials			

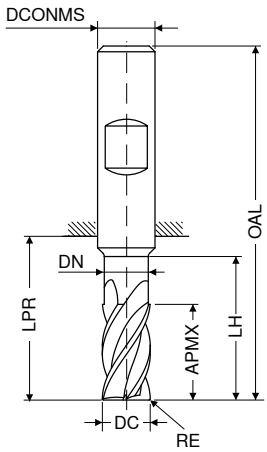
→ v_c/f_z Page 272+273

Continued on next page

MonsterMill – Plunge milling cutter with corner radius

PCR UNI | λ_s=36° 38° γ_s= 8° | ZEFP | HPC





DIN 6527 | DIN 6527 | DIN 6527

HB | HB | HB

V1 | V1 | V1

DC f8	RE ±0,03	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 52 613 ...	£	Article no. 52 614 ...	£	Article no. 52 615 ...	£
mm	mm	mm	mm	mm	mm	mm	mm							
14.0	0.32	26	13.6	52	54	99	14	4					161.41	**140**
15.5	0.32	22			34	82	16	4	162.90	**155**				
15.5	0.32	32	15.3	42	44	92	16	4			182.79	**155**		
15.5	0.32	36	15.0	58	60	108	16	4					231.04	**155**
16.0	0.32	22			34	82	16	4	162.90	**160**				
16.0	0.32	32	15.8	42	44	92	16	4			189.01	**160**		
16.0	0.32	36	15.5	58	60	108	16	4					225.70	**160**
17.5	0.32	24			36	84	18	4	193.98	**175**				
17.5	0.32	32	17.3	42	44	92	18	4			213.88	**175**		
17.5	0.32	36	17.0	67	69	117	18	4					259.77	**175**
18.0	0.32	24			36	84	18	4	193.98	**180**				
18.0	0.32	32	17.8	42	44	92	18	4			220.10	**180**		
18.0	0.32	36	17.5	67	69	117	18	4					259.27	**180**
19.5	0.50	26			42	92	20	4	239.99	**195**				
19.5	0.50	38	19.3	52	54	104	20	4			288.49	**195**		
19.5	0.50	41	19.0	74	76	126	20	4					381.13	**195**
20.0	0.50	26			42	92	20	4	239.99	**200**				
20.0	0.50	38	19.8	52	54	104	20	4			298.44	**200**		
20.0	0.50	41	19.5	74	76	126	20	4					374.29	**200**

Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals			
Heat resistant alloys			
hardened materials			

→ v_c/f_z Page 272+273

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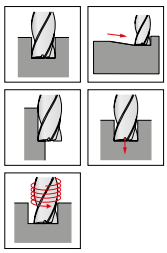
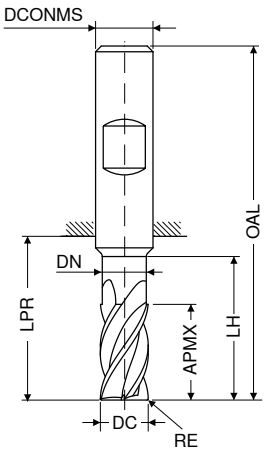
MonsterMill – Plunge milling cutter with corner radius

PCR ALU | λ_s=36° γ_s= 8° | ZEFP | HPC





DIN 6527 | HB | V1

DIN 6527 | HB | V1

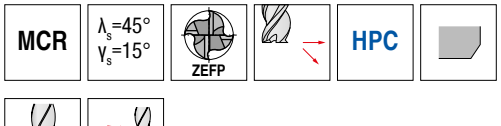
DC f8 mm	RE ±0,03 mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 52 616 ... £		Article no. 52 617 ... £	
5.0	0.20	13	4.8	19	21	57	6	4	62.09	050		
5.0	0.20	13	4.8	24	26	62	6	4			68.49	050
5.7	0.20	13	5.5	19	21	57	6	4	62.09	057		
5.7	0.20	13	5.5	24	26	62	6	4			68.49	057
6.0	0.20	13	5.8	19	21	57	6	4	63.94	060		
6.0	0.20	13	5.8	24	26	62	6	4			70.53	060
6.7	0.20	16	6.5	25	27	63	8	4	73.63	067		
6.7	0.20	16	6.4	30	32	68	8	4			92.04	067
7.0	0.20	16	6.8	25	27	63	8	4	73.63	070		
7.0	0.20	16	6.7	30	32	68	8	4			92.04	070
7.7	0.20	19	7.5	25	27	63	8	4	73.63	077		
7.7	0.20	21	7.4	30	32	68	8	4			92.04	077
8.0	0.20	19	7.8	25	27	63	8	4	78.00	080		
8.0	0.20	21	7.7	30	32	68	8	4			96.08	080
8.7	0.32	19	8.5	30	32	72	10	4	102.96	087		
8.7	0.32	22	8.4	38	40	80	10	4			113.23	087
9.0	0.32	19	8.8	30	32	72	10	4	102.96	090		
9.0	0.32	22	8.7	38	40	80	10	4			113.23	090
9.7	0.32	22	9.5	30	32	72	10	4	102.96	097		
9.7	0.32	22	9.4	38	40	80	10	4			113.23	097
10.0	0.32	22	9.8	30	32	72	10	4	99.84	100		
10.0	0.32	22	9.7	38	40	80	10	4			108.86	100
11.7	0.32	26	11.5	36	38	83	12	4	133.51	117		
11.7	0.32	26	11.3	46	48	93	12	4			155.32	117
12.0	0.32	26	11.8	36	38	83	12	4	127.27	120		
12.0	0.32	26	11.6	46	48	93	12	4			149.09	120
13.7	0.32	26	13.5	36	38	83	14	4	159.08	137		
13.7	0.32	26	13.3	52	54	99	14	4			189.31	137
14.0	0.32	26	13.8	36	38	83	14	4	164.66	140		
14.0	0.32	26	13.6	52	54	99	14	4			185.03	140
15.5	0.32	32	15.3	42	44	92	16	4	213.97	155		
15.5	0.32	36	15.0	58	60	108	16	4			260.81	155
16.0	0.32	32	15.8	42	44	92	16	4	220.58	160		
16.0	0.32	36	15.5	58	60	108	16	4			255.23	160
17.5	0.32	32	17.3	42	44	92	18	4	248.87	175		
17.5	0.32	36	17.0	67	69	117	18	4			292.34	175
18.0	0.32	32	17.8	42	44	92	18	4	254.84	180		
18.0	0.32	36	17.5	67	69	117	18	4			291.69	180
19.5	0.50	38	19.3	52	54	104	20	4	333.47	195		
19.5	0.50	41	19.0	74	76	126	20	4			424.30	195
20.0	0.50	38	19.8	52	54	104	20	4	344.76	200		
20.0	0.50	41	19.5	74	76	126	20	4			417.03	200

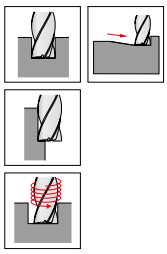
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

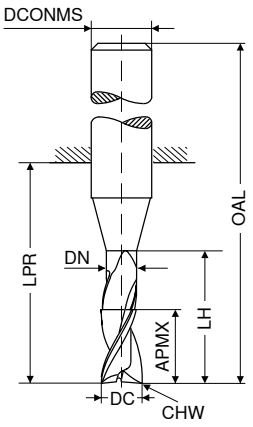
→ v_c/f_z Page 274+275

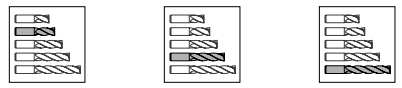
MonsterMill – Rough milling cutter

▲ Cutting edges with irregular pitch









Factory standard | Factory standard | Factory standard

HB | HB | HB

V1 | V1 | V1

DC h11	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 52 752 ...		Article no. 52 752 ...		Article no. 52 752 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£	
1	1.5	0.9	3	10	38	3	0.09	3	165.73	010 [1]				
2	3.0	1.9	8	21	57	6	0.17	3	164.04	020				
3	5.0	2.9	14	21	57	6	0.17	3	176.98	030				
3	8.0	2.9	14	21	57	6	0.17	3			190.39	031		
3	5.0	2.9	19	26	62	6	0.17	3					180.86	032
4	8.0	3.8	18	21	57	6	0.17	3	174.98	040				
4	11.0	3.8	18	21	57	6	0.17	3			188.40	041		
4	8.0	3.8	23	26	62	6	0.17	3					178.84	042
5	9.0	4.8	19	21	57	6	0.17	3	171.14	050				
5	13.0	4.8	19	21	57	6	0.17	3			184.55	051		
5	9.0	4.8	24	26	62	6	0.17	3					174.98	052
6	10.0	5.8	20	21	57	6	0.17	4	167.31	060				
6	13.0	5.8	20	21	57	6	0.17	4			180.86	061		
6	10.0	5.8	25	26	62	6	0.17	4					171.14	062
8	12.0	7.7	25	27	63	8	0.28	4	186.27	080				
8	19.0	7.7	25	27	63	8	0.28	4			218.88	081		
8	12.0	7.7	30	32	68	8	0.28	4					189.96	082
10	15.0	9.5	30	32	72	10	0.28	4	208.33	100				
10	22.0	9.5	30	32	72	10	0.28	4			229.40	101		
10	15.0	9.5	35	40	80	10	0.28	4					216.04	102
12	18.0	11.5	35	38	83	12	0.28	4	256.08	120				
12	26.0	11.5	35	38	83	12	0.28	4			278.60	121		
12	18.0	11.5	45	48	93	12	0.28	4					269.03	122
14	21.0	13.5	35	38	83	14	0.28	4	298.84	140				
14	26.0	13.5	35	38	83	14	0.28	4			311.65	141		
14	21.0	13.5	50	54	99	14	0.28	4					322.61	142
16	24.0	15.5	40	44	92	16	0.43	4	418.66	160				
16	32.0	15.5	40	44	92	16	0.43	4			451.89	161		
16	24.0	15.5	55	60	108	16	0.43	4					450.15	162
20	30.0	19.5	50	54	104	20	0.43	4	556.59	200				
20	38.0	19.5	50	54	104	20	0.43	4			593.92	201		
20	30.0	19.5	70	76	126	20	0.43	4					612.45	202

Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals	○	○	○
Heat resistant alloys	○	○	○
hardened materials	○	○	○

1) DIN 6535 HA Shank

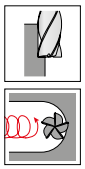
→ v_c/f_z Page 276–279

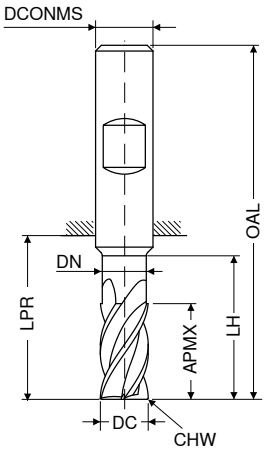
14

CircularLine – End milling cutter

▲ Chip breaker 0.9 x DC

CCR UNI | λ_s=30° 31° | γ_s= 8° | ZEFP | HPC





Factory standard

HB

V1

Factory standard

HB

V1

DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 53 585 ... £		Article no. 53 587 ... £	
mm	mm	mm	mm	mm	mm	mm	mm					
6	13	5.8	19	21	57	6	0.2	6	53.67	060		
6	19	5.8	25	27	63	6	0.2	6			52.61	060
8	21	7.7	25	27	63	8	0.2	6	69.99	080		
8	25	7.7	33	35	71	8	0.2	6			68.27	080
10	22	9.7	30	32	72	10	0.2	6	89.92	100		
10	31	9.7	41	43	83	10	0.2	6			96.25	100
12	26	11.6	36	38	83	12	0.2	6	115.64	120		
12	37	11.6	47	49	94	12	0.2	6			113.04	120
16	36	15.5	42	44	92	16	0.2	6	230.67	160		
16	49	15.5	61	63	111	16	0.2	6			233.91	160
20	41	19.5	52	54	104	20	0.2	6	331.64	200		
20	61	19.5	75	77	127	20	0.2	6			327.92	200

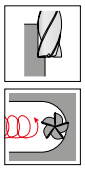
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals		
Heat resistant alloys	○	○
hardened materials		

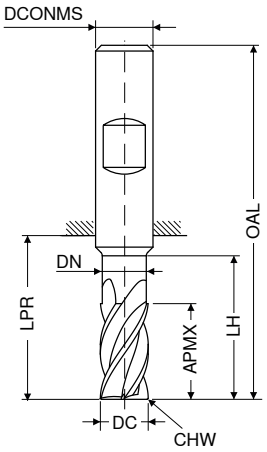
→ v_c/f_z Page 280+281

CircularLine – End milling cutter

▲ Chip breaker 0.9 x DC

CCR UNI | λ_s=35° 36° γ_s= 8° | ZEFP | HPC





DPX72S

DRAGONSKIN

Factory standard

HB

V1

DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 53 589 ...
mm	mm	mm	mm	mm	mm	mm	mm		£	
6	25	5.8	29	31	67	6	0.2	5	54.84	060
8	33	7.7	38	40	76	8	0.2	5	70.52	080
10	41	9.7	47	49	89	10	0.2	5	97.37	100
12	49	11.6	55	57	102	12	0.2	5	118.63	120
16	65	15.5	73	75	123	16	0.2	5	238.38	160
20	82	19.5	91	93	143	20	0.2	5	335.75	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	
Heat resistant alloys	○
hardened materials	

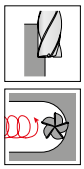
→ v_c/f_z Page 282+283

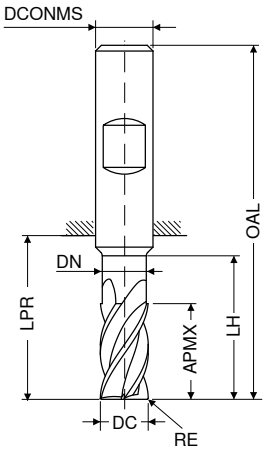
14

CircularLine – End milling cutter

▲ Chip breaker 0.9 x DC

CCR UNI | λ_s=30° 31° γ_s= 8° | ZEFP | HPC





DPX72S

DRAGONSKIN

Factory standard

HB

V1

DC e8	RE ±0,05	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 53 586 ...
mm	mm	mm	mm	mm	mm	mm	mm		£
6	0.2	13	5.8	19	21	57	6	6	53.67 06002
6	1.0	13	5.8	19	21	57	6	6	53.96 06010
6	1.5	13	5.8	19	21	57	6	6	53.96 06015
8	0.2	21	7.7	25	27	63	8	6	69.99 08002
8	1.0	21	7.7	25	27	63	8	6	71.66 08010
8	1.5	21	7.7	25	27	63	8	6	71.66 08015
8	2.0	21	7.7	25	27	63	8	6	71.66 08020
10	0.2	22	9.7	30	32	72	10	6	89.92 10002
10	1.0	22	9.7	30	32	72	10	6	92.39 10010
10	1.5	22	9.7	30	32	72	10	6	92.39 10015
10	1.6	22	9.7	30	32	72	10	6	92.39 10016
10	2.0	22	9.7	30	32	72	10	6	92.39 10020
12	0.2	26	11.6	36	38	83	12	6	115.64 12002
12	1.0	26	11.6	36	38	83	12	6	116.17 12010
12	1.5	26	11.6	36	38	83	12	6	116.17 12015
12	1.6	26	11.6	36	38	83	12	6	116.17 12016
12	2.0	26	11.6	36	38	83	12	6	116.17 12020
12	3.0	26	11.6	36	38	83	12	6	116.17 12030
16	0.2	36	15.5	42	44	92	16	6	230.67 16002
16	1.0	36	15.5	42	44	92	16	6	248.70 16010
16	1.5	36	15.5	42	44	92	16	6	240.37 16015
16	1.6	36	15.5	42	44	92	16	6	240.37 16016
16	2.0	36	15.5	42	44	92	16	6	240.37 16020
16	3.0	36	15.5	42	44	92	16	6	240.37 16030
16	4.0	36	15.5	42	44	92	16	6	240.37 16040
20	0.2	41	19.5	52	54	104	20	6	331.64 20002
20	1.0	41	19.5	52	54	104	20	6	334.99 20010
20	1.5	41	19.5	52	54	104	20	6	334.99 20015
20	1.6	41	19.5	52	54	104	20	6	334.99 20016
20	2.0	41	19.5	52	54	104	20	6	334.99 20020
20	3.0	41	19.5	52	54	104	20	6	334.99 20030
20	4.0	41	19.5	52	54	104	20	6	334.99 20040

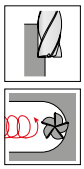
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	
Heat resistant alloys	○
hardened materials	

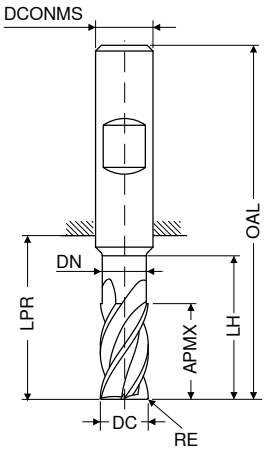
→ v_c/f_z Page 280+281

CircularLine – End milling cutter

▲ Chip breaker 1.8 x DC

CCR UNI | λ_s=30° 31° γ_s= 8° | ZEFP | HPC





DPX72S

DRAGONSKIN

Factory standard

HB

V1

DC e8	RE ±0,05	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 53 592 ...
mm	mm	mm	mm	mm	mm	mm	mm		£
6	0.2	19	5.8	25	27	63	6	6	52.61 06002
6	1.0	19	5.8	25	27	63	6	6	53.72 06010
6	1.5	19	5.8	25	27	63	6	6	53.72 06015
8	0.2	25	7.7	33	35	71	8	6	68.27 08002
8	1.0	25	7.7	33	35	71	8	6	70.52 08010
8	1.5	25	7.7	33	35	71	8	6	70.52 08015
8	2.0	25	7.7	33	35	71	8	6	70.52 08020
10	0.2	31	9.7	41	43	83	10	6	96.25 10002
10	1.0	31	9.7	41	43	83	10	6	98.48 10010
10	1.5	31	9.7	41	43	83	10	6	98.48 10015
10	1.6	31	9.7	41	43	83	10	6	98.48 10016
10	2.0	31	9.7	41	43	83	10	6	98.48 10020
12	0.2	37	11.6	47	49	94	12	6	113.04 12002
12	1.0	37	11.6	47	49	94	12	6	116.39 12010
12	1.5	37	11.6	47	49	94	12	6	116.39 12015
12	1.6	37	11.6	47	49	94	12	6	116.39 12016
12	2.0	37	11.6	47	49	94	12	6	116.39 12020
12	3.0	37	11.6	47	49	94	12	6	116.39 12030
16	0.2	49	15.5	61	63	111	16	6	233.91 16002
16	1.0	49	15.5	61	63	111	16	6	236.14 16010
16	1.5	49	15.5	61	63	111	16	6	236.14 16015
16	1.6	49	15.5	61	63	111	16	6	236.14 16016
16	2.0	49	15.5	61	63	111	16	6	236.14 16020
16	3.0	49	15.5	61	63	111	16	6	236.14 16030
16	4.0	49	15.5	61	63	111	16	6	236.14 16040
20	0.2	61	19.5	75	77	127	20	6	327.92 20002
20	1.0	61	19.5	75	77	127	20	6	331.26 20010
20	1.5	61	19.5	75	77	127	20	6	331.26 20015
20	1.6	61	19.5	75	77	127	20	6	331.26 20016
20	2.0	61	19.5	75	77	127	20	6	331.26 20020
20	3.0	61	19.5	75	77	127	20	6	331.26 20030
20	4.0	61	19.5	75	77	127	20	6	331.26 20040

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	
Heat resistant alloys	○
hardened materials	

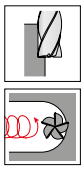
→ v_c/f_z Page 280+281

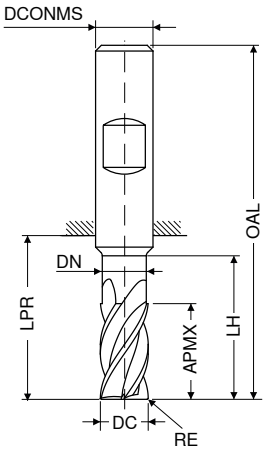
14

CircularLine – End milling cutter

▲ Chip breaker 0.9 x DC

CCR UNI | λ_s=35° 36° γ_s= 8° | ZEFP | HPC





DPX72S

DRAGONSKIN

Factory standard

HB

V1

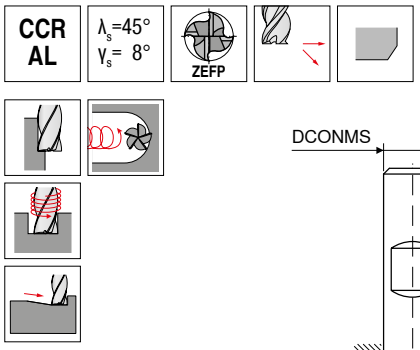
DC e8	RE ±0,05	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 53 593 ...
mm	mm	mm	mm	mm	mm	mm	mm		£
6	0.2	25	5.8	29	31	67	6	5	54.84 06002
6	1.0	25	5.8	29	31	67	6	5	55.95 06010
6	1.5	25	5.8	29	31	67	6	5	55.95 06015
8	0.2	33	7.7	38	40	76	8	5	70.52 08002
8	1.0	33	7.7	38	40	76	8	5	71.63 08010
8	1.5	33	7.7	38	40	76	8	5	71.63 08015
8	2.0	33	7.7	38	40	76	8	5	71.63 08020
10	0.2	41	9.7	47	49	89	10	5	97.37 10002
10	1.0	41	9.7	47	49	89	10	5	99.61 10010
10	1.5	41	9.7	47	49	89	10	5	99.61 10015
10	1.6	41	9.7	47	49	89	10	5	99.61 10016
10	2.0	41	9.7	47	49	89	10	5	99.61 10020
12	0.2	49	11.6	55	57	102	12	5	118.63 12002
12	1.0	49	11.6	55	57	102	12	5	121.99 12010
12	1.5	49	11.6	55	57	102	12	5	121.99 12015
12	1.6	49	11.6	55	57	102	12	5	121.99 12016
12	2.0	49	11.6	55	57	102	12	5	121.99 12020
12	3.0	49	11.6	55	57	102	12	5	121.99 12030
16	0.2	65	15.5	73	75	123	16	5	238.38 16002
16	1.0	65	15.5	73	75	123	16	5	242.86 16010
16	1.5	65	15.5	73	75	123	16	5	242.86 16015
16	1.6	65	15.5	73	75	123	16	5	242.86 16016
16	2.0	65	15.5	73	75	123	16	5	242.86 16020
16	3.0	65	15.5	73	75	123	16	5	242.86 16030
16	4.0	65	15.5	73	75	123	16	5	242.86 16040
20	0.2	82	19.5	91	93	143	20	5	335.75 20002
20	1.0	82	19.5	91	93	143	20	5	341.34 20010
20	1.5	82	19.5	91	93	143	20	5	341.34 20015
20	1.6	82	19.5	91	93	143	20	5	341.34 20016
20	2.0	82	19.5	91	93	143	20	5	341.34 20020
20	3.0	82	19.5	91	93	143	20	5	341.34 20030
20	4.0	82	19.5	91	93	143	20	5	341.34 20040

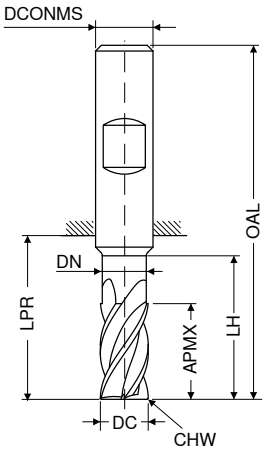
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 282+283

CircularLine – End milling cutter

▲ Chip breaker 1.8 x DC





Factory standard | Factory standard

HB | HB

DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	V1 Article no. 53 590 ...		V1 Article no. 53 591 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
6	19	5.8	24	30	66	6	0.2	4	54.84	060		
6	25	5.8	30	35	71	6	0.2	4			57.08	060
8	25	7.7	32	37	73	8	0.2	4	71.63	080		
8	33	7.7	40	44	80	8	0.2	4			73.86	080
10	31	9.7	40	49	89	10	0.2	4	100.72	100		
10	41	9.7	50	55	95	10	0.2	4			101.85	100
12	37	11.6	48	56	101	12	0.2	4	120.86	120		
12	49	11.6	60	64	109	12	0.2	4			126.47	120
16	49	15.5	64	72	120	16	0.2	4	247.33	160		
16	65	15.5	80	84	132	16	0.2	4			252.93	160
20	62	19.5	80	84	134	20	0.2	4	346.94	200		
20	82	19.5	100	104	154	20	0.2	4			355.88	200

Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 284

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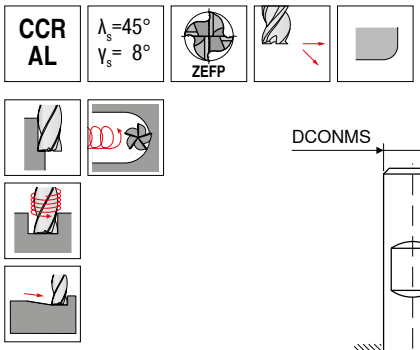
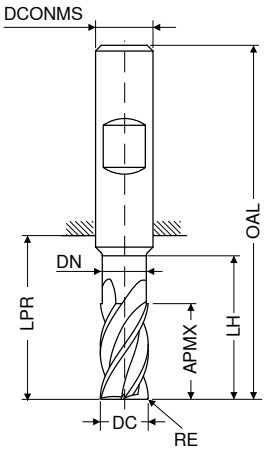
CircularLine – End milling cutter

▲ Chip breaker 1.8 x DC





Factory standard

Factory standard

HB

HB

DC e8	RE ±0,05	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	V1 Article no. 53 594 ...		V1 Article no. 53 595 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
6	0.2	19	5.8	24	30	66	6	4	54.84	06002		
6	1.0	19	5.8	24	30	66	6	4	57.08	06010		
6	1.5	19	5.8	24	30	66	6	4	57.08	06015		
6	0.2	25	5.8	30	35	71	6	4			57.08	06002
6	1.0	25	5.8	30	35	71	6	4			58.19	06010
6	1.5	25	5.8	30	35	71	6	4			58.19	06015
8	0.2	25	7.7	32	37	73	8	4	71.63	08002		
8	1.0	25	7.7	32	37	73	8	4	73.86	08010		
8	1.5	25	7.7	32	37	73	8	4	73.86	08015		
8	2.0	25	7.7	32	37	73	8	4	73.86	08020		
8	0.2	33	7.7	40	44	80	8	4			73.86	08002
8	1.0	33	7.7	40	44	80	8	4			76.10	08010
8	1.5	33	7.7	40	44	80	8	4			76.10	08015
8	2.0	33	7.7	40	44	80	8	4			76.10	08020
10	0.2	31	9.7	40	49	89	10	4	100.72	10002		
10	1.0	31	9.7	40	49	89	10	4	101.85	10010		
10	1.5	31	9.7	40	49	89	10	4	101.85	10015		
10	1.6	31	9.7	40	49	89	10	4	101.85	10016		
10	2.0	31	9.7	40	49	89	10	4	101.85	10020		
10	0.2	41	9.7	50	55	95	10	4			101.85	10002
10	1.0	41	9.7	50	55	95	10	4			104.09	10010
10	1.5	41	9.7	50	55	95	10	4			104.09	10015
10	1.6	41	9.7	50	55	95	10	4			104.09	10016
10	2.0	41	9.7	50	55	95	10	4			104.09	10020
12	0.2	37	11.6	48	56	101	12	4	120.86	12002		
12	1.0	37	11.6	48	56	101	12	4	123.11	12010		
12	1.5	37	11.6	48	56	101	12	4	123.11	12015		
12	1.6	37	11.6	48	56	101	12	4	123.11	12016		
12	2.0	37	11.6	48	56	101	12	4	123.11	12020		
12	3.0	37	11.6	48	56	101	12	4	123.11	12030		
12	0.2	49	11.6	60	64	109	12	4			126.47	12002
12	1.0	49	11.6	60	64	109	12	4			129.82	12010
12	1.5	49	11.6	60	64	109	12	4			129.82	12015
12	1.6	49	11.6	60	64	109	12	4			129.82	12016
12	2.0	49	11.6	60	64	109	12	4			129.82	12020
12	3.0	49	11.6	60	64	109	12	4			129.82	12030
16	0.2	49	15.5	64	72	120	16	4	247.33	16002		
16	1.0	49	15.5	64	72	120	16	4	249.57	16010		
16	1.5	49	15.5	64	72	120	16	4	249.57	16015		

Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

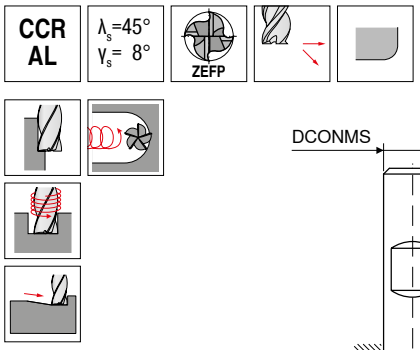
→ v_c/f_z Page 284

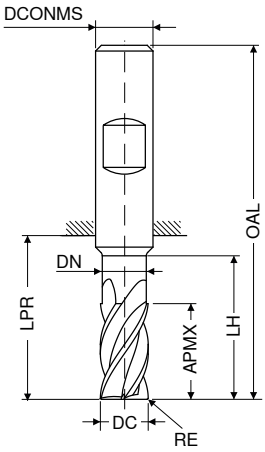
Continued on next page

CircularLine – End milling cutter

▲ Chip breaker 1.8 x DC

CCR AL | λ_s=45° γ_s= 8° | ZEFP





Factory standard | Factory standard

HB | HB

DC e8	RE ±0,05	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	V1 Article no. 53 594 ...		V1 Article no. 53 595 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
16	1.6	49	15.5	64	72	120	16	4	249.57	16016		
16	2.0	49	15.5	64	72	120	16	4	249.57	16020		
16	3.0	49	15.5	64	72	120	16	4	249.57	16030		
16	4.0	49	15.5	64	72	120	16	4	249.57	16040		
16	0.2	65	15.5	80	84	132	16	4			252.93	16002
16	1.0	65	15.5	80	84	132	16	4			256.29	16010
16	1.5	65	15.5	80	84	132	16	4			256.29	16015
16	1.6	65	15.5	80	84	132	16	4			256.29	16016
16	2.0	65	15.5	80	84	132	16	4			256.29	16020
16	3.0	65	15.5	80	84	132	16	4			256.29	16030
16	4.0	65	15.5	80	84	132	16	4			256.29	16040
20	0.2	62	19.5	80	84	134	20	4	346.94	20002		
20	1.0	62	19.5	80	84	134	20	4	351.41	20010		
20	1.5	62	19.5	80	84	134	20	4	351.41	20015		
20	1.6	62	19.5	80	84	134	20	4	351.41	20016		
20	2.0	62	19.5	80	84	134	20	4	351.41	20020		
20	3.0	62	19.5	80	84	134	20	4	351.41	20030		
20	4.0	62	19.5	80	84	134	20	4	351.41	20040		
20	0.2	82	19.5	100	104	154	20	4			355.88	20002
20	1.0	82	19.5	100	104	154	20	4			359.25	20010
20	1.5	82	19.5	100	104	154	20	4			359.25	20015
20	1.6	82	19.5	100	104	154	20	4			359.25	20016
20	2.0	82	19.5	100	104	154	20	4			359.25	20020
20	3.0	82	19.5	100	104	154	20	4			359.25	20030
20	4.0	82	19.5	100	104	154	20	4			359.25	20040

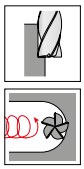
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

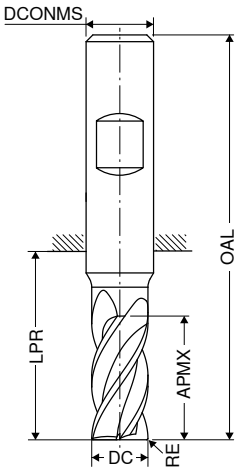
→ v_c/f_z Page 284

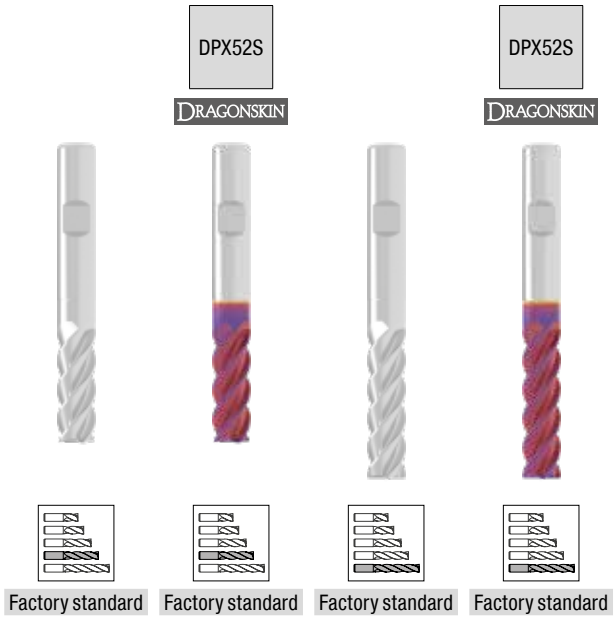
CircularLine – End milling cutter with corner radius

▲ Chip breaker 0.9 x DC

CCR Ti | λ_s=40° γ_s=10° | ZEFP | HPC







Factory standard | Factory standard | Factory standard | Factory standard

HB | HB | HB | HB

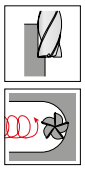
DC e8	RE ±0,01	APMX	LPR	OAL	DCONMS h5	ZEFP	NEW V1 Article no. 52 509 ...		NEW V1 Article no. 52 510 ...		NEW V1 Article no. 52 509 ...		NEW V1 Article no. 52 510 ...	
mm	mm	mm	mm	mm	mm		£		£		£		£	
6	0.1	18	29	65	6	5	68.14	06000	75.79	06000				
6	0.1	24	31	67	6	5					74.05	06100	81.71	06100
8	0.2	24	34	70	8	5	89.34	08000	100.10	08000				
8	0.2	32	44	80	8	5					93.02	08100	103.77	08100
10	0.2	30	40	80	10	5	111.70	10000	124.95	10000				
10	0.2	40	50	90	10	5					118.25	10100	131.53	10100
12	0.2	36	50	95	12	5	143.08	12000	158.09	12000				
12	0.2	48	55	100	12	5					149.31	12100	164.33	12100
16	0.2	48	62	110	16	5	221.37	16000	239.73	16000				
16	0.3	64	72	120	16	5					235.46	16100	253.94	16100
20	0.3	60	75	125	20	5	292.04	20000	314.68	20000				
20	0.3	80	90	140	20	5					360.98	20100	383.62	20100

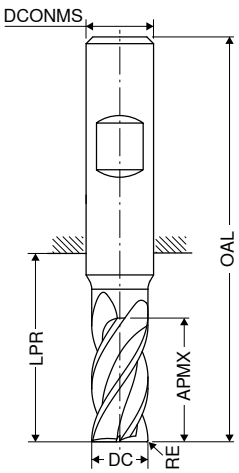
Steel				
Stainless steel	○	○	○	○
Cast iron				
Non ferrous metals				
Heat resistant alloys	●	●	●	●
hardened materials				

→ v_c/f_z Page 286+287

CircularLine – End milling cutter

▲ Chip breaker 0.9 x DC





DPX62S

DRAGONSKIN

Factory standard

HB

NEW V1

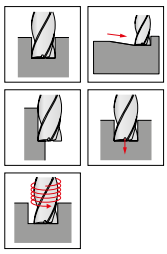
DC e8	RE ±0,03	APMX	LPR	OAL	DCONMS h6	ZEFP	Article no. 53 596 ...
mm	mm	mm	mm	mm	mm		£
6	0.2	19	24	60	6	6	58.75 06002
6	1.0	19	24	60	6	6	58.75 06010
8	0.2	25	31	67	8	6	80.93 08002
8	1.0	25	31	67	8	6	80.93 08010
10	0.2	31	37	77	10	6	112.10 10002
10	1.0	31	37	77	10	6	112.10 10010
10	1.5	31	37	77	10	6	112.10 10015
12	0.2	37	43	88	12	6	133.16 12002
12	1.0	37	43	88	12	6	133.16 12010
12	1.5	37	43	88	12	6	133.16 12015
12	2.0	37	43	88	12	6	133.16 12020
12	3.0	37	43	88	12	6	133.16 12030
16	0.2	49	56	104	16	6	266.69 16002
16	1.0	49	56	104	16	6	266.69 16010
16	1.5	49	56	104	16	6	266.69 16015
16	2.0	49	56	104	16	6	266.69 16020
16	3.0	49	56	104	16	6	266.69 16030
20	0.2	61	68	118	20	6	384.60 20002
20	1.0	61	68	118	20	6	384.60 20010
20	1.5	61	68	118	20	6	384.60 20015
20	2.0	61	68	118	20	6	384.60 20020
20	3.0	61	68	118	20	6	384.60 20030

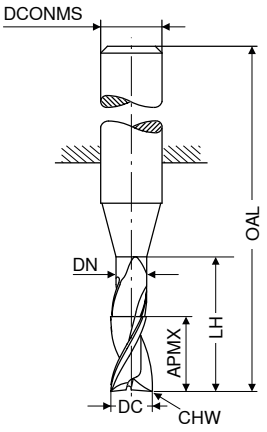
hardened < 45 HRC	●
hardened 46–55 HRC	●
hardened 56–60 HRC	●
hardened 61–65 HRC	●
hardened 65–70 HRC	●

→ v_c/f_z Page 285

AluLine – End milling cutter

▲ with polished chip flutes





Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA

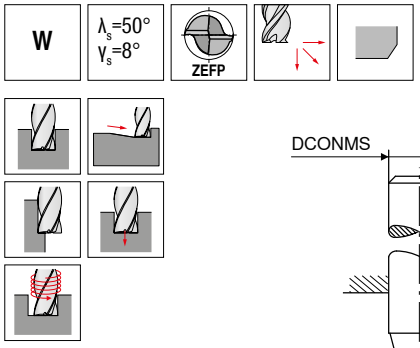
V1 | V1 | V1 | V1

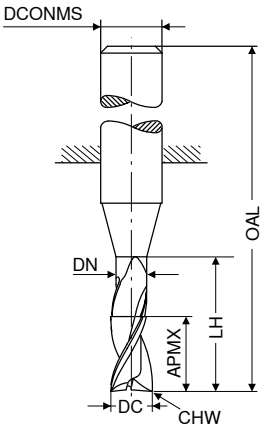
DC h6	APMX	DN	LH	OAL	DCONMS h5	CHW	ZEFP	Article no. 53 500 ...		Article no. 53 501 ...		Article no. 53 502 ...		Article no. 53 503 ...	
mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
2.0	8	1.9	16	57	6	0.05	2							25.16	**020**
2.5	8	2.4	16	57	6	0.10	2							27.02	**025**
3.0	8	2.9	18	57	6	0.10	2							26.40	**030**
3.5	11	3.4	18	57	6	0.10	2					29.52	**035**		
4.0	11	3.9	18	57	6	0.10	2					29.52	**040**		
4.5	13	4.4	20	57	6	0.10	2					29.02	**045**		
5.0	13	4.9	20	57	6	0.10	2					27.90	**050**		
5.5	13	5.4	20	57	6	0.10	2			27.39	**055**				
6.0	13	5.9	20	57	6	0.10	2			25.77	**060**				
6.5	16	6.2	26	63	8	0.10	2					38.73	**065**		
7.0	16	6.7	26	63	8	0.10	2			37.87	**070**				
7.5	19	7.2	26	63	8	0.10	2			36.86	**075**				
8.0	19	7.7	26	63	8	0.10	2			36.24	**080**				
8.5	19	8.2	29	72	10	0.10	2			54.80	**085**				
9.0	19	8.7	29	72	10	0.10	2			53.31	**090**				
9.5	22	9.2	29	72	10	0.10	2			52.06	**095**				
10.0	22	9.7	29	72	10	0.10	2	50.81	**100**						
10.5	26	10.2	36	83	12	0.10	2			83.21	**105**				
11.0	26	10.7	36	83	12	0.10	2			81.20	**110**				
11.5	26	11.2	36	83	12	0.10	2			79.21	**115**				
12.0	26	11.7	36	83	12	0.10	2			79.21	**120**				
12.5	26	12.2	36	83	14	0.10	2	102.87	**125**						
13.0	26	12.7	36	83	14	0.10	2	102.00	**130**						
13.5	26	13.2	36	83	14	0.10	2	101.13	**135**						
14.0	26	13.7	36	83	14	0.10	2	102.11	**140**						
14.5	32	14.0	42	92	16	0.10	2	139.61	**145**						
15.0	32	14.5	42	92	16	0.10	2	136.13	**150**						
15.5	32	15.0	42	92	16	0.10	2	133.76	**155**						
16.0	32	15.5	42	92	16	0.10	2	140.85	**160**						
16.5	32	16.0	42	92	18	0.10	2	178.72	**165**						
17.0	32	16.5	42	92	18	0.10	2	175.11	**170**						
17.5	32	17.0	42	92	18	0.10	2	171.62	**175**						
18.0	32	17.5	42	92	18	0.10	2	171.62	**180**						
18.5	38	18.0	52	104	20	0.10	2	214.20	**185**						
19.0	38	18.5	52	104	20	0.10	2	208.23	**190**						
19.5	38	19.0	52	104	20	0.10	2	203.49	**195**						
20.0	38	19.5	52	104	20	0.10	2	202.39	**200**						

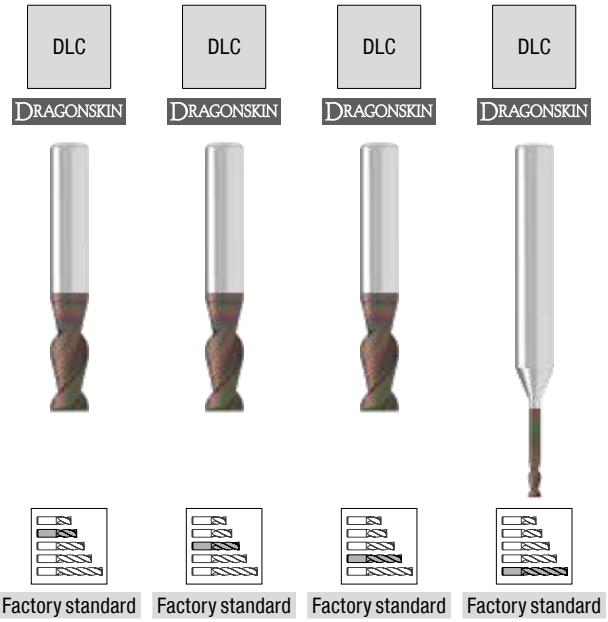
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

→ v_c/f_z Page 288+289

AluLine – End milling cutter







DC h6	APMX	DN	LH	OAL	DCONMS h5	CHW	ZEFP	V1 Article no. 53 504 ...		V1 Article no. 53 505 ...		V1 Article no. 53 506 ...		V1 Article no. 53 507 ...	
mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
2.0	8	1.9	16	57	6	0.05	2							36.61	**020**
2.5	8	2.4	16	57	6	0.10	2							36.98	**025**
3.0	8	2.9	18	57	6	0.10	2							36.49	**030**
3.5	11	3.4	18	57	6	0.10	2					39.48	**035**		
4.0	11	3.9	18	57	6	0.10	2					39.48	**040**		
4.5	13	4.4	20	57	6	0.10	2					39.12	**045**		
5.0	13	4.9	20	57	6	0.10	2					38.12	**050**		
5.5	13	5.4	20	57	6	0.10	2			37.49	**055**				
6.0	13	5.9	20	57	6	0.10	2			35.87	**060**				
6.5	16	6.2	26	63	8	0.10	2					48.70	**065**		
7.0	16	6.7	26	63	8	0.10	2			47.94	**070**				
7.5	19	7.2	26	63	8	0.10	2			47.08	**075**				
8.0	19	7.7	26	63	8	0.10	2			46.33	**080**				
8.5	19	8.2	29	72	10	0.10	2			64.89	**085**				
9.0	19	8.7	29	72	10	0.10	2			63.51	**090**				
9.5	22	9.2	29	72	10	0.10	2			62.15	**095**				
10.0	22	9.7	29	72	10	0.10	2	60.89	**100**						
10.5	26	10.2	36	83	12	0.10	2			93.29	**105**				
11.0	26	10.7	36	83	12	0.10	2			91.15	**110**				
11.5	26	11.2	36	83	12	0.10	2			89.17	**115**				
12.0	26	11.7	36	83	12	0.10	2			89.17	**120**				
12.5	26	12.2	36	83	14	0.10	2	112.96	**125**						
13.0	26	12.7	36	83	14	0.10	2	112.09	**130**						
13.5	26	13.2	36	83	14	0.10	2	111.22	**135**						
14.0	26	13.7	36	83	14	0.10	2	112.21	**140**						
14.5	32	14.0	42	92	16	0.10	2	150.32	**145**						
15.0	32	14.5	42	92	16	0.10	2	146.72	**150**						
15.5	32	15.0	42	92	16	0.10	2	143.21	**155**						
16.0	32	15.5	42	92	16	0.10	2	150.32	**160**						
16.5	32	16.0	42	92	18	0.10	2	188.19	**165**						
17.0	32	16.5	42	92	18	0.10	2	184.55	**170**						
17.5	32	17.0	42	92	18	0.10	2	181.08	**175**						
18.0	32	17.5	42	92	18	0.10	2	182.20	**180**						
18.5	38	18.0	52	104	20	0.10	2	223.67	**185**						
19.0	38	18.5	52	104	20	0.10	2	218.94	**190**						
19.5	38	19.0	52	104	20	0.10	2	214.20	**195**						
20.0	38	19.5	52	104	20	0.10	2	212.96	**200**						

Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

→ v_c/f_z Page 288+289

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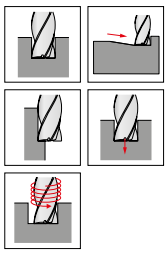
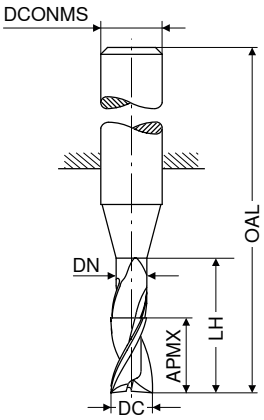
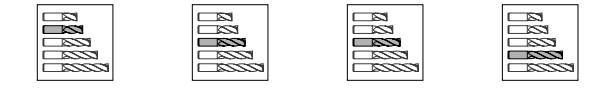
AluLine – End milling cutter

▲ with polished chip flutes







Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA

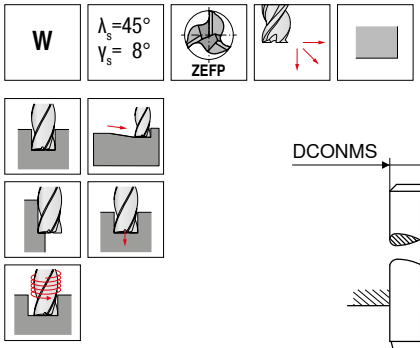
V1 | V1 | V1 | V1

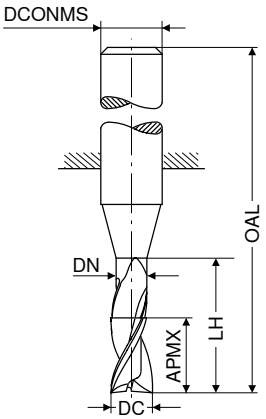
DC h6	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Article no. 53 517 ...		Article no. 53 518 ...		Article no. 53 519 ...		Article no. 53 520 ...	
mm	mm	mm	mm	mm	mm		£		£		£		£	
3	8	2.7	13	57	6	3							28.40	030
4	11	3.7	17	57	6	3							31.14	040
5	13	4.7	19	57	6	3					30.76	050		
6	13	5.7	19	57	6	3					28.76	060		
6	18	5.7	24	62	6	3							31.26	060
8	21	7.4	25	63	8	3			37.91	080				
8	24	7.4	30	68	8	3					46.08	080		
10	22	9.2	30	72	10	3			52.48	100				
10	30	9.2	38	80	10	3					60.77	100		
12	26	11.0	36	83	12	3			81.75	120				
12	36	11.0	46	93	12	3					94.53	120		
14	26	13.0	36	83	14	3	104.60	140						
16	36	15.0	42	92	16	3	145.19	160						
16	48	15.0	58	108	16	3					170.37	160		
18	36	17.0	42	92	18	3	176.21	180						
20	41	19.0	52	104	20	3	208.27	200						
20	60	19.0	74	126	20	3					319.43	200		

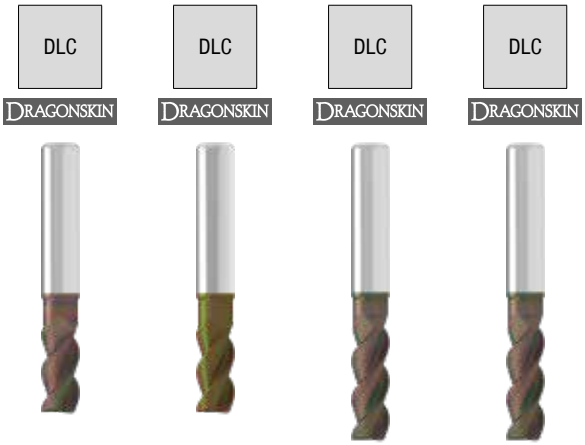
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

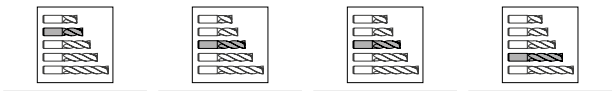
→ v_c/f_z Page 288+289

AluLine – End milling cutter









DC h6	APMX	DN	LH	OAL	DCONMS h5	ZEFP	V1 Article no. 53 521 ...		V1 Article no. 53 522 ...		V1 Article no. 53 523 ...		V1 Article no. 53 524 ...	
mm	mm	mm	mm	mm	mm		£		£		£		£	
3	8	2.7	13	57	6	3							38.60	030
4	11	3.7	17	57	6	3							41.34	040
5	13	4.7	19	57	6	3					40.86	050		
6	13	5.7	19	57	6	3					38.98	060		
6	18	5.7	24	62	6	3							41.47	060
8	21	7.4	25	63	8	3			50.57	080				
8	24	7.4	30	68	8	3					56.04	080		
10	22	9.2	30	72	10	3			66.14	100				
10	30	9.2	38	80	10	3					70.99	100		
12	26	11.0	36	83	12	3			97.38	120				
12	36	11.0	46	93	12	3					104.61	120		
14	26	13.0	36	83	14	3	121.92	140						
16	36	15.0	42	92	16	3	165.64	160						
18	36	17.0	42	92	18	3	197.66	180						
20	41	19.0	52	104	20	3	233.14	200						

Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

→ v_c/f_z Page 288+289

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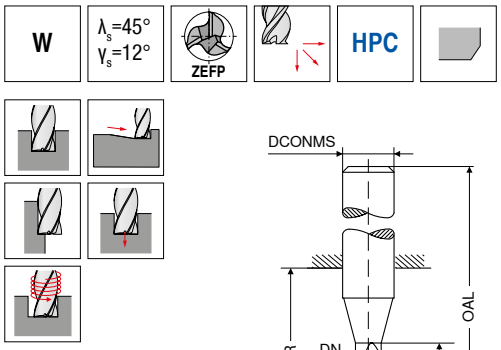
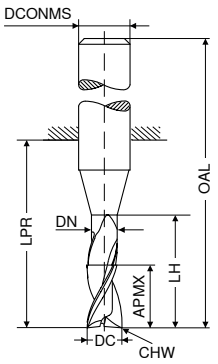
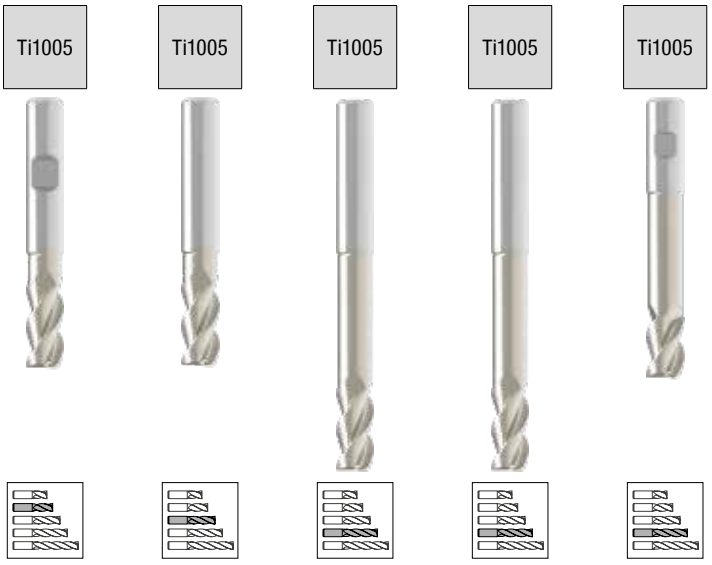
AluLine – End milling cutter

▲ with graduated flute depth





LPR with Shank DIN 6535 HB



Factory standard | Factory standard | Factory standard | Factory standard | Factory standard

HB | HA | HA | HA | HB

V1 | V1 | V1 | V1 | V1

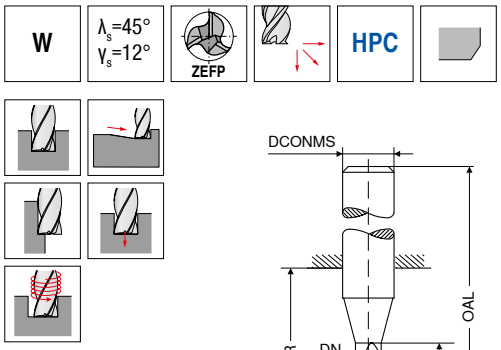
DC h10	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 53 532 ...		Article no. 53 533 ...		Article no. 53 534 ...		Article no. 53 536 ...		Article no. 53 535 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£	
3	8	2.7	12	21	57	6	0.1	3							37.87	030		
4	11	3.7	18	21	57	6	0.1	3							37.87	040		
5	13	4.7	18	21	57	6	0.1	3			35.12	050						
6	13	5.7	18	21	57	6	0.2	3			39.72	060						
8	21	7.4	25	27	63	8	0.2	3			45.58	080						
10	16	9.2	58	60	100	10	0.2	3					103.00	100				
10	22	9.2	30	32	72	10	0.2	3			78.70	100						
10	22	9.2	58	60	100	10	0.2	3							103.00	100		
12	26	11.0	36	38	83	12	0.2	3			106.48	120						
16	36	15.0	42	44	92	16	0.2	3	207.09	160								
18	36	17.0	42	44	92	18	0.2	3	257.93	180								
20	32	19.0	98	100	150	20	0.2	3									415.34	200
20	41	19.0	52	54	104	20	0.2	3	297.03	200								

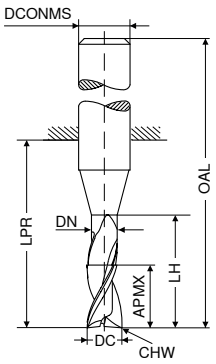
Steel						
Stainless steel						
Cast iron						
Non ferrous metals	●	●	●	●	●	
Heat resistant alloys						
hardened materials						

→ v_c/f_z Page 288+289

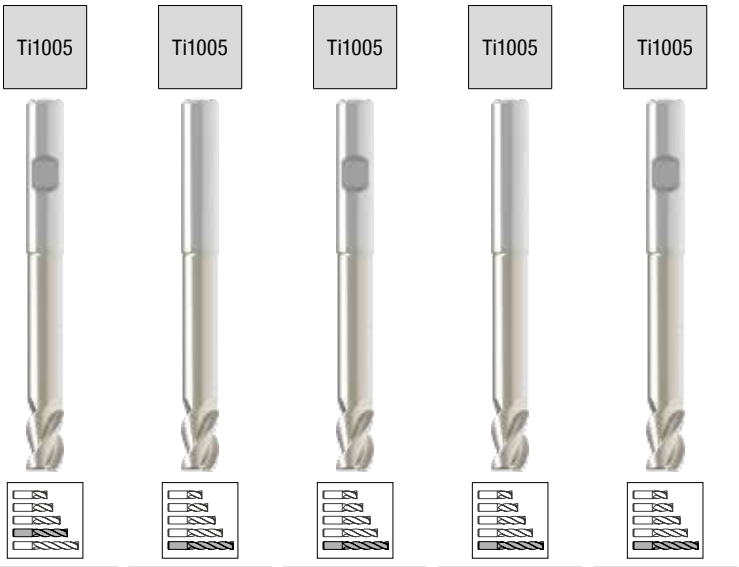
AluLine – End milling cutter

▲ with graduated flute depth





LPR with Shank DIN 6535 HB



Factory standard | Factory standard | Factory standard | Factory standard | Factory standard

HB | HA | HB | HA | HB

V1 | V1 | V1 | V1 | V1

DC h10	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 53 537 ...		Article no. 53 538 ...		Article no. 53 539 ...		Article no. 53 540 ...		Article no. 53 541 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£	
3	5.0	2.7	18	44	80	6	0.1	3							51.06	030		
4	6.5	3.7	24	44	80	6	0.1	3							51.06	040		
5	8.0	4.7	30	44	80	6	0.1	3							51.06	050		
6	10.0	5.7	42	44	80	6	0.2	3			53.56	060						
6	13.0	5.7	42	44	80	6	0.2	3							53.56	060		
8	13.0	7.4	62	64	100	8	0.2	3			69.62	080						
8	21.0	7.4	62	64	100	8	0.2	3							69.62	080		
12	19.0	11.0	73	75	120	12	0.2	3			145.59	120						
12	26.0	11.0	73	75	120	12	0.2	3							145.59	120		
16	25.0	15.0	100	102	150	16	0.2	3					323.05	160				
16	36.0	15.0	100	102	150	16	0.2	3									323.05	160
18	36.0	17.0	100	102	150	18	0.2	3	384.57	180								
20	41.0	19.0	98	100	150	20	0.2	3	415.34	200								

Steel					
Stainless steel					
Cast iron					
Non ferrous metals	●	●	●	●	●
Heat resistant alloys					
hardened materials					

→ v_c/f_z Page 288+289

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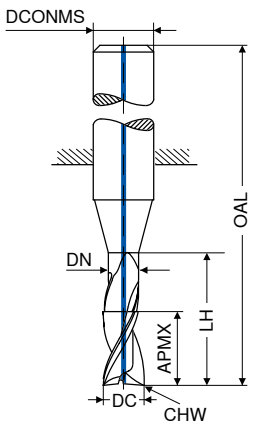
AluLine – End milling cutter

W | λ_s=45° γ_s=12° | ZEFP | HPC



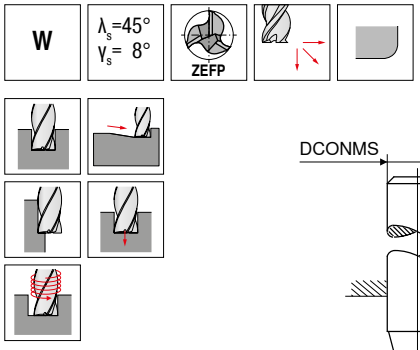
								Factory standard		Factory standard	
								HA		HA	
								V1		V1	
DC h10	APMX	DN	LH	OAL	DCONMS h6	CHW	ZEFP	Article no. 53 542 ...		Article no. 53 543 ...	
mm	mm	mm	mm	mm	mm	mm		£		£	
6	10	5.7	42	80	6	0.2	3			67.12	**060**
8	13	7.4	62	100	8	0.2	3			86.93	**080**
10	16	9.2	58	100	10	0.2	3	129.02	**100**		
12	19	11.0	73	120	12	0.2	3			182.20	**120**

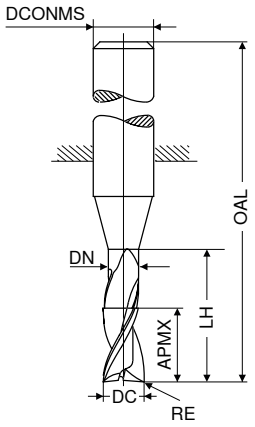
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

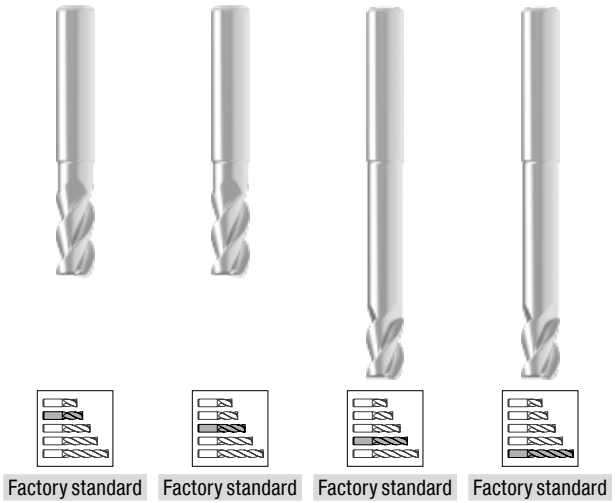
→ v_c/f_z Page 288+289

AluLine – End milling cutter with corner radius

▲ With polished chip flutes







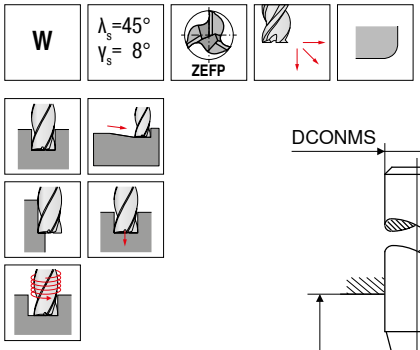
DC h6	RE ±0,01	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Factory standard HA V1 Article no. 53 525 ... £		Factory standard HA V1 Article no. 53 527 ... £		Factory standard HA V1 Article no. 53 528 ... £		Factory standard HA V1 Article no. 53 530 ... £	
mm	mm	mm	mm	mm	mm	mm									
5	0.5	13	4.7	19	57	6	3			25.03	05005				
5	1.0	13	4.7	19	57	6	3			25.03	05010				
6	0.5	10	5.7	42	80	6	3							34.38	06005
6	0.5	13	5.7	19	57	6	3			25.03	06005				
6	1.0	10	5.7	42	80	6	3							34.38	06010
6	1.0	13	5.7	19	57	6	3			25.03	06010				
8	0.5	13	7.4	62	100	8	3							48.07	08005
8	0.5	21	7.4	25	63	8	3			31.39	08005				
8	1.0	13	7.4	62	100	8	3							48.07	08010
8	1.0	21	7.4	25	63	8	3			31.39	08010				
10	0.5	16	9.2	58	100	10	3					66.88	10005		
10	0.5	22	9.2	30	72	10	3			45.58	10005				
10	1.0	16	9.2	58	100	10	3					66.88	10010		
10	1.0	22	9.2	30	72	10	3			45.58	10010				
12	0.5	19	11.0	73	120	12	3							98.26	12005
12	0.5	26	11.0	36	83	12	3			65.62	12005				
12	1.0	19	11.0	73	120	12	3							98.26	12010
12	1.0	26	11.0	36	83	12	3			65.62	12010				
16	2.0	25	15.0	100	150	16	3							186.93	16020
16	2.0	36	15.0	42	92	16	3	111.58	16020						
16	4.0	25	15.0	100	150	16	3							186.93	16040
16	4.0	36	15.0	42	92	16	3	111.58	16040						
20	4.0	32	19.0	98	150	20	3					307.61	20040		
20	4.0	41	19.0	52	104	20	3	173.98	20040						

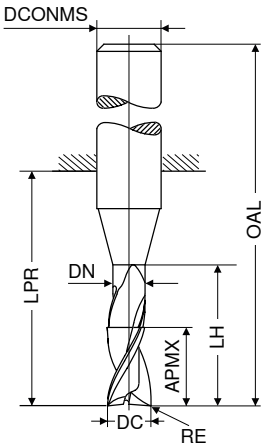
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

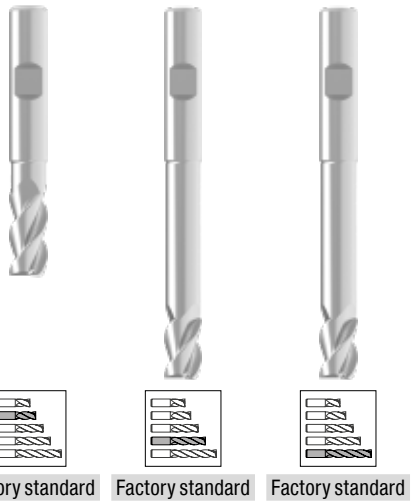
→ v_c/f_z Page 288+289

AluLine – End milling cutter with corner radius

▲ With polished chip flutes







Factory standard | Factory standard | Factory standard

HB | HB | HB

V1 | V1 | V1

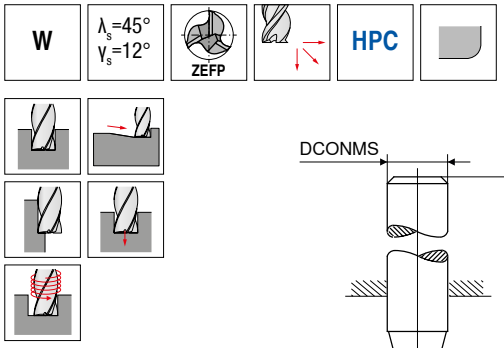
DC h6	RE ±0,01	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Article no. 53 526 ... £		Article no. 53 529 ... £		Article no. 53 531 ... £	
mm	mm	mm	mm	mm	mm	mm	mm							
16	2	25	15	100	102	150	16	3					186.93	**16020**
16	2	36	15	42	44	92	16	3	111.58	**16020**				
16	4	25	15	100	102	150	16	3					186.93	**16040**
16	4	36	15	42	44	92	16	3	111.58	**16040**				
20	4	32	19	98	100	150	20	3			307.61	**20040**		
20	4	41	19	52	54	104	20	3	173.98	**20040**				

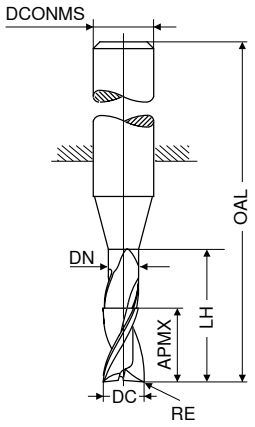
Steel			
Stainless steel			
Cast iron			
Non ferrous metals	●	●	●
Heat resistant alloys			
hardened materials			

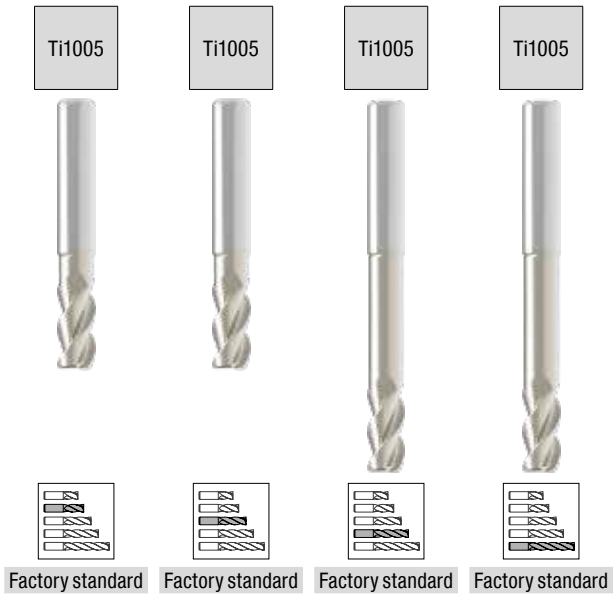
→ v_c/f_z Page 288+289

AluLine – End milling cutter with corner radius

▲ With graduated flute depth







Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA

V1 | V1 | V1 | V1

DC h6	RE ±0,01	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Article no. 53 544 ...		Article no. 53 545 ...		Article no. 53 547 ...		Article no. 53 549 ...	
mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
3	0.4	8	2.7	12	57	6	3					37.36	03004		
3	0.5	8	2.7	12	57	6	3					37.36	03005		
3	1.0	8	2.7	12	57	6	3					37.36	03010		
4	0.2	11	3.7	18	57	6	3					37.36	04002		
4	0.4	11	3.7	18	57	6	3					37.36	04004		
4	0.5	11	3.7	18	57	6	3					37.36	04005		
4	1.0	11	3.7	18	57	6	3					37.36	04010		
5	0.5	13	4.7	18	57	6	3			37.36	05005				
5	1.0	13	4.7	18	57	6	3			37.36	05010				
6	0.4	13	5.7	18	57	6	3			42.35	06004				
6	0.4	13	5.7	42	80	6	3							58.53	06004
6	0.5	13	5.7	18	57	6	3			42.35	06005				
6	0.5	13	5.7	42	80	6	3							58.53	06005
6	0.6	13	5.7	18	57	6	3			42.35	06006				
6	0.6	13	5.7	42	80	6	3							58.53	06006
6	0.8	13	5.7	18	57	6	3			42.35	06008				
6	0.8	13	5.7	42	80	6	3							58.53	06008
6	1.0	13	5.7	18	57	6	3			42.35	06010				
6	1.0	13	5.7	42	80	6	3							58.53	06010
6	1.5	13	5.7	18	57	6	3			42.35	06015				
6	1.5	13	5.7	42	80	6	3							58.53	06015
8	0.5	21	7.4	25	63	8	3			48.57	08005				
8	0.5	21	7.4	62	100	8	3							76.10	08005
8	0.8	21	7.4	25	63	8	3			48.57	08008				
8	0.8	21	7.4	62	100	8	3							76.10	08008
8	1.0	21	7.4	25	63	8	3			48.57	08010				
8	1.0	21	7.4	62	100	8	3							76.10	08010
8	1.2	21	7.4	25	63	8	3			48.57	08012				
8	1.2	21	7.4	62	100	8	3							76.10	08012
8	1.5	21	7.4	25	63	8	3			48.57	08015				
8	1.5	21	7.4	62	100	8	3							76.10	08015
8	2.0	21	7.4	25	63	8	3			48.57	08020				
8	2.0	21	7.4	62	100	8	3							76.10	08020
10	0.5	22	9.2	30	72	10	3			83.94	10005				
10	0.5	22	9.2	58	100	10	3					112.71	10005		
10	1.0	22	9.2	30	72	10	3			83.94	10010				
10	1.0	22	9.2	58	100	10	3					112.71	10010		
10	1.2	22	9.2	30	72	10	3			83.94	10012				
10	1.2	22	9.2	58	100	10	3					112.71	10012		
10	1.5	22	9.2	30	72	10	3			83.94	10015				

Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

→ v_c/f_z Page 288+289

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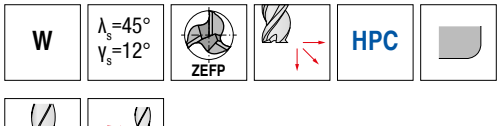
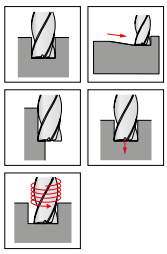
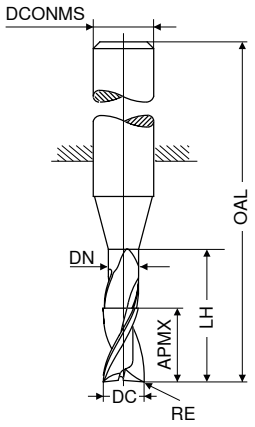
Continued on next page

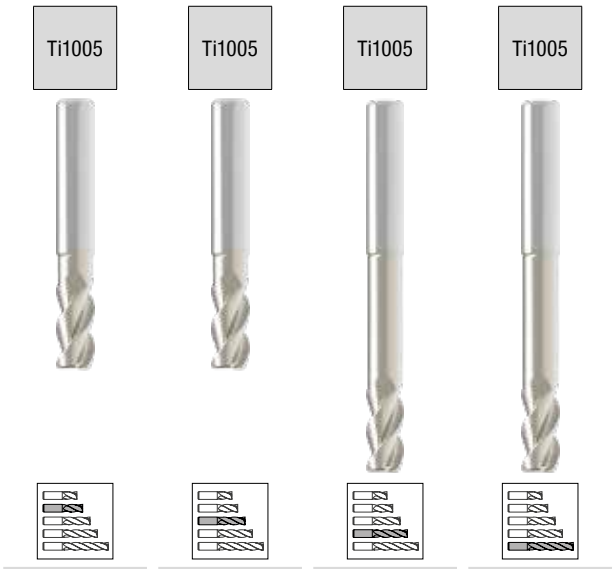
AluLine – End milling cutter with corner radius

▲ With graduated flute depth









Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA

V1 | V1 | V1 | V1

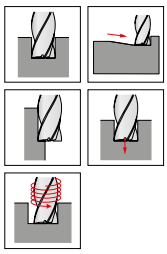
DC h6	RE ±0,01	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Article no. 53 544 ...		Article no. 53 545 ...		Article no. 53 547 ...		Article no. 53 549 ...	
mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
10	1.5	22	9.2	58	100	10	3					112.71	10015		
10	1.6	22	9.2	30	72	10	3			83.94	10016				
10	1.6	22	9.2	58	100	10	3					112.71	10016		
10	2.0	22	9.2	30	72	10	3			83.94	10020				
10	2.0	22	9.2	58	100	10	3					112.71	10020		
12	0.5	26	11.0	73	120	12	3							160.90	12005
12	1.0	26	11.0	73	120	12	3							160.90	12010
12	1.2	26	11.0	73	120	12	3							160.90	12012
12	1.5	26	11.0	73	120	12	3							160.90	12015
12	1.6	26	11.0	73	120	12	3							160.90	12016
12	2.0	26	11.0	73	120	12	3							160.90	12020
12	2.5	26	11.0	73	120	12	3							160.90	12025
12	4.0	26	11.0	73	120	12	3							160.90	12040
16	1.0	36	15.0	42	92	16	3	220.06	16010						
16	1.0	36	15.0	100	150	16	3							340.74	16010
16	1.6	36	15.0	42	92	16	3	220.06	16016						
16	1.6	36	15.0	100	150	16	3							340.74	16016
16	2.0	36	15.0	42	92	16	3	220.06	16020						
16	2.0	36	15.0	100	150	16	3							340.74	16020
16	2.5	36	15.0	42	92	16	3	220.06	16025						
16	2.5	36	15.0	100	150	16	3							340.74	16025
16	3.2	36	15.0	42	92	16	3	220.06	16032						
16	3.2	36	15.0	100	150	16	3							340.74	16032
16	4.0	36	15.0	42	92	16	3	220.06	16040						
16	4.0	36	15.0	100	150	16	3							340.74	16040
20	1.0	41	19.0	52	104	20	3	317.08	20010						
20	1.0	41	19.0	98	150	20	3					439.02	20010		
20	2.0	41	19.0	52	104	20	3	317.08	20020						
20	2.0	41	19.0	98	150	20	3					439.02	20020		
20	4.0	41	19.0	52	104	20	3	317.08	20040						
20	4.0	41	19.0	98	150	20	3					439.02	20040		
20	5.0	41	19.0	52	104	20	3	317.08	20050						
20	5.0	41	19.0	98	150	20	3					439.02	20050		
20	6.3	41	19.0	52	104	20	3	317.08	20063						
20	6.3	41	19.0	98	150	20	3					439.02	20063		

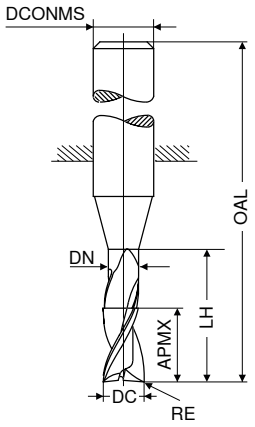
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

→ v_c/f_z Page 288+289

AluLine – End milling cutter with corner radius

▲ with graduated flute depth





Factory standard | Factory standard

HA | HA

DC h6	RE ±0,01	APMX	DN	LH	OAL	DCONMS h5	ZEFP	V1 Article no. 53 546 ...		V1 Article no. 53 548 ...	
mm	mm	mm	mm	mm	mm	mm		£		£	
6	0.4	10	5.7	42	80	6	3			58.53	06004
6	0.5	10	5.7	42	80	6	3			58.53	06005
6	0.6	10	5.7	42	80	6	3			58.53	06006
6	0.8	10	5.7	42	80	6	3			58.53	06008
6	1.0	10	5.7	42	80	6	3			58.53	06010
6	1.5	10	5.7	42	80	6	3			58.53	06015
8	0.5	13	7.4	62	100	8	3			76.10	08005
8	0.8	13	7.4	62	100	8	3			76.10	08008
8	1.0	13	7.4	62	100	8	3			76.10	08010
8	1.2	13	7.4	62	100	8	3			76.10	08012
8	1.5	13	7.4	62	100	8	3			76.10	08015
8	2.0	13	7.4	62	100	8	3			76.10	08020
10	0.5	16	9.2	58	100	10	3	112.71	10005		
10	1.0	16	9.2	58	100	10	3	112.71	10010		
10	1.2	16	9.2	58	100	10	3	112.71	10012		
10	1.5	16	9.2	58	100	10	3	112.71	10015		
10	1.6	16	9.2	58	100	10	3	112.71	10016		
10	2.0	16	9.2	58	100	10	3	112.71	10020		
12	0.5	19	11.0	73	120	12	3			160.90	12005
12	1.0	19	11.0	73	120	12	3			160.90	12010
12	1.2	19	11.0	73	120	12	3			160.90	12012
12	1.5	19	11.0	73	120	12	3			160.90	12015
12	1.6	19	11.0	73	120	12	3			160.90	12016
12	2.0	19	11.0	73	120	12	3			160.90	12020
12	2.5	19	11.0	73	120	12	3			160.90	12025
12	4.0	19	11.0	73	120	12	3			160.90	12040
16	0.5	25	15.0	100	150	16	3			340.74	16005
16	1.6	25	15.0	100	150	16	3			340.74	16016
16	2.0	25	15.0	100	150	16	3			340.74	16020
16	2.5	25	15.0	100	150	16	3			340.74	16025
16	3.2	25	15.0	100	150	16	3			340.74	16032
16	4.0	25	15.0	100	150	16	3			340.74	16040
20	1.0	32	19.0	98	150	20	3	439.02	20010		
20	2.0	32	19.0	98	150	20	3	439.02	20020		
20	4.0	32	19.0	98	150	20	3	439.02	20040		
20	5.0	32	19.0	98	150	20	3	439.02	20050		
20	6.3	32	19.0	98	150	20	3	439.02	20063		

Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 288+289

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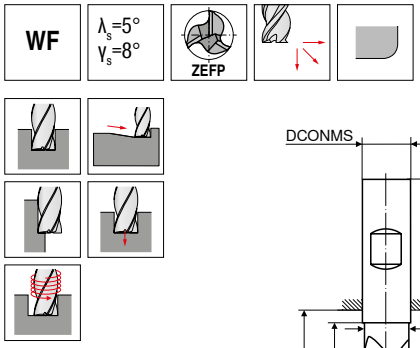
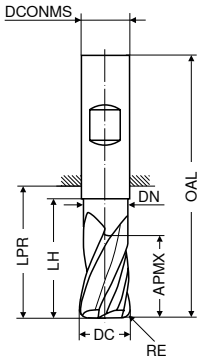
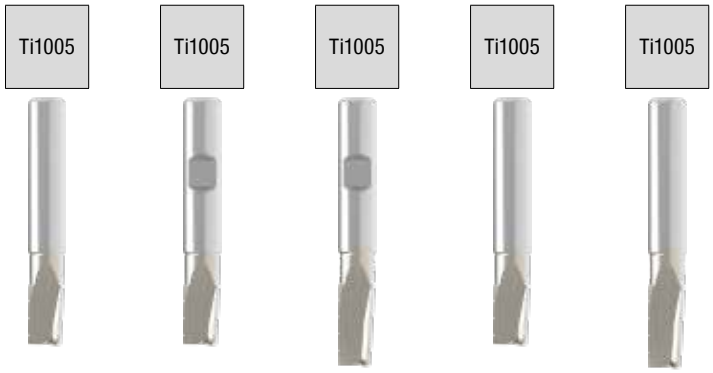
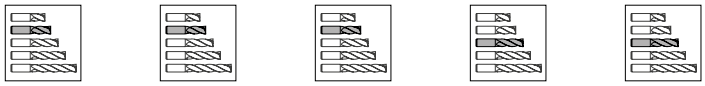
AluLine – Roughing-Finishing Cutter





LPR with Shank DIN 6535 HB



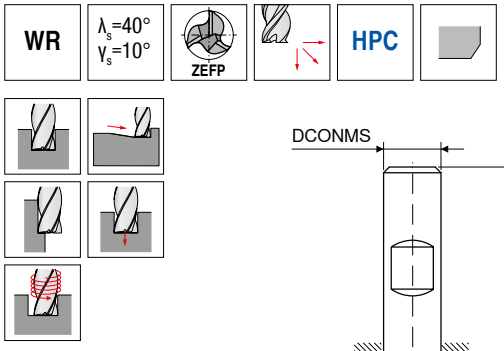


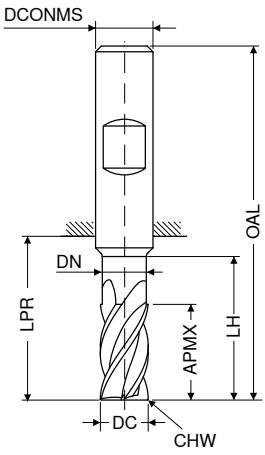
									Factory standard		Factory standard		Factory standard		Factory standard		Factory standard	
									HA		HB		HB		HA		HA	
									V1		V1		V1		V1		V1	
DC h6	RE ±0,01	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Article no. 53 512 ...		Article no. 53 513 ...		Article no. 53 514 ...		Article no. 53 515 ...		Article no. 53 516 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£	
5	0.15	8	4.7	16	18	54	6	3							36.24	05002		
5	0.15	13	4.7	18	21	57	6	3									36.24	05002
6	0.20	10	5.7	17	18	54	6	3	36.24	06002								
6	0.20	13	5.7	18	21	57	6	3									36.24	06002
8	0.25	13	7.4	20	22	58	8	3	41.98	08003								
8	0.25	21	7.4	25	27	63	8	3									44.59	08003
10	0.30	16	9.2	24	26	66	10	3	58.41	10003								
10	0.30	22	9.2	30	32	72	10	3									62.26	10003
12	0.35	19	11.0	26	28	73	12	3	81.57	12004								
12	0.35	26	11.0	36	38	83	12	3									84.80	12004
16	0.50	25	15.0	32	38	82	16	3			138.49	16005						
16	0.50	36	15.0	42	44	92	16	3					145.59	16005				
20	0.60	32	19.0	40	42	92	20	3			233.14	20006						
20	0.60	41	19.0	52	54	104	20	3					250.83	20006				

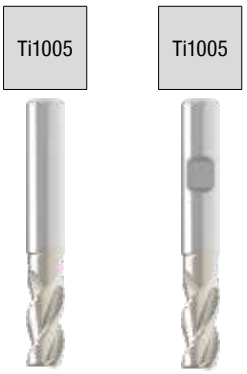
Steel					
Stainless steel					
Cast iron					
Non ferrous metals	●	●	●	●	●
Heat resistant alloys					
hardened materials					

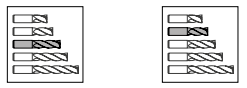
→ v_c/f_z Page 288+289

AluLine – Rough milling cutter









Factory standard | Factory standard

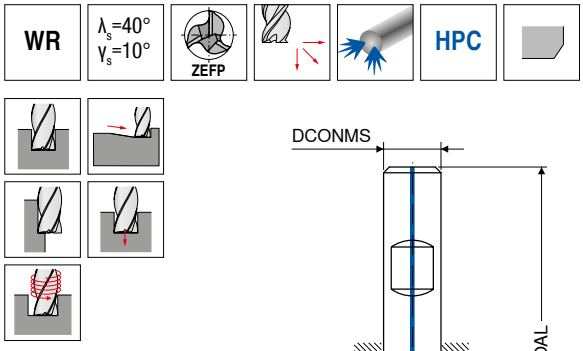
HA | HB

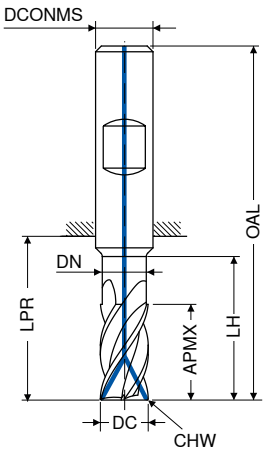
DC h10	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	V1 Article no. 53 551 ...		V1 Article no. 53 550 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
6	13	5.7	18	21	57	6	0.4	3	28.34	060		
8	21	7.4	25	27	63	8	0.4	3	36.49	080		
10	22	9.2	30	32	72	10	0.4	3	48.04	100		
12	26	11.0	36	38	83	12	0.4	3	59.23	120		
16	36	15.0	42	44	92	16	0.4	3			92.24	160
20	41	19.0	52	54	104	20	0.4	3			140.76	200

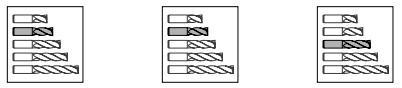
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 288+289

AluLine – Rough milling cutter







Factory standard | Factory standard | Factory standard

HA | HB | HA

V1 | V1 | V1

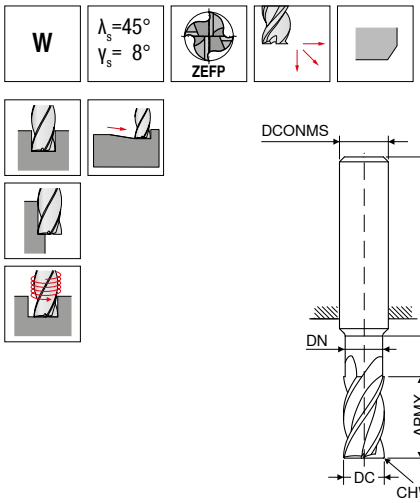
DC h10	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 53 552 ...		Article no. 53 553 ...		Article no. 53 554 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£	
6	13	5.7	18	21	57	6	0.4	3					39.30	060
8	21	7.4	25	27	63	8	0.4	3					52.13	080
10	22	9.2	30	32	72	10	0.4	3					61.22	100
12	26	11.0	36	38	83	12	0.4	3					80.12	120
16	36	15.0	42	44	92	16	0.4	3	118.60	160	118.60	160		
20	41	19.0	52	54	104	20	0.4	3	206.05	200	206.05	200		

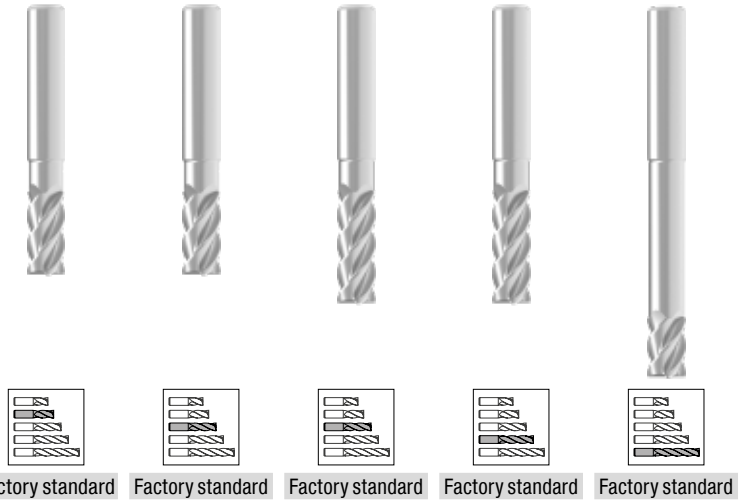
Steel			
Stainless steel			
Cast iron			
Non ferrous metals	●	●	●
Heat resistant alloys			
hardened materials			

→ v_c/f_z Page 288+289

AluLine – End milling cutter

▲ with polished chip flutes





DC h10	APMX	DN	LH	OAL	DCONMS h6	CHW	ZEFP	Factory standard HA V1 Article no. 53 560 ... £		Factory standard HA V1 Article no. 53 561 ... £		Factory standard HA V1 Article no. 53 562 ... £		Factory standard HA V1 Article no. 53 563 ... £		Factory standard HA V1 Article no. 53 564 ... £	
mm	mm	mm	mm	mm	mm	mm											
3.0	8	2.7	13	57	6	0.1	4							30.51	**030**		
3.5	11	3.2	17	57	6	0.1	4							34.13	**035**		
4.0	11	3.7	17	57	6	0.1	4							34.13	**040**		
4.5	13	4.2	19	57	6	0.1	4							35.99	**045**		
5.0	13	4.7	19	57	6	0.1	4					33.38	**050**				
5.5	13	5.2	19	57	6	0.1	4					32.88	**055**				
6.0	10	5.7	42	80	6	0.2	4									35.24	**060**
6.0	13	5.7	19	57	6	0.2	4					35.24	**060**				
6.0	18	5.7	24	62	6	0.2	4							35.24	**060**		
6.5	21	6.1	25	63	8	0.2	4					47.20	**065**				
8.0	13	7.4	62	100	8	0.2	4									50.19	**080**
8.0	21	7.4	25	63	8	0.2	4			50.19	**080**						
8.0	24	7.4	30	68	8	0.2	4					50.19	**080**				
8.5	22	7.9	30	72	10	0.2	4					63.03	**085**				
10.0	16	9.2	58	100	10	0.2	4							66.01	**100**		
10.0	22	9.2	30	72	10	0.2	4			66.01	**100**						
10.0	30	9.2	38	80	10	0.2	4					66.01	**100**				
12.0	19	11.0	73	120	12	0.2	4									101.63	**120**
12.0	26	11.0	36	83	12	0.2	4			101.63	**120**						
12.0	36	11.0	46	93	12	0.2	4					101.63	**120**				
14.0	26	13.0	36	83	14	0.2	4	117.81	**140**								
16.0	25	15.0	100	150	16	0.2	4									185.81	**160**
16.0	36	15.0	42	92	16	0.2	4	185.81	**160**								
16.0	48	15.0	58	108	16	0.2	4					185.81	**160**				
18.0	36	17.0	42	92	18	0.2	4	200.02	**180**								
20.0	32	19.0	98	150	20	0.2	4							341.97	**200**		
20.0	41	19.0	52	104	20	0.2	4	341.97	**200**								
20.0	60	19.0	74	126	20	0.2	4					341.97	**200**				
25.0	52	24.0	62	121	25	0.3	4	447.23	**250**								

Steel						
Stainless steel						
Cast iron						
Non ferrous metals	●	●	●	●	●	
Heat resistant alloys						
hardened materials						

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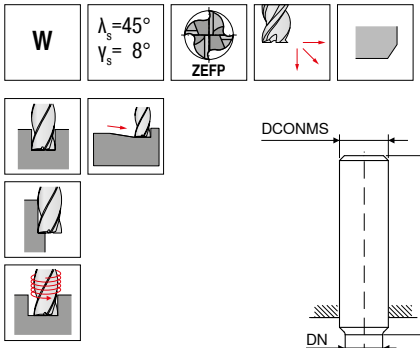
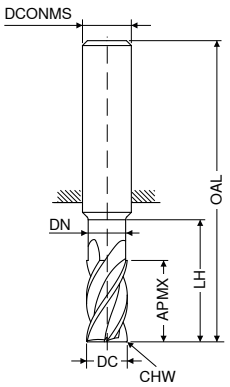
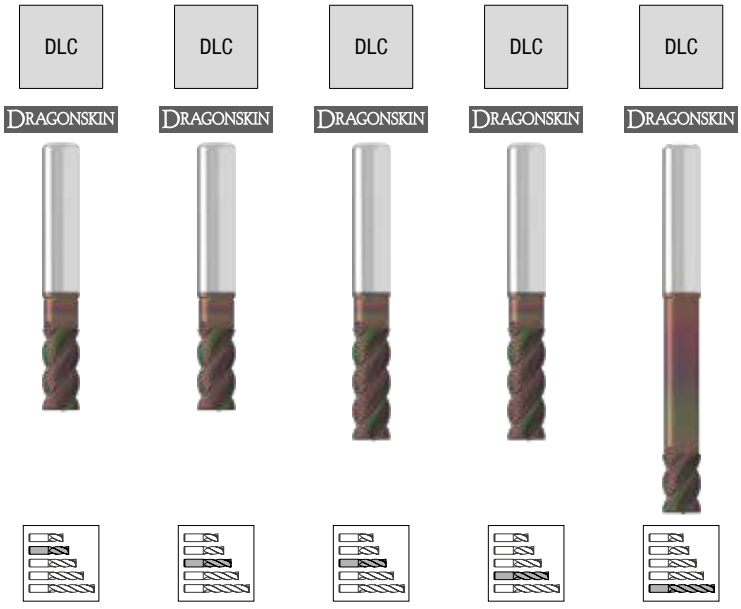
→ v_c/f_z Page 288+289

AluLine – End milling cutter





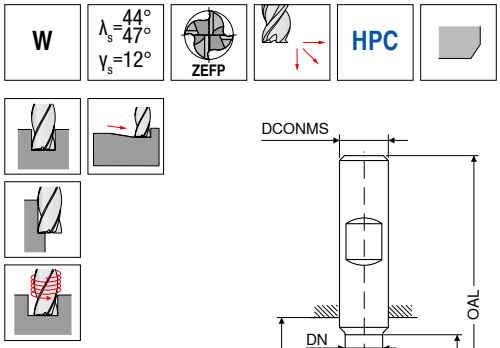


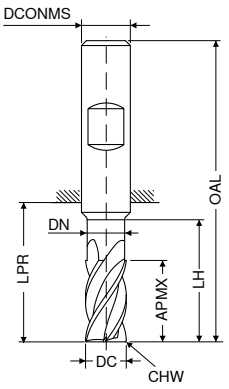
DC h10	APMX	DN	LH	OAL	DCONMS h6	CHW	ZEFP	V1 Article no. 53 565 ...		V1 Article no. 53 566 ...		V1 Article no. 53 567 ...		V1 Article no. 53 568 ...		V1 Article no. 53 569 ...	
mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£	
3.0	8	2.7	13	57	6	0.1	4							40.72	030		
3.5	11	3.2	17	57	6	0.1	4							44.09	035		
4.0	11	3.7	17	57	6	0.1	4							44.09	040		
4.5	13	4.2	19	57	6	0.1	4							46.20	045		
5.0	13	4.7	19	57	6	0.1	4					43.60	050				
5.5	13	5.2	19	57	6	0.1	4					42.97	055				
6.0	10	5.7	42	80	6	0.2	4									45.34	060
6.0	13	5.7	19	57	6	0.2	4					45.34	060				
6.0	18	5.7	24	62	6	0.2	4							45.34	060		
6.5	21	6.1	25	63	8	0.2	4					57.29	065				
8.0	13	7.4	62	100	8	0.2	4									60.28	080
8.0	21	7.4	25	63	8	0.2	4			60.28	080						
8.0	24	7.2	30	68	8	0.2	4					60.28	080				
8.5	22	7.9	30	72	10	0.2	4					73.11	085				
10.0	16	9.2	58	100	10	0.2	4							76.10	100		
10.0	22	9.2	30	72	10	0.2	4			76.10	100						
10.0	30	9.2	38	80	10	0.2	4					76.10	100				
12.0	19	11.0	73	120	12	0.2	4									111.71	120
12.0	26	11.0	36	83	12	0.2	4			111.71	120						
12.0	36	11.0	46	93	12	0.2	4					111.71	120				
14.0	26	13.0	36	83	14	0.2	4	127.78	140								
16.0	25	15.0	100	150	16	0.2	4									196.40	160
16.0	36	15.0	42	92	16	0.2	4	196.40	160								
16.0	48	15.0	58	108	16	0.2	4					196.40	160				
18.0	36	17.0	42	92	18	0.2	4	210.60	180								
20.0	32	19.0	98	150	20	0.2	4							351.44	200		
20.0	41	19.0	52	104	20	0.2	4	351.44	200								
20.0	60	19.0	74	126	20	0.2	4					351.44	200				
25.0	52	24.0	62	121	25	0.3	4	457.93	250								

Steel						
Stainless steel						
Cast iron						
Non ferrous metals	●	●	●	●	●	
Heat resistant alloys						
hardened materials						

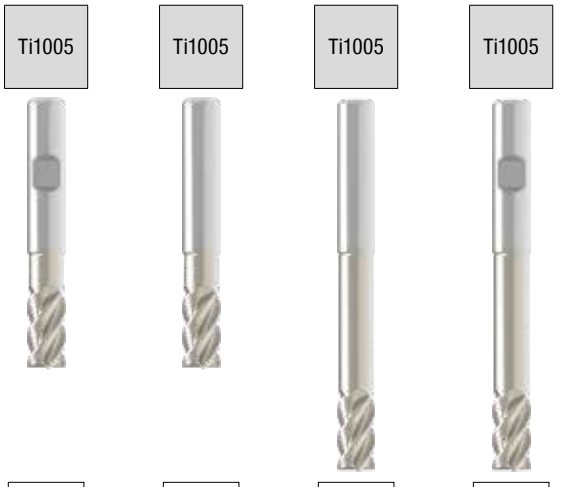
→ v_c/f_z Page 288+289

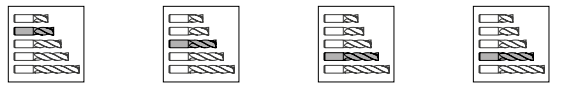
AluLine – End milling cutter





LPR with Shank DIN 6535 HB





									Factory standard		Factory standard		Factory standard		Factory standard	
									HB		HA		HA		HB	
									V1		V1		V1		V1	
DC h10	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 53 570 ...		Article no. 53 571 ...		Article no. 53 572 ...		Article no. 53 573 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
3	6	2.7	10	21	57	6	0.1	4			37.49	**030**				
4	8	3.7	14	21	57	6	0.1	4			37.49	**040**				
4	16	3.7	22	26	62	6	0.1	4					50.44	**040**		
5	10	4.7	16	21	57	6	0.1	4			34.62	**050**				
5	17	4.7	24	26	62	6	0.1	4					50.44	**050**		
6	12	5.5	19	21	57	6	0.2	4			39.36	**060**				
8	16	7.4	25	27	63	8	0.2	4			45.19	**080**				
10	20	9.2	30	32	72	10	0.2	4			77.46	**100**				
10	20	9.2	58	60	100	10	0.2	4					106.11	**100**		
12	24	11.0	36	38	83	12	0.2	4			105.36	**120**				
16	32	15.0	42	44	92	16	0.2	4	205.87	**160**						
20	40	19.0	52	54	104	20	0.2	4	297.03	**200**						
20	40	19.0	98	100	150	20	0.2	4							428.29	**200**

Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

→ v_c/f_z Page 288+289

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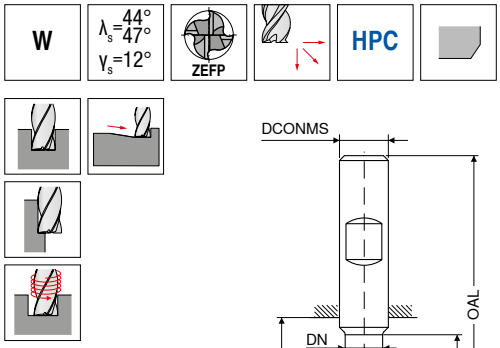
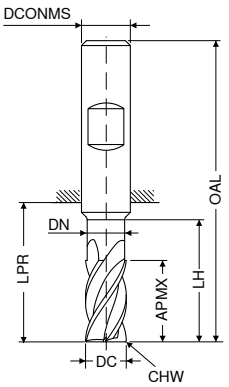
AluLine – End milling cutter





Factory standard | Factory standard

HA | HB

V1 | V1

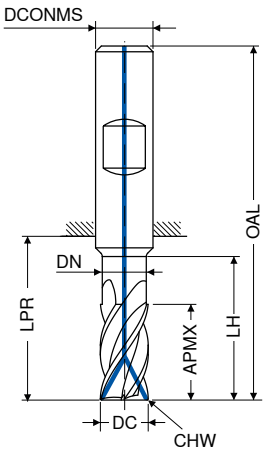
DC h10	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 53 574 ...		Article no. 53 575 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
6	12	5.5	42	44	80	6	0.2	4	55.29	**060**		
8	16	7.4	62	64	100	8	0.2	4	71.62	**080**		
12	24	11.0	73	75	120	12	0.2	4	150.32	**120**		
16	32	15.0	100	102	150	16	0.2	4			332.52	**160**

Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 288+289

AluLine – End milling cutter

W | λ_s=44° 47° γ_s=12° | ZEFP | HPC



Ti1005 | Ti1005

Factory standard | Factory standard

HB | HA

DC h10	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	V1 Article no. 53 576 ...		V1 Article no. 53 577 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
3	6	2.7	10	21	57	6	0.1	4			48.70	030
4	8	3.7	14	21	57	6	0.1	4			48.70	040
5	10	4.7	16	21	57	6	0.1	4			45.19	050
6	12	5.7	19	21	57	6	0.2	4			51.19	060
8	16	7.4	25	27	63	8	0.2	4			58.66	080
10	20	9.2	30	32	72	10	0.2	4			100.62	100
12	24	11.0	36	38	83	12	0.2	4			144.35	120
16	32	15.0	42	44	92	16	0.2	4	267.39	160		
20	40	19.0	52	54	104	20	0.2	4	384.57	200		

Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 288+289

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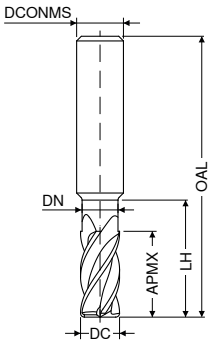
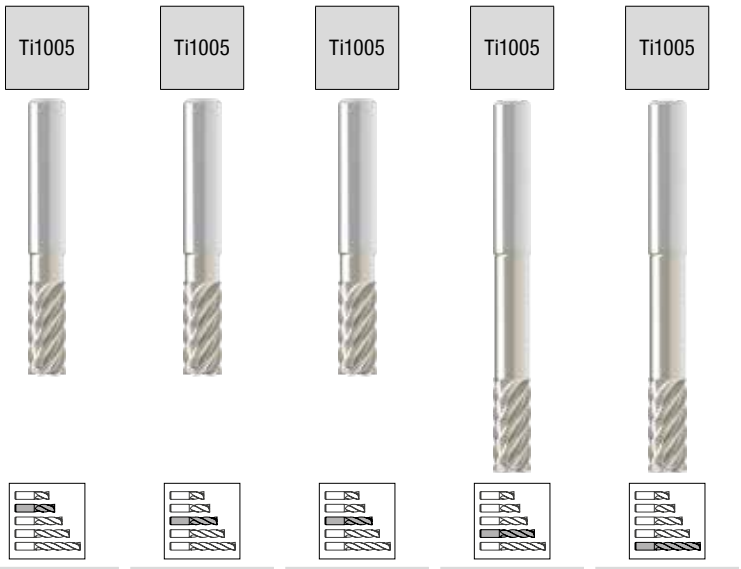
AluLine – High accuracy finish milling cutter

▲ max. taper of 0.003 mm for high precision and parallelism of vertical walls
▲ Tool with cutting edge correction

W | λ_s=44° γ_s=20° | ZEFP | HPC





Factory standard | Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA | HA

V1 | V1 | V1 | V1 | V1

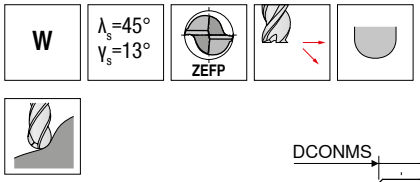
DC $_{h6}$	APMX	DN	LH	OAL	DCONMS $_{h5}$	ZEFP	Article no. 53 555 ...		Article no. 53 556 ...		Article no. 53 557 ...		Article no. 53 558 ...		Article no. 53 559 ...	
mm	mm	mm	mm	mm	mm		£		£		£		£		£	
6	16	5.7	20	58	6	6					41.59	060				
6	16	5.7	42	80	6	6									56.55	060
8	19	7.4	26	64	8	6					48.07	080				
8	19	7.4	62	100	8	6									69.99	080
10	25	9.2	32	74	10	6					81.95	100				
10	25	9.2	58	100	10	6							104.61	100		
12	30	11.0	37	84	12	6			111.22	120						
12	30	11.0	73	120	12	6									155.06	120
12	45			120	12	6					188.19	120				
16	40	15.0	44	93	16	6	207.09	160								
16	40	15.0	100	150	16	6									285.20	160
16	65			150	16	6							408.24	160		
20	50	19.0	53	104	20	6	298.14	200								
20	50	19.0	98	150	20	6							392.80	200		
20	75			150	20	6					540.76	200				

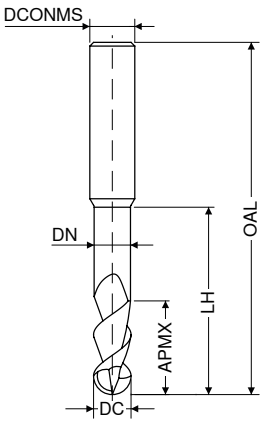
Steel					
Stainless steel					
Cast iron					
Non ferrous metals	●	●	●	●	●
Heat resistant alloys					
hardened materials					

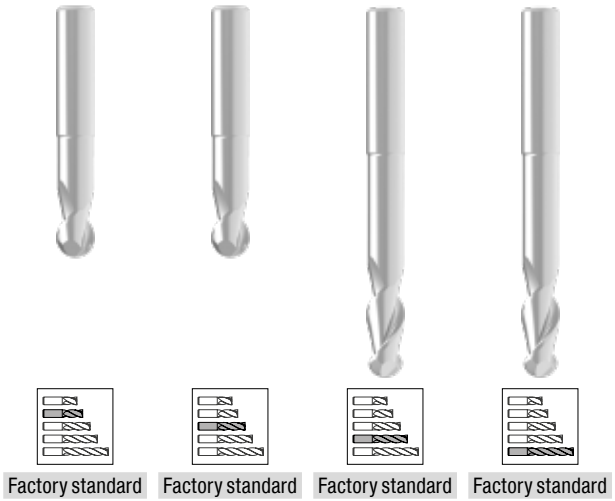
→ v_c/f_z Page 290+291

AluLine – Ball nosed cutter

▲ with polished chip flutes







DC f8	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Factory standard HA V1 Article no. 53 508 ...		Factory standard HA V1 Article no. 53 509 ...		Factory standard HA V1 Article no. 53 510 ...		Factory standard HA V1 Article no. 53 511 ...	
mm	mm	mm	mm	mm	mm		£		£		£		£	
3	6	2.7	16	50	3	2					29.28	**030**		
3	10	2.7	32	75	3	2							42.46	**030**
4	7	3.7	17	54	4	2					34.75	**040**		
4	13	3.7	36	75	4	2							48.94	**040**
5	8	4.6	18	54	5	2			38.86	**050**				
5	15	4.6	40	75	5	2							56.30	**050**
6	10	5.5	21	54	6	2			37.87	**060**				
6	16	5.5	44	100	6	2							51.57	**060**
8	12	7.5	27	59	8	2			48.33	**080**				
8	22	7.5	54	100	8	2							71.37	**080**
10	13	9.4	32	67	10	2			63.40	**100**				
10	25	9.4	60	100	10	2							95.15	**100**
12	16	11.4	38	73	12	2			84.94	**120**				
12	26	11.4	60	100	12	2					123.05	**120**		
14	16	13.2	38	75	14	2	139.61	**140**						
14	26	13.2	60	100	14	2					172.74	**140**		
16	20	15.0	44	83	16	2	170.37	**160**						
16	30	15.0	92	150	16	2					231.89	**160**		
20	25	19.0	50	93	20	2	235.50	**200**						
20	40	19.0	92	150	20	2					320.69	**200**		

Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

→ v_c/f_z Page 290+291

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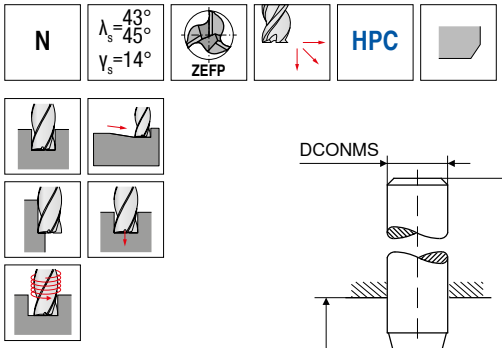
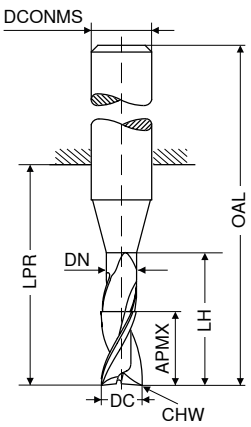
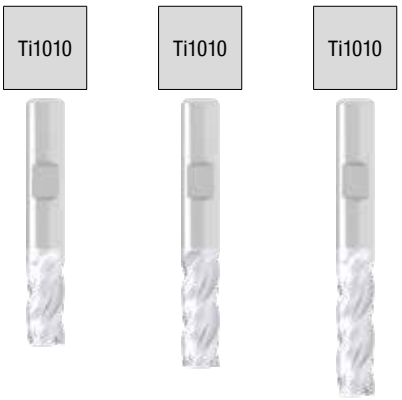
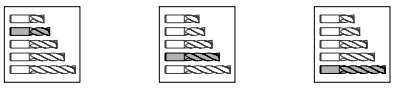
SilverLine – End milling cutter







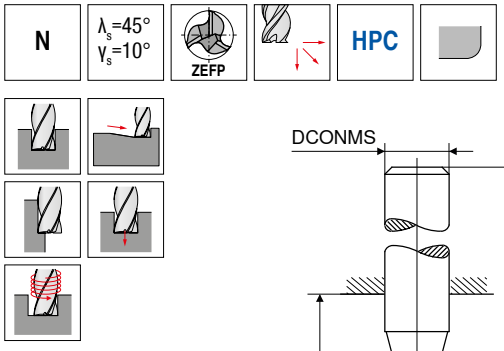


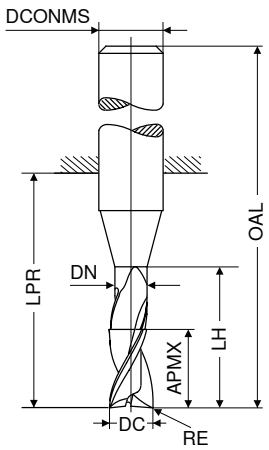
DC e8	APMX	DN	LH	LPR	OAL	DCONMS h5	CHW	ZEFP	≈DIN 6527 HB V0 Article no. 50 951 ...		≈DIN 6527 HB V0 Article no. 50 951 ...		Factory standard HB V0 Article no. 50 951 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£	
3.0	8	2.9	15	21	57	6	0.15	3			56.71	031		
3.5	11	3.4	16	21	57	6	0.15	3			56.71	036		
4.0	8	3.9	15	18	54	6	0.15	3	50.19	040				
4.0	11	3.9	16	21	57	6	0.15	3			50.19	041		
4.0	16			26	62	6	0.15	3					52.55	042
4.5	13	4.4	19	21	57	6	0.15	3			56.71	046		
5.0	9	4.9	16	18	54	6	0.15	3	50.19	050				
5.0	13	4.9	19	21	57	6	0.15	3			50.19	051		
5.0	17			26	62	6	0.15	3					52.55	052
5.5	13	5.4	19	21	57	6	0.15	3			59.57	056		
6.0	10	5.9	17	18	54	6	0.25	3	52.01	060				
6.0	13	5.9	19	21	57	6	0.25	3			52.55	061		
6.0	18			26	62	6	0.25	3					59.57	062
6.5	19	6.3	25	27	63	8	0.25	3			67.80	066		
7.0	19	6.8	25	27	63	8	0.25	3			67.80	071		
7.5	19	7.3	25	27	63	8	0.25	3			67.80	076		
8.0	12	7.8	20	22	58	8	0.25	3	60.29	080				
8.0	19	7.8	25	27	63	8	0.25	3			61.37	081		
8.0	24			32	68	8	0.25	3					67.13	082
8.5	22	8.2	30	32	72	10	0.25	3			115.30	086		
9.0	22	8.7	30	32	72	10	0.25	3			115.30	091		
9.5	22	9.2	30	32	72	10	0.25	3			115.30	096		
10.0	14	9.7	24	26	66	10	0.25	3	95.20	100				
10.0	22	9.7	30	32	72	10	0.25	3			105.59	101		
10.0	30			40	80	10	0.25	3					116.73	102
12.0	16	11.7	26	28	73	12	0.25	3	133.55	120				
12.0	26	11.7	36	38	83	12	0.25	3			142.79	121		
12.0	36			48	93	12	0.25	3					162.05	122
14.0	18	13.7	28	30	75	14	0.25	3	165.02	140				
14.0	26	13.7	36	38	83	14	0.25	3			188.40	141		
14.0	42			54	99	14	0.25	3					208.91	142
16.0	22	15.5	32	34	82	16	0.25	3	198.80	160				
16.0	32	15.5	42	44	92	16	0.25	3			328.18	161		
16.0	48			60	108	16	0.25	3					322.19	162
18.0	24	17.5	34	36	84	18	0.25	3	275.16	180				
18.0	32	17.5	42	44	92	18	0.25	3			329.61	181		
18.0	54			66	114	18	0.25	3					416.38	182
20.0	26	19.5	40	42	92	20	0.25	3	337.02	200				
20.0	38	19.5	38	54	104	20	0.25	3			384.03	201		
20.0	60			76	126	20	0.25	3					481.09	202

Steel	●	●	●
Stainless steel	●	●	●
Cast iron	○	○	○
Non ferrous metals	○	○	○
Heat resistant alloys	●	●	●
hardened materials			

→ v_c/f_z Page 292+293

SilverLine – End milling cutter with corner radius





									≈DIN 6527 HB V0		≈DIN 6527 HB V0	
DC f8	RE ±0,01	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Article no. 50 952 ...		Article no. 50 952 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
4	0.5	8	3.9	15	18	54	6	3	50.19	040		
4	0.5	11	3.9	16	21	57	6	3			52.45	041
5	0.5	9	4.9	16	18	54	6	3	50.19	050		
5	0.5	13	4.9	19	21	57	6	3			52.45	051
6	0.5	10	5.9	17	18	54	6	3	52.32	060		
6	0.5	13	5.9	19	21	57	6	3			59.98	061
8	1.0	12	7.8	20	22	58	8	3	61.42	080		
8	1.0	19	7.8	25	27	63	8	3			69.99	081
10	1.0	14	9.7	24	26	66	10	3	110.58	100		
10	1.0	22	9.7	30	32	72	10	3			119.98	101
12	1.5	16	11.7	26	28	73	12	3	153.20	120		
12	1.5	26	11.7	36	38	83	12	3			163.31	121
16	2.0	22	15.5	32	34	82	16	3	310.37	160		
16	2.0	32	15.5	42	44	92	16	3			319.35	161
20	2.0	26	19.5	40	42	92	20	3	448.73	200		
20	2.0	38	19.5	52	54	104	20	3			458.98	201

Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

→ v_c/f_z Page 292+293

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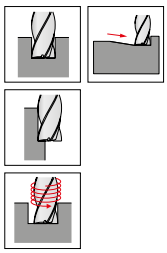
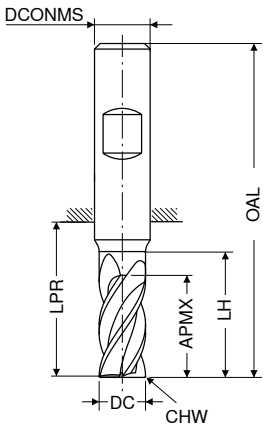
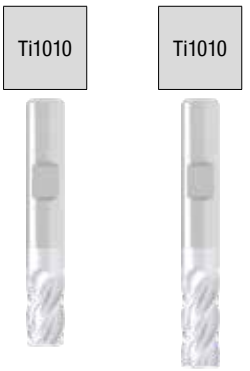
SilverLine – End milling cutter





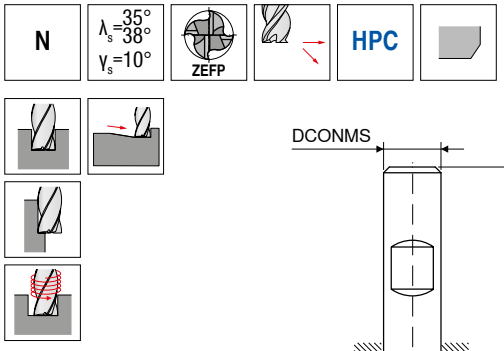


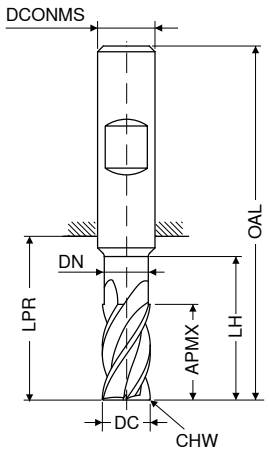
DC f8	APMX	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	V0 Article no. 50 955 ...		V0 Article no. 50 955 ...	
mm	mm	mm	mm	mm	mm	mm		£		£	
3.0	5	8	14	50	6	0.15	4	47.10	030		
3.0	8	11	21	57	6	0.15	4			47.10	031
3.5	8	11	18	54	6	0.15	4	44.25	035		
3.5	11	14	21	57	6	0.15	4			44.25	036
4.0	8	11	18	54	6	0.15	4	47.10	040		
4.0	11	14	21	57	6	0.15	4			47.10	041
4.5	9	12	18	54	6	0.15	4	45.19	045		
4.5	13	16	21	57	6	0.15	4			45.19	046
5.0	9	12	18	54	6	0.15	4	47.10	050		
5.0	13	16	21	57	6	0.15	4			47.10	051
5.5	10	13	18	54	6	0.15	4	43.85	055		
5.5	13	16	21	57	6	0.15	4			43.85	056
6.0	10	13	18	54	6	0.15	4	49.54	060		
6.0	13	16	21	57	6	0.15	4			49.54	061
7.0	12	15	22	58	8	0.25	4	58.23	070		
7.0	21	24	27	63	8	0.25	4			58.23	071
8.0	12	15	22	58	8	0.25	4	53.30	080		
8.0	21	24	27	63	8	0.25	4			56.72	081
9.0	14	17	26	66	10	0.25	4	76.01	090		
9.0	22	25	32	72	10	0.25	4			76.01	091
10.0	14	17	26	66	10	0.25	4	87.14	100		
10.0	22	25	32	72	10	0.25	4			97.31	101
11.0	16	19	28	73	12	0.35	4	120.12	110		
11.0	26	29	38	83	12	0.35	4			120.12	111
12.0	16	19	28	73	12	0.35	4	118.34	120		
12.0	26	29	38	83	12	0.35	4			131.92	121
14.0	16	19	28	73	14	0.35	4	171.00	140		
14.0	26	29	38	83	14	0.35	4			189.32	141
15.0	22	25	34	82	16	0.35	4	190.54	150		
15.0	36	39	44	92	16	0.35	4			190.54	151
16.0	22	25	34	82	16	0.35	4	187.81	160		
16.0	36	39	44	92	16	0.35	4			245.37	161
17.0	22	25	34	82	18	0.35	4	259.22	170		
17.0	36	39	44	92	18	0.35	4			259.22	171
18.0	22	25	34	82	18	0.35	4	247.94	180		
18.0	36	39	44	92	18	0.35	4			273.18	181
19.0	26	29	42	92	20	0.35	4	294.09	190		
19.0	41	44	54	104	20	0.35	4			294.09	191
20.0	26	29	42	92	20	0.35	4	319.61	200		
20.0	41	44	54	104	20	0.35	4			354.50	201

Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

→ v_c/f_z Page 294+295

SilverLine – End milling cutter





DIN 6527 | DIN 6527

HB | HB

V0 | V0

DC f8	APMX	DN	LH	LPR	OAL	DCONMS h5	CHW	ZEFP	Article no. 50 965 ...		Article no. 50 965 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
3	6.5	2.8	9	19	55	6	0.15	4	51.58	030		
3	6.5	2.8	15	22	58	6	0.15	4			51.58	031
4	8.5	3.8	12	19	55	6	0.15	4	51.58	040		
4	8.5	3.8	20	26	62	6	0.15	4			51.58	041
5	10.5	4.8	15	22	58	6	0.15	4	51.58	050		
5	10.5	4.8	25	34	70	6	0.15	4			51.58	051
6	13.0	5.8	18	22	58	6	0.15	4	54.31	060		
6	13.0	5.8	30	34	70	6	0.15	4			54.31	061
8	17.0	7.7	24	28	64	8	0.25	4	54.31	080		
8	17.0	7.7	40	44	80	8	0.25	4			61.08	081
10	21.0	9.7	30	34	74	10	0.25	4	97.73	100		
10	21.0	9.7	50	54	94	10	0.25	4			101.79	101
12	25.0	11.6	36	40	85	12	0.35	4	124.85	120		
12	25.0	11.6	60	64	109	12	0.35	4			138.44	121
14	29.0	13.6	42	46	91	14	0.35	4	177.78	140		
14	29.0	13.6	70	74	119	14	0.35	4			195.43	141
16	33.0	15.5	48	52	100	16	0.35	4	210.90	160		
16	33.0	15.5	80	84	132	16	0.35	4			251.07	161
18	38.0	17.5	54	58	106	18	0.35	4	266.47	180		
18	38.0	17.5	90	94	142	18	0.35	4			293.55	181
20	42.0	19.5	60	64	114	20	0.35	4	325.72	200		
20	42.0	19.5	100	104	154	20	0.35	4			360.99	201

Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

→ v_c/f_z Page 294+295

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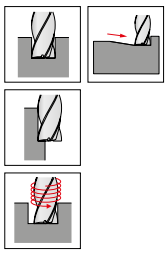
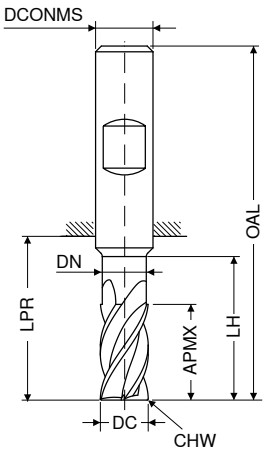
SilverLine – End milling cutter

▲ with reinforced core Ø for increased stability





Factory standard

HB

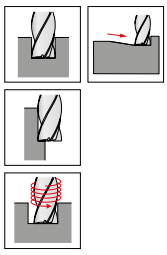
V0

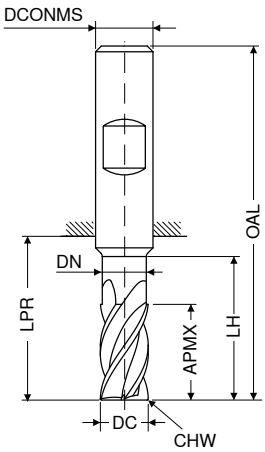
DC f8	APMX	DN	LH	LPR	OAL	DCONMS h5	CHW	ZEFP	Article no. 50 964 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£	
4	8	3.5	12	18	54	6	0.15	4	54.80	041
5	10	4.5	15	18	54	6	0.15	4	54.80	051
6	13	5.5	21	21	57	6	0.15	4	58.43	061
8	19	7.5	27	27	63	8	0.25	4	65.99	081
10	22	9.5	32	32	72	10	0.25	4	115.01	101
12	26	11.5	38	38	83	12	0.35	4	160.04	121
14	26	13.5	38	38	83	14	0.35	4	224.29	141
16	32	15.5	44	44	92	16	0.35	4	290.84	161
18	36	17.5	44	44	92	18	0.35	4	324.03	181
20	38	19.5	54	54	104	20	0.35	4	418.82	201

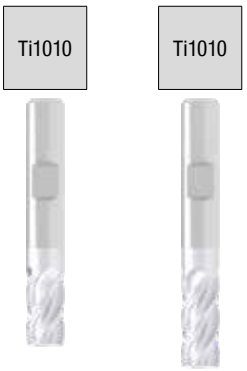
Steel	●
Stainless steel	●
Cast iron	○
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	

→ v_c/f_z Page 294+295

SilverLine – End milling cutter







DC f8	APMX	DN	LH	LPR	OAL	DCONMS h5	CHW	ZEFP	V0 Article no. 50 954 ...		V0 Article no. 50 954 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
3	5		8	14	50	6	0.15	4	49.46	030		
3	8	2.8	13	21	57	6	0.15	4			49.46	031
4	8		11	18	54	6	0.15	4	49.46	040		
4	11	3.8	17	21	57	6	0.15	4			49.46	041
5	9		12	18	54	6	0.15	4	49.46	050		
5	13	4.8	19	21	57	6	0.15	4			49.46	051
6	10		13	18	54	6	0.15	4	51.04	060		
6	13	5.8	19	21	57	6	0.15	4			51.04	061
8	12		15	22	58	8	0.25	4	53.30	080		
8	21	7.7	25	27	63	8	0.25	4			59.57	081
10	14		17	26	66	10	0.25	4	89.75	100		
10	22	9.7	30	32	72	10	0.25	4			102.20	101
12	16		19	28	73	12	0.35	4	124.28	120		
12	26	11.6	36	38	83	12	0.35	4			138.51	121
14	16		19	28	73	14	0.35	4	179.55	140		
14	26	13.6	36	38	83	14	0.35	4			198.80	141
16	22		25	34	82	16	0.35	4	197.22	160		
16	36	15.5	42	44	92	16	0.35	4			257.66	161
18	22		25	34	82	18	0.35	4	260.35	180		
18	36	17.5	42	44	92	18	0.35	4			286.86	181
20	26		29	42	92	20	0.35	4	335.60	200		
20	41	19.5	52	54	104	20	0.35	4			372.23	201

Steel	●	●
Stainless steel		
Cast iron	●	●
Non ferrous metals		
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 296+297

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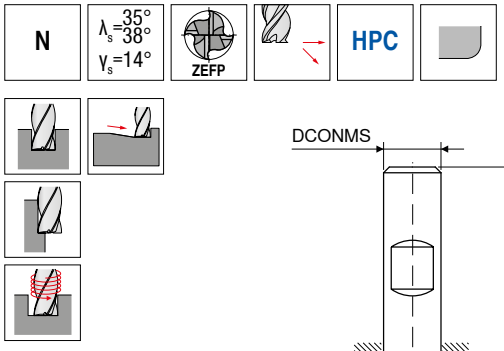
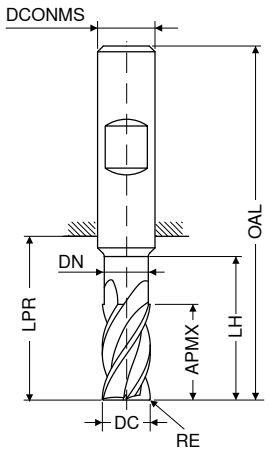
SilverLine – End milling cutter with corner radius





Factory standard

Factory standard

HB

HB

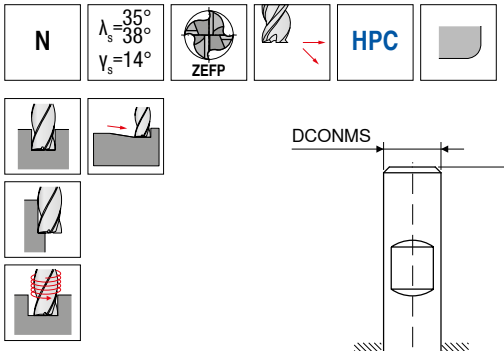
DC f8	RE ±0,01	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	V0 Article no. 50 968 ...		V0 Article no. 50 968 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
3	0.10	8.0	2.8	13	21	57	6	4	52.74	030		
3	0.40	8.0	2.8	13	21	57	6	4	52.74	031		
3	0.50	8.0	2.8	13	21	57	6	4	52.74	032		
3	1.00	8.0	2.8	13	21	57	6	4	52.74	033		
3	0.30	6.5	2.8	15	22	58	6	4	61.86	034		
3	0.50	6.5	2.8	15	22	58	6	4	61.86	035		
3	0.80	6.5	2.8	15	22	58	6	4	61.86	036		
4	0.10	11.0	3.8	17	21	57	6	4	52.74	040		
4	0.40	11.0	3.8	17	21	57	6	4	52.74	041		
4	0.50	11.0	3.8	17	21	57	6	4	52.74	042		
4	1.00	11.0	3.8	17	21	57	6	4	52.74	043		
4	0.40	8.5	3.8	20	26	62	6	4			61.86	044
4	0.50	8.5	3.8	20	26	62	6	4			61.86	045
4	0.80	8.5	3.8	20	26	62	6	4			61.86	046
5	0.10	13.0	4.8	19	21	57	6	4	52.55	050		
5	0.50	13.0	4.8	19	21	57	6	4	52.55	051		
5	1.00	13.0	4.8	19	21	57	6	4	52.55	052		
5	0.50	10.5	4.8	25	34	70	6	4			62.85	053
5	0.80	10.5	4.8	25	34	70	6	4			62.85	054
6	0.10	13.0	5.8	19	21	57	6	4	52.32	060		
6	0.50	13.0	5.8	19	21	57	6	4	52.32	061		
6	1.00	13.0	5.8	19	21	57	6	4	52.32	062		
6	1.50	13.0	5.8	19	21	57	6	4	52.32	063		
6	0.60	13.0	5.8	30	34	70	6	4			62.85	064
6	0.80	13.0	5.8	30	34	70	6	4			62.85	065
6	1.00	13.0	5.8	30	34	70	6	4			62.85	066
8	0.15	21.0	7.7	25	27	63	8	4	64.17	080		
8	0.50	21.0	7.7	25	27	63	8	4	64.17	081		
8	1.00	21.0	7.7	25	27	63	8	4	64.17	082		
8	1.50	21.0	7.7	25	27	63	8	4	64.17	083		
8	2.00	21.0	7.7	25	27	63	8	4	64.17	084		
8	0.80	17.0	7.7	40	44	80	8	4			76.10	085
8	1.00	17.0	7.7	40	44	80	8	4			76.10	086
8	1.50	17.0	7.7	40	44	80	8	4			76.10	087
8	2.00	17.0	7.7	40	44	80	8	4			76.10	088
10	0.15	22.0	9.7	30	32	72	10	4	80.39	100		
10	0.50	22.0	9.7	30	32	72	10	4	80.39	101		
10	1.00	22.0	9.7	30	32	72	10	4	80.39	102		
10	1.50	22.0	9.7	30	32	72	10	4	80.39	103		
10	2.00	22.0	9.7	30	32	72	10	4	80.39	104		
10	0.50	21.0	9.7	50	54	94	10	4			94.19	105
10	1.00	21.0	9.7	50	54	94	10	4			94.19	106
10	1.50	21.0	9.7	50	54	94	10	4			94.19	107
10	2.00	21.0	9.7	50	54	94	10	4			94.19	108
12	0.20	26.0	11.6	36	38	83	12	4	126.41	120		
12	0.50	26.0	11.6	36	38	83	12	4	126.41	121		

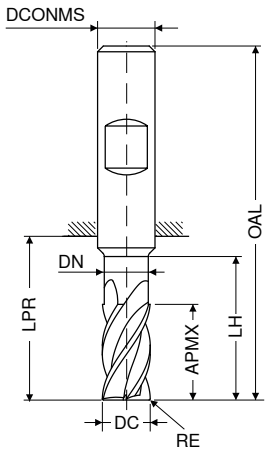
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

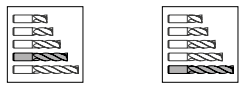
→ v_c/f_z Page 294+295

Continued on next page

SilverLine – End milling cutter with corner radius







Factory standard | Factory standard

HB | HB

DC f8	RE ±0,01	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	V0 Article no. 50 968 ...		V0 Article no. 50 968 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
12	1.00	26.0	11.6	36	38	83	12	4	126.41	122		
12	1.50	26.0	11.6	36	38	83	12	4	126.41	123		
12	2.00	26.0	11.6	36	38	83	12	4	126.41	124		
12	3.00	26.0	11.6	36	38	83	12	4	126.41	131		
12	4.00	26.0	11.6	36	38	83	12	4	126.41	125		
12	0.50	25.0	11.6	60	64	109	12	4			143.06	126
12	1.00	25.0	11.6	60	64	109	12	4			143.06	127
12	1.50	25.0	11.6	60	64	109	12	4			143.06	128
12	2.00	25.0	11.6	60	64	109	12	4			143.06	129
12	3.00	25.0	11.6	60	64	109	12	4			143.06	132
12	4.00	25.0	11.6	60	64	109	12	4			143.06	130
14	0.30	26.0	13.6	36	38	83	14	4	191.08	140		
14	1.00	26.0	13.6	36	38	83	14	4	191.08	141		
14	2.00	26.0	13.6	36	38	83	14	4	191.08	142		
14	3.00	26.0	13.6	36	38	83	14	4	191.08	147		
14	4.00	26.0	13.6	36	38	83	14	4	191.08	143		
14	1.00	29.0	13.6	70	74	119	14	4			214.33	144
14	2.00	29.0	13.6	70	74	119	14	4			214.33	145
14	3.00	29.0	13.6	70	74	119	14	4			214.33	148
14	4.00	29.0	13.6	70	74	119	14	4			214.33	146
16	0.30	36.0	15.5	42	44	92	16	4	191.08	160		
16	1.00	36.0	15.5	42	44	92	16	4	191.08	161		
16	2.00	36.0	15.5	42	44	92	16	4	191.08	162		
16	3.00	36.0	15.5	42	44	92	16	4	191.08	167		
16	4.00	36.0	15.5	42	44	92	16	4	191.08	163		
16	1.00	33.0	15.5	80	84	132	16	4			235.11	164
16	2.00	33.0	15.5	80	84	132	16	4			235.11	165
16	3.00	33.0	15.5	80	84	132	16	4			235.11	168
16	4.00	33.0	15.5	80	84	132	16	4			235.11	166
18	1.00	36.0	17.5	42	44	92	18	4	254.22	180		
18	2.00	36.0	17.5	42	44	92	18	4	254.22	181		
18	3.00	36.0	17.5	42	44	92	18	4	254.22	186		
18	4.00	36.0	17.5	42	44	92	18	4	254.22	182		
18	1.00	38.0	17.5	90	94	142	18	4			283.57	183
18	2.00	38.0	17.5	90	94	142	18	4			283.57	184
18	3.00	38.0	17.5	90	94	142	18	4			283.57	187
18	4.00	38.0	17.5	90	94	142	18	4			283.57	185
20	0.30	41.0	19.5	52	54	104	20	4	286.15	200		
20	1.00	41.0	19.5	52	54	104	20	4	286.15	201		
20	2.00	41.0	19.5	52	54	104	20	4	286.15	202		
20	3.00	41.0	19.5	52	54	104	20	4	286.15	207		
20	4.00	41.0	19.5	52	54	104	20	4	286.15	203		
20	1.00	42.0	19.5	100	104	154	20	4			318.92	204
20	2.00	42.0	19.5	100	104	154	20	4			318.92	205
20	3.00	42.0	19.5	100	104	154	20	4			318.92	208
20	4.00	42.0	19.5	100	104	154	20	4			318.92	206

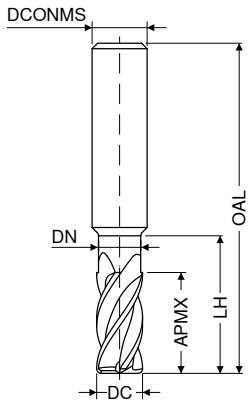
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

→ v_c/f_z Page 294+295

14

SilverLine – High accuracy finish milling cutter

▲ max. taper of 0.003 mm for high precision and parallelism of vertical walls
▲ Tool with cutting edge correction



≈DIN 6527 | Factory standard

HA | HA

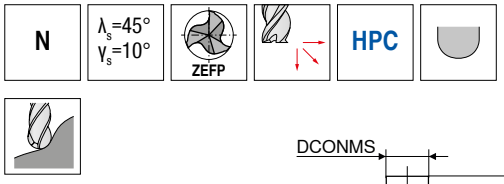
DC f8	APMX	DN	LH	OAL	DCONMS h5	ZEFP	V0 Article no. 50 959 ...		V0 Article no. 50 959 ...	
mm	mm	mm	mm	mm	mm		£		£	
6	13	5.6	19	57	6	6	53.40	060		
6	10	5.8	18	58	6	6	58.43	063		
6	13	5.8	27	67	6	6			79.36	064
6	13	5.8	36	76	6	6			99.19	065
6	15	5.6	42	80	6	6			73.82	061
8	19	7.6	25	63	8	6	61.37	080		
8	13	7.7	24	64	8	6	65.57	083		
8	17	7.7	36	76	8	6			98.19	084
8	17	7.7	48	89	8	6			122.70	085
8	20	7.6	62	100	8	6			91.20	081
10	22	9.6	30	72	10	6	105.14	100		
10	16	9.7	30	74	10	6	115.43	103		
10	21	9.7	45	89	10	6			147.07	104
10	25	9.6	58	100	10	6			136.65	101
10	21	9.7	60	104	10	6			183.82	105
12	26	11.5	36	83	12	6	145.22	120		
12	19	11.6	36	85	12	6	156.18	123		
12	25	11.6	54	103	12	6			227.58	124
12	30	11.5	73	120	12	6			211.90	121
12	25	11.6	72	121	12	6			284.43	125
16	32	15.0	42	92	16	6	270.75	160		
16	25	15.5	48	100	16	6	290.84	163		
16	33	15.5	72	124	16	6			400.56	164
16	33	15.5	96	148	16	6			500.73	165
16	40	15.0	100	150	16	6			372.23	161
20	38	19.0	52	104	20	6	390.03	200		
20	32	19.5	60	114	20	6	418.93	203		
20	42	19.5	90	144	20	6			551.62	204
20	50	19.0	98	150	20	6			513.42	201
20	42	19.5	120	174	20	6			689.53	205
25	40	24.5	75	136	25	6	524.83	253		
25	52	24.5	113	174	25	6			690.13	254
25	52	24.5	150	210	25	6			862.67	255

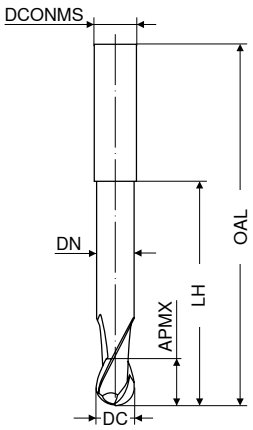
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

→ v_c/f_z Page 298+299

SilverLine – Ball nosed cutter

▲ Radius accuracy: ±0,01 mm





≈DIN 6527 | ≈DIN 6527

HA | HA

DC f8	APMX	DN	LH	OAL	DCONMS h5	ZEFP	V0 Article no. 50 953 ... £		V0 Article no. 50 953 ... £	
mm	mm	mm	mm	mm	mm					
4	8	3.9	15	54	6	3	67.13	040		
4	11	3.9	16	57	6	3			67.13	041
5	9	4.9	16	54	6	3	67.13	050		
5	13	4.9	19	57	6	3			67.13	051
6	10	5.9	17	54	6	3	64.17	060		
6	13	5.9	19	57	6	3			67.13	061
8	12	7.8	20	58	8	3	71.60	080		
8	19	7.8	25	63	8	3			76.96	081
10	14	9.7	24	66	10	3	120.91	100		
10	22	9.7	30	72	10	3			131.96	101
12	16	11.7	26	73	12	3	168.00	120		
12	26	11.7	36	83	12	3			179.55	121
16	22	15.5	32	82	16	3	335.60	160		
16	36	15.5	42	92	16	3			350.13	161
20	26	19.5	40	92	20	3	485.50	200		
20	38	19.5	52	104	20	3			504.59	201

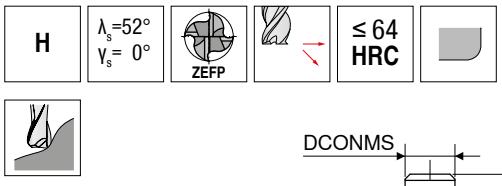
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

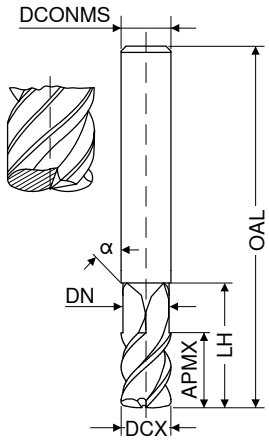
→ v_c/f_z Page 292+293

14

SilverLine – Torus face milling cutter

▲ APMX does not correspond to the maximum cutting depth
▲ r_{3D} = corner radius to be programmed





DIN 6527 | Factory standard

HA | HA

V0 | V0

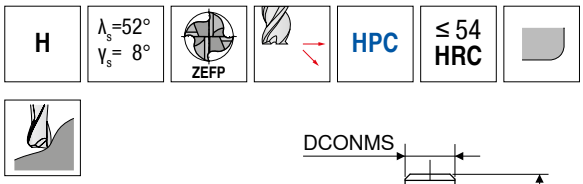
DCX f8 mm	r_{3D} mm	APMX mm	DN mm	LH mm	OAL mm	α°	DCONMS h5 mm	ZEFP	Article no. 50 962 ... £		Article no. 50 962 ... £	
6	1.12	3	5.8	16	54	45	6	4	65.99	060		
6	1.12	3	5.8	44	80	45	6	4			88.52	061
8	1.23	4	7.7	20	58	45	8	4	75.97	080		
8	1.23	4	7.7	54	100	45	8	4			115.72	081
10	1.77	5	9.7	24	66	45	10	4	129.83	100		
10	1.77	5	9.7	60	100	45	10	4			168.59	101
12	1.86	6	11.6	26	73	45	12	4	169.44	120		
12	1.86	6	11.6	75	120	45	12	4			209.47	121
16	2.47	8	15.5	32	82	45	16	4	318.49	160		
16	2.47	8	15.5	92	150	45	16	4			394.59	161
20	2.61	10	19.5	40	92	45	20	4	459.85	200		
20	2.61	10	19.5	92	150	45	20	4			691.83	201

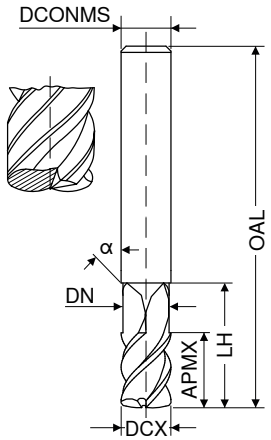
Steel	○	○
Stainless steel		
Cast iron	○	○
Non ferrous metals		
Heat resistant alloys		
hardened materials	●	●

→ v_c/f_z Page 300+301

SilverLine – Torus face milling cutter

▲ APMX does not correspond to the maximum cutting depth
▲ r_{3D} = corner radius to be programmed





≈DIN 6527 | Factory standard

DCX f8 mm	r_{3D} mm	APMX mm	DN mm	LH mm	OAL mm	α°	DCONMS h5 mm	ZEFP	V0 Article no. 50 961 ... £		V0 Article no. 50 961 ... £	
6	1.21	3	5.8	16	54	45	6	4	65.99	060		
6	1.21	3	5.8	44	80	45	6	4			88.52	061
8	1.38	4	7.7	20	58	45	8	4	75.97	080		
8	1.38	4	7.7	54	100	45	8	4			115.72	081
10	2.00	5	9.7	24	66	45	10	4	129.83	100		
10	2.00	5	9.7	60	100	45	10	4			168.59	101
12	2.10	6	11.6	26	73	45	12	4	169.44	120		
12	2.10	6	11.6	75	120	45	12	4			209.47	121
16	2.78	8	15.5	32	82	45	16	4	318.49	160		
16	2.75	8	15.5	92	150	45	16	4			394.59	161
20	3.07	10	19.5	40	92	45	20	4	459.85	200		
20	3.07	10	19.5	92	150	45	20	4			691.83	201

Steel	●	●
Stainless steel		
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys		
hardened materials	○	○

→ v_c/f_z Page 302+303

14

S-Cut – End milling cutter

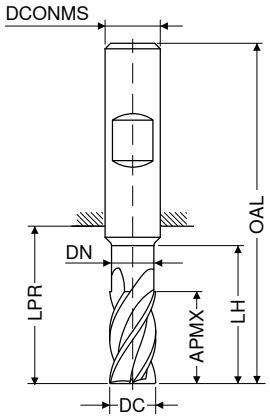
SC
UNI

λ_s=28°
γ_s=10°

ZEFP

HPC

APX72S



≈DIN 6527

HB

V1/1#

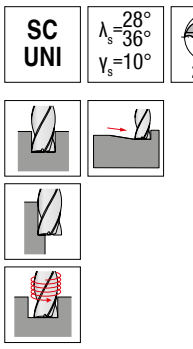
DC f8	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 52 225 ...
mm	mm	mm	mm	mm	mm	mm		£	
3	8	2.8	15.0	21	57	6	4	61.77	030
4	11	3.8	16.5	21	57	6	4	61.77	040
5	13	4.8	18.5	21	57	6	4	61.77	050
6	13	5.5	21.0	21	57	6	4	61.77	060
7	19	6.5	27.0	27	63	8	4	85.50	070
8	19	7.5	27.0	27	63	8	4	82.92	080
9	22	8.5	32.0	32	72	10	4	121.43	090
10	22	9.5	32.0	32	72	10	4	117.74	100
11	26	10.5	38.0	38	83	12	4	169.54	110
12	26	11.5	38.0	38	83	12	4	163.84	120
13	26	12.5	42.0	38	83	14	4	218.23	130
14	26	13.5	42.0	38	83	14	4	211.52	140
16	36	15.5	48.0	44	92	16	4	265.24	160
18	36	17.5	54.0	52	100	18	4	355.88	180
20	38	19.5	54.0	54	104	20	4	407.93	200
25	42	24.0	65.0	65	121	25	4	647.99	250

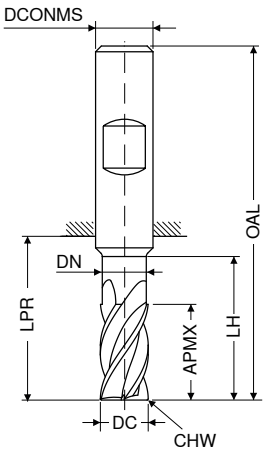
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

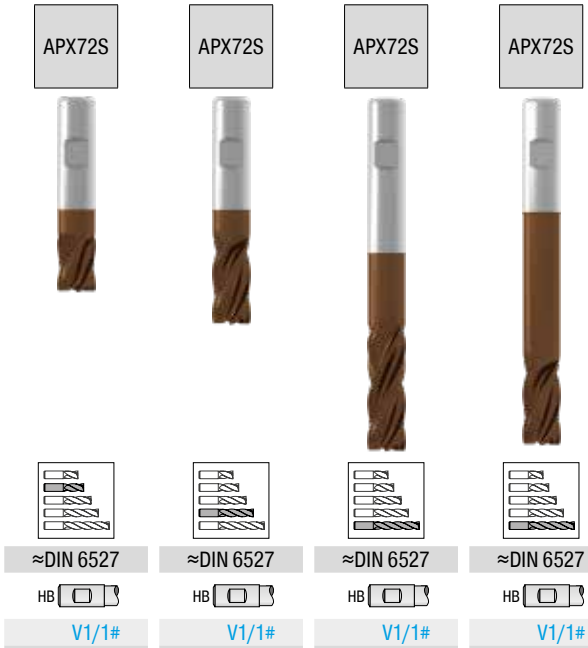
→ v_c/f_z Page 304+305

S-Cut – End milling cutter

SC
UNI
λ_s=28°
36°
γ_s=10°
ZEFP
HPC







≈DIN 6527 | ≈DIN 6527 | ≈DIN 6527 | ≈DIN 6527

HB | HB | HB | HB

V1/1# | V1/1# | V1/1# | V1/1#

DC f8 mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h6 mm	CHW mm	ZEFP	Article no. 52 223 ... £		Article no. 52 224 ... £		Article no. 52 226 ... £		Article no. 52 227 ... £	
3	6	2.8	12.0	18	54	6	0.10	4	51.04	030						
3	8	2.8	15.0	21	57	6	0.10	4			61.77	030				
4	8	3.8	13.5	18	54	6	0.13	4	51.04	040						
4	11	3.8	16.5	21	57	6	0.13	4			61.77	040				
5	9	4.8	15.5	18	54	6	0.18	4	51.04	050						
5	13	4.8	18.5	21	57	6	0.18	4			61.77	050				
5	22	4.8	24.5	27	63	6	0.18	4					75.21	050		
6	10	5.5	18.0	18	54	6	0.20	4	51.04	060						
6	13	5.5	21.0	21	57	6	0.20	4			61.77	060				
6	13	5.5	42.0	44	80	6	0.20	4							94.57	060
6	22	5.5	27.0	27	63	6	0.20	4					75.21	060		
7	12	6.5	22.0	22	58	8	0.20	4	71.51	070						
7	19	6.5	27.0	27	63	8	0.20	4			85.50	070				
8	12	7.5	22.0	22	58	8	0.20	4	69.39	080						
8	19	7.5	27.0	27	63	8	0.20	4			82.92	080				
8	21	7.5	62.0	64	100	8	0.20	4							111.80	080
8	28	7.5	36.0	44	80	8	0.20	4					92.55	080		
9	14	8.5	26.0	26	66	10	0.30	4	97.59	090						
9	22	8.5	32.0	32	72	10	0.20	4			121.43	090				
10	14	9.5	26.0	26	66	10	0.30	4	94.57	100						
10	22	9.5	32.0	32	72	10	0.30	4			117.74	100				
10	22	9.5	58.0	60	100	10	0.30	4							138.88	100
10	33	9.5	54.0	60	100	10	0.30	4					119.53	100		
11	16	10.5	28.0	28	73	12	0.30	4	145.04	110						
11	26	10.5	38.0	38	83	12	0.30	4			169.54	110				
12	16	11.5	28.0	28	73	12	0.30	4	140.67	120						
12	26	11.5	38.0	38	83	12	0.30	4			163.84	120				
12	26	11.5	73.0	75	120	12	0.30	4							172.91	120
12	42	11.5	54.0	55	100	12	0.30	4					154.33	120		
13	18	12.5	30.0	30	75	14	0.30	4	184.66	130						
13	26	12.5	38.0	38	83	14	0.30	4			218.23	130				
14	18	13.5	30.0	30	75	14	0.30	4	179.62	140						
14	26	13.5	38.0	38	83	14	0.30	4			211.52	140				
14	48	13.5	54.0	55	100	14	0.30	4					172.91	140		
16	22	15.5	34.0	34	82	16	0.40	4	224.95	160						
16	36	15.5	44.0	44	92	16	0.40	4			265.24	160				
16	36	15.5	100.0	102	150	16	0.40	4							302.16	160
16	53	15.5	84.0	102	150	16	0.40	4					283.70	160		
18	24	17.5	34.0	36	84	18	0.40	4	302.16	180						
18	36	17.5	52.0	52	100	18	0.40	4			355.88	180				
20	26	19.5	42.0	42	92	20	0.50	4	350.84	200						
20	38	19.5	54.0	54	104	20	0.50	4			407.93	200				
20	38	19.5	100.0	100	150	20	0.50	4							428.08	200
20	68	19.5	84.0	100	150	20	0.50	4					407.93	200		
25	32	24.0	46.0	49	105	25	0.50	4	553.98	250						
25	42	24.0	65.0	65	121	25	0.50	4			647.99	250				
25	68	24.0	84.0	94	150	25	0.50	4					750.39	250		

Steel	●	●	●	●
Stainless steel	●	●	●	●
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

→ v_c/f_z Page 304–307

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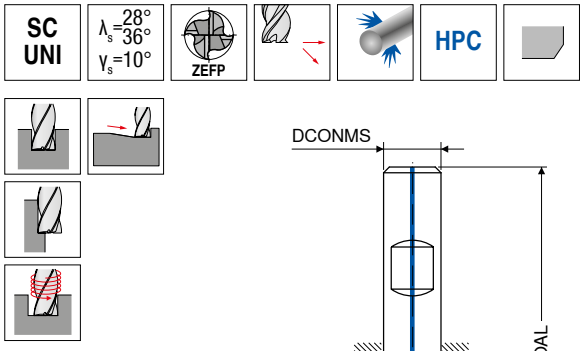
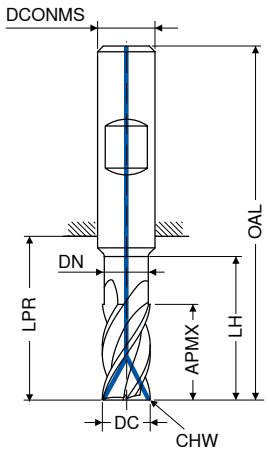
S-Cut – End milling cutter





APX72S

≈DIN 6527

HB

V1/1#

DC f8	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 52 229 ...
mm	mm	mm	mm	mm	mm	mm	mm		£	
6	13	5.5	21	21	57	6	0.2	4	131.16	060
8	19	7.5	27	27	63	8	0.2	4	177.95	080
10	22	9.5	32	32	72	10	0.3	4	251.82	100
12	26	11.5	38	38	83	12	0.3	4	339.11	120
14	26	13.5	42	42	83	14	0.3	4	443.18	140
16	36	15.5	46	46	92	16	0.4	4	616.09	160
20	38	19.5	54	54	104	20	0.5	4	883.01	200
25	42	24.0	65	65	121	25	0.5	4	1,151.60	250

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

→ v_c/f_z Page 304+305

S-Cut – End milling cutter with corner radius

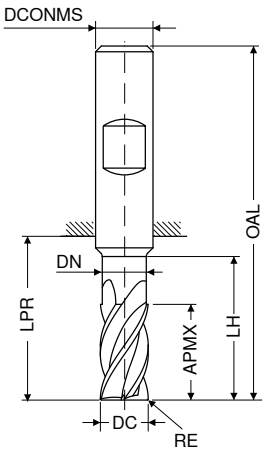
SC
UNI

λ_s=28°
γ_s=10°

ZEFP

HPC

APX72S



≈DIN 6527

HB

V1/1#

DC f8	RE	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 52 228 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£	
3	0.25	8	2.8	15.0	21	57	6	4	61.77	03003
3	0.50	8	2.8	15.0	21	57	6	4	61.77	03005
3	1.00	8	2.8	15.0	21	57	6	4	61.77	03010
4	0.25	11	3.8	16.5	21	57	6	4	61.77	04003
4	0.50	11	3.8	16.5	21	57	6	4	61.77	04005
4	1.00	11	3.8	16.5	21	57	6	4	61.77	04010
5	0.50	13	4.8	18.5	21	57	6	4	61.77	05005
5	1.00	13	4.8	18.5	21	57	6	4	61.77	05010
5	1.50	13	4.8	18.5	21	57	6	4	61.77	05015
6	0.50	13	5.5	21.0	21	57	6	4	61.77	06005
6	0.80	13	5.5	21.0	21	57	6	4	61.77	06008
6	1.00	13	5.5	21.0	21	57	6	4	61.77	06010
6	1.50	13	5.5	21.0	21	57	6	4	61.77	06015
6	2.00	13	5.5	21.0	21	57	6	4	61.77	06020
8	0.50	19	7.5	27.0	27	63	8	4	82.92	08005
8	0.80	19	7.5	27.0	27	63	8	4	82.92	08008
8	1.00	19	7.5	27.0	27	63	8	4	82.92	08010
8	1.50	19	7.5	27.0	27	63	8	4	82.92	08015
8	2.00	19	7.5	27.0	27	63	8	4	82.92	08020
10	0.50	22	9.5	32.0	32	72	10	4	117.74	10005
10	1.00	22	9.5	32.0	32	72	10	4	117.74	10010
10	1.50	22	9.5	32.0	32	72	10	4	117.74	10015
10	1.60	22	9.5	32.0	32	72	10	4	117.74	10016
10	2.00	22	9.5	32.0	32	72	10	4	117.74	10020
12	0.50	26	11.5	38.0	38	83	12	4	163.84	12005
12	1.00	26	11.5	38.0	38	83	12	4	163.84	12010
12	1.50	26	11.5	38.0	38	83	12	4	163.84	12015
12	1.60	26	11.5	38.0	38	83	12	4	163.84	12016
12	2.00	26	11.5	38.0	38	83	12	4	163.84	12020
12	3.00	26	11.5	38.0	38	83	12	4	163.84	12030
14	1.00	26	13.5	38.0	38	83	14	4	211.52	14010
14	2.00	26	13.5	38.0	38	83	14	4	211.52	14020
16	1.00	36	15.5	44.0	44	92	16	4	265.24	16010
16	1.50	36	15.5	44.0	44	92	16	4	265.24	16015
16	1.60	36	15.5	44.0	44	92	16	4	265.24	16016
16	2.00	36	15.5	44.0	44	92	16	4	265.24	16020
16	2.50	36	15.5	44.0	44	92	16	4	265.24	16025
16	3.00	36	15.5	44.0	44	92	16	4	265.24	16030
16	3.20	36	15.5	44.0	44	92	16	4	265.24	16032
18	1.50	36	17.5	44.0	44	92	18	4	355.88	18015
18	2.50	36	17.5	44.0	44	92	18	4	355.88	18025
20	1.00	38	19.5	54.0	54	104	20	4	407.93	20010

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

→ v_c/f_z Page 304+305

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Continued on next page

S-Cut – End milling cutter with corner radius

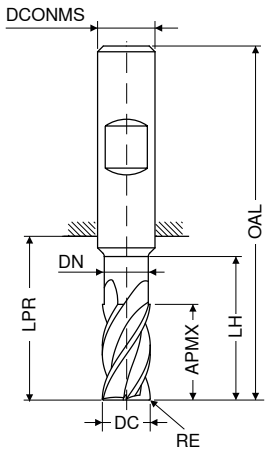
SC
UNI

λ_s=28°
γ_s=10°

ZEFP

HPC

APX72S



≈DIN 6527

HB

V1/1#

DC f8	RE	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 52 228 ...
mm	mm	mm	mm	mm	mm	mm	mm		£
20	1.50	38	19.5	54.0	54	104	20	4	407.93 20015
20	2.00	38	19.5	54.0	54	104	20	4	407.93 20020
20	2.50	38	19.5	54.0	54	104	20	4	407.93 20025
20	3.00	38	19.5	54.0	54	104	20	4	407.93 20030
20	4.00	38	19.5	54.0	54	104	20	4	407.93 20040
25	1.00	42	24.0	65.0	65	121	25	4	647.99 25010
25	1.50	42	24.0	65.0	65	121	25	4	647.99 25015
25	2.00	42	24.0	65.0	65	121	25	4	647.99 25020
25	2.50	42	24.0	65.0	65	121	25	4	647.99 25025
25	3.00	42	24.0	65.0	65	121	25	4	647.99 25030
25	4.00	42	24.0	65.0	65	121	25	4	647.99 25040
25	5.00	42	24.0	65.0	65	121	25	4	647.99 25050

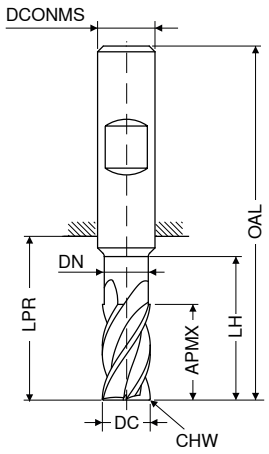
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

→ v_c/f_z Page 304+305

S-Cut – End milling cutter

▲ suitable for trochoidal milling

SC UNI | λ_s=28° γ_s=10° | ZEFP | HPC | APX72S



≈DIN 6527

HB

V1/1#

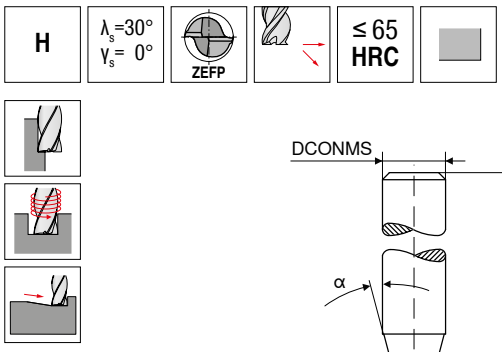
DC f8 mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h6 mm	CHW mm	ZEFP	Article no. 52 230 ... £	
6	18	5.5	25	26	62	6	0.12	5	91.66	**060**
8	24	7.5	30	32	68	8	0.16	5	121.43	**080**
10	30	9.5	35	40	80	10	0.20	5	154.33	**100**
12	36	11.5	45	48	93	12	0.24	5	203.13	**120**
16	48	15.5	55	60	108	16	0.32	5	347.49	**160**
20	60	19.5	70	76	126	20	0.40	5	547.26	**200**

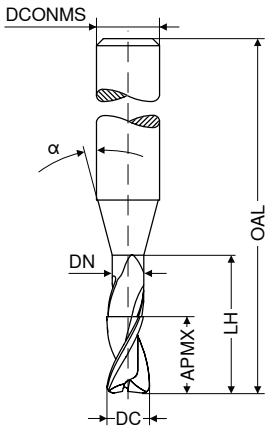
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	
Heat resistant alloys	○
hardened materials	

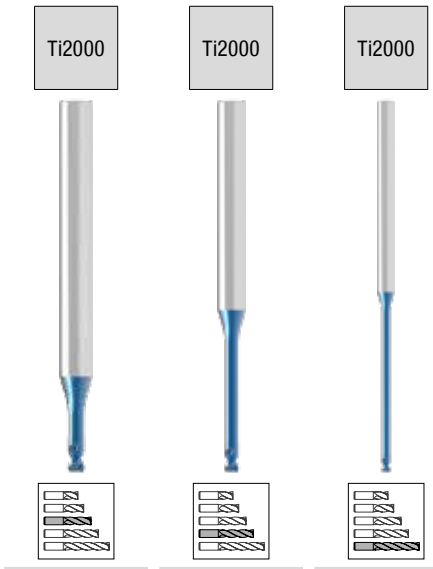
→ v_c/f_z Page 308+309

BlueLine – Micro-end milling cutter

▲ T_x = maximum engagement depth







DC -0,01	APMX	DN	LH	OAL	α°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 345 ...		V1 Article no. 52 346 ...		V1 Article no. 52 347 ...	
mm	mm	mm	mm	mm		mm			£		£		£	
0.2	0.3	0.18	0.5	45	16	4	2,5 x DC	2	71.40	302				
0.2	0.3	0.18	1.0	45	16	4	5 x DC	2	71.40	402				
0.2	0.3	0.18	1.5	45	16	4	7,5 x DC	2	71.40	502				
0.3	0.4	0.28	1.0	45	16	4	3,3 x DC	2	68.45	303				
0.3	0.4	0.28	2.0	45	16	4	6,6 x DC	2	68.45	403				
0.3	0.4	0.28	3.0	45	16	4	10 x DC	2			68.45	303		
0.3	0.4	0.28	6.0	45	16	4	20 x DC	2			68.45	403		
0.3	0.4	0.28	9.0	45	16	4	30 x DC	2					68.45	303
0.4	0.6	0.38	2.0	45	16	4	5 x DC	2	67.46	304				
0.4	0.6	0.38	3.0	45	16	4	7,5 x DC	2	67.46	404				
0.4	0.6	0.38	4.0	45	16	4	10 x DC	2			67.46	304		
0.4	0.6	0.38	5.0	45	16	4	12,5 x DC	2			67.46	404		
0.4	0.6	0.38	8.0	45	16	4	20 x DC	2					67.46	304
0.4	0.6	0.38	12.0	45	16	4	30 x DC	2					69.56	404
0.5	0.7	0.48	2.0	45	16	4	4 x DC	2	54.90	305				
0.5	0.7	0.48	4.0	45	16	4	8 x DC	2	54.90	405				
0.5	0.7	0.48	6.0	45	16	4	12 x DC	2			54.90	305		
0.5	0.7	0.48	8.0	45	16	4	16 x DC	2			56.51	405		
0.5	0.7	0.48	10.0	50	16	4	20 x DC	2					57.74	305
0.5	0.7	0.48	15.0	50	16	4	30 x DC	2					60.56	405
0.6	0.9	0.58	2.0	45	16	4	3,3 x DC	2	54.90	306				
0.6	0.9	0.58	4.0	45	16	4	6,6 x DC	2	54.90	406				
0.6	0.9	0.58	6.0	45	16	4	10 x DC	2			54.90	306		
0.6	0.9	0.58	8.0	45	16	4	13,3 x DC	2			56.51	406		
0.6	0.9	0.58	10.0	45	16	4	16,6 x DC	2			56.51	506		
0.6	0.9	0.58	12.0	50	16	4	20 x DC	2					56.88	306
0.6	0.9	0.58	18.0	50	16	4	30 x DC	2					60.94	406
0.7	1.0	0.68	2.0	45	16	4	2,8 x DC	2	57.86	307				
0.7	1.0	0.68	4.0	45	16	4	5,7 x DC	2	57.86	407				
0.7	1.0	0.68	6.0	45	16	4	8,5 x DC	2	57.86	507				
0.7	1.0	0.68	8.0	45	16	4	11,4 x DC	2			59.46	307		
0.7	1.0	0.68	10.0	50	16	4	14,2 x DC	2			59.46	407		
0.8	1.2	0.78	4.0	45	16	4	5 x DC	2	63.03	308				
0.8	1.2	0.78	6.0	45	16	4	7,5 x DC	2	63.03	408				
0.8	1.2	0.78	8.0	45	16	4	10 x DC	2			63.03	308		
0.8	1.2	0.78	10.0	50	16	4	12,5 x DC	2			66.11	408		
0.8	1.2	0.78	12.0	50	16	4	15 x DC	2			66.11	508		
0.8	1.2	0.78	16.0	50	16	4	20 x DC	2					69.43	308
0.8	1.2	0.78	24.0	60	16	4	30 x DC	2					72.38	408
0.9	1.3	0.88	4.0	45	16	4	4,4 x DC	2	52.56	309				
0.9	1.3	0.88	6.0	45	16	4	6,6 x DC	2	52.56	409				
0.9	1.3	0.88	8.0	45	16	4	8,8 x DC	2	54.04	509				
0.9	1.3	0.88	10.0	45	16	4	11,1 x DC	2			54.04	309		
0.9	1.3	0.88	15.0	50	16	4	16,6 x DC	2			60.08	409		
1.0	1.5	0.95	4.0	45	16	4	4 x DC	2	54.04	310				
1.0	1.5	0.95	6.0	45	16	4	6 x DC	2	54.04	410				
1.0	1.5	0.95	8.0	45	16	4	8 x DC	2	54.04	510				

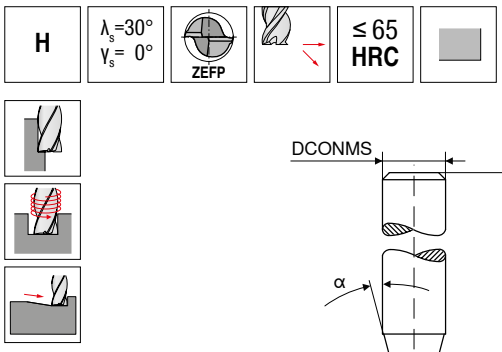
Steel	●	●	●
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	●	●	●

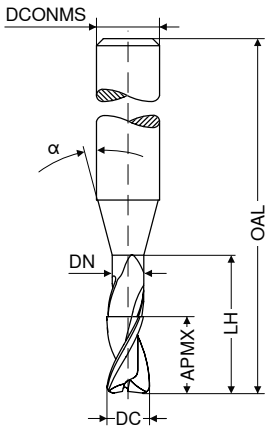
→ v_c/f_z Page 316+317

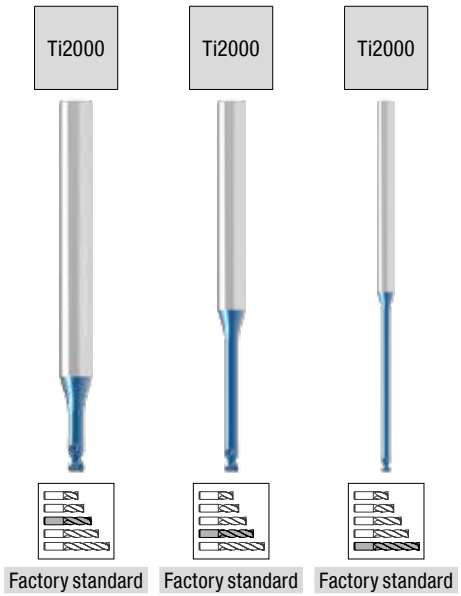
Continued on next page

BlueLine – Micro-end milling cutter

▲ T_x = maximum engagement depth







DC -0,01	APMX	DN	LH	OAL	α°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 345 ...		V1 Article no. 52 346 ...		V1 Article no. 52 347 ...	
mm	mm	mm	mm	mm		mm			£		£		£	
1.0	1.5	0.95	10.0	45	16	4	10 x DC	2			54.04	310		
1.0	1.5	0.95	12.0	45	16	4	12 x DC	2			55.15	410		
1.0	1.5	0.95	14.0	45	16	4	14 x DC	2			55.15	510		
1.0	1.5	0.95	16.0	50	16	4	16 x DC	2			57.74	610		
1.0	1.5	0.95	20.0	54	16	4	20 x DC	2					64.02	310
1.0	1.5	0.95	25.0	70	16	4	25 x DC	2					69.43	410
1.0	1.5	0.95	30.0	70	16	4	30 x DC	2					70.41	510
1.2	1.8	1.14	6.0	45	16	4	5 x DC	2	58.47	312				
1.2	1.8	1.14	8.0	45	16	4	6,6 x DC	2	58.47	412				
1.2	1.8	1.14	10.0	45	16	4	8,3 x DC	2	60.08	512				
1.2	1.8	1.14	12.0	45	16	4	10 x DC	2			60.08	312		
1.2	1.8	1.14	16.0	50	16	4	13,3 x DC	2			66.11	412		
1.2	1.8	1.14	20.0	60	16	4	16,6 x DC	2			67.96	512		
1.4	2.1	1.34	6.0	45	16	4	4,2 x DC	2	58.47	314				
1.4	2.1	1.34	8.0	45	16	4	5,7 x DC	2	58.47	414				
1.4	2.1	1.34	10.0	45	16	4	7,1 x DC	2	60.08	514				
1.4	2.1	1.34	12.0	45	16	4	8,5 x DC	2	60.08	614				
1.4	2.1	1.34	14.0	45	16	4	10 x DC	2			60.08	314		
1.4	2.1	1.34	16.0	50	16	4	11,4 x DC	2			66.11	414		
1.4	2.1	1.34	22.0	54	16	4	15,7 x DC	2			67.96	514		
1.5	2.3	1.44	6.0	45	16	4	4 x DC	2	56.37	315				
1.5	2.3	1.44	8.0	45	16	4	5,3 x DC	2	56.37	415				
1.5	2.3	1.44	10.0	45	16	4	6,6 x DC	2	57.12	515				
1.5	2.3	1.44	12.0	45	16	4	8 x DC	2	57.12	615				
1.5	2.3	1.44	14.0	50	16	4	9,3 x DC	2	63.89	715				
1.5	2.3	1.44	16.0	50	16	4	10,6 x DC	2			63.89	315		
1.5	2.3	1.44	18.0	54	16	4	12 x DC	2			63.89	415		
1.5	2.3	1.44	20.0	54	16	4	13,3 x DC	2			63.89	515		
1.5	2.3	1.44	25.0	70	16	4	16,6 x DC	2			70.29	615		
1.5	2.3	1.44	30.0	70	16	4	20 x DC	2			70.29	715		
1.5	2.3	1.44	35.0	70	16	4	23,3 x DC	2					71.16	315
1.5	2.3	1.44	40.0	80	16	4	26,6 x DC	2					74.48	415
1.5	2.3	1.44	45.0	80	16	4	30 x DC	2					76.08	515
1.6	2.4	1.51	6.0	45	16	4	3,7 x DC	2	56.37	316				
1.6	2.4	1.51	8.0	45	16	4	5 x DC	2	56.37	416				
1.6	2.4	1.51	10.0	45	16	4	6,2 x DC	2	57.12	516				
1.6	2.4	1.51	12.0	45	16	4	7,5 x DC	2	57.12	616				
1.6	2.4	1.51	14.0	50	16	4	8,75 x DC	2	60.32	716				
1.6	2.4	1.51	16.0	50	16	4	10 x DC	2			60.32	316		
1.6	2.4	1.51	18.0	54	16	4	11,25 x DC	2			60.32	416		
1.6	2.4	1.51	20.0	54	16	4	12,5 x DC	2			60.32	516		
1.6	2.4	1.51	26.0	60	16	4	16,2 x DC	2			70.29	616		
1.8	2.7	1.71	6.0	45	16	4	3,3 x DC	2	56.37	318				
1.8	2.7	1.71	8.0	45	16	4	4,4 x DC	2	56.37	418				
1.8	2.7	1.71	10.0	45	16	4	5,5 x DC	2	56.88	518				
1.8	2.7	1.71	12.0	45	16	4	6,6 x DC	2	57.12	618				
1.8	2.7	1.71	14.0	50	16	4	7,7 x DC	2	60.32	718				

Steel	●	●	●
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	●	●	●

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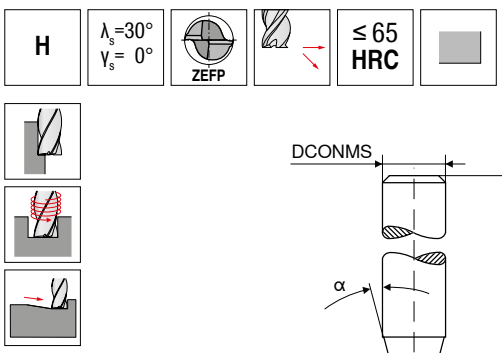
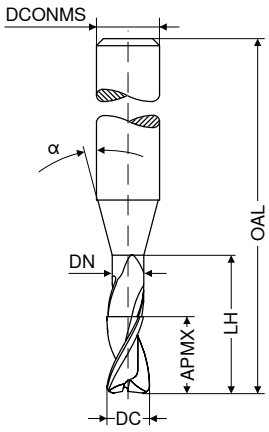
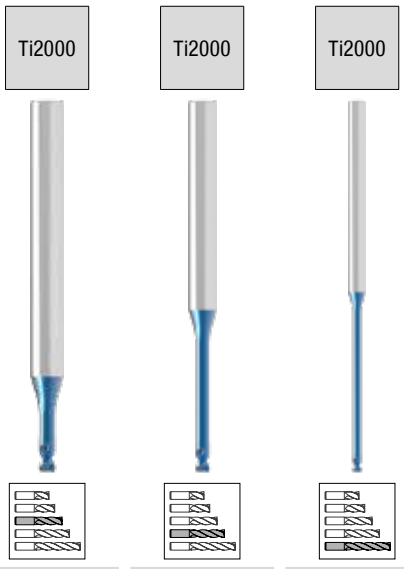
Continued on next page

BlueLine – Micro-end milling cutter

▲ T_x = maximum engagement depth







Factory standard | Factory standard | Factory standard

HA | HA | HA

DC -0,01 mm	APMX mm	DN mm	LH mm	OAL mm	α°	DCONMS h5 mm	T_x	ZEFP	V1 Article no. 52 345 ... £		V1 Article no. 52 346 ... £		V1 Article no. 52 347 ... £	
1.8	2.7	1.71	16.0	50	16	4	8,8 x DC	2	60.32	818				
1.8	2.7	1.71	18.0	54	16	4	10 x DC	2			63.89	318		
1.8	2.7	1.71	20.0	54	16	4	11,1 x DC	2			63.89	418		
1.8	2.7	1.71	25.0	60	16	4	13,8 x DC	2			70.29	518		
2.0	3.0	1.91	6.0	45	16	4	3 x DC	2	56.37	320				
2.0	3.0	1.91	8.0	45	16	4	4 x DC	2	56.37	420				
2.0	3.0	1.91	10.0	45	16	4	5 x DC	2	57.12	520				
2.0	3.0	1.91	12.0	45	16	4	6 x DC	2	57.12	620				
2.0	3.0	1.91	14.0	50	16	4	7 x DC	2	60.32	720				
2.0	3.0	1.91	16.0	50	16	4	8 x DC	2	60.32	820				
2.0	3.0	1.91	18.0	54	16	4	9 x DC	2	60.32	920				
2.0	3.0	1.91	20.0	54	16	4	10 x DC	2			63.89	320		
2.0	3.0	1.91	25.0	60	16	4	12,5 x DC	2			70.29	420		
2.0	3.0	1.91	30.0	70	16	4	15 x DC	2			72.51	520		
2.0	3.0	1.91	35.0	80	16	4	17,5 x DC	2			74.97	620		
2.0	3.0	1.91	40.0	90	16	4	20 x DC	2					80.88	320
2.0	3.0	1.91	50.0	100	16	4	25 x DC	2					86.66	420
2.0	3.0	1.91	60.0	110	16	4	30 x DC	2					98.48	520
2.5	3.7	2.41	8.0	45	16	4	3,2 x DC	2	56.37	325				
2.5	3.7	2.41	10.0	45	16	4	4 x DC	2	57.12	425				
2.5	3.7	2.41	12.0	45	16	4	4,8 x DC	2	57.12	525				
2.5	3.7	2.41	14.0	50	16	4	5,6 x DC	2	60.32	625				
2.5	3.7	2.41	16.0	50	16	4	6,4 x DC	2	60.32	725				
2.5	3.7	2.41	18.0	54	16	4	7,2 x DC	2	63.89	825				
2.5	3.7	2.41	20.0	54	16	4	8 x DC	2	63.89	925				
2.5	3.7	2.41	25.0	60	16	4	10 x DC	2			69.80	325		
2.5	3.7	2.41	30.0	70	16	4	12 x DC	2			76.19	425		
2.5	3.7	2.41	40.0	90	16	4	16 x DC	2			98.73	525		
2.5	3.7	2.41	50.0	100	16	4	20 x DC	2					110.30	325
3.0	4.5	2.92	8.0	45	16	4	2,6 x DC	2	57.12	330				
3.0	4.5	2.92	12.0	45	16	4	4 x DC	2	57.12	430				
3.0	4.5	2.92	16.0	50	16	4	5,3 x DC	2	60.32	530				
3.0	4.5	2.92	20.0	54	16	4	6,6 x DC	2	63.89	630				

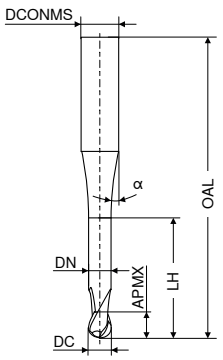
Steel	●	●	●
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	●	●	●

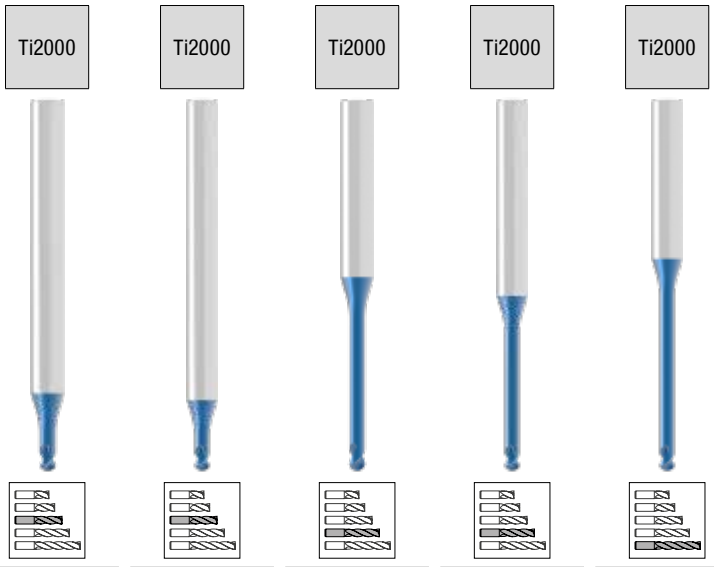
→ v_c/f_z Page 316+317

BlueLine – Micro-ball nosed cutter

▲ T_x = maximum engagement depth

H | λ_s=30° γ_s= 0° | ZEFP | ≤ 65 HRC





Factory standard | Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA | HA

DC $_{-0,01}$	APMX	DN	LH	OAL	α°	DCONMS $_{h5}$	T_x	ZEFP	V1 Article no. 52 356 ...		V1 Article no. 52 358 ...		V1 Article no. 52 357 ...		V1 Article no. 52 359 ...		V1 Article no. 52 360 ...	
mm	mm	mm	mm	mm		mm			£		£		£		£		£	
0.2	0.16	0.17	0.30	45	16	4	1,5 x DC	2	74.72	302								
0.2	0.16	0.17	0.50	45	16	4	2,5 x DC	2	74.72	402								
0.2	0.16	0.17	0.75	45	16	4	3,75 x DC	2	74.72	502								
0.2	0.16	0.17	1.00	45	16	4	5 x DC	2	74.72	602								
0.2	0.16	0.17	1.25	45	16	4	6,2 x DC	2	74.72	702								
0.2	0.16	0.17	1.50	45	16	4	7,5 x DC	2	74.72	802								
0.2	0.16	0.17	1.75	45	16	4	8,7 x DC	2	74.72	902								
0.2	0.16	0.17	2.00	45	16	4	10 x DC	2					74.72	302				
0.2	0.16	0.17	2.50	45	16	4	12,5 x DC	2					74.72	402				
0.2	0.16	0.17	3.00	45	16	4	15 x DC	2					74.72	502				
0.3	0.24	0.27	0.50	45	16	4	1,6 x DC	2	72.51	303								
0.3	0.24	0.27	0.75	45	16	4	2,5 x DC	2	72.51	403								
0.3	0.24	0.27	1.00	45	16	4	3,3 x DC	2	72.51	503								
0.3	0.24	0.27	1.25	45	16	4	4,1 x DC	2	72.51	603								
0.3	0.24	0.27	1.50	45	16	4	5 x DC	2	72.51	703								
0.3	0.24	0.27	1.75	50	16	4	5,8 x DC	2			72.51	303						
0.3	0.24	0.27	2.00	50	16	4	6,6 x DC	2			72.51	403						
0.3	0.24	0.27	2.25	50	16	4	7,5 x DC	2			72.51	503						
0.3	0.24	0.27	2.50	50	16	4	8,3 x DC	2			72.51	603						
0.3	0.24	0.27	2.75	50	16	4	9,1 x DC	2			72.51	703						
0.3	0.24	0.27	3.00	50	16	4	10 x DC	2							72.51	303		
0.3	0.24	0.27	3.50	50	16	4	11,6 x DC	2							72.51	403		
0.3	0.24	0.27	4.00	50	16	4	13,3 x DC	2							72.51	503		
0.3	0.24	0.27	4.50	50	16	4	15 x DC	2							72.51	603		
0.4	0.32	0.34	0.50	45	16	4	1,2 x DC	2	71.52	304								
0.4	0.32	0.34	1.00	45	16	4	2,5 x DC	2	71.52	404								
0.4	0.32	0.34	1.50	45	16	4	3,75 x DC	2	71.52	504								
0.4	0.32	0.34	2.00	45	16	4	5 x DC	2	71.52	604								
0.4	0.32	0.34	2.50	45	16	4	6,2 x DC	2	71.52	704								
0.4	0.32	0.34	3.00	45	16	4	7,5 x DC	2	71.52	804								
0.4	0.32	0.34	3.50	45	16	4	8,7 x DC	2	71.03	904								
0.4	0.32	0.34	4.00	45	16	4	10 x DC	2					71.03	304				
0.4	0.32	0.34	4.50	45	16	4	11,2 x DC	2					71.03	404				
0.4	0.32	0.34	5.00	45	16	4	12,5 x DC	2					71.03	504				
0.4	0.32	0.34	5.50	45	16	4	13,7 x DC	2					71.03	604				
0.4	0.32	0.34	6.00	45	16	4	15 x DC	2					71.03	704				
0.5	0.40	0.47	1.50	45	16	4	3 x DC	2	58.11	305								
0.5	0.40	0.47	2.00	45	16	4	4 x DC	2	58.11	405								
0.5	0.40	0.47	2.50	45	16	4	5 x DC	2	58.11	505								
0.5	0.40	0.47	3.00	45	16	4	6 x DC	2	58.11	605								
0.5	0.40	0.47	3.50	45	16	4	7 x DC	2	58.11	705								
0.5	0.40	0.47	4.00	45	16	4	8 x DC	2	58.11	805								
0.5	0.40	0.47	4.50	45	16	4	9 x DC	2	58.11	905								
0.5	0.40	0.47	5.00	45	16	4	10 x DC	2					58.11	305				

Steel	●	●	●	●	●
Stainless steel					
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials	●	●	●	●	●

→ v_c/f_z Page 316+317

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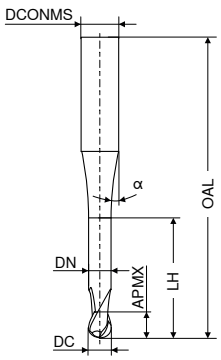
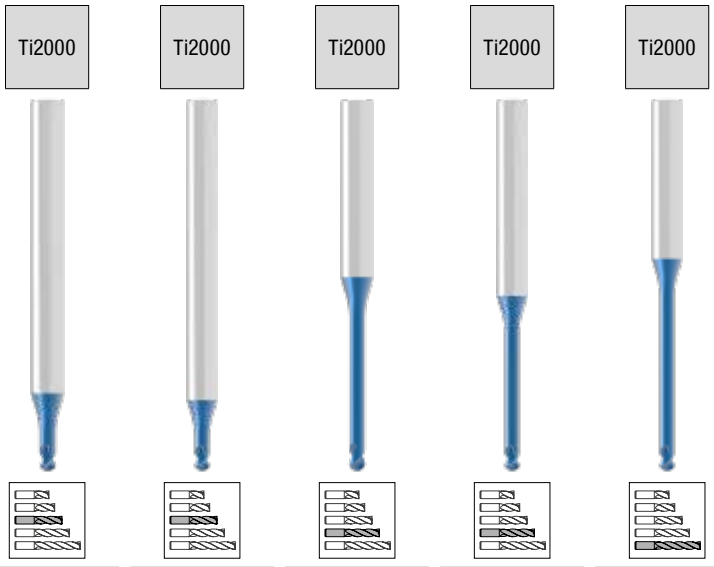
Continued on next page

BlueLine – Micro-ball nosed cutter

▲ T_x = maximum engagement depth

H | λ_s=30° γ_s= 0° | ZEFP | ≤ 65 HRC





Factory standard | Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA | HA

DC $_{-0,01}$	APMX	DN	LH	OAL	α°	DCONMS $_{h5}$	T_x	ZEFP	V1 Article no. 52 356 ...		V1 Article no. 52 358 ...		V1 Article no. 52 357 ...		V1 Article no. 52 359 ...		V1 Article no. 52 360 ...	
mm	mm	mm	mm	mm		mm			£		£		£		£		£	
0.5	0.40	0.47	5.50	45	16	4	11 x DC	2					58.11	405				
0.5	0.40	0.47	6.00	45	16	4	12 x DC	2					58.11	505				
0.5	0.40	0.47	7.00	45	16	4	14 x DC	2					58.11	605				
0.5	0.40	0.47	8.00	45	16	4	16 x DC	2					58.84	705				
0.5	0.40	0.47	9.00	45	16	4	18 x DC	2					58.84	805				
0.5	0.40	0.47	10.00	50	16	4	20 x DC	2									58.84	305
0.6	0.40	0.57	12.00	50	16	4	20 x DC	2									61.79	306
0.6	0.48	0.57	1.00	45	16	4	1,6 x DC	2	58.11	306								
0.6	0.48	0.57	2.00	45	16	4	3,3 x DC	2	58.11	406								
0.6	0.48	0.57	3.00	45	16	4	5 x DC	2	58.11	506								
0.6	0.48	0.57	4.00	45	16	4	6,6 x DC	2	58.11	606								
0.6	0.48	0.57	5.00	45	16	4	8,3 x DC	2	58.11	706								
0.6	0.48	0.57	6.00	45	16	4	10 x DC	2					58.11	306				
0.6	0.48	0.57	8.00	45	16	4	13,3 x DC	2					58.11	406				
0.6	0.48	0.57	10.00	50	16	4	16,6 x DC	2							60.45	306		
0.8	0.64	0.77	2.00	45	16	4	2,5 x DC	2	65.50	308								
0.8	0.64	0.77	3.00	45	16	4	3,75 x DC	2	65.50	408								
0.8	0.64	0.77	4.00	45	16	4	5 x DC	2	65.50	508								
0.8	0.64	0.77	5.00	45	16	4	6,2 x DC	2	65.50	608								
0.8	0.64	0.77	6.00	45	16	4	7,5 x DC	2	65.50	708								
0.8	0.64	0.77	7.00	45	16	4	8,7 x DC	2	65.50	808								
0.8	0.64	0.77	8.00	45	16	4	10 x DC	2					66.11	308				
0.8	0.64	0.77	9.00	45	16	4	11,2 x DC	2					66.11	408				
0.8	0.64	0.77	10.00	50	16	4	12,5 x DC	2							66.11	308		
1.0	0.80	0.96	3.00	45	16	4	3 x DC	2	55.64	310								
1.0	0.80	0.96	4.00	45	16	4	4 x DC	2	55.64	410								
1.0	0.80	0.96	5.00	45	16	4	5 x DC	2	55.64	510								
1.0	0.80	0.96	6.00	45	16	4	6 x DC	2	55.64	610								
1.0	0.80	0.96	7.00	45	16	4	7 x DC	2	60.08	710								
1.0	0.80	0.96	8.00	45	16	4	8 x DC	2	60.08	810								
1.0	0.80	0.96	9.00	45	16	4	9 x DC	2	60.08	910								
1.0	0.80	0.96	10.00	45	16	4	10 x DC	2					60.08	310				
1.0	0.80	0.96	12.00	45	16	4	12 x DC	2					60.08	410				
1.0	0.80	0.96	14.00	50	16	4	14 x DC	2							61.79	310		
1.0	0.80	0.96	16.00	50	16	4	16 x DC	2							64.26	410		
1.2	0.96	1.16	6.00	45	16	4	5 x DC	2	62.04	312								
1.2	0.96	1.16	8.00	45	16	4	6,6 x DC	2	62.04	412								
1.2	0.96	1.16	10.00	45	16	4	8,3 x DC	2	64.14	512								
1.2	0.96	1.16	12.00	45	16	4	10 x DC	2					64.14	312				
1.2	0.96	1.16	14.00	50	16	4	11,6 x DC	2							64.88	312		
1.2	0.96	1.16	16.00	50	16	4	13,3 x DC	2							64.88	412		
1.4	1.12	1.34	8.00	45	16	4	5,7 x DC	2	59.71	314								
1.4	1.12	1.34	12.00	45	16	4	8,5 x DC	2	62.04	414								
1.4	1.12	1.34	16.00	50	16	4	11,4 x DC	2							64.38	314		

Steel	●	●	●	●	●	
Stainless steel						
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials	●	●	●	●	●	

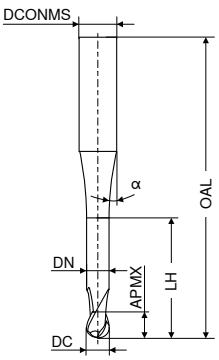
→ v_c/f_z Page 316+317

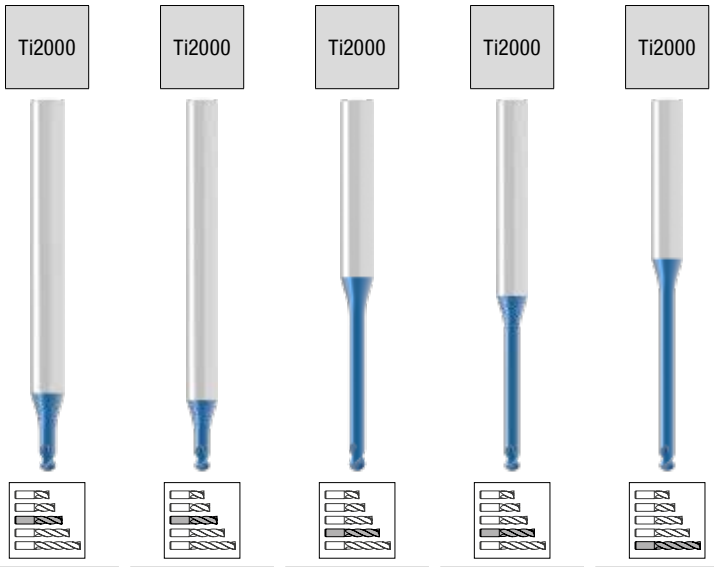
Continued on next page

BlueLine – Micro-ball nosed cutter

▲ T_x = maximum engagement depth

H | λ_s=30° γ_s= 0° | ZEFP | ≤ 65 HRC





Factory standard | Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA | HA

V1 | V1 | V1 | V1 | V1

DC $_{-0,01}$	APMX	DN	LH	OAL	α°	DCONMS $_{h5}$	T_x	ZEFP	Article no. 52 356 ...		Article no. 52 358 ...		Article no. 52 357 ...		Article no. 52 359 ...		Article no. 52 360 ...	
mm	mm	mm	mm	mm		mm			£		£		£		£		£	
1.5	1.20	1.44	3.00	45	16	4	2 x DC	2	58.35	315								
1.5	1.20	1.44	4.00	45	16	4	2,6 x DC	2	58.35	415								
1.5	1.20	1.44	6.00	45	16	4	4 x DC	2	58.35	515								
1.5	1.20	1.44	8.00	45	16	4	5,3 x DC	2	58.35	615								
1.5	1.20	1.44	10.00	45	16	4	6,6 x DC	2	58.35	715								
1.5	1.20	1.44	12.00	45	16	4	8 x DC	2	61.79	815								
1.5	1.20	1.44	14.00	50	16	4	9,3 x DC	2			61.79	315						
1.5	1.20	1.44	16.00	50	16	4	10,6 x DC	2							61.79	315		
1.6	1.28	1.54	8.00	45	16	4	5 x DC	2	61.79	316								
1.6	1.28	1.54	12.00	45	16	4	7,5 x DC	2	61.79	416								
1.6	1.28	1.54	16.00	50	16	4	10 x DC	2							64.14	316		
1.8	1.44	1.74	8.00	45	16	4	4,4 x DC	2	61.79	318								
1.8	1.44	1.74	12.00	45	16	4	6,6 x DC	2	61.79	418								
1.8	1.44	1.74	16.00	50	16	4	8,8 x DC	2			64.14	318						
2.0	1.60	1.94	3.00	45	16	4	1,5 x DC	2	57.98	320								
2.0	1.60	1.94	4.00	45	16	4	2 x DC	2	57.98	420								
2.0	1.60	1.94	6.00	45	16	4	3 x DC	2	57.98	520								
2.0	1.60	1.94	8.00	45	16	4	4 x DC	2	61.79	620								
2.0	1.60	1.94	10.00	45	16	4	5 x DC	2	61.79	720								
2.0	1.60	1.94	12.00	45	16	4	6 x DC	2	61.79	820								
2.0	1.60	1.94	14.00	50	16	4	7 x DC	2			61.79	320						
2.0	1.60	1.94	16.00	50	16	4	8 x DC	2			61.79	420						
2.5	2.00	2.41	10.00	45	16	4	4 x DC	2	64.38	325								
2.5	2.00	2.41	15.00	50	16	4	6 x DC	2			66.23	325						
3.0	3.50	2.92	8.00	45	16	4	2,6 x DC	2	62.04	330								
3.0	3.50	2.92	10.00	45	16	4	3,3 x DC	2	62.04	430								
3.0	3.50	2.92	12.00	45	16	4	4 x DC	2	62.04	530								
3.0	3.50	2.92	16.00	45	16	4	5,3 x DC	2	65.13	630								
3.0	3.50	2.92	16.00	50	16	4	5,3 x DC	2			65.50	330						

Steel	●	●	●	●	●
Stainless steel					
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials	●	●	●	●	●

→ v_c/f_z Page 316+317

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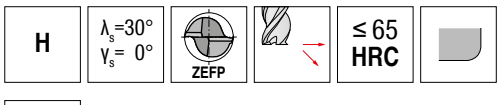
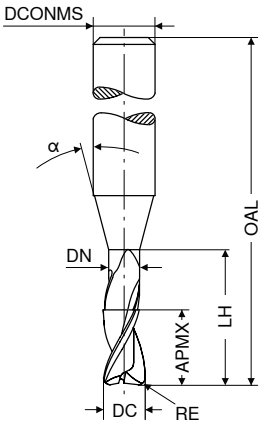
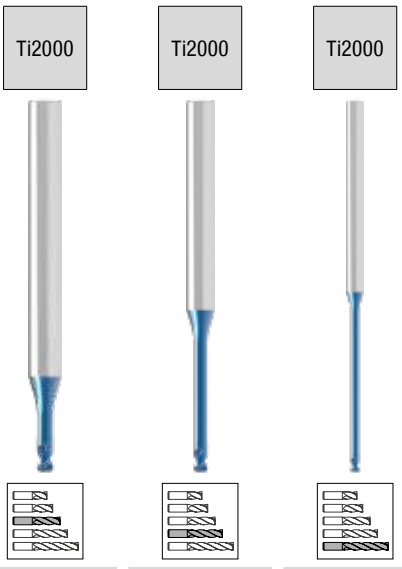
BlueLine – Micro-torus cutter

▲ T_x = maximum engagement depth







Factory standard | Factory standard | Factory standard

HA | HA | HA

DC -0,012	RE ±0,005	APMX	DN	LH	OAL	α°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 349 ...	£	V1 Article no. 52 350 ...	£	V1 Article no. 52 351 ...	£
mm	mm	mm	mm	mm	mm		mm								
0.4	0.1	0.4	0.38	1.0	50	16	4	2,5 x DC	2		30401				
0.4	0.1	0.4	0.38	1.5	50	16	4	3,75 x DC	2		40401				
0.4	0.1	0.4	0.38	2.0	50	16	4	5 x DC	2		50401				
0.4	0.1	0.4	0.38	3.0	50	16	4	7,5 x DC	2		60401				
0.4	0.1	0.4	0.38	4.0	50	16	4	10 x DC	2			30401			
0.5	0.1	0.5	0.48	1.0	50	16	4	2 x DC	2		30501				
0.5	0.1	0.5	0.48	2.0	50	16	4	4 x DC	2		40501				
0.5	0.1	0.5	0.48	3.0	50	16	4	6 x DC	2		50501				
0.5	0.1	0.5	0.48	4.0	50	16	4	8 x DC	2		60501				
0.5	0.1	0.5	0.48	5.0	50	16	4	10 x DC	2			30501			
0.5	0.1	0.5	0.48	6.0	50	16	4	12 x DC	2			40501			
0.6	0.1	0.6	0.58	2.0	50	16	4	3,3 x DC	2		30601				
0.6	0.1	0.6	0.58	3.0	50	16	4	5 x DC	2		40601				
0.6	0.1	0.6	0.58	4.0	50	16	4	6,6 x DC	2		50601				
0.6	0.1	0.6	0.58	6.0	50	16	4	10 x DC	2			30601			
0.6	0.1	0.6	0.58	8.0	50	16	4	13,3 x DC	2			40601			
0.7	0.1	0.7	0.68	4.0	50	16	4	5,7 x DC	2		30701				
0.7	0.1	0.7	0.68	6.0	50	16	4	8,5 x DC	2		40701				
0.8	0.1	0.8	0.78	4.0	50	16	4	5 x DC	2		30801				
0.8	0.1	0.8	0.78	6.0	50	16	4	7,5 x DC	2		40801				
0.8	0.2	0.8	0.78	4.0	50	16	4	5 x DC	2		30802				
0.8	0.2	0.8	0.78	6.0	50	16	4	7,5 x DC	2		40802				
1.0	0.1	1.0	0.95	2.0	50	16	4	2 x DC	2		31001				
1.0	0.1	1.0	0.95	4.0	50	16	4	4 x DC	2		41001				
1.0	0.1	1.0	0.95	6.0	50	16	4	6 x DC	2		51001				
1.0	0.1	1.0	0.95	8.0	50	16	4	8 x DC	2		61001				
1.0	0.1	1.0	0.95	10.0	50	16	4	10 x DC	2			31001			
1.0	0.1	1.0	0.95	12.0	54	16	4	12 x DC	2			41001			
1.0	0.1	1.0	0.95	16.0	60	16	4	16 x DC	2			51001			
1.0	0.1	1.0	0.95	20.0	60	16	4	20 x DC	2						31001
1.0	0.2	1.0	0.95	2.0	50	16	4	2 x DC	2		31002				
1.0	0.2	1.0	0.95	4.0	50	16	4	4 x DC	2		41002				
1.0	0.2	1.0	0.95	6.0	50	16	4	6 x DC	2		51002				
1.0	0.2	1.0	0.95	8.0	50	16	4	8 x DC	2		61002				
1.0	0.2	1.0	0.95	10.0	50	16	4	10 x DC	2			31002			
1.0	0.2	1.0	0.95	12.0	54	16	4	12 x DC	2			41002			
1.0	0.2	1.0	0.95	16.0	60	16	4	16 x DC	2			51002			
1.0	0.2	1.0	0.95	20.0	60	16	4	20 x DC	2						31002
1.0	0.3	1.0	0.95	2.0	50	16	4	2 x DC	2		31003				
1.0	0.3	1.0	0.95	4.0	50	16	4	4 x DC	2		41003				
1.0	0.3	1.0	0.95	6.0	50	16	4	6 x DC	2		51003				
1.0	0.3	1.0	0.95	8.0	50	16	4	8 x DC	2		61003				
1.0	0.3	1.0	0.95	10.0	50	16	4	10 x DC	2			31003			
1.0	0.3	1.0	0.95	12.0	54	16	4	12 x DC	2			41003			
1.0	0.3	1.0	0.95	16.0	60	16	4	16 x DC	2			51003			
1.0	0.3	1.0	0.95	20.0	60	16	4	20 x DC	2						31003
1.2	0.2	1.2	1.14	6.0	50	16	4	5 x DC	2		31202				

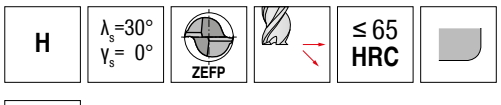
Steel	●	●	●
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	●	●	●

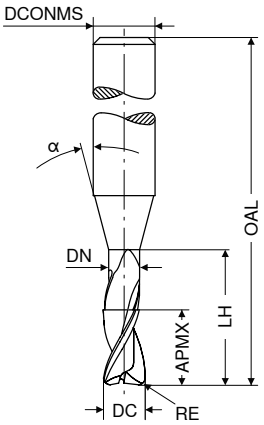
→ v_c/f_z Page 316+317

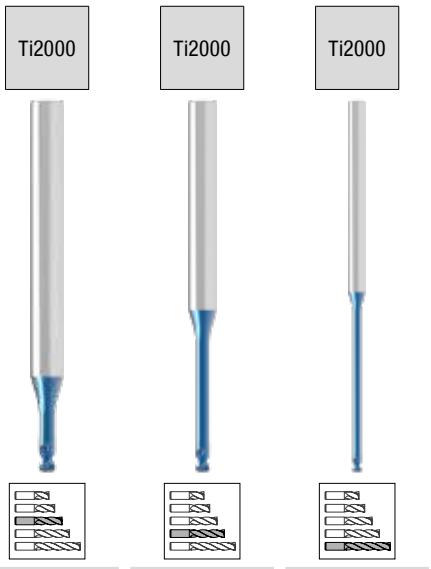
Continued on next page

BlueLine – Micro-torus cutter

▲ T_x = maximum engagement depth







Factory standard | Factory standard | Factory standard

HA | HA | HA

DC -0,012	RE ±0,005	APMX	DN	LH	OAL	α°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 349 ... £		V1 Article no. 52 350 ... £		V1 Article no. 52 351 ... £
mm	mm	mm	mm	mm	mm		mm							
1.2	0.2	1.2	1.14	12.0	54	16	4	10 x DC	2			62.04	31202	
1.2	0.2	1.2	1.14	20.0	60	16	4	16,6 x DC	2			92.95	41202	
1.2	0.3	1.2	1.14	6.0	50	16	4	5 x DC	2	62.04	31203			
1.2	0.3	1.2	1.14	12.0	54	16	4	10 x DC	2			62.04	31203	
1.2	0.3	1.2	1.14	20.0	60	16	4	16,6 x DC	2			92.95	41203	
1.5	0.2	1.5	1.44	4.0	50	16	4	2,6 x DC	2	58.35	31502			
1.5	0.2	1.5	1.44	6.0	50	16	4	4 x DC	2	58.35	41502			
1.5	0.2	1.5	1.44	8.0	50	16	4	5,3 x DC	2	61.79	51502			
1.5	0.2	1.5	1.44	10.0	50	16	4	6,6 x DC	2	61.79	61502			
1.5	0.2	1.5	1.44	12.0	54	16	4	8 x DC	2	61.79	71502			
1.5	0.2	1.5	1.44	16.0	54	16	4	10,6 x DC	2			61.79	31502	
1.5	0.2	1.5	1.44	20.0	60	16	4	13,3 x DC	2			61.79	41502	
1.5	0.3	1.5	1.44	4.0	50	16	4	2,6 x DC	2	58.35	31503			
1.5	0.3	1.5	1.44	6.0	50	16	4	4 x DC	2	58.35	41503			
1.5	0.3	1.5	1.44	8.0	50	16	4	5,3 x DC	2	61.79	51503			
1.5	0.3	1.5	1.44	10.0	50	16	4	6,6 x DC	2	61.79	61503			
1.5	0.3	1.5	1.44	12.0	54	16	4	8 x DC	2	61.79	71503			
1.5	0.3	1.5	1.44	16.0	54	16	4	10,6 x DC	2			61.79	31503	
1.5	0.3	1.5	1.44	20.0	60	16	4	13,3 x DC	2			61.79	41503	
1.5	0.5	1.5	1.44	4.0	50	16	4	2,6 x DC	2	58.35	31505			
1.5	0.5	1.5	1.44	6.0	50	16	4	4 x DC	2	58.35	41505			
1.5	0.5	1.5	1.44	8.0	50	16	4	5,3 x DC	2	58.35	51505			
1.5	0.5	1.5	1.44	10.0	50	16	4	6,6 x DC	2	58.35	61505			
1.5	0.5	1.5	1.44	12.0	54	16	4	8 x DC	2	58.35	71505			
1.5	0.5	1.5	1.44	16.0	54	16	4	10,6 x DC	2			58.35	31505	
1.5	0.5	1.5	1.44	20.0	60	16	4	13,3 x DC	2			58.35	41505	
2.0	0.1	2.0	1.91	4.0	50	16	4	2 x DC	2	57.98	32001			
2.0	0.1	2.0	1.91	6.0	50	16	4	3 x DC	2	57.98	42001			
2.0	0.1	2.0	1.91	8.0	50	16	4	4 x DC	2	61.79	52001			
2.0	0.1	2.0	1.91	10.0	50	16	4	5 x DC	2	61.79	62001			
2.0	0.1	2.0	1.91	12.0	54	16	4	6 x DC	2	61.79	72001			
2.0	0.1	2.0	1.91	16.0	54	16	4	8 x DC	2	61.79	82001			
2.0	0.1	2.0	1.91	20.0	60	16	4	10 x DC	2			61.79	32001	
2.0	0.1	2.0	1.91	26.0	70	16	4	13 x DC	2			61.79	42001	
2.0	0.2	2.0	1.91	4.0	50	16	4	2 x DC	2	57.98	32002			
2.0	0.2	2.0	1.91	6.0	50	16	4	3 x DC	2	57.98	42002			
2.0	0.2	2.0	1.91	8.0	50	16	4	4 x DC	2	61.79	52002			
2.0	0.2	2.0	1.91	10.0	50	16	4	5 x DC	2	61.79	62002			
2.0	0.2	2.0	1.91	12.0	54	16	4	6 x DC	2	61.79	72002			
2.0	0.2	2.0	1.91	16.0	54	16	4	8 x DC	2	61.79	82002			
2.0	0.2	2.0	1.91	20.0	60	16	4	10 x DC	2			61.79	32002	
2.0	0.2	2.0	1.91	26.0	70	16	4	13 x DC	2			61.79	42002	
2.0	0.3	2.0	1.91	4.0	50	16	4	2 x DC	2	57.98	32003			
2.0	0.3	2.0	1.91	6.0	50	16	4	3 x DC	2	57.98	42003			
2.0	0.3	2.0	1.91	8.0	50	16	4	4 x DC	2	57.98	52003			
2.0	0.3	2.0	1.91	10.0	50	16	4	5 x DC	2	61.79	62003			
2.0	0.3	2.0	1.91	12.0	54	16	4	6 x DC	2	61.79	72003			

Steel	●	●	●
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	●	●	●

→ v_c/f_z Page 316+317

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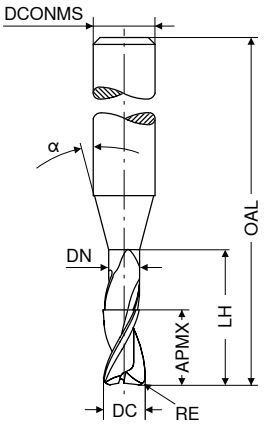
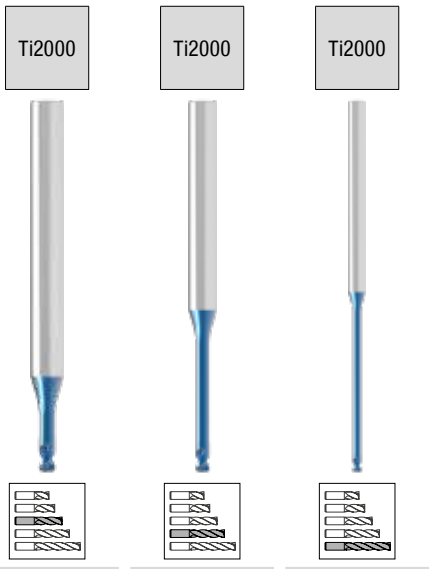
Continued on next page

BlueLine – Micro-torus cutter

▲ T_x = maximum engagement depth





Factory standard | Factory standard | Factory standard

HA | HA | HA

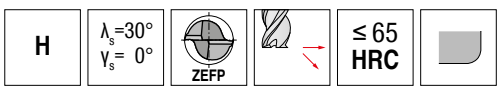
DC -0,012	RE ±0,005	APMX	DN	LH	OAL	α°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 349 ...		V1 Article no. 52 350 ...		V1 Article no. 52 351 ...	
mm	mm	mm	mm	mm	mm		mm			£		£		£	
2.0	0.3	2.0	1.91	16.0	54	16	4	8 x DC	2	61.79	82003				
2.0	0.3	2.0	1.91	20.0	60	16	4	10 x DC	2			61.79	32003		
2.0	0.3	2.0	1.91	26.0	70	16	4	13 x DC	2			61.79	42003		
2.0	0.5	2.0	1.91	4.0	50	16	4	2 x DC	2	57.98	32005				
2.0	0.5	2.0	1.91	6.0	50	16	4	3 x DC	2	57.98	42005				
2.0	0.5	2.0	1.91	8.0	50	16	4	4 x DC	2	61.79	52005				
2.0	0.5	2.0	1.91	10.0	50	16	4	5 x DC	2	61.79	62005				
2.0	0.5	2.0	1.91	12.0	54	16	4	6 x DC	2	61.79	72005				
2.0	0.5	2.0	1.91	16.0	54	16	4	8 x DC	2	61.79	82005				
2.0	0.5	2.0	1.91	20.0	60	16	4	10 x DC	2			61.79	32005		
2.0	0.5	2.0	1.91	26.0	70	16	4	13 x DC	2			61.79	42005		
2.5	0.3	2.5	2.41	10.0	50	16	4	4 x DC	2	64.38	32503				
2.5	0.3	2.5	2.41	12.0	60	16	4	4,8 x DC	2	66.23	42503				
2.5	0.3	2.5	2.41	30.0	70	16	4	12 x DC	2			68.33	32503		
2.5	0.5	2.5	2.41	10.0	50	16	4	4 x DC	2	64.38	32505				
2.5	0.5	2.5	2.41	12.0	60	16	4	4,8 x DC	2	64.38	42505				
2.5	0.5	2.5	2.41	30.0	70	16	4	12 x DC	2			68.33	32505		
3.0	0.3	3.0	2.92	10.0	50	16	4	3,3 x DC	2	61.06	33003				
3.0	0.3	3.0	2.92	12.0	50	16	4	4 x DC	2	61.93	43003				
3.0	0.3	3.0	2.92	30.0	70	16	4	10 x DC	2			82.97	33003		
3.0	0.5	3.0	2.92	10.0	50	16	4	3,3 x DC	2	61.06	33005				
3.0	0.5	3.0	2.92	12.0	50	16	4	4 x DC	2	61.79	43005				
3.0	0.5	3.0	2.92	30.0	70	16	4	10 x DC	2			82.97	33005		

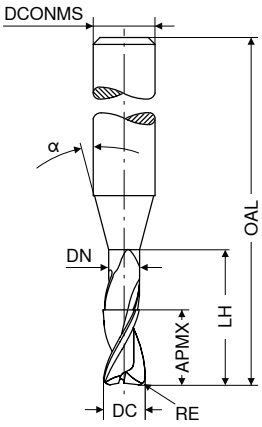
Steel	●	●	●
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	●	●	●

→ v_c/f_z Page 316+317

BlueLine – Micro-torus cutter

▲ T_x = maximum engagement depth





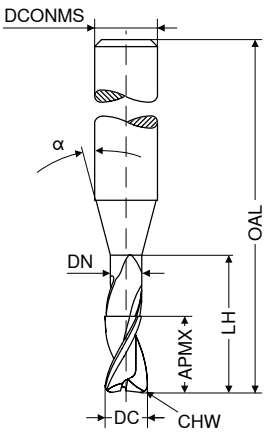
Factory standard

DC -0,008	RE ±0,005	APMX	DN	LH	OAL	α°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 362 ...	
mm	mm	mm	mm	mm	mm		mm			£	
0.6	0.1	0.6	0.58	2	50	16	4	3,3 x DC	2	58.11	30601
0.6	0.1	0.6	0.58	3	50	16	4	5 x DC	2	58.11	40601
0.6	0.1	0.6	0.58	4	50	16	4	6,6 x DC	2	58.11	50601
1.0	0.1	1.0	0.95	2	50	16	4	2 x DC	2	55.64	31001
1.0	0.1	1.0	0.95	4	50	16	4	4 x DC	2	55.64	41001
1.0	0.1	1.0	0.95	6	50	16	4	6 x DC	2	60.08	51001
1.0	0.2	1.0	0.95	2	50	16	4	2 x DC	2	55.64	31002
1.0	0.2	1.0	0.95	4	50	16	4	4 x DC	2	55.64	41002
1.0	0.2	1.0	0.95	6	50	16	4	6 x DC	2	59.94	51002
1.0	0.3	1.0	0.95	2	50	16	4	2 x DC	2	55.64	31003
1.0	0.3	1.0	0.95	4	50	16	4	4 x DC	2	55.64	41003
1.0	0.3	1.0	0.95	6	50	16	4	6 x DC	2	60.08	51003
2.0	0.1	2.0	1.91	4	50	16	4	2 x DC	2	57.98	32001
2.0	0.1	2.0	1.91	6	50	16	4	3 x DC	2	57.98	42001
2.0	0.1	2.0	1.91	8	50	16	4	4 x DC	2	61.79	52001
2.0	0.1	2.0	1.91	10	50	16	4	5 x DC	2	61.79	62001
2.0	0.1	2.0	1.91	12	54	16	4	6 x DC	2	61.79	72001
2.0	0.2	2.0	1.91	4	50	16	4	2 x DC	2	57.98	32002
2.0	0.2	2.0	1.91	6	50	16	4	3 x DC	2	57.98	42002
2.0	0.2	2.0	1.91	8	50	16	4	4 x DC	2	61.79	52002
2.0	0.2	2.0	1.91	10	50	16	4	5 x DC	2	61.79	62002
2.0	0.2	2.0	1.91	12	54	16	4	6 x DC	2	61.79	72002
2.0	0.3	2.0	1.91	4	50	16	4	2 x DC	2	57.98	32003
2.0	0.3	2.0	1.91	6	50	16	4	3 x DC	2	57.98	42003
2.0	0.3	2.0	1.91	8	50	16	4	4 x DC	2	61.79	52003
2.0	0.3	2.0	1.91	10	50	16	4	5 x DC	2	61.79	62003
2.0	0.3	2.0	1.91	12	54	16	4	6 x DC	2	61.79	72003
2.0	0.5	2.0	1.91	4	50	16	4	2 x DC	2	57.98	32005
2.0	0.5	2.0	1.91	6	50	16	4	3 x DC	2	57.98	42005
2.0	0.5	2.0	1.91	8	50	16	4	4 x DC	2	61.79	52005
2.0	0.5	2.0	1.91	10	50	16	4	5 x DC	2	61.79	62005
2.0	0.5	2.0	1.91	12	54	16	4	6 x DC	2	61.79	72005

Steel	●
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
hardened materials	●

→ v_c/f_z Page 316+317

BlueLine – End milling cutter



Ti2000

Factory standard

HA

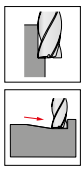
V1

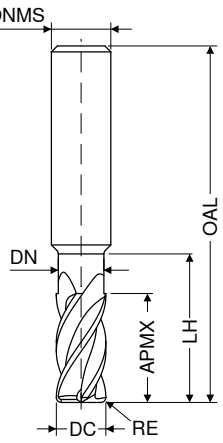
DC e8 mm	APMX mm	DN mm	LH mm	OAL mm	α°	DCONMS h5 mm	CHW mm	ZEFP	Article no. 52 344 ... £	
0.5	1.5			58	12	6	0.02	2	45.79	**905**
1.0	3.0			58	12	6	0.02	2	45.79	**010**
1.5	4.0			58	12	6	0.03	2	45.79	**015**
2.0	5.0	1.8	12	58	20	6	0.03	2	45.79	**020**
2.5	6.0	2.3	13	58	20	6	0.04	2	45.79	**025**
3.0	8.0	2.8	15	58	20	6	0.04	2	45.79	**030**
3.5	8.0	3.3	15	58	20	6	0.05	2	45.79	**035**
4.0	11.0	3.8	15	58	20	6	0.05	2	45.79	**040**
5.0	13.0	4.8	21	58	20	6	0.06	2	45.79	**050**
6.0	16.0	5.8	24	58		6	0.07	2	45.79	**060**
8.0	19.0	7.8	27	64		8	0.08	2	60.08	**080**
10.0	22.0	9.8	32	73		10	0.10	2	91.58	**100**
12.0	26.0	11.8	38	84		12	0.13	2	120.02	**120**
16.0	32.0	15.7	44	93		16	0.18	2	205.58	**160**
20.0	38.0	19.7	54	104		20	0.20	2	315.15	**200**

Steel	●
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
hardened materials	●

→ v_c/f_z Page 314+315

BlueLine – End milling cutter with corner radius





Factory standard

Factory standard

HA

HA

DC e8	RE ±0,005	APMX	DN	LH	OAL	DCONMS h5	ZEFP	V1 Article no. 52 353 ...		V1 Article no. 52 354 ...	
mm	mm	mm	mm	mm	mm	mm		£		£	
1	0.10	1.5	0.85	10	50	3	4	55.03	31001		
1	0.10	1.5	0.85	20	75	3	4			79.03	31001
1	0.20	1.5	0.85	10	50	3	4	55.40	31002		
1	0.20	1.5	0.85	20	75	3	4			79.03	31002
2	0.20	2.5	1.80	12	50	3	4	54.54	32002		
2	0.20	2.5	1.80	25	75	3	4			77.80	32002
2	0.30	2.5	1.80	12	50	3	4	54.54	32003		
2	0.30	2.5	1.80	25	75	3	4			77.80	32003
2	0.50	2.5	1.80	12	50	3	4	54.54	32005		
2	0.50	2.5	1.80	25	75	3	4			77.80	32005
3	0.25	4.0	2.70	14	50	3	4	51.83	33002		
3	0.25	4.0	2.70	32	75	3	4			73.75	33002
3	0.30	4.0	2.70	14	50	3	4	51.83	33003		
3	0.30	4.0	2.70	32	75	3	4			73.75	33003
3	0.50	4.0	2.70	14	50	3	4	51.83	33005		
3	0.50	4.0	2.70	32	75	3	4			73.75	33005
3	1.00	4.0	2.70	14	50	3	4	51.83	33010		
3	1.00	4.0	2.70	32	75	3	4			73.75	33010
4	0.20	5.0	3.70	16	50	4	4	55.64	44002		
4	0.20	5.0	3.70	36	75	4	4			79.90	44002
4	0.25	5.0	3.70	16	50	4	4	55.64	44003		
4	0.25	5.0	3.70	36	75	4	4			79.90	44003
4	0.40	5.0	3.70	16	50	4	4	55.64	44004		
4	0.40	5.0	3.70	36	75	4	4			79.90	44004
4	0.50	5.0	3.70	16	50	4	4	55.64	44005		
4	0.50	5.0	3.70	36	75	4	4			79.90	44005
4	1.00	5.0	3.70	16	50	4	4	55.64	44010		
4	1.00	5.0	3.70	36	75	4	4			79.90	44010
5	0.25	6.0	4.60	18	54	5	4	60.32	55002		
5	0.25	6.0	4.60	40	75	5	4			89.13	55002
5	0.50	6.0	4.60	18	54	5	4	60.32	55005		
5	0.50	6.0	4.60	40	75	5	4			89.13	55005
5	1.00	6.0	4.60	18	54	5	4	60.32	55010		
5	1.00	6.0	4.60	40	75	5	4			89.13	55010
6	0.25	7.0	5.50	21	58	6	4	68.33	06002		
6	0.25	7.0	5.50	44	80	6	4			96.52	06002
6	0.50	7.0	5.50	21	58	6	4	68.33	06005		
6	0.50	7.0	5.50	44	80	6	4			96.52	06005
6	0.80	7.0	5.50	21	58	6	4	68.33	06008		
6	1.00	7.0	5.50	21	58	6	4	68.33	06010		
6	1.00	7.0	5.50	44	80	6	4			96.52	06010
6	1.50	7.0	5.50	21	58	6	4	68.33	06015		
6	1.50	7.0	5.50	44	80	6	4			96.52	06015
6	2.00	7.0	5.50	21	58	6	4	68.33	06020		
8	0.25	9.0	7.40	27	64	8	4	89.99	08002		

Steel	●	●
Stainless steel		
Cast iron		
Non ferrous metals		
Heat resistant alloys		
hardened materials	●	●

→ v_c/f_z Page 314+315

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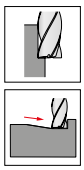
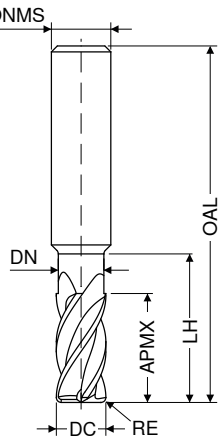
Continued on next page

BlueLine – End milling cutter with corner radius





Factory standard

Factory standard

HA

HA

DC e8	RE ±0,005	APMX	DN	LH	OAL	DCONMS h5	ZEFP	V1 Article no. 52 353 ...		V1 Article no. 52 354 ...	
mm	mm	mm	mm	mm	mm	mm		£		£	
8	0.25	9.0	7.40	54	100	8	4			131.72	08002
8	0.50	9.0	7.40	27	64	8	4	89.99	08005		
8	0.50	9.0	7.40	54	100	8	4			131.72	08005
8	0.80	9.0	7.40	27	64	8	4	89.99	08008		
8	0.80	9.0	7.40	54	100	8	4			131.72	08008
8	1.00	9.0	7.40	27	64	8	4	89.99	08010		
8	1.00	9.0	7.40	54	100	8	4			131.72	08010
8	1.50	9.0	7.40	27	64	8	4	89.99	08015		
8	1.50	9.0	7.40	54	100	8	4			131.72	08015
8	2.00	9.0	7.40	27	64	8	4	89.99	08020		
8	2.00	9.0	7.40	54	100	8	4			131.72	08020
8	2.50	9.0	7.40	27	64	8	4	89.99	08025		
8	3.00	9.0	7.40	27	64	8	4	89.99	08030		
8	3.00	9.0	7.40	54	100	8	4			131.72	08030
10	0.25	11.0	9.20	32	73	10	4	117.44	10002		
10	0.25	11.0	9.20	60	100	10	4			179.74	10002
10	0.50	11.0	9.20	32	73	10	4	117.44	10005		
10	0.50	11.0	9.20	60	100	10	4			179.74	10005
10	0.80	11.0	9.20	32	73	10	4	117.44	10008		
10	0.80	11.0	9.20	60	100	10	4			179.74	10008
10	1.00	11.0	9.20	32	73	10	4	117.44	10010		
10	1.00	11.0	9.20	60	100	10	4			179.74	10010
10	1.50	11.0	9.20	32	73	10	4	117.44	10015		
10	1.50	11.0	9.20	60	100	10	4			179.74	10015
10	2.00	11.0	9.20	32	73	10	4	117.44	10020		
10	2.00	11.0	9.20	60	100	10	4			179.74	10020
10	3.00	11.0	9.20	32	73	10	4	117.44	10030		
10	3.00	11.0	9.20	60	100	10	4			179.74	10030
10	3.50	11.0	9.20	32	73	10	4	117.44	10035		
12	0.50	12.0	11.00	38	84	12	4	158.81	12005		
12	0.50	12.0	11.00	75	120	12	4			237.59	12005
12	1.00	12.0	11.00	38	84	12	4	158.81	12010		
12	1.00	12.0	11.00	75	120	12	4			237.59	12010
12	1.50	12.0	11.00	38	84	12	4	158.81	12015		
12	1.50	12.0	11.00	75	120	12	4			237.59	12015
12	2.00	12.0	11.00	38	84	12	4	158.81	12020		
12	2.00	12.0	11.00	75	120	12	4			237.59	12020
12	3.00	12.0	11.00	38	84	12	4	158.81	12030		
12	3.00	12.0	11.00	75	120	12	4			237.59	12030
16	2.00	16.0	15.00	44	93	16	4	268.37	16020		
16	2.00	16.0	15.00	92	150	16	4			402.56	16020
16	3.00	16.0	15.00	44	93	16	4	268.37	16030		
16	3.00	16.0	15.00	92	150	16	4			402.56	16030

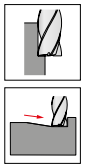
Steel	●	●
Stainless steel		
Cast iron		
Non ferrous metals		
Heat resistant alloys		
hardened materials	●	●

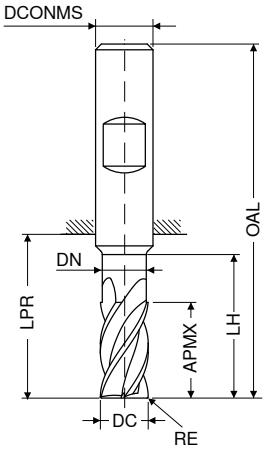
→ v_c/f_z Page 314+315

BlueLine – End milling cutter with corner radius

▲ with decreasing helix angle for reduced machining noise & vibration

H | λ_s=30° γ_s=10° | ZEFP | 54–70 HRC





Factory standard | Factory standard

HA | HB

DC e8	RE ±0,01	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	V1 Article no. 52 140 ...		V1 Article no. 52 141 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
3	0.3	4	2.7	14	22	50	3	4	65.26	031		
3	0.5	4	2.7	14	22	50	3	4	65.26	033		
3	1.0	4	2.7	14	22	50	3	4	65.26	034		
4	0.4	5	3.7	16	22	50	4	4	69.20	042		
4	0.5	5	3.7	16	22	50	4	4	69.20	043		
4	1.0	5	3.7	16	22	50	4	4	69.20	044		
5	0.5	6	4.6	18	26	54	5	4	74.24	053		
5	1.0	6	4.6	18	26	54	5	4	74.24	054		
6	0.5	7	5.5	21	21	57	6	6	92.20	063	92.20	063
6	1.0	7	5.5	21	21	57	6	6	92.20	064	92.20	064
6	1.5	7	5.5	21	21	57	6	6	92.20	065	92.20	065
8	0.5	9	7.4	27	27	63	8	6	121.70	083	121.70	083
8	1.0	9	7.4	27	27	63	8	6	121.70	084	121.70	084
8	1.5	9	7.4	27	27	63	8	6	121.70	085	121.70	085
8	2.0	9	7.4	27	27	63	8	6	121.70	086	121.70	086
10	0.5	11	9.2	32	32	72	10	6	156.34	103	156.34	103
10	1.0	11	9.2	32	32	72	10	6	156.34	104	156.34	104
10	1.5	11	9.2	32	32	72	10	6	156.34	105	156.34	105
10	2.0	11	9.2	32	32	72	10	6	156.34	106	156.34	106
12	0.5	12	11.0	38	38	83	12	6	211.18	123	211.18	123
12	1.0	12	11.0	38	38	83	12	6	211.18	124	211.18	124
12	1.5	12	11.0	38	38	83	12	6	211.18	125	211.18	125
12	2.0	12	11.0	38	38	83	12	6	211.18	126	211.18	126
16	1.0	16	15.0	44	45	93	16	6	356.41	161	356.41	161
16	2.0	16	15.0	44	45	93	16	6	356.41	163	356.41	163
20	1.0	20	18.5	50	54	104	20	6	505.59	201	505.59	201
20	2.5	20	18.5	50	54	104	20	6	505.59	204	505.59	204

Steel	○	○
Stainless steel		
Cast iron		
Non ferrous metals		
Heat resistant alloys		
hardened materials	●	●

→ v_c/f_z Page 310+311

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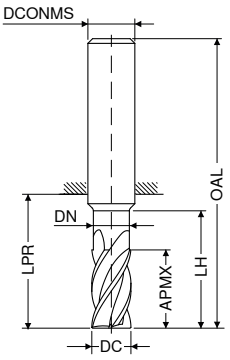
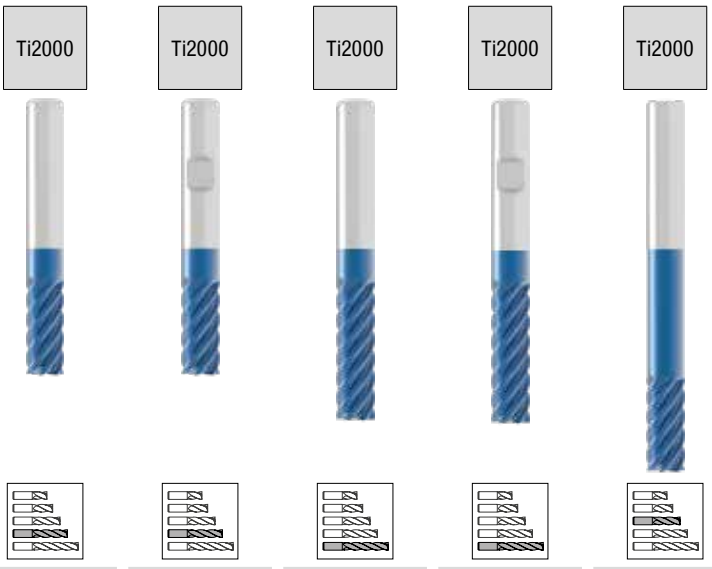
BlueLine – Finish milling cutter

▲ with decreasing helix angle for reduced machining noise & vibration

H | λ_s=30° γ_s= 0° | ZEFP | 54–70 HRC





Factory standard | Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB | HA

V1 | V1 | V1 | V1 | V1

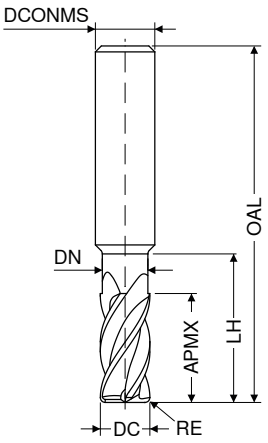
DC e8	APMX	LPR	DN	LH	OAL	DCONMS h6	ZEFP	Article no. 52 133 ...		Article no. 52 134 ...		Article no. 52 135 ...		Article no. 52 136 ...		Article no. 52 348 ...	
mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£	
2	8	22			58	6	4	52.74	020	52.74	020						
3	12	22			58	6	4	52.74	030	52.74	030						
4	13	22			58	6	4	60.80	040	60.80	040						
5	15	22			58	6	6	63.20	050	63.20	050						
6	16	22			58	6	6	90.93	060	90.93	060						
6	16	44	5.8	40	80	6	6									70.17	060
6	21	29			65	6	6					121.20	060	121.20	060		
8	19	64	7.7	50	100	8	6									87.40	080
8	22	34			70	8	6	109.55	080	109.55	080						
8	28	39			75	8	6					141.41	080	141.41	080		
10	25	33			73	10	6	173.30	100	173.30	100						
10	25	60	9.7	60	100	10	6									129.26	100
10	35	45			85	10	6					233.97	100	233.97	100		
12	28	39			84	12	6	250.53	120	250.53	120						
12	30	75	11.6	60	120	12	6									169.88	120
12	45	55			100	12	6					328.01	120	328.01	120		
14	30	39			84	14	6	262.46	140	262.46	140						
14	45	55			100	14	6					371.70	140	371.70	140		
16	35	45			93	16	8	413.65	160	413.65	160						
16	40	102	15.6	100	150	16	8									350.84	160
16	50	62			110	16	8					534.72	160	534.72	160		
16	65	77			125	16	8					450.56	161	563.06	161		
18	35	45			93	18	10	433.88	180	433.88	180						
18	54	66			114	18	10					578.25	180	578.25	180		
20	40	54			104	20	10	598.50	200	598.50	200						
20	50	100	19.6	100	150	20	10									470.27	200
20	55	76			126	20	10					753.20	200	746.29	200		
20	70	85			135	20	10					901.13	201	901.13	201		

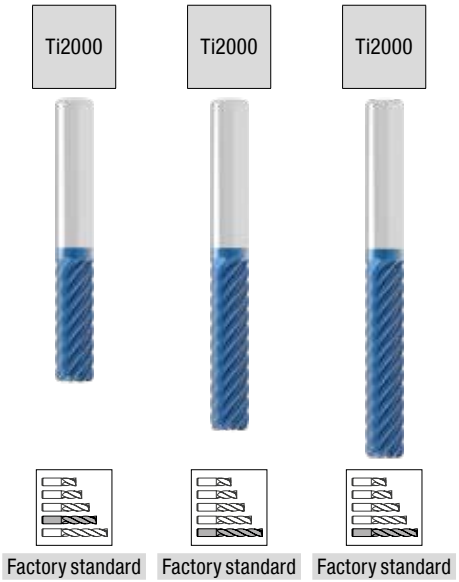
Steel	○	○	○	○	●
Stainless steel					
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials	●	●	●	●	●

→ v_c/f_z Page 310–315

BlueLine – Finish milling cutter with corner radius

H | λ_s=30° γ_s= 0° | ZEFP | 54–70 HRC





Factory standard | Factory standard | Factory standard

HA | HA | HA

V1 | V1 | V1

DC e8	RE +/-0,005	APMX	DN	LH	OAL	DCONMS h6	ZEFP	Article no. 52 324 ...		Article no. 52 325 ...		Article no. 52 326 ...	
mm	mm	mm	mm	mm	mm	mm		£		£		£	
5	0.5	15	4.8	19	58	6	6	91.57	052				
5	1.0	15	4.8	19	58	6	6	91.57	053				
6	0.5	16	5.8	20	58	6	6	93.16	062				
6	0.5	21	5.8	29	65	6	6			110.17	062		
6	1.0	16	5.8	20	58	6	6	93.16	063				
6	1.0	21	5.8	29	65	6	6			110.17	063		
8	0.5	22	7.8	26	70	8	6	109.36	082				
8	0.5	28	7.8	39	75	8	6			125.58	082		
8	1.0	22	7.8	26	70	8	6	109.36	083				
8	1.0	28	7.8	39	75	8	6			125.58	083		
10	0.5	25	9.8	31	73	10	6	175.51	102				
10	0.5	35	9.8	45	85	10	6			193.30	102		
10	1.0	25	9.8	31	73	10	6	175.51	103				
10	1.0	35	9.8	45	85	10	6			198.18	103		
10	1.5	25	9.8	31	73	10	6	175.51	104				
10	1.5	35	9.8	45	85	10	6			193.30	104		
12	0.5	28	11.8	37	84	12	6	236.25	122				
12	0.5	45	11.8	55	100	12	6			283.69	122		
12	1.0	28	11.8	37	84	12	6	236.25	123				
12	1.0	45	11.8	55	100	12	6			283.69	123		
12	1.5	28	11.8	37	84	12	6	236.25	124				
12	1.5	45	11.8	55	100	12	6			283.69	124		
14	1.0	30	13.8	37	84	14	6	255.75	143				
14	1.0	45	13.8	55	100	14	6			318.07	143		
16	1.0	35	15.8	43	93	16	8	367.07	163				
16	1.0	50	15.8	62	110	16	8			464.32	163		
16	1.0	65	15.8	77	125	16	8					496.07	163
16	2.0	35	15.8	43	93	16	8	367.07	165				
16	2.0	50	15.8	62	110	16	8			464.32	165		
16	2.0	65	15.8	77	125	16	8					496.07	165
18	1.0	35	17.8	43	93	18	10	394.50	183				
18	1.0	54	17.8	66	114	18	10			512.54	183		
20	1.0	40	19.8	52	104	20	10	522.30	203				
20	1.0	55	19.8	76	126	20	10			683.69	203		
20	1.0	70	19.8	85	135	20	10					813.09	203
20	2.0	40	19.8	52	104	20	10	522.30	205				
20	2.0	55	19.8	76	126	20	10			683.69	205		
20	2.0	70	19.8	85	135	20	10					813.09	205

Steel	○	○	○
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	●	●	●

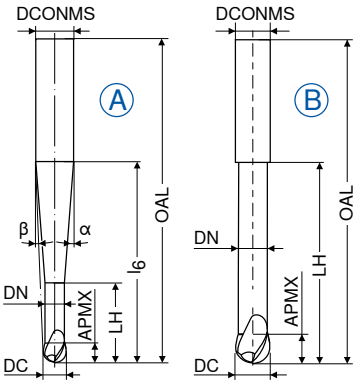
→ v_c/f_z Page 310+311

14

BlueLine – Ball nosed cutter

▲ Radius accuracy: ±0.005 mm

H | λ_s=30° γ_s= 0° | ZEFP | 54–70 HRC | Ti2000



Factory standard

HA

DC mm	APMX mm	DN mm	LH mm	l_6 mm	OAL mm	α°	β°	DCONMS $_{h5}$ mm	ZEFP	Fig.	V1 Article no. 52 302 ... £	
1.0	1.00	0.95	10	16.5	57	15	9.0	6	2	A	177.08	**010**
1.5	1.25	1.40	12	18.0	57	15	7.5	6	2	A	162.19	**015**
2.0	1.50	1.90	16	20.0	57	15	6.0	6	2	A	129.90	**020**
3.0	2.00	2.90	20	34.5	80	15	2.5	6	2	A	156.40	**030**
4.0	2.50	3.90	22	35.0	80	15	2.0	6	2	A	147.06	**040**
5.0	3.00	4.90	25	35.0	80	15	1.0	6	2	A	143.77	**050**
6.0	3.50	5.90	29		80	15		6	2	B	137.96	**060**

Steel	○
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
hardened materials	●

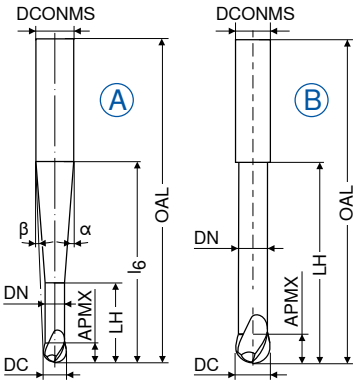
→ v_c/f_z Page 310+311

BlueLine – Ball nosed cutter

▲ Radius accuracy: ±0.005 mm for Ø ≤ 6.0 mm / ± 0.01 mm for Ø > 6,0 mm
▲ for Ø ≤ 5.0 mm, angle tolerance α and β: ±0.5°

H | λ_s=30° γ_s= 0° | ZEFP | 54–70 HRC

Ti2000



Factory standard

HA

V1

DC mm	Tol.	APMX mm	DN mm	LH mm	l_6 mm	OAL mm	α°	β°	DCONMS $_{h5}$ mm	ZEFP	Fig.	Article no. 52 303 ... £	
0.5	±0,01	1.0	0.45	2.0	20	57	10.0	8.5	6	2	A	216.22	**005**
1.0	±0,01	2.0	0.95	4.0	20	57	10.0	8.0	6	2	A	212.77	**010**
1.5	±0,01	2.5	1.40	7.5	20	57	12.5	7.0	6	2	A	209.76	**015**
2.0	±0,01	3.0	1.80	8.0	20	57	12.0	6.5	6	2	A	157.98	**020**
3.0	±0,01	3.5	2.80	10.0	20	57	11.5	5.0	6	2	A	154.82	**030**
4.0	±0,01	4.0	3.80	12.0	20	57	11.0	3.5	6	2	A	149.83	**040**
5.0	±0,01	5.0	4.70	14.0	20	57	10.0	2.0	6	2	A	155.61	**050**
6.0	±0,01	6.0	5.60	20.0		57			6	2	B	150.99	**060**
8.0	±0,02	7.0	7.60	25.0		63			8	2	B	196.71	**080**
10.0	±0,02	8.0	9.60	30.0		72			10	2	B	274.32	**100**
12.0	±0,02	10.0	11.50	35.0		83			12	2	B	342.18	**120**
12.0	±0,02	10.0	11.50	35.0	40	92	35.0	3.5	16	2	A	504.24	**121**
16.0	±0,02	12.0	15.50	40.0		92			16	2	B	493.16	**160**

Steel	○
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
hardened materials	●

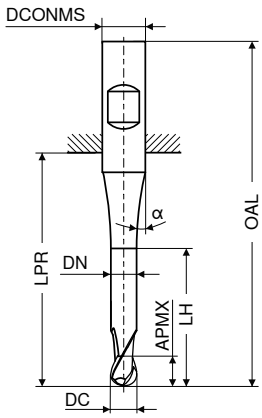
→ v_c/f_z Page 310+311

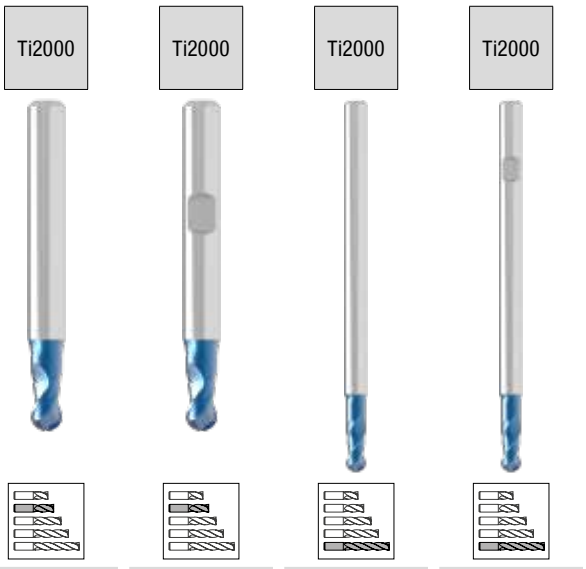
14

BlueLine – Ball nosed cutter

▲ Radius accuracy: ±0.005 mm

H | λ_s=30° γ_s= 0° | ZEFP | 54–70 HRC





Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB

V1 | V1 | V1 | V1

DC f8 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h6 mm	α° ±0,5	ZEFP	Article no. 52 256 ... £		Article no. 52 257 ... £		Article no. 52 258 ... £		Article no. 52 259 ... £	
0.10	0.2			11	10	38	3	8.0	2	115.16	**910**						
0.15	0.3			12	10	38	3	7.5	2	105.88	**915**						
0.20	0.4			12	10	38	3	7.0	2	99.46	**920**						
0.25	0.5	0.20	0.8	12	10	38	3	7.0	2	111.01	**925**						
0.30	1.0	0.25	1.3	12	10	38	3	7.0	2	104.50	**930**						
0.35	1.0	0.30	1.3	12	10	38	3	7.0	2	92.55	**935**						
0.40	1.0	0.35	1.3	12	10	38	3	7.0	2	69.10	**940**						
0.50	1.5	0.40	2.0	12	10	38	3	7.5	2	57.41	**950**						
0.50	1.5	0.40	2.0	17	18	54	6	10.5	2	57.60	**005**	57.60	**005**				
0.50	1.5	0.40	2.0	13	47	75	3	7.0	2					83.09	**950**		
0.50	1.5	0.40	2.0	17	44	80	6	10.5	2					95.48	**005**	99.36	**005**
0.60	1.5	0.50	2.0	12	10	38	3	7.0	2	62.31	**960**						
0.70	2.0	0.60	2.5	12	10	38	3	7.5	2	57.41	**970**						
0.80	2.0	0.70	2.5	13	10	38	3	7.5	2	57.41	**980**						
0.90	2.5	0.80	3.5	13	10	38	3	7.0	2	57.41	**990**						
1.00	2.0	0.90	3.0	13	22	50	3	6.0	2	60.29	**011**						
1.00	2.0	0.90	3.0	18	18	54	6	9.5	2	67.45	**106**	67.45	**010**				
1.00	3.0	0.90	4.0	14	47	75	3	6.0	2					83.09	**011**		
1.00	3.0	0.90	4.0	19	44	80	6	9.5	2					90.17	**010**	99.36	**010**
1.10	3.0	1.00	4.0	13	22	50	3	7.0	2	57.41	**911**						
1.20	3.0	1.10	4.0	13	22	50	3	7.0	2	57.41	**012**						
1.40	3.0	1.30	4.0	14	22	50	3	5.0	2	57.41	**014**						
1.50	3.0	1.40	4.0	13	22	50	3	5.5	2	60.29	**016**						
1.50	3.0	1.40	4.0	18	18	54	6	9.0	2	67.45	**156**	67.45	**015**				
1.50	4.0	1.40	6.0	13	47	75	3	7.0	2					81.37	**016**		
1.50	4.0	1.40	6.0	19	44	80	6	10.0	2					90.36	**015**	99.36	**015**
1.60	4.0	1.50	5.0	13	22	50	3	5.0	2	57.41	**916**						
1.80	4.0	1.70	5.0	13	22	50	3	5.0	2	57.41	**018**						
2.00	4.0	1.90	5.5	12	22	50	3	5.0	2	63.84	**021**						
2.00	4.0	1.90	5.5	18	18	54	6	9.0	2	67.45	**206**	67.45	**020**				
2.00	6.0	1.90	8.0	12	47	75	3	8.0	2					76.17	**021**		
2.00	6.0	1.90	8.0	20	44	80	6	11.0	2					84.94	**020**	97.73	**020**
2.50	5.0	2.30	6.5	10	22	50	3	7.0	2	57.41	**025**						
2.50	5.0	2.30	6.5	17	18	54	6	10.0	2	60.29	**026**	60.29	**026**				
2.50	8.0	2.30	10.0	14	47	75	3	5.5	2					76.10	**026**		
2.50	8.0	2.30	10.0	20	44	80	6	10.0	2					83.09	**025**	97.73	**025**
3.00	6.0	2.80	8.0		22	50	3		2	63.84	**031**						
3.00	6.0	2.80	8.0	18	18	54	6	9.0	2	67.45	**306**	67.45	**030**				
3.00	10.0	2.80	13.0		47	75	3		2					72.96	**031**		
3.00	10.0	2.80	15.0	23	44	80	6	11.0	2					83.09	**030**	95.96	**030**

Steel	○	○	○	○
Stainless steel				
Cast iron				
Non ferrous metals				
Heat resistant alloys				
hardened materials	●	●	●	●

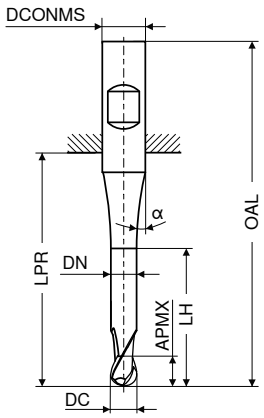
→ v_c/f_z Page 310+311

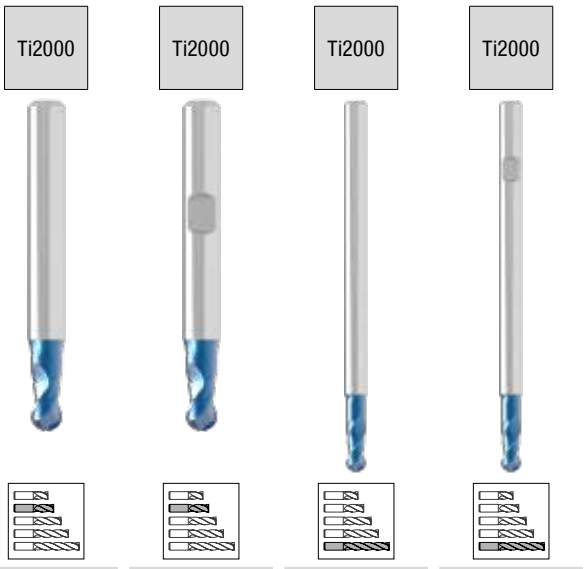
Continued on next page

BlueLine – Ball nosed cutter

▲ Radius accuracy: ±0.005 mm

H | λ_s=30° γ_s= 0° | ZEFP | 54–70 HRC





Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB

V1 | V1 | V1 | V1

DC f8 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h6 mm	α° ±0,5	ZEFP	Article no. 52 256 ... £		Article no. 52 257 ... £		Article no. 52 258 ... £		Article no. 52 259 ... £	
4.00	7.0	3.80	10.0	18	18	54	6	11.0	2	67.45	**406**	67.45	**040**				
4.00	7.0	3.80	10.0		26	54	4		2	65.83	**041**						
4.00	13.0	3.80	20.0		47	75	4		2					71.16	**041**		
4.00	13.0	3.80	18.0	23	44	80	6	12.5	2					78.15	**040**	95.96	**040**
5.00	8.0	4.80	11.0	15	18	54	6	8.0	2	67.45	**506**	67.45	**050**				
5.00	8.0	4.80	11.0		26	54	5		2	67.45	**051**						
5.00	14.0	4.80	19.0		47	75	5		2					81.37	**051**		
5.00	14.0	4.80	19.0	21	64	100	6	13.0	2					90.36	**050**	95.96	**050**
6.00	10.0	5.80	15.0		18	54	6		2	67.45	**061**	67.45	**060**				
6.00	16.0	5.80	25.0		64	100	6		2					101.12	**060**	101.12	**060**
8.00	12.0	7.80	17.0		23	59	8		2	82.51	**081**	82.51	**080**				
8.00	22.0	7.80	35.0		64	100	8		2					121.20	**080**	121.20	**080**
10.00	13.0	9.80	18.0		27	67	10		2	107.75	**101**	107.75	**100**				
10.00	25.0	9.80	40.0		60	100	10		2					158.10	**100**	158.10	**100**
12.00	16.0	11.90	21.0		28	73	12		2	153.08	**121**	153.08	**120**				
12.00	26.0	11.80	40.0		55	100	12		2					208.72	**120**	208.72	**120**
14.00	16.0	13.80	21.0		30	75	14		2	193.52	**141**	193.52	**140**				
14.00	26.0	13.80	40.0		55	100	14		2					282.69	**140**	282.69	**140**
16.00	20.0	15.80	25.0		35	83	16		2	221.90	**161**	221.90	**160**				
16.00	30.0	15.80	50.0		102	150	16		2					458.85	**160**	458.85	**160**
20.00	25.0	19.80	30.0		43	93	20		2	363.18	**201**	363.18	**200**				
20.00	40.0	19.80	60.0		100	150	20		2					559.96	**200**	559.96	**200**

Steel	○	○	○	○
Stainless steel				
Cast iron				
Non ferrous metals				
Heat resistant alloys				
hardened materials	●	●	●	●

→ v_c/f_z Page 310+311

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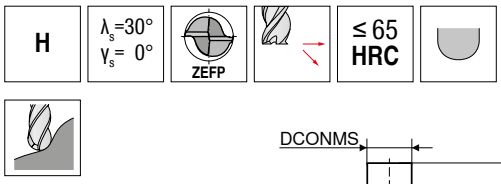
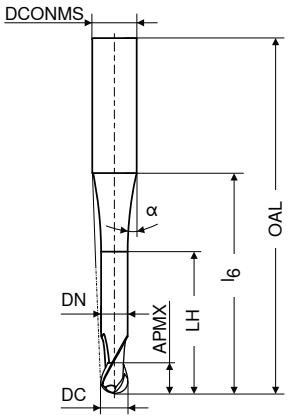
BlueLine – Ball nosed cutter

- Radius accuracy: ±0.005 mm
- for Ø ≤ 5.0 mm, angle tolerance α: ±0.5°





Factory standard

HA

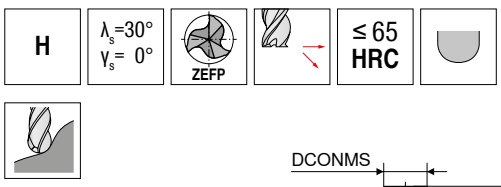
DC f8 mm	APMX mm	DN mm	LH mm	l6 mm	OAL mm	α°	DCONMS h6 mm	ZEFP	V1 Article no. 52 352 ... £	
0.6	0.8	0.55	1.4	27	75	1.5	3	2	79.17	**906**
0.8	1.0	0.75	1.6	27	75	1.5	3	2	76.45	**908**
1.0	1.2	0.95	2.0	27	75	1.5	3	2	74.97	**310**
1.2	1.4	1.15	2.4	27	75	1.5	3	2	74.23	**312**
1.5	1.8	1.45	3.0	27	75	1.5	3	2	72.14	**315**
2.0	2.4	1.95	4.0	27	75	1.5	3	2	71.52	**320**
3.0	4.0	2.80	12.0	40	80	1.5	6	2	114.49	**030**
4.0	5.0	3.80	16.0	40	80	1.5	6	2	113.39	**040**
5.0	6.0	4.80	20.0	40	80	1.5	6	2	112.88	**050**
6.0	6.0	5.80	25.0	50	100	1.5	8	2	155.11	**060**
8.0	7.0	7.80	32.0	60	120	1.5	10	2	210.51	**080**
10.0	9.0	9.80	40.0	80	160	1.5	12	2	328.69	**100**
12.0	11.0	11.80	50.0	100	200	1.5	16	2	562.59	**120**

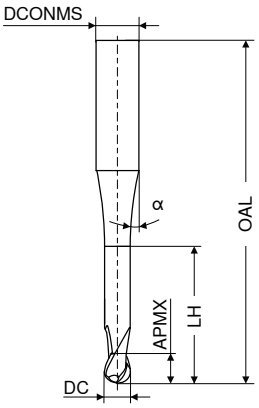
Steel	●
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
hardened materials	●

→ v_c/f_z Page 314

BlueLine – Ball Nosed Cutter

▲ Radius accuracy: ±0.005 mm





Factory standard

DC f8 mm	APMX mm	LH mm	OAL mm	α°	DCONMS h5 mm	ZEFP	V1 Article no. 52 355 ... £	
3	8	11	65	12	6	3	68.45	030
4	8	11	75	12	6	3	70.41	040
5	10	13	75	12	6	3	70.41	050
6	12		100		6	3	72.76	060
8	14		100		8	3	99.10	080
10	18		100		10	3	125.57	100
12	22		120		12	3	163.73	120

Steel	●
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
hardened materials	●

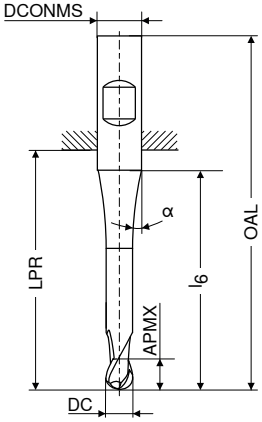
→ v_c/f_z Page 314

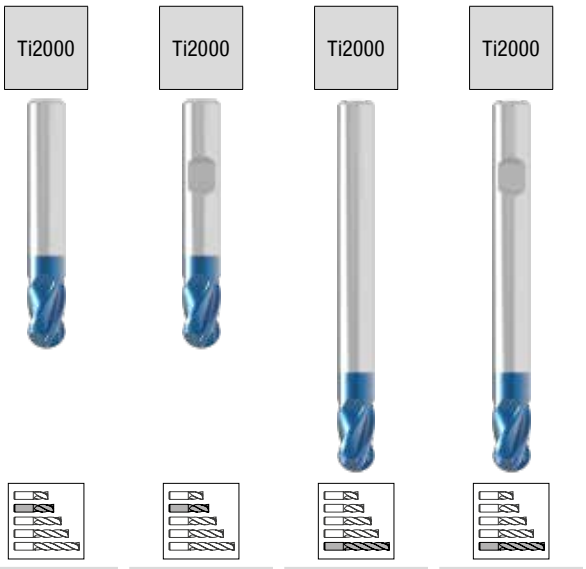
14

BlueLine – Ball Nosed Cutter

▲ Radius accuracy: ±0.005 mm

H | λ_s=30° γ_s= 0° | ZEFP | 54–70 HRC





Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB

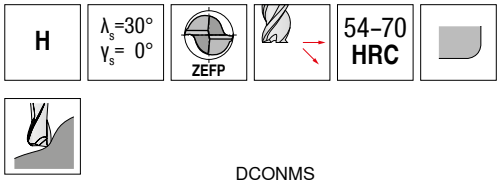
DC f8	APMX	l_6	LPR	OAL	α° ±1°	DCONMS h6	ZEFP	V1 Article no. 52 404 ...		V1 Article no. 52 405 ...		V1 Article no. 52 404 ...		V1 Article no. 52 405 ...	
mm	mm	mm	mm	mm		mm		£		£		£		£	
2.0	4	10.0	22	50	8	3	4	54.80	020						
2.0	4	16.0	18	54	12	6	4	66.12	021	66.12	021				
2.0	4	10.0	47	75	8	3	4					72.01	022		
2.0	4	16.0	44	80	12	6	4					94.38	023	94.38	023
2.5	5	16.0	18	54	12	6	4	66.12	025	66.12	025				
2.5	5	16.0	44	80	12	6	4					88.77	026	88.77	026
3.0	5		22	50		3	4	59.43	030						
3.0	5	14.0	18	54	12	6	4	63.61	031	63.61	031				
3.0	5		47	75		3	4					74.68	032		
3.0	5	14.0	44	80	12	6	4					93.50	033	93.50	033
4.0	8	15.0	18	54	12	6	4	63.61	041	63.61	041				
4.0	8		26	54		4	4	60.41	040						
4.0	8		47	75		4	4					83.74	042		
4.0	8	15.0	44	80	12	6	4					92.63	043	92.63	043
5.0	9	13.5	18	54	12	6	4	62.77	051	62.77	051				
5.0	9		26	54		5	4	61.29	050						
5.0	9		47	75		5	4					84.59	052		
5.0	9	13.5	64	100	12	6	4					90.90	053	90.90	053
6.0	10		18	54		6	4	63.84	060	63.84	060				
6.0	10		64	100		6	4					89.21	062	89.21	062
7.0	12	15.0	23	59	12	8	4	86.64	070	86.64	070				
8.0	12		23	59		8	4	79.53	080	79.53	080				
8.0	12		64	100		8	4					113.86	082	113.86	082
9.0	14	17.0	27	67	12	10	4	115.72	090	115.72	090				
10.0	14	16.0	27	67		10	4	107.73	100	107.73	100				
10.0	14		60	100		10	4					146.92	102	146.92	102
12.0	16		29	74		12	4	144.91	120	144.91	120				
12.0	16		55	100		12	4					188.67	122	188.67	122
14.0	18		30	75		14	4	181.28	140	181.28	140				
14.0	18	20.0	55	100		14	4					237.96	142	237.96	142
16.0	22	24.0	35	83		16	4	226.15	160	226.15	160				
16.0	22	24.0	102	150		16	4					367.65	162	367.65	162
20.0	26	28.0	43	93		20	4	348.27	200	348.27	200				
20.0	26	28.0	100	150		20	4					507.73	202	507.73	202

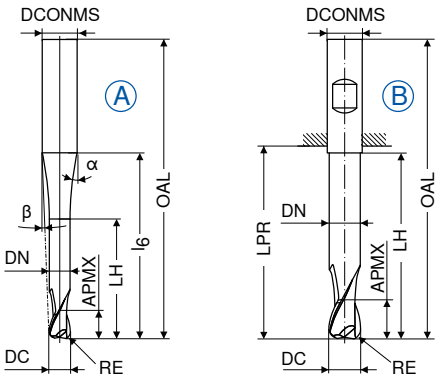
Steel	○	○	○	○
Stainless steel				
Cast iron				
Non ferrous metals				
Heat resistant alloys				
hardened materials	●	●	●	●

→ v_c/f_z Page 310+311

BlueLine – Torus cutter

▲ Radius accuracy: ±0,005 mm for Ø ≤ 6,0 mm / ±0,01 mm for Ø > 6,0 mm
▲ or Ø ≤ 5.0 mm, angle tolerance α and β: ±0.5 °





LPR with Shank DIN 6535 HB

Factory standard

Factory standard

HA

HB

V1

V1

DC ±0,01	RE	APMX	DN	LH	LPR	l6	OAL	α° ±0,5	β°	DCONMS h5	ZEFP	Fig.	Article no. 52 305 ...		Article no. 52 305 ...	
mm	mm	mm	mm	mm	mm	mm	mm			mm			£		£	
1.0	0.2	1.00	0.95	10	21	16.5	57	23.0	9.0	6	2	A	196.71	**010**		
1.5	0.3	1.25	1.40	12	21	18.0	57	21.0	7.5	6	2	A	176.68	**015**		
2.0	0.4	1.50	1.90	16	21	20.0	57	25.0	6.0	6	2	A	144.66	**020**		
3.0	0.5	2.00	2.90	20	44	34.5	80	6.0	2.5	6	2	A	171.82	**030**		
4.0	0.6	2.50	3.90	22	44	35.0	80	4.5	2.0	6	2	A	162.72	**040**		
5.0	0.8	3.00	4.90	25	44	35.0	80	3.5	1.0	6	2	A	160.23	**050**		
6.0	1.0	3.50	5.90	29	44		80			6	2	B			150.35	**060**

Steel	○	○
Stainless steel		
Cast iron		
Non ferrous metals		
Heat resistant alloys		
hardened materials	●	●

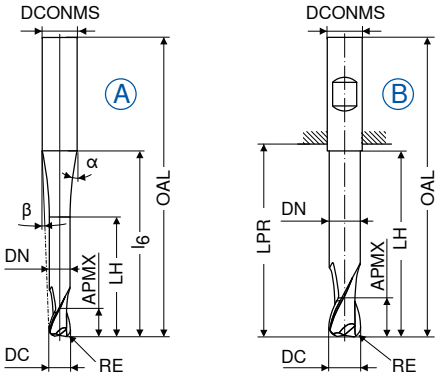
→ v_c/f_z Page 312+313

14

BlueLine – Torus cutter

▲ Radius accuracy: ±0,005 mm for Ø ≤ 6,0 mm / ±0,01 mm for Ø > 6,0 mm
▲ or Ø ≤ 5.0 mm, angle tolerance α and β: ±0.5 °

H | λ_s=30° γ_s= 0° | ZEFP | 54–70 HRC



LPR with Shank DIN 6535 HB

Factory standard | Factory standard

HA | HB

V1 | V1

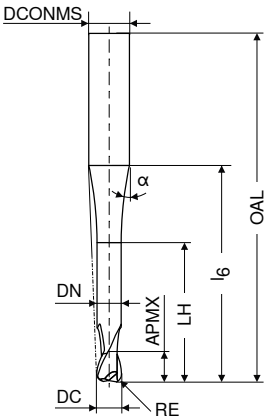
DC mm	Tol.	RE mm	APMX mm	DN mm	LH mm	LPR mm	l_6 mm	OAL mm	α°	β°	DCONMS $_{h5}$ mm	ZEFP	Fig.	Article no. 52 304 ... £		Article no. 52 304 ... £	
0.5	±0,01	0.10	1.0	0.45	2.0	21	20	57	10.0	8.5	6	2	A	203.43	**005**		
1.0	±0,01	0.25	2.0	0.95	4.0	21	20	57	10.0	8.0	6	2	A	199.23	**010**		
1.5	±0,01	0.30	2.5	1.40	7.5	21	20	57	12.5	7.0	6	2	A	183.42	**015**		
2.0	±0,01	0.50	3.0	1.80	8.0	21	20	57	12.0	6.5	6	2	A	147.83	**020**		
3.0	±0,01	0.50	3.5	2.80	10.0	21	20	57	11.5	5.0	6	2	A	144.92	**030**		
4.0	±0,01	1.00	4.0	3.80	12.0	21	20	57	11.0	3.5	6	2	A	140.86	**040**		
5.0	±0,01	1.50	5.0	4.70	14.0	21	20	57	10.0	2.0	6	2	A	146.66	**050**		
6.0	±0,01	2.00	6.0	5.60	20.0	21		57			6	2	B			146.11	**060**
8.0	±0,02	2.00	7.0	7.60	25.0	27		63			8	2	B			188.16	**080**
10.0	±0,02	3.00	8.0	9.60	30.0	32		72			10	2	B			251.66	**100**
12.0	±0,02	4.00	10.0	11.50	35.0	38		83			12	2	B			335.19	**120**
12.0	±0,02	4.00	10.0	11.50	35.0	44	40	92	37.0	3.5	16	2	A	486.07	**121**		
16.0	±0,02	5.00	12.0	15.50	40.0	44		92			16	2	B			475.12	**160**
Steel															○		○
Stainless steel																	
Cast iron																	
Non ferrous metals																	
Heat resistant alloys																	
hardened materials															●		●

→ v_c/f_z Page 312+313

BlueLine – Torus cutter

H | λ_s=30° γ_s= 0° | ZEFP | ≤ 65 HRC

Ti2000



Factory standard

HA

V1

DC $_{e8}$	RE $_{\pm 0,01}$	APMX	DN	LH	l_6	OAL	α°	DCONMS $_{h5}$	ZEFP	Article no. 52 361 ...	
mm	mm	mm	mm	mm	mm	mm		mm		£	
0.8	0.08	1.0	0.75	1.6	27	75	1.5	3	2	73.50	**90801**
1.0	0.10	1.2	0.95	2.0	27	75	1.5	3	2	75.09	**31001**
1.0	0.25	2.0	0.85	4.0	40	80	1.5	6	2	118.30	**01002**
1.2	0.12	1.4	1.15	2.4	27	75	1.5	3	2	74.23	**31201**
1.5	0.15	1.8	1.45	3.0	27	75	1.5	3	2	72.14	**31501**
2.0	0.20	2.4	1.95	4.0	27	75	1.5	3	2	71.52	**32002**
2.0	0.50	2.0	1.80	8.0	40	80	1.5	6	2	114.49	**02005**
3.0	0.30	3.6	2.95	6.0	27	75	1.5	4	2	76.45	**43003**
3.0	0.50	2.0	2.80	12.0	40	80	1.5	6	2	114.49	**03005**
3.0	1.00	2.0	2.80	12.0	40	80	1.5	6	2	114.49	**03010**
4.0	1.00	3.0	3.80	16.0	40	80	1.5	6	2	114.49	**04010**
6.0	1.00	4.0	5.80	25.0	50	100	1.5	8	2	155.11	**06010**
6.0	2.00	4.0	5.80	25.0	50	100	1.5	8	2	155.11	**06020**
8.0	1.00	4.0	7.80	32.0	60	120	1.5	10	2	210.51	**08010**
8.0	2.00	4.0	7.80	32.0	60	120	1.5	10	2	210.51	**08020**
10.0	1.50	6.0	9.80	40.0	80	160	1.5	12	2	328.69	**10015**
12.0	1.50	8.0	11.80	50.0	100	200	1.5	16	2	567.52	**12015**

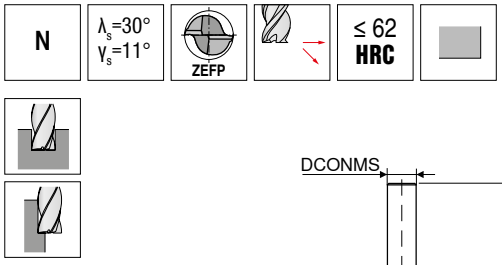
Steel	●
Stainless steel	
Cast iron	
Non ferrous metals	
Heat resistant alloys	
hardened materials	●

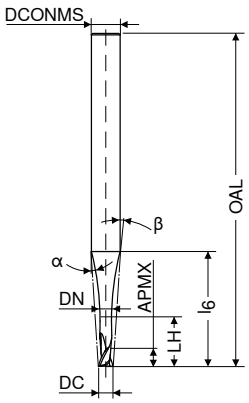
→ v_c/f_z Page 314+315

14

Micro-end milling cutter

▲ T_x = maximum engagement depth





Factory standard | Factory standard

HA | HA

DC	APMX	DN	LH	l_6	OAL	α°	β°	DCONMS $_{h5}$	T_x	ZEFP	V1 Article no. 52 802 ...		V1 Article no. 52 802 ...	
mm	mm	mm	mm	mm	mm			mm			£		£	
0.2	0.12	0.16	0.44	5.7	38	15.0	14	3	2,2 x DC	2	65.69	**021**		
0.2	0.20	0.16	1.00	6.4	38	15.0	13	3	5 x DC	2	65.69	**023**		
0.2	0.20	0.16	2.00	9.2	38	15.0	9	3	10 x DC	2	65.69	**025**		
0.2	0.20	0.16	0.44	5.7	43	15.0	14	3	2,2 x DC	2			65.69	**022**
0.2	0.20	0.16	1.00	6.4	43	15.0	13	3	5 x DC	2			65.69	**024**
0.2	0.20	0.16	2.00	9.2	43	15.0	9	3	10 x DC	2			65.69	**026**
0.5	0.30	0.40	1.10	5.8	38	15.0	13	3	2,2 x DC	2	50.50	**051**		
0.5	0.50	0.40	2.50	7.8	38	15.0	10	3	5 x DC	2	50.50	**053**		
0.5	0.50	0.40	5.00	10.7	38	13.0	7	3	10 x DC	2	50.50	**055**		
0.5	0.50	0.40	1.10	5.8	43	15.0	13	3	2,2 x DC	2			50.50	**052**
0.5	0.50	0.40	2.50	7.8	43	15.0	10	3	5 x DC	2			50.50	**054**
0.5	0.50	0.40	5.00	14.5	43	13.0	5	3	10 x DC	2			50.50	**056**
0.8	0.48	0.64	1.76	5.9	38	15.0	11	3	2,2 x DC	2	57.96	**081**		
0.8	0.80	0.64	4.00	9.0	38	15.0	7	3	5 x DC	2	57.96	**083**		
0.8	0.80	0.64	8.00	13.5	38	12.0	5	3	10 x DC	2	57.96	**085**		
0.8	0.80	0.64	1.76	5.9	43	15.0	11	3	2,2 x DC	2			57.96	**082**
0.8	0.80	0.64	4.00	9.0	43	15.0	7	3	5 x DC	2			57.96	**084**
0.8	0.80	0.64	8.00	15.5	43	9.8	5	3	10 x DC	2			57.96	**086**
1.0	0.60	0.80	2.20	5.9	38	15.0	10	3	2,2 x DC	2	48.32	**101**		
1.0	1.00	0.80	2.20	5.9	43	15.0	10	3	2,2 x DC	2			48.32	**102**
1.0	1.00	0.80	5.00	9.7	43	15.0	6	3	5 x DC	2	48.32	**103**		
1.0	1.00	0.80	10.00	15.3	43	11.0	4	3	10 x DC	2	49.80	**105**		
1.0	1.00	0.80	5.00	9.7	50	15.0	6	3	5 x DC	2			48.32	**104**
1.0	1.00	0.80	10.00	20.6	50	8.5	3	3	10 x DC	2			49.80	**106**
1.5	0.90	1.20	3.30	6.1	38	15.0	8	3	2,2 x DC	2	51.99	**151**		
1.5	1.50	1.20	3.30	6.1	43	15.0	8	3	2,2 x DC	2			51.99	**152**
1.5	1.50	1.20	7.50	11.8	43	14.0	4	3	5 x DC	2	51.99	**153**		
1.5	1.50	1.20	15.00	18.1	43	14.6	3	3	10 x DC	2	55.52	**155**		
1.5	1.50	1.20	7.50	11.8	50	14.0	4	3	5 x DC	2			51.99	**154**
1.5	1.50	1.20	15.00	22.0	50	6.2	2	3	10 x DC	2			55.52	**156**
1.8	1.08	1.44	3.96	6.2	38	15.0	6	3	2,2 x DC	2	51.99	**181**		
1.8	1.80	1.44	3.96	6.2	43	15.0	6	3	2,2 x DC	2			51.99	**182**
1.8	1.80	1.44	9.00	12.9	43	12.0	3	3	5 x DC	2	52.67	**183**		
1.8	1.80	1.44	18.00	20.0	43	19.8	2	3	10 x DC	2	58.89	**185**		
1.8	1.80	1.44	9.00	12.9	50	12.0	3	3	5 x DC	2			52.67	**184**
1.8	1.80	1.44	18.00	22.0	50	5.3	2	3	10 x DC	2			58.89	**186**
2.0	1.20	1.60	4.40	11.9	50	15.0	10	6	2,2 x DC	2	51.99	**201**		
2.0	2.00	1.60	10.00	19.7	50	15.0	6	6	5 x DC	2	52.67	**203**		
2.0	2.00	1.60	20.00	25.0	50	22.1	5	6	10 x DC	2	58.89	**205**		
2.0	2.00	1.60	4.40	11.9	57	15.0	10	6	2,2 x DC	2			51.99	**202**
2.0	2.00	1.60	10.00	19.7	57	15.0	6	6	5 x DC	2			52.67	**204**
2.0	2.00	1.60	20.00	29.0	57	7.8	4	6	10 x DC	2			58.89	**206**

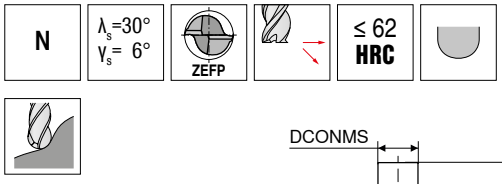
Steel	●	●
Stainless steel	●	●
Cast iron	●	●
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials	●	●

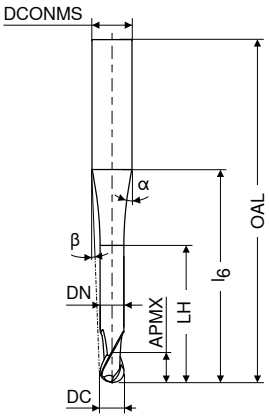
→ v_c/f_z Page 318–325

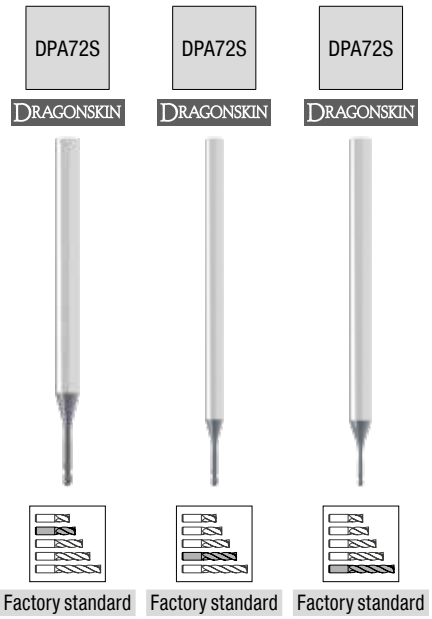
Use the Micro mills on machines with the highest accuracy and good stability.

Micro-ball nosed cutter

▲ T_x = maximum engagement depth







HA HA HA

DC ±0,01	APMX	DN	LH	l_6	OAL	α°	β°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 804 ...	£	V1 Article no. 52 804 ...	£	V1 Article no. 52 804 ...	£
mm	mm	mm	mm	mm	mm			mm								
0.2	0.12	0.16	0.44	5.7	38	15.0	14	3	2,2 x DC	2		73.42 021				
0.2	0.20	0.16	1.00	6.4	38	15.0	13	3	5 x DC	2		73.42 024				
0.2	0.20	0.16	2.00	9.2	38	15.0	9	3	10 x DC	2		73.42 027				
0.2	0.12	0.16	0.44	5.7	50	15.0	14	3	2,2 x DC	2			73.42 022			
0.2	0.20	0.16	1.00	6.4	50	15.0	13	3	5 x DC	2			73.42 025			
0.2	0.20	0.16	2.00	9.2	50	15.0	9	3	10 x DC	2			73.42 028			
0.2	0.12	0.16	0.44	11.3	80	15.0	15	6	2,2 x DC	2				73.42 023		
0.2	0.20	0.16	1.00	12.0	80	15.0	14	6	5 x DC	2				73.42 026		
0.2	0.20	0.16	2.00	14.8	80	15.0	12	6	10 x DC	2				73.42 029		
0.5	0.30	0.40	1.10	5.8	38	15.0	13	3	2,2 x DC	2	57.28 051					
0.5	0.50	0.40	2.50	7.8	38	15.0	10	3	5 x DC	2	57.28 054					
0.5	0.50	0.40	5.00	10.7	38	13.0	7	3	10 x DC	2	57.28 057					
0.5	0.30	0.40	1.10	5.8	50	15.0	13	3	2,2 x DC	2			57.28 052			
0.5	0.50	0.40	2.50	7.8	50	15.0	10	3	5 x DC	2			57.28 055			
0.5	0.50	0.40	5.00	14.5	50	13.0	5	3	10 x DC	2			57.28 058			
0.5	0.30	0.40	1.10	11.4	80	15.0	14	6	2,2 x DC	2				57.28 053		
0.5	0.50	0.40	2.50	13.4	80	15.0	12	6	5 x DC	2				57.28 056		
0.5	0.50	0.40	5.00	20.2	80	15.0	8	6	10 x DC	2				57.28 059		
0.8	0.48	0.64	1.76	5.9	38	15.0	11	3	2,2 x DC	2	64.48 081					
0.8	0.80	0.64	4.00	9.0	38	15.0	7	3	5 x DC	2	64.48 084					
0.8	0.80	0.64	8.00	10.5	38	8.2	6	3	10 x DC	2	65.28 087					
0.8	0.48	0.64	1.76	5.9	50	15.0	11	3	2,2 x DC	2			64.48 082			
0.8	0.80	0.64	4.00	9.0	50	15.0	7	3	5 x DC	2			64.48 085			
0.8	0.80	0.64	8.00	18.7	50	9.8	4	3	10 x DC	2			65.28 088			
0.8	0.48	0.64	1.76	11.5	80	15.0	13	6	2,2 x DC	2				64.48 083		
0.8	0.80	0.64	4.00	14.6	80	15.0	11	6	5 x DC	2				64.48 086		
0.8	0.80	0.64	8.00	25.9	80	14.8	6	6	10 x DC	2				65.28 089		
1.0	0.60	0.80	2.20	7.8	43	15.0	11	4	2,2 x DC	2	54.82 101					
1.0	1.00	0.80	5.00	11.6	43	15.0	8	4	5 x DC	2	54.82 104					
1.0	1.00	0.80	10.00	18.3	43	8.0	5	4	10 x DC	2	59.05 107					
1.0	0.60	0.80	2.20	7.8	60	15.0	11	4	2,2 x DC	2			54.82 102			
1.0	1.00	0.80	5.00	11.6	60	15.0	8	4	5 x DC	2			54.82 105			
1.0	1.00	0.80	10.00	23.7	60	10.2	4	4	10 x DC	2			59.05 108			
1.0	0.60	0.80	2.20	11.5	80	15.0	13	6	2,2 x DC	2				54.82 103		
1.0	1.00	0.80	5.00	15.3	80	15.0	10	6	5 x DC	2				54.82 106		
1.0	1.00	0.80	10.00	28.7	80	13.0	5	6	10 x DC	2				59.05 109		
1.2	0.72	0.96	2.64	7.9	43	15.0	11	4	2,2 x DC	2	61.08 121					
1.2	1.20	0.96	6.00	12.4	43	15.0	7	4	5 x DC	2	61.08 124					
1.2	1.20	0.96	12.00	18.2	43	9.3	5	4	10 x DC	2	63.24 127					
1.2	0.72	0.96	2.64	7.9	60	15.0	11	4	2,2 x DC	2			61.08 122			
1.2	1.20	0.96	6.00	12.4	60	15.0	7	4	5 x DC	2			61.08 125			
1.2	1.20	0.96	12.00	26.1	60	9.1	4	4	10 x DC	2			63.24 128			

Steel	●	●	●
Stainless steel	●	●	●
Cast iron	●	●	●
Non ferrous metals	●	●	●
Heat resistant alloys	●	●	●
hardened materials	●	●	●

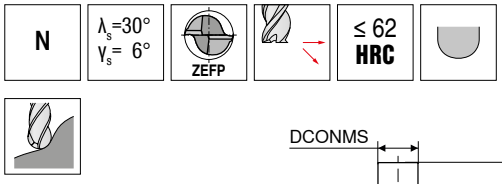
→ v_c/f_z Page 318–325

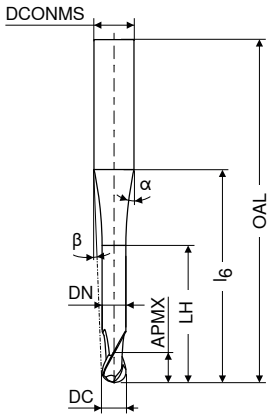
Use the Micro mills on machines with the highest accuracy and good stability.

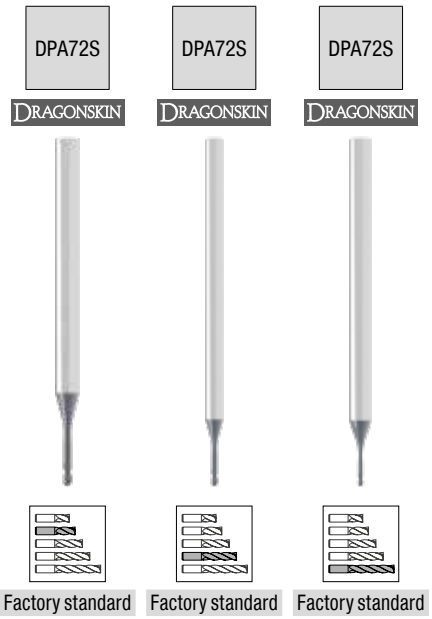
14

Micro-ball nosed cutter

▲ T_x = maximum engagement depth







DC ±0,01	APMX	DN	LH	l_6	OAL	α°	β°	DCONMS h5	T_x	ZEFP	V1 Article no. 52 804 ...		V1 Article no. 52 804 ...		V1 Article no. 52 804 ...	
mm	mm	mm	mm	mm	mm			mm			£		£		£	
1.2	0.72	0.96	2.64	11.6	80	15.0	12	6	2,2 x DC	2					61.08	123
1.2	1.20	0.96	6.00	16.2	80	15.0	9	6	5 x DC	2					61.08	126
1.2	1.20	0.96	12.00	31.8	80	11.7	5	6	10 x DC	2					63.24	129
1.5	0.90	1.20	3.30	8.0	43	15.0	9	4	2,2 x DC	2	57.55	151				
1.5	1.50	1.20	7.50	13.7	43	15.0	6	4	5 x DC	2	60.79	154				
1.5	1.50	1.20	15.00	18.1	43	13.5	4	4	10 x DC	2	60.79	157				
1.5	0.90	1.20	3.30	8.0	60	15.0	9	4	2,2 x DC	2			57.55	152		
1.5	1.50	1.20	7.50	13.7	60	15.0	6	4	5 x DC	2			60.79	155		
1.5	1.50	1.20	15.00	28.0	60	7.8	3	4	10 x DC	2			60.79	158		
1.5	0.90	1.20	3.30	11.7	80	15.0	11	6	2,2 x DC	2					57.55	153
1.5	1.50	1.20	7.50	17.4	80	15.0	8	6	5 x DC	2					60.79	156
1.5	1.50	1.20	15.00	35.8	80	10.2	4	6	10 x DC	2					60.79	159
1.8	1.08	1.44	3.96	8.1	43	15.0	8	4	2,2 x DC	2	60.79	181				
1.8	1.80	1.44	9.00	15.0	43	15.0	5	4	5 x DC	2	60.79	184				
1.8	1.80	1.44	18.00	19.5	43	31.1	4	4	10 x DC	2	63.24	187				
1.8	1.08	1.44	3.96	8.1	60	15.0	8	4	2,2 x DC	2			60.79	182		
1.8	1.80	1.44	9.00	15.0	60	15.0	5	4	5 x DC	2			60.79	185		
1.8	1.80	1.44	18.00	31.9	60	6.8	2	4	10 x DC	2			63.24	188		
1.8	1.08	1.44	3.96	11.8	80	15.0	11	6	2,2 x DC	2					60.79	183
1.8	1.80	1.44	9.00	18.7	80	15.0	7	6	5 x DC	2					60.79	186
1.8	1.80	1.44	18.00	39.3	80	9.1	4	6	10 x DC	2					63.24	189
2.0	1.20	1.60	4.40	11.9	57	15.0	10	6	2,2 x DC	2	57.15	201				
2.0	2.00	1.60	10.00	19.7	57	15.0	6	6	5 x DC	2	60.79	204				
2.0	2.00	1.60	20.00	32.0	57	9.5	4	6	10 x DC	2	60.79	207				
2.0	1.20	1.60	4.40	11.9	70	15.0	10	6	2,2 x DC	2			57.15	202		
2.0	2.00	1.60	10.00	19.7	70	15.0	6	6	5 x DC	2			60.79	205		
2.0	2.00	1.60	20.00	41.4	70	8.5	3	6	10 x DC	2			60.79	208		
2.0	1.20	1.60	4.40	11.9	80	15.0	10	6	2,2 x DC	2					57.15	203
2.0	2.00	1.60	10.00	19.7	80	15.0	6	6	5 x DC	2					60.79	206
2.0	2.00	1.60	20.00	41.4	80	8.5	3	6	10 x DC	2					60.79	209

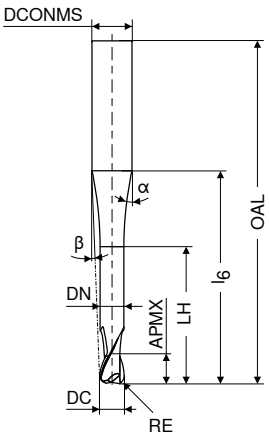
Steel	●	●	●
Stainless steel	●	●	●
Cast iron	●	●	●
Non ferrous metals	●	●	●
Heat resistant alloys	●	●	●
hardened materials	●	●	●

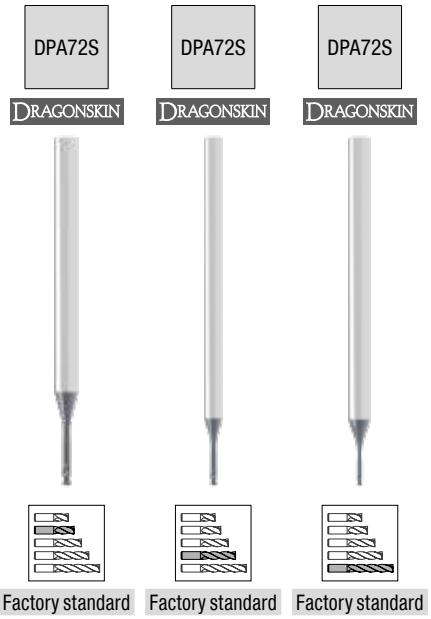
→ v_c/f_z Page 318–325

Use the Micro mills on machines with the highest accuracy and good stability.

Micro-torus cutter

▲ T_x = maximum engagement depth





Factory standard | Factory standard | Factory standard

HA | HA | HA

V1 | V1 | V1

DC ±0,01	RE ±0,005	APMX	DN	LH	l_6	OAL	α°	β°	DCONMS h5	T_x	ZEFP	Article no. 52 806 ...	£		Article no. 52 806 ...	£		Article no. 52 806 ...	£	
mm	mm	mm	mm	mm	mm	mm			mm											
0.5	0.1	0.3	0.4	1.1	5.8	38	15.0	13	3	2,2 x DC	2	58.37	051							
0.5	0.1	0.5	0.4	2.5	7.8	38	15.0	10	3	5 x DC	2	58.37	054							
0.5	0.1	0.5	0.4	5.0	10.7	38	13.0	7	3	10 x DC	2	58.37	057							
0.5	0.1	0.3	0.4	1.1	5.8	50	15.0	13	3	2,2 x DC	2				58.37	052				
0.5	0.1	0.5	0.4	2.5	7.8	50	15.0	10	3	5 x DC	2				58.37	055				
0.5	0.1	0.5	0.4	5.0	14.5	50	13.0	5	3	10 x DC	2				58.37	058				
0.5	0.1	0.3	0.4	1.1	11.4	80	15.0	14	6	2,2 x DC	2							58.37	053	
0.5	0.1	0.5	0.4	2.5	13.4	80	15.0	12	6	5 x DC	2							58.37	056	
0.5	0.1	0.5	0.4	5.0	20.2	80	15.0	8	6	10 x DC	2							58.37	059	
1.0	0.2	0.6	0.8	2.2	7.8	43	15.0	11	4	2,2 x DC	2	55.78	101							
1.0	0.2	1.0	0.8	5.0	11.6	43	15.0	8	4	5 x DC	2	60.26	104							
1.0	0.2	1.0	0.8	10.0	18.3	43	8.0	5	4	10 x DC	2	60.26	107							
1.0	0.2	0.6	0.8	2.2	7.8	60	15.0	11	4	2,2 x DC	2				55.78	102				
1.0	0.2	1.0	0.8	5.0	11.6	60	15.0	8	4	5 x DC	2				60.26	105				
1.0	0.2	1.0	0.8	10.0	23.7	60	10.2	4	4	10 x DC	2				60.26	108				
1.0	0.2	0.6	0.8	2.2	11.5	80	15.0	13	6	2,2 x DC	2							55.78	103	
1.0	0.2	1.0	0.8	5.0	15.3	80	15.0	10	6	5 x DC	2							60.26	106	
1.0	0.2	1.0	0.8	10.0	28.7	80	13.0	5	6	10 x DC	2							60.26	109	
1.5	0.3	0.9	1.2	3.3	8.0	43	15.0	9	4	2,2 x DC	2	58.49	151							
1.5	0.3	1.5	1.2	7.5	13.7	43	15.0	6	4	5 x DC	2	62.01	154							
1.5	0.3	1.5	1.2	15.0	18.1	43	13.5	4	4	10 x DC	2	62.01	157							
1.5	0.3	0.9	1.2	3.3	8.0	60	15.0	9	4	2,2 x DC	2				58.49	152				
1.5	0.3	1.5	1.2	7.5	13.7	60	15.0	6	4	5 x DC	2				62.01	155				
1.5	0.3	1.5	1.2	15.0	29.2	60	7.8	3	4	10 x DC	2				62.01	158				
1.5	0.3	0.9	1.2	3.3	11.7	80	15.0	11	6	2,2 x DC	2							58.49	153	
1.5	0.3	1.5	1.2	7.5	17.4	80	15.0	8	6	5 x DC	2							62.01	156	
1.5	0.3	1.5	1.2	15.0	35.8	80	10.2	4	6	10 x DC	2							62.01	159	
2.0	0.5	1.2	1.6	4.4	11.9	57	15.0	10	6	2,2 x DC	2	58.23	201							
2.0	0.5	2.0	1.6	10.0	19.7	57	15.0	6	6	5 x DC	2	62.01	204							
2.0	0.5	2.0	1.6	20.0	32.0	57	9.5	4	6	10 x DC	2	62.01	207							
2.0	0.5	1.2	1.6	4.4	11.9	70	15.0	10	6	2,2 x DC	2				58.23	202				
2.0	0.5	2.0	1.6	10.0	19.7	70	15.0	6	6	5 x DC	2				62.01	205				
2.0	0.5	2.0	1.6	20.0	41.4	70	8.5	3	6	10 x DC	2				62.01	208				
2.0	0.5	1.2	1.6	4.4	11.9	80	15.0	10	6	2,2 x DC	2							58.23	203	
2.0	0.5	2.0	1.6	10.0	19.7	80	15.0	6	6	5 x DC	2							62.01	206	
2.0	0.5	2.0	1.6	20.0	41.4	80	8.5	3	6	10 x DC	2							62.01	209	

Steel	●	●	●
Stainless steel	●	●	●
Cast iron	●	●	●
Non ferrous metals	●	●	●
Heat resistant alloys	●	●	●
hardened materials	●	●	●

→ v_c/f_z Page 324+325

Use the Micro mills on machines with the highest accuracy and good stability.

MultiChange Programme Overview

The highly stable "MultiChange" exchangeable head system enables an extremely fast tool change. Designed to be durable and for a very high radial run-out accuracy, this exchangeable head system is probably the most stable and precise exchangeable head system on the market. The following chapters contain suitable exchangeable heads for almost every application.

Solid carbide drilling

▲ Solid Carbide NC Spot Drill
◁ 90°, 120°, 142° / Ø 8, 10, 12, 16, 20 mm / ZEFP* 2

→ **Chapter 2, Solid carbide drills**

*ZEFP = Number of teeth

Reaming and Countersinking

▲ Through hole reamers
Ø 8–30.2 mm incl. special diameters / ZEFP* 4-6

▲ Blind hold reamers
Ø 12.2–30.2 mm incl. special diameters / ZEFP* 6

→ **Chapter 4, Reaming and countersinking**

*ZEFP = Number of teeth

Tool holder

▲ Steel Holder Extra Short
Cylindrical / Tapered 87°
Length 60–90 mm
for KLG 8, 10, 12, 16, 20 mm

▲ Short Holder Steel/Solid Carbide
cylindrical
Length 85–120 mm
for KLG 8, 10, 12, 16, 20 mm

▲ Holder Steel /Solid Carbide, Short
87° taper
Length 85–120 mm
for KLG 8, 10, 12, 16, 20 mm

▲ Solid Carbide Holder Medium
Cylindrical / Tapered 87°
Length 110–150 mm
for KLG 8, 10, 12, 16, 20 mm

▲ Holder Steel/Solid Carbide, Long
cylindrical
Length 150–200 mm
for KLG 8, 10, 12, 16, 20 mm

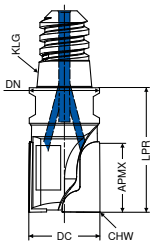
▲ Holder Steel/Solid Carbide, Long
87° taper
Length 150–200 mm
for KLG 8, 10, 12, 16, 20 mm

▲ Steel/Solid Carbide Holder Extra Long
cylindrical
Length 200–250 mm
For Ø 16 and 20 mm

→ **Chapter 17, Accessories**

MultiChange – PCD End Mill

PDC | λ_s=0° γ_s=0° | ZEFP



Factory standard

V8

DC mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	CHW mm	ZEFP	Article no. 52 880 ... £	
8	06	8	7.4	17	0.1	2	593.84	080
10	08	10	9.4	20	0.1	2	690.33	100
12	10	12	11.0	24	0.1	2	840.66	120
16	12	15	15.0	28	0.1	2	1,170.98	160

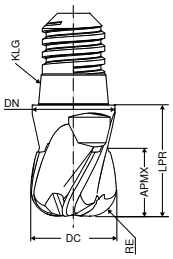
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 328

Other PCD MultiChange heads can be found in our online shop at cuttingtools.ceratizit.com.

MultiChange – Torus Cutter

AL | λ_s=43° γ_s=24° | ZEFP | DLC



Factory standard

NEW V1

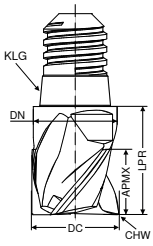
DC mm	RE mm	KLG	APMX mm	DN mm	LPR mm	ZEFP	Article no. 52 870 ... £	
10	0.5	08	7.5	9.8	13	3	85.43	10005
10	1.0	08	7.5	9.8	13	3	85.43	10010
12	0.5	10	9.0	11.8	16	3	100.11	12005
12	1.0	10	9.0	11.8	16	3	100.11	12010
12	2.0	10	9.0	11.8	16	3	100.11	12020
16	2.0	12	12.0	15.8	20	3	138.97	16020
16	4.0	12	12.0	15.8	20	3	138.97	16040
20	2.0	16	15.0	19.8	25	3	196.58	20020
20	3.0	16	15.0	19.8	25	3	196.58	20030
20	4.0	16	15.0	19.8	25	3	196.58	20040

Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 335

MultiChange – End Mill

N | λ_s=41° γ_s= 8° | ZEFP | HPC | Ti1100



Factory standard

V1

DC mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	CHW mm	ZEFP	Article no. 52 861 ... £	
8	06	6.0	7.8	11	0.16	3	57.88	080
10	08	7.5	9.8	13	0.20	3	65.76	100
12	10	9.0	11.8	16	0.24	3	82.39	120
16	12	12.0	15.8	20	0.32	3	114.92	160
20	16	15.0	19.8	25	0.40	3	146.78	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 329

Assembly instructions

- ▲ KLG = Coupling Size
- ▲ SW = Across Flats Size
- ▲ M = Torque moment

KLG	SW mm	M Nm
06	6	5
08	8	12,5
10	10	15
12	13	20
16	16	25

- ▲ A torque wrench should be used when mounting coupling sizes 06 and 08. It is recommended to use one for all sizes
- ▲ In unstable applications, the cutting data should be reduced.

Holders and accessories can be found in → **Chapter 17, Accessories.**

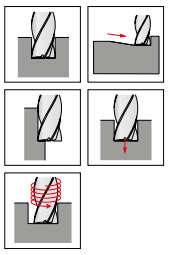
Application Tips

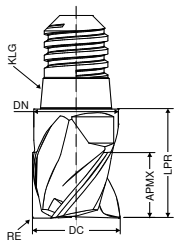
APMX does not correspond to the maximum cutting depth

14

MultiChange – End Mill

PCR UNI | λ_s=36° γ_s=10° | ZEFP | HPC | APA72S





Factory standard

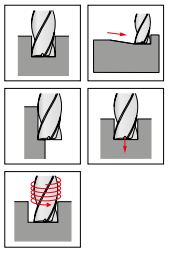
DC mm	RE mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	ZEFP	NEW V1 Article no. 52 871 ... £	
9.7	0.32	08	7.5	9.8	13	4	96.61	**09700**
10.0	0.32	08	7.5	9.8	13	4	96.61	**10000**
11.7	0.32	10	9.0	11.8	16	4	111.38	**11700**
12.0	0.32	10	9.0	11.8	16	4	111.38	**12000**
15.7	0.32	12	12.0	15.8	20	4	145.40	**15700**
16.0	0.32	12	12.0	15.8	20	4	145.40	**16000**
19.7	0.50	16	15.0	19.8	25	4	190.80	**19700**
20.0	0.50	16	15.0	19.8	25	4	190.80	**20000**

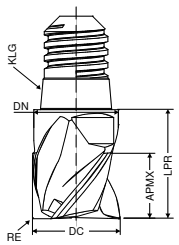
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 326+327

MultiChange – End Mill

PCR ALU | λ_s=41° γ_s=15° | ZEFP | HPC | DLC





Factory standard

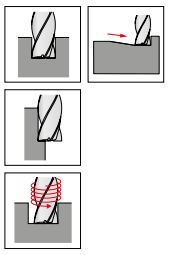
DC mm	RE mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	ZEFP	NEW V1 Article no. 52 872 ... £	
9.7	0.32	08	7.5	9.8	13	4	100.23	**09700**
10.0	0.32	08	7.5	9.8	13	4	100.23	**10000**
11.7	0.32	10	9.0	11.8	16	4	120.23	**11700**
12.0	0.32	10	9.0	11.8	16	4	120.23	**12000**
15.7	0.32	12	12.0	15.8	20	4	158.92	**15700**
16.0	0.32	12	12.0	15.8	20	4	158.92	**16000**
19.7	0.50	16	15.0	19.8	25	4	214.82	**19700**
20.0	0.50	16	15.0	19.8	25	4	214.82	**20000**

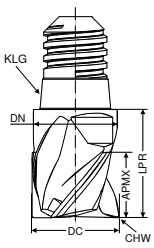
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 326+327

MultiChange – End Mill

N | λ_s=37° γ_s=12° | ZEFP | HPC | Ti1100





Factory standard

DC mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	CHW mm	ZEFP	V1 Article no. 52 860 ... £	
8	06	6.0	7.8	11	0.16	4	62.87	**080**
10	08	7.5	9.8	13	0.20	4	70.53	**100**
12	10	9.0	11.8	16	0.24	4	89.59	**120**
16	12	12.0	15.8	20	0.32	4	128.61	**160**
20	16	15.0	19.8	25	0.40	4	166.33	**200**

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 329

Assembly instructions

- ▲ KLG = Coupling Size
- ▲ SW = Across Flats Size
- ▲ M = Torque moment

KLG	SW mm	M Nm
06	6	5
08	8	12,5
10	10	15
12	13	20
16	16	25

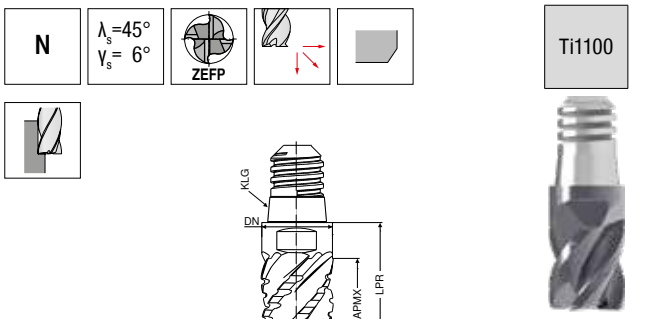
- ▲ A torque wrench should be used when mounting coupling sizes 06 and 08. It is recommended to use one for all sizes
- ▲ In unstable applications, the cutting data should be reduced.

Holders and accessories can be found in → **Chapter 17, Accessories.**

Application Tips

APMX does not correspond to the maximum cutting depth

MultiChange – Roughing-Finishing Cutter



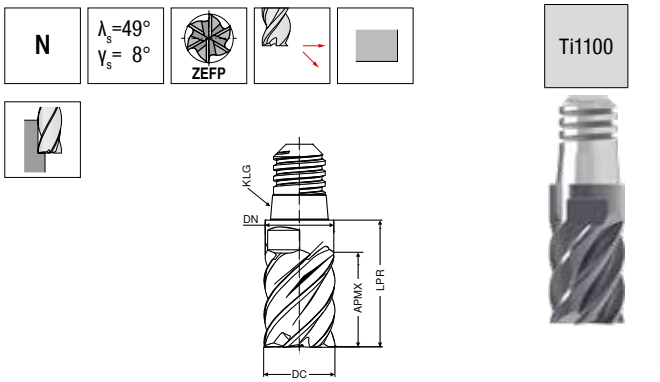
Factory standard

DC mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	CHW mm	ZEFP	V1 Article no. 52 862 ... £	
8	06	10.0	7.8	15	0.16	4	72.02	080
10	08	12.5	9.8	18	0.20	4	75.12	100
12	10	15.0	11.8	22	0.24	4	101.91	120
16	12	20.0	15.8	28	0.32	5	154.10	160
20	16	25.0	19.8	35	0.40	6	210.43	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 330

MultiChange – Finish milling cutter



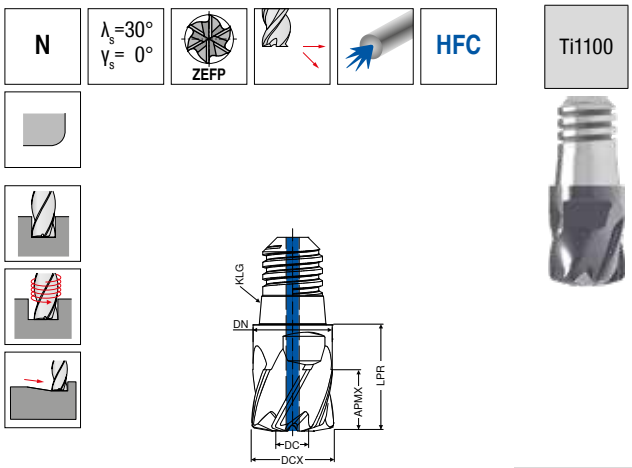
Factory standard

DC mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	ZEFP	V1 Article no. 52 863 ... £	
8	06	10.0	7.8	15	6	64.29	080
10	08	12.5	9.8	18	6	72.72	100
12	10	15.0	11.8	22	6	91.02	120
16	12	20.0	15.8	28	6	141.88	160
20	16	25.0	19.8	35	6	196.14	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 332

MultiChange – High Feed Cutter



Factory standard

DCX mm	KLG	r_{3D} mm	APMX mm	LPR ±0,02 mm	ZEFP	V1 Article no. 52 864 ... £	
8	06	0.7	6.0	11	6	62.87	080
10	08	0.9	7.5	13	6	70.53	100
12	10	1.0	9.0	16	6	89.59	120
16	12	1.4	12.0	20	6	128.61	160
20	16	1.7	15.0	25	6	166.33	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	
Heat resistant alloys	
hardened materials	○

→ v_c/f_z Page 331

- ▲ r_{3D} = corner radius to be programmed
- ▲ Ø DCX back tapers by 0.2 mm, causing reduction to Ø DN
- ▲ Ø DCX halved, giving Ø DC

Assembly instructions

- ▲ KLG = Coupling Size
- ▲ SW = Across Flats Size
- ▲ M = Torque moment

KLG	SW mm	M Nm
06	6	5
08	8	12,5
10	10	15
12	13	20
16	16	25

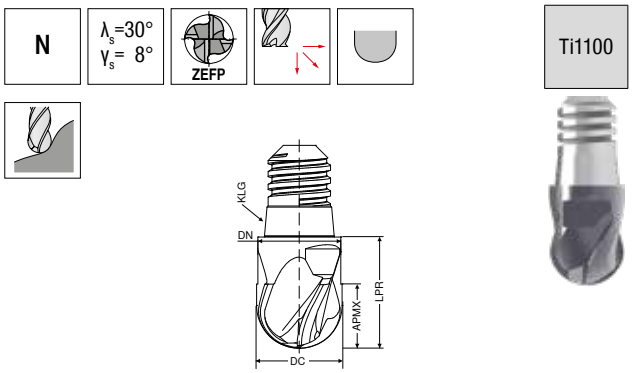
- ▲ A torque wrench should be used when mounting coupling sizes 06 and 08. It is recommended to use one for all sizes
- ▲ In unstable applications, the cutting data should be reduced.

Holders and accessories can be found in → **Chapter 17, Accessories.**

Application Tips

APMX does not correspond to the maximum cutting depth

MultiChange – Ball Nosed Cutter



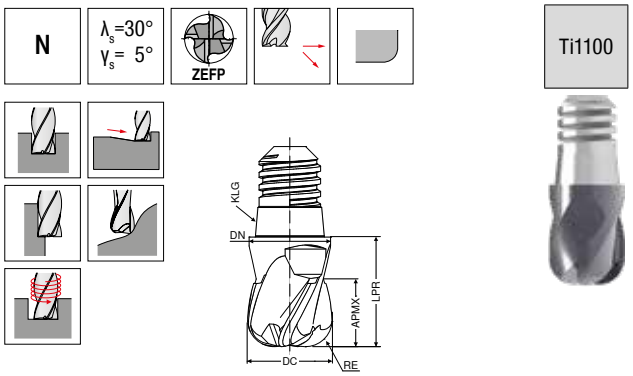
Factory standard

DC mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	ZEFP	V1 Article no. 52 866 ... £	
10	08	7.5	9.8	13	4	73.11	100
12	10	9.0	11.8	16	4	91.26	120
16	12	12.0	15.8	20	4	137.14	160
20	16	15.0	19.8	25	4	169.12	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 333+334

MultiChange – Torus Cutter



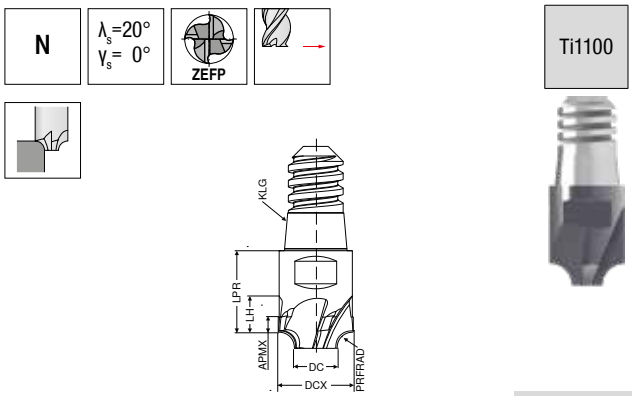
Factory standard

DC mm	KLG	APMX mm	DN mm	LPR ±0,02 mm	RE mm	ZEFP	V1 Article no. 52 865 ... £	
8	06	6.0	7.8	11	1.0	4	57.88	081
8	06	6.0	7.8	11	2.0	4	57.88	082
10	08	7.5	9.8	13	1.5	4	65.76	101
10	08	7.5	9.8	13	3.0	4	65.76	103
12	10	9.0	11.8	16	1.5	4	82.39	121
12	10	9.0	11.8	16	4.0	4	82.39	124
16	12	12.0	15.8	20	2.0	4	122.19	162
16	12	12.0	15.8	20	5.0	4	122.19	165
20	16	15.0	19.8	25	2.0	4	166.03	202
20	16	15.0	19.8	25	6.0	4	166.03	206

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 333+334

MultiChange – Quarter-round milling cutter



Factory standard

DCX mm	KLG	PRFRAD ±0,03 mm	APMX mm	DC mm	LPR ±0,02 mm	LH mm	V1 Article no. 52 869 ... £	
8	06	0.5	2.0	6.63	11	4.5	81.32	080
8	06	1.0	3.0	5.69	11	5.0	81.32	081
10	08	1.5	4.0	6.63	13	6.5	87.31	100
10	08	2.0	4.5	5.69	13	7.0	87.31	101
12	10	2.5	5.5	6.65	16	8.5	105.33	120
12	10	3.0	6.0	5.70	16	9.0	105.33	121
12	10	3.5	6.5	4.76	16	9.5	105.33	122
16	12	4.0	8.0	7.60	20	12.0	149.19	160
16	12	4.5	8.5	6.68	20	12.5	149.19	161
16	12	5.0	9.0	5.74	20	13.0	149.19	162
20	16	5.0	10.0	9.53	25	15.0	201.68	200
20	16	6.0	11.0	7.64	25	16.0	201.68	201

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 336

Assembly instructions

- KLG = Coupling Size
- SW = Across Flats Size
- M = Torque moment

KLG	SW mm	M Nm
06	6	5
08	8	12,5
10	10	15
12	13	20
16	16	25

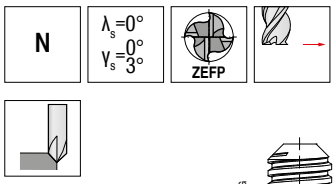
- A torque wrench should be used when mounting coupling sizes 06 and 08. It is recommended to use one for all sizes
- In unstable applications, the cutting data should be reduced.

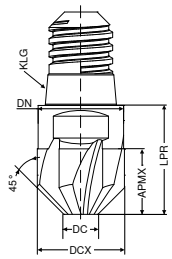
Holders and accessories can be found in → **Chapter 17, Accessories.**

Application Tips

APMX does not correspond to the maximum cutting depth

MultiChange – Deburring Cutter





Ti1050

Factory standard

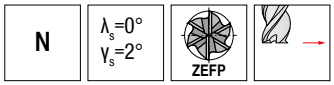
V1

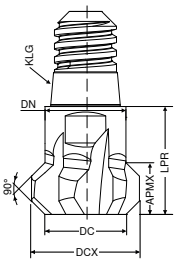
DCX mm	KLG	APMX mm	DC mm	DN mm	LPR ±0,02 mm	ZEFP	Article no. 52 867 ... £	
10	08	7.5	0.0	9.8	13	4	59.33	100
12	10	9.0	0.0	11.8	16	4	76.93	120
16	12	12.0	6.4	15.8	20	6	102.30	160
20	16	15.0	8.0	19.8	25	6	134.94	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 337

MultiChange – Deburring Cutter





Ti1100

Factory standard

V1

DCX mm	KLG	APMX mm	DC mm	DN mm	LPR ±0,02 mm	ZEFP	Article no. 52 868 ... £	
10	06	4.8	7.5	8	11	6	65.76	100
12	08	5.5	9.0	10	13	6	82.39	120
16	10	8.0	12.0	12	16	6	114.92	160
20	12	9.5	15.0	16	20	6	146.78	200

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 337

Assembly instructions

- KLG = Coupling Size
- SW = Across Flats Size
- M = Torque moment

KLG	SW mm	M Nm
06	6	5
08	8	12,5
10	10	15
12	13	20
16	16	25

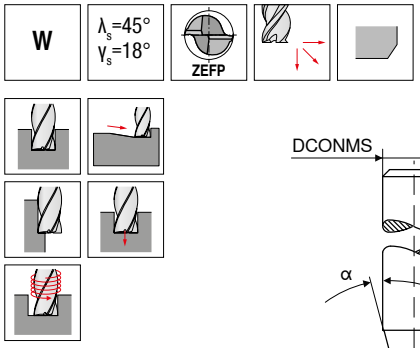
- A torque wrench should be used when mounting coupling sizes 06 and 08. It is recommended to use one for all sizes
- In unstable applications, the cutting data should be reduced.

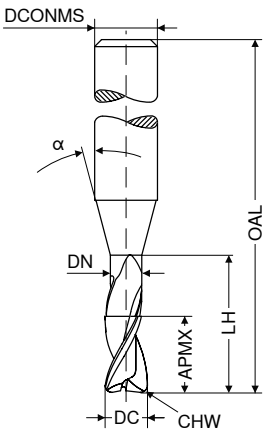
Holders and accessories can be found in → **Chapter 17, Accessories.**

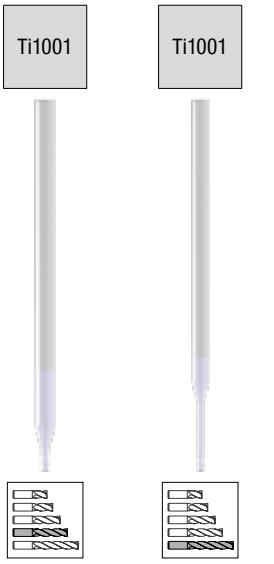
Application Tips

APMX does not correspond to the maximum cutting depth

End milling cutter







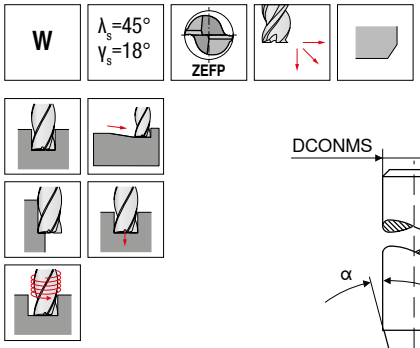
DC f8	APMX	DN	LH	OAL	α°	DCONMS h5	CHW	ZEFP	Factory standard HA V0 Article no. 50 900 ... £		Factory standard HA V0 Article no. 50 900 ... £	
mm	mm	mm	mm	mm		mm	mm					
0.2	0.2	0.18	0.6	55	15	3	0.02	2	81.66	021		
0.2	0.2	0.18	1.0	55	15	3	0.02	2	82.81	022		
0.2	0.2	0.18	1.6	55	15	3	0.02	2	83.66	023		
0.2	0.2	0.18	2.0	55	15	3	0.02	2	84.65	024		
0.3	0.3	0.28	0.9	55	15	3	0.03	2	81.66	031		
0.3	0.3	0.28	1.5	55	15	3	0.03	2	82.81	032		
0.3	0.3	0.28	2.4	55	15	3	0.03	2	83.66	033		
0.3	0.3	0.28	3.0	55	15	3	0.03	2	84.65	034		
0.4	0.4	0.37	1.2	55	15	3	0.04	2	81.66	041		
0.4	0.4	0.37	2.0	55	15	3	0.04	2	82.81	042		
0.4	0.4	0.37	3.2	55	15	3	0.04	2	83.66	043		
0.4	0.4	0.37	4.0	55	15	3	0.04	2	84.65	044		
0.5	0.5	0.45	1.5	55	15	3	0.05	2	79.96	051		
0.5	0.5	0.45	2.5	55	15	3	0.05	2	80.81	052		
0.5	0.5	0.45	4.0	55	15	3	0.05	2	81.66	053		
0.5	0.5	0.45	5.0	55	15	3	0.05	2	82.81	054		
0.6	0.6	0.58	2.0	55	15	3	0.06	2	67.39	061		
0.6	0.6	0.58	3.0	55	15	3	0.06	2	67.13	062		
0.6	0.6	0.58	5.0	65	15	3	0.06	2			73.12	063
0.6	0.6	0.58	6.0	65	15	3	0.06	2			77.39	064
0.8	0.8	0.77	2.5	55	15	3	0.08	2	67.13	081		
0.8	0.8	0.77	4.0	55	15	3	0.08	2	67.13	082		
0.8	0.8	0.77	6.5	65	15	3	0.08	2			74.68	083
0.8	0.8	0.77	8.0	65	15	3	0.08	2			77.39	084
1.0	1.0	0.95	3.0	55	15	3	0.10	2	67.13	101		
1.0	1.0	0.95	5.0	55	15	3	0.10	2	67.13	102		
1.0	1.0	0.95	8.0	65	15	3	0.10	2			70.98	103
1.0	1.0	0.95	10.0	65	15	3	0.10	2			77.39	104
1.0	1.0	0.95	12.0	65	15	3	0.10	2			79.36	105
1.2	1.2	1.15	3.0	55	15	3	0.12	2	67.13	121		
1.2	1.2	1.15	6.0	55	15	3	0.12	2	67.13	122		
1.2	1.2	1.15	10.0	65	15	3	0.12	2			74.68	123
1.2	1.2	1.15	12.0	65	15	3	0.12	2			77.39	124
1.3	1.3	1.25	4.0	55	15	3	0.12	2	67.13	131		
1.3	1.3	1.25	7.0	55	15	3	0.12	2	67.39	132		
1.3	1.3	1.25	11.0	65	15	3	0.12	2			74.68	133
1.3	1.3	1.25	13.0	65	15	3	0.12	2			79.36	134
1.5	1.5	1.44	5.0	55	15	3	0.12	2	67.39	151		
1.5	1.5	1.44	7.5	55	15	3	0.12	2	67.13	152		
1.5	1.5	1.44	12.0	65	15	3	0.12	2			79.36	153
1.5	1.5	1.44	15.0	65	15	3	0.12	2			77.39	154

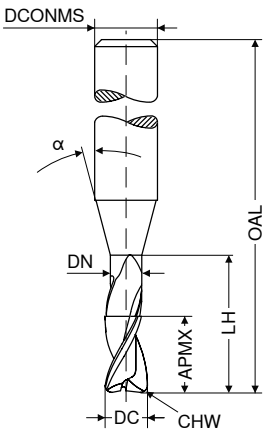
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 350–355

Continued on next page

End milling cutter





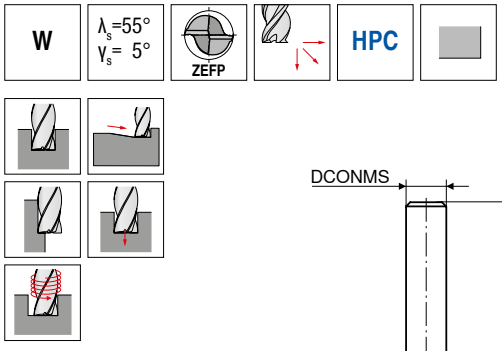
DC f8	APMX	DN	LH	OAL	α°	DCONMS h5	CHW	ZEFP	Factory standard HA V0 Article no. 50 900 ...		Factory standard HA V0 Article no. 50 900 ...	
mm	mm	mm	mm	mm		mm	mm		£		£	
1.6	1.6	1.52	5.0	55	15	3	0.12	2	67.39	161		
1.6	1.6	1.52	8.0	55	15	3	0.12	2	67.39	162		
1.6	1.6	1.52	13.0	65	15	3	0.12	2			74.68	163
1.6	1.6	1.52	16.0	65	15	3	0.12	2			79.36	164
1.8	1.8	1.72	5.5	55	15	3	0.12	2	67.13	181		
1.8	1.8	1.72	9.0	55	15	3	0.12	2	67.39	182		
1.8	1.8	1.72	14.5	65	15	3	0.12	2			74.68	183
1.8	1.8	1.72	18.0	65	15	3	0.12	2			79.36	184
2.0	2.0	1.92	6.0	55	15	3	0.13	2	67.13	201		
2.0	2.0	1.92	10.0	55	15	3	0.13	2	67.13	202		
2.0	2.0	1.92	14.0	55	15	3	0.13	2	70.98	203		
2.0	2.0	1.92	16.0	65	15	3	0.13	2			79.36	204
2.0	2.0	1.92	20.0	65	15	3	0.13	2			77.39	205
2.3	2.3	2.22	7.0	55	15	3	0.13	2	67.13	231		
2.3	2.3	2.22	11.5	55	15	3	0.13	2	67.39	232		
2.3	2.3	2.22	18.5	65	15	3	0.13	2			70.98	233
2.3	2.3	2.22	20.0	65	15	3	0.13	2			79.36	234
2.3	2.3	2.22	23.0	65	15	3	0.13	2			79.36	235
3.0	3.0	2.90	9.0	65	15	6	0.15	2	70.98	301		
3.0	3.0	2.90	15.0	65	15	6	0.15	2	79.36	302		
3.0	3.0	2.90	24.0	100	15	6	0.15	2			86.07	303
3.0	3.0	2.90	30.0	100	15	6	0.15	2			89.50	304
4.0	4.0	3.90	12.0	65	15	6	0.15	2	79.36	401		
4.0	4.0	3.90	20.0	65	15	6	0.15	2	79.36	402		
4.0	4.0	3.90	32.0	100	15	6	0.15	2			89.50	403
4.0	4.0	3.90	40.0	100	15	6	0.15	2			92.49	404
5.0	5.0	4.90	15.0	65	15	6	0.15	2	79.36	501		
5.0	5.0	4.90	25.0	65	15	6	0.15	2	79.36	502		
5.0	5.0	4.90	40.0	100	15	6	0.15	2			92.49	503
5.0	5.0	4.90	50.0	100	15	6	0.15	2			95.34	504
6.0	6.0	5.90	18.0	65	15	6	0.15	2	79.36	601		
6.0	6.0	5.90	30.0	100	15	6	0.15	2			89.50	602
6.0	6.0	5.90	48.0	100	15	6	0.15	2			95.34	603
6.0	6.0	5.90	60.0	100	15	6	0.15	2			98.14	604

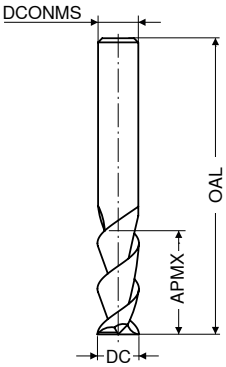
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 350–355

14

End milling cutter





≈DIN 6527

HA

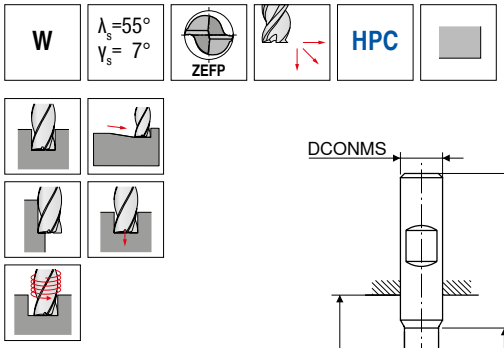
V0

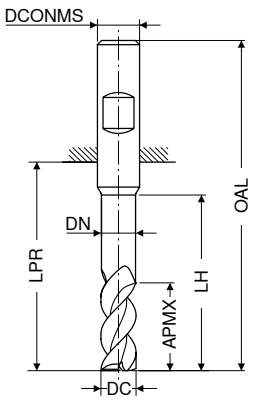
DC h6 mm	APMX mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 50 960 ... £	
3	12	50	3	2	26.07	030
4	15	50	4	2	26.07	040
5	20	50	5	2	26.07	050
6	20	57	6	2	26.07	060
8	20	63	8	2	38.95	080
10	25	73	10	2	53.40	100
12	25	83	12	2	73.40	120
14	30	83	14	2	115.57	140
16	30	92	16	2	129.26	160
20	38	104	20	2	161.31	200

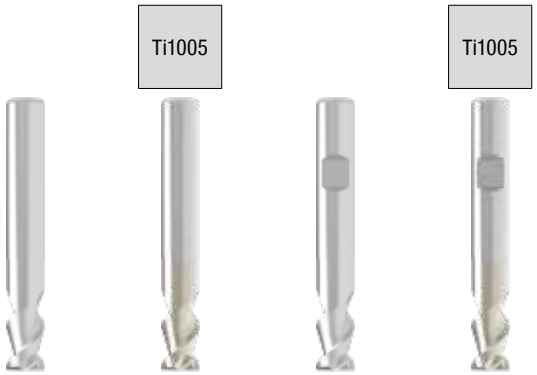
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 338+339

End milling cutter







								Factory standard		Factory standard		Factory standard		Factory standard	
								HA		HA		HB		HB	
								V0		V0		V0		V0	
DC h6	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Article no. 54 590 ...		Article no. 54 592 ...		Article no. 54 591 ...		Article no. 54 593 ...	
mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
2.7	5.0	2.5	12	19	55	6	2	23.81	027	34.25	027	23.81	027	34.25	027
3.0	3.5	2.8	12	19	55	6	2	24.19	033	35.62	033				
3.0	5.0	2.8	12	19	55	6	2	23.81	031	34.25	031	23.81	031	34.25	031
3.7	6.5	3.5	12	19	55	6	2	23.81	037	34.25	037	23.81	037	34.25	037
4.0	4.5	3.8	12	19	55	6	2	24.19	043	35.62	043				
4.0	6.5	3.8	12	19	55	6	2	23.81	041	34.25	041	23.81	041	34.25	041
4.7	8.0	4.5	15	22	58	6	2	23.81	047	34.25	047	23.81	047	34.25	047
5.0	5.5	4.8	15	22	58	6	2	24.19	053	35.62	053				
5.0	8.0	4.8	15	22	58	6	2	23.81	051	34.25	051	23.81	051	34.25	051
5.7	10.0	5.5	18	22	58	6	2	23.81	057	34.25	057	23.81	057	34.25	057
6.0	7.0	5.8	18	22	58	6	2	24.19	063	35.62	063				
6.0	10.0	5.8	18	22	58	6	2	23.81	061	34.25	061	23.81	061	34.25	061
6.7	13.0	6.4	24	28	64	8	2	34.25	067	47.59	067	34.25	067	47.59	067
7.0	13.0	6.7	24	28	64	8	2	34.25	071	47.59	071	34.25	071	47.59	071
7.7	13.0	7.4	24	28	64	8	2	34.25	077	47.59	077	34.25	077	47.59	077
8.0	9.0	7.7	24	28	64	8	2	34.25	083	47.59	083				
8.0	13.0	7.7	24	28	64	8	2	34.25	081	47.59	081	34.25	081	47.59	081
8.7	16.0	8.4	30	34	74	10	2	55.28	087	68.37	087	55.28	087	68.37	087
9.0	16.0	8.7	30	34	74	10	2	55.28	091	68.37	091	55.28	091	68.37	091
9.7	16.0	9.4	30	34	74	10	2	55.28	097	68.37	097	55.28	097	68.37	097
10.0	11.0	9.7	30	34	74	10	2	55.28	103	68.37	103				
10.0	16.0	9.7	30	34	74	10	2	55.28	101	68.37	101	55.28	101	68.37	101
10.7	19.0	10.3	36	40	85	12	2	72.01	107	86.00	107	72.01	107	86.00	107
11.0	19.0	10.6	36	40	85	12	2	72.01	111	86.00	111	72.01	111	86.00	111
11.7	19.0	11.3	36	40	85	12	2	72.01	117	86.00	117	72.01	117	86.00	117
12.0	13.0	11.6	36	40	85	12	2	72.01	123	86.00	123				
12.0	19.0	11.6	36	40	85	12	2	72.01	121	86.00	121	72.01	121	86.00	121
13.0	22.0	12.6	42	46	91	14	2	107.03	131	122.98	131	107.03	131	122.98	131
13.7	22.0	13.3	42	46	91	14	2	107.03	137	122.98	137	107.03	137	122.98	137
14.0	15.0	13.6	42	46	91	14	2	107.03	143	122.98	143				
14.0	22.0	13.6	42	46	91	14	2	107.03	141	122.98	141	107.03	141	122.98	141
15.0	25.0	14.5	48	52	100	16	2	173.58	151	196.07	151	173.58	151	196.07	151
15.7	25.0	15.2	48	52	100	16	2	173.58	157	196.07	157	173.58	157	196.07	157
16.0	17.0	15.5	48	52	100	16	2	173.58	163	196.07	163				
16.0	25.0	15.5	48	52	100	16	2	173.58	161	196.07	161	173.58	161	196.07	161
18.0	20.0	17.5	54	58	106	18	2	220.02	183	257.36	183				
18.0	29.0	17.5	54	58	106	18	2	221.46	181	243.96	181	221.46	181	243.96	181
19.7	32.0	19.2	60	64	114	20	2	242.40	197	260.35	197	242.40	197	267.90	197
20.0	22.0	19.5	60	64	114	20	2	233.42	203	255.93	203				
20.0	32.0	19.5	60	64	114	20	2	242.40	201	260.35	201	242.40	201	260.35	201
24.7	40.0	24.2	75	80	136	25	2	372.65	247	393.58	247	372.65	247	393.58	247
25.0	27.0	24.5	75	80	136	25	2	353.11	253	374.06	253				
25.0	40.0	24.5	75	80	136	25	2	372.65	251	393.58	251	372.65	251	393.58	251

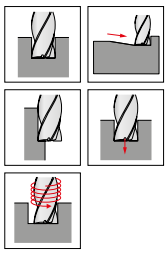
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

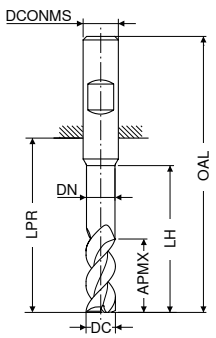
→ v_c/f_z Page 338+339

14

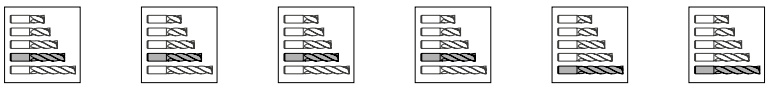
End milling cutter

W | λ_s=55° γ_s= 7° | ZEFP | HPC





LPR with Shank DIN 6535 HB



								Factory standard HA V0		Factory standard HA V0		Factory standard HB V0		Factory standard HB V0		Factory standard HA V0		Factory standard HA V0	
DC h6	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Article no. 54 590 ...		Article no. 54 592 ...		Article no. 54 591 ...		Article no. 54 593 ...		Article no. 54 590 ...		Article no. 54 592 ...	
mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£		£	
2.7	8.0	2.5	15	22	58	6	2	27.26	028	38.03	028	27.26	028	38.03	028				
3.0	3.5	2.8	15	22	58	6	2	26.25	034	36.65	034								
3.0	8.0	2.8	15	22	58	6	2	27.26	032	38.03	032	27.26	032	38.03	032				
3.0	3.5	2.8	24	31	67	6	2									21.54	035	43.89	035
3.7	10.5	3.5	20	26	62	6	2	27.26	038	38.03	038	27.26	038	38.03	038				
4.0	4.5	3.8	20	26	62	6	2	26.25	044	36.65	044								
4.0	10.5	3.8	20	26	62	6	2	27.26	042	38.03	042	27.26	042	38.03	042				
4.0	4.5	3.8	32	38	74	6	2									32.02	045	43.89	045
4.7	13.0	4.5	25	34	70	6	2	27.26	048	38.03	048	27.26	048	38.03	048				
5.0	5.5	4.8	25	34	70	6	2	26.25	054	36.65	054								
5.0	13.0	4.8	25	34	70	6	2	27.26	052	38.03	052	27.26	052	38.03	052				
5.0	5.5	4.8	40	52	88	6	2									33.00	055	44.63	055
5.7	16.0	5.5	30	34	70	6	2	27.26	058	38.03	058	27.26	058	38.03	058				
6.0	7.0	5.8	30	34	70	6	2	26.25	064	36.65	064								
6.0	16.0	5.8	30	34	70	6	2	27.26	062	38.03	062	27.26	062	38.03	062				
6.0	7.0	5.8	48	52	88	6	2									33.00	065	44.63	065
6.7	21.0	6.4	40	44	80	8	2	39.00	068	51.04	068	39.00	068	51.04	068				
7.0	21.0	6.7	40	44	80	8	2	39.00	072	51.04	072	39.00	072	51.04	072				
7.7	21.0	7.4	40	44	80	8	2	39.00	078	51.04	078	39.00	078	51.04	078				
8.0	9.0	7.7	40	44	80	8	2	38.48	084	50.19	084								
8.0	21.0	7.7	40	44	80	8	2	39.00	082	51.04	082	39.00	082	51.04	082				
8.0	9.0	7.7	64	68	104	8	2									49.60	085	62.30	085
8.7	26.0	8.4	50	54	94	10	2	62.41	088	76.67	088	62.41	088	76.67	088				
9.0	26.0	8.7	50	54	94	10	2	62.41	092	76.67	092	62.41	092	76.67	092				
9.7	26.0	9.4	50	54	94	10	2	62.41	098	76.67	098	62.41	098	76.67	098				
10.0	11.0	9.7	50	54	94	10	2	60.87	104	75.11	104								
10.0	26.0	9.7	50	54	94	10	2	62.41	102	76.67	102	62.41	102	76.67	102				
10.0	11.0	9.7	80	84	124	10	2									101.18	105	118.00	105
10.7	31.0	10.3	60	64	109	12	2	103.04	108	120.84	108	103.04	108	120.84	108				
11.0	31.0	10.6	60	64	109	12	2	103.04	112	120.84	112	103.04	112	120.84	112				
11.7	31.0	11.3	60	64	109	12	2	103.04	118	120.84	118	103.04	118	120.84	118				
12.0	13.0	11.6	60	64	109	12	2	101.03	124	118.86	124								
12.0	31.0	11.6	60	64	109	12	2	103.04	122	120.84	122	103.04	122	120.84	122				
12.0	13.0	11.6	96	100	145	12	2									130.71	125	149.05	125
13.0	36.0	12.6	70	74	119	14	2	149.05	132	169.14	132	149.05	132	169.14	132				
13.7	36.0	13.3	70	74	119	14	2	149.05	138	173.58	138	149.05	138	169.14	138				
14.0	15.0	13.6	70	74	119	14	2	147.20	144	167.58	144								
14.0	36.0	13.6	70	74	119	14	2	149.05	142	169.14	142	149.05	142	169.14	142				

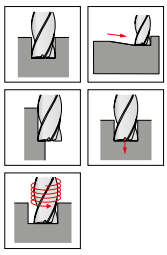
Steel						
Stainless steel						
Cast iron						
Non ferrous metals	●	●	●	●	●	●
Heat resistant alloys						
hardened materials						

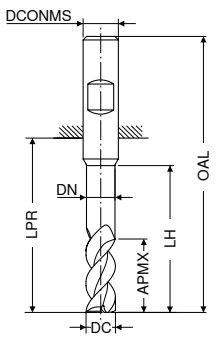
→ v_c/f_z Page 338+339

Continued on next page

End milling cutter

W | λ_s=55° γ_s= 7° | ZEFP | HPC





LPR with Shank DIN 6535 HB

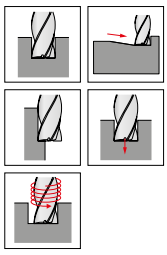
								Factory standard HA V0		Factory standard HA V0		Factory standard HB V0		Factory standard HB V0		Factory standard HA V0		Factory standard HA V0	
DC $_{h6}$	APMX	DN	LH	LPR	OAL	DCONMS $_{h5}$	ZEFP	Article no. 54 590 ...		Article no. 54 592 ...		Article no. 54 591 ...		Article no. 54 593 ...		Article no. 54 590 ...		Article no. 54 592 ...	
mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£		£	
14.0	15.0	13.6	112	116	161	14	2									196.07	**145**	215.45	**145**
15.0	41.0	14.5	80	84	132	16	2	193.09	**152**	215.45	**152**	193.09	**152**	215.45	**152**				
15.7	41.0	15.2	80	84	132	16	2	193.09	**158**	215.45	**158**	193.09	**158**	215.45	**158**				
16.0	17.0	15.5	80	84	132	16	2	191.50	**164**	214.03	**164**								
16.0	41.0	15.5	80	84	132	16	2	193.09	**162**	215.45	**162**	193.09	**162**	215.45	**162**				
16.0	17.0	15.5	128	132	180	16	2									255.93	**165**	278.29	**165**
18.0	20.0	17.5	90	94	142	18	2	240.98	**184**	263.35	**184**								
18.0	47.0	17.5	90	94	142	18	2	252.94	**182**	275.33	**182**	252.94	**182**	275.33	**182**				
18.0	20.0	17.5	144	148	196	18	2									324.78	**185**	347.13	**185**
19.7	52.0	19.2	100	104	154	20	2	276.87	**198**	303.81	**198**	276.87	**198**	303.81	**198**				
20.0	22.0	19.5	100	104	154	20	2	257.36	**204**	284.29	**204**								
20.0	52.0	19.5	100	104	154	20	2	276.87	**202**	303.81	**202**	276.87	**202**	303.81	**202**				
20.0	22.0	19.5	160	164	214	20	2									356.11	**205**	383.05	**205**
24.7	65.0	24.2	125	130	186	25	2	516.26	**248**	537.24	**248**	516.26	**248**	537.24	**248**				
25.0	27.0	24.5	125	130	186	25	2	496.75	**254**	517.69	**254**								
25.0	65.0	24.5	125	130	186	25	2	516.26	**252**	537.24	**252**	516.26	**252**	537.24	**252**				
25.0	27.0	24.5	200	204	260	25	2									703.23	**255**	725.76	**255**

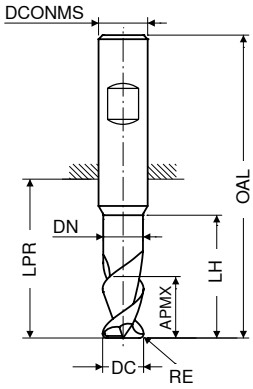
Steel						
Stainless steel						
Cast iron						
Non ferrous metals	●	●	●	●	●	●
Heat resistant alloys						
hardened materials						

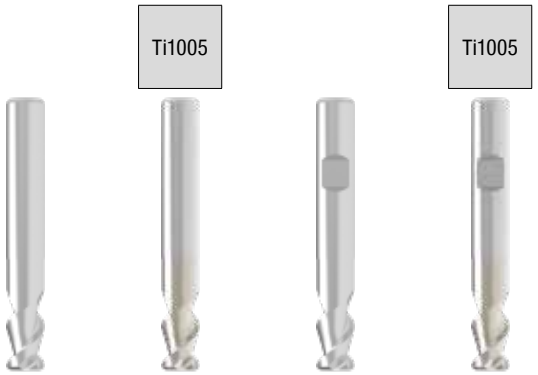
→ v_c/f_z Page 338+339

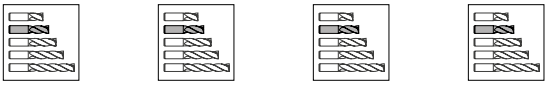
End milling cutter with corner radius

W | λ_s=55° γ_s= 7° | ZEFP | HPC









Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HB | HB

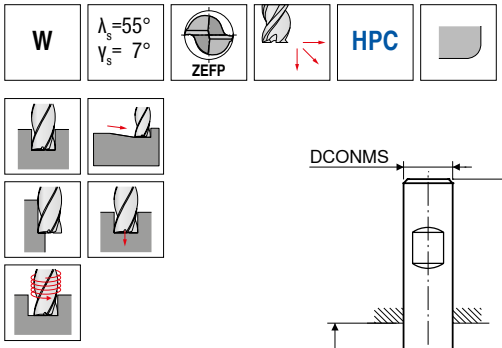
V0 | V0 | V0 | V0

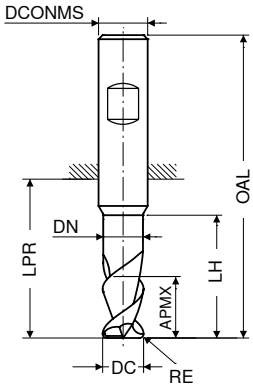
DC $_{h6}$ mm	RE $_{\pm 0,01}$ mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS $_{h5}$ mm	ZEFP	Article no. 54 594 ... £		Article no. 54 596 ... £		Article no. 54 595 ... £		Article no. 54 597 ... £	
3	0.2	5.0	2.8	12	19	55	6	2	26.42	031	38.06	031	26.42	031	38.06	031
3	0.3	5.0	2.8	12	19	55	6	2	26.42	033	38.06	033	26.42	033	38.06	033
3	0.5	5.0	2.8	12	19	55	6	2	26.42	035	38.06	035	26.42	035	38.06	035
4	0.3	6.5	3.8	12	19	55	6	2	26.42	041	38.06	041	26.42	041	38.06	041
4	0.5	6.5	3.8	12	19	55	6	2	26.42	043	38.06	043	26.42	043	38.06	043
4	1.0	6.5	3.8	12	19	55	6	2	26.42	045	38.06	045	26.42	045	38.06	045
5	0.3	8.0	4.8	15	22	58	6	2	27.26	051	38.03	051	27.26	051	38.03	051
5	0.5	8.0	4.8	15	22	58	6	2	27.26	053	38.03	053	27.26	053	38.03	053
5	1.0	8.0	4.8	15	22	58	6	2	27.26	055	38.03	055	27.26	055	38.03	055
6	0.3	10.0	5.8	18	22	58	6	2	28.21	061	38.59	061	28.21	061	38.59	061
6	0.5	10.0	5.8	18	22	58	6	2	28.21	063	38.59	063	28.21	063	38.59	063
6	1.0	10.0	5.8	18	22	58	6	2	28.21	065	38.59	065	28.21	065	38.59	065
8	0.3	13.0	7.7	24	28	64	8	2	38.03	081	50.60	081	38.03	081	50.60	081
8	0.5	13.0	7.7	24	28	64	8	2	38.03	083	50.60	083	38.03	083	50.60	083
8	1.0	13.0	7.7	24	28	64	8	2	38.03	085	50.60	085	38.03	085	50.60	085
10	0.3	16.0	9.7	30	34	74	10	2	58.86	101	73.26	101	58.86	101	73.26	101
10	1.0	16.0	9.7	30	34	74	10	2	58.86	103	73.26	103	58.86	103	73.26	103
10	1.5	16.0	9.7	30	34	74	10	2	58.86	105	73.26	105	58.86	105	73.26	105
12	1.0	19.0	11.6	36	40	85	12	2	75.76	121	89.75	121	75.76	121	89.75	121
12	1.5	19.0	11.6	36	40	85	12	2	75.76	123	89.75	123	75.76	123	89.75	123
12	2.0	19.0	11.6	36	40	85	12	2	75.76	125	89.75	125	75.76	125	89.75	125
16	2.0	25.0	15.5	48	52	100	16	2	179.55	161	200.50	161	179.55	161	200.50	161
16	2.5	25.0	15.5	48	52	100	16	2	181.10	163	202.08	163	181.10	163	202.08	163
16	3.0	25.0	15.5	48	52	100	16	2	181.10	165	202.08	165	181.10	165	202.08	165
20	2.0	32.0	19.5	60	64	114	20	2	245.38	201	272.33	201	237.96	201	272.33	201
20	2.5	32.0	19.5	60	64	114	20	2	245.38	203	272.33	203	245.38	203	272.33	203
20	3.0	32.0	19.5	60	64	114	20	2	245.38	205	272.33	205	245.38	205	272.33	205
20	4.0	32.0	19.5	60	64	114	20	2	245.38	206	272.33	206	245.38	206	272.33	206
25	2.0	40.0	24.5	75	80	136	25	2	375.63	251	398.00	251	375.63	251	398.00	251
25	4.0	40.0	24.5	75	80	136	25	2	377.05	253	398.00	253	377.05	253	398.00	253

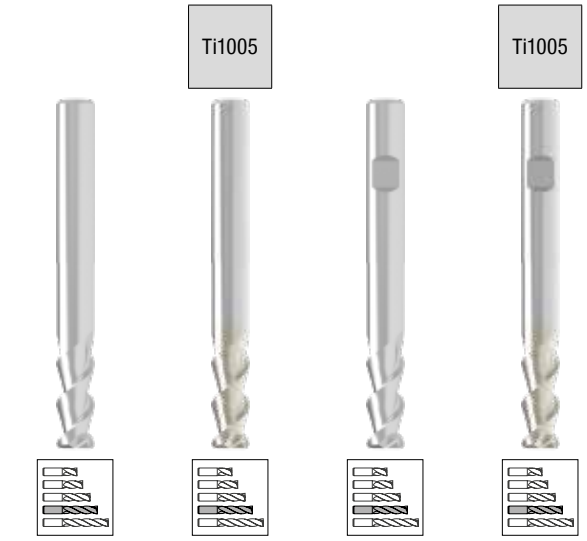
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

→ v_c/f_z Page 338+339

End milling cutter with corner radius







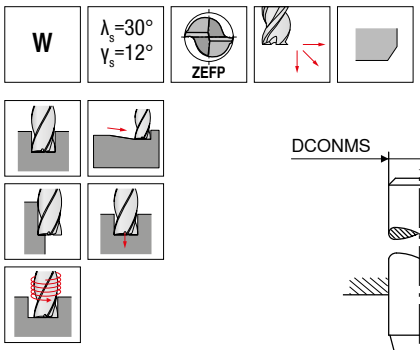
DC h6	RE ±0,01	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Factory standard HA V0 Article no. 54 594 ...		Factory standard HA V0 Article no. 54 596 ...		Factory standard HB V0 Article no. 54 595 ...		Factory standard HB V0 Article no. 54 597 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
3	0.2	8.0	2.8	15	22	58	6	2	26.42	032	38.06	032	26.42	032	38.06	032
3	0.3	8.0	2.8	15	22	58	6	2	26.42	034	38.06	034	26.42	034	38.06	034
3	0.5	8.0	2.8	15	22	58	6	2	26.42	036	38.06	036	26.42	036	38.06	036
4	0.3	10.5	3.8	20	26	62	6	2	28.66	042	39.00	042	28.66	042	39.00	042
4	0.5	10.5	3.8	20	26	62	6	2	28.66	044	39.00	044	28.66	044	39.00	044
4	1.0	10.5	3.8	20	26	62	6	2	28.66	046	39.00	046	28.66	046	39.00	046
5	0.3	13.0	4.8	25	34	70	6	2	30.93	052	41.37	052	30.93	052	41.37	052
5	0.5	13.0	4.8	25	34	70	6	2	30.93	054	41.37	054	30.93	054	41.37	054
5	1.0	13.0	4.8	25	34	70	6	2	30.93	056	41.37	056	30.93	056	41.37	056
6	0.3	16.0	5.8	30	34	70	6	2	30.93	062	41.37	062	30.93	062	41.37	062
6	0.5	16.0	5.8	30	34	70	6	2	30.93	064	41.37	064	30.93	064	41.37	064
6	1.0	16.0	5.8	30	34	70	6	2	30.93	066	41.37	066	30.93	066	41.37	066
8	0.3	21.0	7.7	40	44	80	8	2	43.20	082	54.80	082	43.20	082	54.80	082
8	0.5	21.0	7.7	40	44	80	8	2	43.20	084	54.80	084	43.20	084	54.80	084
8	1.0	21.0	7.7	40	44	80	8	2	43.20	086	54.80	086	43.20	086	54.80	086
10	0.5	26.0	9.7	50	54	94	10	2	66.12	102	80.24	102	66.12	102	80.24	102
10	1.0	26.0	9.7	50	54	94	10	2	66.12	104	80.24	104	66.12	104	80.24	104
10	1.5	26.0	9.7	50	54	94	10	2	66.12	106	80.24	106	66.12	106	80.24	106
12	1.0	31.0	11.6	60	64	109	12	2	107.73	122	125.56	122	107.73	122	125.56	122
12	1.5	31.0	11.6	60	64	109	12	2	107.73	124	125.56	124	107.73	124	125.56	124
12	2.0	31.0	11.6	60	64	109	12	2	107.73	126	125.56	126	107.73	126	125.56	126
16	2.0	41.0	15.5	80	84	132	16	2	203.48	162	226.00	162	203.48	162	226.00	162
16	2.5	41.0	15.5	80	84	132	16	2	205.06	164	227.42	164	205.06	164	227.42	164
16	4.0	41.0	15.5	80	84	132	16	2	205.06	166	227.42	166	205.06	166	227.42	166
20	2.0	52.0	19.5	100	104	154	20	2	281.29	202	308.22	202	281.29	202	308.22	202
20	2.5	52.0	19.5	100	104	154	20	2	282.88	204	309.81	204	282.88	204	309.81	204
20	4.0	52.0	19.5	100	104	154	20	2	282.88	207	309.81	207	282.88	207	309.81	207
25	2.0	65.0	24.5	125	130	186	25	2	525.26	252	546.18	252	525.26	252	546.18	252
25	4.0	65.0	24.5	125	130	186	25	2	525.26	254	546.18	254	525.26	254	546.18	254

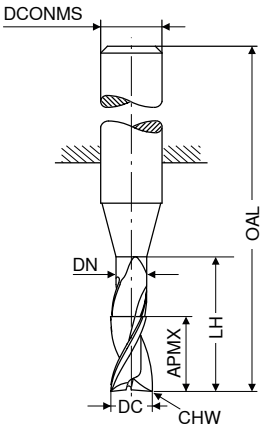
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

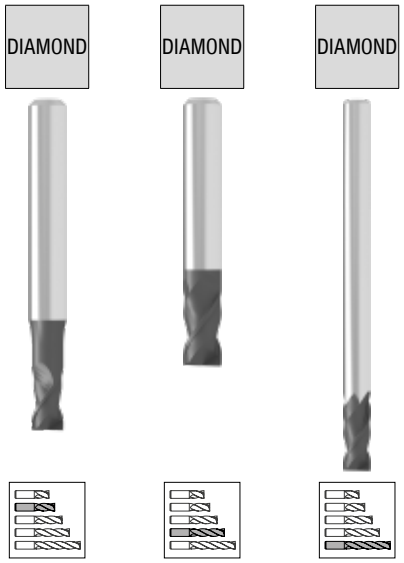
→ v_c/f_z Page 338+339

14

Slot milling cutter







DIN 6527 | DIN 6527 | Factory standard

HA | HA | HA

V1 | V1 | V1

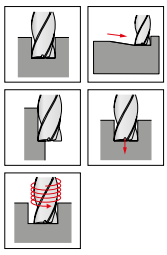
DC mm	Tol.	APMX mm	DN mm	LH mm	OAL mm	DCONMS h6 mm	CHW mm	ZEFP	Article no. 52 760 ... £		Article no. 52 761 ... £		Article no. 52 762 ... £	
2	e8	3			50	6	0.04	2	221.46	**020**				
2	h10	8	1.8	31	60	2	0.04	2					165.02	**020**
3	e8	4			50	6	0.07	2	221.46	**030**				
3	h10	12	2.8	41	70	3	0.07	2					179.84	**030**
4	e8	5			54	6	0.07	2	221.46	**040**				
4	h10	15	3.8	51	80	4	0.07	2					222.30	**040**
5	e8	6			54	6	0.12	2	221.46	**050**				
5	h10	20	4.8	71	100	5	0.12	2					259.51	**050**
6	e8	10			57	6	0.12	2			215.32	**060**		
6	h10	20	5.8	63	100	6	0.12	2					290.84	**060**
8	e8	16			63	8	0.12	2			302.68	**080**		
8	h10	20	7.8	83	120	8	0.12	2					400.56	**080**
10	e8	19			72	10	0.20	2			396.30	**100**		
10	h10	25	9.8	99	140	10	0.20	2					516.26	**100**
12	e8	22			83	12	0.20	2			496.18	**120**		
12	h10	25	11.8	104	150	12	0.20	2					675.14	**120**

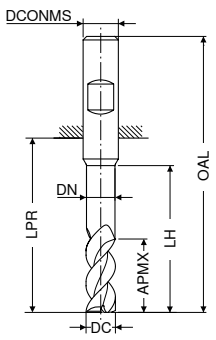
Steel			
Stainless steel			
Cast iron			
Non ferrous metals	●	●	●
Heat resistant alloys			
hardened materials			

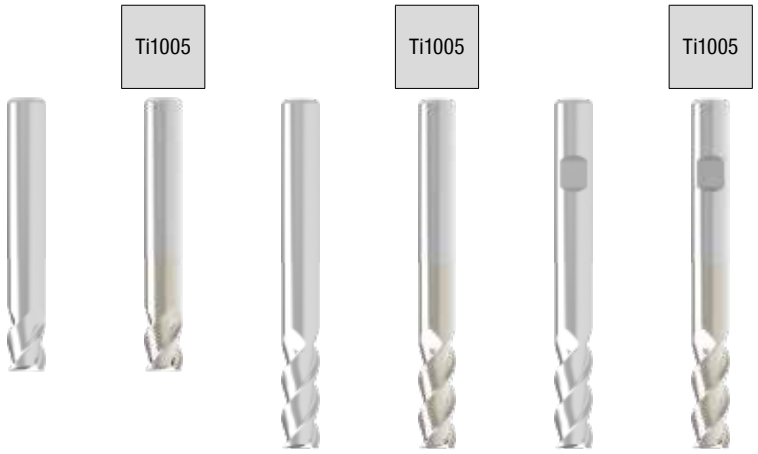
→ v_c/f_z Page 348

End milling cutter

W | λ_s=45° γ_s= 7° | ZEFP | HPC







LPR with Shank DIN 6535 HB

DC h6	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Factory standard HA V0 Article no. 54 610 ...		Factory standard HA V0 Article no. 54 612 ...		Factory standard HA V0 Article no. 54 610 ...		Factory standard HA V0 Article no. 54 612 ...		Factory standard HB V0 Article no. 54 611 ...		Factory standard HB V0 Article no. 54 613 ...	
mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£		£	
3	3.5	2.8	12	19	55	6	3	25.81	033	36.20	033								
3	3.5	2.8	15	22	58	6	3					28.21	034	38.59	034				
3	8.0	2.8	15	22	58	6	3					28.21	032	38.59	032	28.21	032	38.59	032
4	4.5	3.8	12	19	55	6	3	25.81	043	36.20	043								
4	4.5	3.8	20	26	62	6	3					28.21	044	38.59	044				
4	10.5	3.8	20	26	62	6	3					29.23	042	40.41	042	29.23	042	40.41	042
5	5.5	4.8	15	22	58	6	3	25.81	053	36.20	053								
5	5.5	4.8	25	34	70	6	3					28.21	054	38.59	054				
5	13.0	4.8	25	34	70	6	3					29.23	052	40.41	052	29.23	052	40.41	052
6	7.0	5.8	18	22	58	6	3	25.81	063	36.20	063								
6	7.0	5.8	30	34	70	6	3					28.21	064	38.59	064				
6	16.0	5.8	30	34	70	6	3					29.23	062	40.41	062	29.23	062	40.41	062
7	21.0	6.7	40	44	80	8	3					42.47	072	55.23	072	42.47	072	55.23	072
8	9.0	7.7	24	28	64	8	3	36.20	083	49.60	083								
8	9.0	7.7	40	44	80	8	3					40.47	084	53.18	084				
8	21.0	7.7	40	44	80	8	3					42.47	082	55.23	082	42.47	082	55.23	082
9	26.0	8.7	50	54	94	10	3					66.97	092	82.64	092	66.97	092	82.64	092
10	11.0	9.7	30	34	74	10	3	57.43	103	70.18	103								
10	11.0	9.7	50	54	94	10	3					62.72	104	77.11	104				
10	26.0	9.7	50	54	94	10	3					66.97	102	82.64	102	66.97	102	82.64	102
11	31.0	10.6	60	64	109	12	3					111.16	112	130.82	112	111.16	112	130.82	112
12	13.0	11.6	36	40	85	12	3	73.94	123	89.50	123								
12	13.0	11.6	60	64	109	12	3					115.85	124	135.96	124				
12	31.0	11.6	60	64	109	12	3					111.16	122	130.82	122	111.16	122	130.82	122
13	36.0	12.6	70	74	119	14	3					161.60	132	184.11	132	161.60	132	184.11	132
14	15.0	13.6	42	46	91	14	3	106.93	143	124.83	143								
14	15.0	13.6	70	74	119	14	3					167.58	144	190.10	144				
14	36.0	13.6	70	74	119	14	3					161.60	142	184.11	142	161.60	142	184.11	142
15	17.0	14.5	48	52	100	16	3	141.52	153	158.61	153								
15	17.0	14.5	80	84	132	16	3					217.04	154	242.40	154				
15	41.0	14.5	80	84	132	16	3					211.06	152	234.99	152	211.06	152	234.99	152
16	17.0	15.5	48	52	100	16	3	141.52	163	158.61	163								
16	17.0	15.5	80	84	132	16	3					217.04	164	242.40	164				
16	41.0	15.5	80	84	132	16	3					211.06	162	234.99	162	211.06	162	234.99	162
18	20.0	17.5	54	58	106	18	3	178.13	183	196.07	183								
18	20.0	17.5	90	94	142	18	3					272.33	184	297.82	184				
18	47.0	17.5	90	94	142	18	3					264.91	182	290.29	182	264.91	182	290.29	182
20	22.0	19.5	60	64	114	20	3	264.91	203	290.29	203								
20	22.0	19.5	100	104	154	20	3					290.29	204	321.76	204				
20	52.0	19.5	100	104	154	20	3					282.88	202	312.79	202	282.88	202	312.79	202
25	27.0	24.5	75	80	136	25	3	483.35	253	504.30	253								
25	27.0	24.5	125	130	186	25	3					565.58	254	588.10	254				

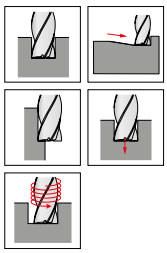
Steel						
Stainless steel						
Cast iron						
Non ferrous metals	●	●	●	●	●	●
Heat resistant alloys						
hardened materials						

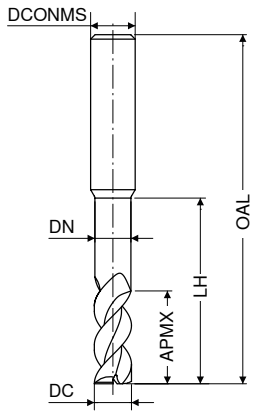
→ v_c/f_z Page 338+339

14

End milling cutter

W | λ_s=45° γ_s= 7° | ZEFP | HPC | Ti1005





Factory standard | Factory standard

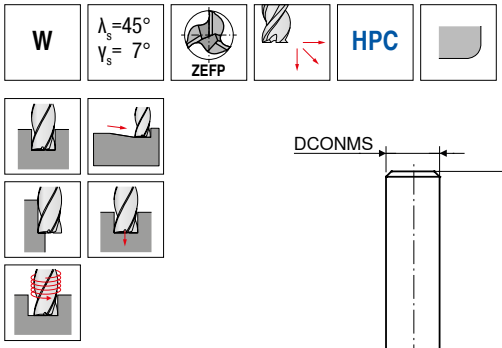
HA | HA

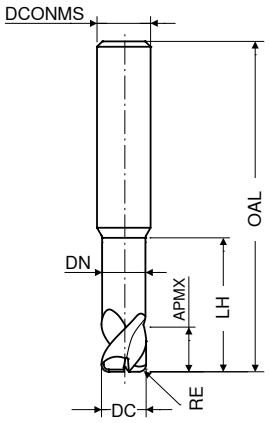
DC h6	APMX	DN	LH	OAL	DCONMS h5	ZEFP	V0 Article no. 54 610 ...		V0 Article no. 54 612 ...	
mm	mm	mm	mm	mm	mm		£		£	
3	3.5	2.8	24	67	6	3	34.77	035	45.03	035
4	4.5	3.8	32	74	6	3	34.77	045	45.03	045
5	5.5	4.8	40	88	6	3	34.77	055	45.03	055
6	7.0	5.8	48	88	6	3	34.77	065	45.03	065
8	9.0	7.7	64	104	8	3	49.77	085	62.22	085
10	11.0	9.7	80	124	10	3	114.87	105	132.11	105
12	13.0	11.6	96	145	12	3	152.61	125	169.14	125
14	15.0	13.6	112	161	14	3	223.02	145	243.96	145
16	17.0	15.5	128	180	16	3	288.83	165	314.24	165
18	20.0	17.5	144	196	18	3	366.66	185	390.60	185
20	22.0	19.5	160	214	20	3	402.56	205	432.50	205

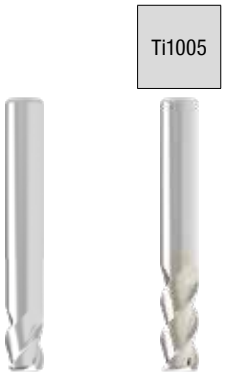
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 338+339

End milling cutter with corner radius







Factory standard

Factory standard

HA

HA

V0

V0

DC h6	RE ±0,01	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Article no. 54 620 ...		Article no. 54 622 ...	
mm	mm	mm	mm	mm	mm	mm		£		£	
3	0.4	3.5	2.8	12	55	6	3	28.92	034	40.05	034
3	0.6	3.5	2.8	12	55	6	3	28.92	035	40.05	035
4	0.4	4.5	3.8	12	55	6	3	28.92	044	40.05	044
4	0.6	4.5	3.8	12	55	6	3	28.92	046	40.05	046
5	0.4	5.5	4.8	15	58	6	3	28.92	054	40.05	054
5	0.6	5.5	4.8	15	58	6	3	28.92	056	40.05	056
6	0.4	7.0	5.8	18	58	6	3	28.92	064	40.05	064
6	0.6	7.0	5.8	18	58	6	3	28.92	066	40.05	066
8	0.4	9.0	7.7	24	64	8	3	40.05	084	52.74	084
8	0.6	9.0	7.7	24	64	8	3	40.05	086	52.74	086
8	0.8	9.0	7.7	24	64	8	3	40.05	087	52.74	087
10	1.6	11.0	9.7	30	74	10	3	59.42	103	74.68	103
12	2.0	13.0	11.6	36	85	12	3	78.54	124	92.63	124
14	0.6	15.0	13.6	42	91	14	3	112.16	146	127.97	146
14	0.8	15.0	13.6	42	91	14	3	112.16	147	127.97	147
16	1.6	17.0	15.5	48	100	16	3	144.64	163	160.17	163
16	3.2	17.0	15.5	48	100	16	3	145.79	167	161.60	167
18	1.6	20.0	17.5	54	106	18	3	181.10	183	199.08	183
20	3.2	22.0	19.5	60	114	20	3	270.91	207	300.82	207
20	5.0	22.0	19.5	60	114	20	3	270.91	209	300.82	209

Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 338+339

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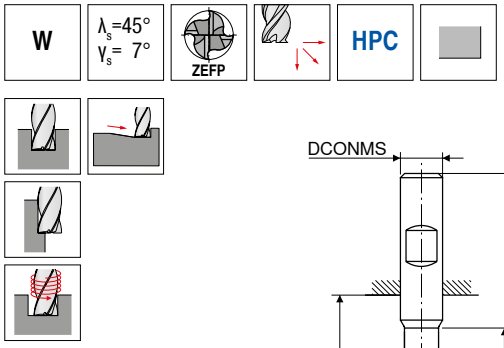
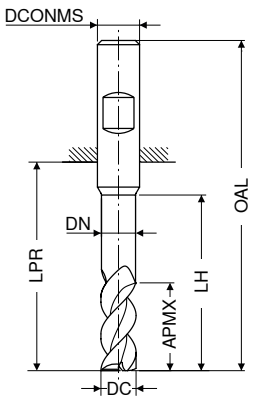
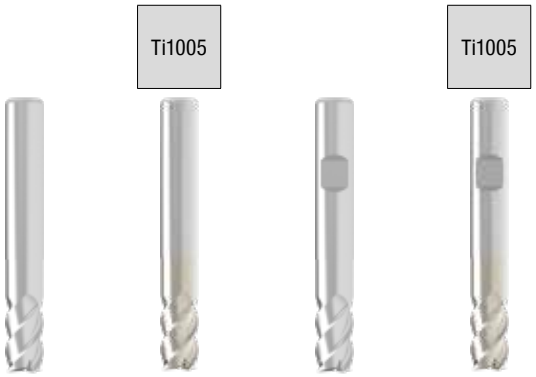
End milling cutter





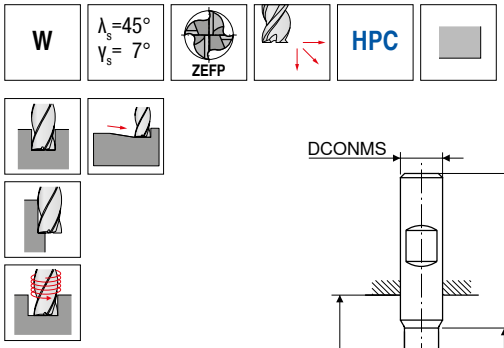


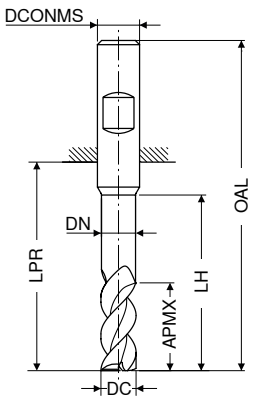
								Factory standard HA V0		Factory standard HA V0		Factory standard HB V0		Factory standard HB V0	
DC h6	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Article no. 54 630 ...		Article no. 54 632 ...		Article no. 54 631 ...		Article no. 54 633 ...	
mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
6	10	5.8	18	22	58	6	4	26.42	061	38.06	061	26.42	061	38.06	061
7	13	6.7	24	28	64	8	4	38.48	071	50.60	071	38.48	071	50.60	071
8	13	7.7	24	28	64	8	4	38.48	081	50.60	081	38.48	081	50.60	081
9	16	8.7	30	34	74	10	4	59.85	091	74.24	091	59.85	091	74.24	091
10	16	9.7	30	34	74	10	4	59.85	101	74.24	101	59.85	101	74.24	101
11	19	10.6	36	40	85	12	4	78.54	111	93.20	111	78.54	111	93.20	111
12	19	11.6	36	40	85	12	4	78.54	121	93.20	121	78.54	121	93.20	121
13	22	12.6	42	46	91	14	4	112.74	131	129.09	131	112.74	131	129.09	131
14	22	13.6	42	46	91	14	4	112.74	141	129.09	141	112.74	141	129.09	141
15	25	14.5	48	52	100	16	4	146.65	151	163.18	151	146.65	151	163.18	151
16	25	15.5	48	52	100	16	4	146.65	161	163.18	161	146.65	161	163.18	161
18	29	17.5	54	58	106	18	4	184.11	181	203.48	181	184.11	181	203.48	181
20	32	19.5	60	64	114	20	4	211.06	201	234.99	201	211.06	201	234.99	201

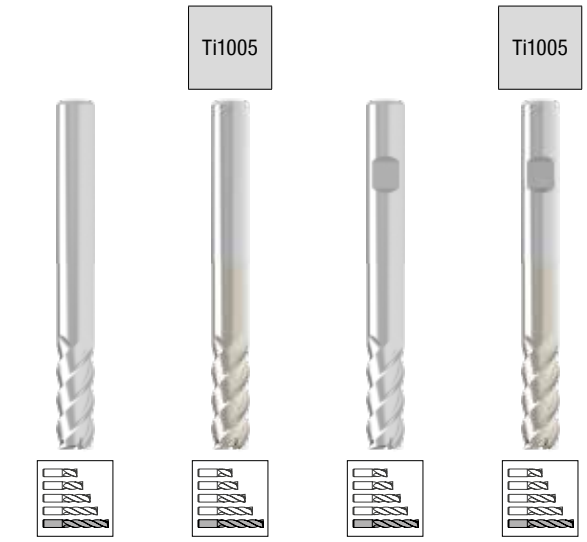
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

→ v_c/f_z Page 338+339

End milling cutter







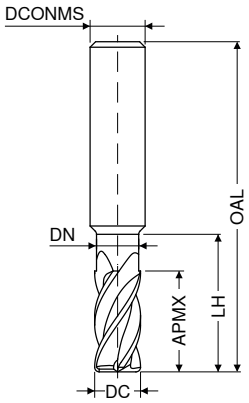
DC h6	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	Factory standard HA V0 Article no. 54 630 ... £		Factory standard HA V0 Article no. 54 632 ... £		Factory standard HB V0 Article no. 54 631 ... £		Factory standard HB V0 Article no. 54 633 ... £	
mm	mm	mm	mm	mm	mm	mm									
6	16	5.8	30	34	70	6	4	28.24	062	41.06	062	28.24	062	41.06	062
7	21	6.7	40	44	80	8	4	42.47	072	55.23	072	42.47	072	55.23	072
8	21	7.7	40	44	80	8	4	42.47	082	55.23	082	42.47	082	55.23	082
9	26	8.7	50	54	94	10	4	66.97	092	82.64	092	66.97	092	82.64	092
10	26	9.7	50	54	94	10	4	66.97	102	82.64	102	66.97	102	82.64	102
11	31	10.6	60	64	109	12	4	111.16	112	130.82	112	111.16	112	130.82	112
12	31	11.6	60	64	109	12	4	111.16	122	130.82	122	111.16	122	130.82	122
13	36	12.6	70	74	119	14	4	161.60	132	184.11	132	161.60	132	184.11	132
14	36	13.6	70	74	119	14	4	161.60	142	184.11	142	161.60	142	184.11	142
15	41	14.5	80	84	132	16	4	211.06	152	234.99	152	211.06	152	234.99	152
16	41	15.5	80	84	132	16	4	211.06	162	234.99	162	211.06	162	234.99	162
18	47	17.5	90	94	142	18	4	264.91	182	290.29	182	264.91	182	290.29	182
20	52	19.5	100	104	154	20	4	282.88	202	312.79	202	282.88	202	312.79	202

Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

→ v_c/f_z Page 338+339

End milling cutter

W | λ_s=38° γ_s=17° | ZEFP | HPC



Ti1005

Factory standard | Factory standard

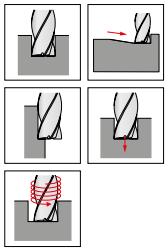
HA | HA

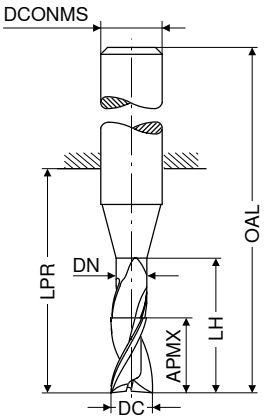
DC h6	APMX	DN	LH	OAL	DCONMS h5	ZEFP	V0 Article no. 54 650 ...		V0 Article no. 54 652 ...	
mm	mm	mm	mm	mm	mm		£		£	
6	19	5.8	30	70	6	5	65.70	062	78.54	062
8	25	7.7	40	80	8	5	84.50	082	95.34	082
10	31	9.7	50	94	10	5	130.82	102	145.06	102
12	37	11.6	60	109	12	5	211.06	122	224.45	122
14	43	13.6	70	119	14	5	341.13	142	356.11	142
16	49	15.5	80	132	16	7	378.62	162	395.01	162
18	56	17.5	90	142	18	7	472.82	182	490.78	182
20	62	19.5	100	154	20	7	523.69	202	544.63	202

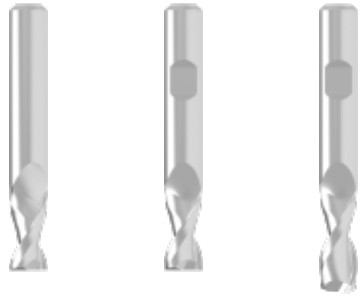
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 338+339

End milling cutter







	Factory standard	Factory standard	Factory standard
	HA	HB	HB
	V1	V1	V1
DC e8 / mm	Article no. 52 842 ... £	Article no. 52 841 ... £	Article no. 52 848 ... £

APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	52 842 ... £		52 841 ... £		52 848 ... £	
0.4			10	38	3	2	85.26	920				
0.5			10	38	3	2	75.11	925				
1.0			10	38	3	2	48.35	930				
1.0			10	38	3	2	48.35	935				
1.0			10	38	3	2	38.87	940				
1.5			10	38	3	2	35.32	950				
1.5			10	38	3	2	35.32	960				
2.0			10	38	3	2	35.32	970				
2.0			10	38	3	2	35.32	980				
2.5			10	38	3	2	35.32	990				
3.0			10	38	3	2	35.32	010				
4.0	0.90	6	22	58	6	2					54.31	010
3.0			10	38	3	2	35.32	011				
4.0			10	38	3	2	35.32	012				
4.0			10	38	3	2	37.16	013				
4.0			10	38	3	2	37.16	014				
3.0	1.40	6	18	54	6	2	46.92	015	46.92	015		
4.0			10	38	3	2	37.16	915				
6.0	1.40	8	22	58	6	2					54.31	015
4.0			10	38	3	2	39.26	016				
5.0			10	38	3	2	39.26	018				
4.0	1.90	8	18	54	6	2	46.92	020	46.92	020		
7.0	1.90	10	22	58	6	2					54.31	020
4.0	2.40	8	18	54	6	2			46.92	025		
6.0			10	38	3	2	37.16	025				
4.0	2.70	9	18	54	6	2	54.31	028	54.31	028		
7.0	2.70	12	22	58	6	2					56.13	028
6.0	2.90	9	18	54	6	2	46.92	030	46.92	030		
10.0	2.90	14	22	58	6	2					54.31	030
6.0	3.30	9	18	54	6	2			46.92	035		
7.0	3.60	12	18	54	6	2	54.31	038	54.31	038		
10.0	3.60	18	22	58	6	2					56.13	038
7.0	3.80	12	18	54	6	2	46.92	040	46.92	040		
13.0	3.80	18	22	58	6	2					54.31	040
7.0	4.30	12	18	54	6	2			46.92	045		
8.0	4.60	16	18	54	6	2	54.31	048	54.31	048		
13.0	4.60	18	22	58	6	2					56.13	048
8.0	4.80	16	18	54	6	2	46.92	050	46.92	050		
15.0	4.80	18	22	58	6	2					54.31	050

Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals	○	○	○
Heat resistant alloys	○	○	○
hardened materials			

→ v_c/f_z Page 350–353

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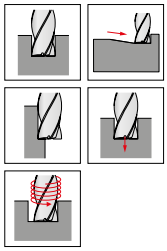
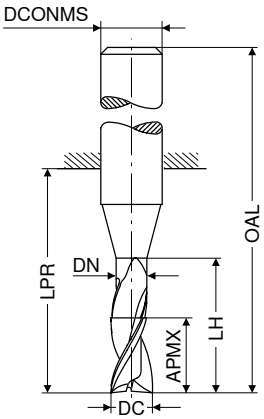
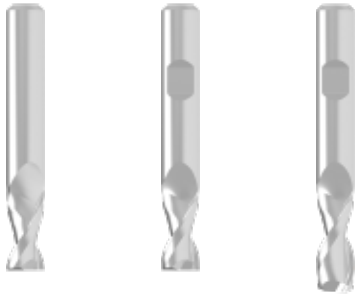
Continued on next page

End milling cutter







DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Factory standard HA V1 Article no. 52 842 ...		Factory standard HB V1 Article no. 52 841 ...		Factory standard HB V1 Article no. 52 848 ...	
mm	mm	mm	mm	mm	mm	mm		£		£		£	
5.50	8.0	5.30	16	18	54	6	2			46.92	055		
5.75	10.0	5.55	16	18	54	6	2	54.31	057	54.31	057		
5.75	15.0	5.55	18	22	58	6	2					57.31	057
6.00	10.0	5.80	16	18	54	6	2	46.92	060	46.92	060		
6.00	16.0	5.80	20	22	58	6	2					54.31	060
6.75	10.0	6.45	16	23	59	8	2	61.68	067	61.68	067		
6.75	16.0	6.45	23	34	70	8	2					69.70	067
7.00	12.0	6.70	18	23	59	8	2			60.49	070		
7.00	16.0	6.70	23	34	70	8	2					61.54	070
7.75	12.0	7.45	18	23	59	8	2	61.14	077	61.14	077		
7.75	16.0	7.45	23	34	70	8	2					65.11	077
8.00	12.0	7.70	20	23	59	8	2	52.45	080	52.45	080		
8.00	22.0	7.70	25	34	70	8	2					60.75	080
8.70	12.0	8.40	20	27	67	10	2			101.19	087		
8.70	12.0	8.40	22	27	67	10	2	101.19	087				
9.00	13.0	8.70	22	27	67	10	2			97.90	090		
9.00	22.0	8.70	28	33	73	10	2					108.96	090
9.70	13.0	9.40	22	27	67	10	2	98.83	097	98.83	097		
9.70	22.0	9.40	28	33	73	10	2					111.23	097
10.00	13.0	9.70	24	27	67	10	2	81.82	100	81.82	100		
10.00	25.0	9.70	30	33	73	10	2					106.46	100
11.00	25.0	10.60	32	39	84	12	2					147.98	110
11.70	16.0	11.30	24	28	73	12	2	140.99	117	140.99	117		
11.70	25.0	11.30	32	39	84	12	2					149.83	117
12.00	16.0	11.60	26	28	73	12	2	114.38	120	114.38	120		
12.00	26.0	11.60	35	39	84	12	2					143.49	120
13.70	16.0	13.30	26	30	75	14	2	190.40	137	190.40	137		
13.70	26.0	13.30	35	39	84	14	2					196.46	137
14.00	16.0	13.60	28	30	75	14	2	159.97	140	159.97	140		
14.00	26.0	13.60	35	39	84	14	2					186.05	140
15.70	20.0	15.20	30	35	83	16	2	218.33	157	218.33	157		
16.00	20.0	15.50	32	35	83	16	2	173.79	160	173.79	160		
16.00	30.0	15.50	40	45	93	16	2					226.25	160
17.70	20.0	17.20	32	37	85	18	2	288.30	177	288.30	177		
18.00	20.0	17.50	34	37	85	18	2	228.99	180	228.99	180		
18.00	30.0	17.50	40	45	93	18	2					280.92	180
19.70	25.0	19.20	38	43	93	20	2	352.33	197	352.33	197		
20.00	25.0	19.50	40	43	93	20	2	293.83	200	293.83	200		
20.00	40.0	19.50	50	54	104	20	2					362.73	200

Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals	○	○	○
Heat resistant alloys	○	○	○
hardened materials			

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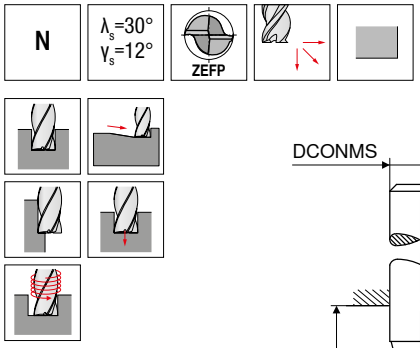
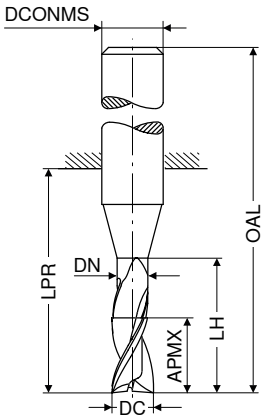
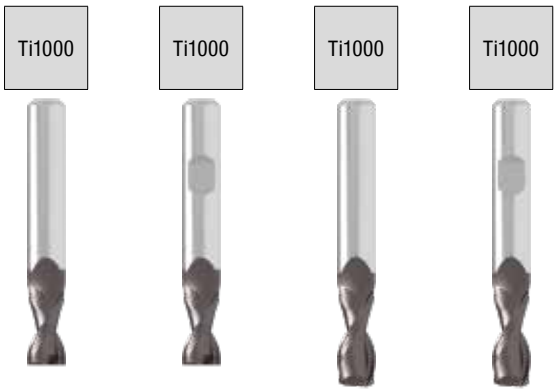
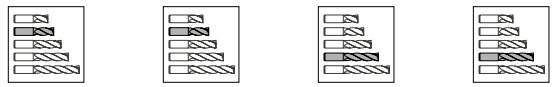
End milling cutter









Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB

V1 | V1 | V1 | V1

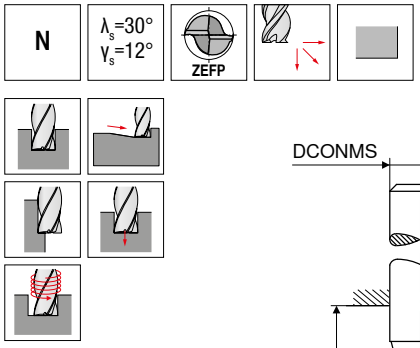
DC e8 mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 52 843 ... £		Article no. 52 844 ... £		Article no. 52 847 ... £		Article no. 52 849 ... £	
0.20	0.4			10	38	3	2	93.02	920						
0.25	0.5			10	38	3	2	83.17	925						
0.30	1.0			10	38	3	2	56.27	930						
0.35	1.0			10	38	3	2	56.27	935						
0.40	1.0			10	38	3	2	46.65	940						
0.50	1.5			10	38	3	2	43.09	950						
0.60	1.5			10	38	3	2	43.09	960						
0.70	2.0			10	38	3	2	43.09	970						
0.80	2.0			10	38	3	2	43.09	980						
0.90	2.5			10	38	3	2	43.09	990						
1.00	3.0			10	38	3	2	43.09	010						
1.00	4.0	0.90	6	22	58	6	2					63.11	010	63.11	010
1.10	3.0			10	38	3	2	43.09	011						
1.20	4.0			10	38	3	2	43.09	012						
1.30	4.0			10	38	3	2	45.07	013						
1.40	4.0			10	38	3	2	45.07	014						
1.50	3.0	1.40	6	18	54	6	2	57.59	015	57.59	015				
1.50	4.0			10	38	3	2	45.07	915						
1.50	6.0	1.40	8	22	58	6	2					63.11	015	63.11	015
1.60	4.0			10	38	3	2	47.05	016						
1.80	5.0			10	38	3	2	47.05	018						
2.00	4.0	1.90	8	18	54	6	2	57.59	020	57.59	020				
2.00	5.0			10	38	3	2	47.05	021						
2.00	7.0	1.90	10	22	58	6	2					63.11	020	63.11	020
2.50	4.0	2.40	8	18	54	6	2	57.59	025	57.59	025				
2.50	6.0			10	38	3	2	45.07	026						
2.80	4.0	2.70	9	18	54	6	2	64.83	028	64.83	028				
2.80	7.0	2.70	12	22	58	6	2					66.01	028	66.01	028
3.00	6.0	2.90	9	18	54	6	2	57.59	030	57.59	030				
3.00	6.0			10	38	3	2	47.05	031						
3.00	10.0	2.90	14	22	58	6	2					63.11	030	63.11	030
3.50	6.0	3.30	9	18	54	6	2	57.59	035	57.59	035				
3.80	7.0	3.60	12	18	54	6	2	64.83	038	64.83	038				
3.80	10.0	3.60	18	22	58	6	2					66.01	038	66.01	038
4.00	7.0	3.80	12	18	54	6	2	57.59	040	57.59	040				
4.00	13.0	3.80	18	22	58	6	2					63.11	040	63.11	040
4.50	7.0	4.30	12	18	54	6	2	57.59	045	57.59	045				
4.80	8.0	4.60	16	18	54	6	2	64.83	048	64.83	048				
4.80	13.0	4.60	18	22	58	6	2					66.01	048	66.01	048
5.00	8.0	4.80	16	18	54	6	2	57.59	050	57.59	050				
5.00	15.0	4.80	18	22	58	6	2					63.11	050	63.11	050
5.50	8.0	5.30	16	18	54	6	2	57.59	055	57.59	055				

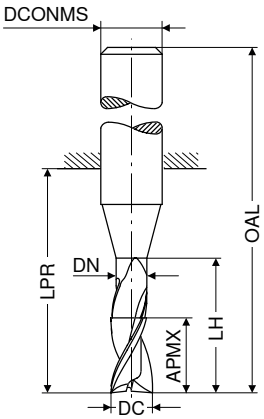
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

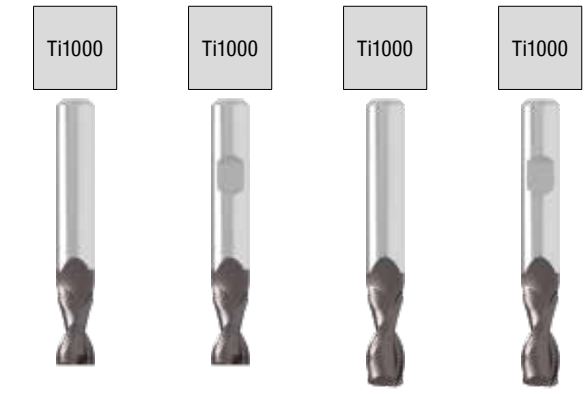
→ v_c/f_z Page 350–353

Continued on next page

End milling cutter







Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB

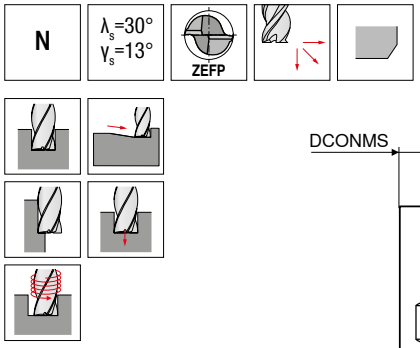
V1 | V1 | V1 | V1

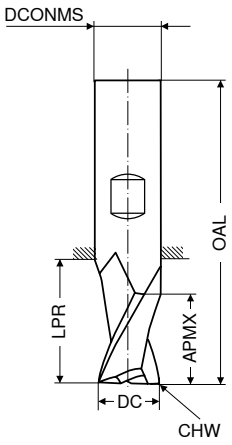
DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 52 843 ...		Article no. 52 844 ...		Article no. 52 847 ...		Article no. 52 849 ...	
mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
5.75	10.0	5.55	16	18	54	6	2	64.83	057	64.83	057				
5.75	15.0	5.55	18	22	58	6	2					67.20	057	67.20	057
6.00	10.0	5.80	16	18	54	6	2	57.59	060	57.59	060				
6.00	16.0	5.80	20	22	58	6	2					63.11	060	63.11	060
6.75	16.0	6.45	23	34	70	8	2					85.91	067	85.91	067
6.75	10.0	6.45	16	23	59	8	2			78.13	067				
7.00	12.0	6.70	18	23	59	8	2	74.32	070	74.32	070				
7.00	16.0	6.70	23	34	70	8	2					77.61	070	77.61	070
7.75	16.0	7.45	23	34	70	8	2					81.31	077	81.31	077
7.75	12.0	7.45	18	23	59	8	2	74.97	077	74.97	077				
8.00	12.0	7.70	20	23	59	8	2	67.34	080	67.34	080				
8.00	22.0	7.70	25	34	70	8	2					77.10	080	77.10	080
8.70	12.0	8.40	20	27	67	10	2			120.55	087				
9.00	13.0	8.70	22	27	67	10	2	116.62	090	116.62	090				
9.00	22.0	8.70	28	33	73	10	2					131.50	090	131.50	090
9.70	13.0	9.40	22	27	67	10	2	117.80	097	117.80	097				
9.70	22.0	9.40	28	33	73	10	2					133.73	097	133.73	097
10.00	13.0	9.70	24	27	67	10	2	103.04	100	103.04	100				
10.00	25.0	9.70	30	33	73	10	2					129.40	100	129.40	100
11.00	25.0	10.60	32	39	84	12	2					177.88	110	177.88	110
11.70	16.0	11.30	24	28	73	12	2	168.53	117	168.53	117				
11.70	25.0	11.30	32	39	84	12	2					179.73	117	179.73	117
12.00	26.0	11.60	35	39	84	12	2					173.53	120	173.53	120
12.00	16.0	11.60	26	28	73	12	2	142.17	120	142.17	120				
13.70	16.0	13.30	26	30	75	14	2			222.81	137				
13.70	26.0	13.30	35	39	84	14	2					229.27	137	229.27	137
14.00	26.0	13.60	35	39	84	14	2					219.39	140	219.39	140
14.00	16.0	13.60	28	30	75	14	2	192.37	140	192.37	140				
15.70	20.0	15.20	30	35	83	16	2			257.19	157				
16.00	20.0	15.50	32	35	83	16	2	214.24	160	214.24	160				
16.00	30.0	15.50	40	45	93	16	2					275.64	160	275.64	160
17.70	20.0	17.20	32	37	85	18	2			333.21	177				
18.00	20.0	17.50	34	37	85	18	2	273.93	180	273.93	180				
18.00	30.0	17.50	40	45	93	18	2					332.02	180	332.02	180
19.70	25.0	19.20	38	43	93	20	2			402.52	197				
20.00	25.0	19.50	40	43	93	20	2	345.08	200	345.08	200				
20.00	40.0	19.50	50	54	104	20	2					426.65	200	426.65	200

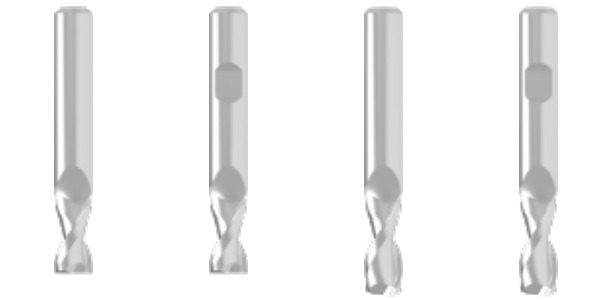
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

→ v_c/f_z Page 350–353

End milling cutter







							Factory standard		Factory standard		≈DIN 6527		≈DIN 6527	
							HA		HB		HA		HB	
							V0		V0		V0		V0	
DC e8	APMX	LPR	OAL	DCONMS h5	CHW	ZEFP	Article no. 50 593 ...		Article no. 50 593 ...		Article no. 50 594 ...		Article no. 50 594 ...	
mm	mm	mm	mm	mm	mm		£		£		£		£	
0.25	0.5	10	38	3.0		2					29.66	925		
0.30	1.0	10	38	3.0		2					27.26	930		
0.35	1.0	10	38	3.0		2					27.26	935		
0.40	1.0	10	38	3.0		2					27.26	940		
0.50	1.5	10	38	3.0		2					27.26	950		
0.60	1.5	10	38	3.0		2					27.26	960		
0.70	2.0	10	38	3.0		2					27.26	970		
0.80	2.0	10	38	3.0		2					27.26	980		
0.90	2.5	10	38	3.0		2					27.26	990		
1.00	3.0	22	50	3.0		2					28.66	010		
1.10	3.0	22	50	3.0		2					28.66	011		
1.20	4.0	22	50	3.0		2					28.66	012		
1.40	4.0	22	50	3.0		2					28.66	014		
1.50	4.0	22	50	3.0		2					28.66	015		
1.60	4.0	22	50	3.0		2					28.66	016		
1.80	5.0	22	50	3.0		2					28.66	018		
2.00	5.0	22	50	3.0	0.07	2					26.37	020		
2.00	8.0	8	32	2.0	0.07	2	13.44	020						
2.50	6.0	22	50	3.0	0.07	2					28.66	025		
2.50	8.0	8	32	2.5	0.07	2	13.44	025						
2.80	8.0	21	57	6.0	0.07	2							23.95	028
3.00	8.0	21	57	6.0	0.15	2							23.95	030
3.00	12.0	12	32	3.0	0.15	2	13.44	030						
3.50	12.0	12	32	3.5	0.15	2	13.44	035						
3.80	11.0	21	57	6.0	0.15	2							23.95	038
4.00	11.0	21	57	6.0	0.15	2							23.95	040
4.00	12.0	12	40	4.0	0.15	2	13.86	040						
4.50	14.0	22	50	4.5	0.15	2	16.91	045						
4.80	13.0	21	57	6.0	0.15	2							23.95	048
5.00	13.0	21	57	6.0	0.15	2							23.95	050
5.00	14.0	22	50	5.0	0.15	2	16.91	050						
5.50	16.0	22	50	5.5	0.15	2	19.95	055						
5.80	13.0	21	57	6.0	0.15	2							23.95	058
6.00	13.0	21	57	6.0	0.15	2							23.95	060
6.00	16.0	14	50	6.0	0.15	2			19.95	060				
6.50	16.0	16	50	6.5	0.15	2	25.88	065						
6.80	16.0	27	63	8.0	0.15	2							27.65	068
7.00	16.0	27	63	8.0	0.15	2							27.65	070
7.00	20.0	24	60	7.0	0.15	2	25.88	070						
7.50	20.0	24	60	7.5	0.15	2	26.00	075						
7.80	19.0	27	63	8.0	0.15	2							27.65	078

Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

→ v_c/f_z Page 350–353

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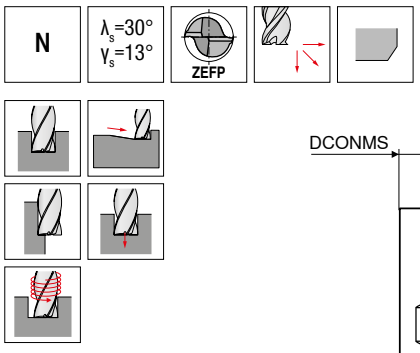
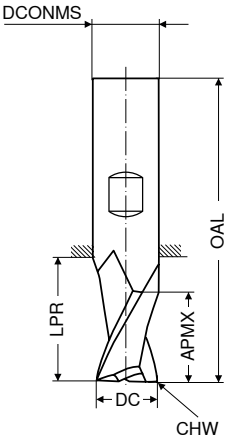
Continued on next page

End milling cutter



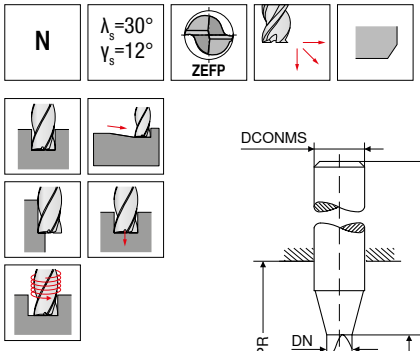


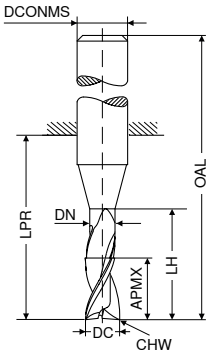
							Factory standard		Factory standard		≈DIN 6527		≈DIN 6527	
							HA		HB		HA		HB	
							V0		V0		V0		V0	
DC e8	APMX	LPR	OAL	DCONMS h5	CHW	ZEFP	Article no. 50 593 ...		Article no. 50 593 ...		Article no. 50 594 ...		Article no. 50 594 ...	
mm	mm	mm	mm	mm	mm		£		£		£		£	
8.00	18.0	24	60	8.0	0.15	2			26.00	080				
8.00	19.0	27	63	8.0	0.15	2							27.65	080
8.50	20.0	24	60	8.5	0.15	2	34.81	085						
8.70	19.0	32	72	10.0	0.15	2							42.77	087
9.00	19.0	32	72	10.0	0.15	2							42.77	090
9.00	20.0	24	60	9.0	0.15	2	34.81	090						
9.50	22.0	34	70	9.5	0.15	2	41.37	095						
9.70	22.0	32	72	10.0	0.15	2							42.77	097
10.00	20.0	30	70	10.0	0.15	2			41.37	100				
10.00	22.0	32	72	10.0	0.15	2							42.77	100
10.70	26.0	38	83	12.0	0.15	2							66.56	107
11.00	22.0	30	70	11.0	0.15	2	54.80	110						
11.00	26.0	38	83	12.0	0.15	2							66.56	110
11.70	26.0	38	83	12.0	0.15	2							66.56	117
12.00	20.0	25	70	12.0	0.15	2			54.80	120				
12.00	26.0	38	83	12.0	0.15	2							63.55	120
13.00	25.0	30	75	13.0	0.15	2	79.80	130						
13.70	26.0	38	83	14.0	0.15	2							81.37	137
14.00	22.0	30	75	14.0	0.15	2			75.53	140				
14.00	26.0	38	83	14.0	0.15	2							81.37	140
15.00	25.0	30	75	15.0	0.15	2	105.46	150						
15.70	32.0	44	92	16.0	0.15	2							107.31	157
16.00	22.0	27	75	16.0	0.15	2			99.35	160				
16.00	32.0	44	92	16.0	0.15	2							95.48	160
17.70	32.0	44	92	18.0	0.15	2							177.84	177
18.00	30.0	52	100	18.0	0.15	2			138.80	180				
18.00	32.0	44	92	18.0	0.15	2							126.41	180
19.70	38.0	54	104	20.0	0.15	2							234.40	197
20.00	30.0	50	100	20.0	0.15	2			147.07	200				
20.00	38.0	54	104	20.0	0.15	2							160.17	200

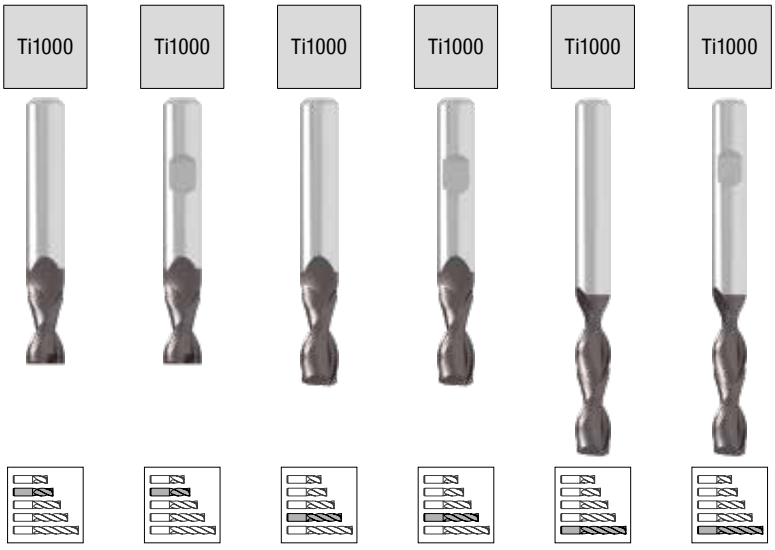
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

→ v_c/f_z Page 350–353

End milling cutter







									Factory standard		Factory standard		Factory standard		Factory standard		Factory standard	
									HA		HB		HA		HB		HA	HB
									V1		V1		V1		V1		V1	V1
DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 52 839 ...		Article no. 52 840 ...		Article no. 52 845 ...		Article no. 52 846 ...		Article no. 52 850 ...	Article no. 52 851 ...
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£	£
2.00	4	1.90	8	18	54	6	0.04	2	57.59	020	57.59	020						
2.00	5			10	38	3	0.04	2	47.05	021								
2.00	6			22	38	2	0.04	2					53.24	020				
2.00	7	1.90	10	22	58	6	0.04	2							63.11	020		
2.50	4	2.40	8	18	54	6	0.07	2	57.59	025	57.59	025						
2.50	6			10	38	3	0.07	2	45.07	026								
2.80	4	2.70	9	18	54	6	0.07	2	64.83	028	64.83	028						
2.80	7			22	38	3	0.07	2					58.51	028				
2.80	7	2.70	12	22	58	6	0.07	2							66.01	028		
3.00	6	2.90	9	18	54	6	0.07	2	57.59	030	57.59	030						
3.00	6			10	38	3	0.07	2	47.05	031								
3.00	7			22	38	3	0.07	2					53.24	030				
3.00	10	2.90	14	22	58	6	0.07	2							63.11	030		
3.00	20	2.90	24	32	60	3	0.07	2									84.86	030
3.50	6	3.30	9	18	54	6	0.07	2	57.59	035	57.59	035						
3.80	7	3.60	12	18	54	6	0.07	2	64.83	038	64.83	038						
3.80	8	3.60	20	22	50	4	0.07	2					59.94	038				
3.80	10	3.60	18	22	58	6	0.07	2							66.01	038		
4.00	7	3.80	12	18	54	6	0.07	2	57.59	040	57.59	040						
4.00	8	3.80	20	22	50	4	0.07	2					54.55	040				
4.00	13	3.80	18	22	58	6	0.07	2							63.11	040		
4.00	30	3.80	35	47	75	4	0.07	2									93.68	040
4.50	7	4.30	12	18	54	6	0.12	2	57.59	045	57.59	045						
4.80	8	4.60	16	18	54	6	0.12	2	64.83	048	64.83	048						
4.80	10	4.60	20	22	50	5	0.12	2					63.11	048				
4.80	13	4.60	18	22	58	6	0.12	2							66.01	048		
5.00	8	4.80	16	18	54	6	0.12	2	57.59	050	57.59	050						
5.00	10	4.80	20	22	50	5	0.12	2					57.31	050				
5.00	15	4.80	18	22	58	6	0.12	2							63.11	050		
5.00	30	4.80	35	47	75	5	0.12	2									100.27	050
5.50	8	5.30	16	18	54	6	0.12	2	57.59	055	57.59	055						
5.75	10	5.55	16	18	54	6	0.12	2	64.83	057	64.83	057						
5.75	15	5.55	18	22	58	6	0.12	2					67.20	057	67.20	057		
6.00	10	5.80	16	18	54	6	0.12	2	57.59	060	57.59	060						
6.00	16	5.80	20	22	58	6	0.12	2					63.11	060	63.11	060		
6.00	40	5.80	60	64	100	6	0.12	2									115.70	060 115.70 060
6.75	16	6.45	23	34	70	8	0.12	2					85.91	067	85.91	067		
7.00	12	6.70	18	23	59	8	0.12	2	74.32	070	74.32	070						
7.00	16	6.70	23	34	70	8	0.12	2					77.61	070	77.61	070		

Steel	●	●	●	●	●	●
Stainless steel	○	○	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys	○	○	○	○	○	○
hardened materials	○	○	○	○	○	○

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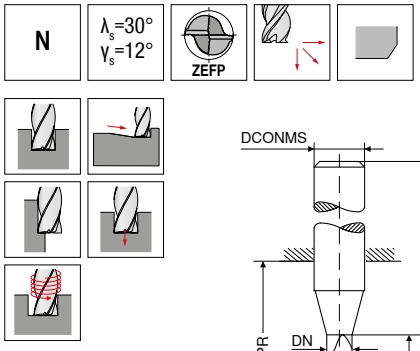
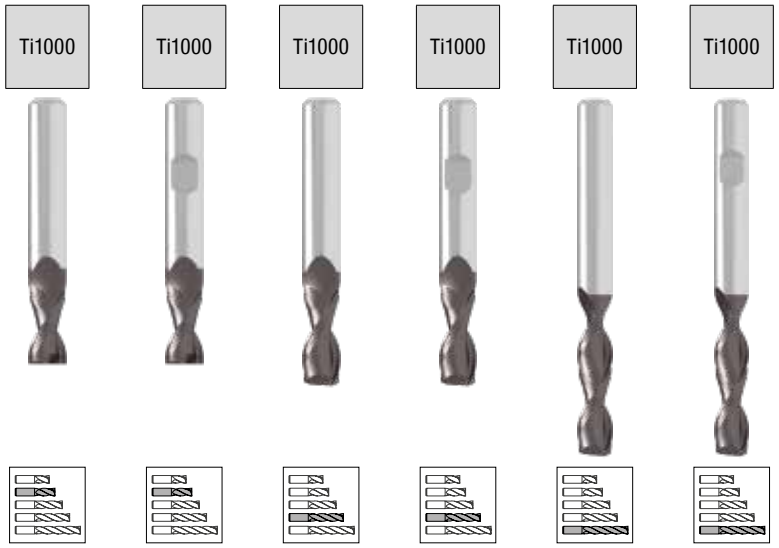
Continued on next page

End milling cutter





DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Factory standard HA V1 Article no. 52 839 ...		Factory standard HB V1 Article no. 52 840 ...		Factory standard HA V1 Article no. 52 845 ...		Factory standard HB V1 Article no. 52 846 ...		Factory standard HA V1 Article no. 52 850 ...		Factory standard HB V1 Article no. 52 851 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£		£	
7.75	12	7.45	18	23	59	8	0.12	2	74.97	077	74.97	077								
7.75	16	7.45	23	34	70	8	0.12	2					81.31	077	81.31	077				
8.00	12	7.70	20	23	59	8	0.12	2	67.34	080	67.34	080								
8.00	22	7.70	25	34	70	8	0.12	2					77.10	080	77.10	080				
8.00	40	7.70	60	64	100	8	0.12	2									133.73	080	133.73	080
9.00	13	8.70	22	27	67	10	0.20	2	116.62	090	116.62	090								
9.00	22	8.70	28	33	73	10	0.20	2					131.50	090	131.50	090				
9.70	13	9.40	22	27	67	10	0.20	2	117.80	097	117.80	097								
9.70	22	9.40	28	33	73	10	0.20	2					133.73	097	133.73	097				
10.00	13	9.70	24	27	67	10	0.20	2	103.04	100	103.04	100								
10.00	25	9.70	30	33	73	10	0.20	2					129.40	100	129.40	100				
10.00	40	9.70	55	60	100	10	0.20	2									182.62	100	182.62	100
11.00	25	10.60	32	39	84	12	0.20	2					177.88	110	177.88	110				
11.70	16	11.30	24	28	73	12	0.20	2	168.53	117	168.53	117								
11.70	25	11.30	32	39	84	12	0.20	2					179.73	117	179.73	117				
12.00	16	11.60	26	28	73	12	0.20	2	142.17	120	142.17	120								
12.00	26	11.60	35	39	84	12	0.20	2					173.53	120	173.53	120				
12.00	45	11.60	50	55	100	12	0.20	2									246.39	120	246.39	120
13.70	26	13.30	35	39	84	14	0.20	2					229.27	137	229.27	137				
14.00	16	13.60	28	30	75	14	0.20	2	192.37	140	192.37	140								
14.00	26	13.60	35	39	84	14	0.20	2					219.39	140	219.39	140				
16.00	20	15.50	32	35	83	16	0.20	2	214.24	160	214.24	160								
16.00	30	15.50	40	45	93	16	0.20	2					275.64	160	275.64	160				
16.00	65	15.50	90	102	150	16	0.20	2									557.21	160	557.21	160
18.00	20	17.50	34	37	85	18	0.20	2	273.93	180	273.93	180								
18.00	30	17.50	40	45	93	18	0.20	2					332.02	180	332.02	180				
20.00	25	19.50	40	43	93	20	0.30	2	345.08	200	345.08	200								
20.00	40	19.50	50	54	104	20	0.30	2					426.65	200	426.65	200				
20.00	65	19.50	90	100	150	20	0.30	2									690.41	200	690.41	200

Steel	●	●	●	●	●	●
Stainless steel	○	○	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys	○	○	○	○	○	○
hardened materials	○	○	○	○	○	○

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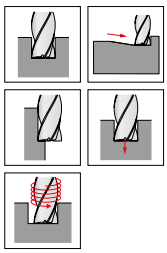
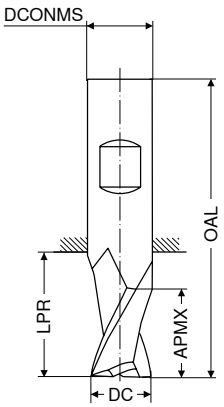
End milling cutter





DC e8	APMX	LPR	OAL	DCONMS h5	ZEFP	≈DIN 6527 HB V0 Article no. 50 614 ... £		≈DIN 6527 HB V0 Article no. 50 614 ... £	
mm	mm	mm	mm	mm					
3.0	8	21	57	6	3	25.47	030		
3.5	11	21	57	6	3	28.08	035		
3.5	15	23	59	6	3			43.31	036
4.0	11	21	57	6	3	25.47	040		
4.0	19	27	63	6	3			43.31	041
4.5	13	21	57	6	3	28.08	045		
4.5	19	27	63	6	3			43.31	046
5.0	13	21	57	6	3	25.03	050		
5.0	24	32	68	6	3			47.01	051
5.5	13	21	57	6	3	28.08	055		
5.5	24	32	68	6	3			47.01	056
6.0	13	21	57	6	3	25.47	060		
6.0	24	32	68	6	3			45.61	061
6.5	16	27	63	8	3	33.00	065		
6.5	30	44	80	8	3			64.71	066
7.0	16	27	63	8	3	32.02	070		
7.0	30	44	80	8	3			64.71	071
7.5	19	27	63	8	3	30.19	075		
7.5	30	44	80	8	3			64.71	076
8.0	19	27	63	8	3	29.66	080		
8.0	38	52	88	8	3			59.57	081
8.5	19	32	72	10	3	45.58	085		
8.5	38	48	88	10	3			102.04	086
9.0	19	32	72	10	3	45.58	090		
9.0	38	48	88	10	3			102.04	091
9.5	22	32	72	10	3	53.18	095		
9.5	38	48	88	10	3			102.04	096
10.0	22	32	72	10	3	47.59	100		
10.0	45	55	95	10	3			99.35	101
11.0	26	38	83	12	3	75.53	110		
11.0	45	57	102	12	3			142.95	111
12.0	26	38	83	12	3	68.40	120		
12.0	53	65	110	12	3			142.95	121
14.0	26	38	83	14	3	87.79	140		
14.0	53	65	110	14	3			181.54	141
16.0	32	44	92	16	3	120.28	160		
16.0	63	75	123	16	3			249.66	161
18.0	32	44	92	18	3	145.79	180		
18.0	63	75	123	18	3			301.39	181
20.0	38	54	104	20	3	189.25	200		
20.0	75	91	141	20	3			402.43	201

Steel	○	○
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

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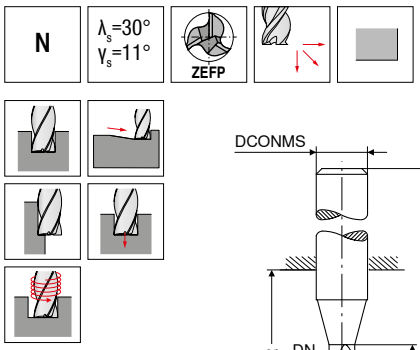
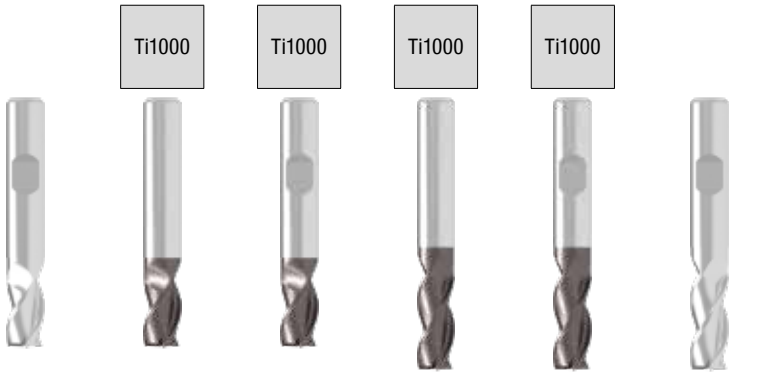
End milling cutter



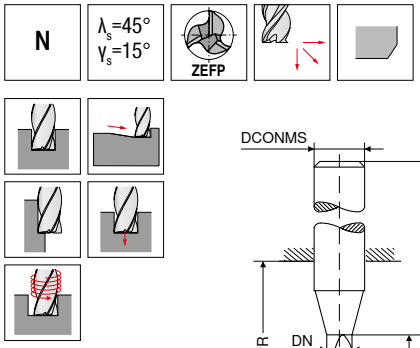


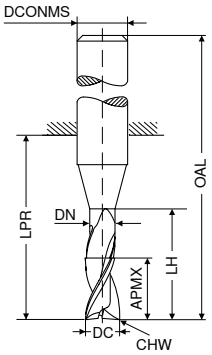
								Factory standard		Factory standard		Factory standard		Factory standard		Factory standard		Factory standard	
								HB		HA		HB		HA		HB		HB	
								V1		V1		V1		V1		V1		V1	
DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 52 823 ...		Article no. 52 821 ...		Article no. 52 822 ...		Article no. 52 826 ...		Article no. 52 827 ...		Article no. 52 828 ...	
mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£		£	
1.00	4	1.00		22	58	6	3							63.11	010	63.11	010	50.59	010
1.50	3	1.40	6	18	54	6	3	46.38	015	57.59	015	57.59	015						
1.50	3	1.40	6	10	38	3	3			53.76	016								
1.50	6	1.50		22	58	6	3							63.11	015	63.11	015	50.59	015
2.00	4	1.90	8	18	54	6	3	46.38	020	57.59	020	57.59	020						
2.00	4	1.90	8	10	38	3	3			53.76	021								
2.00	7	2.00		22	58	6	3							63.11	020	63.11	020	50.59	020
2.50	4	2.40	8	18	54	6	3	46.26	025	57.59	025	57.59	025						
2.50	4	2.40	8	10	38	3	3			53.76	026								
2.80	6	2.70	9	18	54	6	3	54.69	028	65.89	028	65.89	028						
3.00	6	2.90	9	18	54	6	3	46.38	030	57.59	030	57.59	030						
3.00	6	2.90	9	10	38	3	3			53.76	031								
3.00	10	2.90	14	22	58	6	3							63.11	030	63.11	030	50.59	030
3.50	6	3.30	9	18	54	6	3	46.26	035	57.59	035	57.59	035						
3.80	6	3.60	12	18	54	6	3	54.69	038	65.89	038	65.89	038						
4.00	7	3.80	12	18	54	6	3	46.38	040	57.59	040	57.59	040						
4.00	13	3.80	17	22	58	6	3							63.11	040	63.11	040	50.59	040
4.50	7	4.30	12	18	54	6	3	46.26	045	57.59	045	57.59	045						
4.80	8	4.60	16	18	54	6	3	54.69	048	65.89	048	65.89	048						
5.00	8	4.80	16	18	54	6	3	46.38	050	57.59	050	57.59	050						
5.00	15	4.80	19	22	58	6	3							63.11	050	63.11	050	50.59	050
5.50	8	5.30	16	18	54	6	3	46.26	055	57.59	055	57.59	055						
5.75	8	5.55	16	18	54	6	3	54.95	057	66.28	057	66.28	057						
6.00	10	5.80	16	18	54	6	3	46.38	060	57.59	060	57.59	060						
6.00	16	5.80	20	22	58	6	3							63.11	060	63.11	060	50.59	060
7.00	19	6.70	23	28	64	8	3							84.33	070	84.33	070	63.91	070
7.75	10	7.45	18	22	58	8	3	61.29	077	77.10	077	77.10	077						
8.00	12	7.70	20	23	59	8	3	51.80	080	67.34	080	67.34	080						
8.00	22	7.70	26	34	70	8	3							77.10	080	77.10	080	57.83	080
9.00	23	8.70	28	32	72	10	3							141.64	090	141.64	090	114.64	090
9.70	12	9.40	18	19	59	10	3	96.73	097	117.80	097	117.80	097						
10.00	13	9.70	24	27	67	10	3	81.82	100	103.04	100	103.04	100						
10.00	25	9.70	31	33	73	10	3							129.40	100	129.40	100	103.84	100
11.00	25	10.60	34	38	83	12	3							190.00	110	190.00	110	154.82	110
11.70	16	11.30	20	22	67	12	3	134.40	117	162.72	117	162.72	117						
12.00	16	11.60	26	28	73	12	3	113.58	120	142.04	120	142.04	120						
12.00	26	11.60	37	39	84	12	3							173.53	120	173.53	120	140.06	120
14.00	16	13.60	28	30	75	14	3	159.58	140	192.37	140	192.37	140						
14.00	26	13.60	37	39	84	14	3							219.65	140	219.65	140	180.12	140
16.00	20	15.50	32	35	83	16	3	173.79	160	214.24	160	214.24	160						
16.00	32	15.50	43	45	93	16	3							275.64	160	275.64	160	220.97	160
18.00	20	17.50	34	37	85	18	3	232.28	180	273.93	180	273.93	180						
18.00	32	17.50	43	45	93	18	3							332.02	180	332.02	180	271.81	180
20.00	25	19.50	40	43	93	20	3	293.83	200	345.08	200	345.08	200						
20.00	40	19.50	52	54	104	20	3							426.65	200	426.65	200	351.14	200

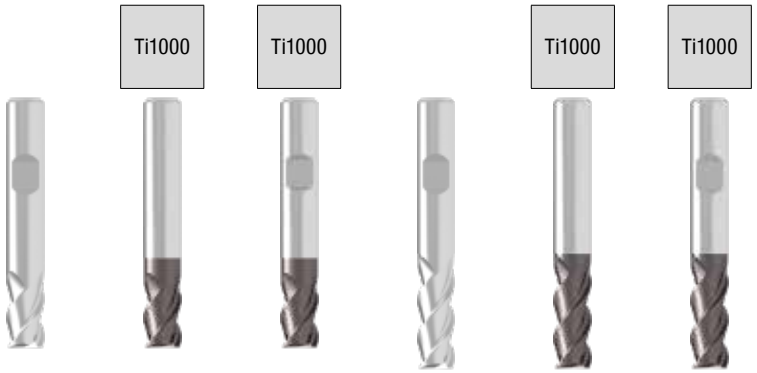
Steel	●	●	●	●	●	●
Stainless steel	○	○	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys	○	○	○	○	○	○
hardened materials		○	○	○	○	

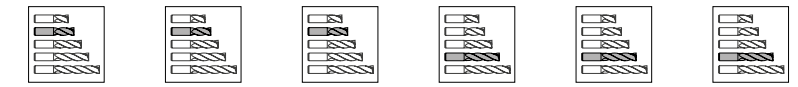
→ v_c/f_z Page 350–353

End milling cutter







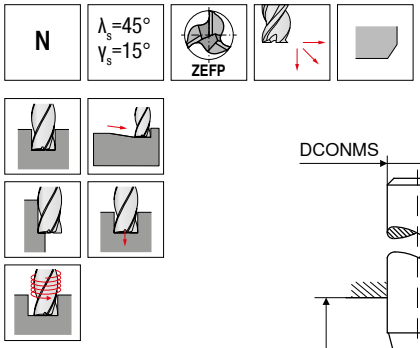


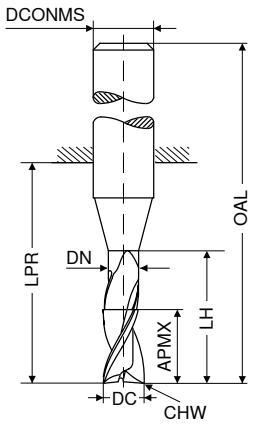
									Factory standard		Factory standard		Factory standard		Factory standard		Factory standard	
									HB		HA		HB		HB		HA		HB	
									V1		V1		V1		V1		V1		V1	
DC e8	APMX	DN	LH	LPR	OAL	CHW	DCONMS h6	ZEFP	Article no. 52 831 ...		Article no. 52 829 ...		Article no. 52 830 ...		Article no. 52 834 ...		Article no. 52 832 ...		Article no. 52 833 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£		£	
2.0	4	1.9	8	18	54	0.04	6	3	46.38	020	57.59	020	57.59	020						
2.0	7	1.9	10	22	58	0.04	6	3							50.59	020	63.11	020	63.11	020
2.5	5	2.4	8	18	54	0.07	6	3	46.38	025	57.59	025	57.59	025						
3.0	6	2.9	9	18	54	0.07	6	3	46.38	030	57.59	030	57.59	030						
3.0	10	2.9	14	22	58	0.07	6	3							50.59	030	63.11	030	63.11	030
4.0	7	3.8	12	18	54	0.07	6	3	46.38	040	57.59	040	57.59	040						
4.0	13	3.8	17	22	58	0.07	6	3							50.59	040	63.11	040	63.11	040
5.0	8	4.8	16	18	54	0.12	6	3	46.38	050	57.59	050	57.59	050						
5.0	15	4.8	19	22	58	0.07	6	3							50.59	050	63.11	050	63.11	050
6.0	10	5.8	16	18	54	0.12	6	3	46.38	060	57.59	060	57.59	060						
6.0	16	5.8	20	22	58	0.12	6	3							50.59	060	63.11	060	63.11	060
7.0	11	6.7	18	23	59	0.12	8	3	57.20	070	73.65	070	73.65	070						
7.0	19	6.7	23	34	70	0.12	8	3							63.91	070	84.33	070	84.33	070
8.0	12	7.7	20	23	59	0.12	8	3	51.80	080	67.34	080	67.34	080						
8.0	22	7.7	26	34	70	0.12	8	3							57.83	080	77.10	080	77.10	080
9.0	13	8.7	22	27	67	0.20	10	3	90.40	090	112.65	090	112.65	090						
9.0	23	8.7	28	33	73	0.12	10	3							114.64	090	141.64	090	141.64	090
10.0	14	9.7	24	27	67	0.20	10	3	81.82	100	103.04	100	103.04	100						
10.0	25	9.7	31	33	73	0.20	10	3							103.84	100	129.40	100	129.40	100
12.0	16	11.6	26	28	73	0.20	12	3	113.58	120	142.04	120	142.04	120						
12.0	28	11.6	37	39	84	0.20	12	3							140.06	120	173.53	120	173.53	120
14.0	18	13.6	28	30	75	0.20	14	3	159.58	140	192.11	140	192.11	140						
14.0	30	13.6	37	39	84	0.20	14	3							180.12	140	219.65	140	219.65	140
16.0	20	15.5	32	35	83	0.20	16	3	173.79	160	214.24	160	214.24	160						
16.0	35	15.5	43	45	93	0.20	16	3							220.97	160	275.64	160	275.64	160
18.0	20	17.5	34	37	85	0.20	18	3	232.28	180	273.93	180	273.93	180						
18.0	35	17.5	43	45	93	0.20	18	3							271.81	180	332.02	180	332.02	180
20.0	25	19.5	40	43	93	0.30	20	3	293.83	200	345.08	200	345.08	200						
20.0	40	19.5	52	54	104	0.20	20	3							351.14	200	426.38	200	426.38	200

Steel	○	○	○	○	○	○
Stainless steel	●	●	●	●	●	●
Cast iron	○	○	○	○	○	○
Non ferrous metals	●	●	●	●	●	●
Heat resistant alloys	●	●	●	●	●	●
hardened materials		○	○		○	○

→ v_c/f_z Page 350–353

End milling cutter





Factory standard | Factory standard

HA | HB

V1 | V1

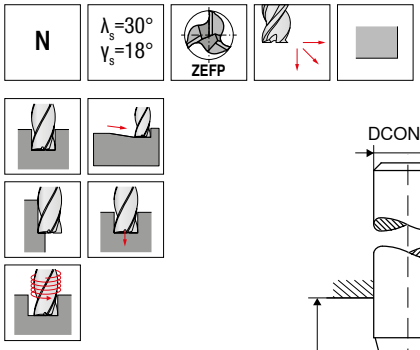
DC e8	DN	APMX	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 52 835 ...		Article no. 52 836 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
3	3.0	20	20	24	60	6	0.07	3	140.99	030	140.99	030
4	3.8	30	35	39	75	6	0.07	3	140.99	040	140.99	040
5	4.8	30	35	39	75	6	0.12	3	140.99	050	140.99	050
6	5.8	40	60	64	100	6	0.12	3	127.55	060	127.55	060
8	7.7	40	60	64	100	8	0.12	3	144.66	080	144.66	080
10	9.7	40	55	60	100	10	0.20	3	190.65	100	190.65	100
12	11.6	45	50	55	100	12	0.20	3	259.15	120	259.15	120
14	13.6	45	50	55	100	14	0.20	3	427.17	140	427.17	140
16	15.5	65	90	102	150	16	0.20	3	579.73	160	579.73	160
18	17.5	65	90	102	150	18	0.20	3	641.93	180	641.93	180
20	19.5	65	90	100	150	20	0.30	3	723.88	200	723.88	200

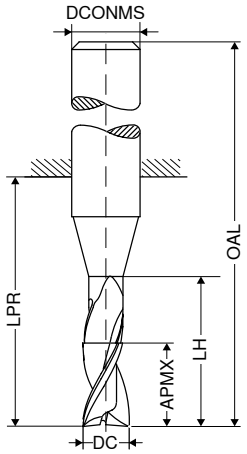
Steel	○	○
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	●	●
Heat resistant alloys	●	●
hardened materials	○	○

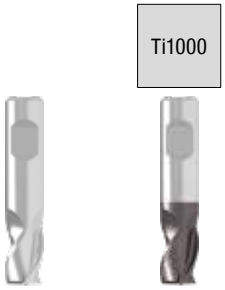
→ v_c/f_z Page 350–355

Mini milling cutter

▲ Shank similar to DIN 6535







Factory standard | Factory standard

HB | HB

V0 | V0

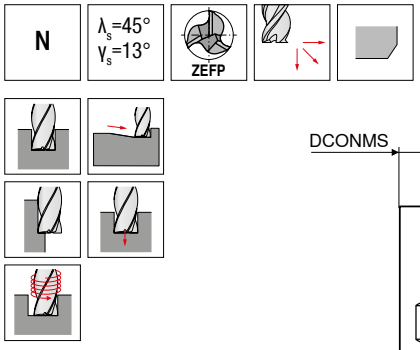
DC e8	APMX	LH	LPR	OAL	DCONMS h5	ZEFP	Article no. 50 598 ...		Article no. 50 599 ...	
mm	mm	mm	mm	mm	mm		£		£	
2.00	4	4.0	10	35	6	3	16.68	020	23.21	020
2.50	4	4.0	10	35	6	3	17.50	025	23.95	025
3.00	5	5.0	10	36	6	3	16.68	030	23.21	030
3.50	5	5.0	10	36	6	3	17.50	035	23.95	035
4.00	7	7.0	12	38	6	3	16.65	040	21.96	040
4.50	7	7.0	12	38	6	3	17.50	045	23.95	045
5.00	8	8.0	13	39	6	3	16.65	050	22.09	050
5.50	8	8.0	13	39	6	3	17.50	055	24.19	055
5.75	8	8.0	13	39	6	3	17.50	057	24.19	057
6.00	8	8.5	13	39	6	3	16.65	060	22.09	060
6.75	11	11.5	16	43	8	3	23.38	067	29.66	067
7.00	11	11.5	16	43	8	3	22.38	070	28.08	070
7.75	11	11.5	16	43	8	3	23.81	077	30.36	077
8.00	11	11.5	16	43	8	3	25.81	080	29.94	080
8.70	13	13.5	18	50	10	3	36.65	087	44.63	087
9.00	13	13.5	18	50	10	3	32.87	090	40.41	090
9.70	13	13.5	18	50	10	3	36.65	097	44.63	097
10.00	13	13.5	18	50	10	3	35.79	100	42.91	100
12.00	15	15.5	24	55	12	3	47.47	120	55.59	120
14.00	15	15.5	26	58	14	3	81.23	140	87.79	140
16.00	18	18.5	28	62	16	3	90.79	160	100.18	160
18.00	20	20.5	35	70	18	3	114.45	180	125.40	180
20.00	22	22.5	40	75	20	3	146.07	200	155.19	200

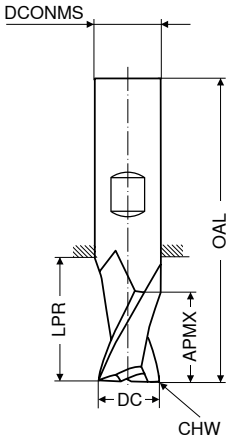
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		○

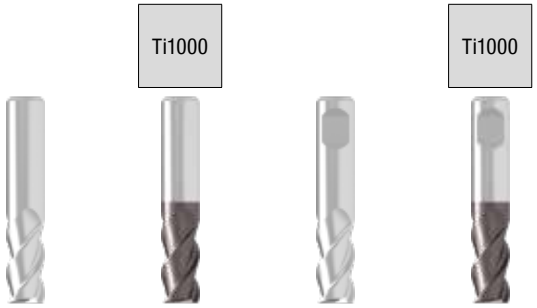
→ v_c/f_z Page 350–353

Mini milling cutter

▲ Shank similar to DIN 6535



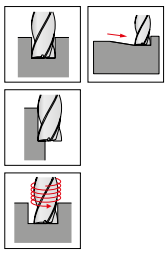


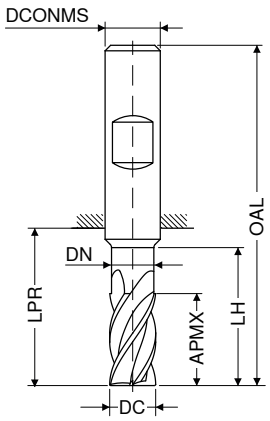


DC e8	APMX	LPR	OAL	DCONMS h5	CHW	ZEFP	Factory standard ~HA V0 Article no. 50 608 ...		Factory standard ~HA V0 Article no. 50 609 ...		Factory standard HB V0 Article no. 50 608 ...		Factory standard HB V0 Article no. 50 609 ...	
mm	mm	mm	mm	mm	mm		£		£		£		£	
0.5	1.5	17	45	3	0.08	3	17.90	005	22.38	005				
1.0	2.0	17	45	3	0.08	3	17.90	010	22.38	010				
1.5	3.0	17	45	3	0.08	3	17.90	015	22.38	015				
1.8	3.0	17	45	3	0.08	3			22.38	018				
2.0	4.0	19	45	6	0.08	3					18.89	020	23.21	020
2.5	6.0	19	45	6	0.15	3					18.89	025	23.21	025
2.8	6.0	19	45	6	0.15	3							23.21	028
3.0	6.0	19	45	6	0.15	3					18.89	030	23.21	030
3.8	7.0	19	45	6	0.15	3							23.21	038
4.0	7.0	19	45	6	0.15	3					20.10	040	23.21	040
4.8	8.0	19	45	6	0.15	3							23.21	048
5.0	8.0	19	45	6	0.15	3					20.52	050	23.21	050
5.7	10.0	19	45	6	0.15	3							23.21	057
6.0	10.0	19	45	6	0.15	3					20.52	060	23.21	060
6.7	10.0	26	55	8	0.15	3							23.21	067
7.0	12.0	26	55	8	0.15	3					29.23	070	23.21	070
7.8	12.0	26	55	8	0.15	3							33.00	078
8.0	13.0	26	55	8	0.15	3					29.23	080	33.00	080
8.7	14.0	28	55	10	0.15	3							39.99	087
9.7	16.0	28	55	10	0.15	3							39.99	097
10.0	16.0	28	55	10	0.15	3					41.37	100	39.99	100
Steel							○		○		○		○	
Stainless steel							●		●		●		●	
Cast iron							○		○		○		○	
Non ferrous metals							○		○		○		○	
Heat resistant alloys							●		●		●		●	
hardened materials									●				●	

→ v_c/f_z Page 350–353

End milling cutter





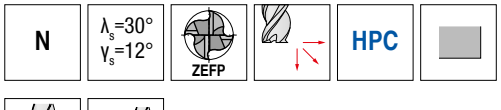
	Factory standard	Factory standard
	HB	HB
	V1	V1
DC e8 / APMX / DN / LH / LPR / OAL / DCONMS h6 / ZEFP	Article no. 52 309 ...	Article no. 52 313 ...
mm / mm / mm / mm / mm / mm / mm	£	£
2 / 4 / 1.9 / 8 / 18 / 54 / 6 / 4	44.79 020	
2 / 7 /		49.02 020
3 / 6 / 2.9 / 9 / 18 / 54 / 6 / 4	44.79 030	
3 / 10 / 2.8 / 14 / 22 / 58 / 6 / 4		49.02 030
4 / 7 / 3.8 / 12 / 18 / 54 / 6 / 4	44.79 040	
4 / 13 / 3.8 / 17 / 22 / 58 / 6 / 4		49.02 040
5 / 8 / 4.8 / 16 / 18 / 54 / 6 / 4	44.79 050	
5 / 15 / 4.8 / 19 / 22 / 58 / 6 / 4		49.02 050
6 / 10 / 5.8 / 16 / 18 / 54 / 6 / 4	44.79 060	
6 / 16 / 5.7 / 20 / 22 / 58 / 6 / 4		49.02 060
7 / 19 / 6.7 / 23 / 27 / 63 / 8 / 4		60.34 070
8 / 12 / 7.7 / 20 / 22 / 58 / 8 / 4	50.06 080	
8 / 22 / 7.7 / 26 / 34 / 70 / 8 / 4		56.01 080
9 / 23 / 8.7 / 28 / 33 / 73 / 10 / 4		105.95 090
10 / 14 / 9.7 / 24 / 26 / 66 / 10 / 4	79.05 100	
10 / 25 / 9.6 / 31 / 33 / 73 / 10 / 4		100.27 100
11 / 26 / 10.6 / 34 / 39 / 84 / 12 / 4		142.97 110
12 / 16 / 11.6 / 26 / 28 / 73 / 12 / 4	109.76 120	
12 / 28 / 11.6 / 37 / 39 / 84 / 12 / 4		135.31 120
14 / 18 / 13.6 / 28 / 30 / 75 / 14 / 4	154.16 140	
14 / 30 / 13.6 / 37 / 36 / 84 / 14 / 4		174.06 140
16 / 22 / 15.5 / 32 / 34 / 82 / 16 / 4	167.87 160	
16 / 35 / 15.6 / 43 / 45 / 93 / 16 / 4		213.58 160
18 / 20 / 17.5 / 34 / 36 / 80 / 18 / 4	224.38 180	
18 / 35 / 17.6 / 43 / 43 / 93 / 18 / 4		262.61 180
20 / 25 / 19.5 / 40 / 42 / 92 / 20 / 4	283.95 200	
20 / 40 / 19.6 / 52 / 54 / 104 / 20 / 4		339.27 200

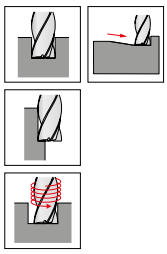
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

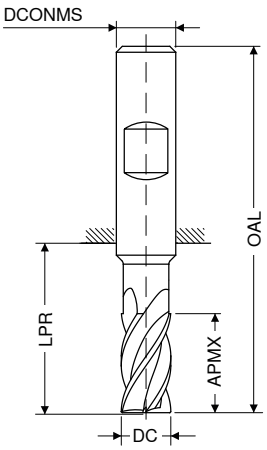
→ v_c/f_z Page 350–353

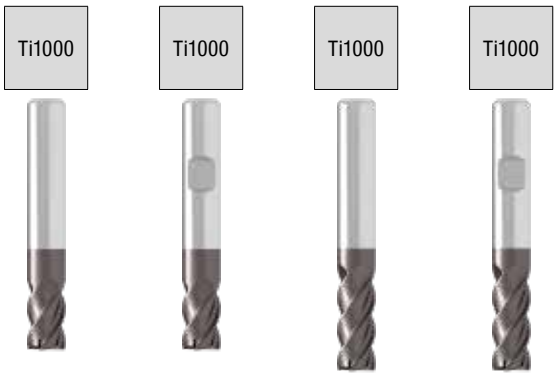
End milling cutter

▲ Cutting edges with irregular pitch







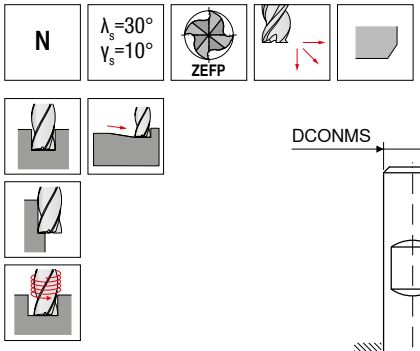


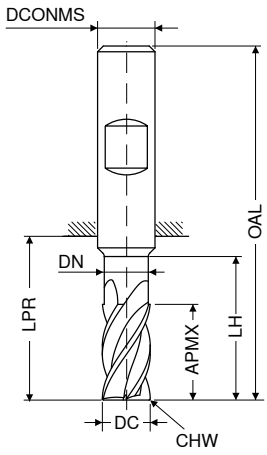
						DIN 6527		DIN 6527		DIN 6527		≈DIN 6527	
						HA		HB		HA		HB	
						V1		V1		V1		V1	
DC e8	APMX	LPR	OAL	DCONMS h6	ZEFP	Article no. 52 121 ...		Article no. 52 131 ...		Article no. 52 126 ...		Article no. 52 132 ...	
mm	mm	mm	mm	mm		£		£		£		£	
3.0	6	18	54	6	4	64.29	030	56.99	030				
3.0	10	22	58	6	4					68.79	030	62.30	030
3.5	7	18	54	6	4	64.29	035	56.99	035				
3.5	13	22	58	6	4					68.79	035	62.30	035
4.0	7	18	54	6	4	64.29	040	56.99	040				
4.0	13	22	58	6	4					68.79	040	62.30	040
4.5	8	18	54	6	4	64.29	045	56.99	045				
4.5	15	22	58	6	4					68.79	045	62.30	045
5.0	8	18	54	6	4	64.29	050	56.99	050				
5.0	15	22	58	6	4					68.79	050	62.30	050
6.0	10	18	54	6	4	93.52	060	56.99	060				
6.0	16	22	58	6	4					111.98	060	62.30	060
8.0	12	23	59	8	4	110.46	080	65.99	080				
8.0	22	34	70	8	4					129.46	080	75.69	080
10.0	14	27	67	10	4	141.84	100	98.56	100				
10.0	25	33	73	10	4					170.33	100	123.83	100
12.0	16	28	73	12	4	202.20	120	137.08	120				
12.0	28	39	84	12	4					247.94	120	160.73	120
14.0	16	30	75	14	4	266.54	140	184.25	140				
14.0	30	39	84	14	4					315.25	140	199.51	140
16.0	20	35	83	16	4	291.92	160	204.63	160				
16.0	35	45	93	16	4					388.69	160	246.82	160
18.0	20	32	80	18	4	384.75	180	241.83	180				
18.0	35	45	93	18	4					458.30	180	292.27	180
20.0	25	43	93	20	4	457.23	200	303.40	200				
20.0	40	54	104	20	4					546.91	200	376.05	200

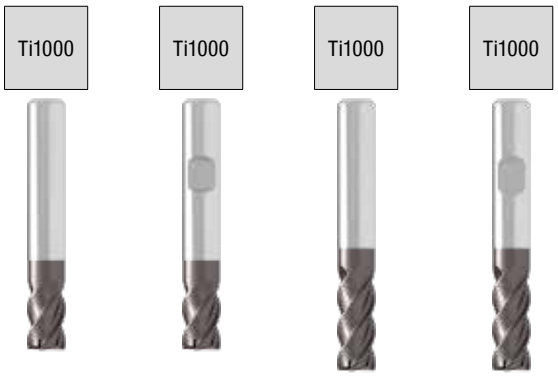
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

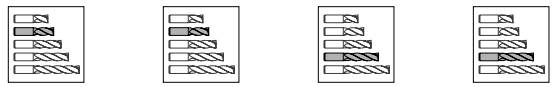
→ v_c/f_z Page 350–353

End milling cutter









Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB

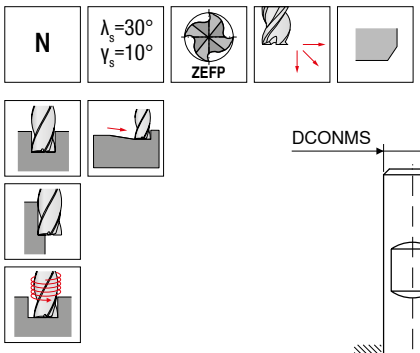
V1 | V1 | V1 | V1

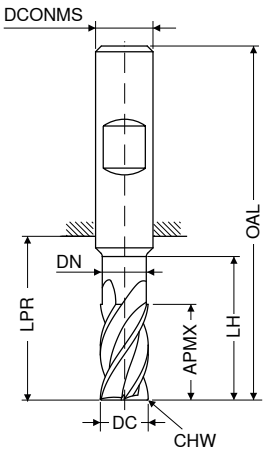
DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 52 306 ...		Article no. 52 307 ...		Article no. 52 310 ...		Article no. 52 311 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
1.5	3	1.4	6	10	38	3	0.02	4	51.53	015						
2.0	4	1.9	8	10	38	3	0.03	4	51.53	021						
2.0	4	1.9	8	18	54	6	0.03	4	58.38	020	58.38	020				
2.0	7			10	38	2	0.03	4					39.26	020		
2.5	4	2.4	8	10	38	3	0.04	4	51.53	025						
3.0	6	2.9	9	10	38	3	0.04	4	51.53	031						
3.0	6	2.9	9	18	54	6	0.04	4	58.38	030	58.38	030				
3.0	10	2.8	14	14	38	3	0.03	4					40.72	030		
4.0	7	3.8	12	18	54	6	0.05	4	58.38	040	58.38	040				
4.0	13	3.8	17	22	50	4	0.04	4					43.09	040		
5.0	8	4.8	16	18	54	6	0.06	4	58.38	050	58.38	050				
5.0	15	4.8	19	22	50	5	0.04	4					53.50	050		
6.0	10	5.8	16	18	54	6	0.07	4	58.38	060	58.38	060				
6.0	16	5.7	20	22	58	6	0.04	4					60.75	060	60.75	060
7.0	19	6.7	23	27	63	8	0.05	4					78.67	070	78.67	070
8.0	12	7.7	20	22	58	8	0.08	4	68.25	080	68.25	080				
8.0	22	7.7	26	34	70	8	0.06	4					74.18	080	74.18	080
9.0	23	8.7	28	33	73	10	0.07	4					131.63	090	131.63	090
10.0	14	9.7	24	26	66	10	0.10	4	104.49	100	104.49	100				
10.0	25	9.6	31	33	73	10	0.08	4					124.39	100	124.39	100
11.0	26	10.6	34	39	84	12	0.10	4					176.29	110	176.29	110
12.0	16	11.6	26	28	73	12	0.13	4	144.16	120	144.16	120				
12.0	28	11.6	37	39	84	12	0.13	4					166.94	120	166.94	120
14.0	18	13.6	28	30	75	14	0.15	4	195.13	140	195.13	140				
14.0	30	13.6	37	36	84	14	0.15	4					211.08	140	211.08	140
16.0	22	15.5	32	34	82	16	0.18	4	217.40	160	217.40	160				
16.0	35	15.6	43	45	93	16	0.18	4					265.11	160	265.11	160
18.0	20	17.5	34	36	80	18	0.18	4	277.88	180	277.88	180				
18.0	35	17.6	43	43	93	18	0.18	4					319.24	180	319.24	180
20.0	25	19.5	40	42	92	20	0.20	4	350.09	200	350.09	200				
20.0	40	19.6	52	54	104	20	0.20	4					410.03	200	410.03	200

Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

→ v_c/f_z Page 350–353

End milling cutter





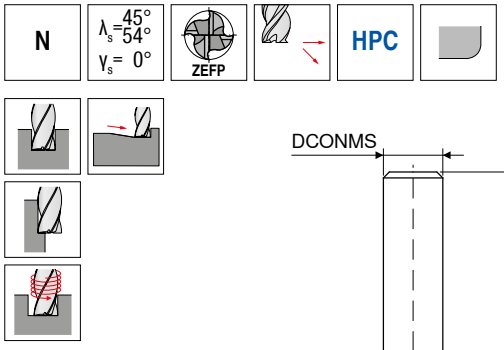
									Factory standard		Factory standard		Factory standard		Factory standard	
									HA		HA		HB		HB	
									V1		V1		V1		V1	
DC e8	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 52 315 ...		Article no. 52 314 ...		Article no. 52 315 ...		Article no. 52 314 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
3	16	2.8	32	47	75	3	0.04	4	63.78	032	75.24	032				
4	16	3.8	32	47	75	4	0.05	4	61.14	042	78.67	042				
4	20	3.8	48	72	100	4	0.05	4	73.40	043	83.81	043				
5	20	4.8	35	47	75	5	0.06	4	73.79	052	87.24	052				
5	25	4.8	55	72	100	5	0.06	4	77.20	053	97.13	053				
6	24	5.8	42	44	80	6	0.07	4					98.28	060	111.23	060
6	30	5.8	62	64	100	6	0.07	4					111.73	061	128.47	061
8	32	7.8	60	64	100	8	0.08	4					119.36	080	138.75	080
8	40	7.8	75	84	120	8	0.08	4					139.01	081	166.81	081
10	40	9.8	58	60	100	10	0.10	4					161.27	100	189.34	100
10	50	9.8	78	80	120	10	0.10	4					187.37	101	228.08	101
12	48	11.8	60	75	120	12	0.13	4					234.79	120	277.48	120
12	60	11.8	90	105	150	12	0.13	4					283.29	121	329.40	121
14	45	13.8	50	52	100	14	0.15	4					309.11	140	354.69	140
14	56	13.8	95	102	150	14	0.15	4					343.63	141	399.24	141
16	50	15.8	70	77	125	16	0.18	4					353.78	160	408.20	160
16	65	15.8	95	102	150	16	0.18	4					406.87	161	461.81	161
18	55	17.8	75	80	130	18	0.18	4					495.16	180	576.32	180
18	72	17.8	95	100	150	18	0.18	4					569.85	181	662.35	181
20	60	19.8	80	85	135	20	0.20	4					599.11	200	707.94	200
20	80	19.8	95	100	150	20	0.20	4					650.89	201	771.45	201
25	75	24.5	90	94	150	25	0.25	4					806.35	250	932.17	250

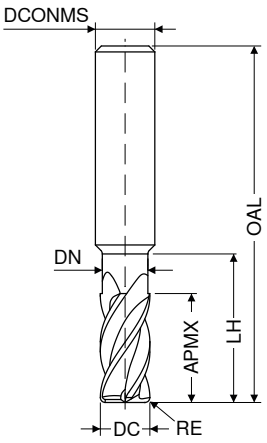
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials		○		○

→ v_c/f_z Page 350–355

End milling cutter with corner radius

▲ optimal quiet running with irregular helix





Factory standard

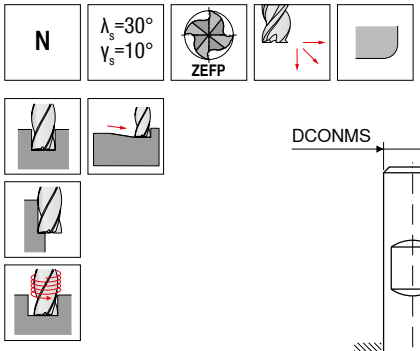
HA

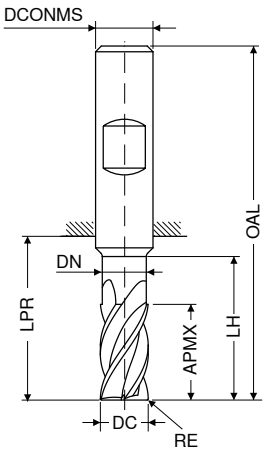
DC e8	RE ±0,01	APMX	DN	LH	OAL	DCONMS h6	ZEFP	V1 Article no. 52 102 ...	
mm	mm	mm	mm	mm	mm	mm		£	
2	0.2	7	1.8	11	58	6	4	88.93	022
3	0.3	8	2.8	13	58	6	4	85.22	033
4	0.4	11	3.8	16	58	6	4	81.66	044
5	0.5	13	4.8	18	58	6	4	81.66	055
6	0.5	16	5.8	26	58	6	4	84.94	065
6	1.0	16	5.8	26	58	6	4	84.94	066
8	0.5	22	7.8	32	64	8	4	121.14	085
8	1.0	22	7.8	32	64	8	4	121.14	086
8	1.5	22	7.8	32	64	8	4	121.14	087
10	0.5	25	9.8	35	73	10	4	153.89	105
10	1.0	25	9.8	35	73	10	4	153.89	106
10	1.5	25	9.8	35	73	10	4	153.89	107
12	0.5	28	11.8	38	84	12	4	205.91	125
12	1.0	28	11.8	38	84	12	4	205.91	126
12	1.5	28	11.8	38	84	12	4	205.91	127

Steel	○
Stainless steel	●
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	○

→ v_c/f_z Page 350–353

End milling cutter with corner radius





≈DIN 6527

HA

V1

≈DIN 6527

HB

V1

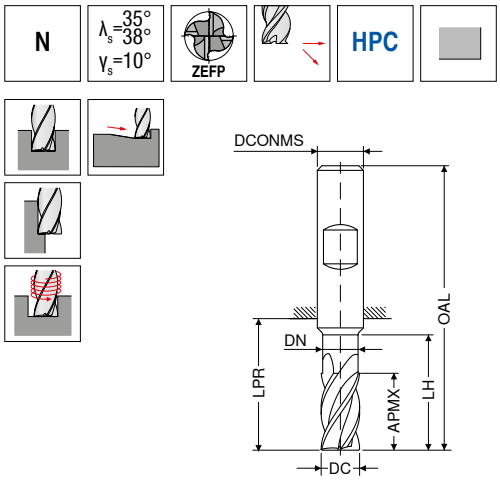
DC e8	RE ±0,01	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 52 316 ...		Article no. 52 317 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
3	0.3	8	2.8	13	21	57	6	4	120.44	031	120.44	031
3	0.5	8	2.8	13	21	57	6	4	120.44	032	120.44	032
4	0.3	11	3.8	16	21	57	6	4	116.46	041	116.46	041
4	0.5	11	3.8	16	21	57	6	4	116.46	042	116.46	042
5	0.3	13	4.8	18	21	57	6	4	116.46	051	116.46	051
5	0.5	13	4.8	18	21	57	6	4	116.46	052	116.46	052
6	0.5	13	5.8	26	31	57	6	4	101.60	062	101.60	062
6	1.0	13	5.8	26	31	57	6	4	101.60	064	101.60	064
6	1.5	13	5.8	26	31	57	6	4	101.60	065	101.60	065
8	0.5	19	7.8	32	35	63	8	4	155.75	082	155.75	082
8	1.0	19	7.8	32	35	63	8	4	155.75	084	155.75	084
8	1.5	19	7.8	32	35	63	8	4	155.75	085	155.75	085
8	2.0	19	7.8	32	35	63	8	4	155.75	086	155.75	086
10	1.0	22	9.8	35	36	72	10	4	194.62	104	194.62	104
10	1.5	22	9.8	35	36	72	10	4	194.62	105	194.62	105
10	2.0	22	9.8	35	36	72	10	4	194.62	106	194.62	106
12	1.0	26	11.8	38	38	83	12	4	257.60	124	257.60	124
12	1.5	26	11.8	38	38	83	12	4	257.60	125	257.60	125
12	2.0	26	11.8	38	38	83	12	4	257.60	126	257.60	126
12	3.0	26	11.8	38	38	83	12	4	257.60	128	257.60	128
16	1.0	32	15.8	44	44	92	16	4	430.85	164	430.85	164
16	1.5	32	15.8	44	44	92	16	4	430.85	165	430.85	165
16	2.0	32	15.8	44	44	92	16	4	430.85	166	430.85	166
16	3.0	32	15.8	44	44	92	16	4	430.85	168	430.85	168
20	1.5	38	19.8	52	54	104	20	4	631.66	205	631.66	205
20	2.0	38	19.8	52	54	104	20	4	631.66	206	631.66	206
20	3.0	38	19.8	52	54	104	20	4	631.66	208	631.66	208

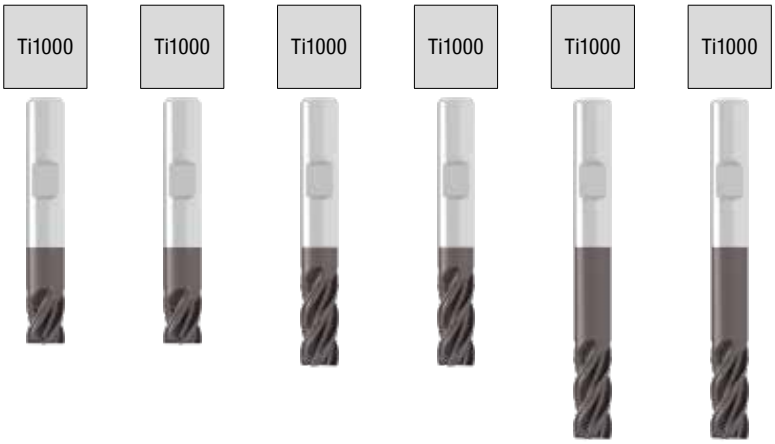
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	○

→ v_c/f_z Page 350–353

End milling cutter

- ▲ irregular helix angle
- ▲ 54 050 ... / 54 051 ... / 54 052 ...: special cutting edge preperation for the machining of steel
- ▲ 54 060 ... / 54 061 ... / 54 062 ...: special cutting edge preperation for the machining of stainless steel





DC h10	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	≈DIN 6527 HB V3 Article no. 54 050 ... £		≈DIN 6527 HB V3 Article no. 54 060 ... £		≈DIN 6527 HB V3 Article no. 54 051 ... £		≈DIN 6527 HB V3 Article no. 54 061 ... £		≈DIN 6527 HB V3 Article no. 54 052 ... £		≈DIN 6527 HB V3 Article no. 54 062 ... £	
mm	mm	mm	mm	mm	mm	mm													
3	5			14	50	6	4	14.55	030	15.78	030								
3	8	2.8	12	21	57	6	4					14.55	030	15.78	030				
3	8	2.8	15	34	70	6	4									20.59	030	22.28	030
4	8			18	54	6	4	14.55	040	15.78	040								
4	11	3.8	15	21	57	6	4					14.55	040	15.78	040				
4	11	3.8	20	34	70	6	4									20.59	040	22.28	040
5	9			18	54	6	4	14.55	050	15.78	050								
5	13	4.8	17	21	57	6	4					14.55	050	15.78	050				
5	13	4.8	25	34	70	6	4									23.16	050	25.07	050
6	10			18	54	6	4	14.55	060	15.78	060								
6	13	5.8	21	21	57	6	4					17.13	060	18.47	060				
6	13	5.8	30	34	70	6	4									25.96	060	27.99	060
8	12			22	58	8	4	20.59	080	22.15	080								
8	19	7.7	27	27	63	8	4					21.94	080	23.84	080				
8	19	7.7	40	44	80	8	4									32.90	080	35.47	080
10	14			26	66	10	4	26.63	100	28.76	100								
10	22	9.7	32	32	72	10	4					28.87	100	31.34	100				
10	22	9.7	50	54	94	10	4									45.67	100	49.47	100
12	16			28	73	12	4	38.28	120	41.41	120								
12	26	11.6	38	38	83	12	4					46.00	120	49.80	120				
12	26	11.6	64	64	109	12	4									56.29	120	60.99	120
16	22			34	82	16	4	67.04	160	72.52	160								
16	32	15.5	44	44	92	16	4					70.85	160	76.67	160				
16	32	15.5	80	84	132	16	4									106.88	160	114.93	160
20	26			42	92	20	4	99.61	200	107.88	200								
20	38	19.5	54	54	104	20	4					106.88	200	115.95	200				
20	38	19.5	100	104	154	20	4									145.49	200	157.68	200

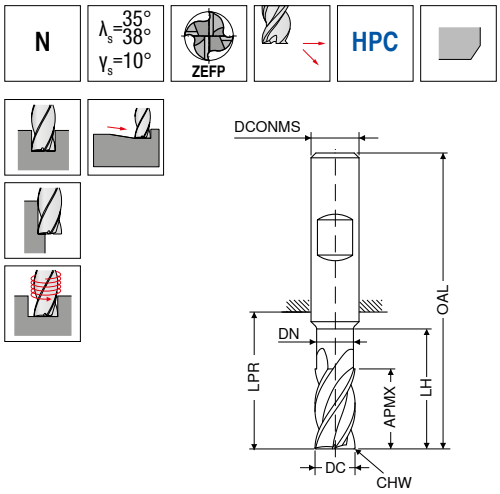
Steel	●	●	●	●	●	●
Stainless steel		●		●		●
Cast iron	●	○	●	○	●	○
Non ferrous metals		○		○		○
Heat resistant alloys		●		●		●
hardened materials						

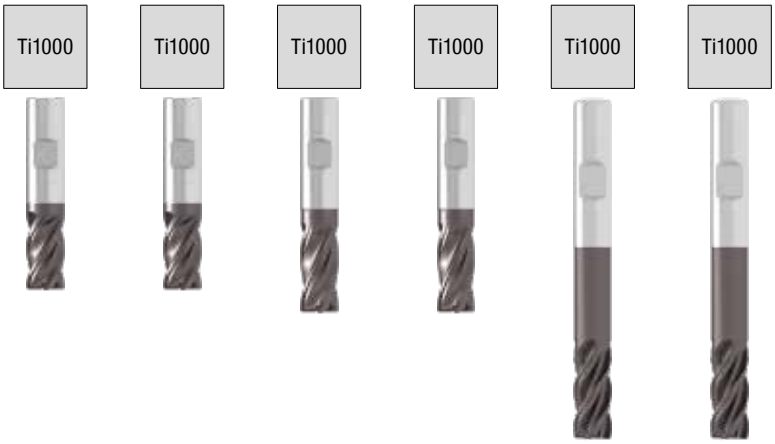
→ v_c/f_z Page 340–343

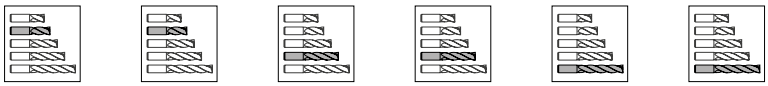
14

End milling cutter

- ▲ irregular helix angle
- ▲ 54 001 ... / 54 002 ... / 54 003 ...: special cutting edge preperation for the machining of steel
- ▲ 54 004 ... / 54 005 ... / 54 006 ...: special cutting edge preperation for the machining of stainless steel





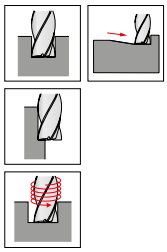


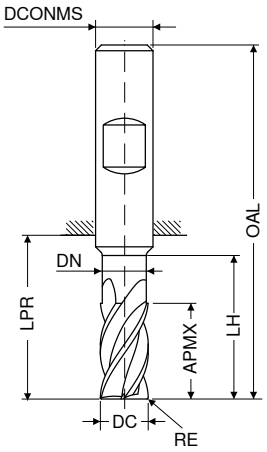
									≈DIN 6527 HB V3		≈DIN 6527 HB V3		≈DIN 6527 HB V3		≈DIN 6527 HB V3		≈DIN 6527 HB V3	
DC h10/	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 54 001 ...		Article no. 54 005 ...		Article no. 54 002 ...		Article no. 54 006 ...		Article no. 54 003 ...		Article no. 54 004 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£		£	
3.0	5			14	50	6	0.15	4	14.58	030	15.75	030								
3.0	8	2.8	12.0	21	57	6	0.15	4					14.58	030	15.75	030				
3.0	8	2.8	15.0	34	70	6	0.15	4									20.59	030	22.28	030
4.0	8			18	54	6	0.15	4	14.58	040	15.75	040								
4.0	11	3.8	15.0	21	57	6	0.15	4					14.58	040	15.75	040				
4.0	11	3.8	20.0	34	70	6	0.15	4									20.59	040	22.28	040
5.0	9			18	54	6	0.15	4	14.58	050	15.75	050								
5.0	13	4.8	17.0	21	57	6	0.15	4					14.58	050	15.75	050				
5.0	13	4.8	25.0	34	70	6	0.15	4									23.16	050	25.07	050
6.0	10			18	54	6	0.15	4	14.58	060	15.75	060								
6.0	13	5.8	21.0	21	57	6	0.15	4					17.02	060	18.42	060				
6.0	13	5.8	30.0	34	70	6	0.15	4									25.96	060	27.99	060
8.0	12			22	58	8	0.25	4	20.42	080	22.15	080								
8.0	19	7.7	27.0	27	63	8	0.25	4					21.93	080	23.79	080				
8.0	19	7.7	40.0	44	80	8	0.25	4									32.90	080	35.47	080
10.0	14			26	66	10	0.25	4	26.59	100	28.81	100								
10.0	22	9.7	32.0	32	72	10	0.25	4					28.81	100	31.26	100				
10.0	22	9.7	50.0	54	94	10	0.25	4									45.67	100	49.47	100
12.0	16			28	73	12	0.35	4	38.25	120	41.39	120								
12.0	26	11.6	38.0	38	83	12	0.35	4					44.67	120	49.68	120				
12.0	26	11.6	64.0	64	109	12	0.35	4									56.29	120	60.99	120
16.0	22			34	82	16	0.35	4	66.94	160	72.42	160								
16.0	32	15.5	44.0	44	92	16	0.35	4					70.67	160	76.62	160				
16.0	32	15.5	80.0	84	132	16	0.35	4									106.88	160	114.93	160
20.0	26			42	92	20	0.35	4	99.36	200	107.65	200								
20.0	38	19.5	54.0	54	104	20	0.35	4					107.06	200	115.91	200				
20.0	38	19.5	100.0	104	154	20	0.35	4									145.49	200	157.68	200
Steel									●		●		●		●		●		●	
Stainless steel											●				●				●	
Cast iron									●		○		●		○		●		○	
Non ferrous metals											○				○				○	
Heat resistant alloys											●				●				●	
hardened materials																				

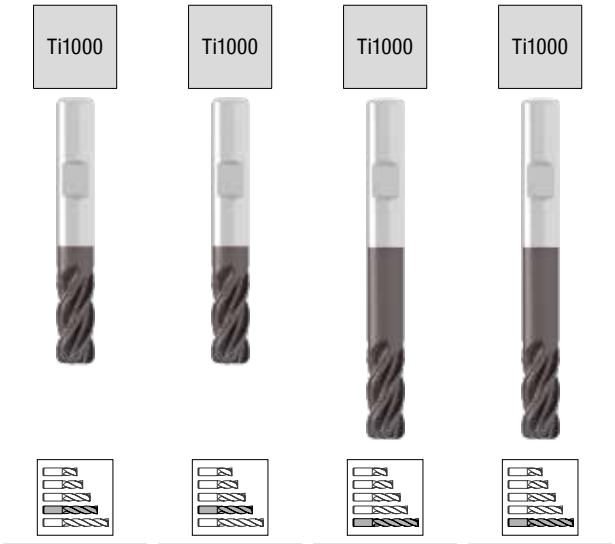
→ v_c/f_z Page 340–343

End milling cutter with corner radius

- irregular helix angle
- 54 053 ... / 54 054 ...: special cutting edge preperation for the machining of steel
- 54 063 ... / 54 064 ...: special cutting edge preperation for the machining of stainless steel







≈DIN 6527 | ≈DIN 6527 | ≈DIN 6527 | ≈DIN 6527

HB | HB | HB | HB

V3 | V3 | V3 | V3

DC h10	RE	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 54 053 ...		Article no. 54 063 ...		Article no. 54 054 ...		Article no. 54 064 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
3	0.1	8	2.8	12	21	57	6	4	19.03	03001	20.70	03001				
3	0.1	8	2.8	15	34	70	6	4					25.18	03001	27.19	03001
3	0.3	8	2.8	12	21	57	6	4	19.03	03003	20.70	03003				
3	0.3	8	2.8	15	34	70	6	4					25.18	03003	27.19	03003
3	0.5	8	2.8	12	21	57	6	4	19.03	03005	20.70	03005				
3	0.5	8	2.8	15	34	70	6	4					25.18	03005	27.19	03005
3	1.0	8	2.8	12	21	57	6	4	19.03	03010	20.70	03010				
3	1.0	8	2.8	15	34	70	6	4					25.18	03010	27.19	03010
4	0.1	11	3.8	15	21	57	6	4	19.03	04001	20.70	04001				
4	0.1	11	3.8	20	34	70	6	4					25.18	04001	27.19	04001
4	0.3	11	3.8	15	21	57	6	4	19.03	04003	20.70	04003				
4	0.3	11	3.8	20	34	70	6	4					25.18	04003	27.19	04003
4	0.5	11	3.8	15	21	57	6	4	19.03	04005	20.70	04005				
4	0.5	11	3.8	20	34	70	6	4					25.18	04005	27.19	04005
4	1.0	11	3.8	15	21	57	6	4	19.03	04010	20.70	04010				
4	1.0	11	3.8	20	34	70	6	4					25.18	04010	27.19	04010
5	0.1	13	4.8	17	21	57	6	4	19.03	05001	20.70	05001				
5	0.1	13	4.8	25	34	70	6	4					27.64	05001	29.88	05001
5	0.3	13	4.8	17	21	57	6	4	19.03	05003	20.70	05003				
5	0.3	13	4.8	25	34	70	6	4					27.64	05003	29.88	05003
5	0.5	13	4.8	17	21	57	6	4	19.03	05005	20.70	05005				
5	0.5	13	4.8	25	34	70	6	4					27.64	05005	29.88	05005
5	1.0	13	4.8	17	21	57	6	4	19.03	05010	20.70	05010				
5	1.0	13	4.8	25	34	70	6	4					27.64	05010	29.88	05010
6	0.1	13	5.8	21	21	57	6	4	21.04	06001	22.82	06001				
6	0.1	13	5.8	30	34	70	6	4					31.11	06001	33.68	06001
6	0.3	13	5.8	21	21	57	6	4	21.04	06003	22.82	06003				
6	0.3	13	5.8	30	34	70	6	4					31.11	06003	33.68	06003
6	0.5	13	5.8	21	21	57	6	4	21.04	06005	22.82	06005				
6	0.5	13	5.8	30	34	70	6	4					31.11	06005	33.68	06005
6	1.0	13	5.8	21	21	57	6	4	21.04	06010	22.82	06010				
6	1.0	13	5.8	30	34	70	6	4					31.11	06010	33.68	06010
6	1.5	13	5.8	21	21	57	6	4	21.04	06015	22.82	06015				
6	1.5	13	5.8	30	34	70	6	4					31.11	06015	33.68	06015
6	2.0	13	5.8	21	21	57	6	4	21.04	06020	22.82	06020				
6	2.0	13	5.8	30	34	70	6	4					31.11	06020	33.68	06020
8	0.1	19	7.7	27	27	63	8	4	27.53	08001	29.88	08001				
8	0.1	19	7.7	40	44	80	8	4					41.52	08001	44.99	08001
8	0.3	19	7.7	27	27	63	8	4	27.53	08003	29.88	08003				
8	0.3	19	7.7	40	44	80	8	4					41.52	08003	44.99	08003
8	0.5	19	7.7	27	27	63	8	4	27.53	08005	29.88	08005				
8	0.5	19	7.7	40	44	80	8	4					41.52	08005	44.99	08005

Steel	●	●	●	●
Stainless steel		●		●
Cast iron	●	○	●	○
Non ferrous metals		○		○
Heat resistant alloys		●		●
hardened materials				

→ v_c/f_z Page 340–343

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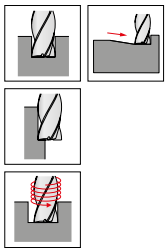
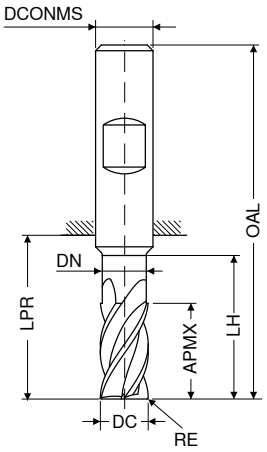
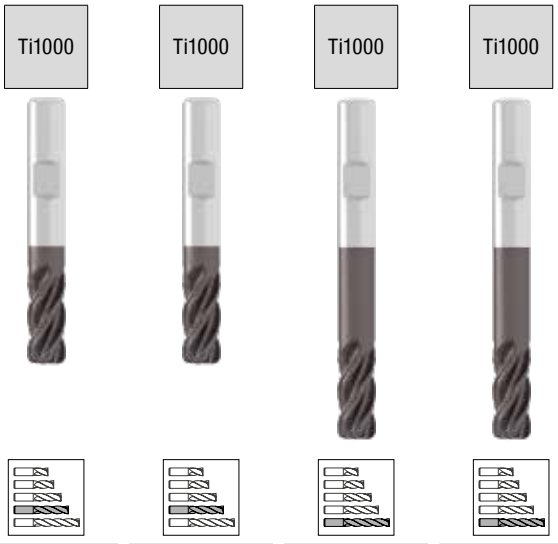
Continued on next page

End milling cutter with corner radius

- ▲ irregular helix angle
- ▲ 54 053 ... / 54 054 ...: special cutting edge preperation for the machining of steel
- ▲ 54 063 ... / 54 064 ...: special cutting edge preperation for the machining of stainless steel







≈DIN 6527 | ≈DIN 6527 | ≈DIN 6527 | ≈DIN 6527

HB | HB | HB | HB

V3 | V3 | V3 | V3

DC h10	RE	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	Article no. 54 053 ...		Article no. 54 063 ...		Article no. 54 054 ...		Article no. 54 064 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
8	1.0	19	7.7	27	27	63	8	4	27.53	08010	29.88	08010				
8	1.0	19	7.7	40	44	80	8	4					41.52	08010	44.99	08010
8	1.5	19	7.7	27	27	63	8	4	27.53	08015	29.88	08015				
8	1.5	19	7.7	40	44	80	8	4					41.52	08015	44.99	08015
8	1.6	19	7.7	27	27	63	8	4	27.53	08016	29.88	08016				
8	1.6	19	7.7	40	44	80	8	4					41.52	08016	44.99	08016
8	2.0	19	7.7	27	27	63	8	4	27.53	08020	29.88	08020				
8	2.0	19	7.7	40	44	80	8	4					41.52	08020	44.99	08020
10	0.1	22	9.7	32	32	72	10	4	34.92	10001	37.72	10001				
10	0.1	22	9.7	50	54	94	10	4					55.40	10001	59.99	10001
10	0.3	22	9.7	32	32	72	10	4	34.92	10003	37.72	10003				
10	0.3	22	9.7	50	54	94	10	4					55.40	10003	59.99	10003
10	0.5	22	9.7	32	32	72	10	4	34.92	10005	37.72	10005				
10	0.5	22	9.7	50	54	94	10	4					55.40	10005	59.99	10005
10	1.0	22	9.7	32	32	72	10	4	34.92	10010	37.72	10010				
10	1.0	22	9.7	50	54	94	10	4					55.40	10010	59.99	10010
10	1.5	22	9.7	32	32	72	10	4	34.92	10015	37.72	10015				
10	1.5	22	9.7	50	54	94	10	4					55.40	10015	59.99	10015
10	1.6	22	9.7	32	32	72	10	4	34.92	10016	37.72	10016				
10	1.6	22	9.7	50	54	94	10	4					55.40	10016	59.99	10016
10	2.0	22	9.7	32	32	72	10	4	34.92	10020	37.72	10020				
10	2.0	22	9.7	50	54	94	10	4					55.40	10020	59.99	10020
12	0.1	26	11.6	38	38	83	12	4	53.95	12001	58.42	12001				
12	0.1	26	11.6	64	64	109	12	4					81.14	12001	87.86	12001
12	0.3	26	11.6	38	38	83	12	4	53.95	12003	58.42	12003				
12	0.3	26	11.6	64	64	109	12	4					81.14	12003	87.86	12003
12	0.5	26	11.6	38	38	83	12	4	53.95	12005	58.42	12005				
12	0.5	26	11.6	64	64	109	12	4					81.14	12005	87.86	12005
12	1.0	26	11.6	38	38	83	12	4	53.95	12010	58.42	12010				
12	1.0	26	11.6	64	64	109	12	4					81.14	12010	87.86	12010
12	1.5	26	11.6	38	38	83	12	4	53.95	12015	58.42	12015				
12	1.5	26	11.6	64	64	109	12	4					81.14	12015	87.86	12015
12	1.6	26	11.6	38	38	83	12	4	53.95	12016	58.42	12016				
12	1.6	26	11.6	64	64	109	12	4					81.14	12016	87.86	12016
12	2.0	26	11.6	38	38	83	12	4	53.95	12020	58.42	12020				
12	2.0	26	11.6	64	64	109	12	4					81.14	12020	87.86	12020
12	3.0	26	11.6	38	38	83	12	4	53.95	12030	58.42	12030				
12	3.0	26	11.6	64	64	109	12	4					81.14	12030	87.86	12030
16	0.1	32	15.5	44	44	92	16	4	81.47	16001	88.19	16001				
16	0.1	32	15.5	80	84	132	16	4					126.12	16001	136.31	16001
16	0.3	32	15.5	44	44	92	16	4	81.47	16003	88.19	16003				
16	0.3	32	15.5	80	84	132	16	4					126.12	16003	136.31	16003

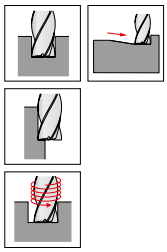
Steel	●	●	●	●
Stainless steel		●		●
Cast iron	●	○	●	○
Non ferrous metals		○		○
Heat resistant alloys		●		●
hardened materials				

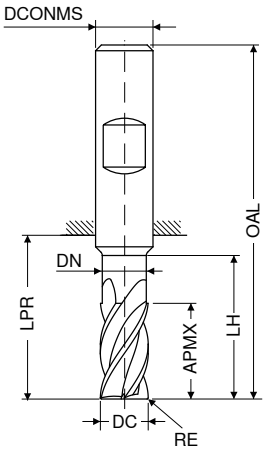
→ v_c/f_z Page 340–343

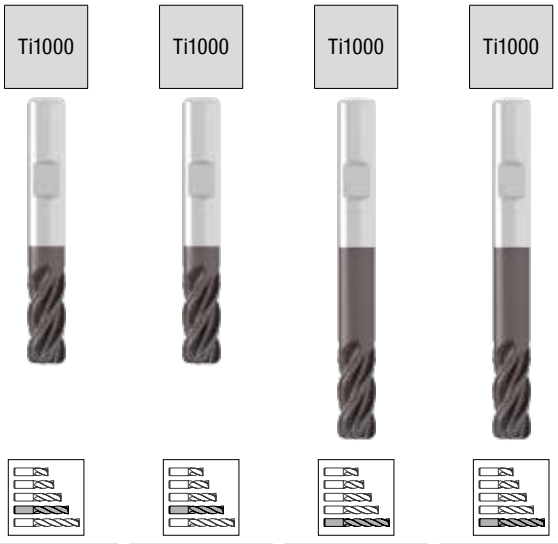
Continued on next page

End milling cutter with corner radius

- ▲ irregular helix angle
- ▲ 54 053 ... / 54 054 ...: special cutting edge preperation for the machining of steel
- ▲ 54 063 ... / 54 064 ...: special cutting edge preperation for the machining of stainless steel







DC h10	RE	APMX	DN	LH	LPR	OAL	DCONMS h6	ZEFP	≈DIN 6527 HB V3 Article no. 54 053 ... £		≈DIN 6527 HB V3 Article no. 54 063 ... £		≈DIN 6527 HB V3 Article no. 54 054 ... £		≈DIN 6527 HB V3 Article no. 54 064 ... £	
mm	mm	mm	mm	mm	mm	mm	mm									
16	0.5	32	15.5	44	44	92	16	4	81.47	16005	88.19	16005				
16	0.5	32	15.5	80	84	132	16	4					126.12	16005	136.31	16005
16	1.0	32	15.5	44	44	92	16	4	81.47	16010	88.19	16010				
16	1.0	32	15.5	80	84	132	16	4					126.12	16010	136.31	16010
16	1.5	32	15.5	44	44	92	16	4	81.47	16015	88.19	16015				
16	1.5	32	15.5	80	84	132	16	4					126.12	16015	136.31	16015
16	1.6	32	15.5	44	44	92	16	4	81.47	16016	88.19	16016				
16	1.6	32	15.5	80	84	132	16	4					126.12	16016	136.31	16016
16	2.0	32	15.5	44	44	92	16	4	81.47	16020	88.19	16020				
16	2.0	32	15.5	80	84	132	16	4					126.12	16020	136.31	16020
16	3.0	32	15.5	44	44	92	16	4	81.47	16030	88.19	16030				
16	3.0	32	15.5	80	84	132	16	4					126.12	16030	136.31	16030
16	4.0	32	15.5	44	44	92	16	4	81.47	16040	88.19	16040				
16	4.0	32	15.5	80	84	132	16	4					126.12	16040	136.31	16040
20	0.1	38	19.5	54	54	104	20	4	118.07	20001	128.15	20001				
20	0.1	38	19.5	100	104	154	20	4					185.22	20001	200.44	20001
20	0.3	38	19.5	54	54	104	20	4	118.07	20103	128.15	20003				
20	0.3	38	19.5	100	104	154	20	4					185.22	20003	200.44	20003
20	0.5	38	19.5	54	54	104	20	4	118.07	20205	128.15	20005				
20	0.5	38	19.5	100	104	154	20	4					185.22	20005	200.44	20005
20	1.0	38	19.5	54	54	104	20	4	118.07	20310	128.15	20010				
20	1.0	38	19.5	100	104	154	20	4					185.22	20010	200.44	20010
20	1.5	38	19.5	54	54	104	20	4	118.07	20415	128.15	20015				
20	1.5	38	19.5	100	104	154	20	4					185.22	20015	200.44	20015
20	1.6	38	19.5	54	54	104	20	4	118.07	20516	128.15	20016				
20	1.6	38	19.5	100	104	154	20	4					185.22	20016	200.44	20016
20	2.0	38	19.5	54	54	104	20	4	118.07	20620	128.15	20020				
20	2.0	38	19.5	100	104	154	20	4					185.22	20020	200.44	20020
20	3.0	38	19.5	54	54	104	20	4	118.07	20730	128.15	20030				
20	3.0	38	19.5	100	104	154	20	4					185.22	20030	200.44	20030
20	4.0	38	19.5	54	54	104	20	4	118.07	20840	128.15	20040				
20	4.0	38	19.5	100	104	154	20	4					185.22	20040	200.44	20040

Steel	●	●	●	●
Stainless steel		●		●
Cast iron	●	○	●	○
Non ferrous metals		○		○
Heat resistant alloys		●		●
hardened materials				

→ v_c/f_z Page 340–343

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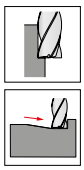
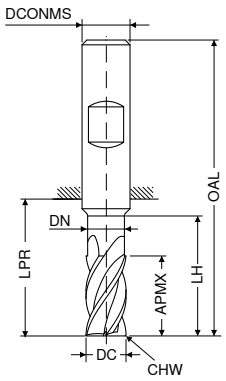
Finish milling cutter





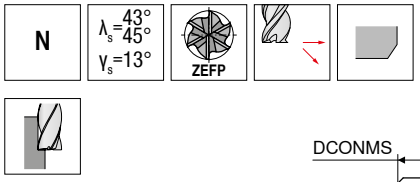
LPR with Shank DIN 6535 HB

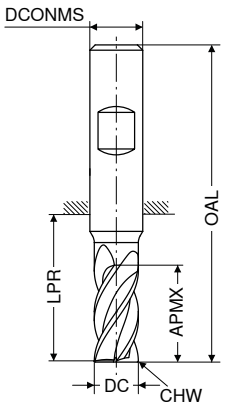
									Factory standard HA V1		Factory standard HB V1		Factory standard HA V1		Factory standard HB V1		Factory standard HA V1		Factory standard HB V1	
DC_{e8}	APMX	DN	LH	LPR	OAL	$DCONMS_{h6}$	CHW	ZEFP	Article no. 52 110 ...		Article no. 52 110 ...		Article no. 52 115 ...		Article no. 52 115 ...		Article no. 52 118 ...		Article no. 52 118 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£		£	
5	8	4.8	13	18	54	6	0.02	6	43.62	051	43.62	050								
5	13	4.8	18	22	58	6	0.02	6					46.16	051	46.16	050				
6	10	5.8	15	18	54	6	0.03	6	43.31	061	43.31	060								
6	16	5.8	20	22	58	6	0.03	6					46.74	061	46.74	060				
6	21			29	65	6	0.03	6									68.40	061	68.40	060
7	12	6.8	17	23	59	8	0.04	6	52.01	071	52.01	070								
7	22	6.8	30	34	70	8	0.04	6					54.15	071	54.15	070				
7	25			39	75	8	0.04	6									84.21	071	84.21	070
8	12	7.8	17	23	59	8	0.04	6	51.88	081	51.88	080								
8	22	7.8	32	34	70	8	0.04	6					55.28	081	55.28	080				
8	28			39	75	8	0.04	6									77.17	081	77.17	080
9	14	8.8	19	20	60	10	0.04	6	80.38	091	80.38	090								
9	25	8.8	33	33	73	10	0.04	6					89.36	091	89.36	090				
9	30			45	85	10	0.04	6									158.32	091	158.32	090
10	14	9.8	19	20	60	10	0.05	6	79.53	101	79.53	100								
10	25	9.8	33	33	73	10	0.05	6					93.76	101	93.76	100				
10	35			45	85	10	0.05	6									152.61	101	152.61	100
12	16	11.8	21	25	70	12	0.05	6	115.85	121	115.85	120								
12	28	11.8	38	39	84	12	0.05	6					136.23	121	136.23	120				
12	45			55	100	12	0.05	6									213.76	121	213.76	120
14	18	13.8	23	25	70	14	0.06	6	152.34	141	152.34	140								
14	30	13.8	38	39	84	14	0.06	6					178.99	141	178.99	140				
16	20	15.8	28	32	80	16	0.06	6	184.25	161	184.25	160								
16	35	15.8	43	45	93	16	0.06	6					206.43	161	206.43	160				
16	50			62	110	16	0.06	6									302.54	162	308.64	160
16	65			77	125	16	0.06	6									339.58	163	308.64	161
18	20	17.8	28	32	80	18	0.07	8	229.57	181	229.57	180								
18	35	17.8	43	45	93	18	0.07	8					257.44	181	257.44	180				
20	25	19.8	33	35	85	20	0.07	8	286.28	201	286.28	200								
20	40	19.8	45	50	100	20	0.07	8					320.70	201	320.70	200				
20	55			65	115	20	0.07	8									450.99	202	460.41	200
20	70			80	130	20	0.07	8									540.51	203	460.41	201
25	55	24.8	63	69	125	25	0.08	8					542.84	251	542.84	250				
25	75			94	150	25	0.08	8									932.48	251	808.81	250

Steel	○	○	○	○	○	○
Stainless steel	●	●	●	●	●	●
Cast iron	○	○	○	○	○	○
Non ferrous metals	●	●	●	●	●	●
Heat resistant alloys	●	●	●	●	●	●
hardened materials						

→ v_c/f_z Page 350–355

Finish milling cutter





≈DIN 6527

HB

V0

Factory standard

HB

V0

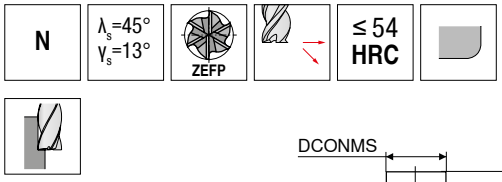
DC f8 mm	APMX mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	Article no. 50 633 ... £		Article no. 50 633 ... £	
4	11	21	57	6	0.15	6	40.33	040		
4	16	26	62	6	0.15	6			55.78	041
5	13	21	57	6	0.15	6	40.33	050		
5	18	26	62	6	0.15	6			55.78	051
6	13	21	57	6	0.15	6	40.33	060		
6	18	26	62	6	0.15	6			55.78	061
7	16	27	63	8	0.15	6	48.24	070		
7	21	32	68	8	0.15	6			74.54	071
8	19	27	63	8	0.15	6	47.01	080		
8	24	32	68	8	0.15	6			65.70	081
9	19	32	72	10	0.15	6	77.52	090		
9	27	40	80	10	0.15	6			118.27	091
10	22	32	72	10	0.15	6	75.53	100		
10	30	40	80	10	0.15	6			115.16	101
12	26	38	83	12	0.15	6	98.14	120		
12	36	48	93	12	0.15	6			157.89	121
14	26	38	83	14	0.15	6	135.80	140		
14	42	54	99	14	0.15	6			212.05	141
16	32	44	92	16	0.15	6	179.42	160		
16	48	60	108	16	0.15	6			273.03	161
16	65	77	125	16	0.15	6			342.84	162
16	75	102	150	16	0.15	6			383.29	163
16	95	102	150	16	0.15	6			443.31	164
18	32	44	92	18	0.15	8	208.06	180		
18	54	66	114	18	0.15	8			334.32	181
20	38	54	104	20	0.15	8	255.35	200		
20	60	76	126	20	0.15	8			425.64	201
20	75	85	135	20	0.15	8			452.74	202
20	95	100	150	20	0.15	8			468.40	203
25	75	94	150	25	0.15	8			559.60	250
25	95	104	160	25	0.15	8			816.85	251
32	75	90	150	32	0.15	8	1,118.75	320		
32	95	100	160	32	0.15	8			1,091.40	321

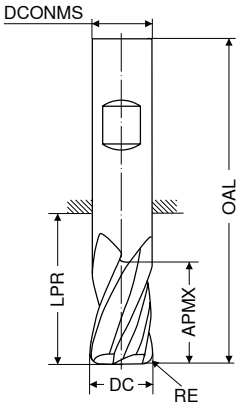
Steel	○	○
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials	●	●

→ v_c/f_z Page 350–355

14

Finish milling cutter with corner radius





Ti1000

Factory standard

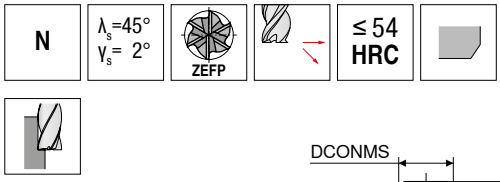
HB

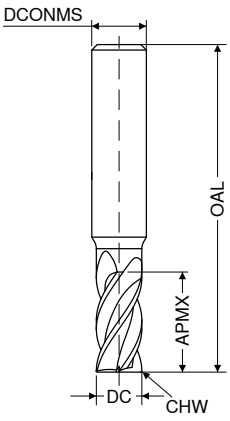
DC f8	RE ±0,01	APMX	LPR	OAL	DCONMS h5	ZEFP	V0 Article no. 50 634 ...
mm	mm	mm	mm	mm	mm		£
6	1.0	18	26	62	6	6	54.15 061
6	0.5	18	26	62	6	6	54.15 060
8	2.0	24	32	68	8	6	53.87 082
8	1.0	24	32	68	8	6	53.87 081
8	0.5	24	32	68	8	6	53.87 080
10	0.5	30	40	80	10	6	109.88 100
10	2.0	30	40	80	10	6	109.88 102
10	1.0	30	40	80	10	6	109.88 101
12	2.0	36	48	93	12	6	143.64 122
12	1.0	36	48	93	12	6	143.64 121
12	3.0	36	48	93	12	6	143.64 123
12	0.5	36	48	93	12	6	143.64 120
16	2.0	48	60	108	16	6	258.49 162
16	1.0	48	60	108	16	6	258.49 161
16	3.0	48	60	108	16	6	258.49 163
16	0.5	48	60	108	16	6	258.49 160
20	0.5	60	76	126	20	8	386.02 200
20	2.0	60	76	126	20	8	386.02 202
20	3.0	60	76	126	20	8	386.02 203
20	1.0	60	76	126	20	8	386.02 201

Steel	○
Stainless steel	●
Cast iron	○
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	●

→ v_c/f_z Page 350–355

Multi-flute milling cutter





Factory standard

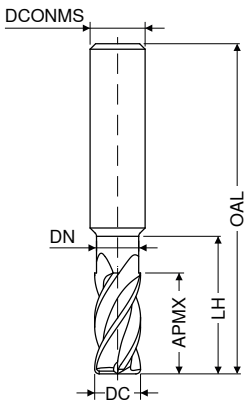
V0

DC h10 mm	APMX mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	Article no. 50 631 ... £	
4	14	40	4	0.05	5	35.23	040
5	18	50	5	0.05	5	39.00	050
6	18	50	6	0.05	7	44.18	060
8	25	63	8	0.05	7	64.14	080
10	30	72	10	0.08	9	91.35	100
12	32	83	12	0.08	9	118.27	120
14	32	83	14	0.08	9	173.28	140
16	36	92	16	0.08	11	251.65	160
18	40	92	18	0.08	11	285.99	180
20	45	104	20	0.08	13	335.16	200
25	45	120	25	0.08	13	606.62	250

Steel	○
Stainless steel	●
Cast iron	○
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	

→ v_c/f_z Page 350–353

Multi-flute milling cutter for finishing



Factory standard

HA

V1

DC e8 mm	APMX mm	DN mm	LH mm	OAL mm	DCONMS h6 mm	ZEFP	£	Article no. 52 109 ...
6	16	5.8	26	58	6	8	73.54	**060**
8	22	7.8	32	64	8	10	82.78	**080**
10	25	9.8	35	73	10	12	144.79	**100**
12	28	11.8	38	84	12	12	196.35	**120**
16	35	15.8	43	93	16	16	420.94	**160**
20	40	19.8	50	104	20	16	498.75	**200**

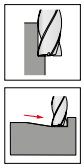
Steel	○
Stainless steel	●
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	○

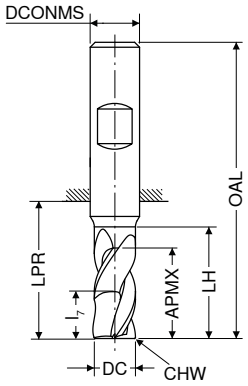
→ v_c/f_z Page 350–353

End milling cutter

▲ With graduated flute depth

H | λ_s = 52° γ_s = –11° | ZEFP | ≤ 54 HRC





DIN 6527 | DIN 6527 | DIN 6527

HB | HB | HB

V0 | V0 | V0

DC f8 mm	APMX mm	LH mm	l_7 mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	Article no. 50 907 ... £		Article no. 50 907 ... £		Article no. 50 907 ... £	
4	8	15	4.4	18	54	6	0.15	4	58.99	040				
4	11	18	4.4	21	57	6	0.15	4			58.99	041		
4	16	19	6.4	26	62	6	0.15	4					65.26	042
5	9	16	4.8	18	54	6	0.15	4	58.99	050				
5	13	19	4.8	21	57	6	0.15	4			58.99	051		
5	17	20	6.8	26	62	6	0.15	4					65.26	052
6	10	17	5.2	18	54	6	0.15	4	62.30	060				
6	13	19	5.2	21	57	6	0.15	4			63.13	061		
6	18	21	7.2	26	62	6	0.15	4					68.37	062
8	12	20	7.6	22	58	8	0.15	4	70.85	080				
8	19	25	7.6	27	63	8	0.15	4			72.25	081		
8	24	27	9.6	32	68	8	0.15	4					78.54	082
10	14	24	8.8	26	66	10	0.15	4	111.72	100				
10	22	30	8.8	32	72	10	0.15	4			123.69	101		
10	30	33	12.0	40	80	10	0.15	4					139.50	102
12	16	26	10.4	28	73	12	0.15	4	148.21	120				
12	26	36	10.4	38	83	12	0.15	4			168.00	121		
12	36	39	14.4	48	93	12	0.15	4					190.65	122
14	18	28	10.4	30	75	14	0.15	4	178.42	140				
14	26	36	10.4	38	83	14	0.15	4			219.15	141		
14	42	45	16.8	54	99	14	0.15	4					263.05	142
16	22	32	12.8	34	82	16	0.15	4	219.15	160				
16	32	42	12.8	44	92	16	0.15	4			296.83	161		
16	48	51	19.2	60	108	16	0.15	4					360.24	162
18	24	34	12.8	36	84	18	0.15	4	275.59	180				
18	32	42	12.8	44	92	18	0.15	4			330.18	181		
18	54	57	21.6	66	114	18	0.15	4					416.81	182
20	26	42	15.2	42	92	20	0.15	4	376.05	200				
20	38	52	15.2	54	104	20	0.15	4			427.21	201		
20	60	63	24.0	76	126	20	0.15	4					534.94	202

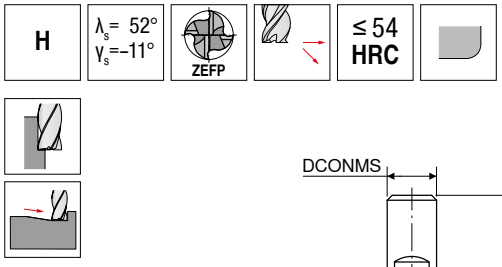
Steel	●	●	●
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	○	○	○

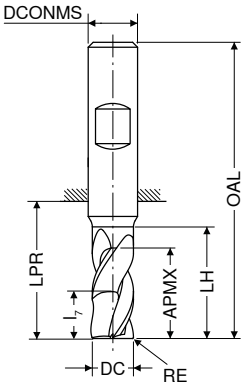
→ v_c/f_z Page 350–355

14

End milling cutter with corner radius

▲ With graduated flute depth





Factory standard | Factory standard | Factory standard

HB | HB | HB

V0 | V0 | V0

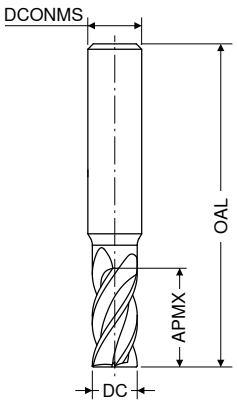
DC f8	RE ±0,01	APMX	LH	l_7	LPR	OAL	DCONMS h5	ZEFP	Article no. 50 908 ...	£		Article no. 50 908 ...	£		Article no. 50 908 ...	£	
mm	mm	mm	mm	mm	mm	mm	mm										
4	0.5	8	15	4.4	18	54	6	4		64.17	040						
4	0.5	11	18	4.4	21	57	6	4					65.99	041			
4	0.5	16	19	6.4	26	62	6	4								76.96	042
5	0.5	9	16	4.8	18	54	6	4		64.17	050						
5	0.5	13	19	4.8	21	57	6	4					65.99	051			
5	0.5	17	20	6.8	26	62	6	4								76.96	052
6	0.5	10	17	5.2	18	54	6	4		67.13	060						
6	0.5	13	19	5.2	21	57	6	4					78.54	061			
6	0.5	18	21	7.2	26	62	6	4								81.37	062
8	1.0	12	20	7.6	22	58	8	4		75.53	080						
8	1.0	19	25	7.6	27	63	8	4					86.07	081			
8	1.0	24	27	9.6	32	68	8	4								88.23	082
10	1.0	14	24	8.8	26	66	10	4		125.56	100						
10	1.0	22	30	8.8	32	72	10	4					133.50	101			
10	1.0	30	33	12.0	40	80	10	4								147.92	102
12	1.5	16	26	10.4	28	73	12	4		169.02	120						
12	1.5	26	36	10.4	38	83	12	4					180.26	121			
12	1.5	36	39	14.4	48	93	12	4								192.67	122
14	1.5	18	28	10.4	30	75	14	4		231.42	140						
14	1.5	26	36	10.4	38	83	14	4					243.69	141			
14	1.5	42	45	16.8	54	99	14	4								282.60	142
16	2.0	22	32	12.8	34	82	16	4		321.34	160						
16	2.0	32	42	12.8	44	92	16	4					330.18	161			
16	2.0	48	51	19.2	60	108	16	4								356.68	162
18	2.0	24	34	12.8	36	84	18	4		331.89	180						
18	2.0	32	42	12.8	44	92	18	4					342.42	181			
18	2.0	54	57	21.6	66	114	18	4								414.82	182
20	2.0	26	40	15.2	42	92	20	4		473.24	200						
20	2.0	38	52	15.2	54	104	20	4					483.77	201			
20	2.0	60	63	24.0	76	126	20	4								564.87	202

Steel	●	●	●
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys			
hardened materials	○	○	○

→ v_c/f_z Page 350–355

Finish milling cutter

H | λ_s=50° γ_s=–5° | ZEFP | ≤ 68 HRC



DIN 6527

HA

V0

Factory standard

HA

V0

DC f8 mm	APMX mm	OAL mm	DCONMS h5 mm	ZEFP	Article no. 50 635 ... £		Article no. 50 635 ... £	
4	11	57	6	6	37.06	040		
4	16	62	6	6			41.80	041
5	13	57	6	6	34.39	050		
5	18	62	6	6			39.99	051
6	13	57	6	6	39.00	060		
6	18	62	6	6			44.62	061
8	19	63	8	6	44.62	080		
8	24	68	8	6			51.59	081
10	22	72	10	6	75.76	100		
10	30	80	10	6			88.93	101
12	26	83	12	6	105.02	120		
12	36	93	12	6			122.54	121
14	26	83	14	6	136.95	140		
14	42	99	14	6			167.87	141
16	32	92	16	8	185.53	160		
16	48	108	16	8			229.40	161
16	90	150	16	8			244.68	162
18	32	92	18	8	206.50	180		
18	54	114	18	8			265.05	181
20	38	104	20	8	266.63	200		
20	60	126	20	8			340.59	201
20	75	135	20	8			303.52	202
20	95	150	20	8			355.66	203
25	75	150	25	8	843.58	250		
25	95	160	25	8			872.52	251
32	75	150	32	8	1,011.31	320		
32	95	160	32	8			1,038.23	321

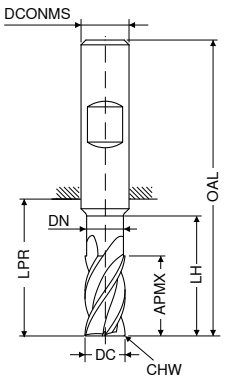
Steel	○	○
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials	●	●

→ v_c/f_z Page 350–355

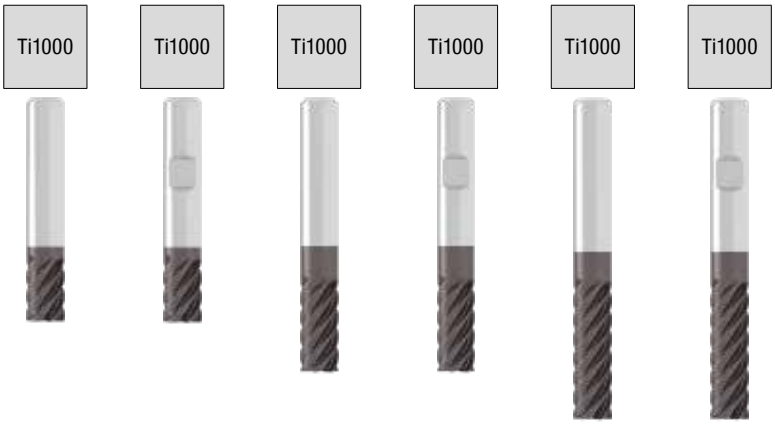
14

Finish milling cutter

H | λ_s=45° γ_s=16° | ZEFP | ≤ 50 HRC



LPR with Shank DIN 6535 HB



Factory standard | Factory standard | Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB | HA | HB

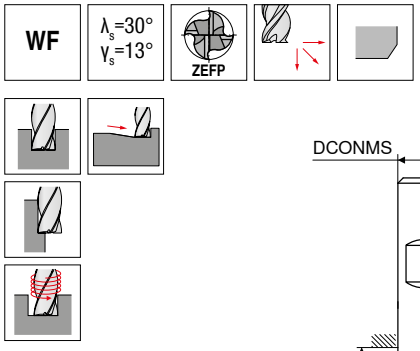
V1 | V1 | V1 | V1 | V1 | V1

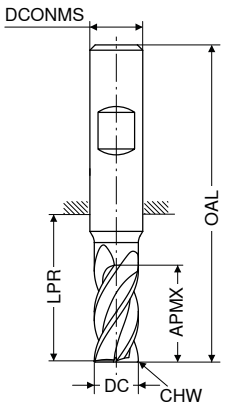
DC $_{e8}$	APMX	DN	LH	LPR	OAL	DCONMS $_{h6}$	CHW	ZEFP	Article no. 52 112 ...		Article no. 52 112 ...		Article no. 52 122 ...		Article no. 52 122 ...		Article no. 52 123 ...		Article no. 52 123 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£		£		£	
5	8	4.8	13	18	54	6	0.02	6	65.56	051	65.56	050								
5	13	4.8	18	22	58	6	0.02	6					69.21	051	69.21	050				
6	10	5.8	15	18	54	6	0.03	6	61.35	061	61.35	060								
6	16	5.8	20	22	58	6	0.03	6					67.73	061	67.73	060				
6	21			29	65	6	0.03	6									92.15	061	92.15	060
7	12	6.8	17	23	59	8	0.04	6	81.97	071	81.97	070								
7	22	6.8	30	34	70	8	0.04	6					86.19	071	86.19	070				
7	25			39	75	8	0.04	6									112.93	071	112.93	070
8	12	7.8	17	23	59	8	0.04	6	76.54	081	76.54	080								
8	22	7.8	32	34	70	8	0.04	6					84.56	081	84.56	080				
8	28			39	75	8	0.04	6									114.27	081	114.27	080
9	14	8.8	19	20	60	10	0.04	6	119.70	091	119.70	090								
9	25	8.8	33	33	73	10	0.04	6					134.64	091	134.64	090				
9	30			45	85	10	0.04	6									204.52	091	204.52	090
10	14	9.8	19	20	60	10	0.05	6	113.59	101	113.59	100								
10	25	9.8	33	33	73	10	0.05	6					133.95	101	133.95	100				
10	35			45	85	10	0.05	6									207.91	101	207.91	100
12	16	11.8	21	25	70	12	0.05	6	170.73	121	170.73	120								
12	28	11.8	38	39	84	12	0.05	6					198.00	121	198.00	120				
12	45			55	100	12	0.05	6									286.50	121	286.50	120
14	18	13.8	23	25	70	14	0.06	6	211.86	141	211.86	140								
14	30	13.8	38	39	84	14	0.06	6					248.63	141	248.63	140				
16	20	15.8	28	32	80	16	0.06	6	275.88	161	275.88	160								
16	35	15.8	43	45	93	16	0.06	6					302.64	161	302.64	160				
16	50			62	110	16	0.06	6									430.74	162	422.06	160
16	65			77	125	16	0.06	6									487.89	163	443.18	161
18	20	17.8	28	32	80	18	0.07	8	316.61	181	316.61	180								
18	35	17.8	43	45	93	18	0.07	8					371.03	181	371.03	180				
20	25	19.8	33	35	85	20	0.07	8	402.12	201	394.92	200								
20	40	19.8	45	50	100	20	0.07	8					455.59	201	455.59	200				
20	55			65	115	20	0.07	8									614.77	202	602.43	200
20	70			80	130	20	0.07	8									751.96	203	632.55	201
25	55	24.8	63	69	125	25	0.08	8					760.52	251	760.52	250				
25	75			94	150	25	0.08	8									1,178.53	251	918.40	250

Steel	○	○	○	○	○	○
Stainless steel	●	●	●	●	●	●
Cast iron	○	○	○	○	○	○
Non ferrous metals	●	●	●	●	●	●
Heat resistant alloys	●	●	●	●	●	●
hardened materials	○	○	○	○	○	○

→ v_c/f_z Page 350–355

Roughing-Finishing Cutter





DIN 6527

HB

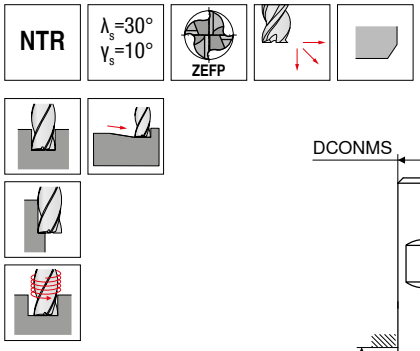
V0

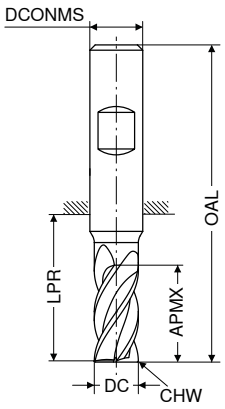
DC $_{d11}$ mm	APMX mm	LPR mm	OAL mm	DCONMS $_{h5}$ mm	CHW mm	ZEFP	Article no. 50 628 ... £	
5	15	21	57	6	0.25	4	80.95	**050**
6	16	21	57	6	0.25	4	76.96	**060**
8	22	27	63	8	0.25	4	95.62	**080**
10	25	32	72	10	0.25	4	103.04	**100**
12	28	38	83	12	0.25	4	125.13	**120**
16	35	44	92	16	0.25	4	198.63	**160**
20	40	54	104	20	0.25	4	298.68	**200**

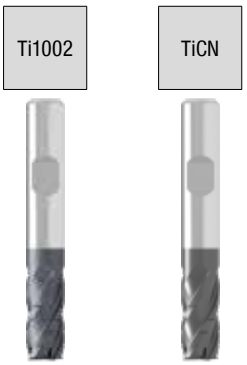
Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

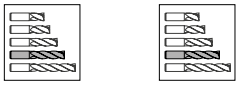
→ v_c/f_z Page 350–353

Roughing-Finishing Cutter









DIN 6527 | DIN 6527

HB | HB

V1 | V1

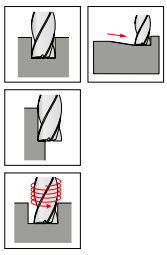
DC h10	APMX	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 52 301 ...		Article no. 52 300 ...	
mm	mm	mm	mm	mm	mm		£		£	
6	13	21	57	6		3	87.37	**060**	87.37	**060**
8	19	27	63	8	0.08	3	111.60	**080**	111.60	**080**
10	22	32	72	10	0.12	4	122.70	**100**	122.70	**100**
12	26	38	83	12	0.15	4	150.77	**120**	150.77	**120**
14	26	38	83	14	0.17	4	212.12	**140**	212.12	**140**
16	32	44	92	16	0.20	4	229.40	**160**	229.40	**160**
18	32	48	92	18	0.22	4	331.59	**180**	331.59	**180**
20	38	54	104	20	0.25	4	335.16	**200**	335.16	**200**

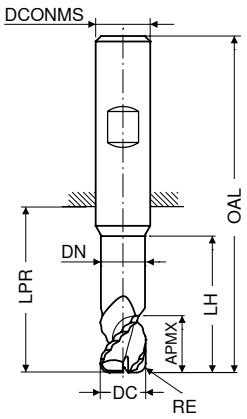
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	

→ v_c/f_z Page 350–353

Rough milling cutter with corner radius

WR | λ_s=45° γ_s= 9° | ZEFP | HPC





Factory standard

HA

Factory standard

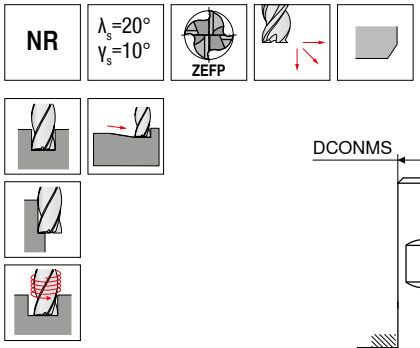
HB

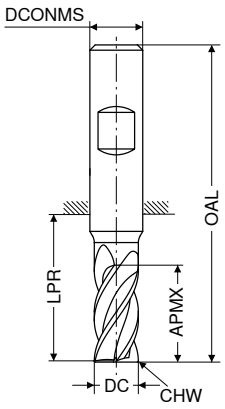
DC h6	RE +/-0,01	APMX	DN	LH	LPR	OAL	DCONMS h5	ZEFP	V0 Article no. 54 625 ...		V0 Article no. 54 627 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
3		4.5	2.8	15	22	58	6	3	52.74	030	52.74	030
3		8.0	2.8	15	22	58	6	3	58.01	031	58.01	031
4		5.5	3.8	20	26	62	6	3	52.74	040	52.74	040
4		10.5	3.8	20	26	62	6	3	58.01	041	58.01	041
5		7.0	4.8	25	34	70	6	3	56.71	050	56.71	050
5		13.0	4.8	25	34	70	6	3	62.30	051	62.30	051
6	1	8.5	5.8	30	34	70	6	3	57.57	061	57.57	061
6	1	16.0	5.8	30	34	70	6	3	62.22	062	62.22	062
7	1	11.0	6.7	40	44	80	8	3	75.97	071	75.97	071
7	1	21.0	6.7	40	44	80	8	3	83.52	072	83.52	072
8	1	11.0	7.7	40	44	80	8	3	75.97	081	75.97	081
8	1	21.0	7.7	40	44	80	8	3	83.52	082	83.52	082
9	1	14.0	8.7	50	54	94	10	3	105.14	091	105.14	091
9	1	26.0	8.7	50	54	94	10	3	118.00	092	118.00	092
10	2	14.0	9.7	50	54	94	10	3	105.14	101	105.14	101
10	2	26.0	9.7	50	54	94	10	3	118.00	102	118.00	102
11	2	16.0	10.6	60	64	109	12	3	172.58	111	172.58	111
11	2	31.0	10.6	60	64	109	12	3	189.82	112	189.82	112
12	2	16.0	11.6	60	64	109	12	3	172.58	121	172.58	121
12	2	31.0	11.6	60	64	109	12	3	189.82	122	189.82	122
14	2	19.0	13.6	70	74	119	14	3	238.54	141	238.54	141
14	2	36.0	13.6	70	74	119	14	3	255.93	142	255.93	142
16	2	22.0	15.5	80	84	132	16	3	303.40	161	303.40	161
16	2	41.0	15.5	80	84	132	16	3	334.01	162	334.01	162
18	2	25.0	17.5	90	94	142	18	3	371.50	181	371.50	181
18	2	47.0	17.5	90	94	142	18	3	427.21	182	427.21	182
20	2	27.0	19.5	100	104	154	20	3	400.01	201	400.01	201
20	2	52.0	19.5	100	104	154	20	3	459.99	202	459.99	202

Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 338+339

Rough milling cutter



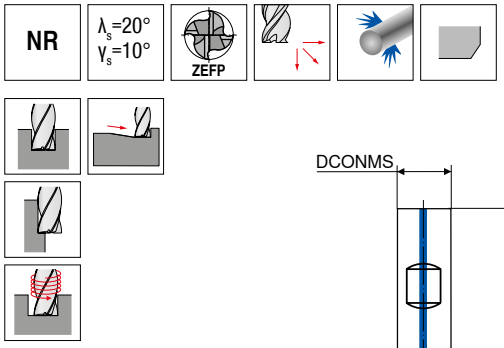


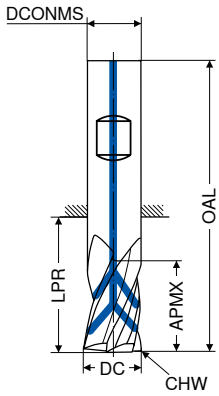
							DIN 6527 HB V0 Article no. 50 618 ...		DIN 6527 HB V0 Article no. 50 624 ...	
DC d11 mm	APMX mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	£		£	
4	8	21	57	6	0.6	4			78.37	040
5	8	18	54	6	0.6	4	72.54	050		
5	13	21	57	6	0.6	4			78.37	050
6	8	18	54	6	0.6	4	65.26	060		
6	13	21	57	6	0.6	4			73.12	060
7	11	22	58	8	0.6	4	88.78	070		
7	19	27	63	8	0.6	4			97.34	070
8	11	22	58	8	0.6	4	80.65	080		
8	19	27	63	8	0.6	4			86.64	080
9	13	26	66	10	0.6	4	100.90	090		
9	22	32	72	10	0.6	4			106.59	090
10	13	26	66	10	0.6	4	100.90	100		
10	22	32	72	10	0.6	4			100.60	100
11	26	38	83	12	0.6	4			126.41	110
12	16	28	73	12	0.6	4	108.35	120		
12	26	38	83	12	0.6	4			119.29	120
13	26	38	83	14	0.6	4			176.69	130
14	16	31	76	14	0.6	4	153.89	140		
14	26	38	83	14	0.6	4			166.58	140
16	19	34	82	16	0.6	4	189.10	160		
16	32	44	92	16	0.6	4			189.67	160
18	19	36	84	18	0.6	4	227.01	180		
18	32	44	92	18	0.6	4			252.08	180
20	19	42	92	20	0.6	4	271.59	200		
20	38	54	104	20	0.6	4			282.71	200
25	45	65	121	25	0.6	5			366.96	250

Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		

→ v_c/f_z Page 350–353

Rough milling cutter





Ti400

DIN 6527

HB

V0

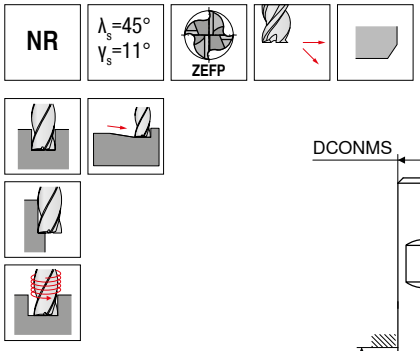
DC d11 mm	APMX mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	Article no. 50 625 ... £	
6	13	21	57	6	0.6	4	129.55	060
8	19	27	63	8	0.6	4	129.55	080
10	22	32	72	10	0.6	4	147.78	100
12	26	38	83	12	0.6	4	169.57	120
14	26	38	83	14	0.6	4	271.47	140
16	32	44	92	16	0.6	4	271.47	160
18	32	44	92	18	0.6	4	442.68	180
20	38	54	104	20	0.6	4	403.55	200

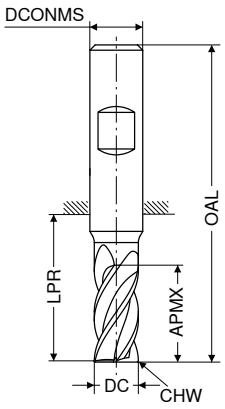
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 350–353

14

Rough milling cutter





DIN 6527

HB

V0

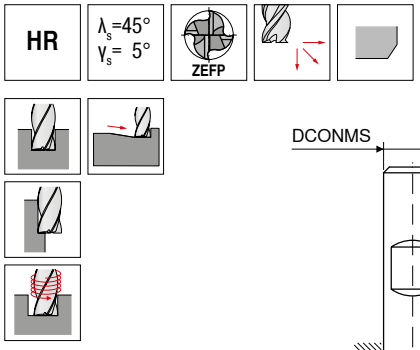
DC d11 mm	APMX mm	LPR mm	OAL mm	DCONMS h5 mm	CHW mm	ZEFP	Article no. 50 637 ... £	
6	13	21	57	6	0.5	4	88.93	**060**
8	19	27	63	8	0.5	4	102.04	**080**
10	22	32	72	10	0.5	4	109.33	**100**
12	26	38	83	12	0.5	4	132.24	**120**
14	26	38	83	14	0.5	4	185.41	**140**
16	32	44	92	16	0.5	5	210.19	**160**
18	32	44	92	18	0.5	5	280.87	**180**
20	38	54	104	20	0.5	6	314.24	**200**
25	45	65	121	25	0.5	6	384.89	**250**

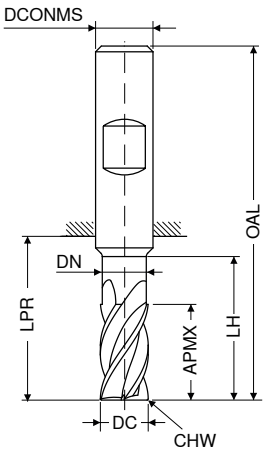
Steel	○
Stainless steel	●
Cast iron	○
Non ferrous metals	○
Heat resistant alloys	●
hardened materials	

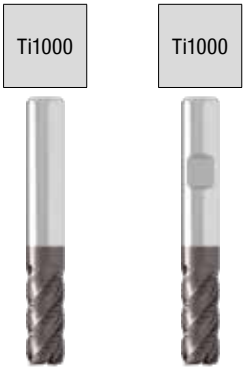
→ v_c/f_z Page 350–353

Rough milling cutter

▲ with integrated chip breakers in the flutes







DC h11	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Factory standard HA V1 Article no. 52 340 ...		Factory standard HB V1 Article no. 52 341 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
6	16	5.8	21	22	58	6	0.15	4	108.32	060	108.32	060
8	22	7.7	27	34	70	8	0.20	4	124.12	080	124.12	080
10	25	9.7	30	33	73	10	0.20	4	134.51	100	134.51	100
12	28	11.6	38	39	84	12	0.25	4	159.03	120	159.03	120
14	30	13.6	40	39	84	14	0.30	4	212.91	140	212.91	140
16	35	15.5	45	45	93	16	0.35	5	271.88	160	271.88	160
18	35	17.5	45	45	93	18	0.40	5	337.73	180	337.73	180
20	40	19.5	55	54	104	20	0.40	5	407.84	200	407.84	200
25	50	24.0	65	69	125	25	0.50	5	686.70	250	686.70	250

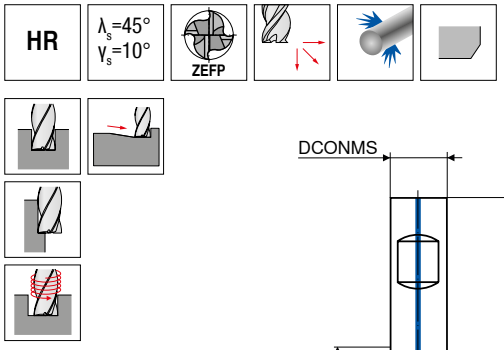
Steel	○	○
Stainless steel	●	●
Cast iron		
Non ferrous metals		
Heat resistant alloys		
hardened materials		

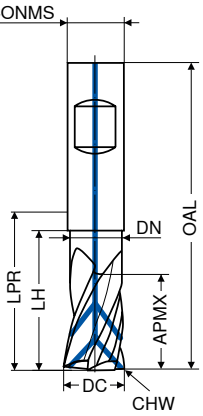
→ v_c/f_z Page 344+345

14

Rough milling cutter

▲ with integrated chip breakers in the flutes





Factory standard

HA

Factory standard

HB

DC h11	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	V1 Article no. 52 338 ...		V1 Article no. 52 339 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£	
6	16	5.8	21	22	58	6	0.15	4	134.51	060	134.51	060
8	22	7.7	27	34	70	8	0.20	4	150.64	080	150.64	080
10	25	9.7	30	33	73	10	0.20	4	176.69	100	176.69	100
12	28	11.6	38	39	84	12	0.25	4	221.73	120	221.73	120
14	30	13.6	40	39	84	14	0.25	4	292.98	140	292.98	140
16	35	15.5	45	45	93	16	0.35	5	377.21	160	377.21	160
18	35	17.5	45	45	93	18	0.35	5	444.03	180	444.03	180
20	40	19.5	55	54	104	20	0.40	5	557.18	200	557.18	200

Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals		
Heat resistant alloys	○	○
hardened materials		

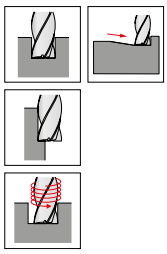
→ v_c/f_z Page 344+345

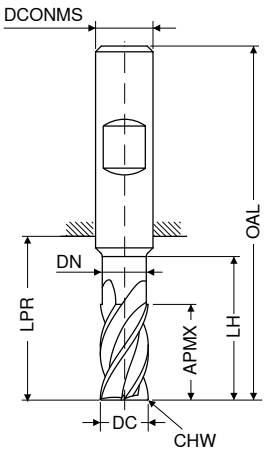
Rough milling cutter

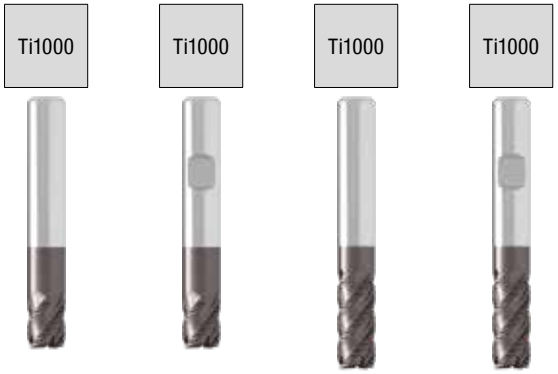
▲ with integrated chip breakers in the flutes

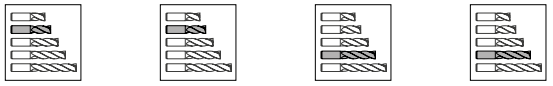
HR

λ_s=45°
γ_s=10°









Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB

V1 | V1 | V1 | V1

DC h11	APMX	DN	LH	LPR	OAL	DCONMS h6	CHW	ZEFP	Article no. 52 342 ...		Article no. 52 343 ...		Article no. 52 342 ...		Article no. 52 343 ...	
mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
6	8	6.0		18	54	6	0.15	4	93.96	060	93.96	060				
6	16	5.8	21	22	58	6	0.15	4					120.54	061	120.54	061
8	11	8.0		23	59	8	0.20	4	109.88	080	109.88	080				
8	22	7.7	27	34	70	8	0.20	4					138.09	081	138.09	081
10	13	10.0		27	67	10	0.20	4	115.33	100	115.33	100				
10	25	9.7	30	33	73	10	0.20	4					149.47	101	149.47	101
12	16	12.0		29	74	12	0.25	4	135.25	120	135.25	120				
12	28	11.6	38	39	84	12	0.25	4					176.56	121	176.56	121
14	16	14.0		30	75	14	0.25	4	188.40	140	188.40	140				
14	30	13.5	40	39	84	14	0.25	4					236.40	141	236.40	141
16	19	16.0		36	84	16	0.35	5	235.11	160	235.11	160				
16	35	15.5	45	45	93	16	0.35	5					301.81	161	301.81	161
18	19	18.0		32	80	18	0.35	5	303.11	180	303.11	180				
18	35	17.5	45	45	93	18	0.35	5					375.19	181	375.19	181
20	19	20.0		43	93	20	0.40	5	358.38	200	358.38	200				
20	40	19.5	55	54	104	20	0.40	5					452.85	201	452.85	201
25	50	24.0	65	69	125	25	0.50	5					675.74	251	675.74	251

Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals				
Heat resistant alloys	○	○	○	○
hardened materials				

→ v_c/f_z Page 344+345

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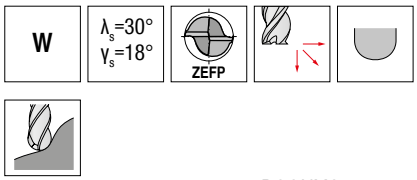
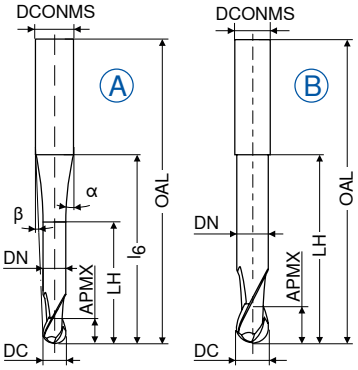
Ball nosed cutter

▲ Radius accuracy: ±0.005 mm
▲ For Ø DC ≤ 5.0 mm, angle tolerance α and β: ±0.5°





Factory standard
HA
V1
Article no. 52 718 ...

Factory standard
HA
V1
Article no. 52 720 ...

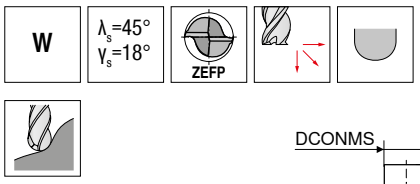
DC ±0,01 mm	APMX mm	DN mm	LH mm	l_6 mm	OAL mm	α°	β°	DCONMS h5 mm	ZEFP	Fig.	£		£	
0.5	1.0	0.45	2.0	9	38	10.0	8.0	3	2	A	176.42	**005**		
1.0	2.0	0.95	4.0	9	38	12.5	6.5	3	2	A	154.91	**010**		
1.5	2.5	1.40	7.5	9	38	32.0	5.0	3	2	A	136.65	**015**		
2.0	3.0	1.80	8.0	9	38	31.0	3.5	3	2	A	106.59	**020**		
3.0	3.5	2.80	10.0	20	57	11.5	5.0	6	2	A	121.60	**030**		
3.0	3.5	2.80	12.0	40	80	3.5	2.5	6	2	A			113.16	**030**
4.0	4.0	3.80	12.0	20	57	11.0	3.5	6	2	A	115.89	**040**		
4.0	4.0	3.80	20.0	40	80	4.0	1.5	6	2	A			117.27	**040**
5.0	5.0	4.70	10.0	40	100	1.5	1.0	6	2	A			151.86	**050**
5.0	5.0	4.70	14.0	20	57	10.0	2.0	6	2	A	125.27	**050**		
6.0	6.0	5.60	20.0		57			6	2	B	163.40	**060**		
6.0	6.0	5.60	40.0		100			6	2	B			153.49	**060**
8.0	7.0	7.60	25.0		63			8	2	B	178.32	**080**		
8.0	7.0	7.60	60.0		120			8	2	B			165.30	**080**
10.0	8.0	9.60	30.0		72			10	2	B	193.51	**100**		
10.0	8.0	9.60	60.0		120			10	2	B			185.97	**100**
12.0	8.0	11.50	40.0		83			12	2	B	322.33	**120**		
12.0	10.0	11.50	70.0		160			12	2	B			313.37	**120**

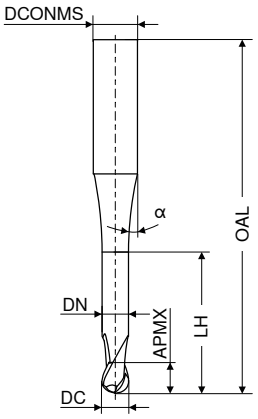
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys	○	○
hardened materials		

→ v_c/f_z Page 350–356

Ball nosed cutter

▲ Radius accuracy: ±0.01 mm





Factory standard | Factory standard

HA | HA

DC f8	APMX	DN	LH	OAL	α°	DCONMS h5	ZEFP	V0 Article no. 50 903 ...		V0 Article no. 50 903 ...	
mm	mm	mm	mm	mm		mm		£		£	
0.2	0.2	0.18	0.6	55	15	3	2	81.66	021		
0.2	0.2	0.18	1.0	55	15	3	2	82.81	022		
0.2	0.2	0.18	1.6	55	15	3	2	83.66	023		
0.2	0.2	0.18	2.0	55	15	3	2	84.65	024		
0.3	0.3	0.28	0.9	55	15	3	2	81.66	031		
0.3	0.3	0.28	1.5	55	15	3	2	82.81	032		
0.3	0.3	0.28	2.4	55	15	3	2	83.66	033		
0.3	0.3	0.28	3.0	55	15	3	2	84.65	034		
0.4	0.4	0.37	1.2	55	15	3	2	81.66	041		
0.4	0.4	0.37	2.0	55	15	3	2	82.81	042		
0.4	0.4	0.37	3.2	55	15	3	2	83.66	043		
0.4	0.4	0.37	4.0	55	15	3	2	84.65	044		
0.5	0.5	0.45	1.5	55	15	3	2	79.96	051		
0.5	0.5	0.45	2.5	55	15	3	2	80.81	052		
0.5	0.5	0.45	4.0	55	15	3	2	81.66	053		
0.5	0.5	0.45	5.0	55	15	3	2	82.81	054		
0.6	0.6	0.58	2.0	55	15	3	2	67.39	061		
0.6	0.6	0.58	3.0	55	15	3	2	67.13	062		
0.6	0.6	0.58	5.0	65	15	3	2			73.12	063
0.6	0.6	0.58	6.0	65	15	3	2			77.39	064
0.8	0.8	0.77	2.5	55	15	3	2	67.13	081		
0.8	0.8	0.77	4.0	55	15	3	2	67.13	082		
0.8	0.8	0.77	6.5	65	15	3	2			74.68	083
0.8	0.8	0.77	8.0	65	15	3	2			77.39	084
1.0	1.0	0.95	3.0	55	15	3	2	67.13	101		
1.0	1.0	0.95	5.0	55	15	3	2	67.13	102		
1.0	1.0	0.95	8.0	65	15	3	2			70.98	103
1.0	1.0	0.95	10.0	65	15	3	2			77.39	104
1.0	1.0	0.95	12.0	65	15	3	2			79.36	105
1.2	1.2	1.15	3.0	55	15	3	2	67.13	121		
1.2	1.2	1.15	6.0	55	15	3	2	67.13	122		
1.2	1.2	1.15	10.0	65	15	3	2			74.68	123
1.2	1.2	1.15	12.0	65	15	3	2			77.39	124
1.3	1.3	1.25	4.0	55	15	3	2	67.13	131		
1.3	1.3	1.25	7.0	55	15	3	2	67.13	132		
1.3	1.3	1.25	11.0	65	15	3	2			74.68	133
1.3	1.3	1.25	13.0	65	15	3	2			77.39	134
1.5	1.5	1.44	5.0	55	15	3	2	67.39	151		
1.5	1.5	1.44	7.5	55	15	3	2	67.13	152		
1.5	1.5	1.44	12.0	65	15	3	2			77.39	154

Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 350–356

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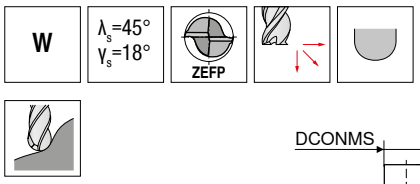
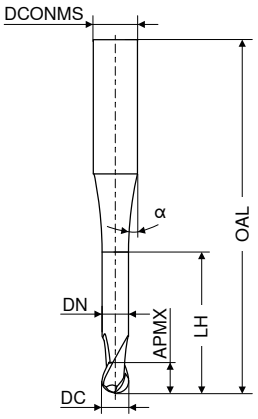
Continued on next page

Ball nosed cutter

▲ Radius accuracy: ±0.01 mm





Factory standard | Factory standard

HA | HA

DC f8 mm	APMX mm	DN mm	LH mm	OAL mm	α°	DCONMS h5 mm	ZEFP	V0 Article no. 50 903 ... £		V0 Article no. 50 903 ... £	
1.5	1.5	1.44	15.0	65	15	3	2			79.36	**153**
1.6	1.6	1.52	5.0	55	15	3	2	67.39	**161**		
1.6	1.6	1.52	8.0	55	15	3	2	67.39	**162**		
1.6	1.6	1.52	13.0	65	15	3	2			74.68	**163**
1.6	1.6	1.52	16.0	65	15	3	2			79.36	**164**
1.8	1.8	1.72	5.5	55	15	3	2	67.13	**181**		
1.8	1.8	1.72	9.0	55	15	3	2	67.39	**182**		
1.8	1.8	1.72	14.5	65	15	3	2			74.68	**183**
1.8	1.8	1.72	18.0	65	15	3	2			79.36	**184**
2.0	2.0	1.92	6.0	55	15	3	2	67.13	**201**		
2.0	2.0	1.92	10.0	55	15	3	2	67.13	**202**		
2.0	2.0	1.92	14.0	55	15	3	2	70.98	**203**		
2.0	2.0	1.92	16.0	65	15	3	2			79.36	**204**
2.0	2.0	1.92	20.0	65	15	3	2			77.39	**205**
2.3	2.3	2.22	7.0	55	15	3	2	67.13	**231**		
2.3	2.3	2.22	11.5	55	15	3	2	67.13	**232**		
2.3	2.3	2.22	18.5	65	15	3	2			70.98	**233**
2.3	2.3	2.22	20.0	65	15	3	2			77.39	**234**
2.3	2.3	2.22	23.0	65	15	3	2			79.36	**235**
3.0	3.0	2.90	9.0	65	15	6	2	70.98	**301**		
3.0	3.0	2.90	15.0	65	15	6	2	79.36	**302**		
3.0	3.0	2.90	24.0	100	15	6	2			86.07	**303**
3.0	3.0	2.90	30.0	100	15	6	2			89.50	**304**
4.0	4.0	3.90	12.0	65	15	6	2	79.36	**401**		
4.0	4.0	3.90	20.0	65	15	6	2	79.36	**402**		
4.0	4.0	3.90	32.0	100	15	6	2			89.50	**403**
4.0	4.0	3.90	40.0	100	15	6	2			92.49	**404**
5.0	5.0	4.90	15.0	65	15	6	2	79.36	**501**		
5.0	5.0	4.90	25.0	65	15	6	2	79.36	**502**		
5.0	5.0	4.90	40.0	100	15	6	2			92.49	**503**
5.0	5.0	4.90	50.0	100	15	6	2			95.34	**504**
6.0	6.0	5.90	18.0	65	15	6	2	79.36	**601**		
6.0	6.0	5.90	30.0	100	15	6	2			89.50	**602**
6.0	6.0	5.90	48.0	100	15	6	2			95.34	**603**
6.0	6.0	5.90	60.0	100	15	6	2			98.14	**604**

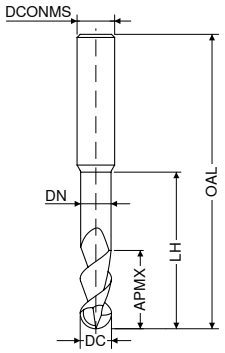
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

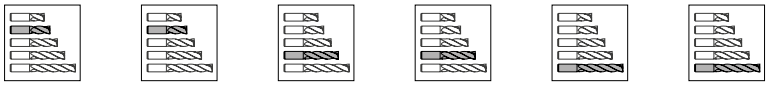
→ v_c/f_z Page 350–356

Ball nosed cutter

▲ Radius accuracy: ±0.01 mm

W | λ_s=55° γ_s= 7° | ZEFP | HPC





Factory standard | Factory standard | Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA | HA | HA

V0 | V0 | V0 | V0 | V0 | V0

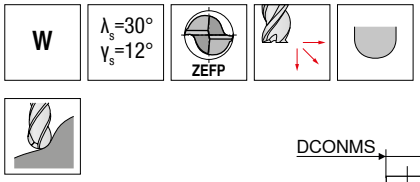
DC h6	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Article no. 54 640 ...	£	Article no. 54 642 ...	£	Article no. 54 640 ...	£	Article no. 54 642 ...	£	Article no. 54 640 ...	£	Article no. 54 642 ...	£
mm	mm	mm	mm	mm	mm													
3	5.0	2.8	12	55	6	2	061.42	031	074.12	031								
3	3.5	2.8	15	58	6	2					066.97	034	080.81	034				
3	8.0	2.8	15	58	6	2					070.25	032	084.94	032				
3	3.5	2.8	24	67	6	2									081.80	035	097.05	035
4	6.5	3.8	12	55	6	2	061.42	041	074.12	041								
4	10.5	3.8	20	62	6	2					070.25	042	095.48	042				
4	4.5	3.8	20	62	6	2					066.97	044	080.81	044				
4	4.5	3.8	32	74	6	2									081.80	045	097.05	045
5	8.0	4.8	15	58	6	2	061.42	051	074.12	051								
5	13.0	4.8	25	70	6	2					070.25	052	084.94	052				
5	5.5	4.8	25	70	6	2					066.97	054	080.81	054				
5	5.5	4.8	40	88	6	2									081.80	055	097.05	055
6	10.0	5.8	18	58	6	2	061.42	061	074.12	061								
6	16.0	5.8	30	70	6	2					070.25	062	084.94	062				
6	7.0	5.8	30	70	6	2					066.97	064	080.81	064				
6	7.0	5.8	48	88	6	2									080.24	065	097.05	065
8	13.0	7.7	24	64	8	2	078.58	081	092.97	081								
8	21.0	7.7	40	80	8	2					091.78	082	106.52	082				
8	9.0	7.7	40	80	8	2					087.50	084	101.35	084				
8	9.0	7.7	64	104	8	2									105.02	085	124.12	085
10	16.0	9.7	30	74	10	2	105.55	101	124.12	101								
10	26.0	9.7	50	94	10	2					120.91	102	146.07	102				
10	11.0	9.7	50	94	10	2					117.43	104	135.37	104				
10	11.0	9.7	80	124	10	2									140.65	105	161.60	105
12	19.0	11.6	36	85	12	2	149.64	121	166.15	121								
12	31.0	11.6	60	109	12	2					205.06	122	228.99	122				
12	13.0	11.6	60	109	12	2					196.07	124	217.04	124				
12	13.0	11.6	96	145	12	2									270.91	125	300.82	125
14	22.0	13.6	42	91	14	2	187.12	141	206.50	141								
14	36.0	13.6	70	119	14	2					257.36	142	282.88	142				
14	15.0	13.6	70	119	14	2					245.38	144	269.32	144				
14	15.0	13.6	112	161	14	2									353.11	145	387.60	145
16	25.0	15.5	48	100	16	2	246.95	161	266.33	161								
16	41.0	15.5	80	132	16	2					338.17	162	366.66	162				
16	17.0	15.5	80	132	16	2					321.76	164	348.72	164				
16	17.0	15.5	128	180	16	2									483.35	165	523.69	165
18	29.0	17.5	54	106	18	2	342.72	181	363.65	181								
18	47.0	17.5	90	142	18	2					471.38	182	499.76	182				
18	20.0	17.5	90	142	18	2					448.86	184	475.81	184				
18	20.0	17.5	144	196	18	2									674.88	185	713.78	185
20	32.0	19.5	60	114	20	2	345.69	201	371.05	201								
20	52.0	19.5	100	154	20	2					475.81	202	510.30	202				
20	22.0	19.5	100	154	20	2					453.43	204	486.35	204				
20	22.0	19.5	160	214	20	2									679.30	205	728.74	205

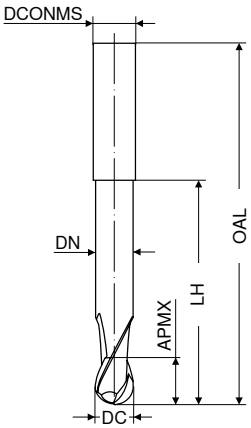
Steel						
Stainless steel						
Cast iron						
Non ferrous metals	●	●	●	●	●	●
Heat resistant alloys						
hardened materials						

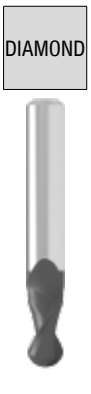
→ v_c/f_z Page 338+339

14

Ball nosed cutter







Factory standard

HA

Factory standard

HA

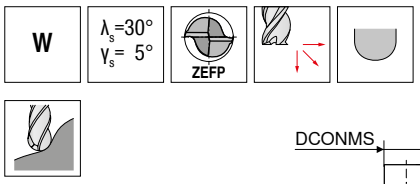
DC h10	APMX	LH	DN	OAL	DCONMS h6	ZEFP	V1 Article no. 52 766 ...		V1 Article no. 52 768 ...	
mm	mm	mm	mm	mm	mm		£		£	
0.5	1.5			38	3	2	160.04	**005**		
1.0	2.0			38	3	2	155.61	**010**		
2.0	3.0			38	3	2	155.61	**020**		
2.0	3.0			50	6	2	238.70	**021**		
2.0	8.0	31	1.8	60	2	2			188.40	**020**
3.0	5.0			38	3	2	155.61	**030**		
3.0	5.0			50	6	2	238.70	**031**		
3.0	12.0	41	2.8	70	3	2			176.56	**030**
4.0	8.0			54	6	2	238.70	**040**		
4.0	15.0	51	3.8	80	4	2			249.52	**040**
5.0	9.0			54	6	2	238.70	**050**		
5.0	20.0	71	4.8	100	5	2			289.27	**050**
6.0	10.0			54	6	2	234.57	**060**		
6.0	20.0	63	5.8	100	6	2			320.46	**060**
8.0	12.0			58	8	2	321.76	**080**		
8.0	20.0	83	7.8	120	8	2			426.06	**080**
10.0	14.0			66	10	2	409.11	**100**		
10.0	25.0	99	9.8	140	10	2			547.05	**100**
12.0	25.0	104	11.8	150	12	2			718.46	**120**

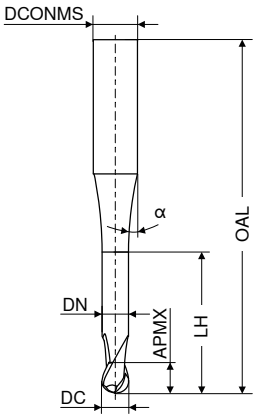
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 348

Micro-ball nosed cutter

▲ Radius accuracy: ±0.01 mm





Factory standard | Factory standard

HA | HA

DC f8 mm	APMX mm	LH mm	DN mm	OAL mm	α°	DCONMS h5 mm	ZEFP	V0 Article no. 50 912 ... £		V0 Article no. 50 912 ... £	
0.6	1.2	3.0	0.58	55	15	6	2	147.07	**906**		
0.6	1.2	6.0	0.58	65	15	6	2			161.03	**006**
0.8	1.2	4.0	0.77	55	15	6	2	147.07	**908**		
0.8	1.2	8.0	0.77	65	15	6	2			161.03	**008**
1.0	1.5	5.0	0.95	55	15	6	2	147.07	**910**		
1.0	1.5	12.0	0.95	65	15	6	2			161.03	**010**
1.2	1.6	6.0	1.15	55	15	6	2	147.07	**912**		
1.2	1.6	12.0	1.15	65	15	6	2			161.03	**012**
1.5	1.8	7.5	1.44	55	15	6	2	147.07	**915**		
1.5	1.8	15.0	1.44	65	15	6	2			161.03	**015**
2.0	2.0	10.0	1.92	55	15	6	2	147.07	**920**		
2.0	2.0	20.0	1.92	65	15	6	2			161.03	**020**

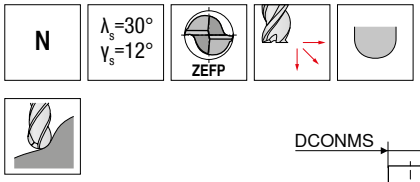
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

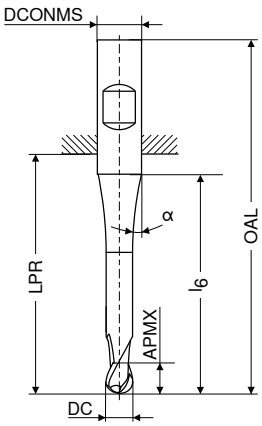
→ v_c/f_z Page 348

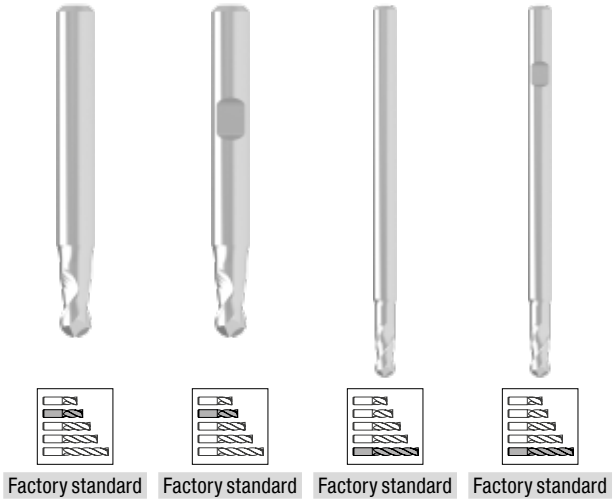
14

Ball nosed cutter

▲ Radius accuracy: ±0.005 mm







DC f8	APMX	l6	LPR	OAL	α° ±0,5	DCONMS h6	ZEFP	Factory standard HA V1 Article no. 52 250 ...		Factory standard HB V1 Article no. 52 250 ...		Factory standard HA V1 Article no. 52 251 ...		Factory standard HB V1 Article no. 52 251 ...	
mm	mm	mm	mm	mm		mm		£		£		£		£	
0.10	0.2	12.5	10	38	8	3	2	95.62	910						
0.15	0.3	11.5	10	38	8	3	2	81.36	915						
0.20	0.4	12.0	10	38	8	3	2	76.10	920						
0.25	0.5	12.5	10	38	8	3	2	83.74	925						
0.30	1.0	11.0	10	38	8	3	2	79.53	930						
0.35	1.0	11.0	10	38	8	3	2	70.18	935						
0.40	1.0	11.0	10	38	8	3	2	51.88	940						
0.50	1.5	11.5	10	38	8	3	2	41.75	950						
0.50	1.5	15.5	18	54	12	6	2	41.75	951						
0.50	1.5	11.5	47	75	8	3	2					48.16	005		
0.50	1.5	16.0	44	80	12	6	2					56.02	006		
0.60	1.5	11.5	10	38	8	3	2	45.03	960						
0.70	2.0	11.5	10	38	8	3	2	41.75	970						
0.80	2.0	11.5	10	38	8	3	2	41.75	980						
0.90	2.5	12.0	10	38	8	3	2	41.75	990						
1.00	2.0	11.0	22	50	8	3	2	45.32	011						
1.00	2.0	16.0	18	54	12	6	2	47.01	106	47.39	010				
1.00	3.0	12.0	47	75	8	3	2					60.45	010		
1.00	3.0	17.5	44	80	12	6	2					73.67	011	72.84	610
1.10	3.0	13.0	22	50	8	3	2	41.75	911						
1.20	3.0	13.0	22	50	8	3	2	41.75	012						
1.40	3.0	13.0	22	50	8	3	2	41.75	014						
1.50	3.0	11.0	22	50	8	3	2	45.32	016						
1.50	3.0	16.5	18	54	12	6	2	47.01	156	47.39	015				
1.50	4.0	13.0	47	75	8	3	2					58.56	015		
1.50	4.0	16.5	44	80	12	6	2					73.67	016	72.84	615
1.60	4.0	10.5	22	50	8	3	2	41.75	916						
1.80	4.0	10.0	22	50	8	3	2	41.75	018						
2.00	4.0	10.0	22	50	8	3	2	45.32	021						
2.00	4.0	16.5	18	54	12	6	2	47.01	206	47.39	020				
2.00	6.0	12.5	47	75	8	3	2					54.80	020		
2.00	6.0	18.0	44	80	12	6	2					71.83	021	70.98	620
2.50	5.0	10.5	22	50	8	3	2	41.75	025						
2.50	5.0	16.0	18	54	12	6	2	45.58	026	45.58	027				
2.50	8.0	14.0	47	75	8	3	2					54.59	025		
2.50	8.0	18.5	44	80	12	6	2					72.69	026	71.68	625
3.00	6.0		22	50		3	2	45.32	031						
3.00	6.0	15.5	18	54	12	6	2	47.01	306	44.63	030				
3.00	10.0		47	75		3	2					53.74	030		
3.00	10.0	19.5	44	80	12	6	2					68.79	031	69.26	630
4.00	7.0	16.0	18	54	12	6	2	47.01	406	44.63	040				

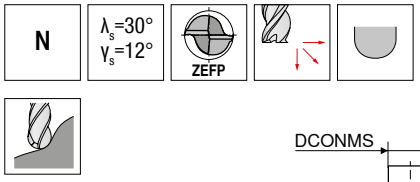
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

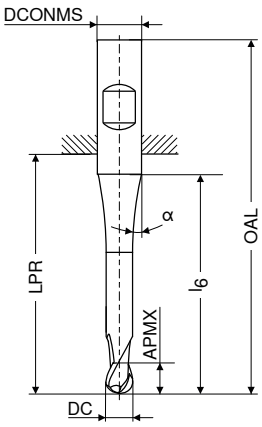
→ v_c/f_z Page 350–356

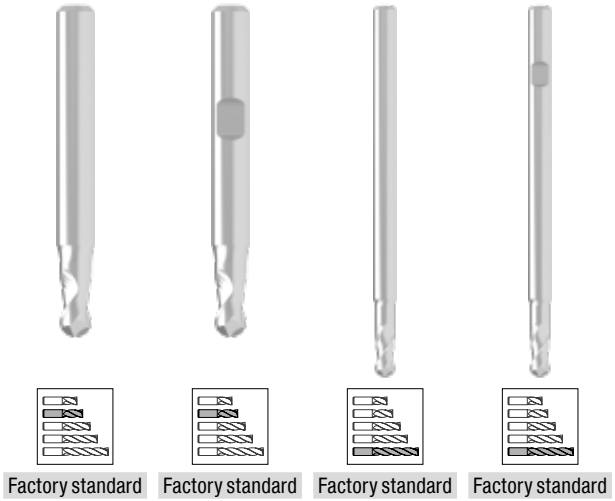
Continued on next page

Ball nosed cutter

▲ Radius accuracy: ±0.005 mm







DC f8	APMX	l6	LPR	OAL	α° ±0,5	DCONMS h6	ZEFP	Factory standard HA V1 Article no. 52 250 ...		Factory standard HB V1 Article no. 52 250 ...		Factory standard HA V1 Article no. 52 251 ...		Factory standard HB V1 Article no. 52 251 ...	
mm	mm	mm	mm	mm		mm		£		£		£		£	
4.00	7.0		26	54		4	2	46.16	**041**						
4.00	13.0		47	75		4	2					51.88	**040**		
4.00	13.0	20.5	44	80	12	6	2					68.79	**041**	69.26	**640**
5.00	8.0	13.0	18	54	12	6	2	47.01	**506**	44.63	**050**				
5.00	8.0		26	54		5	2	47.39	**051**						
5.00	14.0		47	75		5	2					57.16	**050**		
5.00	14.0	20.5	64	100	12	6	2					68.79	**051**	69.26	**650**
6.00	10.0		18	54		6	2	45.03	**061**	44.63	**060**				
6.00	16.0		64	100		6	2					61.86	**061**	62.22	**060**
8.00	12.0		23	59		8	2	51.88	**081**	51.04	**080**				
8.00	22.0		64	100		8	2					72.25	**081**	73.82	**080**
10.00	13.0		27	67		10	2	65.56	**101**	65.99	**100**				
10.00	25.0		60	100		10	2					95.34	**101**	99.35	**100**
12.00	16.0		28	73		12	2	95.34	**121**	96.61	**120**				
12.00	26.0		55	100		12	2					129.83	**121**	132.40	**120**
14.00	16.0		30	75		14	2	125.13	**141**	125.27	**140**				
14.00	26.0		55	100		14	2					183.82	**141**	187.68	**140**
16.00	20.0		35	83		16	2	136.30	**161**	139.22	**160**				
16.00	30.0		102	150		16	2					294.55	**161**	300.82	**160**
20.00	25.0		43	93		20	2	240.12	**201**	241.68	**200**				
20.00	40.0		100	150		20	2					357.25	**201**	364.65	**200**

Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials				

→ v_c/f_z Page 350–356

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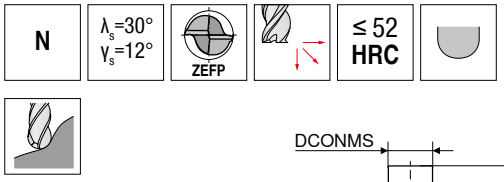
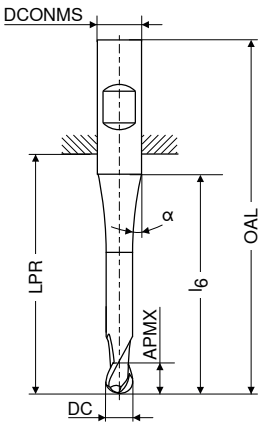
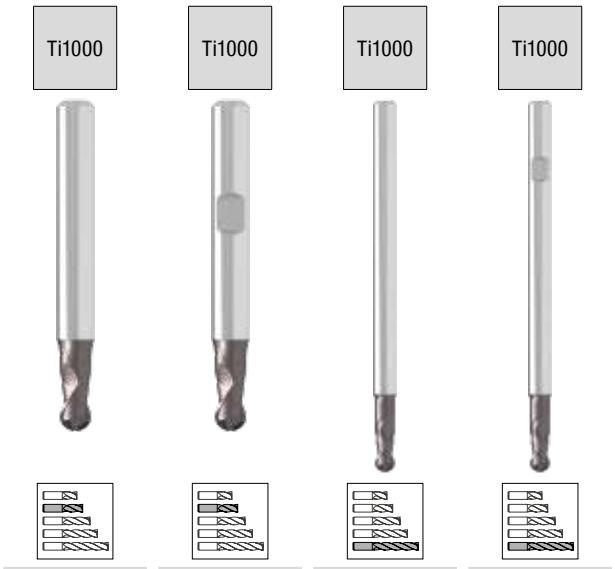
Ball nosed cutter

▲ Radius accuracy: ±0.005 mm







Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB

DC f8 mm	APMX mm	l6 mm	LPR mm	OAL mm	α° ±0,5°	DCONMS h6 mm	ZEFP	V1 Article no. 52 254 ... £		V1 Article no. 52 254 ... £		V1 Article no. 52 255 ... £		V1 Article no. 52 255 ... £	
0.10	0.2	12.5	10	38	8	3	2	100.60	910						
0.15	0.3	11.5	10	38	8	3	2	88.07	915						
0.20	0.4	12.0	10	38	8	3	2	81.79	920						
0.25	0.5	12.5	10	38	8	3	2	107.92	925						
0.30	1.0	11.0	10	38	8	3	2	102.07	930						
0.35	1.0	11.0	10	38	8	3	2	90.80	935						
0.40	1.0	11.0	10	38	8	3	2	68.13	940						
0.50	1.5	15.5	18	54	12	6	2	51.73	951						
0.50	1.5	16.0	44	80	12	6	2					84.21	006		
0.50	1.5	11.5	10	38	8	3	2	56.88	950						
0.50	1.5	11.5	47	75	8	3	2					55.36	005		
0.60	1.5	11.5	10	38	8	3	2	62.42	960						
0.70	2.0	11.5	10	38	8	3	2	56.88	970						
0.80	2.0	11.5	10	38	8	3	2	56.88	980						
0.90	2.5	12.0	10	38	8	3	2	56.88	990						
1.00	2.0	11.0	22	50	8	3	2	63.11	011						
1.00	2.0	16.0	18	54	12	6	2	64.20	106	69.50	010				
1.00	3.0	12.0	47	75	8	3	2					80.89	010		
1.00	3.0	17.5	44	80	12	6	2					88.34	011	88.78	610
1.10	3.0	13.0	22	50	8	3	2	58.63	911						
1.20	3.0	13.0	22	50	8	3	2	58.63	012						
1.40	3.0	13.0	22	50	8	3	2	58.63	014						
1.50	3.0	11.0	22	50	8	3	2	63.11	016						
1.50	3.0	16.5	18	54	12	6	2	64.20	156	69.50	015				
1.50	4.0	13.0	47	75	8	3	2					80.07	015		
1.50	4.0	16.5	44	80	12	6	2					88.34	016	88.78	615
1.60	4.0	10.5	22	50	8	3	2	58.63	916						
1.80	4.0	10.0	22	50	8	3	2	58.63	018						
2.00	4.0	16.5	18	54	12	6	2	64.20	206	69.50	020				
2.00	4.0	10.0	22	50	8	3	2	63.11	021						
2.00	6.0	12.5	47	75	8	3	2					75.59	020		
2.00	6.0	18.0	44	80	12	6	2					87.93	021	86.80	620
2.50	5.0	16.0	18	54	12	6	2	60.87	026	60.87	027				
2.50	5.0	10.5	22	50	8	3	2	58.63	025						
2.50	8.0	14.0	47	75	8	3	2					73.96	025		
2.50	8.0	18.5	44	80	12	6	2					86.94	026	86.00	625
3.00	6.0	15.5	18	54	12	6	2	64.20	306	64.60	030				
3.00	6.0		22	50		3	2	63.11	031						
3.00	10.0		47	75		3	2					73.15	030		
3.00	10.0	19.5	44	80	12	6	2					84.59	031	85.07	630

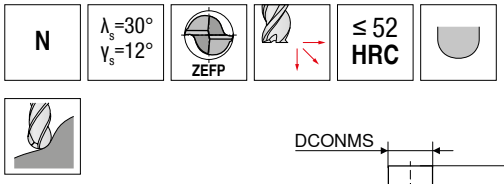
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

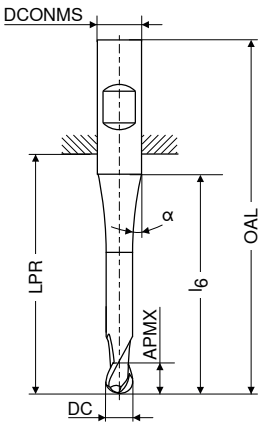
→ v_c/f_z Page 350–356

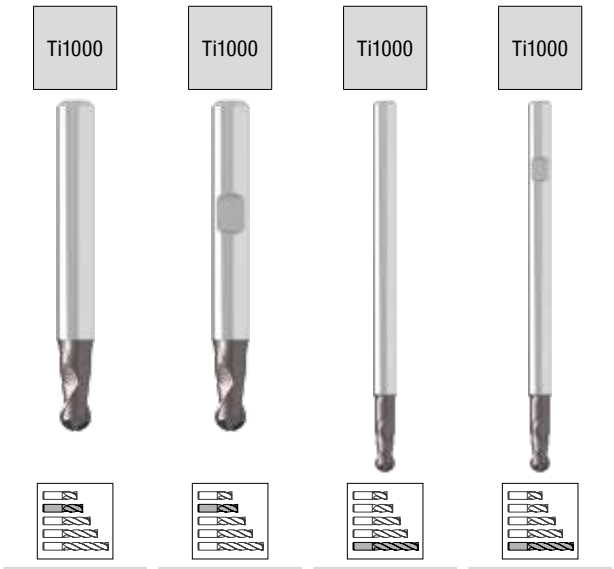
Continued on next page

Ball nosed cutter

▲ Radius accuracy: ±0.005 mm







Factory standard | Factory standard | Factory standard | Factory standard

HA | HB | HA | HB

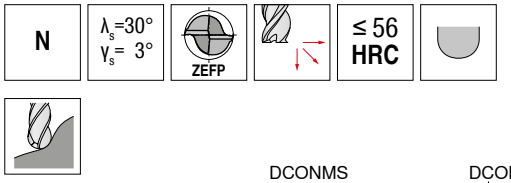
DC f8 mm	APMX mm	l6 mm	LPR mm	OAL mm	α° ±0,5°	DCONMS h6 mm	ZEFP	V1 Article no. 52 254 ... £		V1 Article no. 52 254 ... £		V1 Article no. 52 255 ... £		V1 Article no. 52 255 ... £	
4.00	7.0	13.0	18	54	12	6	2	64.20	**406**	64.60	**040**				
4.00	7.0		26	54		4	2	66.52	**041**						
4.00	13.0		47	75		4	2					72.21	**040**		
4.00	13.0	20.5	44	80	12	6	2					84.59	**041**	85.07	**640**
5.00	8.0	13.0	18	54	12	6	2	64.20	**506**	64.60	**050**				
5.00	8.0		26	54		5	2	69.50	**051**						
5.00	14.0		47	75		5	2					79.54	**050**		
5.00	14.0	20.5	64	100	12	6	2					84.59	**051**	85.07	**650**
6.00	10.0		18	54		6	2	64.48	**061**	64.60	**060**				
6.00	16.0		64	100		6	2					93.77	**061**	96.22	**060**
8.00	12.0		23	59		8	2	77.63	**081**	78.59	**080**				
8.00	22.0		64	100		8	2					112.78	**081**	115.77	**080**
10.00	13.0		27	67		10	2	102.07	**101**	102.62	**100**				
10.00	25.0		60	100		10	2					153.08	**101**	152.00	**100**
12.00	16.0		28	73		12	2	145.62	**121**	146.44	**120**				
12.00	26.0		55	100		12	2					195.83	**121**	200.99	**120**
14.00	16.0		30	75		14	2	185.12	**141**	185.25	**140**				
14.00	26.0		55	100		14	2					264.78	**141**	271.72	**140**
16.00	20.0		35	83		16	2	211.71	**161**	213.34	**160**				
16.00	30.0		102	150		16	2					430.07	**161**	441.20	**160**
18.00	22.0		43	93		18	2	329.40	**181**	329.40	**180**				
20.00	25.0		43	93		20	2	347.42	**201**	348.39	**200**				
20.00	40.0		100	150		20	2					524.93	**201**	538.23	**200**

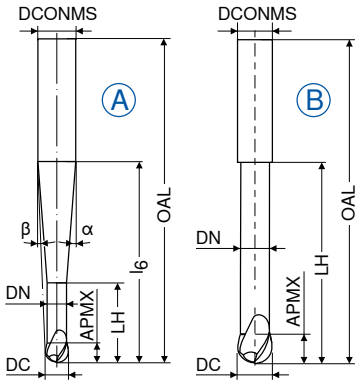
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

→ v_c/f_z Page 350–356

Ball nosed cutter

▲ Radius accuracy: ±0.005 mm
▲ For Ø DC ≤ 5.0 mm, angle tolerance α and β: ±0.5°





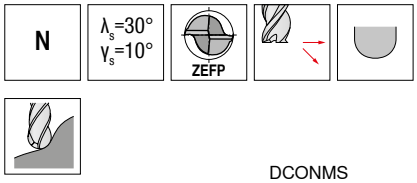
											Factory standard		Factory standard			
											HA		HA			
											V1		V1			
DC ±0,01	APMX	DN	LH	l6	OAL	α°	β°	DCONMS h5	ZEFP	Fig.	Article no. 52 714 ...		Article no. 52 717 ...			
mm	mm	mm	mm	mm	mm			mm			£		£			
0.5	1.0	0.45	2.0	20	57	10.0	8.5	6	2	A	187.12	005				
1.0	2.0	0.95	4.0	20	57	10.0	8.0	6	2	A	164.60	010				
1.0	2.0	0.95	4.0	40	80	4.5	4.0	6	2	A			143.06	010		
1.5	2.5	1.40	7.5	20	57	12.5	7.0	6	2	A	156.90	015				
1.5	2.5	1.40	7.5	40	80	4.5	3.5	6	2	A			136.65	015		
2.0	3.0	1.80	8.0	20	57	12.0	6.5	6	2	A	132.73	020				
2.0	3.0	1.80	8.0	40	80	4.0	3.0	6	2	A			121.40	020		
3.0	3.5	2.80	10.0	20	57	11.5	5.0	6	2	A	126.62	030				
3.0	3.5	2.80	12.0	40	80	3.5	2.5	6	2	A			114.58	030		
4.0	4.0	3.80	12.0	20	57	11.0	3.5	6	2	A	118.89	040				
4.0	4.0	3.80	20.0	40	80	4.0	1.5	6	2	A			109.60	040		
5.0	5.0	4.70	14.0	20	57	10.0	2.0	6	2	A	152.42	050				
5.0	5.0	4.70	25.0	40	80	3.0	1.0	6	2	A			111.31	050		
6.0	6.0	5.60	20.0		57			6	2	B	156.77	060				
6.0	6.0	5.60	40.0		80			6	2	B			137.89	060		
6.0	6.0	5.60	25.0	60	100	2.0	1.0	8	2	A			158.19	061		
8.0	7.0	7.60	25.0		63			8	2	B	168.98	080				
8.0	7.0	7.60	60.0		100			8	2	B			160.73	080		
8.0	7.0	7.60	30.0	75	120	2.0	1.0	10	2	A			211.47	081		
10.0	8.0	9.60	30.0		72			10	2	B	193.80	100				
10.0	8.0	9.60	50.0		100			10	2	B			186.39	102		
10.0	8.0	9.60	75.0		120			10	2	B			181.83	100		
10.0	8.0	9.60	40.0	110	160	1.0	1.0	12	2	A			281.01	101		
12.0	10.0	11.50	35.0		83			12	2	B	277.87	120				
12.0	10.0	11.50	35.0	40	92	35.0	3.5	16	2	A	357.10	121				
12.0	10.0	11.50	70.0		120			12	2	B			297.98	122		
12.0	10.0	11.50	70.0		160			12	2	B			310.37	120		
12.0	10.0	11.50	50.0	150	200	1.5	1.0	16	2	A			569.85	121		
16.0	12.0	15.50	40.0		92			16	2	B	351.83	160				
16.0	12.0	15.50	80.0		200			16	2	B			557.88	160		

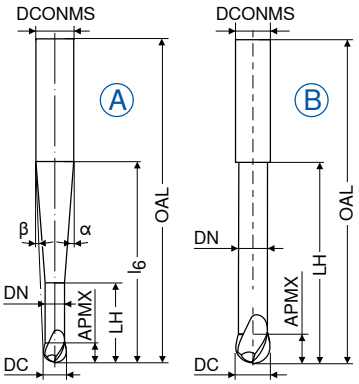
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	○

→ v_c/f_z Page 350–356

Ball nosed cutter

▲ Radius accuracy: ±0.01 mm
▲ for Ø ≤ 5.0 mm, angle tolerance α and β: ±0.5 °





Factory standard

HA

DC e8 mm	APMX mm	DN mm	LH mm	l_6 mm	OAL mm	α°	β°	DCONMS h6 mm	ZEFP	Fig.	V1 Article no. 52 320 ... £	
2	3	1.8	8	40	100	3.6	3.0	6	2	A	97.34	**020**
3	4	2.8	12	40	100	3.1	2.1	6	2	A	97.34	**030**
4	5	3.8	16	40	100	2.4	1.2	6	2	A	93.96	**040**
5	6	4.7	20	40	100	1.4	0.7	6	2	A	94.49	**050**
6	6	5.7	25	50	100	2.3	1.2	8	2	A	130.12	**061**
6	6	5.7	25		100			6	2	B	79.56	**060**
8	7	7.7	32		100			8	2	B	120.73	**080**
8	7	7.7	32	60	120	2.0	1.0	10	2	A	181.39	**081**
10	9	9.6	40		120			10	2	B	172.15	**100**
10	9	9.6	40	81	160	1.4	0.7	12	2	A	292.14	**101**
12	11	11.6	50		160			12	2	B	266.63	**120**
12	11	11.6	50	101	200	2.3	1.2	16	2	A	503.30	**121**
16	14	15.6	60		200			16	2	B	454.44	**160**

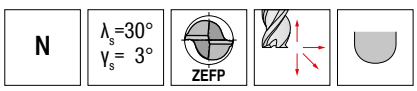
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

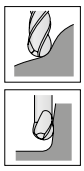
→ v_c/f_z Page 350–356

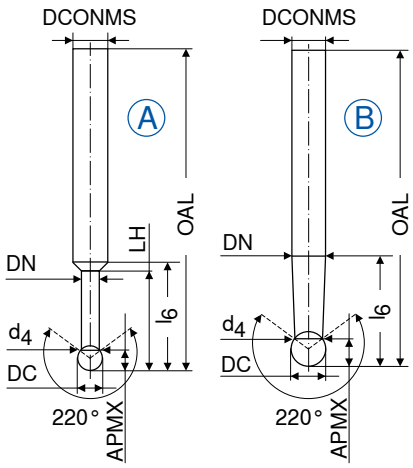
14

Ball nosed cutter 220°

▲ Radius accuracy: ±0.005 mm







Ti1000

Factory standard

HA

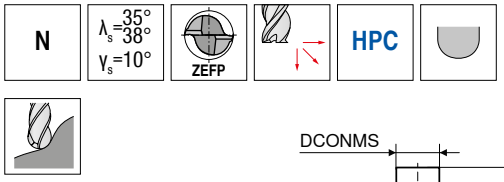
DC f8 mm	APMX mm	DN mm	d_4 mm	LH mm	l_6 mm	OAL mm	DCONMS h6 mm	ZEFP	Fig.	V1 Article no. 52 323 ... £	
1.0	0.7	0.85	0.8	5	17	58	6	2	A	143.64	**010**
1.5	1.2	1.25	1.2	8	20	58	6	2	A	143.64	**015**
2.0	1.5	1.70	1.4	10	21	58	6	2	A	143.64	**020**
3.0	2.3	2.70	2.4	15	22	65	6	2	A	145.06	**030**
4.0	3.0	3.70	3.4	20	25	70	6	2	A	148.36	**040**
5.0	3.5	4.70	4.3	25	28	80	6	2	A	154.47	**050**
6.0	4.0	5.90	4.3		30	100	6	2	B	178.70	**060**
8.0	5.4	7.90	6.2		40	100	8	2	B	236.85	**080**
10.0	6.7	9.90	7.6		50	100	10	2	B	311.21	**100**
12.0	9.0	11.90	9.2		110	160	12	2	B	456.67	**121**
12.0	9.0	11.90	9.2		70	120	12	2	B	429.16	**120**

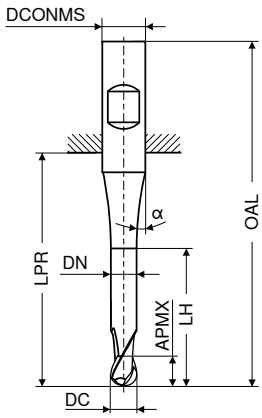
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

→ v_c/f_z Page 350–356

Ball nosed cutter

▲ Radius accuracy: ±0.01 mm





≈DIN 6527 | ≈DIN 6527

HB | HB

V3 | V3

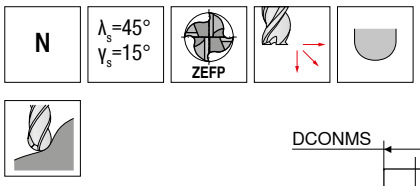
DC h10 mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h6 mm	α°	ZEFP	Article no. 54 055 ... £		Article no. 54 056 ... £	
3	5			14	50	6	15	2	19.03	**030**		
3	8	2.8	12	21	57	6	15	2			19.03	**030**
4	8			18	54	6	15	2	19.03	**040**		
4	11	3.8	15	21	57	6	15	2			19.03	**040**
5	9			18	54	6	15	2	19.03	**050**		
5	13	4.8	17	21	57	6	15	2			19.03	**050**
6	10			18	54	6	30	2	19.81	**060**		
6	13	5.8	21	21	57	6	30	2			22.28	**060**
8	12			22	58	8	30	2	26.08	**080**		
8	19	7.7	27	27	63	8	30	2			27.53	**080**
10	14			26	66	10	30	2	32.56	**100**		
10	22	9.7	32	32	72	10	30	2			34.92	**100**
12	16			28	73	12	30	2	47.57	**120**		
12	26	11.6	38	38	83	12	30	2			55.18	**120**
16	22			34	82	16	30	2	77.66	**160**		
16	32	15.5	44	44	92	16	30	2			81.47	**160**
20	26			42	92	20	30	2	110.91	**200**		
20	38	19.5	54	54	104	20	30	2			118.07	**200**

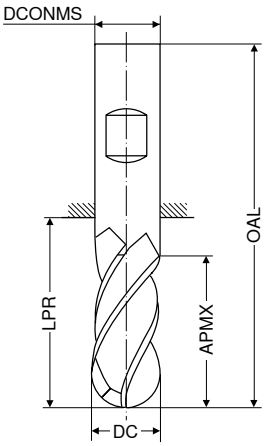
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

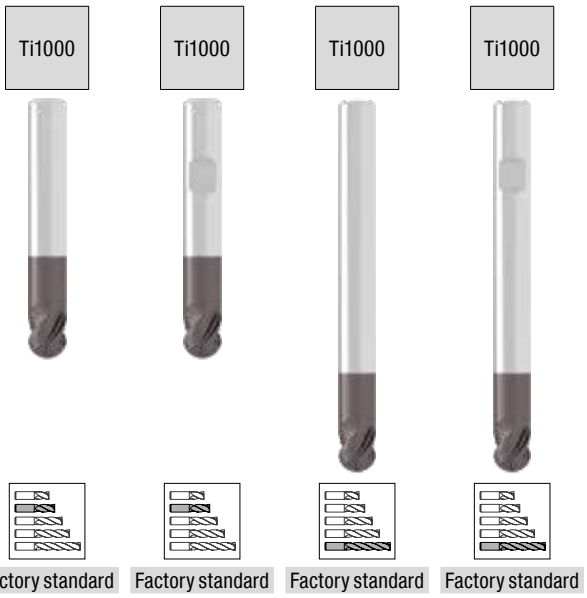
→ v_c/f_z Page 350–356

Ball nosed cutter

▲ Radius accuracy: ±0.005 mm







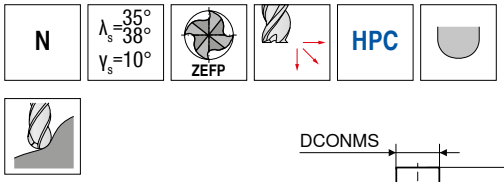
DC f8	APMX	LPR	OAL	DCONMS h6	ZEFP	Factory standard HA V1 Article no. 52 400 ...		Factory standard HB V1 Article no. 52 401 ...		Factory standard HA V1 Article no. 52 402 ...		Factory standard HB V1 Article no. 52 403 ...	
mm	mm	mm	mm	mm		£		£		£		£	
3	5	22	50	3	4	57.43	030						
3	5	47	75	3	4					69.40	030		
4	8	26	54	4	4	57.60	040						
4	8	47	75	4	4					77.17	040		
5	9	26	54	5	4	60.29	050						
5	9	47	75	5	4					80.24	050		
6	10	18	54	6	4	63.55	060	63.55	060				
6	10	64	100	6	4					82.39	060	82.39	060
8	12	23	59	8	4	78.54	080	78.54	080				
8	12	64	100	8	4					104.17	080	104.17	080
10	14	27	67	10	4	104.15	100	104.15	100				
10	14	60	100	10	4					132.67	100	132.67	100
12	16	29	74	12	4	133.55	120	133.55	120				
12	16	55	100	12	4					171.29	120	171.29	120
14	18	30	75	14	4	166.99	140	166.99	140				
14	18	55	100	14	4					210.76	140	210.76	140
16	22	35	83	16	4	219.15	160	219.15	160				
16	22	102	150	16	4					314.77	160	314.77	160
20	26	43	93	20	4	336.01	200	336.01	200				
20	26	100	150	20	4					464.69	200	464.69	200

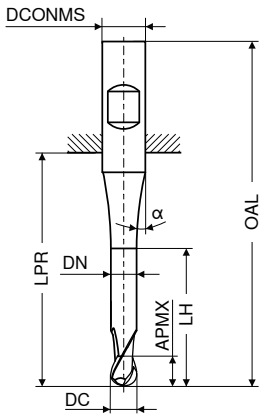
Steel	○	○	○	○
Stainless steel	●	●	●	●
Cast iron	○	○	○	○
Non ferrous metals	●	●	●	●
Heat resistant alloys	●	●	●	●
hardened materials	○	○	○	○

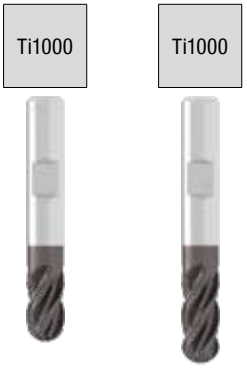
→ v_c/f_z Page 350–356

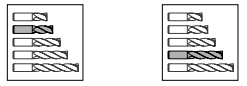
Ball nosed cutter

▲ Radius accuracy: ±0.01 mm









≈DIN 6527 | ≈DIN 6527

HB | HB

V3 | V3

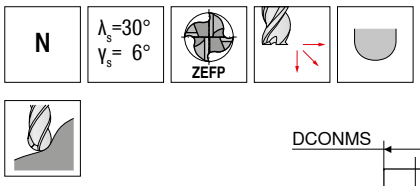
DC h10 mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS h6 mm	α°	ZEFP	Article no. 54 057 ... £		Article no. 54 058 ... £	
3	5			14	50	6	15	4	19.03	**030**		
3	8	2.8	12	21	57	6	15	4			19.03	**030**
4	8			18	54	6	15	4	19.03	**040**		
4	11	3.8	15	21	57	6	15	4			19.03	**040**
5	9			18	54	6	15	4	19.03	**050**		
5	13	4.8	17	21	57	6	15	4			19.03	**050**
6	10			18	54	6	30	4	19.81	**060**		
6	13	5.8	21	21	57	6	30	4			22.28	**060**
8	12			22	58	8	30	4	26.08	**080**		
8	19	7.7	27	27	63	8	30	4			27.53	**080**
10	14			26	66	10	30	4	32.56	**100**		
10	22	9.7	32	32	72	10	30	4			34.92	**100**
12	16			28	73	12	30	4	47.57	**120**		
12	26	11.6	38	38	83	12	30	4			55.18	**120**
16	22			34	82	16	30	4	77.66	**160**		
16	32	15.5	44	44	92	16	30	4			81.47	**160**
20	26			42	92	20	30	4	110.91	**200**		
20	38	19.5	54	54	104	20	30	4			118.07	**200**

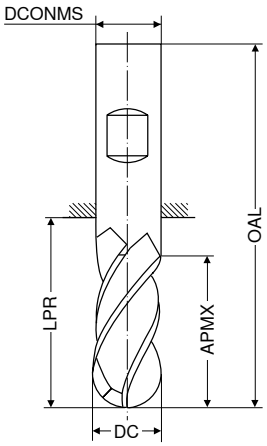
Steel	●	●
Stainless steel	●	●
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	●	●
hardened materials		

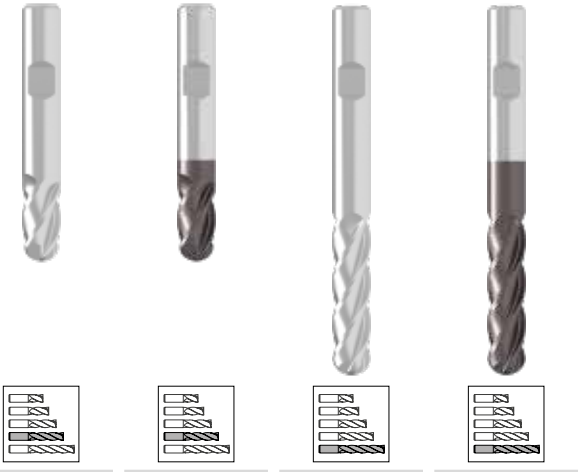
→ v_c/f_z Page 350–356

Ball nosed cutter

▲ Radius accuracy: ±0.01 mm







DC f8	APMX	LPR	OAL	DCONMS h5	ZEFP	DIN 6527 HB V0 Article no. 50 642 ... £		DIN 6527 HB V0 Article no. 50 643 ... £		Factory standard HB V0 Article no. 50 642 ... £		DIN 6527 HB V0 Article no. 50 643 ... £	
mm	mm	mm	mm	mm									
3	8	21	57	6	4	41.49	030	47.59	030				
4	11	21	57	6	4	41.49	040	47.59	040				
6	13	21	57	6	4	41.49	060	47.59	060				
6	40	64	100	6	4					51.17	061	61.42	061
8	19	27	63	8	4	47.59	080	52.01	080				
8	40	64	100	8	4					58.86	081	68.12	081
10	22	32	72	10	4	81.23	100	83.20	100				
10	40	60	100	10	4					104.17	101	113.72	101
12	26	38	83	12	4	108.89	120	110.58	120				
12	45	55	100	12	4					141.36	121	150.93	121
12	75	105	150	12	4					219.31	122	228.56	122
14	26	38	83	14	4	137.67	140	134.90	140				
14	45	55	100	14	4					195.95	141	205.21	141
16	32	44	92	16	4	193.95	160	190.39	160				
16	75	102	150	16	4					268.48	161	277.87	161
20	38	54	104	20	4	268.75	200	245.11	200				
20	75	100	150	20	4					425.95	201	435.33	201

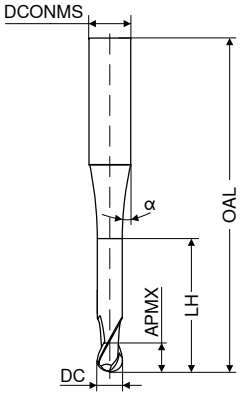
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials		○		○

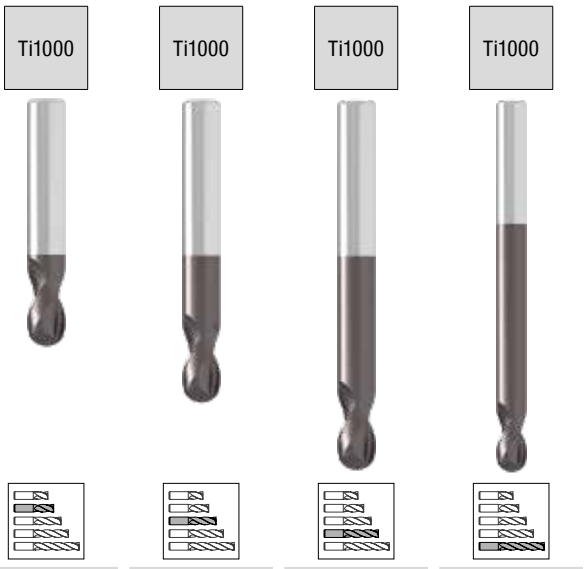
→ v_c/f_z Page 350–356

Ball nosed cutter

▲ Radius accuracy: ±0.01 mm

H | λ_s=30° γ_s= 4° | ZEFP | ≤ 68 HRC





Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA

V0 | V0 | V0 | V0

DC mm	Tol.	APMX mm	LH mm	OAL mm	α°	DCONMS $_{h5}$ mm	ZEFP	Article no. 50 906 ... £		Article no. 50 906 ... £		Article no. 50 906 ... £		Article no. 50 906 ... £	
0.20	0/-0,015	0.3	0.6	40	15	4	2	83.47	**002**						
0.25	0/-0,015	0.3	0.6	40	15	4	2	83.47	**925**						
0.30	0/-0,015	0.3	0.6	40	15	4	2	83.47	**003**						
0.35	0/-0,015	0.4	0.7	40	15	4	2	83.47	**935**						
0.40	0/-0,015	0.4	0.7	40	15	4	2	83.47	**004**						
0.50	0/-0,015	0.5	0.8	40	15	4	2	83.47	**005**						
0.50	0/-0,015	0.5	0.8	54	15	6	2	95.96	**951**						
0.60	0/-0,015	0.6	0.9	40	15	4	2	83.47	**006**						
0.70	0/-0,015	0.8	1.1	40	15	4	2	83.47	**007**						
0.80	0/-0,015	0.8	1.1	40	15	4	2	83.47	**008**						
0.90	0/-0,015	0.9	1.2	40	15	4	2	83.47	**009**						
1.00	0/-0,015	1.0	1.3	54		4	2					83.47	**010**		
1.00	0/-0,015	1.0	1.3	54	15	6	2	95.96	**011**						
1.00	0/-0,015	1.0	1.3	64		6	2					100.44	**012**		
1.00	0/-0,015	1.0	1.3	80		6	2							104.63	**013**
1.00	0/-0,015	1.0	1.3	100		6	2							108.97	**014**
1.20	0/-0,015	1.2	1.5	54		4	2					83.47	**112**		
1.40	0/-0,015	1.4	1.8	54		4	2					83.47	**114**		
1.50	0/-0,015	1.5	1.9	54		4	2					83.47	**115**		
1.50	0/-0,015	1.5	1.9	54	15	6	2	95.96	**215**						
1.50	0/-0,015	1.5	1.9	80		6	2							104.63	**315**
1.60	0/-0,015	1.8	2.3	54		4	2					83.47	**116**		
1.80	0/-0,015	1.8	2.3	54		4	2					83.47	**118**		
2.00	0/-0,015	2.0	2.5	54		4	2					89.03	**206**		
2.00	0/-0,015	4.0	5.0	54		6	2					95.96	**202**		
2.00	0/-0,015	4.0	5.0	64		6	2					107.09	**207**		
2.00	0/-0,015	4.0	5.0	82		6	2							104.63	**204**
2.00	0/-0,015	4.0	5.0	100		6	2							108.97	**205**
2.50	0/-0,02	5.0	6.6	54		4	2					83.47	**251**		
2.50	0/-0,02	5.0	6.3	54	15	6	2	95.96	**252**						
2.50	0/-0,02	5.0	6.3	64		6	2					100.44	**253**		
2.50	0/-0,02	5.0	6.3	82		6	2							104.63	**254**
2.50	0/-0,02	5.0	6.3	100		6	2							108.97	**255**
3.00	0/-0,02	5.0	6.3	54		4	2					83.47	**030**		
3.00	0/-0,02	5.0	6.3	82		4	2							83.47	**032**
3.00	0/-0,02	5.0	6.3	100		4	2							83.47	**033**
3.00	0/-0,02	5.0	6.3	54	15	6	2	95.96	**035**						
3.00	0/-0,02	5.0	6.3	64		6	2					100.44	**036**		
3.00	0/-0,02	5.0	6.3	82		6	2							104.63	**037**
3.00	0/-0,02	8.0	10.0	100		6	2							108.97	**038**
4.00	0/-0,02	8.0		54	15	4	2					83.47	**040**		
4.00	0/-0,02	8.0		82	15	4	2							98.94	**042**
4.00	0/-0,02	8.0		100	15	4	2							105.31	**043**
4.00	0/-0,02	8.0	10.0	54	15	6	2	83.47	**045**						

Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

→ v_c/f_z Page 350–356

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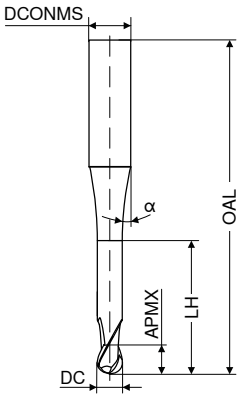
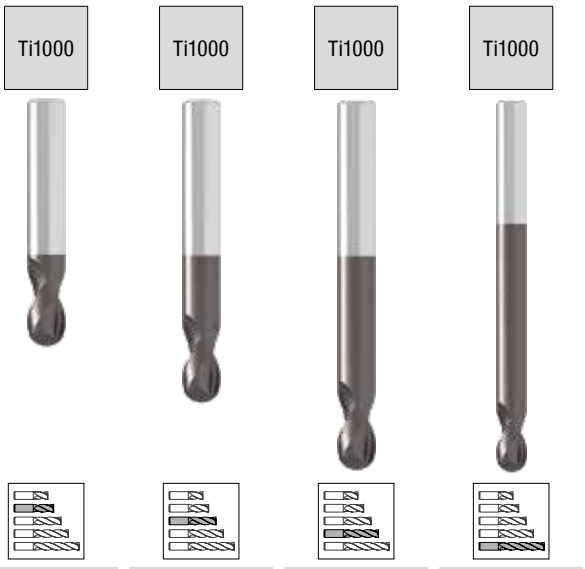
Continued on next page

Ball nosed cutter

▲ Radius accuracy: ±0.01 mm

H | λ_s=30° γ_s= 4° | ZEFP | ≤ 68 HRC





Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA

V0 | V0 | V0 | V0

DC mm	Tol.	APMX mm	LH mm	OAL mm	α°	DCONMS $_{h5}$ mm	ZEFP	Article no. 50 906 ... £		Article no. 50 906 ... £		Article no. 50 906 ... £		Article no. 50 906 ... £	
4.00	0/-0,02	8.0	10.0	64		6	2					100.44	**046**		
4.00	0/-0,02	8.0	10.0	82		6	2							104.63	**047**
4.00	0/-0,02	8.0	10.0	100		6	2							108.97	**048**
5.00	0/-0,02	9.0		54	15	5	2					83.47	**050**		
5.00	0/-0,02	9.0		64	15	5	2					100.44	**051**		
5.00	0/-0,02	9.0		82	15	5	2							104.63	**052**
5.00	0/-0,02	9.0		100	15	5	2							108.97	**053**
5.00	0/-0,02	9.0	11.3	54	15	6	2	83.47	**055**						
5.00	0/-0,02	9.0	11.3	64		6	2					100.44	**056**		
5.00	0/-0,02	9.0	11.3	82		6	2							104.63	**057**
5.00	0/-0,02	9.0	11.3	100		6	2							108.97	**058**
6.00	0/-0,02	10.0		54	15	6	2	83.47	**060**						
6.00	0/-0,02	10.0		64	15	6	2					100.44	**061**		
6.00	0/-0,02	10.0		82	15	6	2							104.63	**062**
6.00	0/-0,02	10.0		100	15	6	2							108.97	**063**
6.00	0/-0,02	10.0		120	15	6	2							113.75	**064**
8.00	0/-0,025	12.0		64	15	8	2					91.20	**081**		
8.00	0/-0,025	12.0		82	15	8	2			116.59	**082**				
8.00	0/-0,025	12.0		100	15	8	2							141.68	**083**
8.00	0/-0,025	12.0		120	15	8	2							166.65	**084**
10.00	0/-0,025	14.0		67	15	10	2	113.86	**101**						
10.00	0/-0,025	14.0		82	15	10	2			153.35	**102**				
10.00	0/-0,025	14.0		100	15	10	2							193.52	**103**
10.00	0/-0,025	14.0		127	15	10	2							232.08	**104**
12.00	0/-0,025	16.0		75	15	12	2	165.71	**121**						
12.00	0/-0,025	16.0		100	15	12	2			249.04	**122**				
12.00	0/-0,025	16.0		150	15	12	2							329.51	**123**
14.00	0/-0,025	18.0		80	15	14	2	206.84	**141**						
14.00	0/-0,025	18.0		100	15	14	2			301.00	**142**				
14.00	0/-0,025	18.0		150	15	14	2							396.98	**143**
16.00	0/-0,025	22.0		85	15	16	2	245.65	**161**						
16.00	0/-0,025	22.0		150	15	16	2							534.72	**163**
20.00	0/-0,025	26.0		90	15	20	2	403.47	**201**						
20.00	0/-0,025	26.0		150	15	20	2							707.74	**203**

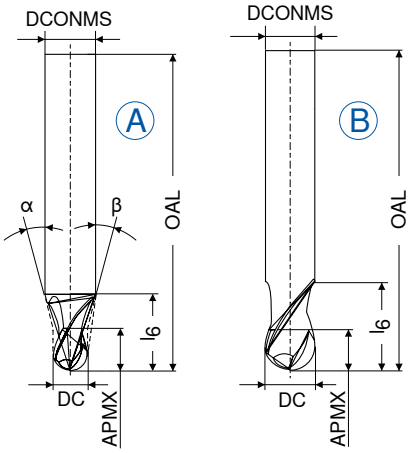
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron	●	●	●	●
Non ferrous metals	○	○	○	○
Heat resistant alloys	○	○	○	○
hardened materials	○	○	○	○

→ v_c/f_z Page 350–356

Ball nosed cutter

▲ Radius accuracy: ±0.005 mm

H | λ_s=30° γ_s=–3° | ZEFP | 45–66 HRC | Ti1000



Factory standard

HA

DC ±0,01 mm	APMX mm	l_6 mm	OAL mm	α°	β°	DCONMS h5 mm	ZEFP	Fig.	V1 Article no. 52 741 ... £	
2	1.5	3.3	38	15	9	3	2	A	124.56	**020**
3	2.0	7.5	57	15	12	6	2	A	108.35	**030**
4	2.5	6.0	57	15	9	6	2	A	105.88	**040**
5	3.0	5.0	57	15	6	6	2	A	105.88	**050**
6	3.5		57	15		6	2	B	131.10	**060**
8	4.5		63	15		8	2	B	167.58	**080**
10	5.5		72	15		10	2	B	209.06	**100**
12	6.5		83	15		12	2	B	264.49	**120**

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

→ v_c/f_z Page 350–356

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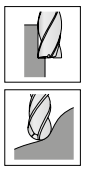
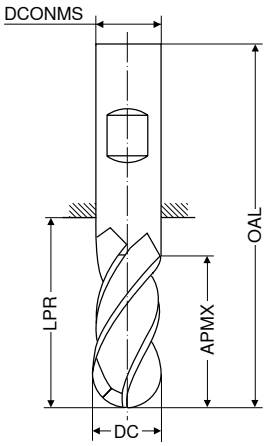
Ball nose cutter for rough milling

▲ Radius accuracy: ±0.01 mm





DIN 6527

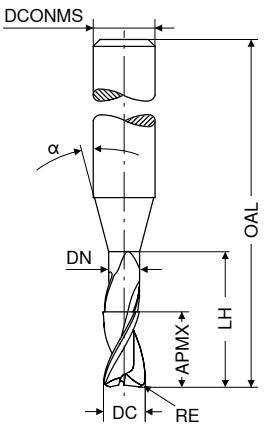
HB

DC d11 mm	APMX mm	LPR mm	OAL mm	DCONMS h5 mm	ZEFP	V0 Article no. 50 641 ... £	
6	13	21	57	6	4	103.17	**060**
8	19	27	63	8	4	113.93	**080**
10	22	32	72	10	4	121.99	**100**
12	26	38	83	12	4	157.89	**120**
14	26	38	83	14	4	223.45	**140**
16	32	44	92	16	4	228.73	**160**
18	32	44	92	18	4	330.31	**180**
20	38	54	104	20	4	339.15	**200**

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

→ v_c/f_z Page 350–356

Torus cutter



Factory standard

Factory standard

HA

HA

V0

V0

DC f8	RE ±0.01	APMX	DN	LH	OAL	α°	DCONMS h5	ZEFP	Article no. 50 901 ...		Article no. 50 901 ...	
mm	mm	mm	mm	mm	mm		mm		£		£	
0.2	0.02	0.2	0.18	0.6	55	15	3	2	81.66	021		
0.2	0.02	0.2	0.18	1.0	55	15	3	2	82.81	022		
0.2	0.02	0.2	0.18	1.6	55	15	3	2	83.66	023		
0.2	0.02	0.2	0.18	2.0	55	15	3	2	84.65	024		
0.3	0.03	0.3	0.28	0.9	55	15	3	2	81.66	031		
0.3	0.03	0.3	0.28	1.5	55	15	3	2	82.81	032		
0.3	0.03	0.3	0.28	2.4	55	15	3	2	83.66	033		
0.3	0.03	0.3	0.28	3.0	55	15	3	2	84.65	034		
0.4	0.04	0.4	0.37	1.2	55	15	3	2	81.66	041		
0.4	0.04	0.4	0.37	2.0	55	15	3	2	82.81	042		
0.4	0.04	0.4	0.37	3.2	55	15	3	2	83.66	043		
0.4	0.04	0.4	0.37	4.0	55	15	3	2	84.65	044		
0.5	0.05	0.5	0.45	1.5	55	15	3	2	79.96	051		
0.5	0.05	0.5	0.45	2.5	55	15	3	2	80.81	052		
0.5	0.05	0.5	0.45	4.0	55	15	3	2	81.66	053		
0.5	0.05	0.5	0.45	5.0	55	15	3	2	82.81	054		
0.6	0.06	0.6	0.58	2.0	55	15	3	2	67.39	061		
0.6	0.06	0.6	0.58	3.0	55	15	3	2	67.39	062		
0.6	0.06	0.6	0.58	4.2	55	15	3	2	67.13	063		
0.6	0.06	0.6	0.58	5.0	65	15	3	2			79.36	064
0.6	0.06	0.6	0.58	6.0	65	15	3	2			77.39	065
0.8	0.08	0.8	0.77	2.5	55	15	3	2	67.13	081		
0.8	0.08	0.8	0.77	4.0	55	15	3	2	67.13	082		
0.8	0.08	0.8	0.77	6.5	65	15	3	2			74.68	083
0.8	0.08	0.8	0.77	8.0	65	15	3	2			77.39	084
1.0	0.10	1.0	0.95	3.0	55	15	3	2	67.13	101		
1.0	0.10	1.0	0.95	5.0	55	15	3	2	67.13	102		
1.0	0.10	1.0	0.95	8.0	65	15	3	2			70.98	103
1.0	0.10	1.0	0.95	10.0	65	15	3	2			77.39	104
1.0	0.10	1.0	0.95	12.0	65	15	3	2			79.36	105
1.2	0.12	1.2	1.15	3.0	55	15	3	2	67.13	121		
1.2	0.12	1.2	1.15	6.0	55	15	3	2	67.13	122		
1.2	0.12	1.2	1.15	10.0	65	15	3	2			74.68	123
1.2	0.12	1.2	1.15	12.0	65	15	3	2			77.39	124
1.3	0.13	1.3	1.25	4.0	55	15	3	2	67.13	131		
1.3	0.13	1.3	1.25	7.0	55	15	3	2	67.39	132		
1.3	0.13	1.3	1.25	11.0	65	15	3	2			74.68	133
1.3	0.13	1.3	1.25	13.0	65	15	3	2			79.36	134
1.5	0.15	1.5	1.44	5.0	55	15	3	2	67.39	151		
1.5	0.15	1.5	1.44	7.5	55	15	3	2	67.13	152		
1.5	0.15	1.5	1.44	12.0	65	15	3	2			79.36	153
1.5	0.15	1.5	1.44	15.0	65	15	3	2			77.39	154
1.6	0.16	1.6	1.52	5.0	55	15	3	2	67.39	161		
1.6	0.16	1.6	1.52	8.0	55	15	3	2	67.39	162		
1.6	0.16	1.6	1.52	13.0	65	15	3	2			74.68	163

Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 350–356

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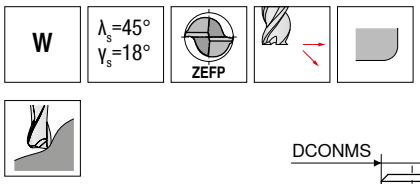
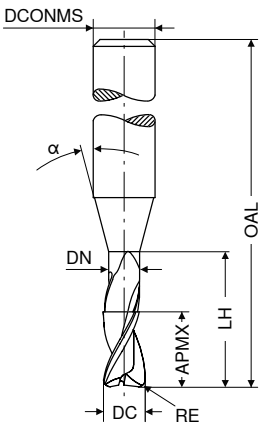
Continued on next page

Torus cutter





Factory standard

Factory standard

HA

HA

V0

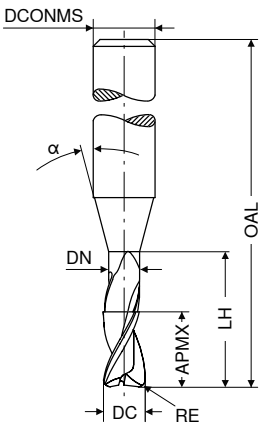
V0

DC f8	RE ±0.01	APMX	DN	LH	OAL	α°	DCONMS h5	ZEFP	Article no. 50 901 ...		Article no. 50 901 ...	
mm	mm	mm	mm	mm	mm		mm		£		£	
1.6	0.16	1.6	1.52	16.0	65	15	3	2			79.36	164
1.8	0.18	1.8	1.72	5.5	55	15	3	2	67.13	181		
1.8	0.18	1.8	1.72	9.0	55	15	3	2	67.39	182		
1.8	0.18	1.8	1.72	14.5	65	15	3	2			74.68	183
1.8	0.18	1.8	1.72	18.0	65	15	3	2			79.36	184
2.0	0.20	2.0	1.92	6.0	55	15	3	2	67.13	201		
2.0	0.20	2.0	1.92	10.0	55	15	3	2	67.39	202		
2.0	0.20	2.0	1.92	14.0	55	15	3	2	67.13	203		
2.0	0.20	2.0	1.92	16.0	65	15	3	2			79.36	204
2.0	0.20	2.0	1.92	20.0	65	15	3	2			77.39	205
2.3	0.23	2.3	2.22	7.0	55	15	3	2	67.13	231		
2.3	0.23	2.3	2.22	11.5	55	15	3	2	67.39	232		
2.3	0.23	2.3	2.22	14.0	55	15	3	2	70.98	233		
2.3	0.23	2.3	2.22	18.5	65	15	3	2			79.36	234
2.3	0.23	2.3	2.22	20.0	65	15	3	2			79.36	235
2.3	0.23	2.3	2.22	23.0	65	15	3	2			79.36	236
3.0	0.30	3.0	2.90	9.0	65	15	6	2	70.98	301		
3.0	0.30	3.0	2.90	15.0	65	15	6	2	79.36	302		
3.0	0.30	3.0	2.90	24.0	100	15	6	2			86.07	303
3.0	0.30	3.0	2.90	30.0	100	15	6	2			89.50	304
4.0	0.40	4.0	3.90	12.0	65	15	6	2	79.36	401		
4.0	0.40	4.0	3.90	20.0	65	15	6	2	79.36	402		
4.0	0.40	4.0	3.90	32.0	100	15	6	2			89.50	403
4.0	0.40	4.0	3.90	40.0	100	15	6	2			92.49	404
5.0	0.50	5.0	4.90	15.0	65	15	6	2	79.36	501		
5.0	0.50	5.0	4.90	25.0	65	15	6	2	79.36	502		
5.0	0.50	5.0	4.90	40.0	100	15	6	2			92.49	503
5.0	0.50	5.0	4.90	50.0	100	15	6	2			95.34	504
6.0	0.60	6.0	5.90	18.0	65	15	6	2	79.36	601		
6.0	0.60	6.0	5.90	30.0	100	15	6	2			89.50	602
6.0	0.60	6.0	5.90	48.0	100	15	6	2			95.34	603
6.0	0.60	6.0	5.90	60.0	100	15	6	2			98.14	604

Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 350–356

Torus cutter



Factory standard | Factory standard | Factory standard

HA | HA | HA

V0 | V0 | V0

DC f8	RE ±0.01	APMX	DN	LH	OAL	α°	DCONMS h5	ZEFP	Article no. 50 902 ...		Article no. 50 902 ...		Article no. 50 902 ...	
mm	mm	mm	mm	mm	mm		mm		£		£		£	
2	0.3	2	1.8	12	50	45	6	2	71.68	020				
2	0.5	2	1.8	12	50	45	6	2	71.68	023				
2	0.3	2	1.8	22	60	45	6	2			71.68	021		
2	0.5	2	1.8	22	60	45	6	2			71.68	024		
2	0.3	2	1.8	47	85	45	6	2					104.17	022
2	0.5	2	1.8	47	85	45	6	2					104.17	025
3	0.3	2	2.8	12	50	45	6	2	71.68	030				
3	0.5	2	2.8	12	50	45	6	2	71.68	033				
3	0.3	2	2.8	22	60	45	6	2			71.68	031		
3	0.5	2	2.8	22	60	45	6	2			71.68	034		
3	0.3	2	2.8	47	85	45	6	2					104.17	032
3	0.5	2	2.8	47	85	45	6	2					104.17	035
4	0.3	3	3.8	16	54	45	6	2	71.68	040				
4	0.5	3	3.8	16	54	45	6	2	71.68	043				
4	1.0	3	3.8	16	54	45	6	2	71.68	046				
4	0.3	3	3.8	37	75	45	6	2			98.14	041		
4	0.5	3	3.8	37	75	45	6	2			98.14	044		
4	1.0	3	3.8	37	75	45	6	2			98.14	047		
4	0.3	3	3.8	47	85	45	6	2					104.17	042
4	0.5	3	3.8	47	85	45	6	2					104.17	045
4	1.0	3	3.8	47	85	45	6	2					104.17	048
5	0.5	3	4.6	16	54	45	6	2	71.68	050				
5	1.0	3	4.6	16	54	45	6	2	71.68	052				
5	1.5	3	4.6	16	54	45	6	2	71.68	054				
5	0.5	3	4.6	37	75	45	6	2			98.14	051		
5	1.0	2	4.6	37	75	45	6	2			98.14	053		
5	1.5	3	4.6	37	75	45	6	2			98.14	055		
6	0.5	4	5.6	16	54	45	6	2	71.68	060				
6	1.0	4	5.6	16	54	45	6	2	71.68	063				
6	2.0	4	5.6	16	54	45	6	2	71.68	066				
6	0.5	4	5.6	47	85	45	6	2			98.14	061		
6	1.0	4	5.6	47	85	45	6	2			98.14	064		
6	2.0	4	5.6	47	85	45	6	2			98.14	067		
6	0.5	4	5.6	47	85	45	8	2			134.94	069		
6	1.0	4	5.6	47	85	45	8	2			134.94	070		
6	2.0	4	5.6	47	85	45	8	2			134.94	071		
6	0.5	4	5.6	62	100	45	6	2					115.85	062
6	1.0	4	5.6	62	100	45	6	2					115.85	065
6	2.0	4	5.6	62	100	45	6	2					115.85	068
8	0.5	4	7.6	20	58	45	8	2	87.50	080				
8	1.0	4	7.6	20	58	45	8	2	87.50	082				

Steel			
Stainless steel			
Cast iron			
Non ferrous metals	●	●	●
Heat resistant alloys			
hardened materials			

→ v_c/f_z Page 350–356

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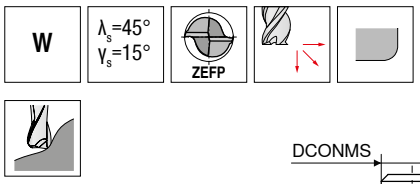
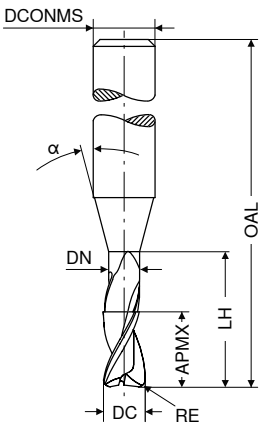
Torus cutter



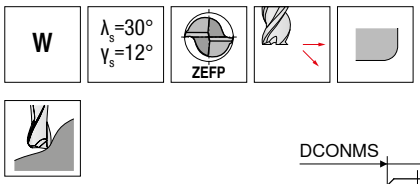


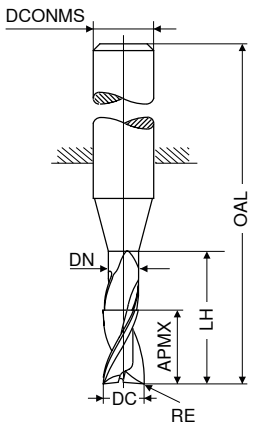
DC f8	RE ±0.01	APMX	DN	LH	OAL	α°	DCONMS h5	ZEFP	Factory standard HA V0 Article no. 50 902 ...	£		Factory standard HA V0 Article no. 50 902 ...	£		Factory standard HA V0 Article no. 50 902 ...	£	
mm	mm	mm	mm	mm	mm		mm										
8	2.0	4	7.6	20	58	45	8	2		87.50	084						
8	0.5	4	7.6	62	100	45	8	2								135.54	081
8	1.0	4	7.6	62	100	45	8	2								135.54	083
8	2.0	4	7.6	62	100	45	8	2								135.54	085
8	2.0	4	7.6	62	100	45	10	2								187.39	086
10	1.0	6	9.6	18	66	45	10	2		106.93	100						
10	2.0	6	9.6	18	66	45	10	2		106.93	103						
10	3.0	6	9.6	18	66	45	10	2		106.93	106						
10	1.0	6	9.6	58	100	45	10	2					185.41	101			
10	2.0	6	9.6	58	100	45	10	2					185.41	104			
10	3.0	6	9.6	58	100	45	10	2					185.41	107			
10	1.0	6	9.6	78	120	45	10	2								222.60	102
10	2.0	6	9.6	78	120	45	10	2								222.60	105
10	3.0	6	9.6	78	120	45	10	2								222.60	108
10	1.0	6	9.6	78	120	45	12	2								286.15	109
10	2.0	6	9.6	78	120	45	12	2								286.15	110
10	3.0	6	9.6	78	120	45	12	2								286.15	111
12	1.0	8	11.5	26	73	45	12	2		158.61	120						
12	2.0	8	11.5	26	73	45	12	2		158.61	123						
12	3.0	8	11.5	26	73	45	12	2		158.61	126						
12	4.0	8	11.5	26	73	45	12	2		158.61	129						
12	1.0	8	11.5	53	100	45	12	2					238.41	121			
12	2.0	8	11.5	53	100	45	12	2					238.41	124			
12	3.0	8	11.5	53	100	45	12	2					238.41	127			
12	4.0	8	11.5	53	100	45	12	2					238.41	130			
12	1.0	8	11.5	73	120	45	12	2								286.15	122
12	2.0	8	11.5	73	120	45	12	2								286.15	125
12	3.0	8	11.5	73	120	45	12	2								286.15	128
12	4.0	8	11.5	73	120	45	12	2								286.15	131
12	1.0	8	11.5	103	150	45	16	2								580.81	132
12	2.0	8	11.5	103	150	45	16	2								580.81	133
12	3.0	8	11.5	103	150	45	16	2								580.81	134
12	4.0	8	11.5	103	150	45	16	2								580.81	135

Steel			
Stainless steel			
Cast iron			
Non ferrous metals	●	●	●
Heat resistant alloys			
hardened materials			

→ v_c/f_z Page 350–356

Torus cutter





DIAMOND

Factory standard

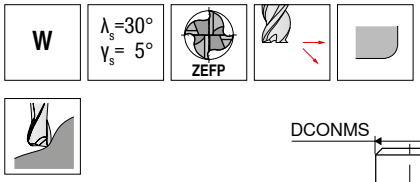
HA

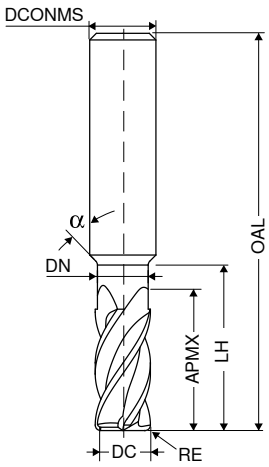
DC h10	RE	APMX	DN	LH	OAL	DCONMS h6	ZEFP	V1 Article no. 52 765 ...	
mm	mm	mm	mm	mm	mm	mm		£	
2	0.3	8	1.8	31	60	2	2	201.49	021
3	0.5	12	2.8	41	70	3	2	214.03	032
4	0.5	15	3.8	51	80	4	2	262.20	042
5	0.5	20	4.8	71	100	5	2	304.10	052
6	0.8	20	5.8	63	100	6	2	335.16	063
8	1.0	20	7.8	83	120	8	2	440.90	084
10	1.0	25	9.8	99	140	10	2	563.85	104
12	1.5	25	11.8	104	150	12	2	745.54	125

Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

→ v_c/f_z Page 348

Torus cutter





Factory standard | Factory standard

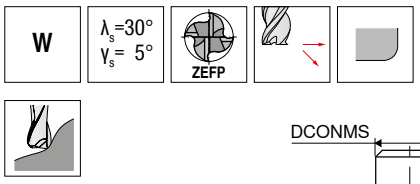
DC f8	RE ±0.01	APMX	DN	LH	OAL	α°	DCONMS h5	ZEFP	V0 Article no. 50 911 ...		V0 Article no. 50 911 ...	
mm	mm	mm	mm	mm	mm		mm		£		£	
4	0.5	8	3.8	12	54	45	6	4	143.06	040		
4	1.0	8	3.8	12	54	45	6	4	143.06	041		
4	0.5	10	3.8	37	75	45	6	4			171.72	042
4	1.0	10	3.8	37	75	45	6	4			171.72	043
5	0.5	9	4.8	16	54	45	6	4	143.06	050		
5	1.0	9	4.8	16	54	45	6	4	143.06	051		
5	1.5	9	4.8	16	54	45	6	4	143.06	052		
5	0.5	12	4.8	37	75	45	6	4			171.72	053
5	1.0	12	4.8	37	75	45	6	4			171.72	054
5	1.5	12	4.8	37	75	45	6	4			171.72	055
6	0.5	10	5.6	16	54	45	6	4	143.06	060		
6	1.0	10	5.6	16	54	45	6	4	143.06	061		
6	1.5	10	5.6	16	54	45	6	4	143.06	062		
6	2.0	10	5.6	16	54	45	6	4	143.06	063		
6	0.5	12	5.6	62	100	45	6	4			187.39	064
6	1.0	12	5.6	62	100	45	6	4			187.39	065
6	1.5	12	5.6	62	100	45	6	4			187.39	066
6	2.0	12	5.6	62	100	45	6	4			187.39	067
7	0.5	11	6.6	20	58	45	8	4	187.39	070		
7	1.0	11	6.6	20	58	45	8	4	187.39	071		
7	1.5	11	6.6	20	58	45	8	4	187.39	072		
7	2.0	11	6.6	20	58	45	8	4	187.39	073		
7	0.5	14	6.6	62	100	45	8	4			234.99	074
7	1.0	14	6.6	62	100	45	8	4			234.99	075
7	1.5	14	6.6	62	100	45	8	4			234.99	076
7	2.0	14	6.6	62	100	45	8	4			234.99	077
8	0.5	12	7.6	20	58	45	8	4	187.39	080		
8	1.0	12	7.6	20	58	45	8	4	187.39	081		
8	1.5	12	7.6	20	58	45	8	4	187.39	086		
8	2.0	12	7.6	20	58	45	8	4	187.39	083		
8	0.5	14	7.6	62	100	45	8	4			234.99	084
8	1.0	14	7.6	62	100	45	8	4			234.99	085
8	1.5	14	7.6	62	100	45	8	4			234.99	082
8	2.0	14	7.6	62	100	45	8	4			234.99	087
10	0.5	14	9.6	24	66	45	10	4	236.69	100		
10	1.0	14	9.6	24	66	45	10	4	236.69	101		
10	1.5	14	9.6	24	66	45	10	4	236.69	107		
10	2.0	14	9.6	24	66	45	10	4	236.69	103		
10	3.0	14	9.6	24	66	45	10	4	236.69	104		
10	0.5	18	9.6	58	100	45	10	4			310.66	105
10	1.0	18	9.6	58	100	45	10	4			310.66	106

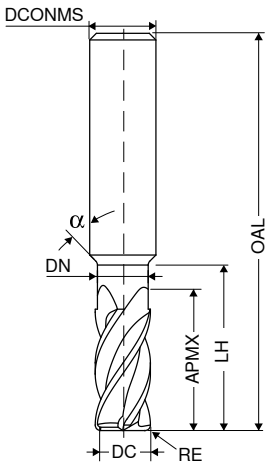
Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 348

Continued on next page

Torus cutter





Factory standard | Factory standard

DC f8	RE ±0.01	APMX	DN	LH	OAL	α°	DCONMS h5	ZEFP	V0 Article no. 50 911 ...		V0 Article no. 50 911 ...	
mm	mm	mm	mm	mm	mm		mm		£		£	
10	1.5	18	9.6	58	100	45	10	4			310.66	102
10	2.0	18	9.6	58	100	45	10	4			310.66	108
10	3.0	18	9.6	58	100	45	10	4			310.66	109
12	0.5	16	11.5	26	73	45	12	4	314.24	120		
12	1.0	16	11.5	26	73	45	12	4	314.24	121		
12	1.5	16	11.5	26	73	45	12	4	314.24	127		
12	2.0	16	11.5	26	73	45	12	4	314.24	123		
12	4.0	16	11.5	26	73	45	12	4	314.24	124		
12	0.5	22	11.5	53	100	45	12	4			393.72	125
12	1.0	22	11.5	53	100	45	12	4			393.72	126
12	1.5	22	11.5	53	100	45	12	4			393.72	122
12	2.0	22	11.5	53	100	45	12	4			393.72	128
12	4.0	22	11.5	53	100	45	12	4			393.72	129

Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

→ v_c/f_z Page 348

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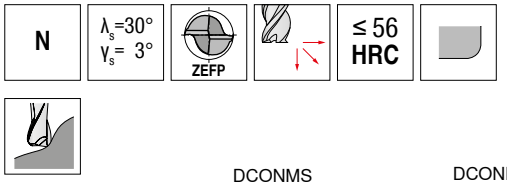
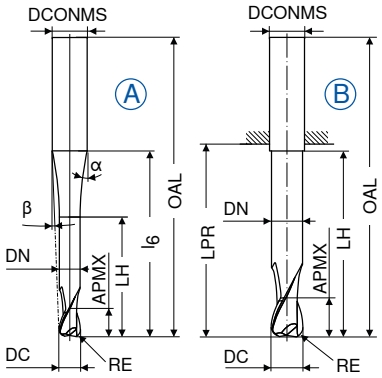
Torus cutter

▲ Radius accuracy: ±0.005 mm
▲ for Ø ≤ 5.0 mm, angle tolerance α and β: ±0.5°





Factory standard | Factory standard

HA | HA

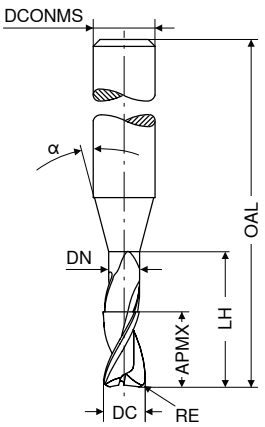
DC ±0.01	RE ±0.005	APMX	DN	LH	l6	OAL	α°	β°	DCONMS h5	ZEFP	Fig.	V1 Article no. 52 730 ...		V1 Article no. 52 734 ...	
mm	mm	mm	mm	mm	mm	mm			mm			£		£	
0.5	0.10	1.0	0.45	2.0	20	57	10.0	8.5	6	2	A	205.66	005		
1.0	0.25	2.0	0.95	4.0	20	57	10.0	8.0	6	2	A	164.60	010		
1.0	0.25	2.0	0.95	4.0	40	80	4.5	4.0	6	2	A			156.90	010
1.5	0.30	2.5	1.40	7.5	20	57	12.5	7.0	6	2	A	156.90	015		
1.5	0.30	2.5	1.40	7.5	40	80	4.5	3.5	6	2	A			148.36	015
2.0	0.50	3.0	1.80	8.0	20	57	12.0	6.5	6	2	A	139.37	020		
2.0	0.50	3.0	1.80	8.0	40	80	4.0	3.0	6	2	A			129.83	020
3.0	0.50	3.5	2.80	10.0	20	57	11.5	5.0	6	2	A	132.96	030		
3.0	0.50	3.5	2.80	12.0	40	80	3.5	2.5	6	2	A			123.13	030
4.0	0.50	4.0	3.80	12.0	20	57	11.0	3.5	6	2	A	122.43	041		
4.0	0.50	4.0	3.80	20.0	40	80	4.0	1.5	6	2	A			145.50	041
4.0	1.00	4.0	3.80	12.0	20	57	11.0	3.5	6	2	A	124.83	040		
4.0	1.00	4.0	3.80	20.0	40	80	4.0	1.5	6	2	A			138.38	040
5.0	1.00	5.0	4.70	14.0	20	57	10.0	2.0	6	2	A	120.14	051		
5.0	1.00	5.0	4.70	25.0	40	80	3.0	1.0	6	2	A			143.06	051
5.0	1.50	5.0	4.70	14.0	20	57	10.0	2.0	6	2	A	152.42	050		
5.0	1.50	5.0	4.70	25.0	40	80	3.0	1.0	6	2	A			154.33	050
6.0	1.00	6.0	5.60	20.0		57			6	2	B	112.01	961		
6.0	1.00	6.0	5.60	40.0		80			6	2	B			136.23	961
6.0	2.00	6.0	5.60	20.0		57			6	2	B	156.77	060		
6.0	2.00	6.0	5.60	40.0		80			6	2	B			149.42	060
6.0	2.00	6.0	5.60	25.0	60	100	2.0	1.0	8	2	A			169.85	061
8.0	1.00	7.0	7.60	25.0		63			8	2	B	154.75	082		
8.0	1.00	7.0	7.60	60.0		100			8	2	B			180.12	082
8.0	2.00	7.0	7.60	25.0		63			8	2	B	168.98	080		
8.0	2.00	7.0	7.60	60.0		100			8	2	B			173.15	080
8.0	2.00	7.0	7.60	30.0	75	120	2.0	1.0	10	2	A			228.56	081
8.0	2.50	7.0	7.60	60.0		100			8	2	B			184.55	083
10.0	1.50	8.0	9.60	30.0		72			10	2	B	228.86	102		
10.0	1.50	8.0	9.60	75.0		120			10	2	B			247.26	102
10.0	2.50	8.0	9.60	75.0		120			10	2	B			253.35	104
10.0	3.00	8.0	9.60	30.0		72			10	2	B	193.80	100		
10.0	3.00	8.0	9.60	50.0		100			10	2	B			233.29	103
10.0	3.00	8.0	9.60	75.0		120			10	2	B			235.11	100
10.0	3.00	8.0	9.60	40.0	110	160	1.0	0.5	12	2	A			359.09	101
12.0	1.50	10.0	11.50	35.0		83			12	2	B	279.29	122		
12.0	1.50	10.0	11.50	70.0		160			12	2	B			361.66	122
12.0	4.00	10.0	11.50	35.0		83			12	2	B	277.87	120		
12.0	4.00	10.0	11.50	35.0	40	92	37.0	3.5	16	2	A	357.10	121		
12.0	4.00	10.0	11.50	70.0		160			12	2	B			321.92	120
12.0	4.00	10.0	11.50	50.0	150	200	1.5	1.0	16	2	A			595.36	121
16.0	5.00	12.0	15.50	40.0		92			16	2	B	351.83	160		
16.0	5.00	12.0	15.50	80.0		200			16	2	B			583.53	160

Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	○

→ v_c/f_z Page 350–356

Torus cutter

H | λ_s=30° γ_s= 3° | ZEFP | ≤ 54 HRC



Factory standard | Factory standard

HA | HA

V0 | V0

DC_{f8}	$RE_{\pm 0.01}$	APMX	DN	LH	OAL	α°	$DCONMS_{h5}$	ZEFP	Article no. 50 649 ...		Article no. 50 649 ...	
mm	mm	mm	mm	mm	mm		mm		£		£	
0.2	0.02	0.2	0.18	0.6	55	15	6	2	82.08	**921**		
0.2	0.02	0.2	0.18	1.0	55	15	6	2	82.81	**022**		
0.2	0.02	0.2	0.18	1.6	55	15	6	2	83.66	**023**		
0.2	0.02	0.2	0.18	2.0	55	15	6	2	84.65	**024**		
0.3	0.03	0.3	0.28	0.9	55	15	6	2	82.08	**031**		
0.3	0.03	0.3	0.28	1.5	55	15	6	2	82.81	**032**		
0.3	0.03	0.3	0.28	2.4	55	15	6	2	83.66	**033**		
0.3	0.03	0.3	0.28	3.0	55	15	6	2	84.65	**034**		
0.4	0.04	0.4	0.37	1.2	55	15	6	2	82.08	**041**		
0.4	0.04	0.4	0.37	2.0	55	15	6	2	82.81	**042**		
0.4	0.04	0.4	0.37	3.2	55	15	6	2	83.66	**043**		
0.4	0.04	0.4	0.45	4.0	55	15	6	2	84.65	**044**		
0.5	0.05	0.5	0.45	1.5	55	15	6	2	79.96	**051**		
0.5	0.05	0.5	0.45	2.5	55	15	6	2	80.81	**052**		
0.5	0.05	0.5	0.45	4.0	55	15	6	2	82.08	**053**		
0.5	0.05	0.5	0.45	5.0	55	15	6	2	82.81	**054**		
0.6	0.06	0.6	0.58	2.0	55	15	6	2	67.39	**061**		
0.6	0.06	0.6	0.58	3.0	55	15	6	2	60.80	**960**		
0.6	0.06	0.6	0.58	5.0	65	15	6	2			73.12	**063**
0.6	0.06	0.6	0.58	6.0	65	15	6	2	70.18	**961**		
0.8	0.08	0.8	0.77	2.5	55	15	6	2	67.13	**081**		
0.8	0.08	0.8	0.77	4.0	55	15	6	2	60.80	**980**		
0.8	0.08	0.8	0.77	6.5	65	15	6	2			74.68	**083**
0.8	0.08	0.8	0.77	8.0	65	15	6	2	70.18	**981**		
1.0	0.10	1.0	0.95	3.0	55	15	6	2	67.13	**101**		
1.0	0.10	1.0	0.95	5.0	55	15	6	2	60.80	**010**		
1.0	0.10	1.0	0.95	8.0	65	15	6	2			70.98	**103**
1.0	0.10	1.0	0.95	10.0	65	15	6	2			70.18	**011**
1.0	0.10	1.0	0.95	12.0	65	15	6	2			79.36	**105**
1.2	0.12	1.2	1.15	3.0	55	15	6	2	67.13	**121**		
1.2	0.12	1.2	1.15	6.0	55	15	6	2	60.80	**012**		
1.2	0.12	1.2	1.15	10.0	65	15	6	2	74.68	**123**		
1.2	0.12	1.2	1.15	12.0	65	15	6	2			70.18	**013**
1.3	0.13	1.3	1.25	4.0	55	15	6	2	67.13	**131**		
1.3	0.13	1.3	1.25	7.0	55	15	6	2	67.39	**132**		
1.3	0.13	1.3	1.25	11.0	65	15	6	2			74.68	**133**
1.3	0.13	1.3	1.25	13.0	65	15	6	2			79.36	**134**
1.5	0.15	1.5	1.44	5.0	55	15	6	2	67.39	**151**		
1.5	0.15	1.5	1.44	7.5	55	15	6	2	60.80	**015**		
1.5	0.15	1.5	1.44	12.0	65	15	6	2			79.36	**153**
1.5	0.15	1.5	1.44	15.0	65	15	6	2			70.18	**016**

Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	○

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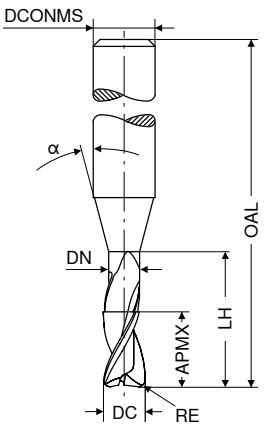
Continued on next page

Torus cutter

H | λ_s=30° γ_s= 3° | ZEFP | ≤ 54 HRC



Factory standard | Factory standard

HA | HA

V0 | V0

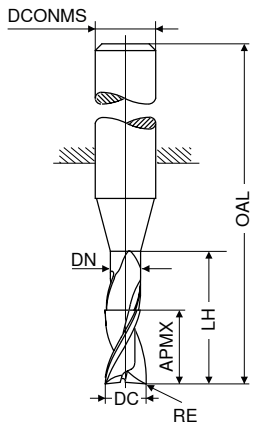
DC f8 mm	RE ±0.01 mm	APMX mm	DN mm	LH mm	OAL mm	α°	DCONMS h5 mm	ZEFP	Article no. 50 649 ... £		Article no. 50 649 ... £	
1.6	0.16	1.6	1.52	5.0	55	15	6	2	67.39	161		
1.6	0.16	1.6	1.52	8.0	55	15	6	2	67.39	162		
1.6	0.16	1.6	1.52	13.0	65	15	6	2			74.68	163
1.6	0.16	1.6	1.52	16.0	65	15	6	2			79.36	164
1.8	0.18	1.8	1.72	5.5	55	15	6	2	67.13	181		
1.8	0.18	1.8	1.72	9.0	55	15	6	2	67.39	182		
1.8	0.18	1.8	1.72	14.5	65	15	6	2			74.68	183
1.8	0.18	1.8	1.72	18.0	65	15	6	2			79.36	184
2.0	0.20	2.0	1.92	6.0	55	15	6	2	67.13	201		
2.0	0.20	2.0	1.92	10.0	55	15	6	2	67.39	202		
2.0	0.20	2.0	1.92	14.0	55	15	6	2	60.80	020		
2.0	0.20	2.0	1.92	16.0	65	15	6	2			79.36	204
2.0	0.20	2.0	1.92	20.0	65	15	6	2			70.18	021
2.3	0.23	2.3	2.22	7.0	55	15	6	2	67.39	231		
2.3	0.23	2.3	2.22	11.5	55	15	6	2	70.98	232		
2.3	0.23	2.3	2.22	18.5	65	15	6	2			79.36	233
2.3	0.23	2.3	2.22	23.0	65	15	6	2			79.36	234
3.0	0.30	3.0	2.90	9.0	65	15	6	2	70.98	301		
3.0	0.30	3.0	2.90	15.0	65	15	6	2	79.36	302		
3.0	0.30	3.0	2.90	24.0	100	15	6	2			86.07	303
3.0	0.30	3.0	2.90	30.0	100	15	6	2			89.50	304
4.0	0.40	4.0	3.90	12.0	65	15	6	2	79.36	401		
4.0	0.40	4.0	3.90	20.0	65	15	6	2	79.36	402		
4.0	0.40	4.0	3.90	32.0	100	15	6	2			89.50	403
4.0	0.40	4.0	3.90	40.0	100	15	6	2			92.49	404
5.0	0.50	5.0	4.90	15.0	65	15	6	2	79.36	501		
5.0	0.50	5.0	4.90	25.0	65	15	6	2	79.36	502		
5.0	0.50	5.0	4.90	40.0	100	15	6	2			92.49	503
5.0	0.50	5.0	4.90	50.0	100	15	6	2			95.34	504
6.0	0.60	6.0	5.90	18.0	65	15	6	2	79.36	601		
6.0	0.60	6.0	5.90	30.0	100	15	6	2			89.50	602
6.0	0.60	6.0	5.90	48.0	100	15	6	2			95.34	603
6.0	0.60	6.0	5.90	60.0	100	15	6	2			98.14	604

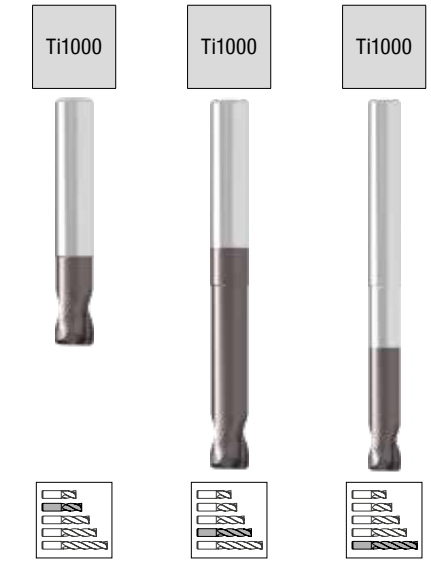
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	○

→ v_c/f_z Page 350–356

Torus cutter

H | λ_s=30° γ_s= 3° | ZEFP | ≤ 68 HRC





Factory standard | Factory standard | Factory standard

HA | HA | HA

V0 | V0 | V0

DC f8	RE ±0.01	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Article no. 50 651 ...	£		Article no. 50 651 ...	£		Article no. 50 651 ...	£	
mm	mm	mm	mm	mm	mm	mm										
2	0.3	2	1.8	7	50	6	2		52.45	020						
2	0.5	2	1.8	7	50	6	2		52.45	021						
2	0.3	2	1.8	7	60	6	2					52.45	022			
2	0.5	2	1.8	7	60	6	2					52.45	023			
2	0.3	2	1.8	7	85	6	2								76.10	024
2	0.5	2	1.8	7	85	6	2								76.10	025
3	0.3	2	2.8	7	50	6	2		52.45	030						
3	0.5	2	2.8	7	50	6	2		52.45	031						
3	0.3	2	2.8	12	60	6	2					52.45	032			
3	0.5	2	2.8	12	60	6	2					52.45	033			
3	0.3	2	2.8	12	85	6	2								76.10	034
3	0.5	2	2.8	12	85	6	2								76.10	035
4	0.3	3	3.8	13	54	6	2		52.45	040						
4	0.5	3	3.8	13	54	6	2		52.45	041						
4	1.0	3	3.8	13	54	6	2		52.45	042						
4	0.3	3	3.8	20	75	6	2					73.12	043			
4	0.5	3	3.8	20	75	6	2					73.12	044			
4	1.0	3	3.8	20	75	6	2					73.12	045			
4	0.3	3	3.8	20	85	6	2								76.10	046
4	0.5	3	3.8	20	85	6	2								76.10	047
4	1.0	3	3.8	20	85	6	2								76.10	048
5	0.5	3	4.6	13	54	6	2		52.45	050						
5	1.0	3	4.6	13	54	6	2		52.45	051						
5	1.5	3	4.6	13	54	6	2		52.45	052						
5	1.0	3	4.6	20	75	6	2					73.12	053			
5	1.5	3	4.6	20	75	6	2					73.12	054			
6	0.5	4	5.6	14	54	6	2		52.45	060						
6	1.0	4	5.6	14	54	6	2		52.45	061						
6	2.0	4	5.6	14	54	6	2		52.45	062						
6	0.5	4	5.6	45	85	6	2					73.12	066			
6	1.0	4	5.6	45	85	6	2					98.19	067			
6	2.0	4	5.6	45	85	6	2					73.12	068			
6	0.5	4	5.6	25	100	6	2								84.65	069
6	1.0	4	5.6	25	100	6	2								84.65	070
6	2.0	4	5.6	25	100	6	2								84.65	071
6	0.5	4	5.6	25	85	8	2					98.19	063			
6	1.0	4	5.6	25	85	8	2					73.12	064			
6	2.0	4	5.6	25	85	8	2					98.19	065			
8	0.5	4	7.6	16	58	8	2		63.84	080						
8	1.0	4	7.6	16	58	8	2		63.84	081						
8	2.0	4	7.6	16	58	8	2		63.84	082						

Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals	○	○	○
Heat resistant alloys	○	○	○
hardened materials	○	○	○

→ v_c/f_z Page 350–356

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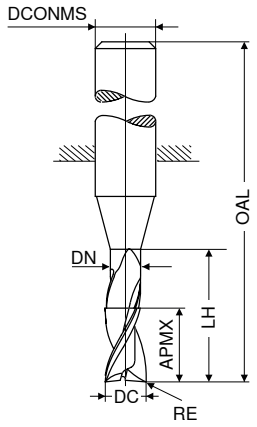
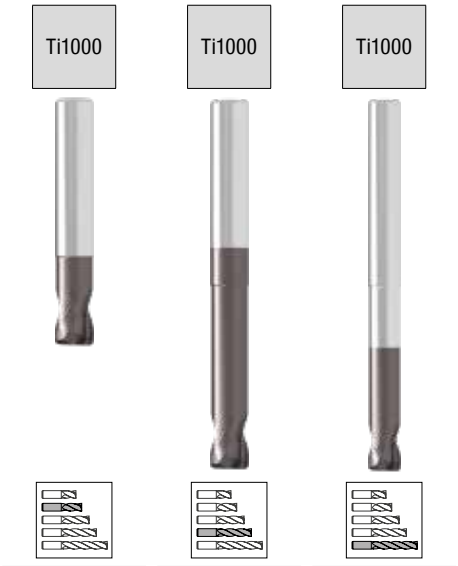
Continued on next page

Torus cutter

H | λ_s=30° γ_s= 3° | ZEFP | ≤ 68 HRC





Factory standard | Factory standard | Factory standard

HA | HA | HA

V0 | V0 | V0

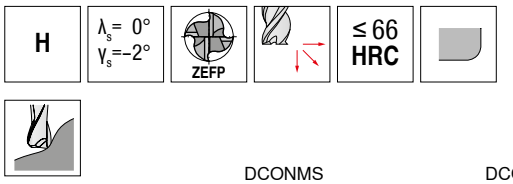
DC f8	RE ±0.01	APMX	DN	LH	OAL	DCONMS h5	ZEFP	Article no. 50 651 ...		Article no. 50 651 ...		Article no. 50 651 ...	
mm	mm	mm	mm	mm	mm	mm		£		£		£	
8	0.5	4	7.6	50	100	8	2					136.23	083
8	2.0	4	7.6	50	100	8	2					97.18	084
8	1.0	4	7.6	30	100	10	2					136.23	085
8	2.0	4	7.6	30	100	10	2					133.55	086
10	1.0	6	9.6	18	66	10	2	79.23	100				
10	3.0	6	9.6	18	66	10	2	79.23	101				
10	1.0	6	9.6	50	100	10	2			134.38	102		
10	2.0	6	9.6	50	100	10	2			79.23	103		
10	3.0	6	9.6	50	100	10	2			134.38	104		
10	1.0	6	9.6	60	120	10	2					161.31	105
10	2.0	6	9.6	60	120	10	2					134.38	106
10	3.0	6	9.6	60	120	10	2					161.31	107
10	1.0	6	9.6	30	120	12	2					207.91	108
10	2.0	6	9.6	30	120	12	2					207.91	109
10	3.0	6	9.6	30	120	12	2					207.91	110
12	1.0	8	11.5	18	73	12	2	115.85	120				
12	2.0	8	11.5	18	73	12	2	115.85	121				
12	3.0	8	11.5	18	73	12	2	115.85	122				
12	4.0	8	11.5	18	73	12	2	115.85	123				
12	1.0	8	11.5	45	100	12	2			173.28	124		
12	2.0	8	11.5	45	100	12	2			173.28	125		
12	3.0	8	11.5	45	100	12	2			173.28	126		
12	4.0	8	11.5	45	100	12	2			173.28	127		
12	1.0	8	11.5	70	120	12	2					208.06	128
12	2.0	8	11.5	70	120	12	2					208.06	129
12	3.0	8	11.5	70	120	12	2					208.06	130
12	4.0	8	11.5	70	120	12	2					208.06	131
12	1.0	8	11.5	35	150	16	2					423.37	132
12	2.0	8	11.5	35	150	16	2					423.37	133
12	3.0	8	11.5	35	150	16	2					423.37	134
12	4.0	8	11.5	35	150	16	2					423.37	135

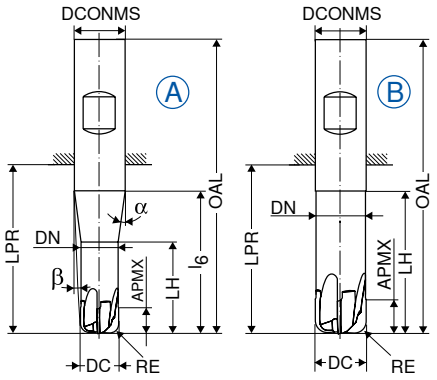
Steel	●	●	●
Stainless steel	○	○	○
Cast iron	●	●	●
Non ferrous metals	○	○	○
Heat resistant alloys	○	○	○
hardened materials	○	○	○

→ v_c/f_z Page 350–356

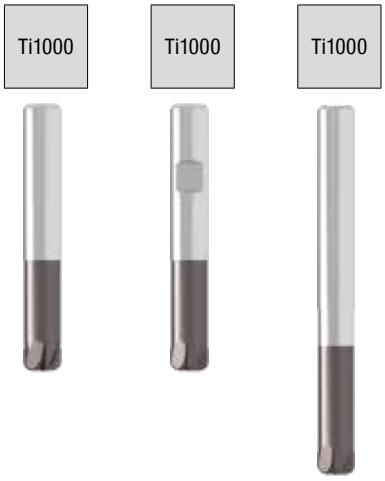
Torus cutter

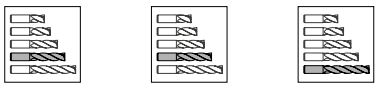
- Radius accuracy: ±0.005 mm
- High-performance tool for clearing
- for Ø ≤ 5.0 mm, angle tolerance α and β: ±0.5°





LPR with Shank DIN 6535 HB





Factory standard | Factory standard | Factory standard

HA | HB | HA

DC ±0.01	RE ±0.005	APMX	DN	LH	l_6	LPR	OAL	α°	β°	DCONMS h5	ZEFP	Fig.	V1 Article no. 52 732 ...		V1 Article no. 52 733 ...		V1 Article no. 52 732 ...	
mm	mm	mm	mm	mm	mm	mm	mm			mm			£		£		£	
3	0.75	2.0	2.8	10	20	21	57	11.5	5.0	6	4	A	133.55	033	133.55	033		
4	1.00	2.5	3.8	12	20	21	57	11.0	3.5	6	4	A	133.55	044	133.55	044		
5	1.25	3.0	4.7	14	20	21	57	10.0	2.0	6	4	A	137.38	055	137.38	055		
6	1.50	4.0	5.6	20		21	57			6	4	B	139.22	065	139.22	065		
6	1.50	4.0	5.6	30		44	80			6	4	B					138.22	066
8	1.00	5.0	7.6	25		27	63			8	4	B	196.93	084				
8	1.00	5.0	7.6	35		44	80			8	4	B					187.53	085
8	2.00	5.0	7.6	25		27	63			8	4	B	192.37	086	192.37	086		
8	2.00	5.0	7.6	35		44	80			8	4	B					187.53	087
10	1.00	6.0	9.6	30		32	72			10	4	B	225.01	104				
10	1.00	6.0	9.6	30		32	72			10	6	B	236.85	105				
10	1.00	6.0	9.6	45		60	100			10	4	B					236.85	106
10	1.00	6.0	9.6	45		60	100			10	6	B					268.19	110
10	2.50	6.0	9.6	30		32	72			10	4	B	219.74	107	219.74	107		
10	2.50	6.0	9.6	30		32	72			10	6	B	236.85	108				
10	2.50	6.0	9.6	45		60	100			10	4	B					238.54	109
10	2.50	6.0	9.6	45		60	100			10	6	B					268.19	111
12	1.00	7.0	11.5	35		38	83			12	4	B	289.27	124				
12	1.00	7.0	11.5	35		38	83			12	8	B	333.89	125				
12	1.00	7.0	11.5	50		55	100			12	4	B					301.10	130
12	1.00	7.0	11.5	50		55	100			12	8	B					373.50	132
12	3.00	7.0	11.5	35		38	83			12	4	B	282.43	128	282.43	128		
12	3.00	7.0	11.5	35		38	83			12	8	B	333.89	129				
12	3.00	7.0	11.5	50		55	100			12	4	B					301.10	131
12	3.00	7.0	11.5	50		55	100			12	8	B					373.50	133
16	4.00	8.0	15.5	40		44	92			16	4	B	423.78	169	423.78	169		
16	4.00	8.0	15.5	60		72	120			16	4	B					437.48	170
16	4.00	8.0	15.5	60		72	120			16	8	B					523.10	171

Steel	●	●	●
Stainless steel			
Cast iron	○	○	○
Non ferrous metals	○	○	○
Heat resistant alloys			
hardened materials	●	●	●

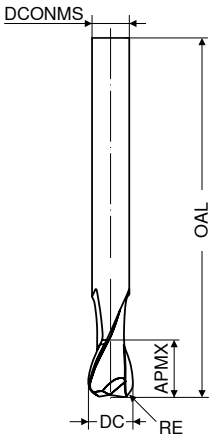
→ v_c/f_z Page 350–356

14

Intermediate size torus cutter

▲ reduced shank Ø for flexible application in various overhang lengths

H | λ_s=45° γ_s=12° | ZEFP | ≤ 56 HRC | Ti1000



Factory standard

HA

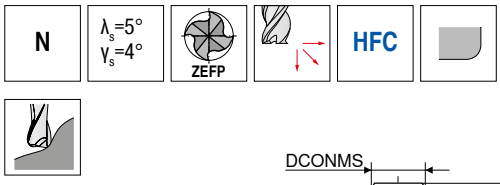
DC e8	RE ±0,01	APMX	OAL	DCONMS h6	ZEFP	V1 Article no. 52 107 ... £	
mm	mm	mm	mm	mm			
7	0.5	9	120	6	4	157.46	075
7	1.0	9	120	6	4	157.46	076
7	1.5	9	120	6	4	157.46	077
9	0.5	12	135	8	4	204.21	095
9	1.0	12	135	8	4	204.21	096
9	1.5	12	135	8	4	204.21	097
11	1.0	15	150	10	4	265.48	115
11	1.5	15	150	10	4	265.48	116
11	2.0	15	150	10	4	265.48	117
13	1.0	18	160	12	4	338.57	135
13	1.5	18	160	12	4	338.57	136
13	2.0	18	160	12	4	338.57	137
15	1.0	21	160	14	4	384.03	156
15	1.5	21	160	14	4	384.03	157
15	2.0	21	160	14	4	384.03	158
17	1.0	24	180	16	4	462.12	176
17	1.5	24	180	16	4	462.12	177
17	2.0	24	180	16	4	462.12	178
17	3.0	24	180	16	4	462.12	179

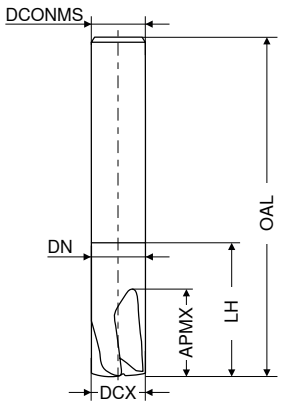
Steel	○
Stainless steel	●
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	○

→ v_c/f_z Page 350–356

High feed cutter

- ▲ APMX does not correspond to the maximum cutting depth
- ▲ for feed per tooth (f_z) up to 1 mm
- ▲ roughing in large depths
- ▲ extremely quiet running
- ▲ r_{3D} = corner radius to be programmed





TiAlN

Factory standard

HA

V1

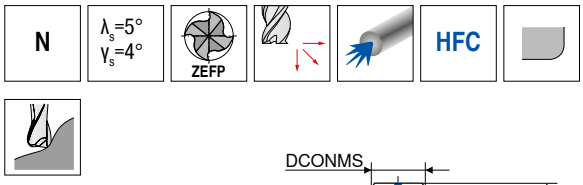
DCX h6 mm	r_{3D} mm	APMX mm	DN mm	LH mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 56 900 ... £	
6	0.50	6	5.8	21	57	6	4	123.69	060
8	0.70	8	7.8	27	63	8	4	176.56	080
10	0.85	10	9.8	32	72	10	4	194.23	100
12	1.00	12	11.8	38	83	12	4	229.57	120
16	1.40	16	15.8	50	92	16	4	352.97	160

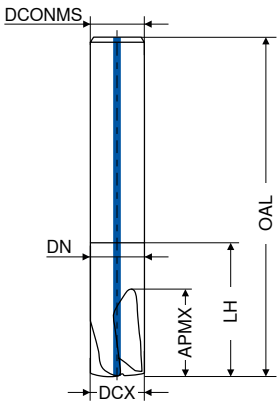
Steel	●
Stainless steel	○
Cast iron	○
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	●

→ v_c/f_z Page 346+347

High feed cutter

- ▲ APMX does not correspond to the maximum cutting depth
- ▲ for feed per tooth (f_z) up to 1 mm
- ▲ Roughing in large depths
- ▲ extremely quiet running
- ▲ r_{3D} = corner radius to be programmed





Factory standard

HA

Factory standard

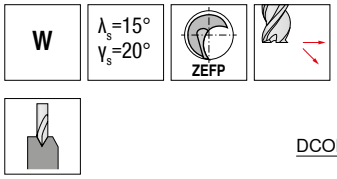
HA

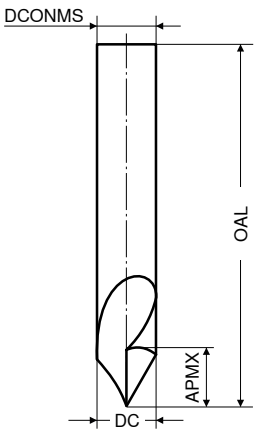
DCX h6 mm	r_{3D} mm	APMX mm	DN mm	LH mm	OAL mm	DCONMS h6 mm	ZEFP	V1 Article no. 56 902 ... £		V1 Article no. 56 904 ... £	
6	0.50	6	5.8	21	57	6	4	159.03	**060**		
6	0.50	6	5.8	64	100	6	4			197.48	**060**
8	0.70	8	7.8	27	63	8	4	218.49	**080**		
8	0.70	8	7.8	64	100	8	4			250.79	**080**
10	0.85	10	9.8	32	72	10	4	280.79	**100**		
10	0.85	10	9.8	60	100	10	4			308.60	**100**
12	1.00	12	11.8	38	83	12	4	355.85	**120**		
12	1.00	12	11.8	65	110	12	4			403.07	**120**
16	1.40	16	15.8	50	92	16	4	659.69	**160**		
16	1.40	16	15.8	65	150	16	4			703.92	**160**

Steel	●	●
Stainless steel	○	○
Cast iron	○	○
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	●	●

→ v_c/f_z Page 346+347

Engraving cutter 60°





Factory standard

HA

V1

DC h6 mm	APMX mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 52 195 ... £	
3	15	50	3	1	50.86	030
4	18	50	4	1	53.40	040
6	20	54	6	1	58.14	060

Steel	○
Stainless steel	○
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

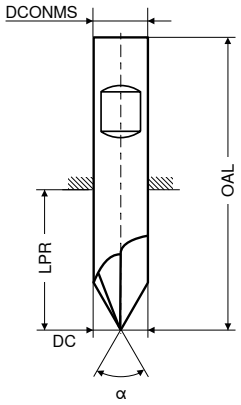
→ v_c/f_z Page 350–353

14

NC deburring cutter

N

λ_s=0°
γ_s=0°



Ti1000 Ti1000 Ti1000

DC h6	OAL	LPR	DCONMS h6	ZEFP	α = 60° Factory standard HB V1 Article no. 52 150 ... £		α = 60° Factory standard HB V1 Article no. 52 153 ... £		α = 90° Factory standard HB V1 Article no. 52 151 ... £		α = 90° Factory standard HB V1 Article no. 52 154 ... £		α = 120° Factory standard HB V1 Article no. 52 152 ... £		α = 120° Factory standard HB V1 Article no. 52 155 ... £	
mm	mm	mm	mm													
4	50	22	4	4	34.49	040 [1]	44.39	040 [1]	34.49	040 [1]	44.39	040 [1]	33.27	040 [1]	44.39	040 [1]
6	54	18	6	4	44.25	060 [2]	59.32	060	44.25	060 [2]	59.32	060	44.25	060 [2]	59.32	060
8	59	23	8	4	55.18	080 [2]	72.48	080	52.52	080 [2]	72.48	080	52.52	080 [2]	72.48	080
10	60	20	10	4	66.41	100 [2]	88.08	100	64.48	100 [2]	88.08	100	64.48	100 [2]	88.08	100
12	70	25	12	4	90.67	120 [2]	119.97	120	90.67	120 [2]	119.97	120	90.67	120 [2]	119.97	120

Steel	●	●	●	●	●	●
Stainless steel	○	○	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys	○	○	○	○	○	○
hardened materials		○		○		○

1) DIN 6535 HA Shank
2) included in the set

→ v_c/f_z Page 350–353

Solid carbide NC deburring cutter set, factory standard

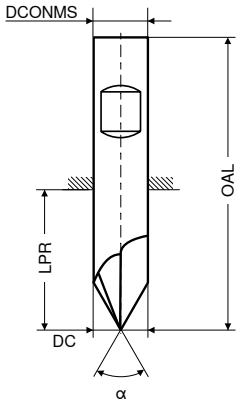
▲ Sets contain Ø 6, Ø 8, Ø 10 and Ø 12 mm

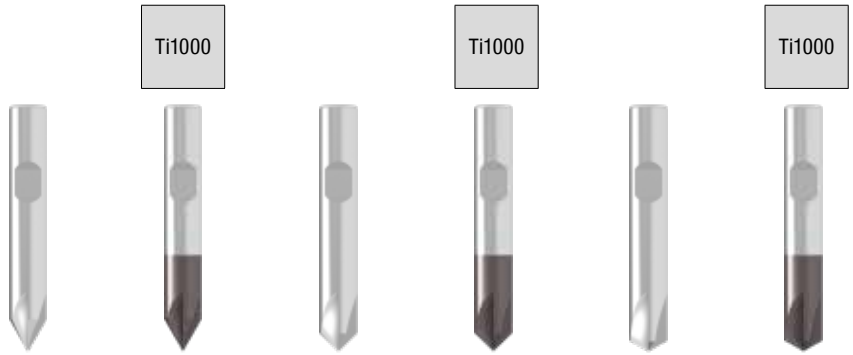
	α = 60° HB V1 Article no. 52 150 ... £		α = 90° HB V1 Article no. 52 151 ... £		α = 120° HB V1 Article no. 52 152 ... £	
Set	263.60	999	263.60	999	263.60	999

NC deburring cutter

N

λ_s=0°
γ_s=0°





DC h6	OAL	LPR	DCONMS h6	ZEFP	α = 60° Factory standard HB V0 Article no. 50 940 ... £		α = 60° Factory standard HB V0 Article no. 50 943 ... £		α = 90° Factory standard HB V0 Article no. 50 941 ... £		α = 90° Factory standard HB V0 Article no. 50 944 ... £		α = 120° Factory standard HB V0 Article no. 50 942 ... £		α = 120° Factory standard HB V0 Article no. 50 945 ... £	
mm	mm	mm	mm													
4	54	26	4	4	26.00	040 [1]	35.35	040 [1]	26.00	040 [1]	35.35	040 [1]	26.00	040 [1]	35.35	040 [1]
6	54	18	6	4	33.40	060	47.18	060	33.40	060	47.18	060	33.40	060	47.18	060
8	58	22	8	4	40.33	080	57.43	080	40.33	080	57.43	080	40.33	080	57.43	080
10	66	26	10	4	49.60	100	69.81	100	49.60	100	69.81	100	49.60	100	69.81	100
12	73	28	12	4	69.57	120	95.20	120	69.57	120	95.20	120	69.57	120	95.20	120

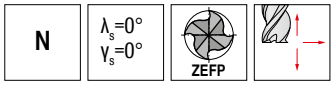
Steel	●	●	●	●	●	●
Stainless steel	○	○	○	○	○	○
Cast iron	●	●	●	●	●	●
Non ferrous metals	○	○	○	○	○	○
Heat resistant alloys	○	○	○	○	○	○
hardened materials		○		○		○

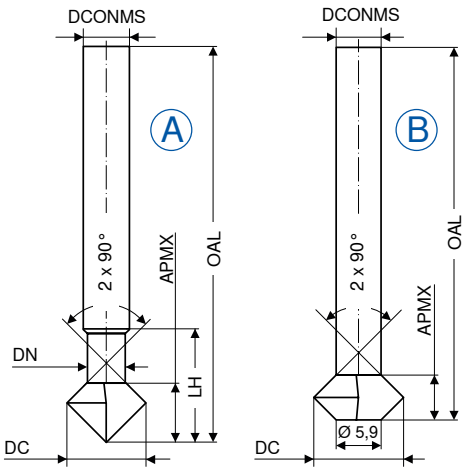
1) DIN 6535 HA Shank

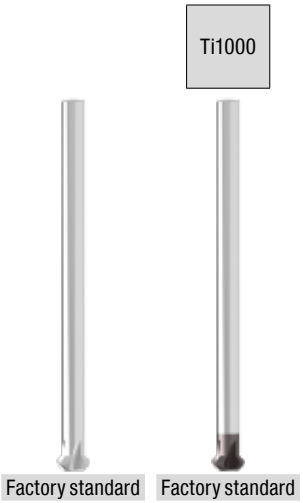
→ v_c/f_z Page 350–353

14

NC front and rear chamfer milling cutter





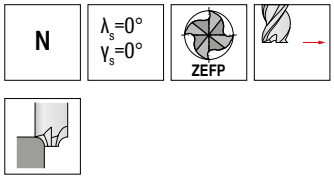


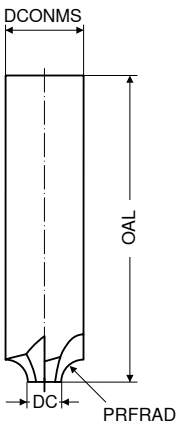
DC mm	APMX mm	DN mm	LH mm	OAL mm	DCONMS $_{h5}$ mm	ZEFP	Fig.	V1 Article no. 52 158 ... £		V1 Article no. 52 159 ... £	
3	2.0	2.2	12.0	75	4	4	A	83.52	**030**	94.91	**030**
4	2.7	2.9	17.7	75	4	4	A	83.52	**040**	94.38	**040**
5	3.0	3.9	18.0	75	5	4	A	85.65	**050**	98.05	**050**
6	4.0	3.9	19.0	100	6	4	A	88.93	**060**	98.14	**060**
8	2.0			100	6	4	B	115.57	**080**	129.97	**080**
10	4.0			100	6	4	B	144.38	**100**	160.46	**100**
12	6.0			100	6	4	B	173.15	**120**	191.25	**120**

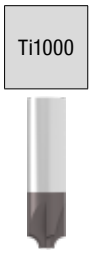
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials		○

→ v_c/f_z Page 350–353

Quarter-round profile milling cutter, concave







Factory standard

HA

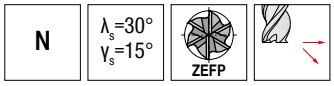
V1

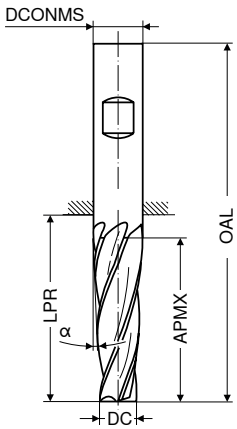
PRFRAD +/-0,02 mm	DC mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 52 249 ... £	
0.50	7.0	70	8	4	155.19	005
1.00	6.0	70	8	4	155.03	010
1.25	7.5	75	10	4	158.10	012
1.50	7.0	75	10	4	165.02	015
2.00	6.0	75	10	4	165.02	020
2.50	7.0	73	12	4	185.25	025
3.00	6.0	73	12	4	185.25	030
3.50	9.0	80	16	4	233.29	035
4.00	8.0	80	16	4	233.29	040
4.50	7.0	80	16	4	233.29	045
5.00	10.0	80	20	4	331.17	050
6.00	8.0	80	20	4	331.17	060

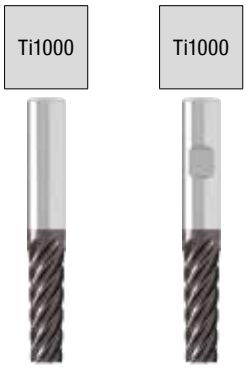
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	○

→ v_c/f_z Page 350–353

Die milling cutter







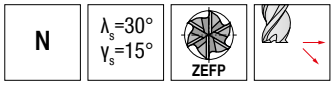
DC ±0,1 mm	α°	APMX mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Factory standard HA V1 Article no. 52 291 ... £		Factory standard HB V1 Article no. 52 291 ... £	
2.0	0,5	10	22	50	3	4	93.76	000		
2.5	0,5	10	22	50	3	4	90.36	001		
2.5	0,5	20	32	60	4	4	119.14	002		
3.0	0,5	20	32	60	4	4	122.13	003		
4.0	0,5	20	32	60	5	4	125.40	004		
5.0	0,5	30	34	75	6	6			140.52	005
6.0	0,5	30	35	75	8	6			142.79	006
8.0	0,5	30	35	80	10	6			151.21	007
10.0	0,5	30	36	85	12	6			174.01	008
12.0	0,5	30	36	85	14	6			220.19	009
12.0	0,5	50	57	110	14	6			235.28	010
16.0	0,5	60	72	120	18	6			343.27	011
2.0	1	10	22	50	3	4	93.76	100		
2.5	1	10	22	50	3	4	90.36	101		
2.5	1	20	32	60	4	4	119.14	102		
3.0	1	20	32	60	4	4	122.13	103		
3.5	1	20	32	60	5	4	125.40	104		
4.0	1	20	32	60	5	4	125.40	105		
4.5	1	20	29	65	6	6			125.13	106
5.0	1	25	29	70	6	6			140.52	107
6.0	1	30	36	75	8	6			140.52	108
8.0	1	30	36	80	10	6			151.21	109
10.0	1	30	36	85	12	6			174.01	110
12.0	1	30	36	85	14	6			220.19	111
12.0	1	50	55	110	14	6			235.28	112
16.0	1	55	61	115	18	6			343.27	113
2.0	1,5	10	22	50	3	4	93.76	200		
2.5	1,5	10	22	50	4	4	103.17	201		
2.5	1,5	20	32	60	4	4	119.14	202		
3.0	1,5	20	32	60	4	4	122.13	203		
3.5	1,5	20	32	60	5	4	125.40	204		
4.0	1,5	20	32	60	5	4	125.40	205		
4.5	1,5	20	25	65	6	4			125.13	206
5.0	1,5	30	36	75	8	6			140.52	207
6.0	1,5	30	36	75	8	6			140.52	208
8.0	1,5	30	36	80	10	6			151.21	209
10.0	1,5	30	36	85	12	6			174.01	210
12.0	1,5	30	36	85	14	6			220.19	211
12.0	1,5	50	56	110	16	6			254.22	212
16.0	1,5	60	68	125	20	6			388.31	213
2.0	2	10	22	50	3	4	93.76	301		
2.5	2	10	22	50	4	4	103.17	302		
2.5	2	20	32	60	4	4	119.14	303		
3.0	2	20	32	60	5	4	125.40	304		
3.5	2	20	32	60	5	4	125.40	305		
4.0	2	20	27	65	6	4			125.13	306
4.5	2	30	37	75	8	4			140.52	307
5.0	2	30	37	75	8	6			140.52	308
6.0	2	28	32	75	8	6			140.52	309
8.0	2	28	33	75	10	6			151.21	310
10.0	2	28	33	85	12	6			174.01	311
12.0	2	28	33	85	14	6			220.19	312
12.0	2	50	56	110	16	6			245.24	313

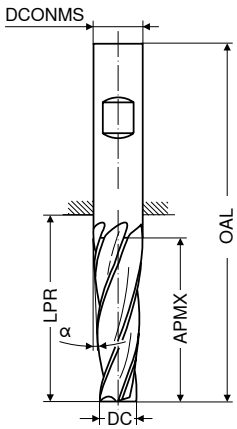
Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	○

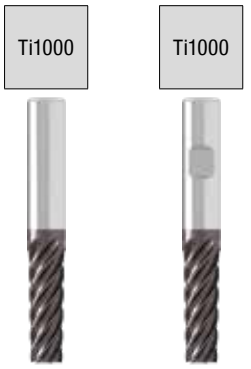
→ v_c/f_z Page 350–353

Continued on next page

Die milling cutter







DC ±0,1 mm	α°	APMX mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	Factory standard HA V1 Article no. 52 291 ... £		Factory standard HB V1 Article no. 52 291 ... £	
16.0	2	55	62	115	20	6			378.48	314
2.0	2,5	15	22	50	4	4	104.89	401		
2.5	2,5	20	32	60	5	4	120.73	402		
3.0	2,5	20	32	60	5	4	125.40	403		
4.0	2,5	20	26	65	6	4			125.13	404
5.0	2,5	30	35	75	8	6			140.52	405
6.0	2,5	30	36	80	10	6			140.52	406
8.0	2,5	30	36	85	12	6			173.85	407
10.0	2,5	40	46	100	14	6			220.19	408
2.0	3	10	22	50	4	4	104.89	500		
2.5	3	10	22	50	4	4	107.03	501		
2.5	3	20	27	65	6	4			125.83	502
3.0	3	25	32	70	6	4			125.13	503
3.0	3	30	38	75	8	4			140.52	504
3.0	3	40	47	85	8	4			151.49	505
4.0	3	25	30	70	8	6			134.25	506
4.0	3	30	35	75	8	6			139.50	507
5.0	3	40	46	90	10	6			174.98	508
6.0	3	30	36	80	10	6			152.34	509
8.0	3	30	36	85	12	6			173.85	510
8.0	3	50	57	110	14	6			227.88	511
10.0	3	30	36	85	14	6			220.19	512
10.0	3	50	57	110	16	6			264.63	513
12.0	3	30	38	90	16	6			242.97	514
12.0	3	50	57	110	18	6			334.75	515
2.5	4	25	30	65	6	4			134.94	601
3.0	4	20	26	65	6	4			134.94	602
3.5	4	25	32	70	8	4			147.64	603
4.0	4	28	33	70	8	6			162.15	604
5.0	4	30	36	85	10	6			166.47	605
5.0	4	45	51	100	12	6			190.82	606
6.0	4	30	38	84	12	6			188.40	607
6.0	4	50	58	110	14	6			241.54	608
8.0	4	30	38	84	14	6			233.42	609
8.0	4	50	58	110	16	6			280.43	610
10.0	4	30	39	93	16	6			257.48	611
10.0	4	50	58	114	18	6			354.81	612
2.5	5	20	25	65	6	4			134.94	701
3.0	5	28	34	70	8	4			147.64	702
3.5	5	30	38	80	10	4			164.15	703
4.0	5	30	36	80	10	6			164.15	704
4.5	5	30	36	80	10	6			164.15	705
5.0	5	30	38	84	12	6			190.82	706
5.0	5	40	46	100	12	6			194.95	707
6.0	5	30	36	93	12	6			191.08	708
6.0	5	55	62	110	16	6			280.43	709
8.0	5	30	38	90	14	6			236.69	710
8.0	5	50	58	114	18	6			354.81	711
10.0	5	30	38	93	16	6			257.48	712
10.0	5	55	63	115	20	6			388.89	713
12.0	5	30	38	93	18	6			273.32	714
12.0	5	45	52	100	20	6			378.62	715

Steel	●	●
Stainless steel	○	○
Cast iron	●	●
Non ferrous metals	○	○
Heat resistant alloys	○	○
hardened materials	○	○

→ v_c/f_z Page 350–353

14

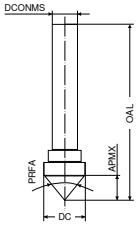
Carbide burrs, similar to DIN 8033

Teeth **Z3**: Application "medium"

Teeth **Z6**: Application "medium"

v_c in m/min = 300–600

KSJ



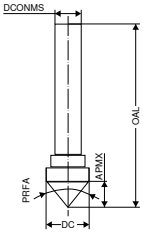
Z3

Z6

DC	APMX	OAL	DCONMS	PRFA	U9 Article no. 50 928 ...		U9 Article no. 50 928 ...	
mm	mm	mm	mm		£		£	
6	5	52	6	60°	17.37	606	18.88	706
12	10	60	6	60°	23.16	612 1)	25.42	712 1)

1) Steel shank / carbide head – shank tolerance h9

KSK



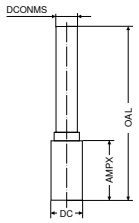
Z3

Z6

DC	APMX	OAL	DCONMS	PRFA	U9 Article no. 50 927 ...		U9 Article no. 50 927 ...	
mm	mm	mm	mm		£		£	
6	3	52	6	90°	16.64	606	18.13	706
12	6	56	6	90°	19.99	612 1)	22.04	712 1)

1) Steel shank / carbide head – shank tolerance h9

ZYA



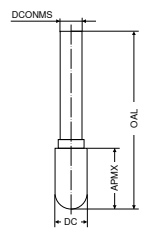
Z3

Z6

DC	APMX	OAL	DCONMS	U9 Article no. 50 921 ...		U9 Article no. 50 921 ...	
mm	mm	mm	mm	£		£	
3	13	40	3	8.40	303	9.16	403
6	13	48	3	14.94	306 1)	16.64	406 1)
6	16	55	6	16.99	606	18.69	706
8	20	65	6	21.67	608 1)	23.55	708 1)
10	20	65	6	24.47	610 1)	26.73	710 1)
12	25	70	6	31.37	612 1)	34.36	712 2)

1) Steel shank / carbide head – shank tolerance h9
2) Steel shank / carbide head – shank tolerance h7

WRC



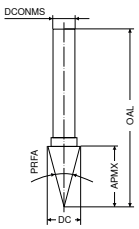
Z3

Z6

DC	APMX	OAL	DCONMS	U9 Article no. 50 922 ...		U9 Article no. 50 922 ...	
mm	mm	mm	mm	£		£	
3	13	40	3	10.67	303	11.59	403
6	13	48	3	16.99	306 1)	18.51	406 1)
6	16	50	6	18.88	606	20.92	706
8	18	63	6	24.28	608 1)	26.73	708 1)
10	20	65	6	28.03	610 1)	30.64	710 1)
12	25	70	6	37.74	612 1)	41.48	712 1)
16	25	70	6	50.05	616 1)	54.90	716 1)

1) Steel shank / carbide head – shank tolerance h9

SKM



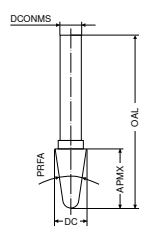
Z3

Z6

DC	APMX	OAL	DCONMS	PRFA	U9 Article no. 50 926 ...		U9 Article no. 50 926 ...	
mm	mm	mm	mm		£		£	
3	11	40	3	14°	10.08	303	11.21	403
6	13	48	3	23°	14.18	306 1)	15.31	406 1)
6	18	50	6	16°	17.75	606	19.43	706
8	20	65	6	20°	16.99	608 1)	18.51	708 1)
10	20	65	6	25°	19.99	610 1)	22.04	710 1)
12	25	70	6	25°	27.11	612 1)	29.89	712 1)

1) Steel shank / carbide head – shank tolerance h9

KEL



Z3

Z6

DC	APMX	OAL	DCONMS	PRFA	U9 Article no. 50 923 ...		U9 Article no. 50 923 ...	
mm	mm	mm	mm		£		£	
3	14	40	3	6°	10.08	303	11.21	403
6	20	55	3	12°	17.37	306 1)	18.88	406 1)
6	20	50	6	10°	18.88	606	20.92	706
8	20	65	6	14°	26.73	608 1)	29.33	708 1)
10	20	65	6	14°	33.25	610 1)	36.61	710 1)
12	30	75	6	14°	39.61	612 1)	43.54	712 1)

1) Steel shank / carbide head – shank tolerance h9

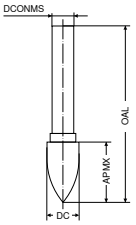
Carbide burrs, similar to DIN 8033

Teeth **Z3**: Application "medium"

Teeth **Z6**: Application "medium"

v_c in m/min = 300–600

SPG



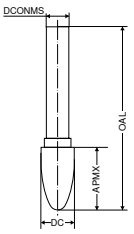
Z3

Z6

DC	APMX	OAL	DCONMS	U9 Article no. 50 925 ...		U9 Article no. 50 925 ...	
mm	mm	mm	mm	£		£	
3	13	40	3	9.92	303	10.83	403
6	13	48	3	14.56	306 1)	16.27	406 1)
6	18	50	6	21.50	606	23.16	706
8	20	65	6	21.67	608 1)	23.90	708 1)
10	20	65	6	26.73	610 1)	29.33	710 1)
12	25	70	6	31.75	612 2)	34.56	712 1)

1) Steel shank / carbide head – shank tolerance h9
2) Steel shank / carbide head – shank tolerance h7

RBF



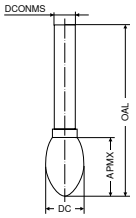
Z3

Z6

DC	APMX	OAL	DCONMS	U9 Article no. 50 924 ...		U9 Article no. 50 924 ...	
mm	mm	mm	mm	£		£	
3	13	40	3	10.08	303	11.21	403
6	13	48	3	16.27	306 1)	17.75	406 1)
6	18	50	6	22.04	606	24.47	706
8	20	65	6	23.55	608 1)	25.98	708 1)
10	20	65	6	27.27	610 1)	29.89	710 1)
12	25	70	6	32.88	612 1)	36.25	712 1)
16	30	75	6	46.89	616 1)	51.74	716 1)

1) Steel shank / carbide head – shank tolerance h9

TRE



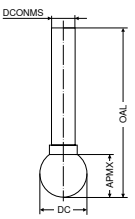
Z3

Z6

DC	APMX	OAL	DCONMS	U9 Article no. 50 929 ...		U9 Article no. 50 929 ...	
mm	mm	mm	mm	£		£	
3	7	40	3	10.08	303	11.21	403
6	10	45	3	14.94	306 1)	16.44	406 1)
6	10	50	6	20.18	606	22.25	706
8	13	58	6	22.41	608 1)	24.66	708 1)
10	16	61	6	25.42	610 1)	28.21	710 1)
12	20	65	6	32.12	612 1)	35.13	712 1)

1) Steel shank / carbide head – shank tolerance h9

KUD



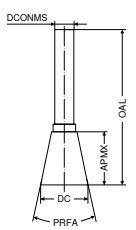
Z3

Z6

DC	APMX	OAL	DCONMS	U9 Article no. 50 930 ...		U9 Article no. 50 930 ...	
mm	mm	mm	mm	£		£	
3	2.7	40.0	3	10.08	303	11.21	403
6	5.4	40.4	3	13.65	306 1)	14.94	406 1)
6	5.0	50.0	6	19.43	606	21.67	706
8	7.2	52.2	6	18.51	608 1)	20.38	708 1)
10	9.0	54.0	6	21.87	610 1)	23.90	710 1)
12	10.8	55.8	6	26.16	612 1)	28.78	712 1)
16	14.4	59.4	6	36.99	616 1)	40.55	716 1)

1) Steel shank / carbide head – shank tolerance h9

WKN



Z3

Z6

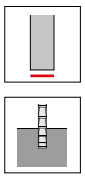
DC	APMX	OAL	DCONMS	PRFA	U9 Article no. 50 931 ...		U9 Article no. 50 931 ...	
mm	mm	mm	mm		£		£	
3	7	40	3	10°	10.08	303	11.21	403
6	7	50	6	10°	18.51	606	20.38	706
12	13	58	6	20°	24.86	612 1)	27.11	712 1)

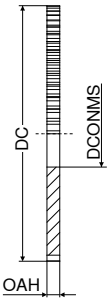
1) Steel shank / carbide head – shank tolerance h9

14

Circular saw blades

▲ straight cut





DIN 1837 A

DC js16	OAH ±0,01	DCONMS H6	ZEFP	NEW V6 Article no. 54 700 ... £	
mm	mm	mm			
15	0.20	5	64	17.30	102
15	0.25	5	64	17.30	103
15	0.30	5	64	17.30	104
15	0.35	5	64	17.30	105
15	0.40	5	64	17.30	106
15	0.50	5	48	17.30	107
15	0.60	5	48	17.30	108
15	0.70	5	48	20.54	109
15	0.80	5	40	20.54	110
15	0.90	5	40	21.63	111
15	1.00	5	40	21.63	112
15	1.10	5	40	22.71	113
15	1.20	5	40	22.71	114
15	1.30	5	40	22.71	115
15	1.40	5	40	22.71	116
15	1.50	5	40	24.87	117
15	1.60	5	40	27.03	118
15	1.70	5	40	29.19	119
15	1.80	5	40	29.19	120
15	1.90	5	40	30.28	121
15	2.00	5	40	30.28	122
15	2.50	5	40	42.17	123
15	3.00	5	40	47.58	124
15	3.50	5	40	52.98	125
15	4.00	5	40	65.96	126
15	4.50	5	40	76.77	127
15	5.00	5	40	80.02	128
15	5.50	5	40	95.15	129
15	6.00	5	40	98.40	130
20	0.20	5	80	19.46	152
20	0.25	5	64	19.46	153
20	0.30	5	64	19.46	154
20	0.35	5	64	19.46	155
20	0.40	5	64	19.46	156
20	0.50	5	48	19.46	157
20	0.60	5	48	19.46	158
20	0.70	5	48	21.63	159
20	0.80	5	48	21.63	160
20	0.90	5	40	22.71	161
20	1.00	5	40	24.87	162
20	1.10	5	40	27.03	163
20	1.20	5	40	27.03	164
20	1.30	5	40	28.11	165
20	1.40	5	40	30.28	166
20	1.50	5	40	30.28	167
20	1.60	5	40	32.44	168
20	1.70	5	40	33.52	169
20	1.80	5	32	33.52	170
20	1.90	5	32	35.68	171
20	2.00	5	32	35.68	172
20	2.50	5	32	44.33	173
20	3.00	5	32	50.82	174
20	3.50	5	24	56.23	175
20	4.00	5	24	67.04	176

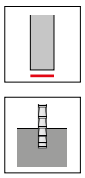
DC js16	OAH ±0,01	DCONMS H6	ZEFP	NEW V6 Article no. 54 700 ... £	
mm	mm	mm			
20	4.50	5	24	80.02	177
20	5.00	5	24	83.26	178
20	5.50	5	24	97.32	179
20	6.00	5	24	100.56	180
25	0.20	8	80	18.38	202
25	0.25	8	80	18.38	203
25	0.30	8	80	18.38	204
25	0.35	8	64	18.38	205
25	0.40	8	64	18.38	206
25	0.50	8	64	21.63	207
25	0.60	8	64	21.63	208
25	0.70	8	48	23.79	209
25	0.80	8	48	27.03	210
25	0.90	8	48	29.19	211
25	1.00	8	48	29.19	212
25	1.10	8	48	33.52	213
25	1.20	8	48	33.52	214
25	1.30	8	40	34.60	215
25	1.40	8	40	35.68	216
25	1.50	8	40	35.68	217
25	1.60	8	40	40.01	218
25	1.70	8	40	40.01	219
25	1.80	8	40	41.09	220
25	1.90	8	40	44.33	221
25	2.00	8	40	45.41	222
25	2.50	8	40	55.15	223
25	3.00	8	32	71.37	224
25	3.50	8	32	78.93	225
25	4.00	8	32	88.67	226
25	4.50	8	32	101.64	227
25	5.00	8	32	107.05	228
25	5.50	8	24	122.19	229
25	6.00	8	24	127.59	230
30	0.20	8	100	23.79	252
30	0.25	8	100	23.79	253
30	0.30	8	80	23.79	254
30	0.35	8	80	23.79	255
30	0.40	8	80	23.79	256
30	0.50	8	80	24.87	257
30	0.60	8	64	24.87	258
30	0.70	8	64	30.28	259
30	0.80	8	64	33.52	260
30	0.90	8	64	35.68	261
30	1.00	8	64	35.68	262
30	1.10	8	64	40.01	263
30	1.20	8	48	40.01	264
30	1.30	8	48	41.09	265
30	1.40	8	48	44.33	266
30	1.50	8	48	44.33	267
30	1.60	8	48	47.58	268
30	1.70	8	48	47.58	269
30	1.80	8	48	48.66	270
30	1.90	8	48	50.82	271
30	2.00	8	48	52.98	272
30	2.50	8	40	62.72	273
30	3.00	8	40	74.61	274
30	3.50	8	40	84.34	275
30	4.00	8	40	95.15	276
30	4.50	8	32	109.21	277
30	5.00	8	32	114.62	278
30	5.50	8	32	129.76	279
30	6.00	8	32	135.16	280

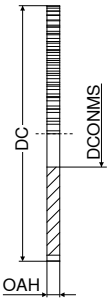
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	○

→ v_c/f_z Page 349

Circular saw blades

▲ straight cut





DIN 1837 A

DC js16	OAH ±0,01	DCONMS H6	ZEFP	NEW V6 Article no. 54 700 ... £	
mm	mm	mm			
40	0.20	10	128	29.19	302
40	0.25	10	100	29.19	303
40	0.30	10	100	29.19	304
40	0.35	10	100	29.19	305
40	0.40	10	100	31.36	306
40	0.50	10	80	33.52	307
40	0.60	10	80	33.52	308
40	0.70	10	80	38.93	309
40	0.80	10	80	40.01	310
40	0.90	10	64	40.01	311
40	1.00	10	64	41.09	312
40	1.10	10	64	42.17	313
40	1.20	10	64	44.33	314
40	1.30	10	64	45.41	315
40	1.40	10	64	47.58	316
40	1.50	10	64	49.74	317
40	1.60	10	64	50.82	318
40	1.70	10	48	52.98	319
40	1.80	10	48	55.15	320
40	1.90	10	48	56.23	321
40	2.00	10	48	56.23	322
40	2.50	10	48	72.45	323
40	3.00	10	48	83.26	324
40	3.50	10	48	92.99	325
40	4.00	10	40	103.80	326
40	4.50	10	40	116.78	327
40	5.00	10	40	124.35	328
40	5.50	10	40	139.49	329
40	6.00	10	40	147.06	330
50	0.20	13	128	47.58	352
50	0.25	13	128	46.50	353
50	0.30	13	128	38.93	354
50	0.35	13	100	38.93	355
50	0.40	13	100	38.93	356
50	0.50	13	100	41.09	357
50	0.60	13	100	41.09	358
50	0.70	13	80	42.17	359
50	0.80	13	80	46.50	360
50	0.90	13	80	47.58	361
50	1.00	13	80	49.74	362
50	1.10	13	80	50.82	363
50	1.20	13	80	51.90	364
50	1.30	13	64	58.39	365
50	1.40	13	64	59.47	366
50	1.50	13	64	62.72	367
50	1.60	13	64	63.80	368
50	1.70	13	64	64.88	369
50	1.80	13	64	69.20	370
50	1.90	13	64	69.20	371
50	2.00	13	64	71.37	372
50	2.50	13	64	86.50	373
50	3.00	13	48	100.56	374
50	3.50	13	48	114.62	375
50	4.00	13	48	121.10	376

DC js16	OAH ±0,01	DCONMS H6	ZEFP	NEW V6 Article no. 54 700 ... £	
mm	mm	mm			
50	4.50	13	48	140.57	377
50	5.00	13	48	148.14	378
50	5.50	13	40	165.44	379
50	6.00	13	40	171.93	380
63	0.20	16	160	70.28	402
63	0.25	16	160	67.04	403
63	0.30	16	128	62.72	404
63	0.35	16	128	59.47	405
63	0.40	16	128	54.06	406
63	0.50	16	128	52.98	407
63	0.60	16	100	54.06	408
63	0.70	16	100	60.55	409
63	0.80	16	100	67.04	410
63	0.90	16	100	67.04	411
63	1.00	16	100	69.20	412
63	1.10	16	80	71.37	413
63	1.20	16	80	73.53	414
63	1.30	16	80	75.69	415
63	1.40	16	80	76.77	416
63	1.50	16	80	77.85	417
63	1.60	16	80	82.18	418
63	1.70	16	80	86.50	419
63	1.80	16	80	87.58	420
63	1.90	16	80	91.91	421
63	2.00	16	80	94.07	422
63	2.50	16	64	113.54	423
63	3.00	16	64	128.67	424
63	3.50	16	64	147.06	425
63	4.00	16	64	161.11	426
63	4.50	16	64	184.90	427
63	5.00	16	48	192.47	428
63	5.50	16	48	216.26	429
63	6.00	16	48	223.83	430

Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●
hardened materials	○

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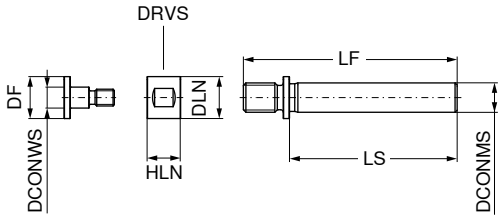
14

Cylindrical shank adapter for circular saw blades

▲ DCONWS = circular saw blade bore diameter



DCONMS h7	DLN	DF	LF	LS	HLN	DCONWS H7	DRVS	NEW X1 Article no. 72 900 ...	
mm	mm	mm	mm	mm	mm	mm	mm	£	
7	10	10	51	40	8	5	9	181.28	**005**
7	15	15	51	40	8	8	14	181.28	**008**
7	17	17	53	40	10	10	16	181.28	**010**
10	10	10	61	50	8	5	9	181.28	**105**
10	15	15	61	50	8	8	14	196.80	**108**
10	17	17	63	50	10	10	16	196.80	**110**
10	20	20	66	50	10	13	18	196.80	**113**
10	24	24	66	50	14	16	22	196.80	**116**
16	17	17	74	55	10	10	16	210.04	**210**
16	20	20	77	55	10	13	18	210.04	**213**
16	24	24	79	55	14	16	22	210.04	**216**

Spare parts for Article no.	X1 Screw – SR Article no. 72 945 ... £		X1 Lock nut – KM Article no. 72 945 ... £	
72 900 005	34.44	**000**	54.12	**005**
72 900 008	34.44	**001**	54.12	**006**
72 900 010	36.71	**002**	56.21	**007**
72 900 105	34.44	**000**	54.12	**005**
72 900 108	34.44	**001**	54.12	**006**
72 900 110	36.71	**002**	56.21	**007**
72 900 113	38.42	**003**	58.10	**008**
72 900 116	40.31	**004**	59.80	**009**
72 900 210	36.71	**010**	56.21	**012**
72 900 213	38.42	**003**	58.10	**008**
72 900 216	40.31	**011**	59.80	**013**

Application data for plastics cutters

Material	Strength N/mm² – HB	50 981 ... - 50 988 ...	50 932 ...	50 937 ...	50 936 ...	50 938 ...	50 610 ... 50 611 ...	50 946 ...	50 948 ...	50 947 ...
Aluminium (non alloyed, low alloyed)	< 350 N/mm²						●			
Aluminium	< 500 N/mm²						●			
Aluminium alloy 0,5–10 % Si	< 400 N/mm²						●			
Aluminium alloy 10–15 % Si	< 400 N/mm²					●		●	●	●
Aluminium	< 400 N/mm²					●		●	●	
Copper (non alloyed, low alloyed)	< 350 N/mm²						●			
Copper wrought alloys	< 700 N/mm²					●		●	●	●
Special copper alloys	< 200 HB					●		●	●	●
Special copper alloys	< 300 HB					●		●	●	●
Special copper alloys	< 300 HB					●		●	●	●
Short-chipping brass, bronze, red bronze	< 600 N/mm²						●			
Long-chipping brass	< 600 N/mm²						●			
Thermoplastics							●			
Duroplastics		●	●	●			●			
Fibre-reinforced plastics		●	●	●	●	●		●	●	●
Magnesium and Magnesium Alloys	< 850 N/mm²					●		●	●	●
Graphite		●	●	●	●	●		●		●
Tungsten and tungsten alloys									●	●
Molybdenum and molybdenum alloys									●	●
Machining direction		↘	↘	↘	↘	↘	↘	↘	↘	↘
		1	2	3	4	5	6	7	8	9

Tips

1

▲ Very sharp cutting edges for GFK and CFK and to prevent delamination of the component.

2

▲ For excellent tool life when machining AFK, CFK and Graphite.

3

4

▲ Specialist for machining honeycomb materials; Milling of pockets not fully through the workpiece.

5

▲ Specialist for machining honeycomb materials.

▲ Milling of recesses that pass through the material, the lower deck is pushed and upper deck pulled therefore the workpiece material is stabilized.

6

▲ For machining non fibre-reinforced plastics and non-ferrous metals with low silicon content. (PE, PA, PVC, acrylic glass)

7

8

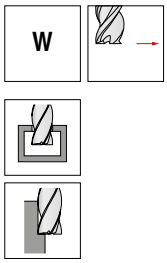
▲ For machining fibre-reinforced plastics and non-ferrous metals with high silicon content.

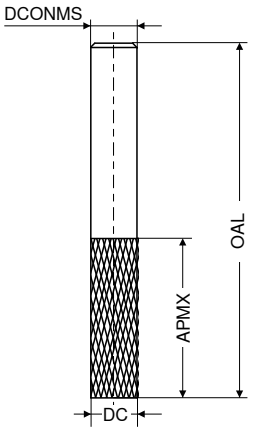
9

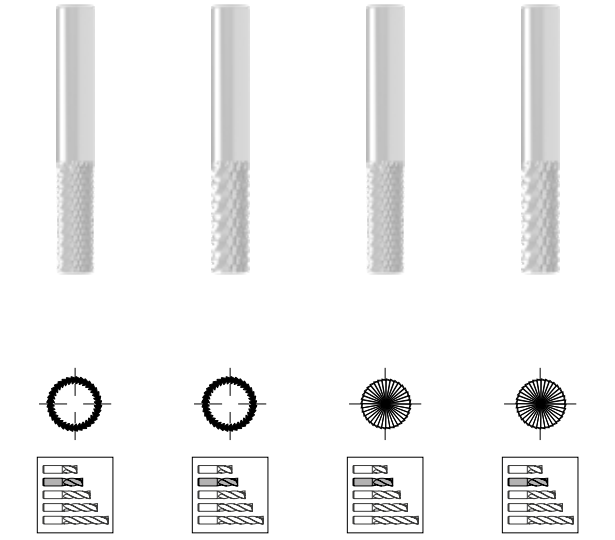
14

Cutter for plastics

- right hand cutting
- cross-pitched
- downward chip evacuation
- 50 981 ... and 50 983 ... = fine pitch
- 50 982 ... and 50 984 ... = medium pitch







Factory standard | Factory standard | Factory standard | Factory standard

HA | HA | HA | HA

V0 | V0 | V0 | V0

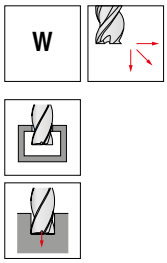
DC h10	APMX	OAL	DCONMS h6	Article no. 50 981 ...		Article no. 50 982 ...		Article no. 50 983 ...		Article no. 50 984 ...	
mm	mm	mm	mm	£		£		£		£	
2.0	7	40	2.0	12.05	020	13.30	020	14.01	020	15.89	020
2.0	7	50	6.0	26.07	021	26.07	021	27.84	021	27.84	021
3.0	10	40	3.0	12.05	030	13.30	030	14.01	030	15.89	030
3.0	12	50	6.0	26.07	031	26.07	031	27.84	031	27.84	031
3.5	12	40	3.5	13.93	035	15.48	035	15.78	035	17.52	035
4.0	15	40	4.0	16.12	040	17.66	040	17.30	040	19.14	040
4.0	20	50	6.0	26.07	041	26.07	041	27.84	041	27.84	041
4.5	15	50	4.5	18.51	045	20.50	045	20.03	045	22.13	045
5.0	16	50	5.0	21.05	050	23.21	050	22.58	050	25.12	050
5.0	25	75	6.0	39.76	051	39.76	051	41.54	051	41.54	051
6.0	18	50	6.0	26.07	060	23.59	060	27.84	060	25.28	060
6.0	35	75	6.0	39.76	061	39.76	061	41.54	061	41.54	061
7.0	22	60	7.0	35.99	070	32.42	070	38.29	070	34.45	070
8.0	25	63	8.0	41.39	080	37.16	080	44.11	080	39.69	080
8.0	40	100	8.0	55.10	081	55.10	081	57.69	081	57.69	081
9.0	25	63	9.0	52.52	090	47.35	090	55.10	090	49.37	090
10.0	30	72	10.0	55.92	100	50.21	100	58.23	100	52.26	100
12.0	32	83	12.0	79.13	120	70.91	120	82.23	120	73.63	120
14.0	32	83	14.0	124.73	140	111.80	140	134.76	140	120.45	140
16.0	36	92	16.0	170.85	160	152.51	160	184.44	160	164.91	160
18.0	40	92	18.0	230.99	180	206.28	180	249.43	180	222.91	180
20.0	45	104	20.0	277.25	200	247.69	200	299.38	200	267.53	200

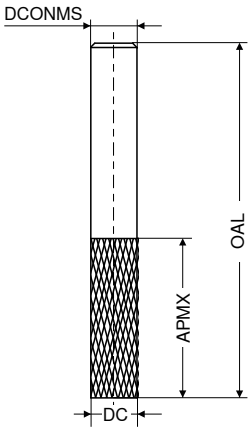
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

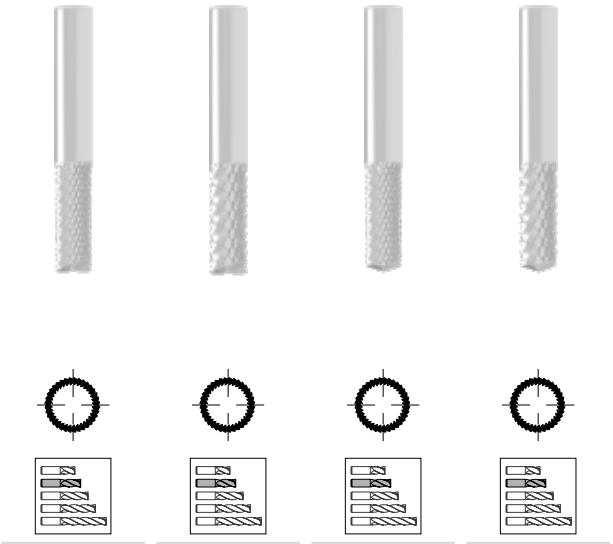
→ v_c/f_z Page 348

Cutter for plastics

- right hand cutting
- cross-pitched
- downward chip evacuation
- 50 985 ... and 50 987 ... = fine pitch
- 50 986 ... and 50 988 ... = medium pitch







DC h10	APMX	OAL	DCONMS h6	Factory standard HA V0 Article no. 50 985 ...		Factory standard HA V0 Article no. 50 986 ...		Factory standard HA V0 Article no. 50 987 ...		Factory standard HA V0 Article no. 50 988 ...	
mm	mm	mm	mm	£		£		£		£	
2.0	7	40	2.0	15.27	020	16.70	020	15.27	020	16.70	020
2.0	7	50	6.0	29.59	021	29.59	021	29.59	021	29.59	021
3.0	10	40	3.0	15.27	030	16.70	030	15.27	030	16.70	030
3.0	12	50	6.0	29.59	031	29.59	031	29.59	031	29.59	031
3.5	12	40	3.5	16.82	035	18.59	035	16.82	035	18.59	035
4.0	15	40	4.0	18.33	040	20.36	040	18.33	040	20.36	040
4.0	20	50	6.0	29.59	041	29.59	041	29.59	041	29.59	041
4.5	15	50	4.5	21.21	045	23.48	045	21.21	045	23.48	045
5.0	16	50	5.0	24.08	050	26.74	050	24.08	050	26.74	050
5.0	25	75	6.0	43.29	051	43.29	051	43.29	051	43.29	051
6.0	18	50	6.0	29.59	060	26.65	060	29.59	060	26.65	060
6.0	35	75	6.0	43.29	061	43.29	061	43.29	061	43.29	061
7.0	22	60	7.0	40.72	070	36.47	070	40.72	070	36.47	070
8.0	25	63	8.0	46.56	080	41.72	080	46.56	080	41.72	080
8.0	40	100	8.0	60.26	081	60.26	081	60.26	081	60.26	081
9.0	25	63	9.0	57.69	090	51.74	090	57.69	090	51.74	090
10.0	30	72	10.0	60.79	100	54.45	100	60.79	100	54.45	100
12.0	32	83	12.0	85.37	120	76.35	120	85.37	120	76.35	120
14.0	32	83	14.0	137.36	140	122.83	140	137.36	140	122.83	140
16.0	36	92	16.0	187.81	160	167.94	160	187.81	160	167.94	160
18.0	40	92	18.0	254.07	180	226.80	180	254.07	180	226.80	180
20.0	45	104	20.0	305.08	200	272.44	200	305.08	200	272.44	200

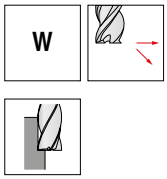
Steel				
Stainless steel				
Cast iron				
Non ferrous metals	●	●	●	●
Heat resistant alloys				
hardened materials				

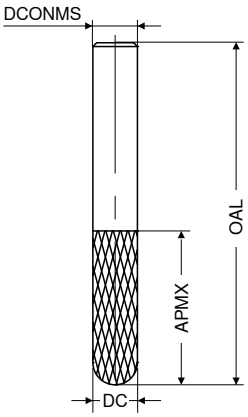
→ v_c/f_z Page 348

14

Ball nosed cutter for plastics

▲ right hand cutting
▲ cross-pitched





Factory standard

HA

V0

DC h10 mm	APMX mm	OAL mm	DCONMS h6 mm	Article no. 50 932 ... £	
2	7	40	2	50.61	020
2	7	50	6	115.37	022
3	10	40	3	50.61	030
3	12	50	6	115.37	032
4	15	40	4	73.42	040
4	20	50	6	115.37	042
5	16	50	5	93.64	050
5	25	75	6	131.92	052
6	18	50	6	96.91	060
6	35	75	6	126.35	062
8	25	63	8	122.69	080
8	40	100	8	179.02	082
10	30	72	10	195.83	100
12	32	83	12	248.76	120
16	36	92	16	502.27	160
20	40	104	20	589.80	200

Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

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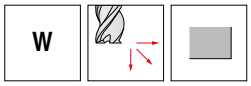
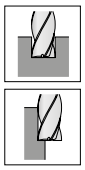
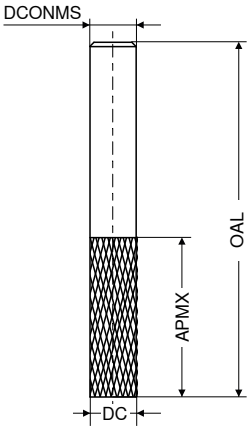
Cutter for plastics

▲ right hand cutting
▲ cross-pitched







Factory standard

DC h10	APMX	OAL	DCONMS h6	V0 Article no. 50 937 ...	
mm	mm	mm	mm	£	
5	16	60	6	115.64	050
5	28	75	6	97.83	052
6	20	60	6	115.64	060
6	35	75	6	102.62	062
8	22	63	8	120.79	080
8	40	100	8	124.85	082
10	25	72	10	148.61	100
10	50	100	10	208.60	102
12	30	83	12	261.80	120
12	50	100	12	306.99	122
16	35	92	16	461.54	160
16	60	125	16	560.78	162

Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

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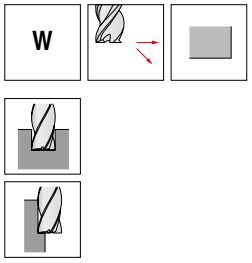
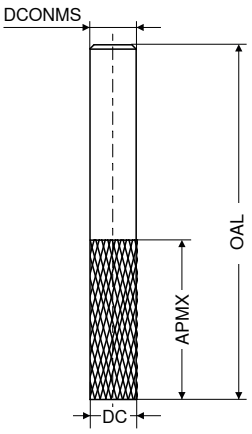
Cutter for honeycomb materials





Factory standard

DC h10 mm	APMX mm	OAL mm	DCONMS h6 mm	V0 Article no. 50 936 ... £	
6	16	50	6	66.91	006
8	19	63	8	98.41	008
10	22	72	10	123.50	010
12	26	83	12	169.65	012
14	17	100	12	200.18	014
16	17	100	12	306.17	016
20	17	100	12	420.43	020
24	10	100	12	498.75	024
24	17	100	12	536.34	025
44	17	100	12	987.43	044 1)

Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

1) vertical plunging not possible

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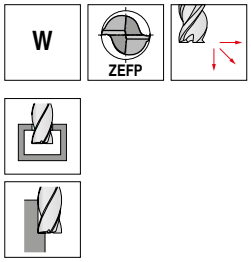
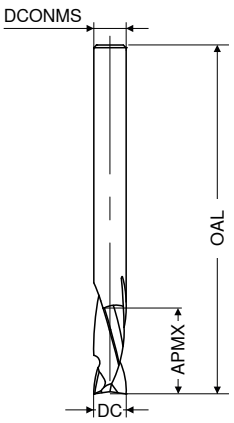
Right and left hand helix cutter for fibre re-inforced plastics





Factory standard

HA

V0

DC h10 mm	APMX mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 50 938 ... £	
2	6	40	6	2	111.82	020
3	12	40	3	2	54.57	030
3	12	50	6	2	111.82	032
4	14	40	4	2	61.91	040
5	16	50	5	2	77.63	050
6	18	50	6	2	94.73	060
8	20	63	8	2	114.55	080
10	25	72	10	2	137.21	100
12	30	83	12	2	199.09	120

Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

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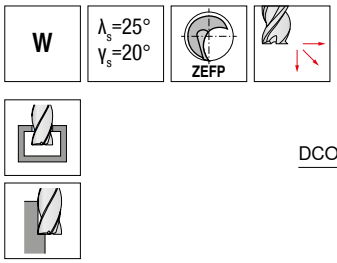
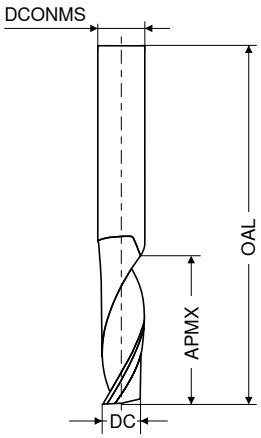
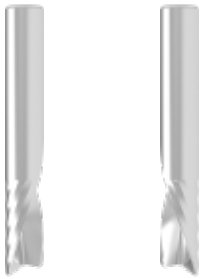
Single flute cutter

▲ with polished chip flutes







Right-hand helix
right-hand cutting

Left-hand helix
right-hand cutting

Factory standard

Factory standard

DC h10	APMX	OAL	DCONMS h6	ZEFP	V0 Article no. 50 610 ...		V0 Article no. 50 611 ...	
mm	mm	mm	mm		£		£	
1.5	6	40	3.0	1	23.62	015	23.62	015
2.0	6	40	3.0	1	23.62	019	23.62	019
2.0	10	40	2.0	1	19.14	020	19.14	020
2.0	10	60	6.0	1	34.90	022	34.90	022
2.0	12	60	6.0	1	35.99	024	35.99	024
2.5	6	40	2.5	1	23.62	025	23.62	025
3.0	12	40	3.0	1	19.00	030	19.00	030
3.0	10	40	6.0	1	34.34	032	34.34	032
3.0	12	60	6.0	1	34.90	034	34.90	034
3.0	15	60	6.0	1	34.90	036	34.90	036
4.0	15	40	4.0	1	23.21	040	23.21	040
4.0	15	60	6.0	1	34.90	042	34.90	042
4.0	20	75	6.0	1	56.59	044	56.59	044
5.0	16	50	5.0	1	29.66	050	29.66	050
5.0	16	60	6.0	1	34.90	052	34.90	052
5.0	28	75	6.0	1	63.38	054	63.38	054
6.0	20	60	6.0	1	34.64	060	34.64	060
6.0	30	60	6.0	1	34.34	062	34.34	062
6.0	35	75	6.0	1	51.44	064	51.44	064
8.0	22	63	8.0	1	56.14	080	56.14	080
8.0	40	100	8.0	1	82.23	084	82.23	084
10.0	25	72	10.0	1	82.78	100	82.78	100
10.0	55	100	10.0	1	136.94	105	136.94	105
12.0	30	83	12.0	1	111.72	120	111.72	120
14.0	30	83	14.0	1	167.17	140	167.17	140
16.0	35	92	16.0	1	237.00	160	237.00	160
18.0	35	92	18.0	1	283.57	180	283.57	180
20.0	40	104	20.0	1	318.92	200	318.92	200

Steel		
Stainless steel		
Cast iron		
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

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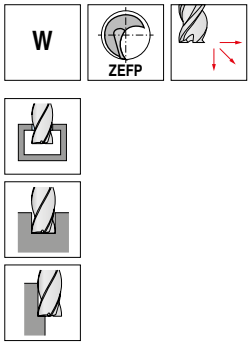
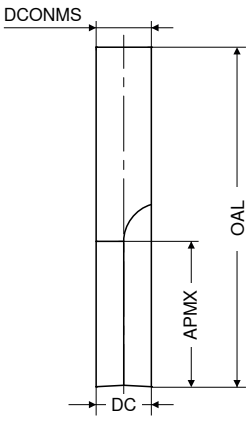
Cutter for plastics

▲ with polished flutes





Factory standard

DC h10	APMX	OAL	DCONMS h6	ZEFP	V0 Article no. 50 946 ...	
mm	mm	mm	mm		£	
1.5	6	40	3	1	29.18	015
2.0	6	40	3	1	29.18	020
2.0	10	40	2	1	20.90	022
2.0	10	60	6	1	42.49	024
2.0	12	60	6	1	43.57	026
3.0	12	40	3	1	21.99	030
3.0	12	60	6	1	42.49	032
3.0	15	60	6	1	42.49	034
4.0	15	60	6	1	42.49	040
4.0	20	75	6	1	64.20	042
5.0	16	60	6	1	42.49	050
5.0	28	75	6	1	70.99	052
6.0	20	60	6	1	36.93	060
6.0	30	60	6	1	41.94	062
6.0	35	75	6	1	59.05	064
8.0	22	63	8	1	57.28	080
8.0	40	100	8	1	92.00	082
10.0	25	72	10	1	85.09	100
10.0	55	100	10	1	150.78	102
12.0	30	83	12	1	110.21	120

Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

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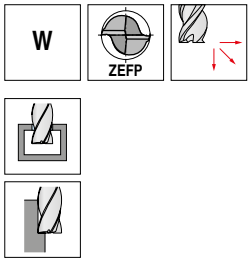
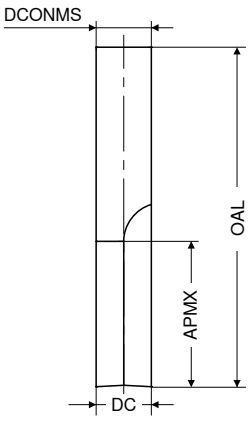
Cutter for plastics

▲ with polished flutes





Factory standard

V0

DC h10 mm	APMX mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 50 948 ... £	
2	6	40	6	2	44.25	**020**
3	12	40	3	2	25.52	**030**
3	12	50	6	2	44.25	**031**
4	14	40	6	2	44.25	**040**
5	16	50	5	2	33.38	**050**
6	18	50	6	2	40.18	**060**
8	20	63	8	2	57.96	**080**
10	25	72	10	2	75.73	**100**
12	30	83	12	2	100.44	**120**

Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

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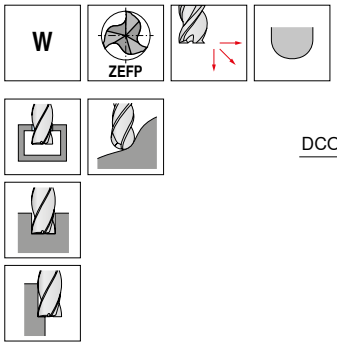
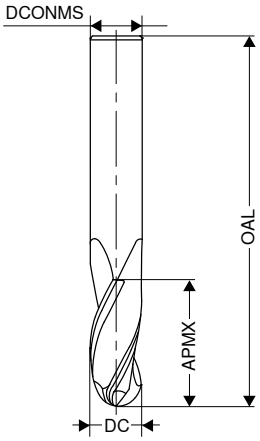
Ball nosed cutter for plastics

- with polished flutes
- irregular pitch





DIN 6527 L

HA

V0

DC h10 mm	APMX mm	OAL mm	DCONMS h6 mm	ZEFP	Article no. 50 947 ... £	
3	10	57	6	3	60.68	030
4	13	57	6	3	60.68	040
5	15	57	6	3	60.68	050
6	18	57	6	3	51.86	060
7	20	63	8	3	80.20	070
8	20	63	8	3	71.10	080
9	22	72	10	3	108.32	090
10	25	72	10	3	95.96	100
12	30	83	12	3	123.63	120
14	30	83	14	3	188.79	140
16	35	92	16	3	253.78	160
18	35	92	18	3	303.05	180
20	45	104	20	3	358.70	200

Steel	
Stainless steel	
Cast iron	
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

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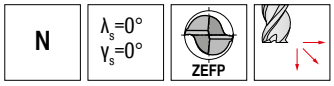
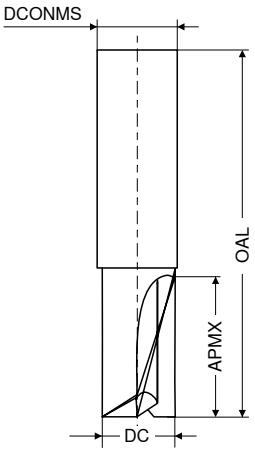
Slot milling cutter





Factory standard

DC e8 mm	APMX mm	OAL mm	DCONMS h6 mm	ZEFP	V1 Article no. 52 168 ... £	
2	8	50	3	2	24.24	**020**
3	12	50	3	2	23.21	**030**
4	13	60	4	2	24.81	**040**
5	14	60	5	2	30.06	**050**
6	16	58	6	2	34.25	**060**
7	20	65	8	2	46.05	**070**
8	20	65	8	2	46.60	**080**
9	22	70	10	2	60.80	**090**
10	22	70	10	2	74.68	**100**
12	25	70	12	2	98.33	**120**

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

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Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting Data – MonsterMill – End Mills – SCR, short – long

Index	Emulsion	Compressed air	MMS	short	long	Ø DC = 3,0–3,5 mm			Ø DC = 4,0–4,5 mm			short	long	Ø DC = 5,0–5,5 mm			Ø DC = 6,0–7,5 mm			Ø DC = 8,0–9,5 mm		
						a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC			a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
	v_c m/min			$a_{p\,max.}$ x DC		f_z mm			f_z mm			$a_{p\,max.}$ x DC		f_z mm			f_z mm			f_z mm		
1.1	105–140	190–240		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.2	105–140	200–250		1,0	1,0	0,031	0,024	0,017	0,043	0,033	0,024	1,0	1,0*	0,062	0,046	0,031	0,083	0,062	0,041	0,11	0,08	0,06
1.3	90–120	160–210		1,0	1,0	0,031	0,024	0,017	0,043	0,033	0,024	1,0	1,0*	0,062	0,046	0,031	0,083	0,062	0,041	0,11	0,08	0,06
1.4	80–115	140–190		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.5	90–120	150–200		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.6	90–120	140–190		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.7	80–115	140–190		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.8	70–100	120–170		1,0	1,0	0,025	0,019	0,014	0,035	0,027	0,020	1,0	1,0*	0,050	0,038	0,025	0,067	0,050	0,034	0,09	0,07	0,05
1.9	70–100	120–170		1,0	1,0	0,022	0,017	0,013	0,031	0,024	0,018	1,0	1,0*	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.10	70–100	140–190		1,0	1,0	0,022	0,017	0,013	0,031	0,024	0,018	1,0	1,0*	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.11	70–100	120–170		1,0	1,0	0,022	0,017	0,013	0,031	0,024	0,018	1,0	1,0*	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.12	70–100	140–190		1,0	1,0	0,022	0,017	0,013	0,031	0,024	0,018	1,0	1,0*	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.13	70–100	90–150		1,0	1,0	0,020	0,015	0,011	0,028	0,021	0,015	1,0	1,0*	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
1.14	50–80	70–120		1,0	1,0	0,017	0,013	0,010	0,024	0,018	0,013	1,0	1,0*	0,034	0,025	0,017	0,046	0,034	0,023	0,06	0,05	0,03
1.15	70–100	130–180		1,0	1,0	0,022	0,017	0,013	0,031	0,024	0,018	1,0	1,0*	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.16	80–120	110–160		1,0	1,0	0,022	0,017	0,013	0,031	0,024	0,018	1,0	1,0*	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
2.1	90–130			1,0	1,0	0,025	0,019	0,014	0,035	0,027	0,020	1,0	1,0*	0,050	0,038	0,025	0,067	0,050	0,034	0,09	0,07	0,05
2.2	80–120			1,0	1,0	0,020	0,015	0,011	0,028	0,021	0,015	1,0	1,0*	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.3	80–120			1,0	1,0	0,020	0,015	0,011	0,028	0,021	0,015	1,0	1,0*	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.4	80–120			1,0	1,0	0,020	0,015	0,011	0,028	0,021	0,015	1,0	1,0*	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.5	80–120			1,0	1,0	0,020	0,015	0,011	0,028	0,021	0,015	1,0	1,0*	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.6	80–120			1,0	1,0	0,020	0,015	0,011	0,028	0,021	0,015	1,0	1,0*	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.7	40–60			1,0	1,0	0,017	0,013	0,010	0,024	0,018	0,013	1,0	1,0*	0,035	0,025	0,017	0,046	0,034	0,023	0,06	0,05	0,03
3.1		200–240		1,0	1,0	0,040	0,031	0,022	0,055	0,043	0,031	1,0	1,0*	0,079	0,059	0,040	0,106	0,079	0,053	0,14	0,11	0,07
3.2		180–220		1,0	1,0	0,040	0,031	0,022	0,055	0,043	0,031	1,0	1,0*	0,079	0,059	0,040	0,106	0,079	0,053	0,14	0,11	0,07
3.3		200–240		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
3.4		180–220		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
3.5		160–200		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
3.6		140–180		1,0	1,0	0,028	0,022	0,016	0,040	0,031	0,022	1,0	1,0*	0,057	0,042	0,028	0,076	0,056	0,038	0,10	0,08	0,05
3.7		160–200		1,0	1,0	0,028	0,022	0,016	0,040	0,031	0,022	1,0	1,0*	0,057	0,042	0,028	0,076	0,056	0,038	0,10	0,08	0,05
3.8		140–180		1,0	1,0	0,028	0,022	0,016	0,040	0,031	0,022	1,0	1,0*	0,057	0,042	0,028	0,076	0,056	0,038	0,10	0,08	0,05
4.1																						
4.2																						
4.3																						
4.4																						
4.5																						
4.6	140–160	230–280		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.7	120–140	200–300		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.8	110–140	140–180		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.9	90–130	120–160		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.10	80–120	100–140		1,0	1,0	0,034	0,026	0,019	0,047	0,036	0,026	1,0	1,0*	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.11	150–200	280–350		1,0	1,0	0,031	0,024	0,017	0,043	0,033	0,024	1,0	1,0*	0,062	0,046	0,031	0,083	0,062	0,041	0,11	0,08	0,06
4.12	140–180	260–300		1,0	1,0	0,031	0,024	0,017	0,043	0,033	0,024	1,0	1,0*	0,062	0,046	0,031	0,083	0,062	0,041	0,11	0,08	0,06
4.13																						
4.14	180–280	300–400		1,0	1,0	0,067	0,052	0,038	0,094	0,073	0,053	1,0	1,0*	0,135	0,101	0,068	0,180	0,134	0,090	0,24	0,18	0,12
4.15																						
4.16																						
4.17																						
4.18	60–90	80–120		0,5	0,5	0,027	0,021	0,015	0,038	0,029	0,021	1,0	1,0	0,054	0,040	0,027	0,072	0,054	0,036	0,10	0,07	0,05
4.19	40–60	60–80		0,5	0,5	0,022	0,017	0,013	0,031	0,024	0,018	1,0	1,0	0,045	0,018	0,023	0,060	0,045	0,030	0,08	0,06	0,04
5.1	30			0,5	0,5	0,022	0,017	0,012	0,030	0,023	0,017	0,5	0,5	0,043	0,032	0,022	0,058	0,043	0,029	0,08	0,06	0,04
5.2	30			0,5	0,5	0,020	0,016	0,011	0,028	0,022	0,016	0,5	0,5	0,041	0,030	0,020	0,054	0,040	0,027	0,07	0,05	0,04
5.3	30			0,5	0,5	0,018	0,014	0,010	0,025	0,019	0,014	0,5	0,5	0,036	0,027	0,018	0,048	0,036	0,024	0,06	0,05	0,03
5.4	30			0,5	0,5	0,016	0,012	0,009	0,022	0,017	0,012	0,5	0,5	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
5.5	30			0,5	0,5	0,016	0,012	0,009	0,022	0,017	0,012	0,5	0,5	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
5.6	30			0,5	0,5	0,011	0,009	0,006	0,016	0,012	0,009	0,5	0,5	0,023	0,017	0,011	0,030	0,022	0,015	0,04	0,03	0,02
5.7	45			0,5	0,5	0,016	0,007	0,009	0,022	0,017	0,012	0,5	0,5	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
5.8	30			0,5	0,5	0,016	0,007	0,009	0,022	0,017	0,012	0,5	0,5	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
5.9	80–160			0,5	0,5	0,025	0,019	0,014	0,035	0,027	0,020	0,5	0,5	0,050	0,038	0,025	0,067	0,050	0,034	0,09	0,07	0,05
5.10	80–140			0,5	0,5	0,025	0,019	0,014	0,035	0,027	0,019	0,5	0,5	0,050	0,037	0,025	0,066	0,049	0,033	0,09	0,07	0,04
5.11	50–100			0,5	0,5	0,022	0,017	0,013	0,031	0,024	0,018	0,5	0,5	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
6.1		120–160		0,5	0,5	0,020	0,016	0,011	0,028	0,022	0,016	0,5	0,5	0,041	0,030	0,020	0,054	0,040	0,027	0,07	0,05	0,04
6.2		80–120		0,3	0,3	0,018	0,014	0,010	0,025	0,019	0,014	0,3	0,3	0,036	0,027	0,018	0,048	0,036	0,024	0,06	0,05	0,03
6.3		60–100		0,15	0,15	0,016	0,012	0,009	0,022	0,017	0,012	0,15	0,15	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
6.4																						
6.5																						

* = With an a_p of 1.5xD, the feed rate per tooth f_z should be multiplied by 0.8

SCR ball nosed cutters at full slot, reduce f_z by 25 %!

Plunging angle for ramping and helical milling: No. of teeth 4 = 4° / No. of teeth 6 = 1°

Index	Ø DC = 10,0–11,5 mm			Ø DC = 12,0 mm			Ø DC = 14,0–15,5 mm			Ø DC = 16,0–17,0 mm			Ø DC = 18,0–19,5 mm			Ø DC = 20,0 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.2	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,08	0,16	0,13	0,10	0,18	0,14	0,11	0,20	0,16	0,12	○	●	○
1.3	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,08	0,16	0,13	0,10	0,18	0,14	0,11	0,20	0,16	0,12	○	●	○
1.4	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.5	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.6	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.7	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.8	0,11	0,08	0,06	0,12	0,09	0,06	0,12	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	○	●	○
1.9	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.10	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.11	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.12	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.13	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	○	●	○
1.14	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	○	●	○
1.15	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.16	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
2.1	0,11	0,08	0,06	0,12	0,09	0,06	0,12	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●		
2.2	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.3	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.4	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.5	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.6	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.7	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
3.1	0,18	0,13	0,09	0,19	0,14	0,10	0,19	0,15	0,11	0,21	0,16	0,12	0,22	0,18	0,14	0,25	0,20	0,16		●	
3.2	0,18	0,13	0,09	0,19	0,14	0,10	0,19	0,15	0,11	0,21	0,16	0,12	0,22	0,18	0,14	0,25	0,20	0,16		●	
3.3	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14		●	
3.4	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14		●	
3.5	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14		●	
3.6	0,13	0,09	0,06	0,14	0,10	0,07	0,14	0,11	0,08	0,15	0,11	0,09	0,16	0,13	0,10	0,18	0,15	0,11		●	
3.7	0,13	0,09	0,06	0,14	0,10	0,07	0,14	0,11	0,08	0,15	0,11	0,09	0,16	0,13	0,10	0,18	0,15	0,11		●	
3.8	0,13	0,09	0,06	0,14	0,10	0,07	0,14	0,11	0,08	0,15	0,11	0,09	0,16	0,13	0,10	0,18	0,15	0,11		●	
4.1																					
4.2																					
4.3																					
4.4																					
4.5																					
4.6	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.7	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.8	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.9	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.10	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,18	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.11	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,08	0,16	0,13	0,10	0,18	0,14	0,11	0,20	0,16	0,12	●		○
4.12	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,08	0,16	0,13	0,10	0,18	0,14	0,11	0,20	0,16	0,12	●		○
4.13																					
4.14	0,30	0,22	0,15	0,33	0,25	0,17	0,33	0,26	0,18	0,36	0,27	0,21	0,38	0,31	0,24	0,43	0,35	0,27	●		○
4.15																					
4.16																					
4.17																					
4.18	0,12	0,09	0,06	0,10	0,10	0,07	0,13	0,10	0,07	0,14	0,11	0,08	0,15	0,12	0,10	0,17	0,14	0,11	●		○
4.19	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	●		○
5.1	0,10	0,07	0,05	0,11	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,14	0,11	0,09	●		
5.2	0,09	0,07	0,05	0,10	0,04	0,05	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,07	0,13	0,11	0,08	●		
5.3	0,08	0,06	0,04	0,09	0,07	0,04	0,09	0,07	0,05	0,10	0,07	0,06	0,10	0,08	0,06	0,11	0,09	0,07	●		
5.4	0,07	0,05	0,04	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06	●		
5.5	0,07	0,05	0,04	0,08	0,03	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06	●		
5.6	0,05	0,04	0,03	0,06	0,04	0,03	0,06	0,04	0,03	0,06	0,05	0,04	0,06	0,05	0,04	0,07	0,06	0,05	●		
5.7	0,07	0,05	0,04	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06	●		
5.8	0,07	0,05	0,04	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06	●		
5.9	0,11	0,08	0,06	0,12	0,09	0,06	0,12	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●		
5.10	0,11	0,08	0,06	0,12	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,11	0,09	0,16	0,13	0,10	●		
5.11	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	●		
6.1	0,09	0,07	0,05	0,10	0,07	0,05	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,07	0,13	0,11	0,08		●	
6.2	0,08	0,06	0,04	0,09	0,07	0,04	0,09	0,07	0,05	0,10	0,07	0,06	0,10	0,08	0,06	0,11	0,09	0,07		●	
6.3	0,07	0,05	0,04	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06		●	
6.4																					
6.5																					

Feed rate guide values for ball nosed and torus cutters on → **Page 356**

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Cutting Data – MonsterMill – End Mills – SCR, extra long

Index	Emulsion	Compressed air	MMS	extra long		Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm		
						a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
	v_c m/min			$a_{p\,max.}$ x DC		f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	90–130	130–180		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.2	90–130	130–180		1,0*	0,5	0,031	0,024	0,017	0,043	0,033	0,024	0,062	0,046	0,031	0,083	0,062	0,041	0,11	0,08	0,06
1.3	70–100	110–160		1,0*	0,5	0,031	0,024	0,017	0,043	0,033	0,024	0,062	0,046	0,031	0,083	0,062	0,041	0,11	0,08	0,06
1.4	70–100	90–140		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.5	70–100	110–160		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.6	70–100	110–160		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.7	70–100	90–140		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
1.8	50–80	70–120		1,0*	0,5	0,025	0,019	0,014	0,035	0,027	0,020	0,050	0,038	0,025	0,067	0,050	0,034	0,09	0,07	0,05
1.9	50–80	70–120		1,0*	0,5	0,022	0,017	0,013	0,031	0,024	0,018	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.10	50–80	70–120		1,0*	0,5	0,022	0,017	0,013	0,031	0,024	0,018	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.11	50–80	70–120		1,0*	0,5	0,022	0,017	0,013	0,031	0,024	0,018	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.12	50–80	70–120		1,0*	0,5	0,022	0,017	0,013	0,031	0,024	0,018	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.13	50–80	70–120		1,0*	0,5	0,020	0,015	0,011	0,028	0,021	0,015	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
1.14	40–70	50–80		1,0*	0,5	0,017	0,013	0,010	0,024	0,018	0,013	0,034	0,025	0,017	0,046	0,034	0,023	0,06	0,05	0,03
1.15	50–80	70–120		1,0*	0,5	0,022	0,017	0,013	0,031	0,024	0,018	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
1.16	60–90	90–140		1,0*	0,5	0,022	0,017	0,013	0,031	0,024	0,018	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
2.1	60–100			1,0*	0,5	0,025	0,019	0,014	0,035	0,027	0,020	0,050	0,038	0,025	0,067	0,050	0,034	0,09	0,07	0,05
2.2	50–80			1,0*	0,5	0,020	0,015	0,011	0,028	0,021	0,015	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.3	50–80			1,0*	0,5	0,020	0,015	0,011	0,028	0,021	0,015	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.4	50–80			1,0*	0,5	0,020	0,015	0,011	0,028	0,021	0,015	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.5	50–80			1,0*	0,5	0,020	0,015	0,011	0,028	0,021	0,015	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.6	50–80			1,0*	0,5	0,020	0,015	0,011	0,028	0,021	0,015	0,040	0,030	0,020	0,053	0,039	0,026	0,07	0,05	0,04
2.7	30–50			1,0*	0,5	0,017	0,013	0,010	0,024	0,018	0,013	0,034	0,025	0,017	0,047	0,034	0,023	0,06	0,05	0,03
3.1		160–200		1,0*	0,5	0,040	0,031	0,022	0,055	0,043	0,031	0,079	0,059	0,040	0,106	0,079	0,053	0,14	0,11	0,07
3.2		120–160		1,0*	0,5	0,040	0,031	0,022	0,055	0,043	0,031	0,079	0,059	0,040	0,106	0,079	0,053	0,14	0,11	0,07
3.3		160–200		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
3.4		120–160		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
3.5		120–160		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
3.6		100–140		1,0*	0,5	0,028	0,022	0,016	0,040	0,031	0,022	0,057	0,042	0,028	0,076	0,056	0,038	0,10	0,08	0,05
3.7		120–160		1,0*	0,5	0,028	0,022	0,016	0,040	0,031	0,022	0,057	0,042	0,028	0,076	0,056	0,038	0,10	0,08	0,05
3.8		100–140		1,0*	0,5	0,028	0,022	0,016	0,040	0,031	0,022	0,057	0,042	0,028	0,076	0,056	0,038	0,10	0,08	0,05
4.1																				
4.2																				
4.3																				
4.4																				
4.5																				
4.6	100–130	220–240		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.7	90–110	180–220		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.8	80–110	140–180		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.9	60–90	120–160		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.10	60–90	100–140		1,0*	0,5	0,034	0,026	0,019	0,047	0,036	0,026	0,068	0,050	0,034	0,090	0,067	0,045	0,12	0,09	0,06
4.11	110–150	280–320		1,0*	0,5	0,031	0,024	0,017	0,043	0,033	0,024	0,062	0,046	0,031	0,083	0,062	0,041	0,11	0,08	0,06
4.12	100–140	260–300		1,0*	0,5	0,031	0,024	0,017	0,043	0,033	0,024	0,062	0,046	0,031	0,083	0,062	0,041	0,11	0,08	0,06
4.13																				
4.14	120–180	300–400		1,0*	0,5	0,067	0,052	0,038	0,094	0,073	0,053	0,135	0,101	0,068	0,180	0,134	0,090	0,24	0,18	0,12
4.15																				
4.16																				
4.17																				
4.18	40–75	80–120		0,5*	0,25	0,027	0,021	0,015	0,038	0,029	0,021	0,054	0,040	0,027	0,072	0,054	0,036	0,10	0,07	0,05
4.19	30–50	60–80		0,5*	0,25	0,022	0,017	0,013	0,031	0,024	0,018	0,045	0,018	0,023	0,060	0,045	0,030	0,08	0,06	0,04
5.1	30			0,5*	0,25	0,022	0,017	0,012	0,030	0,023	0,017	0,043	0,032	0,022	0,058	0,043	0,029	0,08	0,06	0,04
5.2	30			0,5*	0,25	0,020	0,016	0,011	0,028	0,022	0,016	0,041	0,030	0,020	0,054	0,040	0,027	0,07	0,05	0,04
5.3	25			0,5*	0,25	0,018	0,014	0,010	0,025	0,019	0,014	0,036	0,027	0,018	0,048	0,036	0,024	0,06	0,05	0,03
5.4	25			0,5*	0,25	0,016	0,012	0,009	0,022	0,017	0,012	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
5.5	25			0,5*	0,25	0,016	0,012	0,009	0,022	0,017	0,012	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
5.6	25			0,5*	0,25	0,011	0,009	0,006	0,016	0,012	0,009	0,023	0,017	0,011	0,030	0,022	0,015	0,04	0,03	0,02
5.7	45			0,5*	0,25	0,016	0,007	0,009	0,022	0,017	0,012	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
5.8	25			0,5*	0,25	0,016	0,007	0,009	0,022	0,017	0,012	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
5.9	35–65			0,5*	0,25	0,025	0,019	0,014	0,035	0,027	0,020	0,050	0,038	0,025	0,067	0,050	0,034	0,09	0,07	0,05
5.10	30–55			0,5*	0,25	0,025	0,019	0,014	0,035	0,027	0,019	0,050	0,037	0,025	0,066	0,049	0,033	0,09	0,07	0,04
5.11	30–55			0,5*	0,25	0,022	0,017	0,013	0,031	0,024	0,018	0,045	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
6.1		80–120		0,5*	0,5	0,020	0,016	0,011	0,028	0,022	0,016	0,041	0,030	0,020	0,054	0,040	0,027	0,07	0,05	0,04
6.2		60–100		0,5*	0,3	0,018	0,014	0,010	0,025	0,019	0,014	0,036	0,027	0,018	0,048	0,036	0,024	0,06	0,05	0,03
6.3		50–90		0,5*	0,15	0,016	0,012	0,009	0,022	0,017	0,012	0,032	0,023	0,016	0,042	0,031	0,021	0,06	0,04	0,03
6.4																				
6.5																				

* = Trimming and trochoidal slot milling

Plunging angle for ramping and helical milling: No. of teeth 4 = 4° / No. of teeth 6 = 1°

Index	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 18 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.2	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,08	0,15	0,13	0,10	0,18	0,14	0,11	0,20	0,16	0,12	○	●	○
1.3	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,08	0,15	0,13	0,10	0,18	0,14	0,11	0,20	0,16	0,12	○	●	○
1.4	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.5	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.6	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.7	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
1.8	0,11	0,08	0,06	0,12	0,09	0,06	0,12	0,10	0,07	0,12	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	○	●	○
1.9	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.10	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.11	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.12	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.13	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	○	●	○
1.14	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,08	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	○	●	○
1.15	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
1.16	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	○	●	○
2.1	0,11	0,08	0,06	0,12	0,09	0,06	0,12	0,10	0,07	0,12	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●		
2.2	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.3	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.4	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.5	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.6	0,09	0,07	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●		
2.7	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,08	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
3.1	0,18	0,13	0,09	0,19	0,14	0,10	0,19	0,15	0,11	0,20	0,16	0,12	0,22	0,18	0,14	0,25	0,20	0,16	○	●	○
3.2	0,18	0,13	0,09	0,19	0,14	0,10	0,19	0,15	0,11	0,20	0,16	0,12	0,22	0,18	0,14	0,25	0,20	0,16	○	●	○
3.3	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
3.4	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
3.5	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	○	●	○
3.6	0,13	0,09	0,06	0,14	0,10	0,07	0,14	0,11	0,08	0,14	0,11	0,09	0,16	0,13	0,10	0,18	0,15	0,11	○	●	○
3.7	0,13	0,09	0,06	0,14	0,10	0,07	0,14	0,11	0,08	0,14	0,11	0,09	0,16	0,13	0,10	0,18	0,15	0,11	○	●	○
3.8	0,13	0,09	0,06	0,14	0,10	0,07	0,14	0,11	0,08	0,14	0,11	0,09	0,16	0,13	0,10	0,18	0,15	0,11	○	●	○
4.1																					
4.2																					
4.3																					
4.4																					
4.5																					
4.6	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.7	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.8	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.9	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.10	0,15	0,11	0,08	0,17	0,12	0,08	0,16	0,13	0,09	0,17	0,14	0,11	0,19	0,16	0,12	0,21	0,17	0,14	●		○
4.11	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,08	0,15	0,13	0,10	0,18	0,14	0,11	0,20	0,16	0,12	●		○
4.12	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,08	0,15	0,13	0,10	0,18	0,14	0,11	0,20	0,16	0,12	●		○
4.13																					
4.14	0,30	0,22	0,15	0,33	0,25	0,17	0,33	0,26	0,18	0,33	0,27	0,21	0,38	0,31	0,24	0,43	0,35	0,27	●		○
4.15																					
4.16																					
4.17																					
4.18	0,12	0,09	0,06	0,10	0,10	0,07	0,13	0,10	0,07	0,13	0,11	0,08	0,15	0,12	0,10	0,17	0,14	0,11	●		○
4.19	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	●		○
5.1	0,10	0,07	0,05	0,11	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,14	0,11	0,09	●		
5.2	0,09	0,07	0,05	0,10	0,04	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,11	0,08	●		
5.3	0,08	0,06	0,04	0,09	0,07	0,04	0,09	0,07	0,05	0,09	0,07	0,06	0,10	0,08	0,06	0,11	0,09	0,07	●		
5.4	0,07	0,05	0,04	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06	●		
5.5	0,07	0,05	0,04	0,08	0,03	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06	●		
5.6	0,05	0,04	0,03	0,06	0,04	0,03	0,06	0,04	0,03	0,06	0,05	0,04	0,06	0,05	0,04	0,07	0,06	0,05	●		
5.7	0,07	0,05	0,04	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06	●		
5.8	0,07	0,05	0,04	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06	●		
5.9	0,11	0,08	0,06	0,12	0,09	0,06	0,12	0,10	0,07	0,12	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●		
5.10	0,11	0,08	0,06	0,12	0,09	0,06	0,12	0,09	0,07	0,12	0,10	0,08	0,14	0,11	0,09	0,16	0,13	0,10	●		
5.11	0,10	0,08	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	●		
6.1	0,09	0,07	0,05	0,10	0,07	0,05	0,10	0,08	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,11	0,08		●	
6.2	0,08	0,06	0,04	0,09	0,07	0,04	0,09	0,07	0,05	0,09	0,07	0,06	0,10	0,08	0,06	0,11	0,09	0,07		●	
6.3	0,07	0,05	0,04	0,08	0,06	0,04	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,06	0,10	0,08	0,06		●	
6.4																					
6.5																					

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Cutting data – MonsterMill – Torus End Mills – SCR, long

			Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm		
		long	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	170–200	1,0	0,024	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,08	0,06	0,04
1.2	170–200	1,0	0,024	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,08	0,06	0,04
1.3	150–180	1,0	0,019	0,017	0,012	0,029	0,022	0,016	0,040	0,030	0,020	0,048	0,036	0,024	0,06	0,05	0,03
1.4	150–180	1,0	0,019	0,017	0,012	0,029	0,022	0,016	0,040	0,030	0,020	0,048	0,036	0,024	0,06	0,05	0,03
1.5	130–160	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
1.6	140–170	1,0	0,019	0,017	0,012	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
1.7	150–180	1,0	0,024	0,021	0,015	0,029	0,022	0,016	0,040	0,030	0,020	0,048	0,036	0,024	0,06	0,05	0,03
1.8	130–160	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
1.9	150–180	1,0	0,024	0,021	0,015	0,029	0,022	0,016	0,040	0,030	0,020	0,048	0,036	0,024	0,06	0,05	0,03
1.10	130–160	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
1.11	130–160	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
1.12	130–160	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
1.13	130–160	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
1.14	130–160	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
1.15	150–180	1,0	0,024	0,021	0,015	0,029	0,022	0,016	0,040	0,030	0,020	0,048	0,036	0,024	0,06	0,05	0,03
1.16	130–160	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
2.1																	
2.2																	
2.3																	
2.4																	
2.5																	
2.6																	
2.7																	
3.1	170–200	1,0	0,028	0,025	0,018	0,043	0,033	0,024	0,056	0,042	0,028	0,072	0,054	0,036	0,10	0,07	0,05
3.2	170–200	1,0	0,028	0,025	0,018	0,043	0,033	0,024	0,056	0,042	0,028	0,072	0,054	0,036	0,10	0,07	0,05
3.3	150–180	1,0	0,024	0,021	0,015	0,036	0,028	0,020	0,046	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
3.4	150–180	1,0	0,024	0,021	0,015	0,036	0,028	0,020	0,046	0,034	0,023	0,060	0,045	0,030	0,08	0,06	0,04
3.5	100–120	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
3.6	80–100	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
3.7	100–120	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
3.8	80–100	1,0	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
4.1																	
4.2																	
4.3																	
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4.5																	
4.6																	
4.7																	
4.8																	
4.9																	
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4.11																	
4.12																	
4.13																	
4.14																	
4.15																	
4.16																	
4.17																	
4.18	80–100	0,5	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
4.19																	
5.1																	
5.2																	
5.3																	
5.4																	
5.5																	
5.6																	
5.7																	
5.8																	
5.9																	
5.10																	
5.11																	
6.1	100–120	0,5	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
6.2	80–100	0,3	0,014	0,012	0,009	0,022	0,017	0,012	0,030	0,022	0,015	0,036	0,027	0,018	0,05	0,04	0,02
6.3	60–70	0,15	0,009	0,008	0,006	0,014	0,011	0,008	0,020	0,015	0,010	0,024	0,018	0,012	0,03	0,02	0,02
6.4																	
6.5																	

Index	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm					
1.1	0,10	0,08	0,05	0,12	0,09	0,06	0,14	0,10	0,08	○	●	
1.2	0,10	0,08	0,05	0,12	0,09	0,06	0,14	0,10	0,08	○	●	
1.3	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.4	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.5	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.6	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.7	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.8	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.9	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.10	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.11	0,06	0,05	0,03	0,00	0,00	0,00	0,08	0,06	0,05	○	●	
1.12	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.13	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.14	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.15	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.16	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
2.1												
2.2												
2.3												
2.4												
2.5												
2.6												
2.7												
3.1	0,12	0,09	0,06	0,14	0,11	0,07	0,15	0,12	0,09	○	●	
3.2	0,12	0,09	0,06	0,14	0,11	0,07	0,15	0,12	0,09	○	●	
3.3	0,10	0,08	0,05	0,12	0,09	0,06	0,14	0,10	0,08	○	●	
3.4	0,10	0,08	0,05	0,12	0,09	0,06	0,14	0,10	0,08	○	●	
3.5	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
3.6	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
3.7	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
3.8	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
4.1												
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4.16												
4.17												
4.18	0,06	0,05	0,03	0,05	0,05	0,04	0,08	0,06	0,05	○		○
4.19												
5.1												
5.2												
5.3												
5.4												
5.5												
5.6												
5.7												
5.8												
5.9												
5.10												
5.11												
6.1	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05		●	
6.2	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05		●	
6.3	0,04	0,03	0,02	0,05	0,04	0,02	0,05	0,04	0,03		●	
6.4												
6.5												

Cutting data – MonsterMill – Torus End Mills – SCR, extra long

		extra long	Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm			● 1st choice		○ suitable
			a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm					
1.1	120–140	1,0* 0,5	0,08	0,06	0,04	0,10	0,08	0,05	0,12	0,09	0,06	0,14	0,10	0,08	○	●	
1.2	120–140	1,0* 0,5	0,08	0,06	0,04	0,10	0,08	0,05	0,12	0,09	0,06	0,14	0,10	0,08	○	●	
1.3	100–130	1,0* 0,5	0,06	0,05	0,03	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.4	100–130	1,0* 0,5	0,06	0,05	0,03	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.5	90–110	1,0* 0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.6	100–120	1,0* 0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.7	100–130	1,0* 0,5	0,06	0,05	0,03	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.8	90–110	1,0* 0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.9	100–130	1,0* 0,5	0,06	0,05	0,03	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.10	90–110	1,0* 0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.11	90–110	1,0* 0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,00	0,00	0,00	0,08	0,06	0,05	○	●	
1.12	90–110	1,0* 0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.13	90–110	1,0* 0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.14	90–110	1,0* 0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
1.15	100–130	1,0* 0,5	0,06	0,05	0,03	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,08	0,06	○	●	
1.16	90–110	1,0* 0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
2.1																	
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2.7																	
3.1	120–140	1,0* 0,5	0,10	0,07	0,05	0,12	0,09	0,06	0,14	0,11	0,07	0,15	0,12	0,09	○	●	
3.2	120–140	1,0* 0,5	0,10	0,07	0,05	0,12	0,09	0,06	0,14	0,11	0,07	0,15	0,12	0,09	○	●	
3.3	100–130	1,0* 0,5	0,08	0,06	0,04	0,10	0,08	0,05	0,12	0,09	0,06	0,14	0,10	0,08	○	●	
3.4	100–130	1,0* 0,5	0,08	0,06	0,04	0,10	0,08	0,05	0,12	0,09	0,06	0,14	0,10	0,08	○	●	
3.5	70–85	1,0* 0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
3.6	60–70	1,0* 0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
3.7	70–85	1,0* 0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
3.8	60–70	1,0* 0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	○	●	
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4.16																	
4.17																	
4.18	60–70	0,5* 0,25	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05	●		○
4.19																	
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5.11																	
6.1	70–85	0,5* 0,5	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05		●	
6.2	60–70	0,5* 0,3	0,05	0,04	0,02	0,06	0,05	0,03	0,07	0,05	0,04	0,08	0,06	0,05		●	
6.3	50–60	0,5* 0,15	0,03	0,02	0,02	0,04	0,03	0,02	0,05	0,04	0,02	0,05	0,04	0,03		●	
6.4																	
6.5																	

* = Trimming and trochoidal slot milling

Cutting data – MonsterMill – Torus End Mills – SCR, extra long, HSC machining

● 1st choice ○ suitable

Index	v_c m/min	a_p x DC	a_e x DC	Ø DC = 3 mm f_z mm	Ø DC = 4 mm f_z mm	Ø DC = 5 mm f_z mm	Ø DC = 6 mm f_z mm	Ø DC = 8 mm f_z mm	Ø DC = 10 mm f_z mm	Ø DC = 12 mm f_z mm	Ø DC = 16 mm f_z mm	Emulsion	Compressed air	MMS
1.1	**230–250**	0,05	0,6	0,110	0,152	0,190	0,228	0,30	0,38	0,46	0,60	○	●	
1.2	**230–250**	0,05	0,6	0,110	0,152	0,190	0,228	0,30	0,38	0,46	0,60	○	●	
1.3	**200–220**	0,04	0,5	0,090	0,120	0,150	0,180	0,24	0,30	0,36	0,48	○	●	
1.4	**200–220**	0,04	0,5	0,090	0,120	0,150	0,180	0,24	0,30	0,36	0,48	○	●	
1.5	**170–190**	0,03	0,3	0,066	0,090	0,110	0,132	0,18	0,22	0,26	0,35	○	●	
1.6	**190–210**	0,03	0,4	0,072	0,100	0,120	0,144	0,19	0,24	0,29	0,38	○	●	
1.7	**200–220**	0,04	0,5	0,090	0,120	0,150	0,180	0,24	0,30	0,36	0,48	○	●	
1.8	**170–190**	0,03	0,3	0,066	0,090	0,110	0,132	0,18	0,22	0,26	0,35	○	●	
1.9	**200–220**	0,04	0,5	0,090	0,120	0,150	0,180	0,24	0,30	0,36	0,48	○	●	
1.10	**170–190**	0,03	0,3	0,066	0,090	0,110	0,132	0,18	0,22	0,26	0,35	○	●	
1.11	**170–190**	0,03	0,3	0,066	0,090	0,110	0,132	0,18	0,22	0,26	0,35	○	●	
1.12	**170–190**	0,03	0,3	0,066	0,090	0,110	0,132	0,18	0,22	0,26	0,35	○	●	
1.13	**170–190**	0,03	0,3	0,066	0,090	0,110	0,132	0,18	0,22	0,26	0,35	○	●	
1.14	**170–190**	0,03	0,3	0,066	0,090	0,110	0,132	0,18	0,22	0,26	0,35	○	●	
1.15	**200–220**	0,04	0,5	0,090	0,120	0,150	0,180	0,24	0,30	0,36	0,48	○	●	
1.16	**170–190**	0,03	0,3	0,066	0,090	0,110	0,132	0,18	0,22	0,26	0,35	○	●	
2.1														
2.2														
2.3														
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2.7														
3.1	**230–250**	0,05	0,6	0,120	0,160	0,200	0,240	0,32	0,40	0,48	0,64	○	●	
3.2	**230–250**	0,05	0,6	0,120	0,160	0,200	0,240	0,32	0,40	0,48	0,64	○	●	
3.3	**200–220**	0,04	0,5	0,096	0,130	0,160	0,192	0,26	0,32	0,38	0,51	○	●	
3.4	**200–220**	0,04	0,5	0,096	0,130	0,160	0,192	0,26	0,32	0,38	0,51	○	●	
3.5	**130–150**	0,03	0,4	0,072	0,100	0,120	0,144	0,19	0,24	0,29	0,38	○	●	
3.6	**100–120**	0,03	0,4	0,072	0,100	0,120	0,144	0,19	0,24	0,29	0,38	○	●	
3.7	**130–150**	0,03	0,4	0,072	0,100	0,120	0,144	0,19	0,24	0,29	0,38	○	●	
3.8	**100–120**	0,03	0,4	0,072	0,100	0,120	0,144	0,19	0,24	0,29	0,38	○	●	
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4.15														
4.16														
4.17														
4.18	100–120	0,03	0,4	0,072	0,100	0,120	0,144	0,19	0,24	0,29	0,38	●		○
4.19														
5.1														
5.2														
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5.6														
5.7														
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5.9														
5.10														
5.11														
6.1	130–150	0,03	0,4	0,072	0,100	0,120	0,144	0,19	0,24	0,29	0,38		●	
6.2	100–120	0,03	0,3	0,060	0,080	0,100	0,120	0,16	0,20	0,24	0,32		●	
6.3	90–110	0,02	0,3	0,048	0,064	0,080	0,096	0,13	0,16	0,19	0,26		●	
6.4	80–100	0,02	0,2	0,024	0,056	0,070	0,084	0,11	0,14	0,17	0,22		●	
6.5	60–80	0,02	0,2	0,036	0,048	0,060	0,072	0,10	0,12	0,14	0,19		●	

Cutting data standard values – MonsterMill – End mills – ICR, short

	Emulsion	Compressed air	MMS	short	Ø DC = 1,5 mm			Ø DC = 2 mm			Ø DC = 2,5 mm			● 1st choice		○ suitable
					a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
Index	v_c m/min			$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm					
1.1	130–180	150–200		0,25	0,020	0,015	0,011	0,022	0,020	0,015	0,031	0,026	0,019	○	●	○
1.2	130–180	150–200		0,25	0,012	0,013	0,010	0,020	0,019	0,014	0,029	0,024	0,018	○	●	○
1.3	140–160	130–180		0,25	0,014	0,013	0,010	0,020	0,019	0,014	0,029	0,024	0,018	○	●	○
1.4	120–140	110–160		0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016	○	●	○
1.5	140–160	130–180		0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016	○	●	○
1.6	140–160	130–180		0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016	○	●	○
1.7	120–160	110–160		0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016	○	●	○
1.8	80–120	90–140		0,25	0,013	0,012	0,009	0,016	0,015	0,011	0,024	0,020	0,015	○	●	○
1.9	80–120	90–140		0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	○	●	○
1.10	80–120	90–140		0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	○	●	○
1.11	80–120	90–140		0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	○	●	○
1.12	80–120	90–140		0,25	0,011	0,010	0,008	0,013	0,012	0,009	0,020	0,017	0,012	○	●	○
1.13	80–120	90–140		0,25	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,016	0,012	○	●	○
1.14	60–100	50–100		0,25	0,009	0,008	0,006	0,011	0,010	0,008	0,016	0,013	0,010	○	●	○
1.15	80–120	90–140		0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	○	●	○
1.16	100–140	110–160		0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	○	●	○
2.1	**100–140**			0,25	0,013	0,012	0,009	0,016	0,015	0,011	0,024	0,020	0,015	●		
2.2	**100–120**			0,25	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,016	0,012	●		
2.3	**80 –100**			0,25	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,016	0,012	●		
2.4	**80 –100**			0,25	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,016	0,012	●		
2.5	**100–120**			0,25	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,016	0,012	●		
2.6	**100–120**			0,25	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,016	0,012	●		
2.7	**40–60**			0,25	0,009	0,008	0,006	0,011	0,010	0,008	0,016	0,013	0,010	●		
3.1		180–220		0,25	0,020	0,019	0,014	0,025	0,024	0,018	0,036	0,030	0,022		●	
3.2		160–200		0,25	0,020	0,019	0,014	0,025	0,024	0,018	0,036	0,030	0,022		●	
3.3		180 –220		0,25	0,016	0,015	0,011	0,022	0,020	0,015	0,031	0,026	0,019		●	
3.4		160 –200		0,25	0,016	0,015	0,011	0,022	0,020	0,015	0,031	0,026	0,019		●	
3.5		140 –180		0,25	0,014	0,013	0,010	0,022	0,020	0,015	0,028	0,023	0,017		●	
3.6		120–160		0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016		●	
3.7		140 –180		0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016		●	
3.8		120 –160		0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016		●	
4.1																
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4.3																
4.4																
4.5																
4.6	220–240	220–240		0,25	0,016	0,015	0,011	0,022	0,020	0,015	0,031	0,026	0,019	●		○
4.7	220–240	220–240		0,25	0,016	0,015	0,011	0,022	0,020	0,015	0,031	0,026	0,019	●		○
4.8	140–160	140–160		0,25	0,016	0,015	0,011	0,022	0,020	0,015	0,031	0,026	0,019	●		○
4.9	120–140	120–140		0,25	0,016	0,015	0,011	0,022	0,020	0,015	0,031	0,026	0,019	●		○
4.10	100–120	100–120		0,25	0,016	0,015	0,011	0,022	0,020	0,015	0,031	0,026	0,019	●		○
4.11	280–300	280–300		0,25	0,007	0,007	0,005	0,020	0,019	0,014	0,029	0,024	0,018	●		○
4.12	280–300	280–300		0,25	0,014	0,013	0,010	0,020	0,019	0,014	0,029	0,024	0,018	●		○
4.13																
4.14	300–340	300–340		0,25	0,029	0,027	0,020	0,043	0,040	0,030	0,051	0,043	0,032	●		○
4.15																
4.16																
4.17																
4.18	80–120	80–120		0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016	●		
4.19	60–80	60–80		0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	●		
5.1	**30**			0,25	0,013	0,012	0,009	0,016	0,015	0,011	0,024	0,020	0,015	●		
5.2	**30**			0,25	0,013	0,012	0,009	0,016	0,015	0,011	0,024	0,020	0,015	●		
5.3	**25**			0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	●		
5.4	**25**			0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	●		
5.5	**25**			0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	●		
5.6	**25**			0,25	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013	●		
5.7	**45**			0,25	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,012	0,012	●		
5.8	**30**			0,25	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,012	0,012	●		
5.9	**80–100**			0,25	0,013	0,012	0,009	0,016	0,015	0,011	0,024	0,020	0,015	●		
5.10	**60–80**			0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016	●		
5.11	**60–80**			0,25	0,014	0,013	0,010	0,018	0,017	0,013	0,026	0,022	0,016	●		
6.1		80–100		0,25	0,013	0,012	0,009	0,016	0,015	0,011	0,024	0,020	0,015		●	
6.2		80–120		0,20	0,011	0,010	0,008	0,014	0,013	0,010	0,021	0,017	0,013		●	
6.3		60–80		0,15	0,009	0,008	0,006	0,013	0,012	0,009	0,019	0,016	0,012		●	
6.4																
6.5																

Plunging angle for ramping and helical milling: No. of teeth 3 = 5°/No. of teeth 4 = 4°/No. of teeth 5 = 3°

Cutting Data – MonsterMill – End Mills – ICR, short – long

Index	Emulsion	Compressed air	MMS	short	long	Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			● 1st choice		○ suitable
						a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	v_c m/min			$a_{p\,max.}$ x DC		f_z mm			f_z mm			f_z mm			f_z mm					
1.1	130–180	150–200		1,0	1,0*	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	○	●	○
1.2	130–180	150–200		1,0	1,0*	0,038	0,029	0,021	0,049	0,038	0,028	0,063	0,049	0,035	0,074	0,057	0,041	○	●	○
1.3	140–160	130–180		1,0	1,0*	0,0382	0,0295	0,021	0,049	0,038	0,028	0,063	0,049	0,035	0,074	0,057	0,041	○	●	○
1.4	120–140	110–160		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	○	●	○
1.5	140–160	130–180		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	○	●	○
1.6	140–160	130–180		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	○	●	○
1.7	120–160	110–160		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	○	●	○
1.8	80–120	90–140		1,0	1,0*	0,031	0,024	0,018	0,063	0,049	0,035	0,052	0,040	0,029	0,061	0,047	0,034	○	●	○
1.9	80–120	90–140		1,0	1,0*	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	○	●	○
1.10	80–120	90–140		1,0	1,0*	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	○	●	○
1.11	80–120	90–140		1,0	1,0*	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	○	●	○
1.12	80–120	90–140		1,0	1,0*	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	○	●	○
1.13	80–120	90–140		1,0	1,0*	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	○	●	○
1.14	60–100	50–100		1,0	1,0*	0,020	0,016	0,011	0,027	0,021	0,015	0,034	0,026	0,019	0,040	0,031	0,023	○	●	○
1.15	80–120	90–140		1,0	1,0*	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	○	●	○
1.16	100–140	110–160		1,0	1,0*	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	○	●	○
2.1	**100–140**			1,0	1,0*	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034	●		
2.2	**100–120**			1,0	1,0*	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	●		
2.3	**80 –100**			1,0	1,0*	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	●		
2.4	**80 –100**			1,0	1,0*	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	●		
2.5	**100–120**			1,0	1,0*	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	●		
2.6	**100–120**			1,0	1,0*	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	●		
2.7	**40–60**			1,0	1,0*	0,020	0,016	0,011	0,027	0,021	0,015	0,034	0,026	0,019	0,038	0,029	0,021	●		
3.1		180–220		1,0	1,0*	0,047	0,036	0,026	0,063	0,049	0,035	0,079	0,061	0,044	0,094	0,073	0,053		●	
3.2		160–200		1,0	1,0*	0,047	0,036	0,026	0,063	0,049	0,035	0,079	0,061	0,044	0,094	0,073	0,053		●	
3.3		180 –220		1,0	1,0*	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045		●	
3.4		160 –200		1,0	1,0*	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045		●	
3.5		140 –180		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038		●	
3.6		120–160		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038		●	
3.7		140 –180		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038		●	
3.8		120 –160		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038		●	
4.1																				
4.2																				
4.3																				
4.4																				
4.5																				
4.6	220–240	220–240		1,0	1,0*	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	●		○
4.7	220–240	220–240		1,0	1,0*	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	●		○
4.8	140–160	140–160		1,0	1,0*	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	●		○
4.9	120–140	120–140		1,0	1,0*	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	●		○
4.10	100–120	100–120		1,0	1,0*	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	●		○
4.11	280–300	280–300		1,0	1,0*	0,038	0,029	0,021	0,049	0,038	0,028	0,063	0,049	0,035	0,741	0,572	0,413	●		○
4.12	280–300	280–300		1,0	1,0*	0,038	0,029	0,021	0,049	0,038	0,028	0,063	0,049	0,035	0,074	0,057	0,041	●		○
4.13																				
4.14	300–340	300–340		1,0	1,0*	0,058	0,045	0,033	0,108	0,083	0,060	0,135	0,104	0,075	0,162	0,125	0,090	●		○
4.15																				
4.16																				
4.17																				
4.18	80–120	80–120		1,0	1,0*	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	●		
4.19	60–80	60–80		1,0	1,0*	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,021	0,025	0,054	0,042	0,030	●		
5.1	**30**			0,5	0,5	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034	●		
5.2	**30**			0,5	0,5	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034	●		
5.3	**25**			0,5	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	●		
5.4	**25**			0,5	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	●		
5.5	**25**			0,5	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	●		
5.6	**25**			0,5	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	●		
5.7	**45**			0,5	0,5	0,025	0,012	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	●		
5.8	**30**			0,5	0,5	0,025	0,012	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	●		
5.9	**80–100**			0,5	0,5	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034	●		
5.10	**60–80**			0,5	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	●		
5.11	**60–80**			0,5	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	●		
6.1		80–100		0,5	0,5	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034		●	
6.2		80–120		0,3	0,3	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030		●	
6.3		60–80		0,15	0,15	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026		●	
6.4																				
6.5																				

* = with an a_p of 1.5 x d_1 the f_z should be multiplied by 0.8

Plunging angle for ramping and helical milling: No. of teeth 3 = 5°/No. of teeth 4 = 4°/No. of teeth 5 = 3°

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Cutting Data – MonsterMill – End Mills – ICR, short – long

	Emulsion	Compressed air	MMS	short	long	Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 14 mm		
						a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min			$a_{p\,max.}$ x DC		f_z mm			f_z mm			f_z mm			f_z mm		
1.1	130–180	150–200		1,0	1,0*	0,11	0,08	0,06	0,14	0,10	0,08	0,16	0,13	0,09	0,18	0,14	0,10
1.2	130–180	150–200		1,0	1,0*	0,10	0,08	0,06	0,12	0,10	0,07	0,15	0,11	0,08	0,17	0,13	0,10
1.3	140–160	130–180		1,0	1,0*	0,10	0,08	0,06	0,12	0,10	0,07	0,15	0,11	0,08	0,17	0,13	0,10
1.4	120–140	110–160		1,0	1,0*	0,09	0,07	0,05	0,12	0,09	0,07	0,14	0,10	0,08	0,16	0,12	0,09
1.5	140–160	130–180		1,0	1,0*	0,09	0,07	0,05	0,12	0,09	0,07	0,14	0,10	0,08	0,16	0,12	0,09
1.6	140–160	130–180		1,0	1,0*	0,09	0,07	0,05	0,12	0,09	0,07	0,14	0,10	0,08	0,16	0,12	0,09
1.7	120–160	110–160		1,0	1,0*	0,09	0,07	0,05	0,12	0,09	0,07	0,14	0,10	0,08	0,16	0,12	0,09
1.8	80–120	90–140		1,0	1,0*	0,08	0,06	0,05	0,11	0,09	0,06	0,12	0,09	0,07	0,14	0,11	0,08
1.9	80–120	90–140		1,0	1,0*	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
1.10	80–120	90–140		1,0	1,0*	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
1.11	80–120	90–140		1,0	1,0*	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
1.12	80–120	90–140		1,0	1,0*	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
1.13	80–120	90–140		1,0	1,0*	0,06	0,05	0,04	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06
1.14	60–100	50–100		1,0	1,0*	0,05	0,04	0,03	0,07	0,05	0,04	0,11	0,08	0,06	0,09	0,07	0,05
1.15	80–120	90–140		1,0	1,0*	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
1.16	100–140	110–160		1,0	1,0*	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
2.1	**100–140**			1,0	1,0*	0,08	0,06	0,05	0,10	0,08	0,06	0,12	0,09	0,07	0,14	0,11	0,08
2.2	**100–120**			1,0	1,0*	0,06	0,05	0,04	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,09	0,06
2.3	**80 –100**			1,0	1,0*	0,06	0,05	0,04	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06
2.4	**80 –100**			1,0	1,0*	0,06	0,05	0,04	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06
2.5	**100–120**			1,0	1,0*	0,06	0,05	0,04	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06
2.6	**100–120**			1,0	1,0*	0,06	0,05	0,04	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06
2.7	**40–60**			1,0	1,0*	0,05	0,04	0,03	0,07	0,05	0,04	0,08	0,06	0,05	0,09	0,07	0,05
3.1		180–220		1,0	1,0*	0,13	0,10	0,07	0,14	0,10	0,08	0,16	0,13	0,09	0,22	0,17	0,12
3.2		160–200		1,0	1,0*	0,13	0,10	0,07	0,14	0,10	0,08	0,16	0,13	0,09	0,22	0,17	0,12
3.3		180 –220		1,0	1,0*	0,11	0,08	0,06	0,14	0,10	0,08	0,14	0,11	0,08	0,19	0,15	0,11
3.4		160 –200		1,0	1,0*	0,11	0,08	0,06	0,12	0,09	0,07	0,14	0,11	0,08	0,19	0,15	0,11
3.5		140 –180		1,0	1,0*	0,09	0,07	0,05	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09
3.6		120–160		1,0	1,0*	0,09	0,07	0,05	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09
3.7		140 –180		1,0	1,0*	0,09	0,07	0,05	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09
3.8		120 –160		1,0	1,0*	0,09	0,07	0,05	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09
4.1																	
4.2																	
4.3																	
4.4																	
4.5																	
4.6	220–240	220–240		1,0	1,0*	0,11	0,08	0,06	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08
4.7	220–240	220–240		1,0	1,0*	0,11	0,08	0,06	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08
4.8	140–160	140–160		1,0	1,0*	0,11	0,08	0,06	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08
4.9	120–140	120–140		1,0	1,0*	0,11	0,08	0,06	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08
4.10	100–120	100–120		1,0	1,0*	0,11	0,08	0,06	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08
4.11	280–300	280–300		1,0	1,0*	0,10	0,08	0,06	0,12	0,10	0,07	0,15	0,11	0,08	0,17	0,13	0,10
4.12	280–300	280–300		1,0	1,0*	0,10	0,08	0,06	0,12	0,10	0,07	0,15	0,11	0,08	0,17	0,13	0,10
4.13																	
4.14	300–340	300–340		1,0	1,0*	0,22	0,17	0,12	0,27	0,21	0,15	0,32	0,25	0,18	0,38	0,29	0,21
4.15																	
4.16																	
4.17																	
4.18	80–120	80–120		1,0	1,0*	0,09	0,07	0,05	0,14	0,10	0,08	0,11	0,11	0,08	0,16	0,12	0,09
4.19	60–80	60–80		1,0	1,0*	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
5.1	**30**			0,5	0,5	0,08	0,06	0,05	0,10	0,08	0,06	0,12	0,09	0,07	0,14	0,11	0,08
5.2	**30**			0,5	0,5	0,08	0,06	0,05	0,10	0,08	0,06	0,12	0,06	0,07	0,14	0,11	0,08
5.3	**25**			0,5	0,5	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
5.4	**25**			0,5	0,5	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
5.5	**25**			0,5	0,5	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,05	0,06	0,13	0,10	0,07
5.6	**25**			0,5	0,5	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,11	0,09	0,06
5.7	**45**			0,5	0,5	0,06	0,05	0,04	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06
5.8	**30**			0,5	0,5	0,06	0,05	0,04	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06
5.9	**80–100**			0,5	0,5	0,08	0,06	0,05	0,10	0,08	0,06	0,12	0,09	0,07	0,14	0,11	0,08
5.10	**60–80**			0,5	0,5	0,09	0,07	0,05	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09
5.11	**60–80**			0,5	0,5	0,09	0,07	0,05	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09
6.1		80–100		0,5	0,5	0,08	0,06	0,05	0,10	0,08	0,06	0,12	0,09	0,07	0,14	0,11	0,08
6.2		80–120		0,3	0,3	0,07	0,06	0,04	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07
6.3		60–80		0,15	0,15	0,06	0,05	0,04	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06
6.4																	
6.5																	

* = with an a_p of 1.5 x DC the f_z should be multiplied by 0.8

Plunging angle for ramping and helical milling: No. of teeth 3 = 5° / No. of teeth 4 = 4° / No. of teeth 5 = 3°

Index	Ø DC = 16 mm			Ø DC = 18 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm					
1.1	0,19	0,16	0,12	0,20	0,17	0,13	0,22	0,19	0,15	○	●	○
1.2	0,18	0,14	0,11	0,19	0,16	0,12	0,20	0,17	0,14	○	●	○
1.3	0,18	0,14	0,11	0,19	0,16	0,12	0,20	0,17	0,14	○	●	○
1.4	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	○	●	○
1.5	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	○	●	○
1.6	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	○	●	○
1.7	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	○	●	○
1.8	0,14	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11	○	●	○
1.9	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.10	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.11	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.12	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.13	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	○	●	○
1.14	0,10	0,08	0,06	0,10	0,09	0,07	0,14	0,13	0,10	○	●	○
1.15	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.16	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
2.1	0,14	0,12	0,09	0,12	0,10	0,08	0,16	0,14	0,11	●		
2.2	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.3	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.4	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.5	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.6	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.7	0,10	0,08	0,06	0,10	0,09	0,07	0,11	0,09	0,08	●		
3.1	0,22	0,18	0,14	0,24	0,20	0,16	0,25	0,22	0,18		●	
3.2	0,22	0,18	0,14	0,24	0,20	0,16	0,25	0,22	0,18		●	
3.3	0,19	0,16	0,12	0,20	0,17	0,13	0,25	0,22	0,18		●	
3.4	0,19	0,16	0,12	0,20	0,17	0,13	0,22	0,19	0,15		●	
3.5	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13		●	
3.6	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13		●	
3.7	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13		●	
3.8	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13		●	
4.1												
4.2												
4.3												
4.4												
4.5												
4.6	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.7	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.8	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.9	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.10	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.11	0,18	0,14	0,11	0,19	0,16	0,12	0,20	0,17	0,14	●		○
4.12	0,18	0,14	0,11	0,19	0,16	0,12	0,20	0,17	0,14	●		○
4.13												
4.14	0,38	0,31	0,24	0,41	0,35	0,27	0,43	0,38	0,30	●		○
4.15												
4.16												
4.17												
4.18	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	●		
4.19	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.1	0,15	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11	●		
5.2	0,15	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11	●		
5.3	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.4	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.5	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.6	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.7	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
5.8	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
5.9	0,14	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11	●		
5.10	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	●		
5.11	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	●		
6.1	0,14	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11		●	
6.2	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10		●	
6.3	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09		●	
6.4												
6.5												

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Cutting Data – MonsterMill – End Mills – ICR, extra long

Index	Emulsion v_c m/min	Compressed air v_c m/min	MMS v_c m/min	$a_{p\,max.}$ x DC		Ø DC = 3 mm f_z mm			Ø DC = 4 mm f_z mm			Ø DC = 5 mm f_z mm			Ø DC = 6 mm f_z mm			Ø DC = 8 mm f_z mm		
						a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
1.1	110–155	130–180		1	0,5	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	0,11	0,08	0,06
1.2	110–155	130–180		1	0,5	0,038	0,029	0,021	0,049	0,038	0,028	0,063	0,049	0,035	0,074	0,057	0,041	0,10	0,08	0,06
1.3	120–140	110–160		1	0,5	0,038	0,029	0,021	0,049	0,038	0,028	0,063	0,049	0,035	0,074	0,057	0,041	0,10	0,08	0,06
1.4	100–120	90–140		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
1.5	120–140	110–160		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
1.6	120–140	110–160		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
1.7	100–140	90–140		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
1.8	70–105	70–120		1	0,5	0,031	0,024	0,018	0,063	0,049	0,035	0,052	0,040	0,029	0,061	0,047	0,034	0,08	0,06	0,05
1.9	70–105	70–120		1	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
1.10	70–105	70–120		1	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
1.11	70–105	70–120		1	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
1.12	70–105	70–120		1	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
1.13	70–105	70–120		1	0,5	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	0,06	0,05	0,04
1.14	55–85	50–80		1	0,5	0,020	0,016	0,011	0,027	0,021	0,015	0,034	0,026	0,019	0,040	0,031	0,023	0,05	0,04	0,03
1.15	70–105	70–120		1	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
1.16	85–120	90–140		1	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
2.1	**85–120**			1	0,5	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034	0,08	0,06	0,05
2.2	**85–105**			1	0,5	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	0,06	0,05	0,04
2.3	**70–90**			1	0,5	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	0,06	0,05	0,04
2.4	**70–90**			1	0,5	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	0,06	0,05	0,04
2.5	**85–105**			1	0,5	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	0,06	0,05	0,04
2.6	**85–105**			1	0,5	0,025	0,019	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	0,06	0,05	0,04
2.7	**35–55**			1	0,5	0,020	0,016	0,011	0,027	0,021	0,015	0,034	0,026	0,019	0,038	0,029	0,021	0,05	0,04	0,03
3.1		150–190		1	0,5	0,047	0,036	0,026	0,063	0,049	0,035	0,079	0,061	0,044	0,094	0,073	0,053	0,13	0,10	0,07
3.2		140–170		1	0,5	0,047	0,036	0,026	0,063	0,049	0,035	0,079	0,061	0,044	0,094	0,073	0,053	0,13	0,10	0,07
3.3		150–190		1	0,5	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	0,11	0,08	0,06
3.4		140–170		1	0,5	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	0,11	0,08	0,06
3.5		120–150		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
3.6		105–140		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
3.7		120–150		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
3.8		105–140		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
4.1																				
4.2																				
4.3																				
4.4																				
4.5																				
4.6	190–205	190–205		1	0,5	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	0,11	0,08	0,06
4.7	190–205	190–205		1	0,5	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	0,11	0,08	0,06
4.8	120–140	120–140		1	0,5	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	0,11	0,08	0,06
4.9	105–120	105–120		1	0,5	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	0,11	0,08	0,06
4.10	85–105	85–105		1	0,5	0,040	0,031	0,023	0,054	0,042	0,030	0,067	0,052	0,038	0,081	0,062	0,045	0,11	0,08	0,06
4.11	240–260	240–260		1	0,5	0,038	0,029	0,021	0,049	0,038	0,028	0,063	0,049	0,035	0,741	0,572	0,413	0,10	0,08	0,06
4.12	240–260	240–260		1	0,5	0,038	0,029	0,021	0,049	0,038	0,028	0,063	0,049	0,035	0,074	0,057	0,041	0,10	0,08	0,06
4.13																				
4.14	250–290	250–290		1	0,5	0,058	0,045	0,033	0,108	0,083	0,060	0,135	0,104	0,075	0,162	0,125	0,090	0,22	0,17	0,12
4.15																				
4.16																				
4.17																				
4.18	70–105	70–105		1	0,5	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
4.19	50–70	50–70		1	0,5	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,021	0,025	0,054	0,042	0,030	0,07	0,06	0,04
5.1	**27**			0,5	0,25	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034	0,08	0,06	0,05
5.2	**27**			0,5	0,25	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034	0,08	0,06	0,05
5.3	**23**			0,5	0,25	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
5.4	**23**			0,5	0,25	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
5.5	**23**			0,5	0,25	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
5.6	**23**			0,5	0,25	0,027	0,021	0,015	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,07	0,06	0,04
5.7	**38**			0,5	0,25	0,025	0,012	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	0,06	0,05	0,04
5.8	**27**			0,5	0,25	0,025	0,012	0,014	0,031	0,024	0,018	0,040	0,031	0,023	0,047	0,036	0,026	0,06	0,05	0,04
5.9	**70–85**			0,5	0,25	0,031	0,024	0,018	0,040	0,031	0,023	0,052	0,040	0,029	0,061	0,047	0,034	0,08	0,06	0,05
5.10	**50–70**			0,5	0,25	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
5.11	**50–70**			0,5	0,25	0,034	0,026	0,019	0,045	0,035	0,025	0,056	0,043	0,031	0,067	0,052	0,038	0,09	0,07	0,05
6.1		70–85		0,5*		0,031	0,024		0,040	0,031		0,052	0,040		0,061	0,047		0,08	0,06	
6.2		70–105		0,5*		0,027	0,021		0,036	0,028		0,045	0,035		0,054	0,042		0,07	0,06	
6.3		50–70		0,5*		0,025	0,019		0,031	0,024		0,040	0,031		0,047	0,036		0,06	0,05	
6.4																				
6.5																				

* = Edge Milling and Trochoidal Milling

Plunging angle for ramping and helical milling: No. of teeth 3 = 5 ° / No. of teeth 4 = 4° / No. of teeth 5 = 3°

Index	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 18 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,14	0,10	0,08	0,16	0,13	0,09	0,18	0,14	0,10	0,19	0,16	0,12	0,20	0,17	0,13	0,22	0,19	0,15	○	●	○
1.2	0,12	0,10	0,07	0,15	0,11	0,08	0,17	0,13	0,10	0,18	0,14	0,11	0,19	0,16	0,12	0,20	0,17	0,14	○	●	○
1.3	0,12	0,10	0,07	0,15	0,11	0,08	0,17	0,13	0,10	0,18	0,14	0,11	0,19	0,16	0,12	0,20	0,17	0,14	○	●	○
1.4	0,12	0,09	0,07	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	○	●	○
1.5	0,12	0,09	0,07	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	○	●	○
1.6	0,12	0,09	0,07	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	○	●	○
1.7	0,12	0,09	0,07	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	○	●	○
1.8	0,11	0,09	0,06	0,12	0,09	0,07	0,14	0,11	0,08	0,14	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11	○	●	○
1.9	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.10	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.11	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.12	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.13	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	○	●	○
1.14	0,07	0,05	0,04	0,11	0,08	0,06	0,09	0,07	0,05	0,10	0,08	0,06	0,10	0,09	0,07	0,14	0,13	0,10	○	●	○
1.15	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
1.16	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	○	●	○
2.1	0,10	0,08	0,06	0,12	0,09	0,07	0,14	0,11	0,08	0,14	0,12	0,09	0,12	0,10	0,08	0,16	0,14	0,11	●		
2.2	0,08	0,06	0,04	0,10	0,07	0,05	0,11	0,09	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.3	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.4	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.5	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.6	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
2.7	0,07	0,05	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,10	0,09	0,07	0,11	0,09	0,08	●		
3.1	0,14	0,10	0,08	0,16	0,13	0,09	0,22	0,17	0,12	0,22	0,18	0,14	0,24	0,20	0,16	0,25	0,22	0,18		●	
3.2	0,14	0,10	0,08	0,16	0,13	0,09	0,22	0,17	0,12	0,22	0,18	0,14	0,24	0,20	0,16	0,25	0,22	0,18		●	
3.3	0,14	0,10	0,08	0,14	0,11	0,08	0,19	0,15	0,11	0,19	0,16	0,12	0,20	0,17	0,13	0,25	0,22	0,18		●	
3.4	0,12	0,09	0,07	0,14	0,11	0,08	0,19	0,15	0,11	0,19	0,16	0,12	0,20	0,17	0,13	0,22	0,19	0,15		●	
3.5	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13		●	
3.6	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13		●	
3.7	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13		●	
3.8	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13		●	
4.1																					
4.2																					
4.3																					
4.4																					
4.5																					
4.6	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.7	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.8	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.9	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.10	0,14	0,10	0,08	0,16	0,13	0,09	0,14	0,11	0,08	0,19	0,16	0,12	0,21	0,17	0,14	0,22	0,19	0,15	●		○
4.11	0,12	0,10	0,07	0,15	0,11	0,08	0,17	0,13	0,10	0,18	0,14	0,11	0,19	0,16	0,12	0,20	0,17	0,14	●		○
4.12	0,12	0,10	0,07	0,15	0,11	0,08	0,17	0,13	0,10	0,18	0,14	0,11	0,19	0,16	0,12	0,20	0,17	0,14	●		○
4.13																					
4.14	0,27	0,21	0,15	0,32	0,25	0,18	0,38	0,29	0,21	0,38	0,31	0,24	0,41	0,35	0,27	0,43	0,38	0,30	●		○
4.15																					
4.16																					
4.17																					
4.18	0,14	0,10	0,08	0,11	0,11	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	●		
4.19	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.1	0,10	0,08	0,06	0,12	0,09	0,07	0,14	0,11	0,08	0,15	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11	●		
5.2	0,10	0,08	0,06	0,12	0,06	0,07	0,14	0,11	0,08	0,15	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11	●		
5.3	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.4	0,09	0,07	0,05	0,11	0,08	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.5	0,09	0,07	0,05	0,11	0,05	0,06	0,13	0,10	0,07	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.6	0,09	0,07	0,05	0,11	0,08	0,06	0,11	0,09	0,06	0,13	0,10	0,08	0,14	0,12	0,09	0,14	0,13	0,10	●		
5.7	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
5.8	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,06	0,11	0,09	0,07	0,12	0,10	0,08	0,13	0,11	0,09	●		
5.9	0,10	0,08	0,06	0,12	0,09	0,07	0,14	0,11	0,08	0,14	0,12	0,09	0,15	0,13	0,10	0,16	0,14	0,11	●		
5.10	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	●		
5.11	0,11	0,09	0,06	0,14	0,10	0,08	0,16	0,12	0,09	0,16	0,13	0,10	0,17	0,15	0,11	0,18	0,16	0,13	●		
6.1	0,10	0,08		0,12	0,09		0,14	0,11		0,14	0,12		0,16	0,13		0,16	0,14			●	
6.2	0,09	0,07		0,11	0,08		0,13	0,10		0,13	0,10		0,14	0,12		0,14	0,13			●	
6.3	0,08	0,06		0,09	0,07		0,11	0,09		0,11	0,09		0,12	0,10		0,13	0,11			●	
6.4																					
6.5																					

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Cutting data standard values – MonsterMill – TCR, end mills 52 503 ... / 52 504 ... /

	long	extra long	long	extra long	Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm		
					a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,06–0,1 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,06–0,1 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,06–0,1 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,06–0,1 x DC
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
2.1	110	88	1,0	0,5	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,050	0,037	0,025
2.2	100	80	1,0	0,5	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,050	0,037	0,025
2.3	80	64	1,0	0,5	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,050	0,037	0,025
2.4	80	64	1,0	0,5	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,050	0,037	0,025
2.5	100	80	1,0	0,5	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,050	0,037	0,025
2.6	100	80	1,0	0,5	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,050	0,037	0,025
2.7	55	44	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.1	**55**	**44**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.2	**55**	**44**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.3	**55**	**44**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.4	**55**	**44**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.5	**55**	**44**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.6	**55**	**44**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.7	**55**	**44**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.8	**55**	**44**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.9	**120**	**96**	1,0	0,5	0,045	0,035	0,025	0,060	0,045	0,030	0,070	0,052	0,035	0,100	0,075	0,050
5.10	**100**	**80**	1,0	0,5	0,036	0,028	0,020	0,054	0,040	0,027	0,070	0,052	0,035	0,080	0,060	0,040
5.11	**80**	**64**	1,0	0,5	0,027	0,021	0,015	0,040	0,030	0,020	0,050	0,037	0,025	0,060	0,045	0,030

Cutting data standard values – MonsterMill – TCR, end mills 52 505 ... / 52 506 ...

	long	long	Ø DC = 4 mm		Ø DC = 5 mm		Ø DC = 6 mm		Ø DC = 8 mm		Ø DC = 10 mm		Ø DC = 12mm		Ø DC = 16 mm	
			a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
2.1	110	1,0	0,017	0,012	0,024	0,016	0,031	0,021	0,037	0,025	0,048	0,032	0,060	0,040	0,065	0,050
2.2	100	1,0	0,017	0,012	0,024	0,016	0,031	0,021	0,037	0,025	0,048	0,032	0,060	0,040	0,065	0,050
2.3	80	1,0	0,017	0,012	0,024	0,016	0,031	0,021	0,037	0,025	0,048	0,032	0,060	0,040	0,065	0,050
2.4	80	1,0	0,017	0,012	0,024	0,016	0,031	0,021	0,037	0,025	0,048	0,032	0,060	0,040	0,065	0,050
2.5	100	1,0	0,017	0,012	0,024	0,016	0,031	0,021	0,037	0,025	0,048	0,032	0,060	0,040	0,065	0,050
2.6	100	1,0	0,017	0,012	0,024	0,016	0,031	0,021	0,037	0,025	0,048	0,032	0,060	0,040	0,065	0,050
2.7	55	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.1	**55**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.2	**55**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.3	**55**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.4	**55**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.5	**55**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.6	**55**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.7	**55**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.8	**55**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,075	0,050	0,077	0,060
5.9	**120**	1,0	0,035	0,025	0,045	0,030	0,052	0,035	0,075	0,050	0,089	0,060	0,104	0,070	0,077	0,060
5.10	**100**	1,0	0,028	0,020	0,040	0,027	0,052	0,035	0,060	0,040	0,075	0,050	0,089	0,060	0,077	0,060
5.11	**80**	1,0	0,021	0,015	0,030	0,020	0,037	0,025	0,045	0,030	0,060	0,040	0,075	0,050	0,077	0,060

52 507 ... / 52 508 ...

	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,06–0,1 x DC			
Index	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
2.1	0,064	0,048	0,032	0,080	0,060	0,040	0,085	0,065	0,050	0,111	0,090	0,070	●		
2.2	0,064	0,048	0,032	0,080	0,060	0,040	0,085	0,065	0,050	0,111	0,090	0,070	●		
2.3	0,064	0,048	0,032	0,080	0,060	0,040	0,085	0,065	0,050	0,111	0,090	0,070	●		
2.4	0,064	0,048	0,032	0,080	0,060	0,040	0,085	0,065	0,050	0,111	0,090	0,070	●		
2.5	0,064	0,048	0,032	0,080	0,060	0,040	0,085	0,065	0,050	0,111	0,090	0,070	●		
2.6	0,064	0,048	0,032	0,080	0,060	0,040	0,085	0,065	0,050	0,111	0,090	0,070	●		
2.7	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.1	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.2	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.3	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.4	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.5	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.6	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.7	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.8	0,100	0,075	0,050	0,100	0,075	0,050	0,101	0,077	0,060	0,111	0,090	0,070	●		
5.9	0,120	0,089	0,060	0,140	0,104	0,070	0,101	0,077	0,060	0,190	0,155	0,120	●		
5.10	0,100	0,075	0,050	0,120	0,089	0,060	0,101	0,077	0,060	0,158	0,129	0,100	●		
5.11	0,080	0,060	0,040	0,100	0,075	0,050	0,101	0,077	0,060	0,126	0,103	0,080	●		

	Ø DC = 20 mm		● 1st choice		○ suitable
	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC			
Index	f_z mm	f_z mm	Emulsion	Compressed air	MMS
2.1	0,090	0,070	●		
2.2	0,090	0,070	●		
2.3	0,090	0,070	●		
2.4	0,090	0,070	●		
2.5	0,090	0,070	●		
2.6	0,090	0,070	●		
2.7	0,090	0,070	●		
5.1	0,090	0,070	●		
5.2	0,090	0,070	●		
5.3	0,090	0,070	●		
5.4	0,090	0,070	●		
5.5	0,090	0,070	●		
5.6	0,090	0,070	●		
5.7	0,090	0,070	●		
5.8	0,090	0,070	●		
5.9	0,155	0,120	●		
5.10	0,129	0,100	●		
5.11	0,103	0,080	●		

Cutting data standard values – MonsterMill – TCR, ball-nosed end mills 52 513 ... /

	long	extra long		Ø DC = 2 mm		Ø DC = 3 mm		Ø DC = 4 mm		Ø DC = 5 mm		Ø DC = 6 mm		Ø DC = 8 mm	
				a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
2.1	**60**	**55**	0,1–0,2	0,009	0,007	0,011	0,008	0,012	0,009	0,012	0,009	0,018	0,014	0,029	0,023
2.2	**55**	**50**	0,1–0,2	0,009	0,007	0,011	0,008	0,012	0,009	0,012	0,009	0,018	0,014	0,029	0,023
2.3	**45**	**40**	0,1–0,2	0,009	0,007	0,011	0,008	0,012	0,009	0,012	0,009	0,018	0,014	0,029	0,023
2.4	**45**	**40**	0,1–0,2	0,009	0,007	0,011	0,008	0,012	0,009	0,012	0,009	0,018	0,014	0,029	0,023
2.5	**55**	**50**	0,1–0,2	0,009	0,007	0,011	0,008	0,012	0,009	0,012	0,009	0,018	0,014	0,029	0,023
2.6	**55**	**50**	0,1–0,2	0,009	0,007	0,010	0,008	0,012	0,010	0,012	0,010	0,020	0,015	0,025	0,020
2.7	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.1	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.2	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.3	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.4	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.5	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.6	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.7	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.8	**33**	**28**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030
5.9	**65**	**60**	0,1–0,2	0,017	0,013	0,020	0,014	0,022	0,017	0,022	0,017	0,034	0,025	0,053	0,042
5.10	**55**	**50**	0,1–0,2	0,014	0,011	0,017	0,012	0,019	0,014	0,019	0,014	0,029	0,022	0,046	0,036
5.11	**45**	**40**	0,1–0,2	0,012	0,009	0,014	0,010	0,016	0,012	0,016	0,012	0,024	0,018	0,038	0,030

Cutting data standard values – MonsterMill – TCR, torus cutters 52 511 ... / 52 512 ...

	long	extra long		Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm	● 1st choice		○ suitable
				a_e 0,01–1,0 x DC	a_e 0,01–1,0 x DC	a_e 0,01–1,0 x DC	a_e 0,01–1,0 x DC	a_e 0,01–1,0 x DC	a_e 0,01–1,0 x DC	a_e 0,01–1,0 x DC	a_e 0,01–1,0 x DC	a_e 0,01–1,0 x DC	Emulsion	Compressed air	MMS
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
2.1	**120**	**110**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
2.2	**110**	**100**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
2.3	**90**	**80**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
2.4	**90**	**80**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
2.5	**110**	**100**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
2.6	**110**	**100**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
2.7															
5.1	**65**	**55**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
5.2	**65**	**55**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
5.3	**65**	**55**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
5.4	**65**	**55**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
5.5	**65**	**55**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
5.6	**65**	**55**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
5.7	**65**	**55**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
5.8	**65**	**55**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		
5.9	**130**	**120**	0,06	0,040	0,060	0,070	0,090	0,120	0,150	0,180	0,210	0,300	●		
5.10	**110**	**100**	0,06	0,030	0,040	0,060	0,080	0,100	0,120	0,150	0,180	0,240	●		
5.11	**90**	**80**	0,06	0,015	0,040	0,055	0,065	0,075	0,100	0,120	0,150	0,180	●		

52 514 ...

	Ø DC = 10 mm		Ø DC = 12 mm		Ø DC = 16 mm		● 1st choice		○ suitable
	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC	a_e 0,01–0,02 x DC	a_e 0,03–0,04 x DC			
Index	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
2.1	0,032	0,025	0,035	0,030	0,039	0,034	●		
2.2	0,032	0,025	0,035	0,030	0,039	0,034	●		
2.3	0,032	0,025	0,035	0,030	0,039	0,034	●		
2.4	0,032	0,025	0,035	0,030	0,039	0,034	●		
2.5	0,032	0,025	0,035	0,030	0,039	0,034	●		
2.6	0,030	0,025	0,035	0,030	0,040	0,035	●		
2.7	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.1	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.2	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.3	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.4	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.5	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.6	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.7	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.8	0,042	0,033	0,047	0,040	0,052	0,045	●		
5.9	0,059	0,046	0,066	0,056	0,073	0,063	●		
5.10	0,050	0,040	0,056	0,048	0,062	0,054	●		
5.11	0,042	0,033	0,047	0,040	0,052	0,045	●		

Cutting data standard values – MonsterMill – Ball-nosed end mills – HCR, 53 600 ... /

$T_x \leq 2,5$ x DC

Index	v_c m/min	$a_{p\,max}$ x DC	Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,05 x DC									
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	0,07	0,003	0,006	0,008	0,011	0,015	0,018	0,021	0,027	0,033	0,036
1.15	200	0,07	0,003	0,006	0,008	0,011	0,015	0,018	0,021	0,027	0,033	0,036
1.16	200	0,07	0,003	0,006	0,008	0,011	0,015	0,018	0,021	0,027	0,033	0,036
6.1	200	0,05	0,003	0,006	0,008	0,011	0,015	0,018	0,021	0,027	0,033	0,036
6.2	180	0,05	0,003	0,006	0,008	0,011	0,015	0,018	0,021	0,027	0,033	0,036
6.3	160	0,05	**0,002**	**0,005**	**0,006**	**0,008**	**0,012**	**0,014**	**0,017**	**0,022**	**0,026**	**0,029**
6.4	150	0,03	**0,002**	**0,004**	**0,005**	**0,007**	**0,010**	**0,012**	**0,014**	**0,018**	**0,022**	**0,024**
6.5	130	0,03	**0,002**	**0,003**	**0,004**	**0,006**	**0,008**	**0,010**	**0,011**	**0,014**	**0,018**	**0,019**

T_x = 2,6–5 x DC

Index	v_c m/min	$a_{p\,max}$ x DC	Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,05 x DC									
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	120	0,07	0,002	0,005	0,006	0,008	0,012	0,014	0,017	0,022	0,026	0,029
1.15	120	0,07	0,002	0,005	0,006	0,008	0,012	0,014	0,017	0,022	0,026	0,029
1.16	120	0,07	0,002	0,005	0,006	0,008	0,012	0,014	0,017	0,022	0,026	0,029
6.1	120	0,05	0,002	0,005	0,006	0,008	0,012	0,014	0,017	0,022	0,026	0,029
6.2	108	0,05	0,002	0,005	0,006	0,008	0,012	0,014	0,017	0,022	0,026	0,029
6.3	96	0,05	**0,002**	**0,004**	**0,005**	**0,007**	**0,010**	**0,011**	**0,014**	**0,017**	**0,020**	**0,023**
6.4	90	0,03	**0,002**	**0,003**	**0,004**	**0,006**	**0,008**	**0,010**	**0,012**	**0,015**	**0,017**	**0,019**
6.5	78	0,03	**0,001**	**0,002**	**0,003**	**0,004**	**0,006**	**0,008**	**0,009**	**0,012**	**0,014**	**0,015**

T_x = 5,1–10 x DC

Index	v_c m/min	$a_{p\,max}$ x DC	Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,05 x DC									
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	90	0,06	0,002	0,003	0,005	0,006	0,009	0,011	0,014	0,017	0,018	0,021
1.15	90	0,06	0,002	0,003	0,005	0,006	0,009	0,011	0,014	0,017	0,018	0,021
1.16	90	0,06	0,002	0,003	0,005	0,006	0,009	0,011	0,014	0,017	0,018	0,021
6.1	90	0,04	0,002	0,003	0,005	0,006	0,009	0,011	0,014	0,017	0,018	0,021
6.2	81	0,04	0,002	0,003	0,005	0,006	0,009	0,011	0,014	0,017	0,018	0,021
6.3	72	0,04	**0,001**	**0,002**	**0,004**	**0,005**	**0,007**	**0,008**	**0,011**	**0,013**	**0,014**	**0,017**
6.4	68	0,02	**0,001**	**0,002**	**0,003**	**0,004**	**0,006**	**0,007**	**0,009**	**0,011**	**0,012**	**0,014**
6.5	59	0,02	**0,001**	**0,002**	**0,002**	**0,003**	**0,005**	**0,006**	**0,007**	**0,009**	**0,010**	**0,011**

T_x = 10,1–15 x DC

Index	v_c m/min	$a_{p\,max}$ x DC	Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,04 x DC									
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	70	0,05	0,002	0,002	0,003	0,005	0,006	0,008	0,009	0,011	0,012	0,015
1.15	70	0,05	0,002	0,002	0,003	0,005	0,006	0,008	0,009	0,011	0,012	0,015
1.16	70	0,05	0,002	0,002	0,003	0,005	0,006	0,008	0,009	0,011	0,012	0,015
6.1	70	0,03	0,002	0,002	0,003	0,005	0,006	0,008	0,009	0,011	0,012	0,015
6.2	63	0,03	0,002	0,002	0,003	0,005	0,006	0,008	0,009	0,011	0,012	0,015
6.3	56	0,03	**0,001**	**0,001**	**0,002**	**0,004**	**0,005**	**0,006**	**0,007**	**0,008**	**0,010**	**0,012**
6.4	53	0,01	**0,001**	**0,001**	**0,002**	**0,003**	**0,004**	**0,005**	**0,006**	**0,007**	**0,008**	**0,010**
6.5	46	0,01	**0,001**	**0,001**	**0,002**	**0,002**	**0,003**	**0,004**	**0,005**	**0,006**	**0,006**	**0,008**

For improved surface quality, reduce f_z and allowance (a_e or a_p) by 30 %!

53 601 ...

$T_x \leq 2,5 \times DC$

			Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.14	200	0,07	0,045	0,054	0,072	0,108	0,144	0,180	0,216	○	●	●
1.15	200	0,07	0,045	0,054	0,072	0,108	0,144	0,180	0,216	○	●	●
1.16	200	0,07	0,045	0,054	0,072	0,108	0,144	0,180	0,216	○	●	●
6.1	200	0,05	0,045	0,054	0,072	0,108	0,144	0,180	0,216	○	●	●
6.2	180	0,05	0,045	0,054	0,072	0,108	0,144	0,180	0,216	○	●	●
6.3	160	0,05	**0,036**	**0,043**	**0,058**	**0,086**	**0,115**	**0,144**	**0,173**	○	●	●
6.4	150	0,03	**0,030**	**0,036**	**0,048**	**0,072**	**0,096**	**0,120**	**0,144**	○	●	●
6.5	130	0,03	**0,024**	**0,029**	**0,038**	**0,058**	**0,077**	**0,096**	**0,115**	○	●	●

$T_x = 2,6–5 \times DC$

			Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.14	120	0,07	0,036	0,044	0,058	0,076	0,104	0,133	0,162	○	●	●
1.15	120	0,07	0,036	0,044	0,058	0,076	0,104	0,133	0,162	○	●	●
1.16	120	0,07	0,036	0,044	0,058	0,076	0,104	0,133	0,162	○	●	●
6.1	120	0,05	0,036	0,044	0,058	0,076	0,104	0,133	0,162	○	●	●
6.2	108	0,05	0,036	0,044	0,058	0,076	0,104	0,133	0,162	○	●	●
6.3	96	0,05	**0,029**	**0,035**	**0,046**	**0,060**	**0,084**	**0,107**	**0,130**	○	●	●
6.4	90	0,03	**0,024**	**0,029**	**0,039**	**0,050**	**0,070**	**0,089**	**0,108**	○	●	●
6.5	78	0,03	**0,019**	**0,023**	**0,031**	**0,040**	**0,056**	**0,071**	**0,086**	○	●	●

$T_x = 5,1–10 \times DC$

			Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.14	90	0,06	0,027	0,033	0,044	0,043	0,065	0,086	0,108	○	●	●
1.15	90	0,06	0,027	0,033	0,044	0,043	0,065	0,086	0,108	○	●	●
1.16	90	0,06	0,027	0,033	0,044	0,043	0,065	0,086	0,108	○	●	●
6.1	90	0,04	0,027	0,033	0,044	0,043	0,065	0,086	0,108	○	●	●
6.2	81	0,04	0,027	0,033	0,044	0,043	0,065	0,086	0,108	○	●	●
6.3	72	0,04	**0,022**	**0,026**	**0,035**	**0,035**	**0,052**	**0,069**	**0,086**	○	●	●
6.4	68	0,02	**0,018**	**0,022**	**0,029**	**0,029**	**0,043**	**0,058**	**0,072**	○	●	●
6.5	59	0,02	**0,014**	**0,018**	**0,023**	**0,023**	**0,035**	**0,046**	**0,058**	○	●	●

$T_x = 10,1–15 \times DC$

			Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,04 x DC		a_e 0,05 x DC							
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.14	70	0,05	0,021	0,027	0,035	0,035	0,052	0,069	0,086	○	●	●
1.15	70	0,05	0,021	0,027	0,035	0,035	0,052	0,069	0,086	○	●	●
1.16	70	0,05	0,021	0,027	0,035	0,035	0,052	0,069	0,086	○	●	●
6.1	70	0,03	0,021	0,027	0,035	0,035	0,052	0,069	0,086	○	●	●
6.2	63	0,03	0,021	0,027	0,035	0,035	0,052	0,069	0,086	○	●	●
6.3	56	0,03	**0,017**	**0,022**	**0,028**	**0,028**	**0,041**	**0,055**	**0,069**	○	●	●
6.4	53	0,01	**0,014**	**0,018**	**0,023**	**0,023**	**0,035**	**0,046**	**0,058**	○	●	●
6.5	46	0,01	**0,011**	**0,014**	**0,019**	**0,018**	**0,028**	**0,037**	**0,046**	○	●	●

Cutting data standard values – MonsterMill – End mills – HCR, 53 603 ... and 53 604 ...

Peripheral milling

			$T_x \leq 2,5 \times DC$									
			Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,05 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	1,0	0,006	0,006	0,012	0,012	0,018	0,018	0,024	0,030	0,036	0,042
1.15	200	1,0	0,006	0,006	0,012	0,012	0,018	0,018	0,024	0,030	0,036	0,042
1.16	200	1,0	0,006	0,006	0,012	0,012	0,018	0,018	0,024	0,030	0,036	0,042
6.1	200	1,0	0,006	0,006	0,012	0,012	0,018	0,018	0,024	0,030	0,036	0,042
6.2	170	1,0	0,006	0,006	0,012	0,012	0,018	0,018	0,024	0,030	0,036	0,042
6.3	160	1,0	**0,005**	**0,005**	**0,010**	**0,010**	**0,014**	**0,014**	**0,019**	**0,024**	**0,029**	**0,034**
6.4	150	1,0	**0,004**	**0,004**	**0,008**	**0,008**	**0,012**	**0,012**	**0,016**	**0,020**	**0,024**	**0,028**
6.5	110	1,0	**0,003**	**0,003**	**0,006**	**0,006**	**0,010**	**0,010**	**0,013**	**0,016**	**0,019**	**0,022**

Z-layer milling / face milling

			$T_x \leq 2,5 \times DC$									
			Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,3 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	120	0,07	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
1.15	120	0,07	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
1.16	120	0,07	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
6.1	120	0,05	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
6.2	110	0,05	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
6.3	100	0,05	**0,002**	**0,002**	**0,005**	**0,005**	**0,007**	**0,007**	**0,010**	**0,012**	**0,014**	**0,017**
6.4	80	0,03	**0,002**	**0,002**	**0,004**	**0,004**	**0,006**	**0,006**	**0,008**	**0,010**	**0,012**	**0,014**
6.5	60	0,03	**0,002**	**0,002**	**0,003**	**0,003**	**0,005**	**0,005**	**0,006**	**0,008**	**0,010**	**0,011**

Full slot

			$T_x \leq 2,5 \times DC$									
			Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 1,0 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	70	0,07	0,002	0,002	0,005	0,005	0,006	0,008	0,009	0,011	0,012	0,015
1.15	70	0,07	0,002	0,002	0,005	0,005	0,006	0,008	0,009	0,011	0,012	0,015
1.16	70	0,07	0,002	0,002	0,005	0,005	0,006	0,008	0,009	0,011	0,012	0,015
6.1	65	0,05	0,002	0,002	0,005	0,005	0,006	0,008	0,009	0,011	0,012	0,015
6.2	55	0,05	0,002	0,002	0,005	0,005	0,006	0,008	0,009	0,011	0,012	0,015
6.3	45	0,05	**0,001**	**0,001**	**0,003**	**0,003**	**0,004**	**0,005**	**0,006**	**0,007**	**0,008**	**0,010**

For improved surface quality, reduce f_z and allowance (a_e or a_p) by 30 %!

$T_x \leq 2,5 \times DC$

Peripheral milling

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC							Emulsion	Compressed air	MMS
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.14	200	1,0	0,054	0,060	0,084	0,126	0,168	0,210	0,240	○	●	●
1.15	200	1,0	0,054	0,060	0,084	0,126	0,168	0,210	0,240	○	●	●
1.16	200	1,0	0,054	0,060	0,084	0,126	0,168	0,210	0,240	○	●	●
6.1	200	1,0	0,054	0,060	0,084	0,126	0,168	0,210	0,240	○	●	●
6.2	170	1,0	0,054	0,060	0,084	0,126	0,168	0,210	0,240	○	●	●
6.3	160	1,0	**0,043**	**0,048**	**0,067**	**0,101**	**0,134**	**0,168**	**0,192**	○	●	●
6.4	150	1,0	**0,036**	**0,040**	**0,056**	**0,084**	**0,112**	**0,140**	**0,160**	○	●	●
6.5	110	1,0	**0,029**	**0,032**	**0,045**	**0,067**	**0,090**	**0,112**	**0,128**	○	●	●

$T_x \leq 2,5 \times DC$

Z-layer milling / face milling

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,3 x DC							Emulsion	Compressed air	MMS
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.14	120	0,07	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
1.15	120	0,07	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
1.16	120	0,07	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.1	120	0,05	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.2	110	0,05	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.3	100	0,05	**0,022**	**0,024**	**0,034**	**0,050**	**0,067**	**0,084**	**0,096**	○	●	●
6.4	80	0,03	**0,018**	**0,020**	**0,028**	**0,042**	**0,056**	**0,070**	**0,080**	○	●	●
6.5	60	0,03	**0,014**	**0,016**	**0,022**	**0,034**	**0,045**	**0,056**	**0,064**	○	●	●

$T_x \leq 2,5 \times DC$

Full slot

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 1,0 x DC							Emulsion	Compressed air	MMS
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.14	70	0,07	0,018	0,023	0,030	0,045	0,050	0,053	0,060	○	●	●
1.15	70	0,07	0,018	0,023	0,030	0,045	0,050	0,053	0,060	○	●	●
1.16	70	0,07	0,018	0,023	0,030	0,045	0,050	0,053	0,060	○	●	●
6.1	65	0,05	0,018	0,023	0,030	0,045	0,050	0,053	0,060	○	●	●
6.2	55	0,05	0,018	0,023	0,030	0,045	0,050	0,053	0,060	○	●	●
6.3	45	0,05	**0,012**	**0,015**	**0,020**	**0,030**	**0,033**	**0,035**	**0,040**	○	●	●

Cutting data standard values – MonsterMill – End mills – HCR, 53 603 ... and 53 604 ...

Peripheral milling

			T_x = 2,6–5 x DC									
			Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,05 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	140	1,0	0,005	0,005	0,009	0,009	0,014	0,014	0,018	0,023	0,027	0,032
1.15	140	1,0	0,005	0,005	0,009	0,009	0,014	0,014	0,018	0,023	0,027	0,032
1.16	140	1,0	0,005	0,005	0,009	0,009	0,014	0,014	0,018	0,023	0,027	0,032
6.1	140	1,0	0,005	0,005	0,009	0,009	0,014	0,014	0,018	0,023	0,027	0,032
6.2	119	1,0	0,005	0,005	0,009	0,009	0,014	0,014	0,018	0,023	0,027	0,032
6.3	112	1,0	**0,004**	**0,004**	**0,007**	**0,007**	**0,011**	**0,011**	**0,014**	**0,018**	**0,022**	**0,025**
6.4	105	1,0	**0,003**	**0,003**	**0,006**	**0,006**	**0,009**	**0,009**	**0,012**	**0,015**	**0,018**	**0,021**
6.5	77	1,0	**0,002**	**0,002**	**0,005**	**0,005**	**0,007**	**0,007**	**0,010**	**0,012**	**0,014**	**0,017**

Z-layer milling / face milling

			T_x = 2,6–5 x DC									
			Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,3 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	84	0,07	0,002	0,002	0,005	0,005	0,007	0,007	0,009	0,011	0,014	0,016
1.15	84	0,07	0,002	0,002	0,005	0,005	0,007	0,007	0,009	0,011	0,014	0,016
1.16	84	0,07	0,002	0,002	0,005	0,005	0,007	0,007	0,009	0,011	0,014	0,016
6.1	84	0,05	0,002	0,002	0,005	0,005	0,007	0,007	0,009	0,011	0,014	0,016
6.2	77	0,05	0,002	0,002	0,005	0,005	0,007	0,007	0,009	0,011	0,014	0,016
6.3	70	0,05	**0,002**	**0,002**	**0,004**	**0,004**	**0,005**	**0,005**	**0,007**	**0,009**	**0,011**	**0,013**
6.4	56	0,03	**0,002**	**0,002**	**0,003**	**0,003**	**0,005**	**0,005**	**0,006**	**0,008**	**0,009**	**0,011**
6.5	42	0,03	**0,001**	**0,001**	**0,002**	**0,002**	**0,004**	**0,004**	**0,005**	**0,006**	**0,007**	**0,008**

Full slot

			T_x = 2,6–5 x DC									
			Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 1,0 x DC									
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	49	0,07	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
1.15	49	0,07	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
1.16	49	0,07	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
6.1	46	0,05	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
6.2	39	0,05	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
6.3	32	0,05	**0,001**	**0,001**	**0,002**	**0,002**	**0,003**	**0,003**	**0,004**	**0,005**	**0,006**	**0,007**

For improved surface quality, reduce f_z and allowance (a_e or a_p) by 30 %!

T_x = 2,6–5 x DC

Peripheral milling

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice: Emulsion	● 1st choice: Compressed air	● 1st choice: MMS	○ suitable: Emulsion	○ suitable: Compressed air	○ suitable: MMS
			a_e 0,05 x DC												
			f_z mm												
1.14	140	1,0	0,041	0,045	0,063	0,095	0,126	0,158	0,180		●	●	○		
1.15	140	1,0	0,041	0,045	0,063	0,095	0,126	0,158	0,180		●	●	○		
1.16	140	1,0	0,041	0,045	0,063	0,095	0,126	0,158	0,180		●	●	○		
6.1	140	1,0	0,041	0,045	0,063	0,095	0,126	0,158	0,180		●	●	○		
6.2	119	1,0	0,041	0,045	0,063	0,095	0,126	0,158	0,180		●	●	○		
6.3	112	1,0	**0,032**	**0,036**	**0,050**	**0,076**	**0,101**	**0,126**	**0,144**		●	●	○		
6.4	105	1,0	**0,027**	**0,030**	**0,042**	**0,063**	**0,084**	**0,105**	**0,120**		●	●	○		
6.5	77	1,0	**0,022**	**0,024**	**0,034**	**0,050**	**0,067**	**0,084**	**0,096**		●	●	○		

T_x = 2,6–5 x DC

Z-layer milling / face milling

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice: Emulsion	● 1st choice: Compressed air	● 1st choice: MMS	○ suitable: Emulsion	○ suitable: Compressed air	○ suitable: MMS
			a_e 0,3 x DC												
			f_z mm												
1.14	84	0,07	0,020	0,023	0,032	0,047	0,063	0,079	0,090		●	●	○		
1.15	84	0,07	0,020	0,023	0,032	0,047	0,063	0,079	0,090		●	●	○		
1.16	84	0,07	0,020	0,023	0,032	0,047	0,063	0,079	0,090		●	●	○		
6.1	84	0,05	0,020	0,023	0,032	0,047	0,063	0,079	0,090		●	●	○		
6.2	77	0,05	0,020	0,023	0,032	0,047	0,063	0,079	0,090		●	●	○		
6.3	70	0,05	**0,016**	**0,018**	**0,025**	**0,038**	**0,050**	**0,063**	**0,072**		●	●	○		
6.4	56	0,03	**0,014**	**0,015**	**0,021**	**0,032**	**0,042**	**0,053**	**0,060**		●	●	○		
6.5	42	0,03	**0,011**	**0,012**	**0,017**	**0,025**	**0,034**	**0,042**	**0,048**		●	●	○		

T_x = 2,6–5 x DC

Full slot

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice: Emulsion	● 1st choice: Compressed air	● 1st choice: MMS	○ suitable: Emulsion	○ suitable: Compressed air	○ suitable: MMS
			a_e 1,0 x DC												
			f_z mm												
1.14	49	0,07	0,014	0,015	0,021	0,032	0,042	0,053	0,060		●	●	○		
1.15	49	0,07	0,014	0,015	0,021	0,032	0,042	0,053	0,060		●	●	○		
1.16	49	0,07	0,014	0,015	0,021	0,032	0,042	0,053	0,060		●	●	○		
6.1	46	0,05	0,014	0,015	0,021	0,032	0,042	0,053	0,060		●	●	○		
6.2	39	0,05	0,014	0,015	0,021	0,032	0,042	0,053	0,060		●	●	○		
6.3	32	0,05	**0,009**	**0,010**	**0,014**	**0,021**	**0,028**	**0,035**	**0,040**		●	●	○		

Cutting data standard values – MonsterMill – End mills – HCR, 53 603 ... and 53 604 ...

Peripheral milling

			T_x = 5,1–10 x DC									
			Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,05 x DC									
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	110	0,75	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
1.15	110	0,75	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
1.16	110	0,75	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
6.1	110	0,75	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
6.2	94	0,75	0,003	0,003	0,006	0,006	0,009	0,009	0,012	0,015	0,018	0,021
6.3	88	0,75	**0,002**	**0,002**	**0,005**	**0,005**	**0,007**	**0,007**	**0,010**	**0,012**	**0,014**	**0,017**
6.4	83	0,75	**0,002**	**0,002**	**0,004**	**0,004**	**0,006**	**0,006**	**0,008**	**0,010**	**0,012**	**0,014**
6.5	61	0,75	**0,002**	**0,002**	**0,003**	**0,003**	**0,005**	**0,005**	**0,006**	**0,008**	**0,010**	**0,011**

Z-layer milling / face milling

			T_x = 5,1–10 x DC									
			Ø DC = 0,2 mm	Ø DC = 0,3 mm	Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm
			a_e 0,3 x DC									
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	66	0,07	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
1.15	66	0,07	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
1.16	66	0,07	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
6.1	66	0,05	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
6.2	61	0,05	0,002	0,002	0,003	0,003	0,005	0,005	0,006	0,008	0,009	0,011
6.3	55	0,05	**0,001**	**0,001**	**0,002**	**0,002**	**0,004**	**0,004**	**0,005**	**0,006**	**0,007**	**0,008**
6.4	44	0,03	**0,001**	**0,001**	**0,002**	**0,002**	**0,003**	**0,003**	**0,004**	**0,005**	**0,006**	**0,007**
6.5	33	0,03	**0,001**	**0,001**	**0,002**	**0,002**	**0,002**	**0,002**	**0,003**	**0,004**	**0,005**	**0,006**

Peripheral milling

			T_x = 10,1–15 x DC									
			Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm	Ø DC = 2,5 mm	Ø DC = 3 mm
			a_e 0,05 x DC									
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	90	0,5	0,005	0,005	0,007	0,007	0,010	0,012	0,014	0,017	0,022	0,024
1.15	90	0,5	0,005	0,005	0,007	0,007	0,010	0,012	0,014	0,017	0,022	0,024
1.16	90	0,5	0,005	0,005	0,007	0,007	0,010	0,012	0,014	0,017	0,022	0,024
6.1	90	0,5	0,005	0,005	0,007	0,007	0,010	0,012	0,014	0,017	0,022	0,024
6.2	77	0,5	0,005	0,005	0,007	0,007	0,010	0,012	0,014	0,017	0,022	0,024
6.3	72	0,5	**0,004**	**0,004**	**0,006**	**0,006**	**0,008**	**0,010**	**0,012**	**0,013**	**0,017**	**0,019**
6.4	68	0,5	**0,003**	**0,003**	**0,005**	**0,005**	**0,006**	**0,008**	**0,010**	**0,011**	**0,014**	**0,016**
6.5	50	0,5	**0,003**	**0,003**	**0,004**	**0,004**	**0,005**	**0,006**	**0,008**	**0,009**	**0,012**	**0,013**

Z-layer milling / face milling

			T_x = 10,1–15 x DC									
			Ø DC = 0,4–0,5 mm	Ø DC = 0,6–0,7 mm	Ø DC = 0,8–0,9 mm	Ø DC = 1 mm	Ø DC = 1,2–1,4 mm	Ø DC = 1,5 mm	Ø DC = 1,6–1,8 mm	Ø DC = 2 mm	Ø DC = 2,5 mm	Ø DC = 3 mm
			a_e 0,3 x DC									
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	54	0,05	0,002	0,002	0,004	0,004	0,005	0,006	0,007	0,008	0,011	0,012
1.15	54	0,05	0,002	0,002	0,004	0,004	0,005	0,006	0,007	0,008	0,011	0,012
1.16	54	0,05	0,002	0,002	0,004	0,004	0,005	0,006	0,007	0,008	0,011	0,012
6.1	54	0,03	0,002	0,002	0,004	0,004	0,005	0,006	0,007	0,008	0,011	0,012
6.2	50	0,03	0,002	0,002	0,004	0,004	0,005	0,006	0,007	0,008	0,011	0,012
6.3	45	0,03	**0,002**	**0,002**	**0,003**	**0,003**	**0,004**	**0,005**	**0,006**	**0,007**	**0,009**	**0,010**
6.4	36	0,01	**0,002**	**0,002**	**0,002**	**0,002**	**0,003**	**0,004**	**0,005**	**0,006**	**0,007**	**0,008**
6.5	27	0,01	**0,001**	**0,001**	**0,002**	**0,002**	**0,003**	**0,003**	**0,004**	**0,004**	**0,006**	**0,006**

For improved surface quality, reduce f_z and allowance (a_e or a_p) by 30 %!

T_x = 5,1–10 x DC

Peripheral milling

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC							Emulsion	Compressed air	MMS
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.14	110	0,75	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
1.15	110	0,75	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
1.16	110	0,75	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.1	110	0,75	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.2	94	0,75	0,027	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.3	88	0,75	**0,022**	**0,024**	**0,034**	**0,050**	**0,067**	**0,084**	**0,096**	○	●	●
6.4	83	0,75	**0,018**	**0,020**	**0,028**	**0,042**	**0,056**	**0,070**	**0,080**	○	●	●
6.5	61	0,75	**0,014**	**0,016**	**0,022**	**0,034**	**0,045**	**0,056**	**0,064**	○	●	●

T_x = 5,1–10 x DC

Z-layer milling / face milling

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 2,5 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,3 x DC							Emulsion	Compressed air	MMS
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.14	66	0,07	**0,014**	**0,015**	**0,021**	**0,032**	**0,042**	**0,053**	**0,060**	○	●	●
1.15	66	0,07	**0,014**	**0,015**	**0,021**	**0,032**	**0,042**	**0,053**	**0,060**	○	●	●
1.16	66	0,07	**0,014**	**0,015**	**0,021**	**0,032**	**0,042**	**0,053**	**0,060**	○	●	●
6.1	66	0,05	**0,014**	**0,015**	**0,021**	**0,032**	**0,042**	**0,053**	**0,060**	○	●	●
6.2	61	0,05	**0,014**	**0,015**	**0,021**	**0,032**	**0,042**	**0,053**	**0,060**	○	●	●
6.3	55	0,05	**0,011**	**0,012**	**0,017**	**0,025**	**0,034**	**0,042**	**0,048**	○	●	●
6.4	44	0,03	**0,009**	**0,010**	**0,014**	**0,021**	**0,028**	**0,035**	**0,040**	○	●	●
6.5	33	0,03	**0,007**	**0,008**	**0,011**	**0,017**	**0,022**	**0,028**	**0,032**	○	●	●

T_x = 10,1–15 x DC

Peripheral milling

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 4mm	● 1st choice		○ suitable
			a_e 0,05 x DC	Emulsion	Compressed air	MMS
			f_z mm			
1.14	90	0,5	0,034	○	●	●
1.15	90	0,5	0,034	○	●	●
1.16	90	0,5	0,034	○	●	●
6.1	90	0,5	0,034	○	●	●
6.2	77	0,5	0,034	○	●	●
6.3	72	0,5	**0,027**	○	●	●
6.4	68	0,5	**0,022**	○	●	●
6.5	50	0,5	**0,018**	○	●	●

T_x = 10,1–15 x DC

Z-layer milling / face milling

Index	v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 4 mm	● 1st choice		○ suitable
			a_e 0,3 x DC	Emulsion	Compressed air	MMS
			f_z mm			
1.14	54	0,05	0,017	○	●	●
1.15	54	0,05	0,017	○	●	●
1.16	54	0,05	0,017	○	●	●
6.1	54	0,03	0,017	○	●	●
6.2	50	0,03	0,017	○	●	●
6.3	45	0,03	**0,013**	○	●	●
6.4	36	0,01	**0,011**	○	●	●
6.5	27	0,01	**0,009**	○	●	●

Cutting data standard values – MonsterMill – End mills – HCR, 53 605 ...

Peripheral milling

			$T_x \leq 2 \times DC$										
			Ø DC = 1 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC										
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.14	200	2,0	0,018	0,027	0,038	0,051	0,075	0,093	0,120	0,135	○	●	●
1.15	200	2,0	0,018	0,027	0,038	0,051	0,075	0,093	0,120	0,135	○	●	●
1.16	200	2,0	0,018	0,027	0,038	0,051	0,075	0,093	0,120	0,135	○	●	●
6.1	190	2,0	0,018	0,027	0,038	0,051	0,075	0,093	0,120	0,135	○	●	●
6.2	160	2,0	0,018	0,027	0,038	0,051	0,075	0,093	0,120	0,135	○	●	●
6.3	130	2,0	**0,014**	**0,022**	**0,030**	**0,041**	**0,060**	**0,074**	**0,096**	**0,108**	○	●	●
6.4	120	2,0	**0,012**	**0,018**	**0,025**	**0,034**	**0,050**	**0,062**	**0,080**	**0,090**	○	●	●
6.5	110	2,0	**0,010**	**0,014**	**0,020**	**0,027**	**0,040**	**0,050**	**0,064**	**0,072**	○	●	●

Face milling

			$T_x \leq 2 \times DC$										
			Ø DC = 1 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC										
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.14	120	0,07	0,015	0,021	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
1.15	120	0,07	0,015	0,021	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
1.16	120	0,07	0,015	0,021	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.1	120	0,05	0,015	0,021	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.2	110	0,05	0,015	0,021	0,030	0,042	0,063	0,084	0,105	0,120	○	●	●
6.3	90	0,05	**0,012**	**0,017**	**0,024**	**0,034**	**0,050**	**0,067**	**0,084**	**0,096**	○	●	●
6.4	75	0,03	**0,010**	**0,014**	**0,020**	**0,028**	**0,042**	**0,056**	**0,070**	**0,080**	○	●	●
6.5	60	0,03	**0,008**	**0,011**	**0,016**	**0,022**	**0,034**	**0,045**	**0,056**	**0,064**	○	●	●

Cutting data standard values – MonsterMill – End mills – HCR, 53 606 ...

Peripheral milling

			$T_x \leq 3 \times DC$										
			Ø DC = 1 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC		a_e 0,04 x DC								
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.14	140	2,0	0,014	0,024	0,033	0,045	0,066	0,083	0,105	0,120	○	●	●
1.15	140	2,0	0,014	0,024	0,033	0,045	0,066	0,083	0,105	0,120	○	●	●
1.16	140	2,0	0,014	0,024	0,033	0,045	0,066	0,083	0,105	0,120	○	●	●
6.1	140	2,0	0,014	0,024	0,033	0,045	0,066	0,083	0,105	0,120	○	●	●
6.2	119	2,0	0,014	0,024	0,033	0,045	0,066	0,083	0,105	0,120	○	●	●
6.3	112	2,0	**0,011**	**0,019**	**0,026**	**0,036**	**0,053**	**0,066**	**0,084**	**0,096**	○	●	●
6.4	105	2,0	**0,009**	**0,016**	**0,022**	**0,030**	**0,044**	**0,055**	**0,070**	**0,080**	○	●	●
6.5	77	2,0	**0,007**	**0,013**	**0,018**	**0,024**	**0,035**	**0,044**	**0,056**	**0,064**	○	●	●

Face milling

			$T_x \leq 3 \times DC$										
			Ø DC = 1 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC		a_e 0,04 x DC								
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.14	105	0,07	0,009	0,014	0,023	0,036	0,054	0,072	0,090	0,105	○	●	●
1.15	105	0,07	0,009	0,014	0,023	0,036	0,054	0,072	0,090	0,105	○	●	●
1.16	105	0,07	0,009	0,014	0,023	0,036	0,054	0,072	0,090	0,105	○	●	●
6.1	91	0,05	0,009	0,014	0,023	0,036	0,054	0,072	0,090	0,105	○	●	●
6.2	84	0,05	0,009	0,014	0,023	0,036	0,054	0,072	0,090	0,105	○	●	●
6.3	77	0,05	**0,007**	**0,011**	**0,018**	**0,029**	**0,043**	**0,058**	**0,072**	**0,084**	○	●	●
6.4	63	0,03	**0,006**	**0,009**	**0,015**	**0,024**	**0,036**	**0,048**	**0,060**	**0,070**	○	●	●
6.5	42	0,03	**0,005**	**0,007**	**0,012**	**0,019**	**0,029**	**0,038**	**0,048**	**0,056**	○	●	●

For improved surface quality, reduce f_z and allowance (a_e or a_p) by 30 %!

Cutting data standard values – MonsterMill – Ball-nosed end mills – HCR, 53 602 ...

			$T_x \leq 2,5$ x DC								
			Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC						Emulsion	Compressed air	MMS
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.14	200	0,07	0,038	0,050	0,076	0,101	0,126	0,151	○	●	●
1.15	200	0,07	0,038	0,050	0,076	0,101	0,126	0,151	○	●	●
1.16	200	0,07	0,038	0,050	0,076	0,101	0,126	0,151	○	●	●
6.1	200	0,05	0,038	0,050	0,076	0,101	0,126	0,151	○	●	●
6.2	180	0,05	0,038	0,050	0,076	0,101	0,126	0,151	○	●	●
6.3	160	0,05	**0,030**	**0,040**	**0,060**	**0,081**	**0,101**	**0,121**	○	●	●
6.4	150	0,03	**0,025**	**0,034**	**0,050**	**0,067**	**0,084**	**0,101**	○	●	●
6.5	130	0,03	**0,020**	**0,027**	**0,040**	**0,054**	**0,067**	**0,081**	○	●	●

			$T_x = 2,6–5$ x DC								
			Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,05 x DC						Emulsion	Compressed air	MMS
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.14	120	0,07	0,030	0,040	0,053	0,073	0,093	0,113	○	●	●
1.15	120	0,07	0,030	0,040	0,053	0,073	0,093	0,113	○	●	●
1.16	120	0,07	0,030	0,040	0,053	0,073	0,093	0,113	○	●	●
6.1	120	0,05	0,030	0,040	0,053	0,073	0,093	0,113	○	●	●
6.2	108	0,05	0,030	0,040	0,053	0,073	0,093	0,113	○	●	●
6.3	96	0,05	**0,024**	**0,032**	**0,042**	**0,058**	**0,075**	**0,091**	○	●	●
6.4	90	0,03	**0,020**	**0,027**	**0,035**	**0,049**	**0,062**	**0,076**	○	●	●
6.5	78	0,03	**0,016**	**0,022**	**0,028**	**0,039**	**0,050**	**0,060**	○	●	●

			$T_x = 5,1–10$ x DC								
			Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	● 1st choice		○ suitable
			a_e 0,04 x DC						Emulsion	Compressed air	MMS
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.14	90	0,06	0,023	0,030	0,030	0,045	0,060	0,076	○	●	●
1.15	90	0,06	0,023	0,030	0,030	0,045	0,060	0,076	○	●	●
1.16	90	0,06	0,023	0,030	0,030	0,045	0,060	0,076	○	●	●
6.1	90	0,04	0,023	0,030	0,030	0,045	0,060	0,076	○	●	●
6.2	81	0,04	0,023	0,030	0,030	0,045	0,060	0,076	○	●	●
6.3	72	0,04	**0,018**	**0,024**	**0,024**	**0,036**	**0,048**	**0,060**	○	●	●
6.4	68	0,02	**0,015**	**0,020**	**0,020**	**0,030**	**0,040**	**0,050**	○	●	●
6.5	59	0,02	**0,012**	**0,016**	**0,016**	**0,024**	**0,032**	**0,040**	○	●	●

For improved surface quality, reduce f_z and allowance (a_e or a_p) by 30 %!

Cutting data standard values– MonsterMill – End mills – PCR-UNI

	Type short / long / extra long		Ø DC = 5,7–6,0 mm			Ø DC = 6,7–7,0 mm			Ø DC = 7,7–8,0 mm			Ø DC = 8,7–9,0 mm			Ø DC = 9,7–10,0 mm			Ø DC = 11,7–12,0 mm		
			a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	**220**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
1.2	**220**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
1.3	**220**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
1.4	**200**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
1.5	**220**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
1.6	**180**	1,0	0,069	0,054	0,038	0,080	0,062	0,044	0,089	0,069	0,049	0,100	0,078	0,055	0,110	0,085	0,060	0,128	0,099	0,070
1.7	**200**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
1.8	**140**	1,0	0,062	0,048	0,034	0,071	0,055	0,039	0,080	0,062	0,044	0,089	0,069	0,049	0,097	0,075	0,053	0,113	0,088	0,062
1.9	**135**	1,0	0,060	0,047	0,033	0,069	0,054	0,038	0,079	0,061	0,043	0,088	0,068	0,048	0,095	0,074	0,052	0,111	0,086	0,061
1.10	**200**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
1.11	**140**	1,0	0,062	0,048	0,034	0,071	0,055	0,039	0,080	0,062	0,044	0,089	0,069	0,049	0,097	0,075	0,053	0,113	0,088	0,062
1.12	**130**	1,0	0,071	0,055	0,039	0,082	0,064	0,045	0,091	0,071	0,050	0,102	0,079	0,056	0,111	0,086	0,061	0,130	0,100	0,071
1.13	**110**	1,0	0,066	0,051	0,036	0,075	0,058	0,041	0,084	0,065	0,046	0,093	0,072	0,051	0,102	0,079	0,056	0,119	0,092	0,065
1.14	**110**	1,0	0,066	0,051	0,036	0,075	0,058	0,041	0,084	0,065	0,046	0,093	0,072	0,051	0,102	0,079	0,056	0,119	0,092	0,065
1.15	**110**	1,0	0,066	0,051	0,036	0,075	0,058	0,041	0,084	0,065	0,046	0,093	0,072	0,051	0,102	0,079	0,056	0,119	0,092	0,065
1.16	**130**	1,0	0,071	0,055	0,039	0,082	0,064	0,045	0,093	0,072	0,051	0,104	0,081	0,057	0,113	0,088	0,062	0,131	0,102	0,072
2.1	60	1,0	0,044	0,034	0,024	0,049	0,038	0,027	0,057	0,044	0,031	0,062	0,048	0,034	0,068	0,052	0,037	0,080	0,062	0,044
2.2	65	1,0	0,047	0,037	0,026	0,055	0,042	0,030	0,060	0,047	0,033	0,068	0,052	0,037	0,075	0,058	0,041	0,086	0,066	0,047
2.3	65	1,0	0,047	0,037	0,026	0,055	0,042	0,030	0,060	0,047	0,033	0,068	0,052	0,037	0,075	0,058	0,041	0,086	0,066	0,047
2.4	65	1,0	0,047	0,037	0,026	0,055	0,042	0,030	0,060	0,047	0,033	0,068	0,052	0,037	0,075	0,058	0,041	0,086	0,066	0,047
2.5	55	1,0	0,037	0,028	0,020	0,042	0,033	0,023	0,047	0,037	0,026	0,051	0,040	0,028	0,057	0,044	0,031	0,066	0,051	0,036
2.6	60	1,0	0,044	0,034	0,024	0,049	0,038	0,027	0,057	0,044	0,031	0,062	0,048	0,034	0,068	0,052	0,037	0,080	0,062	0,044
2.7	60	1,0	0,038	0,030	0,021	0,042	0,033	0,023	0,047	0,037	0,026	0,053	0,041	0,029	0,058	0,045	0,032	0,068	0,052	0,037
3.1	**240**	1,0	0,124	0,096	0,068	0,142	0,110	0,078	0,161	0,124	0,088	0,177	0,137	0,097	0,195	0,151	0,107	0,226	0,175	0,124
3.2	**180**	1,0	0,088	0,068	0,048	0,100	0,078	0,055	0,113	0,088	0,062	0,124	0,096	0,068	0,137	0,106	0,075	0,159	0,123	0,087
3.3	**220**	1,0	0,106	0,082	0,058	0,122	0,095	0,067	0,137	0,106	0,075	0,152	0,117	0,083	0,166	0,129	0,091	0,194	0,150	0,106
3.4	**180**	1,0	0,088	0,068	0,048	0,100	0,078	0,055	0,113	0,088	0,062	0,124	0,096	0,068	0,137	0,106	0,075	0,159	0,123	0,087
3.5	**160**	1,0	0,088	0,068	0,048	0,100	0,078	0,055	0,113	0,088	0,062	0,124	0,096	0,068	0,137	0,106	0,075	0,159	0,123	0,087
3.6	**150**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
3.7	**160**	1,0	0,088	0,068	0,048	0,100	0,078	0,055	0,113	0,088	0,062	0,124	0,096	0,068	0,137	0,106	0,075	0,159	0,123	0,087
3.8	**150**	1,0	0,075	0,058	0,041	0,086	0,066	0,047	0,097	0,075	0,053	0,106	0,082	0,058	0,117	0,091	0,064	0,137	0,106	0,075
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With an a_p of 1.5 x DC the f_z should be multiplied by 0.75.

Index	Ø DC = 13,7–14,0 mm			Ø DC = 15,5–16,0 mm			Ø DC = 17,5–20,0 mm			Ramping	Helical milling			Drilling	● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	1,0 x DC		Hole diameter		1,0 x DC			
	f_z mm			f_z mm			f_z mm			Max. plunging angle	$\alpha_{R\,max.}$*	$D_{min.}$ DC x 1,5	$D_{max.}$ DC x 1,8	f_z Factor	Emulsion	Compressed air	MMS
1.1	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	16°	0,9	○	●	○
1.2	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	16°	0,9	○	●	○
1.3	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	16°	0,9	○	●	○
1.4	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	16°	0,9	○	●	○
1.5	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	16°	0,9	○	●	○
1.6	0,142	0,110	0,078	0,159	0,123	0,087	0,173	0,134	0,095	45°	0,75xD	25°	16°	0,8	○	●	○
1.7	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	16°	0,9	○	●	○
1.8	0,128	0,099	0,070	0,142	0,110	0,078	0,155	0,120	0,085	45°	0,75xD	25°	16°	0,7	●		○
1.9	0,126	0,098	0,069	0,141	0,109	0,077	0,153	0,119	0,084	45°	0,75xD	25°	16°	0,7	●		○
1.10	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	16°	0,9	○	●	○
1.11	0,128	0,099	0,070	0,142	0,110	0,078	0,155	0,120	0,085	45°	0,75xD	25°	16°	0,8	●		○
1.12	0,146	0,113	0,080	0,162	0,126	0,089	0,177	0,137	0,097	30°	0,5xD	18°	11°	0,8	○	●	○
1.13	0,133	0,103	0,073	0,148	0,115	0,081	0,161	0,124	0,088	30°	0,5xD	18°	11°	0,7	●		○
1.14	0,133	0,103	0,073	0,148	0,115	0,081	0,161	0,124	0,088	30°	0,5xD	18°	11°	0,7	●		○
1.15	0,133	0,103	0,073	0,148	0,115	0,081	0,161	0,124	0,088	30°	0,5xD	18°	11°	0,7	●		○
1.16	0,148	0,115	0,081	0,164	0,127	0,090	0,179	0,139	0,098	30°	0,5xD	18°	11°	0,7	○	●	○
2.1	0,089	0,069	0,049	0,099	0,076	0,054	0,108	0,083	0,059	15°	0,5xD	18°	11°		●		○
2.2	0,097	0,075	0,053	0,108	0,083	0,059	0,117	0,091	0,064	15°	0,5xD	18°	11°		●		○
2.3	0,097	0,075	0,053	0,108	0,083	0,059	0,117	0,091	0,064	15°	0,5xD	18°	11°		●		○
2.4	0,097	0,075	0,053	0,108	0,083	0,059	0,117	0,091	0,064	15°	0,5xD	18°	11°		●		○
2.5	0,075	0,058	0,041	0,082	0,064	0,045	0,089	0,069	0,049	15°	0,5xD	18°	11°		●		
2.6	0,089	0,069	0,049	0,099	0,076	0,054	0,108	0,083	0,059	15°	0,5xD	18°	11°		●		○
2.7	0,077	0,059	0,042	0,086	0,066	0,047	0,093	0,072	0,051	15°	0,5xD	18°	11°		●		
3.1	0,256	0,198	0,140	0,285	0,221	0,156	0,310	0,240	0,170	45°	0,75xD	25°	25°	0,8	○	●	○
3.2	0,179	0,139	0,098	0,199	0,154	0,109	0,217	0,168	0,119	45°	0,75xD	25°	25°	0,8	○	●	○
3.3	0,217	0,168	0,119	0,241	0,187	0,132	0,263	0,204	0,144	45°	0,75xD	25°	25°	0,8	○	●	○
3.4	0,179	0,139	0,098	0,199	0,154	0,109	0,217	0,168	0,119	45°	0,75xD	25°	25°	0,8	○	●	○
3.5	0,179	0,139	0,098	0,199	0,154	0,109	0,217	0,168	0,119	45°	0,75xD	25°	25°	0,8	○	●	○
3.6	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	25°	0,8	○	●	○
3.7	0,179	0,139	0,098	0,199	0,154	0,109	0,217	0,168	0,119	45°	0,75xD	25°	25°	0,8	○	●	○
3.8	0,153	0,119	0,084	0,170	0,132	0,093	0,186	0,144	0,102	45°	0,75xD	25°	25°	0,8	○	●	○
4.1																	
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14

* Width of cut per helical revolution

Cutting data for ramping and helical milling = 100 %
Multiply cutting data for drilling by the factor from the table

Cutting data standard values – MonsterMill – End mills – PCR-ALU

	long	extra long		Ø DC = 5,0 mm			Ø DC = 5,7–7,0 mm			Ø DC = 7,7–8,0 mm			Ø DC = 8,7–10,0 mm			Ø DC =11,7–12,0 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1																		
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3.8																		
4.1	700	300	1	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,130	0,097	0,065	0,140	0,104	0,070
4.2	700	300	1	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,130	0,097	0,065	0,140	0,104	0,070
4.3	420	200	1	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070
4.4	420	180	1	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070
4.5	280	140	1	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070
4.6	200	110	1	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.7	180	100	1	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.8	175	75	1	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.9	175	75	1	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.10	175	75	1	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.11	280	125	1	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.12	210	100	1	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.13																		
4.14																		
4.15																		
4.16	220	130	1	0,07	0,052	0,035	0,08	0,06	0,04	0,1	0,075	0,05	0,12	0,089	0,06	0,14	0,104	0,07
4.17																		
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With an a_p of 1.5 x DC the f_z should be multiplied by 0.75.

Index	Ø DC = 13,7–14,0 mm			Ø DC = 15,5–16,0 mm			Ø DC = 17,5–18,0 mm			Ø DC = 19,5–20,0 mm			Ramping	Helical milling			Drilling	● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	1,0 x DC		Hole diameter		1,0 x DC			
	f_z mm			f_z mm			f_z mm			f_z mm			Max. plunging angle	$\alpha_{R\,max.}$*	$D_{min.}$ DC x 1,5	$D_{max.}$ DC x 1,8	v_c Factor	Emulsion	Compressed air	MMS
1.1																				
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4.1	0,146	0,113	0,080	0,152	0,116	0,090	0,166	0,136	0,105	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,75	●		○
4.2	0,146	0,113	0,080	0,152	0,116	0,090	0,166	0,136	0,105	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,75	●		○
4.3	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	45°	0,75xD	25°	16°	0,75	●		○
4.4	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	45°	0,75xD	25°	16°	0,75	●		○
4.5	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	45°	0,75xD	25°	16°	0,7	●		○
4.6	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,7	●		○
4.7	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,7	●		○
4.8	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,7	●		○
4.9	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,7	●		○
4.10	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,7	●		○
4.11	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,7	●		○
4.12	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	45°	0,75xD	25°	16°	0,7	●		○
4.13																				
4.14																				
4.15																				
4.16	0,164	0,127	0,09	0,203	0,155	0,12	0,221	0,181	0,14	0,269	0,219	0,17	45°	0,75xD	25°	16°	0,7	●		○
4.17																				
4.18																				
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* Width of cut per helical revolution

Cutting data for ramping and helical milling = 100 %
Multiply cutting data for drilling by the factor from the table

Cutting data standard values – MonsterMill – End Mills – MCR, short – long

			Ø DC = 1 mm			Ø DC = 2 mm					Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm		
		short	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	short	long	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm			f_z mm			$a_{p\,max.}$ x DC		f_z mm			f_z mm			f_z mm		
1.1	120–140	0,5	0,010	0,008	0,005	0,019	0,016	0,010	1,0	1,0*	0,038	0,028	0,018	0,051	0,038	0,024	0,064	0,047	0,030
1.2	120–140	0,5	0,010	0,008	0,005	0,019	0,016	0,010	1,0	1,0*	0,038	0,028	0,018	0,051	0,038	0,024	0,064	0,047	0,030
1.3	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.4	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.5	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.6	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.7	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.8	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.9	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.10	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.11	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.12	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.13	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.14	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.15	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
1.16	100–120	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
2.1	60–80	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,030	0,022	0,014	0,038	0,028	0,018	0,049	0,036	0,023
2.2	60–80	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,030	0,022	0,014	0,038	0,028	0,018	0,049	0,036	0,023
2.3	60–80	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,030	0,022	0,014	0,038	0,028	0,018	0,049	0,036	0,023
2.4																			
2.5	60–80	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,030	0,022	0,014	0,038	0,028	0,018	0,049	0,036	0,023
2.6	60–80	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,030	0,022	0,014	0,038	0,028	0,018	0,049	0,036	0,023
2.7																			
3.1	120–140	0,5	0,012	0,010	0,006	0,023	0,019	0,012	1,0	1,0*	0,045	0,033	0,021	0,060	0,044	0,028	0,075	0,055	0,035
3.2	120–140	0,5	0,012	0,010	0,006	0,023	0,019	0,012	1,0	1,0*	0,045	0,033	0,021	0,060	0,044	0,028	0,075	0,055	0,035
3.3	120–140	0,5	0,012	0,010	0,006	0,023	0,019	0,012	1,0	1,0*	0,045	0,033	0,021	0,060	0,044	0,028	0,075	0,055	0,035
3.4	120–140	0,5	0,012	0,010	0,006	0,023	0,019	0,012	1,0	1,0*	0,045	0,033	0,021	0,060	0,044	0,028	0,075	0,055	0,035
3.5	100–120	0,5	0,010	0,008	0,005	0,019	0,016	0,010	1,0	1,0*	0,038	0,028	0,018	0,051	0,038	0,024	0,064	0,047	0,030
3.6	100–120	0,5	0,010	0,008	0,005	0,019	0,016	0,010	1,0	1,0*	0,038	0,028	0,018	0,051	0,038	0,024	0,064	0,047	0,030
3.7	100–120	0,5	0,010	0,008	0,005	0,019	0,016	0,010	1,0	1,0*	0,038	0,028	0,018	0,051	0,038	0,024	0,064	0,047	0,030
3.8	100–120	0,5	0,010	0,008	0,005	0,019	0,016	0,010	1,0	1,0*	0,038	0,028	0,018	0,051	0,038	0,024	0,064	0,047	0,030
4.1																			
4.2																			
4.3																			
4.4																			
4.5																			
4.6	120–140	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
4.7	120–140	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
4.8																			
4.9																			
4.10																			
4.11	120–140	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
4.12	120–140	0,5	0,008	0,007	0,004	0,015	0,013	0,008	1,0	1,0*	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
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5.8																			
5.9	60–80	0,25	0,008	0,007	0,004	0,015	0,013	0,008	0,5	0,5	0,026	0,019	0,012	0,034	0,025	0,016	0,043	0,032	0,020
5.10	60–80	0,25	0,008	0,007	0,004	0,015	0,013	0,008	0,5	0,5	0,026	0,019	0,012	0,034	0,025	0,016	0,043	0,032	0,020
5.11	60–80	0,25	0,008	0,007	0,004	0,015	0,013	0,008	0,5	0,5	0,026	0,019	0,012	0,034	0,025	0,016	0,043	0,032	0,020
6.1	80–100	0,25	0,008	0,007	0,004	0,015	0,013	0,008	0,5	0,5	0,032	0,024	0,015	0,043	0,032	0,020	0,053	0,040	0,025
6.2																			
6.3																			
6.4																			
6.5																			

* = with an a_p of 1.5 x DC the f_z should be multiplied by 0.8

Plunging angle for ramping and helical milling: Diameter 3–5 = 3° / Diameter 6–9 = 5° / Diameter 10–20 = 8°

Ø DC = 6 mm			Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 20 mm			● 1st choice		○ suitable
a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
0,077	0,057	0,036	0,10	0,08	0,05	0,13	0,10	0,06	0,14	0,11	0,07	0,15	0,12	0,08	0,16	0,14	0,10	0,19	0,16	0,12		●	
0,077	0,057	0,036	0,10	0,08	0,05	0,13	0,10	0,06	0,14	0,11	0,07	0,15	0,12	0,08	0,16	0,14	0,10	0,19	0,16	0,12		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	
0,058	0,043	0,027	0,08	0,06	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,11	0,09	0,06	0,12	0,10	0,07	0,14	0,12	0,09	●		
0,058	0,043	0,027	0,08	0,06	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,11	0,09	0,06	0,12	0,10	0,07	0,14	0,12	0,09	●		
0,058	0,043	0,027	0,08	0,06	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,11	0,09	0,06	0,12	0,10	0,07	0,14	0,12	0,09	●		
0,058	0,043	0,027	0,08	0,06	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,11	0,09	0,06	0,12	0,10	0,07	0,14	0,12	0,09	●		
0,058	0,043	0,027	0,08	0,06	0,04	0,10	0,07	0,05	0,10	0,08	0,05	0,11	0,09	0,06	0,12	0,10	0,07	0,14	0,12	0,09	●		
0,090	0,066	0,042	0,12	0,09	0,06	0,15	0,11	0,07	0,16	0,13	0,08	0,18	0,14	0,10	0,19	0,16	0,11	0,22	0,18	0,14		●	
0,090	0,066	0,042	0,12	0,09	0,06	0,15	0,11	0,07	0,16	0,13	0,08	0,18	0,14	0,10	0,19	0,16	0,11	0,22	0,18	0,14		●	
0,090	0,066	0,042	0,12	0,09	0,06	0,15	0,11	0,07	0,16	0,13	0,08	0,18	0,14	0,10	0,19	0,16	0,11	0,22	0,18	0,14		●	
0,090	0,066	0,042	0,12	0,09	0,06	0,15	0,11	0,07	0,16	0,13	0,08	0,18	0,14	0,10	0,19	0,16	0,11	0,22	0,18	0,14		●	
0,077	0,057	0,036	0,10	0,08	0,05	0,13	0,10	0,06	0,14	0,11	0,07	0,15	0,12	0,08	0,16	0,14	0,10	0,19	0,16	0,12		●	
0,077	0,057	0,036	0,10	0,08	0,05	0,13	0,10	0,06	0,14	0,11	0,07	0,15	0,12	0,08	0,16	0,14	0,10	0,19	0,16	0,12		●	
0,077	0,057	0,036	0,10	0,08	0,05	0,13	0,10	0,06	0,14	0,11	0,07	0,15	0,12	0,08	0,16	0,14	0,10	0,19	0,16	0,12		●	
0,077	0,057	0,036	0,10	0,08	0,05	0,13	0,10	0,06	0,14	0,11	0,07	0,15	0,12	0,08	0,16	0,14	0,10	0,19	0,16	0,12		●	
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10	●		
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10	●		
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10	●		
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10	●		
0,051	0,038	0,024	0,07	0,05	0,03	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,13	0,10	0,08	●		
0,051	0,038	0,024	0,07	0,05	0,03	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,13	0,10	0,08	●		
0,051	0,038	0,024	0,07	0,05	0,03	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,13	0,10	0,08	●		
0,064	0,047	0,030	0,09	0,06	0,04	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,16	0,13	0,10		●	

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Cutting data standard values – MonsterMill – End Mills – MCR, extra long

		extra long		Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max}$ x DC		f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	120–140	1,0*	0,5	0,027	0,019	0,012	0,036	0,025	0,016	0,045	0,032	0,020	0,054	0,038	0,024	0,07	0,05	0,03
1.2	120–140	1,0*	0,5	0,027	0,019	0,012	0,036	0,025	0,016	0,045	0,032	0,020	0,054	0,038	0,024	0,07	0,05	0,03
1.3	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.4	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.5	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.6	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.7	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.8	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.9	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.10	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.11	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.12	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.13	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.14	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.15	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
1.16	100–120	1,0*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
2.1	50–70	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
2.2	50–70	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
2.3	50–70	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
2.4																		
2.5	50–70	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
2.6	50–70	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
2.7																		
3.1	120–140	1,0*	0,5	0,034	0,024	0,015	0,045	0,032	0,020	0,056	0,040	0,025	0,067	0,047	0,030	0,09	0,06	0,04
3.2	120–140	1,0*	0,5	0,034	0,024	0,015	0,045	0,032	0,020	0,056	0,040	0,025	0,067	0,047	0,030	0,09	0,06	0,04
3.3	120–140	1,0*	0,5	0,034	0,024	0,015	0,045	0,032	0,020	0,056	0,040	0,025	0,067	0,047	0,030	0,09	0,06	0,04
3.4	120–140	1,0*	0,5	0,034	0,024	0,015	0,045	0,032	0,020	0,056	0,040	0,025	0,067	0,047	0,030	0,09	0,06	0,04
3.5	100–120	1,0*	0,5	0,027	0,019	0,012	0,036	0,025	0,016	0,045	0,032	0,020	0,054	0,038	0,024	0,07	0,05	0,03
3.6	100–120	1,0*	0,5	0,027	0,019	0,012	0,036	0,025	0,016	0,045	0,032	0,020	0,054	0,038	0,024	0,07	0,05	0,03
3.7	100–120	1,0*	0,5	0,027	0,019	0,012	0,036	0,025	0,016	0,045	0,032	0,020	0,054	0,038	0,024	0,07	0,05	0,03
3.8	100–120	1,0*	0,5	0,027	0,019	0,012	0,036	0,025	0,016	0,045	0,032	0,020	0,054	0,038	0,024	0,07	0,05	0,03
4.1																		
4.2																		
4.3																		
4.4																		
4.5																		
4.6	120–140	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
4.7	120–140	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
4.8																		
4.9																		
4.10																		
4.11	120–140	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
4.12	120–140	1,0*	0,5	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
4.13																		
4.14																		
4.15																		
4.16																		
4.17																		
4.18																		
4.19																		
5.1																		
5.2																		
5.3																		
5.4																		
5.5																		
5.6																		
5.7																		
5.8																		
5.9	60–80	0,5*	0,25	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
5.10	60–80	0,5*	0,25	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
5.11	60–80	0,5*	0,25	0,020	0,014	0,009	0,027	0,019	0,012	0,034	0,024	0,015	0,040	0,028	0,018	0,05	0,04	0,02
6.1	80–100	0,5*	0,5	0,025	0,017	0,011	0,031	0,022	0,014	0,040	0,028	0,018	0,047	0,033	0,021	0,06	0,04	0,03
6.2																		
6.3																		
6.4																		
6.5																		

* = Trimming and trochoidal slot milling

Plunging angle for ramping and helical milling: Diameter 3–5 = 3° / Diameter 6–9 = 5° / Diameter 10–20 = 8°

		Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 20 mm			● 1st choice	○ suitable	
		a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	Index	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
	1.1	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,14	0,11	0,08		●	
	1.2	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,14	0,11	0,08		●	
	1.3	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
	1.4	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
	1.5	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
	1.6	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
	1.7	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
	1.8	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
	1.9	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
	1.10	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
	1.11	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
	1.12	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
	1.13	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
	1.14	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
	1.15	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
	1.16	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
	2.1	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
	2.2	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
	2.3	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
	2.4																		
	2.5	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
	2.6	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
	2.7																		
	3.1	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,17	0,14	0,10		●	
	3.2	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,17	0,14	0,10		●	
	3.3	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,17	0,14	0,10		●	
	3.4	0,11	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,11	0,08	0,17	0,14	0,10		●	
	3.5	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,14	0,11	0,08		●	
	3.6	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,14	0,11	0,08		●	
	3.7	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,14	0,11	0,08		●	
	3.8	0,09	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,06	0,14	0,11	0,08		●	
	4.1																		
	4.2																		
	4.3																		
	4.4																		
	4.5																		
	4.6	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
	4.7	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
	4.8																		
	4.9																		
	4.10																		
	4.11	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
	4.12	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
	4.13																		
	4.14																		
	4.15																		
	4.16																		
	4.17																		
	4.18																		
	4.19																		
	5.1																		
	5.2																		
	5.3																		
	5.4																		
	5.5																		
	5.6																		
	5.7																		
	5.8																		
	5.9	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
	5.10	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
	5.11	0,07	0,05	0,03	0,07	0,06	0,04	0,08	0,06	0,04	0,08	0,07	0,05	0,10	0,08	0,06	●		
	6.1	0,08	0,06	0,04	0,08	0,07	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,12	0,09	0,07		●	
	6.2																		
	6.3																		
	6.4																		
	6.5																		

14

Cutting data – CircularLine – End Mills – CCR-UNI, short – long

Index	short, long	max. angle of engagement	Ø DC = 6 mm				Ø DC = 8 mm				Ø DC = 10 mm			
			a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC		a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC		a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC	
	v_c m/min		f_z mm			h_m	f_z mm			h_m	f_z mm			h_m
1.1	**300**	50°	0,13	0,09	0,08	0,03	0,16	0,11	0,09	0,035	0,20	0,14	0,12	0,045
1.2	**300**	50°	0,13	0,09	0,08	0,03	0,16	0,11	0,09	0,035	0,20	0,14	0,12	0,045
1.3	**280**	50°	0,13	0,09	0,08	0,03	0,16	0,11	0,09	0,035	0,20	0,14	0,12	0,045
1.4	**280**	50°	0,13	0,09	0,08	0,03	0,16	0,11	0,09	0,035	0,20	0,14	0,12	0,045
1.5	**280**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.6	**260**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.7	**280**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.8	**260**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.9	**260**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.10	**240**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.11	**240**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.12	**240**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.13	**240**	50°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.14														
1.15	**220**	45°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
1.16	**220**	45°	0,11	0,08	0,06	0,025	0,14	0,10	0,08	0,032	0,18	0,13	0,10	0,040
2.1	200	45°	0,08	0,06	0,05	0,018	0,10	0,07	0,06	0,022	0,13	0,09	0,07	0,028
2.2	180	45°	0,08	0,06	0,05	0,018	0,10	0,07	0,06	0,022	0,13	0,09	0,07	0,028
2.3	160	45°	0,08	0,06	0,05	0,018	0,10	0,07	0,06	0,022	0,13	0,09	0,07	0,028
2.4	160	45°	0,08	0,06	0,05	0,018	0,10	0,07	0,06	0,022	0,13	0,09	0,07	0,028
2.5	140	45°	0,08	0,06	0,05	0,018	0,10	0,07	0,06	0,022	0,13	0,09	0,07	0,028
2.6	140	45°	0,08	0,06	0,05	0,018	0,10	0,07	0,06	0,022	0,13	0,09	0,07	0,028
2.7														
3.1	**300**	50°	0,13	0,09	0,08	0,03	0,16	0,11	0,09	0,035	0,20	0,14	0,12	0,045
3.2	**300**	50°	0,13	0,09	0,08	0,03	0,16	0,11	0,09	0,035	0,20	0,14	0,12	0,045
3.3	**300**	50°	0,13	0,09	0,08	0,03	0,16	0,11	0,09	0,035	0,20	0,14	0,12	0,045
3.4	**260**	50°	0,13	0,09	0,08	0,03	0,16	0,11	0,09	0,035	0,20	0,14	0,12	0,045
3.5	**260**	50°	0,11	0,08	0,06	0,025	0,16	0,11	0,09	0,035	0,18	0,13	0,10	0,040
3.6	**240**	50°	0,11	0,08	0,06	0,025	0,16	0,11	0,09	0,035	0,18	0,13	0,10	0,040
3.7	**240**	50°	0,11	0,08	0,06	0,025	0,16	0,11	0,09	0,035	0,18	0,13	0,10	0,040
3.8	**200**	50°	0,11	0,08	0,06	0,025	0,16	0,11	0,09	0,035	0,18	0,13	0,10	0,040
4.1														
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4.16														
4.17														
4.18														
4.19														
5.1	120	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
5.2	80	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
5.3	80	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
5.4	60	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
5.5	60	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
5.6	60	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
5.7	60	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
5.8	60	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
5.9	140	40°	0,06	0,04	0,03	0,01	0,07	0,05	0,04	0,016	0,09	0,06	0,05	0,020
5.10	120	40°	0,06	0,04	0,03	0,01	0,07	0,05	0,04	0,016	0,09	0,06	0,05	0,020
5.11	100	40°	0,04	0,03	0,03	0,01	0,05	0,04	0,03	0,012	0,07	0,05	0,04	0,015
6.1														
6.2														
6.3														
6.4														
6.5														

Depth of cut corresponds to the flute length

	Ø DC = 12 mm				Ø DC = 16 mm				Ø DC = 20 mm				● 1st choice		○ suitable
	a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC		a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC		a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC				
Index	f_z mm			h_m	f_z mm			h_m	f_z mm			h_m	Emulsion	Compressed air	MMS
1.1	0,25	0,18	0,15	0,057	0,29	0,21	0,17	0,065	0,34	0,24	0,19	0,075	○	●	○
1.2	0,25	0,18	0,15	0,057	0,29	0,21	0,17	0,065	0,34	0,24	0,19	0,075	○	●	○
1.3	0,25	0,18	0,15	0,057	0,29	0,21	0,17	0,065	0,34	0,24	0,19	0,075	○	●	○
1.4	0,25	0,18	0,15	0,057	0,29	0,21	0,17	0,065	0,34	0,24	0,19	0,075	○	●	○
1.5	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.6	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.7	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.8	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.9	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.10	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.11	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.12	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.13	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.14															
1.15	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
1.16	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
2.1	0,16	0,11	0,09	0,036	0,19	0,13	0,11	0,042	0,27	0,19	0,15	0,06	●		
2.2	0,16	0,11	0,09	0,036	0,19	0,13	0,11	0,042	0,27	0,19	0,15	0,06	●		
2.3	0,16	0,11	0,09	0,036	0,19	0,13	0,11	0,042	0,27	0,19	0,15	0,06	●		
2.4	0,16	0,11	0,09	0,036	0,19	0,13	0,11	0,042	0,27	0,19	0,15	0,06	●		
2.5	0,16	0,11	0,09	0,036	0,19	0,13	0,11	0,042	0,27	0,19	0,15	0,06	●		
2.6	0,16	0,11	0,09	0,036	0,19	0,13	0,11	0,042	0,27	0,19	0,15	0,06	●		
2.7															
3.1	0,25	0,18	0,15	0,057	0,29	0,21	0,17	0,065	0,34	0,24	0,19	0,075	○	●	○
3.2	0,25	0,18	0,15	0,057	0,29	0,21	0,17	0,065	0,34	0,24	0,19	0,075	○	●	○
3.3	0,25	0,18	0,15	0,057	0,29	0,21	0,17	0,065	0,34	0,24	0,19	0,075	○	●	○
3.4	0,25	0,18	0,15	0,057	0,29	0,21	0,17	0,065	0,34	0,24	0,19	0,075	○	●	○
3.5	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
3.6	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
3.7	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
3.8	0,23	0,16	0,13	0,051	0,27	0,19	0,15	0,06	0,29	0,21	0,17	0,065	○	●	○
4.1															
4.2															
4.3															
4.4															
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4.13															
4.14															
4.15															
4.16															
4.17															
4.18															
4.19															
5.1	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
5.2	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
5.3	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
5.4	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
5.5	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
5.6	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
5.7	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
5.8	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
5.9	0,11	0,08	0,07	0,025	0,16	0,11	0,09	0,035	0,22	0,15	0,13	0,049	●		
5.10	0,11	0,08	0,07	0,025	0,16	0,11	0,09	0,035	0,22	0,15	0,13	0,049	●		
5.11	0,08	0,06	0,05	0,019	0,12	0,08	0,07	0,026	0,16	0,12	0,09	0,036	●		
6.1															
6.2															
6.3															
6.4															
6.5															

Cutting data – CircularLine – End Mills – CCR-UNI, extra long

	extra long	max. angle of engagement	Ø DC = 6 mm			Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm		
			a_e 0,05 x DC	a_e 0,1 x DC		a_e 0,05 x DC	a_e 0,1 x DC		a_e 0,05 x DC	a_e 0,1 x DC		a_e 0,05 x DC	a_e 0,1 x DC		a_e 0,05 x DC	a_e 0,1 x DC	
Index	v_c in m/min		f_z mm		h_m	f_z mm		h_m	f_z mm		h_m	f_z mm		h_m	f_z mm		h_m
1.1	260	50°	0,07	0,05	0,015	0,08	0,06	0,018	0,10	0,07	0,022	0,12	0,09	0,027	0,14	0,10	0,032
1.2	260	50°	0,07	0,05	0,015	0,08	0,06	0,018	0,10	0,07	0,022	0,12	0,09	0,027	0,14	0,10	0,032
1.3	250	50°	0,07	0,05	0,015	0,08	0,06	0,018	0,10	0,07	0,022	0,12	0,09	0,027	0,14	0,10	0,032
1.4	250	50°	0,07	0,05	0,015	0,08	0,06	0,018	0,10	0,07	0,022	0,12	0,09	0,027	0,14	0,10	0,032
1.5	250	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.6	230	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.7	250	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.8	230	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.9	230	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.10	210	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.11	210	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.12	210	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.13	210	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.14																	
1.15	200	45°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
1.16	200	45°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
2.1	170	45°	0,04	0,03	0,009	0,05	0,03	0,011	0,06	0,04	0,014	0,08	0,06	0,018	0,09	0,07	0,021
2.2	150	45°	0,04	0,03	0,009	0,05	0,03	0,011	0,06	0,04	0,014	0,08	0,06	0,018	0,09	0,07	0,021
2.3	130	45°	0,04	0,03	0,009	0,05	0,03	0,011	0,06	0,04	0,014	0,08	0,06	0,018	0,09	0,07	0,021
2.4	130	45°	0,04	0,03	0,009	0,05	0,03	0,011	0,06	0,04	0,014	0,08	0,06	0,018	0,09	0,07	0,021
2.5	110	45°	0,04	0,03	0,009	0,05	0,03	0,011	0,06	0,04	0,014	0,08	0,06	0,018	0,09	0,07	0,021
2.6	110	45°	0,04	0,03	0,009	0,05	0,03	0,011	0,06	0,04	0,014	0,08	0,06	0,018	0,09	0,07	0,021
2.7																	
3.1	260	50°	0,07	0,05	0,015	0,08	0,06	0,018	0,10	0,07	0,022	0,12	0,09	0,027	0,14	0,10	0,032
3.2	260	50°	0,07	0,05	0,015	0,08	0,06	0,018	0,10	0,07	0,022	0,12	0,09	0,027	0,14	0,10	0,032
3.3	260	50°	0,07	0,05	0,015	0,08	0,06	0,018	0,10	0,07	0,022	0,12	0,09	0,027	0,14	0,10	0,032
3.4	230	50°	0,07	0,05	0,015	0,08	0,06	0,018	0,10	0,07	0,022	0,12	0,09	0,027	0,14	0,10	0,032
3.5	230	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
3.6	210	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
3.7	210	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,09	0,030
3.8	180	50°	0,05	0,04	0,012	0,07	0,05	0,016	0,09	0,06	0,020	0,11	0,08	0,025	0,13	0,10	0,030
4.1																	
4.2																	
4.3																	
4.4																	
4.5																	
4.6																	
4.7																	
4.8																	
4.9																	
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4.12																	
4.13																	
4.14																	
4.15																	
4.16																	
4.17																	
4.18																	
4.19																	
5.1	100	40°	0,02	0,02	0,005	0,03	0,02	0,006	0,04	0,03	0,008	0,04	0,03	0,010	0,06	0,04	0,013
5.2	70	40°	0,02	0,02	0,005	0,03	0,02	0,006	0,04	0,03	0,008	0,04	0,03	0,010	0,06	0,04	0,013
5.3	70	40°	0,02	0,02	0,005	0,03	0,02	0,006	0,04	0,03	0,008	0,04	0,03	0,010	0,06	0,04	0,013
5.4																	
5.5																	
5.6																	
5.7																	
5.8																	
5.9	120	40°	0,03	0,02	0,007	0,04	0,03	0,008	0,04	0,03	0,010	0,05	0,04	0,012	0,08	0,05	0,017
5.10	100	40°	0,03	0,02	0,007	0,04	0,03	0,008	0,04	0,03	0,010	0,05	0,04	0,012	0,08	0,05	0,017
5.11	90	40°	0,02	0,02	0,005	0,03	0,02	0,006	0,04	0,03	0,008	0,04	0,03	0,010	0,06	0,04	0,013
6.1																	
6.2																	
6.3																	
6.4																	
6.5																	

Depth of cut corresponds to the flute length

	Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,05 x DC	a_e 0,1 x DC				
Index	f_z mm		h_m	Emulsion	Compressed air	MMS
1.1	0,17	0,12	0,037	○	●	○
1.2	0,17	0,12	0,037	○	●	○
1.3	0,17	0,12	0,037	○	●	○
1.4	0,17	0,12	0,037	○	●	○
1.5	0,14	0,10	0,032	○	●	○
1.6	0,14	0,10	0,032	○	●	○
1.7	0,14	0,10	0,032	○	●	○
1.8	0,14	0,10	0,032	○	●	○
1.9	0,14	0,10	0,032	○	●	○
1.10	0,14	0,10	0,032	○	●	○
1.11	0,14	0,10	0,032	○	●	○
1.12	0,14	0,10	0,032	○	●	○
1.13	0,14	0,10	0,032	○	●	○
1.14						
1.15	0,14	0,10	0,032	○	●	○
1.16	0,14	0,10	0,032	○	●	○
2.1	0,13	0,09	0,03	●		
2.2	0,13	0,09	0,03	●		
2.3	0,13	0,09	0,03	●		
2.4	0,13	0,09	0,03	●		
2.5	0,13	0,09	0,03	●		
2.6	0,13	0,09	0,03	●		
2.7						
3.1	0,17	0,12	0,037	○	●	○
3.2	0,17	0,12	0,037	○	●	○
3.3	0,17	0,12	0,037	○	●	○
3.4	0,17	0,12	0,037	○	●	○
3.5	0,14	0,10	0,032	○	●	○
3.6	0,14	0,10	0,032	○	●	○
3.7	0,14	0,10	0,032	○	●	○
3.8	0,14	0,10	0,032	○	●	○
4.1						
4.2						
4.3						
4.4						
4.5						
4.6						
4.7						
4.8						
4.9						
4.10						
4.11						
4.12						
4.13						
4.14						
4.15						
4.16						
4.17						
4.18						
4.19						
5.1	0,08	0,06	0,018	●		
5.2	0,08	0,06	0,018	●		
5.3	0,08	0,06	0,018	●		
5.4						
5.5						
5.6						
5.7						
5.8						
5.9	0,11	0,08	0,024	●		
5.10	0,11	0,08	0,024	●		
5.11	0,08	0,06	0,018	●		
6.1						
6.2						
6.3						
6.4						
6.5						

Cutting data – CircularLine – End Mills – CCR-AL, long – extra long

Index	long v_c m/min	extra long v_c m/min	max. angle of engagement	Ø DC = 6 mm a_e 0,1 x DC f_z mm	Ø DC = 6 mm a_e 0,2 x DC f_z mm	Ø DC = 6 mm a_e 0,4 x DC f_z mm	Ø DC = 6 mm h_m	Ø DC = 8 mm a_e 0,1 x DC f_z mm	Ø DC = 8 mm a_e 0,2 x DC f_z mm	Ø DC = 8 mm a_e 0,4 x DC f_z mm	Ø DC = 8 mm h_m	● 1st choice Emulsion		○ suitable MMS
													Compressed air	
4.1	**500**	**400**	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.2	**500**	**400**	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.3	**500**	**400**	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.4	**500**	**400**	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.5	**400**	**350**	60°	0,35	0,25	0,17	0,110	0,44	0,31	0,22	0,140	●		○
4.6	**300**	**250**	60°	0,35	0,25	0,17	0,110	0,38	0,27	0,19	0,120	●		○
4.7	**300**	**250**	60°	0,35	0,25	0,17	0,110	0,38	0,27	0,19	0,120	●		○
4.8	**300**	**250**	60°	0,35	0,25	0,17	0,110	0,38	0,27	0,19	0,120	●		○
4.9	**300**	**250**	60°	0,35	0,25	0,17	0,110	0,38	0,27	0,19	0,120	●		○
4.10	**300**	**250**	60°	0,35	0,25	0,17	0,110	0,38	0,27	0,19	0,120	●		○
4.11	**400**	**350**	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.12	**400**	**350**	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○

Index	long v_c m/min	extra long v_c m/min	max. angle of engagement	Ø DC = 10 mm a_e 0,1 x DC f_z mm	Ø DC = 10 mm a_e 0,2 x DC f_z mm	Ø DC = 10 mm a_e 0,4 x DC f_z mm	Ø DC = 10 mm h_m	Ø DC = 12 mm a_e 0,1 x DC f_z mm	Ø DC = 12 mm a_e 0,2 x DC f_z mm	Ø DC = 12 mm a_e 0,4 x DC f_z mm	Ø DC = 12 mm h_m	● 1st choice Emulsion		○ suitable MMS
													Compressed air	
4.1	**500**	**400**	60°	0,47	0,34	0,24	0,150	0,51	0,36	0,25	0,160	●		○
4.2	**500**	**400**	60°	0,47	0,34	0,24	0,150	0,51	0,36	0,25	0,160	●		○
4.3	**500**	**400**	60°	0,47	0,34	0,24	0,150	0,51	0,36	0,25	0,160	●		○
4.4	**500**	**400**	60°	0,47	0,34	0,24	0,150	0,51	0,36	0,25	0,160	●		○
4.5	**400**	**350**	60°	0,47	0,34	0,24	0,150	0,51	0,36	0,25	0,160	●		○
4.6	**300**	**250**	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.7	**300**	**250**	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.8	**300**	**250**	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.9	**300**	**250**	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.10	**300**	**250**	60°	0,41	0,29	0,21	0,130	0,44	0,31	0,22	0,140	●		○
4.11	**400**	**350**	60°	0,47	0,34	0,24	0,150	0,51	0,36	0,25	0,160	●		○
4.12	**400**	**350**	60°	0,47	0,34	0,24	0,150	0,51	0,36	0,25	0,160	●		○

Index	long v_c m/min	extra long v_c m/min	max. angle of engagement	Ø DC = 16 mm a_e 0,1 x DC f_z mm	Ø DC = 16 mm a_e 0,2 x DC f_z mm	Ø DC = 16 mm a_e 0,4 x DC f_z mm	Ø DC = 16 mm h_m	Ø DC = 20 mm a_e 0,1 x DC f_z mm	Ø DC = 20 mm a_e 0,2 x DC f_z mm	Ø DC = 20 mm a_e 0,4 x DC f_z mm	Ø DC = 20 mm h_m	● 1st choice Emulsion		○ suitable MMS
													Compressed air	
4.1	**500**	**400**	60°	0,63	0,45	0,32	0,2	0,76	0,54	0,38	0,24	●		○
4.2	**500**	**400**	60°	0,63	0,45	0,32	0,2	0,76	0,54	0,38	0,24	●		○
4.3	**500**	**400**	60°	0,63	0,45	0,32	0,2	0,76	0,54	0,38	0,24	●		○
4.4	**500**	**400**	60°	0,63	0,45	0,32	0,2	0,76	0,54	0,38	0,24	●		○
4.5	**400**	**350**	60°	0,63	0,45	0,32	0,2	0,76	0,54	0,38	0,24	●		○
4.6	**300**	**250**	60°	0,57	0,40	0,29	0,18	0,63	0,45	0,32	0,2	●		○
4.7	**300**	**250**	60°	0,57	0,40	0,29	0,18	0,63	0,45	0,32	0,2	●		○
4.8	**300**	**250**	60°	0,57	0,40	0,29	0,18	0,63	0,45	0,32	0,2	●		○
4.9	**300**	**250**	60°	0,57	0,40	0,29	0,18	0,63	0,45	0,32	0,2	●		○
4.10	**300**	**250**	60°	0,57	0,40	0,29	0,18	0,63	0,45	0,32	0,2	●		○
4.11	**400**	**350**	60°	0,63	0,45	0,32	0,2	0,76	0,54	0,38	0,24	●		○
4.12	**400**	**350**	60°	0,63	0,45	0,32	0,2	0,76	0,54	0,38	0,24	●		○

Depth of cut corresponds to the flute length

Plunging angle for ramping and helical milling: 4°

Cutting data standard values – CircularLine – End mills – CCR-H, 53 596 ...

Index	long v_c m/min	max. angle of engagement	Ø DC = 6 mm a_e 0,02 x DC f_z mm	Ø DC = 6 mm a_e 0,05 x DC f_z mm	Ø DC = 6 mm a_e 0,10 x DC f_z mm	Ø DC = 6 mm h_m	Ø DC = 8 mm a_e 0,02 x DC f_z mm	Ø DC = 8 mm a_e 0,05 x DC f_z mm	Ø DC = 8 mm a_e 0,10 x DC f_z mm	Ø DC = 8 mm h_m	Ø DC = 10 mm a_e 0,02 x DC f_z mm	Ø DC = 10 mm a_e 0,05 x DC f_z mm	Ø DC = 10 mm a_e 0,10 x DC f_z mm	Ø DC = 10 mm h_m	● 1st choice Emulsion	● 1st choice Compressed air	○ suitable MMS
6.1	150	30°	**0,13**	**0,08**	**0,06**	**0,018**	**0,14**	**0,09**	**0,06**	**0,020**	**0,18**	**0,11**	**0,08**	**0,025**		●	○
6.2	130	30°	**0,09**	**0,06**	**0,04**	**0,013**	**0,11**	**0,07**	**0,05**	**0,016**	**0,14**	**0,09**	**0,06**	**0,020**		●	○
6.3	120	30°	**0,04**	**0,03**	**0,02**	**0,006**	**0,06**	**0,04**	**0,03**	**0,008**	**0,07**	**0,04**	**0,03**	**0,010**		●	○
6.4	115	30°	**0,03**	**0,02**		**0,004**	**0,04**	**0,03**		**0,006**	**0,05**	**0,03**		**0,007**		●	○
6.5	110	30°	**0,02**			**0,003**	**0,03**			**0,004**	**0,04**			**0,005**		●	○

Index	long v_c m/min	max. angle of engagement	Ø DC = 12 mm a_e 0,02 x DC f_z mm	Ø DC = 12 mm a_e 0,05 x DC f_z mm	Ø DC = 12 mm a_e 0,10 x DC f_z mm	Ø DC = 12 mm h_m	Ø DC = 16 mm a_e 0,02 x DC f_z mm	Ø DC = 16 mm a_e 0,05 x DC f_z mm	Ø DC = 16 mm a_e 0,10 x DC f_z mm	Ø DC = 16 mm h_m	Ø DC = 20 mm a_e 0,02 x DC f_z mm	Ø DC = 20 mm a_e 0,05 x DC f_z mm	Ø DC = 20 mm a_e 0,10 x DC f_z mm	Ø DC = 20 mm h_m	● 1st choice Emulsion	● 1st choice Compressed air	○ suitable MMS
6.1	150	30°	**0,21**	**0,13**	**0,09**	**0,030**	**0,28**	**0,18**	**0,13**	**0,040**	**0,35**	**0,22**	**0,16**	**0,050**		●	○
6.2	130	30°	**0,18**	**0,11**	**0,08**	**0,025**	**0,25**	**0,16**		**0,035**	**0,34**	**0,22**		**0,049**		●	○
6.3	120	30°	**0,08**	**0,05**	**0,04**	**0,012**	**0,13**	**0,08**		**0,018**	**0,17**	**0,11**		**0,024**		●	○
6.4	115	30°	**0,06**	**0,04**		**0,009**	**0,09**			**0,013**	**0,13**			**0,018**		●	○
6.5	110	30°	**0,04**			**0,006**	**0,06**			**0,009**	**0,08**			**0,012**		●	○

Depth of cut corresponds to the flute length

Cutting data standard values – CircularLine – CCR-Ti, long

Index	long v_c m/min	max. angle of engagement	Ø DC = 6 mm a_e 0,05 x DC f_z mm	a_e 0,10 x DC f_z mm	a_e 0,15 x DC f_z mm	h_m	Ø DC = 8 mm a_e 0,05 x DC f_z mm	a_e 0,10 x DC f_z mm	a_e 0,15 x DC f_z mm	h_m	Ø DC = 10 mm a_e 0,05 x DC f_z mm	a_e 0,10 x DC f_z mm	a_e 0,15 x DC f_z mm	h_m
2.1	200	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028
2.2	180	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028
2.3	160	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028
2.4	160	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028
2.5	140	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028
2.6	140	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028
2.7														
5.1	**120**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015
5.2	**80**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015
5.3	**80**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015
5.4	**60**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015
5.5	**60**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015
5.6	**60**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015
5.7	**60**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015
5.8	**60**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015
5.9	**140**	40°	0,060	0,042	0,034	0,013	0,070	0,049	0,040	0,016	0,089	0,063	0,052	0,020
5.10	**120**	40°	0,060	0,042	0,034	0,013	0,070	0,049	0,040	0,016	0,089	0,063	0,052	0,020
5.11	**100**	40°	0,045	0,032	0,026	0,010	0,052	0,037	0,030	0,012	0,067	0,047	0,039	0,015

Cutting data standard values – CircularLine – CCR-Ti, extra long

Index	extra long v_c m/min	max. angle of engagement	Ø DC = 6 mm a_e 0,05 x DC f_z mm	a_e 0,10 x DC f_z mm	h_m	Ø DC = 8 mm a_e 0,05 x DC f_z mm	a_e 0,10 x DC f_z mm	h_m	Ø DC = 10 mm a_e 0,05 x DC f_z mm	a_e 0,10 x DC f_z mm	h_m	Ø DC = 12 mm a_e 0,05 x DC f_z mm	a_e 0,10 x DC f_z mm	h_m
2.1	170	45°	0,080	0,057	0,018	0,098	0,070	0,022	0,125	0,089	0,028	0,125	0,089	0,028
2.2	150	45°	0,080	0,057	0,018	0,098	0,070	0,022	0,125	0,089	0,028	0,125	0,089	0,028
2.3	130	45°	0,080	0,057	0,018	0,098	0,070	0,022	0,125	0,089	0,028	0,125	0,089	0,028
2.4	130	45°	0,080	0,057	0,018	0,098	0,070	0,022	0,125	0,089	0,028	0,125	0,089	0,028
2.5	110	45°	0,080	0,057	0,018	0,098	0,070	0,022	0,125	0,089	0,028	0,125	0,089	0,028
2.6	110	45°	0,080	0,057	0,018	0,098	0,070	0,022	0,125	0,089	0,028	0,125	0,089	0,028
2.7														
5.1	**100**	40°	0,022	0,016	0,005	0,027	0,019	0,006	0,036	0,025	0,008	0,045	0,032	0,010
5.2	**70**	40°	0,022	0,016	0,005	0,027	0,019	0,006	0,036	0,025	0,008	0,045	0,032	0,010
5.3	**70**	40°	0,022	0,016	0,005	0,027	0,019	0,006	0,036	0,025	0,008	0,045	0,032	0,010
5.4														
5.5														
5.6														
5.7														
5.8														
5.9	**120**	40°	0,031	0,022	0,007	0,036	0,025	0,008	0,045	0,032	0,010	0,054	0,038	0,012
5.10	**100**	40°	0,031	0,022	0,007	0,036	0,025	0,008	0,045	0,032	0,010	0,054	0,038	0,012
5.11	**90**	40°	0,022	0,016	0,005	0,027	0,019	0,006	0,036	0,025	0,008	0,045	0,032	0,010

Depth of cut corresponds to the flute length

	Ø DC = 12 mm				Ø DC = 16 mm				Ø DC = 20 mm				● 1st choice		○ suitable
	a_e 0,05 x DC	a_e 0,10 x DC	a_e 0,15 x DC	h_m	a_e 0,05 x DC	a_e 0,10 x DC	a_e 0,15 x DC	h_m	a_e 0,05 x DC	a_e 0,10 x DC	a_e 0,15 x DC	h_m			
Index	f_z mm	f_z mm	f_z mm		f_z mm	f_z mm	f_z mm		f_z mm	f_z mm	f_z mm		Emulsion	Compressed air	MMS
2.1	0,161	0,114	0,093	0,036	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,06	●		
2.2	0,161	0,114	0,093	0,036	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,06	●		
2.3	0,161	0,114	0,093	0,036	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,06	●		
2.4	0,161	0,114	0,093	0,036	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,06	●		
2.5	0,161	0,114	0,093	0,036	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,06	●		
2.6	0,161	0,114	0,093	0,036	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,06	●		
2.7															
5.1	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		
5.2	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		
5.3	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		
5.4	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		
5.5	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		
5.6	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		
5.7	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		
5.8	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		
5.9	0,113	0,080	0,065	0,025	0,157	0,111	0,090	0,035	0,217	0,153	0,125	0,049	●		
5.10	0,113	0,080	0,065	0,025	0,157	0,111	0,090	0,035	0,217	0,153	0,125	0,049	●		
5.11	0,085	0,060	0,049	0,019	0,117	0,083	0,068	0,026	0,163	0,115	0,094	0,036	●		

	Ø DC = 16 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,05 x DC	a_e 0,10 x DC	h_m	a_e 0,05 x DC	a_e 0,10 x DC	h_m			
Index	f_z mm	f_z mm		f_z mm	f_z mm		Emulsion	Compressed air	MMS
2.1	0,161	0,114	0,036	0,188	0,133	0,042	●		
2.2	0,161	0,114	0,036	0,188	0,133	0,042	●		
2.3	0,161	0,114	0,036	0,188	0,133	0,042	●		
2.4	0,161	0,114	0,036	0,188	0,133	0,042	●		
2.5	0,161	0,114	0,036	0,188	0,133	0,042	●		
2.6	0,161	0,114	0,036	0,188	0,133	0,042	●		
2.7									
5.1	0,058	0,041	0,013	0,080	0,057	0,018	●		
5.2	0,058	0,041	0,013	0,080	0,057	0,018	●		
5.3	0,058	0,041	0,013	0,080	0,057	0,018	●		
5.4									
5.5									
5.6									
5.7									
5.8									
5.9	0,076	0,054	0,017	0,107	0,076	0,024	●		
5.10	0,076	0,054	0,017	0,107	0,076	0,024	●		
5.11	0,058	0,041	0,013	0,080	0,057	0,018	●		

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Cutting data standard values – AluLine – End mills – ZEFP = 2

	Type short / medium length	Type long / extra long		Ø DC = 2 mm			Ø DC = 2,5 mm			Ø DC = 3,0–3,5 mm			Ø DC = 4,0–4,5 mm			Ø DC = 5,0–5,5 mm			Ø DC = 6,0–7,5 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
4.1	700	300	1,0	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,072	0,055	0,040	0,090	0,067	0,045	0,100	0,075	0,050
4.2	700	300	1,0	0,036	0,028	0,020	0,045	0,035	0,025	0,054	0,042	0,030	0,072	0,055	0,040	0,090	0,067	0,045	0,100	0,075	0,050
4.3	420	200	1,0	0,027	0,021	0,015	0,034	0,026	0,019	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040
4.4	420	180	1,0	0,027	0,021	0,015	0,034	0,026	0,019	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040
4.5	280	140	1,0	0,027	0,021	0,015	0,034	0,026	0,019	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040
4.6	200	110	1,0	0,018	0,014	0,010	0,022	0,017	0,013	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030
4.7	180	100	1,0	0,018	0,014	0,010	0,022	0,017	0,013	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030
4.8	175	75	1,0	0,018	0,014	0,010	0,022	0,017	0,013	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030
4.9	175	75	1,0	0,018	0,014	0,010	0,022	0,017	0,013	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030
4.10	175	75	1,0	0,018	0,014	0,010	0,022	0,017	0,013	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030
4.11	280	125	1,0	0,018	0,014	0,010	0,022	0,017	0,013	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030
4.12	210	100	1,0	0,018	0,014	0,010	0,022	0,017	0,013	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030
4.13																					
4.14																					
4.15																					
4.16	220	130	1,0	0,027	0,021	0,015	0,034	0,026	0,019	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040
4.17																					
4.18																					
4.19																					

Cutting data standard values – AluLine – End mills – ZEFP = 3–4

	Type short / medium length	Type long / extra long		Ø DC = 3,0–3,5 mm			Ø DC = 4,0–4,5 mm			Ø DC = 5,0–5,5 mm			Ø DC = 6,0–7,5 mm			Ø DC = 8,0–8,5 mm			Ø DC = 10 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
4.1	700	300	1,0	0,048	0,037	0,027	0,063	0,048	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,130	0,097	0,065
4.2	700	300	1,0	0,048	0,037	0,027	0,063	0,048	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,130	0,097	0,065
4.3	420	200	1,0	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.4	420	180	1,0	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.5	280	140	1,0	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.6	200	110	1,0	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.7	180	100	1,0	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.8	175	75	1,0	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.9	175	75	1,0	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.10	175	75	1,0	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.11	280	125	1,0	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.12	210	100	1,0	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.13																					
4.14																					
4.15																					
4.16	220	130	1,0	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.17																					
4.18																					
4.19																					

Index	Ø DC = 8,0–9,5 mm			Ø DC = 10,0–11,5 mm			Ø DC = 12,0–13,5 mm			Ø DC = 14,0–15,5 mm			Ø DC = 16,0–17,5 mm			Ø DC = 18,0–19,5 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
4.1	0,120	0,089	0,060	0,140	0,104	0,070	0,160	0,119	0,080	0,201	0,156	0,110	0,254	0,194	0,150	0,269	0,219	0,170	0,316	0,258	0,200	●	○*	○
4.2	0,120	0,089	0,060	0,140	0,104	0,070	0,160	0,119	0,080	0,201	0,156	0,110	0,254	0,194	0,150	0,269	0,219	0,170	0,316	0,258	0,200	●	○*	○
4.3	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	●	○*	○
4.4	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	●	○*	○
4.5	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	●	○*	○
4.6	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	●	○*	○
4.7	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	●	○*	○
4.8	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	●	○*	○
4.9	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	●	○*	○
4.10	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	●	○*	○
4.11	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	●	○*	○
4.12	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	●	○*	○
4.13																								
4.14																								
4.15																								
4.16	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	●	○*	○
4.17																								
4.18																								
4.19																								

* = only suitable for DLC coated cutters

Index	Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 18 mm			Ø DC = 20 mm			Ø DC = 25 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
4.1	0,140	0,104	0,070	0,146	0,113	0,080	0,152	0,116	0,090	0,166	0,136	0,105	0,190	0,155	0,120	0,213	0,174	0,135	●	○*	○
4.2	0,140	0,104	0,070	0,146	0,113	0,080	0,152	0,116	0,090	0,166	0,136	0,105	0,190	0,155	0,120	0,213	0,174	0,135	●	○*	○
4.3	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	0,316	0,258	0,200	●	○*	○
4.4	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	0,316	0,258	0,200	●	○*	○
4.5	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	0,316	0,258	0,200	●	○*	○
4.6	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	0,221	0,181	0,140	●	○*	○
4.7	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	0,221	0,181	0,140	●	○*	○
4.8	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	0,221	0,181	0,140	●	○*	○
4.9	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	0,221	0,181	0,140	●	○*	○
4.10	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	0,221	0,181	0,140	●	○*	○
4.11	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	0,221	0,181	0,140	●	○*	○
4.12	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,158	0,129	0,100	0,190	0,155	0,120	0,221	0,181	0,140	●	○*	○
4.13																					
4.14																					
4.15																					
4.16	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,221	0,181	0,140	0,269	0,219	0,170	0,316	0,258	0,200	●	○*	○
4.17																					
4.18																					
4.19																					

* = only suitable for DLC coated cutters

Cutting data – AluLine – Ball Nosed End Mills

	Type short / medium length	Type long / extra long		Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm			Ø DC = 10 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
4.1	750	450	0,03	0,054	0,042	0,030	0,072	0,055	0,040	0,090	0,067	0,045	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070
4.2	750	450	0,03	0,054	0,042	0,030	0,072	0,055	0,040	0,090	0,067	0,045	0,100	0,075	0,050	0,120	0,089	0,060	0,140	0,104	0,070
4.3	600	360	0,03	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.4	400	240	0,03	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.5	400	240	0,03	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.6	230	170	0,03	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.7	190	145	0,03	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.8	80	55	0,03	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.9	80	55	0,03	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.10	80	55	0,03	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.11	145	85	0,03	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.12	135	105	0,03	0,027	0,021	0,015	0,036	0,028	0,020	0,050	0,037	0,025	0,060	0,045	0,030	0,080	0,060	0,040	0,100	0,075	0,050
4.13	240	145	0,03				0,135	0,104	0,075	0,200	0,149	0,100	0,240	0,179	0,120	0,300	0,224	0,150	0,400	0,298	0,200
4.14	65	40	0,03				0,135	0,104	0,075	0,200	0,149	0,100	0,240	0,179	0,120	0,300	0,224	0,150	0,400	0,298	0,200
4.15																					
4.16	350	210	0,03	0,041	0,032	0,023	0,054	0,042	0,030	0,070	0,052	0,035	0,080	0,060	0,040	0,100	0,075	0,050	0,120	0,089	0,060
4.17																					
4.18																					
4.19																					

Feed rate guide values for ball nosed and torus cutters on → **Page 356**

Cutting data – AluLine – High Accuracy Finishing Cutters

	Type short / medium length	Type long / extra long		Ø DC = 6 mm			Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
4.1	500	360	2,0	0,030	0,018		0,040	0,024		0,045	0,027		0,050	0,030		0,060	0,036	
4.2	500	360	2,0	0,030	0,018		0,040	0,024		0,045	0,027		0,050	0,030		0,060	0,036	
4.3	300	220	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.4	210	150	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.5	210	150	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.6	150	110	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.7	140	100	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.8	60	40	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.9	60	40	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.10	60	40	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.11	140	100	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.12	150	110	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.13																		
4.14																		
4.15																		
4.16	200	140	2,0	0,018	0,011		0,020	0,012		0,025	0,015		0,030	0,018		0,050	0,030	
4.17																		
4.18																		
4.19																		

	Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
Index	f_z mm			f_z mm			f_z mm			f_z mm					
4.1	0,160	0,119	0,080	0,201	0,156	0,110	0,254	0,194	0,150	0,316	0,258	0,200	●		○
4.2	0,160	0,119	0,080	0,201	0,156	0,110	0,254	0,194	0,150	0,316	0,258	0,200	●		○
4.3	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,269	0,219	0,170	●		○
4.4	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,269	0,219	0,170	●		○
4.5	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,269	0,219	0,170	●		○
4.6	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,190	0,155	0,120	●		○
4.7	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,190	0,155	0,120	●		○
4.8	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,190	0,155	0,120	●		○
4.9	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,190	0,155	0,120	●		○
4.10	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,190	0,155	0,120	●		○
4.11	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,190	0,155	0,120	●		○
4.12	0,120	0,089	0,060	0,128	0,099	0,070	0,135	0,103	0,080	0,190	0,155	0,120	●		○
4.13	0,500	0,373	0,250	0,548	0,424	0,300	0,592	0,452	0,350	0,712	0,581	0,450	●		○
4.14	0,500	0,373	0,250	0,548	0,424	0,300	0,592	0,452	0,350	0,712	0,581	0,450	●		○
4.15															
4.16	0,140	0,104	0,070	0,164	0,127	0,090	0,203	0,155	0,120	0,269	0,219	0,170	●		○
4.17															
4.18															
4.19															

	Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
Index	f_z mm					
4.1	0,070	0,042		●		○
4.2	0,070	0,042		●		○
4.3	0,060	0,036		●		○
4.4	0,060	0,036		●		○
4.5	0,060	0,036		●		○
4.6	0,060	0,036		●		○
4.7	0,060	0,036		●		○
4.8	0,060	0,036		●		○
4.9	0,060	0,036		●		○
4.10	0,060	0,036		●		○
4.11	0,060	0,036		●		○
4.12	0,060	0,036		●		○
4.13						
4.14						
4.15						
4.16	0,060	0,036		●		○
4.17						
4.18						
4.19						

Cutting data – SilverLine – End Mills – 50 951 ... / 50 952 ... / 50 953 ...

	Type short	Type long / extra long	Type short / long	Type extra long	Ø DC = 3,0–3,5 mm			Ø DC = 4,0–4,5 mm			Ø DC = 5,0–5,5 mm			Ø DC = 6,0–7,5 mm			Ø DC = 8,0–9,5 mm		
					a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min		$a_{p\,max}$ x DC	$a_{p\,max}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	**230**	**184**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.2	**240**	**192**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.3	**210**	**168**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.4	**200**	**160**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.5	**200**	**160**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.6	**190**	**152**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.7	**190**	**152**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.8	**180**	**144**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.9	**160**	**128**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.10	**190**	**152**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.11	**170**	**136**	1,0*	0,5	0,019	0,015	0,011	0,027	0,021	0,015	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03
1.12	**180**	**144**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.13																			
1.14																			
1.15																			
1.16																			
2.1	**130**	**104**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.2	**120**	**96**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.3	**100**	**80**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.4	**120**	**96**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.5	**120**	**96**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.6	**120**	**96**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.7	**30**	**24**	1,0*	0,5	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
3.1	200	160	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
3.2	180	144	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
3.3	190	152	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.4	170	136	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.5	180	144	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.6	160	128	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.7	180	144	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.8	160	128	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
4.1																			
4.2																			
4.3																			
4.4																			
4.5																			
4.6	280	224	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.7	300	240	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.8	160	128	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.9	140	112	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.10	120	96	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.11	350	280	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.12	300	240	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.13																			
4.14																			
4.15																			
4.16																			
4.17																			
4.18																			
4.19																			
5.1																			
5.2																			
5.3	**30**	**24**	0,5	0,5	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.4	**30**	**24**	0,5	0,5	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.5	**30**	**24**	0,5	0,5	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.6	**30**	**24**	0,5	0,5	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.7	**30**	**24**	0,5	0,5	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.8	**30**	**24**	0,5	0,5	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.9	**160**	**128**	0,5	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
5.10	**140**	**112**	0,5	0,5	0,019	0,015	0,011	0,027	0,021	0,015	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03
5.11	**100**	**80**	0,5	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
6.1																			
6.2																			
6.3																			
6.4																			
6.5																			

* = long version: $a_{p\,max.}$ 1.5 x DC at f_z x 0.75 / ball-nosed end mill: $a_{p\,max.}$ 0.5 x DC

„Extra long“ version: when profiling with an a_e of 0.1–0.4 x DC an a_p of 1.0 x DC should be used.

Index	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 18 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.2	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.3	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.4	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.5	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.6	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.7	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.8	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.9	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.10	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.11	0,08	0,06	0,04	0,10	0,08	0,05	0,10	0,08	0,06	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●	○	○
1.12	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.13																					
1.14																					
1.15																					
1.16																					
2.1	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.2	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.3	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.4	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.5	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.6	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.7	0,05	0,04	0,03	0,06	0,05	0,03	0,06	0,05	0,04	0,07	0,05	0,04	0,07	0,06	0,05	0,08	0,07	0,05	●		
3.1	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●	●	●
3.2	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,16	0,13	0,10	●	●	●
3.3	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.4	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.5	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.6	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.7	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.8	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
4.1																					
4.2																					
4.3																					
4.4																					
4.5																					
4.6	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●		
4.7	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●		
4.8	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●		
4.9	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●		
4.10	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●		
4.11	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●		
4.12	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●		
4.13																					
4.14																					
4.15																					
4.16																					
4.17																					
4.18																					
4.19																					
5.1																					
5.2																					
5.3	0,05	0,04	0,03	0,06	0,05	0,03	0,06	0,05	0,04	0,07	0,05	0,04	0,07	0,06	0,05	0,08	0,07	0,05	●		
5.4	0,05	0,04	0,03	0,06	0,05	0,03	0,06	0,05	0,04	0,07	0,05	0,04	0,07	0,06	0,05	0,08	0,07	0,05	●		
5.5	0,05	0,04	0,03	0,06	0,03	0,03	0,06	0,05	0,04	0,07	0,05	0,04	0,07	0,06	0,05	0,08	0,07	0,05	●		
5.6	0,05	0,04	0,03	0,06	0,05	0,03	0,06	0,05	0,04	0,07	0,05	0,04	0,07	0,06	0,05	0,08	0,07	0,05	●		
5.7	0,05	0,04	0,03	0,06	0,05	0,03	0,06	0,05	0,04	0,07	0,05	0,04	0,07	0,06	0,05	0,08	0,07	0,05	●		
5.8	0,05	0,04	0,03	0,06	0,05	0,03	0,06	0,05	0,04	0,07	0,05	0,04	0,07	0,06	0,05	0,08	0,07	0,05	●		
5.9	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,08	0,07	0,05	●		
5.10	0,08	0,06	0,04	0,10	0,08	0,05	0,10	0,08	0,06	0,10	0,08	0,06	0,11	0,09	0,07	0,08	0,07	0,05	●		
5.11	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,08	0,07	0,05	●		
6.1																					
6.2																					
6.3																					
6.4																					
6.5																					

14

Plunging angle for ramping and helical milling: 3°

Cutting data – SilverLine – End Mills – 50 955 ... / 50 964 ... / 50 965 ... / 50 968 ...

	Type short	Type long / extra long	Type short / long	Type extra long	Ø DC = 3,0–3,5 mm			Ø DC = 4,0–4,5 mm			Ø DC = 5,0–5,5 mm			Ø DC = 6,0–7,0 mm			Ø DC = 8,0–9,0 mm		
					a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min		$a_{p\,max}$ x DC	$a_{p\,max}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	**240**	**192**	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
1.2	**250**	**200**	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
1.3	**210**	**168**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.4	**190**	**152**	1,0*	0,5	0,019	0,015	0,011	0,027	0,021	0,015	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03
1.5	**200**	**160**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.6	**190**	**152**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.7	**190**	**152**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.8	**170**	**136**	1,0*	0,5	0,019	0,015	0,011	0,027	0,021	0,015	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03
1.9	**160**	**128**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.10	**190**	**152**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.11	**170**	**136**	1,0*	0,5	0,019	0,015	0,011	0,027	0,021	0,015	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03
1.12	**190**	**152**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.13																			
1.14																			
1.15	**180**	**144**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.16	**150**	**120**	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
2.1	**130**	**100**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.2	**120**	**90**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.3	**100**	**80**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.4	**100**	**80**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.5	**120**	**90**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.6	**120**	**90**	1,0*	0,5	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
2.7	**30**	**24**	1,0*	0,5	0,011	0,010	0,007	0,016	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,00	0,03	0,02
3.1	200	160	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
3.2	160	128	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.3	190	152	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.4	150	120	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.5	180	144	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.6	160	128	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.7	180	144	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.8	160	128	1,0*	0,5	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
4.1																			
4.2																			
4.3																			
4.4																			
4.5																			
4.6	280	224	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.7	300	240	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.8	160	128	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.9	140	112	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.10	120	96	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.11	350	280	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.12	300	240	1,0*	0,5	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
4.13																			
4.14																			
4.15																			
4.16																			
4.17																			
4.18																			
4.19																			
5.1																			
5.2																			
5.3	**30**	**24**	0,5	0,25	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.4	**30**	**24**	0,5	0,25	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.5	**30**	**24**	0,5	0,25	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.6	**30**	**24**	0,5	0,25	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.7	**30**	**24**	0,5	0,25	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.8	**30**	**24**	0,5	0,25	0,013	0,010	0,007	0,018	0,014	0,010	0,026	0,019	0,013	0,034	0,025	0,017	0,04	0,03	0,02
5.9	**110**	**80**	0,5	0,25	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
5.10	**90**	**70**	0,5	0,25	0,019	0,015	0,011	0,027	0,021	0,015	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03
5.11	**70**	**60**	0,5	0,25	0,015	0,012	0,008	0,022	0,017	0,012	0,032	0,024	0,016	0,042	0,031	0,021	0,05	0,04	0,03
6.1																			
6.2																			
6.3																			
6.4																			
6.5																			

* = long version: $a_{p\,max.}$ = 1.5 x DC at f_z x 0.75

„Extra long“ version: when profiling with an a_e of 0.1–0.4 x DC an a_p of 1.0 x DC should be used.

Index	Ø DC = 10,0–11,0 mm			Ø DC = 12,0 mm			Ø DC = 14,0–15,0 mm			Ø DC = 16,0–17,0 mm			Ø DC = 18,0–19,0 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●	○	○
1.2	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●	○	○
1.3	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.4	0,08	0,06	0,04	0,10	0,08	0,05	0,10	0,08	0,06	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●	○	○
1.5	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.6	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.7	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.8	0,08	0,06	0,04	0,10	0,08	0,05	0,10	0,08	0,06	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●	○	○
1.9	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.10	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.11	0,08	0,06	0,04	0,10	0,08	0,05	0,10	0,08	0,06	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●	○	○
1.12	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.13																					
1.14																					
1.15	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.16	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
2.1	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.2	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.3	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.4	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.5	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.6	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	●		
2.7	0,01	0,04	0,03	0,06	0,05	0,03	0,06	0,05	0,04	0,07	0,05	0,04	0,07	0,06	0,05	0,08	0,07	0,05	●		
3.1	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●	●	●
3.2	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.3	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.4	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.5	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.6	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.7	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.8	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
4.1																					
4.2																					
4.3																					
4.4																					
4.5																					
4.6	0,12	0,09	0,06	0,17	0,13	0,09	0,18	0,14	0,10	0,19	0,14	0,11	0,19	0,16	0,12	0,22	0,18	0,14	●		
4.7	0,12	0,09	0,06	0,17	0,13	0,09	0,18	0,14	0,10	0,19	0,14	0,11	0,19	0,16	0,12	0,22	0,18	0,14	●		
4.8	0,12	0,09	0,06	0,17	0,13	0,09	0,18	0,14	0,10	0,19	0,14	0,11	0,19	0,16	0,12	0,22	0,18	0,14	●		
4.9	0,12	0,09	0,06	0,17	0,13	0,09	0,18	0,14	0,10	0,19	0,14	0,11	0,19	0,16	0,12	0,22	0,18	0,14	●		
4.10	0,12	0,09	0,06	0,17	0,13	0,09	0,18	0,14	0,10	0,19	0,14	0,11	0,19	0,16	0,12	0,22	0,18	0,14	●		
4.11	0,12	0,09	0,06	0,17	0,13	0,09	0,18	0,14	0,10	0,19	0,14	0,11	0,18	0,14	0,11	0,19	0,15	0,12	●		
4.12	0,12	0,09	0,06	0,17	0,13	0,09	0,18	0,14	0,10	0,19	0,14	0,11	0,18	0,14	0,11	0,19	0,15	0,12	●		
4.13																					
4.14																					
4.15																					
4.16																					
4.17																					
4.18																					
4.19																					
5.1																					
5.2																					
5.3	0,05	0,04	0,03	0,07	0,05	0,04	0,07	0,06	0,04	0,08	0,06	0,05	0,08	0,07	0,05	0,09	0,07	0,05	●		
5.4	0,05	0,04	0,03	0,07	0,05	0,04	0,07	0,06	0,04	0,08	0,06	0,05	0,08	0,07	0,05	0,09	0,07	0,05	●		
5.5	0,05	0,04	0,03	0,07	0,03	0,04	0,07	0,06	0,04	0,08	0,06	0,05	0,08	0,07	0,05	0,09	0,07	0,05	●		
5.6	0,05	0,04	0,03	0,07	0,05	0,04	0,07	0,06	0,04	0,08	0,06	0,05	0,08	0,07	0,05	0,09	0,07	0,05	●		
5.7	0,05	0,04	0,03	0,07	0,05	0,04	0,07	0,06	0,04	0,08	0,06	0,05	0,08	0,07	0,05	0,09	0,07	0,05	●		
5.8	0,05	0,04	0,03	0,07	0,05	0,04	0,07	0,06	0,04	0,08	0,06	0,05	0,08	0,07	0,05	0,09	0,07	0,05	●		
5.9	0,10	0,08	0,05	0,14	0,10	0,07	0,15	0,11	0,08	0,15	0,12	0,09	0,16	0,13	0,10	0,17	0,14	0,11	●		
5.10	0,08	0,06	0,04	0,11	0,08	0,06	0,11	0,09	0,06	0,12	0,09	0,07	0,13	0,10	0,08	0,14	0,12	0,09	●		
5.11	0,06	0,05	0,03	0,09	0,07	0,05	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,12	0,10	0,08	●		
6.1																					
6.2																					
6.3																					
6.4																					
6.5																					

Plunging angle for ramping and helical milling: 3°

Cutting data – SilverLine – End Mills – 50 954 ...

	Type short	Type long		Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min		$a_{p\,max}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	240	192	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.2	250	200	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.3	210	168	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.4	190	152	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.5	200	160	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.6	190	152	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.7	190	152	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.8	170	136	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.9	160	128	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.10	190	152	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.11	170	136	1,0*	0,019	0,015	0,011	0,027	0,021	0,015	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03
1.12	180	144	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.13																		
1.14																		
1.15	170	136	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
1.16	160	128	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
2.1																		
2.2																		
2.3																		
2.4																		
2.5																		
2.6																		
2.7																		
3.1	200	160	1,0*	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
3.2	180	144	1,0*	0,032	0,025	0,018	0,045	0,035	0,025	0,064	0,048	0,032	0,076	0,057	0,038	0,09	0,07	0,05
3.3	190	152	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.4	170	136	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.5	180	144	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.6	160	128	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.7	180	144	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
3.8	160	128	1,0*	0,025	0,020	0,014	0,036	0,028	0,020	0,054	0,040	0,027	0,066	0,049	0,033	0,08	0,06	0,04
4.1																		
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6.1																		
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6.4																		
6.5																		

* = long version: $a_{p\,max.}$ = 1.5 x DC at f_z x 0.75

Plunging angle for ramping and helical milling: 3°

Index	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 18 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.2	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.3	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.4	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.5	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.6	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.7	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.8	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.9	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.10	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.11	0,08	0,06	0,04	0,10	0,08	0,05	0,10	0,08	0,06	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	●	○	○
1.12	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	○	○
1.13																					
1.14																					
1.15	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	○
1.16	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	○
2.1																					
2.2																					
2.3																					
2.4																					
2.5																					
2.6																					
2.7																					
3.1	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●	●	●
3.2	0,12	0,09	0,06	0,14	0,10	0,07	0,16	0,12	0,09	0,17	0,13	0,10	0,17	0,14	0,11	0,19	0,16	0,12	●	●	●
3.3	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.4	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.5	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.6	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.7	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
3.8	0,10	0,08	0,05	0,12	0,09	0,06	0,13	0,10	0,07	0,14	0,10	0,08	0,14	0,12	0,09	0,16	0,13	0,10	●	●	●
4.1																					
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Cutting data standard values – SilverLine – End Mills – 50 959 ...

	Type long	Type extra long		Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm
				$a_{e\,max.}$ 0,05 x DC	$a_{e\,max.}$ 0,05 x DC	$a_{e\,max.}$ 0,05 x DC	$a_{e\,max.}$ 0,05 x DC	$a_{e\,max.}$ 0,05 x DC
Index	v_c m/min		$a_{p\,max.}$	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.1	290	232	2xDC	0,066	0,08	0,10	0,12	0,14
1.2	300	240	2xDC	0,066	0,08	0,10	0,12	0,14
1.3	260	208	2xDC	0,066	0,08	0,10	0,12	0,14
1.4	250	200	2xDC	0,066	0,08	0,10	0,12	0,14
1.5	250	200	2xDC	0,066	0,08	0,10	0,12	0,14
1.6	230	184	2xDC	0,066	0,08	0,10	0,12	0,14
1.7	230	184	2xDC	0,066	0,08	0,10	0,12	0,14
1.8	220	176	2xDC	0,066	0,08	0,10	0,12	0,14
1.9	200	160	2xDC	0,066	0,08	0,10	0,12	0,14
1.10	230	184	2xDC	0,066	0,08	0,10	0,12	0,14
1.11	210	168	2xDC	0,050	0,06	0,08	0,10	0,10
1.12	220	176	2xDC	0,066	0,08	0,10	0,12	0,14
1.13	150	120	2xDC	0,042	0,05	0,06	0,08	0,09
1.14								
1.15	210	168	2xDC	0,066	0,08	0,10	0,12	0,14
1.16	200	160	2xDC	0,066	0,08	0,10	0,12	0,14
2.1	160	128	2xDC	0,042	0,05	0,06	0,08	0,09
2.2	150	120	2xDC	0,042	0,05	0,06	0,08	0,09
2.3	125	100	2xDC	0,042	0,05	0,06	0,08	0,09
2.4	150	120	2xDC	0,042	0,05	0,06	0,08	0,09
2.5	150	120	2xDC	0,042	0,05	0,06	0,08	0,09
2.6	150	120	2xDC	0,042	0,05	0,06	0,08	0,09
2.7	40	32	2xDC	0,034	0,04	0,05	0,06	0,07
3.1	250	200	2xDC	0,076	0,09	0,12	0,14	0,17
3.2	220	176	2xDC	0,076	0,09	0,12	0,14	0,17
3.3	230	184	2xDC	0,066	0,08	0,10	0,12	0,14
3.4	210	168	2xDC	0,066	0,08	0,10	0,12	0,14
3.5	220	176	2xDC	0,066	0,08	0,10	0,12	0,14
3.6	200	160	2xDC	0,066	0,08	0,10	0,12	0,14
3.7	220	176	2xDC	0,066	0,08	0,10	0,12	0,14
3.8	200	160	2xDC	0,066	0,08	0,10	0,12	0,14
4.1								
4.2								
4.3								
4.4								
4.5								
4.6	350	280	2xDC	0,076	0,09	0,12	0,14	0,17
4.7	370	296	2xDC	0,076	0,09	0,12	0,14	0,17
4.8	300	240	2xDC	0,076	0,09	0,12	0,14	0,17
4.9	220	176	2xDC	0,076	0,09	0,12	0,14	0,17
4.10	180	144	2xDC	0,076	0,09	0,12	0,14	0,17
4.11	430	344	2xDC	0,076	0,09	0,12	0,14	0,17
4.12	370	296	2xDC	0,076	0,09	0,12	0,14	0,17
4.13								
4.14								
4.15								
4.16								
4.17								
4.18								
4.19								
5.1								
5.2								
5.3	40	32	2xDC	0,034	0,04	0,05	0,06	0,07
5.4	40	32	2xDC	0,034	0,04	0,05	0,06	0,07
5.5	40	32	2xDC	0,034	0,04	0,05	0,06	0,07
5.6	40	32	2xDC	0,034	0,04	0,05	0,06	0,07
5.7	40	32	2xDC	0,034	0,04	0,05	0,06	0,07
5.8	40	32	2xDC	0,034	0,04	0,05	0,06	0,07
5.9	200	160	2xDC	0,066	0,08	0,10	0,12	0,14
5.10	175	140	2xDC	0,050	0,06	0,08	0,10	0,10
5.11	125	100	2xDC	0,042	0,05	0,06	0,08	0,09
6.1								
6.2								
6.3								
6.4								
6.5								

	Ø DC = 20 mm	Ø DC = 25 mm	● 1st choice		○ suitable
	$a_{e\,max.}$ 0,05 x DC	$a_{e\,max.}$ 0,05 x DC	Emulsion	Compressed air	MMS
Index	f_z mm	f_z mm			
1.1	0,16	0,18	●	○	○
1.2	0,16	0,18	●	○	○
1.3	0,16	0,18	●	○	○
1.4	0,16	0,18	●	○	○
1.5	0,16	0,18	●	○	○
1.6	0,16	0,18	●	○	○
1.7	0,16	0,18	●	○	○
1.8	0,16	0,18	●	○	○
1.9	0,16	0,18	●	○	○
1.10	0,16	0,18	●	○	○
1.11	0,13	0,14	●	○	○
1.12	0,16	0,18	●	○	○
1.13	0,11	0,12	●	○	○
1.14					
1.15	0,16	0,18	●	○	○
1.16	0,16	0,18	●	○	○
2.1	0,11	0,12	●		
2.2	0,11	0,12	●		
2.3	0,11	0,12	●		
2.4	0,11	0,12	●		
2.5	0,11	0,12	●		
2.6	0,11	0,12	●		
2.7	0,08	0,09	●		
3.1	0,19	0,21	●	●	●
3.2	0,19	0,21	●	●	●
3.3	0,16	0,18	●	●	●
3.4	0,16	0,18	●	●	●
3.5	0,16	0,18	●	●	●
3.6	0,16	0,18	●	●	●
3.7	0,16	0,18	●	●	●
3.8	0,16	0,18	●	●	●
4.1					
4.2					
4.3					
4.4					
4.5					
4.6	0,19	0,21	●		
4.7	0,19	0,21	●		
4.8	0,19	0,21	●		
4.9	0,19	0,21	●		
4.10	0,19	0,21	●		
4.11	0,19	0,21	●		
4.12	0,19	0,21	●		
4.13					
4.14					
4.15					
4.16					
4.17					
4.18					
4.19					
5.1					
5.2					
5.3	0,08	0,09	●		
5.4	0,08	0,09	●		
5.5	0,08	0,09	●		
5.6	0,08	0,09	●		
5.7	0,08	0,09	●		
5.8	0,08	0,09	●		
5.9	0,16	0,18	●		
5.10	0,13	0,14	●		
5.11	0,11	0,12	●		
6.1					
6.2					
6.3					
6.4					
6.5					

Cutting data – SilverLine – Torus End Mills – 50 962 ...

	Type short	Type long	Ø DCX = 6 mm			Ø DCX = 8 mm			Ø DCX = 10 mm			Ø DCX = 12 mm			Ø DCX = 14 mm			Ø DCX = 16 mm		
			a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX
Index	v_c m/min		f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1																				
1.2																				
1.3																				
1.4																				
1.5																				
1.6																				
1.7																				
1.8	170	136	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.9																				
1.10																				
1.11	170	136	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.12	190	152	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.13	130	104	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.14																				
1.15	120	96	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.16	120	96	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
2.1																				
2.2																				
2.3																				
2.4																				
2.5																				
2.6																				
2.7																				
3.1	250	200	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.2	230	184	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.3	200	160	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.4	180	144	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.5	220	176	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.6	210	168	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.7	220	176	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.8	210	168	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
4.1																				
4.2																				
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5.10																				
5.11																				
6.1	**160**	**128**	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,55	0,42	0,30	0,59	0,45	0,35
6.2	**120**	**96**	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,55	0,42	0,30	0,59	0,45	0,35
6.3	**80**	**64**	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,55	0,42	0,30	0,59	0,45	0,35
6.4																				
6.5																				

$a_{e\,max.}$ = 0.5 x DC / $a_{p\,max.}$ = 0.03 x DC

Plunging angle for ramping and helical milling: 3°

Index	Ø DCX = 18 mm			Ø DCX = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DCX	a_e 0,3–0,4 x DCX	a_e 0,6–1,0 x DCX	a_e 0,1–0,2 x DCX	a_e 0,3–0,4 x DCX	a_e 0,6–1,0 x DCX	Emulsion	Compressed air	MMS
	f_z mm			f_z mm					
1.1									
1.2									
1.3									
1.4									
1.5									
1.6									
1.7									
1.8	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.9									
1.10									
1.11	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.12	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.13	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.14									
1.15	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.16	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
2.1									
2.2									
2.3									
2.4									
2.5									
2.6									
2.7									
3.1	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.2	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.3	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.4	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.5	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.6	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.7	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.8	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
4.1									
4.2									
4.3									
4.4									
4.5									
4.6									
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4.8									
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5.4									
5.5									
5.6									
5.7									
5.8									
5.9									
5.10									
5.11									
6.1	0,63	0,52	0,40	0,71	0,58	0,45		●	●
6.2	0,63	0,52	0,40	0,71	0,58	0,45		●	●
6.3	0,63	0,52	0,40	0,71	0,58	0,45		●	●
6.4									
6.5									

Cutting data – SilverLine – Torus End Mills – 50 961 ...

	Type short	Type long	Ø DCX = 6 mm			Ø DCX = 8 mm			Ø DCX = 10 mm			Ø DCX = 12 mm			Ø DCX = 14 mm			Ø DCX = 16 mm		
			a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX
Index	v_c m/min		f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	220	176	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.2	230	184	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.3	240	192	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.4	220	176	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.5	210	168	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.6	190	152	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,55	0,42	0,30	0,59	0,45	0,35
1.7	200	160	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.8	180	144	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,73	0,57	0,40	0,59	0,45	0,35
1.9																				
1.10	180	144	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.11	170	136	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,55	0,42	0,30	0,59	0,45	0,35
1.12	180	144	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,55	0,42	0,30	0,59	0,45	0,35
1.13	150	120	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
1.14																				
1.15	150	120	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,55	0,42	0,30	0,59	0,45	0,35
1.16	150	120	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,50	0,37	0,25	0,55	0,42	0,30	0,59	0,45	0,35
2.1																				
2.2																				
2.3																				
2.4																				
2.5																				
2.6																				
2.7																				
3.1	250	200	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.2	230	184	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.3	200	160	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.4	180	144	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.5	220	176	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.6	210	168	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.7	220	176	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
3.8	210	168	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
4.1																				
4.2																				
4.3																				
4.4																				
4.5																				
4.6	250	200	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
4.7																				
4.8	220	176	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
4.9																				
4.10	180	144	0,40	0,30	0,20	0,50	0,37	0,25	0,60	0,45	0,30	0,70	0,52	0,35	0,73	0,57	0,40	0,76	0,58	0,45
4.11																				
4.12																				
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5.7																				
5.8																				
5.9																				
5.10																				
5.11																				
6.1																				
6.2	120	96	0,10	0,07	0,05	0,20	0,15	0,10	0,30	0,22	0,15	0,40	0,30	0,20	0,46	0,35	0,25	0,51	0,39	0,30
6.3																				
6.4																				
6.5																				

$a_{e\,max.}$ = 0.5 x DC / $a_{p\,max.}$ = 0.05 x DC

Plunging angle for ramping and helical milling: 3°

Index	Ø DCX = 18 mm			Ø DCX = 20 mm			● 1st choice		○ suitable
	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	a_p 0,1–0,2 x DCX	a_p 0,3–0,4 x DCX	a_p 0,6–1,0 x DCX	Emulsion	Compressed air	MMS
	f_z mm			f_z mm					
1.1	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.2	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.3	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.4	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.5	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.6	0,63	0,52	0,40	0,71	0,58	0,45	●	○	○
1.7	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.8	0,63	0,52	0,40	0,71	0,58	0,45	●	○	○
1.9									
1.10	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.11	0,63	0,52	0,40	0,71	0,58	0,45	●	○	○
1.12	0,63	0,52	0,40	0,71	0,58	0,45	●	○	○
1.13	0,79	0,65	0,50	0,87	0,71	0,55	●	○	○
1.14									
1.15	0,63	0,52	0,40	0,71	0,58	0,45	●	○	○
1.16	0,63	0,52	0,40	0,71	0,58	0,45	●	○	○
2.1									
2.2									
2.3									
2.4									
2.5									
2.6									
2.7									
3.1	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.2	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.3	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.4	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.5	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.6	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.7	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
3.8	0,79	0,65	0,50	0,87	0,71	0,55	●	●	●
4.1									
4.2									
4.3									
4.4									
4.5									
4.6	0,79	0,65	0,50	0,87	0,71	0,55	●		
4.7									
4.8	0,87	0,71	0,55	0,87	0,71	0,55	●		
4.9									
4.10	0,79	0,65	0,50	0,87	0,71	0,55	●		
4.11									
4.12									
4.13									
4.14									
4.15									
4.16									
4.17									
4.18									
4.19									
5.1									
5.2									
5.3									
5.4									
5.5									
5.6									
5.7									
5.8									
5.9									
5.10									
5.11									
6.1									
6.2	0,55	0,45	0,35	0,63	0,52	0,40		●	●
6.3									
6.4									
6.5									

Cutting data standard values – S-Cut – End mills – SC-UNI, short – long

	Type short / long		Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm		
			a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,6–1,0 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,6–1,0 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,6–1,0 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,6–1,0 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	105–240	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
1.2	105–250	1,0	0,036	0,028	0,020	0,049	0,038	0,028	0,071	0,053	0,036	0,095	0,071	0,047	0,127	0,092	0,069
1.3	90–210	1,0	0,036	0,028	0,020	0,049	0,038	0,028	0,071	0,053	0,036	0,095	0,071	0,047	0,127	0,092	0,069
1.4	80–190	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
1.5	90–200	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
1.6	90–190	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
1.7	80–190	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
1.8	70–170	1,0	0,029	0,022	0,016	0,040	0,031	0,023	0,058	0,044	0,029	0,077	0,058	0,039	0,104	0,081	0,058
1.9	70–170	1,0	0,025	0,020	0,015	0,036	0,028	0,021	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046
1.10	70–190	1,0	0,025	0,020	0,015	0,036	0,028	0,021	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046
1.11	70–170	1,0	0,025	0,020	0,015	0,036	0,028	0,021	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046
1.12	70–190	1,0	0,025	0,020	0,015	0,036	0,028	0,021	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046
1.13	70–150	1,0	0,023	0,017	0,013	0,032	0,024	0,017	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046
1.14	50–120	1,0	0,020	0,015	0,012	0,028	0,021	0,015	0,039	0,029	0,020	0,053	0,039	0,026	0,069	0,058	0,035
1.15	70–180	1,0	0,025	0,020	0,015	0,036	0,028	0,021	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046
1.16	80–160	1,0	0,025	0,020	0,015	0,036	0,028	0,021	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046
2.1	90–130	1,0	0,029	0,022	0,016	0,040	0,031	0,023	0,058	0,044	0,029	0,077	0,058	0,039	0,104	0,081	0,058
2.2	80–120	1,0	0,023	0,017	0,013	0,032	0,024	0,017	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046
2.3	80–120	1,0	0,023	0,017	0,013	0,032	0,024	0,017	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046
2.4	80–120	1,0	0,023	0,017	0,013	0,032	0,024	0,017	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046
2.5	80–120	1,0	0,023	0,017	0,013	0,032	0,024	0,017	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046
2.6	80–120	1,0	0,023	0,017	0,013	0,032	0,024	0,017	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046
2.7	40–60	1,0	0,020	0,015	0,012	0,028	0,021	0,015	0,039	0,029	0,020	0,053	0,039	0,026	0,069	0,029	0,035
3.1	200–240	1,0	0,046	0,036	0,025	0,063	0,049	0,036	0,091	0,068	0,046	0,122	0,091	0,061	0,161	0,127	0,081
3.2	180–220	1,0	0,046	0,036	0,025	0,063	0,049	0,036	0,091	0,068	0,046	0,122	0,091	0,061	0,161	0,127	0,081
3.3	200–240	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
3.4	180–220	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
3.5	160–200	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
3.6	140–180	1,0	0,032	0,025	0,018	0,046	0,036	0,025	0,066	0,048	0,032	0,087	0,064	0,044	0,115	0,092	0,058
3.7	160–200	1,0	0,032	0,025	0,018	0,046	0,036	0,025	0,066	0,048	0,032	0,087	0,064	0,044	0,115	0,092	0,058
3.8	140–180	1,0	0,032	0,025	0,018	0,046	0,036	0,025	0,066	0,048	0,032	0,087	0,064	0,044	0,115	0,092	0,058
4.1																	
4.2																	
4.3																	
4.4																	
4.5																	
4.6	140–280	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
4.7	120–300	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
4.8	110–180	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
4.9	90–160	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
4.10	80–140	1,0	0,039	0,030	0,022	0,054	0,041	0,030	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069
4.11	150–350	1,0	0,036	0,028	0,020	0,049	0,038	0,028	0,071	0,053	0,036	0,095	0,071	0,047	0,127	0,092	0,069
4.12	140–300	1,0	0,036	0,028	0,020	0,049	0,038	0,028	0,071	0,053	0,036	0,095	0,071	0,047	0,127	0,092	0,069
4.13																	
4.14	180–400	1,0	0,077	0,060	0,044	0,108	0,084	0,061	0,155	0,116	0,078	0,207	0,154	0,104	0,276	0,207	0,138
4.15																	
4.16																	
4.17																	
4.18	60–120	0,5	0,031	0,024	0,017	0,044	0,033	0,024	0,062	0,046	0,031	0,083	0,062	0,041	0,115	0,081	0,058
4.19	40–80	0,5	0,025	0,020	0,015	0,036	0,028	0,021	0,052	0,021	0,026	0,069	0,052	0,035	0,092	0,069	0,046
5.1	30	0,5	0,025	0,020	0,014	0,035	0,026	0,020	0,049	0,037	0,025	0,067	0,049	0,033	0,092	0,069	0,046
5.2	30	0,5	0,023	0,018	0,013	0,032	0,025	0,018	0,047	0,035	0,023	0,062	0,046	0,031	0,081	0,058	0,046
5.3	30	0,5	0,021	0,016	0,012	0,029	0,022	0,016	0,041	0,031	0,021	0,055	0,041	0,028	0,069	0,058	0,035
5.4	30	0,5	0,018	0,014	0,010	0,025	0,020	0,014	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035
5.5	30	0,5	0,018	0,014	0,010	0,025	0,020	0,014	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035
5.6	30	0,5	0,013	0,014	0,007	0,018	0,014	0,010	0,026	0,020	0,013	0,035	0,025	0,017	0,046	0,035	0,023
5.7	45	0,5	0,018	0,008	0,010	0,025	0,020	0,014	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035
5.8	30	0,5	0,018	0,008	0,010	0,025	0,020	0,014	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035
5.9	80–160	0,5	0,029	0,022	0,016	0,040	0,031	0,023	0,058	0,044	0,029	0,077	0,058	0,039	0,104	0,081	0,058
5.10	80–140	0,5	0,029	0,022	0,016	0,040	0,031	0,022	0,058	0,043	0,029	0,076	0,056	0,038	0,104	0,081	0,058
5.11	50–100	0,5	0,025	0,020	0,015	0,036	0,028	0,021	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046
6.1	120–160	0,5	0,023	0,018	0,013	0,032	0,025	0,018	0,047	0,035	0,023	0,062	0,046	0,031	0,081	0,058	0,046
6.2	80–120	0,3	0,021	0,016	0,012	0,029	0,022	0,016	0,041	0,031	0,021	0,055	0,041	0,028	0,069	0,058	0,035
6.3	60–100	0,2	0,018	0,014	0,010	0,025	0,020	0,014	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035
6.4																	
6.5																	

With an a_p of 1.5 x DC the f_z should be multiplied by 0.75.
With an a_p of 2.0 x DC the f_z should be multiplied by 0.5.

Plunging angle for ramping and helical milling: 3°

	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm			Ø DC = 20 mm			Ø DC = 25 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC			
Index	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			Emulsion	Compressed air	MMS
1.1	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●	○	○
1.2	0,161	0,115	0,081	0,173	0,127	0,092	0,184	0,150	0,115	0,230	0,184	0,138	0,292	0,234	0,175	●	○	○
1.3	0,161	0,115	0,081	0,173	0,127	0,092	0,184	0,150	0,115	0,230	0,184	0,138	0,292	0,234	0,175	●	○	○
1.4	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●	○	○
1.5	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●	○	○
1.6	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●	○	○
1.7	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●	○	○
1.8	0,127	0,092	0,069	0,138	0,104	0,069	0,150	0,115	0,092	0,184	0,150	0,115	0,234	0,190	0,146	●	○	○
1.9	0,115	0,092	0,058	0,127	0,092	0,069	0,138	0,104	0,081	0,161	0,138	0,104	0,204	0,175	0,131	●	○	○
1.10	0,115	0,092	0,058	0,127	0,092	0,069	0,138	0,104	0,081	0,161	0,138	0,104	0,204	0,175	0,131	●	○	○
1.11	0,115	0,092	0,058	0,127	0,092	0,069	0,138	0,104	0,081	0,161	0,138	0,104	0,204	0,175	0,131	●	○	○
1.12	0,115	0,092	0,058	0,127	0,092	0,069	0,138	0,104	0,081	0,161	0,138	0,104	0,204	0,175	0,131	●	○	○
1.13	0,104	0,081	0,046	0,115	0,081	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,190	0,146	0,117	●	○	○
1.14	0,092	0,069	0,046	0,092	0,069	0,046	0,104	0,081	0,058	0,127	0,104	0,081	0,161	0,131	0,102	●	○	○
1.15	0,115	0,092	0,058	0,127	0,092	0,069	0,138	0,104	0,081	0,161	0,138	0,104	0,204	0,175	0,131	●	○	○
1.16	0,115	0,092	0,058	0,127	0,092	0,069	0,138	0,104	0,081	0,161	0,138	0,104	0,204	0,175	0,131	●	○	○
2.1	0,127	0,092	0,069	0,138	0,104	0,069	0,150	0,115	0,092	0,184	0,150	0,115	0,234	0,190	0,146	●		
2.2	0,104	0,081	0,046	0,115	0,081	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,190	0,146	0,117	●		
2.3	0,104	0,081	0,046	0,115	0,081	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,190	0,146	0,117	●		
2.4	0,104	0,081	0,046	0,115	0,081	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,190	0,146	0,117	●		
2.5	0,104	0,081	0,046	0,115	0,081	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,190	0,146	0,117	●		
2.6	0,104	0,081	0,046	0,115	0,081	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,190	0,146	0,117	●		
2.7	0,092	0,069	0,046	0,092	0,069	0,046	0,104	0,081	0,058	0,127	0,104	0,081	0,161	0,131	0,102	●		
3.1	0,207	0,150	0,104	0,219	0,161	0,115	0,242	0,184	0,138	0,288	0,230	0,184	0,365	0,292	0,234		●	
3.2	0,207	0,150	0,104	0,219	0,161	0,115	0,242	0,184	0,138	0,288	0,230	0,184	0,365	0,292	0,234		●	
3.3	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204		●	
3.4	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204		●	
3.5	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204		●	
3.6	0,150	0,104	0,069	0,161	0,115	0,081	0,173	0,127	0,104	0,207	0,173	0,127	0,263	0,219	0,161		●	
3.7	0,150	0,104	0,069	0,161	0,115	0,081	0,173	0,127	0,104	0,207	0,173	0,127	0,263	0,219	0,161		●	
3.8	0,150	0,104	0,069	0,161	0,115	0,081	0,173	0,127	0,104	0,207	0,173	0,127	0,263	0,219	0,161		●	
4.1																		
4.2																		
4.3																		
4.4																		
4.5																		
4.6	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●		○
4.7	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●		○
4.8	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●		○
4.9	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●		○
4.10	0,173	0,127	0,092	0,196	0,138	0,092	0,207	0,161	0,127	0,242	0,196	0,161	0,307	0,248	0,204	●		○
4.11	0,161	0,115	0,081	0,173	0,127	0,092	0,184	0,150	0,127	0,230	0,184	0,138	0,292	0,234	0,175	●		○
4.12	0,161	0,115	0,081	0,173	0,127	0,092	0,184	0,150	0,115	0,230	0,184	0,138	0,292	0,234	0,175	●		○
4.13																		
4.14	0,345	0,253	0,173	0,380	0,288	0,196	0,414	0,311	0,242	0,495	0,403	0,311	0,628	0,511	0,394	●		○
4.15																		
4.16																		
4.17																		
4.18	0,138	0,104	0,069	0,115	0,115	0,081	0,161	0,127	0,092	0,196	0,161	0,127	0,248	0,204	0,161	●		○
4.19	0,115	0,092	0,058	0,127	0,092	0,069	0,138	0,104	0,081	0,161	0,138	0,104	0,204	0,175	0,131	●		○
5.1	0,115	0,081	0,058	0,127	0,092	0,058	0,127	0,104	0,081	0,161	0,127	0,104	0,204	0,161	0,131	●		
5.2	0,104	0,081	0,058	0,115	0,046	0,058	0,127	0,092	0,069	0,150	0,127	0,092	0,190	0,161	0,117	●		
5.3	0,092	0,069	0,046	0,104	0,081	0,046	0,115	0,081	0,069	0,127	0,104	0,081	0,161	0,131	0,102	●		
5.4	0,081	0,058	0,046	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,146	0,117	0,088	●		
5.5	0,081	0,058	0,046	0,092	0,035	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,146	0,117	0,088	●		
5.6	0,058	0,046	0,035	0,069	0,046	0,035	0,069	0,058	0,046	0,081	0,069	0,058	0,102	0,088	0,073	●		
5.7	0,081	0,058	0,046	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,146	0,117	0,088	●		
5.8	0,081	0,058	0,046	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,146	0,117	0,088	●		
5.9	0,127	0,092	0,069	0,138	0,104	0,069	0,150	0,115	0,092	0,184	0,150	0,115	0,234	0,190	0,146	●		
5.10	0,127	0,092	0,069	0,138	0,104	0,069	0,150	0,115	0,092	0,184	0,150	0,115	0,234	0,190	0,146	●		
5.11	0,115	0,092	0,058	0,127	0,092	0,069	0,138	0,104	0,081	0,161	0,138	0,104	0,204	0,175	0,131	●		
6.1	0,104	0,081	0,058	0,115	0,081	0,058	0,127	0,092	0,069	0,150	0,127	0,092	0,190	0,161	0,117	●		
6.2	0,092	0,069	0,046	0,104	0,081	0,046	0,115	0,081	0,069	0,127	0,104	0,081	0,161	0,131	0,102	●		
6.3	0,081	0,058	0,046	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,146	0,117	0,088	●		
6.4																		
6.5																		

Cutting data standard values – S-Cut – End mills – SC-UNI, extra long

	Type extra long			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max}$ x DC		f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	90–180	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
1.2	90–180	1,0	0,5	0,071	0,053	0,036	0,095	0,071	0,047	0,127	0,092	0,069	0,161	0,115	0,081	0,173	0,127	0,092
1.3	70–160	1,0	0,5	0,071	0,053	0,036	0,095	0,071	0,047	0,127	0,092	0,069	0,161	0,115	0,081	0,173	0,127	0,092
1.4	70–140	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
1.5	70–160	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
1.6	70–160	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
1.7	70–140	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
1.8	50–120	1,0	0,5	0,058	0,044	0,029	0,077	0,058	0,039	0,104	0,081	0,058	0,127	0,092	0,069	0,138	0,104	0,069
1.9	50–120	1,0	0,5	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046	0,115	0,092	0,058	0,127	0,092	0,069
1.10	50–120	1,0	0,5	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046	0,115	0,092	0,058	0,127	0,092	0,069
1.11	50–120	1,0	0,5	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046	0,115	0,092	0,058	0,127	0,092	0,069
1.12	50–120	1,0	0,5	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046	0,115	0,092	0,058	0,127	0,092	0,069
1.13	50–120	1,0	0,5	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046	0,104	0,081	0,046	0,115	0,081	0,058
1.14	40–80	1,0	0,5	0,039	0,029	0,020	0,053	0,039	0,026	0,069	0,058	0,035	0,092	0,069	0,046	0,092	0,069	0,046
1.15	50–120	1,0	0,5	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046	0,115	0,092	0,058	0,127	0,092	0,069
1.16	60–140	1,0	0,5	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046	0,115	0,092	0,058	0,127	0,092	0,069
2.1	60–100	1,0	0,5	0,058	0,044	0,029	0,077	0,058	0,039	0,104	0,081	0,058	0,127	0,092	0,069	0,138	0,104	0,069
2.2	50–80	1,0	0,5	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046	0,104	0,081	0,046	0,115	0,081	0,058
2.3	50–80	1,0	0,5	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046	0,104	0,081	0,046	0,115	0,081	0,058
2.4	50–80	1,0	0,5	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046	0,104	0,081	0,046	0,115	0,081	0,058
2.5	50–80	1,0	0,5	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046	0,104	0,081	0,046	0,115	0,081	0,058
2.6	50–80	1,0	0,5	0,046	0,035	0,023	0,061	0,045	0,030	0,081	0,058	0,046	0,104	0,081	0,046	0,115	0,081	0,058
2.7	30–50	1,0	0,5	0,039	0,029	0,020	0,054	0,039	0,026	0,069	0,058	0,035	0,092	0,069	0,046	0,092	0,069	0,046
3.1	160–200	1,0	0,5	0,091	0,068	0,046	0,122	0,091	0,061	0,161	0,127	0,081	0,207	0,150	0,104	0,219	0,161	0,115
3.2	120–160	1,0	0,5	0,091	0,068	0,046	0,122	0,091	0,061	0,161	0,127	0,081	0,207	0,150	0,104	0,219	0,161	0,115
3.3	160–200	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
3.4	120–160	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
3.5	120–160	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
3.6	100–140	1,0	0,5	0,066	0,048	0,032	0,087	0,064	0,044	0,115	0,092	0,058	0,150	0,104	0,069	0,161	0,115	0,081
3.7	120–160	1,0	0,5	0,066	0,048	0,032	0,087	0,064	0,044	0,115	0,092	0,058	0,150	0,104	0,069	0,161	0,115	0,081
3.8	100–140	1,0	0,5	0,066	0,048	0,032	0,087	0,064	0,044	0,115	0,092	0,058	0,150	0,104	0,069	0,161	0,115	0,081
4.1																		
4.2																		
4.3																		
4.4																		
4.5																		
4.6	100–240	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
4.7	90–220	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
4.8	80–180	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
4.9	60–160	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
4.10	60–140	1,0	0,5	0,078	0,058	0,039	0,104	0,077	0,052	0,138	0,104	0,069	0,173	0,127	0,092	0,196	0,138	0,092
4.11	110–320	1,0	0,5	0,071	0,053	0,036	0,095	0,071	0,047	0,127	0,092	0,069	0,161	0,115	0,081	0,173	0,127	0,092
4.12	100–300	1,0	0,5	0,071	0,053	0,036	0,095	0,071	0,047	0,127	0,092	0,069	0,161	0,115	0,081	0,173	0,127	0,092
4.13																		
4.14	120–400	1,0	0,5	0,155	0,116	0,078	0,207	0,154	0,104	0,276	0,207	0,138	0,345	0,253	0,173	0,380	0,288	0,196
4.15																		
4.16																		
4.17																		
4.18	40–120	0,5	0,25	0,062	0,046	0,031	0,083	0,062	0,041	0,115	0,081	0,058	0,138	0,104	0,069	0,115	0,115	0,081
4.19	30–80	0,5	0,25	0,052	0,021	0,026	0,069	0,052	0,035	0,092	0,069	0,046	0,115	0,092	0,058	0,127	0,092	0,069
5.1	30	0,5	0,25	0,049	0,037	0,025	0,067	0,049	0,033	0,092	0,069	0,046	0,115	0,081	0,058	0,127	0,092	0,058
5.2	30	0,5	0,25	0,047	0,035	0,023	0,062	0,046	0,031	0,081	0,058	0,046	0,104	0,081	0,058	0,115	0,046	0,058
5.3	25	0,5	0,25	0,041	0,031	0,021	0,055	0,041	0,028	0,069	0,058	0,035	0,092	0,069	0,046	0,104	0,081	0,046
5.4	25	0,5	0,25	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035	0,081	0,058	0,046	0,092	0,069	0,046
5.5	25	0,5	0,25	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035	0,081	0,058	0,046	0,092	0,069	0,046
5.6	25	0,5	0,25	0,026	0,020	0,013	0,035	0,025	0,017	0,046	0,035	0,023	0,058	0,046	0,035	0,069	0,046	0,035
5.7	45	0,5	0,25	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035	0,081	0,058	0,046	0,092	0,069	0,046
5.8	25	0,5	0,25	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035	0,081	0,058	0,046	0,092	0,069	0,046
5.9	35–65	0,5	0,25	0,058	0,044	0,029	0,077	0,058	0,039	0,104	0,081	0,058	0,127	0,092	0,069	0,138	0,104	0,069
5.10	30–55	0,5	0,25	0,058	0,043	0,029	0,076	0,056	0,038	0,104	0,081	0,046	0,127	0,092	0,069	0,138	0,104	0,069
5.11	30–55	0,5	0,25	0,052	0,039	0,026	0,069	0,052	0,035	0,092	0,069	0,046	0,115	0,092	0,058	0,127	0,092	0,069
6.1	80–120	0,5	0,5	0,047	0,035	0,023	0,062	0,046	0,031	0,081	0,058	0,046	0,104	0,081	0,058	0,115	0,081	0,058
6.2	60–100	0,5	0,3	0,041	0,031	0,021	0,055	0,041	0,028	0,069	0,058	0,035	0,092	0,069	0,046	0,104	0,081	0,046
6.3	50–90	0,5	0,15	0,037	0,026	0,018	0,048	0,036	0,024	0,069	0,046	0,035	0,081	0,058	0,046	0,092	0,069	0,046
6.4																		
6.5																		

Plunging angle for ramping and helical milling: 3°

	Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 20 mm			Ø DC = 25 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,5 x DC	a_e 0,6–1,0 x DC			
Index	f_z mm			f_z mm			f_z mm			f_z mm			Emulsion	Compressed air	MMS
1.1	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●	○	○
1.2	0,173	0,138	0,092	0,173	0,150	0,115	0,230	0,184	0,138	0,276	0,230	0,184	●	○	○
1.3	0,173	0,138	0,092	0,173	0,150	0,115	0,230	0,184	0,138	0,276	0,230	0,184	●	○	○
1.4	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●	○	○
1.5	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●	○	○
1.6	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●	○	○
1.7	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●	○	○
1.8	0,138	0,115	0,081	0,138	0,115	0,092	0,184	0,150	0,115	0,219	0,184	0,150	●	○	○
1.9	0,127	0,104	0,069	0,127	0,104	0,081	0,161	0,138	0,104	0,184	0,161	0,138	●	○	○
1.10	0,127	0,104	0,069	0,127	0,104	0,081	0,161	0,138	0,104	0,184	0,161	0,138	●	○	○
1.11	0,127	0,104	0,069	0,127	0,104	0,081	0,161	0,138	0,104	0,184	0,161	0,138	●	○	○
1.12	0,127	0,104	0,069	0,127	0,104	0,081	0,161	0,138	0,104	0,184	0,161	0,138	●	○	○
1.13	0,115	0,092	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,184	0,150	0,115	●	○	○
1.14	0,092	0,069	0,058	0,092	0,081	0,058	0,127	0,104	0,081	0,150	0,127	0,104	●	○	○
1.15	0,127	0,104	0,069	0,127	0,104	0,081	0,161	0,138	0,104	0,184	0,161	0,138	●	○	○
1.16	0,127	0,104	0,069	0,127	0,104	0,081	0,161	0,138	0,104	0,184	0,161	0,138	●	○	○
2.1	0,138	0,115	0,081	0,138	0,115	0,092	0,184	0,150	0,115	0,219	0,184	0,150	●		
2.2	0,115	0,092	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,184	0,150	0,115	●		
2.3	0,115	0,092	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,184	0,150	0,115	●		
2.4	0,115	0,092	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,184	0,150	0,115	●		
2.5	0,115	0,092	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,184	0,150	0,115	●		
2.6	0,115	0,092	0,058	0,115	0,092	0,069	0,150	0,115	0,092	0,184	0,150	0,115	●		
2.7	0,092	0,069	0,058	0,092	0,081	0,058	0,127	0,104	0,081	0,150	0,127	0,104	●		
3.1	0,219	0,173	0,127	0,230	0,184	0,138	0,288	0,230	0,184	0,345	0,288	0,230	○	●	○
3.2	0,219	0,173	0,127	0,230	0,184	0,138	0,288	0,230	0,184	0,345	0,288	0,230	○	●	○
3.3	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	○	●	○
3.4	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	○	●	○
3.5	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	○	●	○
3.6	0,161	0,127	0,092	0,161	0,127	0,104	0,207	0,173	0,127	0,242	0,207	0,173	○	●	○
3.7	0,161	0,127	0,092	0,161	0,127	0,104	0,207	0,173	0,127	0,242	0,207	0,173	○	●	○
3.8	0,161	0,127	0,092	0,161	0,127	0,104	0,207	0,173	0,127	0,242	0,207	0,173	○	●	○
4.1															
4.2															
4.3															
4.4															
4.5															
4.6	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●		○
4.7	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●		○
4.8	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●		○
4.9	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●		○
4.10	0,184	0,150	0,104	0,196	0,161	0,127	0,242	0,196	0,161	0,288	0,242	0,196	●		○
4.11	0,173	0,138	0,092	0,173	0,150	0,115	0,230	0,184	0,138	0,276	0,230	0,184	●		○
4.12	0,173	0,138	0,092	0,173	0,150	0,115	0,230	0,184	0,138	0,276	0,230	0,184	●		○
4.13															
4.14	0,380	0,299	0,207	0,380	0,311	0,242	0,495	0,403	0,311	0,587	0,495	0,403	●		○
4.15															
4.16															
4.17															
4.18	0,150	0,115	0,081	0,150	0,127	0,092	0,196	0,161	0,127	0,230	0,196	0,161	●		○
4.19	0,127	0,104	0,069	0,127	0,104	0,081	0,161	0,138	0,104	0,184	0,161	0,138	●		○
5.1	0,127	0,092	0,069	0,127	0,104	0,081	0,161	0,127	0,104	0,196	0,161	0,127	●		
5.2	0,115	0,092	0,058	0,115	0,092	0,069	0,150	0,127	0,092	0,173	0,150	0,127	●		
5.3	0,104	0,081	0,058	0,104	0,081	0,069	0,127	0,104	0,081	0,150	0,127	0,104	●		
5.4	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,138	0,115	0,092	●		
5.5	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,138	0,115	0,092	●		
5.6	0,069	0,046	0,035	0,069	0,058	0,046	0,081	0,069	0,058	0,092	0,081	0,069	●		
5.7	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,138	0,115	0,092	●		
5.8	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,138	0,115	0,092	●		
5.9	0,138	0,115	0,081	0,138	0,115	0,092	0,184	0,150	0,115	0,219	0,184	0,150	●		
5.10	0,138	0,104	0,081	0,138	0,115	0,092	0,184	0,150	0,115	0,219	0,184	0,150	●		
5.11	0,127	0,104	0,069	0,127	0,104	0,081	0,161	0,138	0,104	0,184	0,161	0,138	●		
6.1	0,115	0,092	0,058	0,115	0,092	0,069	0,150	0,127	0,092	0,173	0,150	0,127		●	
6.2	0,104	0,081	0,058	0,104	0,081	0,069	0,127	0,104	0,081	0,150	0,127	0,104		●	
6.3	0,092	0,069	0,046	0,092	0,069	0,058	0,115	0,092	0,069	0,138	0,115	0,092		●	
6.4															
6.5															

14

Cutting data standard values – S-Cut – End mills – SC-UNI, ZEFP = 5, long

Index	Type long	max. angle of engagement	Ø DC = 6 mm				Ø DC = 8 mm				Ø DC = 10 mm				Ø DC = 12 mm			
			a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC	h_m	a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC	h_m	a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC	h_m	a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC	h_m
	v_c m/min		f_z mm				f_z mm				f_z mm				f_z mm			
1.1	300	50°	0,134	0,095	0,077	0,030	0,157	0,111	0,090	0,035	0,201	0,142	0,116	0,045	0,255	0,180	0,147	0,057
1.2	300	50°	0,134	0,095	0,077	0,030	0,157	0,111	0,090	0,035	0,201	0,142	0,116	0,045	0,255	0,180	0,147	0,057
1.3	280	50°	0,134	0,095	0,077	0,030	0,157	0,111	0,090	0,035	0,201	0,142	0,116	0,045	0,255	0,180	0,147	0,057
1.4	280	50°	0,134	0,095	0,077	0,030	0,157	0,111	0,090	0,035	0,201	0,142	0,116	0,045	0,255	0,180	0,147	0,057
1.5	280	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.6	260	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.7	280	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.8	260	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.9	260	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.10	240	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.11	240	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.12	240	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.13	240	50°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.14																		
1.15	220	45°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
1.16	220	45°	0,112	0,079	0,065	0,025	0,143	0,101	0,083	0,032	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
2.1	200	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028	0,161	0,114	0,093	0,036
2.2	180	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028	0,161	0,114	0,093	0,036
2.3	160	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028	0,161	0,114	0,093	0,036
2.4	160	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028	0,161	0,114	0,093	0,036
2.5	140	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028	0,161	0,114	0,093	0,036
2.6	140	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028	0,161	0,114	0,093	0,036
2.7	140	45°	0,080	0,057	0,046	0,018	0,098	0,070	0,057	0,022	0,125	0,089	0,072	0,028	0,161	0,114	0,093	0,036
3.1	300	50°	0,134	0,095	0,077	0,030	0,157	0,111	0,090	0,035	0,201	0,142	0,116	0,045	0,255	0,180	0,147	0,057
3.2	300	50°	0,134	0,095	0,077	0,030	0,157	0,111	0,090	0,035	0,201	0,142	0,116	0,045	0,255	0,180	0,147	0,057
3.3	300	50°	0,134	0,095	0,077	0,030	0,157	0,111	0,090	0,035	0,201	0,142	0,116	0,045	0,255	0,180	0,147	0,057
3.4	260	50°	0,134	0,095	0,077	0,030	0,157	0,111	0,090	0,035	0,201	0,142	0,116	0,045	0,255	0,180	0,147	0,057
3.5	260	50°	0,112	0,079	0,065	0,025	0,157	0,111	0,090	0,035	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
3.6	240	50°	0,112	0,079	0,065	0,025	0,157	0,111	0,090	0,035	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
3.7	240	50°	0,112	0,079	0,065	0,025	0,157	0,111	0,090	0,035	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
3.8	200	50°	0,112	0,079	0,065	0,025	0,157	0,111	0,090	0,035	0,179	0,126	0,103	0,040	0,228	0,161	0,132	0,051
4.1																		
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4.16																		
4.17																		
4.18																		
4.19																		
5.1	120	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
5.2	80	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
5.3	80	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
5.4	60	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
5.5	60	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
5.6	60	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
5.7	60	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
5.8	60	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
5.9	140	40°	0,045	0,032	0,026	0,010	0,072	0,051	0,041	0,016	0,089	0,063	0,052	0,020	0,112	0,079	0,065	0,025
5.10	120	40°	0,045	0,032	0,026	0,010	0,072	0,051	0,041	0,016	0,089	0,063	0,052	0,020	0,112	0,079	0,065	0,025
5.11	100	40°	0,045	0,032	0,026	0,010	0,054	0,038	0,031	0,012	0,067	0,047	0,039	0,015	0,085	0,060	0,049	0,019
6.1																		
6.2																		
6.3																		
6.4																		
6.5																		

Cutting depth corresponding to the cutting length

Index	Ø DC = 16 mm				Ø DC = 20 mm				● 1st choice		○ suitable
	a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC	h_m	a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,15 x DC	h_m	Emulsion	Compressed air	MMS
	f_z mm				f_z mm						
1.1	0,291	0,206	0,168	0,065	0,335	0,237	0,194	0,075	○	●	○
1.2	0,291	0,206	0,168	0,065	0,335	0,237	0,194	0,075	○	●	○
1.3	0,291	0,206	0,168	0,065	0,335	0,237	0,194	0,075	○	●	○
1.4	0,291	0,206	0,168	0,065	0,335	0,237	0,194	0,075	○	●	○
1.5	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.6	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.7	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.8	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.9	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.10	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.11	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.12	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.13	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.14											
1.15	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
1.16	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
2.1	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,060	●		
2.2	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,060	●		
2.3	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,060	●		
2.4	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,060	●		
2.5	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,060	●		
2.6	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,060	●		
2.7	0,188	0,133	0,108	0,042	0,268	0,190	0,155	0,060	●		
3.1	0,291	0,206	0,168	0,065	0,335	0,237	0,194	0,075	○	●	○
3.2	0,291	0,206	0,168	0,065	0,335	0,237	0,194	0,075	○	●	○
3.3	0,291	0,206	0,168	0,065	0,335	0,237	0,194	0,075	○	●	○
3.4	0,291	0,206	0,168	0,065	0,335	0,237	0,194	0,075	○	●	○
3.5	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
3.6	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
3.7	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
3.8	0,268	0,190	0,155	0,060	0,291	0,206	0,168	0,065	○	●	○
4.1											
4.2											
4.3											
4.4											
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4.12											
4.13											
4.14											
4.15											
4.16											
4.17											
4.18											
4.19											
5.1	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
5.2	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
5.3	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
5.4	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
5.5	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
5.6	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
5.7	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
5.8	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
5.9	0,157	0,111	0,090	0,035	0,219	0,155	0,127	0,049	●		
5.10	0,157	0,111	0,090	0,035	0,219	0,155	0,127	0,049	●		
5.11	0,116	0,082	0,067	0,026	0,161	0,114	0,093	0,036	●		
6.1											
6.2											
6.3											
6.4											
6.5											

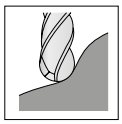
Cutting data standard values – BlueLine – End mills 52 133 ... / 52 134 ... / 52 140 ... /

	52 140... 52 141...	52 133... 52 134... 52 324...		Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm	Ø DC = 20 mm
	Compressed air	Compressed air		a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	190	160	1,0	0,018	0,020	0,022	0,024	0,025	0,030	0,035	0,038	0,040
1.15	190	160	1,0	0,018	0,020	0,022	0,024	0,025	0,030	0,035	0,038	0,040
1.16	190	160	1,0	0,018	0,020	0,022	0,024	0,025	0,030	0,035	0,038	0,040
6.1	**180**	**160**	1,0	0,015	0,015	0,018	0,020	0,022	0,026	0,030	0,033	0,035
6.2	**160**	**140**	1,0	0,013	0,013	0,016	0,018	0,020	0,023	0,025	0,029	0,032
6.3	**140**	**130**	1,0	0,011	0,011	0,014	0,016	0,018	0,020	0,022	0,025	0,027
6.4	**100**	**90**	1,0	0,010	0,010	0,012	0,014	0,016	0,018	0,020	0,023	0,025

Cutting data standard values – BlueLine – End mills 52 135 ... / 52 136 ... / 52 325 ... /

	Compressed air		Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm	Ø DC = 20 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	140	1,0	0,011	0,013	0,015	0,019	0,022	0,027	0,032	0,034	0,035
1.15	140	1,0	0,011	0,013	0,015	0,019	0,022	0,027	0,032	0,034	0,035
1.16	140	1,0	0,011	0,013	0,015	0,019	0,022	0,027	0,032	0,034	0,035
6.1	**140**	**1,0**	0,010	0,011	0,012	0,015	0,018	0,023	0,028	0,029	0,030
6.2	**125**	**1,0**	0,008	0,009	0,011	0,014	0,016	0,020	0,023	0,026	0,028
6.3	**115**	**1,0**	0,007	0,008	0,009	0,012	0,014	0,017	0,020	0,023	0,025
6.4	**80**	**1,0**	0,005	0,006	0,007	0,010	0,012	0,015	0,017	0,019	0,020

Cutting data standard values – BlueLine – Ball-nosed end mills 52 258 ... / 52 259 ...

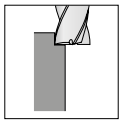


	Compressed air		Ø DC = 0,1–0,5 mm	Ø DC = 0,5–1,0 mm	Ø DC = 1,5–2,0 mm	Ø DC = 2,0–2,5 mm	Ø DC = 2,5–3,0 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	190	0,05	0,008	0,010	0,012	0,016	0,020	0,025	0,030	0,040	0,050	0,060
1.15	190	0,05	0,008	0,010	0,012	0,016	0,020	0,025	0,030	0,040	0,050	0,060
1.16	190	0,05	0,008	0,010	0,012	0,016	0,020	0,025	0,030	0,040	0,050	0,060
6.1	**185**	**0,05**	0,005	0,005	0,006	0,008	0,010	0,015	0,020	0,030	0,040	0,050
6.2	**165**	**0,05**	0,004	0,005	0,006	0,008	0,010	0,014	0,017	0,028	0,038	0,048
6.3	**145**	**0,05**	0,004	0,004	0,005	0,006	0,008	0,012	0,015	0,025	0,035	0,045
6.4	**105**	**0,05**	0,003	0,004	0,005	0,005	0,006	0,010	0,014	0,022	0,030	0,040

Cutting data standard values – BlueLine – Ball-nosed end mills 52 256 ... / 52 257 ... /

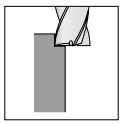
	Compressed air		Ø DC = 0,1–0,5 mm	Ø DC = 0,5–1,0 mm	Ø DC = 1,0–1,5 mm	Ø DC = 1,5–2,0 mm	Ø DC = 2,0–2,5 mm	Ø DC = 2,5–3,0 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 7 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	0,05	0,010	0,011	0,012	0,015	0,019	0,025	0,030	0,033	0,036	0,040
1.15	200	0,05	0,010	0,011	0,012	0,015	0,019	0,025	0,030	0,033	0,036	0,040
1.16	200	0,05	0,010	0,011	0,012	0,015	0,019	0,025	0,030	0,033	0,036	0,040
6.1	**190**	**0,05**	0,006	0,006	0,006	0,008	0,011	0,015	0,020	0,025	0,030	0,038
6.2	**170**	**0,05**	0,005	0,006	0,006	0,008	0,011	0,015	0,020	0,024	0,027	0,035
6.3	**150**	**0,05**	0,005	0,006	0,006	0,008	0,010	0,013	0,018	0,022	0,025	0,032
6.4	**110**	**0,05**	0,004	0,005	0,005	0,007	0,009	0,013	0,016	0,021	0,025	0,030

52 141 ... / 52 324 ...



Index	52 140... 52 141... Compressed air v_c m/min	52 133... 52 134... 52 324... Compressed air v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 3 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 4 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 5 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 6 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 8 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 10 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 12 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 16 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 20 mm a_e 0,6–1,0 x DC f_z mm
1.14	190	160	0,05	0,018	0,020	0,022	0,024	0,025	0,030	0,035	0,038	0,040
1.15	190	160	0,05	0,018	0,020	0,022	0,024	0,025	0,030	0,035	0,038	0,040
1.16	190	160	0,05	0,018	0,020	0,022	0,024	0,025	0,030	0,035	0,038	0,040
6.1	**180**	**160**	0,05	0,015	0,015	0,018	0,020	0,022	0,026	0,030	0,033	0,035
6.2	**160**	**140**	0,05	0,013	0,013	0,016	0,018	0,020	0,023	0,025	0,029	0,032
6.3	**140**	**130**	0,05	0,011	0,011	0,014	0,016	0,018	0,020	0,022	0,025	0,027
6.4	**100**	**90**	0,05	0,010	0,010	0,012	0,014	0,016	0,018	0,020	0,023	0,025

52 326 ...



Index	Compressed air v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 3 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 4 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 5 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 6 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 8 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 10 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 12 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 16 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 20 mm a_e 0,6–1,0 x DC f_z mm
1.14	140	0,05	0,011	0,013	0,015	0,019	0,022	0,027	0,032	0,034	0,035
1.15	140	0,05	0,011	0,013	0,015	0,019	0,022	0,027	0,032	0,034	0,035
1.16	140	0,05	0,011	0,013	0,015	0,019	0,022	0,027	0,032	0,034	0,035
6.1	**140**	0,05	0,010	0,011	0,012	0,015	0,018	0,023	0,028	0,029	0,030
6.2	**125**	0,05	0,008	0,009	0,011	0,014	0,016	0,020	0,023	0,026	0,028
6.3	**115**	0,05	0,007	0,008	0,009	0,012	0,014	0,017	0,020	0,023	0,025
6.4	**80**	0,05	0,005	0,006	0,007	0,010	0,012	0,015	0,017	0,019	0,020

Index	Ø DC = 12 mm a_e 0,05 x DC f_z mm	Ø DC = 16 mm a_e 0,05 x DC f_z mm	Ø DC = 20 mm a_e 0,05 x DC f_z mm
1.14	0,070	0,090	0,100
1.15	0,070	0,090	0,100
1.16	0,070	0,090	0,100
6.1	0,060	0,080	0,090
6.2	0,058	0,078	0,085
6.3	0,055	0,075	0,080
6.4	0,050	0,070	0,070

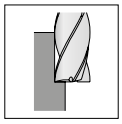
52 302 ... / 52 303 ... / 52 404 ... / 52 405 ...

Index	Ø DC = 8 mm a_e 0,05 x DC f_z mm	Ø DC = 9 mm a_e 0,05 x DC f_z mm	Ø DC = 10 mm a_e 0,05 x DC f_z mm	Ø DC = 12 mm a_e 0,05 x DC f_z mm	Ø DC = 14 mm a_e 0,05 x DC f_z mm	Ø DC = 16 mm a_e 0,05 x DC f_z mm	Ø DC = 20 mm a_e 0,05 x DC f_z mm
1.14	0,050	0,060	0,070	0,080	0,090	0,100	0,120
1.15	0,050	0,060	0,070	0,080	0,090	0,100	0,120
1.16	0,050	0,060	0,070	0,080	0,090	0,100	0,120
6.1	0,044	0,050	0,060	0,070	0,080	0,090	0,110
6.2	0,042	0,048	0,058	0,068	0,078	0,088	0,105
6.3	0,039	0,045	0,055	0,065	0,075	0,085	0,100
6.4	0,035	0,040	0,050	0,060	0,070	0,080	0,090

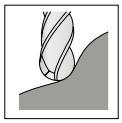
Cutting data standard values – BlueLine – torus cutters 52 304 ...

	Compressed air		Ø DC = 0,5–1,5 mm	Ø DC = 2,0–3,0 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	190	1,0	0,012	0,028	0,055	0,055	0,065	0,075	0,090	0,100	0,120
1.15	190	1,0	0,012	0,028	0,055	0,055	0,065	0,075	0,090	0,100	0,120
1.16	190	1,0	0,012	0,028	0,055	0,055	0,065	0,075	0,090	0,100	0,120
6.1	**180**	1,0	0,008	0,025	0,050	0,050	0,060	0,070	0,085	0,095	0,115
6.2	**160**	1,0	0,007	0,023	0,040	0,040	0,055	0,070	0,082	0,090	0,110
6.3	**140**	1,0	0,006	0,020	0,038	0,038	0,058	0,065	0,080	0,085	0,105
6.4	**100**	1,0	0,005	0,018	0,035	0,035	0,060	0,060	0,075	0,080	0,100

Cutting data standard values – BlueLine – torus cutters 52 305 ...



	Compressed air		Ø DC = 1,0–1,5 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	190	1,0	0,010	0,025	0,025	0,050	0,050	0,060
1.15	190	1,0	0,010	0,025	0,025	0,050	0,050	0,060
1.16	190	1,0	0,010	0,025	0,025	0,050	0,050	0,060
6.1	**180**	1,0	0,006	0,022	0,022	0,045	0,045	0,055
6.2	**160**	1,0	0,005	0,020	0,020	0,035	0,035	0,050
6.3	**140**	1,0	0,004	0,017	0,017	0,033	0,033	0,053
6.4	**100**	1,0	0,003	0,015	0,015	0,030	0,030	0,050



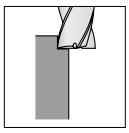
	Compressed air		Ø DC = 0,5–1,5 mm	Ø DC = 2,0–3,0 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	190	0,05	0,016	0,032	0,060	0,060	0,080	0,090	0,100	0,120	0,140
1.15	190	0,05	0,016	0,032	0,060	0,060	0,080	0,090	0,100	0,120	0,140
1.16	190	0,05	0,016	0,032	0,060	0,060	0,080	0,090	0,100	0,120	0,140
6.1	**180**	0,05	0,012	0,030	0,055	0,055	0,075	0,085	0,095	0,105	0,135
6.2	**160**	0,05	0,011	0,028	0,050	0,050	0,070	0,080	0,090	0,100	0,130
6.3	**140**	0,05	0,010	0,025	0,044	0,044	0,070	0,075	0,088	0,085	0,125
6.4	**100**	0,05	0,090	0,021	0,040	0,040	0,065	0,070	0,085	0,090	0,120

	Compressed air		Ø DC = 1,0–1,5 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	190	0,05	0,014	0,030	0,030	0,055	0,055	0,070
1.15	190	0,05	0,014	0,030	0,030	0,055	0,055	0,070
1.16	190	0,05	0,014	0,030	0,030	0,055	0,055	0,070
6.1	**180**	0,05	0,010	0,027	0,027	0,050	0,050	0,065
6.2	**160**	0,05	0,009	0,025	0,025	0,045	0,045	0,060
6.3	**140**	0,05	0,008	0,022	0,022	0,040	0,039	0,063
6.4	**100**	0,05	0,007	0,018	0,018	0,035	0,035	0,060

Cutting data standard values – BlueLine – End mills – 52 344 ...

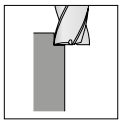
Index	Compressed air: v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 0,5 mm			Ø DC = 1,0–1,5 mm			Ø DC = 2,0–2,5 mm			Ø DC = 3,0–3,5 mm			Ø DC = 4,0 mm			Ø DC = 5,0 mm		
			a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.14	120	**0,5**	0,006	0,004	0,004	0,008	0,006	0,005	0,011	0,008	0,006	0,016	0,012	0,009	0,022	0,017	0,012	0,027	0,020	0,014
1.15	120	**0,5**	0,006	0,004	0,004	0,008	0,006	0,005	0,011	0,008	0,006	0,016	0,012	0,009	0,022	0,017	0,012	0,027	0,020	0,014
1.16	120	**0,5**	0,006	0,004	0,004	0,008	0,006	0,005	0,011	0,008	0,006	0,016	0,012	0,009	0,022	0,017	0,012	0,027	0,020	0,014
6.1	**110**	**0,5**	0,006	0,004	0,004	0,008	0,006	0,005	0,011	0,008	0,006	0,016	0,012	0,009	0,022	0,017	0,012	0,027	0,020	0,014
6.2	**80**	**0,5**	0,006	0,004	0,004	0,008	0,006	0,005	0,011	0,008	0,006	0,016	0,012	0,009	0,022	0,017	0,012	0,027	0,020	0,014
6.3	**60**	**0,5**	0,004	0,004	0,003	0,006	0,005	0,004	0,009	0,007	0,005	0,013	0,010	0,007	0,017	0,013	0,010	0,022	0,016	0,011
6.4	**50**	**0,5**	0,004	0,003	0,002	0,005	0,004	0,003	0,007	0,006	0,004	0,011	0,008	0,006	0,014	0,011	0,008	0,018	0,013	0,009

Cutting data standard values – BlueLine – torus cutters – 52 361 ...



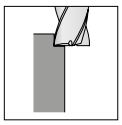
Index	Compressed air: v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 0,8–1,0 mm	Ø DC = 1,2–1,5 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm
			a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	**0,05**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
1.15	200	**0,05**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
1.16	200	**0,05**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
6.1	**190**	**0,05**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
6.2	**170**	**0,05**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
6.3	**150**	**0,05**	0,006	0,008	0,012	0,024	0,036	0,060	0,072	0,084	0,096
6.4	**110**	**0,05**	0,005	0,007	0,010	0,020	0,030	0,050	0,060	0,070	0,080

Cutting data standard values – BlueLine – End mills – 52 353 ...



Index	Compressed air: v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 1 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm
			a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC	a_e 0,6–1,0 x DC
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	**0,05**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
1.15	200	**0,05**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
1.16	200	**0,05**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
6.1	**190**	**0,05**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
6.2	**170**	**0,05**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
6.3	**150**	**0,05**	0,006	0,012	0,024	0,036	0,048	0,060	0,072	0,084	0,096	0,108
6.4	**110**	**0,05**	0,005	0,010	0,020	0,030	0,040	0,050	0,060	0,070	0,080	0,090

Cutting data standard values – BlueLine – End mills – 52 354 ...

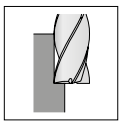


Index	Compressed air: v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 1 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm
			a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC	a_e 0,6-1,0 x DC
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	**0,05**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
1.15	200	**0,05**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
1.16	200	**0,05**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
6.1	**190**	**0,05**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
6.2	**170**	**0,05**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
6.3	**150**	**0,05**	0,004	0,006	0,012	0,018	0,024	0,030	0,036	0,042	0,048	0,054
6.4	**110**	**0,05**	0,003	0,005	0,010	0,015	0,020	0,025	0,030	0,035	0,040	0,045

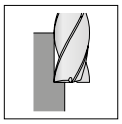
Cutting data standard values – BlueLine – Ball nosed end mills – 52 352 ... / 52 355 ...

Index	Compressed air: v_c m/min	$a_{p\,max.}$ x DC	Ø DC = 0,6–0,8 mm	Ø DC = 1 mm	Ø DC = 1,2–1,5 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
			f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	**0,05**	0,006	0,008	0,010	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120
1.15	200	**0,05**	0,006	0,008	0,010	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120
1.16	200	**0,05**	0,006	0,008	0,010	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120
6.1	**190**	**0,05**	0,006	0,008	0,010	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120
6.2	**170**	**0,05**	0,006	0,008	0,010	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120
6.3	**150**	**0,05**	0,004	0,006	0,008	0,012	0,024	0,036	0,048	0,060	0,072	0,084	0,096
6.4	**110**	**0,05**	0,004	0,005	0,007	0,010	0,020	0,030	0,040	0,050	0,060	0,070	0,080

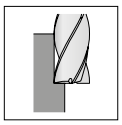
	Ø DC = 6,0 mm			Ø DC = 8,0 mm			Ø DC = 10,0 mm			Ø DC = 12,0 mm			Ø DC = 16,0 mm			Ø DC = 20,0 mm		
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.14	0,036	0,027	0,018	0,048	0,036	0,024	0,054	0,040	0,027	0,060	0,045	0,030	0,076	0,058	0,045	0,095	0,077	0,060
1.15	0,036	0,027	0,018	0,048	0,036	0,024	0,054	0,040	0,027	0,060	0,045	0,030	0,076	0,058	0,045	0,095	0,077	0,060
1.16	0,036	0,027	0,018	0,048	0,036	0,024	0,054	0,040	0,027	0,060	0,045	0,030	0,076	0,058	0,045	0,095	0,077	0,060
6.1	0,036	0,027	0,018	0,048	0,036	0,024	0,054	0,040	0,027	0,060	0,045	0,030	0,076	0,058	0,045	0,095	0,077	0,060
6.2	0,036	0,027	0,018	0,048	0,036	0,024	0,054	0,040	0,027	0,060	0,045	0,030	0,076	0,058	0,045	0,095	0,077	0,060
6.3	0,029	0,021	0,014	0,038	0,029	0,019	0,043	0,032	0,022	0,048	0,036	0,024	0,061	0,046	0,036	0,076	0,062	0,048
6.4	0,024	0,018	0,012	0,032	0,024	0,016	0,036	0,027	0,018	0,040	0,030	0,020	0,051	0,039	0,030	0,063	0,052	0,040



	Compressed air		Ø DC = 0,8–1,0 mm	Ø DC = 1,2–1,5 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm
			a_e 0,1 x DC	a_e 0,1 x DC	a_e 0,1 x DC	a_e 0,1 x DC	a_e 0,1 x DC	a_e 0,1 x DC	a_e 0,1 x DC	a_e 0,1 x DC	a_e 0,1 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	**0,50**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
1.15	200	**0,50**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
1.16	200	**0,50**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
6.1	**190**	**0,50**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
6.2	**170**	**0,50**	0,008	0,010	0,015	0,030	0,045	0,075	0,090	0,105	0,120
6.3	**150**	**0,50**	0,006	0,008	0,012	0,024	0,036	0,060	0,072	0,084	0,096
6.4	**110**	**0,50**	0,005	0,007	0,010	0,020	0,030	0,050	0,060	0,070	0,080



	Compressed air		Ø DC = 1 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	**0,50**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
1.15	200	**0,50**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
1.16	200	**0,50**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
6.1	**190**	**0,50**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
6.2	**170**	**0,50**	0,008	0,015	0,030	0,045	0,060	0,075	0,090	0,105	0,120	0,135
6.3	**150**	**0,50**	0,006	0,012	0,024	0,036	0,048	0,060	0,072	0,084	0,096	0,108
6.4	**110**	**0,50**	0,005	0,010	0,020	0,030	0,040	0,050	0,060	0,070	0,080	0,090



	Compressed air		Ø DC = 1 mm	Ø DC = 2 mm	Ø DC = 3 mm	Ø DC = 4 mm	Ø DC = 5 mm	Ø DC = 6 mm	Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	200	**0,50**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
1.15	200	**0,50**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
1.16	200	**0,50**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
6.1	**190**	**0,50**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
6.2	**170**	**0,50**	0,005	0,008	0,015	0,023	0,030	0,038	0,045	0,053	0,060	0,068
6.3	**150**	**0,50**	0,004	0,006	0,012	0,018	0,024	0,030	0,036	0,042	0,048	0,054
6.4	**110**	**0,50**	0,003	0,005	0,010	0,015	0,020	0,025	0,030	0,035	0,040	0,045

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Cutting data standard values – BlueLine – End mills – 52 348 ...

	Compressed air		Ø DC = 6 mm		Ø DC = 8 mm		Ø DC = 10 mm		Ø DC = 12 mm		Ø DC = 16 mm		Ø DC = 20 mm	
			a_e 0,05 x DC	a_e 0,1 x DC	a_e 0,07 x DC	a_e 0,1 x DC	a_e 0,07 x DC	a_e 0,1 x DC	a_e 0,07 x DC	a_e 0,1 x DC	a_e 0,07 x DC	a_e 0,1 x DC	a_e 0,07 x DC	a_e 0,1 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm											
1.14	120	**2,0**		0,021		0,024		0,027		0,032		0,038		0,045
1.15	120	**2,0**		0,021		0,024		0,027		0,032		0,038		0,045
1.16	120	**2,0**		0,021		0,024		0,027		0,032		0,038		0,045
6.1	**115**	**2,0**		0,021		0,024		0,027		0,032		0,038		0,045
6.2	**100**	**2,0**		0,021		0,024		0,027		0,032		0,038		0,045
6.3	**90**	**2,0**		0,017		0,019		0,022		0,025		0,030		0,036
6.4	**60**	**2,0**	0,014		0,016		0,018		0,021		0,025		0,030	

Cutting data standard values – BlueLine – End mills – 52 345 ... – 52 351 ... / 52 362 ...

	Compressed air		$T_X \leq 2,5 \times DC$											
		Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	190	**0,50**	0,0038	0,0045	0,0150	0,0078	0,0093	0,0131	0,0165	0,0180	0,0195	0,0210	0,0225	0,0240
1.15	190	**0,50**	0,0038	0,0045	0,0150	0,0078	0,0093	0,0131	0,0165	0,0180	0,0195	0,0210	0,0225	0,0240
1.16	190	**0,50**	0,0038	0,0045	0,0150	0,0078	0,0093	0,0131	0,0165	0,0180	0,0195	0,0210	0,0225	0,0240
6.1	**180**	**0,50**	0,0038	0,0045	0,0150	0,0078	0,0093	0,0131	0,0165	0,0180	0,0195	0,0210	0,0225	0,0240
6.2	**120**	**0,50**	0,0038	0,0045	0,0150	0,0078	0,0093	0,0131	0,0165	0,0180	0,0195	0,0210	0,0225	0,0240
6.3	**70**	**0,50**	0,0030	0,0036	0,0120	0,0062	0,0074	0,0104	0,0132	0,0144	0,0156	0,0168	0,0180	0,0192
6.4	**50**	**0,50**	0,0025	0,0030	0,0100	0,0052	0,0062	0,0087	0,0110	0,0120	0,0130	0,0140	0,0150	0,0160

	Compressed air		$T_X = 2,6–5,0 \times DC$											
		Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	171	**0,50**	0,0038	0,0041	0,0045	0,0063	0,0075	0,0102	0,0134	0,0152	0,0158	0,0176	0,0195	0,0195
1.15	171	**0,50**	0,0038	0,0041	0,0045	0,0063	0,0075	0,0102	0,0134	0,0152	0,0158	0,0176	0,0195	0,0195
1.16	171	**0,50**	0,0038	0,0041	0,0045	0,0063	0,0075	0,0102	0,0134	0,0152	0,0158	0,0176	0,0195	0,0195
6.1	**162**	**0,50**	0,0038	0,0041	0,0045	0,0063	0,0075	0,0102	0,0134	0,0152	0,0158	0,0176	0,0195	0,0195
6.2	**108**	**0,50**	0,0038	0,0041	0,0045	0,0063	0,0075	0,0102	0,0134	0,0152	0,0158	0,0176	0,0195	0,0195
6.3	**63**	**0,50**	0,0030	0,0032	0,0036	0,0050	0,0060	0,0082	0,0107	0,0121	0,0126	0,0140	0,0156	0,0156
6.4	**45**	**0,50**	0,0025	0,0027	0,0030	0,0042	0,0050	0,0068	0,0089	0,0101	0,0105	0,0117	0,0130	0,0130

	Compressed air		$T_X = 5,1–10,0 \times DC$											
		Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	152	**0,50**	0,0030	0,0038	0,0045	0,0060	0,0068	0,0075	0,0083	0,0090	0,0105	0,0113	0,0120	0,0128
1.15	152	**0,50**	0,0030	0,0038	0,0045	0,0060	0,0068	0,0075	0,0083	0,0090	0,0105	0,0113	0,0120	0,0128
1.16	152	**0,50**	0,0030	0,0038	0,0045	0,0060	0,0068	0,0075	0,0083	0,0090	0,0105	0,0113	0,0120	0,0128
6.1	**144**	**0,50**	0,0030	0,0038	0,0045	0,0060	0,0068	0,0075	0,0083	0,0090	0,0105	0,0113	0,0120	0,0128
6.2	**96**	**0,50**	0,0030	0,0038	0,0045	0,0060	0,0068	0,0075	0,0083	0,0090	0,0105	0,0113	0,0120	0,0128
6.3	**56**	**0,50**	0,0024	0,0030	0,0036	0,0048	0,0054	0,0060	0,0066	0,0072	0,0084	0,0090	0,0096	0,0102
6.4	**40**	**0,50**	0,0020	0,0025	0,0030	0,0040	0,0045	0,0050	0,0055	0,0060	0,0070	0,0075	0,0080	0,0085

Cutting data standard values – BlueLine – End mills – 52 356 ...-52 360 ...

	Compressed air		$T_X \leq 2,5 \times DC$											
		Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	190	0,50	0,0015	0,0023	0,0030	0,0038	0,0045	0,0053	0,0060	0,0063	0,0066	0,0069	0,0072	0,0075
1.15	190	0,50	0,0015	0,0023	0,0030	0,0038	0,0045	0,0053	0,0060	0,0063	0,0066	0,0069	0,0072	0,0075
1.16	190	0,50	0,0015	0,0023	0,0030	0,0038	0,0045	0,0053	0,0060	0,0063	0,0066	0,0069	0,0072	0,0075
6.1	180	0,50	0,0015	0,0023	0,0030	0,0038	0,0045	0,0053	0,0060	0,0063	0,0066	0,0069	0,0072	0,0075
6.2	120	0,50	0,0015	0,0023	0,0030	0,0038	0,0045	0,0053	0,0060	0,0063	0,0066	0,0069	0,0072	0,0075
6.3	70	0,50	0,0012	0,0018	0,0024	0,0030	0,0036	0,0042	0,0048	0,0050	0,0053	0,0055	0,0058	0,0060
6.4	50	0,50	0,0010	0,0015	0,0020	0,0025	0,0030	0,0035	0,0040	0,0042	0,0044	0,0046	0,0048	0,0050

	Compressed air		$T_X = 2,6–5,0 \times DC$											
		Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	171	**0,50**	0,0011	0,0014	0,0018	0,0023	0,0026	0,0029	0,0032	0,0035	0,0038	0,0041	0,0044	0,0048
1.15	171	**0,50**	0,0011	0,0014	0,0018	0,0023	0,0026	0,0029	0,0032	0,0035	0,0038	0,0041	0,0044	0,0048
1.16	171	**0,50**	0,0011	0,0014	0,0018	0,0023	0,0026	0,0029	0,0032	0,0035	0,0038	0,0041	0,0044	0,0048
6.1	**162**	**0,50**	0,0011	0,0014	0,0018	0,0023	0,0026	0,0029	0,0032	0,0035	0,0038	0,0041	0,0044	0,0048
6.2	**108**	**0,50**	0,0011	0,0014	0,0018	0,0023	0,0026	0,0029	0,0032	0,0035	0,0038	0,0041	0,0044	0,0048
6.3	**63**	**0,50**	0,0008	0,0011	0,0014	0,0018	0,0020	0,0023	0,0025	0,0028	0,0030	0,0032	0,0035	0,0038
6.4	**45**	**0,50**	0,0007	0,0009	0,0012	0,0015	0,0017	0,0019	0,0021	0,0023	0,0025	0,0027	0,0029	0,0032

Compressed air

			T_x = 10,1–15,0 x DC											
		Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	114	0,50	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063	0,0066
1.15	114	0,50	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063	0,0066
1.16	114	0,50	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063	0,0066
6.1	108	0,50	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063	0,0066
6.2	72	0,50	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063	0,0066
6.3	42	0,50	0,0012	0,0018	0,0024	0,0030	0,0036	0,0038	0,0041	0,0043	0,0046	0,0048	0,0050	0,0053
6.4	30	0,50	0,0010	0,0015	0,0020	0,0025	0,0030	0,0032	0,0034	0,0036	0,0038	0,0040	0,0042	0,0044

Compressed air

			T_x = 15,1–20,0 x DC											
		Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	76	0,50	0,0015	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063
1.15	76	0,50	0,0015	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063
1.16	76	0,50	0,0015	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063
6.1	72	0,50	0,0015	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063
6.2	48	0,50	0,0015	0,0015	0,0023	0,0030	0,0038	0,0045	0,0048	0,0051	0,0054	0,0057	0,0060	0,0063
6.3	28	0,50	0,0012	0,0012	0,0018	0,0024	0,0030	0,0036	0,0038	0,0041	0,0043	0,0046	0,0048	0,0050
6.4	20	0,50	0,0010	0,0010	0,0015	0,0020	0,0025	0,0030	0,0032	0,0034	0,0036	0,0038	0,0040	0,0042

Compressed air

			T_x = 20,1–30,0 x DC											
		Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	57	0,50	0,001	0,002	0,002	0,003	0,003	0,003	0,004	0,004	0,004	0,005	0,005	0,005
1.15	57	0,50	0,001	0,002	0,002	0,003	0,003	0,003	0,004	0,004	0,004	0,005	0,005	0,005
1.16	57	0,50	0,001	0,002	0,002	0,003	0,003	0,003	0,004	0,004	0,004	0,005	0,005	0,005
6.1	54	0,50	0,001	0,002	0,002	0,003	0,003	0,003	0,004	0,004	0,004	0,005	0,005	0,005
6.2	36	0,50	0,001	0,002	0,002	0,003	0,003	0,003	0,004	0,004	0,004	0,005	0,005	0,005
6.3	21	0,50	0,001	0,001	0,002	0,002	0,002	0,003	0,003	0,003	0,003	0,004	0,004	0,004
6.4	15	0,50	0,0008	0,0010	0,0013	0,0017	0,0019	0,0022	0,0025	0,0027	0,0029	0,0030	0,0031	0,0032

Compressed air

			T_x = 5,1–10,0 x DC											
		Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	152	0,50	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036	0,0039
1.15	152	0,50	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036	0,0039
1.16	152	0,50	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036	0,0039
6.1	144	0,50	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036	0,0039
6.2	96	0,50	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036	0,0039
6.3	56	0,50	0,0005	0,0007	0,0010	0,0012	0,0014	0,0017	0,0019	0,0022	0,0024	0,0026	0,0029	0,0031
6.4	40	0,50	0,0004	0,0006	0,0008	0,0010	0,0012	0,0014	0,0016	0,0018	0,0020	0,0022	0,0024	0,0026

Compressed air

			T_x = 10,1–15,0 x DC											
		Ø DC =	0,2 mm	0,3 mm	0,4–0,5 mm	0,6–0,7 mm	0,8–0,9 mm	1,0 mm	1,2–1,4 mm	1,5 mm	1,6–1,8 mm	2,0 mm	2,5 mm	3,0 mm
			a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC	a_e 0,05 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.14	114	0,50	0,0003	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036
1.15	114	0,50	0,0003	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036
1.16	114	0,50	0,0003	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036
6.1	108	0,50	0,0003	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036
6.2	72	0,50	0,0003	0,0006	0,0009	0,0012	0,0015	0,0018	0,0021	0,0024	0,0027	0,0030	0,0033	0,0036
6.3	42	0,50	0,0002	0,0005	0,0007	0,0010	0,0012	0,0014	0,0017	0,0019	0,0022	0,0024	0,0026	0,0029
6.4	30	0,50	0,0002	0,0004	0,0006	0,0008	0,0010	0,0012	0,0014	0,0016	0,0018	0,0020	0,0022	0,0024

Cutting data – Micro End Mills – 2.2xD

		Ø DC = 0,2 mm					Ø DC = 0,5 mm					Ø DC = 0,8 mm				
	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC
	$a_{p\,max.}$	0,02	0,02	0,02	0,01	0,01	0,1	0,1	0,1	0,1	0,05	$a_{p\,max.}$	0,2	0,2	0,2	0,2	0,12
	$n_{min.}$	30.000					12.000					$n_{min.}$	8.000				
Index	n	v_f mm/min.					v_f mm/min.					n	v_f mm/min.				
1.1	50.000	232	202	174	144	116	274	238	205	170	137	50.000	485	422	364	301	242
1.2	50.000	232	202	174	144	116	274	238	205	170	137	50.000	485	422	364	301	242
1.3	50.000	232	202	174	144	116	274	238	205	170	137	50.000	485	422	364	301	242
1.4	50.000	232	202	174	144	116	274	238	205	170	137	50.000	485	422	364	301	242
1.5	50.000	232	202	174	144	116	274	238	205	170	137	50.000	485	422	364	301	242
1.6	50.000	201	175	151	125	101	237	206	178	147	119	50.000	420	365	315	260	210
1.7	50.000	232	202	174	144	116	274	238	205	170	137	50.000	485	422	364	301	242
1.8	50.000	201	175	151	125	101	237	206	178	147	119	50.000	420	365	315	260	210
1.9	50.000	232	202	174	144	116	274	238	205	170	137	50.000	485	422	364	301	242
1.10	50.000	201	175	151	125	101	237	206	178	147	119	50.000	420	365	315	260	210
1.11	50.000	201	175	151	125	101	237	206	178	147	119	50.000	420	365	315	260	210
1.12	50.000	201	175	151	125	101	237	206	178	147	119	50.000	420	365	315	260	210
1.13	50.000	201	175	151	125	101	237	206	178	147	119	50.000	420	365	315	260	210
1.14	50.000	201	175	151	125	101	237	206	178	147	119	50.000	420	365	315	260	210
1.15	50.000	232	202	174	144	116	274	238	205	170	137	50.000	485	422	364	301	242
1.16	50.000	201	175	151	125	101	237	206	178	147	119	50.000	420	365	315	260	210
2.1	50.000	232	202	174	144	116	219	191	164	136	110	38.000	346	301	260	215	173
2.2	50.000	232	202	174	144	116	219	191	164	136	110	38.000	346	301	260	215	173
2.3	50.000	232	202	174	144	116	219	191	164	136	110	38.000	346	301	260	215	173
2.4	50.000	232	202	174	144	116	219	191	164	136	110	32.000	346	301	260	215	173
2.5	50.000	232	202	174	144	116	219	191	164	136	110	38.000	346	301	260	215	173
2.6	50.000	232	202	174	144	116	219	191	164	136	110	38.000	346	301	260	215	173
2.7	50.000	232	202	174	144	116	219	191	164	136	110	25.000	312	271	234	193	156
3.1	50.000	232	202	174	144	116	219	191	164	136	110	50.000	485	422	364	301	242
3.2	50.000	232	202	174	144	116	219	191	164	136	110	50.000	485	422	364	301	242
3.3	50.000	232	202	174	144	116	219	191	164	136	110	50.000	485	422	364	301	242
3.4	50.000	232	202	174	144	116	219	191	164	136	110	50.000	485	422	364	301	242
3.5	50.000	141	123	106	88	71	175	152	131	109	88	32.000	285	248	213	176	142
3.6	50.000	141	123	106	88	71	175	152	131	109	88	32.000	285	248	213	176	142
3.7	50.000	141	123	106	88	71	175	152	131	109	88	32.000	285	248	213	176	142
3.8	50.000	141	123	106	88	71	175	152	131	109	88	32.000	285	248	213	176	142
4.1	50.000	232	202	174	144	116	274	238	205	170	137	50.000	582	506	436	361	291
4.2	50.000	232	202	174	144	116	274	238	205	170	137	50.000	582	506	436	361	291
4.3																	
4.4																	
4.5																	
4.6	50.000	232	202	174	144	116	274	238	205	170	137	50.000	582	506	436	361	291
4.7	50.000	232	202	174	144	116	274	238	205	170	137	44.000	485	422	364	301	242
4.8	50.000	126	110	95	78	63	134	117	101	83	67	25.000	170	148	127	105	85
4.9	50.000	126	110	95	78	63	107	93	80	67	54	19.000	147	128	110	91	74
4.10	50.000	126	110	95	78	63	112	97	84	69	56	19.000	158	138	119	98	79
4.11	50.000	232	202	174	144	116	274	238	205	170	137	44.000	485	422	364	301	242
4.12	50.000	232	202	174	144	116	274	238	205	170	137	44.000	485	422	364	301	242
4.13	50.000	232	202	174	144	116	274	238	205	170	137	50.000	582	506	436	361	291
4.14	50.000	232	202	174	144	116	274	238	205	170	137	50.000	582	506	436	361	291
4.15	50.000	212	185	159	132	106	200	174	150	124	100	38.000	316	275	237	196	158
4.16	50.000	212	185	159	132	106	250	218	188	155	125	50.000	531	462	398	329	266
4.17																	
4.18	50.000	141	123	106	88	71	150	131	113	93	75	31.000	221	193	166	137	111
4.19																	
5.1	50.000	72	62	54	44	36	89	77	66	55	44	25.000	102	89	76	63	51
5.2	50.000	72	62	54	44	36	89	77	66	55	44	25.000	102	89	76	63	51
5.3	50.000	72	62	54	44	36	89	77	66	55	44	25.000	91	79	68	56	45
5.4	50.000	54	47	41	34	27	66	57	49	41	33	12.000	78	68	59	49	39
5.5	50.000	54	47	41	34	27	66	57	49	41	33	12.000	78	68	59	49	39
5.6	50.000	63	54	47	39	31	76	66	57	47	38	19.000	91	79	68	56	45
5.7	50.000	46	40	35	29	23	55	48	41	34	27	19.000	69	60	51	43	34
5.8	50.000	46	40	35	29	23	55	48	41	34	27	19.000	78	68	59	49	39
5.9	50.000	114	99	85	71	57	164	143	123	102	82	44.000	114	99	85	71	57
5.10	50.000	114	99	85	71	57	164	143	123	102	82	44.000	164	143	123	102	82
5.11	50.000	70	61	53	43	35	85	74	64	53	42	38.000	101	88	76	63	51
6.1	50.000	219	191	164	136	110	232	202	174	144	116	50.000	388	338	291	241	194
6.2	50.000	201	175	151	125	101	285	248	213	176	142	38.000	336	292	252	208	168
6.3	50.000	114	99	85	71	57	134	117	101	83	67	25.000	156	136	117	97	78
6.4	50.000	107	93	80	67	54	126	110	95	78	63	25.000	141	123	106	88	71
6.5																	

		Ø DC = 1,0 mm						Ø DC = 1,5 mm						●	○
	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6 –1,0 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC	1st choice	suitable	
	$a_{p\,max.}$	0,3	0,3	0,3	0,3	0,2	$a_{p\,max.}$	0,45	0,45	0,45	0,45	0,3			
	$n_{min.}$	6.500					$n_{min.}$	6.500							
Index	n	v_f mm/min.					n	v_f mm/min.					Emulsion	Compressed air	MMS
1.1	50.000	775	674	581	480	387	33.000	1200	1044	900	744	600		●	○
1.2	50.000	775	674	581	480	387	33.000	1200	1044	900	744	600		●	○
1.3	50.000	775	674	581	480	387	33.000	1200	1044	900	744	600		●	○
1.4	50.000	775	674	581	480	387	33.000	1200	1044	900	744	600		●	○
1.5	50.000	775	674	581	480	387	33.000	1200	1044	900	744	600		●	○
1.6	50.000	671	584	503	416	335	33.000	1039	904	779	644	520		●	○
1.7	50.000	775	674	581	480	387	33.000	1200	1044	900	744	600		●	○
1.8	50.000	671	584	503	416	335	33.000	1039	904	779	644	520		●	○
1.9	50.000	775	674	581	480	387	33.000	1200	1044	900	744	600		●	○
1.10	50.000	671	584	503	416	335	33.000	1039	904	779	644	520		●	○
1.11	50.000	671	584	503	416	335	33.000	1039	904	779	644	520		●	○
1.12	50.000	671	584	503	416	335	33.000	1039	904	779	644	520		●	○
1.13	50.000	671	584	503	416	335	33.000	1039	904	779	644	520		●	○
1.14	50.000	671	584	503	416	335	33.000	1039	904	779	644	520		●	○
1.15	50.000	775	674	581	480	387	33.000	1200	1044	900	744	600		●	○
1.16	50.000	671	584	503	416	335	33.000	1039	904	779	644	520		●	○
2.1	38.000	589	512	442	365	294	25.000	850	740	638	527	425		●	○
2.2	38.000	589	512	442	365	294	25.000	850	740	638	527	425		●	○
2.3	38.000	589	512	442	365	294	25.000	850	740	638	527	425		●	○
2.4	32.000	496	431	372	307	248	21.000	760	661	570	471	380		●	○
2.5	38.000	589	512	442	365	294	25.000	850	740	638	527	425		●	○
2.6	38.000	589	512	442	365	294	25.000	850	740	638	527	425		●	○
2.7	25.000	465	404	349	288	232	16.000	640	557	480	397	320		●	○
3.1	50.000	775	674	581	480	387	38.000	1200	1044	900	744	600		●	○
3.2	50.000	775	674	581	480	387	38.000	1200	1044	900	744	600		●	○
3.3	50.000	775	674	581	480	387	38.000	1200	1044	900	744	600		●	○
3.4	50.000	775	674	581	480	387	38.000	1200	1044	900	744	600		●	○
3.5	32.000	389	338	292	241	194	21.000	548	477	411	340	274		●	○
3.6	32.000	389	338	292	241	194	21.000	548	477	411	340	274		●	○
3.7	32.000	389	338	292	241	194	21.000	548	477	411	340	274		●	○
3.8	32.000	389	338	292	241	194	21.000	548	477	411	340	274		●	○
4.1	50.000	930	809	697	576	465	50.000	1500	1305	1125	930	750		●	○
4.2	50.000	930	809	697	576	465	50.000	1500	1305	1125	930	750		●	○
4.3															
4.4															
4.5															
4.6	50.000	930	809	697	576	465	38.000	1400	1218	1050	868	700		●	○
4.7	44.000	775	674	581	480	387	29.000	1160	1009	870	719	580		●	○
4.8	25.000	266	231	199	165	133	16.000	392	341	294	243	196		●	○
4.9	19.000	202	176	152	125	101	12.000	286	249	214	177	143		●	○
4.10	19.000	202	176	152	125	101	12.000	286	249	214	177	143		●	○
4.11	44.000	775	674	581	480	387	29.000	1160	1009	870	719	580		●	○
4.12	44.000	775	674	581	480	387	29.000	1160	1009	870	719	580		●	○
4.13	50.000	930	809	697	576	465	33.000	1320	1148	990	818	660		●	○
4.14	50.000	930	809	697	576	465	38.000	1520	1322	1140	942	760		●	○
4.15	38.000	495	431	371	307	247	25.000	685	596	513	424	342		●	○
4.16	50.000	849	738	636	526	424	38.000	1388	1207	1041	860	694		●	○
4.17															
4.18	31.000	354	308	265	219	177	21.000	529	461	397	328	265		●	○
4.19															
5.1	25.000	152	132	114	94	76	16.000	294	256	220	182	147		●	○
5.2	25.000	152	132	114	94	76	16.000	294	256	220	182	147		●	○
5.3	25.000	152	132	114	94	76	16.000	294	256	220	182	147		●	○
5.4	12.000	110	95	82	68	55	8.000	170	148	127	105	85		●	○
5.5	12.000	131	114	99	82	66	8.000	255	221	191	158	127		●	○
5.6	19.000	152	132	114	94	76	12.000	294	256	220	182	147		●	○
5.7	19.000	99	86	74	61	49	12.000	170	148	127	105	85		●	○
5.8	19.000	131	114	99	82	66	12.000	255	221	191	158	127		●	○
5.9	44.000	170	148	127	105	85	29.000	329	286	246	204	164		●	○
5.10	44.000	247	215	186	153	124	29.000	365	318	274	226	183		●	○
5.11	38.000	170	148	127	105	85	25.000	329	286	246	204	164		●	○
6.1	50.000	620	539	465	384	310	33.000	850	740	638	527	425		●	
6.2	38.000	537	467	402	333	268	25.000	779	678	585	483	390		●	
6.3	25.000	235	204	176	146	117	16.000	346	301	260	215	173		●	
6.4	25.000	221	193	166	137	111	16.000	327	284	245	202	163		●	
6.5															

Cutting data – Micro End Mills – 2.2xD

		Ø DC = 1,8 mm					Ø DC = 2,0 mm					●	○	
	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC	1st choice		suitable
	$a_{p\,max.}$	0,54	0,54	0,54	0,54	0,36	0,6	0,6	0,6	0,6	0,4	Emulsion	Compressed air	MMS
	$n_{min.}$	5.500					5.000							
Index	n	v_f mm/min.					n	v_f mm/min.						
1.1	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.2	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.3	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.4	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.5	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.6	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.7	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.8	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.9	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.10	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.11	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.12	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.13	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.14	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.15	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
1.16	29.000	1300	1131	975	806	650	25.000	1500	1300	1125	930	750		●	○
2.1	22.000	950	827	713	589	475	19.000	1140	990	855	700	570		●	○
2.2	22.000	950	827	713	589	475	19.000	1140	990	855	700	570		●	○
2.3	22.000	950	827	713	589	475	19.000	1140	990	855	700	570		●	○
2.4	18.000	800	696	600	496	400	15.000	840	730	630	520	420		●	○
2.5	22.000	950	827	713	589	475	19.000	1140	990	855	700	570		●	○
2.6	22.000	950	827	713	589	475	19.000	1140	990	855	700	570		●	○
2.7	14.000	680	592	510	422	340	12.000	720	620	540	450	360		●	○
3.1	32.000	1400	1218	1050	868	700	25.000	1500	1300	1125	930	750		●	○
3.2	32.000	1400	1218	1050	868	700	25.000	1500	1300	1125	930	750		●	○
3.3	32.000	1400	1218	1050	868	700	25.000	1500	1300	1125	930	750		●	○
3.4	32.000	1400	1218	1050	868	700	25.000	1500	1300	1125	930	750		●	○
3.5	18.000	630	548	473	391	315	25.000	1500	1300	1125	930	750		●	○
3.6	18.000	630	548	473	391	315	25.000	1500	1300	1125	930	750		●	○
3.7	18.000	630	548	473	391	315	25.000	1500	1300	1125	930	750		●	○
3.8	18.000	630	548	473	391	315	25.000	1500	1300	1125	930	750		●	○
4.1	44.000	1800	1566	1350	1116	900	25.000	1500	1300	1125	930	750		●	○
4.2	44.000	1800	1566	1350	1116	900	25.000	1500	1300	1125	930	750		●	○
4.3															
4.4															
4.5															
4.6	32.000	1520	1322	1140	942	760	25.000	1500	1300	1125	930	750		●	○
4.7	25.000	1250	1088	938	775	625	25.000	1500	1300	1125	930	750		●	○
4.8	14.000	500	435	375	310	250	25.000	1500	1300	1125	930	750		●	○
4.9	10.000	370	322	278	229	185	19.000	1140	990	855	700	570		●	○
4.10	10.000	370	322	278	229	185	19.000	1140	990	855	700	570		●	○
4.11	25.000	1250	1088	938	775	625	19.000	1140	990	855	700	570		●	○
4.12	25.000	1250	1088	938	775	625	15.000	840	730	630	520	420		●	○
4.13	28.000	1400	1218	1050	868	700	19.000	1140	990	855	700	570		●	○
4.14	33.000	1560	1357	1170	967	780	19.000	1140	990	855	700	570		●	○
4.15	22.000	800	696	600	496	400	12.000	720	630	540	450	360		●	○
4.16	33.000	1560	1357	1170	967	780	25.000	1500	1300	1125	930	750		●	○
4.17															
4.18	29.000	300	261	225	186	150	25.000	1500	1300	1125	930	750		●	○
4.19															
5.1	14.000	400	348	300	248	200	25.000	1500	1300	1125	930	750		●	○
5.2	14.000	400	348	300	248	200	25.000	1500	1300	1125	930	750		●	○
5.3	14.000	420	365	315	260	210	25.000	1500	1300	1125	930	750		●	○
5.4	7.000	250	218	188	155	125	25.000	1500	1300	1125	930	750		●	○
5.5	7.000	370	322	278	229	185	25.000	1500	1300	1125	930	750		●	○
5.6	10.000	370	322	278	229	185	25.000	1500	1300	1125	930	750		●	○
5.7	10.000	280	244	210	174	140	25.000	1500	1300	1125	930	750		●	○
5.8	10.000	370	322	278	229	185	25.000	1500	1300	1125	930	750		●	○
5.9	25.000	400	348	300	248	200	25.000	1500	1300	1125	930	750		●	○
5.10	25.000	480	418	360	298	240	25.000	1500	1300	1125	930	750		●	○
5.11	22.000	380	331	285	236	190	25.000	1500	1300	1125	930	750		●	○
6.1	29.000	1200	1044	900	744	600	25.000	1500	1300	1125	930	750		●	
6.2	22.000	1000	870	750	620	500	19.000	1140	990	855	700	570		●	
6.3	14.000	420	365	315	260	210	19.000	1140	990	855	700	570		●	
6.4	14.000	420	365	315	260	210	19.000	1140	990	855	700	570		●	
6.5															

Cutting data – Micro End Mills – 5xD

		Ø DC = 0,2 mm					Ø DC = 0,5 mm					Ø DC = 0,8 mm					● 1st choice		○ suitable	
	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC				
	$a_{p\,max.}$	0,012	0,012	0,012	0,012	$a_{p\,max.}$	0,06	0,06	0,06	0,06	$a_{p\,max.}$	0,12	0,12	0,12	0,12	0,064				
	$n_{min.}$	30.000				$n_{min.}$	12.000				$n_{min.}$	8.000								
Index	n	v_f mm/min.				n	v_f mm/min.				n	v_f mm/min.					Emulsion	Compressed air	MMS	
1.1	50.000	232	202	174	144	50.000	274	238	205	170	44.000	485	422	364	301	242		●	○	
1.2	50.000	232	202	174	144	50.000	274	238	205	170	44.000	485	422	364	301	242		●	○	
1.3	50.000	232	202	174	144	50.000	274	238	205	170	44.000	485	422	364	301	242		●	○	
1.4	50.000	232	202	174	144	50.000	274	238	205	170	44.000	485	422	364	301	242		●	○	
1.5	50.000	232	202	174	144	50.000	274	238	205	170	44.000	485	422	364	301	242		●	○	
1.6	50.000	201	175	151	125	50.000	237	206	178	147	31.000	330	287	248	205	165		●	○	
1.7	50.000	232	202	174	144	50.000	274	238	205	170	44.000	485	422	364	301	242		●	○	
1.8	50.000	201	175	151	125	50.000	237	206	178	147	31.000	330	287	248	205	165		●	○	
1.9	50.000	232	202	174	144	50.000	274	238	205	170	31.000	381	332	286	236	191		●	○	
1.10	50.000	201	175	151	125	50.000	237	206	178	147	31.000	330	287	248	205	165		●	○	
1.11	50.000	201	175	151	125	50.000	237	206	178	147	31.000	330	287	248	205	165		●	○	
1.12	50.000	201	175	151	125	50.000	237	206	178	147	31.000	330	287	248	205	165		●	○	
1.13	50.000	201	175	151	125	50.000	237	206	178	147	31.000	330	287	248	205	165		●	○	
1.14	50.000	201	175	151	125	50.000	237	206	178	147	31.000	330	287	248	205	165		●	○	
1.15	50.000	232	202	174	144	50.000	274	238	205	170	44.000	485	422	364	301	242		●	○	
1.16	50.000	201	175	151	125	50.000	237	206	178	147	31.000	330	287	248	205	165		●	○	
2.1	50.000	232	202	174	144	50.000	219	191	164	136	31.000	346	301	260	215	173		●	○	
2.2	50.000	232	202	174	144	50.000	219	191	164	136	31.000	346	301	260	215	173		●	○	
2.3	50.000	232	202	174	144	50.000	219	191	164	136	31.000	346	301	260	215	173		●	○	
2.4	50.000	232	202	174	144	50.000	219	191	164	136	31.000	346	301	260	215	173		●	○	
2.5	50.000	232	202	174	144	50.000	219	191	164	136	31.000	346	301	260	215	173		●	○	
2.6	50.000	232	202	174	144	50.000	219	191	164	136	31.000	346	301	260	215	173		●	○	
2.7	50.000	232	202	174	144	38.000	192	167	144	119	19.000	263	229	197	163	132		●	○	
3.1	50.000	232	202	174	144	50.000	219	191	164	136	50.000	416	362	312	258	208		●	○	
3.2	50.000	232	202	174	144	50.000	219	191	164	136	50.000	416	362	312	258	208		●	○	
3.3	50.000	232	202	174	144	50.000	219	191	164	136	50.000	416	362	312	258	208		●	○	
3.4	50.000	232	202	174	144	50.000	219	191	164	136	50.000	416	362	312	258	208		●	○	
3.5	50.000	141	123	106	88	50.000	175	152	131	109	25.000	240	209	180	149	120		●	○	
3.6	50.000	141	123	106	88	50.000	175	152	131	109	25.000	240	209	180	149	120		●	○	
3.7	50.000	141	123	106	88	50.000	175	152	131	109	25.000	240	209	180	149	120		●	○	
3.8	50.000	141	123	106	88	50.000	175	152	131	109	25.000	240	209	180	149	120		●	○	
4.1	50.000	232	202	174	144	50.000	274	238	205	170	50.000	554	482	416	344	277		●	○	
4.2	50.000	232	202	174	144	50.000	274	238	205	170	50.000	554	482	416	344	277		●	○	
4.3																				
4.4																				
4.5																				
4.6	50.000	232	202	174	144	50.000	274	238	205	170	50.000	554	482	416	344	277		●	○	
4.7	50.000	232	202	174	144	50.000	274	238	205	170	38.000	554	482	416	344	277		●	○	
4.8	50.000	126	110	95	78	44.000	134	117	101	83	22.000	204	177	153	126	102		●	○	
4.9	50.000	126	110	95	78	31.000	112	97	84	69	15.000	170	148	127	105	85		●	○	
4.10	50.000	126	110	95	78	31.000	112	97	84	69	15.000	170	148	127	105	85		●	○	
4.11	50.000	232	202	174	144	50.000	274	238	205	170	38.000	485	422	364	301	242		●	○	
4.12	50.000	232	202	174	144	50.000	274	238	205	170	38.000	485	422	364	301	242		●	○	
4.13	50.000	232	202	174	144	50.000	274	238	205	170	44.000	554	482	416	344	277		●	○	
4.14	50.000	232	202	174	144	50.000	274	238	205	170	50.000	554	482	416	344	277		●	○	
4.15	50.000	141	123	106	88	50.000	200	174	150	124	31.000	316	275	237	196	158		●	○	
4.16	50.000	212	185	159	132	50.000	250	218	188	155	50.000	506	440	379	314	253		●	○	
4.17																				
4.18	50.000	141	123	106	88	50.000	150	131	113	93	25.000	253	220	190	157	126		●	○	
4.19																				
5.1	50.000	63	54	47	39	44.000	76	66	57	47	22.000	91	79	68	56	45		●	○	
5.2	50.000	63	54	47	39	44.000	76	66	57	47	22.000	91	79	68	56	45		●	○	
5.3	50.000	63	54	47	39	44.000	76	66	57	47	22.000	91	79	68	56	45		●	○	
5.4	50.000	46	40	35	29	25.000	55	48	41	34	12.000	88	77	66	55	44		●	○	
5.5	50.000	46	40	35	29	25.000	55	48	41	34	12.000	78	68	59	49	39		●	○	
5.6	50.000	54	47	40	33	31.000	63	55	47	39	15.000	91	79	68	56	45		●	○	
5.7	50.000	55	48	41	32	31.000	58	51	44	36	15.000	98	85	73	61	49		●	○	
5.8	50.000	55	47	40	32	31.000	58	51	44	36	15.000	98	85	73	61	49		●	○	
5.9	50.000	60	61	48	41	50.000	71	62	53	44	38.000	114	99	85	71	57		●	○	
5.10	50.000	60	61	48	41	50.000	71	62	53	44	38.000	126	110	95	78	63		●	○	
5.11	50.000	60	52	45	37	50.000	71	62	49	39	31.000	89	77	66	55	44		●	○	
6.1	50.000	155	135	116	96	50.000	164	143	123	102	44.000	346	301	260	215	173		●		
6.2	50.000	95	83	71	59	50.000	134	117	101	83	31.000	180	157	135	112	90		●		
6.3	50.000	95	83	71	59	44.000	134	117	101	83	22.000	180	157	135	112	90		●		
6.4	50.000	89	78	67	55	44.000	126	110	95	78	22.000	170	148	127	105	85		●		
6.5																				

a_e = 0.6–1.0 x DC: If values are missing, only trochoidal slot milling and profiling are permitted. Otherwise, there is the risk of tool breakage.

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Cutting data – Micro End Mills – 5xD

		Ø DC = 1,0 mm					Ø DC = 1,5 mm					Ø DC = 1,8 mm				
	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC
	$a_{p\,max.}$	0,3	0,3	0,3	0,3	0,2	$a_{p\,max.}$	0,3	0,3	0,3	0,3	0,2	$a_{p\,max.}$	0,54	0,54	0,54	0,54	0,36
	$n_{min.}$	6.500					$n_{min.}$	6.500					$n_{min.}$	5.500				
Index	n	v_f mm/min.					n	v_f mm/min.					n	v_f mm/min.				
1.1	44.000	682	593	511	423	341	29.000	1160	1009	870	719	580	25.000	1250	1088	938	775	625
1.2	44.000	682	593	511	423	341	29.000	1160	1009	870	719	580	25.000	1250	1088	938	775	625
1.3	44.000	682	593	511	423	341	29.000	1160	1009	870	719	580	25.000	1250	1088	938	775	625
1.4	44.000	682	593	511	423	341	29.000	1160	1009	870	719	580	25.000	1250	1088	938	775	625
1.5	44.000	682	593	511	423	341	29.000	1160	1009	870	719	580	25.000	1250	1088	938	775	625
1.6	31.000	416	362	312	258	208	21.000	693	603	520	430	346	18.000	850	740	638	527	425
1.7	44.000	682	593	511	423	341	29.000	1160	1009	870	719	580	25.000	1250	1088	938	775	625
1.8	31.000	416	362	312	258	208	21.000	693	603	520	430	346	18.000	850	740	638	527	425
1.9	31.000	480	418	360	298	240	21.000	800	696	600	496	400	18.000	850	740	638	527	425
1.10	31.000	416	362	312	258	208	21.000	693	603	520	430	346	18.000	850	740	638	527	425
1.11	31.000	416	362	312	258	208	21.000	693	603	520	430	346	18.000	850	740	638	527	425
1.12	31.000	416	362	312	258	208	21.000	693	603	520	430	346	18.000	850	740	638	527	425
1.13	31.000	416	362	312	258	208	21.000	693	603	520	430	346	18.000	850	740	638	527	425
1.14	31.000	416	362	312	258	208	21.000	693	603	520	430	346	18.000	850	740	638	527	425
1.15	44.000	682	593	511	423	341	29.000	1160	1009	870	719	580	25.000	1250	1088	938	775	625
1.16	31.000	416	362	312	258	208	21.000	693	603	520	430	346	18.000	850	740	638	527	425
2.1	31.000	480	418	360	298	240	21.000	800	696	600	496	400	18.000	850	740	638	527	425
2.2	31.000	480	418	360	298	240	21.000	800	696	600	496	400	18.000	850	740	638	527	425
2.3	31.000	480	418	360	298	240	21.000	800	696	600	496	400	18.000	850	740	638	527	425
2.4	31.000	480	418	360	298	240	21.000	800	696	600	496	400	18.000	850	740	638	527	425
2.5	31.000	480	418	360	298	240	21.000	800	696	600	496	400	18.000	850	740	638	527	425
2.6	31.000	480	418	360	298	240	21.000	800	696	600	496	400	18.000	850	740	638	527	425
2.7	19.000	310	270	232	192	155	12.000	480	418	360	298	240	10.000	500	435	375	310	250
3.1	50.000	620	539	465	384	310	33.000	1000	870	750	620	500	28.000	1320	1148	990	818	660
3.2	50.000	620	539	465	384	310	33.000	1000	870	750	620	500	28.000	1320	1148	990	818	660
3.3	50.000	620	539	465	384	310	33.000	1000	870	750	620	500	28.000	1320	1148	990	818	660
3.4	50.000	620	539	465	384	310	33.000	1000	870	750	620	500	28.000	1320	1148	990	818	660
3.5	25.000	297	258	223	184	148	16.000	411	357	308	255	205	14.000	480	418	360	298	240
3.6	25.000	297	258	223	184	148	16.000	411	357	308	255	205	14.000	480	418	360	298	240
3.7	25.000	297	258	223	184	148	16.000	411	357	308	255	205	14.000	480	418	360	298	240
3.8	25.000	297	258	223	184	148	16.000	411	357	308	255	205	14.000	480	418	360	298	240
4.1	50.000	775	674	581	480	387	42.000	1200	1044	900	744	600	36.000	1500	1305	1125	930	750
4.2	50.000	775	674	581	480	387	42.000	1200	1044	900	744	600	36.000	1500	1305	1125	930	750
4.3																		
4.4																		
4.5																		
4.6	50.000	930	809	697	576	465	33.000	1320	1148	990	818	660	28.000	1400	1218	1050	868	700
4.7	38.000	705	613	529	437	352	25.000	1000	870	750	620	500	22.000	1080	940	810	670	540
4.8	22.000	278	242	209	173	139	14.000	343	298	257	213	171	12.000	450	392	338	279	225
4.9	15.000	190	165	142	118	95	10.000	245	213	184	152	122	8.000	300	261	225	186	150
4.10	15.000	190	165	142	118	95	10.000	245	213	184	152	122	8.000	300	261	225	186	150
4.11	38.000	697	607	523	432	349	25.000	1000	870	750	620	500	22.000	1100	957	825	682	550
4.12	38.000	697	607	523	432	349	25.000	1000	870	750	620	500	22.000	1100	957	825	682	550
4.13	44.000	813	708	610	504	407	29.000	1160	1009	870	719	580	25.000	1200	1044	900	744	600
4.14	50.000	930	809	697	576	465	33.000	1320	1148	990	818	660	28.000	1400	1218	1050	868	700
4.15	31.000	438	381	329	272	219	21.000	575	500	431	357	288	18.000	650	566	488	403	325
4.16	50.000	849	738	636	526	424	33.000	1205	1048	904	747	602	28.000	1400	1218	1050	868	700
4.17																		
4.18	25.000	318	277	239	197	159	16.000	438	381	329	272	219	14.000	500	435	375	310	250
4.19																		
5.1	22.000	114	99	85	71	57	14.000	196	170	147	121	98	12.000	300	261	225	186	150
5.2	22.000	114	99	85	71	57	14.000	196	170	147	121	98	12.000	300	261	225	186	150
5.3	22.000	114	99	85	71	57	14.000	196	170	147	121	98	12.000	300	261	225	186	150
5.4	12.000	110	95	82	68	55	8.000	170	148	127	105	85	7.000	240	209	180	149	120
5.5	12.000	131	114	99	82	66	8.000	170	148	127	105	85	7.000	240	209	180	149	120
5.6	15.000	152	132	114	94	76	10.000	245	213	184	152	122	8.000	300	261	225	186	150
5.7	15.000	120	105	90	75	60	10.000	184	160	138	114	92	8.000	280	244	210	174	140
5.8	15.000	120	105	90	75	60	10.000	184	160	138	114	92	8.000	280	244	210	174	140
5.9	38.000	156	135	117	96	78	25.000	274	238	205	170	137	22.000	380	331	285	236	190
5.10	38.000	212	185	159	132	106	25.000	365	318	274	226	183	22.000	450	392	338	279	225
5.11	31.000	127	111	95	79	64	21.000	201	175	151	125	100	18.000	300	261	225	186	150
6.1	44.000	426	371	320	264	213	29.000	600	522	450	372	300	25.000	800	696	600	496	400
6.2	31.000	201	175	151	125	101	21.000	346	301	260	215	173	16.000	500	435	375	310	250
6.3	22.000	235	204	176	146	117	14.000	346	301	260	215	173	12.000	450	392	338	279	225
6.4	22.000	221	193	166	137	111	14.000	327	284	245	202	163	12.000	450	392	338	279	225
6.5																		

		Ø DC = 2,0 mm					●		○
	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,6–1,0 x DC	1st choice		suitable
	$a_{p\,max.}$	0,6	0,6	0,6	0,6	0,4	Emulsion	Compressed air	MMS
	$n_{min.}$	5.000							
Index	n	v_f mm/min.							
1.1	22.000	1320	1148	990	818	660		●	○
1.2	22.000	1320	1148	990	818	660		●	○
1.3	22.000	1320	1148	990	818	660		●	○
1.4	22.000	1320	1148	990	818	660		●	○
1.5	22.000	1320	1148	990	818	660		●	○
1.6	15.000	900	783	675	558	450		●	○
1.7	22.000	1320	1148	990	818	660		●	○
1.8	15.000	900	783	675	558	450		●	○
1.9	15.000	900	783	675	558	450		●	○
1.10	15.000	900	783	675	558	450		●	○
1.11	15.000	900	783	675	558	450		●	○
1.12	15.000	900	783	675	558	450		●	○
1.13	15.000	900	783	675	558	450		●	○
1.14	15.000	900	783	675	558	450		●	○
1.15	22.000	1320	1148	990	818	660		●	○
1.16	15.000	900	783	675	558	450		●	○
2.1	15.000	900	783	675	558	450		●	○
2.2	15.000	900	783	675	558	450		●	○
2.3	15.000	900	783	675	558	450		●	○
2.4	15.000	900	783	675	558	450		●	○
2.5	15.000	900	783	675	558	450		●	○
2.6	15.000	900	783	675	558	450		●	○
2.7	9.000	540	470	405	335	270		●	○
3.1	25.000	1500	1305	1125	930	750		●	○
3.2	25.000	1500	1305	1125	930	750		●	○
3.3	25.000	1500	1305	1125	930	750		●	○
3.4	25.000	1500	1305	1125	930	750		●	○
3.5	12.000	520	452	390	322	260		●	○
3.6	12.000	520	452	390	322	260		●	○
3.7	12.000	520	452	390	322	260		●	○
3.8	12.000	520	452	390	322	260		●	○
4.1	31.000	1860	1618	1395	1153	930		●	○
4.2	31.000	1860	1618	1395	1153	930		●	○
4.3									
4.4									
4.5									
4.6	25.000	1500	1305	1125	930	750		●	○
4.7	19.000	1140	992	855	707	570		●	○
4.8	11.000	480	418	360	298	240		●	○
4.9	7.000	300	261	225	186	150		●	○
4.10	7.000	300	261	225	186	150		●	○
4.11	19.000	1140	992	855	707	570		●	○
4.12	19.000	1140	992	855	707	570		●	○
4.13	22.000	1320	1148	990	818	660		●	○
4.14	25.000	1500	1305	1125	930	750		●	○
4.15	15.000	660	574	495	409	330		●	○
4.16	25.000	1500	1305	1125	930	750		●	○
4.17									
4.18	12.000	520	452	390	322	260		●	○
4.19									
5.1	11.000	400	348	300	248	200		●	○
5.2	11.000	400	348	300	248	200		●	○
5.3	11.000	400	348	300	248	200		●	○
5.4	6.000	260	226	195	161	130		●	○
5.5	6.000	260	226	195	161	130		●	○
5.6	7.000	300	261	225	186	150		●	○
5.7	7.000	300	261	225	186	150		●	○
5.8	7.000	300	261	225	186	150		●	○
5.9	19.000	420	365	315	260	210		●	○
5.10	19.000	500	435	375	310	250		●	○
5.11	15.000	400	348	300	248	200		●	○
6.1	22.000	1000	870	750	620	500		●	
6.2	15.000	500	435	375	310	250		●	
6.3	11.000	480	418	360	298	240		●	
6.4	11.000	480	418	360	298	240		●	
6.5									

Cutting data – Micro end mills – 10xD

		Ø DC = 0,2 mm				Ø DC = 0,5 mm					Ø DC = 0,8 mm				Ø DC = 1,0 mm			
	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC
	$a_{p\,max.}$	0,006	0,006	0,006	0,006	0,015	0,015	0,015	0,015	$a_{p\,max.}$	0,024	0,024	0,024	0,024	0,03	0,03	0,03	0,03
	$n_{min.}$	30.000				12.000				$n_{min.}$	8.000				6.500			
Index	n	v_f mm/min.				v_f mm/min.				n	v_f mm/min.				v_f mm/min.			
1.1	50.000	232	202	174	144	274	238	205	170	38.000	450	392	338	279	589	512	442	365
1.2	50.000	232	202	174	144	274	238	205	170	38.000	450	392	338	279	589	512	442	365
1.3	50.000	232	202	174	144	274	238	205	170	38.000	450	392	338	279	589	512	442	365
1.4	50.000	232	202	174	144	274	238	205	170	38.000	450	392	338	279	589	512	442	365
1.5	50.000	232	202	174	144	274	238	205	170	38.000	450	392	338	279	589	512	442	365
1.6	50.000	201	175	151	125	190	165	142	118	25.000	300	261	225	186	335	292	252	208
1.7	50.000	232	202	174	144	219	191	164	136	38.000	450	392	338	279	589	512	442	365
1.8	50.000	201	175	151	125	190	165	142	118	25.000	300	261	225	186	335	292	252	208
1.9	50.000	232	202	174	144	219	191	164	136	38.000	450	392	338	279	589	512	442	365
1.10	50.000	201	175	151	125	190	165	142	118	25.000	270	235	203	167	335	292	252	208
1.11	50.000	201	175	151	125	190	165	142	118	25.000	270	235	203	167	335	292	252	208
1.12	50.000	201	175	151	125	190	165	142	118	25.000	270	235	203	167	335	292	252	208
1.13	50.000	201	175	151	125	190	165	142	118	25.000	270	235	203	167	335	292	252	208
1.14	50.000	201	175	151	125	190	165	142	118	25.000	270	235	203	167	335	292	252	208
1.15	50.000	232	202	174	144	219	191	164	136	38.000	450	392	338	279	589	512	442	365
1.16	50.000	201	175	151	125	190	165	142	118	25.000	270	235	203	167	335	292	252	208
2.1	50.000	155	135	116	96	208	181	156	129	25.000	312	271	234	193	387	337	290	240
2.2	50.000	155	135	116	96	208	181	156	129	25.000	312	271	234	193	387	337	290	240
2.3	50.000	155	135	116	96	208	181	156	129	25.000	312	271	234	193	387	337	290	240
2.4	50.000	155	135	116	96	164	143	123	102	19.000	242	211	182	150	294	256	221	182
2.5	50.000	155	135	116	96	219	191	164	136	25.000	312	271	234	193	387	337	290	240
2.6	50.000	155	135	116	96	219	191	164	136	25.000	312	271	234	193	387	337	290	240
2.7	50.000	155	135	116	96	170	148	127	105	15.000	236	205	177	146	279	243	209	173
3.1	50.000	232	202	174	144	274	238	205	170	44.000	485	422	364	301	682	593	511	423
3.2	50.000	232	202	174	144	274	238	205	170	44.000	485	422	364	301	682	593	511	423
3.3	50.000	232	202	174	144	274	238	205	170	44.000	485	422	364	301	682	593	511	423
3.4	50.000	232	202	174	144	274	238	205	170	44.000	485	422	364	301	682	593	511	423
3.5	50.000	141	123	106	88	150	131	113	93	19.000	215	187	161	133	269	234	202	167
3.6	50.000	141	123	106	88	150	131	113	93	19.000	215	187	161	133	269	234	202	167
3.7	50.000	141	123	106	88	150	131	113	93	19.000	215	187	161	133	269	234	202	167
3.8	50.000	141	123	106	88	150	131	113	93	19.000	215	187	161	133	269	234	202	167
4.1	50.000	232	202	174	144	438	381	329	272	50.000	693	603	520	430	930	809	697	576
4.2	50.000	232	202	174	144	438	381	329	272	50.000	693	603	520	430	930	809	697	576
4.3																		
4.4																		
4.5																		
4.6	50.000	232	202	174	144	274	238	205	170	44.000	416	362	312	258	542	472	407	336
4.7	50.000	232	202	174	144	274	238	205	170	31.000	402	350	301	249	480	418	360	298
4.8	50.000	126	110	95	78	134	117	101	83	19.000	170	148	127	105	190	165	142	118
4.9	50.000	126	110	95	78	89	78	67	55	12.000	136	118	102	84	152	132	114	94
4.10	50.000	126	110	95	78	89	78	67	55	12.000	136	118	102	84	152	132	114	94
4.11	50.000	232	202	174	144	274	238	205	170	31.000	402	350	301	249	480	418	360	298
4.12	50.000	232	202	174	144	274	238	205	170	31.000	402	350	301	249	480	418	360	298
4.13	50.000	232	202	174	144	329	286	246	204	38.000	554	482	416	344	705	613	529	437
4.14	50.000	232	202	174	144	329	286	246	204	44.000	554	482	416	344	813	708	610	504
4.15	50.000	141	123	106	88	200	174	150	124	25.000	285	248	213	176	339	295	255	210
4.16	50.000	212	185	159	132	300	261	225	186	44.000	506	440	379	314	742	646	557	460
4.17																		
4.18	50.000	141	123	106	88	150	131	113	93	19.000	215	187	161	133	255	221	191	158
4.19																		
5.1	50.000	54	47	40	33	63	55	47	39	19.000	79	69	59	49	101	88	76	63
5.2	50.000	54	47	40	33	63	55	47	39	19.000	91	79	68	56	114	99	85	71
5.3	50.000	54	47	40	33	63	55	47	39	19.000	102	89	76	63	126	110	95	78
5.4	50.000	46	40	35	29	55	48	41	34	12.000	88	77	66	55	110	95	82	68
5.5	50.000	46	40	35	29	55	48	41	34	12.000	59	51	44	36	82	71	62	51
5.6	50.000	54	47	40	33	63	55	47	39	12.000	79	69	59	49	101	88	76	63
5.7	50.000	46	40	35	29	55	48	41	34	12.000	69	60	51	43	88	76	66	54
5.8	50.000	46	40	35	29	55	48	41	34	12.000	69	60	51	43	88	76	66	54
5.9	50.000	60	52	45	37	71	62	53	44	31.000	101	88	76	63	141	123	106	88
5.10	50.000	60	52	45	37	71	62	53	44	31.000	101	88	76	63	177	154	133	110
5.11	50.000	60	52	45	37	71	62	53	44	25.000	89	77	66	55	141	123	106	88
6.1	50.000	77	67	58	48	82	71	62	51	38.000	173	151	130	107	194	168	145	120
6.2	50.000	47	41	36	29	67	58	50	42	25.000	90	78	68	56	101	88	75	62
6.3	50.000	47	41	36	29	67	58	50	42	19.000	90	78	68	56	101	88	75	62
6.4	50.000	45	39	34	28	63	55	47	39	19.000	85	74	64	53	95	83	71	59
6.5																		

a_e= 0,6–1,0 x DC: Missing values only trochodial slotting and milling is recommended. Otherwise there is the risk of tool breakage.

		Ø DC = 1,5 mm					Ø DC = 1,8 mm					Ø DC = 2,0 mm				●	○	
	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	a_e	0,1 x DC	0,2 x DC	0,3 x DC	0,4 x DC	1st choice	suitable	
	$a_{p\,max.}$	0,06	0,06	0,06	0,06	$a_{p\,max.}$	0,072	0,072	0,072	0,072	$a_{p\,max.}$	0,08	0,08	0,08	0,08	Emulsion	Compressed air	MMS
	$n_{min.}$	6.500				$n_{min.}$	5.500				$n_{min.}$	5.000						
Index	n	v_f mm/min.				n	v_f mm/min.				n	v_f mm/min.						
1.1	25.000	1000	870	750	620	22.000	1080	940	810	670	19.000	1140	992	855	707		●	○
1.2	25.000	1000	870	750	620	22.000	1080	940	810	670	19.000	1140	992	855	707		●	○
1.3	25.000	1000	870	750	620	22.000	1080	940	810	670	19.000	1140	992	855	707		●	○
1.4	25.000	1000	870	750	620	22.000	1080	940	810	670	19.000	1140	992	855	707		●	○
1.5	25.000	1000	870	750	620	22.000	1080	940	810	670	19.000	1140	992	855	707		●	○
1.6	16.000	554	482	416	344	14.000	680	592	510	422	12.000	720	626	540	446		●	○
1.7	25.000	1000	870	750	620	22.000	1080	940	810	670	19.000	1140	992	855	707		●	○
1.8	16.000	554	482	416	344	14.000	680	592	510	422	12.000	720	626	540	446		●	○
1.9	25.000	1000	870	750	620	22.000	1080	940	810	670	19.000	1140	992	855	707		●	○
1.10	16.000	554	482	416	344	14.000	680	592	510	422	12.000	720	626	540	446		●	○
1.11	16.000	554	482	416	344	14.000	680	592	510	422	12.000	720	626	540	446		●	○
1.12	16.000	554	482	416	344	14.000	680	592	510	422	12.000	720	626	540	446		●	○
1.13	16.000	554	482	416	344	14.000	680	592	510	422	12.000	720	626	540	446		●	○
1.14	16.000	554	482	416	344	14.000	680	592	510	422	12.000	720	626	540	446		●	○
1.15	25.000	1000	870	750	620	22.000	1080	940	810	670	19.000	1140	992	855	707		●	○
1.16	16.000	554	482	416	344	14.000	680	592	510	422	12.000	720	626	540	446		●	○
2.1	16.000	600	522	450	372	14.000	650	566	488	403	12.000	720	626	540	446		●	○
2.2	16.000	600	522	450	372	14.000	650	566	488	403	12.000	720	626	540	446		●	○
2.3	16.000	600	522	450	372	14.000	650	566	488	403	12.000	720	626	540	446		●	○
2.4	12.000	400	348	300	248	10.000	450	392	338	279	9.000	540	470	405	335		●	○
2.5	16.000	600	522	450	372	14.000	650	566	488	403	12.000	720	626	540	446		●	○
2.6	16.000	600	522	450	372	14.000	650	566	488	403	12.000	720	626	540	446		●	○
2.7	10.000	380	331	285	236	8.000	400	348	300	248	7.000	420	365	315	260		●	○
3.1	29.000	1160	1009	870	719	25.000	1240	1079	930	769	22.000	1320	1148	990	818		●	○
3.2	29.000	1160	1009	870	719	25.000	1240	1079	930	769	22.000	1320	1148	990	818		●	○
3.3	29.000	1160	1009	870	719	25.000	1240	1079	930	769	22.000	1320	1148	990	818		●	○
3.4	29.000	1160	1009	870	719	25.000	1240	1079	930	769	22.000	1320	1148	990	818		●	○
3.5	12.000	329	286	246	204	10.000	380	331	285	236	9.000	390	339	293	242		●	○
3.6	12.000	329	286	246	204	10.000	380	331	285	236	9.000	390	339	293	242		●	○
3.7	12.000	329	286	246	204	10.000	380	331	285	236	9.000	390	339	293	242		●	○
3.8	12.000	329	286	246	204	10.000	380	331	285	236	9.000	390	339	293	242		●	○
4.1	38.000	1520	1322	1140	942	33.000	1600	1392	1200	992	28.000	1680	1462	1260	1042		●	○
4.2	38.000	1520	1322	1140	942	33.000	1600	1392	1200	992	28.000	1680	1462	1260	1042		●	○
4.3																		
4.4																		
4.5																		
4.6	29.000	900	783	675	558	25.000	1000	870	750	620	22.000	1140	992	855	707		●	○
4.7	21.000	800	696	600	496	18.000	900	783	675	558	15.000	900	783	675	558		●	○
4.8	12.000	294	256	220	182	10.000	260	226	195	161	9.000	390	339	293	242		●	○
4.9	8.000	196	170	147	121	7.000	260	226	195	161	6.000	260	226	195	161		●	○
4.10	8.000	196	170	147	121	7.000	260	226	195	161	6.000	260	226	195	161		●	○
4.11	21.000	800	696	600	496	18.000	850	740	638	527	15.000	900	783	675	558		●	○
4.12	21.000	800	696	600	496	18.000	850	740	638	527	15.000	900	783	675	558		●	○
4.13	25.000	1000	870	750	620	18.000	1000	870	750	620	19.000	1140	992	855	707		●	○
4.14	29.000	1160	1009	870	719	25.000	1200	1044	900	744	22.000	1320	1148	990	818		●	○
4.15	16.000	438	381	329	272	14.000	500	435	375	310	12.000	520	452	390	322		●	○
4.16	29.000	1059	921	794	657	25.000	1200	1044	900	744	22.000	1320	1148	990	818		●	○
4.17																		
4.18	12.000	329	286	246	204	10.000	380	331	285	236	9.000	390	339	293	242		●	○
4.19																		
5.1	12.000	163	142	122	101	10.000	300	261	225	186	9.000	380	331	285	236		●	○
5.2	12.000	204	178	153	127	10.000	300	261	225	186	9.000	380	331	285	236		●	○
5.3	12.000	204	178	153	127	10.000	300	261	225	186	9.000	350	305	263	217		●	○
5.4	8.000	177	154	133	110	7.000	300	261	225	186	6.000	350	305	263	217		●	○
5.5	8.000	106	92	80	66	7.000	200	174	150	124	6.000	220	191	165	136		●	○
5.6	8.000	147	128	110	91	7.000	220	191	165	136	6.000	250	218	188	155		●	○
5.7	8.000	127	111	95	79	7.000	220	191	165	136	6.000	250	218	188	155		●	○
5.8	8.000	127	111	95	79	7.000	220	191	165	136	6.000	250	218	188	155		●	○
5.9	21.000	228	199	171	141	18.000	300	261	225	186	15.000	380	331	285	236		●	○
5.10	21.000	274	238	205	170	18.000	400	348	300	248	15.000	450	392	338	279		●	○
5.11	16.000	237	206	178	147	14.000	300	261	225	186	12.000	380	331	285	236		●	○
6.1	25.000	300	261	225	186	21.000	400	348	300	248	19.000	500	435	375	310		●	
6.2	16.000	173	151	130	107	14.000	200	174	150	124	12.000	240	209	180	149		●	
6.3	12.000	173	151	130	107	10.000	200	174	150	124	9.000	240	209	180	149		●	
6.4	12.000	163	142	122	101	10.000	200	174	150	124	9.000	240	209	180	149		●	
6.5																		

Cutting data standard values – MultiChange – PCR-UNI – 52 871 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder	a_p max.	Feedrates for extra short and short holder											
					Ø DC	9,7–10,0	11,7–12,0	15,7–16,0	19,7–20,0	24,7–25,0	Ø DC	9,7–10,0	11,7–12,0	15,7–16,0	19,7–20,0	24,7–25,0
					a_e 0,25 x DC						a_e 1 x DC					
					v_c m/min	f_z mm					v_c m/min	f_z mm				
1.1	0,9	0,7*	0,6*	0,56xDC	445	0,050	0,058	0,072	0,084	0,094	220	0,025	0,029	0,036	0,042	0,047
1.2	0,9	0,7*	0,6*	0,56xDC	445	0,050	0,058	0,072	0,084	0,094	220	0,025	0,029	0,036	0,042	0,047
1.3	0,9	0,7*	0,6*	0,56xDC	445	0,050	0,058	0,072	0,084	0,094	220	0,025	0,029	0,036	0,042	0,047
1.4	0,9	0,7*	0,6*	0,56xDC	405	0,050	0,058	0,072	0,084	0,094	200	0,025	0,029	0,036	0,042	0,047
1.5	0,9	0,7*	0,6*	0,56xDC	445	0,050	0,058	0,072	0,084	0,094	220	0,025	0,029	0,036	0,042	0,047
1.6	0,9	0,7*	0,6*	0,56xDC	365	0,047	0,054	0,068	0,078	0,087	180	0,023	0,027	0,034	0,039	0,044
1.7	0,9	0,7*	0,6*	0,56xDC	405	0,050	0,058	0,072	0,084	0,094	200	0,025	0,029	0,036	0,042	0,047
1.8	0,9	0,7*	0,6*	0,56xDC	285	0,042	0,048	0,060	0,070	0,078	140	0,021	0,024	0,030	0,035	0,039
1.9	0,9	0,7*	0,6*	0,56xDC	270	0,048	0,056	0,070	0,081	0,090	135	0,024	0,028	0,035	0,041	0,045
1.10	0,9	0,7*	0,6*	0,56xDC	405	0,050	0,058	0,072	0,084	0,094	200	0,025	0,029	0,036	0,042	0,047
1.11	0,9	0,7*	0,6*	0,56xDC	285	0,042	0,048	0,060	0,070	0,078	140	0,021	0,024	0,030	0,035	0,039
1.12	0,9	0,7*	0,6*	0,56xDC	265	0,048	0,055	0,069	0,080	0,089	130	0,024	0,028	0,034	0,040	0,044
1.13	0,9	0,7*	0,6*	0,56xDC	225	0,043	0,050	0,063	0,073	0,081	110	0,022	0,025	0,031	0,036	0,041
1.14	0,9	0,7*	0,6*	0,56xDC	225	0,043	0,050	0,063	0,073	0,081	110	0,022	0,025	0,031	0,036	0,041
1.15	0,9	0,7*	0,6*	0,56xDC	225	0,043	0,050	0,063	0,073	0,081	110	0,022	0,025	0,031	0,036	0,041
1.16	0,9	0,7*	0,6*	0,56xDC	265	0,048	0,055	0,069	0,080	0,089	130	0,024	0,028	0,034	0,040	0,044
2.1	0,9	0,7*	0,6*	0,56xDC	120	0,029	0,034	0,042	0,049	0,055	60	0,015	0,017	0,021	0,024	0,027
2.2	0,9	0,7*	0,6*	0,56xDC	135	0,032	0,037	0,046	0,053	0,059	65	0,016	0,018	0,023	0,027	0,030
2.3	0,9	0,7*	0,6*	0,56xDC	135	0,032	0,037	0,046	0,053	0,059	65	0,016	0,018	0,023	0,027	0,030
2.4	0,9	0,7*	0,6*	0,56xDC	135	0,032	0,037	0,046	0,053	0,059	65	0,016	0,018	0,023	0,027	0,030
2.5	0,9	0,7*	0,6*	0,56xDC	115	0,024	0,028	0,035	0,041	0,045	55	0,012	0,014	0,017	0,020	0,023
2.6	0,9	0,7*	0,6*	0,56xDC	120	0,029	0,034	0,042	0,049	0,055	60	0,015	0,017	0,021	0,024	0,027
2.7	0,9	0,7*	0,6*	0,56xDC	120	0,025	0,029	0,036	0,042	0,047	60	0,013	0,015	0,018	0,021	0,023
3.1	0,9	0,7*	0,6*	0,56xDC	485	0,083	0,097	0,121	0,140	0,156	240	0,042	0,048	0,060	0,070	0,078
3.2	0,9	0,7*	0,6*	0,56xDC	365	0,058	0,068	0,084	0,098	0,109	180	0,029	0,034	0,042	0,049	0,055
3.3	0,9	0,7*	0,6*	0,56xDC	445	0,071	0,082	0,103	0,119	0,132	220	0,035	0,041	0,051	0,059	0,066
3.4	0,9	0,7*	0,6*	0,56xDC	365	0,058	0,068	0,084	0,098	0,109	180	0,029	0,034	0,042	0,049	0,055
3.5	0,9	0,7*	0,6*	0,56xDC	325	0,058	0,068	0,084	0,098	0,109	160	0,029	0,034	0,042	0,049	0,055
3.6	0,9	0,7*	0,6*	0,56xDC	305	0,050	0,058	0,072	0,084	0,094	150	0,025	0,029	0,036	0,042	0,047
3.7	0,9	0,7*	0,6*	0,56xDC	325	0,058	0,068	0,084	0,098	0,109	160	0,029	0,034	0,042	0,049	0,055
3.8	0,9	0,7*	0,6*	0,56xDC	305	0,050	0,058	0,072	0,084	0,094	150	0,025	0,029	0,036	0,042	0,047

* = Trimming and trochoidal slot milling

Cutting data standard values – MultiChange – PCR-ALU – 52 872 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder	a_p max.	Feedrates for extra short and short holder											
					Ø DC	9,7–10,0	11,7–12,0	15,7–16,0	19,7–20,0	24,7–25,0	Ø DC	9,7–10,0	11,7–12,0	15,7–16,0	19,7–20,0	24,7–25,0
					a_e 0,25 x DC						a_e 1 x DC					
					v_c m/min	f_z mm					v_c m/min	f_z mm				
4.1	0,9	0,7*	0,6*	0,56xDC	1085	0,142	0,169	0,211	0,245	0,273	605	0,071	0,085	0,106	0,122	0,136
4.2	0,9	0,7*	0,6*	0,56xDC	1085	0,142	0,169	0,211	0,245	0,273	605	0,071	0,085	0,106	0,122	0,136
4.3	0,9	0,7*	0,6*	0,56xDC	720	0,149	0,178	0,222	0,257	0,286	405	0,075	0,089	0,106	0,128	0,143
4.4	0,9	0,7*	0,6*	0,56xDC	575	0,156	0,186	0,232	0,269	0,300	320	0,078	0,093	0,116	0,135	0,150
4.5	0,9	0,7*	0,6*	0,56xDC	415	0,171	0,203	0,253	0,294	0,327	230	0,085	0,102	0,127	0,147	0,164
4.6	0,9	0,7*	0,6*	0,56xDC	415	0,114	0,136	0,169	0,196	0,218	230	0,057	0,068	0,084	0,098	0,109
4.7	0,9	0,7*	0,6*	0,56xDC	520	0,071	0,085	0,106	0,122	0,136	290	0,036	0,042	0,053	0,061	0,068
4.8	0,9	0,7*	0,6*	0,56xDC	310	0,114	0,136	0,169	0,196	0,218	175	0,057	0,068	0,084	0,098	0,109
4.9	0,9	0,7*	0,6*	0,56xDC	520	0,071	0,085	0,106	0,122	0,136	290	0,036	0,042	0,053	0,061	0,068
4.10	0,9	0,7*	0,6*	0,56xDC	520	0,071	0,085	0,106	0,122	0,136	290	0,036	0,042	0,053	0,061	0,068
4.11	0,9	0,7*	0,6*	0,56xDC	520	0,071	0,085	0,106	0,122	0,136	290	0,036	0,042	0,053	0,061	0,068
4.12	0,9	0,7*	0,6*	0,56xDC	520	0,071	0,085	0,106	0,122	0,136	290	0,036	0,042	0,053	0,061	0,068
4.13																
4.14																
4.15																
4.16																
4.17																
4.18																
4.19																

* = Trimming and trochoidal slot milling

For unstable applications, the cutting data can be reduced.

		Ramping	Drilling	Helical milling			● 1st choice		○ suitable
					Max. plunging angle				
	v_c m/min	Max. angle	f_z factor	$\alpha_{R\,max.}$**	$D_{min.}$ 1,5	$D_{max.}$ 1,8	Emulsion	Compressed air	MMS
	1.1	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	○	●	○
	1.2	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	○	●	○
	1.3	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	○	●	○
	1.4	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	1.5	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	○	●	○
	1.6	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	1.7	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	1.8	**45°**	**0,7**	**0,56xDC**	**20°**	**13°**	●		○
	1.9	**30°**		**0,5xDC**	**18°**	**11°**	●		○
	1.10	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	1.11	**45°**	**0,7**	**0,56xDC**	**20°**	**13°**	●		○
	1.12	**30°**	**0,8**	**0,5xDC**	**18°**	**11°**	○	●	○
	1.13	**30°**	**0,7**	**0,5xDC**	**18°**	**11°**	●		○
	1.14	**30°**	**0,7**	**0,5xDC**	**18°**	**11°**	●		○
	1.15	**30°**	**0,7**	**0,5xDC**	**18°**	**11°**	●		○
	1.16	**30°**	**0,8**	**0,5xDC**	**18°**	**11°**	○	●	○
	2.1	15°		0,4xDC	14°	9°	●		○
	2.2	15°		0,4xDC	14°	9°	●		○
	2.3	15°		0,4xDC	14°	9°	●		○
	2.4	15°		0,4xDC	14°	9°	●		○
	2.5	15°		0,4xDC	14°	9°	●		
	2.6	15°		0,4xDC	14°	9°	●		○
	2.7	15°		0,4xDC	14°	9°	●		
	3.1	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	3.2	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	3.3	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	3.4	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	3.5	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	3.6	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	3.7	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○
	3.8	**45°**	**0,8**	**0,56xDC**	**20°**	**13°**	○	●	○

		Ramping	Drilling	Helical milling			● 1st choice		○ suitable
					Max. plunging angle				
	v_c m/min	Max. angle	f_z factor	$\alpha_{R\,max.}$**	$D_{min.}$ 1,5	$D_{max.}$ 1,8	Emulsion	Compressed air	MMS
	4.1	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.2	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.3	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.4	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.5	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.6	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.7	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.8	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.9	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.10	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.11	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.12	**45°**	**0,9**	**0,56xDC**	**20°**	**13°**	●		○
	4.13								
	4.14								
	4.15								
	4.16								
	4.17								
	4.18								
	4.19								

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** Width of cut per helical revolution

Cutting data standard values – MultiChange – PCD milling heads

Index	Correction factor v_c, a_p and f_z Medium Holder	Correction factor v_c, a_p and f_z Long Holder	Correction factor v_c, a_p and f_z Extra Long Holder	$n_{max.}$ rpm	v_c m/min	Feedrates for extra short and short holder Ø DC = 8 mm a_e 0,1–0,4 x DC, a_p max. 6 mm, f_z in mm	Ø DC = 8 mm a_e 0,6–1,0 x DC, a_p max. 3 mm, f_z in mm	v_c m/min	Ø DC = 10 mm a_e 0,1–0,4 x DC, a_p max. 8 mm, f_z in mm	Ø DC = 10 mm a_e 0,6–1,0 x DC, a_p max. 4 mm, f_z in mm	● 1st choice Emulsion	○ suitable Compressed air	○ suitable MMS
4.1	0,9	0,7*	0,6*	**18000**	**300–450**	0,08	0,08	**350–550**	0,08	0,08	●	○	○
4.2	0,9	0,7*	0,6*		**300–450**	0,08	0,08	**350–550**	0,08	0,08	●	○	○
4.3	0,9	0,7*	0,6*		**300–450**	0,16	0,08	**350–550**	0,16	0,08	●	○	○
4.4	0,9	0,7*	0,6*		**300–450**	0,16	0,08	**350–550**	0,16	0,08	●	○	○
4.5	0,9	0,7*	0,6*		**300–450**	0,20	0,10	**350–550**	0,20	0,10	●	○	○
4.6	0,9	0,7*	0,6*		**300–450**	0,24	0,12	**350–550**	0,24	0,12	●	○	○
4.7	0,9	0,7*	0,6*		**300–450**	0,16	0,08	**350–550**	0,16	0,08	●	○	○
4.8	0,9	0,7*	0,6*		**300–450**	0,24	0,12	**350–550**	0,24	0,12	●	○	○
4.9	0,9	0,7*	0,6*		**300–450**	0,24	0,12	**350–550**	0,24	0,12	●	○	○
4.10	0,9	0,7*	0,6*		**300–450**	0,24	0,12	**350–550**	0,24	0,12	●	○	○
4.11	0,9	0,7*	0,6*		**300–450**	0,16	0,08	**350–550**	0,16	0,08	●	○	○
4.12	0,9	0,7*	0,6*		**300–450**	0,16	0,08	**350–550**	0,16	0,08	●	○	○
4.13	0,9	0,7*	0,6*		**300–450**	0,16	0,08	**350–550**	0,16	0,08	●	○	○
4.14	0,9	0,7*	0,6*		**300–450**	0,16	0,08	**350–550**	0,16	0,08	●	○	○
4.15	0,9	0,7*	0,6*		**300–450**	0,16	0,08	**350–550**	0,16	0,08	●	○	○
4.16	0,9	0,7*	0,6*		**300–450**	0,20	0,12	**350–550**	0,20	0,12	●	○	○
4.17	0,9	0,7*	0,6*		**300–450**	0,20	0,12	**350–550**	0,20	0,12	●	○	○
4.18	0,9	0,7*	0,6*		**300–450**	0,20	0,12	**350–550**	0,20	0,12	●	○	○
4.19	0,9	0,7*	0,6*		**300–450**	0,20	0,12	**350–550**	0,20	0,12	●	○	○

*= Edge Milling and Trochoidal Milling

Index	Correction factor v_c, a_p and f_z Medium Holder	Correction factor v_c, a_p and f_z Long Holder	Correction factor v_c, a_p and f_z Extra Long Holder	$n_{max.}$ rpm	v_c m/min	Feedrates for extra short and short holder Ø DC = 12 mm a_e 0,1–0,4 x DC, a_p max. 8 mm, f_z in mm	Ø DC = 12 mm a_e 0,6–1,0 x DC, a_p max. 4 mm, f_z in mm	v_c m/min	Ø DC = 16 mm a_e 0,1–0,4 x DC, a_p max. 8 mm, f_z in mm	Ø DC = 16 mm a_e 0,6–1,0 x DC, a_p max. 4 mm, f_z in mm	● 1st choice Emulsion	○ suitable Compressed air	○ suitable MMS
4.1	0,9	0,7*	0,6*	**18000**	**400–600**	0,08	0,08	**450–700**	0,08	0,08	●	○	○
4.2	0,9	0,7*	0,6*		**400–600**	0,08	0,08	**450–700**	0,08	0,08	●	○	○
4.3	0,9	0,7*	0,6*		**400–600**	0,16	0,08	**450–700**	0,16	0,08	●	○	○
4.4	0,9	0,7*	0,6*		**400–600**	0,16	0,08	**450–700**	0,16	0,08	●	○	○
4.5	0,9	0,7*	0,6*		**400–600**	0,20	0,10	**450–700**	0,20	0,10	●	○	○
4.6	0,9	0,7*	0,6*		**400–600**	0,24	0,12	**450–700**	0,24	0,12	●	○	○
4.7	0,9	0,7*	0,6*		**400–600**	0,16	0,08	**450–700**	0,16	0,08	●	○	○
4.8	0,9	0,7*	0,6*		**400–600**	0,24	0,12	**450–700**	0,24	0,12	●	○	○
4.9	0,9	0,7*	0,6*		**400–600**	0,24	0,12	**450–700**	0,24	0,12	●	○	○
4.10	0,9	0,7*	0,6*		**400–600**	0,24	0,12	**450–700**	0,24	0,12	●	○	○
4.11	0,9	0,7*	0,6*		**400–600**	0,16	0,08	**450–700**	0,16	0,08	●	○	○
4.12	0,9	0,7*	0,6*		**400–600**	0,16	0,08	**450–700**	0,16	0,08	●	○	○
4.13	0,9	0,7*	0,6*		**400–600**	0,16	0,08	**450–700**	0,16	0,08	●	○	○
4.14	0,9	0,7*	0,6*		**400–600**	0,16	0,08	**450–700**	0,16	0,08	●	○	○
4.15	0,9	0,7*	0,6*		**400–600**	0,16	0,08	**450–700**	0,16	0,08	●	○	○
4.16	0,9	0,7*	0,6*		**400–600**	0,20	0,12	**450–700**	0,20	0,12	●	○	○
4.17	0,9	0,7*	0,6*		**400–600**	0,20	0,12	**450–700**	0,20	0,12	●	○	○
4.18	0,9	0,7*	0,6*		**400–600**	0,20	0,12	**450–700**	0,20	0,12	●	○	○
4.19	0,9	0,7*	0,6*		**400–600**	0,20	0,12	**450–700**	0,20	0,12	●	○	○

*= Edge Milling and Trochoidal Milling

All tools should be mounted using torque wrench.
In unstable applications, the machining parameters can be reduced.

Cutting data standard values – MultiChange – End milling heads – 52 860 ... / 52 861 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder	v_c m/min	Feedrates for extra short and short holder															● 1st choice		○ suitable
				$a_{p\,max.}$	Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm			Ø DC = 20 mm					
					5,2 mm	4,4 mm	3,6 mm	6,5 mm	5,5 mm	4,5 mm	7,8 mm	6,6 mm	5,4 mm	10,4 mm	8,8 mm	7,2 mm	13 mm	11 mm	9 mm			
					a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
					f_z mm																	
1.1	**0,9**	**0,7***	**0,6***	**180**	0,05	0,04	0,03	0,07	0,06	0,04	0,08	0,07	0,05	0,11	0,09	0,07	0,14	0,12	0,08	○	●	○
1.2	**0,9**	**0,7***	**0,6***	**200**	0,06	0,05	0,03	0,08	0,07	0,05	0,09	0,08	0,06	0,13	0,11	0,08	0,16	0,14	0,10	○	●	○
1.3	**0,9**	**0,7***	**0,6***	**180**	0,05	0,04	0,03	0,07	0,06	0,04	0,08	0,07	0,05	0,11	0,09	0,07	0,14	0,12	0,08	○	●	○
1.4	**0,9**	**0,7***	**0,6***	**150**	0,04	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,04	0,10	0,08	0,06	0,13	0,11	0,08	○	●	○
1.5	**0,9**	**0,7***	**0,6***	**160**	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,12	0,10	0,07	0,15	0,13	0,09	○	●	○
1.6	**0,9**	**0,7***	**0,6***	**140**	0,04	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,04	0,10	0,08	0,06	0,13	0,11	0,08	○	●	○
1.7	**0,9**	**0,7***	**0,6***	**140**	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,12	0,10	0,07	0,15	0,13	0,09	○	●	○
1.8	**0,9**	**0,7***	**0,6***	**100**	0,04	0,03	0,02	0,05	0,04	0,03	0,06	0,05	0,03	0,08	0,07	0,05	0,10	0,09	0,06	○	●	○
1.9	**0,9**	**0,7***	**0,6***	**140**	0,05	0,04	0,03	0,07	0,06	0,04	0,08	0,07	0,05	0,11	0,09	0,07	0,14	0,12	0,08	○	●	○
1.10	**0,9**	**0,7***	**0,6***	**120**	0,04	0,03	0,02	0,05	0,04	0,03	0,06	0,05	0,03	0,08	0,07	0,05	0,10	0,09	0,06	○	●	○
1.11	**0,9**	**0,7***	**0,6***	**100**	0,03	0,03	0,02	0,04	0,04	0,03	0,05	0,04	0,03	0,07	0,06	0,04	0,09	0,08	0,06	○	●	○
1.12	**0,9**	**0,7***	**0,6***	**90**	0,04	0,03	0,02	0,05	0,04	0,03	0,06	0,05	0,03	0,08	0,07	0,05	0,10	0,09	0,06	○	●	○
1.13	**0,9**	**0,7***	**0,6***	**70**	0,04	0,03	0,02	0,05	0,04	0,03	0,06	0,05	0,03	0,08	0,07	0,05	0,10	0,09	0,06	○	●	○
1.14																						
1.15	**0,9**	**0,7***	**0,6***	**80**	0,03	0,03	0,02	0,04	0,04	0,03	0,05	0,04	0,03	0,07	0,06	0,04	0,09	0,08	0,06	○	●	○
1.16	**0,9**	**0,7***	**0,6***	**80**	0,03	0,03	0,02	0,04	0,04	0,03	0,05	0,04	0,03	0,07	0,06	0,04	0,09	0,08	0,06	○	●	○
2.1	0,9	0,7*	0,6*	60	0,04	0,04		0,06	0,05		0,07	0,06		0,09	0,08		0,12	0,10		●		
2.2	0,9	0,7*	0,6*	60	0,04	0,03		0,05	0,04		0,06	0,05		0,08	0,07		0,10	0,09		●		
2.3	0,9	0,7*	0,6*	50	0,04	0,03		0,05	0,04		0,06	0,05		0,08	0,07		0,10	0,09		●		
2.4	0,9	0,7*	0,6*	40	0,03	0,02		0,04	0,03		0,04	0,04		0,06	0,05		0,08	0,07		●		
2.5	0,9	0,7*	0,6*	50	0,03	0,03		0,04	0,04		0,05	0,04		0,07	0,06		0,09	0,08		●		
2.6	0,9	0,7*	0,6*	50	0,03	0,03		0,04	0,04		0,05	0,04		0,07	0,06		0,09	0,08		●		
2.7	0,9	0,7*	0,6*	40	0,03	0,02		0,04	0,03		0,04	0,04		0,06	0,05		0,08	0,07		●		
3.1	**0,9**	**0,7***	**0,6***	**150**	0,06	0,05	0,03	0,08	0,07	0,05	0,09	0,08	0,06	0,13	0,11	0,08	0,16	0,14	0,10		●	
3.2	**0,9**	**0,7***	**0,6***	**120**	0,05	0,04	0,03	0,07	0,06	0,04	0,08	0,07	0,05	0,11	0,09	0,07	0,14	0,12	0,08		●	
3.3	**0,9**	**0,7***	**0,6***	**140**	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,12	0,10	0,07	0,15	0,13	0,09		●	
3.4	**0,9**	**0,7***	**0,6***	**120**	0,04	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,04	0,10	0,08	0,06	0,13	0,11	0,08		●	
3.5	**0,9**	**0,7***	**0,6***	**120**	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,12	0,10	0,07	0,15	0,13	0,09		●	
3.6	**0,9**	**0,7***	**0,6***	**100**	0,05	0,04	0,03	0,07	0,06	0,04	0,08	0,07	0,05	0,11	0,09	0,07	0,14	0,12	0,08		●	
3.7	**0,9**	**0,7***	**0,6***	**120**	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,12	0,10	0,07	0,15	0,13	0,09		●	
3.8	**0,9**	**0,7***	**0,6***	**100**	0,04	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,04	0,10	0,08	0,06	0,13	0,11	0,08		●	
4.1																						
4.2																						
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4.5																						
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4.9																						
4.10	0,9	0,7*	0,6*	160	0,03	0,03	0,02	0,04	0,04	0,03	0,05	0,04	0,03	0,07	0,06	0,04	0,09	0,08	0,06	●		○
4.11	0,9	0,7*	0,6*	220	0,06	0,05	0,03	0,08	0,07	0,05	0,09	0,08	0,06	0,13	0,11	0,08	0,16	0,14	0,10	●		○
4.12																						
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* = Trimming and trochoidal slot milling

For unstable applications, the cutting data can be reduced.

14

Cutting Data – MultiChange – Roughing finishing milling heads – 52 862 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder	v_c m/min	Feedrates for extra short and short holder										Emulsion	Compressed air	MMS
					Ø DC = 8 mm		Ø DC = 10 mm		Ø DC = 12 mm		Ø DC = 16 mm		Ø DC = 20 mm		● 1st choice		○ suitable
				$a_{p\,max.}$	7,5 mm		9,4 mm		11,3 mm		15,0 mm		18,8 mm				
					a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC			
					f_z mm		f_z mm		f_z mm		f_z mm		f_z mm				
1.1	0,9	0,7*	0,6*	215	0,04	0,03	0,05	0,04	0,06	0,05	0,08	0,07	0,10	0,08	○	●	○
1.2	0,9	0,7*	0,6*	240	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,08	0,12	0,10	○	●	○
1.3	0,9	0,7*	0,6*	215	0,04	0,03	0,05	0,04	0,06	0,05	0,08	0,07	0,10	0,08	○	●	○
1.4	0,9	0,7*	0,6*	180	0,03	0,03	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,08	○	●	○
1.5	0,9	0,7*	0,6*	190	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,07	0,10	0,09	○	●	○
1.6	0,9	0,7*	0,6*	170	0,03	0,03	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,08	○	●	○
1.7	0,9	0,7*	0,6*	170	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,07	0,10	0,09	○	●	○
1.8	0,9	0,7*	0,6*	120	0,03	0,02	0,04	0,03	0,04	0,04	0,06	0,05	0,07	0,06	○	●	○
1.9	0,9	0,7*	0,6*	170	0,04	0,03	0,05	0,04	0,06	0,05	0,08	0,07	0,10	0,08	○	●	○
1.10	0,9	0,7*	0,6*	145	0,03	0,02	0,04	0,03	0,04	0,04	0,06	0,05	0,07	0,06	○	●	○
1.11	0,9	0,7*	0,6*	120	0,03	0,02	0,03	0,03	0,04	0,03	0,05	0,04	0,06	0,05	○	●	○
1.12	0,9	0,7*	0,6*	110	0,03	0,02	0,04	0,03	0,04	0,04	0,06	0,05	0,07	0,06	○	●	○
1.13	0,9	0,7*	0,6*	85	0,03	0,02	0,04	0,03	0,04	0,04	0,06	0,05	0,07	0,06	○	●	○
1.14																	
1.15	0,9	0,7*	0,6*	95	0,03	0,02	0,03	0,03	0,04	0,03	0,05	0,04	0,06	0,05	○	●	○
1.16	0,9	0,7*	0,6*	95	0,03	0,02	0,03	0,03	0,04	0,03	0,05	0,04	0,06	0,05	○	●	○
2.1	0,9	0,7*	0,6*	70	0,03	0,03	0,04	0,04	0,05	0,04	0,07	0,06	0,08	0,07	●		
2.2	0,9	0,7*	0,6*	70	0,03	0,02	0,04	0,03	0,04	0,04	0,06	0,05	0,07	0,06	●		
2.3	0,9	0,7*	0,6*	60	0,03	0,02	0,04	0,03	0,04	0,04	0,06	0,05	0,07	0,06	●		
2.4	0,9	0,7*	0,6*	50	0,02	0,02	0,03	0,02	0,03	0,03	0,04	0,04	0,06	0,05	●		
2.5	0,9	0,7*	0,6*	60	0,03	0,02	0,03	0,03	0,04	0,03	0,05	0,04	0,06	0,05	●		
2.6	0,9	0,7*	0,6*	60	0,03	0,02	0,03	0,03	0,04	0,03	0,05	0,04	0,06	0,05	●		
2.7	0,9	0,7*	0,6*	50	0,02	0,02	0,03	0,02	0,03	0,03	0,04	0,04	0,06	0,05	●		
3.1	0,9	0,7*	0,6*	180	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,08	0,12	0,10		●	
3.2	0,9	0,7*	0,6*	140	0,04	0,03	0,05	0,04	0,06	0,05	0,08	0,07	0,10	0,08		●	
3.3	0,9	0,7*	0,6*	170	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,07	0,10	0,09		●	
3.4	0,9	0,7*	0,6*	140	0,03	0,03	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,08		●	
3.5	0,9	0,7*	0,6*	140	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,07	0,10	0,09		●	
3.6	0,9	0,7*	0,6*	120	0,04	0,03	0,05	0,04	0,06	0,05	0,08	0,07	0,10	0,08		●	
3.7	0,9	0,7*	0,6*	140	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,07	0,10	0,09		●	
3.8	0,9	0,7*	0,6*	120	0,03	0,03	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,08		●	
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4.5																	
4.6																	
4.7																	
4.8																	
4.9																	
4.10	0,9	0,7*	0,6*	190	0,03	0,02	0,03	0,03	0,04	0,03	0,05	0,04	0,06	0,05	●		○
4.11	0,9	0,7*	0,6*	260	0,04	0,04	0,06	0,05	0,07	0,06	0,09	0,08	0,12	0,10	●		○
4.12																	
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5.11																	
6.1																	
6.2																	
6.3																	
6.4																	
6.5																	

* = Trimming and trochoidal slot milling

For unstable applications, the cutting data can be reduced.

Cutting data standard values – MultiChange – HFC milling heads – 52 864 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder	v_c m/min	$a_{p\,max.}$ x DCX	Feedrates for extra short and short holder															● 1st choice	○ suitable	
						Ø DCX = 8 mm			Ø DCX = 10 mm			Ø DCX = 12 mm			Ø DCX = 16 mm			Ø DCX = 20 mm					
						a_e 0,1–0,2 x DCX	a_e 0,3–0,4 x DCX	a_e 0,6–1,0 x DCX	a_e 0,1–0,2 x DCX	a_e 0,3–0,4 x DCX	a_e 0,6–1,0 x DCX	a_e 0,1–0,2 x DCX	a_e 0,3–0,4 x DCX	a_e 0,6–1,0 x DCX	a_e 0,1–0,2 x DCX	a_e 0,3–0,4 x DCX	a_e 0,6–1,0 x DCX	a_e 0,1–0,2 x DCX	a_e 0,3–0,4 x DCX	a_e 0,6–1,0 x DCX	Emulsion	Compressed air	MMS
						f_z mm																	
1.1	0,9	0,7*	0,6*	200	0,05	0,36	0,30	0,21	0,54	0,45	0,32	0,60	0,50	0,35	0,84	0,70	0,49	1,08	0,90	0,63	○	●	○
1.2	0,9	0,7*	0,6*	220	0,05	0,43	0,36	0,25	0,64	0,53	0,37	0,71	0,59	0,42	0,99	0,83	0,58	1,28	1,07	0,75	○	●	○
1.3	0,9	0,7*	0,6*	200	0,05	0,36	0,30	0,21	0,54	0,45	0,32	0,60	0,50	0,35	0,84	0,70	0,49	1,08	0,90	0,63	○	●	○
1.4	0,9	0,7*	0,6*	170	0,05	0,33	0,28	0,20	0,49	0,41	0,29	0,55	0,46	0,32	0,76	0,64	0,45	0,99	0,82	0,58	○	●	○
1.5	0,9	0,7*	0,6*	180	0,05	0,39	0,33	0,23	0,59	0,49	0,35	0,66	0,55	0,38	0,92	0,77	0,54	1,18	0,98	0,69	○	●	○
1.6	0,9	0,7*	0,6*	150	0,05	0,33	0,28	0,20	0,49	0,41	0,29	0,55	0,46	0,32	0,76	0,64	0,45	0,99	0,82	0,58	○	●	○
1.7	0,9	0,7*	0,6*	150	0,05	0,39	0,33	0,23	0,59	0,49	0,35	0,66	0,55	0,38	0,92	0,77	0,54	1,18	0,98	0,69	○	●	○
1.8	0,9	0,7*	0,6*	110	0,05	0,27	0,22	0,16	0,39	0,33	0,23	0,44	0,37	0,26	0,61	0,51	0,36	0,79	0,66	0,46	○	●	○
1.9	0,9	0,7*	0,6*	150	0,05	0,36	0,30	0,21	0,54	0,45	0,32	0,60	0,50	0,35	0,84	0,70	0,49	1,08	0,90	0,63	○	●	○
1.10	0,9	0,7*	0,6*	130	0,05	0,27	0,22	0,16	0,39	0,33	0,23	0,44	0,37	0,26	0,61	0,51	0,36	0,79	0,66	0,46	○	●	○
1.11	0,9	0,7*	0,6*	110	0,05	0,23	0,19	0,14	0,34	0,29	0,20	0,39	0,32	0,23	0,54	0,45	0,31	0,69	0,58	0,41	○	●	○
1.12	0,9	0,7*	0,6*	100	0,05	0,27	0,22	0,16	0,39	0,33	0,23	0,44	0,37	0,26	0,61	0,51	0,36	0,79	0,66	0,46	○	●	○
1.13	0,9	0,7*	0,6*	80	0,05	0,27	0,22	0,16	0,39	0,33	0,23	0,44	0,37	0,26	0,61	0,51	0,36	0,79	0,66	0,46	○	●	○
1.14																							
1.15	0,9	0,7*	0,6*	90	0,05	0,23	0,19	0,14	0,34	0,29	0,20	0,39	0,32	0,23	0,54	0,45	0,31	0,69	0,58	0,41	○	●	○
1.16	0,9	0,7*	0,6*	90	0,05	0,23	0,19	0,14	0,34	0,29	0,20	0,39	0,32	0,23	0,54	0,45	0,31	0,69	0,58	0,41	○	●	○
2.1	0,9	0,7*	0,6*	70	0,025	0,45	0,37	0,26	0,66	0,55	0,39	0,74	0,62	0,43	1,03	0,86	0,60	1,33	1,11	0,78	●		
2.2	0,9	0,7*	0,6*	70	0,025	0,39	0,33	0,23	0,59	0,49	0,35	0,66	0,55	0,38	0,92	0,77	0,54	1,18	0,98	0,69	●		
2.3	0,9	0,7*	0,6*	60	0,025	0,39	0,33	0,23	0,59	0,49	0,35	0,66	0,55	0,38	0,92	0,77	0,54	1,18	0,98	0,69	●		
2.4	0,9	0,7*	0,6*	40	0,025	0,30	0,25	0,17	0,45	0,37	0,26	0,49	0,41	0,29	0,69	0,58	0,41	0,88	0,74	0,52	●		
2.5	0,9	0,7*	0,6*	60	0,025	0,34	0,29	0,20	0,52	0,43	0,30	0,57	0,48	0,34	0,81	0,67	0,47	1,03	0,86	0,60	●		
2.6	0,9	0,7*	0,6*	55	0,025	0,34	0,29	0,20	0,52	0,43	0,30	0,57	0,48	0,34	0,81	0,67	0,47	1,03	0,86	0,60	●		
2.7	0,9	0,7*	0,6*	40	0,025	0,30	0,25	0,17	0,45	0,37	0,26	0,49	0,41	0,29	0,69	0,58	0,41	0,88	0,74	0,52	●		
3.1	0,9	0,7*	0,6*	170	0,05	0,43	0,36	0,25	0,64	0,53	0,37	0,71	0,59	0,42	0,99	0,83	0,58	1,28	1,07	0,75		●	
3.2	0,9	0,7*	0,6*	130	0,05	0,36	0,30	0,21	0,54	0,45	0,32	0,60	0,50	0,35	0,84	0,70	0,49	1,08	0,90	0,63		●	
3.3	0,9	0,7*	0,6*	150	0,05	0,39	0,33	0,23	0,59	0,49	0,35	0,66	0,55	0,38	0,92	0,77	0,54	1,18	0,98	0,69		●	
3.4	0,9	0,7*	0,6*	130	0,05	0,33	0,28	0,20	0,49	0,41	0,29	0,55	0,46	0,32	0,76	0,64	0,45	0,99	0,82	0,58		●	
3.5	0,9	0,7*	0,6*	130	0,05	0,39	0,33	0,23	0,59	0,49	0,35	0,66	0,55	0,38	0,92	0,77	0,54	1,18	0,98	0,69		●	
3.6	0,9	0,7*	0,6*	110	0,05	0,36	0,30	0,21	0,54	0,45	0,32	0,60	0,50	0,35	0,84	0,70	0,49	1,08	0,90	0,63		●	
3.7	0,9	0,7*	0,6*	130	0,05	0,39	0,33	0,23	0,59	0,49	0,35	0,66	0,55	0,38	0,92	0,77	0,54	1,18	0,98	0,69		●	
3.8	0,9	0,7*	0,6*	110	0,05	0,33	0,28	0,20	0,49	0,41	0,29	0,55	0,46	0,32	0,76	0,64	0,45	0,99	0,82	0,58		●	
4.1																							
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5.9																							
5.10																							
5.11																							
6.1	0,9	0,7*	0,6*	70	0,025	0,20			0,30			0,33			0,46			0,49				●	
6.2	0,9	0,7*	0,6*	60	0,025	0,17			0,25			0,28			0,38			0,41				●	
6.3																							
6.4																							
6.5																							

* = Trimming and trochoidal slot milling

For unstable applications, the cutting data can be reduced.

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Cutting Data – MultiChange – Finish milling heads – 52 863 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder	v_c m/min	Feedrates for extra short and short holder							
					Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm	Ø DC = 20 mm	● 1st choice		○ suitable
				$a_{p\,max.}$	7,5 mm	9,4 mm	11,3 mm	15,0 mm	18,8 mm			
					a_e 0,1–0,2 x DC	a_e 0,1–0,2 x DC	a_e 0,1–0,2 x DC	a_e 0,1–0,2 x DC	a_e 0,1–0,2 x DC	Emulsion	Compressed air	MMS
					f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.1	**0,9**	**0,7***	**0,6***	**250**	0,05	0,06	0,08	0,10	0,13	○	●	○
1.2	**0,9**	**0,7***	**0,6***	**280**	0,06	0,07	0,09	0,11	0,15	○	●	○
1.3	**0,9**	**0,7***	**0,6***	**250**	0,05	0,06	0,08	0,10	0,13	○	●	○
1.4	**0,9**	**0,7***	**0,6***	**210**	0,05	0,06	0,07	0,09	0,12	○	●	○
1.5	**0,9**	**0,7***	**0,6***	**220**	0,06	0,07	0,08	0,11	0,14	○	●	○
1.6	**0,9**	**0,7***	**0,6***	**200**	0,05	0,06	0,07	0,09	0,12	○	●	○
1.7	**0,9**	**0,7***	**0,6***	**200**	0,06	0,07	0,08	0,11	0,14	○	●	○
1.8	**0,9**	**0,7***	**0,6***	**140**	0,04	0,05	0,06	0,07	0,09	○	●	○
1.9	**0,9**	**0,7***	**0,6***	**200**	0,05	0,06	0,08	0,10	0,13	○	●	○
1.10	**0,9**	**0,7***	**0,6***	**170**	0,04	0,05	0,06	0,07	0,09	○	●	○
1.11	**0,9**	**0,7***	**0,6***	**140**	0,03	0,04	0,05	0,06	0,08	○	●	○
1.12	**0,9**	**0,7***	**0,6***	**130**	0,04	0,05	0,06	0,07	0,09	○	●	○
1.13	**0,9**	**0,7***	**0,6***	**100**	0,04	0,05	0,06	0,07	0,09	○	●	○
1.14												
1.15	**0,9**	**0,7***	**0,6***	**110**	0,03	0,04	0,05	0,06	0,08	○	●	○
1.16	**0,9**	**0,7***	**0,6***	**110**	0,03	0,04	0,05	0,06	0,08	○	●	○
2.1	0,9	0,7*	0,6*	80	0,04	0,05	0,06	0,08	0,10	●		
2.2	0,9	0,7*	0,6*	80	0,04	0,05	0,06	0,07	0,09	●		
2.3	0,9	0,7*	0,6*	70	0,04	0,05	0,06	0,07	0,09	●		
2.4	0,9	0,7*	0,6*	60	0,03	0,04	0,04	0,05	0,07	●		
2.5	0,9	0,7*	0,6*	70	0,03	0,04	0,05	0,06	0,08	●		
2.6	0,9	0,7*	0,6*	70	0,03	0,04	0,05	0,06	0,08	●		
2.7	0,9	0,7*	0,6*	60	0,03	0,04	0,04	0,05	0,07	●		
3.1	**0,9**	**0,7***	**0,6***	**210**	0,06	0,07	0,09	0,11	0,15		●	
3.2	**0,9**	**0,7***	**0,6***	**170**	0,05	0,06	0,08	0,10	0,13		●	
3.3	**0,9**	**0,7***	**0,6***	**200**	0,06	0,07	0,08	0,11	0,14		●	
3.4	**0,9**	**0,7***	**0,6***	**170**	0,05	0,06	0,07	0,09	0,12		●	
3.5	**0,9**	**0,7***	**0,6***	**170**	0,06	0,07	0,08	0,11	0,14		●	
3.6	**0,9**	**0,7***	**0,6***	**140**	0,05	0,06	0,08	0,10	0,13		●	
3.7	**0,9**	**0,7***	**0,6***	**170**	0,06	0,07	0,08	0,11	0,14		●	
3.8	**0,9**	**0,7***	**0,6***	**140**	0,05	0,06	0,07	0,09	0,12		●	
4.1												
4.2												
4.3												
4.4												
4.5												
4.6												
4.7												
4.8												
4.9												
4.10	**0,9**	**0,7***	**0,6***	220	0,03	0,04	0,05	0,06	0,08	●		○
4.11	**0,9**	**0,7***	**0,6***	310	0,06	0,07	0,09	0,11	0,15	●		○
4.12												
4.13												
4.14												
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4.16												
4.17												
4.18												
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5.8												
5.9												
5.10												
5.11												
6.1												
6.2												
6.3												
6.4												
6.5												

* = Trimming and trochoidal slot milling

For unstable applications, the cutting data can be reduced.

Cutting Data – MultiChange – Ball nosed and torus milling heads – 52 866 ... / 52 865 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder	Feedrates for extra short and short holder															● 1st choice	○ suitable	
				Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm			Ø DC = 20 mm					
				$a_{p\,max.}$ 4,8 mm	1,6 mm	0,8 mm	5,6 mm	2,0 mm	1,0 mm	6,8 mm	2,4 mm	1,2 mm	9,0 mm	3,2 mm	1,6 mm	11,3 mm	4,0 mm	2,0 mm			
				a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,6–1,0 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,6–1,0 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_p 0,1–0,2 x DC	a_p 0,3–0,4 x DC	a_p 0,6–1,0 x DC	Emulsion	Compressed air	MMS
				v_c m/min	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,9	0,7*	0,6*	180	0,07	0,06	0,05	0,07	0,06	0,05	0,12	0,10	0,08	0,15	0,12	0,10	0,18	0,15	0,12	○	●	○
1.2	0,9	0,7*	0,6*	200	0,08	0,07	0,05	0,08	0,07	0,05	0,13	0,11	0,09	0,17	0,14	0,11	0,21	0,17	0,14	○	●	○
1.3	0,9	0,7*	0,6*	180	0,07	0,06	0,05	0,07	0,06	0,05	0,12	0,10	0,08	0,15	0,12	0,10	0,18	0,15	0,12	○	●	○
1.4	0,9	0,7*	0,6*	150	0,06	0,05	0,04	0,06	0,05	0,04	0,10	0,09	0,07	0,13	0,11	0,09	0,16	0,13	0,11	○	●	○
1.5	0,9	0,7*	0,6*	160	0,07	0,06	0,05	0,07	0,06	0,05	0,13	0,11	0,09	0,16	0,13	0,11	0,19	0,16	0,13	○	●	○
1.6	0,9	0,7*	0,6*	140	0,06	0,05	0,04	0,06	0,05	0,04	0,10	0,09	0,07	0,13	0,11	0,09	0,16	0,13	0,11	○	●	○
1.7	0,9	0,7*	0,6*	140	0,07	0,06	0,05	0,07	0,06	0,05	0,13	0,11	0,09	0,16	0,13	0,11	0,19	0,16	0,13	○	●	○
1.8	0,9	0,7*	0,6*	100	0,05	0,04	0,03	0,05	0,04	0,03	0,09	0,07	0,06	0,10	0,09	0,07	0,13	0,11	0,09	○	●	○
1.9	0,9	0,7*	0,6*	140	0,07	0,06	0,05	0,07	0,06	0,05	0,12	0,10	0,08	0,15	0,12	0,10	0,18	0,15	0,12	○	●	○
1.10	0,9	0,7*	0,6*	120	0,05	0,04	0,03	0,05	0,04	0,03	0,09	0,07	0,06	0,10	0,09	0,07	0,13	0,11	0,09	○	●	○
1.11	0,9	0,7*	0,6*	100	0,04	0,04	0,03	0,04	0,04	0,03	0,07	0,06	0,05	0,09	0,08	0,06	0,11	0,09	0,07	○	●	○
1.12	0,9	0,7*	0,6*	90	0,05	0,04	0,03	0,05	0,04	0,03	0,09	0,07	0,06	0,10	0,09	0,07	0,13	0,11	0,09	○	●	○
1.13	0,9	0,7*	0,6*	70	0,05	0,04	0,03	0,05	0,04	0,03	0,09	0,07	0,06	0,10	0,09	0,07	0,13	0,11	0,09	○	●	○
1.14																						
1.15	0,9	0,7*	0,6*	80	0,04	0,04	0,03	0,04	0,04	0,03	0,07	0,06	0,05	0,09	0,08	0,06	0,11	0,09	0,07	○	●	○
1.16	0,9	0,7*	0,6*	80	0,04	0,04	0,03	0,04	0,04	0,03	0,07	0,06	0,05	0,09	0,08	0,06	0,11	0,09	0,07	○	●	○
2.1	0,9	0,7*	0,6*	60	0,06	0,05	0,04	0,06	0,05	0,04	0,10	0,08	0,07	0,12	0,10	0,08	0,15	0,12	0,10	●		
2.2	0,9	0,7*	0,6*	60	0,05	0,04	0,03	0,05	0,04	0,03	0,09	0,07	0,06	0,10	0,09	0,07	0,13	0,11	0,09	●		
2.3	0,9	0,7*	0,6*	50	0,05	0,04	0,03	0,05	0,04	0,03	0,09	0,07	0,06	0,10	0,09	0,07	0,13	0,11	0,09	●		
2.4	0,9	0,7*	0,6*	40	0,04	0,03	0,03	0,04	0,03	0,03	0,06	0,05	0,04	0,08	0,07	0,05	0,10	0,08	0,07	●		
2.5	0,9	0,7*	0,6*	50	0,04	0,04	0,03	0,04	0,04	0,03	0,07	0,06	0,05	0,09	0,08	0,06	0,11	0,09	0,07	●		
2.6	0,9	0,7*	0,6*	50	0,04	0,04	0,03	0,04	0,04	0,03	0,07	0,06	0,05	0,09	0,08	0,06	0,11	0,09	0,07	●		
2.7	0,9	0,7*	0,6*	40	0,04	0,03	0,03	0,04	0,03	0,03	0,06	0,05	0,04	0,08	0,07	0,05	0,10	0,08	0,07	●		
3.1	0,9	0,7*	0,6*	150	0,08	0,07	0,05	0,08	0,07	0,05	0,13	0,11	0,09	0,17	0,14	0,11	0,21	0,17	0,14		●	
3.2	0,9	0,7*	0,6*	120	0,07	0,06	0,05	0,07	0,06	0,05	0,12	0,10	0,08	0,15	0,12	0,10	0,18	0,15	0,12		●	
3.3	0,9	0,7*	0,6*	140	0,07	0,06	0,05	0,07	0,06	0,05	0,13	0,11	0,09	0,16	0,13	0,11	0,19	0,16	0,13		●	
3.4	0,9	0,7*	0,6*	120	0,06	0,05	0,04	0,06	0,05	0,04	0,10	0,09	0,07	0,13	0,11	0,09	0,16	0,13	0,11		●	
3.5	0,9	0,7*	0,6*	120	0,07	0,06	0,05	0,07	0,06	0,05	0,13	0,11	0,09	0,16	0,13	0,11	0,19	0,16	0,13		●	
3.6	0,9	0,7*	0,6*	100	0,07	0,06	0,05	0,07	0,06	0,05	0,12	0,10	0,08	0,15	0,12	0,10	0,18	0,15	0,12		●	
3.7	0,9	0,7*	0,6*	120	0,07	0,06	0,05	0,07	0,06	0,05	0,13	0,11	0,09	0,16	0,13	0,11	0,19	0,16	0,13		●	
3.8	0,9	0,7*	0,6*	100	0,06	0,05	0,04	0,06	0,05	0,04	0,10	0,09	0,07	0,13	0,11	0,09	0,16	0,13	0,11		●	
4.1	0,9	0,7*	0,6*	500	0,12	0,10	0,08	0,12	0,10	0,08	0,20	0,17	0,13	0,25	0,21	0,17	0,30	0,25	0,20	●		○
4.2	0,9	0,7*	0,6*	450	0,12	0,10	0,08	0,12	0,10	0,08	0,20	0,17	0,13	0,25	0,21	0,17	0,30	0,25	0,20	●		○
4.3	0,9	0,7*	0,6*	380	0,11	0,09	0,07	0,11	0,09	0,07	0,19	0,16	0,13	0,24	0,20	0,16	0,28	0,24	0,19	●		○
4.4	0,9	0,7*	0,6*	300	0,10	0,09	0,07	0,10	0,09	0,07	0,18	0,15	0,12	0,22	0,19	0,15	0,27	0,23	0,18	●		○
4.5	0,9	0,7*	0,6*	150	0,09	0,08	0,06	0,09	0,08	0,06	0,16	0,13	0,11	0,20	0,17	0,13	0,24	0,20	0,16	●		○
4.6	0,9	0,7*	0,6*	250	0,07	0,06	0,05	0,07	0,06	0,05	0,13	0,11	0,09	0,16	0,13	0,11	0,19	0,16	0,13	●		○
4.7	0,9	0,7*	0,6*	200	0,07	0,06	0,05	0,07	0,06	0,05	0,12	0,10	0,08	0,15	0,12	0,10	0,18	0,15	0,12	●		○
4.8	0,9	0,7*	0,6*	220	0,06	0,05	0,04	0,06	0,05	0,04	0,10	0,08	0,07	0,12	0,10	0,08	0,15	0,12	0,10	●		○
4.9	0,9	0,7*	0,6*	200	0,04	0,04	0,03	0,04	0,04	0,03	0,07	0,06	0,05	0,09	0,08	0,06	0,11	0,09	0,07	●		○
4.10	0,9	0,7*	0,6*	160	0,04	0,04	0,03	0,04	0,04	0,03	0,07	0,06	0,05	0,09	0,08	0,06	0,11	0,09	0,07	●		○
4.11	0,9	0,7*	0,6*	220	0,08	0,07	0,05	0,08	0,07	0,05	0,13	0,11	0,09	0,17	0,14	0,11	0,21	0,17	0,14	●		○
4.12	0,9	0,7*	0,6*	190	0,08	0,07	0,05	0,08	0,07	0,05	0,13	0,11	0,09	0,17	0,14	0,11	0,21	0,17	0,14	●		○
4.13																						
4.14																						
4.15																						
4.16																						
4.17																						
4.18																						
4.19																						
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6.2																						
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6.4																						
6.5																						

* = Trimming and trochoidal slot milling

For unstable applications, the cutting data can be reduced.

14

Cutting Data – MultiChange – HSC Ball nosed and torus milling heads – 52 866 ... / 52 865 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder		Feedrates for extra short and short holder					● 1st choice		○ suitable
					Ø DC = 8 mm	Ø DC = 10 mm	Ø DC = 12 mm	Ø DC = 16 mm	Ø DC = 20 mm			
					a_e/a_p = 0,04	a_e/a_p = 0,05	a_e/a_p = 0,06	a_e/a_p = 0,08	a_e/a_p = 0,10			
				v_c m/min	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.1	**0,9**	**0,7***	**0,6***	**540**	0,08	0,09	0,08	0,11	0,13	○	●	○
1.2	**0,9**	**0,7***	**0,6***	**600**	0,10	0,11	0,10	0,13	0,16	○	●	○
1.3	**0,9**	**0,7***	**0,6***	**540**	0,08	0,09	0,08	0,11	0,13	○	●	○
1.4	**0,9**	**0,7***	**0,6***	**450**	0,08	0,08	0,08	0,10	0,12	○	●	○
1.5	**0,9**	**0,7***	**0,6***	**480**	0,09	0,10	0,09	0,12	0,14	○	●	○
1.6	**0,9**	**0,7***	**0,6***	**420**	0,08	0,08	0,08	0,10	0,12	○	●	○
1.7	**0,9**	**0,7***	**0,6***	**420**	0,09	0,10	0,09	0,12	0,14	○	●	○
1.8	**0,9**	**0,7***	**0,6***	**300**	0,06	0,07	0,06	0,08	0,10	○	●	○
1.9	**0,9**	**0,7***	**0,6***	**420**	0,08	0,09	0,08	0,11	0,13	○	●	○
1.10	**0,9**	**0,7***	**0,6***	**360**	0,06	0,07	0,06	0,08	0,10	○	●	○
1.11	**0,9**	**0,7***	**0,6***	**300**	0,05	0,06	0,05	0,07	0,09	○	●	○
1.12	**0,9**	**0,7***	**0,6***	**270**	0,06	0,07	0,06	0,08	0,10	○	●	○
1.13	**0,9**	**0,7***	**0,6***	**210**	0,06	0,07	0,06	0,08	0,10	○	●	○
1.14												
1.15	**0,9**	**0,7***	**0,6***	**240**	0,05	0,06	0,05	0,07	0,09	○	●	○
1.16	**0,9**	**0,7***	**0,6***	**240**	0,05	0,06	0,05	0,07	0,09	○	●	○
2.1	0,9	0,7*	0,6*	180	0,07	0,08	0,07	0,09	0,11	●		
2.2	0,9	0,7*	0,6*	180	0,06	0,07	0,06	0,08	0,10	●		
2.3	0,9	0,7*	0,6*	150	0,06	0,07	0,06	0,08	0,10	●		
2.4	0,9	0,7*	0,6*	120	0,05	0,05	0,05	0,06	0,07	●		
2.5	0,9	0,7*	0,6*	150	0,05	0,06	0,05	0,07	0,09	●		
2.6	0,9	0,7*	0,6*	150	0,05	0,06	0,05	0,07	0,09	●		
2.7	0,9	0,7*	0,6*	120	0,05	0,05	0,05	0,06	0,07	●		
3.1	**0,9**	**0,7***	**0,6***	**450**	0,10	0,11	0,10	0,13	0,16		●	
3.2	**0,9**	**0,7***	**0,6***	**360**	0,08	0,09	0,08	0,11	0,13		●	
3.3	**0,9**	**0,7***	**0,6***	**420**	0,09	0,10	0,09	0,12	0,14		●	
3.4	**0,9**	**0,7***	**0,6***	**360**	0,08	0,08	0,08	0,10	0,12		●	
3.5	**0,9**	**0,7***	**0,6***	**360**	0,09	0,10	0,09	0,12	0,14		●	
3.6	**0,9**	**0,7***	**0,6***	**300**	0,08	0,09	0,08	0,11	0,13		●	
3.7	**0,9**	**0,7***	**0,6***	**360**	0,09	0,10	0,09	0,12	0,14		●	
3.8	**0,9**	**0,7***	**0,6***	**300**	0,08	0,08	0,08	0,10	0,12		●	
4.1	0,9	0,7*	0,6*	1500	0,14	0,16	0,14	0,19	0,23	●		○
4.2	0,9	0,7*	0,6*	1350	0,14	0,16	0,14	0,19	0,23	●		○
4.3	0,9	0,7*	0,6*	1140	0,13	0,15	0,13	0,18	0,22	●		○
4.4	0,9	0,7*	0,6*	900	0,13	0,14	0,13	0,17	0,20	●		○
4.5	0,9	0,7*	0,6*	450	0,11	0,13	0,11	0,15	0,18	●		○
4.6	0,9	0,7*	0,6*	750	0,09	0,10	0,09	0,12	0,14	●		○
4.7	0,9	0,7*	0,6*	600	0,08	0,09	0,08	0,11	0,13	●		○
4.8	0,9	0,7*	0,6*	660	0,07	0,08	0,07	0,09	0,11	●		○
4.9	0,9	0,7*	0,6*	600	0,05	0,06	0,05	0,07	0,09	●		○
4.10	0,9	0,7*	0,6*	480	0,05	0,06	0,05	0,07	0,09	●		○
4.11	0,9	0,7*	0,6*	660	0,10	0,11	0,10	0,13	0,16	●		○
4.12	0,9	0,7*	0,6*	570	0,10	0,11	0,10	0,13	0,16	●		○
4.13												
4.14												
4.15												
4.16												
4.17												
4.18												
4.19												
5.1												
5.2												
5.3												
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5.8												
5.9												
5.10												
5.11												
6.1												
6.2												
6.3												
6.4												
6.5												

* = Trimming and trochoidal slot milling

For unstable applications, the cutting data can be reduced.

Cutting data standard values – MultiChange – Torus milling heads – 52 870 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder	v_c m/min	Feedrates for extra short and short holder								Emulsion ●	Compressed air ○	MMS ○
					Ø DC = 10 mm		Ø DC = 12 mm		Ø DC = 16 mm		Ø DC = 20 mm		1st choice		suitable
				$a_{p\,max.}$	5,0 mm	3,0 mm	6,0 mm	3,6 mm	8,0 mm	4,8 mm	10,0 mm	6,0 mm			
					a_e = DC		a_e = DC		a_e = DC		a_e = DC				
					f_z mm		f_z mm		f_z mm		f_z mm				
1.1															
1.2															
1.3															
1.4															
1.5															
1.6															
1.7															
1.8															
1.9															
1.10															
1.11															
1.12															
1.13															
1.14															
1.15															
1.16															
2.1															
2.2															
2.3															
2.4															
2.5															
2.6															
2.7															
3.1															
3.2															
3.3															
3.4															
3.5															
3.6															
3.7															
3.8															
4.1	0,9	0,7	0,6	290–650	0,19–0,21	0,24–0,27	0,21–0,23	0,27–0,29	0,23–0,25	0,29–0,31	0,25–0,27	0,30–0,32	●		○
4.2	0,9	0,7	0,6	290–650	0,19–0,21	0,24–0,27	0,21–0,23	0,27–0,29	0,23–0,25	0,29–0,31	0,25–0,27	0,30–0,32	●		○
4.3	0,9	0,7	0,6	250–550	0,19–0,21	0,24–0,27	0,21–0,23	0,27–0,29	0,23–0,25	0,29–0,31	0,25–0,27	0,30–0,32	●		○
4.4	0,9	0,7	0,6	210–500	0,19–0,21	0,24–0,27	0,21–0,23	0,27–0,29	0,23–0,25	0,29–0,31	0,25–0,27	0,30–0,32	●		○
4.5	0,9	0,7	0,6	280–450	0,19–0,21	0,24–0,27	0,21–0,23	0,27–0,29	0,23–0,25	0,29–0,31	0,25–0,27	0,30–0,32	●		○
4.6															
4.7															
4.8															
4.9															
4.10															
4.11															
4.12															
4.13															
4.14															
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4.18															
4.19															
5.1															
5.2															
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5.4															
5.5															
5.6															
5.7															
5.8															
5.9															
5.10															
5.11															
6.1															
6.2															
6.3															
6.4															
6.5															

For unstable applications, the cutting data can be reduced.

14

Cutting Data – MultiChange – Quarter round milling heads – 52 869 ...

		Ø DCX = 8 mm		Ø DCX = 10 mm		Ø DCX = 12 mm			Ø DCX = 16 mm			Ø DCX = 20 mm		● 1st choice		○ suitable
		PRFRAD = 0,5	PRFRAD = 1,0	PRFRAD = 1,5	PRFRAD = 2,0	PRFRAD = 2,5	PRFRAD = 3,0	PRFRAD = 3,5	PRFRAD = 4,0	PRFRAD = 4,5	PRFRAD = 5,0	PRFRAD = 5,0	PRFRAD = 6,0			
Index	v_c m/min	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.1	150	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,07	0,07	0,06	0,08	0,08	○	●	○
1.2	170	0,03	0,03	0,04	0,04	0,06	0,05	0,05	0,08	0,08	0,07	0,09	0,09	○	●	○
1.3	150	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,07	0,07	0,06	0,08	0,08	○	●	○
1.4	130	0,03	0,02	0,03	0,03	0,05	0,04	0,04	0,06	0,06	0,05	0,07	0,07	○	●	○
1.5	140	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,08	0,07	0,07	0,09	0,08	○	●	○
1.6	120	0,03	0,02	0,03	0,03	0,05	0,04	0,04	0,06	0,06	0,05	0,07	0,07	○	●	○
1.7	120	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,08	0,07	0,07	0,09	0,08	○	●	○
1.8	90	0,02	0,02	0,03	0,02	0,03	0,03	0,03	0,05	0,05	0,04	0,06	0,06	○	●	○
1.9	120	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,07	0,07	0,06	0,08	0,08	○	●	○
1.10	100	0,02	0,02	0,03	0,02	0,03	0,03	0,03	0,05	0,05	0,04	0,06	0,06	○	●	○
1.11	90	0,02	0,02	0,02	0,02	0,03	0,03	0,02	0,04	0,04	0,04	0,05	0,05	○	●	○
1.12	80	0,02	0,02	0,03	0,02	0,03	0,03	0,03	0,05	0,05	0,04	0,06	0,06	○	●	○
1.13	60	0,02	0,02	0,03	0,02	0,03	0,03	0,03	0,05	0,05	0,04	0,06	0,06	○	●	○
1.14																
1.15	70	0,02	0,02	0,02	0,02	0,03	0,03	0,02	0,04	0,04	0,04	0,05	0,05	○	●	○
1.16	70	0,02	0,02	0,02	0,02	0,03	0,03	0,02	0,04	0,04	0,04	0,05	0,05	○	●	○
2.1	50	0,03	0,02	0,03	0,02	0,04	0,04	0,03	0,06	0,05	0,05	0,07	0,06	●		
2.2	50	0,02	0,02	0,03	0,02	0,03	0,03	0,03	0,05	0,05	0,04	0,06	0,06	●		
2.3	40	0,02	0,02	0,03	0,02	0,03	0,03	0,03	0,05	0,05	0,04	0,06	0,06	●		
2.4	30	0,02	0,01	0,02	0,02	0,03	0,02	0,02	0,04	0,04	0,03	0,05	0,04	●		
2.5	40	0,02	0,02	0,02	0,02	0,03	0,03	0,02	0,04	0,04	0,04	0,05	0,05	●		
2.6	40	0,02	0,02	0,02	0,02	0,03	0,03	0,02	0,04	0,04	0,04	0,05	0,05	●		
2.7	30	0,02	0,01	0,02	0,02	0,03	0,02	0,02	0,04	0,04	0,03	0,05	0,04	●		
3.1	130	0,03	0,03	0,04	0,04	0,06	0,05	0,05	0,08	0,08	0,07	0,09	0,09		●	
3.2	100	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,07	0,07	0,06	0,08	0,08		●	
3.3	120	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,08	0,07	0,07	0,09	0,08		●	
3.4	100	0,03	0,02	0,03	0,03	0,05	0,04	0,04	0,06	0,06	0,05	0,07	0,07		●	
3.5	100	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,08	0,07	0,07	0,09	0,08		●	
3.6	90	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,07	0,07	0,06	0,08	0,08		●	
3.7	100	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,08	0,07	0,07	0,09	0,08		●	
3.8	90	0,03	0,02	0,03	0,03	0,05	0,04	0,04	0,06	0,06	0,05	0,07	0,07		●	
4.1	430	0,05	0,04	0,06	0,05	0,09	0,08	0,07	0,12	0,11	0,10	0,14	0,13	●		○
4.2	380	0,05	0,04	0,06	0,05	0,09	0,08	0,07	0,12	0,11	0,10	0,14	0,13	●		○
4.3	320	0,05	0,04	0,06	0,05	0,08	0,07	0,07	0,11	0,11	0,10	0,13	0,12	●		○
4.4	260	0,05	0,04	0,05	0,05	0,08	0,07	0,06	0,11	0,10	0,09	0,12	0,12	●		○
4.5	130	0,04	0,03	0,05	0,04	0,07	0,06	0,05	0,10	0,09	0,08	0,11	0,10	●		○
4.6	210	0,03	0,03	0,04	0,03	0,06	0,05	0,04	0,08	0,07	0,07	0,09	0,08	●		○
4.7	170	0,03	0,03	0,04	0,03	0,05	0,05	0,04	0,07	0,07	0,06	0,08	0,08	●		○
4.8	190	0,02	0,02	0,03	0,02	0,04	0,04	0,03	0,06	0,05	0,05	0,07	0,06	●		○
4.9	170	0,02	0,02	0,02	0,02	0,03	0,03	0,03	0,04	0,04	0,04	0,05	0,05	●		○
4.10	140	0,02	0,02	0,02	0,02	0,03	0,03	0,02	0,04	0,04	0,04	0,05	0,05	●		○
4.11	190	0,03	0,03	0,04	0,04	0,06	0,05	0,05	0,08	0,08	0,07	0,09	0,09	●		○
4.12																
4.13																
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5.11																
6.1																
6.2																
6.3																
6.4																
6.5																

Cutting Data – MultiChange – Deburring heads – 52 867 ... / 52 868 ...

Index	Correction factor f_z and v_c Medium Holder	Correction factor f_z and v_c Long Holder	Correction factor f_z and v_c Extra Long Holder	v_c m/min	Feedrates for extra short and short holder: Ø DCX = 10 mm	Ø DCX = 12 mm	Ø DCX = 16 mm	Ø DCX = 20 mm	● 1st choice: Emulsion	○ suitable: Compressed air	MMS
				$a_{p\,max.}$ 52 867 ...	5,0 mm	6,0 mm	4,8 mm	6,0 mm			
				$a_{p\,max.}$ 52 868 ...	1,25 mm	1,5 mm	2,0 mm	2,5 mm			
					a_e 0,1–0,2 x DCX	a_e 0,1–0,2 x DCX	a_e 0,1–0,2 x DCX	a_e 0,1–0,2 x DCX			
					f_z mm	f_z mm	f_z mm	f_z mm			
1.1	**0,9**	**0,7**	**0,6**	**200**	0,07	0,09	0,12	0,14	○	●	○
1.2	**0,9**	**0,7**	**0,6**	**220**	0,09	0,11	0,14	0,17	○	●	○
1.3	**0,9**	**0,7**	**0,6**	**200**	0,07	0,09	0,12	0,17	○	●	○
1.4	**0,9**	**0,7**	**0,6**	**170**	0,07	0,08	0,11	0,15	○	●	○
1.5	**0,9**	**0,7**	**0,6**	**180**	0,08	0,10	0,13	0,17	○	●	○
1.6	**0,9**	**0,7**	**0,6**	**150**	0,07	0,08	0,11	0,15	○	●	○
1.7	**0,9**	**0,7**	**0,6**	**150**	0,08	0,10	0,13	0,17	○	●	○
1.8	**0,9**	**0,7**	**0,6**	**110**	0,05	0,07	0,09	0,12	○	●	○
1.9	**0,9**	**0,7**	**0,6**	**150**	0,07	0,09	0,12	0,12	○	●	○
1.10	**0,9**	**0,7**	**0,6**	**130**	0,05	0,07	0,09	0,09	○	●	○
1.11	**0,9**	**0,7**	**0,6**	**110**	0,05	0,06	0,08	0,06	○	●	○
1.12	**0,9**	**0,7**	**0,6**	**100**	0,05	0,07	0,09	0,04	○	●	○
1.13	**0,9**	**0,7**	**0,6**	**80**	0,05	0,07	0,09	0,03	○	●	○
1.14											
1.15	**0,9**	**0,7**	**0,6**	**90**	0,05	0,06	0,08	0,09	○	●	○
1.16	**0,9**	**0,7**	**0,6**	**90**	0,05	0,06	0,08	0,09	○	●	○
2.1	0,9	0,7	0,6	70	0,06	0,08	0,10	0,12	●		
2.2	0,9	0,7	0,6	70	0,05	0,07	0,09	0,11	●		
2.3	0,9	0,7	0,6	60	0,05	0,07	0,09	0,11	●		
2.4	0,9	0,7	0,6	40	0,04	0,05	0,07	0,08	●		
2.5	0,9	0,7	0,6	60	0,05	0,06	0,08	0,09	●		
2.6	0,9	0,7	0,6	60	0,05	0,06	0,08	0,09	●		
2.7	0,9	0,7	0,6	40	0,04	0,05	0,07	0,08	●		
3.1	**0,9**	**0,7**	**0,6**	**170**	0,09	0,11	0,14	0,17		●	
3.2	**0,9**	**0,7**	**0,6**	**130**	0,07	0,09	0,12	0,15		●	
3.3	**0,9**	**0,7**	**0,6**	**150**	0,08	0,10	0,13	0,16		●	
3.4	**0,9**	**0,7**	**0,6**	**130**	0,07	0,08	0,11	0,13		●	
3.5	**0,9**	**0,7**	**0,6**	**130**	0,08	0,10	0,13	0,16		●	
3.6	**0,9**	**0,7**	**0,6**	**110**	0,07	0,09	0,12	0,15		●	
3.7	**0,9**	**0,7**	**0,6**	**130**	0,08	0,10	0,13	0,16		●	
3.8	**0,9**	**0,7**	**0,6**	**110**	0,07	0,08	0,11	0,13		●	
4.1	**0,9**	**0,7**	**0,6**	**550**	0,12	0,16	0,21	0,25	●		○
4.2	**0,9**	**0,7**	**0,6**	**500**	0,12	0,16	0,21	0,25	●		○
4.3	**0,9**	**0,7**	**0,6**	**420**	0,12	0,15	0,20	0,24	●		○
4.4	**0,9**	**0,7**	**0,6**	**330**	0,11	0,14	0,19	0,23	●		○
4.5	**0,9**	**0,7**	**0,6**	**170**	0,10	0,13	0,17	0,20	●		○
4.6	**0,9**	**0,7**	**0,6**	**280**	0,08	0,10	0,13	0,16	●		○
4.7	**0,9**	**0,7**	**0,6**	**220**	0,07	0,09	0,12	0,15	●		○
4.8	**0,9**	**0,7**	**0,6**	**240**	0,06	0,08	0,10	0,12	●		○
4.9	**0,9**	**0,7**	**0,6**	**220**	0,05	0,06	0,08	0,09	●		○
4.10	**0,9**	**0,7**	**0,6**	**180**	0,05	0,06	0,08	0,09	●		○
4.11	**0,9**	**0,7**	**0,6**	**240**	0,09	0,11	0,14	0,17	●		○
4.12	**0,9**	**0,7**	**0,6**	**210**	0,09	0,11	0,14	0,17	●		○
4.13											
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6.5											

For unstable applications the machining parameters must be reduced.

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Cutting data – End Mills – W/HPC, short

	Emulsion	MMS		Ø DC = 2,7–3,0 mm			Ø DC = 3,7–4,0 mm			Ø DC = 4,7–5,0 mm			Ø DC = 5,7–7,0 mm			Ø DC = 7,7–9,0 mm			Ø DC = 9,7–11,0 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm																		
4.1	700	1,0*	0,054	0,042	0,030	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,20	0,15	0,10	0,24	0,18	0,12
4.2	700	1,0*	0,054	0,042	0,030	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,20	0,15	0,10	0,24	0,18	0,12
4.3	420	1,0*	0,054	0,042	0,030	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,20	0,15	0,10	0,24	0,18	0,12
4.4	420	1,0*	0,054	0,042	0,030	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,20	0,15	0,10	0,24	0,18	0,12
4.5	280	1,0*	0,054	0,042	0,030	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,20	0,15	0,10	0,24	0,18	0,12
4.6	200	1,0*	0,036	0,028	0,020	0,054	0,042	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,16	0,12	0,08	0,20	0,15	0,10
4.7	180	1,0*	0,036	0,028	0,020	0,054	0,042	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,16	0,12	0,08	0,20	0,15	0,10
4.8	175	1,0*	0,036	0,028	0,020	0,054	0,042	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,16	0,12	0,08	0,20	0,15	0,10
4.9	175	1,0*	0,036	0,028	0,020	0,054	0,042	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,16	0,12	0,08	0,20	0,15	0,10
4.10	175	1,0*	0,036	0,028	0,020	0,054	0,042	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,16	0,12	0,08	0,20	0,15	0,10
4.11	280	1,0*	0,036	0,028	0,020	0,054	0,042	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,16	0,12	0,08	0,20	0,15	0,10
4.12	210	1,0*	0,036	0,028	0,020	0,054	0,042	0,030	0,080	0,060	0,040	0,100	0,075	0,050	0,16	0,12	0,08	0,20	0,15	0,10

* = use a_p 1.5 x DC only in a_e range 0.1–0.4 x DC

Cutting data – End Mills – W/HPC, long

	Emulsion	MMS		Ø DC = 2,7–3,0 mm			Ø DC = 3,7–4,0 mm			Ø DC = 4,7–5,0 mm			Ø DC = 5,7–7,0 mm			Ø DC = 7,7–9,0 mm			Ø DC = 9,7–11,0 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm																		
4.1	400	1,0*	0,036	0,028	0,020	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,16	0,12	0,08	0,20	0,15	0,10
4.2	400	1,0*	0,036	0,028	0,020	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,16	0,12	0,08	0,20	0,15	0,10
4.3	240	1,0*	0,036	0,028	0,020	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,16	0,12	0,08	0,20	0,15	0,10
4.4	240	1,0*	0,036	0,028	0,020	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,16	0,12	0,08	0,20	0,15	0,10
4.5	160	1,0*	0,036	0,028	0,020	0,063	0,049	0,035	0,100	0,075	0,050	0,120	0,089	0,060	0,16	0,12	0,08	0,20	0,15	0,10
4.6	115	1,0*	0,027	0,021	0,015	0,045	0,035	0,025	0,070	0,052	0,035	0,100	0,075	0,050	0,14	0,10	0,07	0,18	0,13	0,09
4.7	120	1,0*	0,027	0,021	0,015	0,045	0,035	0,025	0,070	0,052	0,035	0,100	0,075	0,050	0,14	0,10	0,07	0,18	0,13	0,09
4.8	100	1,0*	0,027	0,021	0,015	0,045	0,035	0,025	0,070	0,052	0,035	0,100	0,075	0,050	0,14	0,10	0,07	0,18	0,13	0,09
4.9	100	1,0*	0,027	0,021	0,015	0,045	0,035	0,025	0,070	0,052	0,035	0,100	0,075	0,050	0,14	0,10	0,07	0,18	0,13	0,09
4.10	100	1,0*	0,027	0,021	0,015	0,045	0,035	0,025	0,070	0,052	0,035	0,100	0,075	0,050	0,14	0,10	0,07	0,18	0,13	0,09
4.11	160	1,0*	0,027	0,021	0,015	0,045	0,035	0,025	0,070	0,052	0,035	0,100	0,075	0,050	0,14	0,10	0,07	0,18	0,13	0,09
4.12	120	1,0*	0,027	0,021	0,015	0,045	0,035	0,025	0,070	0,052	0,035	0,100	0,075	0,050	0,14	0,10	0,07	0,18	0,13	0,09

* = use a_p 1.5 x DC only in a_e range 0.1–0.4 x DC

Cutting data – End Mills – W and WR/HPC, extra long

	Emulsion	MMS		Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6–7 mm			Ø DC = 8–9 mm			Ø DC = 10–11 mm		
				a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min	$a_{p\,max.}$ x DC	f_z mm																		
4.1	300	0,75*	0,013	0,010	0,007	0,018	0,014	0,010	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03	0,07	0,05	0,04
4.2	300	0,75*	0,013	0,010	0,007	0,018	0,014	0,010	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03	0,07	0,05	0,04
4.3	180	0,75*	0,013	0,010	0,007	0,018	0,014	0,010	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03	0,07	0,05	0,04
4.4	180	0,75*	0,013	0,010	0,007	0,018	0,014	0,010	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03	0,07	0,05	0,04
4.5	125	0,75*	0,013	0,010	0,007	0,018	0,014	0,010	0,040	0,030	0,020	0,050	0,037	0,025	0,06	0,05	0,03	0,07	0,05	0,04
4.6	90	0,75*	0,009	0,007	0,005	0,014	0,011	0,008	0,020	0,015	0,010	0,030	0,022	0,015	0,04	0,03	0,02	0,05	0,04	0,03
4.7	90	0,75*	0,009	0,007	0,005	0,014	0,011	0,008	0,020	0,015	0,010	0,030	0,022	0,015	0,04	0,03	0,02	0,05	0,04	0,03
4.8	75	0,75*	0,009	0,007	0,005	0,014	0,011	0,008	0,020	0,015	0,010	0,030	0,022	0,015	0,04	0,03	0,02	0,05	0,04	0,03
4.9	75	0,75*	0,009	0,007	0,005	0,014	0,011	0,008	0,020	0,015	0,010	0,030	0,022	0,015	0,04	0,03	0,02	0,05	0,04	0,03
4.10	75	0,75*	0,009	0,007	0,005	0,014	0,011	0,008	0,020	0,015	0,010	0,030	0,022	0,015	0,04	0,03	0,02	0,05	0,04	0,03
4.11	125	0,75*	0,009	0,007	0,005	0,014	0,011	0,008	0,020	0,015	0,010	0,030	0,022	0,015	0,04	0,03	0,02	0,05	0,04	0,03
4.12	90	0,75*	0,009	0,007	0,005	0,014	0,011	0,008	0,020	0,015	0,010	0,030	0,022	0,015	0,04	0,03	0,02	0,05	0,04	0,03

* = use a_p 1.25 x DC only in a_e range 0.1–0.4 x DC

Cooling lubrication with emulsion

Feed rate guide values for ball nosed and torus cutters on → **Page 356**

	Ø DC = 11,7–13,0 mm			Ø DC = 13,7–15,0 mm			Ø DC = 15,7–16,0 mm			Ø DC = 18,0 mm			Ø DC = 19,7–20,0 mm			Ø DC = 24,7–25,0 mm		
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
4.1	0,27	0,22	0,15	0,29	0,23	0,16	0,31	0,24	0,17	0,33	0,25	0,18	0,34	0,27	0,27	0,35	0,28	0,22
4.2	0,27	0,22	0,15	0,29	0,23	0,16	0,31	0,24	0,17	0,33	0,25	0,18	0,34	0,27	0,27	0,35	0,28	0,22
4.3	0,27	0,22	0,15	0,29	0,23	0,16	0,31	0,24	0,17	0,33	0,25	0,18	0,34	0,27	0,27	0,35	0,28	0,22
4.4	0,27	0,22	0,15	0,29	0,23	0,16	0,31	0,24	0,17	0,33	0,25	0,18	0,34	0,27	0,27	0,35	0,28	0,22
4.5	0,27	0,22	0,15	0,29	0,23	0,16	0,31	0,24	0,17	0,33	0,25	0,18	0,34	0,27	0,27	0,35	0,28	0,22
4.6	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,24	0,32	0,26	0,20
4.7	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,24	0,32	0,26	0,20
4.8	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,24	0,32	0,26	0,20
4.9	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,24	0,32	0,26	0,20
4.10	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,24	0,32	0,26	0,20
4.11	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,24	0,32	0,26	0,20
4.12	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,24	0,32	0,26	0,20

	Ø DC = 11,7–13,0 mm			Ø DC = 13,7–15,0 mm			Ø DC = 15,7–16,0 mm			Ø DC = 18,0 mm			Ø DC = 19,7–20,0 mm			Ø DC = 24,7–25,0 mm		
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
4.1	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,17	0,32	0,26	0,20
4.2	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,17	0,32	0,26	0,20
4.3	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,17	0,32	0,26	0,20
4.4	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,17	0,32	0,26	0,20
4.5	0,22	0,17	0,12	0,24	0,18	0,13	0,25	0,20	0,14	0,27	0,21	0,15	0,30	0,24	0,17	0,32	0,26	0,20
4.6	0,20	0,16	0,11	0,22	0,17	0,12	0,23	0,18	0,13	0,26	0,20	0,14	0,26	0,21	0,15	0,29	0,23	0,18
4.7	0,20	0,16	0,11	0,22	0,17	0,12	0,23	0,18	0,13	0,26	0,20	0,14	0,26	0,21	0,15	0,29	0,23	0,18
4.8	0,20	0,16	0,11	0,22	0,17	0,12	0,23	0,18	0,13	0,26	0,20	0,14	0,26	0,21	0,15	0,29	0,23	0,18
4.9	0,20	0,16	0,11	0,22	0,17	0,12	0,23	0,18	0,13	0,26	0,20	0,14	0,26	0,21	0,15	0,29	0,23	0,18
4.10	0,20	0,16	0,11	0,22	0,17	0,12	0,23	0,18	0,13	0,26	0,20	0,14	0,26	0,21	0,15	0,29	0,23	0,18
4.11	0,20	0,16	0,11	0,22	0,17	0,12	0,23	0,18	0,13	0,26	0,20	0,14	0,26	0,21	0,15	0,29	0,23	0,18
4.12	0,20	0,16	0,11	0,22	0,17	0,12	0,23	0,18	0,13	0,26	0,20	0,14	0,26	0,21	0,15	0,29	0,23	0,18

	Ø DC = 12–13 mm			Ø DC = 14–15 mm			Ø DC = 16 mm			Ø DC = 18 mm			Ø DC = 20 mm			Ø DC = 25 mm		
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
4.1	0,08	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,16	0,13	0,10
4.2	0,08	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,16	0,13	0,10
4.3	0,08	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,16	0,13	0,10
4.4	0,08	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,16	0,13	0,10
4.5	0,08	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,13	0,10	0,08	0,16	0,13	0,10
4.6	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,14	0,12	0,09
4.7	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,14	0,12	0,09
4.8	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,14	0,12	0,09
4.9	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,14	0,12	0,09
4.10	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,14	0,12	0,09
4.11	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,14	0,12	0,09
4.12	0,06	0,05	0,03	0,07	0,06	0,04	0,09	0,07	0,05	0,10	0,08	0,06	0,11	0,09	0,07	0,14	0,12	0,09

Cutting data standard values – End mills – 54 001 ... – 54 003 ... / 54 050 ... – 54 054 ...

	Type short	Type long / extra long	Type short / long	Type extra long	Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm		
					a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min		$a_{p\,max.}$ x DC	$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	**210**	**170**	1,0	0,5	0,027	0,021	0,015	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.2	**220**	**180**	1,0	0,5	0,027	0,021	0,015	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.3	**190**	**150**	1,0	0,5	0,019	0,015	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.4	**170**	**140**	1,0	0,5	0,014	0,011	0,008	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.5	**180**	**145**	1,0	0,5	0,019	0,015	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.6	**170**	**140**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.7	**170**	**140**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.8	**150**	**125**	1,0	0,5	0,014	0,011	0,008	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.9	**150**	**120**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.10	**170**	**140**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.11	**150**	**125**	1,0	0,5	0,014	0,011	0,008	0,024	0,019	0,014	0,036	0,027	0,018	0,045	0,034	0,023	0,05	0,04	0,03
1.12	**170**	**140**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.13																			
1.14																			
1.15	**160**	**130**	1,0	0,5	0,019	0,015	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
1.16	**140**	**110**	1,0	0,5	0,019	0,015	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
2.1																			
2.2																			
2.3																			
2.4																			
2.5																			
2.6																			
2.7																			
3.1	**180**	**145**	1,0	0,5	0,027	0,021	0,015	0,04	0,031	0,023	0,058	0,043	0,029	0,068	0,051	0,034	0,08	0,06	0,04
3.2	**160**	**130**	1,0	0,5	0,021	0,016	0,011	0,04	0,031	0,023	0,058	0,043	0,029	0,068	0,051	0,034	0,08	0,06	0,04
3.3	**170**	**140**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
3.4	**155**	**125**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
3.5	**160**	**130**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
3.6	**150**	**120**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
3.7	**160**	**130**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
3.8	**145**	**120**	1,0	0,5	0,021	0,016	0,011	0,032	0,025	0,018	0,049	0,036	0,024	0,059	0,044	0,03	0,07	0,05	0,04
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„Extra long“ version: when profiling with an a_e of 0.1–0.4 x DC an a_p of 1.0 x DC should be used.

Plunging angle for ramping and helical milling: 3°

Index	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.2	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.3	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.4	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.5	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.6	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.7	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.8	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.9	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.10	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.11	0,07	0,05	0,04	0,09	0,07	0,05	0,09	0,07	0,05	0,11	0,09	0,07	●	○	○
1.12	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	○	○
1.13															
1.14															
1.15	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	●	○
1.16	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	●	○
2.1															
2.2															
2.3															
2.4															
2.5															
2.6															
2.7															
3.1	0,1	0,08	0,05	0,13	0,09	0,06	0,15	0,12	0,09	0,17	0,14	0,11	●	●	●
3.2	0,1	0,08	0,05	0,13	0,09	0,06	0,15	0,12	0,09	0,17	0,14	0,11	●	●	●
3.3	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	●	●
3.4	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	●	●
3.5	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	●	●
3.6	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	●	●
3.7	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	●	●
3.8	0,09	0,07	0,05	0,11	0,08	0,05	0,12	0,09	0,07	0,14	0,12	0,09	●	●	●
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6.3															
6.4															
6.5															

Feed rate guide values for ball nosed and torus cutters on → **Page 356**

Cutting data standard values – End mills – 54 004 ... – 54 006 ... / 54 060 ... – 54 064 ...

	Type short	Type long / extra long	Type short / long	Type extra long	Ø DC = 3 mm			Ø DC = 4 mm			Ø DC = 5 mm			Ø DC = 6 mm			Ø DC = 8 mm		
					a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
Index	v_c m/min		$a_{p\,max.}$ x DC	$a_{p\,max.}$ x DC	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	**200**	**160**	1,0	0,5	0,024	0,019	0,014	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.2	**210**	**170**	1,0	0,5	0,024	0,019	0,014	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.3	**180**	**140**	1,0	0,5	0,017	0,013	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.4	**160**	**130**	1,0	0,5	0,012	0,009	0,007	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.5	**170**	**135**	1,0	0,5	0,017	0,013	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.6	**160**	**130**	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.7	**160**	**130**	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.8	**140**	**115**	1,0	0,5	0,012	0,009	0,007	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.9	**140**	**110**	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.10	**160**	**130**	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.11	**140**	**115**	1,0	0,5	0,012	0,009	0,007	0,022	0,017	0,012	0,032	0,024	0,016	0,04	0,03	0,02	0,05	0,04	0,02
1.12	**160**	**130**	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.13																			
1.14																			
1.15	**150**	**120**	1,0	0,5	0,017	0,013	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
1.16	**130**	**100**	1,0	0,5	0,017	0,013	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
2.1	**110**	**90**	1,0	0,5	0,012	0,009	0,007	0,018	0,014	0,01	0,027	0,02	0,014	0,036	0,027	0,018	0,04	0,03	0,02
2.2	**100**	**80**	1,0	0,5	0,012	0,009	0,007	0,018	0,014	0,01	0,027	0,02	0,014	0,036	0,027	0,018	0,04	0,03	0,02
2.3	**85**	**70**	1,0	0,5	0,012	0,009	0,007	0,018	0,014	0,01	0,027	0,02	0,014	0,036	0,027	0,018	0,04	0,03	0,02
2.4	**85**	**70**	1,0	0,5	0,012	0,009	0,007	0,018	0,014	0,01	0,027	0,02	0,014	0,036	0,027	0,018	0,04	0,03	0,02
2.5	**100**	**80**	1,0	0,5	0,012	0,009	0,007	0,018	0,014	0,01	0,027	0,02	0,014	0,036	0,027	0,018	0,04	0,03	0,02
2.6	**100**	**80**	1,0	0,5	0,012	0,009	0,007	0,018	0,014	0,01	0,027	0,02	0,014	0,036	0,027	0,018	0,04	0,03	0,02
2.7	**25**	**20**	1,0	0,5	0,009	0,007	0,005	0,015	0,012	0,009	0,022	0,016	0,011	0,029	0,022	0,014	0,03	0,03	0,02
3.1	170	135	1,0	0,5	0,024	0,019	0,014	0,036	0,028	0,02	0,051	0,038	0,026	0,061	0,045	0,03	0,07	0,05	0,04
3.2	140	110	1,0	0,5	0,018	0,014	0,01	0,036	0,028	0,02	0,051	0,038	0,026	0,061	0,045	0,03	0,07	0,05	0,04
3.3	160	130	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
3.4	130	100	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
3.5	150	120	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
3.6	140	110	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
3.7	150	120	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
3.8	135	110	1,0	0,5	0,018	0,014	0,01	0,029	0,022	0,016	0,043	0,032	0,022	0,053	0,039	0,026	0,06	0,05	0,03
4.1																			
4.2																			
4.3																			
4.4																			
4.5																			
4.6	240	190	1,0	0,5	0,029	0,022	0,016	0,038	0,029	0,021	0,054	0,041	0,027	0,065	0,048	0,032	0,08	0,06	0,04
4.7	260	200	1,0	0,5	0,029	0,022	0,016	0,038	0,029	0,021	0,054	0,041	0,027	0,065	0,048	0,032	0,08	0,06	0,04
4.8	140	110	1,0	0,5	0,029	0,022	0,016	0,038	0,029	0,021	0,054	0,041	0,027	0,065	0,048	0,032	0,08	0,06	0,04
4.9	120	95	1,0	0,5	0,029	0,022	0,016	0,038	0,029	0,021	0,054	0,041	0,027	0,065	0,048	0,032	0,08	0,06	0,04
4.10	100	80	1,0	0,5	0,029	0,022	0,016	0,038	0,029	0,021	0,054	0,041	0,027	0,065	0,048	0,032	0,08	0,06	0,04
4.11	300	240	1,0	0,5	0,029	0,022	0,016	0,038	0,029	0,021	0,054	0,041	0,027	0,065	0,048	0,032	0,08	0,06	0,04
4.12	260	200	1,0	0,5	0,029	0,022	0,016	0,038	0,029	0,021	0,054	0,041	0,027	0,065	0,048	0,032	0,08	0,06	0,04
4.13																			
4.14																			
4.15																			
4.16																			
4.17																			
4.18																			
4.19																			
5.1																			
5.2																			
5.3	**25**	**20**	0,5	0,25	0,011	0,008	0,006	0,015	0,012	0,009	0,022	0,016	0,011	0,029	0,022	0,014	0,03	0,03	0,02
5.4	**25**	**20**	0,5	0,25	0,011	0,008	0,006	0,015	0,012	0,009	0,022	0,016	0,011	0,029	0,022	0,014	0,03	0,03	0,02
5.5	**25**	**20**	0,5	0,25	0,011	0,008	0,006	0,015	0,012	0,009	0,022	0,016	0,011	0,029	0,022	0,014	0,03	0,03	0,02
5.6	**25**	**20**	0,5	0,25	0,011	0,008	0,006	0,015	0,012	0,009	0,022	0,016	0,011	0,029	0,022	0,014	0,03	0,03	0,02
5.7	**25**	**20**	0,5	0,25	0,011	0,008	0,006	0,015	0,012	0,009	0,022	0,016	0,011	0,029	0,022	0,014	0,03	0,03	0,02
5.8	**25**	**20**	0,5	0,25	0,011	0,008	0,006	0,015	0,012	0,009	0,022	0,016	0,011	0,029	0,022	0,014	0,03	0,03	0,02
5.9	**100**	**70**	0,5	0,25	0,021	0,017	0,012	0,031	0,024	0,017	0,046	0,034	0,023	0,056	0,042	0,028	0,07	0,05	0,03
5.10	**80**	**60**	0,5	0,25	0,015	0,012	0,009	0,023	0,018	0,013	0,034	0,025	0,017	0,043	0,032	0,021	0,05	0,04	0,03
5.11	**60**	**50**	0,5	0,25	0,012	0,009	0,007	0,018	0,014	0,01	0,027	0,02	0,014	0,036	0,027	0,018	0,04	0,03	0,02
6.1																			
6.2																			
6.3																			
6.4																			
6.5																			

„Extra long“ version: when profiling with an a_e of 0.1–0.4 x DC an a_p of 1.0 x DC should be used.

Plunging angle for ramping and helical milling: 3°

Index	Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 16 mm			Ø DC = 20 mm			● 1st choice		○ suitable
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	Emulsion	Compressed air	MMS
	f_z mm			f_z mm			f_z mm			f_z mm					
1.1	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.2	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.3	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.4	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.5	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.6	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.7	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.8	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.9	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.10	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.11	0,06	0,05	0,03	0,08	0,06	0,04	0,08	0,06	0,05	0,1	0,08	0,06	●	○	○
1.12	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.13															
1.14															
1.15	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
1.16	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	○	○
2.1	0,05	0,04	0,03	0,07	0,05	0,03	0,07	0,05	0,04	0,09	0,08	0,06	●		
2.2	0,05	0,04	0,03	0,07	0,05	0,03	0,07	0,05	0,04	0,09	0,08	0,06	●		
2.3	0,05	0,04	0,03	0,07	0,05	0,03	0,07	0,05	0,04	0,09	0,08	0,06	●		
2.4	0,05	0,04	0,03	0,07	0,05	0,03	0,07	0,05	0,04	0,09	0,08	0,06	●		
2.5	0,05	0,04	0,03	0,07	0,05	0,03	0,07	0,05	0,04	0,09	0,08	0,06	●		
2.6	0,05	0,04	0,03	0,07	0,05	0,03	0,07	0,05	0,04	0,09	0,08	0,06	●		
2.7	0,04	0,03	0,02	0,05	0,04	0,03	0,06	0,04	0,03	0,07	0,05	0,04	●		
3.1	0,09	0,07	0,05	0,11	0,08	0,06	0,14	0,1	0,08	0,15	0,12	0,1	●	●	●
3.2	0,09	0,07	0,05	0,11	0,08	0,06	0,14	0,1	0,08	0,15	0,12	0,1	●	●	●
3.3	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	●	●
3.4	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	●	●
3.5	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	●	●
3.6	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	●	●
3.7	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	●	●
3.8	0,08	0,06	0,04	0,1	0,07	0,05	0,11	0,08	0,06	0,13	0,1	0,08	●	●	●
4.1															
4.2															
4.3															
4.4															
4.5															
4.6	0,1	0,07	0,05	0,14	0,11	0,07	0,16	0,12	0,09	0,19	0,15	0,12	●		
4.7	0,1	0,07	0,05	0,14	0,11	0,07	0,16	0,12	0,09	0,19	0,15	0,12	●		
4.8	0,1	0,07	0,05	0,14	0,11	0,07	0,16	0,12	0,09	0,19	0,15	0,12	●		
4.9	0,1	0,07	0,05	0,14	0,11	0,07	0,16	0,12	0,09	0,19	0,15	0,12	●		
4.10	0,1	0,07	0,05	0,14	0,11	0,07	0,16	0,12	0,09	0,19	0,15	0,12	●		
4.11	0,1	0,07	0,05	0,14	0,11	0,07	0,16	0,12	0,09	0,16	0,13	0,1	●		
4.12	0,1	0,07	0,05	0,14	0,11	0,07	0,16	0,12	0,09	0,16	0,13	0,1	●		
4.13															
4.14															
4.15															
4.16															
4.17															
4.18															
4.19															
5.1															
5.2															
5.3	0,04	0,03	0,02	0,06	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,05	●		
5.4	0,04	0,03	0,02	0,06	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,05	●		
5.5	0,04	0,03	0,02	0,06	0,02	0,03	0,06	0,05	0,04	0,07	0,06	0,05	●		
5.6	0,04	0,03	0,02	0,06	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,05	●		
5.7	0,04	0,03	0,02	0,06	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,05	●		
5.8	0,04	0,03	0,02	0,06	0,04	0,03	0,06	0,05	0,04	0,07	0,06	0,05	●		
5.9	0,09	0,06	0,04	0,12	0,09	0,06	0,13	0,1	0,08	0,15	0,12	0,09	●		
5.10	0,07	0,05	0,03	0,09	0,07	0,05	0,1	0,08	0,06	0,12	0,1	0,08	●		
5.11	0,05	0,04	0,03	0,08	0,06	0,04	0,09	0,07	0,05	0,11	0,09	0,07	●		
6.1															
6.2															
6.3															
6.4															
6.5															

Feed rate guide values for ball nosed and torus cutters on → **Page 356**

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Cutting data – Roughing Cutters – 52 338 ... – 52 343 ...

Index	Full slot milling v_c m/min	Contour milling v_c m/min	Ti1000 Ø DC = 6 mm f_z in mm		Ø DC = 8 mm f_z in mm		Ø DC = 10 mm f_z in mm		Ø DC = 12 mm f_z in mm	
1.1	150–170	170–200	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.2	170–190	190–220	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.3	140–170	170–190	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.4	100–140	140–180	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.5	140–170	170–190	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.6	120–140	140–160	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.7	100–140	140–170	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.8	100–120	120–160	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.9	150–170	170–200	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.10										
1.11										
1.12	140–170	170–190	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.13										
1.14										
1.15	80–120	120–150	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
1.16	80–120	120–150	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
2.1	45-65	65-85	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
2.2	45-65	65-85	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
2.3	30-50	45-60	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
2.4	25-40	40-50	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
2.5	40-60	60-85	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
2.6	50-70	70-90	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
2.7										
3.1	100–130	130–150	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
3.2	100–120	120–140	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
3.3	100–120	120–140	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
3.4	80–100	100–120	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
3.5	100–120	120–140	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
3.6	80–100	100–120	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
3.7	100–120	120–140	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
3.8	80–100	100–120	0,028	0,03	0,04	0,05	0,05	0,06	0,06	0,07
4.1										
4.2										
4.3										
4.4										
4.5										
4.6										
4.7										
4.8										
4.9										
4.10										
4.11										
4.12										
4.13										
4.14										
4.15										
4.16										
4.17										
4.18										
4.19										
5.1	30-40	40-50	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
5.2										
5.3										
5.4										
5.5										
5.6										
5.7										
5.8										
5.9										
5.10	35-50	50-60	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
5.11	30-40	40-50	0,02	0,03	0,03	0,04	0,04	0,05	0,05	0,06
6.1										
6.2										
6.3										
6.4										
6.5										

For **Full slot milling** the values indicated in the table are based on:

a_e = 1,0 x DC / a_p = 1,0 x DC

For **Contour milling** the values indicated in the table are based on:

a_e = 0,4 x DC / a_p = 1,0 x DC

	Ti1000										● 1st choice		○ suitable
	Ø DC = 14 mm f_z in mm		Ø DC = 16 mm f_z in mm		Ø DC = 18 mm f_z in mm		Ø DC = 20 mm f_z in mm		Ø DC = 25 mm f_z in mm				
Index											Emulsion	Compressed air	MMS
1.1	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.2	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.3	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.4	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.5	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.6	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.7	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.8	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.9	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.10													
1.11													
1.12	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.13													
1.14													
1.15	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
1.16	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
2.1	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
2.2	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
2.3	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
2.4	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
2.5	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
2.6	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
2.7													
3.1	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
3.2	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
3.3	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
3.4	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
3.5	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
3.6	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
3.7	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
3.8	0,07	0,08	0,08	0,09	0,09	0,1	0,1	0,12	0,1	0,12	●	○	
4.1													
4.2													
4.3													
4.4													
4.5													
4.6													
4.7													
4.8													
4.9													
4.10													
4.11													
4.12													
4.13													
4.14													
4.15													
4.16													
4.17													
4.18													
4.19													
5.1	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
5.2													
5.3													
5.4													
5.5													
5.6													
5.7													
5.8													
5.9													
5.10	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
5.11	0,06	0,07	0,06	0,08	0,07	0,09	0,08	0,1	0,08	0,1	●		
6.1													
6.2													
6.3													
6.4													
6.5													

With tools with internal cooling (52 338.../52 339...) the cutting speed (v_c) can be increased by 20–30 %!

Cutting data – High Feed Cutters 56 900 ... / 56 902 ... / 56 904 ...

			TiAlN							
			Medium	Roughing	Medium	Roughing	Medium	Roughing	Medium	Roughing
	Medium machining	Rough machining	**Ø DCX = 6 mm**	**Ø DCX = 6 mm**	**Ø DCX = 8 mm**	**Ø DCX = 8 mm**	**Ø DCX = 10 mm**	**Ø DCX = 10 mm**	**Ø DCX = 12 mm**	**Ø DCX = 12 mm**
			a_p = 0,1–0,2	a_p = 0,2–0,3	a_p = 0,1–0,2	a_p = 0,2–0,3	a_p = 0,1–0,2	a_p = 0,2–0,3	a_p = 0,1–0,2	a_p = 0,2–0,3
Index	v_c m/min	v_c m/min	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
1.1	**250–300**	**150–250**	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
1.2	**250–300**	**150–250**	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
1.3	**250–300**	**150–250**	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
1.4	**200–250**	**180–200**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.5	**220–250**	**200–220**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.6	**220–250**	**200–220**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.7	**170–190**	**170–190**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.8	**160–180**	**160–180**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.9	**220–250**	**200–220**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.10	**170–190**	**170–190**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.11	**160–180**	**160–180**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.12	**170–190**	**170–190**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.13	**100–120**	**100–120**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.14	**80–100**	**80–100**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.15	**140–180**	**140–180**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
1.16	**140–180**	**140–180**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
2.1	110–150	70–110	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
2.2	110–150	70–110	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
2.3	110–150	70–110	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
2.4	110–150	70–110	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
2.5	110–150	70–110	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
2.6	80–110	60–90	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
2.7	80–110	60–90	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
3.1	300–350	250–300	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
3.2	180–250	180–250	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
3.3	200–250	150–200	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
3.4	200–250	150–200	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
3.5	200–250	150–200	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
3.6	200–250	150–200	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
3.7	200–250	150–200	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
3.8	200–250	150–200	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
4.1	400–600	400–600	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.2	400–600	400–600	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.3	400–600	400–600	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.4	400–600	400–600	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.5	400–600	400–600	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.6	300–500	300–500	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.7	300–500	300–500	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.8	300–500	300–500	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.9	300–500	300–500	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.10	300–500	300–500	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.11	300–500	300–500	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.12	300–500	300–500	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
4.13										
4.14										
4.15										
4.16										
4.17										
4.18										
4.19										
5.1										
5.2										
5.3										
5.4	50–80	30–50	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
5.5										
5.6										
5.7	50–80	30–50	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
5.8										
5.9										
5.10	60–80	60–80	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
5.11	40–80	40–80	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
6.1	**160–190**	**160–190**	0,1–0,22	0,22–0,35	0,1–0,3	0,3–0,5	0,1–0,4	0,4–0,7	0,1–0,45	0,45–0,8
6.2	**150–180**	**80–120**	0,1–0,22	0,22–0,35	0,1–0,25	0,25–0,4	0,1–0,25	0,25–0,4	0,1–0,35	0,35–0,6
6.3	**120–150**	**80–100**	0,1–0,22	0,2–0,3	0,1–0,25	0,2–0,3	0,1–0,25	0,25–0,35	0,1–0,35	0,3–0,4
6.4	**80–110**	**60–90**	0,1–0,22	0,2–0,3	0,1–0,25	0,2–0,3	0,1–0,25	0,25–0,35	0,1–0,35	0,3–0,4
6.5										

The width of cut (a_e) in steel should be 60–95 % of the cutter diameter (Ø DC), with high-grade steels and for sticking materials 40 % of Ø DC maximum!

	TiAlN		● 1st choice		○ suitable
	Medium	Roughing			
	Ø DCX = 16 mm	Ø DCX = 16 mm			
	a_p = 0,1–0,25	a_p = 0,2–0,4			
Index	f_z mm	f_z mm	Emulsion	Compressed air	MMS
1.1	0,1–0,45	0,45–0,8		○	●
1.2	0,1–0,45	0,45–0,8		○	●
1.3	0,1–0,45	0,45–0,8		○	●
1.4	0,1–0,35	0,35–0,6		○	●
1.5	0,1–0,35	0,35–0,6		○	●
1.6	0,1–0,35	0,35–0,6		○	●
1.7	0,1–0,35	0,35–0,6		○	●
1.8	0,1–0,35	0,35–0,6		○	●
1.9	0,1–0,35	0,35–0,6		○	●
1.10	0,1–0,35	0,35–0,6		○	●
1.11	0,1–0,35	0,35–0,6		○	●
1.12	0,1–0,35	0,35–0,6		○	●
1.13	0,1–0,35	0,35–0,6		○	●
1.14	0,1–0,35	0,35–0,6		○	●
1.15	0,1–0,35	0,35–0,6		○	●
1.16	0,1–0,35	0,35–0,6		○	●
2.1	0,1–0,35	0,35–0,6	●		○
2.2	0,1–0,35	0,35–0,6	●		○
2.3	0,1–0,35	0,35–0,6	●		○
2.4	0,1–0,35	0,35–0,6	●		○
2.5	0,1–0,35	0,35–0,6	●		○
2.6	0,1–0,35	0,35–0,6	●		○
2.7	0,1–0,35	0,35–0,6	●		○
3.1	0,1–0,45	0,45–0,8		●	○
3.2	0,1–0,45	0,45–0,8		●	○
3.3	0,1–0,35	0,35–0,6		●	○
3.4	0,1–0,35	0,35–0,6		●	○
3.5	0,1–0,35	0,35–0,6		●	○
3.6	0,1–0,35	0,35–0,6		●	○
3.7	0,1–0,35	0,35–0,6		●	○
3.8	0,1–0,35	0,35–0,6		●	○
4.1	0,1–0,45	0,45–0,8	●		○
4.2	0,1–0,45	0,45–0,8	●		○
4.3	0,1–0,45	0,45–0,8	●		○
4.4	0,1–0,45	0,45–0,8	●		○
4.5	0,1–0,45	0,45–0,8	●		○
4.6	0,1–0,45	0,45–0,8	●		○
4.7	0,1–0,45	0,45–0,8	●		○
4.8	0,1–0,45	0,45–0,8	●		○
4.9	0,1–0,45	0,45–0,8	●		○
4.10	0,1–0,45	0,45–0,8	●		○
4.11	0,1–0,45	0,45–0,8	●		○
4.12	0,1–0,45	0,45–0,8	●		○
4.13					
4.14					
4.15					
4.16					
4.17					
4.18					
4.19					
5.1					
5.2					
5.3					
5.4	0,1–0,45	0,45–0,8	○		●
5.5					
5.6					
5.7	0,1–0,45	0,45–0,8	○		●
5.8					
5.9					
5.10	0,1–0,45	0,45–0,8	○		●
5.11	0,1–0,45	0,45–0,8	○		●
6.1	0,1–0,45	0,45–0,8		●	○
6.2	0,1–0,35	0,35–0,6		●	○
6.3	0,1–0,35	0,35–0,45		●	○
6.4	0,1–0,35	0,35–0,45		●	○
6.5					

Cutting data – Cutters for plastic machining

	Suitable for:	Strength N/mm² – HB	50 981 …	50 982 …	50 983 …	50 984 …	50 985 …	50 986 …	50 987 …	50 988 …	50 932 …	50 937 …	50 936 …	50 938 …	50 610 …	50 611 …	52 76. …	50 91. …	50 946 …	50 948 …	50 947 …
4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²													400–450			400–450			
4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²													400–450			400–450			
4.3	Aluminium alloys 0.5–10 % Si	< 400 N/mm²													350–400			350–400			
4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²												300–400					300–400	300–400	300–400
4.5	Aluminum alloys > 15 % Si	< 400 N/mm²												300–400					250–300	250–300	250–300
4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²													400–450			400–450			
4.7	Wrought Copper Alloys	< 700 N/mm²												200–250					200–250	200–250	200–250
4.8	Special copper alloys	< 200 HB												200–250					200–250	200–250	200–250
4.9	Special copper alloys	< 300 HB												200–250					200–250	200–250	200–250
4.10	Special copper alloys	> 300 HB												200–250					200–250	200–250	200–250
4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²													350–400			350–400			
4.12	Long-chipping brass	< 600 N/mm²													350–400			350–400			
4.13	Thermoplastics														500–550			500–550			
4.14	Duroplastics					300–350						300–350			500–550			500–550			
4.15	Fibre-reinforced plastics					150–200						150–200	500–600	150–200					150–200	150–200	150–200
4.16	Magnesium and magnesium alloys	< 850 N/mm²												250					250	250	250
4.17	Graphite					300–400						500–600	500–600	300–400				300	300–400		300–400
4.18	Tungsten and tungsten alloys																			200–250	250–300
4.19	Molybdenum and molybdenum alloys																			200–250	250–300

	Plastics, Thermoset, Hardwood, Pressed Cardboard					Plastic, Thermoplast, Polycarbonate, Non-ferrous metal, Hard rubber				
	End milling cutter Type W			Ball nosed cutter Type W		End milling cutter Type W			Ball nosed cutter Type W	
	Shoulder milling, trimming		Slot milling	Copy milling – Line milling		Shoulder milling, trimming		Slot milling	Copy milling – Line milling	
	Roughing	Finishing		Roughing	Finishing	Roughing	Finishing		Roughing	Finishing
	a_p = 1,0 x DC a_e = 0,4 x DC	a_p = 1,0 x DC a_e = 0,1 x DC		a_p = 0,5 x DC a_e = 0,5 x DC	a_p = 0,03 x DC a_e = 0,02 x DC	a_p = 1,5 x DC a_e = 0,8 x DC	a_p = 1,0 x DC a_e = 0,1 x DC		a_p = 0,5 x DC a_e = 0,5 x DC	a_p = 0,03 x DC a_e = 0,02 x DC
DC in mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm
2	0,024	0,018	0,016	0,028	0,024	0,024	0,022	0,017	0,037	0,03
3	0,036	0,027	0,024	0,042	0,036	0,036	0,033	0,026	0,056	0,045
4	0,048	0,036	0,032	0,056	0,048	0,048	0,044	0,034	0,074	0,06
5	0,060	0,045	0,04	0,07	0,06	0,060	0,055	0,043	0,093	0,075
6	0,072	0,054	0,048	0,084	0,072	0,072	0,066	0,051	0,111	0,09
8	0,10	0,07	0,06	0,11	0,10	0,10	0,09	0,07	0,15	0,12
10	0,12	0,09	0,08	0,14	0,12	0,12	0,11	0,09	0,19	0,15
12	0,14	0,11	0,10	0,17	0,14	0,14	0,13	0,10	0,22	0,18
14	0,17	0,13	0,11	0,20	0,17	0,17	0,15	0,12	0,26	0,21
16	0,19	0,14	0,13	0,22	0,19	0,19	0,18	0,14	0,30	0,24
18	0,22	0,16	0,14	0,25	0,22	0,22	0,20	0,15	0,33	0,27
20	0,24	0,18	0,16	0,28	0,24	0,24	0,22	0,17	0,37	0,30

	Fiber reinforced plastics AFK, CFK, GFK			
	End mill staggered teeth			
	Shoulder milling, trimming		Copy milling – Line milling	
	a_p = 1,0 x DC a_e = 0,05 x DC	a_p = 1,0 x DC a_e = 0,05 x DC	a_p = 0,35 x DC	a_p = 0,35 x DC
	fine	Medium	fine	Medium
DC in mm	f	f	f	f
2	0,16	0,14	0,14	0,12
3	0,24	0,21	0,21	0,18
4	0,32	0,28	0,28	0,24
5	0,40	0,35	0,35	0,30
6	0,48	0,42	0,42	0,36
8	0,64	0,56	0,56	0,48
10	0,80	0,70	0,70	0,60
12	0,96	0,84	0,84	0,72
16	1,28	1,12	1,12	0,96
20	1,60	1,40	1,40	1,20

Feed rate guide values for ball nosed and torus cutters on → **Page 356**

Cutting data standard values – Circular saw blades

	Circular saws Solid carbide Fine	
Index	v_c m/min	f_z mm
1.1	100–160	0,005–0,01
1.2	100–160	0,005–0,01
1.3	100–160	0,005–0,01
1.4	80–130	0,003–0,007
1.5	80–130	0,003–0,007
1.6	80–130	0,003–0,007
1.7	100–160	0,005–0,01
1.8	50–100	0,003–0,007
1.9	80–130	0,003–0,007
1.10	80–130	0,003–0,007
1.11	50–100	0,003–0,007
1.12	50–100	0,003–0,007
1.13	50–100	0,003–0,007
1.14	50–100	0,003–0,007
1.15	50–100	0,003–0,007
1.16	50–100	0,003–0,007
2.1	80–130	0,003–0,007
2.2	80–130	0,003–0,007
2.3	80–130	0,003–0,007
2.4	50–100	0,003–0,007
2.5	80–130	0,003–0,007
2.6	100–160	0,003–0,007
2.7	50–100	0,003–0,007
3.1	80–130	0,003–0,007
3.2	50–100	0,003–0,007
3.3	50–100	0,003–0,007
3.4	50–100	0,003–0,007
3.5	80–130	0,003–0,007
3.6	80–130	0,003–0,007
3.7	80–130	0,003–0,007
3.8	50–100	0,003–0,007
4.1	200–500	0,005–0,01
4.2	200–500	0,005–0,01
4.3	200–500	0,005–0,01
4.4	200–450	0,005–0,01
4.5	200–450	0,005–0,01
4.6	200–450	0,005–0,01
4.7	150–300	0,005–0,01
4.8	150–300	0,005–0,01
4.9	150–300	0,005–0,01
4.10	150–300	0,005–0,01
4.11	200–400	0,005–0,01
4.12		
4.13	150–300	0,005–0,01
4.14	80–250	0,005–0,01
4.15		
4.16		
4.17		
4.18		
4.19		
5.1		
5.2	50–100	0,003–0,007
5.3	50–100	0,003–0,007
5.4	20–30	0,003–0,007
5.5	20–30	0,003–0,007
5.6	20–30	0,003–0,007
5.7	20–30	0,003–0,007
5.8	20–30	0,003–0,007
5.9	30–70	0,003–0,007
5.10	30–70	0,003–0,007
5.11	30–70	0,003–0,007
6.1	50–100	0,003–0,007
6.2		
6.3		
6.4		
6.5		

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The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type.
The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting Speeds – Depending upon Coating

			TiCN		Ti400		● 1st choice		○ suitable	Ti1000 / Ti1002		● 1st choice		○ suitable
							Emulsion	Compressed air	MMS			Emulsion	Compressed air	MMS
Index	v_c m/min		v_c m/min		v_c m/min					v_c m/min				
1.1	90–110	130–160	110–130	160–200	90–130	140–200	●	○	○	150–170	220–240	○	●	○
1.2	90–110	130–160	110–130	160–200	90–130	140–200	●	○	○	150–170	220–240	○	●	○
1.3	90–110	130–160	110–130	160–200	90–130	140–200	●	○	○	150–170	220–240	○	●	○
1.4	70–90	100–130	90–110	120–160	80–100	100–150	●	○	○	120–140	170–200	○	●	○
1.5	80–100	120–140	100–120	150–170	90–110	100–160	●	○	○	130–150	180–220	○	●	○
1.6	50–60	70–90	60–80	80–110	60–70	80–110	●	○	○	70–100	100–140	○	●	○
1.7	70–90	100–130	90–110	120–160	80–100	140–160	●	○	○	120–140	170–200	○	●	○
1.8	40–60	60–80	50–70	70–100	50–70	70–100	●	○	○	60–80	90–120	○	●	○
1.9	60–70	80–100	70–80	100–120	70–90	100–140	●	○	○	80–100	120–150	○	●	○
1.10	50–60	70–90	60–80	80–110	60–80	70–110	●	○	○	70–100	100–140	○	●	○
1.11	40–50	60–70	50–60	70–85	50–70	70–90	●	○	○	60–80	90–120	○	●	○
1.12	50–60		60–80	80–110	60–70	70–100	●	○	○	70–100	100–140	○	●	○
1.13	30–40	40–60	30–50	50–70	40–50	60–80	●	○	○	60–70	80–100	○	●	○
1.14	10–20	15–30	15–30	20–40	20–40	30–40	●	○	○	25–35	40–50	○	●	○
1.15	30–50	40–70	30–60	50–80	40–60	70–100	●	○	○	60–80	80–120	○	●	○
1.16	25–40	40–60	30–50	50–70	40–60	70–100	●	○	○	50–80	70–110	○	●	○
2.1	40–50	60–70	50–60	70–80	50–60	70–100	●	○	○	60–80	90–120	●		○
2.2	40–50	60–70	50–60	70–80	40–50	60–80	●	○	○	60–80	90–120	●		○
2.3	30–40	40–50	30–40	50–60	40–50	50–90	●	○	○	50–70	80–100	●		○
2.4	20–30	30–40	25–35	40–50	25–35	40–70	●	○	○	40–60	60–80	●		○
2.5	30–40	40–50	30–40	50–60	40–50	70–100	●	○	○	50–70	80–100	●		○
2.6	40–50	60–70	50–60	70–80	50–60	80–110	●	○	○	70–80	100–120	●		○
2.7	20–30	30–40	25–35	40–50	20–30	50–90	●	○	○	40–60	60–80	●		○
3.1	60–80	90–120	70–100	110–140	70–90	100–130	●	○	○	100–110	140–160	○	●	○
3.2	60–70	80–100	70–90	100–120	60–80	90–120	●	○	○	80–100	120–140	○	●	○
3.3	60–70	80–100	70–90	100–120	70–90	100–130	●	○	○	80–100	120–140	○	●	○
3.4	50–60	70–90	60–80	80–110	60–80	90–120	●	○	○	70–80	100–120	○	●	○
3.5	60–80	90–120	80–100	110–150	70–90	100–130	●	○	○	100–110	140–160	○	●	○
3.6	60–80	90–120	80–100	110–150	60–80	90–120	●	○	○	100–110	140–160	○	●	○
3.7	60–70	80–100	70–90	100–120	70–90	100–130	●	○	○	80–100	120–140	○	●	○
3.8	50–60	70–90	60–80	90–110	60–80	90–120	●	○	○	70–80	100–120	○	●	○
4.1	<300	<400	<300	<450	280–320	250–350	●	○	○	180–350	250–500	●		○
4.2	<300	<400	<300	<450	280–320	220–320	●	○	○	180–350	250–500	●		○
4.3	130–180	200–250	170–210	240–300	220–270	200–300	●	○	○	140–200	200–300	●		○
4.4	100–120	140–170	120–140	170–200	170–200	200–250	●	○	○	110–130	160–180	●		○
4.5	40–60	60–80	50–70	70–90	120–180	150–200	●	○	○	50–70	80–100	●		○
4.6	150–180	210–260	180–210	250–310	100–130	120–180	●	○	○	180–210	250–300	●		○
4.7	110–150	160–200	130–170	190–240	100–130	140–200	●	○	○	130–170	180–240	●		○
4.8	140–180	200–250	170–210	240–300	120–160	160–220	●	○	○	160–200	220–280	●		○
4.9	120–160	170–230	140–180	210–270	120–160	160–220	●	○	○	140–180	200–250	●		○
4.10	80–120	120–150	100–140	150–180	120–160	160–220	●	○	○	100–140	150–200	●		○
4.11	160–200	230–280	180–210	280–330	100–130	120–200	●	○	○	180–210	250–300	●	○	○
4.12	120–160	170–230	140–180	210–270	100–130	120–200	●	○	○	140–180	200–250	●	○	○
4.13	40–60	60–90	40–70	70–100	70–90	90–120	●	○	○	40–70	60–100	○	●	○
4.14	50–70	70–100	60–80	80–120	120–180	150–220	●	○	○	60–80	80–120	○	●	○
4.15	30–50	40–70	40–60	50–80	50–70	70–110	●	○	○	40–60	60–80	○	●	○
4.16	150–180	220–260	180–210	270–310	170–200	170–250		●	○	180–210	250–300		●	○
4.17	70–100	100–140	80–120	120–170	100–120	130–180		●	○	80–120	120–180		●	○
4.18	50–60	60–80	60–70	70–100	60–80	80–100	●	○	○	60–70	80–100	○	●	○
4.19	50–70	70–90	60–80	80–110	60–80	80–100	●	○	○	60–80	90–120	○	●	○
5.1	15–25	20–35	35–50	50–70	30–50	50–70	●	○	○	40–60	60–80	●	○	○
5.2	10–20	15–30	25–35	40–50	25–40	40–60	●	○	○	30–40	40–60	●	○	○
5.3	15–25	20–35	30–40	40–60	40–60	50–80	●	○	○	35–50	50–70	●	○	○
5.4			30–50	50–60	30–50	50–70	●	○	○	40–60	60–80	●	○	○
5.5			25–35	40–50	30–40	40–60	●	○	○	30–40	40–60	●	○	○
5.6			10–20	30–40	30–40	40–60	●	○	○	20–30	30–40	●	○	○
5.7			20–30	40–50	25–35	30–50	●	○	○	30–40	40–60	●	○	○
5.8			20–30	40–50	30–40	40–60	●	○	○	30–40	40–60	●	○	○
5.9	30–50	40–70	50–60	60–80	40–50	70–100	●	○	○	50–70	80–100	●	○	○
5.10	30–40	40–50	40–50	60–70	50–60	80–120	●	○	○	50–60	70–90	●	○	○
5.11			15–20	30–40	30–40	40–60	●	○	○	20–30	30–40	●	○	○
6.1							●	○	○	70–80	100–120		●	○
6.2							●	○	○	60–70	80–100		●	○
6.3							●	○	○	40–60	60–80		●	○
6.4							●	○	○	30–40	40–60		●	○
6.5							●	○	○	20–30	30–40		●	○

Index	Ti1001 v_c m/min		● 1st choice / ○ suitable: Emulsion	Compressed air	MMS	Ti10 / Ti20 v_c m/min		● 1st choice / ○ suitable: Emulsion	Compressed air	MMS
1.1										
1.2										
1.3										
1.4										
1.5										
1.6										
1.7										
1.8										
1.9										
1.10										
1.11										
1.12										
1.13										
1.14										
1.15										
1.16										
2.1										
2.2										
2.3										
2.4										
2.5										
2.6										
2.7										
3.1										
3.2										
3.3										
3.4										
3.5										
3.6										
3.7										
3.8										
4.1	300–400	300–500	●		○	150–350	250–500	●		○
4.2	300–400	300–500	●		○	120–220	150–300	●		○
4.3	250–300	300–450	●		○	150–180	220–250	●		○
4.4	200–250	250–350	●		○	100–130	150–180	●		○
4.5	150–200	200–250	●		○					
4.6	220–280	250–330	●		○	120–150	170–220	●		○
4.7	180–220	200–280	●		○	140–150	200–220	●		○
4.8	160–200	180–250	●		○					
4.9	150–200	160–250	●		○					
4.10	140–200	150–250	●		○					
4.11						170–180	240–260	●		○
4.12						180–200	260–280	●		○
4.13						140–170	200–240	●		○
4.14						220–280	300–400	●		○
4.15						70–100	100–140	●		○
4.16						140–170	200–250		●	
4.17										
4.18										
4.19										
5.1										
5.2										
5.3										
5.4										
5.5										
5.6										
5.7										
5.8										
5.9							80–100	●		○
5.10										
5.11										
6.1										
6.2										
6.3										
6.4										
6.5										

Depths of Cut Reference Values – Milling Cutters – extra short – long

Index	$a_{p\,max.}$ x DC		Ø DC = 2,5 mm a_e 0,1–0,2 x DC f_z mm	Ø DC = 2,5 mm a_e 0,3–0,4 x DC f_z mm	Ø DC = 2,5 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 3 mm a_e 0,1–0,2 x DC f_z mm	Ø DC = 3 mm a_e 0,3–0,4 x DC f_z mm	Ø DC = 3 mm a_e 0,6–1,0 x DC f_z mm	$a_{p\,max.}$ x DC		Ø DC = 4 mm a_e 0,1–0,2 x DC f_z mm	Ø DC = 4 mm a_e 0,3–0,4 x DC f_z mm	Ø DC = 4 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 5 mm a_e 0,1–0,2 x DC f_z mm	Ø DC = 5 mm a_e 0,3–0,4 x DC f_z mm	Ø DC = 5 mm a_e 0,6–1,0 x DC f_z mm	Ø DC = 6 mm a_e 0,1–0,2 x DC f_z mm	Ø DC = 6 mm a_e 0,3–0,4 x DC f_z mm	Ø DC = 6 mm a_e 0,6–1,0 x DC f_z mm
1.1	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
1.2	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
1.3	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,041	0,027	0,020	0,054	0,035	0,026
1.4	1,0	0,5	0,014	0,009	0,007	0,020	0,013	0,010	1,5	1	0,027	0,018	0,013	0,036	0,024	0,018	0,045	0,029	0,022
1.5	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
1.6	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
1.7	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
1.8	1,0	0,5	0,014	0,009	0,007	0,020	0,013	0,010	1,5	1	0,027	0,018	0,013	0,036	0,024	0,018	0,045	0,029	0,022
1.9	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
1.10	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
1.11	1,0	0,5	0,014	0,009	0,007	0,020	0,013	0,010	1,5	1	0,027	0,018	0,013	0,036	0,024	0,018	0,045	0,029	0,022
1.12	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
1.13	1,0	0,5	0,014	0,009	0,007	0,020	0,013	0,010	1,5	1	0,027	0,018	0,013	0,036	0,024	0,018	0,045	0,029	0,022
1.14	1,0	0,4	0,014	0,009	0,007	0,020	0,013	0,010	1,5	1	0,027	0,018	0,013	0,036	0,024	0,018	0,045	0,029	0,022
1.15	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
1.16	1,0	0,5	0,017	0,011	0,008	0,024	0,016	0,012	1,5	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
2.1	1,0	0,5	0,011	0,007	0,005	0,016	0,011	0,008	1,5	1	0,022	0,014	0,011	0,029	0,019	0,014	0,036	0,023	0,017
2.2	1,0	0,5	0,011	0,007	0,005	0,016	0,011	0,008	1,5	1	0,022	0,014	0,011	0,029	0,019	0,014	0,036	0,023	0,017
2.3	1,0	0,5	0,011	0,007	0,005	0,016	0,011	0,008	1,5	1	0,022	0,014	0,011	0,029	0,019	0,014	0,036	0,023	0,017
2.4	1,0	0,5	0,011	0,007	0,005	0,016	0,011	0,008	1,5	1	0,022	0,014	0,011	0,029	0,019	0,014	0,036	0,023	0,017
2.5	1,0	0,5	0,011	0,007	0,005	0,016	0,011	0,008	1,5	1	0,022	0,014	0,011	0,029	0,019	0,014	0,036	0,023	0,017
2.6	1,0	0,5	0,011	0,007	0,005	0,016	0,011	0,008	1,5	1	0,022	0,014	0,011	0,029	0,019	0,014	0,036	0,023	0,017
2.7	1,0	0,5	0,011	0,007	0,005	0,016	0,010	0,008	1,5	1	0,021	0,014	0,010	0,028	0,018	0,014	0,035	0,023	0,017
3.1	1,0	0,5	0,020	0,013	0,010	0,029	0,019	0,014	1,5	1	0,039	0,026	0,019	0,052	0,034	0,025	0,064	0,042	0,031
3.2	1,0	0,5	0,017	0,011	0,008	0,025	0,016	0,012	1,5	1	0,034	0,022	0,016	0,044	0,029	0,022	0,055	0,036	0,027
3.3	1,0	0,5	0,017	0,011	0,008	0,025	0,016	0,012	1,5	1	0,034	0,022	0,016	0,044	0,029	0,022	0,055	0,036	0,027
3.4	1,0	0,5	0,017	0,011	0,008	0,025	0,016	0,012	1,5	1	0,034	0,022	0,016	0,044	0,029	0,022	0,055	0,036	0,027
3.5	1,0	0,5	0,017	0,011	0,008	0,025	0,016	0,012	1,5	1	0,034	0,022	0,016	0,044	0,029	0,022	0,055	0,036	0,027
3.6	1,0	0,5	0,017	0,011	0,008	0,025	0,016	0,012	1,5	1	0,034	0,022	0,016	0,044	0,029	0,022	0,055	0,036	0,027
3.7	1,0	0,5	0,017	0,011	0,008	0,025	0,016	0,012	1,5	1	0,034	0,022	0,016	0,044	0,029	0,022	0,055	0,036	0,027
3.8	1,0	0,5	0,017	0,011	0,008	0,025	0,016	0,012	1,5	1	0,034	0,022	0,016	0,044	0,029	0,022	0,055	0,036	0,027
4.1	1,0	0,5	0,028	0,018	0,013	0,040	0,027	0,020	1,5	1	0,055	0,036	0,027	0,072	0,047	0,035	0,090	0,059	0,043
4.2	1,0	0,5	0,028	0,018	0,013	0,040	0,027	0,020	1,5	1	0,055	0,036	0,027	0,072	0,047	0,035	0,090	0,059	0,043
4.3	1,0	0,5	0,028	0,018	0,013	0,040	0,027	0,020	1,5	1	0,055	0,036	0,027	0,072	0,047	0,035	0,090	0,059	0,043
4.4	1,0	0,5	0,028	0,018	0,013	0,040	0,027	0,020	1,5	1	0,055	0,036	0,027	0,072	0,047	0,035	0,090	0,059	0,043
4.5	1,0	0,5	0,028	0,018	0,013	0,040	0,027	0,020	1,5	1	0,055	0,036	0,027	0,072	0,047	0,035	0,090	0,059	0,043
4.6	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.7	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.8	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.9	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.10	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.11	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.12	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.13	1,0	0,5	0,040	0,026	0,019	0,058	0,038	0,028	1,5	1	0,078	0,051	0,038	0,103	0,068	0,050	0,128	0,084	0,062
4.14	1,0	0,5	0,044	0,029	0,021	0,064	0,042	0,031	1,5	1	0,086	0,057	0,042	0,114	0,074	0,055	0,141	0,092	0,068
4.15	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.16	1,0	0,5	0,026	0,017	0,012	0,038	0,025	0,018	1,5	1	0,051	0,033	0,025	0,067	0,044	0,033	0,083	0,054	0,040
4.17	1,0	0,5	0,019	0,012	0,009	0,028	0,018	0,013	1,5	1	0,038	0,025	0,018	0,050	0,032	0,024	0,061	0,040	0,030
4.18	1,0	0,5	0,016	0,010	0,008	0,023	0,015	0,011	1,5	1	0,031	0,021	0,015	0,041	0,027	0,020	0,051	0,034	0,025
4.19	1,0	0,5	0,012	0,008	0,006	0,017	0,011	0,008	1,5	1	0,024	0,015	0,011	0,031	0,020	0,015	0,038	0,025	0,019
5.1	0,7	0,3	0,017	0,011	0,008	0,024	0,016	0,012	1,0	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
5.2	0,7	0,3	0,017	0,011	0,008	0,024	0,016	0,012	1,0	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
5.3	0,7	0,3	0,015	0,010	0,007	0,022	0,014	0,011	1,0	1	0,030	0,020	0,014	0,039	0,026	0,019	0,049	0,032	0,024
5.4	0,7	0,3	0,015	0,010	0,007	0,022	0,014	0,011	1,0	1	0,030	0,020	0,014	0,039	0,026	0,019	0,049	0,032	0,024
5.5	0,7	0,3	0,015	0,010	0,007	0,022	0,014	0,011	1,0	1	0,030	0,020	0,014	0,039	0,026	0,019	0,049	0,032	0,024
5.6	0,7	0,3	0,015	0,010	0,007	0,022	0,014	0,011	1,0	1	0,030	0,020	0,014	0,039	0,026	0,019	0,049	0,032	0,024
5.7	0,7	0,3	0,014	0,009	0,007	0,020	0,013	0,010	1,0	1	0,027	0,018	0,013	0,036	0,024	0,018	0,045	0,029	0,022
5.8	0,7	0,3	0,014	0,009	0,007	0,020	0,013	0,010	1,0	1	0,027	0,018	0,013	0,036	0,024	0,018	0,045	0,029	0,022
5.9	0,7	0,3	0,017	0,011	0,008	0,024	0,016	0,012	1,0	1	0,033	0,022	0,016	0,043	0,028	0,021	0,054	0,035	0,026
5.10	0,7	0,3	0,018	0,012	0,009	0,026	0,017	0,013	1,0	1	0,035	0,023	0,017	0,046	0,030	0,023	0,058	0,038	0,028
5.11	0,7	0,3	0,018	0,012	0,009	0,026	0,017	0,013	1,0	1	0,035	0,023	0,017	0,046	0,030	0,023	0,058	0,038	0,028

	$a_{p\,max.}$	a_e : 0,1 x DC	a_e : 0,1 x DC	$a_{p\,max.}$	a_e : 0,1 x DC	a_e : 0,1 x DC	a_e : 0,1 x DC
6.1	0,5[1]	0,021	0,030	1,0[1]	0,041	0,054	0,067
6.2	0,5[1]	0,019	0,027	1,0[1]	0,037	0,049	0,061
6.3	0,5[1]	0,017	0,025	1,0[1]	0,034	0,045	0,056
6.4	0,5[1]	0,015	0,022	1,0[1]	0,030	0,040	0,050
6.5	0,5[1]	0,013	0,020	1,0[1]	0,026	0,035	0,043

Finishing cutter

$a_{p\,max.}$	a_e : 0,2–0,3 mm	a_e : 0,2–0,3 mm	a_e : 0,2–0,3 mm	$a_{p\,max.}$	a_e : 0,2–0,3 mm	a_e : 0,2–0,3 mm	a_e : 0,2–0,3 mm
0,7				1,5	0,08*	0,09*	0,1*

[1] = Trimming and trochoidal slot milling

* = To improve the surface quality reduce the f_z

Cutting data for Micro-Mini cutters for milling with diameter < 2.5 mm → v_c/f_z Page 318–325

Index	Ø DC = 8 mm			Ø DC = 10 mm			Ø DC = 12 mm			Ø DC = 14 mm			Ø DC = 16 mm			Ø DC = 18 mm			Ø DC = 20–25 mm		
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,6–1,0 x DC
	f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm			f_z mm		
1.1	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
1.2	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
1.3	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
1.4	0,06	0,04	0,03	0,07	0,05	0,04	0,08	0,05	0,04	0,10	0,06	0,04	0,11	0,07	0,05	0,12	0,08	0,05	0,14	0,09	0,06
1.5	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
1.6	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
1.7	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
1.8	0,06	0,04	0,03	0,07	0,05	0,04	0,08	0,05	0,04	0,10	0,06	0,04	0,11	0,07	0,05	0,12	0,08	0,05	0,14	0,09	0,06
1.9	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
1.10	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
1.11	0,06	0,04	0,03	0,07	0,05	0,04	0,08	0,05	0,04	0,10	0,06	0,04	0,11	0,07	0,05	0,12	0,08	0,05	0,14	0,09	0,06
1.12	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
1.13	0,06	0,04	0,03	0,07	0,05	0,04	0,08	0,05	0,04	0,10	0,06	0,04	0,11	0,07	0,05	0,12	0,08	0,05	0,14	0,09	0,06
1.14	0,06	0,04	0,03	0,07	0,05	0,04	0,08	0,05	0,04	0,10	0,06	0,04	0,11	0,07	0,05	0,12	0,08	0,05	0,14	0,09	0,06
1.15	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
1.16	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
2.1	0,05	0,03	0,02	0,06	0,04	0,03	0,06	0,04	0,03	0,08	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,04	0,11	0,07	0,05
2.2	0,05	0,03	0,02	0,06	0,04	0,03	0,06	0,04	0,03	0,08	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,04	0,11	0,07	0,05
2.3	0,05	0,03	0,02	0,06	0,04	0,03	0,06	0,04	0,03	0,08	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,04	0,11	0,07	0,05
2.4	0,05	0,03	0,02	0,06	0,04	0,03	0,06	0,04	0,03	0,08	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,04	0,11	0,07	0,05
2.5	0,05	0,03	0,02	0,06	0,04	0,03	0,06	0,04	0,03	0,08	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,04	0,11	0,07	0,05
2.6	0,05	0,03	0,02	0,06	0,04	0,03	0,06	0,04	0,03	0,08	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,04	0,11	0,07	0,05
2.7	0,05	0,03	0,02	0,06	0,04	0,03	0,06	0,04	0,03	0,08	0,04	0,03	0,09	0,06	0,04	0,09	0,06	0,04	0,11	0,07	0,05
3.1	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,06	0,14	0,08	0,06	0,16	0,10	0,07	0,17	0,11	0,08	0,20	0,13	0,08
3.2	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,14	0,09	0,06	0,15	0,10	0,07	0,17	0,11	0,07
3.3	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,14	0,09	0,06	0,15	0,10	0,07	0,17	0,11	0,07
3.4	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,14	0,09	0,06	0,15	0,10	0,07	0,17	0,11	0,07
3.5	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,14	0,09	0,06	0,15	0,10	0,07	0,17	0,11	0,07
3.6	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,14	0,09	0,06	0,15	0,10	0,07	0,17	0,11	0,07
3.7	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,14	0,09	0,06	0,15	0,10	0,07	0,17	0,11	0,07
3.8	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,14	0,09	0,06	0,15	0,10	0,07	0,17	0,11	0,07
4.1	0,12	0,08	0,06	0,15	0,10	0,07	0,16	0,10	0,08	0,20	0,11	0,08	0,22	0,15	0,10	0,24	0,16	0,11	0,27	0,18	0,12
4.2	0,12	0,08	0,06	0,15	0,10	0,07	0,16	0,10	0,08	0,20	0,11	0,08	0,22	0,15	0,10	0,24	0,16	0,11	0,27	0,18	0,12
4.3	0,12	0,08	0,06	0,15	0,10	0,07	0,16	0,10	0,08	0,20	0,11	0,08	0,22	0,15	0,10	0,24	0,16	0,11	0,27	0,18	0,12
4.4	0,12	0,08	0,06	0,15	0,10	0,07	0,16	0,10	0,08	0,20	0,11	0,08	0,22	0,15	0,10	0,24	0,16	0,11	0,27	0,18	0,12
4.5	0,12	0,08	0,06	0,15	0,10	0,07	0,16	0,10	0,08	0,20	0,11	0,08	0,22	0,15	0,10	0,24	0,16	0,11	0,27	0,18	0,12
4.6	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.7	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.8	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.9	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.10	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.11	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.12	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.13	0,17	0,11	0,08	0,21	0,14	0,10	0,23	0,15	0,11	0,28	0,16	0,12	0,32	0,21	0,14	0,35	0,23	0,15	0,39	0,26	0,17
4.14	0,18	0,12	0,09	0,23	0,15	0,11	0,25	0,16	0,12	0,31	0,18	0,13	0,35	0,23	0,15	0,38	0,25	0,17	0,43	0,28	0,19
4.15	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.16	0,11	0,07	0,05	0,13	0,09	0,07	0,15	0,10	0,07	0,18	0,11	0,08	0,21	0,13	0,09	0,23	0,15	0,10	0,25	0,17	0,11
4.17	0,08	0,05	0,04	0,10	0,07	0,05	0,11	0,07	0,05	0,13	0,08	0,06	0,15	0,10	0,07	0,17	0,11	0,07	0,19	0,12	0,08
4.18	0,07	0,04	0,03	0,08	0,05	0,04	0,09	0,06	0,04	0,11	0,07	0,05	0,13	0,08	0,05	0,14	0,09	0,06	0,16	0,10	0,07
4.19	0,05	0,03	0,02	0,06	0,04	0,03	0,07	0,05	0,03	0,08	0,05	0,04	0,10	0,06	0,04	0,11	0,07	0,05	0,12	0,08	0,05
5.1	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
5.2	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
5.3	0,06	0,04	0,03	0,08	0,05	0,04	0,09	0,06	0,04	0,11	0,06	0,05	0,12	0,08	0,05	0,13	0,09	0,06	0,15	0,10	0,06
5.4	0,06	0,04	0,03	0,08	0,05	0,04	0,09	0,06	0,04	0,11	0,06	0,05	0,12	0,08	0,05	0,13	0,09	0,06	0,15	0,10	0,06
5.5	0,06	0,04	0,03	0,08	0,05	0,04	0,09	0,06	0,04	0,11	0,06	0,05	0,12	0,08	0,05	0,13	0,09	0,06	0,15	0,10	0,06
5.6	0,06	0,04	0,03	0,08	0,05	0,04	0,09	0,06	0,04	0,11	0,06	0,05	0,12	0,08	0,05	0,13	0,09	0,06	0,15	0,10	0,06
5.7	0,06	0,04	0,03	0,07	0,05	0,04	0,08	0,05	0,04	0,10	0,06	0,04	0,11	0,07	0,05	0,12	0,08	0,05	0,14	0,09	0,06
5.8	0,06	0,04	0,03	0,07	0,05	0,04	0,08	0,05	0,04	0,10	0,06	0,04	0,11	0,07	0,05	0,12	0,08	0,05	0,14	0,09	0,06
5.9	0,07	0,05	0,03	0,09	0,06	0,04	0,10	0,06	0,05	0,12	0,07	0,05	0,13	0,09	0,06	0,15	0,10	0,06	0,16	0,11	0,07
5.10	0,07	0,05	0,04	0,09	0,06	0,05	0,10	0,07	0,05	0,13	0,07	0,05	0,14	0,09	0,06	0,16	0,10	0,07	0,18	0,12	0,08
5.11	0,07	0,05	0,04	0,09	0,06	0,05	0,10	0,07	0,05	0,13	0,07	0,05	0,14	0,09	0,06	0,16	0,10	0,07	0,18	0,12	0,08
	a_e : 0,1 x DC			a_e : 0,1 x DC			a_e : 0,1 x DC			a_e : 0,1 x DC			a_e : 0,1 x DC			a_e : 0,1 x DC			a_e : 0,1 x DC		
6.1	0,09			0,11			0,12			0,13			0,15			0,16			0,18		
6.2	0,08			0,10			0,11			0,12			0,13			0,15			0,17		
6.3	0,07			0,09			0,10			0,11			0,12			0,14			0,15		
6.4	0,06			0,08			0,09			0,10			0,11			0,12			0,13		
6.5	0,06			0,07			0,08			0,08			0,10			0,11			0,12		
	Finishing cutter																				
	a_e : 0,2–0,3 mm			a_e : 0,2–0,3 mm			a_e : 0,2–0,3 mm			a_e : 0,2–0,3 mm			a_e : 0,2–0,3 mm			a_e : 0,2–0,3 mm			a_e : 0,2–0,3 mm		
	0,11*			0,13*			0,15*			0,17*			0,19*			0,21*			0,23*		

Plunging angle for ramping and helical milling: 3°

Feed rate guide values for ball nosed and torus cutters on → **Page 356**

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Depths of Cut Reference Values – Milling Cutters – extra long

		Ø DC = 2,5 mm		Ø DC = 3 mm			Ø DC = 4 mm		Ø DC = 5 mm		Ø DC = 6 mm		Ø DC = 8 mm		Ø DC = 10 mm	
		a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC		a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC
Index	$a_{p\,max.}$ x DC	f_z mm		f_z mm		$a_{p\,max.}$ x DC	f_z mm		f_z mm		f_z mm		f_z mm		f_z mm	
1.1	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
1.2	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
1.3	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,052	0,034	0,049	0,032	0,07	0,04	0,08	0,05
1.4	0,6	0,011	0,007	0,020	0,013	1,0	0,027	0,018	0,034	0,022	0,041	0,027	0,05	0,04	0,07	0,04
1.5	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
1.6	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
1.7	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
1.8	0,6	0,011	0,007	0,020	0,013	1,0	0,027	0,018	0,034	0,022	0,041	0,027	0,05	0,04	0,07	0,04
1.9	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
1.10	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
1.11	0,6	0,011	0,007	0,020	0,013	1,0	0,027	0,018	0,034	0,022	0,041	0,027	0,05	0,04	0,07	0,04
1.12	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
1.13	0,6	0,011	0,007	0,020	0,013	1,0	0,027	0,018	0,034	0,022	0,041	0,027	0,05	0,04	0,07	0,04
1.14	0,6	0,011	0,007	0,020	0,013	1,0	0,027	0,018	0,034	0,022	0,041	0,027	0,05	0,04	0,07	0,04
1.15	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
1.16	0,6	0,013	0,009	0,024	0,016	1,0	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
2.1	0,6	0,009	0,006	0,016	0,011	1,0	0,022	0,014	0,027	0,018	0,033	0,021	0,04	0,03	0,05	0,04
2.2	0,6	0,009	0,006	0,016	0,011	1,0	0,022	0,014	0,027	0,018	0,033	0,021	0,04	0,03	0,05	0,04
2.3	0,6	0,009	0,006	0,016	0,011	1,0	0,022	0,014	0,027	0,018	0,033	0,021	0,04	0,03	0,05	0,04
2.4	0,6	0,009	0,006	0,016	0,011	1,0	0,022	0,014	0,027	0,018	0,033	0,021	0,04	0,03	0,05	0,04
2.5	0,6	0,009	0,006	0,016	0,011	1,0	0,022	0,014	0,027	0,018	0,033	0,021	0,04	0,03	0,05	0,04
2.6	0,6	0,009	0,006	0,016	0,011	1,0	0,022	0,014	0,027	0,018	0,033	0,021	0,04	0,03	0,05	0,04
2.7	0,6	0,008	0,005	0,016	0,010	1,0	0,021	0,014	0,026	0,017	0,031	0,021	0,04	0,03	0,05	0,03
3.1	0,6	0,015	0,010	0,029	0,019	1,0	0,039	0,025	0,048	0,032	0,058	0,038	0,08	0,05	0,10	0,06
3.2	0,6	0,013	0,009	0,025	0,016	1,0	0,033	0,022	0,042	0,027	0,050	0,033	0,07	0,04	0,08	0,06
3.3	0,6	0,013	0,009	0,025	0,016	1,0	0,033	0,022	0,042	0,027	0,050	0,033	0,07	0,04	0,08	0,06
3.4	0,6	0,013	0,009	0,025	0,016	1,0	0,033	0,022	0,042	0,027	0,050	0,033	0,07	0,04	0,08	0,06
3.5	0,6	0,013	0,009	0,025	0,016	1,0	0,033	0,022	0,042	0,027	0,050	0,033	0,07	0,04	0,08	0,06
3.6	0,6	0,013	0,009	0,025	0,016	1,0	0,033	0,022	0,042	0,027	0,050	0,033	0,07	0,04	0,08	0,06
3.7	0,6	0,013	0,009	0,025	0,016	1,0	0,033	0,022	0,042	0,027	0,050	0,033	0,07	0,04	0,08	0,06
3.8	0,6	0,013	0,009	0,025	0,016	1,0	0,033	0,022	0,042	0,027	0,050	0,033	0,07	0,04	0,08	0,06
4.1	0,6	0,022	0,014	0,041	0,027	1,0	0,054	0,035	0,068	0,044	0,081	0,053	0,11	0,07	0,14	0,09
4.2	0,6	0,022	0,014	0,041	0,027	1,0	0,054	0,035	0,068	0,044	0,081	0,053	0,11	0,07	0,14	0,09
4.3	0,6	0,022	0,014	0,041	0,027	1,0	0,054	0,035	0,068	0,044	0,081	0,053	0,11	0,07	0,14	0,09
4.4	0,6	0,022	0,014	0,041	0,027	1,0	0,054	0,035	0,068	0,044	0,081	0,053	0,11	0,07	0,14	0,09
4.5	0,6	0,022	0,014	0,041	0,027	1,0	0,054	0,035	0,068	0,044	0,081	0,053	0,11	0,07	0,14	0,09
4.6	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.7	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.8	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.9	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.10	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.11	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.12	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.13	0,6	0,031	0,020	0,058	0,038	1,0	0,077	0,051	0,097	0,063	0,116	0,076	0,16	0,10	0,19	0,13
4.14	0,6	0,034	0,022	0,064	0,042	1,0	0,085	0,056	0,107	0,070	0,128	0,084	0,17	0,11	0,21	0,14
4.15	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.16	0,6	0,020	0,013	0,038	0,025	1,0	0,050	0,033	0,063	0,041	0,076	0,049	0,10	0,07	0,13	0,08
4.17	0,6	0,015	0,010	0,028	0,018	1,0	0,037	0,024	0,046	0,030	0,056	0,037	0,07	0,05	0,09	0,06
4.18	0,6	0,012	0,008	0,023	0,015	1,0	0,031	0,020	0,039	0,025	0,046	0,030	0,06	0,04	0,08	0,05
4.19	0,6	0,009	0,006	0,017	0,011	1,0	0,023	0,015	0,029	0,019	0,035	0,023	0,05	0,03	0,06	0,04
5.1	0,3	0,013	0,009	0,024	0,016	0,5	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
5.2	0,3	0,013	0,009	0,024	0,016	0,5	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
5.3	0,3	0,012	0,008	0,022	0,014	0,5	0,029	0,019	0,037	0,024	0,044	0,029	0,06	0,04	0,07	0,05
5.4	0,3	0,012	0,008	0,022	0,014	0,5	0,029	0,019	0,037	0,024	0,044	0,029	0,06	0,04	0,07	0,05
5.5	0,3	0,012	0,008	0,022	0,014	0,5	0,029	0,019	0,037	0,024	0,044	0,029	0,06	0,04	0,07	0,05
5.6	0,3	0,012	0,008	0,022	0,014	0,5	0,029	0,019	0,037	0,024	0,044	0,029	0,06	0,04	0,07	0,05
5.7	0,3	0,011	0,007	0,020	0,013	0,5	0,027	0,018	0,034	0,022	0,041	0,027	0,05	0,04	0,07	0,04
5.8	0,3	0,011	0,007	0,020	0,013	0,5	0,027	0,018	0,034	0,022	0,041	0,027	0,05	0,04	0,07	0,04
5.9	0,3	0,013	0,009	0,024	0,016	0,5	0,033	0,021	0,041	0,027	0,049	0,032	0,07	0,04	0,08	0,05
5.10	0,3	0,014	0,009	0,026	0,017	0,5	0,035	0,023	0,044	0,029	0,052	0,034	0,07	0,05	0,09	0,06
5.11	0,3	0,014	0,009	0,026	0,017	0,5	0,035	0,023	0,044	0,029	0,052	0,034	0,07	0,05	0,09	0,06
	$a_{p\,max.}$	a_e : 0,1 x DC		a_e : 0,1 x DC		$a_{p\,max.}$	a_e : 0,1 x DC		a_e : 0,1 x DC		a_e : 0,1 x DC		a_e : 0,1 x DC		a_e : 0,1 x DC	
6.1	0,3[1]	0,013		0,024		0,5[1]	0,033		0,041		0,049		0,07		0,08	
6.2	0,3[1]	0,012		0,022		0,5[1]	0,029		0,037		0,044		0,06		0,07	
6.3	0,3[1]	0,011		0,020		0,5[1]	0,027		0,034		0,041		0,05		0,07	
6.4	0,3[1]	0,010		0,018		0,5[1]	0,024		0,030		0,036		0,05		0,06	
6.5	0,3[1]	0,008		0,016		0,5[1]	0,021		0,026		0,031		0,04		0,05	

Finishing cutter

$a_{p\,max.}$				$a_{p\,max.}$	a_e : 0,2–0,3 mm	a_e : 0,2–0,3 mm	a_e : 0,2–0,3 mm	a_e : 0,2–0,3 mm	a_e : 0,2–0,3 mm
0,6				1,5	0,08*	0,09*	0,1*	0,11*	0,13*

[1] = Trimming and trochoidal slot milling

* = With an a_p of 1.5 x DC the f_z should be multiplied by 0.75

Cutting data for Micro-Mini cutters for milling with diameter < 2.5 mm

→ v_c/f_z Page 318–325

Index	Ø DC = 12 mm		Ø DC = 14 mm		Ø DC = 16 mm		Ø DC = 18 mm		Ø DC = 20–25 mm	
	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC	a_e 0,1–0,2 x DC	a_e 0,3–0,4 x DC
	f_z mm		f_z mm		f_z mm		f_z mm		f_z mm	
1.1	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
1.2	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
1.3	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
1.4	0,08	0,05	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,08
1.5	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
1.6	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
1.7	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
1.8	0,08	0,05	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,08
1.9	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
1.10	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
1.11	0,08	0,05	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,08
1.12	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
1.13	0,08	0,05	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,08
1.14	0,08	0,05	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,08
1.15	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
1.16	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
2.1	0,06	0,04	0,07	0,04	0,07	0,05	0,08	0,05	0,09	0,06
2.2	0,06	0,04	0,07	0,04	0,07	0,05	0,08	0,05	0,09	0,06
2.3	0,06	0,04	0,07	0,04	0,07	0,05	0,08	0,05	0,09	0,06
2.4	0,06	0,04	0,07	0,04	0,07	0,05	0,08	0,05	0,09	0,06
2.5	0,06	0,04	0,07	0,04	0,07	0,05	0,08	0,05	0,09	0,06
2.6	0,06	0,04	0,07	0,04	0,07	0,05	0,08	0,05	0,09	0,06
2.7	0,06	0,04	0,06	0,04	0,07	0,05	0,08	0,05	0,09	0,06
3.1	0,11	0,07	0,12	0,08	0,13	0,09	0,15	0,10	0,16	0,11
3.2	0,09	0,06	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09
3.3	0,09	0,06	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09
3.4	0,09	0,06	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09
3.5	0,09	0,06	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09
3.6	0,09	0,06	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09
3.7	0,09	0,06	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09
3.8	0,09	0,06	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09
4.1	0,15	0,10	0,16	0,11	0,18	0,12	0,20	0,13	0,23	0,15
4.2	0,15	0,10	0,16	0,11	0,18	0,12	0,20	0,13	0,23	0,15
4.3	0,15	0,10	0,16	0,11	0,18	0,12	0,20	0,13	0,23	0,15
4.4	0,15	0,10	0,16	0,11	0,18	0,12	0,20	0,13	0,23	0,15
4.5	0,15	0,10	0,16	0,11	0,18	0,12	0,20	0,13	0,23	0,15
4.6	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.7	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.8	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.9	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.10	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.11	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.12	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.13	0,21	0,14	0,23	0,15	0,26	0,17	0,29	0,19	0,33	0,21
4.14	0,23	0,15	0,26	0,17	0,29	0,19	0,32	0,21	0,36	0,23
4.15	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.16	0,14	0,09	0,15	0,10	0,17	0,11	0,19	0,12	0,21	0,14
4.17	0,10	0,07	0,11	0,07	0,13	0,08	0,14	0,09	0,16	0,10
4.18	0,09	0,06	0,09	0,06	0,11	0,07	0,12	0,08	0,13	0,09
4.19	0,06	0,04	0,07	0,05	0,08	0,05	0,09	0,06	0,10	0,06
5.1	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
5.2	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
5.3	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,07	0,12	0,08
5.4	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,07	0,12	0,08
5.5	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,07	0,12	0,08
5.6	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,07	0,12	0,08
5.7	0,08	0,05	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,08
5.8	0,08	0,05	0,08	0,05	0,09	0,06	0,10	0,07	0,11	0,08
5.9	0,09	0,06	0,10	0,06	0,11	0,07	0,12	0,08	0,14	0,09
5.10	0,10	0,06	0,11	0,07	0,12	0,08	0,13	0,09	0,15	0,10
5.11	0,10	0,06	0,11	0,07	0,12	0,08	0,13	0,09	0,15	0,10
	a_e : 0,1 x DC		a_e : 0,1 x DC		a_e : 0,1 x DC		a_e : 0,1 x DC		a_e : 0,1 x DC	
6.1	0,09		0,10		0,11		0,12		0,14	
6.2	0,08		0,09		0,10		0,11		0,12	
6.3	0,08		0,08		0,09		0,10		0,11	
6.4	0,07		0,07		0,08		0,09		0,10	
6.5	0,06		0,06		0,07		0,08		0,09	
	Finishing cutter									
	a_e : 0,2–0,3 mm		a_e : 0,2–0,3 mm		a_e : 0,2–0,3 mm		a_e : 0,2–0,3 mm		a_e : 0,2–0,3 mm	
	0,15*		0,17*		0,19*		0,21*		0,23*	

Plunging angle for ramping and helical milling: 3°

Feed rate guide values for ball nosed and torus cutters on → **Page 356**

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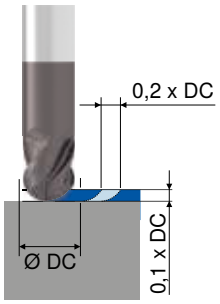
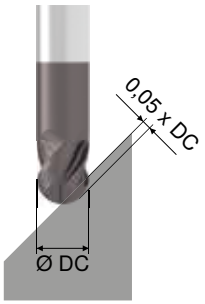
Feedrate for machining in steel, iron and non-ferrous materials with torus and ball nosed end mills

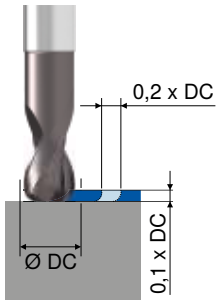
Ball nose end milling cutters



Ball nosed and torus cutters



Torus end milling cutters



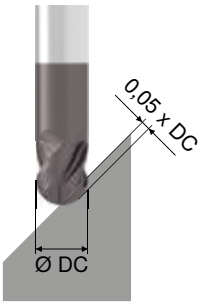
Ø DC mm	f_z mm	f_z mm	f_z mm
2	0,015	0,010	0,010
3	0,030	0,020	0,015
4	0,040	0,030	0,020
5	0,060	0,050	0,030
6	0,070	0,060	0,050
8	0,100	0,080	0,070
10	0,120	0,100	0,080
12	0,150	0,120	0,100
16	0,180	0,150	0,120
18	0,200	0,180	0,140
20	0,220	0,200	0,150

The feed should be reduced by 10–20 % for uncoated tools.

Feedrates for the machining of hardened materials with Ti1000 coated torus and ball nosed cutters

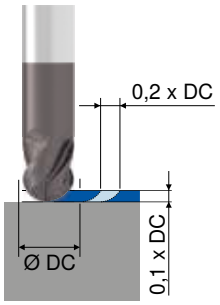
Ball nosed and torus cutters

Hardness = 40–60 HRC
v_c = 80–120 m/min



Ball nosed and torus cutters

Hardness = 40–60 HRC
v_c = 80–120 m/min



Ø DC mm	f_z mm	f_z mm
2	0,005	0,005
3	0,015	0,010
4	0,030	0,015
5	0,050	0,020
6	0,060	0,030
8	0,070	0,035
10	0,080	0,040
12	0,080	0,050
16	0,100	0,080

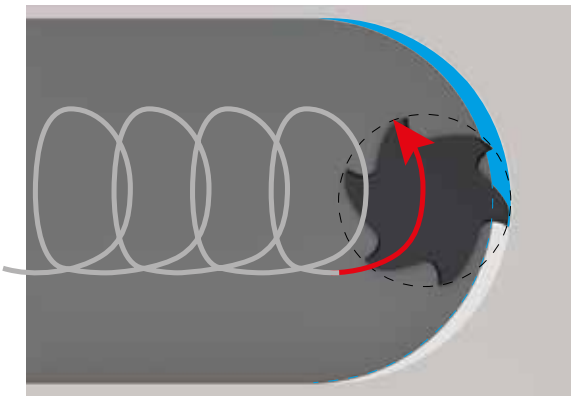
Trochoidal milling

The trochoidal milling process means that large depths of cut with unstable or lower powered machines are possible.

Depending on the strength of the material, radial step over of between 5–20 % of the cutting diameter should be used. Since the trochoidal milling is only peripheral milling, the cutting forces are far less.

Advantages/Benefits

- Reduced tool wear
- Reduced cycle time
- Protection of the machine tool components
- Exploiting the full length of the cutting edge
- Reduced cutting pressure



Most CAM providers offer an application for trochoidal milling. Our recommendations for this application are as follows:

Material	Depth of Cut	Radial Infeed	Feed rate Correction Factor	v_c Correction Factor
Steel	2xD	0,05xD	3,5	1,6
	2xD	0,10xD	2,5	1,3
Stainless steel	2xD	0,05xD	3,5	1,4
	2xD	0,10xD	2,5	1,2
Cast iron	2xD	0,05xD	3,5	1,6
	2xD	0,10xD	2,5	1,3
Non-ferrous metals	2xD	0,05xD	3,5	1,8
	2xD	0,10xD	2,5	1,4
	2xD	0,20xD	1,5	1,2

Please note that the indicated values may require reducing due to the component design, machine rigidity and machine dynamics. In optimal conditions, the values can also be increased.

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Technical references

Feedrate Adjustment

If the rpm indicated in the tables cannot be obtained by the machine spindle, the feed rate is to be reduced proportionally to the max rpm.

Example:
according to table = n 50000 1/min. and v_f 1000 mm/min.,
maximum machine rpm = 40000 1/min.

Calculation of feed rate which can be applied:
40000 = 80 % of 50000 1/min. accordingly 80 % of 1000 = 800 mm/min.

Feed rate which can be applied = **800 mm/min.**

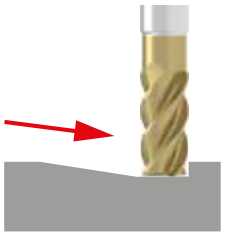
Cutting data for tapered milling cutters

Using tapered milling cutters in various positions of the cutting edge different effective diameters cut into the material, the following has to be observed when calculating the cutting parameters:

- To determine the rpm, the largest diameter must be used in line with the cutting data table
- To determine the feedrate, the smallest diameter must be used in line with the cutting data table

Angled ramping with solid carbide cutters

Angled ramping with solid carbide cutters is possible at an angle of 3° to 6° depending on the cutter type.
A protective edge chamfer or corner radius is an advantage.

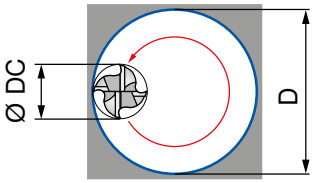
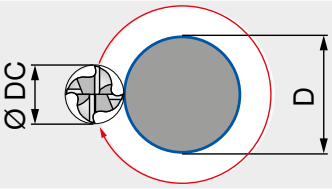
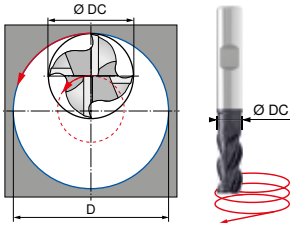


General formula for calculating the cutting parameters

Designation	Abbreviation	Unit	Formula	Example	
Number of revolutions	**n**	**min^{-1}**	$n = \frac{v_c \times 1000}{DC \times \pi}$	v_c = 25 m/min DC = 20 mm	$n = \frac{25 \times 1000}{20 \times \pi}$ = 398 min^{-1}
Cutting speed	**v_c**	**m/min**	$v_c = \frac{DC \times \pi \times n}{1000}$	n = 400 min^{-1} DC = 20 mm	$v_c = \frac{20 \times \pi \times 400}{1000}$ = 25 m/min
Feed per tooth	**f_z**	**mm**	$f_z = \frac{v_f}{ZEFP \times n}$	v_f = 320 mm/min. n = 400 min^{-1} ZEFP = 4	$f_z = \frac{320}{4 \times 400}$ = 0,2 mm
Feed per revolution	**f**	**mm**	$f = f_z \times ZEFP$	f_z = 0,2 mm ZEFP = 4	f = 0,2 x 4 = 0,8 mm
Feed rate	**v_f**	**mm/min.**	$v_f = f_z \times ZEFP \times n$	f_z = 0,2 mm ZEFP = 4 n = 400 min^{-1}	v_f = 0,2 x 4 x 400 = 320 mm/min.
Average chip thickness	**h_m**	**mm**	$h_m = f_z \times \sqrt{\frac{a_e}{DC}}$	f_z = 0,2 mm a_e = 0,3 mm DC = 20 mm	h_m = 0,2 x $\sqrt{\frac{0,3}{20}}$ = 0,024 mm

ZEFP = Number of teeth
a_e = cutting width

Calculation of the feed rate on the midpoint path of the milling cutter (v_{fM})

Designation	Abbreviation	Unit	Formula	Example
Internal contour	**v_{fM}**	**mm/min.**	$V_{fM} = \frac{v_f \times (D - DC)}{D}$	
Outside profile	**v_{fM}**	**mm/min.**	$V_{fM} = \frac{v_f \times (D + DC)}{D}$	
Helical ramping	**v_{fM}**	**mm/min.**	$V_{fM} = \frac{n \times f_z \times ZEFP \times (D - D_C)}{D}$	

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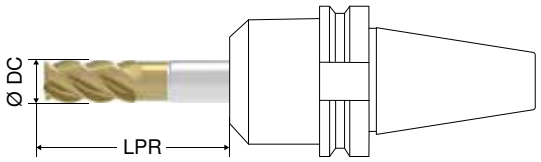
Tips for Tool Selection

Rake and helix angles combined with the coating are decisive factors for the operational area.

Characteristics	Benefits
Helix angle with slow spiral	
▲ For soft steels, non ferrous metals, etc.	▲ High edge stability
▲ For high material removal rates	▲ Low tendency to edge chipping
▲ For slot milling, pocket milling, rough milling	
Helix angle with quick spiral	
▲ For materials with high tensile strength	▲ Soft cut
▲ For low material removal rates	▲ Low cutting forces
▲ Typical for finishing processes	
Small rake angles are applied	
▲ For hard, brittle materials	▲ High edge stability
▲ For high material removal rates	▲ Low tendency to edge chipping
▲ For rough machining	
Large rake angles are applied	
▲ For soft materials	▲ Soft cut
▲ For low material removal rates	▲ Low cutting forces
▲ For finishing	▲ Favorable chip flow
	▲ Low tendency to stick

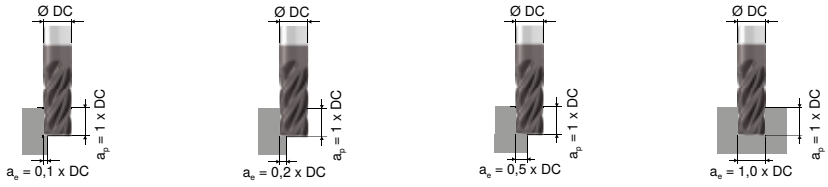
Correction factor for solid carbide milling cutters

Factors for cutting speed (v_c) and feed rate (f_z) in relation to the overhang length (LPR)



Length					
Overhang length (LPR)	1,5 x DC	4 x DC	8 x DC	12 x DC	> 12 x DC
Factor for v_c (Kf v_c)	1,0	1,0	0,9	0,85	0,7
Factor for f_z (Kf f_z)	1,2	1,0	0,8	0,7	0,5

Factors for cutting speed (v_c) and feed rate (f_z) in relation to the cutting depth (a_p) and cutting width (a_e)



Factor for v_c (Kf v_c)	1,3	1,1	1,0	0,85
Factor for f_z (Kf f_z)	1,5	1,3	1,0	0,8

Calculation aid for copy milling

Theoretical surface roughness (R_{th}) and step over (b_r)

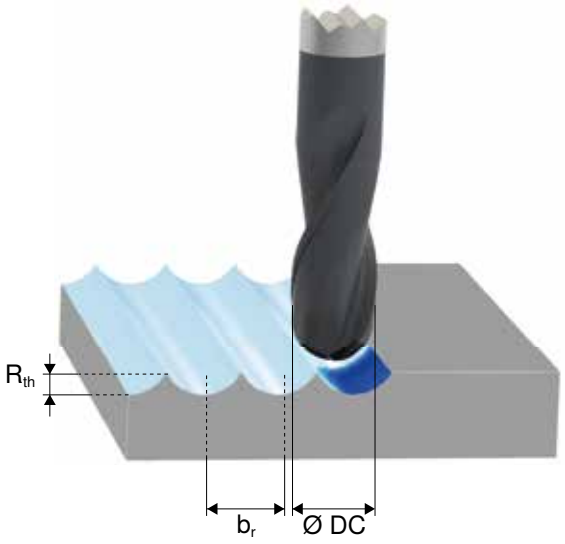
$$R_{th} = r - \sqrt{\frac{(r \times 2)^2 - b_r^2}{4}}$$

$$b_r = 2 \times \sqrt{R_{th} \times (r \times 2 - R_{th})}$$

$$R_{th} \simeq R_a / 0{,}1$$

$$R_a \simeq 0{,}1 \times R_{th}$$

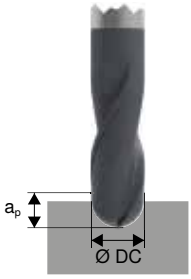
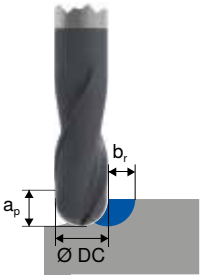
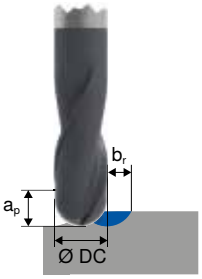
When copy milling, in order to achieve as smooth a surface as possible, the step over b_r should be adapted to the cutter diameter DC. The smaller the cutter diameter DC is, the smaller the step over b_r must be.



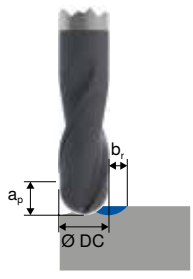
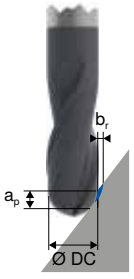
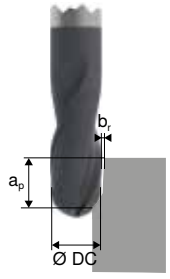
RPM correction factor (Kf n) for copy milling

$$n = \frac{v_c \times 1000}{DC \times \pi} \times Kf\,n$$

Rough machining

	Peripheral and ball nose copy milling	Ball nose copy milling	
			
Axial milling depth a_p	0,5 x DC	> 0,5 x DC	0,2 x DC – 0,5 x DC
Step over b_r	1 x DC	0,2 x DC – 0,5 x DC	0,2 x DC – 0,5 x DC
Correction factor (Kf n)	1	1	1,1

Finish milling

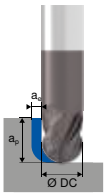
	Ball nose copy milling		
			
Axial milling depth a_p	< 0,2 x DC	0,2 x DC – 0,5 x DC	> 0,5 x DC
Step over b_r	< 0,2 x DC	< 0,2 x DC	< 0,2 x DC
Correction factor (Kf n)	2	1,3	1

14

Calculation aid for copy milling

For peripheral milling or ball nosed copy milling at cutting depths of $\mathbf{a_p} \geq 0.5 \times DC$ and $\mathbf{a_e} = 0.2$ to $0.5 \times DC$ the rpm can be calculated with the following fomula:

$$n = \frac{v_C \times 1000}{DC \times \pi}$$



When ball milling the effective milling diameter $\mathbf{d_{eff.}}$ must be determined using the following formula:

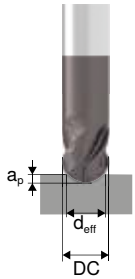
Ball nose milling cutters

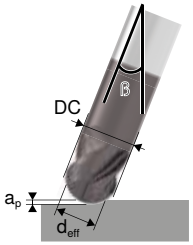
$$d_{eff.} = 2 \times \sqrt{a_p \times (DC - a_p)}$$

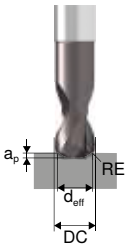
$$d_{eff.} = DC \times \sin\left(\beta \pm \arccos\left(\frac{DC - 2a_p}{DC}\right)\right)$$

Torus end milling cutters

$$d_{eff.} = (DC - 2RE) + 2 \times \sqrt{a_p \times (2RE - a_p)}$$





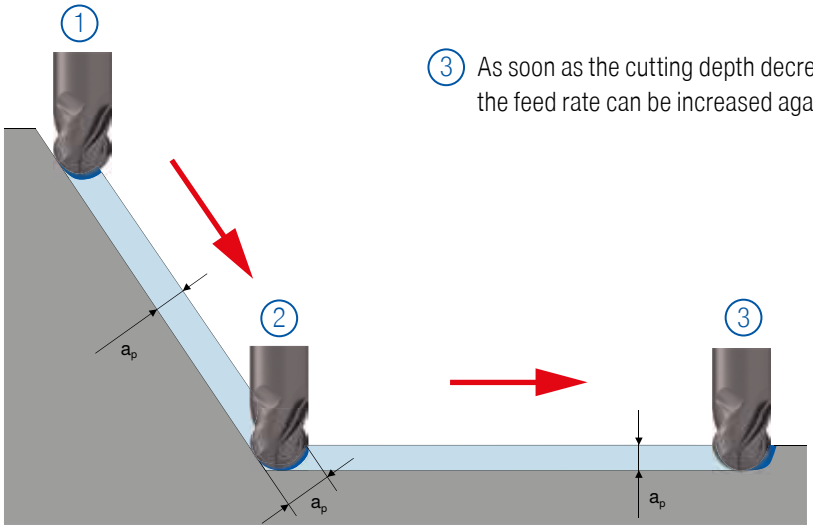


Information concerning plunge and draw milling

① When machining the profile flanks relatively high feed rates are possible as the cutting depth is relatively low (area highlighted in blue).

② A large increase in cutting depth occurs when the base of the profile is reached. Here the feed rate must be reduced as othwerwise tool breakage can occur due to vibrations, misalignment or chattering.

③ As soon as the cutting depth decreases during the machining of the profile base, the feed rate can be increased again.



Rule:
The steeper the angle, the lower the feed rate.
The shallower the angle, the larger the feed rate.

When plunge or draw milling dies, the feed rate has to be adapted to the various milling positions. Otherwise the cutting edge can be damaged due to overload (vibrations, misalignment or chattering).

Coatings

APA72S
- AlCrN multilayer coating
- HV0.05 = 3500
- Coefficient of friction (against steel) = 0.35
- Maximum application temperature: 1100 °C

APB72S
- Special nanolayer coating
- HV0.05 = 3300
- Coefficient of friction (against steel) = 0.6
- Maximum application temperature: 900 °C

APX72S
- Special nanolayer coating
- HV0.05 = 3800
- Coefficient of friction (against steel) = 0.4
- Maximum application temperature: 1100 °C

DIA-MOND
- Diamond monolayer coating
- HV0.025 = 10,000
- Coefficient of friction (against steel) = 0.2
- Maximum application temperature: 700 °C

DLC
- Diamond-like carbon coating
- Specially for machining non-ferrous metals
- Maximum application temperature: 400 °C

DPX52S
- TiSiN multilayer coating
- HV0.05 = 3500
- Coefficient of friction (against steel) = 0.4
- Maximum application temperature: 1000 °C

DPX62S
- TiAlN multilayer coating
- HV0.05 = 3800
- Coefficient of friction (against steel) = 0.4
- Maximum application temperature: 800 °C

DPX62U
- Special TiAlN coating
- HV0.05 = 4000
- Coefficient of friction (against steel) = 0.5
- Maximum application temperature: 1150 °C

DPA72S
- Special nanolayer coating
- HV0.05 = 3200
- Coefficient of friction (against steel) = 0.5
- Maximum application temperature: 1000 °C

DPX72S
- Special multilayer coating
- HV0.05 = 3400
- Coefficient of friction (against steel) = 0.6
- Maximum application temperature: 900 °C

TiAlN
- TiAlN multilayer coating
- Maximum application temperature: 900 °C

TiCN
- TiCN multilayer coating
- Maximum application temperature: 450 °C

Ti28
- Ti multilayer coating
- HV0.05 = 2800
- Coefficient of friction (against steel) = 0.1
- Maximum application temperature: 500 °C

Ti40
- Ti monolayer coating
- HV0.05 = 4000
- Maximum application temperature: 900 °C

Ti400
- Ti multilayer coating
- HV0.05 = 3500
- Coefficient of friction (against steel) = 0.6
- Maximum application temperature: 400 °C

Ti1000
- Ti monolayer coating
- HV0.05 = 3500
- Coefficient of friction (against steel) = 0.3
- Maximum application temperature: 800 °C

Ti1001
- Ti monolayer coating
- HV0.05 = 3500
- Coefficient of friction (against steel) = 0.6
- Maximum application temperature: 800 °C

Ti1002
- Ti monolayer coating
- HV0.05 = 3300
- Coefficient of friction (against steel) = 0.4
- Maximum application temperature: 900 °C

Ti1005
- Ti multilayer coating
- HV0.05 = 2800
- Coefficient of friction (against steel) = 0.4
- Maximum application temperature: 600 °C

Ti1010
- Ti multilayer coating
- HV0.05 = 3600
- Coefficient of friction (against steel) = 0.2
- Maximum application temperature: 800 °C

Ti1050
- Ti multilayer coating
- HV0.005 = 3300
- Coefficient of friction (against steel) = 0.3-0.5
- Maximum application temperature: 900 °C

Ti1100
- Ti multilayer coating
- HV0.05 = 3200
- Coefficient of friction (against steel) = 0.35
- Maximum application temperature: 1100 °C

Ti1200
- Ti nanolayer coating
- Maximum application temperature: 1100–1200 °C

Ti1500
- Ti nanolayer coating
- HV0.05 = 3400
- Coefficient of friction (against steel) = 0.7
- Maximum application temperature: 900 °C

Ti2000
- Ti multilayer coating
- HV0.05 = 3500
- Coefficient of friction (against steel) = 0.5
- Maximum application temperature: 900 °C

New products for machining technicians

NEW DHFC

Double-sided high-feed milling system

NEW HPC-04

PCD and CBN milling system Ø 20–40 mm

NEW CTCS245

New Dragonskin high-performance coating for the ISO S application range

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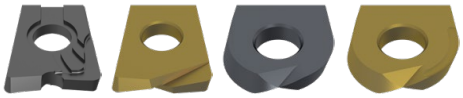
NEW K2000 system grade update



New high-performance grades for mold & die production

NEW MaxiMill 270-19 addition

New system size with a 19 mm indexable insert for heavy machining

---

NEW MaxiMill 273 addition

Adjustable milling cutter with length adjustment

NEW MaxiMill 491 addition

Indexable insert range expansion to include the sizes SNHU 09.. RE 1.2 and RE 1.6 as well as additional grades for the ISO M and S application range

Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

18 Material examples and article no. index

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CERATIZIT \ Performance

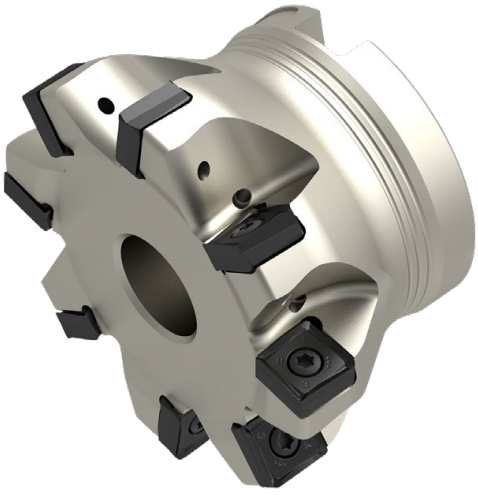
Premium quality tools for high performance.

The premium quality tools from the **CERATIZIT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

Symbol explanation

central internal coolant

lateral internal coolant



ZNF = Number of teeth

● = **Main Application**

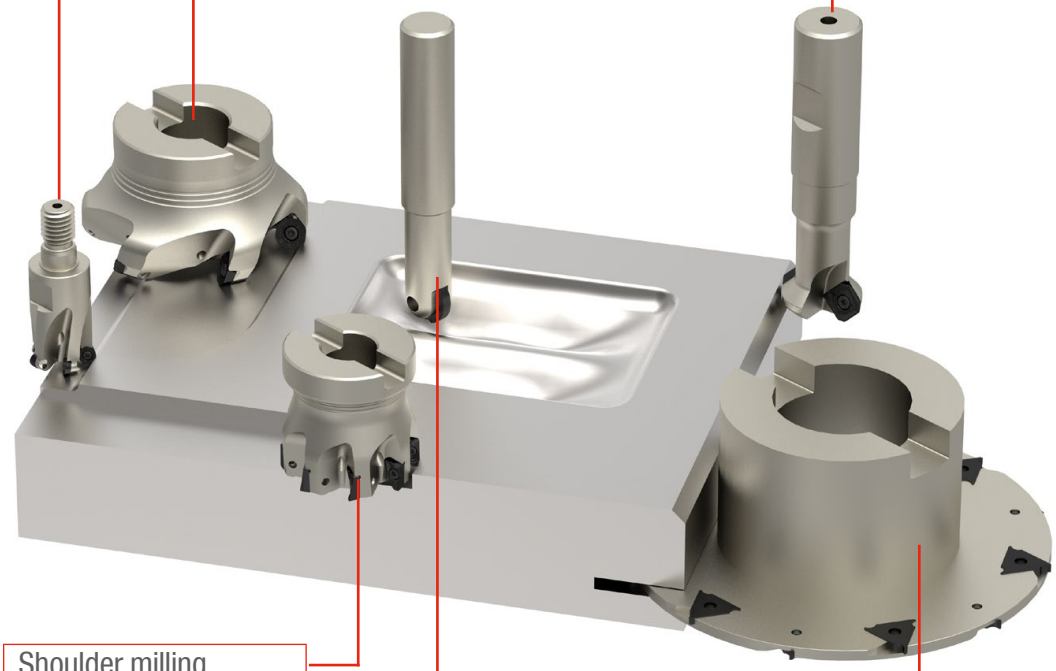
○ = Extended application

Toolfinder – Application Selection Guide

Form milling
→ System Selection:
8+9

Face milling
→ System Selection:
4+5

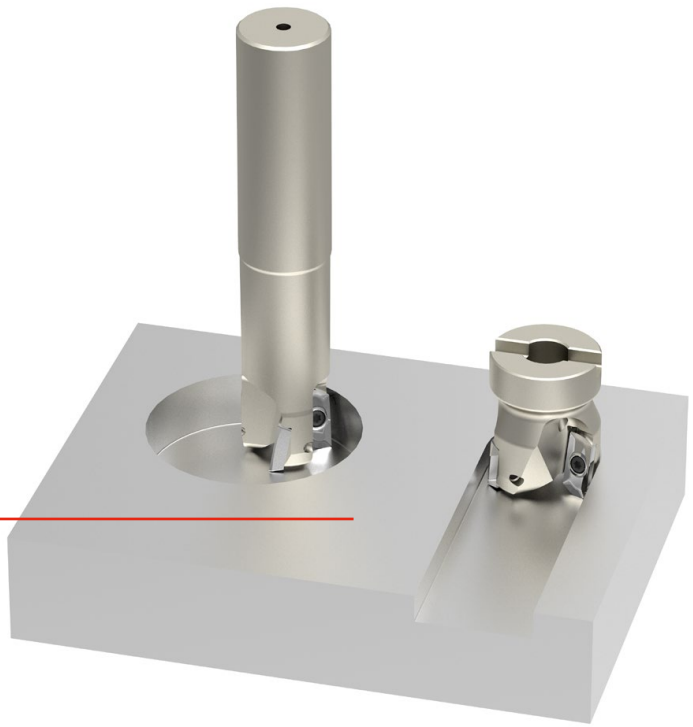
Chamfer/Angle milling cutters
→ System Selection:
10



Shoulder milling
→ System Selection:
6+7

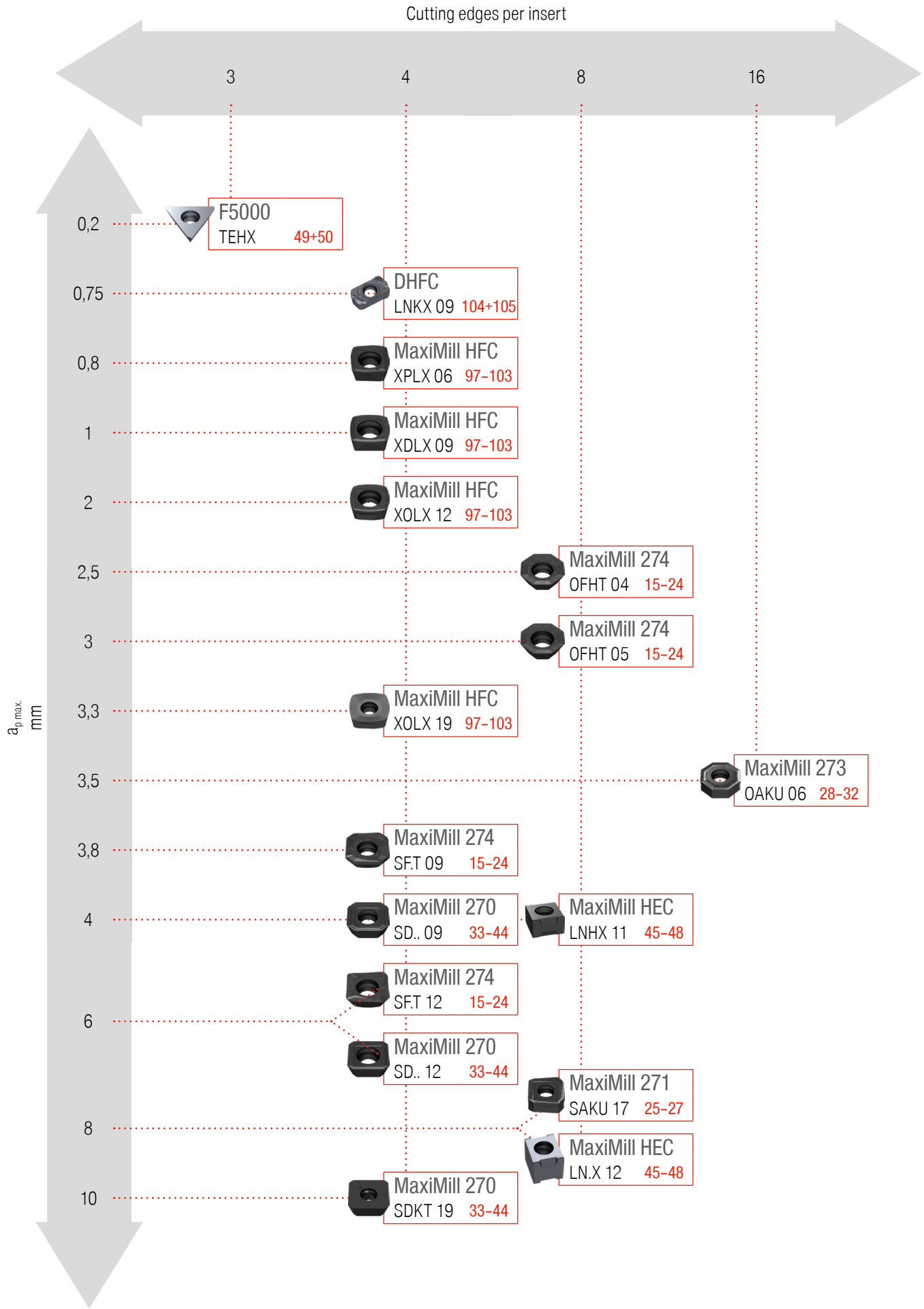
Slot milling and saws
→ System Selection:
10

Form milling
→ System Selection:
8+9



HSC-/HPC-milling
→ System Selection:
6+7

Toolfinder – Face Milling Cutters



Overview – Face Milling Cutters

System	Inserts	Cutting edges per insert	$a_{p\,max.}$ mm	Ø-range mm			Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Pages
MaxiMill 274	OFH. 04.. / 05.. | SF.T 09.. / 12..	8 / 4	2,5–6	Ø 20–32	Ø 20–32	Ø 32–160	●	●	●	●	●		15–24
MaxiMill 271	SAKU 1706..	8	8,4			Ø 50–250	●	●	●		●		25–27
MaxiMill 273	OAKU 0605..	16	3,5		Ø 32–40	Ø 40–250	●	●	●		●		28–32
MaxiMill 270	SD.. 0903.. / 1204.. / 19..	4	4–10	Ø 16–32	Ø 6–32	Ø 32–315	●	●	●	●	●		33–44
MaxiMill HEC	LNHX 1106.. | LN.X 1210..	8	4–8			Ø 50–160	●	○	●				45–48
F 5000	TEHX 16T3..	3	0,2			Ø 42–100	●	○	●	○		●	49–50
MaxiMill HFC	X..X 06.. / 09.. / 12.. / 19..	4	0,8–3,3	Ø 16–42	Ø 16–35	Ø 32–160	●	●	●		●		97–103
DHFC	LNKX 09..	4	0,75	Ø 16–42	Ø 16–20		●	●	●		●	●	104–105

Additional diameters are available upon request

Indexable inserts for systems that are no longer listed here can be found in our online shop at cuttingtools.ceratizit.com

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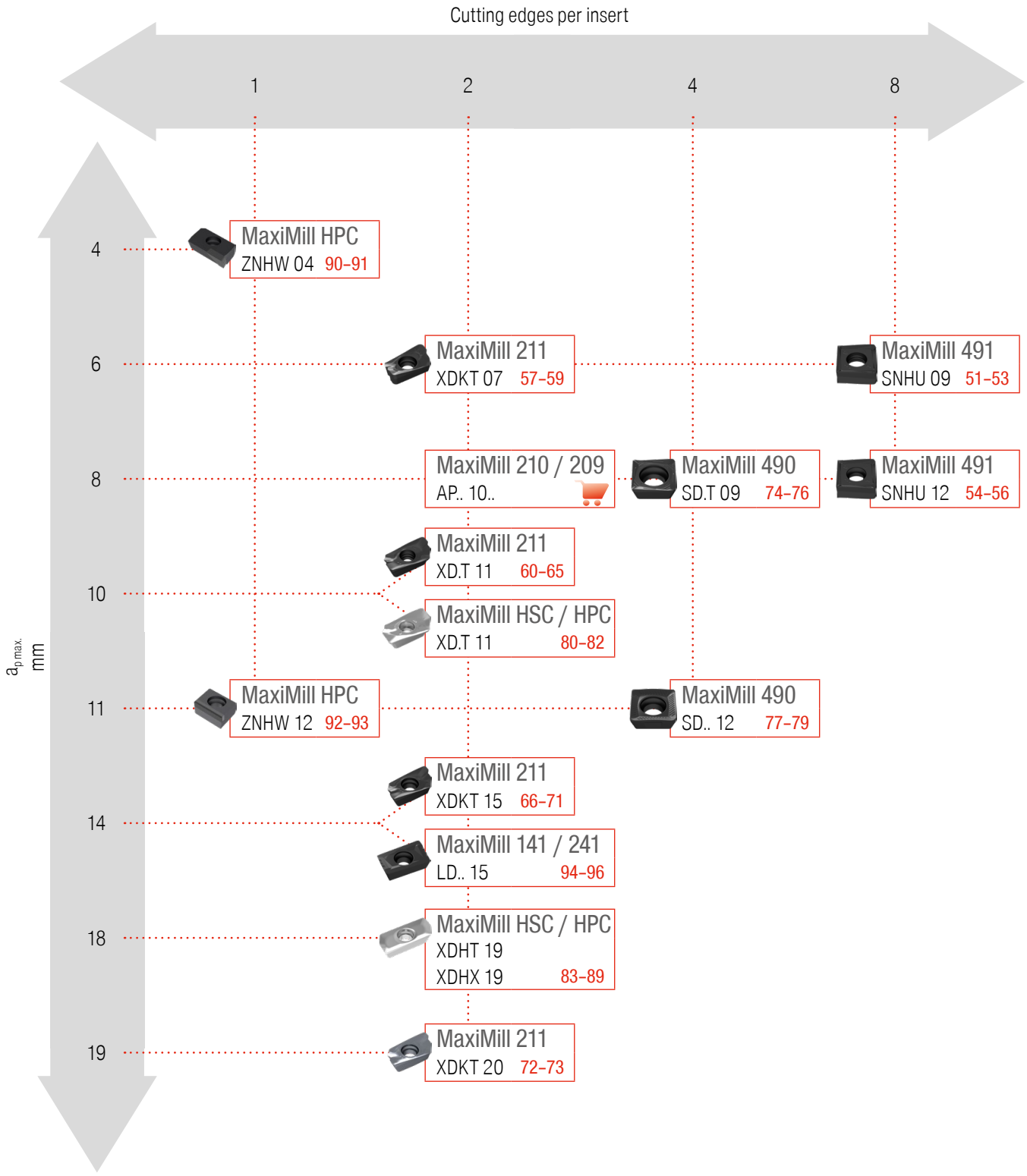
Toolfinder – shoulder milling



Overview – Shoulder Milling Cutters

System	Inserts	Cutting edges per insert	$a_{p\,max.}$ mm	Ø-range mm				Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Pages
MaxiMill 491	SNHU 09T3.. / 1204..	8	6–8	Ø 25–32	Ø 25–32	Ø 40–160		●	●	●	●	●		51–56
MaxiMill 211	XD.T 0703.. / 11T3.. / 1505.. / 2007..	2	6–19	Ø 16–40	Ø 10–40	Ø 32–160		●	●	●	●	●	○	57–73
MaxiMill 211 K	XD.T 11T3.. / 1505.. / 2007..	2	27–75,5		Ø 25–50	Ø 40–50		●	●	●	●	●		57–73
MaxiMill 490	SD.. 09T3.. / 1205..	4	8–11	Ø 25–40	Ø 25–32	Ø 40–160		●	●	●	●	●		74–79
MaxiMill 490 K	SD.. 09T3..	4	41			Ø 40–63		●	●	●	●	●		74–79
MaxiMill HSC / HPC	XD.. 11T3.. / 1904..	2	10–18	Ø 16–40	Ø 16–32	Ø 40–125	Ø 25–50			○	●			80–89
MaxiMill HPC	ZNHW 04T3.. / 1205..	1	4–11	Ø 20–40	Ø 20–40	Ø 40–315	Ø 40–160			●	●		○	90–93
MaxiMill 141 / 241	LD.. 1504..	2	14	Ø 25–40	Ø 20–32	Ø 40–100		●	●	●	●			94–96
MaxiMill 210 / 209	AP.. 1003..	2	8	Ø 16,0–31,7	Ø 9,7–32	Ø 40–125		●	●	●	●	●	●	

Additional diameters are available upon request

Indexable inserts for systems that are no longer listed here can be found in our online shop at cuttingtools.ceratizit.com

This article can be found in our online shop at cuttingtools.ceratizit.com

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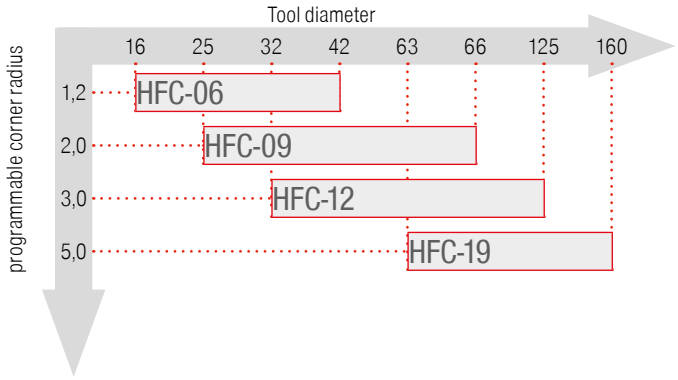
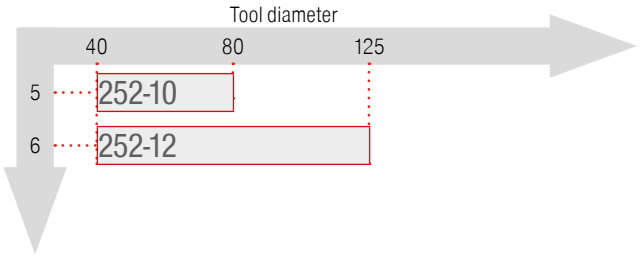
Toolfinder – form milling

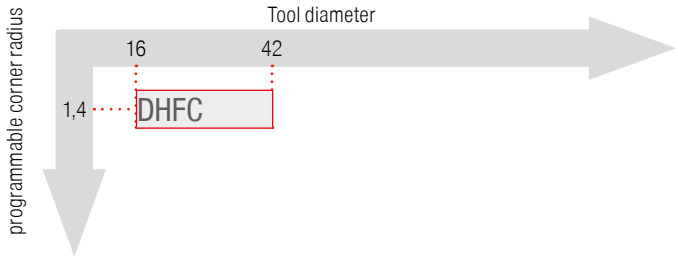
MaxiMill HFC 97–103



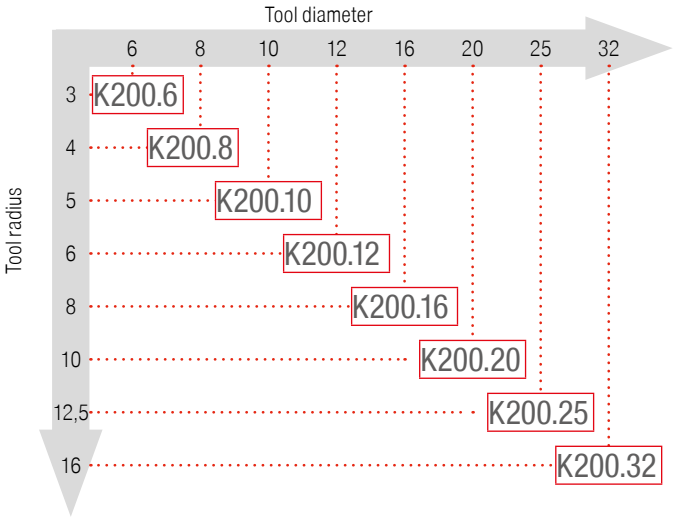
MaxiMill 252 119+120



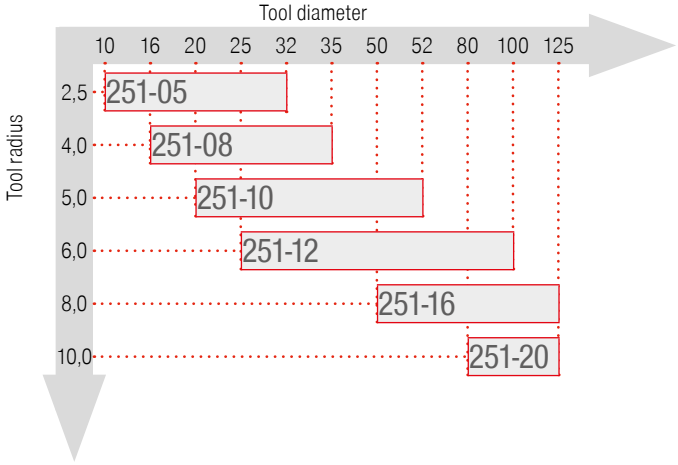
DHFC 104+105



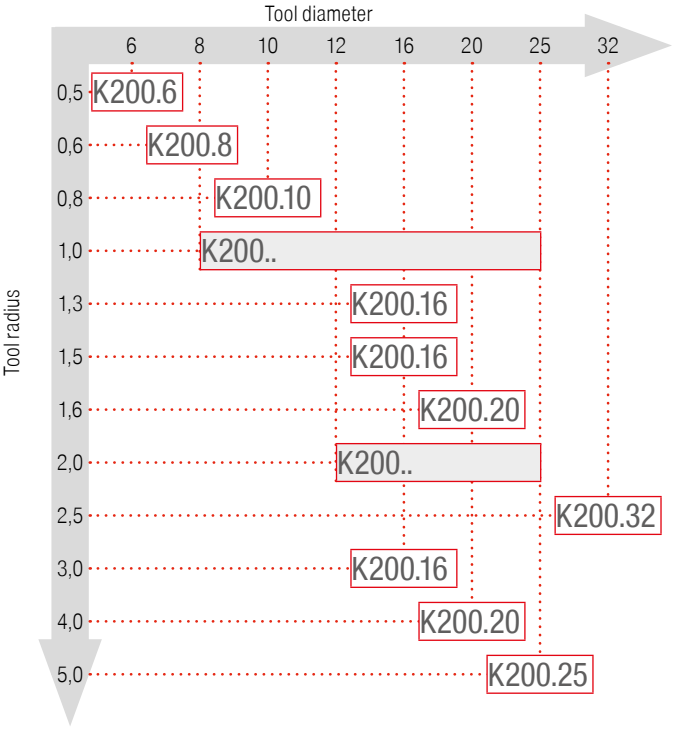
K200. Ball Nosed 121–125



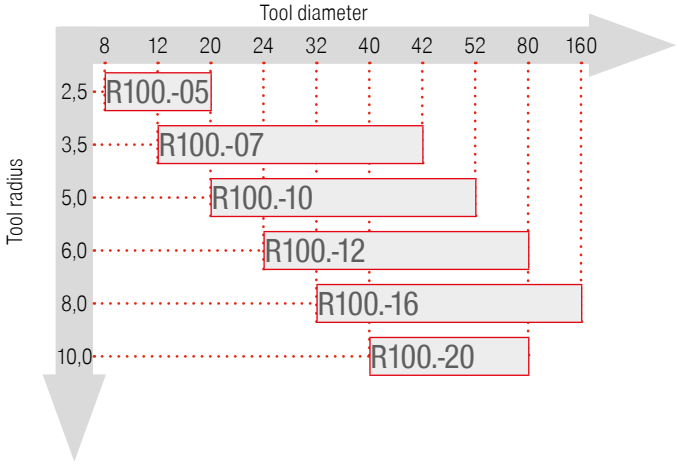
MaxiMill 251 106–113



K200. Torus 126–129



R100. 114–118



Application range

Tool diameter

Overview – form milling

System	Inserts	Cutting edges per insert	$a_{p\,max.}$ mm	Ø-range mm			Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Pages
MaxiMill HFC	X.LX 06.. / 09.. / 12.. / 19..	4	0,8–3,3	Ø 16–42	Ø 16–35	Ø 32–160	●	●	●		●		97–103
DHFC	LNKX 09..	4	0,75	Ø 16–42	Ø 16–20		●	●	●		○	○	104+105
MaxiMill 251	R..X 05.. / 08.. / 10.. / 12.. / 16.. / 20..	8	2,5–10	Ø 10–42	Ø 10–32	Ø 40–125	●	●	●	●	●		106–113
R100.	RD.X 05.. / 07.. / 10.. / 12.. / 16.. / 20..	8	5	Ø 12–42	Ø 8–20	Ø 42–160	●	●	●	●	○	●	114–118
MaxiMill 252	RNHU 10.. / 12..	8	3			Ø 40–125	●	●	○		●		119+120
K200. Ball Nosed	RO.X .... / XOHX	1	0,4–8	Ø 8–32	Ø 6–32		●	●	●	●	●	●	121–125
K200. Torus	XO.X	1	0,5–8	Ø 8–32	Ø 8–32		●	●	●	●	●	●	126–129

Additional diameters are available upon request

Indexable inserts for systems that are no longer listed here can be found in our online shop at cuttingtools.ceratizit.com

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Overview – Chamfer / Angle Milling Cutters

System	Inserts	Cutting edges per insert	$a_{p\,max.}$ mm	Ø-range mm		Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Pages
MaxiMill 272	SD.. 0903..	4	4	Ø 6–25		●	●	○	●	●		35+36
4500	SD.. 09T3..	4	4	Ø 16–25		●	●	●	●	●		75+76
4500	SD.. 1205..	4	4	Ø 20–32	Ø 20–32	●	●	●	●	●		78+79
MaxiMill 242	LD.. 1504..	2			Ø 50–92	○	●			●		95+96

Additional diameters are available upon request.

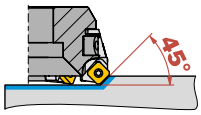
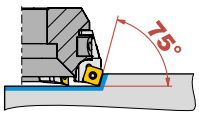
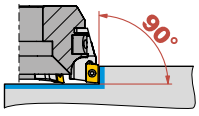
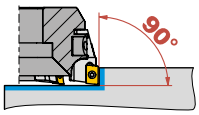
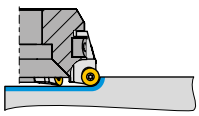
Overview – Slot / Multipurpose Milling Cutters

System	Inserts	Cutting edges per insert	$a_{p\,max.}$ mm	Ø-range mm		Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat resistant alloys	hardened materials	Pages
FM	FM..	1	49	Ø 100–160		●	●	●	●			130+131
TX	TX.. R/L	3	64	Ø 80–160	Ø 100–200	●	●	●	●	●		132–134

Additional diameters are available upon request.

Overview – Combi Milling Cutters

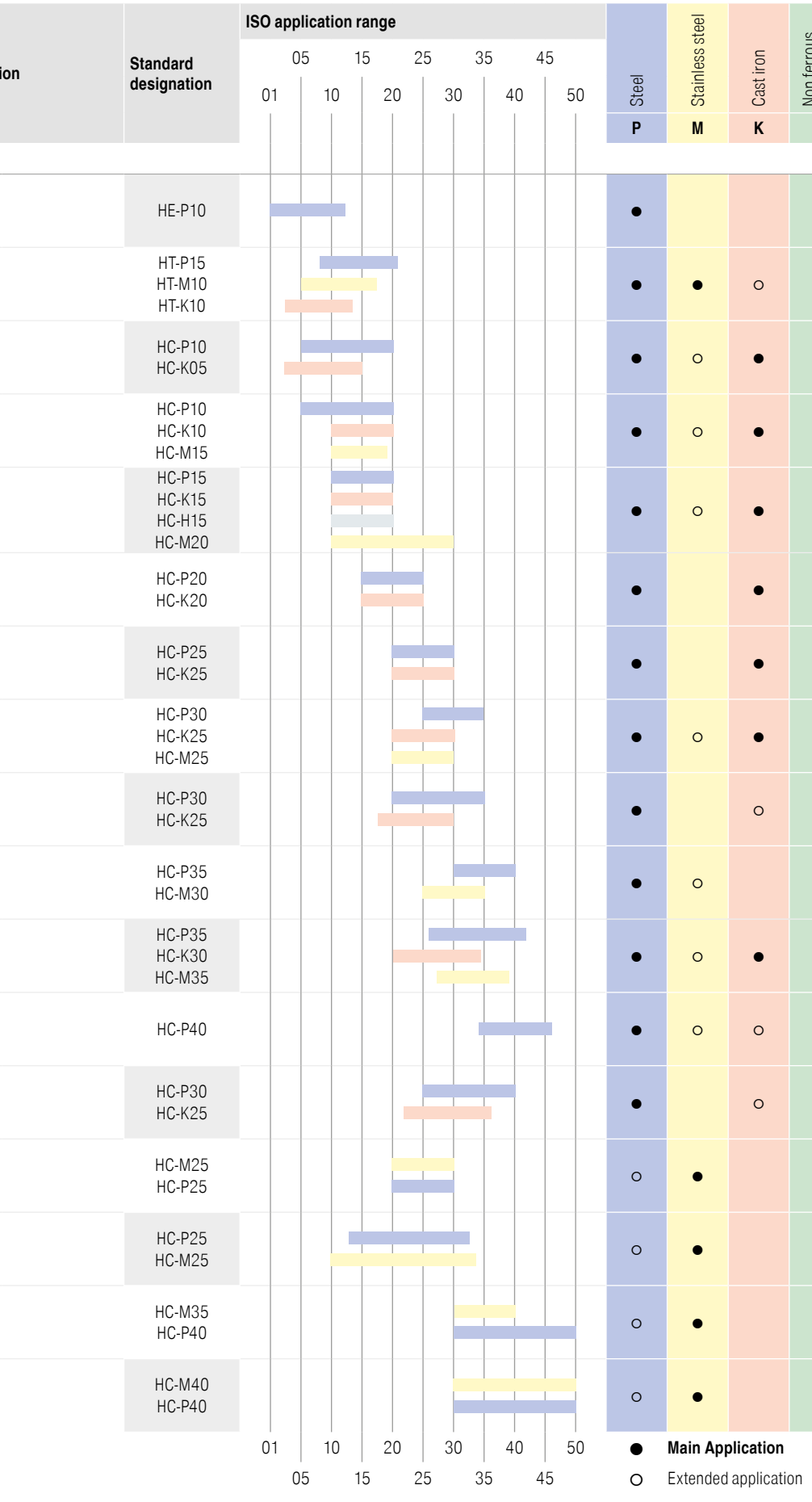
System	Ø-range mm	Pages
MaxiMill 260	80–400	135

													Pages
	**Cartridge no.**	**041**	**031**			**029**		**032**		**057**			136
				SD.. 0903..	SD.. 1204.. XD.. 1204..		SE.. 1204..		SD.. 1504..			OA.. 0605.. XA.. 0605..	
	**Cartridge no.**	**018**											136
			SP.. 1204..										
	**Cartridge no.**	**042**		**039**		**051**		**025**					136
			AP.. 1003..		SD.. 1205..		LD.. 1504..		TP.. 2204..				
	**Cartridge no.**	**055**		**054**		**056**							136
			SD.. 09T3		XD.. 11T3		XD.. 1505						
	**Cartridge no.**	**052**		**053**									136
			RP.X 1204..		RP.X 1604..								

15

Toolfinder – Grade Selection

Grade designation	Standard designation	Steel P	Stainless steel M	Cast iron K	Non ferrous metals N	Heat resistant alloys S	hardened materials H
CTEP210 (DCC1210)	HE-P10	●					
TCM10 (CWC10)	HT-P15 HT-M10 HT-K10	●	●	○			
WTN1205	HC-P10 HC-K05	●	○	●	○		●
CTPP211	HC-P10 HC-K10 HC-M15	●	○	●			
CTPP216	HC-P15 HC-K15 HC-H15 HC-M20	●	○	●			●
CTCP220 (DCX1220)	HC-P20 HC-K20	●		●			
CTPP225 (DPX1225)	HC-P25 HC-K25	●		●			
CTCP230 (DCX1230)	HC-P30 HC-K25 HC-M25	●	○	●			
CTPP231	HC-P30 HC-K25	●		○			○
CTPP235 (DPX1235)	HC-P35 HC-M30	●	○				
CTPP236	HC-P35 HC-K30 HC-M35	●	○	●			
WAN1240	HC-P40	●	○	○		○	
WAX1240	HC-P30 HC-K25	●		○			○
CTPM225 (DPX2225)	HC-M25 HC-P25	○	●				
WAN2225	HC-P25 HC-M25	○	●			●	
CTCM235 (DCX2235)	HC-M35 HC-P40	○	●				
CTPM240 (DPX2240)	HC-M40 HC-P40	○	●				



Toolfinder – Grade Selection

Grade designation	Standard designation	ISO application range	Steel P	Stainless steel M	Cast iron K	Non ferrous metals N	Heat resistant alloys S	hardened materials H
CTPM241	HC-M40 HC-P40		○	●			●	
CTPM245 (DPX2245)	HC-M45 HC-P50		○	●				
CTN3105 (CTS3105)	CN-K05				●			
CTL3215 (CWB3215)	BC-K10 BC-H10				●			
CTCK215 (DCX3215)	HC-K15				●			
CTPK220 (DPX3220)	HC-K20				●			
CTPK221	HC-K10 HC-M15			○	●		○	○
CTPK226	HC-K15 HC-H15 HC-P15		○		●			●
CTPK231	HC-P30 HC-K30		●		●			
CTD4205 (CWD4205)	DP-N05					●		
AMZ (AMZ)	HC-N10 HC-P10 HC-K10		○		○	●		
WUN4210	HT-N10 HT-M15			○		●		
CTCN211	HC-N10					●		
H216T	HW-N15 HW-K15 HW-S15				●	●	○	
CTC5240 (HCF5240)	HC-S35 HC-M35			●			●	
CTCS245	HC-S40						●	
CTP6215 (CCN6215)	HC-K15 HC-H15		○		●			●

ISO application range: 01 05 10 15 20 25 30 35 40 45 50

● **Main Application**
○ Extended application

wear-resistant v_c+ ⟷ v_c– tough

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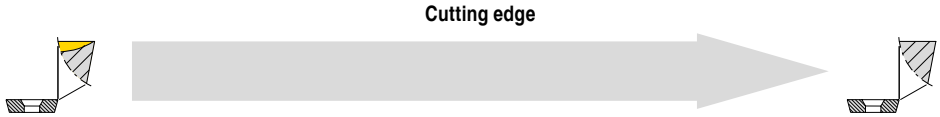
Toolfinder – Chip Former Type



				sharp		medium		stable	
				●		● ●		● ● ●	
				10	20	30	40	50	60
increasing wedge angle	fine	F		**-F10**	**-F20**		**-F40**	**-F50**	**-33**
	medium	M				**-M31** **-M30** **-M32**		**-M50** **-31**	**-29**
	rough	R				**-R30**		**-R50**	**-R60**

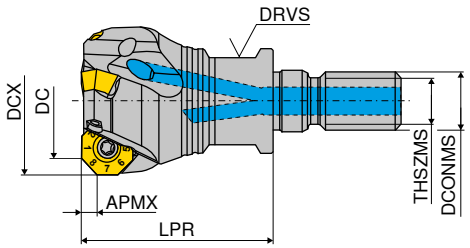
A detailed overview of chip breakers can be found on → **Page 196–208**

Chip breaker code

				Cutting edge		
				sharp	medium	stable
				10–20	30–40	50–60
Application type	light	F		●	● ●	● ● ●
	universal	M		●	● ●	● ● ●
	difficult	R		●	● ●	● ● ●

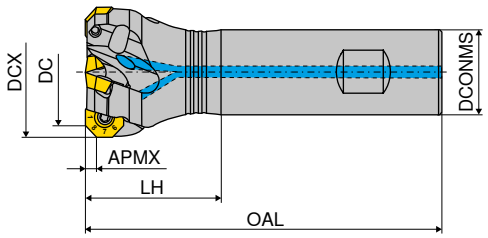
Example: Chip breaker -M50

MaxiMill – Screw in cutter G 274-04/-09



Designation	DC	DCX	ZNF	APMX	LPR	THSZMS	DCONMS	DRVS	torque moment	Insert	2B/40 Article no. 50 742 ...	
	mm	mm		mm	mm		mm	mm	Nm		£	
G274.20.R.03-09	20	25.5	3	3.8	35	M12	12.5	17	1,2	OF.. 0403 / SF.. 0903	243.73	**020**
G274.25.R.04-09	25	30.6	4	3.8	35	M12	12.5	17	1,2	OF.. 0403 / SF.. 0903	277.55	**025**
G274.32.R.05-09	32	37.6	5	3.8	35	M16	17.0	24	1,2	OF.. 0403 / SF.. 0903	311.55	**032**

MaxiMill – End milling cutter C 274-04/-09



Designation	DC	DCX	ZNF	APMX	OAL	LH	DCONMS	torque moment	Insert	A 2B/40 Article no. 50 743 ...		B 2B/40 Article no. 50 743 ...	
	mm	mm		mm	mm	mm	mm	Nm		£		£	
C274.20.R.03-09-A/B20-25	20	25.5	3	3.8	77	25	20	1,2	OF.. 0403 / SF.. 0903	243.73	**020**	243.73	**120**
C274.25.R.04-09-A/B20-32	25	30.6	4	3.8	84	32	20	1,2	OF.. 0403 / SF.. 0903	277.55	**025**	277.55	**125**
C274.32.R.05-09-A/B25-40	32	37.6	5	3.8	98	40	25	1,2	OF.. 0403 / SF.. 0903	311.55	**032**	311.55	**132**

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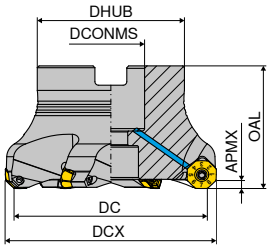
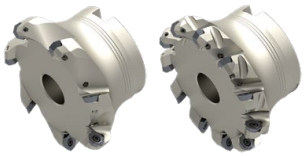
MaxiMill – Shell mill A 274-04/-09

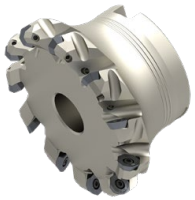




Designation	DC	DCX	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	torque moment	Insert	2B/40 Article no. 50 744 ...		2B/40 Article no. 50 744 ...	
	mm	mm		mm	mm	mm	mm	Nm		£		£	
A274.32.R.05-09	32	37.7	5	3.8	40	38	16	1,2	OF.. 0403 / SF.. 0903			311.55	**032**
A274.40.R.04-09	40	45.7	4	3.8	40	38	16	1,2	OF.. 0403 / SF.. 0903	311.55	**040**		
A274.40.R.06-09	40	45.7	6	3.8	40	38	16	1,2	OF.. 0403 / SF.. 0903			345.36	**140**
A274.50.R.05-09	50	55.7	5	3.8	40	48	22	1,2	OF.. 0403 / SF.. 0903	362.36	**050**		
A274.50.R.07-09	50	55.7	7	3.8	40	48	22	1,2	OF.. 0403 / SF.. 0903			379.45	**150**
A274.63.R.06-09	63	68.7	6	3.8	40	48	22	1,2	OF.. 0403 / SF.. 0903	413.36	**063**		
A274.63.R.09-09	63	68.7	9	3.8	40	48	22	1,2	OF.. 0403 / SF.. 0903			464.27	**163**
A274.80.R.07-09	80	85.7	7	3.8	50	58	27	1,2	OF.. 0403 / SF.. 0903	464.27	**080**		
A274.80.R.11-09	80	85.7	11	3.8	50	58	27	1,2	OF.. 0403 / SF.. 0903			532.09	**180**
A274.100.R.09-09	100	105.7	9	3.8	50	78	32	1,2	OF.. 0403 / SF.. 0903	572.55	**100**		
A274.100.R.13-09	100	105.7	13	3.8	50	78	32	1,2	OF.. 0403 / SF.. 0903			640.45	**200**
A274.125.R.12-09	125	130.7	12	3.8	63	88	40	1,2	OF.. 0403 / SF.. 0903	697.64	**125**		

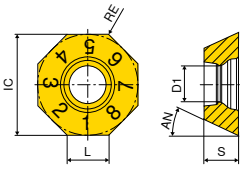
Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£		£	
20 - 25	6.69	**043**			13.49	**125**			3.98	**303**	3.72	**133**	163.58	**191**
32 - 40	6.69	**043**	4.78	**040**	13.49	**125**	11.35	**151**	3.98	**303**	3.72	**133**	163.58	**191**
50 - 125	6.69	**043**			13.49	**125**			3.98	**303**	3.72	**133**	163.58	**191**

Two insert types – ONE Cutter

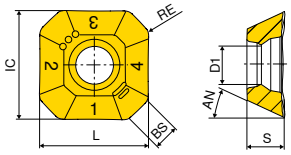


OFHT / OFHW / SFHT / SFKT

Designation	IC	D1	L	BS	S	AN
	mm	mm	mm	mm	mm	°
OFH. 0403..	9.52	3.35	3.94	-	3.18	25
SF.T 0903..	9.80	3.35	9.00	2.25	3.50	25



OF..

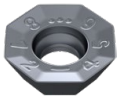
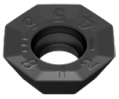
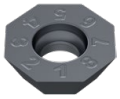


SF.T

OFHT

	-F50 CTCP220	-F50 CTPP225	-F50 CTCP230	-M50 CTCP230	-F50 CTPP235	-M50 CTPP235
	-F50 DCX1220	-F50 DPX1225	-F50 DCX1230	-M50 DCX1230	-F50 DPX1235	-M50 DPX1235
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
	OFHT	OFHT	OFHT	OFHT	OFHT	OFHT
	1B/61	1B/61	1B/61	1B/61	1B/61	1B/61
ISO RE	**Article no. 51 002 ...**	**Article no. 51 002 ...**	**Article no. 51 002 ...**	**Article no. 51 003 ...**	**Article no. 51 002 ...**	**Article no. 51 003 ...**
mm	£	£	£	£	£	£
040305SN 0.5	14.33 **255**	14.33 **055**	14.33 **005**	14.33 **005**	14.33 **105**	14.33 **105**
Steel	●	●	●	●	●	●
Stainless steel			○	○	○	○
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials						

OFHT / OFHW

	-F50 CTPM225	-F50 CTCM235	-F50 CTPM240	-M50 CTPM240	-F50 CTPM245	CTPM245
	-F50 DPX2225	-F50 DCX2235	-F50 DPX2240	-M50 DPX2240	-F50 DPX2245	DPX2245
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	OFHT	OFHT	OFHT	OFHT	OFHT	OFHW
	1B/61	1B/61	1B/61	1B/61	1H/17	1H/17
ISO RE	**Article no. 51 002 ...**	**Article no. 51 002 ...**	**Article no. 51 002 ...**	**Article no. 51 003 ...**	**Article no. 51 002 ...**	**Article no. 51 105 ...**
mm	£	£	£	£	£	£
040302EN 0.2						15.79 **452**
040305SN 0.5	14.33 **205**	14.33 **305**	14.33 **405**	14.33 **405**	15.79 **455**	
Steel	○	○	○	○	●	●
Stainless steel	●	●	●	●	●	●
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials						

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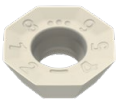
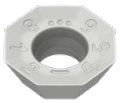
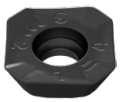
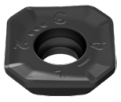
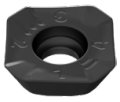
OFHT / OFHW

		-M50 CTCK215		-F10 CTWN215		-F50 CTC5240		CTC5240		-F50 CTCS245	
		-M50 DCX3215		-F10 CWK4615				HCF5240			
		DRAGONSKIN				DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
											
		OFHT		OFHT		OFHT		OFHW		OFHT	
		1B/61		1B/61		NEW 1H/D4		1H/D4		NEW 1H/D4	
ISO	RE	Article no. 51 003 ...		Article no. 50 459 ...		Article no. 51 002 ...		Article no. 50 457 ...		Article no. 51 002 ...	
	mm	£		£		£		£		£	
040302EN	0.2							15.79	504		
040305FN	0.5			15.19	505						
040305SN	0.5	14.33	505			15.79	15500			15.79	555
Steel		○									
Stainless steel											
Cast iron		●		○							
Non ferrous metals				●							
Heat resistant alloys						●		●		●	
hardened materials											

SFHT / SFKT

		-F50 CTCP220	-M50 CTCP220	-F50 CTPP225	-M50 CTPP225
		-F50 DCX1220	-M50 DCX1220	-F50 DPX1225	-M50 DPX1225
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		SFHT	SFKT	SFHT	SFKT
		1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 012 ...	Article no. 51 013 ...	Article no. 51 012 ...	Article no. 51 013 ...
	mm	£	£	£	£
0903AFSR	1.0	14.33 270	10.55 270	14.33 070	10.55 070
Steel		●	●	●	●
Stainless steel					
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

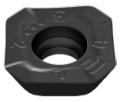
SFHT / SFKT

		-F50 CTCP230	-M50 CTCP230	-F50 CTPP235	-M50 CTPP235
		-F50 DCX1230	-M50 DCX1230	-F50 DPX1235	-M50 DPX1235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		SFHT	SFKT	SFHT	SFKT
		1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 012 ...	Article no. 51 013 ...	Article no. 51 012 ...	Article no. 51 013 ...
	mm	£	£	£	£
0903AFSR	1.0	14.33 020	10.55 020	14.33 120	10.55 120
Steel		●	●	●	●
Stainless steel		○	○	○	○
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

SFHT / SFKT

		-F50 CTPM225	-M50 CTPM225	-F50 CTCM235	-F50 CTPM240	-M50 CTPM240	-F50 CTPM245
		-F50 DPX2225	-M50 DPX2225	-F50 DCX2235	-F50 DPX2240		-F50 DPX2245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		SFHT	SFKT	SFHT	SFHT	SFKT	SFHT
		1B/61	1B/61	1B/61	1B/61	NEW 1B/61	1H/17
ISO	RE	Article no. 51 012 ...	Article no. 51 013 ...	Article no. 51 012 ...	Article no. 51 012 ...	Article no. 51 013 ...	Article no. 51 012 ...
	mm	£	£	£	£	£	£
0903AFSR	1.0	14.33 220	10.55 220	14.33 320	14.33 420	10.55 42000	17.82 470
Steel		○	○	○	○	○	●
Stainless steel		●	●	●	●	●	●
Cast iron							
Non ferrous metals							
Heat resistant alloys							
hardened materials							

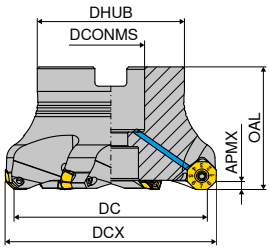
SFKT / SFHT

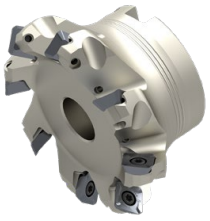
		-R50 CTCK215	-R50 CTPK220	-F10 CTWN215	-F40 CTC5240
		-R50 DCX3215	-R50 DPX3220	-F10 CWK4615	-F40 HCF5240
		DRAGONSKIN	DRAGONSKIN		DRAGONSKIN
					
		SFKT	SFKT	SFHT	SFHT
		1B/61	1B/61	1B/61	1H/D4
ISO	RE	Article no. 51 065 ...	Article no. 51 065 ...	Article no. 50 514 ...	Article no. 50 514 ...
	mm	£	£	£	£
0903AFFR	1.0			17.18 505	
0903AFSR	1.0	10.55 520	10.55 620		17.82 504
Steel		○	○		
Stainless steel					
Cast iron		●	●	○	
Non ferrous metals				●	
Heat resistant alloys					●
hardened materials					

Milling guide

Machining strategy	→ 140	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 140
Starting Parameter	→ 141		

MaxiMill – Shell mill A 274-05/-12





Designation	DC	DCX	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	torque moment	Insert	2B/40 Article no. 50 772 ...	
	mm	mm		mm	mm	mm	mm	Nm		£	
A274.40.R.03-12	40	48.0	3	6	40	38	16	3,2	OFHT 0504 / SFKT 1204	234.55	**24000**
A274.40.R.04-12	40	48.0	4	6	40	38	16	3,2	OFHT 0504 / SFKT 1204	307.73	**04000**
A274.50.R.05-12	50	58.0	5	6	40	43	22	3,2	OFHT 0504 / SFKT 1204	390.82	**050**
A274.50.R.04-12	50	58.1	4	6	40	43	22	3,2	OFHT 0504 / SFKT 1204	312.64	**25000**
A274.63.R.06-12	63	71.0	6	6	40	48	22	3,2	OFHT 0504 / SFKT 1204	469.00	**063**
A274.63.R.05-12	63	71.1	5	6	40	48	22	3,2	OFHT 0504 / SFKT 1204	400.36	**26300**
A274.80.R.06-12	80	88.0	6	6	50	58	27	3,2	OFHT 0504 / SFKT 1204	488.45	**28000**
A274.80.R.08-12	80	88.0	8	6	50	58	27	3,2	OFHT 0504 / SFKT 1204	625.36	**080**
A274.100.R.10-12	100	107.9	10	6	50	78	32	3,2	OFHT 0504 / SFKT 1204	771.82	**100**
A274.100.R.08-12	100	108.0	8	6	50	78	32	3,2	OFHT 0504 / SFKT 1204	644.91	**30000**
A274.125.R.12-12	125	132.9	12	6	63	88	40	3,2	OFHT 0504 / SFKT 1204	942.73	**125**
A274.125.R.09-12	125	133.0	9	6	63	88	40	3,2	OFHT 0504 / SFKT 1204	808.36	**32500**
A274.160.R.11-12	160	133.0	11	6	63	88	40	3,2	OFHT 0504 / SFKT 1204	982.73	**36000** [1]
A274.160.R.14-12	160	167.9	14	6	63	98	40	3,2	OFHT 0504 / SFKT 1204	1,250.91	**16000** [1]

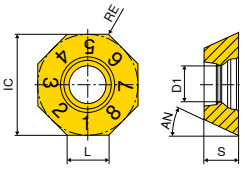
1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£	
40 - 160	6.69	**054**	15.77	**128**	3.98	**303**	4.19	**340**	183.22	**193**

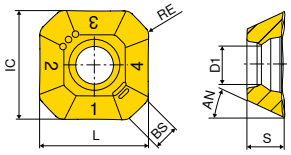
Two insert types – ONE Cutter

OFHT / SFHT / SFKT

Designation	IC	D1	L	BS	S	AN
	mm	mm	mm	mm	mm	°
OFHT 0504..	12.7	4.8	4.5	-	4.76	25
SF.T 1204..	12.7	4.8	12.7	1.42	4.76	25



OF..

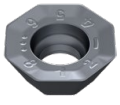
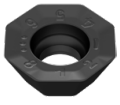
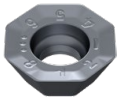
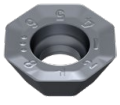


SF.T

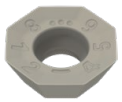
OFHT

ISO	RE	-F50 CTCP230	-M50 CTCP230	-F50 CTPP235	-M50 CTPP235
		-F50 DCX1230		-F50 DPX1235	
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		OFHT	OFHT	OFHT	OFHT
		1B/61	NEW 1B/61	1B/61	NEW 1B/61
		Article no. 51 002 ...	Article no. 51 003 ...	Article no. 51 002 ...	Article no. 51 003 ...
	mm	£	£	£	£
050410SN	1.0	15.75 **010**	15.75 **01000**	15.75 **110**	15.75 **11000**
Steel		●	●	●	●
Stainless steel		○	○	○	○
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

OFHT

ISO	RE	-F50 CTPM225	-M50 CTPM225	-F50 CTCM235	-F50 CTPM240	-M50 CTPM240	-F50 CTPM245
		-F50 DPX2225	-M50 DPX2225	-F50 DCX2235	-F50 DPX2240		-F50 DPX2245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		OFHT	OFHT	OFHT	OFHT	OFHT	OFHT
		1B/61	1B/61	1B/61	1B/61	NEW 1B/61	1H/17
		Article no. 51 002 ...	Article no. 51 003 ...	Article no. 51 002 ...	Article no. 51 002 ...	Article no. 51 003 ...	Article no. 51 002 ...
	mm	£	£	£	£	£	£
050410SN	1.0	15.75 **210**	15.75 **210**	15.75 **310**	15.75 **410**	15.75 **41000**	17.36 **460**
Steel		○	○	○	○	○	●
Stainless steel		●	●	●	●	●	●
Cast iron							
Non ferrous metals							
Heat resistant alloys							
hardened materials							

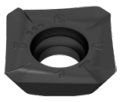
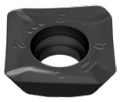
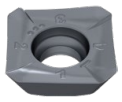
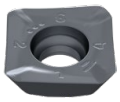
OFHT



ISO	RE	-F10 CTWN215		-F50 CTC5240	
		OFHT		OFHT	
		NEW 1B/61		NEW 1H/D4	
		Article no. 51 122 ...		Article no. 51 002 ...	
	mm	£		£	
050410FN	1.0	18.90	36000		
050410SN	1.0			17.36	16000

Steel		
Stainless steel		
Cast iron	○	
Non ferrous metals	●	
Heat resistant alloys		●
hardened materials		

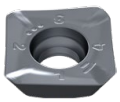
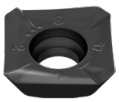
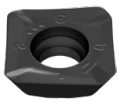
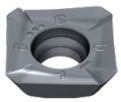
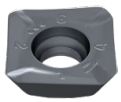
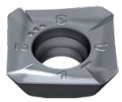
SFHT / SFKT

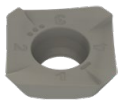
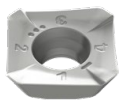
ISO	RE	-F50 CTCP230		-M50 CTCP230 -M50 DCX1230		-F50 CTPP235		-M50 CTPP235 -M50 DPX1235	
		SFHT		SFKT		SFHT		SFKT	
		NEW 1B/61		1B/61		NEW 1B/61		1B/61	
		Article no. 51 012 ...		Article no. 51 013 ...		Article no. 51 012 ...		Article no. 51 013 ...	
	mm	£		£		£		£	
1204AFSR	1.0	15.75	02500	11.61	025	15.75	12500	11.61	125

Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron				
Non ferrous metals				
Heat resistant alloys				
hardened materials				

SFHT / SFKT

		-F50 CTPM225	-M50 CTPM225	-F50 CTCM235	-M50 CTCM235	-F50 CTPM240	-M50 CTPM240	-F50 CTPM245
		-F50 DPX2225	-M50 DPX2225	-F50 DCX2235	-M50 DCX2235		-M50 DPX2240	
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		SFHT	SFKT	SFHT	SFKT	SFHT	SFKT	SFHT
		1B/61	1B/61	1B/61	1B/61	NEW 1B/61	1B/61	NEW 1H/17
ISO	RE	Article no. 51 012 ...	Article no. 51 013 ...	Article no. 51 012 ...	Article no. 51 013 ...	Article no. 51 012 ...	Article no. 51 013 ...	Article no. 51 012 ...
	mm	£	£	£	£	£	£	£
1204AFSR	1.0	15.75 225	11.61 225	15.75 325	11.61 325	15.75 42500	11.61 425	19.23 47500
Steel		○	○	○	○	○	○	●
Stainless steel		●	●	●	●	●	●	●
Cast iron								
Non ferrous metals								
Heat resistant alloys								
hardened materials								

SFHT

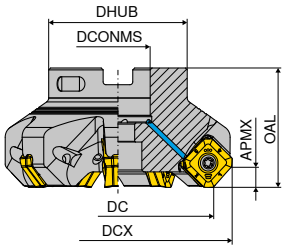
		-F10 CTWN215	-F40 CTC5240
			DRAGONSKIN
			
		SFHT	SFHT
		NEW 1B/61	NEW 1H/D4
ISO	RE	Article no. 51 123 ...	Article no. 50 514 ...
	mm	£	£
1204AFER	1.0		19.62 50900
1204AFFR	1.0	18.90 37000	
Steel			
Stainless steel			
Cast iron		○	
Non ferrous metals		●	
Heat resistant alloys			●
hardened materials			

Milling guide

Machining strategy	→ 142	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 142
Starting Parameter	→ 143		

MaxiMill – A 271 Face mill

▲ 8 cutting edges per insert



Designation	DC	DCX	ZNF	APMX	OAL	DCONMS	DHUB	torque moment	Insert	2B/40 Article no. 50 767 ...	
	mm	mm		mm	mm	mm	mm	Nm		£	
A271.50.R.04-17	50	66.1	4	8.4	40	22	43	5	SAKU 1706	361.55	**050**
A271.63.R.06-17	63	79.1	6	8.4	40	22	48	5	SAKU 1706	508.09	**063**
A271.80.R.07-17	80	96.1	7	8.4	50	27	58	5	SAKU 1706	581.36	**080**
A271.100.R.08-17	100	116.1	8	8.4	50	32	78	5	SAKU 1706	669.36	**100**
A271.125.R.10-17	125	141.1	10	8.4	63	40	88	5	SAKU 1706	771.82	**125**
A271.160.R.12-17	160	176.1	12	8.4	63	40	104	5	SAKU 1706	908.73	**16000** [1]
A271.200.R.13-17	200	216.1	13	8.4	63	60	134	5	SAKU 1706	1,123.64	**20000** [2]
A271.250.R.15-17	250	266.1	15	8.4	63	60	134	5	SAKU 1706	1,358.18	**25000** [2]

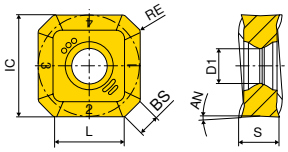
1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm
2) With threaded holes M16 on the front face, pitch circle diameter = 101.6 mm

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£	
50 - 250	6.69	**037**	13.11	**114**	3.98	**303**	3.72	**302**	183.22	**193**

15

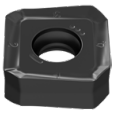
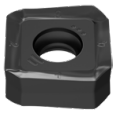
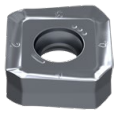
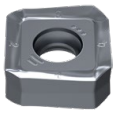
SAKU

Designation	IC	D1	L	BS	S	AN
	mm	mm	mm	mm	mm	°
SAKU 1706..	17	5.8	11.85	3.7	6.35	3



SAKU

SAKU

		-F50 CTCP220	-M50 CTCP220	-F50 CTPP225	-M50 CTPP225
		-F50 DCX1220	-M50 DCX1220	-F50 DPX1225	-M50 DPX1225
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
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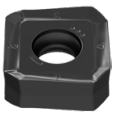
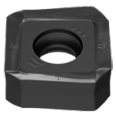
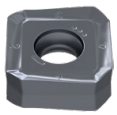
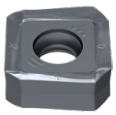
		1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 004 ...	Article no. 51 005 ...	Article no. 51 004 ...	Article no. 51 005 ...
	mm	£	£	£	£
1706ABSR	0.8	26.48 270	26.48 270	26.48 070	26.48 070
Steel		●	●	●	●
Stainless steel					
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

SAKU

		-F50 CTCP230	-M50 CTCP230	-F50 CTPP235	-M50 CTPP235
		-F50 DCX1230	-M50 DCX1230	-F50 DPX1235	-M50 DPX1235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
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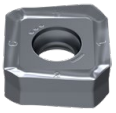
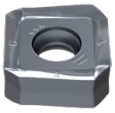
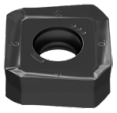
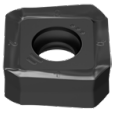
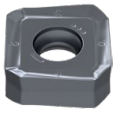
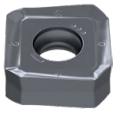
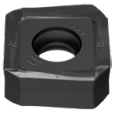
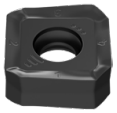
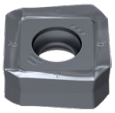
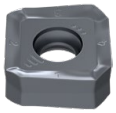
		1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 004 ...	Article no. 51 005 ...	Article no. 51 004 ...	Article no. 51 005 ...
	mm	£	£	£	£
1706ABSR	0.8	26.48 020	26.48 020	26.48 120	26.48 120
Steel		●	●	●	●
Stainless steel		○	○	○	○
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

SAKU

		-F50 CTPM225	-M50 CTPM225	-F50 CTCM235	-M50 CTCM235	-F50 CTPM240	-M50 CTPM240	-F50 CTPM245
		-F50 DPX2225	-M50 DPX2225	-F50 DCX2235	-M50 DCX2235	-F50 DPX2240	-M50 DPX2240	-F50 DPX2245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		SAKU	SAKU	SAKU	SAKU	SAKU	SAKU	SAKU
		1B/61	1B/61	1B/61	1B/61	1B/61	1B/61	1H/17
ISO	RE	Article no. 51 004 ...	Article no. 51 005 ...	Article no. 51 004 ...	Article no. 51 005 ...	Article no. 51 004 ...	Article no. 51 005 ...	Article no. 51 004 ...
	mm	£	£	£	£	£	£	£
1706ABSR	0.8	26.48 220	26.48 220	26.48 320	26.48 320	26.48 420	26.48 420	32.58 470
Steel		○	○	○	○	○	○	●
Stainless steel		●	●	●	●	●	●	●
Cast iron								
Non ferrous metals								
Heat resistant alloys								
hardened materials								

SAKU

		-M50 CTCK215	-R50 CTCK215	-M50 CTPK220	-R50 CTPK220	-F50 CTC5240	-F50 CTCS245
		-M50 DCX3215	-R50 DCX3215	-M50 DPX3220	-R50 DPX3220	-F50 HCF5240	
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		SAKU	SAKU	SAKU	SAKU	SAKU	SAKU
		1B/61	1B/61	1B/61	1B/61	1H/D4	NEW 1H/D4
ISO	RE	Article no. 51 005 ...	Article no. 51 058 ...	Article no. 51 005 ...	Article no. 51 058 ...	Article no. 50 306 ...	Article no. 51 004 ...
	mm	£	£	£	£	£	£
1706ABSR	0.8	26.48 520	26.48 520	26.48 620	26.48 620	32.58 520	32.58 570
Steel		○	○	○	○		
Stainless steel							
Cast iron		●	●	●	●		
Non ferrous metals							
Heat resistant alloys						●	●
hardened materials							

Milling guide

Starting Parameter	→ 144	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 144

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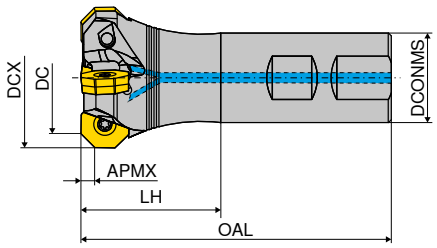
MaxiMill – End milling cutter C 273

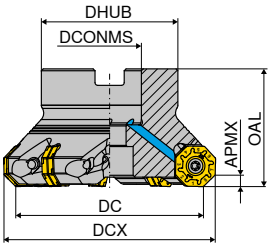
▲ 16 cutting edges per insert

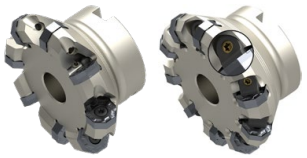


Designation	DC	DCX	ZNF	APMX	DCONMS h6	LH	OAL	torque moment	Insert	2B/40 Article no. 50 762 ...	
	mm	mm		mm	mm	mm	mm	Nm		£	
C273.32.R.03-06-B-40	32	42.1	3	3.5	32	40	101	5	OAKU / XAHT 0605	351.91	032
C273.40.R.04-06-B32-50	40	50.1	4	3.5	32	50	111	5	OAKU / XAHT 0605	363.64	040

MaxiMill – Shell mill A 273

▲ 16 cutting edges per insert





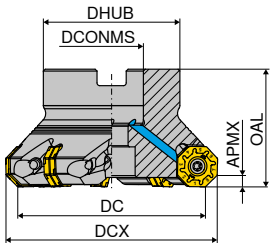
Designation	DC	DCX	ZNF	APMX	OAL	DCONMS H6	DHUB	torque moment	Insert	2B/40 Article no. 50 741 ...		2B/40 Article no. 50 741 ...	
	mm	mm		mm	mm	mm	mm	Nm		£		£	
A273.40.R.04-06	40	50.2	3	3.5	40	16	38	5	OAKU / XAHT 0605	346.73	040		
A273.40.R.04-06	40	50.2	4	3.5	40	16	38	5	OAKU / XAHT 0605	363.64	140 [5]		
A273.50.R.05-06	50	60.2	5	3.5	40	22	43	5	OAKU / XAHT 0605	407.73	050		
A273.63.R.07-06	63	73.2	7	3.5	40	22	48	5	OAKU / XAHT 0605	489.45	063		
A273.80.R.08-06	80	90.2	8	3.5	50	27	58	5	OAKU / XAHT 0605	571.00	080		
A273.80.R.10-06	80	90.2	10	3.5	50	27	58	5	OAKU / XAHT 0605			870.09	180 [1]
A273.100.R.10-06	100	110.2	10	3.5	50	32	78	5	OAKU / XAHT 0605	673.00	100		
A273.100.R.14-06	100	110.2	14	3.5	50	32	78	5	OAKU / XAHT 0605			1,111.82	200 [1]
A273.125.R.12-06	125	135.2	12	3.5	63	40	88	5	OAKU / XAHT 0605	754.55	125		
A273.125.R.17-06	125	135.2	17	3.5	63	40	88	5	OAKU / XAHT 0605			1,290.00	225 [1]
A273.160.R.14-06	160	170.2	14	3.5	63	40	104	5	OAKU / XAHT 0605	894.45	160 [4]		
A273.160.R.20-06	160	170.2	20	3.5	63	40	104	5	OAKU / XAHT 0605			1,526.36	260 [2]
A273.200.R.25-06	200	210.2	25	3.5	63	60	153	5	OAKU / XAHT 0605			1,908.18	300 [3]
A273.250.R.31-06	250	260.2	31	3.5	63	60	153	5	OAKU / XAHT 0605			2,333.64	25031 [3]

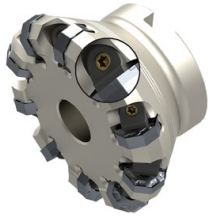
1) Version with Wedge, without internal coolant supply
2) Version with Wedge, without internal coolant supply / With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm
3) Version with Wedge, without internal coolant supply / With threaded holes M16 on the front face, pitch circle diameter = 101.6 mm
4) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm / Without Through Coolant
5) Without Through Coolant

Spare parts IDNR	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		2A/28 Clamping wedge screw Article no. 70 950 ...		2A/28 Clamping wedge Face mill Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£		£		£	
50741040	6.69	037	4.78	040					13.11	114	11.35	151	3.72	302	183.22	193
50741050	6.69	037	6.09	050					13.11	114	15.58	154	3.72	302	183.22	193
50741063 - 50741125	6.69	037							13.11	114			3.72	302	183.22	193
50741140	6.69	037	4.78	040					13.11	114	11.35	151	3.72	302	183.22	193
50741160	6.69	037							13.11	114			3.72	302	183.22	193
50741180 - 50741300	6.69	036			5.36	844	21.41	845	12.26	113					183.22	193
50762032 - 50762040	6.69	037							13.11	114			3.72	302	183.22	193
5074125031	6.69	036			5.36	844	21.41	845	12.26	113					183.22	193

MaxiMill – Shell mill A 273

- 16 cutting edges per indexable insert
- Axially adjustable





Designation	DC	DCX	ZNF	APMX	OAL	DCONMS $_{H6}$	DHUB	torque moment	Insert	NEW 2B/40 Article no. 50 777 ...	
	mm	mm		mm	mm	mm	mm	Nm		£	
A273.80.R.10A10-06	80	90.2	10	3.5	50	27	58	5	OAKU / XAHT 0605	1,143.64	**08010** [1]
A273.100.R.14A14-06	100	110.2	14	3.5	50	32	78	5	OAKU / XAHT 0605	1,557.27	**10014** [1]
A273.125.R.17A17-06	125	135.2	17	3.5	63	40	88	5	OAKU / XAHT 0605	1,830.91	**12517** [1]
A273.160.R.20A20-06	160	170.2	20	3.5	63	40	104	5	OAKU / XAHT 0605	2,161.82	**16020** [2]
A273.200.R.25A25-06	200	210.2	25	3.5	63	60	153	5	OAKU / XAHT 0605	2,703.64	**20025** [3]
A273.250.R.31A31-06	250	260.2	31	3.5	63	60	153	5	OAKU / XAHT 0605	3,320.00	**25031** [3]

1) Version with Wedge, without internal coolant supply
2) Version with Wedge, without internal coolant supply / With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm
3) Version with Wedge, without internal coolant supply / With threaded holes M16 on the front face, pitch circle diameter = 101.6 mm

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		2A/28 Clamping wedge screw Article no. 70 950 ...		2A/28 Clamping wedge Face mill Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Wedge Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£		£	
80 - 250	6.69	**036**	5.36	**844**	21.41	**845**	12.26	**113**	3.98	**303**	33.45	**199**	183.22	**193**

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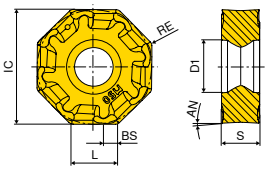
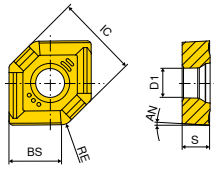
OAKU / XAHT

Designation	IC	D1	L	BS	S	AN
	mm	mm	mm	mm	mm	°
XAHT 0605..	17.08	6.0	-	11.95	5.56	3
OAKU 0605..	17.10	5.8	6	2.00	5.66	3

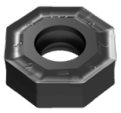
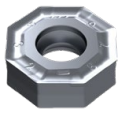


OAKU

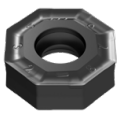
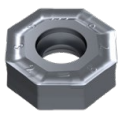


XAHT

OAKU

	-F50 CTCP220	-M50 CTCP220	-F50 CTPP225	-M50 CTPP225
	-F50 DCX1220	-M50 DCX1220	-F50 DPX1225	-M50 DPX1225
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
	OAKU	OAKU	OAKU	OAKU
	1B/61	1B/61	1B/61	1B/61
ISO RE mm	**Article no. 51 000 ...** £	**Article no. 51 001 ...** £	**Article no. 51 000 ...** £	**Article no. 51 001 ...** £
060508SR 0.8	22.33 **258**	22.33 **258**	22.33 **058**	22.33 **058**
Steel	●	●	●	●
Stainless steel				
Cast iron				
Non ferrous metals				
Heat resistant alloys				
hardened materials				

OAKU

	-F50 CTCP230	-M50 CTCP230	-F50 CTPP235	-M50 CTPP235
	-F50 DCX1230	-M50 DCX1230	-F50 DPX1235	-M50 DPX1235
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
	OAKU	OAKU	OAKU	OAKU
	1B/61	1B/61	1B/61	1B/61
ISO RE mm	**Article no. 51 000 ...** £	**Article no. 51 001 ...** £	**Article no. 51 000 ...** £	**Article no. 51 001 ...** £
060508SL 0.8				22.33 **10900**
060508SR 0.8	22.33 **008**	22.33 **008**	22.33 **108**	22.33 **108**
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron				
Non ferrous metals				
Heat resistant alloys				
hardened materials				

OAKU

		-F50 CTPM225		-M50 CTPM225		-F50 CTCM235		-M50 CTCM235		-F50 CTPM240		-M50 CTPM240		-F40 CTPM245	
		-F50 DPX2225		-M50 DPX2225		-F50 DCX2235		-M50 DCX2235		-F50 DPX2240		-M50 DPX2240		-F40 DPX2245	
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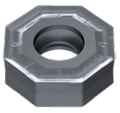
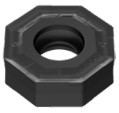
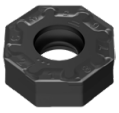
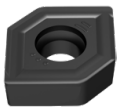
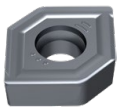
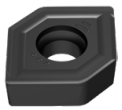
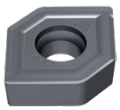
															
		OAKU		OAKU		OAKU		OAKU		OAKU		OAKU		OAKU	
		1B/61		1B/61		1B/61		1B/61		1B/61		1B/61		1H/17	
ISO	RE	Article no. 51 000 ...		Article no. 51 001 ...		Article no. 51 000 ...		Article no. 51 001 ...		Article no. 51 000 ...		Article no. 51 001 ...		Article no. 51 104 ...	
	mm	£		£		£		£		£		£		£	
060508ER	0.8													27.92	458
060508SR	0.8	22.33	208	22.33	208	22.33	308	22.33	308	22.33	408	22.33	408		
Steel		○		○		○		○		○		○		●	
Stainless steel		●		●		●		●		●		●		●	
Cast iron															
Non ferrous metals															
Heat resistant alloys															
hardened materials															

OAKU

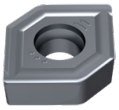
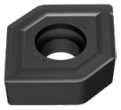
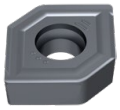
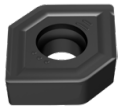
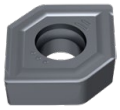
		-M50 CTCK215		-R50 CTCK215		-M50 CTPK220		-R50 CTPK220		-F40 CTC5240	
		-M50 DCX3215		-R50 DCX3215		-M50 DPX3220		-R50 DPX3220		-F40 HCF5240	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
		OAKU		OAKU		OAKU		OAKU		OAKU	
		1B/61		1B/61		1B/61		1B/61		1H/D4	
ISO	RE	Article no. 51 001 ...		Article no. 51 027 ...		Article no. 51 001 ...		Article no. 51 027 ...		Article no. 50 446 ...	
	mm	£		£		£		£		£	
060508ER	0.8									27.92	550
060508SL	0.8	22.33	50900			22.33	60900				
060508SR	0.8	22.33	508	22.33	508	22.33	608	22.33	608		
Steel		○		○		○		○			
Stainless steel											
Cast iron		●		●		●		●			
Non ferrous metals											
Heat resistant alloys										●	
hardened materials											

15

XAHT

		-M50 CTCP220	-M50 CTPP225	-M50 CTCP230	-M50 CTPP235
		-M50 DCX1220	-M50 DPX1225	-M50 DCX1230	-M50 DPX1235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		XAHT	XAHT	XAHT	XAHT
		1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 014 ...	Article no. 51 014 ...	Article no. 51 014 ...	Article no. 51 014 ...
	mm	£	£	£	£
060525SR	2.5	27.65 275	27.65 075	27.65 025	27.65 125
Steel		●	●	●	●
Stainless steel				○	○
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

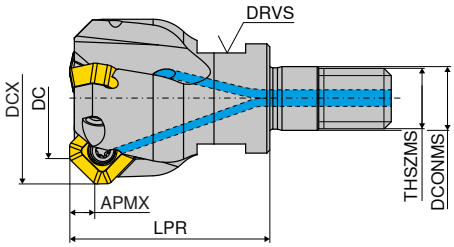
XAHT

		-M50 CTPM225	-M50 CTCM235	-M50 CTPM240	-M50 CTCK215	-M50 CTPK220
		-M50 DPX2225	-M50 DCX2235	-M50 DPX2240	-M50 DCX3215	-M50 DPX3220
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		XAHT	XAHT	XAHT	XAHT	XAHT
		1B/61	1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 014 ...	Article no. 51 014 ...	Article no. 51 014 ...	Article no. 51 014 ...	Article no. 51 014 ...
	mm	£	£	£	£	£
060525SL	2.5				27.65 52600	
060525SR	2.5	27.65 225	27.65 325	27.65 425	27.65 525	27.65 625
Steel		○	○	○	○	○
Stainless steel		●	●	●		
Cast iron					●	●
Non ferrous metals						
Heat resistant alloys						
hardened materials						

Milling guide

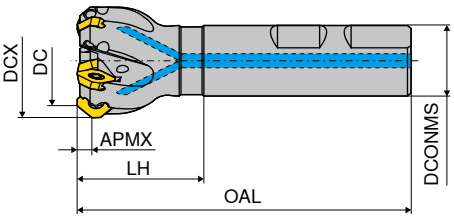
Starting Parameter	→ 145	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 145

MaxiMill – Screw in cutter 45° G 270-09



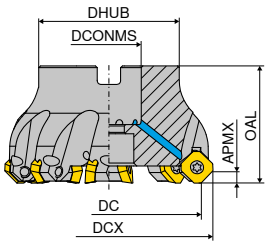
Designation	DC	DCX	ZNF	APMX	LPR	THSZMS	DCONMS	DRVS	torque moment	Insert	2B Article no. 55 202 ...	
	mm	mm		mm	mm		mm	mm	Nm		£	
G270.ESF.16.R.02-09	16	24.4	2	4	27	M8	8.5	10	1,8	SD.. 0903..	143.00	016
G270.ESF.20.R.03-09	20	28.4	3	4	33	M10	10.5	15	1,8	SD.. 0903..	167.73	020
G270.ESF.25.R.04-09	25	33.4	4	4	35	M12	12.5	17	1,8	SD.. 0903..	188.82	025
G270.ESF.32.R.05-09	32	40.4	5	4	35	M16	17.0	17	1,8	SD.. 0903..	207.73	032

MaxiMill – End milling cutter 45° C 270-09



Designation	DC	DCX	ZNF	APMX	OAL	LH	DCONMS	torque moment	Insert	2B/40 Article no. 50 666 ...	
	mm	mm		mm	mm	mm	mm	Nm		£	
C270.06.R.01-09	6	14.4	1	4	80	32	16	1,2	SD.. 0903..	123.45	006
C270.12.R.01-09	12	20.4	1	4	80	32	16	1,2	SD.. 0903..	136.36	012
C270.16.R.02-09	16	24.4	2	4	90	40	20	1,8	SD.. 0903..	155.27	016
C270.20.R.03-09	20	28.4	3	4	90	40	20	1,8	SD.. 0903..	197.55	020
C270.25.R.04-09	25	33.4	4	4	100	44	25	1,8	SD.. 0903..	279.91	025
C270.32.R.05-09	32	40.4	5	4	95	36	25	1,8	SD.. 0903..	329.27	032

MaxiMill – Shell mill 45° A 270-09



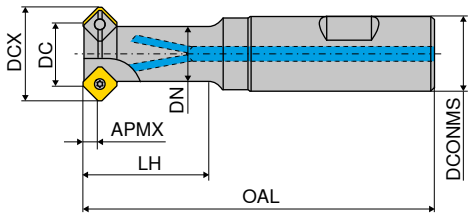
Designation	DC	DCX	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	torque moment	right 2B/40 Article no. 50 704 ...		right 2B/40 Article no. 50 705 ...		right 2B/40 Article no. 50 706 ...		left 2B Article no. 50 707 ...	
	mm	mm		mm	mm	mm	mm	Nm	£		£		£		£	
A270.32.R.05-09	32	40.4	5	4	40	34	16	1,8					315.09	**532**		
A270.40.R.04-09	40	48.4	4	4	40	38	16	1,8			323.36	**540**				
A270.40.R.06-09	40	48.4	6	4	40	38	16	1,8					364.64	**540**		
A270.42.R.06-09	42	50.4	6	4	40	38	16	1,8					377.45	**542**		
A270.50.R.06-09	50	58.4	6	4	40	43	22	1,8			375.18	**550**				
A270.50.R.08-09	50	58.4	8	4	40	43	22	1,8					449.27	**550**		
A270.50.L.08-09	50	58.4	8	4	40	43	22	1,8							465.18	**550**
A270.52.R.08-09	52	60.4	8	4	40	43	22	1,8					465.18	**552**		
A270.63.R.05-09	63	71.4	5	4	40	48	22	1,8	364.64	**563**						
A270.63.R.08-09	63	71.4	8	4	40	48	22	1,8			455.09	**563**				
A270.63.R.10-09	63	71.4	10	4	40	48	22	1,8					566.82	**563**		
A270.63.L.10-09	63	71.4	10	4	40	48	22	1,8							586.27	**563**
A270.66.R.10-09	66	74.4	10	4	40	48	22	1,8					586.27	**566**		
A270.80.R.06-09	80	88.4	6	4	50	58	27	1,8	412.73	**580**						
A270.80.R.10-09	80	88.4	10	4	50	58	27	1,8			575.00	**580**				
A270.80.R.12-09	80	88.4	12	4	50	58	27	1,8					681.91	**580**		
A270.80.L.12-09	80	88.4	12	4	50	58	27	1,8							705.45	**580**
A270.100.R.07-09	100	108.4	7	4	50	78	32	1,8	532.82	**600**						
A270.100.R.12-09	100	108.4	12	4	50	78	32	1,8			693.82	**600**				
A270.100.R.14-09	100	108.4	14	4	50	78	32	1,8					805.64	**600**		
A270.125.R.12-09	125	133.4	12	4	63	88	40	1,8			811.45	**625**				
A270.160.R.12-09	160	168.4	12	4	63	93	40	1,8	1,043.64	**660** [1)]						

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

- ▲ 50 704 ... Open pitch for use on aluminum alloys, non-ferrous metals and plastics
- ▲ 50 705 ... Normal pitch for a broad spectrum of use on aluminum alloys, non-ferrous metals, and soft steel materials
- ▲ 50 706 ... Fine pitch for highest feed rates, predominantly used on steel and cast materials
- ▲ 50 707 ... As 50 706 ..., but **left hand** version

MaxiMill – Chamfer milling cutter C 272-09

▲ Usable on front and rear cutting edges



B

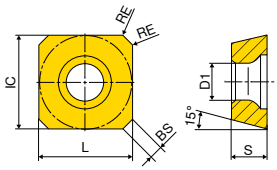
Designation	DC	DCX	ZNF	APMX	DN	OAL	LH	DCONMS	torque moment	Insert	2B Article no. 50 669 ...	
	mm	mm		mm	mm	mm	mm	mm	Nm		£	
C272.06.R.01-09	6	14.4	1	4	10	91	24.0	16	1,2	SD.. 0903..	146.82	**006**
C272.08.R.01-09	8	16.4	1	4	10	91	25.5	16	1,2	SD.. 0903..	163.64	**008**
C272.12.R.01-09	12	20.4	1	4	12	91	26.0	16	1,2	SD.. 0903..	168.18	**012**
C272.16.R.02-09	16	24.4	2	4	15	97	30.0	20	1,8	SD.. 0903..	207.00	**016**
C272.18.R.02-09	18	26.4	2	4	16	97	30.0	20	1,8	SD.. 0903..	207.00	**018**
C272.25.R.03-09	25	33.4	3	4	21	109	35.0	25	1,8	SD.. 0903..	242.18	**025**

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£	
6 - 12	6.69	**033**	10.30	**110**	3.98	**303**	2.85	**365**	163.58	**191**
16 - 160	6.69	**033**	10.30	**110**	3.98	**303**	2.34	**115**	163.58	**191**

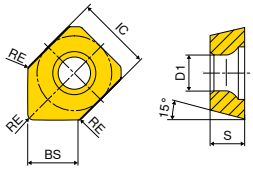
15

SDHW / SDNT / SDHT / XDHW

Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
XDHW 0903..	9.52	3.4	-	5.50	3.18
SD.. 0903..	9.52	3.4	9.52	1.68	3.18

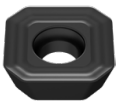
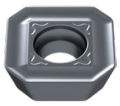
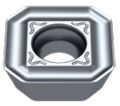


SD..

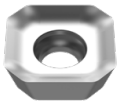
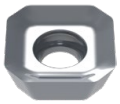
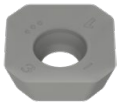


XDHW

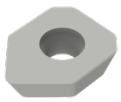
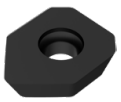
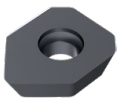
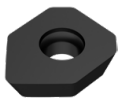
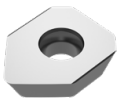
SDHW / SDNT / SDHT

		TCM10	-29 CTCP230	-29 CTPP235	-33 CTPM240	-33P CTPM240	-F50 CTPM245
		CWC10	-29 DCX1230	-29 DPX1235	-33 DPX2240	-33P DPX2240	-F50 DPX2245
			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		CERMET					
		SDHW	SDNT	SDNT	SDHT	SDHT	SDHT
		1B/79	1B/61	1B/61	1B/61	1B/61	1H/17
ISO	RE	Article no. 50 428 ...	Article no. 51 011 ...	Article no. 51 011 ...	Article no. 51 028 ...	Article no. 51 086 ...	Article no. 51 109 ...
	mm	£	£	£	£	£	£
0903AESN	1.0	14.52 898	12.54 020	12.54 120	14.33 420	15.08 420	17.82 470
Steel		●	●	●	○	○	●
Stainless steel		●	○	○	●	●	●
Cast iron		○					
Non ferrous metals							
Heat resistant alloys							
hardened materials							

SDNT / SDHT

		-31 CTCK215	-27P H216T	-27P AMZ	-M31 CTC5240	-F50 CTCS245
		-31 DCX3215	-ALP CWK26	-ALP AMZ	-M31 HCF5240	
		DRAGONSKIN			DRAGONSKIN	DRAGONSKIN
						
		SDNT	SDHT	SDHT	SDHT	SDHT
		1B/61	1A/90	1A/90	1H/D4	NEW 1H/D4
ISO	RE	Article no. 51 029 ...	Article no. 50 426 ...	Article no. 50 426 ...	Article no. 50 421 ...	Article no. 51 109 ...
	mm	£	£	£	£	£
0903AEFN	1.0		14.33 548	17.18 848		
0903AESN	1.0	12.00 520			17.82 509	17.82 57100
Steel		○				
Stainless steel						
Cast iron		●	○	○		
Non ferrous metals			●	●		
Heat resistant alloys					●	●
hardened materials						

XDHW

		TCM10	CTCP230	CTPP235	CTCK215	H216T
		CWC10	DCX1230	DPX1235	DCX3215	CWK26
			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
						
		CERMET				
		XDHW	XDHW	XDHW	XDHW	XDHW
		1B/79	1B/61	1B/61	1B/18	1B/61
ISO	RE	Article no. 50 449 ...	Article no. 51 015 ...	Article no. 51 015 ...	Article no. 51 015 ...	Article no. 50 449 ...
	mm	£	£	£	£	£
0903AEEN	1				17.05 520	
0903AEFN	1					15.08 548
0903AESN	1	15.74 898	17.63 020	17.63 120		
Steel		●	●	●	○	
Stainless steel		●	○	○		
Cast iron		○			●	○
Non ferrous metals						●
Heat resistant alloys						
hardened materials						

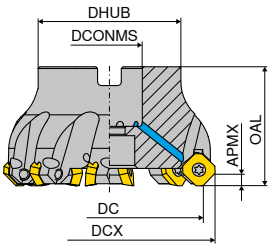
Milling guide

Machining strategy	→ 146	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 146

15

MaxiMill – Shell mill 45° A 270-12

- 50 705 ... Normal pitch for a broad spectrum of use on aluminum alloys, non-ferrous metals, up to soft steel materials
- 50 706 ... Predominantly fine pitch for highest feed rates, use on steel and cast materials



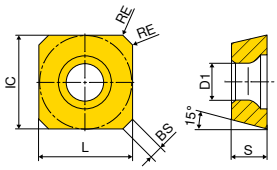
Designation	DC	DCX	ZNF	APMX	DCONMS $_{H6}$	OAL	DHUB	torque moment	Insert	2B/40 Article no. 50 705 ...		2B/40 Article no. 50 706 ...	
	mm	mm		mm	mm	mm	mm	Nm		£		£	
A270.32.R.03-12	32	46	3	6	16	40	32	5	SD../XD.. 1204..	361.00	**032**		
A270.40.R.03-12	40	54	3	6	16	40	38	5	SD../XD.. 1204..	369.27	**040**		
A270.40.R.04-12	40	54	4	6	16	40	38	5	SD../XD.. 1204..			369.27	**040**
A270.50.R.04-12	50	64	4	6	22	40	43	5	SD../XD.. 1204..	417.45	**050**		
A270.50.R.05-12	50	64	5	6	22	40	43	5	SD../XD.. 1204..			417.45	**050**
A270.63.R.04-12	63	77	4	6	22	40	48	5	SD../XD.. 1204..	477.45	**063**		
A270.63.R.06-12	63	77	6	6	22	40	48	5	SD../XD.. 1204..			546.82	**063**
A270.80.R.05-12	80	94	5	6	27	50	58	5	SD../XD.. 1204..	553.91	**080**		
A270.80.R.08-12	80	94	8	6	27	50	58	5	SD../XD.. 1204..			681.91	**080**
A270.100.R.06-12	100	114	6	6	32	50	78	5	SD../XD.. 1204..	652.55	**100**		
A270.100.R.10-12	100	114	10	6	32	50	78	5	SD../XD.. 1204..			798.45	**100**
A270.125.R.07-12	125	139	7	6	40	63	88	5	SD../XD.. 1204..	797.27	**125**		
A270.125.R.12-12	125	139	12	6	40	63	88	5	SD../XD.. 1204..			1,078.18	**125**
A270.160.R.08-12	160	174	8	6	40	63	94	5	SD../XD.. 1204..	1,018.18	**160** [1]		

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

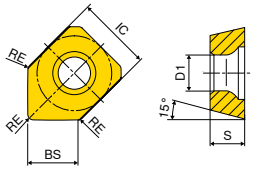
Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£		£	
32 - 40	6.69	**037**	4.78	**040**	13.11	**114**	11.35	**151**	3.98	**303**	2.29	**280**	183.22	**193**
50 - 160	6.69	**037**			13.11	**114**			3.98	**303**	2.29	**280**	183.22	**193**

SDHT / SDHW / SDMT / XDHW

Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
XDHW 1204..	12.7	5.5	-	7.50	4.76
SD.. 1204..	12.7	5.5	12.7	1.74	4.76



SD..

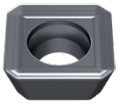
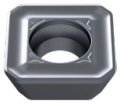


XDHW

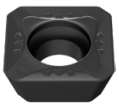
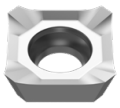
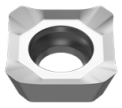
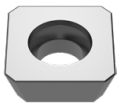
SDHT / SDHW / SDMT

	TCM10	-R TCM10	-29R CTCP230	-R CTCP230	CTCP230
	CWC10	-R CWC10	-29R DCX1230	-R DCX1230	DCX1230
			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
	CERMET	**CERMET**			
	SDHT	SDHW	SDMT	SDHT	SDHW
	1B/79	1B/79	1B/61	1B/61	1B/61
ISO RE mm	**Article no. 50 426 ...** £	**Article no. 50 428 ...** £	**Article no. 51 010 ...** £	**Article no. 51 006 ...** £	**Article no. 51 008 ...** £
1204AESN 0.2	15.63 **900**				
1204AESN 1.0		16.28 **899**	13.32 **020**	15.19 **020**	15.63 **020**
Steel	●	●	●	●	●
Stainless steel	●	●	○	○	○
Cast iron	○	○			
Non ferrous metals					
Heat resistant alloys					
hardened materials					

SDMT / SDHT / SDHW

	-29 CTPP235	-R CTPP235	-R CTPP235	-F50 CTPM245	-33 CTPM240
	-29 DPX1235	-R DPX1235	-R DPX1235	-F50 DPX2245	-33 DPX2240
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
	SDMT	SDHT	SDHW	SDHT	SDHT
	1B/61	1B/61	1B/61	1H/17	1B/61
ISO RE mm	**Article no. 51 010 ...** £	**Article no. 51 006 ...** £	**Article no. 51 008 ...** £	**Article no. 51 109 ...** £	**Article no. 51 028 ...** £
1204AESN 1.0	13.32 **120**	15.19 **120**	15.63 **120**	20.52 **475**	15.63 **425**
Steel	●	●	●	●	○
Stainless steel	○	○	○	●	●
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

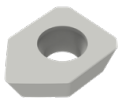
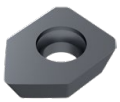
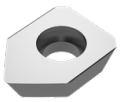
SDMT / SDHW / SDHT

		-31 CTCK215	-R CTCK215	-27 H216T	-27P H216T	H216T
		-31 DCX3215	-R DCX3215	-AL CWK26	-ALP CWK26	CWK26
		DRAGONSKIN	DRAGONSKIN			
						
		SDMT	SDHW	SDHT	SDHT	SDHW
		1B/61	1B/61	1A/90	1A/90	1B/61
ISO	RE	Article no. 51 059 ...	Article no. 51 008 ...	Article no. 50 426 ...	Article no. 50 426 ...	Article no. 50 428 ...
	mm	£	£	£	£	£
1204AEEN	1.0	12.98 520	15.63 520			
1204AEFN	0.2			15.63 504		
1204AEFN	1.0				15.63 554	
1204AESN	0.2					12.98 600
Steel		○	○			
Stainless steel						
Cast iron		●	●	○	○	○
Non ferrous metals				●	●	●
Heat resistant alloys						
hardened materials						

SDHT

		-M31 CTC5240	-F50 CTCS245
		-M31 HCF5240	
		DRAGONSKIN	DRAGONSKIN
		SDHT	SDHT
		1H/D4	NEW 1H/D4
ISO	RE	Article no. 50 421 ...	Article no. 51 109 ...
	mm	£	£
1204AESN	1.0	20.52 512	20.52 57600
Steel			
Stainless steel			
Cast iron			
Non ferrous metals			
Heat resistant alloys		●	●
hardened materials			

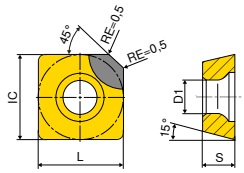
XDHW

		TCM10	CTCP230	CTPP235	CTCK215	H216T
		CWC10	DCX1230	DPX1235	DCX3215	CWK26
			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
						
		CERMET XDHW	XDHW	XDHW	XDHW	XDHW
		1B/79	1B/61	1B/61	1B/61	1B/61
ISO	RE	**Article no.** **50 449 ...**	**Article no.** **51 015 ...**	**Article no.** **51 015 ...**	**Article no.** **51 015 ...**	**Article no.** **50 449 ...**
	mm	£	£	£	£	£
1204AEEN	1				20.58 **525**	
1204AEFN	1					19.47 **600**
1204AESN	1	20.58 **900**	21.58 **025**	21.58 **125**		
Steel		●	●	●	○	
Stainless steel		●	○	○		
Cast iron		○			●	○
Non ferrous metals						●
Heat resistant alloys						
hardened materials						

15

SDHW

Designation	IC	D1	L	S
	mm	mm	mm	mm
SDHW 1204..	12.7	5.5	12.7	4.76

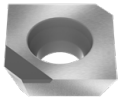


SDHW

SDHW

CTBS10U

PBC10



CBN
SDHW
V9

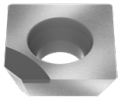
ISO	Article no. 51 900 ...	£	
1204AETN-2		78.37	300 [1]
Steel			
Stainless steel			
Cast iron			●
Non ferrous metals			
Heat resistant alloys			●
hardened materials			

1) $a_{p\,max.}$ = 2.0 mm

SDHW

CTDPS30

PDC



DIAMOND
SDHW
V9

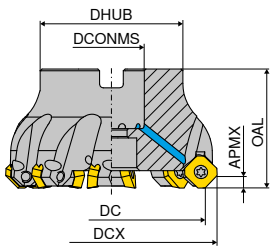
ISO	Article no. 51 900 ...	£	
1204AEFN-2		101.85	100 [1]
1204AEFN-3		100.48	102 [2]
Steel			
Stainless steel			
Cast iron			
Non ferrous metals			●
Heat resistant alloys			
hardened materials			

1) $a_{p\,max.}$ = 2.0 mm
2) $a_{p\,max.}$ = 3,5 mm

Milling guide

Machining strategy	→ 147	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 147

MaxiMill – Shell mill 45° A 270-19



Designation	DC	DCX	ZNF	APMX	DCONMS $_{H6}$	OAL	DHUB	torque moment	Insert	Left-hand NEW 2B/40 Article no. 50 698 ...		Right-hand NEW 2B/40 Article no. 50 698 ...	
	mm	mm		mm	mm	mm	mm	Nm		£		£	
A270.125.R.07-19	125	146.4	7	10	40	63	88	5	SD.. 1907..			715.00	**12507**
A270.160.R.09-19	160	181.4	9	10	40	63	104	5	SD.. 1907..			905.64	**16009** [1]
A270.200.R.11-19	200	221.1	11	10	60	63	134	5	SD.. 1907..			1,096.36	**20011** [2]
A270.250.L.14-19	250	271.4	14	10	60	63	134	5	SD.. 1907..	2,049.09	**75014** [2]		
A270.250.R.14-19	250	271.4	14	10	60	63	134	5	SD.. 1907..			2,049.09	**25014** [2]
A270.315.L.17-19	315	336.4	17	10	60	63	226	5	SD.. 1907..	2,427.27	**81517** [3]		
A270.315.R.17-19	315	336.4	17	10	60	63	226	5	SD.. 1907..			2,427.27	**31517** [3]

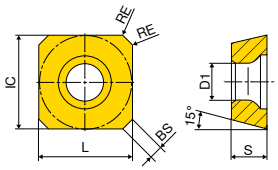
1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm
2) With threaded holes M16 on the front face, pitch circle diameter = 101.6 mm
3) With 4 threaded holes M16 on the front face, pitch circle diameter = 101.6 mm and with 4 threaded holes M20 on the front face, pitch circle diameter = 177.8 mm

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£	
125 - 315	6.69	**037**	13.11	**114**	3.98	**303**	3.72	**302**	183.22	**193**

15

SDKT

Designation	IC	D1	L	BS	S	AN
	mm	mm	mm	mm	mm	°
SDKT 1907..	19.15	6	19.15	1.5	7.35	15
SDKT 1907..	19.15	6	19.15	1.5	7.16	15



SD..

SDKT

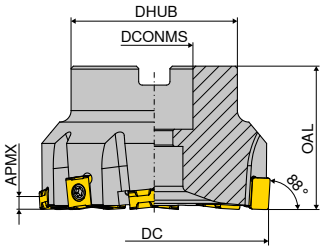
		-R50 CTCP230	-M50 CTPP235	-R50 CTPP235	-R50 CTPM225	-R50 CTCK215
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		SDKT	SDKT	SDKT	SDKT	SDKT
		NEW 1B/61	NEW 1B/61	NEW 1B/61	NEW 1B/61	NEW 1B/61
ISO	RE	Article no. 51 132 ...	Article no. 51 131 ...	Article no. 51 132 ...	Article no. 51 132 ...	Article no. 51 132 ...
	mm	£	£	£	£	£
1907AESN	1.6	28.21 **02100**	28.21 **12000**	28.21 **12300**	28.21 **22200**	28.21 **52000**
Steel		●	●	●	○	○
Stainless steel		○	○	○	●	
Cast iron						●
Non ferrous metals						
Heat resistant alloys						
hardened materials						

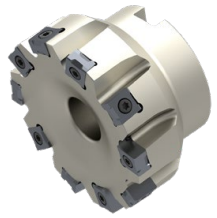
Milling guide

Grade description	→ 209	ISO Designation System	→ 194+195
Cutting data appoximate values	→ 148		

MaxiMill – Shell mill HEC 11

▲ not adjustable



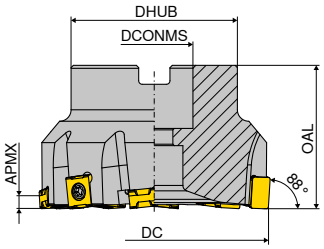


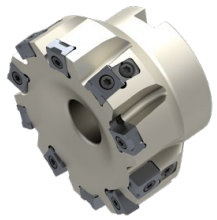
Designation	DC	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	RPMX	torque moment	Insert	2B/40 Article no. 50 725 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£	
AHEC.50.R.06-11	50	6	6	40	48	22	12700	3,2	LNHX 1106	493.45	**050**
AHEC.63.R.08-11	63	8	6	40	48	22	10100	3,2	LNHX 1106	592.36	**063**
AHEC.80.R.10-11	80	10	6	50	58	27	8000	3,2	LNHX 1106	724.18	**080**
AHEC.100.R.12-11	100	12	6	50	78	32	6400	3,2	LNHX 1106	845.09	**100**
AHEC.125.R.12-11	125	12	6	63	88	40	5100	3,2	LNHX 1106	965.45	**125**
AHEC.125.R.16-11	125	16	6	63	88	40	5100	3,2	LNHX 1106	972.73	**12516**
AHEC.160.R.20-11	160	20	6	63	100	40	4000	3,2	LNHX 1106	1,417.27	**160** [1]

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

MaxiMill – Shell mill HEC 11

▲ Axially adjustable with same tooth pitch



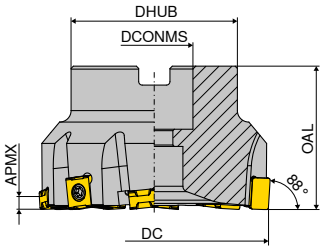


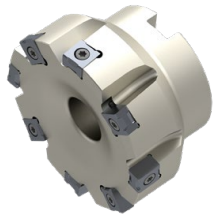
Designation	DC	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	RPMX	torque moment	Insert	2B/40 Article no. 50 733 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£	
AHEC.50.R.06A03-11	50	6	6	40	48	22	12700	3,2	LNHX 1106	747.73	**050**
AHEC.63.R.08A04-11	63	8	6	40	48	22	10100	3,2	LNHX 1106	930.91	**063**
AHEC.80.R.10A05-11	80	10	6	50	58	27	8000	3,2	LNHX 1106	1,148.18	**080**
AHEC.100.R.12A06-11	100	12	6	50	78	32	6400	3,2	LNHX 1106	1,354.55	**100**
AHEC.125.R.16A08-11	125	16	6	63	88	40	5100	3,2	LNHX 1106	1,832.73	**125**
AHEC.160.R.20A10-11	160	20	6	63	100	40	4000	3,2	LNHX 1106	2,264.55	**160** [1]

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

MaxiMill – Shell mill HEC 11

▲ with irregular pitch, non adjustable





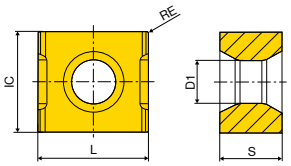
Designation	DC	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	RPMX	torque moment	Insert	2B/40 Article no. 50 733 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£	
AHEC.50.R.04B-11	50	4	6	40	48	22	12700	3,2	LNHX 1106	384.91	**550**
AHEC.63.R.06B-11	63	6	6	40	48	22	10100	3,2	LNHX 1106	478.36	**563**
AHEC.80.R.08B-11	80	8	6	50	58	27	8000	3,2	LNHX 1106	613.09	**580**
AHEC.100.R.10B-11	100	10	6	50	78	32	6400	3,2	LNHX 1106	788.00	**600**
AHEC.125.R.12B-11	125	12	6	63	88	40	5100	3,2	LNHX 1106	963.64	**625**
AHEC.160.R.14B-11	160	14	6	63	100	40	4000	3,2	LNHX 1106	1,196.36	**660** [1]

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Coolant Disc Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Wedge Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£	
50 - 63	6.69	**036**	3.98	**303**	22.89	**852**	2.85	**113**	33.45	**199**	183.22	**193**
80	6.69	**036**	3.98	**303**	23.39	**853**	2.85	**113**	33.45	**199**	183.22	**193**
100	6.69	**036**	3.98	**303**	25.75	**854**	2.85	**113**	33.45	**199**	183.22	**193**
125	6.69	**036**	3.98	**303**	33.94	**855**	2.85	**113**	33.45	**199**	183.22	**193**
160	6.69	**036**	3.98	**303**			2.85	**113**	33.45	**199**	183.22	**193**

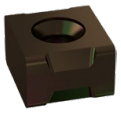
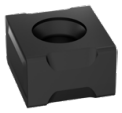
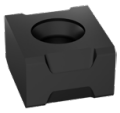
LNHX

Designation	IC	D1	L	S
	mm	mm	mm	mm
LNHX 1106..	10	4.27	11	6.35



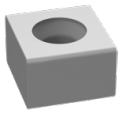
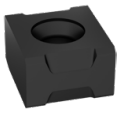
LNHX

LNHX

		CTEP210	CTCK215	-R50 CTCK215	-Q CTCK215
		DCC1210	DCX3215	-R50 DCX3215	-Q DCX3215
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		CERMET			
		LNHX	LNHX	LNHX	LNHX
		1B/79	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 046 ...	Article no. 51 046 ...	Article no. 51 024 ...	Article no. 51 045 ...
	mm	£	£	£	£
1106PNEN	0.5		23.55 51600		
1106PNER	0.5		23.55 520	23.55 520	
1106PNER	0.8	27.31 820			
1106ZZER	0.5				23.55 520 1)
Steel		●	○	○	○
Stainless steel					
Cast iron		●	●	●	●
Non ferrous metals					
Heat resistant alloys					
hardened materials					

1) -Q = Wiper insert

LNHX

		CTPK220	-R50 CTPK220	CTN3105	CTL3215	-Q CTL3215
		DPX3220	-R50 DPX3220	CTS3105	CWB3215	
		DRAGONSKIN	DRAGONSKIN			
						
		LNHX	LNHX	CERAMIC LNHX	CBN LNHX	CBN LNHX
		1B/61	1B/61	1G/55	1G/21	1G/21
ISO	RE	Article no. 51 046 ...	Article no. 51 024 ...	Article no. 50 500 ...	Article no. 51 046 ...	Article no. 51 045 ...
	mm	£	£	£	£	£
110608EN	0.8		23.55 608			
1106PNER	0.5	23.55 620	23.55 620			
1106PNSR	0.5			22.20 904		
1106PNSR					129.73 87200	
1106ZZER						129.73 87000 1)
Steel		○	○			
Stainless steel						
Cast iron		●	●	●	●	●
Non ferrous metals						
Heat resistant alloys						
hardened materials					○	○

1) -Q = Wiper insert

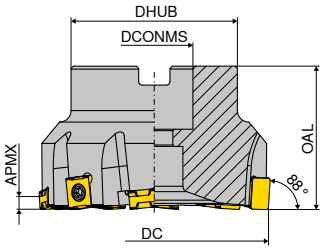
15

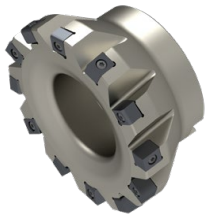
Milling guide

Grade description	→ 209+210	ISO Designation System	→ 194+195
Cutting data appoximate values	→ 148		

MaxiMill – Shell mill HEC 12

▲ not adjustable





Designation	DC	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	RPMX	torque moment	Insert	NEW 2B/40 Article no. 50 725 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£	
AHEC.125.R.12-1210	125	12	8	63	88	40	5000	3,2	LN.. 1210..	965.45	**32512**
AHEC.160.R.16-1210	160	16	8	63	88	40	3900	3,2	LN.. 1210..	1,133.64	**36016** [1)]

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

Key D

Y7

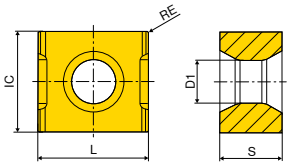
Coolant Disc

2A/28

Spare parts DC	Article no. 80 950 ...		Article no. 70 950 ...	
	£		£	
125 - 160	9.36	**105**	33.94	**855**

LNHX / LNEX

Designation	IC	D1	L	S
	mm	mm	mm	mm
LN.X 1210..	10	4.4	12.7	10.00

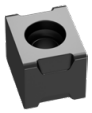


LNHX

LNHX / LNEX

CTCK215 | CTPK220 | -R50 CTPK220

LNHX


LNEX

LNHX

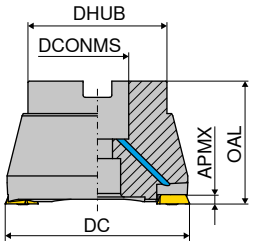
ISO	RE	NEW 1B/61 Article no. 51 135 ...		NEW 1B/61 Article no. 51 133 ...		NEW 1B/61 Article no. 51 134 ...	
	mm	£		£		£	
121008EN	0.8					29.44	**60800**
121008SN	0.8	29.44	**50900**				
121020EN				27.08	**62000**		
121020SN	2.0	29.44	**52100**				
Steel			○		○		○
Stainless steel							
Cast iron			●		●		●
Non ferrous metals							
Heat resistant alloys							
hardened materials							

Milling guide

Grade description	→ 209+210	ISO Designation System	→ 194+195
Cutting data appoximate values	→ 148		

Finishing cutter F 5000 A

- With µm-adjustable inserts
- Adjust with screw (56 950 017) and set with Torx 20 key (80 950 114)



Designation	DC	ZNF	APMX	OAL	DCONMS	DHUB	torque moment	Insert	WA Article no. 56 511 ...	
	mm		mm	mm	mm	mm	Nm		£	
F5000A.42.2.43.IK	42	2	0,2	43	16	35	3,2	TEHX 16T3..	478.51	**421**
F5000A.52.2.43.IK	52	2	0,2	43	22	48	3,2	TEHX 16T3..	576.24	**521**
F5000A.66.2.53.IK	66	2	0,2	53	27	60	3,2	TEHX 16T3..	673.94	**661**
F5000A.80.2.53.IK	80	2	0,2	53	27	60	3,2	TEHX 16T3..	771.52	**801**
F5000A.100.2.53	100	2	0,2	53	32	70	3,2	TEHX 16T3..	869.20	**910** 1)

1) Without Through Coolant

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Key-T Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		WA Axial runout adjustment screw Article no. 56 950 ...		2A/28 Molykote Article no. 70 950 ...		WA Clamping screw Article no. 56 950 ...		WA Grubscrew Article no. 56 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£		£		£	
42	6.69	**036**	6.99	**088**	13.11	**114**	5.54	**017**	3.98	**303**	5.78	**028**	43.16	**121**	183.22	**193**
52	6.69	**036**	6.99	**088**	12.26	**113**	5.54	**017**	3.98	**303**	5.78	**028**			183.22	**193**
66	6.69	**036**	6.99	**088**	12.26	**113**	5.54	**017**	3.98	**303**	5.78	**028**			183.22	**193**
80	6.69	**036**	6.99	**088**	12.26	**113**	5.54	**017**	3.98	**303**	5.78	**028**			183.22	**193**
100	6.69	**036**	6.99	**088**	12.26	**113**	5.54	**017**	3.98	**303**	5.78	**028**	43.16	**121**	183.22	**193**

Description of article

- Tightening torque of the indexable insert clamping screw 56 950 028 is 3.2 Nm.
- This tool produces surfaces with excellent surface quality Rz ≤ 2.5 µm with high axial run-out precision.
- The two precision adjustment screws make adjustment to µm accuracy possible.
- Additional grinding is therefore avoided, so machining time and costs are reduced.
- The tool is also well-suited for unstable workpieces and low power machines.

The screws for the adjustment of the axial run-out are mounted on every milling cutter and have to be tightened to a preset value. Otherwise there is the danger that the screws loosen during the machining operation. This can result in damage of the workpiece or tool and also cause danger for the machine operator. Should the screws for fine adjustment not be needed we recommend to remove them from the tool.

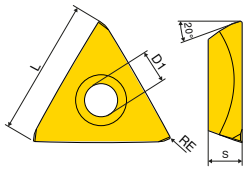
Material	v_c m/min	f_z mm	a_p mm
Steel	150–250*)	0,5–2	0,05–0,2
Cast iron	150–250*)	0,5–2	0,05–0,2
Hardened materials ≤ 56 HRC	35–200*)	0,2–1	0,05–0,1

*) Depending on the machining and structural state of the processed workpiece.

15

TEHX

Designation	L	S	D1
	mm	mm	mm
TEHX 16T3..	14.32	4.00	3.9



TEHX

WTN1205

TEHX
WB

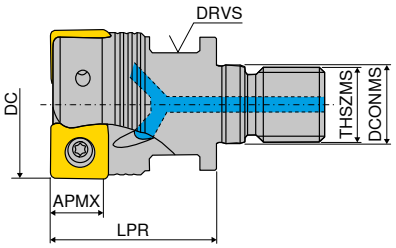
ISO	RE	Article no. 56 327 ...
	mm	£
16T3ZF	0.2	28.78 **151**

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
hardened materials	●

Milling guide

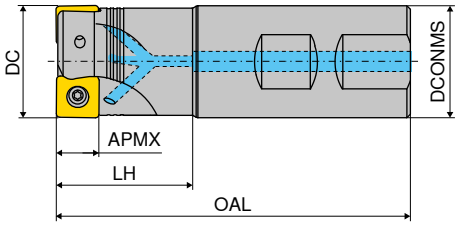
Grade description	→ 209+210	ISO Designation System	→ 194+195
Cutting data appoximate values	→ 49		

MaxiMill – Screw in cutter G 491



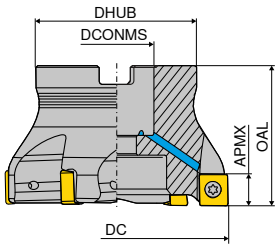
Designation	DC	ZNF	APMX	LPR	THSZMS	DCONMS	DRVS	torque moment	Insert	2B/40 Article no. 50 773 ...	
	mm		mm	mm		mm	mm	Nm		£	
G491.25.R.03-09	25	3	6	35	M12	12.5	17	2	SNHU 09T3	319.36	125
G491.32.R.03-09	32	3	6	35	M16	17.0	24	2	SNHU 09T3	324.18	132
G491.32.R.04-09	32	4	6	35	M16	17.0	24	2	SNHU 09T3	362.18	232

MaxiMill – End milling cutter C 491



Designation	DC	ZNF	APMX	OAL	LH	DCONMS h6	RPMX	torque moment	Insert	A 2B/40 Article no. 50 774 ...		B 2B/40 Article no. 50 774 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£		£	
C491.25.R.03-09-B-32	25	3	6	59	32	25	23500	2	SNHU 09T3			324.18	425
C491.25.R.03-09-A-50-225	25	3	6	225	50	25	23500	2	SNHU 09T3	324.18	325		
C491.32.R.03-09-B-40	32	3	6	101	40	32	19600	2	SNHU 09T3			333.64	632
C491.32.R.04-09-B-40	32	4	6	101	40	32	19600	2	SNHU 09T3			362.18	432
C491.32.R.03-09-A-63-250	32	3	6	250	63	32	19600	2	SNHU 09T3	333.64	532		
C491.32.R.04-09-A-63-250	32	4	6	250	63	32	19600	2	SNHU 09T3	362.18	332		

MaxiMill – Shell mill A 491

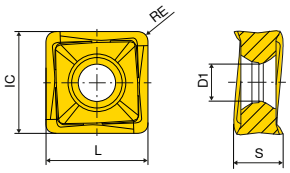


Designation	DC	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	RPMX	torque moment	Insert	2B/40 Article no. 50 776 ...		2B/40 Article no. 50 775 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£		£	
A491.40.R.03-09	40	3	6	40	38	16	16800	2	SNHU 09T3			352.64	**240**
A491.40.R.05-09	40	5	6	40	38	16	16800	2	SNHU 09T3	409.91	**240**		
A491.50.R.04-09	50	4	6	40	43	22	14600	2	SNHU 09T3			390.82	**250**
A491.50.R.06-09	50	6	6	40	43	22	14600	2	SNHU 09T3	448.00	**250**		
A491.63.R.05-09	63	5	6	40	48	22	12700	2	SNHU 09T3			467.09	**263**
A491.63.R.08-09	63	8	6	40	48	22	12700	2	SNHU 09T3	552.82	**263**		
A491.80.R.06-09	80	6	6	50	58	27	11100	2	SNHU 09T3			495.73	**280**
A491.80.R.10-09	80	10	6	50	58	27	11100	2	SNHU 09T3	610.09	**280**		
A491.100.R.07-09	100	7	6	50	78	32	9800	2	SNHU 09T3			629.09	**300**
A491.100.R.12-09	100	12	6	50	78	32	9800	2	SNHU 09T3	772.09	**300**		
A491.125.R.08-09	125	8	6	63	88	40	8700	2	SNHU 09T3			762.55	**325**
A491.125.R.15-09	125	15	6	63	88	40	8700	2	SNHU 09T3	934.55	**325**		

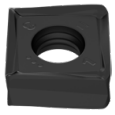
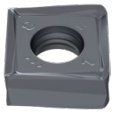
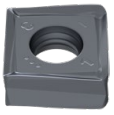
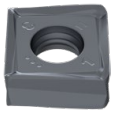
Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£		£	
25 - 32	6.69	**053**			11.73	**119**			3.98	**303**	2.81	**710**	183.22	**193**
40	6.69	**053**	4.78	**040**	11.73	**119**	11.35	**151**	3.98	**303**	2.81	**710**	183.22	**193**
50 - 125	6.69	**053**			11.73	**119**			3.98	**303**	2.81	**710**	183.22	**193**

SNHU

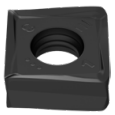
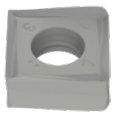
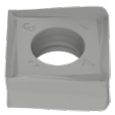
Designation	IC	L	S	D1
	mm	mm	mm	mm
SNHU 09T3..	9.15	9.15	3.70	3.85



SNHU

		-M50 CTCP230	-M50 CTPP235	-F50 CTPM240	-M50 CTPM240	-F40 CTPM245
		-M50 DCX1230	-M50 DPX1235	-F50 DPX2240	-M50 DPX2240	
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		SNHU	SNHU	SNHU	SNHU	SNHU
		1B/61	1B/61	1B/61	1B/61	NEW 1H/17
ISO	RE	Article no. 51 120 ...	Article no. 51 120 ...	Article no. 51 119 ...	Article no. 51 120 ...	Article no. 51 126 ...
	mm	£	£	£	£	£
09T308ER	0.8					24.96 45800
09T308SR	0.8	19.95 008	19.95 108	19.95 408	19.95 408	
09T312SR	1.2	19.95 01200	19.95 11200	19.95 41200	19.95 41200	
09T316SR	1.6	19.95 01600	19.95 11600	19.95 41600	19.95 41600	
Steel		●	●	○	○	●
Stainless steel		○	○	●	●	●
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials						

SNHU

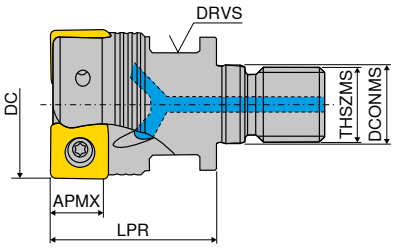
		-R50 CTCK215	-F10 CTWN215	-F40 CTC5240	-F40 CTCS245
		-R50 DCX3215	-F10 CWK4615		
		DRAGONSKIN		DRAGONSKIN	DRAGONSKIN
					
		SNHU	SNHU	SNHU	SNHU
		1B/61	1B/61	NEW 1H/D4	NEW 1H/D4
ISO	RE	Article no. 51 121 ...	Article no. 51 118 ...	Article no. 51 126 ...	Article no. 51 126 ...
	mm	£	£	£	£
09T308ER	0.8			24.96 15800	24.96 55800
09T308FR	0.8		19.95 358		
09T308SR	0.8	19.95 508			
09T312FR	1.2		19.95 36200		
09T312SR	1.2	19.95 51200			
09T316FR	1.6		19.95 36600		
09T316SR	1.6	19.95 51600			
Steel		○			
Stainless steel					
Cast iron		●	○		
Non ferrous metals			●		
Heat resistant alloys				●	●
hardened materials					

Milling guide

Starting Parameter	→ 150	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 150

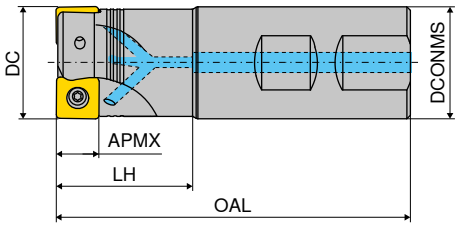
15

MaxiMill – Screw in cutter G 491



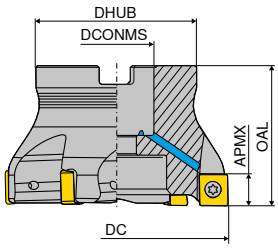
Designation	DC	ZNF	APMX	LPR	THSZMS	DCONMS	DRVS	torque moment	Insert	2B/40 Article no. 50 773 ...	
	mm		mm	mm		mm	mm	Nm		£	
G491.32.R.02-12	32	2	8	35	M16	17	24	3,2	SNHU 1204	305.09	032

MaxiMill – End milling cutter C 491



Designation	DC	ZNF	APMX	OAL	LH	DCONMS $_{h6}$	RPMX	torque moment	Insert	A 2B/40 Article no. 50 774 ...		B 2B/40 Article no. 50 774 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£		£	
C491.32.R.02-12-B-40	32	2	8	102	40	32	13600	3,2	SNHU 1204			305.09	032
C491.32.R.02-12-A-63-250	32	2	8	250	63	32	10200	3,2	SNHU 1204	305.09	232		

MaxiMill – Shell mill A 491



Designation	DC	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	RPMX	torque moment	Insert	2B/40 Article no. 50 776 ...		2B/40 Article no. 50 775 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£		£	
A491.40.R.03-12	40	3	8	40	38	16	11500	3,2	SNHU 1204			352.64	**040**
A491.40.R.04-12	40	4	8	40	38	16	11500	3,2	SNHU 1204	381.27	**040**		
A491.50.R.04-12	50	4	8	40	43	22	9800	3,2	SNHU 1204			390.82	**050**
A491.50.R.05-12	50	5	8	40	43	22	9800	3,2	SNHU 1204	419.45	**050**		
A491.63.R.05-12	63	5	8	40	48	22	8500	3,2	SNHU 1204			467.09	**063**
A491.63.R.06-12	63	6	8	40	48	22	8500	3,2	SNHU 1204	495.73	**063**		
A491.80.R.06-12	80	6	8	50	58	27	7400	3,2	SNHU 1204			495.73	**080**
A491.80.R.08-12	80	8	8	50	58	27	7400	3,2	SNHU 1204	571.91	**080**		
A491.100.R.07-12	100	7	8	50	78	32	6500	3,2	SNHU 1204			629.09	**100**
A491.100.R.10-12	100	10	8	50	78	32	6500	3,2	SNHU 1204	715.00	**100**		
A491.125.R.08-12	125	8	8	63	88	40	5700	3,2	SNHU 1204			762.55	**125**
A491.125.R.12-12	125	12	8	63	88	40	5700	3,2	SNHU 1204	877.00	**125**		
A491.160.R.09-12	160	9	8	63	98	40	5000	3,2	SNHU 1204			886.55	**160** [1]
A491.160.R.14-12	160	14	8	63	98	40	5000	3,2	SNHU 1204	1,030.00	**160** [1]		

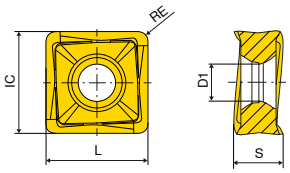
1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£		£	
32	6.69	**054**			15.77	**128**			3.98	**303**	2.85	**859**	183.22	**193**
40	6.69	**054**	4.78	**040**	15.77	**128**	11.35	**151**	3.98	**303**	2.85	**859**	183.22	**193**
50 - 160	6.69	**054**			15.77	**128**			3.98	**303**	2.85	**859**	183.22	**193**

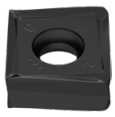
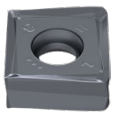
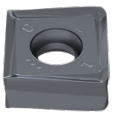
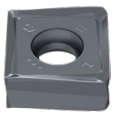
15

SNHU

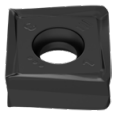
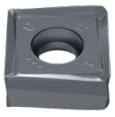
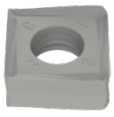
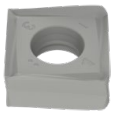
Designation	IC	L	S	D1
	mm	mm	mm	mm
SNHU 1204..	12.2	12.2	5.00	4.4



SNHU

ISO	RE	-M50 CTCP230	-M50 CTPP235	-F50 CTPM240	-M50 CTPM240	-F40 CTPM245
		-M50 DCX1230	-M50 DPX1235	-F50 DPX2240	-M50 DPX2240	
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		SNHU	SNHU	SNHU	SNHU	SNHU
		1B/61	1B/61	1B/61	1B/61	NEW 1H/17
	mm	Article no. 51 100 ... £	Article no. 51 100 ... £	Article no. 51 102 ... £	Article no. 51 100 ... £	Article no. 51 128 ... £
120408ER	0.8					29.97 45800
120408SR	0.8	24.37 008	24.37 108	24.37 408	24.37 408	
120412SR	1.2		24.37 112	24.37 412		
120416SR	1.6		24.37 116	24.37 416		
120420SR	2.0		24.37 120	24.37 420		
Steel		●	●	○	○	●
Stainless steel		○	○	●	●	●
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials						

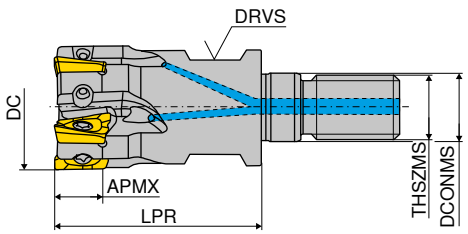
SNHU

ISO	RE	-R50 CTCK215	-R50 CTPK220	-F10 CTWN215	-F40 CTC5240	-F40 CTCS245
		-R50 DCX3215	-R50 DPX3220	-F10 CWK4615		
		DRAGONSKIN	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN
						
		SNHU	SNHU	SNHU	SNHU	SNHU
		1B/61	1B/61	1B/61	NEW 1H/D4	NEW 1H/D4
	mm	Article no. 51 103 ... £	Article no. 51 103 ... £	Article no. 51 101 ... £	Article no. 51 128 ... £	Article no. 51 128 ... £
120408ER	0.8				29.97 15800	29.97 55800
120408FR	0.8			24.37 358		
120408SR	0.8	24.37 508	24.37 608			
120412FR	1.2			24.37 362		
120412SR	1.2	24.37 512				
120416FR	1.6			24.37 366		
120416SR	1.6	24.37 516				
120420FR	2.0			24.37 370		
120420SR	2.0	24.37 520				
Steel		○	○			
Stainless steel						
Cast iron		●	●	○		
Non ferrous metals				●		
Heat resistant alloys					●	●
hardened materials						

Milling guide

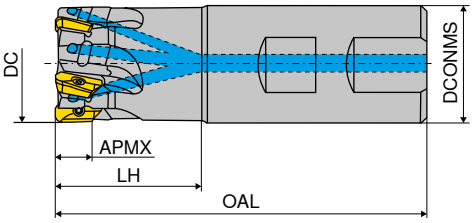
Starting Parameter	→ 151	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 151

MaxiMill – Screw in cutter G 211-07



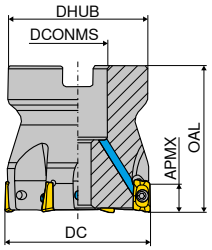
Designation	DC	ZNF	APMX	LPR	DCONMS	THSZMS	DRVS	RPMX	torque moment	Insert	2B/40 Article no. 50 751 ...	
	mm		mm	mm	mm		mm	1/min.	Nm		£	
G211.16.R.04-07	16	4	6	27	8.5	M8	10	50400	1	XD.T 0703	243.64	016
G211.20.R.05-07	20	5	6	33	10.5	M10	15	44280	1	XD.T 0703	271.82	020
G211.25.R.06-07	25	6	6	35	12.5	M12	17	39480	1	XD.T 0703	317.09	025
G211.32.R.08-07	32	8	6	35	17.0	M16	24	36240	1	XD.T 0703	345.27	032

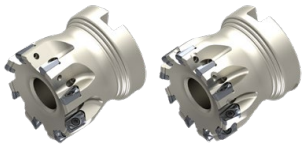
MaxiMill – End milling cutter C 211-07



Designation	DC	ZNF	APMX	OAL	LH	DCONMS	RPMX	torque moment	Insert	A 2B/40 Article no. 50 752 ...		B 2B/40 Article no. 50 752 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£		£	
C211.10.R.01-07-A-20	10	1	6	61.0	20	10	72000	1	XD.T 0703	192.73	010		
C211.12.R.02-07-A-20	12	2	6	66.5	20	12	66600	1	XD.T 0703	220.91	012		
C211.16.R.04-07-A/B-25	16	4	6	74.5	25	16	50400	1	XD.T 0703	243.64	016	243.64	216
C211.16.R.03-07-A-32-165	16	3	6	165.0	32	16	17760	1	XD.T 0703	226.55	116		
C211.20.R.05-07-A/B-25	20	5	6	77.0	25	20	44280	1	XD.T 0703	271.82	020	271.82	220
C211.20.R.04-07-A-40-200	20	4	6	200.0	40	20	12600	1	XD.T 0703	254.82	120		
C211.25.R.06-07-A/B20-32	25	6	6	84.0	32	20	39840	1	XD.T 0703	317.09	025	317.09	225
C211.25.R.05-07-A20-50-225	25	5	6	225.0	50	20	11280	1	XD.T 0703	283.18	125		
C211.32.R.08-07-A/B25-40	32	8	6	98.0	40	25	36240	1	XD.T 0703	345.27	032	345.27	232

MaxiMill – Shell mill A 211-07



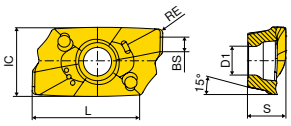


Designation	DC	ZNF	APMX	OAL	DCONMS $_{H6}$	DHUB	RPMX	torque moment	Insert	2B/40 Article no. 50 753 ...		2B/40 Article no. 50 754 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£		£	
A211.32.R.06-07	32	6	6	40	16	38	36240	1	XD.T 0703	289.00	**032**		
A211.32.R.08-07	32	8	6	40	16	38	36240	1	XD.T 0703			322.82	**032**
A211.40.R.08-07	40	8	6	40	16	38	33240	1	XD.T 0703	356.82	**040**		
A211.40.R.10-07	40	10	6	40	16	38	33240	1	XD.T 0703			390.82	**040**
A211.50.R.10-07	50	10	6	40	22	43	30480	1	XD.T 0703	424.73	**050**		
A211.50.R.12-07	50	12	6	40	22	43	30480	1	XD.T 0703			458.64	**050**

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£		£	
10 - 32	6.69	**051**			13.49	**124**			3.98	**303**	2.89	**137**	163.58	**191**
32	6.69	**051**	4.78	**040**	13.49	**124**	11.35	**151**	3.98	**303**	2.89	**137**	163.58	**191**
40 - 50	6.69	**051**			13.49	**124**			3.98	**303**	2.89	**137**	163.58	**191**

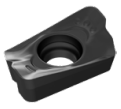
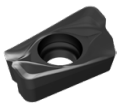
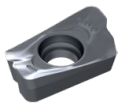
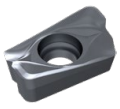
XDKT

Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
XDKT 0703..	4.9	2.5	7.8	1.2	3.18

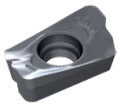
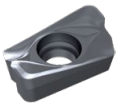
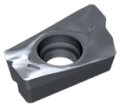


XDKT

XDKT

ISO	RE	-F50 CTCP230	-M50 CTCP230	-F50 CTPP235	-M50 CTPP235
		-F50 DCX1230	-M50 DCX1230	-F50 DPX1235	-M50 DPX1235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		XDKT	XDKT	XDKT	XDKT
		1B/61	1B/61	1B/61	1B/61
		Article no. 51 033 ...	Article no. 51 036 ...	Article no. 51 033 ...	Article no. 51 036 ...
	mm	£	£	£	£
070304SR	0.4	10.51 004	10.51 004	10.51 104	10.51 104
070308SR	0.8	10.51 008	10.51 008	10.51 108	10.51 108
Steel		●	●	●	●
Stainless steel		○	○	○	○
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

XDKT

ISO	RE	-F50 CTPM240	-M50 CTPM240	-F40 CTPM245	-F20 CTWN215	-F40 CTC5240	-F40 CTCS245
		-F50 DPX2240	-M50 DPX2240	-F40 DPX2245	-F20 CWK4615	-F40 HCF5240	
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN
							
		XDKT	XDKT	XDKT	XDKT	XDKT	XDKT
		1B/61	1B/61	1H/17	1A/90	1H/D4	NEW 1H/D4
		Article no. 51 033 ...	Article no. 51 036 ...	Article no. 51 112 ...	Article no. 50 507 ...	Article no. 50 498 ...	Article no. 51 112 ...
	mm	£	£	£	£	£	£
070304ER	0.4			12.55 454		12.55 544	
070304FR	0.4				12.10 504		
070304SR	0.4	10.51 404	10.51 404				
070308ER	0.8			12.55 458		12.55 548	12.55 558
070308FR	0.8				12.10 508		
070308SR	0.8	10.51 408	10.51 408				
Steel		○	○	●			
Stainless steel		●	●	●			
Cast iron					○		
Non ferrous metals					●		
Heat resistant alloys						●	●
hardened materials							

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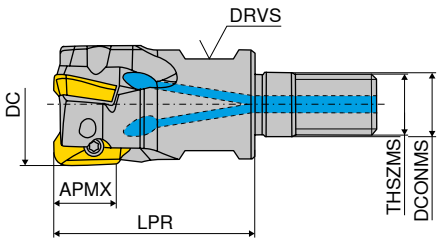
Milling guide

Machining strategy	→ 152	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 152
Starting Parameter	→ 152	Correction of the tooth load f_z	→ 157

MaxiMill – Screw in cutter G 211-11

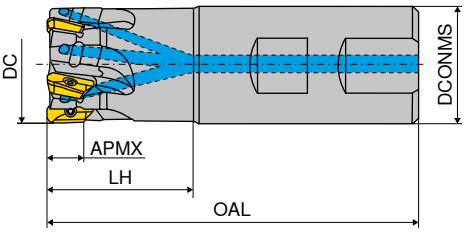
▲ Insert radius > 1,6 mm: Modify cutter body



Designation	DC	ZNF	APMX	LPR	DCONMS	THSZMS	DRVS	RPMX	torque moment	Insert	2B/40 Article no. 50 736 ...	
	mm		mm	mm	mm		mm	1/min.	Nm		£	
G211.16.R.02-11	16	2	10	27	8.5	M8	10	42000	1,2	XD.T 11T3	209.55	016
G211.20.R.03-11	20	3	10	33	10.5	M10	15	36900	1,2	XD.T 11T3	237.91	020
G211.25.R.03-11	25	3	10	35	12.5	M12	17	33200	1,2	XD.T 11T3	249.18	12500
G211.25.R.04-11	25	4	10	35	12.5	M12	17	33200	1,2	XD.T 11T3	266.27	025
G211.32.R.04-11	32	4	10	35	17.0	M16	24	30200	1,2	XD.T 11T3	277.55	13200
G211.32.R.05-11	32	5	10	35	17.0	M16	24	30200	1,2	XD.T 11T3	294.64	032
G211.40.R.06-11	40	6	10	35	17.0	M16	27	27700	1,8	XD.T 11T3	322.82	040

MaxiMill – End milling cutter C 211-11

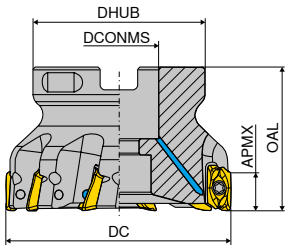
▲ Insert radius > 1,6 mm: Modify cutter body

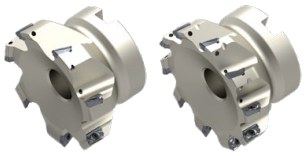


Designation	DC	ZNF	APMX	OAL	LH	DCONMS h6	RPMX	torque moment	Insert	A 2B/40 Article no. 50 737 ...		B 2B/40 Article no. 50 737 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£		£	
C211.12.R.01-11-B-20	12	1	10	75	20	16	55000	1,2	XD.T 11T3			186.91	012
C211.16.R.02-11-A/B-25	16	2	10	75	25	16	42000	1,2	XD.T 11T3	209.55	116	209.55	016
C211.16.R.02-11-A15-32-165	16	2	10	165	32	15	14800	1,2	XD.T 11T3	209.55	316		
C211.16.R.02-11-A-32-165	16	2	10	165	32	16	14800	1,2	XD.T 11T3	209.55	216		
C211.20.R.03-11-A-25	20	3	10	77	25	20	36900	1,2	XD.T 11T3	237.91	120		
C211.20.R.02-11-B-25	20	2	10	77	25	20	36900	1,2	XD.T 11T3			220.91	02002
C211.20.R.02-11-A-25	20	2	10	77	25	20	36900	1,2	XD.T 11T3	220.91	12002		
C211.20.R.03-11-B-25	20	3	10	77	25	20	36900	1,2	XD.T 11T3			237.91	020
C211.20.R.03-11-A-32-165	20	3	10	165	32	20	15800	1,2	XD.T 11T3	237.91	320		
C211.20.R.02-11-A-40-200	20	2	10	200	40	20	10500	1,2	XD.T 11T3	220.91	420		
C211.20.R.02-11-A19-40-200	20	2	10	200	40	19	10500	1,2	XD.T 11T3	220.91	620		
C211.25.R.03-11-A/B-32	25	3	10	90	32	25	33200	1,2	XD.T 11T3	249.27	625	249.27	725
C211.25.R.04-11-A/B-32	25	4	10	90	32	25	33200	1,2	XD.T 11T3	266.27	125	266.27	025
C211.25.R.04-11-A-40-165	25	4	10	165	40	25	19900	1,2	XD.T 11T3	266.27	325		
C211.25.R.03-11-A-50-225	25	3	10	225	50	25	9400	1,2	XD.T 11T3	249.27	425		
C211.25.R.02-11-A-50-225	25	2	10	225	50	25	9400	1,2	XD.T 11T3	232.36	02502		
C211.25.R.03-11-A24-50-225	25	3	10	225	50	24	9400	1,2	XD.T 11T3	249.27	825		
C211.32.R.04-11-A-40	32	4	10	102	40	32	30200	1,2	XD.T 11T3	277.55	13204		
C211.32.R.05-11-B5-40	32	5	10	102	40	25	30200	1,2	XD.T 11T3			294.64	73200
C211.32.R.04-11-B-25	32	4	10	102	40	32	30200	1,2	XD.T 11T3			277.55	83200
C211.32.R.04-11-A25-40	32	4	10	102	40	25	30200	1,2	XD.T 11T3	277.55	53204		
C211.32.R.05-11-A/B-40	32	5	10	102	40	32	30200	1,2	XD.T 11T3	294.64	132	294.64	032
C211.32.R.05-11-A-50-165	32	5	10	165	50	32	20900	1,2	XD.T 11T3	294.64	332		
C211.32.R.04-11-A-64-250	32	4	10	250	64	32	8500	1,2	XD.T 11T3	277.55	432		
C211.40.R.06-11-B32-50	40	6	10	110	50	32	27700	1,8	XD.T 11T3			322.82	04000
C211.40.R.06-11-B-50	40	6	10	122	50	40	27700	1,8	XD.T 11T3			322.82	14000

MaxiMill – Shell mill A 211-11

▲ Insert radius > 1,6 mm: Modify cutter body





Designation	DC	ZNF	APMX	OAL	DCONMS $_{H6}$	DHUB	RPMX	torque moment	Insert	2B/40 Article no. 50 738 ...		2B/40 Article no. 50 739 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£		£	
A211.40.R.04-11	40	4	10	40	16	38	27700	1,8	XD.T 11T3	289.00	**040**		
A211.40.R.06-11	40	6	10	40	16	38	27700	1,8	XD.T 11T3			322.82	**040**
A211.50.R.05-11	50	5	10	40	22	43	25400	1,8	XD.T 11T3	339.82	**050**		
A211.50.R.08-11	50	8	10	40	22	43	25400	1,8	XD.T 11T3			390.91	**050**
A211.63.R.06-11	63	6	10	40	22	48	23300	1,8	XD.T 11T3	390.91	**063**		
A211.63.R.10-11	63	10	10	40	22	48	23300	1,8	XD.T 11T3			458.82	**063**
A211.80.R.07-11	80	7	10	50	27	58	21300	1,8	XD.T 11T3	441.91	**080**		
A211.80.R.10-11	80	10	10	50	27	58	21300	1,8	XD.T 11T3			492.82	**180**
A211.100.R.08-11	100	8	10	50	32	78	19600	1,8	XD.T 11T3	492.82	**10000**		
A211.125.R.10-11	125	10	10	63	40	88	17900	1,8	XD.T 11T3	538.09	**12500**		

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£		£	
12	6.69	**043**			13.49	**125**			3.98	**303**	2.34	**116**	163.58	**191**
16 - 32	6.69	**043**			13.49	**125**			3.98	**303**	3.72	**128**	163.58	**191**
40	6.69	**043**	4.78	**040**	13.49	**125**	11.35	**151**	3.98	**303**	3.72	**131**	163.58	**191**
50	6.69	**043**	6.09	**050**	13.49	**125**	15.58	**154**	3.98	**303**	3.72	**131**	163.58	**191**
63 - 125	6.69	**043**			13.49	**125**			3.98	**303**	3.72	**131**	163.58	**191**

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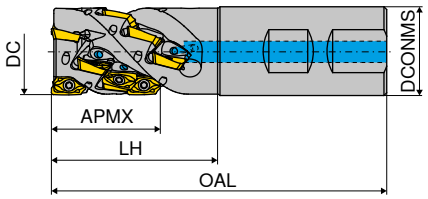
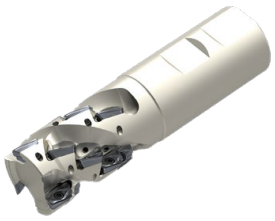
MaxiMill – Extended flute cutter C 211-11K

▲ ZEFP = Number of inserts
▲ ZNP = Number of teeth





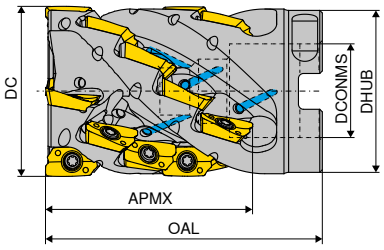
B

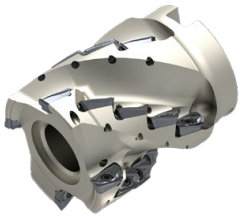
Designation	DC mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS mm	ZEFP	ZNP	torque moment Nm	Insert	2B/40 Article no. 50 758 ... £	
C211.25.R.02K3-11-B-40	25	2	27.0	97	40	25	6	3	1,2	XD.T 11T3	577.55	**025**
C211.25.R.02K4-11-B-50	25	2	37.0	107	50	25	8	4	1,2	XD.T 11T3	611.45	**125**
C211.25.R.02K5-11-B-60	25	2	45.5	117	60	25	10	5	1,2	XD.T 11T3	652.18	**225** 1)
C211.32.R.02K4-11-B-50	32	2	37.0	111	50	32	8	4	1,2	XD.T 11T3	633.45	**032**
C211.32.R.03K5-11-B-60	32	3	45.5	121	60	32	15	5	1,2	XD.T 11T3	764.27	**132**
C211.40.R.03K4-11-B32-50	40	3	37.0	110	50	32	12	4	1,8	XD.T 11T3	726.91	**040**
C211.40.R.04K5-11-B32-60	40	4	45.5	120	60	32	20	5	1,8	XD.T 11T3	876.36	**140**

1) only for profile milling

MaxiMill – Extended flute cutter A 211-11K

▲ ZEFP = Number of inserts
▲ ZNP = Number of teeth





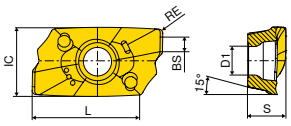
Designation	DC mm	ZNF	APMX mm	ZEFP	ZNP	OAL mm	DCONMS $_{H6}$ mm	DHUB mm	torque moment Nm	Insert	2B/40 Article no. 50 757 ... £	
A211.40.R.03K4-11	40	3	37.0	12	4	56	16	38	1,8	XD.T 11T3	726.91	**040**
A211.40.R.04K4-11	40	4	37.0	16	4	55	16	38	1,8	XD.T 11T3	794.73	**140**
A211.40.R.04K5-11	40	4	45.5	20	5	65	16	38	1,8	XD.T 11T3	876.36	**240** 1)
A211.50.R.04K5-11	50	4	45.5	20	5	65	22	43	1,8	XD.T 11T3	958.18	**150**
A211.50.R.05K5-11	50	5	45.5	25	5	65	22	43	1,8	XD.T 11T3	1,043.64	**050**
A211.50.R.05K6-11	50	5	54.5	30	6	74	22	43	1,8	XD.T 11T3	1,143.64	**250** 1)

1) only for profile milling

Spare parts	2A/28 Cylindrical screw Article no. 70 950 ... £		Y7 TORX® blade Article no. 80 950 ... £		Y7 Key D Article no. 80 950 ... £		2A/28 Molykote Article no. 70 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Socket head screw Article no. 70 950 ... £		Y7 Torque screwdriver Article no. 80 950 ... £	
25 (50758...)			6.69	**043**	13.49	**125**	3.98	**303**	3.72	**128**			163.58	**191**
32 - 40 (50758...)			6.69	**043**	13.49	**125**	3.98	**303**	3.72	**131**			163.58	**191**
40 (50757...)	8.51	**001**	6.69	**043**	13.49	**125**	3.98	**303**	3.72	**131**	2.85	**179**	163.58	**191**
50 (50757...)	10.45	**002**	6.69	**043**	13.49	**125**	3.98	**303**	3.72	**131**	4.95	**180**	163.58	**191**

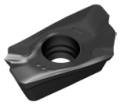
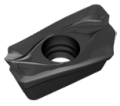
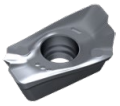
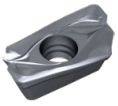
XDKT

Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
XDKT 11T302..	6.8	2.8	10.6	2	3.80
XDKT 11T304..	6.8	2.8	10.6	1.8	3.80
XDKT 11T308..	6.8	2.8	10.6	1.4	3.80
XDKT 11T312..	6.8	2.8	10.6	1.4	3.80
XDKT 11T316..	6.8	2.8	10.6	1.4	3.80
XDKT 11T320..	6.8	2.8	10.6	1.4	3.80
XDKT 11T325..	6.8	2.8	10.6	1.4	3.80
XDKT 11T332..	6.8	2.8	10.6	-	3.80
XDKT 11T332..	6.8	2.8	10.6	1.4	3.80
XDKT 11T332..	6.8	2.8	10.6	0.8	3.80
XDKT 11T340..	6.8	2.8	10.6	-	3.80

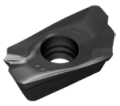
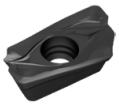
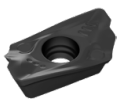
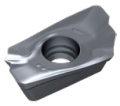
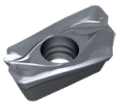
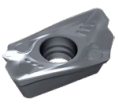


XDKT

XDKT

	-F50 CTCP220	-M50 CTCP220	-F50 CTPP225	-M50 CTPP225
	-F50 DCX1220	-M50 DCX1220	-F50 DPX1225	-M50 DPX1225
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
	XDKT	XDKT	XDKT	XDKT
	1B/61	1B/61	1B/61	1B/61
ISO / RE mm	Article no. 51 034 ... £	Article no. 51 037 ... £	Article no. 51 034 ... £	Article no. 51 037 ... £
11T308SR 0.8	12.78 258	12.78 258	12.78 058	12.78 058
Steel	●	●	●	●
Stainless steel				
Cast iron				
Non ferrous metals				
Heat resistant alloys				
hardened materials				

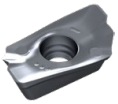
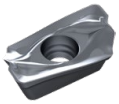
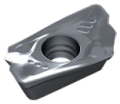
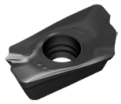
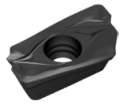
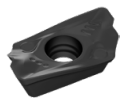
XDKT

	-F50 CTCP230	-M50 CTCP230	-R50 CTCP230	-F50 CTPP235	-M50 CTPP235	-R50 CTPP235
	-F50 DCX1230	-M50 DCX1230	-R50 DCX1230	-F50 DPX1235	-M50 DPX1235	-R50 DPX1235
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	XDKT	XDKT	XDKT	XDKT	XDKT	XDKT
	1B/61	1B/61	1B/61	1B/61	1B/61	1B/61
ISO / RE mm	Article no. 51 034 ... £	Article no. 51 037 ... £	Article no. 51 039 ... £	Article no. 51 034 ... £	Article no. 51 037 ... £	Article no. 51 039 ... £
11T304SR 0.4	12.78 004	12.78 004	12.78 004	12.78 104	12.78 104	12.78 104
11T308SR 0.8	12.78 008	12.78 008	12.78 008	12.78 108	12.78 108	12.78 108
11T312SR 1.2		12.78 012			12.78 112	
11T320SR 2.0	12.78 020 1)	12.78 020 1)	12.78 020 1)	12.78 120 1)	12.78 120 1)	12.78 120 1)
11T325SR 2.5	12.78 025 1)	12.78 025 1)	12.78 025 1)	12.78 125 1)	12.78 125 1)	12.78 125 1)
11T332SR 3.2				12.78 13200		
11T340SR 4.0				12.78 14000		
Steel	●	●	●	●	●	●
Stainless steel	○	○	○	○	○	○
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials						

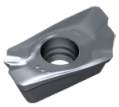
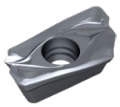
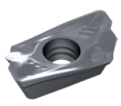
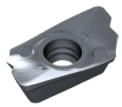
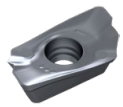
1) Insert radius > 1.6 mm: Modify cutter body

15

XDKT

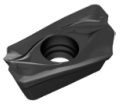
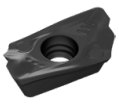
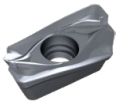
		-F50 CTPM225		-M50 CTPM225		-R50 CTPM225		-F50 CTCM235		-M50 CTCM235		-R50 CTCM235	
		-F50 DPX2225		-M50 DPX2225		-R50 DPX2225		-F50 DCX2235		-M50 DCX2235		-R50 DCX2235	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
													
		XDKT		XDKT		XDKT		XDKT		XDKT		XDKT	
		1B/61		1B/61		1B/61		1B/61		1B/61		1B/61	
ISO	RE	Article no. 51 034 ...		Article no. 51 037 ...		Article no. 51 039 ...		Article no. 51 034 ...		Article no. 51 037 ...		Article no. 51 039 ...	
	mm	£		£		£		£		£		£	
11T308SR	0.8	12.78	208	12.78	208	12.78	208	12.78	308	12.78	308	12.78	308
Steel		○		○		○		○		○		○	
Stainless steel		●		●		●		●		●		●	
Cast iron													
Non ferrous metals													
Heat resistant alloys													
hardened materials													

XDKT

		-F50 CTPM240		-M50 CTPM240		-R50 CTPM240		-F40 CTPM245		-F50 CTPM245	
		-F50 DPX2240		-M50 DPX2240		-R50 DPX2240		-F40 DPX2245		-F50 DPX2245	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
											
		XDKT		XDKT		XDKT		XDKT		XDKT	
		1B/61		1B/61		1B/61		1H/17		1H/17	
ISO	RE	Article no. 51 034 ...		Article no. 51 037 ...		Article no. 51 039 ...		Article no. 51 113 ...		Article no. 51 034 ...	
	mm	£		£		£		£		£	
11T304ER	0.4							16.45	454		
11T304SR	0.4			12.78	404						
11T308ER	0.8							16.45	458		
11T308SR	0.8	12.78	408	12.78	408	12.78	408			16.45	458
11T312ER	1.2							16.45	462		
11T312SR	1.2	12.78	412	12.78	412	12.78	412				
11T316ER	1.6							16.45	466		
11T320ER	2.0							16.45	470 1)		
11T320SR	2.0	12.78	420 1)	12.78	420 1)	12.78	420 1)				
11T325ER	2.5							16.45	475 1)		
11T332ER	3.2							16.45	482 1)		
11T332SR	3.2	12.78	432 1)	12.78	432 1)	12.78	432 1)				
11T340ER	4.0							16.45	490 1)		
Steel		○		○		○		●		●	
Stainless steel		●		●		●		●		●	
Cast iron											
Non ferrous metals											
Heat resistant alloys											
hardened materials											

1) Insert radius > 1.6 mm: Modify cutter body

XDKT

		-M50 CTCK215	-R50 CTCK215	-M50 CTPK220	-F20 CTWN215	-F40 CTC5240	-F40 CTCS245	-R60 CTP6215
		-M50 DCX3215	-R50 DCX3215	-M50 DPX3220	-F20 CWK4615	-F40 HCF5240		-R60 CCN6215
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN	
								
		XDKT	XDKT	XDKT	XDKT	XDKT	XDKT	XDKT
		1B/61	1B/61	1B/61	1A/90	1H/D4	NEW 1H/D4	1B/61
ISO	RE	Article no. 51 037 ...	Article no. 51 039 ...	Article no. 51 037 ...	Article no. 50 478 ...	Article no. 50 463 ...	Article no. 51 113 ...	Article no. 50 464 ...
	mm	£	£	£	£	£	£	£
11T302FR	0.2				16.06 502			
11T304ER	0.4					16.45 504		
11T304FR	0.4				16.06 504			
11T304SR	0.4	12.78 504						
11T308ER	0.8					16.45 500	16.45 558	
11T308FR	0.8				16.06 508			
11T308SR	0.8	12.78 508	12.78 508	12.78 608				16.52 300
11T312ER	1.2					16.45 512	16.45 562	
11T316ER	1.6					16.45 516	16.45 566	
11T320ER	2.0					16.45 520 1)	16.45 570	
11T320FR	2.0				16.06 520 1)			
11T325ER	2.5					16.45 525 1)	16.45 57500 1)	
11T325FR	2.5				16.06 525 1)			
11T332ER	3.2					16.45 532 1)	16.45 582	
11T340ER	4.0					16.45 540 1)	16.45 59000 1)	

Steel	○	○	○					
Stainless steel								
Cast iron	●	●	●	○				●
Non ferrous metals				●				
Heat resistant alloys					●	●		
hardened materials								●

1) Insert radius > 1.6 mm: Modify cutter body

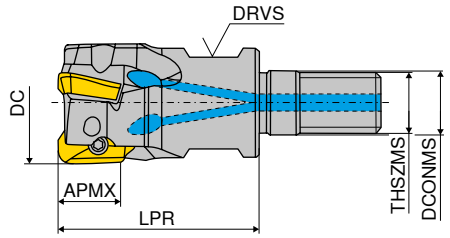
Milling guide

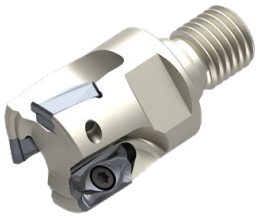
Machining strategy	→ 153	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 153
Starting Parameter	→ 155	Correction of the tooth load f_z	→ 157

15

MaxiMill – Screw in cutter G 211-15

▲ Insert radius > 2,5 mm: Modify cutter body

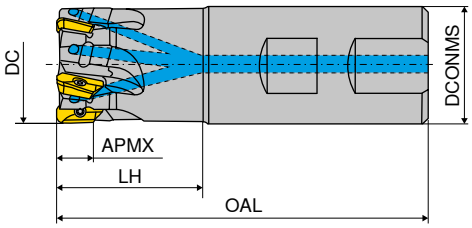




Designation	DC	ZNF	APMX	LPR	DCONMS	THSZMS	DRVS	RPMX	torque moment	Insert	2B/40 Article no. 50 746 ...	
	mm		mm	mm	mm		mm	1/min.	Nm		£	
G211.25.R.02-15	25	2	14	35	12.5	M12	17	26560	3,2	XD.T 1505	240.64	025
G211.32.R.03-15	32	3	14	35	17.0	M16	24	30200	3,2	XD.T 1505	267.91	032
G211.40.R.04-15	40	4	14	40	17.0	M16	27	27700	3,2	XD.T 1505	295.45	040

MaxiMill – End milling cutter C 211-15

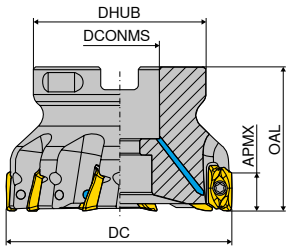
▲ Insert radius > 2,5 mm: Modify cutter body

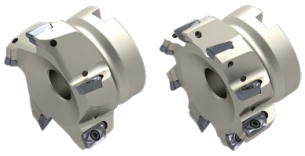


Designation	DC	ZNF	APMX	OAL	LH	DCONMS	RPMX	torque moment	Insert	A 2B/40 Article no. 50 747 ...		B 2B/40 Article no. 50 747 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£		£	
C211.25.R.02-15-B20-32	25	2	14	83	32	20	26560	3,2	XD.T 1505			240.64	125
C211.25.R.02-15-B/A-32	25	2	14	90	32	25	26560	3,2	XD.T 1505	240.64	225	240.64	025
C211.25.R.02-15-A-50-225	25	2	14	225	50	25	7520	3,2	XD.T 1505	224.27	325		
C211.32.R.03-15-B25-40	32	3	14	96	40	25	22160	3,2	XD.T 1505			267.91	132
C211.32.R.03-15-A-40	32	3	14	103	40	32	24160	3,2	XD.T 1505	267.91	232		
C211.32.R.03-15-B-40	32	3	14	103	40	32	24160	3,2	XD.T 1505			267.91	032
C211.32.R.03-15-A-63-250	32	3	14	250	63	32	6800	3,2	XD.T 1505	251.64	332		
C211.40.R.04-15-A-50	40	4	14	110	50	32	22160	3,2	XD.T 1505	295.45	240		
C211.40.R.04-15-B32-50	40	4	14	110	50	32	22160	3,2	XD.T 1505			295.45	040
C211.40.R.03-15-A-50-275	40	3	14	275	50	32	6120	3,2	XD.T 1505	278.82	340		

MaxiMill – Shell mill A 211-15

▲ Insert radius > 2,5 mm: Modify cutter body





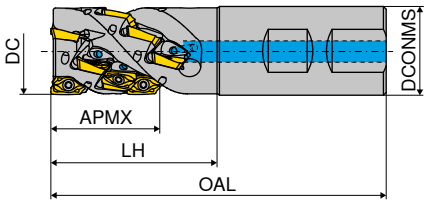
Designation	DC	ZNF	APMX	OAL	DCONMS $_{H6}$	DHUB	RPMX	torque moment	Insert	2B/40 Article no. 50 748 ...		2B/40 Article no. 50 749 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£		£	
A211.40.R.03-15	40	3	14	40	16	38	22160	3,2	XD.T 1505	262.55	**040**		
A211.40.R.04-15	40	4	14	40	16	38	22160	3,2	XD.T 1505			295.45	**040**
A211.50.R.03-15	50	3	14	40	22	43	20320	3,2	XD.T 1505	311.73	**050**		
A211.50.R.05-15	50	5	14	40	22	43	20320	3,2	XD.T 1505			344.55	**050**
A211.63.R.04-15	63	4	14	45	22	48	18640	3,2	XD.T 1505	377.27	**063**		
A211.63.R.06-15	63	6	14	45	22	48	18640	3,2	XD.T 1505			410.45	**063**
A211.80.R.05-15	80	5	14	50	27	58	17040	3,2	XD.T 1505	426.55	**080**		
A211.80.R.08-15	80	8	14	50	27	58	17040	3,2	XD.T 1505			459.27	**080**
A211.100.R.06-15	100	6	14	50	32	78	15680	3,2	XD.T 1505	475.91	**100**		
A211.100.R.10-15	100	10	14	50	32	78	15680	3,2	XD.T 1505			508.64	**100**
A211.125.R.07-15	125	7	14	63	40	88	14320	3,2	XD.T 1505	503.09	**125**		
A211.125.R.11-15	125	11	14	63	40	88	14320	3,2	XD.T 1505			535.91	**125**
A211.160.R.08-15	160	8	14	63	40	93	13200	3,2	XD.T 1505	704.82	**160**		
A211.160.R.12-15	160	12	14	63	40	93	13200	3,2	XD.T 1505			737.64	**160**

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£		£	
25 - 32	6.69	**054**			15.77	**128**			3.98	**303**	2.89	**839**	183.22	**193**
40	6.69	**054**	4.78	**040**	15.77	**128**	11.35	**151**	3.98	**303**	2.89	**839**	183.22	**193**
50	6.69	**054**	6.09	**050**	15.77	**128**	15.58	**154**	3.98	**303**	2.89	**839**	183.22	**193**
63 - 160	6.69	**054**			15.77	**128**			3.98	**303**	2.89	**839**	183.22	**193**

15

MaxiMill – Extended flute cutter C 211-15K

▲ ZEFP = Number of Inserts
▲ ZNP = Number of rows



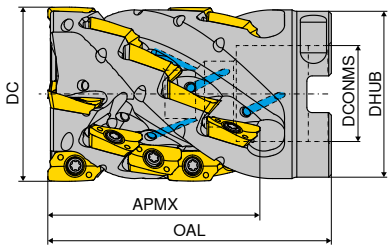
B

Designation	DC mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS mm	ZEFP	ZNP	torque moment Nm	Insert	NEW 2B/40 Article no. 50 782 ... £	
C211.40.R.02K3-15-B32-60	40	2	38.0	120	60	32	6	3	3,2	XD.T 1505	703.27	**04002**
C211.50.R.03K4-15-B40-64	50	3	50.5	134	64	40	12	4	3,2	XD.T 1505	822.18	**05003**

Spare parts DC	Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £	
40 - 50	12.05	**120**	2.89	**839**

MaxiMill – Extended flute cutter A 211-15K

▲ ZEFP = Number of Inserts
▲ ZNP = Number of rows

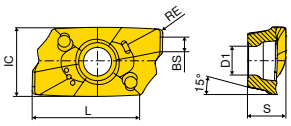


Designation	DC mm	ZNF	APMX mm	ZEFP	ZNP	OAL mm	DCONMS H6 mm	DHUB mm	torque moment Nm	Insert	2B/40 Article no. 50 759 ... £	
A211.50.R.03K4-15	50	3	50.5	12	4	74	22	43	3,2	XD.T 1505	822.18	**050**
A211.50.R.03K5-15	50	3	63.0	15	5	88	22	43	3,2	XD.T 1505	873.09	**150**
A211.63.R.03K4-15	63	3	50.5	12	4	74	27	58	3,2	XD.T 1505	896.36	**063**
A211.63.R.04K6-15	63	4	75.5	24	6	102	27	58	3,2	XD.T 1505	1,100.00	**163**
A211.80.R.04K5-15	80	4	63.0	20	5	88	32	78	3,2	XD.T 1505	1,105.45	**080**
A211.80.R.05K6-15	80	5	75.5	30	6	102	32	78	3,2	XD.T 1505	1,276.36	**180**

Spare parts DC	2A/28 Cylindrical screw Article no. 70 950 ... £		Y7 TORX® blade Article no. 80 950 ... £		Y7 Key D Article no. 80 950 ... £		2A/28 Molykote Article no. 70 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Socket head screw Article no. 70 950 ... £		Y7 Torque screwdriver Article no. 80 950 ... £	
50	10.45	**002**	6.69	**054**	15.77	**128**	3.98	**303**	2.89	**839**	4.95	**180**	183.22	**193**
63	14.50	**003**	6.69	**054**	15.77	**128**	3.98	**303**	2.89	**839**	7.68	**181**	183.22	**193**
80	23.39	**004**	6.69	**054**	15.77	**128**	3.98	**303**	2.89	**839**	10.45	**234**	183.22	**193**

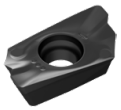
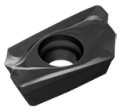
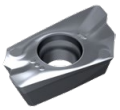
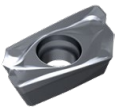
XDKT

Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
XDKT 150508..	9.3	4.4	14.8	1.6	5.56
XDKT 150512..	9.3	4.4	14.8	1.6	5.56
XDKT 150516..	9.3	4.4	14.8	1.6	5.56
XDKT 150520..	9.3	4.4	14.8	1.6	5.56
XDKT 150530..	9.3	4.4	14.8	1.6	5.56
XDKT 150532..	9.3	4.4	14.8	1.9	5.56
XDKT 150540..	9.3	4.4	14.8	1.2	5.56



XDKT

XDKT

		-F50 CTCP220	-M50 CTCP220	-F50 CTPP225	-M50 CTPP225
		-F50 DCX1220	-M50 DCX1220	-F50 DPX1225	-M50 DPX1225
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
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	mm	£	£	£	£
150508SR	0.8	17.05 258	17.05 258	17.05 058	17.05 058
Steel		●	●	●	●
Stainless steel					
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

XDKT

		-F50 CTCP230	-M50 CTCP230	-R50 CTCP230	-F50 CTPP235	-M50 CTPP235	-R50 CTPP235
		-F50 DCX1230	-M50 DCX1230	-R50 DCX1230	-F50 DPX1235	-M50 DPX1235	-R50 DPX1235
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		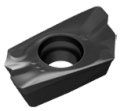	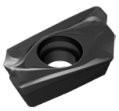	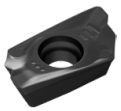	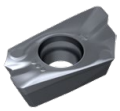	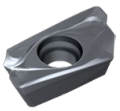	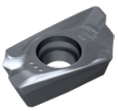
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	mm	£	£	£	£	£	£
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150512SR	1.2		17.05 012			17.05 112	
150516SR	1.6		17.05 016			17.05 116	
150520SR	2.0			17.05 020		17.05 120	17.05 120
150530SR	3.0		17.05 030			17.05 130	
150540SR	4.0		17.05 040			17.05 140	
Steel		●	●	●	●	●	●
Stainless steel		○	○	○	○	○	○
Cast iron							
Non ferrous metals							
Heat resistant alloys							
hardened materials							

15

XDKT

		-F50 CTPM225	-M50 CTPM225	-F50 CTCM235	-M50 CTCM235
		-F50 DPX2225	-M50 DPX2225	-F50 DCX2235	-M50 DCX2235
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		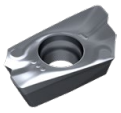	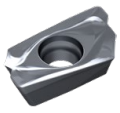	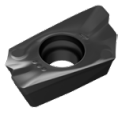	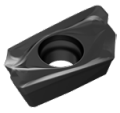
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	mm	£	£	£	£
150508SR	0.8	17.05 208	17.05 208	17.05 308	17.05 308
Steel		○	○	○	○
Stainless steel		●	●	●	●
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

XDKT

		-F50 CTPM240	-M50 CTPM240	-R50 CTPM240	-F40 CTPM245
		-F50 DPX2240	-M50 DPX2240	-R50 DPX2240	-F40 DPX2245
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		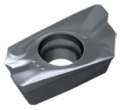	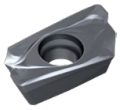	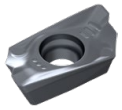	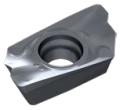
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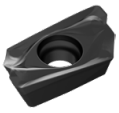
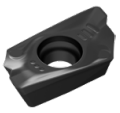
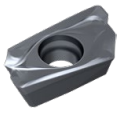
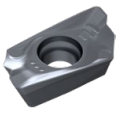
	mm	£	£	£	£
150508ER	0.8				20.52 458
150508SR	0.8	17.05 408	17.05 408	17.05 408	
150512SR	1.2		17.05 412		
150516SR	1.6		17.05 416		
150530SR	3.0		17.05 430		
150532ER	3.2				20.52 482 1)
150540ER	4.0				20.52 490 1)
150540SR	4.0		17.05 440		
Steel		○	○	○	●
Stainless steel		●	●	●	●
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

1) Insert radius >1.6 mm: Modify cutter body

XDKT

		-M50 CTCK215	-R50 CTCK215	-M50 CTPK220	-R50 CTPK220	-F20 CTWN215
		-M50 DCX3215	-R50 DCX3215	-M50 DPX3220	-R50 DPX3220	-F20 CWK4615
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
						
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	mm	£	£	£	£	£
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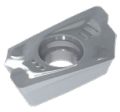
150508SR	0.8	17.05 508	17.05 508	17.05 608	17.05 608	
Steel		○	○	○	○	
Stainless steel						
Cast iron		●	●	●	●	○
Non ferrous metals						●
Heat resistant alloys						
hardened materials						

XDKT

		-F40 CTC5240	-F40 CTCS245	-R60 CTP6215
		-F40 HCF5240		-R60 CCN6215
		DRAGONSKIN	DRAGONSKIN	
				
		XDKT	XDKT	XDKT
		1H/D4	NEW 1H/D4	1B/61
ISO	RE	Article no. 50 473 ...	Article no. 51 114 ...	Article no. 50 469 ...
	mm	£	£	£
150508ER	0.8	20.52 508	20.52 558	
150508SR	0.8			17.05 300
150532ER	3.2	20.52 532 [1)]		
150540ER	4.0	20.52 540 [1)]	20.52 59000 [1)]	
Steel				
Stainless steel				
Cast iron				●
Non ferrous metals				
Heat resistant alloys		●	●	
hardened materials				●

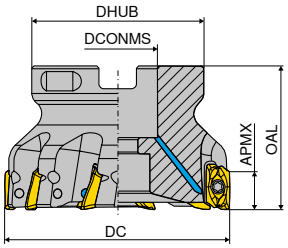
1) Insert radius >2.5 mm: Modify cutter body

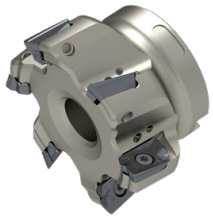
Milling guide

Machining strategy	→ 154	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 154
Starting Parameter	→ 155	Correction of the tooth load f_z	→ 157

15

MaxiMill – Shell mill A 211-20

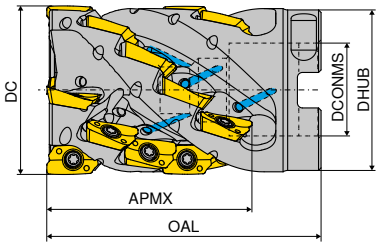




Designation	DC	ZNF	APMX	OAL	DCONMS $_{H6}$	DHUB	RPMX	torque moment	Insert	NEW 2B/40 Article no. 50 778 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£	
A211.63.R.05-20	63	5	19	45	22	48	14400	5	XD.. 2007..	394.64	**06305**
A211.80.R.06-20	80	6	19	50	27	58	12400	5	XD.. 2007..	422.09	**08006**
A211.100.R.07-20	100	7	19	50	32	78	10900	5	XD.. 2007..	452.91	**10007**

MaxiMill – Extended flute cutter A 211-20K

- ZEFP = Number of Inserts
- ZNP = Number of rows

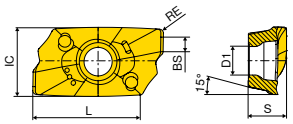


Designation	DC	ZNF	APMX	ZEFP	ZNP	OAL	DCONMS $_{H6}$	DHUB	torque moment	Insert	NEW 2B/40 Article no. 50 780 ...	
	mm		mm			mm	mm	mm	Nm		£	
A211.63.R.04K4-20	63	4	68	16	4	92	27	58	3,2	XD.. 2007..	874.00	**06304**
A211.80.R.05K4-20	80	5	68	20	4	92	32	76	3,2	XD.. 2007..	980.00	**08005**

Spare parts DC	2A/28 Cylindrical screw Article no. 70 950 ...		Y7 TORX® blade Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		2A/28 Socket head screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£		£	
63	14.50	**003**	6.69	**037**	9.61	**106**	3.98	**303**	2.29	**280**	7.68	**181**	183.22	**193**
80	23.39	**004**	6.69	**037**	9.61	**106**	3.98	**303**	2.29	**280**	10.45	**234**	183.22	**193**
100			6.69	**037**	9.61	**106**	3.98	**303**	2.29	**280**			183.22	**193**

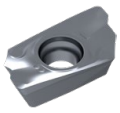
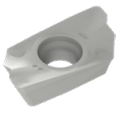
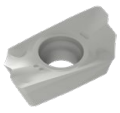
XDKT

Designation	IC	D1	L	S
	mm	mm	mm	mm
XDKT 200708..	12.5	5.5	18.8	6.93
XDKT 200732..	12.5	5.5	18.8	6.82



XDKT

XDKT

		-F40 CTPM245	-F40 CTC5240	-F40 CTCS245
			DRAGONSKIN	DRAGONSKIN
		 XDKT	 XDKT	 XDKT
		NEW 1H/17	NEW 1H/D4	NEW 1H/D4
ISO	RE	**Article no. 51 127 ...**	**Article no. 51 127 ...**	**Article no. 51 127 ...**
	mm	£	£	£
200708ER	0.8	24.26 **45800**	24.26 **15800**	24.26 **55800**
200732ER	3.2		24.26 **18200**	
Steel		●		
Stainless steel		●		
Cast iron				
Non ferrous metals				
Heat resistant alloys			●	●
hardened materials				

Milling guide

Machining strategy	→ 156	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 156
Starting Parameter	→ 156	Correction of the tooth load f_z	→ 157

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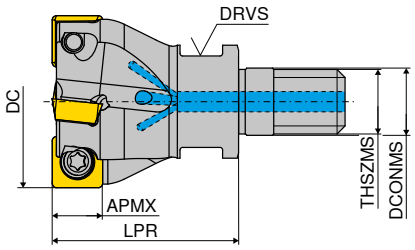
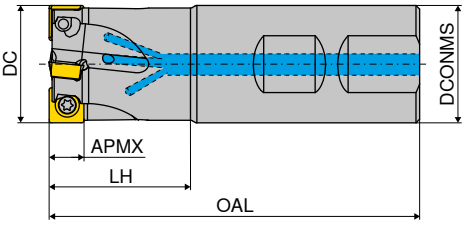
MaxiMill – Screw in cutter G 490-09



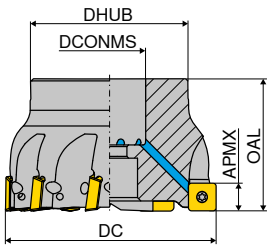
Designation	DC	ZNF	APMX	LPR	THSZMS	DCONMS	DRVS	torque moment	Insert	2B/40 Article no. 50 726 ...	
	mm		mm	mm		mm	mm	Nm		£	
G490.25.R.03-09	25	3	8	35	M12	12.5	17	3,2	SD.. 09T3..	276.55	025
G490.32.R.04-09	32	4	8	35	M16	17.0	24	3,2	SD.. 09T3..	299.91	032

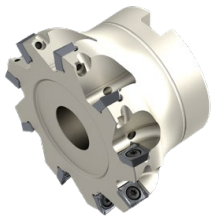
MaxiMill – End milling cutter C 490-09



Designation	DC	ZNF	APMX	DCONMS	OAL	LH	torque moment	Insert	A 2B/40 Article no. 50 727 ...		B 2B/40 Article no. 50 727 ...	
	mm		mm	mm	mm	mm	Nm		£		£	
C490.25.R.03-09-B-32	25	3	8	25	88	32	3,2	SD.. 09T3..			276.55	025
C490.25.R.02-09-A-20	25	2	8	20	165	40	3,2	SD.. 09T3..	255.00	225		
C490.25.R.02-09-A-40-165	25	2	8	25	165	40	3,2	SD.. 09T3..	264.55	125		
C490.32.R.04-09-B-25	32	4	8	25	100	40	3,2	SD.. 09T3..			289.00	132
C490.32.R.04-09-B-40	32	4	8	32	100	40	3,2	SD.. 09T3..			299.91	032

MaxiMill – Shell mill A 490-09

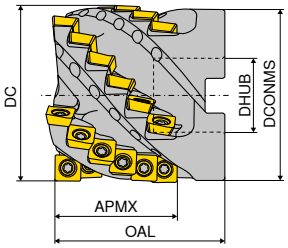


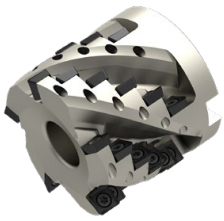


Designation	DC	ZNF	APMX	DHUB	DCONMS $_{H6}$	OAL	torque moment	Insert	2B/40 Article no. 50 728 ...	
	mm		mm	mm	mm	mm	Nm		£	
A490.40.R.05-09	40	5	8	38	16	40	3,2	SD.. 09T3..	335.27	040
A490.42.R.06-09	42	6	8	38	16	40	3,2	SD.. 09T3..	358.64	042
A490.50.R.06-09	50	6	8	43	22	40	3,2	SD.. 09T3..	370.45	050
A490.52.R.07-09	52	7	8	43	22	40	3,2	SD.. 09T3..	393.91	052
A490.63.R.07-09	63	7	8	48	22	40	3,2	SD.. 09T3..	405.73	063
A490.66.R.08-09	66	8	8	48	22	40	3,2	SD.. 09T3..	429.18	066
A490.80.R.09-09	80	9	8	58	27	50	3,2	SD.. 09T3..	570.36	080
A490.100.R.10-09	100	10	8	78	32	50	3,2	SD.. 09T3..	623.27	100
A490.160.R.14-09	160	14	8	88	40	62	3,2	SD.. 09T3..	920.91	160

MaxiMill – Extended flute cutter A 490K

▲ ZEFP = Number of Inserts
▲ ZNP = Number of rows

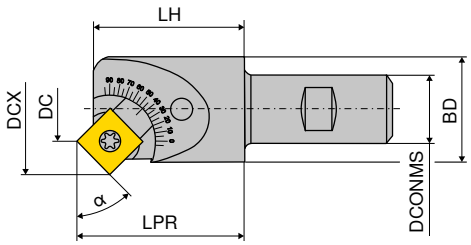




Designation	DC	ZNF	APMX	ZEFP	ZNP	OAL	DCONMS $_{H6}$	DHUB	torque moment	Insert	2B/40 Article no. 50 761 ...	
	mm		mm			mm	mm	mm	Nm		£	
A490.40.R.03K6-09	40	3	41	18	6	55	16	38	3,2	SD.. 09T3..	929.09	**040**
A490.50.R.04K6-09	50	4	41	24	6	55	22	48	3,2	SD.. 09T3..	1,124.55	**050**
A490.63.R.05K6-09	63	5	41	30	6	60	27	61	3,2	SD.. 09T3..	1,270.91	**063**

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£		£	
25 - 32	6.69	**036**			12.26	**113**			3.98	**303**	2.85	**110**	154.29	**192**
40 - 42	6.69	**036**	4.78	**040**	12.26	**113**	11.35	**151**	3.98	**303**	2.85	**110**	154.29	**192**
50 - 160	6.69	**036**			12.26	**113**			3.98	**303**	2.85	**110**	154.29	**192**

Adjustable single angle milling cutter C 4500



B

Designation	DC	DCX	ZNF	LPR	DCONMS	LH	BD	torque moment	Insert	2B Article no. 50 668 ...	
	mm	mm		mm	mm	mm	mm	Nm		£	
C4500.16.R.01	3,0 - 20,8	20,3 - 23,9	1	33,0 - 35,0	16	32	18.65	3,2	SD.. 09T3..	137.27	**116**

Spare parts Insert	2A Cylindrical screw Article no. 70 950 ...		2A Adjustment wedge Article no. 70 950 ...		Y7 TORX® blade Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£		£	
SD.. 09T3..	3.07	**709**	13.73	**708**	6.69	**036**	12.26	**113**	3.98	**303**	2.85	**110**	154.29	**192**

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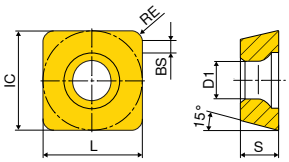
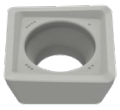
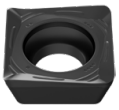
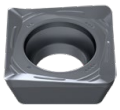
SDHT / SDNT

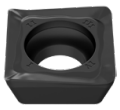
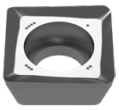
Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
SD.T 09T3..	9.52	4.4	9.52	2.5	3.97



SDHT / SDNT

		TCM10	-29 CTCP230	CTPP235	-29 CTPP235	-33 CTPM240	-F50 CTPM245
		CWC10	-29 DCX1230	DPX1235	-29 DPX1235	-33 DPX2240	-F50 DPX2245
			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		CERMET					
		SDHT	SDNT	SDNT	SDNT	SDNT	SDNT
		1B/79	1B/61	1B/61	1B/61	1B/61	1H/17
ISO	RE	Article no. 50 424 ...	Article no. 51 011 ...	Article no. 51 082 ...	Article no. 51 011 ...	Article no. 51 030 ...	Article no. 51 111 ...
	mm	£	£	£	£	£	£
09T308ER	0.8			10.55 108			11.82 458
09T308SR	0.8	14.33 900	10.55 008		10.55 108	10.55 408	
Steel		●	●	●	●	○	●
Stainless steel		●	○	○	○	●	●
Cast iron		○					
Non ferrous metals							
Heat resistant alloys							
hardened materials							

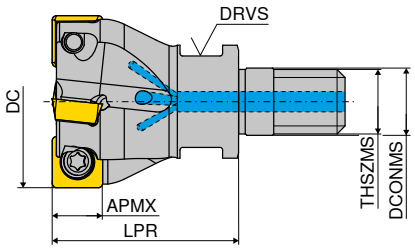
SDNT / SDHT

		-31 CTCK215	-27P H216T	-27P AMZ	-27 CTC5240	-M31 CTC5240	-F10 CTCS245
		-31 DCX3215	-27P CWK26	-27P AMZ	-AL HCF5240	-M31 HCF5240	
		DRAGONSKIN			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		SDNT	SDHT	SDHT	SDHT	SDNT	SDHT
		1B/61	1A/90	1A/90	1H/D4	1H/D4	NEW 1H/D4
ISO	RE	Article no. 51 029 ...	Article no. 50 424 ...	Article no. 50 424 ...	Article no. 50 496 ...	Article no. 50 425 ...	Article no. 51 125 ...
	mm	£	£	£	£	£	£
09T308ER	0.8				19.75 508	11.82 508	19.75 55800
09T308FR	0.8		14.33 550	17.18 650			
09T308SR	0.8	10.55 508					
Steel		○					
Stainless steel							
Cast iron		●	○	○			
Non ferrous metals			●	●			
Heat resistant alloys					●	●	●
hardened materials							

Milling guide

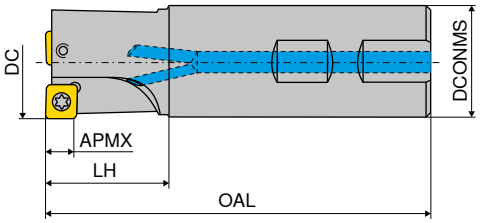
Machining strategy	→ 157+186	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 157+186
Starting Parameter	→ 157	Correction of the tooth load f_z	→ 157

MaxiMill – Screw in cutter G 490-12



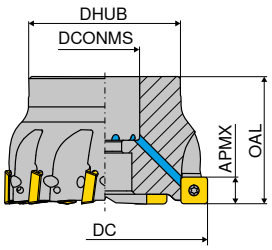
Designation	DC	ZNF	APMX	LPR	THSZMS	DCONMS	DRVS	torque moment	Insert	2B/40 Article no. 50 726 ...	
	mm		mm	mm		mm	mm	Nm		£	
G490.32.R.03-12	32	3	10.7	35	M16	17	24	3,2	SD.. 1205..	288.91	13200
G490.40.R.04-12	40	4	10.7	40	M16	17	24	3,2	SD.. 1205..	319.18	14000

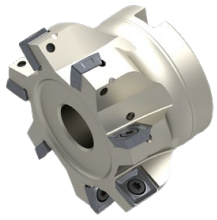
MaxiMill – End milling cutter C 490-12



Designation	DC	ZNF	APMX	DCONMS	OAL	LH	torque moment	Insert	2B Article no. 50 703 ...	
	mm		mm	mm	mm	mm	Nm		£	
C490.32.R.02	32	2	11	32	110	40	5	SD.. 1205..	191.55	032
C490.32.R.03-12-B-40	32	3	11	32	101	40	5	SD.. 1205..	288.91	13200
C490.40.R.03	40	3	11	32	115	45	5	SD.. 1205..	225.91	040
C490.40.R.04-12-B32-50	40	4	11	32	112	50	5	SD.. 1205..	319.18	14000

MaxiMill – Shell mill A 490-12





Designation	DC	ZNF	APMX	DHUB	DCONMS	OAL	torque moment	Insert	2B/40 Article no. 50 703 ...	
	mm		mm	mm	mm	mm	Nm		£	
A490.40.R.04-12	40	4	11	38	16	40	5	SD.. 1205..	319.18	54000
A490.50.R.05-12	50	5	11	43	22	40	5	SD.. 1205..	354.45	550
A490.63.R.06-12	63	6	11	48	22	40	5	SD.. 1205..	389.91	563
A490.80.R.07-12	80	7	11	58	27	50	5	SD.. 1205..	538.45	580
A490.100.R.08-12	100	8	11	75	32	50	5	SD.. 1205..	591.45	600
A490.125.R.10-12	125	10	11	88	40	63	5	SD.. 1205..	633.91	625

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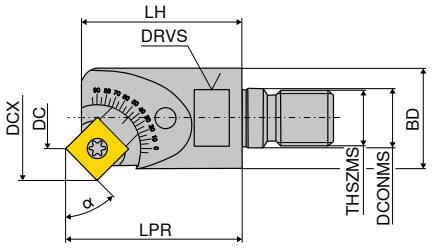
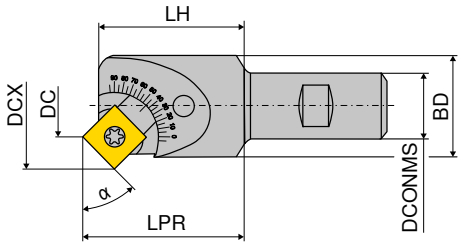
Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£		£	
32 - 40	6.69	037			13.11	114			3.98	303	2.29	280	183.22	193
50 - 125	6.69	037	4.78	040	13.11	114	11.35	151	3.98	303	2.29	280	183.22	193

Adjustable single angle milling cutter with threaded shank G 4500



Designation	DC	DCX	ZNF	LPR	THSZMS	DCONMS	LH	BD	DRVS	torque moment	Insert	2B Article no. 55 210 ...
	mm	mm		mm		mm	mm	mm	mm	Nm		£
G4500.20.R.01	7,1 - 31,0	30,5 - 35,45	1	48 - 50	M16	17	46	28.5	24	5	SD.. 1205..	161.09 **020**

Adjustable single angle milling cutter C 4500

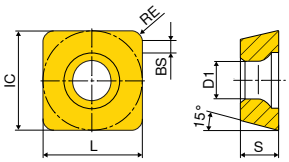


Designation	DC	DCX	ZNF	LPR	DCONMS	LH	BD	torque moment	Insert	2B Article no. 50 668 ...
	mm	mm		mm	mm	mm	mm	Nm		£
C4500.20.R.01	3,7 - 27,8	27,3 - 32,2	1	35,9 - 40,5	20	37	25	5	SD.. 1205..	144.91 **020**

Spare parts	2A Cylindrical screw	2A Adjustment wedge	Y7 TORX® blade	Y7 Key D	2A/28 Molykote	2A Clamping screw	Y7 Torque screwdriver
Insert	**Article no. 70 950 ...**	**Article no. 70 950 ...**	**Article no. 80 950 ...**	**Article no. 80 950 ...**	**Article no. 70 950 ...**	**Article no. 70 950 ...**	**Article no. 80 950 ...**
	£	£	£	£	£	£	£
SD.. 1205..	3.90 **706**	12.67 **705**	6.69 **037**	13.11 **114**	3.98 **303**	2.29 **280**	183.22 **193**

SDHW / SDMT / SDHT

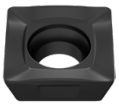
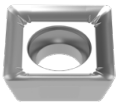
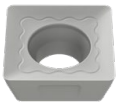
Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
SDH. 120508..	12.7	5.5	12.7	2.2	5.00
SDHT 120512..	12.7	5.5	12.7	1.8	5.00
SDHT 120520..	12.7	5.5	12.7	1.0	5.00
SDHT 120525..	12.7	5.5	12.7	1.5	5.00
SDMT 120508..	12.7	5.5	12.7	3.0	5.00
SDMT 1205ZZ..	12.7	5.5	12.7	0.9	5.00



SDHW / SDMT / SDHT

	TCM10	-29 CTCP230	-29 CTPP235	-29 CTPM240	-33 CTPM240	-F50 CTPM245
	CWC10	-29 DCX1230	-29 DPX1235	-29 DPX2240	-33 DPX2240	-F50 DPX2245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
	CERMET					
	SDHW	SDMT	SDMT	SDMT	SDHT	SDMT
	1B/79	1B/61	1B/61	1B/61	1B/61	1H/17
ISO / RE	Article no. 50 428 ...	Article no. 51 081 ...	Article no. 51 081 ...	Article no. 51 081 ...	Article no. 51 028 ...	Article no. 51 110 ...
mm	£	£	£	£	£	£
120508ER 0.8						16.75 458
120508SR 0.8	17.05 901					
120512SR 1.2					16.61 412	
120520SR 2.0					16.61 421	
1205ZZSN 0.8		14.33 020	14.33 120	13.87 420		
Steel	●	●	●	○	○	●
Stainless steel	●	○	○	●	●	●
Cast iron	○					
Non ferrous metals						
Heat resistant alloys						
hardened materials						

SDMT / SDHT

	-31 CTCK215	-27P H216T	-27P AMZ	-M31 CTC5240	-F50 CTCS245
	-31 DCX3215	-ALP CWK26	-ALP AMZ	-M31 HCF5240	
	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN
					
	SDMT	SDHT	SDHT	SDMT	SDMT
	1B/61	1A/90	1A/90	1H/D4	NEW 1H/D4
ISO / RE	Article no. 51 059 ...	Article no. 50 426 ...	Article no. 50 426 ...	Article no. 50 580 ...	Article no. 51 110 ...
mm	£	£	£	£	£
120508ER 0.8				16.75 508	16.75 55800
120508FR 0.8		16.61 555	20.58 655		
120525FR 2.5		16.61 559			
1205ZZSN 0.8	13.87 521				
Steel	○				
Stainless steel					
Cast iron	●	○	○		
Non ferrous metals		●	●		
Heat resistant alloys				●	●
hardened materials					

Milling guide

Machining strategy	→ 158+186	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 158+186
Starting Parameter	→ 158		

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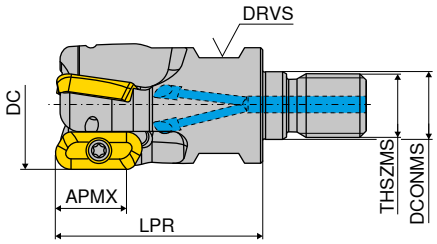
MaxiMill – Screw in cutter 90° G HSC-11

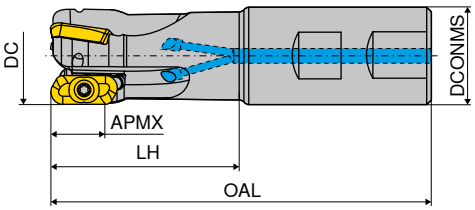
▲ Insert radius > 3.2 mm: Modify cutter body



Designation	DC	ZNF	APMX	DCONMS	LPR	THSZMS	RPMX	DRVS	torque moment	Insert	2B/40 Article no. 55 107 ...	
	mm		mm	mm	mm		1/min.	mm	Nm		£	
GHSC.16.R.02-11	16	2	10	8.5	27	M8	56000	10	1,8	XDHT 11T3..	243.55	016
GHSC.18.R.02-11	18	2	10	8.5	27	M8	53100	10	1,8	XDHT 11T3..	249.36	018
GHSC.20.R.02-11	20	2	10	10.5	33	M10	50100	15	1,8	XDHT 11T3..	262.18	020
GHSC.25.R.03-11	25	3	10	12.5	35	M12	45000	17	1,8	XDHT 11T3..	295.36	025
GHSC.32.R.03-11	32	3	10	17.0	35	M16	39800	24	1,8	XDHT 11T3..	307.00	032
GHSC.40.R.03-11	40	3	10	17.0	35	M16	35500	24	1,8	XDHT 11T3..	322.27	040

MaxiMill – End milling cutter 90° C HSC-11

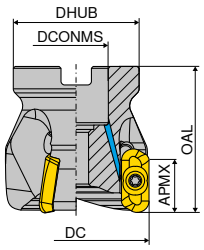
▲ Insert radius > 3.2 mm: Modify cutter body



Designation	DC	ZNF	APMX	DCONMS h6	OAL	LH	RPMX	torque moment	Insert	A 2B/40 Article no. 50 675 ...		B 2B/40 Article no. 50 675 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£		£	
CHSC.16.R.02-11-B/A-25	16	2	10	16	75	25	56200	1,8	XDHT 11T3..	243.55	016	243.55	416
CHSC.16.R.02-11-A-32	16	2	10	16	165	32	18800	1,8	XDHT 11T3..	243.55	116		
CHSC.18.R.02-11-A-25	18	2	10	20	78	25	56100	1,8	XDHT 11T3..	249.36	018		
CHSC.18.R.02-11-A-32	18	2	10	20	165	32	23900	1,8	XDHT 11T3..	249.36	118		
CHSC.19.R.02-11-A-25	19	2	10	20	78	25	51700	1,8	XDHT 11T3..	255.18	019		
CHSC.19.R.02-11-A-32	19	2	10	20	165	32	25400	1,8	XDHT 11T3..	255.18	119		
CHSC.20.R.02-11-A-32	20	2	10	20	84	32	50100	1,8	XDHT 11T3..	262.18	020		
CHSC.20.R.03-11-B-32	20	3	10	20	84	32	50100	1,8	XDHT 11T3..			297.45	420
CHSC.20.R.02-11-A-40	20	2	10	20	165	40	26700	1,8	XDHT 11T3..	262.18	120		
CHSC.22.R.02-11-A-32	22	2	10	25	91	32	47800	1,8	XDHT 11T3..	269.45	022		
CHSC.22.R.02-11-A-40	22	2	10	25	165	40	30200	1,8	XDHT 11T3..	269.45	122		
CHSC.25.R.02-11-A-40	25	2	10	25	98	40	45000	1,8	XDHT 11T3..	282.18	025		
CHSC.25.R.03-11-A-40	25	3	10	25	98	40	45000	1,8	XDHT 11T3..	295.36	225		
CHSC.25.R.04-11-B-40	25	4	10	25	98	40	45000	1,8	XDHT 11T3..			324.64	425
CHSC.25.R.02-11-A-50	25	2	10	25	165	50	31700	1,8	XDHT 11T3..	282.18	125		
CHSC.25.R.03-11-A-50	25	3	10	25	165	50	31700	1,8	XDHT 11T3..	295.36	325		
CHSC.32.R.03-11-A-50	32	3	10	32	112	50	39800	1,8	XDHT 11T3..	307.00	032		
CHSC.32.R.05-11-B-50	32	5	10	25	112	50	39800	1,8	XDHT 11T3..			388.09	432
CHSC.32.R.03-11-A-63	32	3	10	32	165	63	33400	1,8	XDHT 11T3..	307.00	132		

MaxiMill – Shell mill 90° A HSC-11

▲ Insert radius > 3.2 mm: Modify cutter body

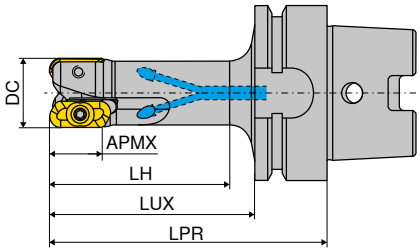


Designation	DC	ZNF	APMX	DCONMS $_{H6}$	DHUB	OAL	RPMX	torque moment	Insert	2B/40 Article no. 50 718 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£	
AHSC.40.R.04-11	40	4	10	16	38	50	35500	1,8	XDHT 11T3..	410.36	**040**
AHSC.50.R.04-11	50	4	10	22	43	50	31800	1,8	XDHT 11T3..	496.36	**050**
AHSC.63.R.05-11	63	5	10	22	43	50	28300	1,8	XDHT 11T3..	552.73	**063**
AHSC.80.R.05-11	80	5	10	27	58	50	25100	1,8	XDHT 11T3..	575.00	**080**
AHSC.100.R.05-11	100	5	10	32	78	50	22400	1,8	XDHT 11T3..	616.27	**100**

MaxiMill – Milling cutter 90° M HSC-11 with HSK 63-A

▲ balanced to G 6,3

▲ Insert radius > 3.2 mm: Modify cutter body



Designation	DC	ZNF	APMX	LPR	LH	LUX	RPMX	torque moment	Insert	2B/40 Article no. 50 722 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£	
MHSC.25.R.03-11-H63A-50	25	3	10	90	50	64	45000	1,8	XDHT 11T3..	704.45	**025**
MHSC.25.R.03-11-H63A-63	25	3	10	100	63	74	42000	1,8	XDHT 11T3..	704.45	**125**
MHSC.32.R.03-11-H63A-63	32	3	10	100	63	74	39800	1,8	XDHT 11T3..	716.18	**032**
MHSC.32.R.03-11-H63A-80	32	3	10	120	80	94	37200	1,8	XDHT 11T3..	716.18	**132**
MHSC.40.R.04-11-H63A-63	40	4	10	100	63	74	35500	1,8	XDHT 11T3..	743.27	**040**
MHSC.40.R.04-11-H63A-80	40	4	10	120	80	94	35500	1,8	XDHT 11T3..	743.27	**140**
MHSC.50.R.04-11-H63A-63	50	4	10	100	63	74	31800	1,8	XDHT 11T3..	756.09	**050**
MHSC.50.R.04-11-H63A-100	50	4	10	140	100	114	31800	1,8	XDHT 11T3..	756.09	**150**

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£		£	
16 - 25	6.69	**043**			13.49	**125**			3.98	**303**	3.72	**128**	154.29	**192**
32	6.69	**043**			13.49	**125**			3.98	**303**	3.72	**131**	154.29	**192**
40	6.69	**043**	4.78	**040**	13.49	**125**	11.35	**151**	3.98	**303**	3.72	**131**	154.29	**192**
50 - 63	6.69	**043**	6.09	**050**	13.49	**125**	15.58	**154**	3.98	**303**	3.72	**131**	154.29	**192**
80 - 100	6.69	**043**			13.49	**125**			3.98	**303**	3.72	**131**	154.29	**192**

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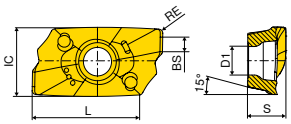
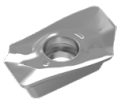
XDKT / XDHT

Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
XD.T 11T302FR	6.8	2.8	10.6	2	3.80
XD.T 11T304FR	6.8	2.8	10.6	1.8	3.80
XD.T 11T308FR	6.8	2.8	10.6	1.4	3.80
XD.T 11T320FR	6.8	2.8	10.6	1.4	3.80
XD.T 11T325FR	6.8	2.8	10.6	1.4	3.80
XDHT 11T312FR	6.8	2.8	10.6	1.4	3.80
XDHT 11T316FR	6.8	2.8	10.6	1.4	3.80
XDHT 11T332FR	6.8	2.8	10.6	0.8	3.80
XDHT 11T340FR	6.8	2.8	10.6	-	3.80
XDHT 11T350FR	6.8	2.8	10.6	-	3.80



XDKT

XDKT / XDHT

ISO	RE	-F20 CTWN215 / -F20 CWK4615		-27P H216T / -ALP CWK26	
		XDKT		 XDHT	
		1A/90		1A/90	
	mm	Article no. 50 478 ...		Article no. 50 477 ...	
		£		£	
11T302FR	0.2	16.06	**502**	24.21	**502**
11T304FR	0.4	16.06	**504**	24.21	**504**
11T308FR	0.8	16.06	**508**	24.21	**508**
11T312FR	1.2			24.21	**512**
11T316FR	1.6			24.21	**516**
11T320FR	2.0	16.06	**520** 1)	24.21	**520** 1)
11T325FR	2.5	16.06	**525** 1)	24.21	**525** 1)
11T332FR	3.2			24.21	**532** 1)
11T340FR	4.0			24.21	**540** 1)
11T350FR	5.0			24.21	**550** 1)

Steel		
Stainless steel		
Cast iron	○	○
Non ferrous metals	●	●
Heat resistant alloys		
hardened materials		

1) Insert radius >1.6 mm: Modify cutter body

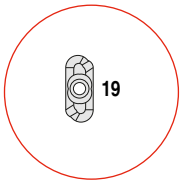
Milling guide

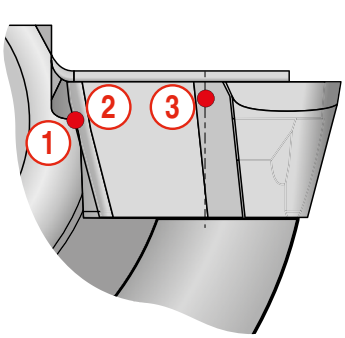
Machining strategy	→ 161–165	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 160+163
Safety advice	→ 159		

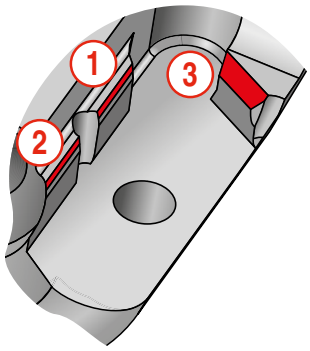
MaxiMill HSC-19

For medium – high number of revolutions

n_{max} = 34400 min^{-1}
$a_{p\,max}$ = 18 mm







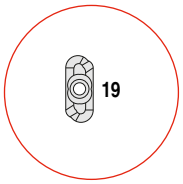
(1) (2) Radial contact points
- ▲ Guaranteed 90° corner angles and exact radial run-out

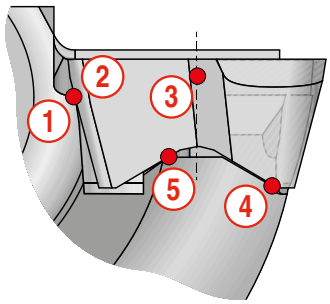
(3) Axial contact point
- ▲ guarantees precise axial run-out

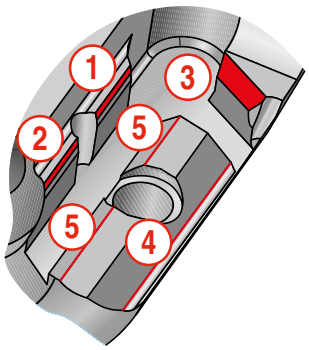
MaxiMill HPC-19

For maximum number of revolutions

n_{max} = 45200 min^{-1}
$a_{p\,max}$ = 18 mm







Roof-shaped surface, included angle 140°
- ▲ greater stability, higher security
- ▲ guaranteed positive connection between insert and tool

(1) (2) Radial contact points
- ▲ Guaranteed 90° corner angles and exact radial run-out

(3) Axial contact point
- ▲ guarantees precise axial run-out

(4) (5) Contact Point
- ▲ resist machining and centrifugal forces

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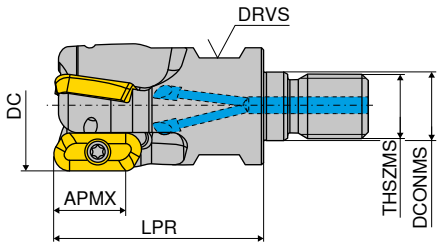
MaxiMill – Screw-in cutter 90° G HSC-19

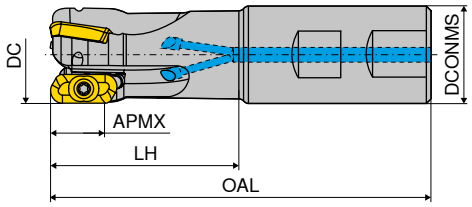
▲ Insert radius > 4.0 mm: Modify cutter body



Designation	DC	ZNF	APMX	DCONMS	LPR	THSZMS	DRVS	RPMX	torque moment	Insert	2B/40 Article no. 55 108 ...	
	mm		mm	mm	mm		mm	1/min.	Nm		£	
GHSC.25.R.02-19	25	2	18	12.5	45	M12	17	34400	5	XDHT 1904..	286.91	025
GHSC.32.R.03-19	32	3	18	17.0	52	M16	24	29100	5	XDHT 1904..	371.64	032
GHSC.40.R.03-19	40	3	18	17.0	52	M16	24	24900	5	XDHT 1904..	395.18	040

MaxiMill – End milling cutter 90° C HSC-19

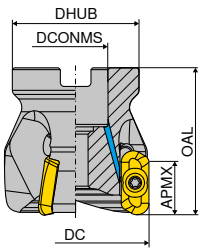
▲ Insert radius > 4.0 mm: Modify cutter body

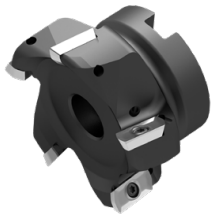


Designation	DC	ZNF	APMX	DCONMS $_{h5}$	OAL	LH	RPMX	torque moment	Insert	A 2B/40 Article no. 50 679 ...		B 2B/40 Article no. 50 679 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£		£	
CHSC.25.R.02-19-A-50	25	2	18	25	121	50	32400	5	XDHT 1904..	286.91	225		
CHSC.25.R.02-19	25	2	18	25	121	65	32400	5	XDHT 1904..			295.36	025
CHSC.25.R.02-19-A-63	25	2	18	25	165	63	24700	5	XDHT 1904..	286.91	325		
CHSC.32.R.02-19-A-63	32	2	18	32	125	63	28900	5	XDHT 1904..	301.09	232		
CHSC.32.R.03-19-A-63	32	3	18	32	125	63	28900	5	XDHT 1904..	371.64	432		
CHSC.32.R.03-19	32	3	18	32	125	65	28900	5	XDHT 1904..			378.64	033
CHSC.32.R.02-19	32	2	18	32	125	65	28900	5	XDHT 1904..			308.09	032
CHSC.32.R.02-19-A-80	32	2	18	32	165	80	24400	5	XDHT 1904..	301.09	332		
CHSC.32.R.03-19-A-80	32	3	18	32	165	80	24400	5	XDHT 1904..	371.64	532		

MaxiMill – Shell mill 90° A HSC-19

▲ Insert radius > 4.0 mm: Modify cutter body



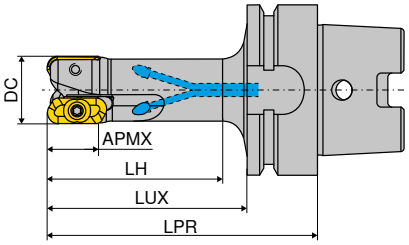


Designation	DC	ZNF	APMX	DCONMS H6	DHUB	OAL	RPMX	torque moment	Insert	2B/40 Article no. 50 716 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£	
AHSC.40.R.03-19	40	3	18	16	38	50	24900	5	XDHT 1904..	384.55	**040**
AHSC.50.R.04-19	50	4	18	22	43	50	21600	5	XDHT 1904..	483.27	**050**
AHSC.63.R.04-19	63	4	18	22	48	50	18800	5	XDHT 1904..	541.00	**163**
AHSC.63.R.05-19	63	5	18	22	48	50	18800	5	XDHT 1904..	552.73	**063**
AHSC.80.R.04-19	80	4	18	27	58	50	16400	5	XDHT 1904..	562.09	**180**
AHSC.80.R.05-19	80	5	18	27	58	50	16400	5	XDHT 1904..	575.00	**080**
AHSC.100.R.04-19	100	4	18	32	78	50	14500	5	XDHT 1904..	603.36	**200**
AHSC.100.R.05-19	100	5	18	32	78	50	14500	5	XDHT 1904..	616.27	**100**
AHSC.125.R.05-19	125	5	18	40	88	63	12800	5	XDHT 1904..	712.55	**125**
AHSC.125.R.06-19	125	6	18	40	88	63	12800	5	XDHT 1904..	724.36	**225**

MaxiMill – Milling cutter 90° M HSC-19 with HSK 63-A

▲ balanced to G 6,3

▲ Insert radius > 4.0 mm: Modify cutter body



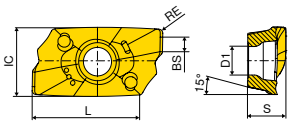
Designation	DC	ZNF	APMX	LPR	LH	LUX	RPMX	torque moment	Insert	2B/40 Article no. 50 720 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£	
MHSC.25.R.02-19-H63A-50	25	2	18	90	50	64	35000	5	XDHT 1904..	693.82	**525**
MHSC.25.R.02-19-H63A-63	25	2	18	100	63	74	32700	5	XDHT 1904..	693.82	**625**
MHSC.32.R.02-19-H63A-63	32	2	18	100	63	74	29100	5	XDHT 1904..	708.09	**532**
MHSC.32.R.02-19-H63A-80	32	2	18	120	80	94	27200	5	XDHT 1904..	708.09	**632**
MHSC.32.R.03-19-H63A-63	32	3	18	100	63	74	29100	5	XDHT 1904..	719.82	**732**
MHSC.32.R.03-19-H63A-80	32	3	18	120	80	94	27200	5	XDHT 1904..	719.82	**832**
MHSC.40.R.03-19-H63A-63	40	3	18	100	63	74	24900	5	XDHT 1904..	733.91	**540**
MHSC.40.R.03-19-H63A-80	40	3	18	120	80	94	24900	5	XDHT 1904..	733.91	**640**
MHSC.50.R.03-19-H63A-100	50	3	18	140	100	114	21600	5	XDHT 1904..	733.91	**550**

Spare parts DC	Y7 TORX® blade Article no. 80 950 ... £		Y7 Clamping key – T Article no. 80 397 ... £		Y7 Key D Article no. 80 950 ... £		2A/28 Power Screw Article no. 70 950 ... £		2A/28 Molykote Article no. 70 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		Y7 Torque screwdriver Article no. 80 950 ... £	
25	6.69	**036**			12.26	**113**			3.98	**303**	2.60	**172**	183.22	**193**
32	6.69	**036**			12.26	**113**			3.98	**303**	3.09	**173**	183.22	**193**
40	6.69	**036**	4.78	**040**	12.26	**113**	11.35	**151**	3.98	**303**	3.09	**173**	183.22	**193**
50 - 63	6.69	**036**	6.09	**050**	12.26	**113**	15.58	**154**	3.98	**303**	3.09	**174**	183.22	**193**
80 - 125	6.69	**036**			12.26	**113**			3.98	**303**	3.09	**174**	183.22	**193**

15

XDHT

Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
XDHT 190402..	9.52	4.65	19	2	4.76
XDHT 190404..	9.52	4.65	19	2	4.76
XDHT 190408..	9.52	4.65	19	2	4.76
XDHT 190412..	9.52	4.65	19	2	4.76
XDHT 190416..	9.52	4.65	19	2	4.76
XDHT 190420..	9.52	4.65	19	2	4.76
XDHT 190425..	9.52	4.65	19	1.4	4.76
XDHT 190432..	9.52	4.65	19	1	4.76
XDHT 190440..	9.52	4.65	19	1	4.76
XDHT 190450..	9.52	4.65	19	-	4.76

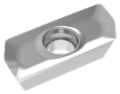


XDKT

XDHT

-27P
H216T

-ALP
CWK26


XDHT

ISO	RE	1A/90 Article no. 50 487 ... £	
	mm		
190402FR	0.2	24.87	**552**
190404FR	0.4	24.87	**554**
190408FR	0.8	24.87	**556**
190412FR	1.2	24.87	**557**
190416FR	1.6	24.87	**558**
190420FR	2.0	24.87	**560**
190425FR	2.5	24.87	**562**
190432FR	3.2	24.87	**564**
190440FR	4.0	24.87	**566**
190450FR	5.0	24.87	**568** 1)

Steel	
Stainless steel	
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

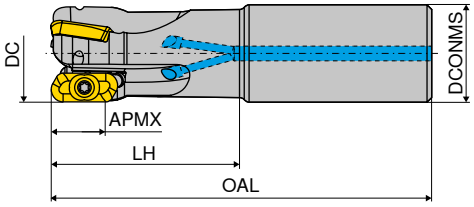
1) Insert radius >4.0 mm: Modify cutter body

Milling guide

Machining strategy	→ 161–165	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 160+163
Safety advice	→ 159		

MaxiMill – End milling cutter 90° C HPC-19

▲ Shank type to DIN 1835-A
▲ Insert radius > 4.0 mm: Modify cutter body



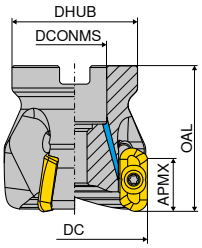
A

2B/40

Designation	DC mm	ZNF	APMX mm	DCONMS h5 mm	OAL mm	LH mm	RPMX 1/min.	torque moment Nm	Insert	Article no. 50 680 ... £	
CHPC.22.R.02-19-A-40	22	2	18	22	165	40	31900	5	XDHX 1904..	345.64	**122**
CHPC.25.R.02-19-A-50	25	2	18	25	121	50	41800	5	XDHX 1904..	357.55	**125**
CHPC.25.R.02-19-A-63	25	2	18	25	165	63	31900	5	XDHX 1904..	357.55	**225**
CHPC.32.R.02-19-A-63	32	2	18	32	125	63	39800	5	XDHX 1904..	371.64	**132**
CHPC.32.R.02-19-A-80	32	2	18	32	165	80	33500	5	XDHX 1904..	371.64	**232**
CHPC.32.R.03-19-A-63	32	3	18	32	125	63	39800	5	XDHX 1904..	441.00	**332**
CHPC.32.R.03-19-A-80	32	3	18	32	165	80	33500	5	XDHX 1904..	441.00	**432**

MaxiMill – Shell mill 90° A HPC-19

▲ Insert radius > 4.0 mm: Modify cutter body

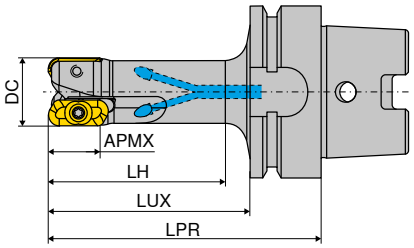


2B/40

Designation	DC mm	ZNF	APMX mm	DCONMS H6 mm	DHUB mm	OAL mm	RPMX 1/min.	torque moment Nm	Insert	Article no. 50 717 ... £	
AHPC.40.R.03-19	40	3	18	16	38	50	35700	5	XDHX 1904..	449.27	**040**
AHPC.50.R.03-19	50	3	18	22	43	50	31900	5	XDHX 1904..	468.00	**050**
AHPC.63.R.03-19	63	3	18	22	48	50	28500	5	XDHX 1904..	490.45	**063**
AHPC.63.R.04-19	63	4	18	22	48	50	28500	5	XDHX 1904..	503.36	**163**

MaxiMill – Milling cutter 90° M HPC-19 with HSK 63-A

- balanced to G 6,3
- Insert radius > 4.0 mm: Modify cutter body

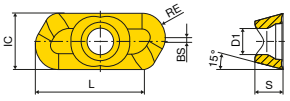


Designation	DC	ZNF	APMX	LPR	LH	LUX	RPMX	torque moment	Insert	2B/40 Article no. 50 721 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£	
MHPC.25.R.02-19-H63A-50	25	2	18	90	50	64	45200	5	XDHX 1904..	894.91	**025**
MHPC.25.R.02-19-H63A-63	25	2	18	100	63	74	42300	5	XDHX 1904..	894.91	**125**
MHPC.25.R.02-19-H63A-80	25	2	18	120	80	94	38400	5	XDHX 1904..	894.91	**225**
MHPC.25.R.02-19-H63A-100	25	2	18	140	100	114	33900	5	XDHX 1904..	894.91	**325**
MHPC.32.R.02-19-H63A-63	32	2	18	100	63	74	40000	5	XDHX 1904..	910.00	**032**
MHPC.32.R.03-19-H63A-63	32	3	18	100	63	74	40000	5	XDHX 1904..	1,004.55	**532**
MHPC.32.R.02-19-H63A-80	32	2	18	120	80	94	37500	5	XDHX 1904..	910.00	**132**
MHPC.32.R.03-19-H63A-80	32	3	18	120	80	94	37500	5	XDHX 1904..	1,004.55	**632**
MHPC.32.R.02-19-H63A-100	32	2	18	140	100	114	34300	5	XDHX 1904..	910.00	**232**
MHPC.40.R.03-19-H63A-63	40	3	18	100	63	74	35700	5	XDHX 1904..	1,032.73	**040**
MHPC.40.R.03-19-H63A-80	40	3	18	120	80	94	35700	5	XDHX 1904..	1,032.73	**140**
MHPC.40.R.03-19-H63A-100	40	3	18	140	100	114	33500	5	XDHX 1904..	1,032.73	**240**
MHPC.50.R.03-19-H63A-63	50	3	18	100	63	74	31900	5	XDHX 1904..	1,050.00	**050**
MHPC.50.R.03-19-H63A-80	50	3	18	120	80	94	31900	5	XDHX 1904..	1,050.00	**150**
MHPC.50.R.03-19-H63A-100	50	3	18	140	100	114	31900	5	XDHX 1904..	1,050.00	**250**

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£		£	
22 - 25	6.69	**036**			12.26	**113**			3.98	**303**	2.60	**172**	183.22	**193**
32	6.69	**036**			12.26	**113**			3.98	**303**	3.09	**173**	183.22	**193**
40	6.69	**036**	4.78	**040**	12.26	**113**	11.35	**151**	3.98	**303**	3.09	**173**	183.22	**193**
50 - 63	6.69	**036**	6.09	**050**	12.26	**113**	15.58	**154**	3.98	**303**	3.09	**174**	183.22	**193**

XDHX

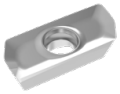
Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
XDHX 190402..	9.52	4.65	19	2	4.76
XDHX 190404..	9.52	4.65	19	2	4.76
XDHX 190408..	9.52	4.65	19	2	4.76
XDHX 190412..	9.52	4.65	19	2	4.76
XDHX 190416..	9.52	4.65	19	2	4.76
XDHX 190420..	9.52	4.65	19	2	4.76
XDHX 190425..	9.52	4.65	19	1.4	4.76
XDHX 190432..	9.52	4.65	19	1	4.76
XDHX 190440..	9.52	4.65	19	1	4.76
XDHX 190450..	9.52	4.65	19	-	4.76



XDHX

-27P
H216T

-ALP
CWK26



XDHX
1H/D4

ISO	RE	Article no. 50 488 ...	
	mm	£	
190402FR	0.2	32.47	**552**
190404FR	0.4	32.47	**554**
190408FR	0.8	32.47	**556**
190412FR	1.2	32.47	**557**
190416FR	1.6	32.47	**558**
190420FR	2.0	32.47	**560**
190425FR	2.5	32.47	**562**
190432FR	3.2	32.47	**564**
190440FR	4.0	32.47	**566**
190450FR	5.0	32.47	**568** 1)

Steel	
Stainless steel	
Cast iron	○
Non ferrous metals	●
Heat resistant alloys	
hardened materials	

1) Insert radius > 4.0 mm: Modify cutter body

Milling guide

Machining strategy	→ 163–165	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 163
Safety advice	→ 159		

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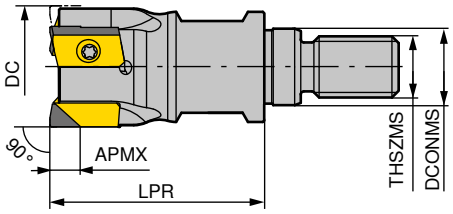
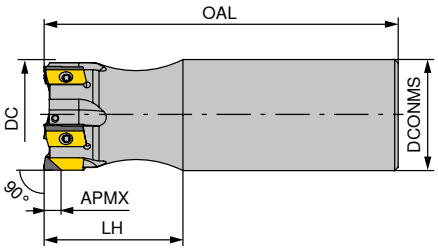
MaxiMill – Screw-in cutter G HPC 04



Designation	DC mm	ZNF	APMX mm	THSZMS	DCONMS mm	LPR mm	RPMX 1/min.	torque moment Nm	Insert	NEW 2B/40 Article no. 50 785 ... £	
GHPC.20.R.03-04	20	3	4	M10	10.5	35	52000	5	ZNHW 04T3..	237.91	**20003**
GHPC.25.R.04-04	25	4	4	M12	12.5	35	45000	5	ZNHW 04T3..	266.27	**25004**
GHPC.32.R.05-04	32	5	4	M16	17.0	35	38000	5	ZNHW 04T3..	294.64	**32005**
GHPC.40.R.06-04	40	6	4	M16	17.0	35	34000	5	ZNHW 04T3..	322.82	**40006**

MaxiMill – End Mill C HPC 04



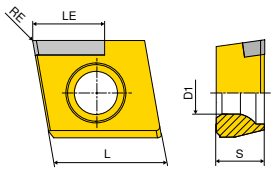
A

Designation	DC mm	ZNF	APMX mm	DCONMS mm	OAL mm	LH mm	RPMX 1/min.	torque moment Nm	Insert	NEW 2B/40 Article no. 50 680 ... £	
CHPC.20.R.03-04-A-25	20	3	4	20	77	25	52000	5	ZNHW 04T3..	237.91	**02003**
CHPC.25.R.04-04-A-32	25	4	4	25	90	32	45000	5	ZNHW 04T3..	266.27	**02504**
CHPC.32.R.05-04-A-40	32	5	4	32	102	40	38000	5	ZNHW 04T3..	294.64	**03205**
CHPC.40.R.06-04-A-50	40	6	4	32	112	50	34000	5	ZNHW 04T3..	322.82	**04006**

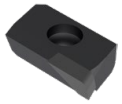
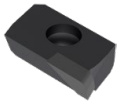
Spare parts DC	Y7 TORX® blade Article no. 80 950 ... £		Y7 Key D Article no. 80 950 ... £		2A/28 Molykote Article no. 70 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		Y7 Torque screwdriver Article no. 80 950 ... £	
20 - 40	6.69	**043**	13.49	**125**	3.98	**303**	3.72	**131**	163.58	**191**

ZNHW

Designation	LE	D1	L	S
	mm	mm	mm	mm
ZNHW 04T3..	4	2.8	11	3.97
ZNHW 04T3..	4	2.8	11	3.97
ZNHW 04T3..	4	2.8	11	3.97
ZNHW 04T3..	4	2.8	11	3.97



ZNHW

ISO	RE	CTD4205 DIAMOND ZNHW NEW 1G/22 Article no. 51 137 ...		CTL3215 CWB3215 CBN ZNHW NEW 1G/21 Article no. 51 137 ...	
	mm	£		£	
04T304ER	0.4	95.45	75400		
04T305ER	0.5			115.27	85500
04T308ER	0.8	95.45	75800		
04T3POER		95.45	77000		

Steel		
Stainless steel		
Cast iron		●
Non ferrous metals	●	
Heat resistant alloys		
hardened materials		○

Milling guide

Machining strategy	→ 166	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 166

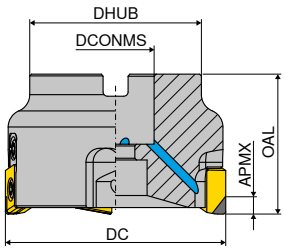
15

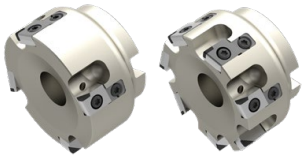
MaxiMill – Shell mill HPC 12

▲ 50 723 ... normal pitch
▲ 50 724 ... fine pitch

Scope of supply:

Tool, adjustment wedges and setting key; incl. wooden box





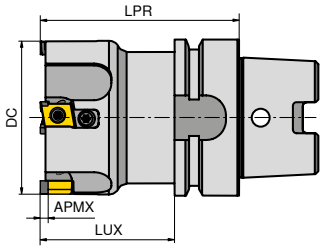
Designation	DC	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	RPMX	torque moment	Insert	2B/40 Article no. 50 723 ...		2B/40 Article no. 50 724 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£		£	
AHPC.40.R.04-12	40	4	11	40	34	16	32000	5	ZNHW 1205..	593.55	**040**		
AHPC.50.R.04-12	50	4	11	40	49	22	32000	5	ZNHW 1205..	607.18	**050**		
AHPC.50.R.05-12	50	5	11	40	49	22	32000	5	ZNHW 1205..			679.91	**050**
AHPC.63.R.04-12	63	4	11	40	49	22	29000	5	ZNHW 1205..	625.45	**063**		
AHPC.63.R.07-12	63	7	11	40	49	22	29000	5	ZNHW 1205..			842.91	**063**
AHPC.80.R.09-12	80	9	11	50	60	27	26000	5	ZNHW 1205..			1,172.73	**080**
AHPC.80.R.05-12	80	5	11	50	60	27	26000	5	ZNHW 1205..	883.82	**080**		
AHPC.100.R.06-12	100	6	11	50	70	32	24000	5	ZNHW 1205..	997.27	**100**		
AHPC.100.R.12-12	100	12	11	50	70	32	24000	5	ZNHW 1205..			1,430.91	**100**
AHPC.125.R.08-12	125	8	11	63	72	40	22000	5	ZNHW 1205..	1,182.73	**125**		
AHPC.125.R.14-12	125	14	11	63	72	40	22000	5	ZNHW 1205..			1,617.27	**12514**
AHPC.160.R.10-12	160	10	11	63	118	40	18000	5	ZNHW 1205..	1,472.73	**16010**		
AHPC.160.R.16-12	160	16	11	63	118	40	18000	5	ZNHW 1205..			4,240.91	**16016**
AHPC.200.R.12-12	200	12	11	63	153	60	16000	5	ZNHW 1205..	4,392.73	**20000**		
AHPC.250.R.14-12	250	14	11	63	200	60	14000	5	ZNHW 1205..	4,960.91	**25014**		
AHPC.315.R.18-12	315	18	11	80	265	60	12000	5	ZNHW 1205..	6,249.09	**31518**		

MaxiMill – Monoblock HPC 12

▲ balanced to G 6,3

Scope of supply:

Tool, adjustment wedges and setting key; incl. wooden box

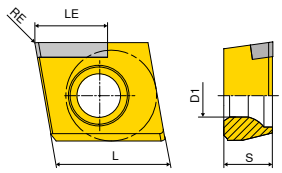


Designation	DC	ZNF	APMX	LPR	LUX	RPMX	torque moment	Insert	2B/40 Article no. 50 721 ...		2B/40 Article no. 50 721 ...	
	mm		mm	mm	mm	1/min.	Nm		£		£	
MHPC.40.R.04-12-H63A-70	40	4	11	70	44	32000	5	ZNHW 1205..			883.82	**04004**
MHPC.50.R.04-12-H63A-80	50	4	11	80	54	32000	5	ZNHW 1205..			883.82	**05004**
MHPC.50.R.05-12-H63A-80	50	5	11	80	54	32000	5	ZNHW 1205..	956.36	**05005**		
MHPC.63.R.04-12-H63A-80	63	4	11	80	54	29000	5	ZNHW 1205..			883.82	**06304**
MHPC.63.R.07-12-H63A-80	63	7	11	80	54	29000	5	ZNHW 1205..	1,100.91	**06307**		
MHPC.80.R.05-12-H63A-90	80	5	11	90	64	26000	5	ZNHW 1205..			1,083.64	**08005**
MHPC.80.R.09-12-H63A-90	80	9	11	90	64	26000	5	ZNHW 1205..	1,374.55	**08009**		
MHPC.100.R.06-12-H63A-90	100	6	11	90	64	24000	5	ZNHW 1205..			1,290.91	**10006**
MHPC.100.R.12-12-H63A-90	100	12	11	90	64	24000	5	ZNHW 1205..	1,727.27	**10012**		
MHPC.125.R.08-12-H63A-123	125	8	11	123	97	22000	5	ZNHW 1205..			3,050.00	**12508**
MHPC.160.R.10-12-H63A-123	160	10	11	123	97	18000	5	ZNHW 1205..			4,124.55	**16010**

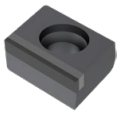
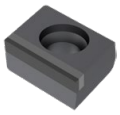
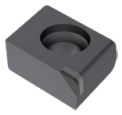
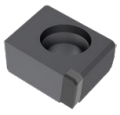
Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Wedge Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£	
40 - 315	6.69	**036**	3.98	**303**	3.09	**174**	33.45	**199**	183.22	**193**

ZNHW

Designation	LE	D1	L	S
	mm	mm	mm	mm
ZNHW 120504ER-1503	3	4.85	12.7	5.40
ZNHW 120504FR-0007	7	4.85	12.7	5.40
ZNHW 120508ER-1503	3	4.85	12.7	5.40
ZNHW 120508SR-0003	3	4.85	12.7	5.40
ZNHW 1205EOER-1002	2	4.85	12.7	5.40
ZNHW 1205POER-1511	11	4.85	12.7	5.40
ZNHW 1205POSR-1003	3	4.85	12.7	5.40
ZNHW 1205POSR-1503	3	4.85	12.7	5.40
ZNHW 1205POSR-1506	6	4.85	12.7	5.40
ZNHW 1205POSR-3003	3	4.85	12.7	5.40
ZNHW 1205ZZSR-5003	3	4.85	12.7	5.40

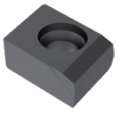


ZNHW

		CTD4205	-R CTD4205	CTD4205	-Q CTD4205
		CWD4205	CWD4205	CWD4205	-Q CWD4205
					
		DIAMOND ZNHW	DIAMOND ZNHW	DIAMOND ZNHW	DIAMOND ZNHW
		1G/22	NEW 1G/22	1G/22	1G/22
ISO	RE	Article no. 50 467 ...	Article no. 50 517 ...	Article no. 50 468 ...	Article no. 50 466 ...
	mm	£	£	£	£
120504ER-1503	0.4			105.55 906	
120504FR-0007	0.4			128.55 904	
120508ER-1503	0.8			105.55 910	
120508SR-0003	0.8			105.00 908	
1205POER-1511		152.09 902			
1205POSR-1003		105.55 90600			
1205POSR-1503		95.45 900			
1205POSR-1506		123.82 90800	123.82 90800		
1205POSR-3003		105.00 904			
1205ZZSR-5003					134.36 900 [1]
Steel					
Stainless steel					
Cast iron					
Non ferrous metals		●	●	●	●
Heat resistant alloys					
hardened materials					

1) -Q = Wiper insert

ZNHW

	CTL3215
	CWB3215
	
	CBN ZNHW
	1G/21
ISO	Article no. 50 515 ...
	£
1205EOER-1002	121.73 952
Steel	
Stainless steel	
Cast iron	●
Non ferrous metals	
Heat resistant alloys	
hardened materials	○

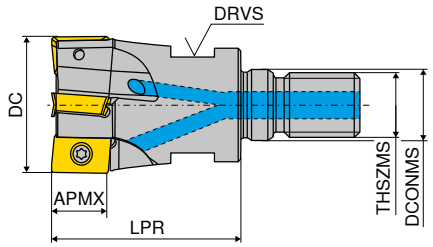
Milling guide

Machining strategy	→ 166+167
ISO Designation System	→ 194+195
Grade description	→ 209+210
Cutting data appoximate values	→ 166

15

MaxiMill – Screw in cutter G 141

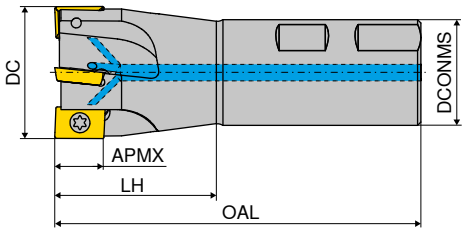
▲ Insert radius > 3.2 mm: Modify cutter body



Designation	DC	ZNF	APMX	LPR	THSZMS	DCONMS	DRVS	torque moment	Insert	2B Article no. 50 770 ...	
	mm		mm	mm		mm	mm	Nm		£	
G141.25.R.02.IK	25	2	14	35	M12	12.5	17	3,2	LD.. 1504..	151.55	**025**
G141.32.R.03.IK	32	3	14	40	M16	17.0	24	3,2	LD.. 1504..	182.00	**032**
G141.40.R.04.IK	40	4	14	40	M16	17.0	24	3,2	LD.. 1504..	209.73	**040**

MaxiMill – End milling cutter C 141

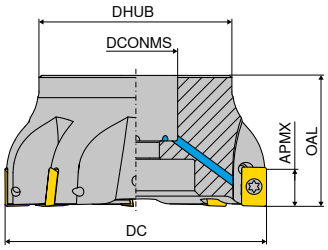
▲ Insert radius > 3.2 mm: Modify cutter body

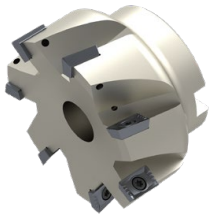


Designation	DC	ZNF	APMX	DCONMS	OAL	LH	torque moment	Insert	2B Article no. 50 771 ...	
	mm		mm	mm	mm	mm	Nm		£	
C141.20.R.01	20	1	14	25	95	39	3,2	LD.. 1504..	155.36	**020**
C141.25.R.02	25	2	14	25	100	44	3,2	LD.. 1504..	206.82	**025**
C141.32.R.03	32	3	14	32	108	48	3,2	LD.. 1504..	240.27	**032**

MaxiMill – Shell mill A 241

▲ Insert radius > 3.2 mm: Modify cutter body



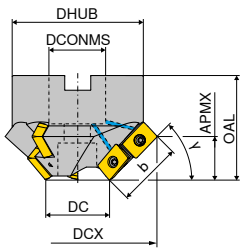


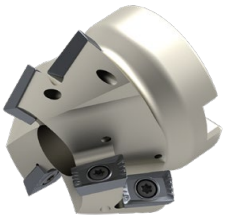
Designation	DC	ZNF	APMX	DHUB	DCONMS	OAL	torque moment	Insert	2B Article no. 50 769 ...	
	mm		mm	mm	mm	mm	Nm		£	
A241.40.R.04	40	4	14	33	16	40	3,2	LD.. 1504..	249.73	**040**
A241.50.R.05	50	5	14	43	22	40	3,2	LD.. 1504..	306.00	**050**
A241.52.R.05	52	5	14	43	22	40	3,2	LD.. 1504..	299.36	**052**
A241.63.R.06	63	6	14	48	22	40	3,2	LD.. 1504..	368.91	**063**
A241.66.R.06	66	6	14	58	27	50	3,2	LD.. 1504..	362.18	**066**
A241.80.R.07	80	7	14	58	27	50	3,2	LD.. 1504..	433.82	**080**
A241.100.R.08	100	8	14	75	32	50	3,2	LD.. 1504..	504.27	**100**

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£	
20 - 40	6.69	**036**	12.26	**113**	3.98	**303**	2.85	**110**	154.29	**192**
50 - 100	6.69	**036**	12.26	**113**	3.98	**303**	2.85	**304**	154.29	**192**

MaxiMill – Chamfer Cutter A 242

▲ Caution: Use only inserts with a corner radius of less than 1.6 mm
▲ ZEFP = number of inserts
▲ ZNP = tooth rows





KAPR	DC	DCX ±0,3	ZNF	APMX ±0,3	ZEFP	b ±0,3	OAL	DCONMS	DHUB	ZNP	torque moment	Insert	2B Article no. 50 768 ...	
°	mm	mm		mm		mm	mm	mm	mm		Nm		£	
15	35	92.2	3	7.6	6	29.6	50	27	62.5	2	3,2	LD.. 1504..	342.18	**015**
30	35	86.3	3	14.8	6	29.6	50	27	62.5	2	3,2	LD.. 1504..	342.18	**030**
45	35	76.9	3	20.9	6	29.6	50	27	62.5	2	3,2	LD.. 1504..	342.18	**045**
60	35	64.6	3	25.6	6	29.6	50	22	62.5	2	3,2	LD.. 1504..	342.18	**060** 1)
75	35	50.3	3	28.5	6	29.6	60	22	49.0	2	3,2	LD.. 1504..	342.18	**075** 1)

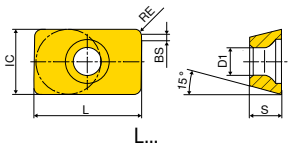
1) Version with Powerscrew

Spare parts KAPR	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...		Y8 Clamping screw Article no. 83 950 ...	
	£		£		£		£		£		£		£		£	
15 - 45	6.69	**036**			12.26	**113**			3.98	**303**	2.85	**304**	154.29	**192**	7.05	**125**
60 - 75	6.69	**036**	6.09	**050**	12.26	**113**	15.58	**154**	3.98	**303**	2.85	**304**	154.29	**192**		

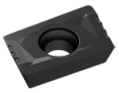
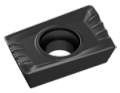
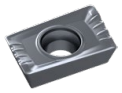
15

LDFW / LDFT / LDMT

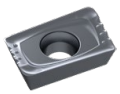
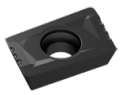
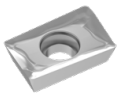
Designation	IC	D1	L	BS	S
	mm	mm	mm	mm	mm
LD.. 1504PD..	9.52	4.4	15	1.2	4.76
LDFT 150408..	9.52	4.4	15	1.2	4.76
LDFT 1504PD..	9.52	4.4	15	0.8	4.76



LDFW / LDFT / LDMT

		CTCP230	-29 CTCP230	-29 CTCP230	-29 CTPP235	-29 CTPP235
		DCX1230	-29 DCX1230	-29 DCX1230	-29 DPX1235	-29 DPX1235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		LDFW	LDFT	LDMT	LDFT	LDMT
		1B/61	1B/61	1B/61	1B/61	1B/61
ISO	RE	**Article no. 51 043 ...**	**Article no. 51 079 ...**	**Article no. 51 080 ...**	**Article no. 51 079 ...**	**Article no. 51 080 ...**
	mm	£	£	£	£	£
1504PDSR	0.8	14.52 **020**	17.39 **020**	8.88 **020**	17.39 **120**	8.88 **120**
Steel		●	●	●	●	●
Stainless steel		○	○	○	○	○
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials						

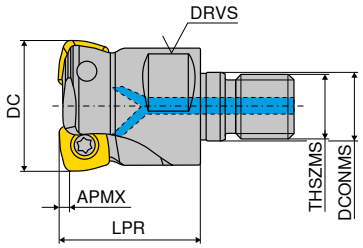
LDFT / LDFW

		-33 CTPM240	CTCK215	-27P H216T
		-33 DPX2240	DCX3215	-ALP CWK26
		DRAGONSKIN	DRAGONSKIN	
				
		LDFT	LDFW	LDFT
		1B/61	1B/61	1A/90
ISO	RE	**Article no. 51 042 ...**	**Article no. 51 043 ...**	**Article no. 50 409 ...**
	mm	£	£	£
150408FR	0.8			18.05 **550**
1504PDSR	0.8		14.52 **520**	
1504PDSR	1.2	16.61 **420**		
Steel		○	○	
Stainless steel		●		
Cast iron			●	○
Non ferrous metals				●
Heat resistant alloys				
hardened materials				

Milling guide

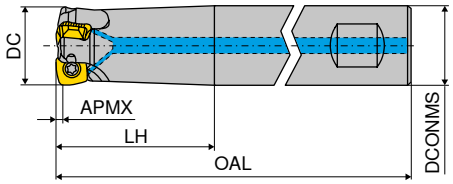
Machining strategy	→ 168	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 168

MaxiMill – Screw in cutter G HFC



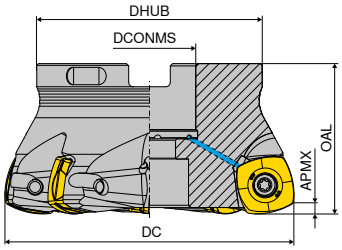
Designation	DC	ZNF	APMX	LPR	DCONMS	THSZMS	DRVS	RPMX	torque moment	Insert	2B/40 Article no. 50 682 ...	
	mm		mm	mm	mm		mm	1/min.	Nm		£	
GHFC.16.R.02-06	16	2	0.8	27	8.5	M8	10	20800	1,2	XPLX 0603..	209.55	616
GHFC.20.R.03-06	20	3	0.8	33	10.5	M10	15	19800	1,2	XPLX 0603..	237.91	620
GHFC.25.R.04-06	25	4	0.8	35	12.5	M12	17	18700	1,2	XPLX 0603..	266.27	625
GHFC.32.R.05-06	32	5	0.8	35	17.0	M16	24	22000	1,2	XPLX 0603..	294.64	632
GHFC.42.R.07-06	42	7	0.8	35	17.0	M16	24	15000	1,2	XPLX 0603..	324.18	04207
GHFC.25.R.02-09	25	2	1.0	35	12.5	M12	17	30000	3,2	XDLX 09T3..	250.91	025
GHFC.25.R.03-09	25	3	1.0	35	12.5	M12	17	30000	3,2	XDLX 09T3..	269.36	125
GHFC.32.R.03-09	32	3	1.0	35	17.0	M16	24	27000	3,2	XDLX 09T3..	281.36	032
GHFC.42.R.05-19	42	5	1.0	35	17.0	M16	24	26100	3,2	XDLX 09T3..	315.18	04205
GHFC.32.R.02-12	32	2	2.0	35	17.0	M16	24	21600	5	XOLX 1204..	263.18	132
GHFC.35.R.03-12	35	3	2.0	35	17.0	M16	24	21360	5	XOLX 1204..	281.36	035
GHFC.42.R.04-12	42	4	2.0	35	17.0	M16	24	20800	5	XOLX 1204..	303.91	04204

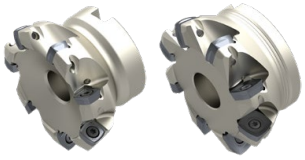
MaxiMill – End milling cutter C HFC



Designation	DC	ZNF	APMX	OAL	LH	DCONMS h6	RPMX	torque moment	Insert	A 2B/40 Article no. 50 681 ...		B 2B/40 Article no. 50 681 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£		£	
CHFC.16.R.02-06-A-40-200	16	2	0.8	200	40	16	4600	1,2	XPLX 0603..	209.55	716		
CHFC.16.R.02-06-B-40	16	2	0.8	89	40	16	17300	1,2	XPLX 0603..			209.55	616
CHFC.20.R.03-06-B-50	20	3	0.8	101	50	20	14500	1,2	XPLX 0603..			237.91	620
CHFC.20.R.03-06-A-50-225	20	3	0.8	225	50	20	4200	1,2	XPLX 0603..	237.91	720		
CHFC.25.R.04-06-B-50	25	4	0.8	107	50	25	15600	1,2	XPLX 0603..			266.27	625
CHFC.25.R.04-06-A-50-225	25	4	0.8	225	50	25	4600	1,2	XPLX 0603..	266.27	725		
CHFC.32.R.05-06-B-25-60	32	5	0.8	117	60	25	11000	1,2	XPLX 0603..			294.64	632
CHFC.32.R.05-06-A-25-60-225	32	5	0.8	225	60	25	3900	1,2	XPLX 0603..	294.64	732		
CHFC.25.R.02-09-A-50-225	25	2	1.0	225	50	25	9000	3,2	XDLX 09T3..	250.91	025		
CHFC.25.R.03-09-A-50-225	25	3	1.0	225	50	25	9000	3,2	XDLX 09T3..	269.36	125		
CHFC.32.R.03-09-A-63-250	32	3	1.0	250	63	32	8100	3,2	XDLX 09T3..	281.36	032		
CHFC.32.R.02-12-A-63-250	32	2	2.0	250	63	32	6480	5	XOLX 1204..	263.18	132		
CHFC.35.R.03-12-A-63-250	35	3	2.0	250	63	32	6480	5	XOLX 1204..	281.36	035		

MaxiMill – Shell mill A HFC





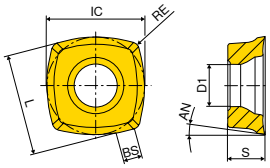
Designation	DC	ZNF	APMX	OAL	DCONMS $_{H6}$	DHUB	RPMX	torque moment	Insert	2B/40 Article no. 50 683 ...		2B/40 Article no. 50 683 ...	
	mm		mm	mm	mm	mm	1/min.	Nm		£		£	
AHFC.32.R.03-09	32	3	1.0	40	16	38	27700	3,2	XDLX 09T3..	281.36	**032**		
AHFC.35.R.04-09	35	4	1.0	40	16	38	26700	3,2	XDLX 09T3..	299.73	**035**		
AHFC.40.R.04-09	40	4	1.0	40	16	38	26400	3,2	XDLX 09T3..	312.00	**140**		
AHFC.42.R.05-09	42	5	1.0	40	16	38	26100	3,2	XDLX 09T3..	330.27	**142**		
AHFC.50.R.05-09	50	5	1.0	40	22	43	23500	3,2	XDLX 09T3..	367.09	**150**		
AHFC.52.R.06-09	52	6	1.0	40	22	43	23000	3,2	XDLX 09T3..	385.45	**152**		
AHFC.63.R.06-09	63	6	1.0	40	22	48	20500	3,2	XDLX 09T3..	422.09	**163**		
AHFC.66.R.07-09	66	7	1.0	40	22	48	20000	3,2	XDLX 09T3..	440.45	**16600**		
AHFC.40.R.03-12	40	3	2.0	40	16	38	21120	5	XOLX 1204..	293.73	**040**		
AHFC.42.R.04-12	42	4	2.0	40	16	38	20880	5	XOLX 1204..	312.00	**042**		
AHFC.50.R.04-12	50	4	2.0	40	22	43	18800	5	XOLX 1204..	348.64	**050**		
AHFC.52.R.05-12	52	5	2.0	40	22	43	18400	5	XOLX 1204..	367.09	**052**		
AHFC.63.R.05-12	63	5	2.0	40	22	48	16400	5	XOLX 1204..	403.64	**063**		
AHFC.66.R.06-12	66	6	2.0	40	22	48	16000	5	XOLX 1204..	422.09	**066**		
AHFC.80.R.07-12	80	7	2.0	50	27	58	14000	5	XOLX 1204..	477.18	**080**		
AHFC.100.R.08-12	100	8	2.0	50	32	78	12000	5	XOLX 1204..	532.36	**100**		
AHFC.63.R.05-19	63	5	3.3	40	22	48	5500	5	XOLX 1906..			422.64	**263**
AHFC.80.R.06-19	80	6	3.3	50	27	58	4700	5	XOLX 1906..			513.55	**280**
AHFC.100.R.08-19	100	8	3.3	52	32	78	4100	5	XOLX 1906..			611.27	**300**
AHFC.125.R.10-19	125	10	3.3	63	40	88	3600	5	XOLX 1906..			767.82	**325**
AHFC.160.R.11-19	160	11	3.3	63	40	98	3100	5	XOLX 1906..			928.18	**360** [1]

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm

Spare parts	Y7 TORX® blade Article no. 80 950 ...		Y7 Clamping key – T Article no. 80 397 ...		Y7 Key D Article no. 80 950 ...		2A/28 Power Screw Article no. 70 950 ...		2A/28 Molykote Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£		£		£	
XDLX 09T3..	6.69	**036**			12.26	**113**			3.98	**303**	2.85	**110**	154.29	**192**
XDLX 09T3.. (Ø32 – Ø42)	6.69	**036**	4.78	**040**	12.26	**113**	11.35	**151**	3.98	**303**	2.85	**110**	154.29	**192**
XOLX 1204..	6.69	**037**			13.11	**114**			3.98	**303**	2.29	**280**	183.22	**193**
XOLX 1204.. (Ø40 – Ø42)	6.69	**037**	4.78	**040**	13.11	**114**	11.35	**151**	3.98	**303**	2.29	**280**	183.22	**193**
XOLX 1906..	6.69	**037**			13.11	**114**			3.98	**303**	3.72	**302**	183.22	**193**
XPLX 0603..	6.69	**033**			10.30	**110**			3.98	**303**	2.34	**116**	154.29	**192**

XPLX / XDLX / XOLX

Designation	IC	D1	L	BS	S	AN
	mm	mm	mm	mm	mm	°
XPLX 0603..	6.35	2.8	6	1	2.75	11
XDLX 09T3..	9.52	4.4	9	1.9	3.97	15
XOLX 1204..	12.70	5.5	12	1.3	4.76	-
XOLX 1906..	19.14	6.0	19	-	6.35	10



XPLX

		-M50 CTCP220	-M50 CTPP225	-M50 CTPP235	-M50 CTPM225	-M50 CTPM240	-F40 CTPM245
		-M50 DCX1220	-M50 DPX1225	-M50 DPX1235	-M50 DPX2225	-M50 DPX2240	-F40 DPX2245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		XPLX	XPLX	XPLX	XPLX	XPLX	XPLX
		1B/61	1B/61	1B/61	1B/61	1B/61	1H/17
ISO	RE	**Article no. 51 019 ...**	**Article no. 51 019 ...**	**Article no. 51 019 ...**	**Article no. 51 019 ...**	**Article no. 51 019 ...**	**Article no. 51 116 ...**
	mm	£	£	£	£	£	£
060305ER	0.5						13.69 **455**
060305SR	0.5	11.22 **255**	11.22 **055**	11.22 **105**	11.22 **205**	11.22 **405**	
Steel		●	●	●	○	○	●
Stainless steel				○	●	●	●
Cast iron							
Non ferrous metals							
Heat resistant alloys							
hardened materials							

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XPLX

		-M50 CTCK215	-F40 CTC5240	-F40 CTCS245
		-M50 DCX3215	-F40 HCF5240	
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		XPLX	XPLX	XPLX
		1B/61	1H/D4	NEW 1H/D4
ISO	RE	Article no. 51 019 ...	Article no. 50 518 ...	Article no. 51 116 ...
	mm	£	£	£
060305ER	0.5		13.69 558	13.69 55500
060305SR	0.5	11.22 505		
Steel		○		
Stainless steel				
Cast iron		●		
Non ferrous metals				
Heat resistant alloys			●	●
hardened materials				

XDLX

		-M50 CTCP220	-M50 CTPP225	-M50 CTCP230	-M50 CTPP235
		-M50 DCX1220	-M50 DPX1225	-M50 DCX1230	-M50 DPX1235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		XDLX	XDLX	XDLX	XDLX
		1B/61	1B/61	1B/61	1B/61
ISO	RE	Article no. 51 016 ...	Article no. 51 016 ...	Article no. 51 016 ...	Article no. 51 016 ...
	mm	£	£	£	£
09T308SR	0.8	11.56 258	11.56 058	11.56 008	11.56 108
Steel		●	●	●	●
Stainless steel				○	○
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

XDLX

		-M50 CTPM225	-M50 CTCM235	-M50 CTPM240	-F40 CTPM245	-M50 CTPM245
		-M50 DPX2225	-M50 DCX2235	-M50 DPX2240	-F40 DPX2245	-M50 DPX2245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		XDLX	XDLX	XDLX	XDLX	XDLX
		1B/61	1B/61	1B/61	1H/17	1H/17
ISO	RE	Article no. 51 016 ...	Article no. 51 016 ...	Article no. 51 016 ...	Article no. 51 115 ...	Article no. 51 016 ...
	mm	£	£	£	£	£
09T308ER	0.8				13.96 458	
09T308SR	0.8	11.56 208	11.56 308	11.56 408		13.96 458
Steel		○	○	○	●	●
Stainless steel		●	●	●	●	●
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials						

XDLX

		-M50 CTCK215	-F40 CTC5240	-F40 CTCS245
		-M50 DCX3215	-F40 HCF5240	
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		XDLX	XDLX	XDLX
		1B/61	1H/D4	NEW 1H/D4
ISO	RE	Article no. 51 016 ...	Article no. 50 503 ...	Article no. 51 115 ...
	mm	£	£	£
09T308ER	0.8		13.96 558	13.96 558
09T308SR	0.8	11.56 508		
Steel		○		
Stainless steel				
Cast iron		●		
Non ferrous metals				
Heat resistant alloys			●	●
hardened materials				

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XOLX

		-M50 CTCP220	-M50 CTPP225	-M50 CTCP230	-M50 CTPP235	-R50 CTPP235
		-M50 DCX1220	-M50 DPX1225	-M50 DCX1230	-M50 DPX1235	-R50 DPX1235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		XOLX	XOLX	XOLX	XOLX	XOLX
		1B/61	1B/61	1B/61	1B/61	1B/61
ISO	RE	**Article no. 51 017 ...**	**Article no. 51 017 ...**	**Article no. 51 017 ...**	**Article no. 51 017 ...**	**Article no. 51 018 ...**
	mm	£	£	£	£	£
120410SR	1.0	13.87 **260**	13.87 **060**	13.87 **010**	13.87 **110**	13.87 **110**
Steel		●	●	●	●	●
Stainless steel				○	○	○
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials						

XOLX

		-M50 CTPM225	-M50 CTCM235	-M50 CTPM240	-F40 CTPM245	-M50 CTPM245
		-M50 DPX2225	-M50 DCX2235	-M50 DPX2240	-F40 DPX2245	-M50 DPX2245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		XOLX	XOLX	XOLX	XOLX	XOLX
		1B/61	1B/61	1B/61	1H/17	1H/17
ISO	RE	**Article no. 51 017 ...**	**Article no. 51 017 ...**	**Article no. 51 017 ...**	**Article no. 51 022 ...**	**Article no. 51 017 ...**
	mm	£	£	£	£	£
120410ER	1.0				16.33 **460**	
120410SR	1.0	13.87 **210**	13.87 **310**	13.87 **410**		16.33 **460**
Steel		○	○	○	●	●
Stainless steel		●	●	●	●	●
Cast iron						
Non ferrous metals						
Heat resistant alloys						
hardened materials						

XOLX / XOHX

		-M50 CTCK215	-F40 CTC5240	-F50 CTC5240	-F40 CTCS245	-F50 CTCS245
		-M50 DCX3215	-F40 HCF5240			
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		XOLX	XOLX	XOHX	XOLX	XOLX
		1B/61	1H/D4	NEW 1H/D4	NEW 1H/D4	NEW 1H/D4
ISO	RE	Article no. 51 017 ...	Article no. 50 504 ...	Article no. 51 124 ...	Article no. 51 022 ...	Article no. 51 124 ...
	mm	£	£	£	£	£
120410ER	1.0		16.33 558		16.33 560	
120410SR	1.0	13.87 510		21.23 16000		21.23 56000
Steel		○				
Stainless steel						
Cast iron		●				
Non ferrous metals						
Heat resistant alloys			●	●	●	●
hardened materials						

XOLX

		-M50 CTCP230	-M50 CTPP235	-M50 CTPM240	-F40 CTPM245	-M50 CTCK215	-F40 CTC5240	-F40 CTCS245
		-M50 DCX1230	-M50 DPX1235	-M50 DPX2240	-F40 DPX2245	-M50 DCX3215	-F40 HCF5240	
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		XOLX	XOLX	XOLX	XOLX	XOLX	XOLX	XOLX
		1B/61	1B/61	1B/61	1H/17	1B/61	1H/D4	NEW 1H/D4
ISO	RE	Article no. 51 017 ...	Article no. 51 017 ...	Article no. 51 017 ...	Article no. 51 022 ...	Article no. 51 017 ...	Article no. 50 504 ...	Article no. 51 022 ...
	mm	£	£	£	£	£	£	£
190615ER	1.5				24.78 465		24.78 515	24.78 56500
190615SR	1.5	20.15 015	20.15 115	20.15 415		20.15 515		
Steel		●	●	○	●	○		
Stainless steel		○	○	●	●			
Cast iron						●		
Non ferrous metals								
Heat resistant alloys							●	●
hardened materials								

Milling guide

Machining strategy	→ 170–173	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 170–173
Starting Parameter	→ 170–173		

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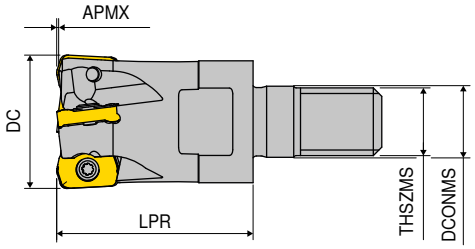
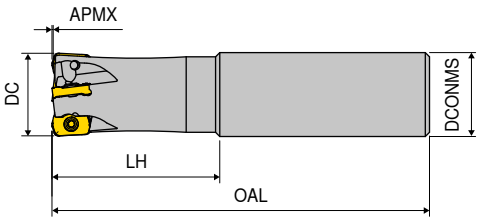
MaxiMill – Screw in cutter G DHFC



Designation	DC	ZNF	APMX	LPR	DCONMS	THSZMS	torque moment	Insert	NEW WA Article no. 56 411 ...	
	mm		mm	mm	mm		Nm		£	
GDHFC.16.R.02-09	16	2	0.75	29	8.5	M8	0,65	LNKX 0925..	202.23	01602
GDHFC.16.R.03-09	16	3	0.75	29	8.5	M8	0,65	LNKX 0925..	220.50	01603
GDHFC.20.R.04-09	20	4	0.75	29	10.5	M10	0,65	LNKX 0925..	253.03	02004
GDHFC.25.R.05-09	25	5	0.75	33	12.5	M12	0,65	LNKX 0925..	293.67	02505
GDHFC.32.R.05-09	32	5	0.75	42	17.0	M16	0,65	LNKX 0925..	314.00	03205
GDHFC.35.R.06-09	35	6	0.75	42	17.0	M16	0,65	LNKX 0925..	332.26	03506
GDHFC.42.R.06-09	42	6	0.75	42	17.0	M16	0,65	LNKX 0925..	346.52	04206

MaxiMill – End milling cutter C DHFC



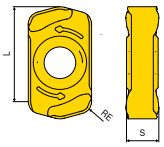
A

Designation	DC	ZNF	APMX	OAL	LH	DCONMS h6	torque moment	Insert	NEW WA Article no. 56 417 ...	
	mm		mm	mm	mm	mm	Nm		£	
CDHFC.16.R.05-09-A-32	16	3	0.75	80	32	16	0,65	LNKX 0925..	220.50	01603
CDHFC.20.R.04-09-A-40	20	4	0.75	90	40	20	0,65	LNKX 0925..	253.03	02004

Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		WA Clamping screw Article no. 56 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£	
16 - 42	6.69	051	10.47	117	3.98	303	3.15	15000	163.58	191

LNKX

Designation	L	S
	mm	mm
LNKX 0925..	9	2.50



LNKX

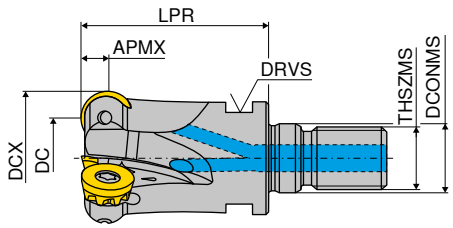
		-R50 CTPP231	-M50 CTPP236	-R50 CTPP236	-M50 CTPM241	-R50 CTPK221
		LNKX	LNKX	LNKX	LNKX	LNKX
		NEW WB	NEW WB	NEW WB	NEW WB	NEW WB
ISO	RE	Article no. 56 353 ...	Article no. 56 355 ...	Article no. 56 353 ...	Article no. 56 355 ...	Article no. 56 353 ...
	mm	£	£	£	£	£
0925ZSR	1	16.61 12000	16.61 02500	16.61 02000	16.61 42500	16.61 27000
Steel		●	●	●	●	●
Stainless steel					●	
Cast iron		●	●	●		●
Non ferrous metals						
Heat resistant alloys					●	
hardened materials		●	●	●		●

Milling guide

Machining strategy	→ 174	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 174

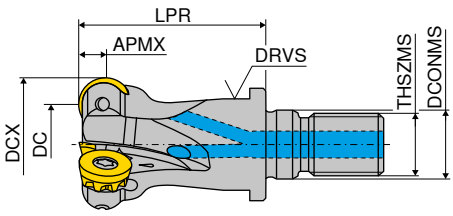
15

MaxiMill – Screw in cutter G 251 RS



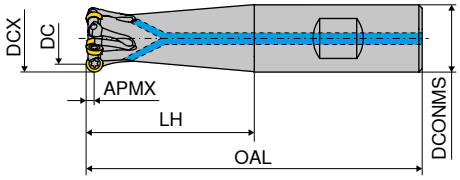
Designation	DC	DCX	ZNF	APMX	DCONMS	LPR	THSZMS	DRVS	RPMX	torque moment	Insert	2B/40 Article no. 50 684 ...	
	mm	mm		mm	mm	mm		mm	1/min.	Nm		£	
G251.20.R.05-05-RS	15	20	5	2.5	10.5	33	M10	15	31800	0,7	RDHX 0501..	253.45	220
G251.25.R.06-05-RS	20	25	6	2.5	12.5	35	M12	17	24450	0,7	RDHX 0501..	291.82	225
G251.32.R.07-05-RS	27	32	7	2.5	17.0	35	M16	24	19850	0,7	RDHX 0501..	350.09	232
G251.20.R.03-08-RS	12	20	3	4.0	10.5	33	M10	15	25000	1,2	RDHX 0802..	237.91	120
G251.25.R.04-08-RS	17	25	4	4.0	12.5	35	M12	17	19000	1,2	RDHX 0802..	266.27	125
G251.32.R.05-08-35-RS	24	32	5	4.0	17.0	35	M16	24	19000	1,2	RDHX 0802..	323.73	132
G251.20.R.02-10-RS	10	20	2	5.0	10.5	33	M10	15	30000	2	RP.X 10T3..	192.45	020
G251.25.R.03-10-RS	15	25	3	5.0	12.5	35	M12	17	30000	2	RP.X 10T3..	258.73	025
G251.32.R.04-10-RS	22	32	4	5.0	17.0	35	M16	24	25000	2	RP.X 10T3..	301.09	032
G251.25.R.02-12-35-RS	13	25	2	6.0	12.5	35	M12	17	25000	3,2	RP.X 1204..	186.64	525
G251.32.R.03-12-35-RS	20	32	3	6.0	17.0	35	M16	24	19850	3,2	RP.X 1204..	227.73	532
G251.35.R.03-12-35-RS	23	35	3	6.0	17.0	35	M16	24	15900	3,2	RP.X 1204..	227.73	535
G251.42.R.04-12-42-RS	30	42	4	6.0	17.0	42	M16	24	15000	3,2	RP.X 1204..	270.64	542

MaxiMill – Screw in cutter G 251



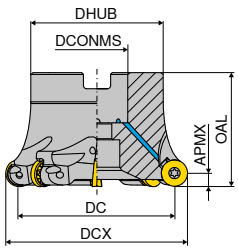
Designation	DC	DCX	ZNF	APMX	THSZMS	LPR	DCONMS	DRVS	torque moment	Insert	2B Article no. 55 112 ...	
	mm	mm		mm		mm	mm	mm	Nm		£	
G251.10.R.02-05	5	10	2	2.5	M8	20	8.5	10	0,7	RDHX 0501..	137.27	110
G251.12.R.03-05	7	12	3	2.5	M8	20	8.5	10	0,7	RDHX 0501..	184.91	112
G251.15.R.04-05	10	15	4	2.5	M8	20	8.5	10	0,7	RDHX 0501..	216.36	115
G251.16.R.04-05	11	16	4	2.5	M8	20	8.5	10	0,7	RDHX 0501..	216.36	216
G251.20.R.05-05	15	20	5	2.5	M10	25	10.5	15	0,7	RDHX 0501..	255.45	320
G251.20.R.03-08	12	20	3	4.0	M10	28	10.5	15	1,2	RDHX 0802..	184.91	420
G251.25.R.04-08	17	25	4	4.0	M12	28	12.5	17	1,2	RDHX 0802..	231.64	425
G251.32.R.06-08	24	32	6	4.0	M16	28	17.0	24	1,2	RDHX 0802..	306.00	432
G251.35.R.06-08	27	35	6	4.0	M16	28	17.0	24	1,2	RDHX 0802..	306.00	435
G251.20.R.02-10	10	20	2	5.0	M10	33	10.5	15	2	RP.X 10T3..	196.36	220
G251.32.R.04-10	22	32	4	5.0	M16	35	17.0	24	2	RP.X 10T3..	286.91	232
G251.35.R.05-10	25	35	5	5.0	M16	35	17.0	24	2	RP.X 10T3..	321.27	235
G251.25.R.02-12.IK	13	25	2	6.0	M12	35	12.5	17	3,2	RP.X 1204..	193.55	525
G251.32.R.03-12.IK	20	32	3	6.0	M16	35	17.0	24	3,2	RP.X 1204..	235.45	532
G251.35.R.03-12.IK	23	35	3	6.0	M16	35	17.0	24	3,2	RP.X 1204..	235.45	535
G251.42.R.04-12.IK	30	42	4	6.0	M16	42	17.0	24	3,2	RP.X 1204..	280.27	542

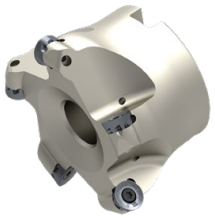
MaxiMill – End milling cutter C 251 RS



Designation	DC	DCX	ZNF	APMX	OAL	LH	DCONMS	RPMX	Insert	A 2B/40 Article no. 50 685 ...		B 2B/40 Article no. 50 685 ...	
	mm	mm		mm	mm	mm	mm	1/min.		£		£	
C251.10.R-02-05-B-12-20-RS	5	10	2	2.5	67	21.5	12	40000	RDHX 0501..			175.27	010
C251.10.R-02-05-A-25-165-RS	5	10	2	2.5	165	25.0	10	12000	RDHX 0501..	169.27	110		
C251.12.R-03-05-B-16-25-RS	7	12	3	2.5	75	25.0	16	40000	RDHX 0501..			221.09	012
C251.12.R-03-05-A-32-165-RS	7	12	3	2.5	165	32.0	12	16000	RDHX 0501..	212.91	112		
C251.16.R-04-05-B-32-RS	11	16	4	2.5	81	32.0	16	40000	RDHX 0501..			258.73	316
C251.16.R-04-05-A-40-165-RS	11	16	4	2.5	165	40.0	16	18000	RDHX 0501..	252.82	016		
C251.20.R-05-05-B-40-RS	15	20	5	2.5	91	40.0	20	31800	RDHX 0501..			301.09	620
C251.20.R-05-05-A-50-165-RS	15	20	5	2.5	165	50.0	20	18000	RDHX 0501..	295.36	120		
C251.16.R-02-08-B-32-RS	8	16	2	4.0	81	32.0	16	40000	RDHX 0802..			182.36	116
C251.16.R-02-08-A-40-165-RS	8	16	2	4.0	165	40.0	16	18000	RDHX 0802..	175.27	216		
C251.20.R-03-08-B-40-RS	12	20	3	4.0	91	40.0	20	31800	RDHX 0802..			231.73	220
C251.20.R-03-08-A-60-RS	12	20	3	4.0	110	50.0	20	30000	RDHX 0802..	237.91	020		
C251.20.R-03-08-A-50-200-RS	12	20	3	4.0	200	50.0	20	25000	RDHX 0802..	224.64	320		
C251.25.R-04-08-B-50-RS	17	25	4	4.0	107	50.0	25	25500	RDHX 0802..			274.00	625
C251.25.R-04-08-A-60-RS	17	25	4	4.0	116	60.0	25	19000	RDHX 0802..	266.27	125		
C251.25.R-04-08-A-60-225-RS	17	25	4	4.0	225	60.0	25	18000	RDHX 0802..	266.91	225		
C251.20.R-02-10-A-50-RS	10	20	2	5.0	102	50.0	20	25000	RP.X 10T3..	194.09	420		
C251.20.R-02-10-A-50-200-RS	10	20	2	5.0	200	50.0	20	25000	RP.X 10T3..	194.09	520		
C251.25.R.03-10-A-60-RS	15	25	3	5.0	116	60.0	25	25000	RP.X 10T3..	262.27	025		
C251.25.R-03-10-B-60-RS	15	25	3	5.0	116	60.0	25	20000	RP.X 10T3..			262.27	325
C251.25.R-03-10-A-60-225-RS	15	25	3	5.0	225	60.0	25	18000	RP.X 10T3..	262.27	425		
C251.32.R.04-10-A-70-RS	22	32	4	5.0	127	70.0	32	25000	RP.X 10T3..	295.36	032		
C251.25.R-02-12-B-30-RS	13	25	2	6.0	86	30.0	25	25000	RP.X 1204..			239.18	525
C251.32.R-03-12-A-RS	20	32	3	6.0	100	40.0	32	19000	RP.X 1204..	276.64	232		
C251.32.R-03-12-B-40-RS	20	32	3	6.0	100	40.0	32	19000	RP.X 1204..			276.64	132

MaxiMill – Shell mill A 251 RS



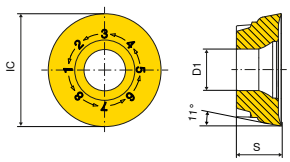


Designation	DC	DCX	ZNF	APMX	OAL	DHUB	DCONMS $_{H6}$	RPMX	torque moment	Insert	2B/40 Article no. 50 686 ...	
	mm	mm		mm	mm	mm	mm	1/min.	Nm		£	
A251.40.R.03-10-RS	30	40	3	5	40	38	16	15900	2	RP.X 10T3..	286.91	**240**
A251.40.R.05-10-RS	30	40	5	5	40	38	16	16000	2	RP.X 10T3..	323.36	**140**
A251.42.R.06-10-RS	32	42	6	5	40	38	16	16000	2	RP.X 10T3..	371.64	**142**
A251.50.R.04-10-RS	40	50	4	5	40	43	22	12700	2	RP.X 10T3..	315.09	**350**
A251.50.R.06-10-RS	40	50	6	5	40	43	22	12500	2	RP.X 10T3..	384.55	**150**
A251.52.R.06-10-RS	42	52	6	5	40	43	22	12500	2	RP.X 10T3..	384.55	**152**
A251.40.R.04-12-RS	28	40	4	6	40	38	16	15900	3,2	RP.X 1204..	297.45	**340**
A251.50.R.04-12-RS	38	50	4	6	40	43	22	12700	3,2	RP.X 1204..	307.00	**250**
A251.50.R.05-12-RS	38	50	5	6	40	43	22	12500	3,2	RP.X 1204..	361.00	**050**
A251.52.R.05-12-RS	40	52	5	6	40	43	22	12500	3,2	RP.X 1204..	378.64	**052**
A251.63.R.06-12-RS	51	63	6	6	40	48	22	10000	3,2	RP.X 1204..	445.73	**063**
A251.66.R.07-12-RS	54	66	7	6	40	48	22	9000	3,2	RP.X 1204..	469.91	**166**
A251.80.R.05-12-RS	68	80	5	6	50	58	27	7950	3,2	RP.X 1204..	406.82	**180**
A251.80.R.07-12-RS	68	80	7	6	50	58	27	8000	3,2	RP.X 1204..	502.82	**080**
A251.100.R.06-12-RS	88	100	6	6	50	78	32	6350	3,2	RP.X 1204..	454.00	**100**
A251.100.R.10-12-RS	88	100	10	6	50	78	32	6350	3,2	RP.X 1204..	663.27	**200**
A251.50.R.04-16-RS	34	50	4	8	40	48	22	12700	5	RP.X 1605..	361.00	**450**
A251.52.R.04-16-RS	36	52	4	8	40	48	22	10100	5	RP.X 1605..	361.00	**452**
A251.63.R.05-16-RS	47	63	5	8	40	48	22	10100	5	RP.X 1605..	455.09	**163**
A251.66.R.05-16-RS	50	66	5	8	40	48	22	7950	5	RP.X 1605..	458.45	**466**
A251.80.R.06-16-RS	64	80	6	8	50	58	27	7950	5	RP.X 1605..	552.73	**280**
A251.100.R.07-16-RS	84	100	7	8	50	78	32	6350	5	RP.X 1605..	645.73	**300**
A251.125.R.08-16-RS	109	125	8	8	63	88	40	5050	5	RP.X 1605..	683.45	**225**
A251.80.R.05-20-RS	60	80	5	10	50	58	27	7950	5	RP.X 2006..	468.00	**380**
A251.100.R.06-20-RS	80	100	6	10	50	78	32	6350	5	RP.X 2006..	559.82	**400**
A251.125.R.06-20-RS	105	125	6	10	63	88	40	5050	5	RP.X 2006..	566.82	**125**

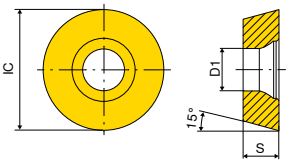
Spare parts	Y7 TORX® blade		Y7 Clamping key – T		Y7 Key D		2A/28 Power Screw		2A/28 Molykote		2A/28 Clamping screw		Y7 Torque screwdriver	
	Article no. 80 950 ...		Article no. 80 397 ...		Article no. 80 950 ...		Article no. 70 950 ...		Article no. 70 950 ...		Article no. 70 950 ...		Article no. 80 950 ...	
Insert	£		£		£		£		£		£		£	
RDHX 0501..	6.69	**031**			11.15	**108**			3.98	**303**	2.34	**149**	163.58	**191**
RDHX 0802..	6.69	**033**			10.30	**110**			3.98	**303**	2.34	**116**	163.58	**191**
RP.X 10T3..	6.69	**035**	4.78	**040**	12.05	**112**	11.35	**151**	3.98	**303**	2.34	**840**	154.29	**192**
RP.X 1204..	6.69	**036**	4.78	**040**	12.26	**113**	11.35	**151**	3.98	**303**	2.85	**304**	154.29	**192**
RP.X 1605..	6.69	**037**	6.09	**050**	13.11	**114**	15.58	**154**	3.98	**303**	2.29	**280**	183.22	**193**
RP.X 2006..	6.69	**037**			13.11	**114**			3.98	**303**	3.72	**302**	183.22	**193**

RDHX / RPHX / RPNX

Designation	IC	D1	S
	mm	mm	mm
RDHX 0501..	5	2.5	1.59
RDHX 0802..	8	2.8	2.38
RP.X 10T3..	10	3.4	3.97
RP.X 1204..	12	4.4	4.76
RP.X 1605..	16	5.5	5.56
RP.X 2006..	20	6.0	6.35



RP.X 10T3.. / RP.X 1204.. / RP.X 1605.. / RPNX 2006..

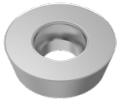


RDHX 0501.. / RDHX 0802..

RDHX

	-SN CTCP230	-SN CTPP235	-F50 CTPM240	-F50 CTPM245
	-SN DCX1230	-SN DPX1235	-F50 DPX2240	-F50 DPX2245
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
	RDHX	RDHX	RDHX	RDHX
	1B/61	1B/61	NEW 1B/61	1H/17
ISO	Article no. 51 048 ...	Article no. 51 048 ...	Article no. 51 083 ...	Article no. 51 083 ...
	£	£	£	£
0501MOSN	11.01 020	11.01 120		10.11 465
0802M4SN				13.31 471
0802MOSN	11.24 025	11.24 125	11.24 420	13.31 470
Steel	●	●	○	●
Stainless steel	○	○	●	●
Cast iron				
Non ferrous metals				
Heat resistant alloys				
hardened materials				

RDHX

	-EN CTCK215	-FN H216T	-M31 CTC5240	-F50 CTCS245
	-EN DCX3215	-FN CWK26	-M31 HCF5240	
	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN
				
	RDHX	RDHX	RDHX	RDHX
	1B/61	1B/61	1H/D4	NEW 1H/D4
ISO	Article no. 51 048 ...	Article no. 50 481 ...	Article no. 50 481 ...	Article no. 51 083 ...
	£	£	£	£
0501MOFN		8.74 600		
0802M4EN			13.31 50100	
0802MOEN	11.24 520		13.31 500	13.31 570
0802MOFN		9.01 602		
Steel	○			
Stainless steel				
Cast iron	●	○		
Non ferrous metals		●		
Heat resistant alloys			●	●
hardened materials				

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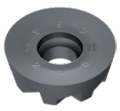
RPHX / RPNX

	-SN TCM10	-F50 CTCP230	-M50 CTCP230	-SN CTCP230	-SN CTCP230
	-SN CWC10	-F50 DCX1230	-M50 DCX1230	-SN DCX1230	-SN DCX1230
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
	CERMET RPHX	RPNX	RPNX	RPHX	RPNX
	1B/79	1B/18	1B/61	1B/61	1B/61
ISO	Article no. 50 483 ...	Article no. 51 055 ...	Article no. 51 054 ...	Article no. 51 052 ...	Article no. 51 057 ...
	£	£	£	£	£
10T3MOEN		11.66 020			
10T3MOSN	11.66 900		8.88 020	11.66 020	
1204MOEN		10.20 025			
1204MOSN	12.78 902		10.20 025	12.78 025	10.20 025
1605MOSN			13.87 030	17.39 030	13.87 030
2006MOSN					18.05 035
Steel	●	●	●	●	●
Stainless steel	●	○	○	○	○
Cast iron	○				
Non ferrous metals					
Heat resistant alloys					
hardened materials					

RPHX / RPNX

	-F50 CTPP235	-F50 CTPP235	-M30 CTPP235	-M30 CTPP235
	-F50 DPX1235	-F50 DPX1235	-M30 DPX1235	-M30 DPX1235
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
	RPHX	RPNX	RPHX	RPNX
	1B/61	1B/61	1B/61	1B/61
ISO	Article no. 51 051 ...	Article no. 51 055 ...	Article no. 51 049 ...	Article no. 51 053 ...
	£	£	£	£
10T3MOEN			11.66 120	
10T3MOSN	11.66 12000	8.88 120		
1204MOEN		10.20 125		
1204MOSN	12.78 125			
1605MOSN		13.87 130		
2006MOEN				18.05 120
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron				
Non ferrous metals				
Heat resistant alloys				
hardened materials				

RPNX / RPHX

	-M50 CTPP235	-M50 CTPP235	-SN CTPP235	-SN CTPP235
	-M50 DPX1235	-M50 DPX1235	-SN DPX1235	-SN DPX1235
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
	RPNX	RPHX	RPHX	RPNX
	1B/61	NEW 1B/61	1B/61	1B/18
ISO	**Article no. 51 054 ...**	**Article no. 51 050 ...**	**Article no. 51 052 ...**	**Article no. 51 057 ...**
	£	£	£	£
10T3MOSN	8.88 **12000**	11.66 **12000**	11.66 **120**	
1204MOSN	10.20 **125**		12.78 **125**	10.20 **125**
1605MOSN	13.87 **130**		17.39 **130**	13.87 **130**
2006MOSN				18.05 **135**
Steel	●	●	●	●
Stainless steel	○	○	○	○
Cast iron				
Non ferrous metals				
Heat resistant alloys				
hardened materials				

RPHX

	-F50 CTPM225	-M30 CTPM225	-SN CTPM225	-F50 CTCM235	-M30 CTCM235
	-F50 DPX2225	-M30 DPX2225	-SN DPX2225	-F50 DCX2235	-M30 DCX2235
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
	RPHX	RPHX	RPHX	RPHX	RPHX
	1B/61	1B/61	1B/61	1B/61	1B/61
ISO	**Article no. 51 051 ...**	**Article no. 51 049 ...**	**Article no. 51 052 ...**	**Article no. 51 051 ...**	**Article no. 51 049 ...**
	£	£	£	£	£
1204MOEN		12.78 **225**		12.78 **325**	
1204MOSN	12.78 **225**		12.78 **225**		12.78 **325**
Steel	○	○	○	○	○
Stainless steel	●	●	●	●	●
Cast iron					
Non ferrous metals					
Heat resistant alloys					
hardened materials					

RPHX / RPNX

ISO	-F50 CTPM240 -F50 DPX2240 DRAGONSKIN RPHX 1B/61 Article no. 51 051 ... £		-F50 CTPM240 -F50 DPX2240 DRAGONSKIN RPNX 1B/61 Article no. 51 055 ... £		-M30 CTPM240 -M30 DPX2240 DRAGONSKIN RPHX 1B/61 Article no. 51 049 ... £		-M30 CTPM240 -M30 DPX2240 DRAGONSKIN RPNX 1B/61 Article no. 51 053 ... £		-M50 CTPM240 -M50 DPX2240 DRAGONSKIN RPHX 1B/61 Article no. 51 050 ... £	
10T3MOEN					11.66	**420**			11.66	**420**
10T3MOSN	11.66	**420**								
1204MOEN					12.78	**425**			12.78	**425**
1204MOSN	12.78	**425**								
1605MOEN					17.39	**430**				
1605MOSN	17.39	**430**								
2006MOEN							18.05	**420**		
2006MOSN			18.05	**435**						
Steel	○		○		○		○		○	
Stainless steel	●		●		●		●		●	
Cast iron										
Non ferrous metals										
Heat resistant alloys										
hardened materials										

RPHX / RPNX

ISO	CTPM245 DPX2245 DRAGONSKIN RPHX 1H/17 Article no. 51 052 ... £		-F50 CTPM245 -F50 DPX2245 DRAGONSKIN RPHX 1H/17 Article no. 51 051 ... £		-F50 CTPM245 -F50 DPX2245 DRAGONSKIN RPNX 1H/17 Article no. 51 055 ... £		-M32 CTPM245 -M32 DPX2245 DRAGONSKIN RPHX 1H/17 Article no. 51 108 ... £		-M50 CTPM245 -M50 DPX2245 DRAGONSKIN RPHX 1H/17 Article no. 51 050 ... £	
10T3M4SN			14.72	**470** [1]	12.24	**470** [1]			14.72	**470** [1]
10T3M8SN			14.72	**471**	12.24	**471**			14.72	**471**
1204M4EN	16.22	**475** [1]					16.22	**475** [1]		
1204M4SN			16.22	**475** [1]	14.40	**475** [1]			16.22	**475** [1]
1204M6SN			16.22	**476**					16.22	**476**
1204M8SN			16.22	**477**	14.40	**476**			16.22	**477**
1605M8SN			22.13	**480**						
2006M4SN			28.03	**485** [1]						
2006M8SN					22.13	**485**				
Steel	●		●		●		●		●	
Stainless steel	●		●		●		●		●	
Cast iron										
Non ferrous metals										
Heat resistant alloys										
hardened materials										

1) Insert with 4 indexes

RPNX / RPHX

	-R30 CTCK215	-SN CTCK215	-SN CTCK215	-SN CTPK220	-27P H216T
	-R30 DCX3215	-SN DCX3215	-SN DCX3215	-SN DPX3220	-ALP CWK26
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
	RPNX	RPHX	RPNX	RPNX	RPHX
	1B/18	1B/61	1B/18	1B/61	1A/90
ISO	**Article no. 51 056 ...**	**Article no. 51 052 ...**	**Article no. 51 057 ...**	**Article no. 51 057 ...**	**Article no. 50 483 ...**
	£	£	£	£	£
10T3MOEN	8.88 **520**				
10T3MOFN					13.32 **600**
10T3MOSN		11.66 **520**		8.88 **620**	
1204MOEN	10.20 **525**				
1204MOFN					14.76 **602**
1204MOSN		12.78 **525**	10.20 **525**	10.20 **625**	
1605MOFN					20.15 **604**
1605MOSN		17.39 **530**	13.87 **530**	13.87 **630**	
2006MOSN			18.05 **535**	18.05 **635**	
Steel	○	○	○	○	
Stainless steel					
Cast iron	●	●	●	●	○
Non ferrous metals					●
Heat resistant alloys					
hardened materials					

RPHX / RPNX

	-M31 CTC5240	-F50 CTCS245	-F50 CTCS245	-R60 CTP6215
	-M31 HCF5240			-R60 CCN6215
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
	RPHX	RPHX	RPNX	RPNX
	1H/D4	NEW 1H/D4	NEW 1H/D4	1B/61
ISO	**Article no. 50 493 ...**	**Article no. 51 051 ...**	**Article no. 51 055 ...**	**Article no. 50 508 ...**
	£	£	£	£
10T3M4EN	14.72 **550** [1]			
10T3M4SN		14.72 **570** [1]		
10T3M8EN	14.72 **551**			
10T3M8SN		14.72 **571**		
1204M4EN	16.22 **552** [1]			
1204M4SN		16.22 **575**		
1204M6EN	16.22 **56200**	16.22 **57800**		
1204M8EN	16.22 **582**			11.01 **300**
1204M8SN		16.22 **577**		
1605M8EN	22.13 **555**	22.13 **58100**		
2006M8SN			22.13 **585**	
Steel				
Stainless steel				
Cast iron				●
Non ferrous metals				
Heat resistant alloys	●	●	●	
hardened materials				●

1) Insert with 4 indexes

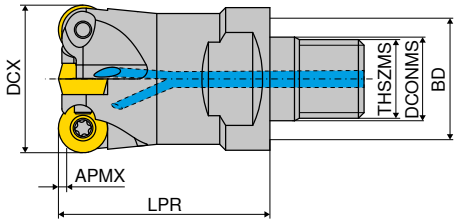
15

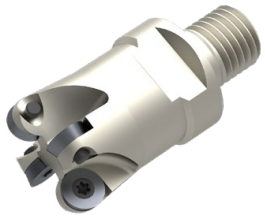
Milling guide

Machining strategy	→ 176	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 175

Button insert milling cutter R 1000 G

▲ Insert angle 0°

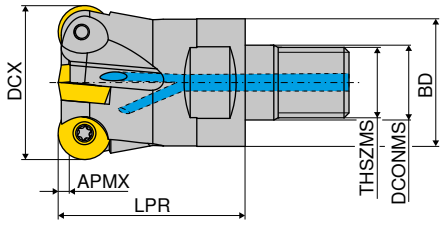




Designation	DCX	ZNF	APMX	THSZMS	LPR	DCONMS	BD	torque moment	Insert	WA Article no. 56 403 ...	
	mm		mm		mm	mm	mm	Nm		£	
R1000G.15.4.M8-05.IK	15	4	1.3	M8	20.5	8.5	13.8	0,43	RDHX 0501..	252.50	**151**
R1000G.20.5.M10-05.IK	20	5	1.3	M10	25.5	10.5	18.0	0,43	RDHX 0501..	300.49	**201**
R1000G.12.2.M8-07.IK	12	2	1.5	M8	28.5	8.5	11.8	0,75	RD.X 07T1..	164.02	**123**
R1000G.15.3.M8-07.IK	15	3	1.5	M8	28.5	8.5	13.8	0,75	RD.X 07T1..	196.21	**152**
R1000G.20.4.M10-07.IK	20	4	1.5	M10	28.5	10.5	18.0	0,75	RD.X 07T1..	253.57	**202**
R1000G.25.5.M12-07.IK	25	5	1.5	M12	28.5	10.5	21.0	0,75	RD.X 07T1..	291.10	**251**
R1000G.15.2.M8-07.IK	15	2	1.5	M8	28.5	8.5	13.8	0,9	RD.X 0702..	164.94	**153**
R1000G.16.3.M8-07.IK	16	3	1.5	M8	28.5	8.5	13.8	0,9	RD.X 0702..	202.46	**161**
R1000G.20.4.M10-07.IK	20	4	1.5	M10	28.5	10.5	18.0	0,9	RD.X 0702..	253.57	**203**
R1000G.25.5.M12-07.IK	25	5	1.5	M12	28.5	12.5	21.0	0,9	RD.X 0702..	291.10	**252**
R1000G.30.5.M16-07.IK	30	5	1.5	M16	28.5	17.0	29.0	0,9	RD.X 0702..	310.78	**301**
R1000G.35.6.M16-07.IK	35	6	1.5	M16	28.5	17.0	29.0	0,9	RD.X 0702..	331.75	**351**
R1000G.42.7.M16-07.IK	42	7	1.5	M16	42.5	17.0	29.0	0,9	RD.X 0702..	394.43	**421**
R1000G.20.2.M10-10.IK	20	2	2.8	M10	29.0	10.5	18.0	2,4	RD.X 1003..	176.20	**204**
R1000G.25.2.M12-10.IK	25	2	2.8	M12	33.0	12.5	21.0	2,4	RD.X 1003..	177.12	**253**
R1000G.25.3.M12-10.IK	25	3	2.8	M12	33.0	12.5	21.0	2,4	RD.X 1003..	184.81	**254**
R1000G.30.4.M12-10.IK	30	4	2.3	M12	33.0	12.5	21.0	2,4	RD.X 1003..	255.61	**302**
R1000G.30.4.M16-10.IK	30	4	2.8	M16	43.0	17.0	23.0	2,4	RD.X 1003..	255.61	**303**
R1000G.35.5.M16-10.IK	35	5	2.8	M16	43.0	17.0	29.0	2,4	RD.X 1003..	312.05	**352**
R1000G.42.5.M16-10.IK	42	5	2.8	M16	43.0	17.0	29.0	2,4	RD.X 1003..	330.96	**422**
R1000G.42.6.M16-10.IK	42	6	2.8	M16	43.0	17.0	29.0	2,4	RD.X 1003..	351.61	**423**
R1000G.24.2.M12-12.IK	24	2	3.0	M12	33.0	12.5	21.0	2,4	RD.X 12T3..	183.39	**241**
R1000G.35.3.M16-12.IK	35	3	3.0	M16	43.0	17.0	29.0	2,4	RD.X 12T3..	206.66	**353**
R1000G.35.4.M16-12.IK	35	4	3.0	M16	43.0	17.0	29.0	2,4	RD.X 12T3..	266.86	**354**
R1000G.42.4.M16-12.IK	42	4	3.0	M16	43.0	17.0	29.0	2,4	RD.X 12T3..	292.01	**424**
R1000G.42.5.M16-12.IK	42	5	3.0	M16	43.0	17.0	29.0	2,4	RD.X 12T3..	323.45	**425**
R1000G.32.2.M16-16.IK	32	2	4.0	M16	43.5	17.0	29.0	4,3	RD.X 1604..	212.94	**321**
R1000G.35.3.M16-16.IK	35	3	4.0	M16	43.5	17.0	29.0	4,3	RD.X 1604..	262.01	**355**
R1000G.40.2.M16-20.IK	40	2	7.0	M16	53.5	17.0	29.0	4,3	RD.X 2006..	300.49	**401**

Button insert milling cutter R 1007 G

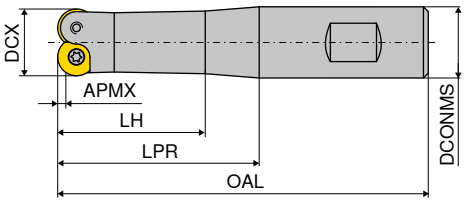
- Insert angle 7°
- for Steel < 10 % Cr



Designation	DCX	ZNF	APMX	THSZMS	LPR	DCONMS	BD	torque moment	Insert	WA Article no. 56 405 ...	
	mm		mm		mm	mm	mm	Nm		£	
R1007G.25.3.M12-10.IK	25	3	2.5	M12	32.5	12.5	21	2,4	RD.X 1003..	184.81	**251**
R1007G.42.6.M16-10.IK	42	6	2.5	M16	42.5	17.0	29	2,4	RD.X 1003..	351.61	**421**
R1007G.35.3.M16-12.IK	35	3	3.0	M16	42.5	17.0	29	2,4	RD.X 12T3..	234.83	**351**
R1007G.35.4.M16-12.IK	35	4	3.0	M16	42.5	17.0	29	2,4	RD.X 12T3..	266.86	**352**

Button insert milling cutter R 1000 C

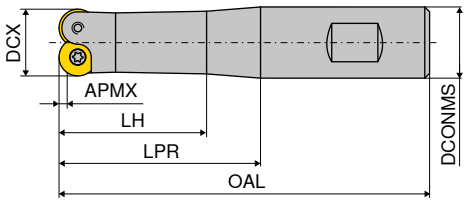
- Insert angle 0°



Designation	DCX	ZNF	APMX	OAL	LPR	LH	DCONMS	torque moment	Insert	WA Article no. 56 441 ...	
	mm		mm	mm	mm	mm	mm	Nm		£	
R1000C.8.1.30-05	8	1	1.3	75	30	18	10	0,43	RDHX 0501..	180.58	**081**
R1000C.10.2.30-05	10	2	1.3	75	30	23	10	0,43	RDHX 0501..	202.46	**101**
R1000C.12.3.30-05	12	3	1.3	81	30	23	12	0,43	RDHX 0501..	225.28	**121**
R1000C.12.2.30-07	12	2	1.5	76	30	23	12	0,75	RD.X 07T1..	143.98	**122**

Button insert milling cutter R 1002 C

▲ Insert angle 0°

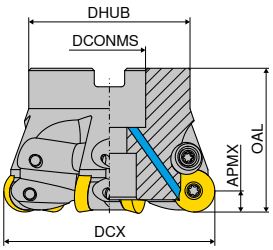


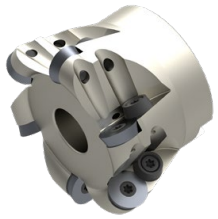
B

Designation	DCX	ZNF	APMX	OAL	LPR	LH	DCONMS	Insert	WA Article no. 56 443 ...	
	mm		mm	mm	mm	mm	mm		£	
R1002C.12.2.40-07	12	2	1.5	89	40	19.5	16	RD.X 07T1..	147.11	**121**
R1002C.12.2.60-07	12	2	1.5	110	60	19.5	16	RD.X 07T1..	157.75	**122**
R1002C.12.2.80-07	12	2	1.5	129	80	19.5	16	RD.X 07T1..	167.75	**123**
R1002C.15.2.40-07	15	2	2.6	89	40	23.0	16	RD.X 0702..	147.11	**151**
R1002C.15.2.60-07	15	2	2.6	109	60	23.0	16	RD.X 0702..	156.50	**152**
R1002C.15.2.80-07	15	2	2.6	131	80	22.0	20	RD.X 0702..	167.75	**153**
R1002C.15.2.100-07	15	2	2.6	151	100	22.0	20	RD.X 0702..	178.38	**154**
R1002C.20.2.40-10	20	2	4.0	91	40	23.0	20	RD.X 1003..	164.94	**201**
R1002C.20.2.60-10	20	2	4.0	111	60	23.0	20	RD.X 1003..	169.01	**202**
R1002C.20.2.80-10	20	2	4.0	137	80	23.0	25	RD.X 1003..	177.44	**203**
R1002C.20.2.100-10	20	2	4.0	157	100	23.0	25	RD.X 1003..	187.76	**204**
R1002C.20.2.120-10	20	2	4.0	177	125	23.0	25	RD.X 1003..	199.33	**205**

Button insert milling cutter R 1000 A

▲ Insert angle 0°

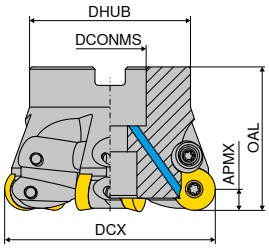


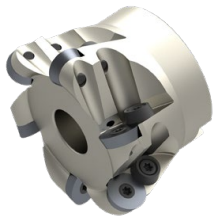


Designation	DCX	ZNF	APMX	OAL	DCONMS	DHUB	torque moment	Insert	WA Article no. 56 407 ...	
	mm		mm	mm	mm	mm	Nm		£	
R1000A.42.6.43-10.IK	42	6	2.8	43.0	16	35	2,4	RD.X 1003..	351.61	**420**
R1000A.42.4.43-12.IK	42	4	3.0	43.0	16	35	2,4	RD.X 12T3..	282.65	**421**
R1000A.42.5.43-12.IK	42	5	3.0	43.0	16	35	2,4	RD.X 12T3..	323.45	**422**
R1000A.52.5.53-12.IK	52	5	3.5	53.0	22	40	2,4	RD.X 12T3..	350.65	**521**
R1000A.52.4.53,5-16.IK	52	4	4.7	53.5	22	40	4,3	RD.X 1604..	344.41	**522**
R1000A.66.5.53,5-16.IK	66	5	5.1	53.5	27	48	4,3	RD.X 1604..	405.98	**661**
R1000A.80.6.53,5-16.IK	80	6	5.8	53.5	27	60	4,3	RD.X 1604..	520.57	**801**

Button insert milling cutter R 1007 A

- Insert angle 7°
- for Steel < 10 % Cr + Milling machines with low power





Designation	DCX	ZNF	APMX	OAL	DCONMS	DHUB	torque moment	Insert	WA Article no. 56 409 ...	
	mm		mm	mm	mm	mm	Nm		£	
R1007A.42.6.42,5-10.IK	42	6	3.5	42.5	16	35	2,4	RD.X 1003..	351.61	**421**
R1007A.52.7.52,5-10.IK	52	7	3.5	52.5	22	40	2,4	RD.X 1003..	511.21	**521**
R1007A.52.5.52,5-12.IK	52	5	3.5	52.5	22	40	2,4	RD.X 12T3..	350.65	**522**
R1007A.66.6.52,5-12.IK	66	6	3.5	52.5	27	48	2,4	RD.X 12T3..	414.14	**661**
R1007A.80.7.54,5-12.IK	80	7	3.5	54.5	27	60	2,4	RD.X 12T3..	520.57	**801**
R1007A.52.5.53-16.IK	52	5	4.1	53.0	22	40	4,3	RD.X 1604..	384.89	**523**
R1007A.66.5.53-16.IK	66	5	4.6	53.0	27	48	4,3	RD.X 1604..	405.98	**662**
R1007A.66.6.53-16.IK	66	6	5.1	53.0	27	48	4,3	RD.X 1604..	467.28	**663**
R1007A.80.6.53-16.IK	80	6	5.1	53.0	27	60	4,3	RD.X 1604..	520.57	**802**
R1007A.100.7.53-16	100	7	5.1	53.0	32	70	4,3	RD.X 1604..	643.32	**910** 1)
R1007A.125.8.53-16	125	8	5.2	53.0	40	90	4,3	RD.X 1604..	729.60	**925** 1)
R1007A.160.9.53-16	160	9	5.1	53.0	40	120	4,3	RD.X 1604..	1,000.85	**960** 1)
R1007A.66.5.53-20.IK	66	5	7.0	53.0	27	48	4,3	RD.X 2006..	489.31	**664**
R1007A.80.5.53-20.IK	80	5	7.4	53.0	27	60	4,3	RD.X 2006..	602.97	**803**

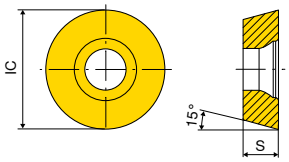
1) Without Through Coolant

Spare parts	Y7 TORX® blade		WA Clamping Screw		WA over clamp		Y7 Key D		2A/28 Molykote		WA Clamping screw		Y7 Torque screwdriver	
	Article no. 80 950 ...		Article no. 56 950 ...		Article no. 56 950 ...		Article no. 80 950 ...		Article no. 70 950 ...		Article no. 56 950 ...		Article no. 80 950 ...	
Insert	£		£		£		£		£		£		£	
RD.X 0702..	6.69	**032**					10.30	**109**	3.98	**303**	4.12	**006**	163.58	**191**
RD.X 07T1..	6.69	**032**					10.30	**109**	3.98	**303**	4.12	**004**	163.58	**191**
RD.X 1003..	6.69	**036**					12.26	**113**	3.98	**303**	5.56	**010**	154.29	**192**
RD.X 12T3..	6.69	**036**	3.60	**022**			12.26	**113**	3.98	**303**	5.56	**010**	154.29	**192**
RD.X 1604..	6.69	**037**			2.51	**210**	13.11	**114**	3.98	**303**	5.93	**012**	154.29	**192**
RD.X 2006..	6.69	**037**			2.51	**210**	13.11	**114**	3.98	**303**	5.93	**012**	154.29	**192**
RDHX 0501..							11.15	**108**	3.98	**303**	4.70	**002**	163.58	**191**

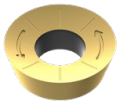
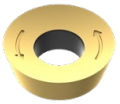
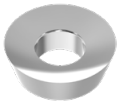
15

RDHX / RDMX / RDEX / RDPX

Designation	IC	S
	mm	mm
RDHX 0501..	5	1.50
RD.X 07T1..	7	1.99
RD.X 0702..	7	2.38
RD.X 1003..	10	3.18
RD.X 12T3..	12	3.97
RD.X 1604..	16	4.76
RDHX 2006..	20	6.00



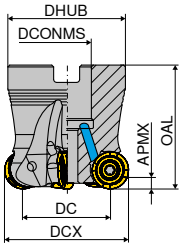
RDHX / RDMX / RDEX / RDPX

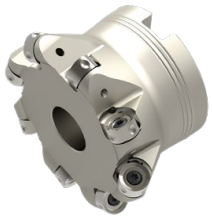
	WTN1205	WAN1240	WAX1240	-HP WAN2225	-F30P WUN4210
					
	RDHX	RDMX	RDEX	RDPX	RDHX
	WB	WB	WB	WB	WB
ISO	Article no. 56 302 ...	Article no. 56 309 ...	Article no. 56 314 ...	Article no. 56 348 ...	Article no. 56 304 ...
	£	£	£	£	£
0501MOT	16.27 100				
0702MOE					15.37 611
0702MOT	16.72 111		11.73 611		
07T1MOE					15.37 621
07T1MOT	16.72 121		11.26 621		
1003MOS				16.44 231	
1003MOT	16.44 131	12.50 731	12.02 631		17.68 631
12T3MOS				17.80 241	
12T3MOT	17.80 141	14.39 741	13.70 641		21.41 641
1604MOS				22.20 251	
1604MOT	17.80 151	15.54 751	15.50 651		26.10 651
2006MOT	24.40 161				28.47 661
Steel	●	●	●		
Stainless steel	○	○		●	
Cast iron	●	○	○		
Non ferrous metals	○				●
Heat resistant alloys		○		○	
hardened materials	●		○		

Milling guide

Machining strategy	→ 180+181	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 177–179

MaxiMill – Shell mill A 252





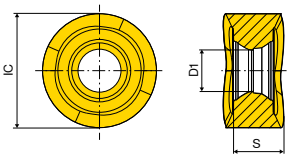
Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	DHUB mm	DCONMS mm	torque moment Nm	Insert	2B/40 Article no. 50 689 ... £	
A252.40.R.05-10	30	40	5	2.5	40	38	16	2	RNHU 1004..	372.27	**140**
A252.42.R.05-10	32	42	5	2.5	40	38	16	2	RNHU 1004..	426.91	**142**
A252.50.R.06-10	40	50	6	2.5	40	43	22	2	RNHU 1004..	442.64	**150**
A252.52.R.07-10	42	52	7	2.5	40	43	22	2	RNHU 1004..	480.73	**152**
A252.63.R.08-10	53	63	8	2.5	40	48	22	2	RNHU 1004..	544.82	**16300**
A252.80.R.10-10	70	80	10	2.5	50	58	27	2	RNHU 1004..	619.73	**18000**
A252.40.R.04-12	28	40	4	3.0	40	38	16	3,2	RNHU 1205..	342.00	**240**
A252.50.R.05-12	38	50	5	3.0	40	43	22	3,2	RNHU 1205..	415.27	**250**
A252.52.R.05-12	40	52	5	3.0	40	43	22	3,2	RNHU 1205..	416.27	**252**
A252.63.R.06-12	51	63	6	3.0	40	48	22	3,2	RNHU 1205..	513.00	**263**
A252.66.R.07-12	54	66	7	3.0	40	48	22	3,2	RNHU 1205..	540.36	**266**
A252.80.R.08-12	68	80	8	3.0	50	58	27	3,2	RNHU 1205..	590.18	**280**
A252.100.R.10-12	88	100	10	3.0	50	78	32	3,2	RNHU 1205..	702.36	**30000**
A252.125.R.12-12	113	125	12	3.0	63	88	40	3,2	RNHU 1205..	849.73	**32500**

Spare parts	Y7 TORX® blade Article no. 80 950 ... £		Y7 Clamping key – T Article no. 80 397 ... £		Y7 Key D Article no. 80 950 ... £		2A/28 Power Screw Article no. 70 950 ... £		2A/28 Molykote Article no. 70 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		Y7 Torque screwdriver Article no. 80 950 ... £	
RNHU 1004.. (Ø40 – Ø80)	6.69	**053**			15.31	**127**			3.98	**303**	2.81	**710**	154.29	**192**
RNHU 1205.. (Ø40)	6.69	**054**	4.78	**040**	15.77	**128**	11.35	**151**	3.98	**303**	2.89	**839**	154.29	**192**
RNHU 1205.. (Ø50 – Ø125)	6.69	**054**			15.77	**128**			3.98	**303**	2.89	**839**	154.29	**192**

15

RNHU

Designation	IC	D1	S
	mm	mm	mm
RNHU 1004..	10	3.4	4.60
RNHU 1205..	12	4.4	5.30



RNHU

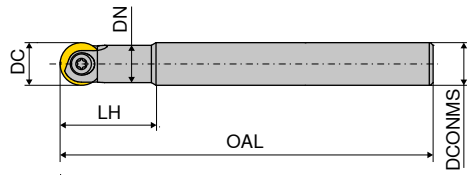
	-M50 CTPP235	-F50 CTPM240	-M31 CTPM245 -M31 DPX2245	-M32 CTPM245 -M32 DPX2245	-M31 CTC5240 -M31 HCF5240	-M31 CTC5240 -M31 HCF5240
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
	RNHU	RNHU	RNHU	RNHU	RNHU	RNHU
	NEW 1B/61	NEW 1B/61	1H/17	1H/17	1H/D4	1H/D4
ISO	Article no. 51 130 ...	Article no. 51 129 ...	Article no. 51 106 ...	Article no. 51 107 ...	Article no. 50 520 ...	Article no. 50 521 ...
	£	£	£	£	£	£
1004M4ER	16.67 12000	16.67 42000	22.55 470	22.55 470	22.55 550	
1205M4ER		18.05 42500	24.69 475	24.69 475		24.69 552
1205M4SR	18.05 12500					
Steel	●	○	●	●		
Stainless steel	○	●	●	●		
Cast iron						
Non ferrous metals						
Heat resistant alloys					●	●
hardened materials						

Milling guide

Grade description	→ 209+210	Cutting data appoximate values	→ 182
ISO Designation System	→ 194+195		

Copy milling cutter K 2000C / K 2001C

▲ with carbide shank



Designation	DC	DN	LH	OAL	DCONMS $_{h6}$	torque moment	WA Article no. 56 100 ...		WA Article no. 56 101 ...	
	mm	mm	mm	mm	mm	Nm	£		£	
K2000C.6.16.100	6	5.3	16	100	8	0,6	515.47	**060** [1]		
K2000C.6.20.100	6	5.8	20	100	6	0,6	515.47	**061** [1]		
K2000C.6.70.150	6	5.8	70	150	6	0,6	670.50	**062** [1]		
K2000C.6.100.200	6	5.8	100	200	6	0,6	812.43	**063** [1]		
K2000C.8.25.80	8	7.0	25	80	8	1	547.23	**081** [1]		
K2000C.8.25.100	8	7.0	25	100	8	1	547.23	**082** [1]		
K2000C.8.25.150	8	7.0	40	150	8	1	606.99	**083** [1]		
K2000C.10.35.80	10	8.8	35	80	10	5	657.43	**101** [1]		
K2000C.10.35.120	10	8.8	35	120	10	5	677.96	**102** [1]		
K2000C.10.50.150	10	8.8	50	150	10	5	750.81	**103** [1]		
K2000C/K2001C.12.35.80	12	10.5	35	80	12	5	685.45	**121** [1]	685.45	**121**
K2000C/K2001C.12.35.120	12	10.5	35	120	12	5	715.32	**122** [1]	715.32	**122**
K2000C/K2001C.12.50.160	12	10.5	50	160	12	5	765.77	**123** [1]	765.77	**123**
K2001C.16.40.100	16	14.0	40	100	16	5			945.06	**161**
K2001C.16.40.140	16	14.0	40	140	16	5			945.06	**162**
K2001C.16.55.175	16	14.0	55	175	16	5			1,029.07	**163**
K2001C.20.50.100	20	18.0	50	100	20	5			1,200.91	**201**
K2001C.20.50.140	20	18.0	50	140	20	5			1,200.91	**202**
K2001C.20.75.190	20	18.0	75	190	20	5			1,411.96	**203**
K2001C.25.60.160	25	22.4	60	160	25	5			1,707.06	**252**
K2001C.25.90.210	25	22.4	90	210	25	5			2,131.02	**253**

1) Without Through Coolant

Applicable inserts

	ROHX-FM3, ROHX-FM4, ROHX-FM6, ROHX-MR5, ROGX-MR4

	XOHX06.. -MR2, XOHX-FM1

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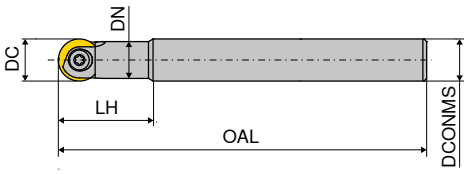
Copy milling cutter K 2002C

▲ cylindrical steel shank version



Designation	DC	DN	LH	OAL	DCONMS $_{h6}$	torque moment	WA Article no. 56 102 ...	
	mm	mm	mm	mm	mm	Nm	£	
K2002C.12.32.90	12	10.5	32	90	12	5	147.54	**121**
K2002C.12.32.130	12	10.5	32	130	12	5	147.54	**122**
K2002C.12.46.150	12	10.5	46	150	12	5	155.01	**123**
K2002C.16.36.100	16	14.0	36	100	16	5	156.88	**161**
K2002C.16.36.140	16	14.0	36	140	16	5	156.88	**162**
K2002C.16.53.160	16	14.0	53	160	16	5	168.10	**163**
K2002C.20.45.160	20	18.0	45	160	20	5	164.37	**202**
K2002C.20.61.175	20	18.0	61	175	20	5	194.24	**203**
K2002C.25.45.160	25	22.4	45	160	25	5	229.72	**252**
K2002C.25.70.190	25	22.4	70	190	25	5	239.07	**253**
K2002C.32.56.175	32	28.6	56	175	32	5	295.11	**322**
K2002C.32.80.210	32	28.6	80	210	32	5	310.05	**323**

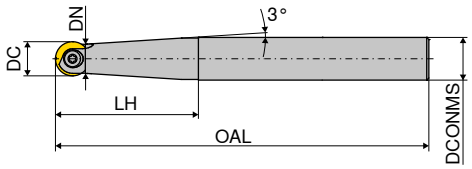
Applicable inserts

	ROHX-FM3, ROHX-FM4, ROHX-FM6, ROHX-MR5, ROGX-MR4

	XOHX-FM1

Copy milling cutter K 2003C

▲ tapered execution



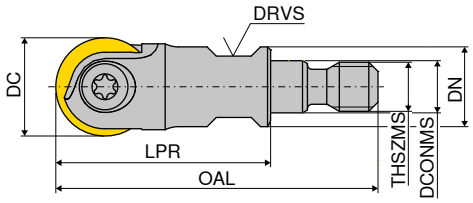
Designation	DC	DN	LH	OAL	DCONMS $_{h6}$	torque moment	WA Article no. 56 104 ...	
	mm	mm	mm	mm	mm	Nm	£	
K2003C.6.16.90	6	5.3	16	90	10	0,6	168.10	**061**
K2003C.8.50.85	8	7.5	50	85	12	1	199.84	**081**
K2003C.8.50.140	8	7.5	50	140	12	1	199.84	**082**
K2003C.10.35.85	10	9.0	35	85	12	5	199.84	**101**
K2003C.10.35.150	10	9.0	35	150	12	5	199.84	**102**
K2003C.12.60.110	12	10.5	60	110	16	5	201.73	**121**
K2003C.12.60.160	12	10.5	60	160	16	5	201.73	**122**
K2003C.16.67.120	16	14.0	67	120	20	5	218.53	**161**
K2003C.16.67.175	16	14.0	67	175	20	5	218.53	**162**
K2003C.20.80.190	20	18.0	80	190	25	5	254.01	**201**
K2003C.25.100.210	25	22.4	100	210	32	5	313.77	**251**
K2003C.32.123.240	32	28.6	123	240	40	5	401.55	**321**

Applicable inserts

	ROHX-FM3, ROHX-FM4, ROHX-FM6, ROHX-MR5, ROGX-MR4

	XOHX-FM1

Copy milling cutter K 2000G



Designation	DC	LPR	DN	OAL	DCONMS	THSZMS	DRVS	torque moment	WA Article no. 56 120 ...	
	mm	mm	mm	mm	mm		mm	Nm	£	
K2000G.8.25.M6	8	25	10	39.5	6.5	M6	8	1	330.59	**081** 1)
K2000G.10.25.M6	10	25	10	39.5	6.5	M6	8	5	328.71	**101** 1)
K2000G.12.25.M6	12	25	10	39.5	6.5	M6	8	5	339.91	**121** 1)
K2000G.12.26.M8	12	26	13	43.5	8.5	M8	10	5	339.91	**122**
K2000G.16.26.M8	16	26	13	43.5	8.5	M8	10	5	354.87	**161**
K2000G.20.30.M10	20	30	18	49.5	10.5	M10	15	5	360.46	**201**
K2000G.25.40.M12	25	40	21	62.0	12.5	M12	17	5	375.41	**251**
K2000G.32.45.M16	32	45	30	69.0	17.0	M16	26	5	395.95	**321**

1) Without Through Coolant

Applicable inserts

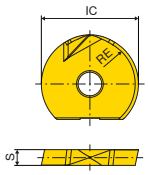
	ROHX-FM3, ROHX-FM4, ROHX-FM6, ROHX-MR5, ROGX-MR4

	XOHX-FM1

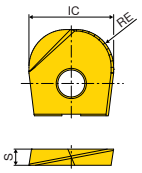
Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		WA Clamping screw Article no. 56 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£	
6	6.69	**031**	11.15	**108**	3.98	**303**	9.68	**041**	163.58	**191**
8	6.69	**033**	10.30	**110**	3.98	**303**	9.68	**042**	163.58	**191**
10	6.69	**036**	12.26	**113**	3.98	**303**	9.68	**043**	183.22	**193**
12	6.69	**037**	13.11	**114**	3.98	**303**	13.08	**044**	183.22	**193**
16	6.69	**037**	13.11	**114**	3.98	**303**	13.08	**045**	183.22	**193**
20	6.69	**037**	13.11	**114**	3.98	**303**	13.08	**046**	183.22	**193**
25			14.15	**131**	3.98	**303**	13.12	**047**		
32			14.15	**131**	3.98	**303**	13.56	**048**		

ROHX / XOHX / ROGX

Designation	IC	S
	mm	mm
ROHX0616R..	6	1.60
ROHX0820R..	8	2.00
XOHX10254..	10	2.50
ROHX1025R..	10	2.50
XOHX12255..	12	2.50
RO.X1225R..	12	2.50
XOHX16307..	16	3.00
RO.X1630R..	16	3.00
XOHX20309..	20	3.00
RO.X2030R..	20	3.00
RO.X2540R..	25	4.00
RO.X3250R..	32	5.00



RO.X



XOHX

ROHX / XOHX / ROGX

	-MR5 CTPP211	-FM1 CTPP216	-FM3 CTPP216	-FM4 CTPP216	-FM4 CTPK226	-MR4 CTPK231	-FM6 CTCN211
	ROHX	XOHX	ROHX	ROHX	ROHX	ROGX	ROHX
	NEW WB	NEW WB	NEW WB	NEW WB	NEW WB	NEW WB	WB
ISO	Article no. 56 149 ...	Article no. 56 169 ...	Article no. 56 147 ...	Article no. 56 141 ...	Article no. 56 141 ...	Article no. 56 143 ...	Article no. 56 145 ...
RE mm	£	£	£	£	£	£	£
0616 R3 / 3.0			42.07 30200	35.06 90200			102.72 602 1)
0820 R4 / 4.0	42.76 71300		51.01 31300	33.69 71300	35.32 11300		132.62 613 1)
1025 R5 / 5.0	42.76 72400		51.01 32400	33.69 72400	35.32 12400		132.62 624 1)
102540 / 4.0		46.19 92400					
1225 R6 / 6.0			51.83 33500	35.06 73500	35.32 13500	34.37 53500	132.62 635 1)
122550 / 5.0		49.49 93500					
1630 R8 / 8.0			55.81 34600	40.28 74600	41.17 14600	40.28 54600	151.30 646 1)
163070 / 7.0		52.93 94700					
2030 R10 / 10.0			59.11 35700	46.19 75700	46.01 15700	46.19 55700	
203090 / 9.0		60.34 95900					
2540 R12,5 / 12.5			73.56 36800	68.88 76800	68.64 16800	68.06 56800	
3250 R16 / 16.0			98.57 37900	100.62 77900	101.79 17900	93.89 57900	
Steel	●	●	●	●	●	●	
Stainless steel	●	●	●	●	○	●	
Cast iron	●	●	●	●	○	●	
Non ferrous metals	○				○		●
Heat resistant alloys	●	●	●	●	○	●	
hardened materials	○	●	●	●	●		

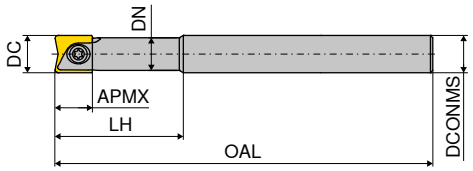
1) Specifically for machining graphite !

Milling guide

Depth of Cut	→ 185	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 183+184

Copy milling cutter K 2005C / K 2006C

▲ with carbide shank



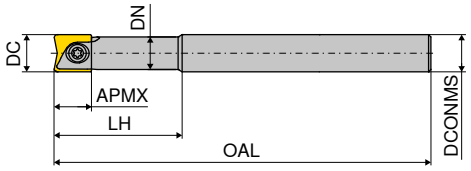
Designation	DC	APMX	DN	LH	OAL	DCONMS h6	torque moment	WA Article no. 56 110 ...		WA Article no. 56 111 ...	
	mm	mm	mm	mm	mm	mm	Nm	£		£	
K2005C.8.27.82	8	9.5	7.0	27	82	8	1	547.23	**081** [1]		
K2005C.8.27.102	8	9.5	7.0	27	102	8	1	547.23	**082** [1]		
K2005C.8.42.152	8	9.5	7.0	42	152	8	1	606.99	**083** [1]		
K2005C.10.37.82	10	11.5	8.8	37	82	10	5	657.43	**101** [1]		
K2005C.10.37.122	10	11.5	8.8	37	122	10	5	677.96	**102** [1]		
K2005C.10.52.152	10	11.5	8.8	52	152	10	5	750.81	**103** [1]		
K2005C/K2006C.12.37.82	12	14.0	10.5	37	82	12	5	685.45	**121** [1]	685.45	**121**
K2005C/K2006C.12.37.122	12	14.0	10.5	37	122	12	5	715.32	**122** [1]	715.32	**122**
K2005C/K2006C.12.52.162	12	14.0	10.5	52	162	12	5	765.77	**123** [1]	765.77	**123**
K2006C.16.42.102	16	16.0	14.0	42	102	16	5			945.06	**161**
K2006C.16.42.142	16	16.0	14.0	42	142	16	5			945.06	**162**
K2006C.16.57.177	16	16.0	14.0	57	177	16	5			1,029.07	**163**
K2006C.20.52.102	20	18.0	18.0	52	102	20	5			1,200.91	**201**
K2006C.20.52.142	20	18.0	18.0	52	142	20	5			1,200.91	**202**
K2006C.20.77.192	20	18.0	18.0	77	192	20	5			1,411.96	**203**
K2006C.25.62.162	25	23.5	22.4	62	162	25	5			1,707.06	**252**
K2006C.25.92.212	25	23.5	22.4	92	212	25	5			2,131.02	**253**

1) Without Through Coolant

Applicable inserts

	XOHX-FM2 / -FM5 / -MR2 / -MR3 / -MR6
	XOGX-MF4

Copy milling cutter K 2007C

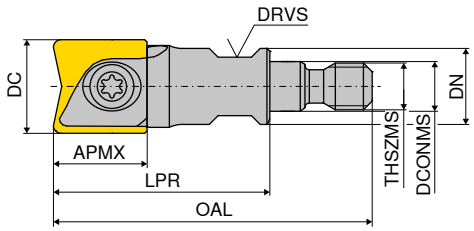


Designation	DC	APMX	DN	LH	OAL	DCONMS $_{h6}$	torque moment	WA Article no. 56 112 ...	
	mm	mm	mm	mm	mm	mm	Nm	£	
K2007C.12.34.92	12	14.0	10.5	34	92	12	5	162.49	**121**
K2007C.12.34.132	12	14.0	10.5	34	132	12	5	147.54	**122**
K2007C.12.48.152	12	14.0	10.5	48	152	12	5	155.01	**123**
K2007C.16.38.102	16	16.0	14.0	38	102	16	5	156.88	**161**
K2007C.16.38.142	16	16.0	14.0	38	142	16	5	156.88	**162**
K2007C.16.55.162	16	16.0	14.0	55	162	16	5	168.10	**163**
K2007C.20.47.162	20	18.0	18.0	47	162	20	5	164.37	**202**
K2007C.20.63.177	20	18.0	18.0	63	177	20	5	194.24	**203**
K2007C.25.47.162	25	23.5	22.4	47	162	25	5	229.72	**252**
K2007C.25.72.192	25	23.5	22.4	72	192	25	5	239.07	**253**
K2007C.32.58.177	32	28.0	28.6	58	177	32	5	295.11	**322**
K2007C.32.82.212	32	28.0	28.6	82	212	32	5	310.05	**323**

Applicable inserts

	XOHX-FM2 / -FM5 / -MR2 / -MR3 / -MR6
	XOGX-MF4

Copy milling cutter K 2005G



Designation	DC	APMX	DN	LPR	OAL	DCONMS	THSZMS	DRVS	torque moment	WA Article no. 56 130 ...	
	mm	mm	mm	mm	mm	mm		mm	Nm	£	
K2005G.8.25.M6	8	9.5	10	25	39.5	6.5	M6	8	1	330.59	**081** 1)
K2005G.10.25.M6	10	11.5	10	25	39.5	6.5	M6	8	5	328.71	**101** 1)
K2005G.12.25.M6	12	14.0	10	25	39.5	6.5	M6	8	5	339.91	**121** 1)
K2005G.12.28.M8	12	14.0	13	28	45.5	8.5	M8	8	5	339.91	**122**
K2005G.16.28.M8	16	16.0	13	28	45.5	8.5	M8	10	5	354.87	**161**
K2005G.20.32.M10	20	18.0	18	32	51.5	10.5	M10	15	5	360.46	**201**
K2005G.25.42.M12	25	23.5	21	42	64.0	12.5	M12	17	5	375.41	**251**
K2005G.32.47.M16	32	28.0	30	47	71.0	17.0	M16	26	5	395.95	**321**

1) Without Through Coolant

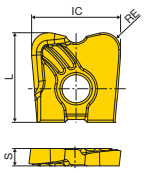
Applicable inserts

	XOHX-FM2 / -FM5 / -MR2 / -MR3 / -MR6
	XOGX-MF4

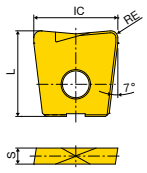
Spare parts DC	Y7 TORX® blade Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		WA Clamping screw Article no. 56 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£	
8	6.69	**033**	10.30	**110**	3.98	**303**	9.68	**042**	163.58	**191**
10	6.69	**036**	12.26	**113**	3.98	**303**	9.68	**043**	183.22	**193**
12	6.69	**037**	13.11	**114**	3.98	**303**	13.08	**044**	183.22	**193**
16	6.69	**037**	13.11	**114**	3.98	**303**	13.08	**045**	183.22	**193**
20	6.69	**037**	13.11	**114**	3.98	**303**	13.08	**046**	183.22	**193**
25			14.15	**131**	3.98	**303**	13.12	**047**		
32			14.15	**131**	3.98	**303**	13.56	**048**		

XOHX / XOGX

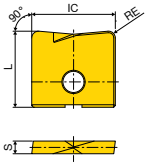
Designation	IC	S	L
	mm	mm	mm
XO.X10251..	10	2.50	11.5
XO.X12251..	12	2.50	14.0
XO.X12252..	12	2.50	14.0
XO.X16301..	16	3.00	16.0
XO.X16303..	16	3.00	16.0
XO.X20301..	20	3.00	18.0
XO.X20304..	20	3.00	18.0
XOHX06160..	6	1.60	8.0
XOHX08200..	8	2.00	9.5
XOHX08201..	8	2.00	9.5
XOHX10250..	10	2.50	11.5
XOHX12252..	12	3.00	14.0
XOHX20302..	20	3.00	18.0
XOHX25401..	25	4.00	23.5
XOHX25402..	25	4.00	23.5
XOHX25405..	25	4.00	23.5
XOHX32502..	32	5.00	28.0



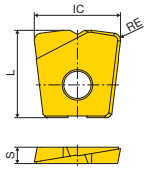
XOGX -MF4



XOHX -FM2, -MR2

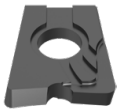
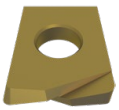


XOHX -FM5, -MR6



XOHX -MR3

XOHX / XOGX

	-MR2 CTPP211	-MR6 CTPP211	-FM2 CTPP216	-FM5 CTPP216	-MF4 CTPP216	-MR3 CTPK231	-MR2 CTCN211
							
	XOHX	XOHX	XOHX	XOHX	XOGX	XOHX	XOHX
	NEW WB	NEW WB	NEW WB	NEW WB	NEW WB	NEW WB	WB
ISO	RE	Article no. 56 167 ...	Article no. 56 163 ...	Article no. 56 165 ...	Article no. 56 159 ...	Article no. 56 161 ...	Article no. 56 171 ...	Article no. 56 168 ...
	mm	£	£	£	£	£	£	£
061605	0.5	43.72 71000						102.72 610 1)
082006	0.6		47.01 71000	41.38 71000	36.16 71000			
082010	1.0	47.85 71200		41.38 71200				121.40 612 1)
102508	0.8		47.01 72100	41.38 72100	35.75 72100		52.10 32100	
102510	1.0	47.85 72200		41.38 72200		41.79 92200		128.88 622 1)
122510	1.0	51.27 73200	51.27 73200	42.76 73200	40.28 73200	45.36 93200	52.10 53200	141.95 632 1)
122520	2.0	51.27 73500		42.76 73500		45.36 93500		
163010	1.0	55.40 74200		49.49 74200		51.27 94200		177.43 642 1)
163013	1.3		54.58 74300	49.49 74300	46.19 74300			
163015	1.5						55.40 54400	
163030	3.0	55.40 74700		49.49 74500		51.27 94700		
203010	1.0	63.79 75200		54.58 75200		57.88 95200		
203016	1.6		62.13 75400	54.58 75400	52.93 75400			
203020	2.0						65.43 55500	
203040	4.0	63.79 75800		54.58 75800		57.88 95800		
254010	1.0	81.38 76200		70.53 76200				
254020	2.0		85.51 76500	70.53 76500	73.82 76500			
254050	5.0	81.38 76900		70.53 76900				
325025	2.5		120.83 77600		102.42 77600			
Steel		●	●	●	●	●	●	
Stainless steel		●	●	●	●	●	●	
Cast iron		●	●	●	●	●	●	
Non ferrous metals		○	○					●
Heat resistant alloys		●	●	●	●	●	●	
hardened materials		○	○	●	●	●		

1) Specifically for machining graphite !

Milling guide

Depth of Cut	→ 185	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 183+184

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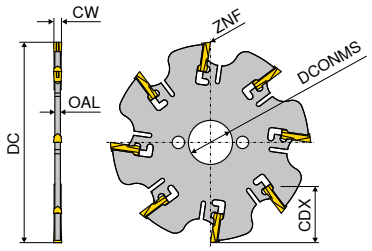
Side and Face milling System FM

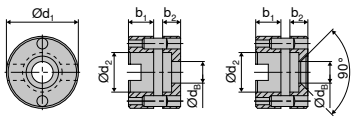
▲ For safety reasons the cutting speed must not exceed 250 m/min!

Scope of supply:
incl. ejector



Designation	DC	CW	ZNF	CDX	OAL	DCONMS	RPMX	Insert	2B Article no. 50 756 ...	
	mm	mm		mm	mm	mm	1/min.		£	
SF-1,8-Z 8-100	100	2.3	8	28	1.8	22	800	FM-2.3 ...	476.64	**100**
SF-2,4-Z 8-100	100	3.0	8	28	2.4	22	800	FM-3.0 ...	432.73	**102**
SF-2,8-Z 8-100	100	4.0	8	28	2.8	22	800	FM-4.0 ...	432.73	**104**
SF-3,7-Z 8-100	100	5.0	8	28	3.7	22	800	FM-5.0 ...	552.82	**106**
SF-4,7-Z 8-100	100	6.0	8	28	4.7	22	800	FM-6.0 ...	575.82	**108**
SF-1,8-Z 10-125	125	2.3	10	40	1.8	22	650	FM-2.3 ...	567.18	**110**
SF-2,4-Z 10-125	125	3.0	10	40	2.4	22	650	FM-3.0 ...	512.82	**112**
SF-2,8-Z 10-125	125	4.0	10	40	2.8	22	650	FM-4.0 ...	512.82	**114**
SF-3,7-Z 10-125	125	5.0	10	40	3.7	22	650	FM-5.0 ...	656.82	**116**
SF-4,7-Z 10-125	125	6.0	10	40	4.7	22	650	FM-6.0 ...	696.82	**118**
SF-2,4-Z 15-160	160	3.0	15	49	2.4	32	500	FM-3.0 ...	603.36	**120**
SF-2,8-Z 15-160	160	4.0	15	49	2.8	32	500	FM-4.0 ...	603.36	**122**
SF-3,7-Z 15-160	160	5.0	15	49	3.7	32	500	FM-5.0 ...	735.91	**124**
SF-4,7-Z 15-160	160	6.0	15	49	4.7	32	500	FM-6.0 ...	767.36	**126**

Drive dogs



M../2N M../2S

Type	d_1 mm	d_2 mm	d_B mm	b_1 mm	b_2 mm	Ø mm	2A Article no. 70 950 ... £	
M22/2N	40	22	12	14.5	10	100/125	48.33	**800**
M32/2N	58	32	18	17.5	15	160	51.19	**801**
M22/2S	40	22	12	14.5	10	100/125	54.15	**802**
M32/2S	58	32	18	17.5	15	160	59.29	**803**

Ejector

2A Article no. 70 950 ... £	
3.38	**804**

FM

ISO	-N CWN35		-KXF CWN35		-N CWK12	
	FM V5		FM V5		FM V5	
	Article no. 50 491 ...		Article no. 50 492 ...		Article no. 50 491 ...	
	£		£		£	
FM-2.3-8	16.99	**023**	16.99	**023**	14.97	**123**
FM-3.0-8	16.99	**030**	16.99	**030**	14.97	**130**
FM-4.0-8	16.99	**040**	16.99	**040**	14.97	**140**
FM-5.0-8	21.09	**050**			20.39	**150**
FM-6.0-8	21.09	**060**			20.39	**160**
Steel	●		●			
Stainless steel	●		●			
Cast iron					●	
Non ferrous metals					●	
Heat resistant alloys						
hardened materials						

Milling guide

Machining strategy	→ 188	ISO Designation System	→ 194+195
Grade description	→ 209+210	Cutting data appoximate values	→ 187

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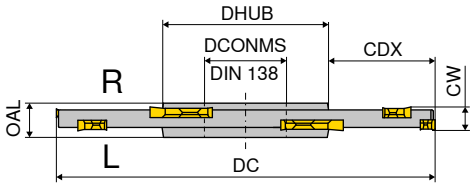
Saw Cutter TX

- ▲ Note: side and face milling cutters TX are cross-pitched and equipped with indexable inserts for both right-hand and left-hand version.
- ▲ ZEFP = number of inserts

Scope of supply:
side and face milling cutter, 2 spare clamping screws and 1 Torx key



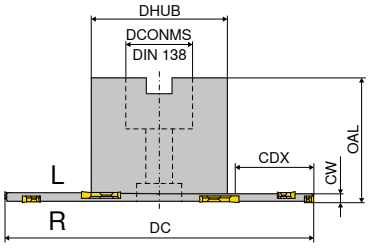
Designation	DC	CW	ZNF	CDX	DCONMS	DHUB	OAL	ZEFP	Insert	torque moment	V5 Article no. 50 730 ...	
	mm	mm		mm	mm	mm	mm			Nm	£	
TX.STF.80X27.03.Z4	80	3	4	18.0	27	40	8	8	TX. 161702	0,9	814.85	**083**
TX.STF.100X32.03.Z5	100	3	5	25.0	32	46	8	10	TX. 161702	0,9	866.66	**103**
TX.STF.125X40.03.Z6	125	3	6	32.0	40	54	10	12	TX. 161702	0,9	945.12	**123**
TX.STF.160X40.03.Z8	160	3	8	50.0	40	54	10	16	TX. 161702	0,9	1,105.67	**163**
TX.STF.80X27.04.Z4	80	4	4	18.0	27	40	8	8	TX. 162302	1,3	680.77	**084**
TX.STF.100X32.04.Z5	100	4	5	25.0	32	46	8	10	TX. 162302	1,3	858.21	**104**
TX.STF.125X40.04.Z6	125	4	6	32.0	40	54	10	12	TX. 162302	1,3	936.68	**124**
TX.STF.160X40.04.Z8	160	4	8	50.0	40	54	10	16	TX. 162302	1,3	1,096.01	**164**
TX.STF.80X27.06.Z4	80	6	4	21.0	27	36	10	8	TX. 223202	2	445.40	**086**
TX.STF.80X22.06.Z4	80	6	4	22.0	22	33	10	8	TX. 223202	2	445.40	**080**
TX.STF.100X32.06.Z5	100	6	5	25.5	32	47	10	10	TX. 223202	2	531.10	**106**
TX.STF.125X40.06.Z6	125	6	6	32.5	40	58	10	12	TX. 223202	2	715.80	**136**
TX.STF.160X40.06.Z8	160	6	8	50.0	40	58	10	16	TX. 223202	2	1,125.63	**166**
TX.STF.80X27.08.Z4	80	8	4	21.0	27	36	12	8	TX. 224302	2,8	445.40	**088**
TX.STF.100X32.08.Z5	100	8	5	25.5	32	47	12	10	TX. 224302	2,8	531.10	**108**
TX.STF.125X40.08.Z6	125	8	6	32.5	40	58	12	12	TX. 224302	2,8	715.80	**138**
TX.STF.160X40.08.Z8	160	8	8	50.0	40	58	12	16	TX. 224302	2,8	919.78	**168**
TX.STF.80X27.10.Z4	80	10	4	21.0	27	36	12	8	TX. 225402	3	445.40	**090**
TX.STF.100X32.10.Z5	100	10	5	25.5	32	47	12	10	TX. 225402	3	531.10	**110**
TX.STF.125X40.10.Z6	125	10	6	32.5	40	58	14	12	TX. 225402	3	715.80	**140**
TX.STF.160X40.10.Z8	160	10	8	50.0	40	58	14	16	TX. 225402	3	1,125.63	**170**

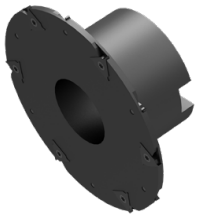
Spare parts CW	Y7 TORX® blade Article no. 80 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		V5 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
	£		£		£		£		£	
3	6.69	**032**	10.30	**109**	3.98	**303**	7.73	**858**	163.58	**191**
4	6.69	**033**	10.30	**110**	3.98	**303**	3.60	**218**	163.58	**191**
6	6.69	**036**	12.26	**113**	3.98	**303**	4.57	**101**	154.29	**192**
8	6.69	**037**	13.11	**114**	3.98	**303**	4.57	**135**	154.29	**192**
10	6.69	**037**	13.11	**114**	3.98	**303**	4.57	**146**	154.29	**192**

Shell side and face milling cutter TX

▲ Note: side and face milling cutters TX are cross-pitched and equipped with indexable inserts for both right-hand and left-hand version.
▲ ZEFP = number of inserts

Scope of supply:
side and face milling cutter, 2 spare clamping screws and 1 Torx key



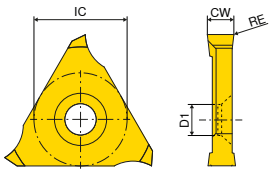


Designation	DC	CW	ZNF	CDX	DCONMS	DHUB	OAL	ZEFP	torque moment	Insert	V5 Article no. 50 734 ...	
	mm	mm		mm	mm	mm	mm		Nm		£	
TX.ASF.100.R.03.Z5	100	3	5	25.0	27	48	50	10	0,9	TX. 161702	920.85	**300**
TX.ASF.125.R.03.Z6	125	3	6	37.5	27	48	50	12	0,9	TX. 161702	1,429.23	**225**
TX.ASF.160.R.03.Z8	160	3	8	44.0	40	70	50	16	0,9	TX. 161702	1,530.92	**260**
TX.ASF.100.R.04.Z5	100	4	5	25.0	27	48	50	10	3,2	TX. 162302	910.82	**100**
TX.ASF.125.R.04.Z6	125	4	6	37.5	27	48	50	12	3,2	TX. 162302	1,316.09	**025**
TX.ASF.125.R.04.Z6	125	4	6	26.5	40	70	50	12	3,2	TX. 162302	1,280.32	**125**
TX.ASF.160.R.04.Z8	160	4	8	55.0	27	48	50	16	3,2	TX. 162302	1,612.55	**060**
TX.ASF.160.R.04.Z8	160	4	8	44.0	40	70	50	16	3,2	TX. 162302	1,516.61	**160**
TX.ASF.180.R.04.Z9	180	4	9	54.0	40	70	50	18	3,2	TX. 162302	1,755.76	**180**
TX.ASF.200.R.04.Z10	200	4	10	64.0	40	70	50	20	3,2	TX. 162302	1,953.37	**200**

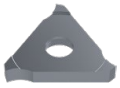
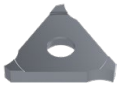
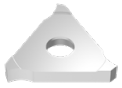
Spare parts CW	DCONMS	V5 Washer Article no. 70 950 ...		Y7 TORX® blade Article no. 80 950 ...		V5 Clamping Screw Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Molykote Article no. 70 950 ...		V5 Clamping screw Article no. 70 950 ...		Y7 Torque screwdriver Article no. 80 950 ...	
		£		£		£		£		£		£		£	
3	40	2.69	**222**	6.69	**032**	11.64	**220**	10.30	**109**	3.98	**303**	7.73	**858**	163.58	**191**
3	27	1.52	**221**	6.69	**032**	2.69	**219**	10.30	**109**	3.98	**303**	7.73	**858**	163.58	**191**
4	27	1.52	**221**	6.69	**033**	2.69	**219**	10.30	**110**	3.98	**303**	3.60	**218**	154.29	**192**
4	40	2.69	**222**	6.69	**033**	11.64	**220**	10.30	**110**	3.98	**303**	3.60	**218**	154.29	**192**

TX-L / TX-R

Designation	IC	D1	CW
	mm	mm	mm
TX . 1617..	10	3.95	1.7
TX . 1623..	10	3.95	2.3
TX . 2232..	13	5.50	3.2
TX . 2243..	13	5.50	4.3
TX . 2254..	13	5.50	5.4



TX-L / TX-R

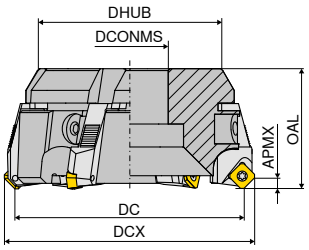
		CWX500		CWX500		CWK10		CWK10	
									
		TX-L		TX-R		TX-L		TX-R	
		V5		V5		V5		V5	
ISO	RE	Article no. 50 382 ...		Article no. 50 381 ...		Article no. 50 382 ...		Article no. 50 381 ...	
	mm	£		£		£		£	
TX 161702	0.2	22.62	217	22.62	217				
TX 162302	0.2	32.54	223	32.54	223				
TX 223202	0.2	49.11	232	49.11	232	43.73	532	43.73	532
TX 224302	0.2	48.74	243	48.74	243	44.62	543	44.62	543
TX 225402	0.2	36.88	254	36.88	254	31.67	554	31.67	554
Steel		●		●					
Stainless steel		●		●					
Cast iron		●		●					
Non ferrous metals						●		●	
Heat resistant alloys		●		●					
hardened materials									

Milling guide

Grade description → 209+210
ISO Designation System → 194+195
Cutting data appoximate values → 187

MaxiMill – Combi Mill Base Holder 260

▲ Basic body with clamping wedges, without cartridges



DC	ZNF	DCONMS	DHUB	OAL	WT	2B/40 Article no. 50 715 ...	
mm		mm	mm	mm	kg	£	
80	5	27	66	52	1	333.91	080
100	6	32	86	52	2	365.73	100
125	7	40	95	63	3	509.27	125
160	10	40	130	63	6	558.55	160
200	12	60	172	63	9	713.82	200
250	14	60	222	63	17	924.55	250
315	18	60	280	80	31	966.36	315
400	22	60	365	80	52	2,083.64	400

For information on axial runout setting, see → **page 189**

Spare parts DC	2A/28 Clamping wedge screw Article no. 70 950 ... £		2A/28 Clamping Wedge Article no. 70 950 ... £		2A/28 Key-T Article no. 70 950 ... £		2A/28 Molykote Article no. 70 950 ... £		2A/28 Eccentric Key Article no. 70 950 ... £	
80 - 400	2.71	297	15.88	296	6.45	317	3.98	303	11.25	298

Insert related diameter

	Inserts	Nominal Ø in mm 80 DC mm	80 DCX mm	100 DC mm	100 DCX mm	120 DC mm	120 DCX mm	160 DC mm	160 DCX mm	200 DC mm	200 DCX mm	250 DC mm	250 DCX mm	315 DC mm	315 DCX mm	400 DC mm	400 DCX mm
	SD.. 0903..	80	88,4	100	108,4	123	131,4	158	166,4	198	206,4	248	256,4	313	321,4	398	406,4
	SD.. 1204..	80	94,5	100	114,5	123	137,5	158	172,5	198	212,5	248	262,5	313	327,5	398	412,5
	SE.. 1204..	80	93	100	113	123	136	158	171	198	211	248	261	313	326	398	411
	SD.. 1504..	75	94	95	114	118	137	153	172	193	212	243	262	308	327	393	412
	SP.. 1204..	82	88	102	108	125	131	160	166	200	206	250	256	315	321	400	406
	OA.. 0605..	80	85,6	100	105,6	123	128,6	158	163,6	198	203,6	248	253,6	313	318,6	398	403,6
	RP.X 1204..	80	92	100	112	123	135	158	170	198	210	248	260	313	325	398	410
	RP.X 16..	76	92	96	112	119	135	154	170	194	210	244	260	309	325	394	410
	SD.. 1205..	89		109		132		167		207		257		322		407	
	SD.. 09T3	89		109		132		167		207		257		322		407	
	LD..1504..	89		109		132		167		207		257		322		407	
	XD.T 11T3	89		109		132		167		207		257		322		407	
	XDKT 1505	89		109		132		167		207		257		322		407	
	AP.. 1003..	89		109		132		167		207		257		322		407	
	TPKW 2204..	89		109		132		167		207		257		322		407	

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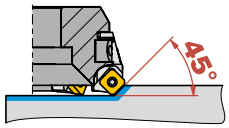
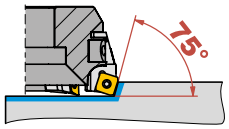
System MaxiMill 260/Combi Mill

Cassette for inserts

Face milling

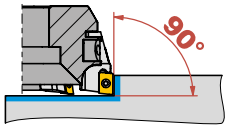


	SD.. 0903..	SD.. 1204..	SE.. 1204..	SD.. 1504..		OA.. 0605..	
Cartridge no.	041	031	029	032		057	
Article no. 70 950 ...	329	411	306	412		338	



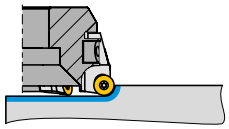
	SP.. 1204..	
Cartridge no.	018	
Article no. 70 950 ...	310	

Shoulder milling



	AP.. 1003..	LD.. 1504..	XD.T 11T3..	XDKT 1505..		SD.. 1205..	SD.. 09T3..		TPKW 2204..	
Cartridge no.	042	051	054	056		039	055		025	
Article no. 70 950 ...	307	300	336	339		311	337		313	

Face/Copy milling



	RP.X 1204..	RP.X 16....
Cartridge no.	052	053
Article no. 70 950 ...	333	707

Insert	APMX	Cassette 2B/40 Article no. 70 950 ...
	mm	£
AP.. 1003..	8.0	76.60 307
LD.. 1504..	14.0	76.60 300
OA.. 0605..	3.5	76.60 338
RP.X 1204..	6.0	76.60 333
RP.X 16..	8.0	76.60 707
SD.. 0903..	4.0	76.60 329
SD.. 09T3..	8.0	76.60 337
SD.. 1204..	6.0	76.60 411
SD.. 1205..	6.0	76.60 311
SD.. 1504..	9.0	76.60 412
SE.. 1204..	6.0	76.60 306
SP.. 1204..	9.0	76.60 310
TPKW 2204..	18.0	76.60 313
XD.T 11T3	10.0	76.60 336
XDKT 1505..	14.0	76.60 339

Spare parts	Y7 TORX® blade Article no. 80 950 ... £		Y7 Key D Article no. 80 950 ... £		2A/28 Molykote Article no. 70 950 ... £		2A Clamping screw Article no. 70 950 ... £		Y7 Torque screwdriver Article no. 80 950 ... £	
AP.. 1003..	6.69	033	10.30	110	3.98	303	2.15	112	163.58	191
OA.. 0605..	6.69	037	13.11	114	3.98	303	3.72	302	183.22	193
RP.X 1204.. / LD.. 1504..	6.69	036	12.26	113	3.98	303	2.85	304	154.29	192
SD.. 0903..	6.69	033	10.30	110	3.98	303	2.34	115	163.58	191
SD.. 09T3..	6.69	036	12.26	113	3.98	303	2.85	110	154.29	192
SD.. 1204.. / SE.. 1204.. / SP.. 1204.. / SD.. 1205.. / SD.. 1504.. / RP.X 16.. / TPKW 2204..	6.69	037	13.11	114	3.98	303	2.29	280	183.22	193
XD.T.. 11T3..	6.69	043	13.49	125	3.98	303	3.72	131	163.58	191
XDKT 1505..	6.69	054	15.77	128	3.98	303	2.89	839	154.29	192

Material examples referring to the cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1		< 45 HRC						
	6.2		46–55 HRC						
	6.3	Tempered steel	56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data appoximate values

Cutting Material **hard** (v_c↑) → **tough** (v_c↓)

	DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN				DRAGONSKIN				DRAGONSKIN		DRAGONSKIN		DRAGONSKIN					
	CERMET		CERMET																							
	CTEP210 (DCC1210)		TCM10 (CWC10)		CTCP220 (DCX1220)		CTPP225 (DPX1225)		CTCP230 (DCX1230)		CTPP231		CTPP235 (DPX1235)		CTPP236		CTPM225 (DPX2225)		CTCM235 (DCX2235)		CTPM240 (DPX2240)		CTPM241		CTPM245 (DPX2245)	
Index																										
1.1	320		280		320	170	300	160	280	170	200	100	240	140	300	180	270	160	240	140	220	130	200	100		
1.2	400		350		280	150	250	130	230	140	170	90	190	110	250	150	220	130	190	110	170	100	170	90		
1.3	350		300		320	170	300	160	280	170	200	100	240	140	300	180	270	160	240	140	220	130	200	100		
1.4	330		300		300	150	280	140	250	150	170	90	220	130	270	160	240	140	210	130	200	120	170	90	250	
1.5	400		350		300	150	280	140	250	150	170	90	210	130	270	160	230	140	210	130	190	110	170	90		
1.6	350		300		300	150	280	140	250	150	170	90	210	130	270	160	230	140	210	130	190	110	170	90		
1.7	280		250		300	150	280	140	250	150	170	90	220	130	270	160	240	140	210	130	200	120	170	90	220	
1.8	320		280		250	120	220	110	190	110	150	80	160	100	210	120	180	100	150	90	140	80	150	80	180	
1.9	250		230		280	140	250	130	230	140	200	110	200	120	250	150	220	130	200	120	180	100	180	100	250	
1.10	280		250		300	150	280	140	250	150	170	90	220	130	270	160	240	140	210	130	200	120	170	100	220	
1.11	300		250		190	100	170	90	140	90	120	70	120	70	160	100	140	80	100	60	100	60	120	80	180	
1.12	300		250		300	150	280	140	250	150	170	90	220	130	270	160	240	140	210	130	200	120	170	100	250	
1.13					300	150	280	140	250	150	170	90	210	130	270	160	230	140	210	130	190	110	170	100	250	
1.14					150	70	130	70	100	60	120	70	90	50	150	100	170	100	120	70	90	50	120	80	120	
1.15	280		250		180	90	150	90	130	80	140	80	110	70	180	140	180	110	150	90	120	70	140	90	220	
1.16	280		250		180	90	150	90	130	80	140	80	110	70	180	140	180	110	150	90	120	70	180	100	160	
2.1									90	60			80	50			170	100	110	70	80	50	210	100	240	
2.2			280						130	80			110	70			180	110	150	90	120	70	210	100	240	
2.3			250						90	60			80	50			170	100	110	70	80	50	210	100	260	
2.4									130	80			110	70			180	110	150	90	120	70	210	100	280	
2.5													190	110			280	160	250	140	190	110	210	100	180	160
2.6													190	110			280	160	260	150	210	120	210	100	200	180
2.7													190	110			280	160	260	150	210	120	210	100	150	130
3.1	380										150	110			360	90										
3.2	300		250								150	110			360	90										
3.3	400		350								150	110			230	170										
3.4	350		300								150	110			160	110										
3.5	380		330												250	180										
3.6	250														250	180										
3.7	350		300												210	160										
3.8	280														210	160										
4.1																										
4.2																										
4.3																										
4.4																										
4.5																										
4.6																										
4.7																										
4.8																										
4.9																										
4.10																										
4.11																										
4.12																										
4.13																										
4.14																										
4.15																										
4.16																										
4.17																										
4.18																										
4.19																										
5.1																							80	40		
5.2																							80	40		
5.3																							80	40		
5.4																							80	40		
5.5																							80	40		
5.6																							80	40		
5.7																							80	40		
5.8																							80	40		
5.9																							80	40		
5.10																							90	50		
5.11																							90	50		
6.1											120	50			130	60										
6.2																										
6.3																										
6.4																										
6.5																										

Cutting data appoximate values

Cutting Material **hard** (v_c↑) → **tough** (v_c↓)

	CERAMIC		CBN																			
	CTN3105 CTS3105		CTL3215 CWB3215		CTPK221		CTCK215 DCX3215		CTPK220 DPX3220		H216T CWK 26		AMZ AMZ		CTWN215 CWK 4615		CTC5240 HCF 5240		CTCS245		CTP6215 CCN6215	
Index																						
1.1					**190**	**120**	350	210	300	180												
1.2					**180**	**100**	300	180	250	150												
1.3					**190**	**120**	350	210	300	180												
1.4					**180**	**100**																
1.5					**180**	**100**	320	190	270	160												
1.6					**180**	**100**	320	190	270	160												
1.7					**180**	**100**																
1.8					**180**	**100**																
1.9					**200**	**120**	300	180	260	160												
1.10					**180**	**100**																
1.11					**120**	**70**																
1.12					**180**	**100**																
1.13					**180**	**100**	320	190	270	160												
1.14					**120**	**70**																
1.15					**210**	**120**																
1.16					**210**	**120**																
2.1																						
2.2																						
2.3																						
2.4																						
2.5																						
2.6																						
2.7																						
3.1	**400–1500**		**500–1000**		**270**	**200**	**360**	160	**320**	160	110	110	140		80	80					**280**	250
3.2	**300–800**		**500–1000**		**270**	**200**	**360**	160	**320**	160	110	110	140		80	80					**280**	250
3.3					**250**	**180**	**230**	140	**210**	130	130	130	150		80	80					**180**	150
3.4			**350–650**		**180**	**120**	**160**	100	**140**	80	130	130	150		80	80					**180**	150
3.5					**270**	**190**	**250**	150	**200**	120	130	130	150		80	80					**250**	220
3.6					**270**	**190**	**250**	150	**200**	120	130	130	150		80	80					**250**	220
3.7					**220**	**170**	**210**	130	**170**	100	130	130	150		80	80					**190**	160
3.8					**220**	**170**	**210**	130	**170**	100	130	130	150		80	80					**190**	160
4.1												**1500**		**1500**		**280**						
4.2												**1500**		**1500**		**250**						
4.3												**400**		**400**		**800**						
4.4												**350**		**350**		**800**						
4.5																**500**						
4.6												**500**		**500**		**200**						
4.7												**500**		**500**	80	**80**						
4.8												**500**		**500**	80	**80**						
4.9												**500**		**500**	80	**80**						
4.10												**300**		**300**	70	**70**						
4.11												**800**		**800**	80	**80**						
4.12												**800**		**800**	80	**80**						
4.13												**350**		**350**	80	**80**						
4.14												**350**		**350**	80	**80**						
4.15												**350**		**350**	80	**80**						
4.16												**150**		**150**	80	**110**						
4.17											**90**				80	**80**						
4.18												**90**		**90**		**90**						
4.19												**130**		**130**		**130**						
5.1																		**50**		**30–50**		
5.2																		**50**		**30–50**		
5.3																		**50**		**30–50**		
5.4																		**40**		**30–50**		
5.5																		**40**		**30–50**		
5.6																		**40**		**30–50**		
5.7																		**40**		**30–50**		
5.8																		**40**		**30–50**		
5.9																		**90**				
5.10																		**60**				
5.11																		**60**				
6.1					**180**	**120**															**50**	
6.2					**160**	**100**															**50**	
6.3			110–190																		**40**	
6.4																						
6.5																						

15

System MaxiMill 274-04/-09

Cutting data recommendations/Technology data

System Maximill 274 OFHT-04

	F			M			R		
Material	m/min	f_z mm	a_p mm	m/min	f_z mm	a_p mm	m/min	f_z mm	a_p mm
Steel	50–350	0,1–0,25	2,5	60–280	0,1–0,3	2,5	60–280	0,1–0,3	2,5
Stainless steel	60–270	0,1–0,25	2,5	60–270	0,1–0,3	2,5	60–270	0,1–0,3	2,5
Cast iron				130–360	0,1–0,3	2,5	130–360	0,1–0,3	2,5
Non-ferrous metals	160–1500	0,05–0,4	2,5	160–1500	0,05–0,4	2,5	160–1500	0,05–0,4	2,5
Heat resistant alloys	25–80	0,1–0,25	2,5	25–80	0,1–0,25	2,5			
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

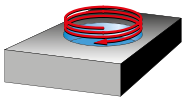
System MaxiMill 274 SFKT-09

	F			M			R		
Material	m/min	f_z mm	a_p mm	m/min	f_z mm	a_p mm	m/min	f_z mm	a_p mm
Steel	50–350	0,1–0,25	3,8	60–280	0,1–0,3	3,8	60–280	0,1–0,3	3,8
Stainless steel	60–270	0,1–0,25	3,8	60–270	0,1–0,3	3,8	60–270	0,1–0,3	3,8
Cast iron	110–130	0,05–0,4		130–360	0,1–0,35	3,8	130–360	0,1–0,35	3,8
Non-ferrous metals	160–1500	0,05–0,4	3,8	160–1500	0,05–0,4	3,8	160–1500	0,05–0,4	3,8
Heat resistant alloys	25–80	0,1–0,25	3,8	25–80	0,1–0,25	3,8	25–80	0,1–0,25	3,8
hardened materials									

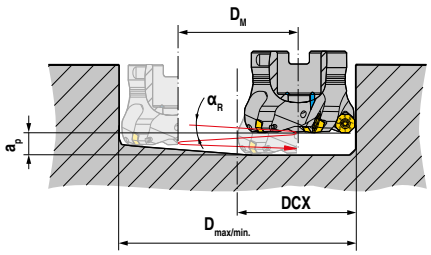
Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

Helical plunge milling



$D_{max.}$ in mm = largest diameter for flat bottom hole
$D_{min.}$ in mm = smallest hole diameter for flat bottom surface
D_M = D_{max} – DCX and D_{min} – DCX



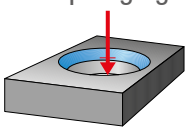
OF..04

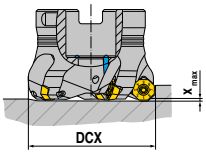
DCX mm	D_{max} mm	D_{min} mm	$\alpha_{R\,max}$ °
25,6	45	39	2,3
30,7	55	49	1,9
37,7	69	63	1,4
45,7	85	79	1,2
55,7	105	99	0,9
68,7	131	125	0,7
85,7	165	159	0,6
105,7	205	199	0,5
130,7	255	249	0,4

SF..09

DCX mm	D_{max} mm	D_{min} mm	$\alpha_{R\,max}$ °
27,4	45,00	42,0	1,9
32,5	55,00	52,0	1,5
39,2	69,00	66,0	1,1
47,6	85,00	82,0	0,9
57,6	105,00	102,0	0,7
70,5	131,00	128,0	0,5
87,5	165,00	162,0	0,4
107,5	205,00	202,0	0,3
132,5	255,00	252,0	0,3

Axial plunging





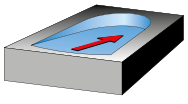
OF..04

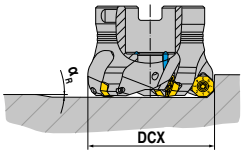
DCX mm	x_{max} mm
25,6	2,5
30,7	2,5
37,7	2,5
45,7	2,5
55,7	2,5
68,7	2,5
85,7	2,5
105,7	2,5
130,7	2,5

SF..09

DCX mm	x_{max} mm
27,4	3,7
32,5	3,5
39,2	3,2
47,6	3,1
57,6	3,1
70,5	3,0
87,5	2,9
107,5	2,7
132,5	2,7

Angled ramping





OF..04

DCX mm	$\alpha_{R\,max}$ °
25,6	14,2
30,7	9,5
37,7	6,5
45,7	4,7
55,7	3,5
68,7	2,7
85,7	2,0
105,7	1,6
130,7	1,2

SF..09

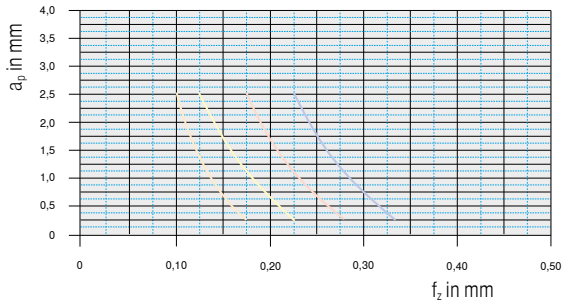
DCX mm	$\alpha_{R\,max}$ °
27,4	20,4
32,5	13,0
39,2	8,0
47,6	5,8
57,6	4,3
70,5	3,2
87,5	2,3
107,5	1,7
132,5	1,3

System MaxiMill 274-04

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718

OF.. 04



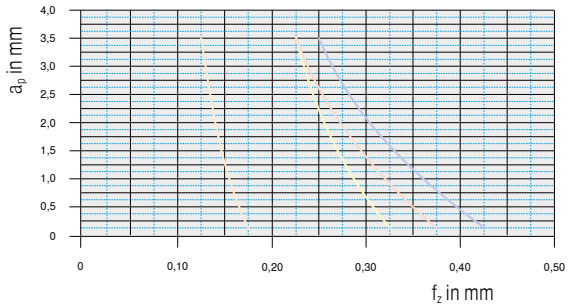
Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**OFHT040305SN-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**OFHT040305SN-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**OFHT040305SN-M50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**OFHT040305SN-F50**	**CTC5240** (HCF5240)	35	Emulsion

System MaxiMill 274-09

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718

SF.. 09



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**SFKT0903AFSR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**SFHT0903AFSR-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**SFKT0903AFSR-R50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**SFHT0903AFSR-F50**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill 274-05/-12

Cutting data recommendations/Technology data

System MaxiMill 274 OFHT-05

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	50–350	0,1–0,25	3	60–280	0,1–0,3	3	60–280	0,1–0,3	3
Stainless steel	60–270	0,1–0,25	3	60–270	0,1–0,3	3	60–270	0,1–0,3	3
Cast iron				130–360	0,1–0,3	3	130–360	0,1–0,3	3
Non-ferrous metals	160–1500	0,05–0,4	3	160–1500	0,05–0,4	3	160–1500	0,05–0,4	3
Heat resistant alloys	25–80	0,1–0,25	3	25–80	0,1–0,25	3			
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

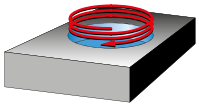
System MaxiMill 274 SFKT-12

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	50–350	0,1–0,25	6	60–280	0,1–0,3	6	60–280	0,1–0,3	6
Stainless steel	60–270	0,1–0,25	6	60–270	0,1–0,3	6	60–270	0,1–0,3	6
Cast iron	110–130	0,05–0,4		130–360	0,1–0,35	6	130–360	0,1–0,35	6
Non-ferrous metals	160–1500	0,05–0,4	6	160–1500	0,05–0,4	6	160–1500	0,05–0,4	6
Heat resistant alloys	25–80	0,1–0,25	6	25–80	0,1–0,25	6	25–80	0,1–0,25	6
hardened materials									

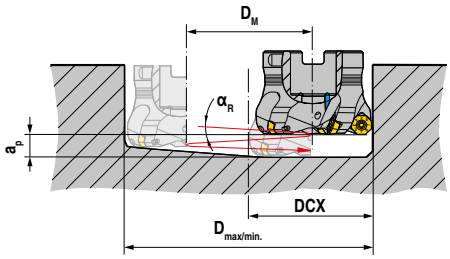
Detailed information on cutting speed for each grade can be found on → page 138+139

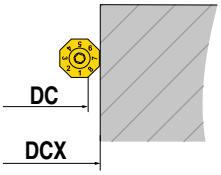
Machining strategy

Helical plunge milling



$D_{max.}$ in mm = largest diameter for flat bottom hole
$D_{min.}$ in mm = smallest hole diameter for flat bottom surface
D_M = D_{max} – DCX and D_{min} – DCX





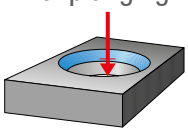
OF..05

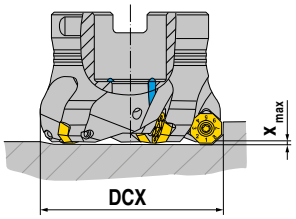
DC mm	DCX mm	D_{max} mm	D_{min} mm	$\alpha_{R\,max}$ °
50	**58**	107	99	1,1
63	**71**	133	125	0,9
80	**88**	167	159	0,7
100	**107,9**	207	199	0,5
125	**132,9**	257	249	0,4

SF..12

DC mm	DCX mm	D_{max} mm	D_{min} mm	$\alpha_{R\,max}$ °
47,0	**61,0**	107	105	0,5
59,9	**74,0**	133	131	0,4
76,9	**90,9**	167	165	0,3
96,9	**110,9**	207	205	0,25
121,9	**135,9**	257	255	0,2

Axial plunging





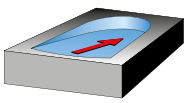
OF..05

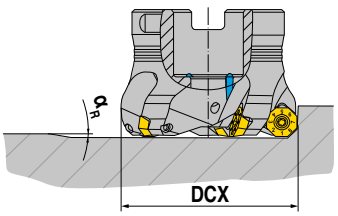
DC mm	DCX mm	X_{max} mm
50	**58**	2,2
63	**71**	1,9
80	**88**	1,8
100	**107,9**	1,1
125	**132,9**	1,4

SF..12

DC mm	DCX mm	X_{max} mm
47,0	**61,0**	3,4
59,9	**74,0**	3,2
76,9	**90,9**	3,0
96,9	**110,9**	2,5
121,9	**135,9**	2,6

Angled ramping





OF..05

DC mm	DCX mm	$\alpha_{R\,max}$ °
50	**58**	3,2
63	**71**	2,0
80	**88**	1,5
100	**107,9**	0,7
125	**132,9**	0,7

SF..12

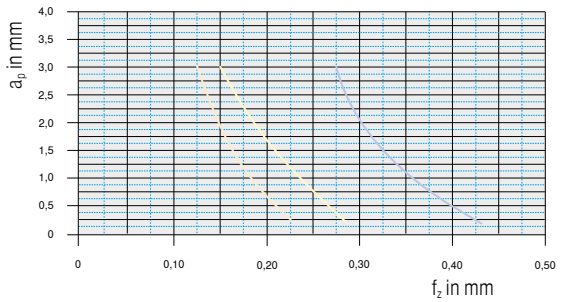
DC mm	DCX mm	$\alpha_{R\,max}$ °
47,0	**61,0**	4,9
59,9	**74,0**	3,4
76,9	**90,9**	2,4
96,9	**110,9**	1,6
121,9	**135,9**	1,3

System MaxiMill 274-05

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718

OF.. 05



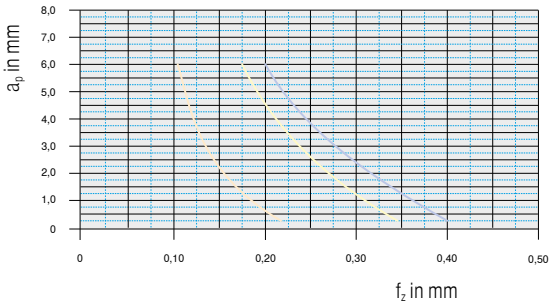
Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**OFHT050410SN-M50**	**CTCP230** (DCX1230)	200	Dry
Stainless steel	1.4571	**OFHT050410SN-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301				
Heat resistant alloys	2.4856	**OFHT050410SN-F50**	**CTC5240** (HCF5240)	35	Emulsion

System MaxiMill 274-12

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718

SF.. 12



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**SFKT1204AFSR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**SFKT1204AFSR-M50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301				
Heat resistant alloys	2.4856	**SFHT1204AFER-F40**	**CTC5240** (HCF5240	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill 271

Cutting data appoximate values

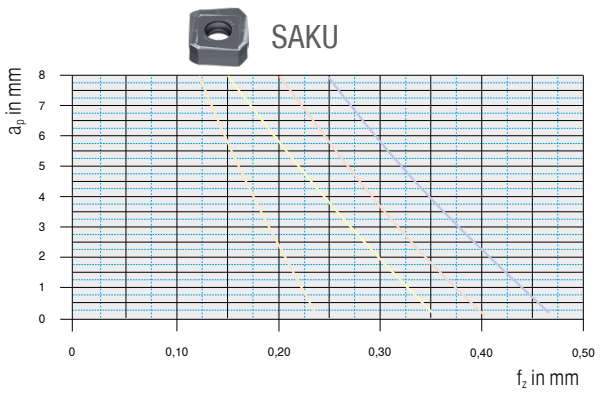
MaxiMill 271

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	50–340	0,2–0,3	8,4	50–340	0,2–0,5	8,4	50–340	0,2–0,5	8,4
Stainless steel	60–270	0,2–0,3	8,4	60–270	0,2–0,5	8,4	60–270	0,2–0,5	8,4
Cast iron				130–360	0,2–0,5	8,4	130–360	0,2–0,5	8,4
Non-ferrous metals									
Heat resistant alloys	25–80	0,2–0,3	8,4	25–80	0,2–0,3	8,4	25–80	0,2–0,3	8,4
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**SAKU 1706ABSR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**SAKU 1706ABSR-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**SAKU 1706ABSR-R50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**SAKU 1706ABSR-F50**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

MaxiMill 273 / 273 XAHT system

Cutting data appoximate values

MaxiMill 273

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	60–280	0,2–0,25	3,5	60–280	0,2–0,5	3,5	60–280	0,2–0,5	3,5
Stainless steel	130–240	0,2–0,5	3,5	60–270	0,2–0,5	3,5	60–270	0,2–0,5	3,5
Cast iron				130–360	0,2–0,5	3,5	130–360	0,2–0,5	3,5
Non-ferrous metals									
Heat resistant alloys	25–80	0,2–0,25	3,5	25–80	0,2–0,25	3,5	25–80	0,2–0,25	3,5
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

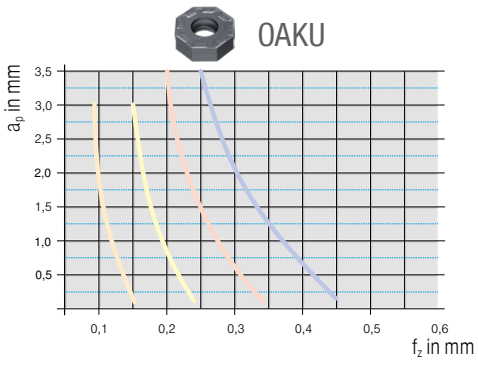
System MaxiMill 273 Wiper insert XAHT

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm						
Steel	60–350	0,05–0,15	0,20–1,00						
Stainless steel	40–250	0,05–0,15	0,20–1,00						
Cast iron	70–280	0,05–0,15	0,20–1,00						
Non-ferrous metals									
Heat resistant alloys	10–100	0,05	0,20–1,00						
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**OAKU 060508SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**OAKU 060508SR-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**OAKU 060508SR-R50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**OAKU 060508ER-F40**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill 270-09

Cutting data recommendations/Technology data

for standard inserts

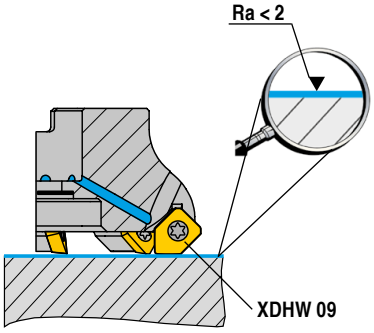
	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	60–280	0,1–0,3	4	60–280	0,1–0,3	4	60–280	0,1–0,3	4
Stainless steel	60–270	0,1–0,25	4	60–270	0,1–0,25	4	60–270	0,1–0,25	4
Cast iron	110–130	0,05–0,4		130–360	0,1–0,35	4	130–360	0,1–0,35	4
Non-ferrous metals	160–1500	0,05–0,4	4	160–1500	0,05–0,4	4	160–1500	0,05–0,4	4
Heat resistant alloys	25–80	0,1–0,25	4	25–80	0,1–0,25	4	25–80	0,1–0,25	4
hardened materials									

for wiper inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	150–350	0,05–0,25	0,10–2,0						
Stainless steel	110–200	0,05–0,25	0,10–2,0						
Cast iron	150–280	0,05–0,25	0,10–2,0						
Non-ferrous metals	< 2000	0,05–0,25	0,10–2,0						
Heat resistant alloys									
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

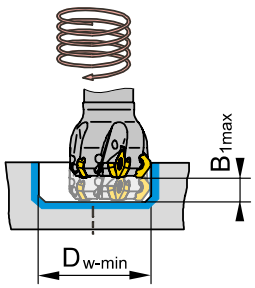


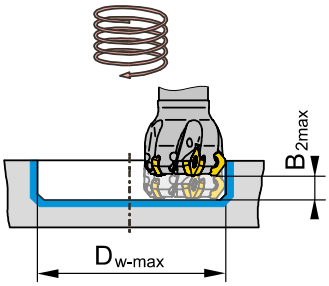
Finish milling with wiper inserts

Two wiper inserts are mounted in each 125mm head

Steel	SDNT	0903AESN-29	DPX 1235	+	XDHW	0903AESN	DPX 1235
	SDNT	0903AESN-29	DCX 1230	+	XDHW	0903AESN	DCX 1230
	SDHT	0903AESN-33	DCX 1230	+	XDHW	0903AESN	DCX 1230
	SDHW	0903AESN	CWC 10	+	XDHW	0903AESN	CWC 10
Cast iron	SDNT	0903AESN-31	DCX 3215	+	XDHW	0903AEEN	DCX 3215
Non-ferrous metals	SDHT	0903AEFN-ALP	CWK 26	+	XDHW	0903AEFN	CWK 26

Helical plunge milling (without start hole)





C 270-09

DC mm	$D_{w\text{-}min}$ mm	$B_{1\,max}$ mm	$D_{w\text{-}max}$ mm	$B_{2\,max}$ mm
6	14,4	1,5	19,0	1,5
12	28,5	1,5	31,0	1,5
16	36,5	1,5	39,0	1,5
20	44,5	1,5	47,0	1,5
25	54,5	1,5	57,0	1,5
32	68,5	1,5	71,0	1,5

A 270-09

DC mm	$D_{w\text{-}min}$ mm	$B_{1\,max}$ mm	$D_{w\text{-}max}$ mm	$B_{2\,max}$ mm
32	68,5	1,5	71,0	1,5
40	84,5	1,5	87,0	1,5
50	104,5	1,5	107,0	1,5
63	130,5	1,5	133,0	1,5
80	164,5	1,5	167,0	1,5
100	204,5	1,5	207,0	1,5
125	254,5	1,5	257,0	1,5
160	324,5	1,5	327,0	1,5

System MaxiMill 270-12

Cutting data recommendations/Technology data

for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	30–280	0,1–0,3	6	60–280	0,1–0,3	6	60–280	0,1–0,3	6
Stainless steel	60–270	0,1–0,25	6	60–270	0,1–0,25	6	60–270	0,1–0,25	6
Cast iron	150–200	0,05–0,4	6	130–360	0,1–0,35	6	130–360	0,1–0,3	6
Non-ferrous metals	160–3500	0,05–0,4	6	160–1500	0,05–0,4	6	160–1500	0,05–0,4	6
Heat resistant alloys	25–80	0,1–0,25	6	25–80	0,1–0,25	6	25–80	0,1–0,25	6
hardened materials									

for wiper inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	20–350	0,10–0,25	0,10–4,00						
Stainless steel	40–120	0,10–0,25	0,10–4,00						
Cast iron	120–290	0,10– 0,25	0,10–4,00						
Non-ferrous metals	< 2000	0,10–0,25	0,10–4,00						
Heat resistant alloys									
hardened materials									

for CBN inserts

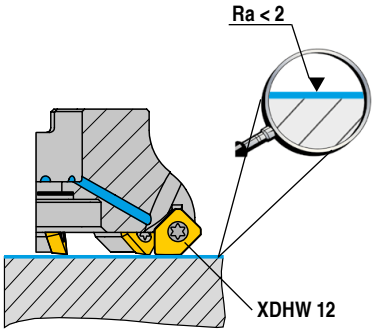
	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel									
Cast iron	600–1600	0,10–0,25	0,20–1,50						
Non-ferrous metals									
Heat resistant alloys	350–700	0,08–0,15	0,20–1,00						
hardened materials	350–600	0,08–0,12	0,20–0,40						

for PCD / MDC inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel									
Cast iron									
Non-ferrous metals	< 2000	0,05–0,25	0,10–2,00						
Heat resistant alloys									
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

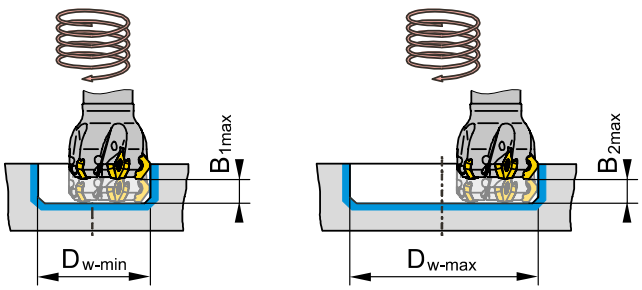


Finish milling with wiper inserts

Two wiper inserts are mounted in each 125mm head

Steel	SDMT 1204AESN-29R	DPX 1235	+	XDHW 1204AESN	DPX 1235
	SDMT 1204AESN-29R	DCX 1230	+	XDHW 1204AESN	DCX 1230
	SDHW 1204AESN-R	CWC 10	+	XDHW 1204AESN	CWC 10
Cast iron	SDMT 1204AEEN-31	DCX 3215	+	XDHW 1204AEEN	DCX 3215
	SDHW 1204AESN-R	DCX 3215	+	XDHW 1204AEEN	DCX 3215
Non-ferrous metals	SDHT 1204AEFN-ALP	CWK 26	+	XDHW 1204AEFN	CWK 26

Helical plunge milling (without start hole)



DC mm	$D_{w\text{-}min}$ mm	$B_{1\,max}$ mm	$D_{w\text{-}max}$ mm	$B_{2\,max}$ mm
32	74,5	1,5	78,0	1,5
40	90,5	1,5	94,0	1,5
50	110,5	1,5	114,0	1,5
63	136,5	1,5	140,0	1,5
80	170,5	1,5	174,0	1,5
100	210,5	1,5	214,0	1,5
125	260,5	1,5	264,0	1,5
160	330,5	1,5	334,0	1,5

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill 270-19

Cutting data appoximate values

for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel				40–180	0,15–0,6	10	40–180	0,3–0,7	10
Stainless steel				40–120	0,15–0,5	10	40–120	0,3–0,6	10
Cast iron							50–200	0,3–0,9	10
Non-ferrous metals									
Heat resistant alloys				20–70	0,15–0,5	10			
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill HEC

Cutting data appoximate values

MaxiMill HEC 11

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel									
Cast iron	100–800	0,08–0,3	6	100–360	0,08–0,3	6	100–360	0,1–0,45	6
Non-ferrous metals									
Heat resistant alloys									
hardened materials									

MaxiMill HEC 12

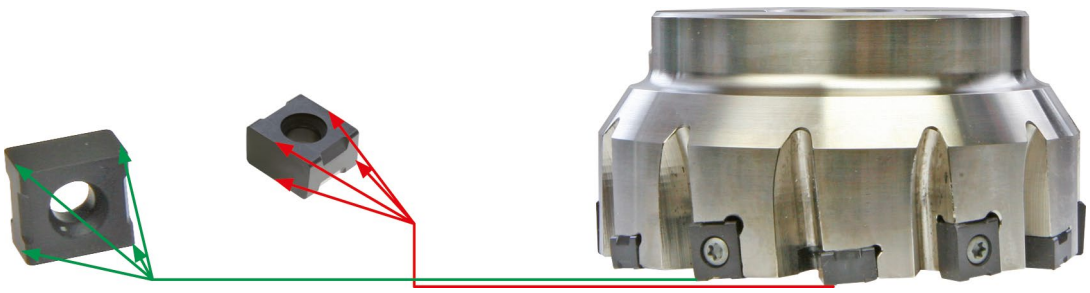
	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel									
Cast iron	100–360	0,08–0,3	8	100–360	0,08–0,3	8	100–360	0,1–0,45	8
Non-ferrous metals									
Heat resistant alloys									
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

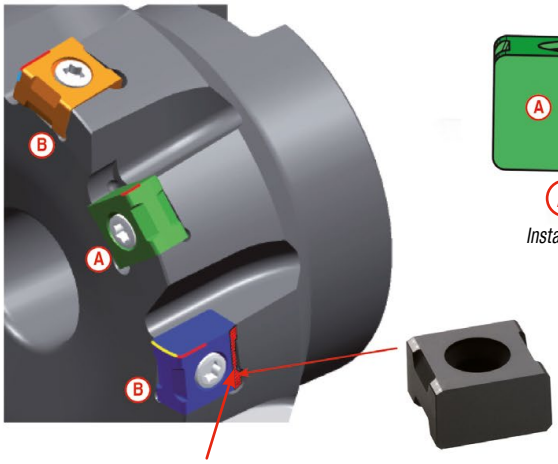
From v_c > 400 m/min, the tool must be balanced!

System MaxiMill HEC 11

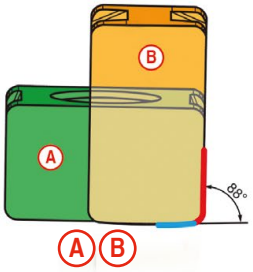
4 cutting edges per installation position



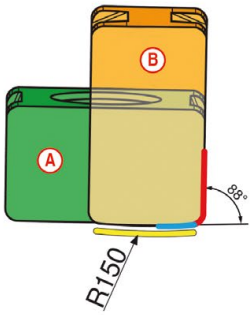
Correct assembly of standard and wiper inserts



Marking for the correct assembly



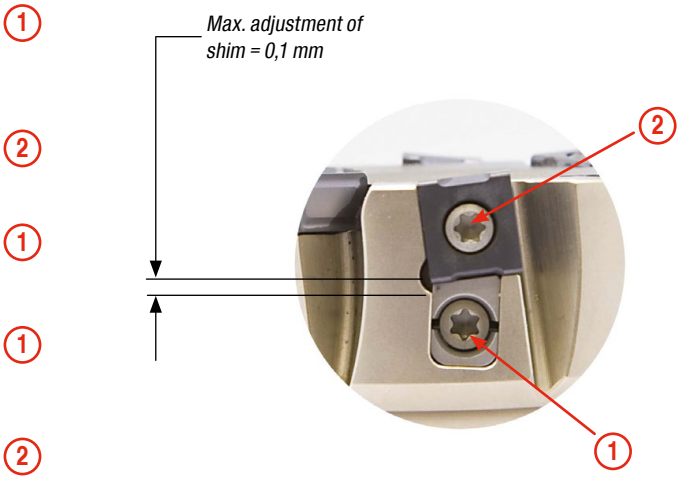
Installation position



Face machining insert — B
Insert main cutting edge — A B
Wiper Facet — B

Adjust the tools in axial direction

- Install the wedge into the cutter body and lightly clamp the clamping screw so as not to clamp.
- Install the inserts as shown and tighten to 1,0 Nm torque.
- Using pre-setting equipment, mark the highest cutting edge.
- With small adjustments of the setting screw set all cutting edges to the same height by 0,005 mm or better.
- Clamp insert with 3,2 Nm torque.



15

MaxiMill 491-09 system

Cutting data appoximate values

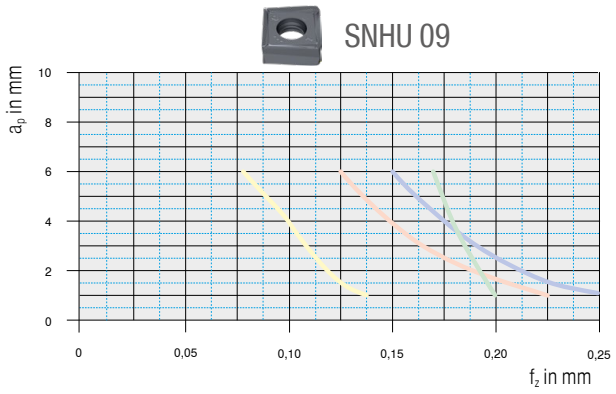
MaxiMill 491-09

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	60–280	0,1–0,2	6	60–280	0,1–0,2	6	60–280	0,1–0,2	6
Stainless steel	60–280	0,05–0,2	6	130–240	0,05–0,25	6	130–240	0,1–0,25	6
Cast iron	110–130	0,05–0,25	6	100–360	0,1–0,25	6	100–360	0,1–0,25	6
Non-ferrous metals	160–1500	0,05–0,25	6	160–1500	0,05–0,25	6	160–1500	0,05–0,25	6
Heat resistant alloys	25–75	0,08–0,15	6	25–75	0,08–0,15	6	25–75	0,08–0,15	6
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Non-ferrous metals	450 N/mm²	4.3	3.2315	AlMgSi1



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**SNHU09T308SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**SNHU09T308SR-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**SNHU09T308SR-R50**	**CTCK215** (DCX3215)	250	Dry
Non-ferrous metals	3.2315	**SNHU09T308FR-F10**	**CTWN215** (CWK4615)	500	Emulsion

From v_c > 400 m/min, the tool must be balanced!

MaxiMill 491-12 system

Cutting data appoximate values

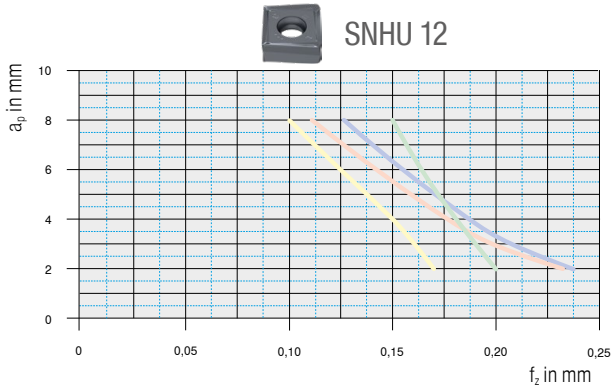
MaxiMill 491-12

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	60–280	0,1–0,2	8	60–280	0,1–0,2	8	60–280	0,1–0,2	8
Stainless steel	60–280	0,05–0,2	8	130–240	0,05–0,25	8	130–240	0,1–0,25	8
Cast iron	110–130	0,05–0,25	8	100–360	0,1–0,25	8	100–360	0,1–0,25	8
Non-ferrous metals	160–1500	0,05–0,25	8	160–1500	0,05–0,25	8	160–1500	0,05–0,25	8
Heat resistant alloys	25–75	0,08–0,15	8	25–75	0,08–0,15	8	25–75	0,08–0,15	8
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Non-ferrous metals	450 N/mm²	4.3	3.2315	AlMgSi1



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**SNHU120408SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**SNHU120408SR-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**SNHU120408SR-R50**	**CTCK215** (DCX3215)	250	Dry
Non-ferrous metals	3.2315	**SNHU120408FR-F10**	**CTWN215** (CWK4615)	500	Emulsion

From v_c > 400 m/min, the tool must be balanced!

15

System MaxiMill 211-07

Cutting data recommendations/Technology data

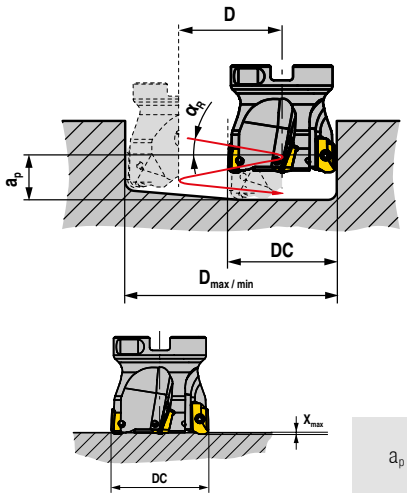
for standard inserts

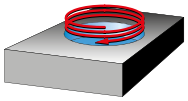
	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	50–340	0,1–0,2	6	50–340	0,1–0,2	6	50–340	0,1–0,2	6
Stainless steel	60–280	0,05–0,2	6	60–280	0,05–0,3	6	60–280	0,1–0,3	6
Cast iron				100–360	0,1–0,3	6	100–360	0,1–0,3	6
Non-ferrous metals	160–1500	0,1–0,2	6	160–1500	0,1–0,2	6	160–1500	0,1–0,2	6
Heat resistant alloys	25–75	0,05–0,15	6	25–75	0,05–0,15	6	25–75	0,05–0,15	6
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

Helical plunge milling



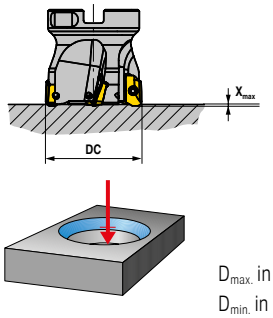


DC mm	D_{max} / RE 0,4 mm	D_{min} mm	$\alpha_{R\,max}$ °
10	19	13	5,5
12	23	17	6,0
16	31	25	3,0
20	39	33	2,0
25	49	43	1,5
32	63	57	1,2
40	79	73	0,8
50	99	93	0,7

DC mm	D mm	$\alpha_{R\,max\,360°}$ °
10	13	5,5
12	17	6,0
16	25	3,0
20	33	2,0
25	43	1,5
32	57	1,2
40	73	0,8
50	93	0,7

a_p in mm = $D * \pi * \tan \alpha_R$

Axial plunging

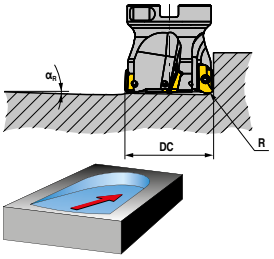


DC mm	X_{max} mm
10	0,8
12	0,8
16	0,8
20	0,8
25	0,8
32	0,8
40	0,8
50	0,8

$D_{max.}$ in mm = largest diameter for flat bottom hole

$D_{min.}$ in mm = smallest hole diameter for flat bottom surface

Angled ramping



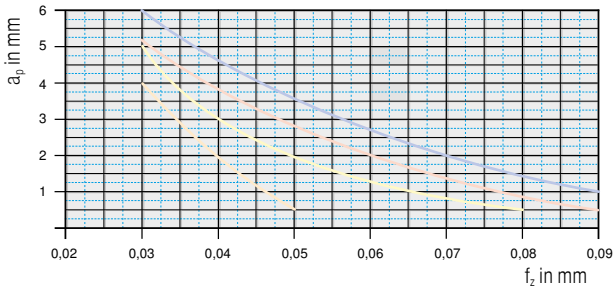
DC mm	α °
10	11,0
12	7,9
16	4,3
20	3,0
25	2,5
32	1,6
40	1,2
50	1,0

$D = D_{max} - DC / D_{min} - DC$

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718

XDKT 07



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**XDKT070308SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**XDKT070308SR-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301		**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**XDKT070308ER-F40**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill 211-11

Cutting data recommendations/Technology data

for standard inserts

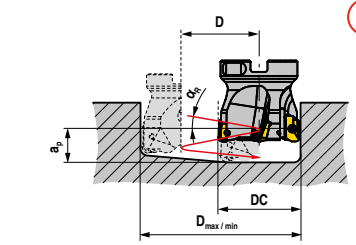
	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	50–340	0,1–0,2	10	50–340	0,1–0,2	10	50–340	0,1–0,2	10
Stainless steel	60–280	0,05–0,2	10	60–280	0,05–0,25	10	60–280	0,1–0,25	10
Cast iron				100–360	0,1–0,25	10	100–360	0,1–0,25	10
Non-ferrous metals	160–1500	0,1–0,2	10	160–1500	0,1–0,2	10	160–1500	0,1–0,2	10
Heat resistant alloys	25–75	0,05–0,15	10	25–75	0,05–0,15	10	25–75	0,05–0,15	10
hardened materials				40–60	0,05–0,2	10			

for shell end mill

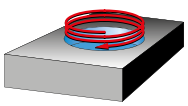
	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	100–300	0,05–0,20	≤ APMX						
Stainless steel	80–200	0,05–0,20	≤ APMX						
Cast iron	110–300	0,05–0,20	≤ APMX						
Non-ferrous metals	300–2000	0,10–0,25	≤ APMX						
Heat resistant alloys	40–80	0,05–0,15	≤ APMX						
hardened materials	30–50	0,05–0,10	≤ APMX						

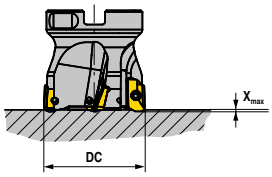
Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

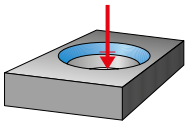


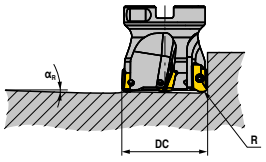
1 Helical plunge milling



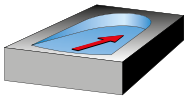


2 Axial plunging





3 Angled ramping



	maximum rpm based on overhang length. n_{max} in min^{-1}				
DC mm	l_a = 1–2 x Ø mm	l_a = 2,5 x Ø mm	l_a = 3 x Ø mm	l_a = 4 x Ø mm	l_a = 5 x Ø mm
12	55000	51500	47000	42000	37000
16	42000	38500	34100	28900	24200
20	36900	33000	28500	23900	19500
25	33200	29000	24400	19900	15400
32	30200	26000	20900	16600	11900
40	27700	23000	18000	13500	9000
50	25400	20400	15400	10800	6100
63	23300	18300	12900	8300	3700
80	21300	16100	10600	5800	
100	19600	14100	8400		

	1	2	3
DC mm	Helical plunge milling RE = 0,8 mm	Axial plunging X_{max}	Angled ramping α_R
12	α_R 16° D_{max} 21 mm D_{min} 14 mm	1,3 mm	18°
16	α_R 9,5° D_{max} 29 mm D_{min} 21 mm	1,5 mm	10,8°
20	α_R 7° D_{max} 37 mm D_{min} 30 mm	2,0 mm	9,8°
25	α_R 4,5° D_{max} 47 mm D_{min} 40 mm	2,0 mm	7,5°
32	α_R 3,2° D_{max} 61 mm D_{min} 53 mm	1,0 mm	4,8°
40	α_R 2,2° D_{max} 77 mm D_{min} 72 mm	1,6 mm	2,9°
50	α_R 1,7° D_{max} 98 mm D_{min} 93 mm	1,6 mm	2,2°
63	α_R 1,5° D_{max} 123 mm D_{min} 116 mm	1,6 mm	1,8°
80	α_R 1,0° D_{max} 157 mm D_{min} 153 mm	1,6 mm	1,4°
100	α_R 0,8° D_{max} 107 mm D_{min} 101 mm	1,6 mm	1,1°

$D_{max.}$ in mm = largest diameter for flat bottom hole
$D_{min.}$ in mm = smallest diameter for flat bottom hole

a_p in mm = D x π x tan (α_R) = Pitch

l_a in mm = Overhang length

System MaxiMill 211-15

Cutting data recommendations/Technology data

for standard inserts

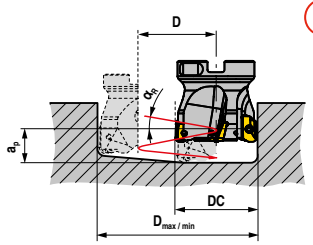
	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	50–340	0,1–0,2	14	50–340	0,1–0,2	14	50–340	0,1–0,2	14
Stainless steel	60–280	0,05–0,2	14	60–280	0,05–0,25	14	60–280	0,1–0,25	14
Cast iron				100–360	0,1–0,25	14	100–360	0,1–0,25	14
Non-ferrous metals	160–1500	0,1–0,2	14	160–1500	0,1–0,2	14	160–1500	0,1–0,2	14
Heat resistant alloys	25–75	0,05–0,15	14	25–75	0,05–0,15	14	25–75	0,05–0,15	14
hardened materials				40–60	0,05–0,2	14			

for shell end mill

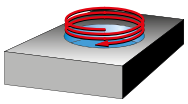
	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	120–300	0,08–0,35	≤ APMX						
Stainless steel	150–200	0,08–0,35	≤ APMX						
Cast iron	130–300	0,08–0,35	≤ APMX						
Non-ferrous metals	400–2500	0,12–0,40	≤ APMX						
Heat resistant alloys	25–80	0,08–0,20	≤ APMX						
hardened materials									

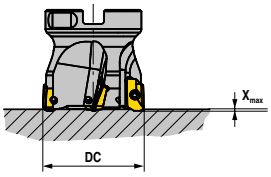
Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

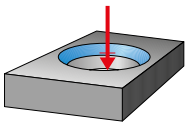


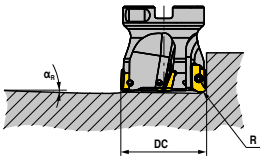
① Helical plunge milling



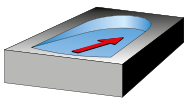


② Axial plunging





③ Angled ramping



DC mm	① Helical plunge milling	RE = 0,8 mm	② Axial plunging X_{max}	③ Angled ramping α_R
25	α_R	7,5°	2,7 mm	9,5°
	D_{max}	48 mm		
	D_{min}	37 mm		
32	α_R	5°	2,5 mm	6,8°
	D_{max}	62 mm		
	D_{min}	47 mm		
40	α_R	3,2°	2,5 mm	5,1°
	D_{max}	78 mm		
	D_{min}	63 mm		
50	α_R	2,5°	2,5 mm	2,5°
	D_{max}	98 mm		
	D_{min}	86 mm		
63	α_R	1,5°	2,5 mm	2,5°
	D_{max}	124 mm		
	D_{min}	111 mm		
80	α_R	1,3°	2,5 mm	2,0°
	D_{max}	158 mm		
	D_{min}	147 mm		
100	α_R	1,1°	2,5 mm	1,5°
	D_{max}	198 mm		
	D_{min}	190 mm		
125	α_R	0,9°	2,5 mm	0,9°
	D_{max}	248 mm		
	D_{min}	240 mm		
160	α_R	0,6°	2,5 mm	0,7°
	D_{max}	318 mm		
	D_{min}	310 mm		

$D_{max.}$ in mm = largest diameter for flat bottom hole
$D_{min.}$ in mm = smallest diameter for flat bottom hole

a_p in mm = D x π x tan (α_R) = Pitch

l_a in mm = Overhang length

maximum rpm based on overhang length.
n_{max} in min^{-1}

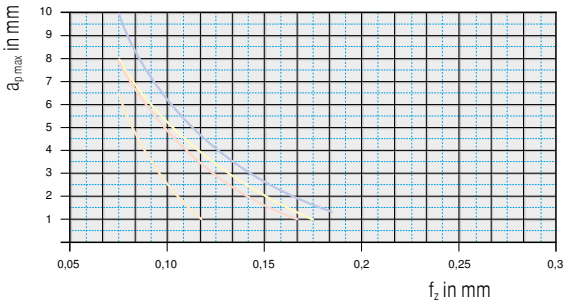
DC mm	l_a = 2 x Ø mm	l_a = 3 x Ø mm	l_a = 5 x Ø mm
25	26560	19520	13320
32	24160	16720	9520
40	22160	14400	7200
50	20320	12320	4880
63	18640	10320	2960
80	17040	8480	
100	15680	6720	
125	14320		
160	13200		

System MaxiMill 211-11

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718

XDKT 11



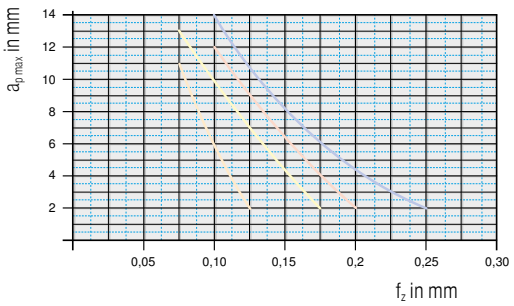
Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**XDKT11T308SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**XDKT11T308SR-F50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**XDKT11T308SR-R50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**XDKT11T308ER-F50**	**CTC5240** (HCF5240)	35	Emulsion

System MaxiMill 211-15

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718

XDKT 15



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**XDKT150508SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571		**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**XDKT150508SR-R50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**XDKT150508ER-F40**	**CTC5240** (HCF5240)	35	Emulsion

15

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill 211-20

Cutting data recommendations/Technology data

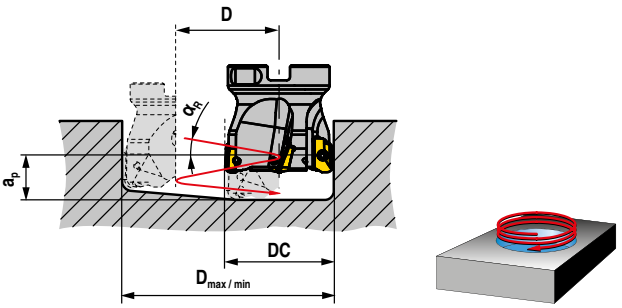
for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel	130–280	0,08–0,2	19	130–280	0,08–0,3	19	180–280	0,1–0,25	19
Cast iron									
Non-ferrous metals									
Heat resistant alloys	25–80	0,08–0,2	19	25–80	0,08–0,3	19	25–80	0,1–0,15	19
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

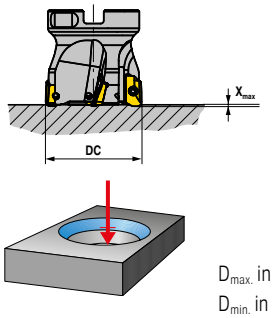
Helical plunge milling



DC mm	D_{max} / RE 0,4 mm	D_{min} mm	$\alpha_{R\,max}$ °
63	124	107	2,2
80	158	143	1,7
100	198	183	1,3

a_p in mm = $D * \pi * \tan \alpha_R$

Axial plunging

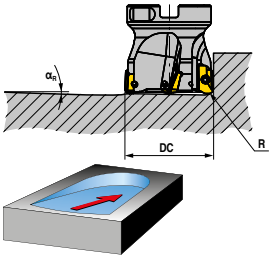


DC mm	X_{max} mm
63	2,0
80	2,0
100	2,0

$D_{max.}$ in mm = largest diameter for flat bottom hole

$D_{min.}$ in mm = smallest hole diameter for flat bottom surface

Angled ramping



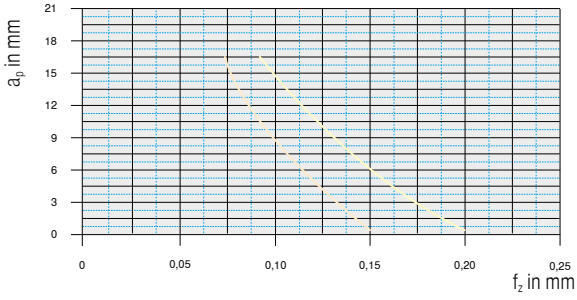
DC mm	α °
63	2,2
80	1,7
100	1,3

$D = D_{max} - DC / D_{min} - DC$

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718

XDKT 20



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312				
Stainless steel	1.4571	**XDKT200708ER-F40**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301				
Heat resistant alloys	2.4856	**XDKT200708ER-F40**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill 490-09

Cutting data recommendations/Technology data

for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	50–350	0,05–0,25	7,3	50–350	0,05–0,3	7,3	50–270	0,1–0,3	7,3
Stainless steel	130–280	0,1–0,2	7,3	60–280	0,1–0,2	7,3	60–280	0,1–0,2	7,3
Cast iron	100–360	0,05–0,25	7,3	100–360	0,05–0,3	7,3	100–360	0,1–0,3	7,3
Non-ferrous metals	160–1500	0,08–0,35	7,3	160–1500	0,08–0,35	7,3	160–1500	0,08–0,35	7,3
Heat resistant alloys	25–75	0,1–0,2	7,3	25–75	0,1–0,2	7,3	25–75	0,1–0,2	7,3
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

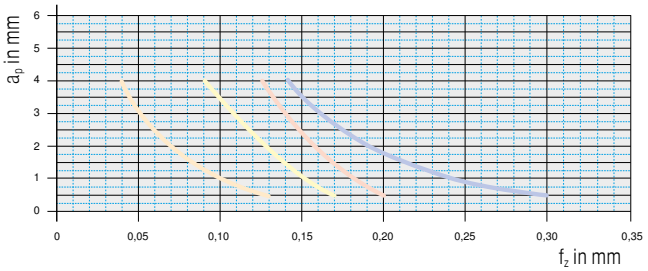
Machining strategy

System MaxiMill 490-09 is not suitable for plunging!

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718

SDNT 09

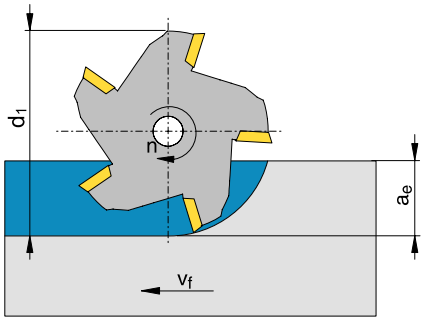


Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**SDNT09T308SR-29**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**SDNT09T308SR-33**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**SDNT09T308SR-31**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**SDNT09T308ER-M31**	**CTC5240** (HCF5240)	35	Emulsion

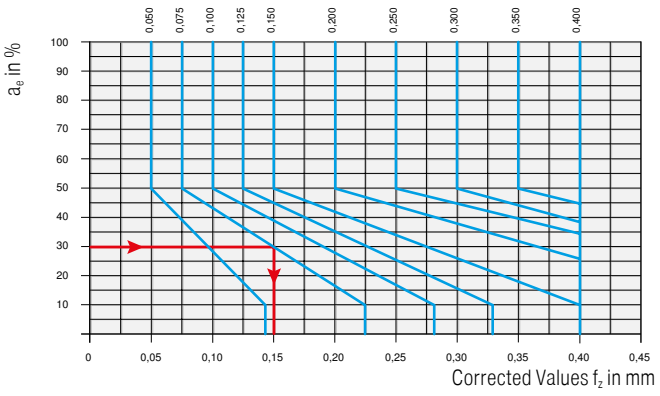
Correction of the tooth load f_z

for System 211-07/-11/-15/-20 and 490-09/-12

These values apply to an engagement width (a_e) below 50 %!



Start values f_z in mm from starting parameter diagram



Example:
Start value (f_z) = 0.075 mm
a_e = 30 %
corrected value (f_z) = 0.15 mm

System MaxiMill 490-12

Cutting data appoximate values

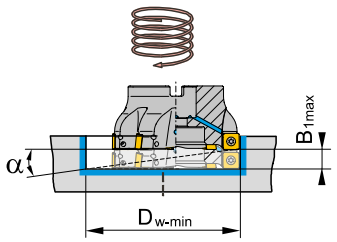
for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	50–350	0,05–0,25	10,7	50–350	0,05–0,3	10,7	50–270	0,1–0,3	10,7
Stainless steel	130–280	0,1–0,2	10,7	60–280	0,1–0,2	10,7	60–280	0,1–0,2	10,7
Cast iron	100–360	0,05–0,25	10,7	100–360	0,05–0,3	10,7	100–360	0,1–0,3	10,7
Non-ferrous metals	160–1500	0,08–0,35	10,7	160–1500	0,08–0,35	10,7	160–1500	0,08–0,35	10,7
Heat resistant alloys	25–75	0,1–0,2	10,7	25–75	0,1–0,2	10,7	25–75	0,1–0,2	10,7
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

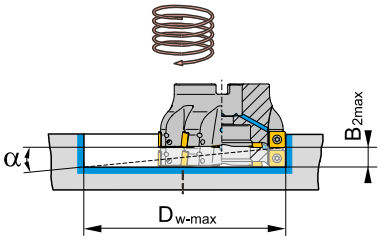
Machining strategy

Helical plunge milling (without start hole)



$$B = (D_W - DC) \times \pi \times \tan \alpha$$

D_w = Diameter of bore to be produced
DC = Nominal diameter of milling cutter
B = Depth of cut calculated for 360° helical movement

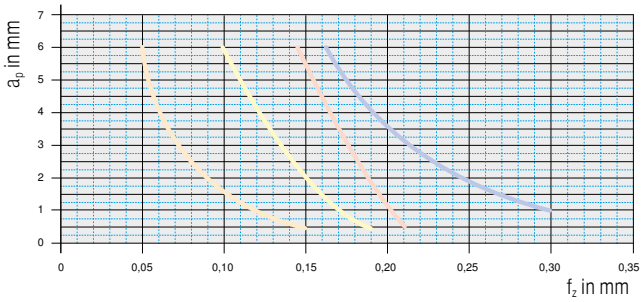


DC mm	$D_{w\text{-}min}$ mm	$B_{1\,max}$ mm	$D_{w\text{-}max}$ mm	$B_{2\,max}$ mm	α °
50	77	2,5	98	4,8	2,0
63	103	1,8	124	3,0	1,0
80	137	2,1	158	3,0	0,8
100	177	2,1	198	2,9	0,6
125	227	1,8	248	2,4	0,4

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718

SDMT 12



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**SDMT1205ZZSN-29**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**SDMT120512SR-33**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**SDMT1205ZZSN-31**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**SDMT120508ER-M31**	**CTC5240** (HCF5240)	35	Emulsion

HSC/HPC machining

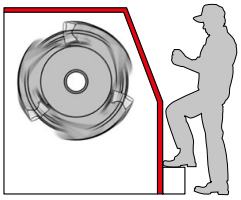
Safety advice

Suitability of the tool for HSC machining

HSC tools from CERATIZIT have been specially developed for this machining strategy and guarantee maximum operational reliability.

Observation of safety precautions of the machine manufacturer

Make sure that all safety precautions of the machine-manufacturer are observed (e.g.: closed machine guards).

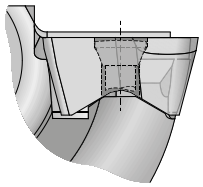


Suitability of the adapters for HSC machining

According to the milling situation, choose the optimum tool/clamping device combination.
For high speed milling applications it is necessary to dynamically balance tool and tool adapter together (see ISO 1940 directives).

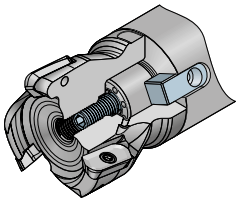
Mounting the indexable insert with centrifugal force protection

Insert clamping: EURO-patent EP 1083017A1
Make sure that the insert pocket is cleaned and the threading bore for the clamping screw is in good condition.
Check the axial and radial contact points of the insert in the pocket.
The clamping screws for positive insert clamping must be tightened with a torque of (XDHT11 = 1,8 Nm; XDH.19 = 6,0 Nm).



Optimum mounting of HSC milling cutters (DC = Ø 40–63) to milling arbors using power screw

The power screw guarantees a stable connection of tool and milling adapter and is easy to use.



Power Screw

Maximum admissible number of revolutions

Please note the maximum number of revolutions stated on the tool. This number is exclusively valid for the specific tool and must be adapted according to the selected tool adapter, total overhang length and the respective machining situation.

Optimum application range of the tool (a_e, a_p, f_z, n)

In order to guarantee productive milling, please observe the recommendations regarding the cutting parameters.

Failure to comply with these safety regulations automatically excludes CERATIZIT from any liability

System MaxiMill HSC-11

Cutting data appoximate values

for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel									
Cast iron	110–130	0,05–0,35	10						
Non-ferrous metals	160–3000	0,05–0,35	10	160–3000	0,05–0,35	10	160–3000	0,05–0,35	10
Heat resistant alloys									
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

	Workpiece material	Treatment / alloy		VDI 3323 Group	Hardness HB	H216T (CWK26) v_c in m/min	H216T (CWK26) v_c in m/min
N	Forged aluminium alloy	non hardenable		21	60		200–3000
		hardenable		22	100		200–2000
	Cast aluminum alloy	non hardenable	< 12% Si	23	80		200–2000
		hardenable	< 12% Si	24	90		200–1800
		non hardenable	> 12% Si	25	130		200–1000
	Copper and Copper alloys (Bronze, Brass)		Free-cutting steel alloy (1% Pb)	26			200–600
			brass, red bronze	27	90	250–1000	250–1000
			bronze	28	100		150–400
			lead-free copper and electrolytic copper	29	100		300–800
	Non metal materials		Duroplastics	29		80–1000	80–1000
			Fibre-reinforced plastics	29		70–500	70–500
			hard rubber	30		80–300	80–300

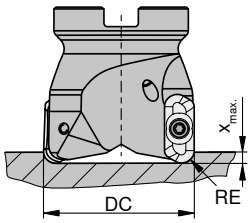
= full lubricant = minimum quantity lubrication = dry machining

System MaxiMill HSC-11

Technical data

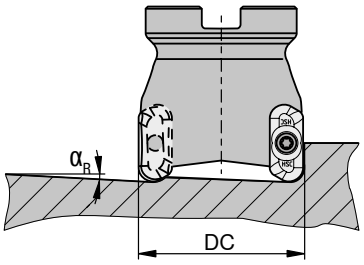
Machining strategy

Plunging



DC mm	11 RE 0,2-4,0 $x_{max.}$ mm
16	1,70
18	2,11
19	2,24
20	2,39
22	2,70
25	2,55
32	2,40
40	2,28
50	2,26
63	2,10
80	1,75
100	1,79

Linear ramping



DC mm	α_R °
16	18,8
18	16,3
19	15,3
20	14,8
22	13,8
25	10,3
32	6,8
40	4,8
50	3,5
63	2,5
80	1,8
100	1,3

Milling strategy for roughing and finishing

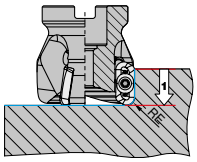
With maximum chip volume

Indexable Insert	RE mm	a_p mm	$a_{p\,max.}$ mm
XDHT 11T302FR-ALP	0,2	10	9,8
XDHT 11T304FR-ALP	0,4	10	9,6
XDHT 11T308FR-ALP	0,8	10	9,2
XDHT 11T312FR-ALP	1,2	10	8,8
XDHT 11T316FR-ALP	1,6	10	8,4
XDHT 11T320FR-ALP	2,0	10	8,0
XDHT 11T325FR-ALP	2,5	10	7,5
XDHT 11T332FR-ALP	3,2	10	6,8
XDHT 11T340FR-ALP	4,0	10	6,0
XDHT 11T350FR-ALP	5,0	10	5,0

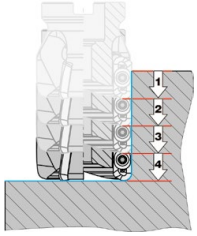
With maximum side wall quality

Indexable Insert	RE mm	$a_{p\,max.}$ mm
XDHT 11T302FR-ALP	0,2	7,8
XDHT 11T304FR-ALP	0,4	7,6
XDHT 11T308FR-ALP	0,8	7,2
XDHT 11T312FR-ALP	1,2	6,5
XDHT 11T316FR-ALP	1,6	6,8
XDHT 11T320FR-ALP	2,0	6,4
XDHT 11T325FR-ALP	2,5	5,5
XDHT 11T332FR-ALP	3,2	4,8
XDHT 11T340FR-ALP	4,0	4,0
XDHT 11T350FR-ALP	5,0	3,0

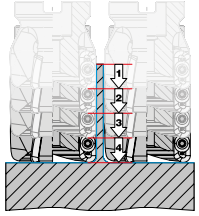
Shoulder milling



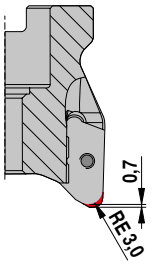
Pocket milling

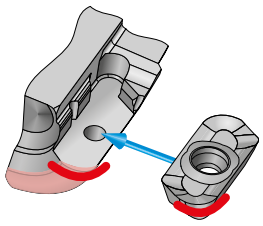


Pocket milling with thin walled components



Modification to front profile





For inserts with a corner radius larger than 3.2 mm the basic body of the tool must be modified according to the drawing above.

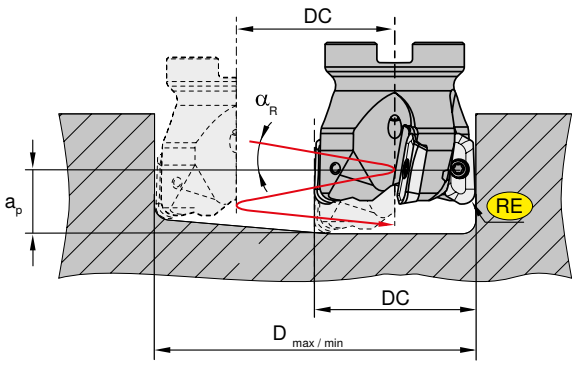
15

System MaxiMill HSC-11

Technical data

Machining strategy

Circular ramping



RE = Insert radius
α_R in mm = Maximum ramping angle (related to centre of tool)

a_p in mm = pitch → $D \times \pi \times \tan(\alpha_R)$

D in mm = pitch → D_{max} – DC and/or D_{min} – DC

For flat bottom hole

$D_{max.}$ in mm = largest drilling diameter
$D_{min.}$ in mm = smallest drilling diameter
$DN_{max.}$ in mm = Maximum hole diameter for non flat bottom

DC in mm		XDHT-11 (HSC-11)								
(DN_{max})		RE = 0,2	RE = 0,4	RE = 0,8	RE = 1,2	RE = 1,6	RE = 2,0	RE = 2,5	RE = 3,2	RE = 4,0
16	α_R	9,7°	10,0°	9,9°	9,4°	8,9°	8,4°	7,9°	7,0°	6,1°
	D_{max}	30	30	29	28	27	27	26	24	23
(31)	D_{min}	18	18	18	18	18	18	18	18	18
18	α_R	9,4°	9,1°	8,7°	8,3°	7,9°	7,5°	6,9°	6,2°	5,3°
	D_{max}	34	34	33	32	31	31	30	28	27
(35)	D_{min}	22	22	22	22	22	22	22	22	22
19	α_R	8,8°	8,6°	8,3°	7,9°	7,5°	7,5°	6,5°	5,9°	5,1°
	D_{max}	36	36	35	34	33	33	32	30	29
(37)	D_{min}	24	24	24	24	24	24	24	24	24
20	α_R	8,4°	8,2°	7,8°	7,4°	7,7°	6,7°	6,2°	5,5°	4,8°
	D_{max}	38	38	37	36	35	35	34	32	31
(39)	D_{min}	26	26	26	26	26	26	26	26	26
22	α_R	7,6°	7,4°	7,8°	6,7°	6,4°	6,5°	5,6°	5,2°	4,3°
	D_{max}	42	42	41	40	39	39	38	36	35
(43)	D_{min}	30	30	30	30	30	30	30	30	30
25	α_R	6,7°	6,5°	6,2°	5,9°	5,6°	5,3°	4,9°	4,4°	3,8°
	D_{max}	48	48	47	46	45	45	44	42	41
(49)	D_{min}	36	36	36	36	36	36	36	36	36
32	α_R	4,7°	4,7°	4,8°	4,6°	4,3°	4,1°	3,8°	3,4°	2,9°
	D_{max}	62	62	61	60	59	59	58	56	55
(63)	D_{min}	50	50	50	50	50	50	50	50	50
40	α_R	3,3°	3,3°	3,4°	3,4°	3,5°	3,3°	3,0°	2,7°	2,3°
	D_{max}	78	78	77	76	75	75	74	72	71
(79)	D_{min}	66	66	66	66	66	66	66	66	66
50	α_R	2,4°	2,5°	2,5°	2,5°	2,6°	2,6°	2,4°	2,2°	1,9°
	D_{max}	98	98	97	96	95	95	94	92	91
(99)	D_{min}	86	86	86	86	86	86	86	86	86
63	α_R	1,7°	1,7°	1,7°	1,8°	1,8°	1,8°	1,8°	1,7°	1,5°
	D_{max}	124	124	123	122	121	121	120	118	117
(125)	D_{min}	112	112	112	112	112	112	112	112	112
80	α_R	1,1°	1,1°	1,1°	1,1°	1,1°	1,1°	1,1°	1,2°	1,2°
	D_{max}	158	158	157	156	155	155	154	152	151
(159)	D_{min}	146	146	146	146	146	146	146	146	146
100	α_R	0,8°	0,8°	0,9°	0,9°	0,9°	0,9°	0,9°	0,9°	0,9°
	D_{max}	198	198	197	196	195	195	194	192	191
(199)	D_{min}	186	186	186	186	186	186	186	186	186

System MaxiMill HSC/HPC-19

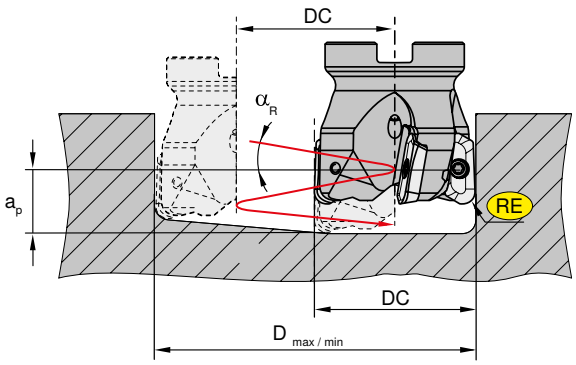
Cutting data recommendations/Technology data

for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel									
Cast iron	110–130	0,05–0,35	18						
Non-ferrous metals	160–3000	0,05–0,35	18	160–3000	0,05–0,35	18	160–3000	0,05–0,35	18
Heat resistant alloys									
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

Circular ramping



RE = Insert radius

α_R in mm = Maximum ramping angle (related to centre of tool)

a_p in mm = pitch → D x π x tan (α_R)

D in mm = pitch → D_{max} – DC and/or D_{min} – DC

For flat bottom hole

$D_{max.}$ in mm = largest drilling diameter

$D_{min.}$ in mm = smallest drilling diameter

$DN_{max.}$ in mm = Maximum hole diameter for non flat bottom

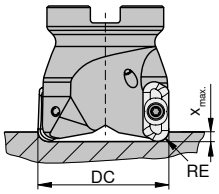
	DC mm	DN_{max} mm	α_R °	D_{max} mm	D_{min} mm
RE = 0,2 mm	**25**	49	7°02‘	48	32
	32	63	4°34‘	62	46
	40	79	3°47‘	78	62
	50	99	3°01‘	97	81
	63	125	2°17‘	124	107
	80	159		158	141
	100	199		198	181
RE = 0,4 mm	**25**	49	7°08‘	48	32
	32	63	4°37‘	62	46
	40	79	3°49‘	78	62
	50	99	3°02‘	98	81
	63	125	2°18‘	124	107
	80	159		158	141
	100	199		198	181
RE = 0,8 mm	**25**	49	7°21‘	47	32
	32	63	4°44‘	61	46
	40	79	3°53‘	77	62
	50	99	3°05‘	97	81
	63	125	2°20‘	123	107
	80	159		157	141
	100	199		197	181
RE = 2,0 mm	**25**	49	8°40‘	45	32
	32	63	5°04‘	59	46
	40	79	4°06‘	75	62
	50	99	3°13‘	95	81
	63	125	2°25‘	121	107
	80	159		155	141
	100	199		195	181
RE = 2,5 mm	**25**	49	8°24‘	44	32
	32	63	5°13‘	58	46
	40	79	4°12‘	74	62
	50	99	3°17‘	94	81
	63	125	2°27‘	120	107
	80	159		154	141
	100	199		194	181
RE = 3,2 mm	**25**	49	8°54‘	42	32
	32	63	5°26‘	56	46
	40	79	4°20‘	72	62
	50	99	3°21‘	92	81
	63	125	2°30‘	118	107
	80	159		152	141
	100	199		192	181
RE = 4,0 mm	**25**	49	9°32‘	41	32
	32	63	5°42‘	55	46
	40	79	4°30‘	71	62
	50	99	3°28‘	91	81
	63	125	2°33‘	117	107
	80	159		151	141
	100	199		191	181
RE = 5,0 mm	**25**	49	6°49‘	39	32
	32	63	3°59‘	53	46
	40	79	3°20‘	69	62
	50	99	2°13‘	89	81
	63	125	1°52‘	115	107
	80	159		149	141
	100	199		189	181

System MaxiMill HSC/HPC-19

Technical data

Machining strategy

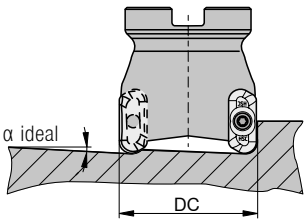
Plunging



HSC 19	DC mm	19 RE 0,2–4,0 $x_{max.}$ mm	19 RE 5,0 $x_{max.}$ mm
CHSC 19 / GHSC 19 / MHSC 19	25	5,0	4,0
CHSC 19 / GHSC 19 / MHSC 19	32–40	4,0	3,0
AHSC 19	40–100	4,0	3,0

HPC 19	DC mm	19 RE 0,2–4,0 $x_{max.}$ mm	19 RE 5,0 $x_{max.}$ mm
CHPC 19 / MHPC 19	22–25	5,0	4,0
CHPC 19 / MHPC 19	32–50	6,0	5,0
AHPC 19	40–63	6,0	5,0

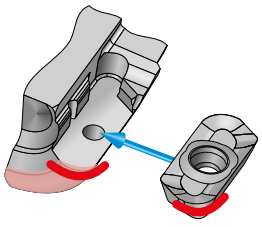
Linear ramping

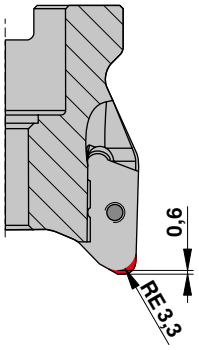


DC mm	α ideal HSC 19	α ideal HPC 19
25	11°	11°
32	7°	7°
40	5°	5°
50	4°	4°
63	3°	3°
80	2°	
100	2°	

Modification to basic body

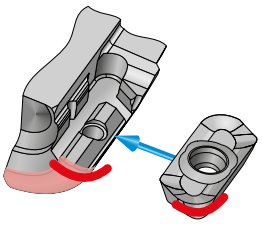
HSC 19





Modification to front profile

HPC 19



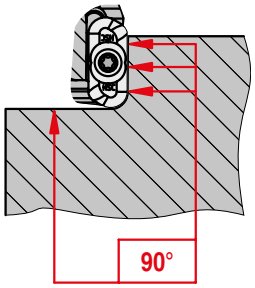
For inserts with a corner radius larger than 4.0 mm the basic body of the tool must be modified according to the drawing above.

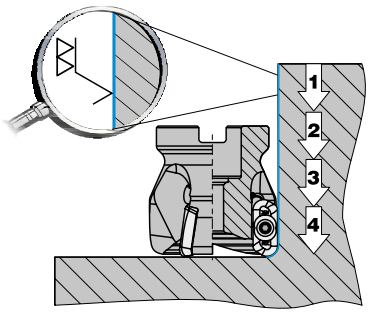
System MaxiMill HSC/HPC-19

Technical data

Machining strategy

▽ + ▽▽ Excellent side wall quality after roughing operation.
Additional finishing operations minimized or no longer required.





Milling strategy for roughing and finishing

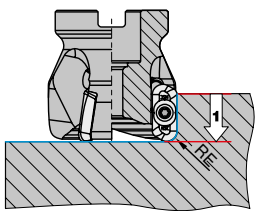
With maximum chip volume

Indexable Insert	RE mm	a_p mm	$a_{p\ max.}$ mm
XDH. 190402FR-ALP	0,2	18,0	17,8
XDH. 190404FR-ALP	0,4	18,0	17,6
XDH. 190408FR-ALP	0,8	18,0	17,2
XDH. 190420FR-ALP	2,0	18,0	16,0
XDH. 190425FR-ALP	2,5	18,0	15,0
XDH. 190432FR-ALP	3,2	18,0	14,8
XDH. 190440FR-ALP	4,0	18,0	14,0
XDH. 190450FR-ALP	5,0	17,0	13,0

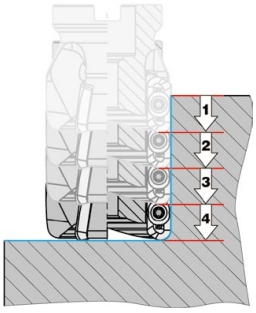
With maximum side wall quality

Shoulder milling	RE mm	$a_{p\ max.}$ mm
XDH. 190402FR-ALP	0,2	11,8
XDH. 190404FR-ALP	0,4	11,6
XDH. 190408FR-ALP	0,8	11,2
XDH. 190420FR-ALP	2,0	10,0
XDH. 190425FR-ALP	2,5	9,5
XDH. 190432FR-ALP	3,2	8,8
XDH. 190440FR-ALP	4,0	8,0
XDH. 190450FR-ALP	5,0	7,0

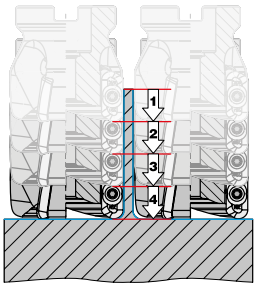
Shoulder milling



Pocket milling



Pocket milling with thin walled components



This information applies to the inserts type XDHT 19 and XDHX 19.

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System MaxiMill HPC-04/12

Cutting data recommendations/Technology data

MaxiMill HPC-04

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel									
Cast iron	450–800	0,05–0,2	4						
Non-ferrous metals	350–3500	0,05–0,2	4	350–3500	0,05–0,2	4			
Heat resistant alloys									
hardened materials									

MaxiMill HPC-12

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel									
Stainless steel									
Cast iron	450–800	0,05–0,2	2						
Non-ferrous metals	350–3500	0,1–0,35	11	350–3500	0,1–0,35	11	350–3500	0,1–0,4	11
Heat resistant alloys									
hardened materials									

Machining strategy

What do you have to take into account?

- Machine stability.
- Stable work piece clamping and tool adapter.
- Use of coolant generally not necessary, however, this will facilitate the removal of the chips - also improved surface quality.
- Take into account thermal stress and critical temperature of 600 °C! If required for material, work with coolant.
- Avoid vibration.
- Observe balancing quality class.
- Observe chemical reactions of diamond to carbide forming elements (Fe, Ti, Ta, Co, Ni)

Excellent suitability

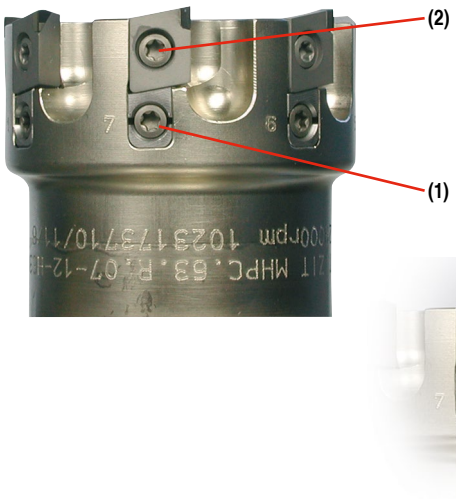
- for components made of light metals and non-ferrous metals, plastic, fibre composite materials, graphite ...
- when the simplest setting method saves cost for tool presetting.
- for high-volume production.
- for high surface quality of the work pieces.
- when long tool life is necessary to reduce tool changes and expensive machine downtime.
- when the tool is already on site (presetting, etc.)

Quality class check

After assembly, clamping of the inserts and adjustment of the axial run-out the balancing quality class of the tools should be checked. When applying shell milling cutters, after assembly with an adapter balancing is necessary.

Setting wiper inserts

As in the setting procedure described above the standard inserts are adjusted to a radial run-out of = 0.02 mm. The inserts with wiper edge are then set to 0.02–0.03 mm above the highest cutting edge.



The adjustment procedure

1 Mount Adjustment wedgesin the tools (as delivered). Tighten adjustment screw (1) without deforming the wedges.

2 Mount the PCD inserts and tighten the clamping screws (2) with 1.0 Nm.

3 Mark „ highest edge“ with the help of pre-setting equipment.

4 Adjust the PCD insert by 0.02 mm turning the clamping screw (1) clockwise.

Pre-loading must be reached. Use the angled TORX screwdrivers

5 Set other cutting edges to this level, maximum deviation of 0.005 mm. Maximum length adjustment = 0.10 mm.

6 Tighten all insert tightening screws (2) to 5,0 Nm.

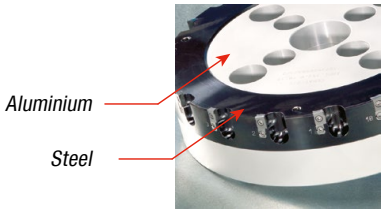
7 Check axial run-out of all inserts: Target = 0.005 mm.

Perfect precision – MaxiMill HPC-12

The adjustable high-performance tool for the finishing of aluminium components

Tool body made of steel

- For highest stability
- Maximum abrasion resistance
- Bimetallic version from diameter 160 mm easier handling and spindle protection with large tools



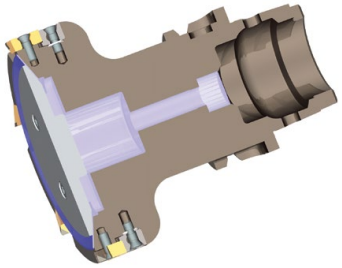
Picture shows bimetallic version

Available as shell milling cutters and monobloc type

- Direct HSK63 connection as monobloc type
- Monobloc tools balanced to G2.5 at n=20,000 min^{-1} (ISO1940)

Particularly for HSC applications with internal coolant supply

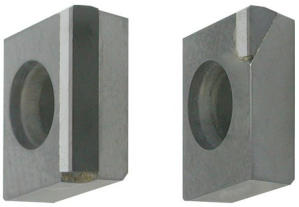
- Improved chip evacuation
- High surface quality
- Optimum application conditions
- Suitability for minimum quantity lubrication



Time is money – the system MaxiMill HPC-12 is simple and quick to adjust!

Highly positive rake angle of +25°

- Low cutting forces
- Increased parallelism of surfaces
- Minimised component deformation



Tangential concept

- Stable location for the PCD segment and maximum process security

Adapted PCD cutting edge

- High impact strength when milling!
- Maximum edge stability
- Reduced built-up edge on the work piece
- The machining of Al-Si alloys with over 12 % silicon is possible without problems

Inserts Selection

- Standard insert
- Insert with corner radius
- Insert with wiper edge

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Cutting data recommendations/Technology data

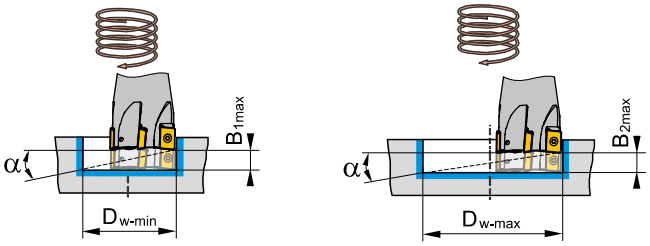
for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	60–280	0,1–0,2	14	60–280	0,1–0,2	14	60–280	0,1–0,2	14
Stainless steel	130–240	0,05–0,2	14	130–240	0,05–0,25	14	130–240	0,1–0,25	14
Cast iron				100–360	0,1–0,25	14			
Non-ferrous metals	160–1500	0,1–0,2	14	160–1500	0,1–0,2	14	160–1500	0,1–0,2	14
Heat resistant alloys									
hardened materials									

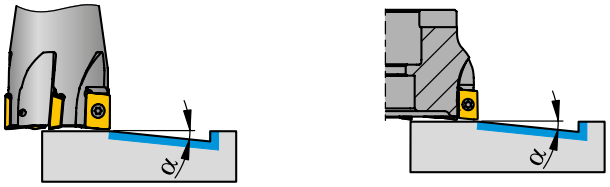
Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

Helical plunge milling (without start hole)



Angled ramping



D_w = Diameter of bore to be produced
DC = Nominal diameter of milling cutter
B = Depth of cut calculated for 360° helical movement

$$B = (D_w - DC) \times \pi \times \tan \alpha$$

C 141

DC mm	$D_{w\text{-}min}$ mm	$B_{1\,max}$ mm	$D_{w\text{-}max}$ mm	$B_{2\,max}$ mm	α °
16	20,0	0,4	30,0	1,5	2,0
20	24,0	0,4	38,0	1,9	2,0
25	34,0	0,9	48,0	2,5	2,0
32	48,0	1,7	62,0	3,2	2,0
40	64,0	1,9	78,0	3,1	1,5

A 241

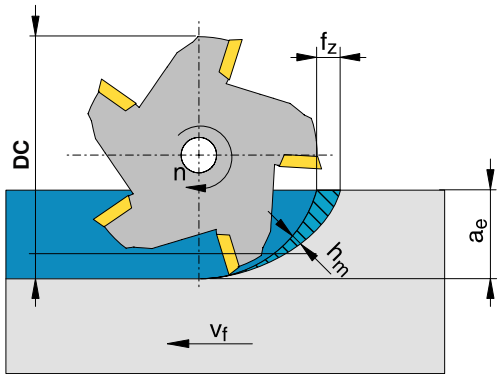
DC mm	$D_{w\text{-}min}$ mm	$B_{1\,max}$ mm	$D_{w\text{-}max}$ mm	$B_{2\,max}$ mm	α °
40	64,0	1,9	78,0	3,1	1,5
50	84,0	1,8	98,0	2,6	1,0
63	110,0	1,2	124,0	1,6	0,5
80	144,0	1,4	158,0	1,7	0,4
100	184,0	1,3	198,0	1,6	0,3
125	234,0	1,2	248,0	1,3	0,2

Average chip thickness [h_m] – the approach

Shoulder milling

1 Select appropriate average chip thickness [h_m] for the steel from the table.

Material	Tensile strength N/mm²	h_m mm
for steel	...–800	0,16
for steel	800–1000	0,14
for steel	1000–1200	0,12
for steel	1200–...	0,10
for stainless steel	...–750	0,15
for stainless steel	750–900	0,13
for stainless steel	900–1150	0,11
for stainless steel	1150–...	0,09 *



2 Select the corrected feed rate value from the table based on the appropriate chip thickness [h_m] and depth of cut [a_e].

h_m mm	Corrected feed value f_z for h_m				
0,16	0,36	0,29	0,25	0,18	0,16
0,14	0,31	0,26	0,22	0,16	0,14
0,12	0,27	0,22	0,19	0,14	0,12
0,10	0,22	0,18	0,16	0,12	0,10
0,15	0,34	0,27	0,24	0,17	0,15
0,13	0,29	0,24	0,21	0,15	0,13
0,11	0,25	0,20	0,17	0,13	0,11
0,09 *	0,20	0,16	0,14	0,10	0,09 *
a_e =	**0,2 x DC**	**0,3 x DC**	**0,4 x DC**	**0,75 x DC**	**1 x DC**

Face milling

Material	Tensile strength N/mm²	h_m mm
for steel	...–800	0,2
for steel	800–1000	0,18
for steel	1000–1200	0,16
for steel	1200–...	0,14
for stainless steel	... –750	0,21
for stainless steel	750–900	0,19
for stainless steel	900–1150	0,17
for stainless steel	1150– ...	0,15

Procedure as shoulder milling.

h_m mm	Corrected feed value f_z for h_m			
0,20	0,40 **	0,40 **	0,33	0,28
0,18	0,40 **	0,40 **	0,29	0,25
0,16	0,40 **	0,36	0,26	0,23
0,14	0,36	0,31	0,23	0,20
0,21	0,40 **	0,40 **	0,34	0,30
0,19	0,40 **	0,40 **	0,31	0,27
0,17	0,40 **	0,38	0,28	0,24
0,15	0,39	0,34	0,24	0,21
a_e =	**0,3 x DC**	**0,4 x DC**	**0,75 x DC**	**1 x DC**

* f_z < 0,08 mm: Danger, as tool is not working and cutting
** f_z > 0,4 mm: Danger of an open space contact

System MaxiMill HFC-06

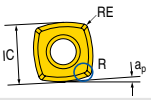
Cutting data recommendations/Technology data

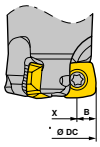
	F			M			R		
Material	v_c in m/min	f_z in mm	a_p in mm	v_c in m/min	f_z in mm	a_p in mm	v_c in m/min	f_z in mm	a_p in mm
Steel				60–280	0,2–1,25	0,8	60–280	0,2–1,25	0,8
Stainless steel				60–270	0,2–1,25	0,8	60–270	0,2–1,25	0,8
Cast iron				130–360	0,2–1,25	0,8	130–360	0,2–1,25	0,8
Non-ferrous metals									
Heat resistant alloys				25–75	0,2–1,25	0,8	25–75	0,2–1,25	0,8
hardened materials									

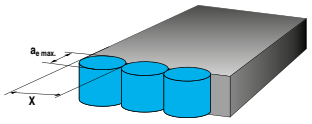
Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

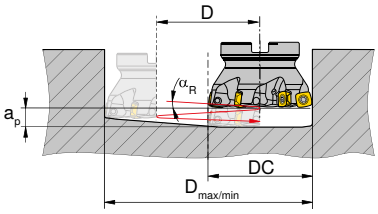
Programmed radius R= 1.2 mm

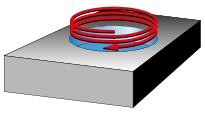


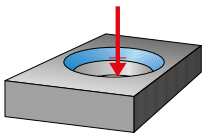


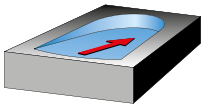


Cutting depth and remaining material			Cutting width for flat surfaces			Cutting depth when plunging				
IC in mm	RE in mm	$a_{p\,max.}$ in mm	DC in mm	X in mm	B in mm	$a_{e\,max.}$ in mm	f_z in mm			X
							initial	min.	max.	
6,35	0,5	0,8	16–32	DC–(2 x B)	4,3	5,3	0,10	0,08	0,15	<0,7 x DC









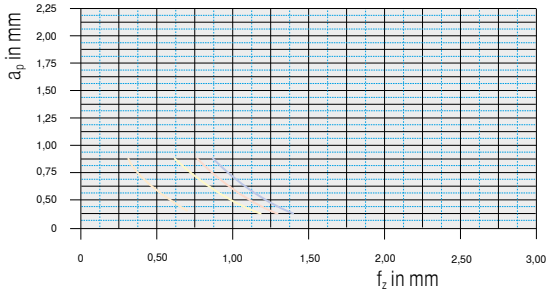
	circular		
	Helical plunging (helical plunging into solid material)		
DC mm	$D_{max.}$ mm	$D_{min.}$ mm	$\alpha_{R\,max.}$ °
16	31	22	4,5°
20	39	30	2,3°
25	49	40	1,3°
32	63	54	0,9°

	axial	Angled
	Plunging	
DC mm	$X_{max.}$ mm	$\alpha_{R\,max.}$ °
16	0,5	5,9°
20		3,2°
25		2°
32		1,3°

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718

XPLX 06



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**XPLX 060305SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**XPLX 060305ER-M40**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**XPLX 060305ER-M50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**XPLX 060305SR-F40**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill HFC-09

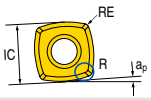
Cutting data recommendations/Technology data

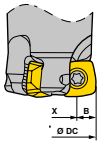
	F			M			R		
Material	v_c in m/min	f_z in mm	a_p in mm	v_c in m/min	f_z in mm	a_p in mm	v_c in m/min	f_z in mm	a_p in mm
Steel				60–280	0,2–2,5	1	60–280	0,2–2,5	1
Stainless steel				60–270	0,2–2,5	1	60–270	0,2–2,5	1
Cast iron				130–360	0,2–2,5	1	130–360	0,2–2,5	1
Non-ferrous metals									
Heat resistant alloys				25–75	0,2–2,5	1	25–75	0,2–2,5	1
hardened materials									

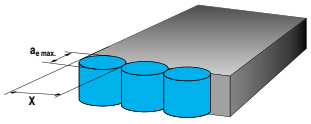
Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

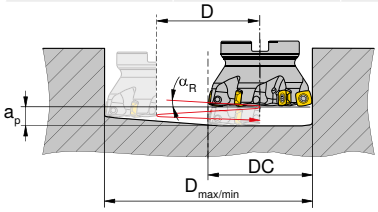
Programmed radius R = 2 mm

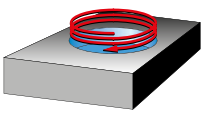


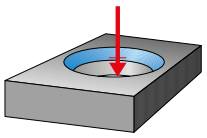


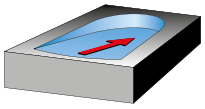


Cutting depth and remaining material			Cutting width for flat surfaces			Cutting depth when plunging				
IC in mm	RE in mm	$a_{p\,max.}$ in mm	DC in mm	X in mm	B in mm	$a_{e\,max.}$ in mm	f_z in mm			X
							initial	min.	max.	
9	0,8	1	25–66	DC–(2 x B)	5,9	7,5	0,10	0,08	0,15	<0,7 x DC







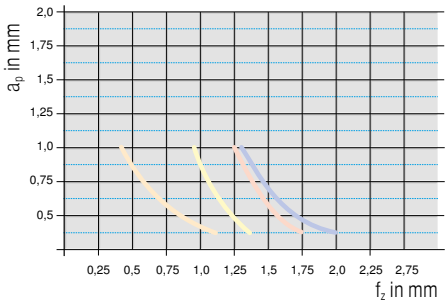


	circular				axial	Angled
	Helical plunging (helical plunging into solid material)				Plunging	
DC mm	$D_{max.}$ mm	$D_{min.}$ mm	$\alpha_{R\,max.}$ °	**DC mm**	$X_{max.}$ mm	$\alpha_{R\,max.}$ °
25	48	35	3,1°	**25**		3,6°
32	62	49	1,7°	**32**		2,0°
35	68	55	1,4°	**35**		1,6°
40	78	65	1,0°	**40**		1,2°
42	82	69	0,9°	**42**	0,75	1,1°
50	98	85	0,8°	**50**		0,9°
52	102	89	0,7°	**52**		0,8°
63	124	111	0,7°	**63**		0,8°
66	130	117	0,6°	**66**		0,7°

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718

XDLX 09



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**XDLX09T308SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**XDLX09T308SR-M50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**XDLX09T308SR-M50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**XDLX09T308ER-F40**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill HFC-12

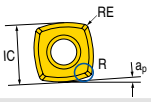
Cutting data recommendations/Technology data

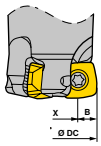
	F			M			R		
Material	v_c in m/min	f_z in mm	a_p in mm	v_c in m/min	f_z in mm	a_p in mm	v_c in m/min	f_z in mm	a_p in mm
Steel				60–280	0,2–3,0	2	60–280	0,2–3,0	2
Stainless steel				60–270	0,2–3,0	2	60–270	0,2–3,0	2
Cast iron				130–360	0,2–3,0	2	130–360	0,2–3,0	2
Non-ferrous metals									
Heat resistant alloys				25–75	0,2–3,0	2	25–75	0,2–3,0	2
hardened materials									

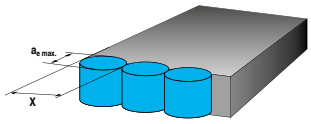
Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

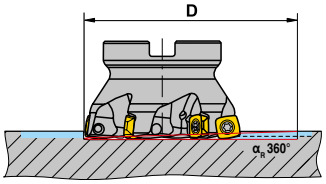
Programmed radius R = 3 mm

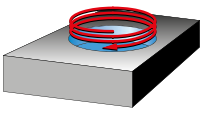


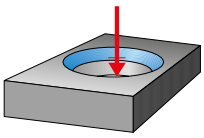


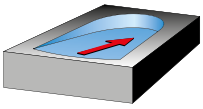


Cutting depth and remaining material			Cutting width for flat surfaces			Cutting depth when plunging				
IC in mm	RE in mm	$a_{p\,max.}$ in mm	DC in mm	X in mm	B in mm	$a_{e\,max.}$ in mm	f_z in mm			X
							initial	min.	max.	
12	1,0	2	32–100	DC–(2 x B)	8,3	10	0,15	0,10	0,20	<0,7 x DC









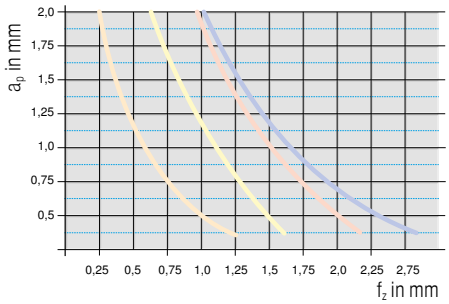
	circular		
	Helical plunging (helical plunging into solid material)		
DC mm	$D_{max.}$ mm	$D_{min.}$ mm	$\alpha_{R\,max.}$ °
32	62	44	6,1°
35	68	50	3,7°
40	78	60	2,5°
42	82	64	2,3°
50	98	80	1,3°
52	102	84	1,3°
63	124	106	0,9°
66	130	112	0,9°
80	158	140	1,1°
100	198	180	0,6°

	axial	Angled
	Plunging	
DC mm	$X_{max.}$ mm	$\alpha_{R\,max.}$ °
32	1,15	7,2°
35		4,4°
40		2,9°
42		2,7°
50 + 52		1,5°
63 + 66		1,1°
80		1,3°
100		0,7°

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718

XOLX 12



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**XOLX120410SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**XOLX120410ER-M50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**XOLX120410ER-M50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**XOLX120410ER-F40**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System MaxiMill HFC-19

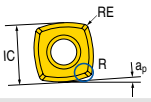
Cutting data recommendations/Technology data

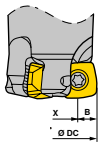
	F			M			R		
Material	v_c in m/min	f_z in mm	a_p in mm	v_c in m/min	f_z in mm	a_p in mm	v_c in m/min	f_z in mm	a_p in mm
Steel				60–280	0,2–3,0	3,3	60–280	0,2–3,0	3,3
Stainless steel				60–270	0,2–3,0	3,3	60–270	0,2–3,0	3,3
Cast iron				130–360	0,2–3,0	3,3	130–360	0,2–3,0	3,3
Non-ferrous metals									
Heat resistant alloys				25–75	0,2–3,0	3,3	25–75	0,2–3,0	3,3
hardened materials									

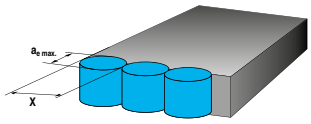
Detailed information on cutting speed for each grade can be found on → page 138+139

Machining strategy

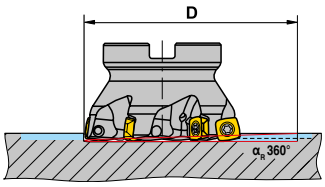
Programmed radius R = 5 mm

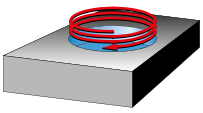


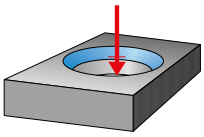


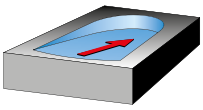


Cutting depth and remaining material			Cutting width for flat surfaces			Cutting depth when plunging				
IC in mm	RE in mm	$a_{p\,max.}$ in mm	DC in mm	X in mm	B in mm	$a_{e\,max.}$ in mm	f_z in mm			X
							initial	min.	max.	
19,14	1,5	3,3	63–160	DC–(2 x B)	13,1	12	0,2	0,10	0,25	<0,65 x DC









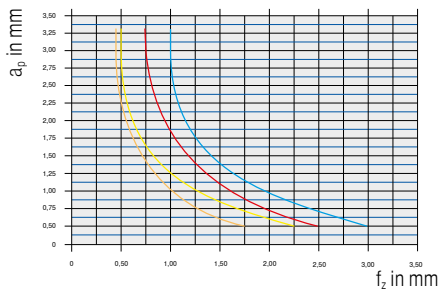
	circular		
	Helical plunging (helical plunging into solid material)		
DC mm	$D_{max.}$ mm	$D_{min.}$ mm	$\alpha_{R\,max.}$ °
63	97	123	2,5
80	131	157	1,4
100	171	197	1,0
125	221	247	0,7
160	291	317	0,5

	axial	Angled	
	Plunging		
DC mm	$X_{max.}$ mm	$\alpha_{R\,max.}$ °	$a_{p\,max}$ mm
63		2,9	
80		1,8	
100	1,7	1,3	3,3
125		1,0	
160		0,7	

Starting Parameter

Example materials				
Steel	1000 N/mm²	1.15	1.2312	40CrMnMoS 8-6
Stainless steel	600 N/mm²	2.6	1.4571	X6CrNiMoTi 1712 2
Cast iron	180 HB	3.1	EN-GJL-250	EN-GJL-250 (GG25)
Heat resistant alloys	1450 N/mm²	5.8	Inconel 625	Inconel 718

XOLX 19



Material		Inserts		v_c in m/min	Coolant
Steel	1.2312	**XOLX190615SR-M50**	**CTPP235** (DPX1235)	200	Dry
Stainless steel	1.4571	**XOLX190615SR-M50**	**CTPM240** (DPX2240)	180	Dry
Cast iron	5.1301	**XOLX190615SR-M50**	**CTCK215** (DCX3215)	250	Dry
Heat resistant alloys	2.4856	**XOLX190615ER-F40**	**CTC5240** (HCF5240)	35	Emulsion

From v_c > 400 m/min, the tool must be balanced!

System DHFC

Cutting data recommendations/Technology data

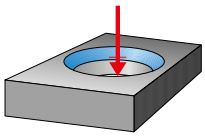
for standard inserts

	F			M			R		
Material	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm	v_c m/min	f_z mm	a_p mm
Steel	130–300	0,25–1,0	0,7	130–300	0,25–1,0	0,7	130–300	0,25–1,0	0,7
Stainless steel				80–210	0,25–1,0	0,6			
Cast iron				120–250	0,2–1,1	0,7	120–270	0,2–1,2	0,75
Non-ferrous metals									
Heat resistant alloys				30–90	0,15–0,75	0,6			
hardened materials									

Detailed information on cutting speed for each grade can be found on → page 138+139

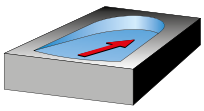
Machining strategy

Axial plunging into solid material



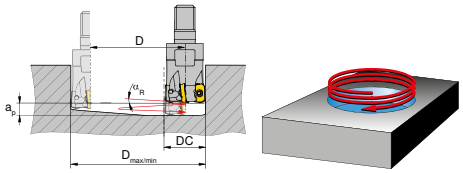
DC mm	X_{max} mm
16	0,35
20	0,40
25	0,45
32–35	0,50
40	0,55

Angled ramping



DC mm	α°	y mm
16	<2,5	7
20	<1,9	11
25	<1,5	16
32	<1,2	23
35	<1,0	26
42	<0,9	33

Circular Milling



DC mm	D_{min} mm	D_{max} mm
16	23	31
20	31	39
25	41	49
32	55	63
35	61	69
42	75	83

System MaxiMill 251

Cutting data recommendations/Technology data

for standard inserts

		F			
		05		08	
Material	v_c m/min	f_z mm	a_p mm	f_z mm	a_p mm
Steel	50–350	0,08–0,35	2,5	0,08–0,35	4
Stainless steel	130–280	0,08–0,35	2,5	0,08–0,35	4
Cast iron	100–360			0,1–0,4	4
Non-ferrous metals	160–1500	0,05–0,4	2,5	0,05–0,4	4
Heat resistant alloys	25–75			0,08–0,35	4
hardened materials					

		M					
		10		12		16	
Material	v_c m/min	f_z mm	a_p mm	f_z mm	a_p mm	f_z mm	a_p mm
Steel	50–350	0,08–0,4	5	0,08–0,4	6	0,08–0,4	8
Stainless steel	60–280	0,08–0,35	5	0,08–0,35	6	0,08–0,35	8
Cast iron	100–360	0,1–0,4	5	0,1–0,4	6	0,1–0,4	8
Non-ferrous metals	160–1500	0,05–0,4	5	0,05–0,4	6	0,05–0,4	8
Heat resistant alloys	25–75	0,08–0,38	5	0,08–0,38	6	0,08–0,38	8
hardened materials	40–60			0,05–0,35	6		

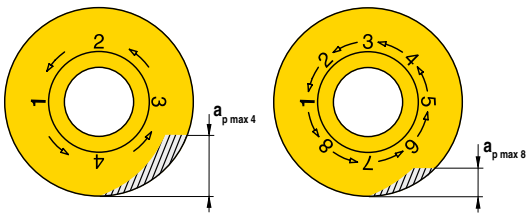
		R					
		20					
Material	v_c m/min	f_z mm	a_p mm	f_z mm	a_p mm	f_z mm	a_p mm
Steel	50–350	0,1–0,4	10				
Stainless steel	60–280	0,08–0,35	10				
Cast iron	100–360	0,1–0,4	10				
Non-ferrous metals	160–1500	0,05–0,4	10				
Heat resistant alloys	25–75	0,08–0,38	10				
hardened materials							

Detailed information on cutting speed for each grade can be found on → page 138+139

Recommended cutting depth

Ø mm	4-position $a_{p\,max.}$ mm	4-position $a_{p\,max}$ theoretical mm	8-face $a_{p\,max.}$ mm
5	1,0	2,0	0,7
8	1,5	3,5	1,1
10	2,5	4,5	1,4
12	3,0	5,5	1,7
16	4,0	7,5	2,3
20	4,0	9,5	2,9

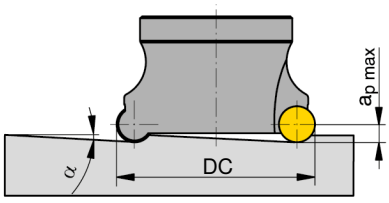
Average depth for the 4/8 index use of the insert



System MaxiMill 251

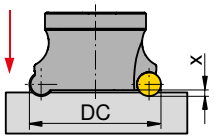
Technical data

Linear ramping



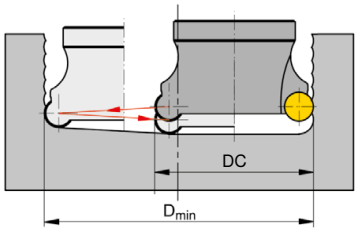
	05	08	10	12	16	20
Ø DC mm	α °	α °	α °	α °	α °	α °
10	3,4					
12	16,0					
16	8,0	5,0				
20	5,5	20,0	1,3			
25	4,0	13,0	2,0	6,0		
32	3,0	8,0	3,0	4,0		
40			3,3	2,8		
42			3,1			
50			2,4	2,6	4,0	
52			2,2	2,3		
63				1,9	2,8	
66				1,6		
80				1,3	2,0	3,2
100				1,0	1,5	2,3
125						1,7

Plunging

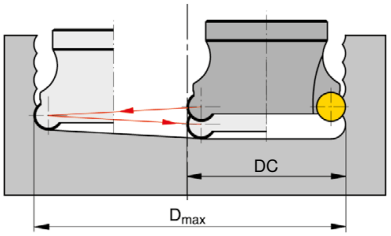


	05	08	10	12	16	20
Ø DC mm	X max. mm	X max. mm	X max. mm	X max. mm	X max. mm	X max. mm
10	0,5					
12	1,3					
16	1,3	0,5				
20	1,3	2,7	0,2			
25	1,3	2,7	0,4	1,0		
32	1,3	2,7	0,8	1,1		
40			1,5	1,2		
42			1,5	1,5		
50			1,5	1,5	2,0	
52			1,5	1,5	2,0	
63				1,5	2,0	
66				1,5	2,0	
80				1,5	2,0	3,0
100				1,5	2,0	3,0
125						3,0

Circular milling into solid



$D_{min.}$ = smallest drilling diameter depending on the tool diameter



$D_{max.}$ = Maximum hole diameter Depending on the tool diameter

maximum possible hole diameter = 2 x DC – 1 mm

	05			08			10			12			16			20		
Ø DC mm	D_{min} mm	D_{max} mm	α_R °	D_{min} mm	D_{max} mm	α_R °	D_{min} mm	D_{max} mm	α_R °	D_{min} mm	D_{max} mm	α_R °	D_{min} mm	D_{max} mm	α_R °	D_{min} mm	D_{max} mm	α_R °
10	12	15	2,5															
12	16	19	2,1															
16	24	27	1,5	21	24	2,4												
20	32	35	1,2	27	32	1,9	26	30	1,3									
25	42	45	1,0	37	42	1,5	37	40	1,8	31	38	2,2						
32	56	59	0,7	51	56	1,2	50	54	1,5	46	52	1,7						
40							64	70	1,1	62	68	1,4						
42							68	74	1,1									
50							84	90	0,9	81	88	1,1	75	84	1,5			
52							88	94	0,9	86	92	1,0						
63										107	114	0,9	101	110	1,1			
66										113	120	0,8						
80										142	148	0,7	135	144	0,9	128	140	1,1
100										181	188	0,5	175	184	0,7	168	180	0,9
125																218	230	0,7

R100. system

Cutting data appoximate values

	v_c m/min	WTN 1205	WAN 2225	WAN 1240	WAX 1240	WUN 4210
Steel						
Non alloyed steel	**R**	150–250		100–250	100–300	
	F	200–400			150–350	
Alloyed tool steel Cast steel	**R**	150–250		100–200	100–250	
	F	200–350			150–300	
High alloyed tool steel	**R**	120–200		100–150	150–180	
	F	150–300			150–250	
Stainless steel						
	R		80–200			
	F	100–200	80–230			
Cast iron						
Grey Iron GG	**R**	150–200			160–220	
	F	200–350			160–220	
Cast iron with spheroidal graphite GGG	**R**	150–200			160–220	
	F	200–350			160–220	
Tempered cast iron	**R**	100–180			160–220	
	F	200–350			160–220	
Non-ferrous metals						
Aluminium	**R**					100–800
	F					100–800
Copper	**R**					100–400
	F					100–400
Graphite	**R**	200–800				200–800
	F	200–800				200–800
Plastics	**R**	200–800				200–800
	F	200–800				200–800
Heat resistant alloys						
Heat resistant alloys	**R**					
	F					
Titanium alloys	**R**		40–50			
	F		40–60			
hardened materials						
to 48 HRC	**R**	150–250			80–150	
	F	150–250				
to 55 HRC	**R**	100–180				
	F	100–180				
to 65 HRC	**R**	35–150				
	F	35–150				

R (Roughing)
F (Finishing)

15

System R 1000, 1002, 1007

Cutting data appoximate values

		f_z, a_p mm	WTN1205	WUN 4210	WAN2225	WAX1240	WAN1240
Steel							
	0501	f_z	0,1–0,3				
		a_p	0,1–0,3				
	07T1	f_z	0,1–0,3	0,1–0,2		0,1–0,3	
		a_p	0,1–0,5	0,1–0,2		0,1–0,7	
	0702	f_z	0,1–0,3			0,2–0,5	
		a_p	0,1–0,7			0,1–0,75	
	1003	f_z	0,1–0,3	0,15–0,3		0,2–0,7	0,2–0,9
		a_p	0,1–1,0	0,1–0,3		0,2–1,5	0,2–1,5
	12T3	f_z	0,1–0,3	0,15–0,3		0,2–0,8	0,25–1,0
		a_p	0,1–1,5	0,1–0,3		0,2–2,0	0,2–2,0
	1604	f_z	0,2–0,3			0,25–1,0	0,3–1,2
		a_p	0,2–1,5			0,2–3,0	0,25–3,0
	2006	f_z	0,25–0,4				
		a_p	0,2–2,0				
Stainless steel							
	0501	f_z	0,1–0,15				
		a_p	0,1–0,15				
	07T1	f_z	0,1–0,2	0,1–0,2			
		a_p	0,1–0,2	0,1–0,2			
	0702	f_z	0,1–0,2	0,1–0,2			
		a_p	0,1–0,2	0,1–0,2			
	1003	f_z	0,15–0,3	0,15–0,3	0,15–0,6		
		a_p	0,1–0,3	0,1–0,3	0,4–1,0		
	12T3	f_z	0,15–0,3	0,15–0,3	0,2–0,8		
		a_p	0,1–0,3	0,1–0,3	0,5–2,0		
	1604	f_z	0,15–0,3	0,15–0,3	0,3–1,0		
		a_p	0,1–0,3	0,1–0,3	0,6–3,0		
	2006	f_z		0,15–0,3			
		a_p		0,1–0,4			
Cast iron							
	0501	f_z	0,1–0,2				
		a_p	0,1–03				
	07T1	f_z	0,1–0,3	0,1–0,3		0,1–0,3	
		a_p	0,1–0,5	0,1–0,5		0,1–0,5	
	0702	f_z	0,1–0,3	0,1–0,3		0,1–0,3	
		a_p	0,1–0,7	0,1–1,0		0,1–0,7	
	1003	f_z	0,15–0,3	0,15–0,3		0,1–0,3	0,1–0,3
		a_p	0,1–1,0	0,1–1,5		0,1–1,0	0,1–1,0
	12T3	f_z	0,15–0,4	0,15–0,4		0,1–0,4	0,1–0,4
		a_p	0,1–1,5	0,1–2,0		0,1–1,5	0,1–1,5
	1604	f_z	0,2–0,5	0,2–0,5		0,2–0,5	0,2–0,5
		a_p	0,2–3,0	0,2–3,0		0,2–3,0	0,2–2,0
	2006	f_z	0,25–0,6	0,25–0,6			
		a_p	0,2–4,0	0,2–4,0			

System R 1000, 1002, 1007

Cutting data appoximate values

		f_z, a_p mm	WTN1205	WUN4210	WAN2225	WAX1240	WAN1240
Non-ferrous metals							
	0501	f_z	0,1–0,2				
		a_p	0,1–0,3				
	07T1	f_z	0,1–0,3				
		a_p	0,1–0,7				
	0702	f_z	0,1–0,3				
		a_p	0,1–1,0				
	1003	f_z	0,1–0,3				
		a_p	0,1–1,5				
	12T3	f_z	0,1–0,4				
		a_p	0,1–2,0				
	1604	f_z	0,2–0,5				
		a_p	0,2–4,0				
	2006	f_z	0,25–0,6				
		a_p	0,2–5,0				
Heat resistant alloys							
	0501	f_z					
		a_p					
	07T1	f_z					
		a_p					
	0702	f_z					
		a_p					
	1003	f_z			0,1–0,4		
		a_p			0,2–1,0		
	12T3	f_z			0,15–0,5		
		a_p			0,3–1,5		
	1604	f_z			0,15–0,5		
		a_p			0,3–2,0		
	2006	f_z					
		a_p					
hardened materials							
	0501	f_z	0,1–0,15				
		a_p	0,1–0,2				
	07T1	f_z	0,1–0,15			0,1–0,2	
		a_p	0,1–0,2			0,1–0,3	
	0702	f_z	0,1–0,2			0,1–0,2	
		a_p	0,1–0,3			0,1–0,3	
	1003	f_z	0,1–0,2			0,1–0,2	
		a_p	0,1–0,5			0,1–0,5	
	12T3	f_z	0,1–0,25			0,1–0,25	
		a_p	0,1–0,7			0,1–0,7	
	1604	f_z	0,15–0,3			0,15–0,3	
		a_p	0,2–1,0			0,2–1,0	
	2006	f_z	0,2–0,4				
		a_p	0,2–1,0				

WTN 1205

Up to 48 HRC: a_p-range as indicated in the table
Up to 55 HRC: maximum value a_p x 0,7
Up to 65 HRC: maximum value a_p x 0,5

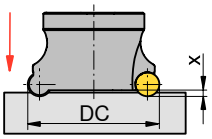
15

System R 1000, 1002, 1007

Technical data

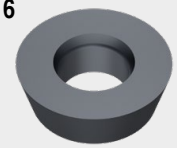
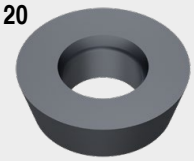
Machining strategy

Plunging

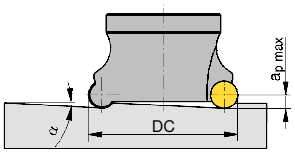


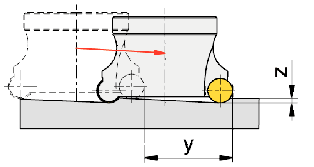
reduce f_z according to table by 30 %

→ v_c Page 178+179

	05	07	10	12	16	20
						
Ø DC mm	$X_{max.}$ mm	$X_{max.}$ mm	$X_{max.}$ mm	$X_{max.}$ mm	$X_{max.}$ mm	$X_{max.}$ mm
8–160	1,0	1,2	2,5	3,0	4,0	5,0

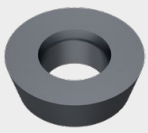
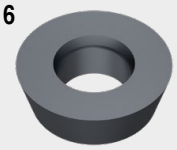
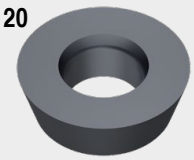
Linear ramping





y = minimum cutter movement
z = minimum cutter movement
a_p / f_z application table

→ v_c Page 178+179

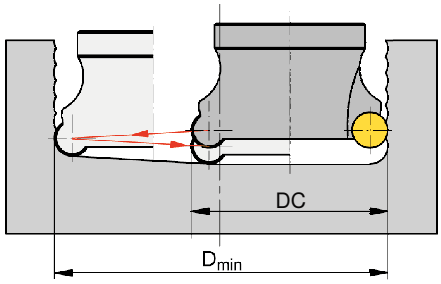
	05			07			10			12			16			20		
																		
Ø DC mm	α°	y mm	z mm	α°	y mm	z mm	α°	y mm	z mm	α°	y mm	z mm	α°	y mm	z mm	α°	y mm	z mm
8	26,5	2	< 1,0															
10																		
12	14,0	4	< 1,0															
14	9,5	6	< 1,0															
15	8,1	7	< 1,0	26,5	2	< 1,2												
16	7,1	8	< 1,0	14,0	4	< 1,2												
18	5,7	10	< 1,0	11,3	6	< 1,2												
20	4,7	12	< 1,0	8,5	8	< 1,2												
22																		
24																		
25				5,3	13	< 1,2	19,7	7	< 2,5									
30				3,8	18	< 1,2	11,7	12	< 2,5									
32																		
35				3,0	23	< 1,2	8,4	17	< 2,5	13,0	13	< 3,0	38,7	5	< 4,0			
40																		
42				2,3	30	< 1,2	5,9	24	< 2,5	8,5	20	< 3,0						
50																22,6	12	< 5,0
52							4,2	34	< 2,5	5,7	30	< 3,0	10,3	22	< 4,0			
66										3,9	44	< 3,0	6,4	36	< 4,0	10,1	28	< 5,0
80										3,0	58	< 3,0	4,6	50	< 4,0	6,8	42	< 5,0
100													3,3	70	< 4,0	4,6	62	< 5,0
125													2,4	95	< 4,0	3,3	87	< 5,0
160													1,8	130	< 4,0	2,3	122	< 5,0

System R 1000, 1002, 1007

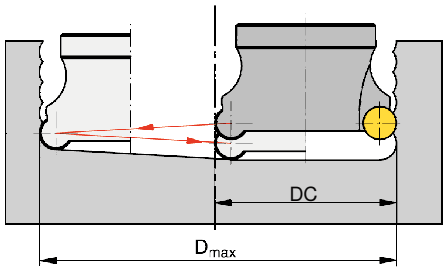
Technical data

Machining strategy

Circular ramping



D_{min} = smallest drilling diameter depending on the tool diameter



D_{max} = largest drilling diameter depending on the tool diameter

a_p / f_z according to table

→ v_c Page 178+179

	05		07		10		12		16		20	
Ø DC mm	D_{min} mm	D_{max} mm	D_{min} mm	D_{max} mm	D_{min} mm	D_{max} mm	D_{min} mm	D_{max} mm	D_{min} mm	D_{max} mm	D_{min} mm	D_{max} mm
8	10	16										
10	12	20										
12	16	24	14	24								
14	20	28	16	28								
15	22	30	17	30								
16	24	30	20	32								
18	28	36	24	36	20	36						
20	32	40	28	40	22	40						
22							24	44				
24							26	48				
25			38	50	32	50						
30			48	60	42	60						
32									34	64		
35			58	80	72	70	48	70	40	70		
40											42	80
42			72	84	66	84	62	84				
50											62	100
52					86	104	82	104	74	104		
66							110	132	102	132	94	132
80							138	160	130	160	122	160
100									170	200	162	200
125									220	250	212	250
160									290	320	282	320

System MaxiMill 252

Cutting data recommendations/Technology data

for standard inserts

	M						
		10		12			
Material	v_c m/min	f_z mm	a_p mm	f_z mm	a_p mm	f_z mm	a_p mm
Steel	60–240	0,08–0,35	2,5	0,08–0,35	3		
Stainless steel	60–280	0,05–0,35	2,5	0,05–0,35	3		
Cast iron							
Non-ferrous metals							
Heat resistant alloys	25–75	0,08–0,35	2,5	0,08–0,35	3		
hardened materials							

Detailed information on cutting speed for each grade can be found on → page 138+139

MaxiMill 252 – recommended cutting depth

	4-position	
Ø mm	$a_{p\,max}$ mm	$a_{p\,max}$ theoretical mm
10	2,5	4,5
12	3,0	5,5

Cutting data standard values for copy milling cutter K200.

● 1st choice ○ suitable

	R	F	R	F	R	F	R	F	suitable coolant types		
	CTPK226		CTPP211		CTPK231		CTCN211				
Index	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	v_c m/min	Emulsion	Com-pressed air	MMS
1.1		280–300	180–220	220–300	160–200				○	●	●
1.2		280–300	180–220	220–300	160–200				○		●
1.3		280–300	180–220	220–300	160–200				○		●
1.4		280–300	180–220	220–300	160–200				○		●
1.5		220–240	180–220	220–240	160–200				○	●	●
1.6		220–240	180–220	220–240	160–200				○		●
1.7		220–240	180–220	220–240	160–200				○	●	●
1.8		220–240	180–220	220–240	160–200				○		●
1.9		220–240	180–220	220–240	160–200				○		●
1.10		280–300	140–220	200–300	140–180				○	●	●
1.11		280–300	140–220	200–300	140–180				○		●
1.12		280–300	140–220	200–300	140–180				○		●
1.13		280–300	140–220	200–300	140–180				○		●
1.14		280–300	140–220	200–300	140–180				○		●
1.15		280–320	180–220	240–320	160–200				○	●	●
1.16		280–320	180–220	240–320	160–200				○	●	●
2.1		220–220	140–180	200–240	120–180				●		
2.2		220–220	140–180	200–240	120–180				●		
2.3		220–220	140–180	200–240	120–180				●		
2.4		220–220	140–180	200–240	120–180				●	○	
2.5		220–220	140–180	200–240	120–160				●		
2.6		180–200	140–160	180–200	120–160				●	○	
2.7		180–200	140–160	180–200	120–160				●		
3.1		280–300	160–200	200–300	120–200					●	○
3.2		280–300	160–200	200–300	120–200					●	○
3.3		280–300	160–200	200–300	120–200					●	○
3.4		300–350	180–220	240–350	180–200					●	○
3.5		300–350	180–220	240–350	180–200					●	○
3.6		300–350	180–220	240–350	180–200					●	○
3.7		300–350	180–220	240–350	180–200					●	○
3.8		240–260	160–200	220–260	160–200					●	○
4.1			240–280	300–600	300–600				●		
4.2			240–280	300–600	300–600				●		
4.3			240–280	300–600	300–600				●		
4.4			240–280	300–600	300–600				●		
4.5									●		
4.6			240–280	300–600	240–280				●		
4.7			240–280	300–600	240–280				●		
4.8			240–280	300–600	240–280				●		
4.9			240–280	300–600	240–280				●		
4.10			240–280	280–320	240–280				●		
4.11			240–280	280–320	240–280				●		
4.12			240–280	280–320	240–280				●		
4.13			500–600	500–600			400–600	600–800		●	
4.14			300–400	300–400						●	
4.15			300–400	300–400				250–300		●	
4.16			300–400	300–400				300–400	●		
4.17							400–600	600–800		●	
4.18							100–140	160–180	●		
4.19							100–140	100–140	●		
5.1					80–120				●		
5.2				80–120	80–120				●		
5.3				80–120	80–120				●		
5.4				80–120	80–120				●		
5.5				80–120	80–120				●		
5.6				80–120	80–120				●		
5.7				80–120	80–120				●		
5.8				80–120	80–120				●		
5.9				80–120	80–120				●		
5.10				60–80	60–80				●	○	
5.11				60–80	80–100				●	○	
6.1		240–260		60–80	140–160						
6.2		240–260	140–200	220–300	140–160					●	○
6.3		200–220	120–160	180–300	80–100					●	○
6.4		120–140	100–120	120–200						●	○
6.5											

Cutting data standard values for copy milling cutter K200.

● 1st choice ○ suitable

	R	F	Roughing (R)		Finishing (F)		only for -MR3 Roughing (R)		suitable coolant types		
	CTPP216		Ø 6–16	Ø 20–32	Ø 6–16	Ø 20–32	Ø 6–16	Ø 20–32	Emulsion	Com-pressed air	MMS
Index	v_c m/min	v_c m/min	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm	f_z mm			
1.1	220-300	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,2-1,5	○	●	●
1.2	220-300	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,2-1,5	○		●
1.3	220-300	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,2-1,5	○		●
1.4	220-300	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,2-1,5	○		●
1.5	220-300	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,2-1,5	○	●	●
1.6	220-300	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	○		●
1.7	260-340	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	○	●	●
1.8	260-340	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	○		●
1.9	260-340	280-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	○		●
1.10	240-340	240-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,20	○	●	●
1.11	240-340	240-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5	○		●
1.12	240-340	240-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5	○		●
1.13	240-340	240-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5	○		●
1.14	240-340	240-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5	○		●
1.15	250-360	240-320	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5	○	●	●
1.16	250-360	240-320	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5	○	●	●
2.1	220-300	220-240	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	●		
2.2	220-300	220-240	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	●		
2.3	220-300	220-240	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	●		
2.4	220-300	220-240	0,08-0,4	0,25-0,45	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	●	○	
2.5	220-300	220-240	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25	●		
2.6	220-250	220-240	0,08-0,4	0,25-0,45	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,5	●	○	
2.7	220-250	220-240	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,5	●		
3.1	240-350	240-260	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5		●	○
3.2	240-350	240-260	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5		●	○
3.3	240-350	240-260	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,8	1,0-1,5		●	○
3.4	340-400	240-360	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25		●	○
3.5	340-400	240-360	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25		●	○
3.6	340-400	240-360	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25		●	○
3.7	340-400	240-360	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25		●	○
3.8	280-340	220-300	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,3-0,6	0,8-1,25		●	○
4.1		400-450	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.2		400-450	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.3		400-450	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.4		400-450	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.5		300-400	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.6		300-400	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.7		300-400	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.8		300-400	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.9		300-400	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.10		300-400	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.11		300-400	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.12		300-400	0,08-0,35	0,25,0,45	0,06-0,25	0,025-0,45			●		
4.13		600-800	0,25-0,35	0,4-0,5	0,08-0,3	0,25-0,4				●	
4.14		300-350	0,25-0,35	0,4-0,5	0,08-0,3	0,25-0,4				●	
4.15			0,25-0,35	0,4-0,5	0,08-0,3	0,25-0,4				●	
4.16			0,25-0,35	0,4-0,5	0,08-0,3	0,25-0,4			●		
4.17			0,25-0,35	0,4-0,5	0,08-0,3	0,25-0,4				●	
4.18							0,20-0,4	0,4-0,8	●		
4.19							0,20-0,4	0,4-0,8	●		
5.1		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,20-0,4	0,4-0,8	●		
5.2		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,20-0,4	0,4-0,8	●		
5.3		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,20-0,4	0,4-0,8	●		
5.4		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,20-0,4	0,4-0,8	●		
5.5		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,20-0,4	0,4-0,8	●		
5.6		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,20-0,4	0,4-0,8	●		
5.7		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,25-0,5	0,6-1,0	●		
5.8		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,25-0,5	0,6-1,0	●		
5.9		60-80	0,08-0,3	0,15-0,4	0,05-0,2	0,15-0,25	0,25-0,5	0,6-1,0	●		
5.10		60-80	0,08-0,35	0,4-0,5	0,08-0,3	0,25-0,4	0,25-0,5	0,6-1,0	●	○	
5.11		60-80	0,08-0,35	0,4-0,5	0,08-0,3	0,25-0,4	0,25-0,5	0,6-1,0	●	○	
6.1	240-260	240-260	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,25-0,5	0,6-1,0			
6.2	240-260	240-260	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5	0,25-0,5	0,6-1,0		●	○
6.3	220-240	160-240	0,08-0,4	0,25-0,5	0,08-0,3	0,2-0,5				●	○
6.4	120-140	100-140	0,25-0,35	0,4-0,5	0,08-0,2	0,18-0,35				●	○
6.5											

Maximum axial depths of cut a_p for copy milling cutter K200.

Ball nose insert									
Insert Ø in mm		6	8	10	12	16	20	25	32
		$a_{p\ max.}$	$a_{p\ max.}$	$a_{p\ max.}$	$a_{p\ max.}$	$a_{pmax.}$	$a_{p\ max.}$	$a_{p\ max.}$	$a_{p\ max.}$
ROHX-FM3	**R**	0,8	1,0	1,5	2,0	3,0	4,0	5,0	6,0
	F	0,4	0,8	1,0	1,2	1,5	1,5	2,0	2,0
ROHX-FM4	**R**	0,8	1,0	2,0	3,0	4,0	5,0	6,0	8,0
	F	0,4	0,8	1,0	1,2	1,5	1,5	2,0	2,0
ROHX-FM6	**R**	0,8	1,0	1,5	2,0	3,0	4,0	5,0	6,0
	F	0,4	0,8	1,0	1,2	1,5	1,5	2,0	2,0
ROGX-MR4	**R***				4,0	6,0	8,0	12,0	16,0
	F				2,0	3,0	4,0	5,0	6,0
ROHX-MR5	**R**		1,5	2,0					
	F		0,8	1,0					

*a_p with full interference 25 % of Ø DC maximum!

Torus inserts									
Insert Ø in mm		6	8	10	12	16	20	25	32
		$a_{p\ max.}$	$a_{p\ max.}$	$a_{p\ max.}$	$a_{p\ max.}$	$a_{pmax.}$	$a_{p\ max.}$	$a_{p\ max.}$	$a_{p\ max.}$
XOHX-FM5	**R**		2,0	3,0	3,0	4,0	5,0	6,0	8,0
	F		0,6	2,0	2,4	3,2	4,0	5,0	6,4
XOHX-MR6	**R**		2,0	3,0	3,0	4,0	5,0	6,0	8,0
	F		0,6	2,0	2,4	3,2	4,0	5,0	6,4
XOHX-FM1	**R**			1,5	2,0	3,0	4,0		
	F			0,8	0,8	1,0	1,0		
XOHX-FM2	**R**		1,0	1,5	2,0	3,0	4,0	5,0	
	F		0,5	0,7	0,8	1,0	1,0	1,5	
XOHX-MR2	**R**	0,8	1,0	1,5	2,0	3,0	4,0	5,0	
	F	0,5	0,5	0,7	0,8	1,0	1,0	1,5	
XOGX-MF4	**R**			1,5	2,0	3,0	4,0		
	F			0,7	0,8	1,0	1,0		
XOHX-MR3	**R**			0,5	0,6	0,8	1,0		
	F								

Ranges of application of geometry

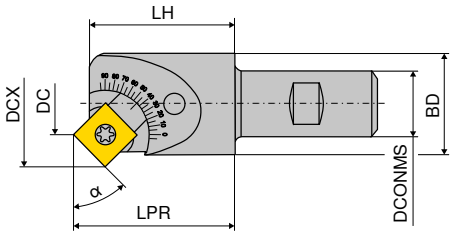
Inserts	F	M	R	Main Application
XOHX-FM1	●	●		Steel, steel casting, heat resistant steel, hardened steel to 63 HRC
XOHX-FM2	●	●		Steel, steel casting, heat resistant steel, hardened steel to 60 HRC
ROHX-FM3	●	●		Steel, steel casting, heat resistant steel
ROHX-FM4	●	●		Steel, steel casting, heat resistant steel, hardened steel to 60 HRC
XOHX-FM5	●	●		Steel, steel casting, heat resistant steel, hardened steel to 60 HRC
ROHX-FM6	●	●	●	Non ferrous metals, plastics, graphite
XOHX-MR2		●	●	long-chipping ferrous metals
XOHX-MR3		●	●	Steel, steel casting, heat resistant steel
ROGX-MR4		●	●	Steel, steel casting, heat resistant steel
XOGX-MF4	●	●		Steel, steel casting, heat resistant steel
ROHX-MR5		●	●	long-chipping ferrous metals
XOHX-MR6		●	●	long-chipping ferrous metals

System 4500-09

Cutting data recommendations/Technology data

for standard inserts

Material	09 m/min	f_z mm
Steel	120–250	0,05–0,30
Stainless steel	110–220	0,08–0,30
Cast iron	120–240	0,10–0,35
Non-ferrous metals	200–280	0,10–0,35
Heat resistant alloys		
hardened materials		



Machining strategy

Cutting angle α	$D_{min.}$ mm	$D_{max.}$ mm
0°	3,0	20,30
5°	3,8	20,90
10°	4,9	21,60
15°	5,8	22,10
20°	6,8	22,60
25°	7,9	23,00
30°	8,9	23,50
35°	10,0	23,60
40°	11,0	23,85
45°	12,3	23,90
50°	13,3	23,85
55°	14,3	23,80
60°	15,5	23,60
65°	16,4	23,40
70°	17,4	23,10
75°	18,4	22,60
80°	19,3	22,20
85°	20,0	21,50
90°	20,8	20,80

Detailed information on cutting speed for each grade can be found on → page 138+139

System 4500-12

Cutting data recommendations/Technology data

for standard inserts

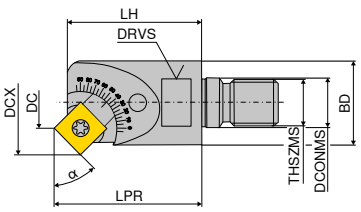
Material	12 m/min	f_z mm
Steel	120–250	0,05–0,25
Stainless steel	110–220	0,08–0,20
Cast iron	120–240	0,10–0,25
Non-ferrous metals	200–280	0,10–0,25
Heat resistant alloys		
hardened materials		

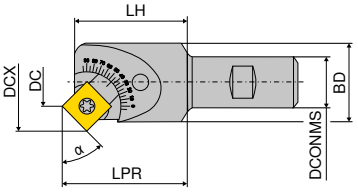
Machining strategy

Cutting angle α	$D_{min.}$ mm	$D_{max.}$ mm
0°	7,1	30,50
5°	7,8	31,40
10°	9,4	32,40
15°	10,7	33,20
20°	12,0	33,80
25°	13,4	34,40
30°	14,9	34,80
35°	16,5	35,20
40°	17,9	35,40
45°	19,3	35,45
50°	20,8	35,40
55°	22,3	35,20
60°	23,6	34,90
65°	25,0	34,60
70°	26,5	34,00
75°	27,7	33,40
80°	28,8	32,70
85°	29,9	31,90
90°	31,0	31,00

Machining strategy

Cutting angle α	$D_{min.}$ mm	$D_{max.}$ mm
0°	3,7	27,30
5°	4,7	28,20
10°	6,0	29,00
15°	7,3	29,80
20°	8,8	30,50
25°	10,0	31,00
30°	11,5	31,50
35°	13,1	31,90
40°	14,7	32,15
45°	16,0	32,20
50°	17,5	32,15
55°	19,0	32,00
60°	20,4	31,80
65°	21,8	31,30
70°	23,0	30,90
75°	24,4	30,20
80°	25,7	29,50
85°	26,7	28,70
90°	27,8	27,80





Detailed information on cutting speed for each grade can be found on → page 138+139

Cutting data for side and face milling cutters FM

Material	v_c m/min		f_z mm/z	
	CWN 35 **ISO (P35)**	CWK 12 **ISO (K10)**	FM-N	FM-KXF
St 37 / C 15	90–180		0,05–0,08	0,07–0,2
St 50 / C 50	80–150		0,04–0,08	0,07–0,2
St 60–70 / C 60	70–140		0,04–0,08	0,07–0,18
16 Mn Cr 5	50–120		0,04–0,09	0,07–0,2
42 Cr Mo4 / 50 Cr V 4	40–120		0,04–0,09	0,08–0,25
Tool steels and HSS	40–90		0,04–0,08	0,07–0,18
Corrosion resistant X-CrNi steel	30–80		0,04–0,08	0,07–0,15
Ferritic, austenitic steels	10–40		0,03–0,09	0,07–0,15
GG-10		60–180	0,04–0,1	
GG-30		60–150	0,04–0,1	
Malleable iron GT		40–100	0,04–0,11	
Aluminium		200–250	0,04–0,12	
G Al Si		200–250	0,06–0,1	
brass		50–250	0,05–0,08	
Copper Cu-E		120–250	0,04–0,08	
Red bronze		120–250	0,05–0,09	
bronze		100–250	0,05–0,1	
hard rubber		200–250	0,03–0,15	
Novotex, Pertinax		50–250	0,03–0,1	
Bakelite		50–250	0,03–0,1	

Cutting data for side and face milling cutters TX

	Material			HB	v_c m/min	h_m mm
P	Unalloyed steel	1.0711 9 S 20 1.0037 ST 37 1.0050 ST 50		125–300	160–240	0,1
	low-alloy steel	1.0070 ST 70 1.7131 16 MnCr 5 1.7218 25 CrMo 4		180–350	70–150	0,08
	High-alloy steel	1.2842 90 MnCr V 8 1.7225 42 CrMo4 V 1.2344 X 40 CrMoV		200–350	50–70	0,05
	Stainless steel	1.4002 X 6 CrA 13 1.4510 X 6 CrTi 17 1.4104 X 12 CrMoS 17		200–325	80–120	0,08
M	Stainless steel	1.4057 20 CrNi 17 2 1.4301 X 5 CrNi 18 10 1.4571 X 6 CrNiMoTi 17 12 2		180–330	120–130	0,08
K	Grey cast iron	0.6020 GG 20 0.6040 GG 40		180–260	90–100	0,1
	Cast iron with spheroidal graphite	0.7040 GGG 40 0.7070 GGG 70		160–250	60–100	0,08
N	Wrought Aluminium Alloys	non hardenable	Al Mn Al Mg Al Mg Mn	60	500–700	0,12
		hardenable	Al Mg Si Al Cu Mg Al Cu Si Mn	100	200–500	0,12
	Cast Aluminium Alloys	non hardenable < 12 % Si hardenable < 12 % Si non hardenable > 12 % Si		80–130	80–220	0,1
	Copper and copper alloys	non hardenable	Cu Ag Cu As	90–100	200–500	0,12
S	Heat resistant alloys	1.4962 X 12 CrNiWTi 16 13 1.4923 X 22 CrMoV 12 1		200–320	80–140	0,05
	Titanium alloys	3.7024 Ti 99,5 3.7154 TiAl6Zr5		120–310	80–120	0,06

Average Chip Thickness

h_m in mm

$$h_m = f_z \sqrt{\frac{a_e}{DC}}$$

Feed per tooth

f_z in mm

$$f_z = h_m \sqrt{\frac{DC}{a_e}}$$

Feed rate

v_f in mm/min

$$v_f = f_z \times z \times n$$

DC = Ø of the disc cutters

ZNF = Number of teeth of the cutter

15

System FM

Technical data

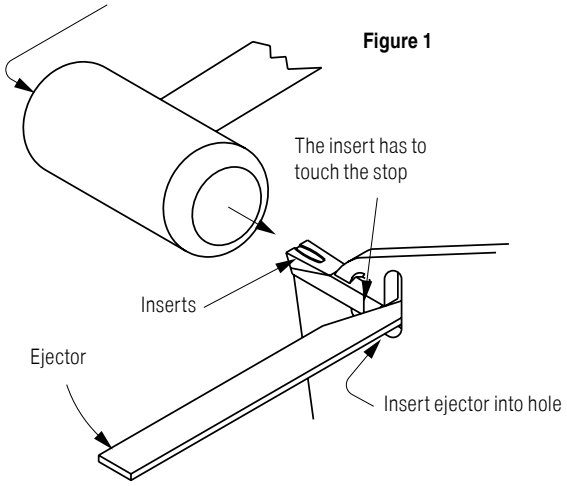
Machining strategy

Advantages:

- Self-clamping insert with double prismatic support and precise location.
- Clamping pressure increases as a function of cutting pressure (lever principle).
- No additional clamping elements like claws, screws or clamping wedges in the tool.
- The special shape of the chip groove crimps the chips, so they become smaller than the milled groove, which allows continuous chip flow.
- Every cutting insert cuts the entire width of cut, therefore the feed rate can be doubled per tool revolution compared to cross-pitched cutters (rough and finishing cutter).
- Changing the insert takes only 15 seconds per cutting edge and can be carried out in the machine without dismantling the side and face miling cutter. The insert is removed from the prism using the ejector (included in the delivery) (picture 1).
- Side and face miling cutters of the FM system can be used for both climb and conventional miling.

Move inserts to the stop using a plastic hammer

Figure 1



Remove insert with lever movement

Figure 2

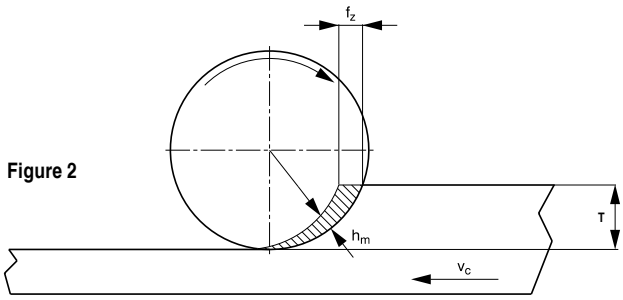
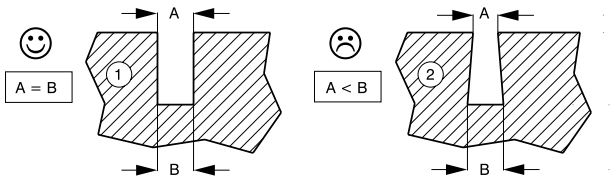


Figure 3



Information on application:

When the side and face milling cutter cuts into the workpiece a 'comma' chip is produced. The depth of cut „a_e" is important with regard to the feed rate. The average chip thickness is indicated by the parameter „h_m", which is always smaller than the feed per tooth „f_z" (see picture 2).

Make sure the chips are not too thin, as they would cause early wear of the cutting edge.

Guide values for the feed rate„f_z":

1) The feed values„f_z" in the cutting data table apply for 50–100 % of the maximum cutting depth „a_e".
2) With „a_e" < 50 % and > 30 % the feed rate should be increased by approx. 30–40 %.
3) With „a_e" < 30 % the feed rate should be increased by approx. 50 %.

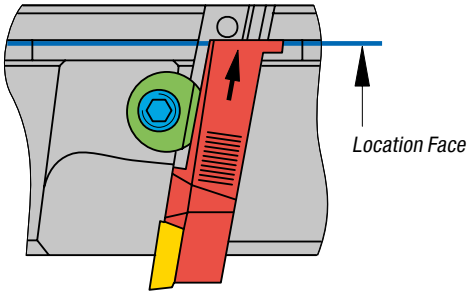
Side and face milling cutters are preferably used for climb milling (see picture 2). When climb milling, the cutting edge first cuts the largest section, therefore less friction wear is caused than in conventional milling (cutting edge goes into workpiece first).
Another advantage of climb milling is that the workpiece is pressed onto the support face - lifting of the workpiece is not possible..

Specially when slot milling make sure that the slot which is being produced does not close during machining, because otherwise the inserts are pulled out of their seat and the tool is destroyed (see picture 3).

For safety reasons the maximum cutting speed of 250 m/min. must not be exceeded.

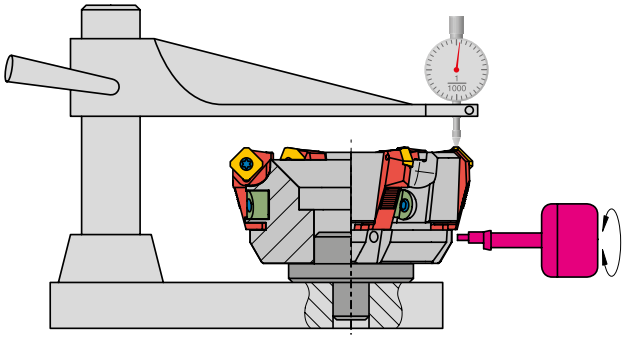
System MaxiMill 260

Setting of axial run-out for roughing



For assembly simply press cartridges onto the location face of the radial groove. The axial run-out amounts to 0.03 mm measured on the master insert.

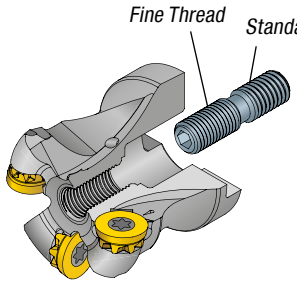
Setting of axial run-out with eccentric key and clock gauge or on optical presetting equipment



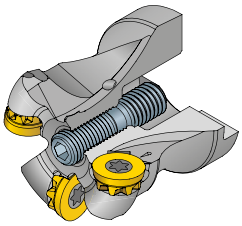
Exact setting of axial run-out up to 0.002 mm

- Clean the milling tools
- Mount cutter on appropriate setting equipment
- Loosen clamping wedge, push cassette to face and tighten wedge lightly
- Insert ecentric key into hole and turn until cassette is in desired position
- Keep ecentric key in contact with the cassette so that it remains in position.
  Tighten wedge (torque moment 10 Nm)
- The tool is now ready for use

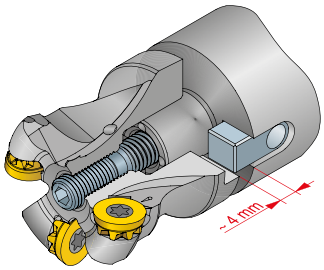
Easy and safe clamping – with the CERATIZIT power screw



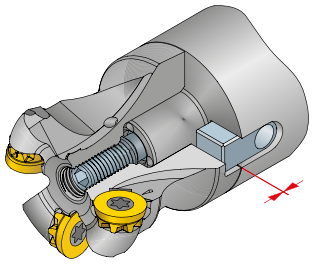
The fine-pitch part of the power screw is threaded into the milling cutter.



The power screw is turned carefully until the stop (as screw was delivered).

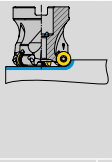
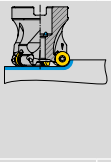
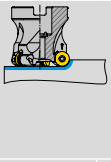


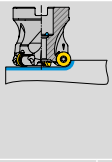
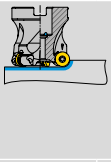
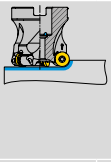
In order to guarantee an optimum connection of tool and shank, a gap of 4 mm is required between cutter body and adapter prior to final clamping.
Using standardised adpaters this is automatically guaranteed.
If necessary, you can readjust by means of the power screw with 0.5 mm/rev.



Turn clamping screw to tighten

Torque moments for clamping screws for mounting the milling cutter to the shell mill adapter

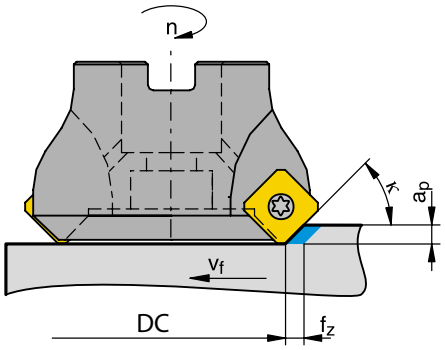
	 10				 12				 16			
Cutter Ø mm	ISK-Screw DIN 912	M_d Nm	Suits-screw Article no.	M_d Nm	ISK-Screw DIN 912	M_d Nm	Suits-screw Article no.	M_d Nm	ISK-Screw DIN 912	M_d Nm	Suits-screw Article no.	M_d Nm
40			70 950 151	10			70 950 151	10				
42			70 950 151	10			70 950 151	10				
50	M10x25	80			M10x25	80					70 950 154	15
52					M10x25	80					70 950 154	15
63					M10x25	80			M10x25	80		
66					M10x25	80			M10x25	80		

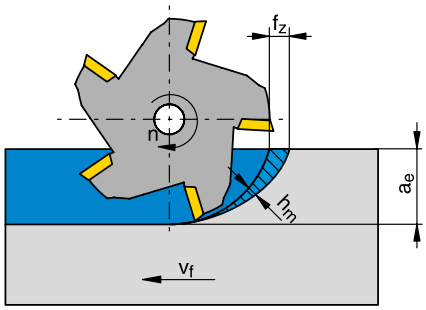
	 12				 16				 20			
Cutter Ø mm	ISK-Screw DIN 912	M_d Nm	Suits-screw Article no.	M_d Nm	ISK-Screw DIN 912	M_d Nm	Suits-screw Article no.	M_d Nm	ISK-Screw DIN 912	M_d Nm	Suits-screw Article no.	M_d Nm
80	M12x30	140			M12x30	140			M12x30	140		
100	M16x35	180			M16x35	180			M16x35	180		
125					M16x35	180			M16x35	180		

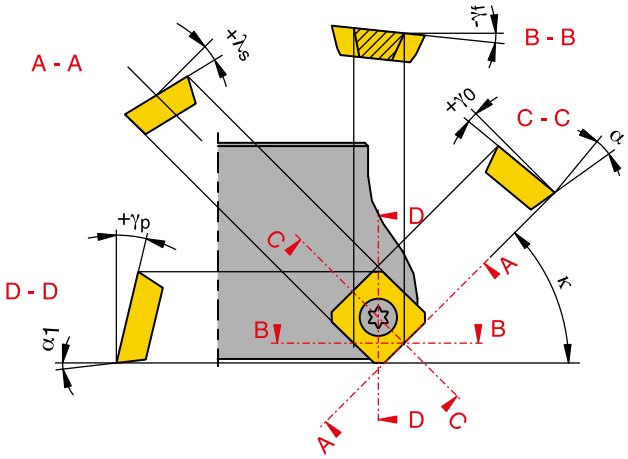
Abbreviations & dimensions

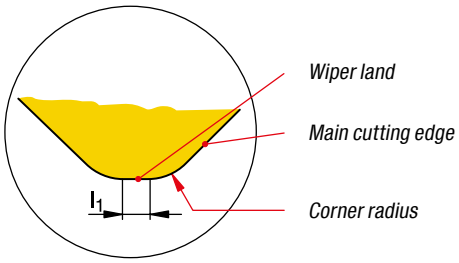
a_e	cutting width	mm
a_p	Cutting depth	mm
DC	Tool diameter	mm
D_w	Workpiece diameter	mm
f_z	Feed per tooth	mm
h_m	Average Chip Thickness	mm
ZNP	Number of teeth	
k_c	Specific cutting force	N/mm²
$k_{c1.1}$	Specific cutting force for 1 mm² chip area	N/mm²
BS	Length of wiper land	mm
m_c	Increase of specific cutting force	
n	rpm	rpm
Q	Chip volume	cm³/min
v_c	Cutting speed	m/min
v_f	Feed rate	mm/min.
ZNF	Number of Effective Teeth	

γ_0	Effective cutting angle	degree
γ_f	Side clearance angle	degree
γ_p	Axial cutting angle	degree
κ	Cutting edge angle	degree
λ_s	Angle of inclination	degree
α	Clearance angle	degree
α_1	Side clearance angle	degree







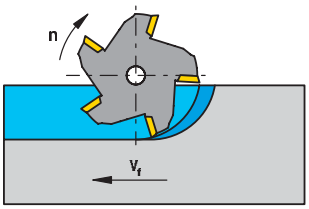


15

Engagement conditions

Recommended

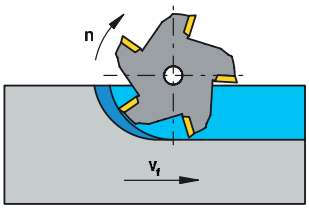
Climb milling



The feed direction of the workpiece is the same as the direction of rotation of the milling cutter in the cutting zone. The chips have maximum thickness at the beginning, chip thickness then decreases until it becomes zero at the end of the cut.

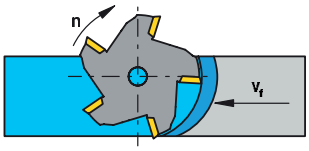
Unsuitable

Conventional milling

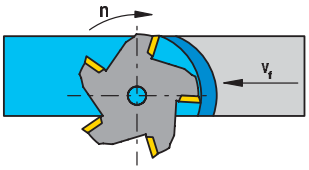


The feed direction of the workpiece is opposite to the direction of rotation of the milling cutter in the cutting zone. Chip thickness is zero at the beginning and increases until it reaches its maximum at the end of the cut.

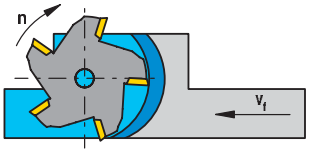
Cutter positioning



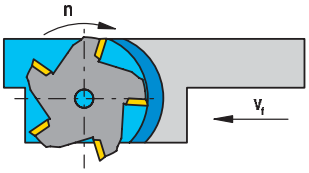
If possible the cutter should exit tangentially of the workpiece.



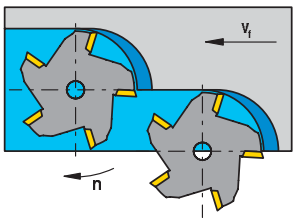
Workpiece situation



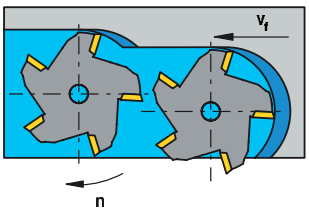
The workpiece should be clamped in such a way as to allow the cutter to emerge tangentially of the workpiece along the whole machining length.



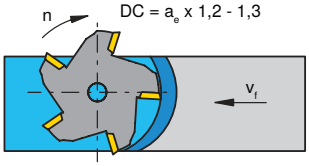
Overlapping



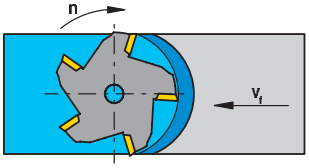
Either employ climb milling or ensure that the cutter comes out of the workpiece tangentially, as in the illustration on the left.



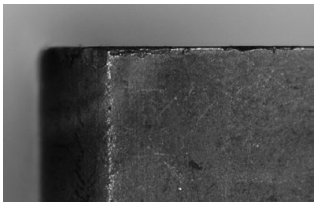
Cutter size

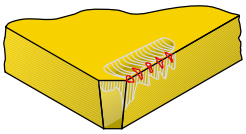


When face milling the diameter of the cutter should be 20–30 % larger than that of the workpiece.



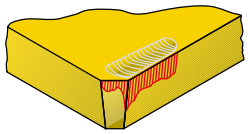
Cutting demands when milling





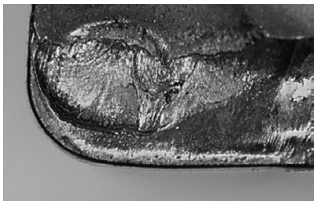
Edge chipping

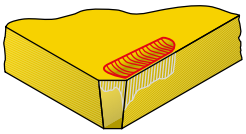
Cutting speed ↑
Feed per tooth ↓
Toughness of grade ↑
Cutting edge chamfer ↑



Wear on clearance face

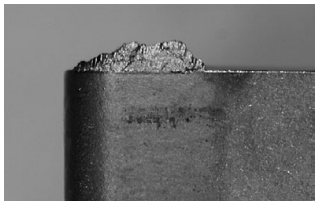
Cutting speed ↓
Feed per tooth ↑
Abrasion resistant grade ↑

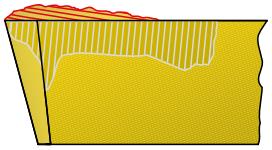




Cratering

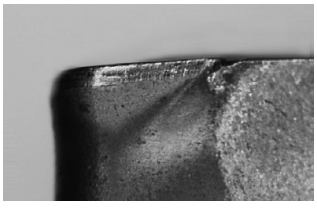
Cutting speed ↓
Feed per tooth ↓
Abrasion resistant grade ↑

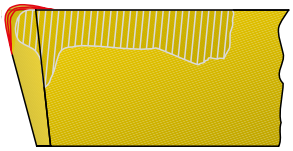




Built-up edge

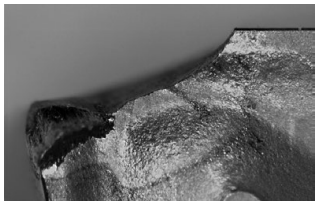
Cutting speed ↑
Feed per tooth ↑
Wear resistance ↑

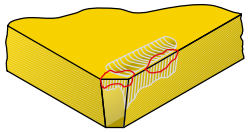




Cutting-edge deformation

Cutting speed ↓
Feed per tooth ↓
Abrasion resistant grade ↑





Cutting Edge Breakage

Cutting speed ↓
Toughness of grade ↑

15

ISO designation indexable milling inserts

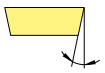
X	D	K	T	11	T3	08	S	R	-	F50
1	2	3	4	5	6	7	8	9		10

Z	N	H	W	12	05	PO	S	R	-	15	06	-	R
1	2	3	4	5	6	7	8	9		11	12		13

1 Insert shape

A	85°	
B	82°	
K	55°	
H	120°	
L	90°	
O	135°	
P	108°	
C	80°	
D	55°	
E	75°	
M	86°	
V	35°	
R		
S	90°	
T	60°	
W	80°	
X Z	Special version	

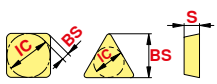
2 Clearance angle



	α
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Special version

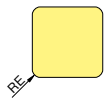
3 Tolerances

	IC ±mm	BS ±mm	S ±mm	IC = 6,35 / 9,52	IC = 12,7	IC = 15,8 / 19,05
A	0,025	0,005	0,025	●	●	●
C	0,025	0,013	0,025	●	●	●
E	0,025	0,025	0,025	●	●	●
F	0,013	0,005	0,025	●	●	●
G	0,025	0,025	0,13	●	●	●
H	0,013	0,013	0,025	●	●	●
J	0,05	0,005	0,025	●		
	0,08	0,005	0,025		●	
	0,10	0,005	0,025			●
K	0,05	0,013	0,025	●		
	0,08	0,013	0,02		●	
	0,10	0,013	0,02			●



	IC ±mm	BS ±mm	S ±mm	IC = 6,35 / 9,52	IC = 12,7	IC = 15,8 / 19,05
M	0,05	0,08	0,13	●		
	0,08	0,13	0,13		●	
	0,10	0,15	0,13			●
N	0,05	0,08	0,025	●		
	0,08	0,13	0,025		●	
	0,10	0,15	0,025			●
U	0,08	0,13	0,13	●		
	0,13	0,20	0,13		●	
	0,18	0,27	0,13			●

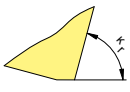
7 Wiper land / corner radius



Radius

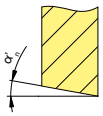
	RE in mm
M0*	
02	0,2
04	0,4
08	0,8
12	1,2

* Only with insert type "R"



1. Designation

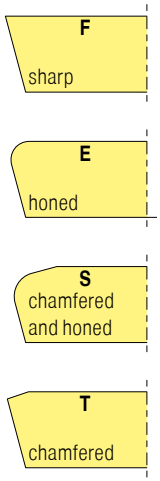
	K_r
A	45°
D	60°
E	75°
F	85°
P	90°
Z	Alternative



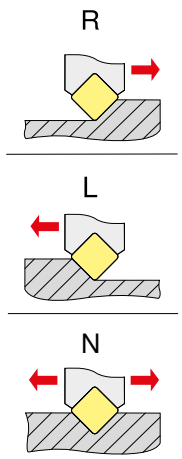
2. Designation

	α'_n
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
Z O	Alternative

8 Cutting edge

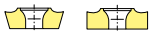


9 Direction of cut



4

Characteristics

A	
F	
G	
M	
N	
Q	
R	
T	
U	
W	
X	Special version

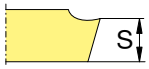
5

Cutting length

IC mm	A	T	C/S	H	L	R	V	W	O	X	Z
4,90										07	
5,00						05					
5,56			05		08			03			
6,00											
6,35		11	06		10			04		06	
6,65	10										
6,80										11	
7,00											04
7,94			07								
8,00						08					
9,00					12						
9,30										15	
9,52	16	16	09		15			06	04		
9,57	15										
9,60										09	
10,00			10		11	10					12
12,00						12					
12,50										20	
12,70		12/22	12		20		22	08		12	
15,81			15		22			10			
16,00						16					
16,20				09							
16,74			16								
17,00			17								
17,18									06		
18,18									07		
19,05			19					13			
20,00						20					

6

Insert thickness



	S mm
01	1,59
T1	1,98
02	2,38
03	3,18
T3	3,97
04	4,76
05	5,56
06	6,35
07	7,94
09	9,52

10

Chip groove

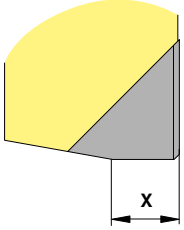
Chip breaker designation
F.. = fine
M.. = medium
R.. = roughing

Additional characteristics:
R = transition radius main/ secondary cutting edge
Q = Masterfinish

11

Manufacturer specification

Length of the finishing cutting edge

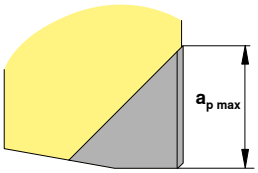


00 = 0,0 mm
10 = 1,0 mm
12 = 1,2 mm
15 = 1,5 mm
30 = 3,0 mm
50 = 5,0 mm

12

Manufacturer specification

$a_{p\,max}$



02 = 2,0 mm
03 = 3,0 mm
04 = 4,0 mm
06 = 6,0 mm
07 = 7,0 mm
11 = 11,0 mm

13

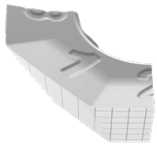
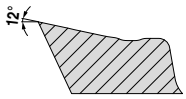
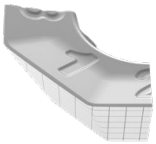
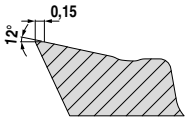
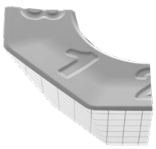
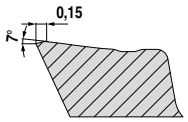
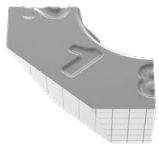
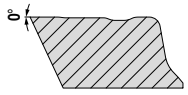
Manufacturer specification

F = Fine
M = Medium
R = Rough

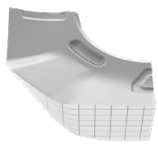
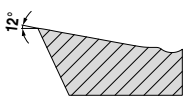
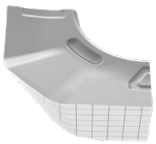
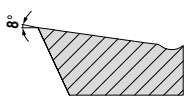
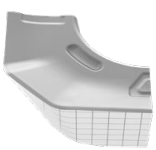
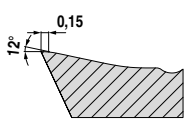
15

Chip Breakers Overview

MaxiMill 274 (OF..)

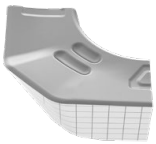
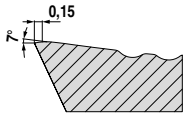
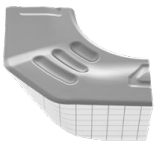
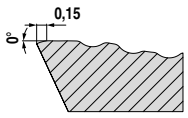
Model	Machining			sectional illustration	f_z in mm
	fine	medium	rough		
-F10 ▲ Highly positive geometry ▲ Sharp cutting edges ▲ First choice for non-ferrous metals					0,05–0,40
	CTWN215 (CWK4615)	**CTWN215 (CWK4615)**	**CTWN215 (CWK4615)**		
-F50 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ First choice for stainless steel materials					0,10–0,25
	CTCP220/CTPP225 **(DCX1220**/DPX1225) CTPM225/**CTCM235** (DPX2225 /**DCX2235)**	CTCP230/**CTPP235** (DCX1230/**DPX1235)** CTPM225/**CTCM235 CTPM240**/CTPM245 (DPX2225/**DCX2235 DPX2240**/ DPX2245)	CTPM240/**CTPM245** (DPX2240/**DPX2245)**		
	CTC5240/CTCS245 (HCF5240)	**CTC5240/CTCS245 (HCF5240)**			
-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials					0,10–0,30
		CTCP230/CTPP235 **(DCX1230**/DPX1235) **CTPM240/CTPM225 (DPX2240/DPX2225)** **CTCK215 (DCX3215)**	CTCP230/**CTPP235** (DCX1230/**DPX1235)** **CTPM240 (DPX2240)** **CTCK215 (DCX3215)**		
EN ▲ Universal Geometry ▲ Low cutting force ▲ First choice for good flatness					0,10–0,25
	CTPM245 (DPX2245)	**CTPM245 (DPX2245)**			
	CTC5240 (HCF5240)	**CTC5240 (HCF5240)**			

MaxiMill 274 (SF..)

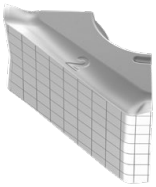
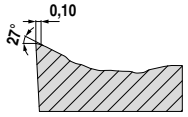
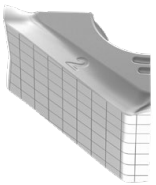
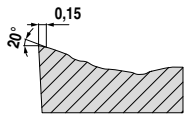
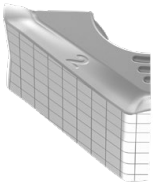
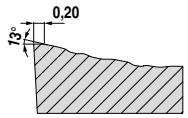
-F10 ▲ Highly positive geometry ▲ Sharp cutting edges ▲ First choice for non-ferrous metals					0,05–0,40
	CTWN215 (CWK4615)	**CTWN215 (CWK4615)**	**CTWN215 (CWK4615)**		
-F40 ▲ Positive Geometry ▲ Finishing and rough machining ▲ For unstable workholding ▲ For heat resistant materials, titanium and super alloys					0,10–0,25
	CTC5240 (HCF5240)	**CTC5240 (HCF5240)**			
-F50 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ First choice for stainless steel materials					0,10–0,25
	CTCP220/CTPP225 **(DCX1220**/DPX1225) CTPM225/**CTCM235** (DPX2225 /**DCX2235)**	CTCP230/**CTPP235** (DCX1230/**DPX1235)** CTPM225/**CTCM235 CTPM240**/CTPM245 (DPX2225/**DCX2235 DPX2240**/ DPX2245)	CTPM240/**CTPM245** (DPX2240/**DPX2245)**		
	CTC5240/CTCS245 (HCF5240)	**CTC5240/CTCS245 (HCF5240)**			

Chip Breakers Overview

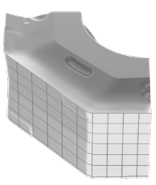
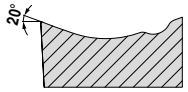
MaxiMill 274 (SF..)

	Model	Machining fine	Machining medium	Machining rough	sectional illustration	f_z in mm
-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		**CTCP220**/CTPP225 **(DCX1220**/DPX1225) CTPM225 (DPX2225)	**CTCP230**/CTPP235 **(DCX1230**/DPX1235) **CTPM225/CTPM240** **(DPX2225/DPX2240)**	CTCP230/**CTPP235** (DCX1230/**DPX1235)** CTPM240 (DPX2240)		0,10–0,30
-R50 ▲ Stable Geometry ▲ Medium rough machining ▲ For interrupted cuts ▲ First choice for cast iron materials			**CTCK215/CTPK220** **(DCX3215/DPX3220)**	**CTCK215/CTPK220** **(DCX3215/DPX3220)**		0,10–0,35

MaxiMill 271

-F50 ▲ Positive Geometry ▲ Medium rough machining ▲ For unstable clamoing with steel machining ▲ First choice for stainless steel materials		**CTCP220**/CTPP225 **(DCX1220**/DPX1225) **CTCM235**/CTPM225 **(DCX2235/**DPX2225) **CTCS245/CTC5240** **(HCF5240)**	**CTCP230**/CTPP235 **(DCX1230**/DPX1235) CTPM225/**CTPM240**/CTPM245 (DPX2225/**DPX2240**/ DPX2245) **CTCS245/CTC5240** **(HCF5240)**	**CTPP235** **(DPX1235)** **CTPM245** **(DPX2245)** **CTCS245/CTC5240** **(HCF5240)**		0,20–0,30
-M50 ▲ Universal Geometry ▲ Medium to heavy rough machining ▲ First choice for general steel materials		**CTCP220**/CTPP225 **(DCX1220**/DPX1225)	CTPP225/**CTCP230**/CTPP235 (DPX1225/**DCX1230**/DPX1235) CTPM225/**CTCM235**/**CTPM240** (DPX2225/**DCX2235**/**DPX2240**) **CTCK215**/CTPK220 **(DCX3215**/DPX3220)	CTCP230/**CTPP235** (DCX1230/**DPX1235)** CTCM235/**CTPM240** (DCX2235/**DPX2240)** CTCK215/**CTPK220** (DCX3215/**DPX3220)**		0,20–0,50
-R50 ▲ Stable Geometry ▲ Heavy rough machining ▲ For heavily interrupted cuts ▲ First choice for cast iron materials			**CTCK215**/CTPK220 **(DCX3215**/DPX3220)	CTCK215/**CTPK220** (DCX3215/**DPX3220)**		0,20–0,50

MaxiMill 273

-F40 ▲ Positive Geometry ▲ Finishing and rough machining ▲ For unstable workholding ▲ For heat resistant materials, titanium and super alloys		CTPM245 (DPX2245) **CTC5240** **(HCF5240)**	CTPM245 (DPX2245) **CTC5240** **(HCF5240)**	CTC5240 (HCF5240)		0,20–0,25

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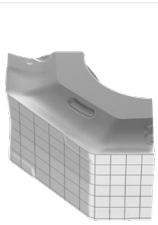
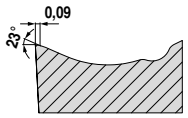
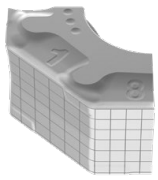
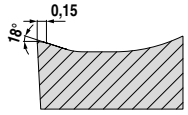
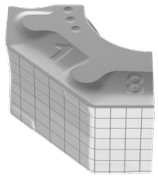
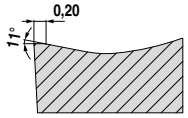
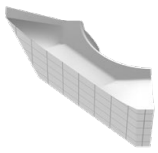
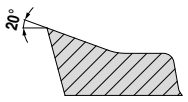
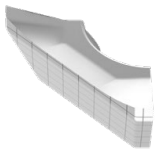
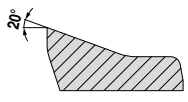
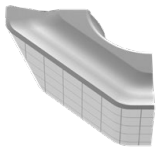
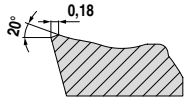
Chip Breakers Overview

MaxiMill 273

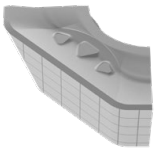
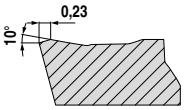
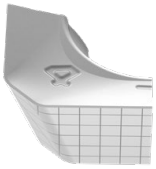
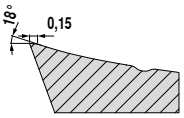
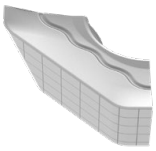
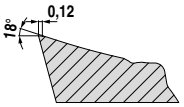
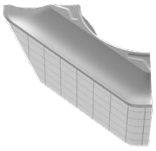
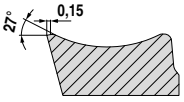
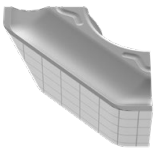
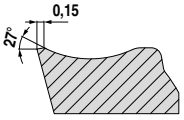
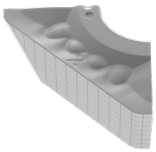
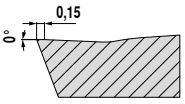
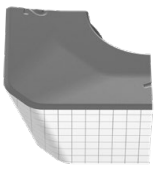
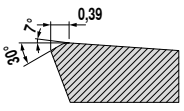
Model	Machining			sectional illustration	f_z in mm
	fine	medium	rough		
-F50 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ First choice for stainless steel materials		**CTCP220/**CTPP225 **(DCX1220/**DPX1225)	CTPP225/**CTCP230**/CTPP235 (DPX1225/**DCX1230**/DPX1235) CTPP225/**CTPM240** (DPX1225/**DPX2240)**	CTPM240 (DPX2240)		0,20–0,25
-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		**CTCP220/**CTPP225 **(DCX1220/**DPX1225) CTPM225/CTCM235 (DPX2225/ DCX2235)	CTPP225/**CTCP230**/CTPP235 (DPX1225/**DCX1230**/DPX1235) CTPP225/**CTPM240** (DPX1225/**DPX2240)** **CTCK215**/CTPK220 **(DCX3215/**DPX3220)	CTCP230/**CTPP235** (DCX1230/**DPX1235)** CTCM235/**CTPM240** (DCX2235/**DPX2240)** CTCK215/**CTPK220** (DCX3215/**DPX3220)**		0,20–0,50
-R50 ▲ Stable Geometry ▲ Heavy rough machining ▲ For heavily interrupted cuts ▲ First choice for cast iron materials			CTCK215/CTPK220 (DCX3215/DPX3220) **CTCK215**/CTPK220 **(DCX3215/**DPX3220)	CTCK215/CTPK220 (DCX3215/DPX3220) CTCK215/**CTPK220** (DCX3215/**DPX3220)**		0,20–0,50

MaxiMill 270

-27 ▲ Highly positive geometry ▲ Sharp cutting edges ▲ First choice for non-ferrous metals		**H216T** **(CWK26)**	**H216T** **(CWK26)**	**H216T** **(CWK26)**		0,05–0,40
-27P ▲ Highly positive geometry ▲ Sharp cutting edges ▲ Reduced built up edge ▲ First choice for non-ferrous metals		**H216T**/AMZ **(CWK26**/AMZ)	**H216T**/AMZ **(CWK26**/AMZ)	**H216T**/AMZ **(CWK26**/AMZ)		0,05–0,40
-29 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		**CTCP230**/CTPP235 **(DCX1230**/DPX1235)	CTCP230/**CTPP235** (DCX1230/**DPX1235)**	CTCP230/**CTPP235** (DCX1230/**DPX1235)**		0,10–0,30

Chip Breakers Overview

MaxiMill 270

Model	Machining			sectional illustration	f_z in mm
	fine	medium	rough		
-31 ▲ Stable Geometry ▲ Heavy rough machining ▲ For heavily interrupted cuts ▲ First choice for cast iron materials		**CTCK215 (DCX3215)**	**CTCK215 (DCX3215)**		0,10–0,35
-F50 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ First choice for stainless steel materials		**CTPM245 (DPX2245)** CTCS245	**CTPM245 (DPX2245)** **CTCS245**	CTPM245 (DPX2245) CTCS245		0,10–0,20
-M31 ▲ Positive Geometry ▲ Smooth running ▲ Universal application ▲ For heat resistant materials, titanium and super alloys		CTC5240 (HCF5240)	CTC5240 (HCF5240)	CTC5240 (HCF5240)		0,10–0,25
-33 ▲ Positive Geometry ▲ Light rough machining ▲ First choice for stainless steel materials		**CTPM240 (DPX2240)**	**CTPM240 (DPX2240)**	**CTPM240 (DPX2240)**		0,10–0,25
-33P ▲ Positive Geometry ▲ Reduced built up edge ▲ First choice for stainless steel materials		**CTPM240 (DPX2240)**	**CTPM240 (DPX2240)**		0,10–0,25
-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		CTPP235 (DPX1235)	**CTPP235 (DPX1235)**	**CTPP235 (DPX1235)**		0,20–0,60
-R50 ▲ Stable Geometry ▲ Medium rough machining ▲ For interrupted cuts ▲ First choice for cast iron materials		**CTCP230**/CTPP235 (**DCX1230**/DPX1235) **CTPM225** **CTCK215**	CTCP230/**CTPP235** (DCX1230/**DPX1235**) **CTPM225** **CTCK215**	**CTCP230/CTPP235 (DCX1230/DPX1235)** **CTPM225** **CTCK215**		0,30–0,80

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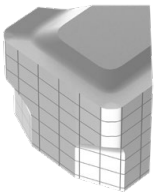
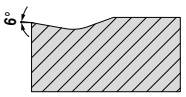
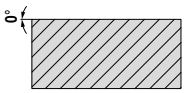
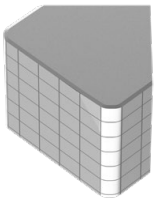
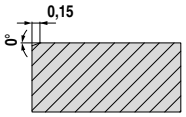
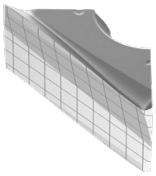
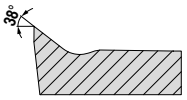
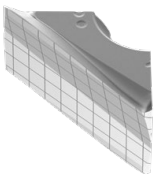
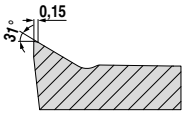
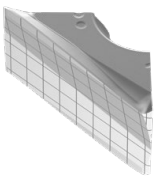
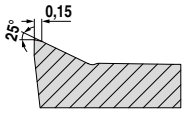
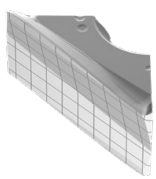
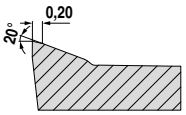
Chip Breakers Overview

MaxiMill HEC

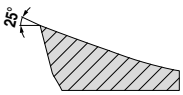
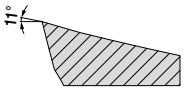
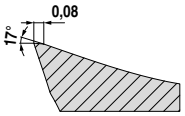
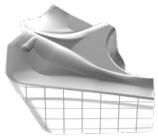
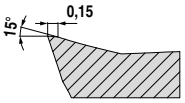
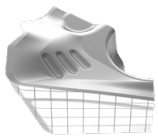
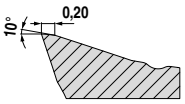
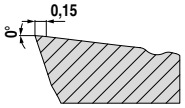
Model	Machining			sectional illustration	f_z in mm
	fine	medium	rough		
-R50 ▲ Positive Geometry ▲ For thin-walled components ▲ For low powered machines ▲ For cast iron materials	 **CTCK215 (DCX3215)**	**CTPK220 (DPX3220)**			0,08–0,25
-ER ▲ Stable cutting edge ▲ Universal application ▲ High surface quality through parallel land ▲ First choice for cast iron materials	**CTEP210 (DCC1210)** **CTCK215**/CTEP210 **(DCX3215**/DCC1210)	**CTPK220 (DPX3220)**			0,08–0,30
-SR ▲ Stable cutting edge ▲ Aligned with ceramics & CBN as a cutting material ▲ Stable component clamping and machine ▲ For cast iron materials	 **CTN3105**/CTL3215 **(CTS3105)**				0,10–0,25

MaxiMill 491

Model	Machining			sectional illustration	f_z in mm
	fine	medium	rough		
-F10 ▲ Very positive geometry ▲ Sharp cutting edge ▲ Prevents sticking and edge build up ▲ First Choice for non-ferrous metal	 CTWN215 (CWK4615) **CTWN215 (CWK4615)**	**CTWN215 (CWK4615)**	**CTWN215 (CWK4615)**		0,05–0,25
-F50 ▲ Positive geometry ▲ Finishing and light roughing ▲ First choice for stainless steel materials	 **CTPM240 (DPX2240)**	**CTPM240 (DPX2240)**			0,10–0,20
-M50 ▲ Universal geometry ▲ Light to medium roughing ▲ First choice for general steel materials		**CTCP230**/CTPP235 **(DCX1230**/DPX1235) **CTPM240 (DPX2240)**	**CTPP235/**CTCP230 **(DPX1235**/DCX1230) **CTPM240 (DPX2240)**		0,10–0,25
-R50 ▲ Stable geometry ▲ Strong roughing geometry ▲ For heavily interrupted cutting ▲ First choice for cast iron materials		**CTCK215**/CTPK220 **(DCX3215**/DPX3220)	**CTPK220**/CTCK215 **(DPX3220**/DCX3215)		0,10–0,30

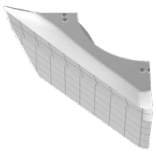
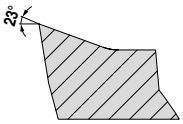
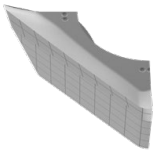
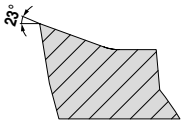
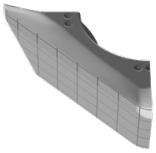
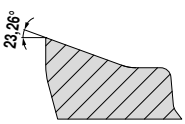
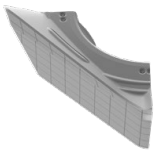
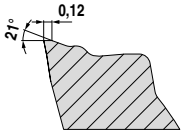
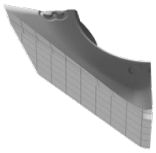
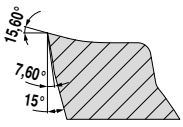
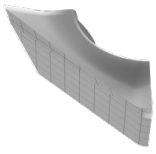
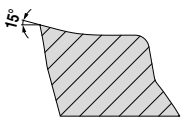
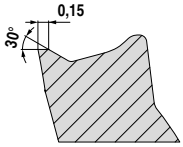
Chip Breakers Overview

MaxiMill 211

	Model	Machining			sectional illustration	f_z in mm
		fine	medium	rough		
-F20 ▲ Highly positive geometry ▲ First choice for non-ferrous metals		**CTWN215 (CWK4615)**	**CTWN215 (CWK4615)**	**CTWN215 (CWK4615)**		0,10–0,20
-F40 ▲ Positive Geometry ▲ Finishing and rough machining ▲ For unstable workholding ▲ For heat resistant materials, titanium and super alloys		**CTC5240/CTCS245**	CTPM245 **CTC5240/CTCS245**	**CTPM245** **CTC5240/CTCS245**		0,05–0,15
-F50 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ First choice for stainless steel materials		**CTCP220**/CTPP225 (**DCX1220**/DPX1225) **CTCM235**/CTPM225 (**DCX2235**/DPX2225)	**CTCP230**/CTPP235 (**DCX1230**/DPX1235) CTPM225/**CTPM240/CTPM245** (DPX2225/**DPX2240/ DPX2245**)	CTCP230/**CTPP235** (DCX1230/**DPX1235**) CTPM240/**CTPM245** (DPX2240/**DPX2245**)		0,10–0,20
-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		**CTCM235**/CTPM225 (**DCX2235**/DPX2225)	**CTCP230**/CTPP235 (**DCX1230**/DPX1235) CTPM225/**CTPM240** (DPX2225/**DPX2240**) **CTCK215**/CTPK220 (**DCX3215**/DPX3220)	CTCP230/CTPP235 (DCX1230/DPX1235) CTPM225/CTPM240 (DPX2225/DPX2240) CTCK215/**CTPK220** (DCX3215/**DPX3220**)		0,10–0,25
-R50 ▲ Stable Geometry ▲ Heavy rough machining ▲ For heavily interrupted cuts ▲ First choice for cast iron materials		**CTCK215 (DCX3215)**	CTPM225/**CTPM240/CTCM235** (DPX2225/**DPX2240/DCX2235**) **CTCK215 (DCX3215)**	CTCP230/CTPP235 (DCX1230/DPX1235) CTPM225/**CTPM240/CTCM235** (DPX2225/**DPX2240/DCX2235**) **CTCK215 (DCX3215)**		0,10–0,30
-R60 ▲ Highly stable geometry ▲ For stable clamping ▲ First choice for hard machining		**CTP6215 (CCN6215)**	**CTP6215 (CCN6215)**	**CTP6215 (CCN6215)**		0,05–0,20

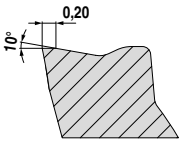
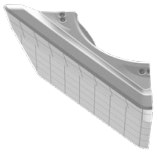
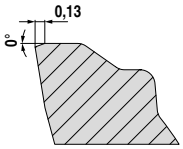
Chip Breakers Overview

MaxiMill 490

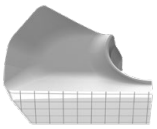
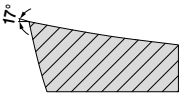
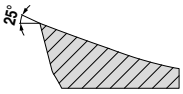
Model	Machining			sectional illustration	f_z in mm
	fine	medium	rough		
-27 ▲ Highly positive geometry ▲ Sharp cutting edges ▲ For finish machining of titanium alloys		**CTC5240 (HCF5240)**	**CTC5240 (HCF5240)**		0,10–0,20
-27P ▲ Highly positive geometry ▲ Sharp cutting edges ▲ Reduced built up edge ▲ First choice for non-ferrous metals		**AMZ**/H216T **(AMZ**/CWK26) AMZ/**H216T** (AMZ/**CWK26)**	AMZ/H216T **(AMZ/CWK26)**	AMZ/H216T **(AMZ**/CWK26)		0,08–0,35
-F10 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ For heat resistant materials		**CTCS245**	**CTCS245**		0,05–0,20
-29 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		CTCP230/**CTPP235** (DCX1230/**DPX1235)** CTPM240 (DPX2240)	CTCP230/**CTPP235** (DCX1230/**DPX1235)**		0,10–0,25
-F50 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ First choice for stainless steel materials		CTPM245 (DPX2245)	**CTPM245 (DPX2245)** **CTCS245**	**CTCS245**		0,10–0,20
-M31 ▲ Positive Geometry ▲ Universal application ▲ Smooth running ▲ For heat resistant materials, titanium and super alloys		**CTC5240 (HCF5240)**	**CTC5240 (HCF5240)**		0,10–0,20
-33 ▲ Positive Geometry ▲ Light rough machining ▲ First choice for stainless steel materials		CTPM240 (DPX2240)	**CTPM240 (DPX2240)**		0,10–0,20

Chip Breakers Overview

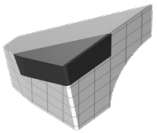
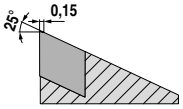
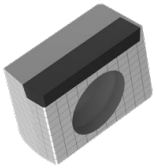
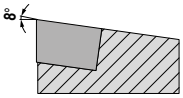
MaxiMill 490

Model	Machining			sectional illustration	f_z in mm
	fine	medium	rough		
-31 ▲ Stable Geometry ▲ Heavy rough machining ▲ For heavily interrupted cuts ▲ First choice for cast iron materials		**CTCK215 (DCX3215)**	**CTCK215 (DCX3215)**		0,10–0,30
-SR ▲ Stable Geometry ▲ Light to medium finishing ▲ Aligned with cermet ▲ For steel materials		**TCM10 (CWC10)** TCM10 (CWC10) TCM10 (CWC10)	**TCM10/CTPP235 (CWC10/DPX1235)**	**CTPP235 (DPX1235)**		0,05–0,25

MaxiMill HSC/HPC

-27P ▲ Highly positive geometry ▲ Sharp cutting edges ▲ Reduced built up edge ▲ First choice for non-ferrous metals		H216T (CWK26) **H216T (CWK26)**	**H216T (CWK26)**	**H216T (CWK26)**		0,05–0,35
-F20 ▲ Highly positive geometry ▲ First choice for non-ferrous metals		**CTWN215 (CWK4615)**	**CTWN215 (CWK4615)**	**CTWN215 (CWK4615)**		0,10–0,20

MaxiMill HPC

-SR ▲ Highly positive geometry ▲ Universal application ▲ Low cutting forces ▲ Minimum burr formation ▲ High surface quality through parallel land		**CTD4205 (CWD4205)**	**CTD4205 (CWD4205)**	**CTD4205 (CWD4205)**		0,10–0,30
-ER ▲ Positive Geometry ▲ Medium to heavy rough machining ▲ Reduced burr formation ▲ Finishing of cast iron and hardened steel		**CTL3215 (CWB3215)** **CTD4205 (CWD4205)** **CTL3215 (CWB3215)**	**CTL3215 (CWB3215)** **CTD4205 (CWD4205)**	**CTD4205 (CWD4205)**		0,10–0,35

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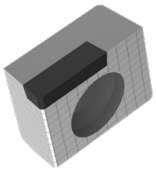
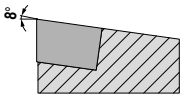
Chip Breakers Overview

MaxiMill HPC

Model	Machining			sectional illustration	f_z in mm
	fine	medium	rough		
-FR ▲ Positive Geometry ▲ For medium to heavy rough machining ▲ Reduced burr formation					0,10–0,35
	CTD4205 (CWD4205)	**CTD4205 (CWD4205)**	**CTD4205 (CWD4205)**		

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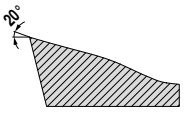
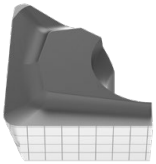
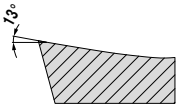
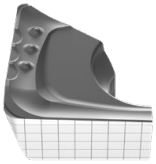
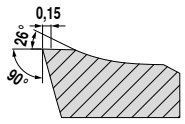
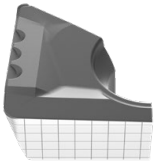
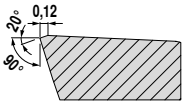
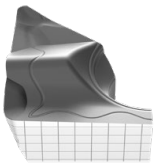
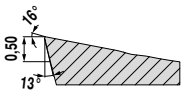
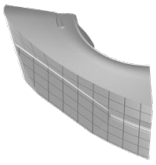
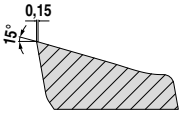
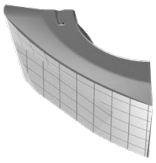
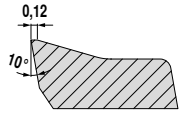
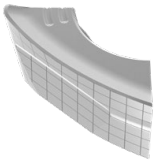
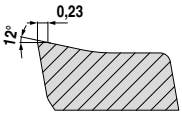
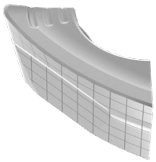
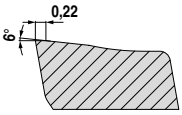
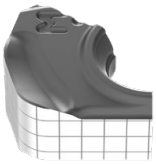
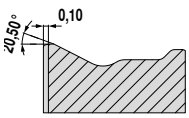
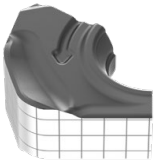
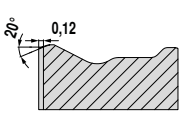
-27P ▲ Highly positive geometry ▲ Sharp cutting edges ▲ Reduced built up edge ▲ First choice for non-ferrous metals					0,05–0,25
	H216T (CWK26)	**H216T (CWK26)**	**H216T (CWK26)**		
-29 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		**CTCP230**/CTPP235 **(DCX1230**/DPX1235)	CTCP230/**CTPP235** (DCX1230/**DPX1235**)		0,10–0,30
-33 ▲ Positive Geometry ▲ Light rough machining ▲ First choice for stainless steel materials		**CTPM240 (DPX2240)**	**CTPM240 (DPX2240)**		0,10–0,30
-SR ▲ Stable Geometry ▲ Light to medium finishing ▲ Aligned with cermet ▲ For steel materials		**CTCP230 (DCX1230)**	**CTCP230 (DCX1230)**		0,15–0,35
-ER ▲ Positive Geometry ▲ Finishing and rough machining ▲ For unstable workholding ▲ For heat resistant materials, titanium and super alloys		CTC5240 (HCF5240)	**CTC5240 (HCF5240)**		0,10–0,25

Chip Breakers Overview

MaxiMill HFC

Model	Machining			sectional illustration	f_z in mm
	fine	medium	rough		
-F40 ▲ Positive Geometry ▲ Finishing and rough machining ▲ For unstable workholding ▲ For heat resistant materials, titanium and super alloys		CTPM245 (DPX2245)	CTPM245 (DPX2245)		0,20–1,25
		CTC5240/CTCS245 (HCF5240)	**CTC5240/CTCS245 (HCF5240)**	**CTC5240/CTCS245 (HCF5240)**	
-F50 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ For heat resistant materials					0,20–1,50
		CTC5240/CTCS245 (HCF5240)	**CTC5240/CTCS245 (HCF5240)**	**CTC5240/CTCS245 (HCF5240)**	
-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		CTCP220/**CTPP225/CTCP230** (DCX1220/**DPX1225/DCX1230**)	CTPP225/**CTCP230/CTPP235** (DPX1225/**DCX1230/DPX1235**)	CTCP230/**CTPP235** (DCX1230/**DPX1235**)		0,50–3,00
		CTPM225 (DPX2225)	**CTCM235/CTPM240**/CTPM245 **(DCX2235/DPX2240**/DPX2245)	**CTPM240/CTPM245 (DPX2240/DPX2245)**	
			CTCK215 (DCX3215)	**CTCK215 (DCX3215)**	
-R50 ▲ Stable Geometry ▲ For stable machining conditions ▲ First choice for heavily interrupted cuts ▲ First choice for general steel materials			**CTPP235 (DPX1235)**	**CTPP235 (DPX1235)**		0,50–3,00

DHFC

-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		CTPP236	**CTPP236**	CTPP236		0,25–1,20
		CTPM241	**CTPM241**	CTPM241	
-R50 ▲ Stable Geometry ▲ For stable machining conditions ▲ First choice for heavily interrupted cuts ▲ First choice for general steel materials			**CTPP231**/CTPP236	CTPP231/**CTPP236**		0,30–1,20
			CTPK221	**CTPK221**	

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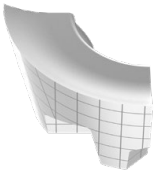
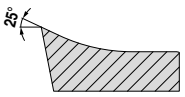
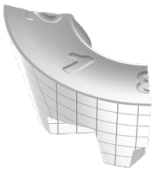
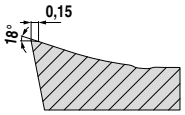
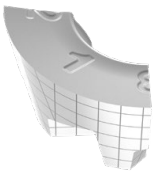
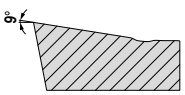
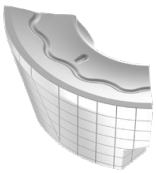
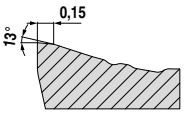
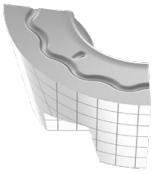
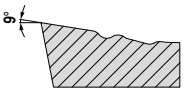
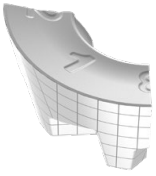
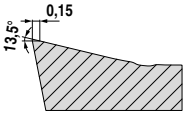
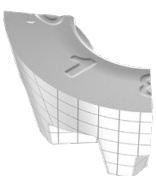
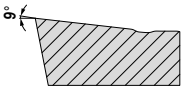
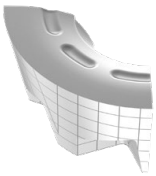
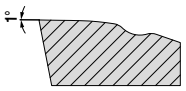
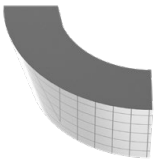
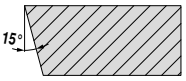
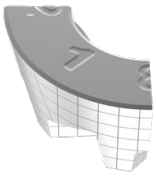
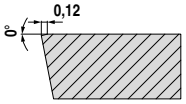
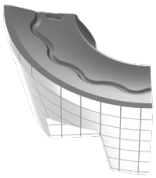
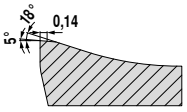
Chip Breakers Overview

MaxiMill 251

Model	Machining			sectional illustration	f_z in mm
	fine	Medium	rough		
-27P ▲ Highly positive geometry ▲ Sharp cutting edges ▲ Reduced built up edge ▲ First choice for non-ferrous metals					0,05–0,40
	H216T (CWK26)				
	H216T (CWK26)	**H216T (CWK26)**	**H216T (CWK26)**		
-F50 ▲ Positive Geometry ▲ Low cutting forces ▲ For unstable workholding ▲ First choice for austenitic stainless steel materials					0,08–0,35
	CTCP230/**CTPP235** (DCX1230/**DPX1235**)	CTCP230/**CTPP235** (DCX1230/**DPX1235**)			
	CTPP225/**CTCM235**/CTPM240 (DPX1225/**DCX2235**/DPX2240)	CTPP225/**CTCM235/CTPM240** (DPX1225/**DCX2235/DPX2240**)	CTCM235/**CTPM240** (DCX2235/**DPX2240**)		
	CTCS245	**CTCS245**	**CTCS245**		
-M30 ▲ Medium rough machining ▲ Combines low cutting force and stability ▲ First choice for martensitic stainless steel materials					0,08–0,35
		CTPP235 (DPX1235)	**CTPP235 (DPX1235)**		
	CTPP225/**CTCM235**/CTPM240 (DPX1225/**DCX2235**/DPX2240)	CTPP225/**CTCM235/CTPM240** (DPX1225/**DCX2235/DPX2240**)	CTPP225/CTCM235/**CTPM240** (DPX1225/DCX2235/**DPX2240**)		
-M31 ▲ Positive Geometry ▲ Universal application ▲ Smooth running ▲ For heat resistant materials, titanium and super alloys					0,08–0,35
	CTC5240 (HCF5240)	**CTC5240 (HCF5240)**	**CTC5240 (HCF5240)**		
-M32 ▲ Medium rough machining ▲ Low cutting force and good stability ▲ First choice for martensitic stainless steel materials					0,08–0,35
	CTPM245 (DPX2245)	**CTPM245 (DPX2245)**	**CTPM245 (DPX2245)**		
-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials					0,10–0,40
	CTCP230/CTPP235 (**DCX1230**/DPX1235)	**CTCP230/CTPP235 (DCX1230/DPX1235)**	CTCP230/**CTPP235** (DCX1230/**DPX1235**)		
-R30 ▲ Sateble Geometry ▲ Heavy rough machining ▲ For heavily interrupted cuts ▲ First choice for cast iron materials					0,10–0,40
		CTCK215 (DCX3215)	**CTCK215 (DCX3215)**		

Chip Breakers Overview

MaxiMill 251

	Model	Machining			sectional illustration	f_z in mm
		fine	Medium	rough		
-R60 ▲ Highly stable geometry ▲ For stable clamping ▲ First choice for hard machining		**CTP6215 (CCN6215)**	**CTP6215 (CCN6215)**	**CTP6215 (CCN6215)**		0,05–0,35
-FN ▲ Highly positive geometry ▲ First choice for non-ferrous metals		**H216T (CWK26)**	**H216T (CWK26)**	**H216T (CWK26)**		0,10–0,40
-SN ▲ Robust insert ▲ For poor machining conditions ▲ First choice for cast iron/steel matrerials		**TCM10**/CTCP230 **(CWC10**/DCX1230) TCM10/CTPM225 (CWC10/ DPX2225) TCM10/CTCK215 (CWC10/DCX3215)	TCM10/**CTCP230/CTPP235** (CWC10/**DCX1230/DPX1235**) **CTPM225 (DPX2225)** **CTCK215 (DCX3215)**	CTCP230/**CTPP235** (DCX1230/**DPX1235**) CTPM225 (DPX2225) **CTCK215 (DCX3215)**		0,10–0,40
-EN ▲ Universal Geometry ▲ Low cutting force ▲ First choice for good flatness		**CTCK215 (DCX3215)**	**CTCK215 (DCX3215)**	**CTCK215 (DCX3215)**		0,15–0,50

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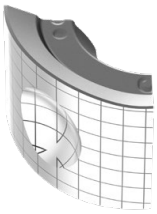
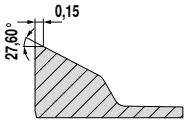
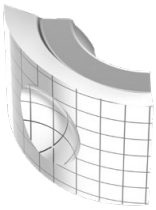
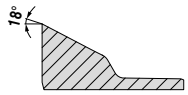
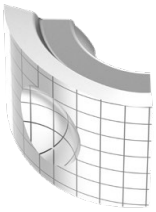
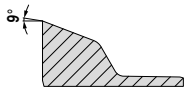
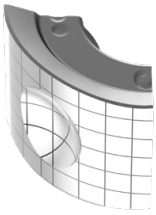
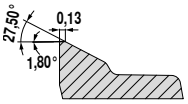
Chip Breakers Overview

MaxiMill 252

Model	Machining			sectional illustration	f_z in mm
	fine	Medium	rough		
-F50 ▲ Positive Geometry ▲ Light rough machining ▲ For unstable workholding ▲ First choice for stainless steel materials		**CTPM240 (DPX2240)**	CTPM240 (DPX2240)		0,08–0,35
-M31 ▲ Positive Geometry ▲ Universal application ▲ Smooth running ▲ For heat resistant materials, titanium and super alloys		**CTPM245 (DPX2245)** **CTC5240 (HCF5240)**	**CTPM245 (DPX2245)** **CTC5240 (HCF5240)**		0,08–0,35
-M32 ▲ Medium rough machining ▲ Low cutting force and good stability ▲ First choice for martensitic stainless steel materials		**CTPM245 (DPX2245)**	**CTPM245 (DPX2245)**		0,05–0,35
-M50 ▲ Universal Geometry ▲ Light to medium rough machining ▲ First choice for general steel materials		**CTPP235 (DPX1235)**	**CTPP235 (DPX1235)**		0,10–0,40

Grade description

CTCP220 / DCX1220
- Carbide, TiCN-Al_2O_3-coated
- ISO | **P20**
- The wear-resistant grade for dry machining steels

CTCP225 / DPX1225
- Carbide, TiAlTaN-coated
- ISO | **P25** | **K25**
- The wear-resistant grade for wet machining of steels

CTCP230 / DCX1230
- Carbide, TiCN-Al_2O_3-coated
- ISO | **P30** | **K25** | M25
- The first choice for dry machining steel at high cutting speeds

CTPP235 / DPX1235
- Carbide, TiAlTaN-coated
- ISO | **P25** | **K25**
- The wear-resistant grade for wet machining of steels

CTPM225 / DPX2225
- Carbide, TiAlTaN-coated
- ISO | P25 | **M25**
- The wear-resistant choice for machining austenitic steels

CTCM235 / DCX2235
- Carbide, TiCN-Al_2O_3-coated
- ISO | P40 | **M35**
- The tough alternative for general steel machining
- Well suited to martensitic steel materials

CTPM240 / DPX2240
- Carbide, TiAlTaN-coated
- ISO | P40 | **M40**
- The first choice for machining austenitic steels

CTCK215 / DCX3215
- Carbide, TiCN-Al_2O_3-coated
- ISO | **K15**
- The first choice for machining cast iron materials at high cutting speeds

CTPK220 / DPX3220
- Carbide, TiAlTaN-coated
- ISO | **K20**
- Optimal for machining high-strength cast iron materials in the tougher application range

CTEP210 / DCC1210
- Cermet, TiCN-Al_2O_3-coated
- ISO | **P10** | **K05**
- The coated cermet grade with reserves of toughness for finish machining at high cutting speeds

CTWN215 / CWK4615
- Carbide, uncoated
- ISO | K15 | **N15**
- Uncoated carbide grade for machining non-ferrous metals

AMZ
- Carbide, TiAlN-coated
- ISO | P10 | K10 | **N10** | S10
- The coated carbide grade for aluminium machining

CTC5240 / HCF5240
- Carbide, TiN-TiB_2-coated
- ISO | **S40**
- The special grade for machining titanium and titanium alloys

CTD4205 / CWD4205
- Carbide, uncoated
- ISO | **N05**
- Polycrystalline diamond grade for machining non-ferrous metals and non-metallic materials

H216T / CWK26
- Carbide, uncoated
- ISO | **K15** | **N15**
- The uncoated carbide grade for machining aluminium and other non-ferrous metals
- Also highly suitable for HSC machining

TCM10 / CWC10
- Cermet, uncoated
- ISO | **P15** | **M10** | K10
- The uncoated cermet grade for finish machining stainless and hardened steel
- Particularly wear resistant thanks to high heat resistance

CTP6215 / CCN6215
- Carbide, TiAlN-coated
- ISO | **K15** | **H15**
- The coated carbide grade for hard machining

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Grade description

WAN1240
- Carbide, coated
- ISO | **P40** | M40 | K40
- Coated, tough special grade for machining steel at medium to high cutting speeds
- Also suitable for machining cast iron as a secondary application

WAX1240
- Carbide, coated
- ISO | **P40** | K40
- High-strength special grades for medium and rough machining of steel at medium cutting speeds and an extremely high feed per tooth

WAN2225
- Carbide, coated
- ISO | **M25** | S25
- Fine grain size with high toughness and temperature resistance
- For rough and finish machining of rust and acid-resistant steels in both wet and dry cutting

WUN4210
- Carbide, uncoated
- ISO | **N10**
- Uncoated standard grade for medium machining of non-ferrous metals and graphite

WTN1205
- Carbide, coated
- ISO | **P05** | **K05** | N05 | S05 | **H05**
- Coated special grade for machining steel, hardened steel, cast iron, graphite and plastics

CTPK211
- Carbide, TiAlN-coated
- ISO | M15 | **K10** | **N10** | S10 | H10
- The coated standard grade for fine machining of cast iron and non-ferrous metals at medium cutting speeds

CTPP236
- Carbide, TiAlN-TiN coated
- ISO | **P35** | M35 | **K30**
- The tough special grade for medium and rough machining of steel at high cutting speeds
- This grade is also suitable for machining cast iron and stainless steel

CTPP231
- Carbide, coated
- ISO | **P30** | K25
- A very tough special grade for medium and rough machining of steel at medium cutting speeds and an extremely high feed per tooth

CTPM241
- Carbide, AlTiN-coated
- ISO | P40 | **M40** | **S40**
- The tough carbide grade for machining stainless and heat-resistant steels

CTPP216
- Carbide, TiAlN-coated
- ISO | **P10** | M10 | **K10** | H10
- Highly wear-resistant carbide grade with high cutting edge stability for finish machining of high-strength materials, unalloyed tool steels, cast iron and hardened steel up to 54 HRC

CTPP211
- Carbide, coated
- ISO | **P10** | **M10** | K10
- Wear-resistant carbide grade for medium and rough machining of steel and stainless steel
- Well suited to dry machining

CTPK231
- Carbide, coated
- ISO | **P30** | **K30**
- Tough carbide grade for medium and rough machining of steel and cast iron materials
- Well suited to dry machining

CTPK226
- Carbide, coated
- ISO | P30 | **K30** | **H30**
- Extremely wear-resistant ultra-fine grain carbide grade for machining cast iron materials and hardened steels up to 62 HRC

CTCN211
- Carbide, coated
- ISO | **N10**
- Diamond-coated carbide grade especially for machining graphite and non-ferrous metals

Grade description

C	T	C	P	2	2	0
D	C	X	1	2	2	0

(Example)

Main application – material

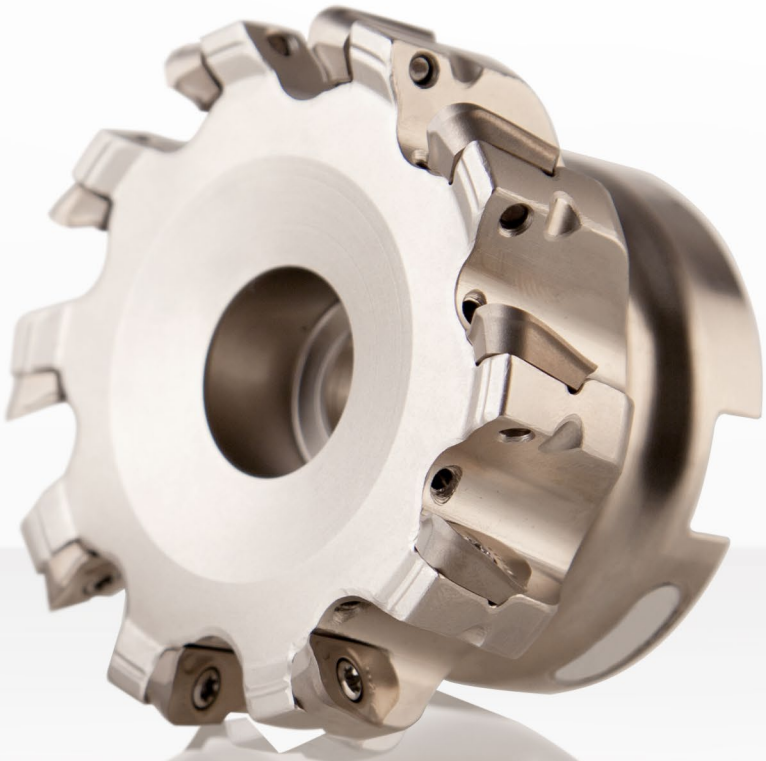
1|P	Steel
2|M	Stainless steel
3|K	Cast iron
4|N	Light and non ferrous metals
5|S	Super alloys, titanium
6|H	Hard materials
7|X	Universal application

Application

1	Turning
2	Milling
3	Grooving
4	Drilling
5	Thread turning
6	Others
7	Several processes

Degree of hardness

05	ISO 05
10	ISO 10
15	ISO 15
	...



New products for machining technicians

NEW ABS adapters

Work with flexibility and process-security with the modular ABS coupling system for rotating and stationary tools.

Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories

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WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

WNT \ Standard

Quality tools for standard applications.

The quality tools of the **WNT Standard** product line are high quality, powerful and reliable and enjoy the highest trust of our customers worldwide. Tools from this product line are the first choice for many standard applications and guarantee optimal results.

Symbol explanation

Version

Without coolant supply (Form A)

Axial coolant (Form AD)

Coolant supply either via the flange, or central (Form AD / B)

With eroded cooling ducts

Adapter with two additional coolant holes

SZID = For tool size

Types

Centro-P – Precision collet chuck with high holding forces, suitable for all machining

Centro-P WD – Collet with pull-out protection, specifically for use with Centro-P precision collet chucks

Centro-P Coated – Coated precision collet for Centro-P precision collet chuck

TG – Specially matched adapter for ThermoGrip® shrinking process

NC 2010 – Short drill chuck for all drilling applications

Coated – Coated collet for universal application

ER-B 2 µm

Collets Description
- ▲ Type – Version
- ▲ Concentricity

ABS – **KOMET ABS** – modular coupling system for rotating and stationary tools

Toolfinder – Machine interface

DIN 69871 – SK steep taper adapters

- SK 30
- SK 40
- SK 50

Toolfinder – Adapters, rotating 4+5
Product programme 10–49

JIS B 6339 – BT steep taper adapters

MAS-BT / MAS-BT-FC with face contact

- BT 30
- BT 40
- BT 50
- BT-FC 30
- BT-FC 40
- BT-FC 50

Toolfinder – Adapters, rotating 4+5
MAS-BT product range 50–83
MAS-BT-FC product range 84–92

HSK hollow taper adapters with face contact

ISO 12164 – HSK-A / HSK-E

- HSK-A 32
- HSK-A 40
- HSK-A 50
- HSK-A 63
- HSK-A 100
- HSK-E 25
- HSK-E 32
- HSK-E 40
- HSK-E 50

Toolfinder – Adapters, rotating 4+5
HSK-A product range 93–133
HSK-E product range 134–138

ISO 12164-3 – HSK-T

- HSK-T 63
- HSK-T 100

Toolfinder – Adapters, stationary 6+7
Product programme 139–156

ISO 26623-1 – PSC polygon hollow adapters with face contact

PSC, rotating

- PSC 32
- PSC 40
- PSC 50
- PSC 63
- PSC 80

Toolfinder – Adapters, rotating 4+5
Product programme 157–173

PSC, stationary

- PSC 32
- PSC 40
- PSC 50
- PSC 63
- PSC 80
- PSC 80X

Toolfinder – Adapters, stationary 6+7
Product programme 174–187

ISO 10889 – VDI tool holders with cylindrical shank

- VDI 16
- VDI 20
- VDI 25
- VDI 30
- VDI 40
- VDI 50

Toolfinder – Adapters, stationary 8+9
Product programme 188–205
Driven Tools 224–226

Toolfinder – Adapters, rotating

Accuracy		Holder Type		Finishing	Roughing – Finishing	Roughing	DIN 69871 SK	JIS B 6339 MAS-BT	JIS B 6339 MAS-BT-FC	ISO 12164 HSK-A	ISO 12164 HSK-E	ISO 26623-1 PSC
	Maximum	Centro-P										
		▲ ER Precision Collet chuck		●	●	●	10–12	50–52	84	93–95	134+135	157
		▲ OZ precision collet chuck		●	●	●	13	53		96		
		High Pressure Milling Chuck		●	●	○	14–16	54–56	86	97–99		158
		Hydraulic chuck		●			17+18	57+58	87	100+101		
		Heat Shrink Adapter		●	○		19–22	59+60	85	102–107	136	159+160
		Micro-Precision Collet Chuck		●						119	137	
	High	Cylindrical shank adapter										
		▲ Weldon			○	●	23–25	61+62	88	108–112		161
		▲ Whistle Notch			○	●	26+27	63+64		113		162
		Indexable insert drill adapter					28	65		114		163
		Collet Chuck										
		▲ ER Collet chuck		●	○		29	66	89	115–117		164+165
		▲ OZ Collet Chuck		●	○		30	67				
		NC 2010 short drill chuck					31	68		118		
		Quick change tapping chuck with minimum length compensation					32+33	69+70		120+121		166
		Quick change tap chuck with length compensation					34	71		122		167
		Quick change tap chuck without length compensation					34	71		122		
		ABS adapters					35+36	72+73		123+124		

● = **Main Application** ○ = Extended application

Toolfinder – Adapters, rotating

	Holder Type		Finishing	Roughing – Finishing	Roughing	DIN 69871 SK	JIS B 6339 MAS-BT	JIS B 6339 MAS-BT-FC	ISO 12164 HSK-A	ISO 12164 HSK-E	ISO 26623-1 PSC
Accuracy	Medium	Adapter for milling cutters with threaded end		○	●	37+38	74		125+126		168
		Face mill adapter									
		▲ Combination shell mill adapter	●	●	●	39	75		127		169+170
		▲ Shell mill adapter	●	●	●	40+41	76+77	90	128–130		
		▲ Large diameter facemill adapter	●	●	●	42	78				
		Drill chuck adapter				43	79				
		Milling adapter sleeve for Morse taper shanks with external thread		○	●	44	80				
		Taper adapter for Morse taper				45	81		131		171

Overview Accessories

		DIN 69871 SK	JIS B 6339 MAS-BT	JIS B 6339 MAS-BT-FC	ISO 12164 HSK-A	ISO 12164 HSK-E	ISO 26623-1 PSC
Intermediate/reducing adapter for SK adapters		46	82				
Blank		47	83		132		172
Test bar		47	83		133		173
Pull stud		48+49	91+92				
Coolant pipe/key					138		173

Collets and quick change adapters can be found on → **Pages 206–223.**

16

Toolfinder – Stationary adapters – HSK-T and PSC tool holders

Toolholders for negative turning inserts

	Type Machining	Illustration	HSK-T ISO 12164	PSC ISO 26623
	DCLN 95° Internal + External		139	174
CN..	DCMN 95° External		139	
	DCMN+ DDMN External		140	
	DCMN+ DDMN External		140	
	DDUN 93° Internal + External		140	
DN..	DDJN 93° Internal + External		141	174
	DDHN 107,5° Internal + External		141	
	DDMN 48° External		142	
SN..	DSDN 45° External		142	
VN..	DVMN 50° External		143	
WN..	DWLN 95° Internal + External		143	175

Toolholders for positive turning inserts

	Type Machining	Illustration	HSK-T ISO 12164	PSC ISO 26623
CC..	SCLC 95° Internal + External		144	
	SCMC 50° External		144	
	SDJC 93° Internal + External		145	175
DC..	SDNC 62,5° Internal + External			176
	SDMC 48° External		145	
	PRDC 0° External		146	
RC..	PRSC Internal + External		146	
	SVUC 93° Internal + External		147	
	SVJC 93° Internal + External		147	
VC..	SVHC 107,5° Internal + External		148	
	SVMC 50° External		148	

Multifunction tools – EcoCut

Type	Illustration	HSK-T ISO 12164	PSC ISO 26623
2,25xD		152	

Toolfinder – Stationary adapters – HSK-T and PSC tool holders

Holders for grooving and threading inserts

Type	Illustration	HSK-T ISO 12164	PSC ISO 26623
0°		153	
90°		153	

Toolholders for threading inserts

Type	Illustration	HSK-T ISO 12164	PSC ISO 26623
Internal thread			179
External thread			179

Boring bars for negative inserts

	Type	Illustration	HSK-T ISO 12164	PSC ISO 26623
CN..	DCLN 95°		149	
DN..	DDUN 93°		149	
WN..	DWLN 95°		150	

Boring bars for positive inserts

	Type	Illustration	HSK-T ISO 12164	PSC ISO 26623
CC..	SCLC 95°		151	177
DC..	SDUC 93°		151	177
VC..	SVUC 93°		152	
	SVQC 107,5°			178

Basic holder

Type	Illustration	HSK-T ISO 12164	PSC ISO 26623
Square shank holder 0°		155	180
Square shank holder 45°		155	181
Square shank holder 90°		156	180
Square shank holder 2 face 0°			181
Square shank holder 3 face 0°		155	181
Boring bar holder		156	182+183

Extension / Reduction / Adapter

Type	Illustration	HSK-T ISO 12164	PSC ISO 26623
Extension			184
Reduction			185+186

Parting blade holders

Type	Illustration	HSK-T ISO 12164	PSC ISO 26623
Parting Blade Holder GX / LX / FX / SX		154	
Radial Grooving Holders, right / left			180

Others

Protection plug			187
Hollow nose keys			187

16

Toolfinder – Stationary adapters – VDI adapters for star turrets

Toolholders above

Upper turret		Spindle rotation clockwise		Spindle rotation counter clockwise	
	Square Shank Adapters	B2/B3/B6/B7/C1/C2/D1/D2	188–191	B2/B3/B6/B7/C3/C4/D1/D2	188–191
	Part Off Holder	double	201	double – overhead	201
	Adapter VDI to VDI	left-hand	202	left-hand	202
	Boring bar holder	left-hand	202+203	left-hand	202+203

Lower turret		Spindle rotation clockwise		Spindle rotation counter clockwise	
	Square Shank Adapters	B2/B3/B6/B7/C3/C4/D1/D2	188–191	B2/B3/B6/B7/C1/C2/D1/D2	188–191
	Part Off Holder	double – overhead	201	double	201
	Adapter VDI to VDI	right-hand	202	right-hand	202
	Boring bar holder	right-hand	202+203	right-hand	202+203

Toolholders below

Upper turret		Spindle rotation clockwise		Spindle rotation counter clockwise	
	Square Shank Adapters	B2/B3/B6/B7/C3/C4/D1/D2	188–191	B2/B3/B6/B7/C1/C2/D1/D2	188–191
	Part Off Holder	double	201	double – overhead	201
	Adapter VDI to VDI	right-hand	202	right-hand	202
	Boring bar holder	right-hand	202+203	right-hand	202+203

Lower turret		Spindle rotation clockwise		Spindle rotation counter clockwise	
	Square Shank Adapters	B2/B3/B6/B7/C1/C2/D1/D2	188–191	B2/B3/B6/B7/C3/C4/D1/D2	188–191
	Part Off Holder	double – overhead	201	double	201
	Adapter VDI to VDI	left-hand	202	left-hand	202
	Boring bar holder	left-hand	202+203	left-hand	202+203

Toolfinder – Stationary adapters – VDI adapters for disc turrets

Upper turret		Spindle rotation clockwise		Spindle rotation counter clockwise	
	Square Shank Adapters	B1/B5/C1/C2/D1	188–191	B3/B7/C3/C4/D2	188–191
	Cylindrical Shank Adapters	E/E1/E2/E3/E4	191–194	E/E1/E2/E3/E4	191–194
	Taper Adapters	F1	195	F1	195
	Part Off Holder	right-hand	196+197	overhead right	196+197
	Drill Chucks	NC 2010	198	NC 2010	198
	Tapping Chucks	GSF/GML	199	GSF/GML	199

Lower turret		Spindle rotation clockwise		Spindle rotation counter clockwise	
	Square Shank Adapters	B4/B8/C3/C4/D2	188–191	B2/B6/C1/C2/D1	188–191
	Cylindrical Shank Adapters	E/E1/E2/E3/E4	191–194	E/E1/E2/E3/E4	191–194
	Taper Adapters	F1	195	F1	195
	Part Off Holder	overhead left	196+197	left-hand	196+197
	Drill Chucks	NC 2010	198	NC 2010	198
	Tapping Chucks	GSF/GML	199	GSF/GML	199

Accessories

	Bar stop	198
	Test arbors	200
	Tool holders	200+201

	Bar pullers	204
	Gripper accessories	205
	Protection plug	205

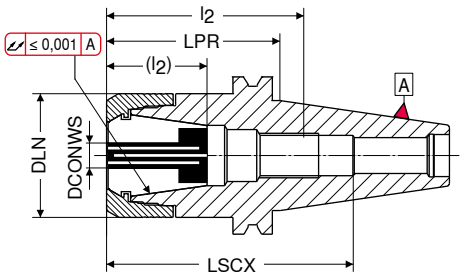
16

ER Precision Collet chuck

- For standard or sealed nuts
- Maximum size collet to ISO tolerance field H10
- For clamping a roll key is required
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P



Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	AD G 2,5 n_{max} 25000 Y8 Article no. 84 424 ... £		AD/B G 2,5 n_{max} 25000 Y8 Article no. 84 414 ... £	
SK 30	2 - 16	70	40	66	35 - 49 (18 - 31)	430E (ER25)	222.46	016		
SK 30	2 - 20	70	50	75	50 - 75 (29 - 40)	470E (ER32)	222.46	020		
SK 40	1 - 10	70	30	110	28 - 45 (16 - 31)	426E (ER16)	183.78	102		
SK 40	1 - 10	100	30	140	28 - 45 (16 - 31)	426E (ER16)	226.33	103		
SK 40	1 - 10	130	30	140	28 - 50 (14 - 34)	426E (ER16)			228.86	510
SK 40	1 - 10	160	30	200	28 - 45 (16 - 31)	426E (ER16)			252.58	910
SK 40	2 - 16	45	40	85	35 - 60 (20 - 42)	430E (ER25)			207.84	816
SK 40	2 - 16	70	40	110	35 - 60 (20 - 42)	430E (ER25)	169.83	162		
SK 40	2 - 16	100	40	113	35 - 60 (20 - 42)	430E (ER25)	226.33	163		
SK 40	2 - 16	130	40	140	38 - 67 (21 - 49)	430E (ER25)			248.72	516
SK 40	2 - 16	160	40	118	35 - 60 (20 - 42)	430E (ER25)			262.03	916
SK 40	2 - 16	200	40	148	35 - 60 (20 - 42)	430E (ER25)			439.02	917
SK 40	2 - 20	50	50	85	52 - 70 (26 - 52)	470E (ER32)	223.43	201		
SK 40	2 - 20	70	50	111	55 - 75 (42 - 62)	470E (ER32)	158.50	202		
SK 40	2 - 20	100	50	114	52 - 70 (32 - 52)	470E (ER32)	226.33	203		
SK 40	2 - 20	130	50	114	50 - 74 (36 - 55)	470E (ER32)			248.72	620
SK 40	2 - 20	160	50	119	52 - 70 (32 - 52)	470E (ER32)			262.03	920
SK 40	3 - 26	70	63	105	48 - 55	472E (ER40)	254.51	261 [1]		
SK 40	3 - 26	100	63	120	48 - 62	472E (ER40)	325.10	262 [1]		
SK 50	1 - 10	70	30	100	28 - 45 (16 - 35)	426E (ER16)	353.44	106		
SK 50	1 - 10	100	30	130	28 - 55 (16 - 41)	426E (ER16)	424.18	107		
SK 50	1 - 10	160	30	190	28 - 55 (16 - 41)	426E (ER16)	650.20	108		
SK 50	2 - 16	70	40	120	35 - 64 (20 - 48)	430E (ER25)	353.44	166		
SK 50	2 - 16	100	40	150	35 - 64 (20 - 48)	430E (ER25)	424.18	167		
SK 50	2 - 20	70	50	120	59 - 85 (40 - 70)	470E (ER32)			377.33	320
SK 50	2 - 20	100	50	150	53 - 81 (35 - 63)	470E (ER32)			425.71	520
SK 50	2 - 20	160	50	200	53 - 83 (35 - 65)	470E (ER32)			693.43	720
SK 50	3 - 26	70	63	120	48 - 60	472E (ER40)	381.77	266		

1) Non standard groove before tool change collar not according to DIN, not suitable for automatic tool change

→ Transmittable torque moments, page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 3 mm longer

Spare parts, ER precision collet chuck

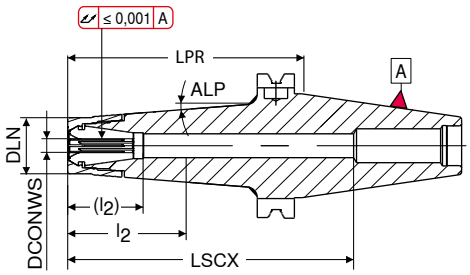
Spare parts	Y8 Lock nut IK		Y8 Lock nut			Y8 Stop screw 2			Y8 Stop screw 1	
	Article no. 84 950 ...		Article no. 84 950 ...			Article no. 83 950 ...			Article no. 83 950 ...	
for collet	£		£			£			£	
426E (ER16)	72.78	011	54.05	001	M11x1 - SW6	45.14	341	M11x1 - SW6	30.24	337
430E (ER25)	81.12	013	60.06	003	M18x1,5 - SW6	31.75	432	M18x1,5 - SW6	22.65	431
470E (ER32)	86.74	015	66.06	005	M22x1,5 - SW6	26.82	402	M22x1,5 - SW6	19.53	401
472E (ER40)	118.63	017	96.10	007				M28x1,5 - SW6	27.38	400

ER Precision tapered collet chuck

- For special tapered nuts
- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P



AD/B
G 2,5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	ALP	Y8 Article no. 84 417 ... £	
SK 40	1 - 10	100	24	140	28 - 48 (20 - 35)	426E (ER16)	4.5°	247.67	410
SK 40	1 - 10	160	24	200	28 - 48 (20 - 35)	426E (ER16)	2.5°	297.15	910

→ Transmittable torque moments, page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts	Y8 Tapered lock nut IK		Y8 Tapered lock nut			Y8 Stop screw 2			Y8 Stop screw 1	
	Article no. 84 950 ...		Article no. 84 950 ...			Article no. 83 950 ...			Article no. 83 950 ...	
for collet	£		£			£			£	
426E (ER16)	89.35	033	75.49	031	M11x1 - SW6	45.14	341	M11x1 - SW6	30.24	337

Accessories

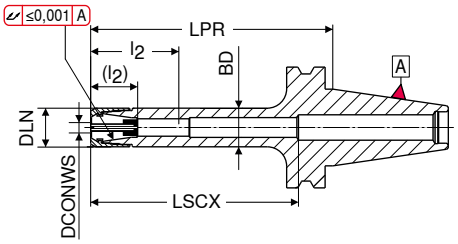
ER collet	Sealing ring	Roll key	Roll key device	Pull studs	Others
→ 208–211, 213	→ 207	→ 17|36	→ 17|36	→ 48–49	→ 17|34

ER Precision collet chuck, slim version

- For Mini Clamping Nuts
- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P



Adapter	DCONWS mm	LPR mm	DLN mm	BD mm	LSCX mm	l_2 (l_2) mm	for collet	AD G 2,5 n_{max} 25000 Y8 Article no. 84 411 ... £		AD/B G 2,5 n_{max} 25000 Y8 Article no. 84 412 ... £	
SK 30	1 - 7	50	16	16	68	18 - 36 (12 - 26)	4008E (ER11)	220.16	**007**		
SK 30	1 - 7	100	16	16	68	18 - 36 (12 - 26)	4008E (ER11)	243.75	**008**		
SK 40	1 - 7	70	16	16	60	15 - 32 (7 - 22)	4008E (ER11)			231.86	**207**
SK 40	1 - 7	100	16	16	68	18 - 36 (12 - 26)	4008E (ER11)			239.29	**407**
SK 40	1 - 7	130	16	16	110	15 - 32 (7 - 22)	4008E (ER11)			309.06	**607**
SK 40	1 - 7	160	16	16	68	18 - 36 (12 - 26)	4008E (ER11)			322.73	**907**
SK 40	1 - 10	70	22	22	90	28 - 50 (14 - 36)	426E (ER16)			231.86	**210**
SK 40	1 - 10	100	22	22	110	28 - 50 (14 - 36)	426E (ER16)			231.86	**310**
SK 40	1 - 10	130	22	22	140	28 - 50 (14 - 36)	426E (ER16)			309.06	**410**
SK 40	1 - 10	160	22	22	170	28 - 50 (14 - 36)	426E (ER16)			309.06	**510**

→ Transmittable torque moments, page 233

LSCX =Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts for collet	Mini lock nut IK Y8 Article no. 84 950 ... £		Mini lock nut Y8 Article no. 84 950 ... £		Stop screw 2 Y8 Article no. 83 950 ... £		Stop screw 1 Y8 Article no. 83 950 ... £	
4008E (ER11)			75.49	**041**	M8x1 - SW4	43.03 **340**	M8x1 - SW4	28.66 **336**
426E (ER16)	73.51	**035**	60.30	**034**	M11x1 - SW6	45.14 **341**	M11x1 - SW6	30.24 **337**

Accessories

ER collet
→ 208–211, 213

Sealing ring
→ 207

Device
→ 17|35

Roll key
→ 17|36

Roll key device
→ 17|36

Pull studs
→ 48–49

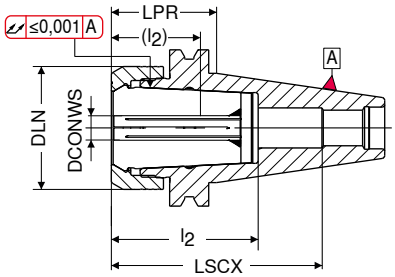
Others
→ 17|34

OZ Precision Collet Chuck

- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P



AD/B
G 2,5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	Y8 Article no. 84 406 ... £	
SK 40	2 - 25	43	50	80	53 - 65 (37 - 48)	462E	185.57	**025**
SK 50	2 - 25	50	50	110	55 - 66 (36 - 50)	462E	358.77	**725**

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts	Y8 Lock nut IK Article no. 84 950 ...		Y8 Stop screw 2 Article no. 83 950 ...		Y8 Stop screw 1 Article no. 83 950 ...	
for collet	£		£		£	
462E	71.74	**020**	M22x1,5 - SW6	26.82 **402**	M22x1,5 - SW6	19.53 **401**

Accessories

OZ Collet → 217

Sealing ring → 217

roll key → 17|36

roll key device → 17|36

Pull studs → 48–49

Others → 17|34

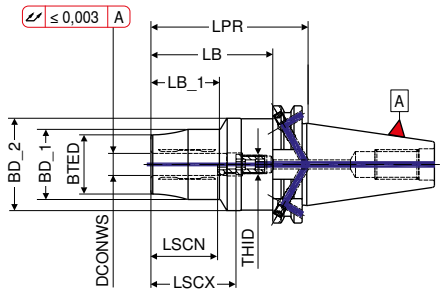
16

High pressure chuck, short version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw



AD/B
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BTED	BD_1	BD_2	LB_1	LSCX	LSCN	LB	THID	Article no. 83 422 ...	
		mm	mm	mm	mm	mm	mm	mm	mm	mm		£	
short	SK 40	16	90	36	42	50	42	49	39	71	M12x1	898.85	116
	SK 40	20	95	42	48	50	45	51	41	76	M16x1	798.70	120
	SK 40	25	110	51	57	50	60	57	47	91	M16x1	898.85	125
	SK 40	32	120	57	63	50	65	61	51	101	M16x1	898.85	132

→ Min. clamping depth, Page 233

LSCX = maximum insertion depth
LSCN = minimum insertion depth

		Y7 Clamping key - T		Y7 Pressure pin		Y7 Pressure screw		Y7 Stop screw IK	
Spare parts DCONWS		**Article no. 80 397 ...**		**Article no. 83 950 ...**		**Article no. 83 950 ...**		**Article no. 83 950 ...**	
		£		£		£		£	
16	SW5	6.09	050	Ø5 x 16	7.08	433	TR10x1,5x14	32.16	430	M12x1x18	16.71	446
20	SW5	6.09	050	Ø6 x 16	7.37	434	TR10x1,5x14	32.16	430	M16x1x18,5	18.31	448
25	SW5	6.09	050	Ø6 x 16	7.37	434	TR10x1,5x14	32.16	430	M16x1x22	28.95	449
32	SW5	6.09	050	Ø6 x 16	7.37	434	TR10x1,5x14	32.16	430	M16x1x25	36.03	450

Accessories

Reduction sleeve
→ 17|32

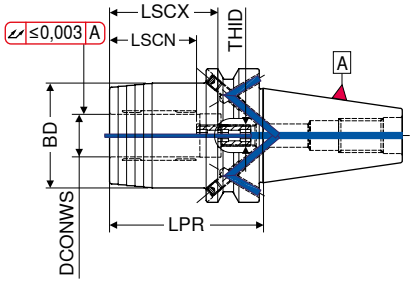
Pull studs
→ 48–49

Others
→ 17|34

High pressure chuck, short and stable version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Base body with backstop screw and pressure screw



AD/B
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	BD	LSCX	LSCN	THID	Y8 Article no. 83 427 ...	£	
	mm	mm	mm	mm	mm				
SK 40	20	64.5	49	51	40	M16x1x13,5		338.53	**120**

→ Min. clamping depth, Page 233

LSCX = maximum insertion depth
LSCN = minimum insertion depth

Spare parts

		Y7 Cylindrical screw Article no. 83 950 ...	£		Y7 Clamping key – T Article no. 80 397 ...	£		Y7 Pressure screw Article no. 83 950 ...	£		Y7 Stop screw IK Article no. 83 950 ...	£	
83 427 120	M5x5 - SW2,5		2.89	**157**	SW5		6.09	**050**	M10x1x14		8.65	**429**	M16x1x13,5 - SW8	21.78	**424**

Accessories

Reduction sleeve
→ 17|32

Pull studs
→ 48–49

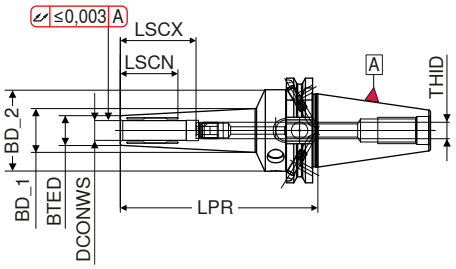
Others
→ 17|34

High pressure chuck, slim 3°

▲ For solid carbide and HSS shanks to h6 tolerance or better

Scope of supply:

Base body with backstop screw, pressure screw and screw plug



AD/B
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BTED	BD_1	BD_2	LSCX	LSCN	THID	Article no. 83 421 ...	
		mm	mm	mm	mm	mm	mm	mm		£	
long	SK 40	3	120	9	17.40	49.5	28	12	M3	646.02	103
	SK 40	4	120	10	18.40	49.5	28	16	M3	646.02	104
	SK 40	5	120	11	19.40	49.5	28	20	M3	646.02	105
	SK 40	6	120	12	20.40	49.5	37	27	M5	551.05	106
	SK 40	8	120	14	22.40	49.5	37	27	M6	551.05	108
	SK 40	10	120	16	24.50	49.5	41	31	M8x1	551.05	110
	SK 40	12	120	18	26.60	49.5	46	36	M10x1	551.05	112
	SK 40	16	120	24	32.30	49.5	49	39	M12x1	797.58	116
	SK 40	20	120	28	36.40	49.5	51	41	M16x1	797.58	120
	SK 40	6	160	16	34.37	49.5	37	27	M5	793.34	206
	SK 40	8	160	18	35.45	49.5	37	27	M6	793.34	208
	SK 40	10	160	20	37.10	49.5	41	31	M8x1	793.34	210
	SK 40	12	160	22	38.72	49.5	46	36	M10x1	793.34	212
	SK 40	6	200	16	38.72	49.5	37	27	M5	939.05	306
	SK 40	8	200	18	39.74	49.5	37	27	M6	939.05	308
	SK 40	10	200	20	41.40	49.5	41	31	M8x1	939.05	310
	SK 40	12	200	22	43.02	49.5	46	36	M10x1	939.05	312

→ Min. clamping depth, Page 233

LSCX = maximum insertion depth
LSCN = minimum insertion depth

Y7

Cylindrical screw

Y7

Clamping key - T

Y7

Pressure screw

Y7

Stop screw IK

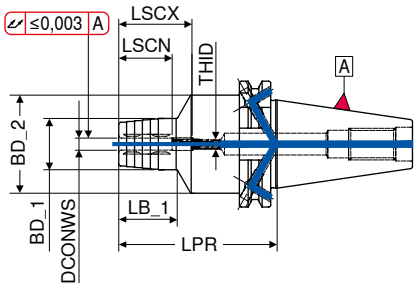
Spare parts for Article no.		Article no. 83 950 ... £			Article no. 80 397 ... £			Article no. 83 950 ... £			Article no. 83 950 ... £	
83 421 103	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M3x20 - SW1,5	13.10	172
83 421 104	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M3x20 - SW1,5	13.10	172
83 421 105	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M3x20 - SW1,5	13.10	172
83 421 106	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M5x12,5 - SW2,5	18.89	418
83 421 108	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M6x12,5 - SW3	18.89	419
83 421 110	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x12	17.20	159	M8x1x13,5 - SW3	18.89	420
83 421 112	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x12	17.20	159	M10x1x13,5 - SW5	18.89	421
83 421 116	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x12	17.20	159	M12x1x13,5 - SW5	18.89	422
83 421 120	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x12	17.20	159	M16x1x13,5 - SW8	21.78	424
83 421 206	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M5x12,5 - SW2,5	18.89	418
83 421 208	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M6x12,5 - SW3	18.89	419
83 421 210	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x12	17.20	159	M8x1x13,5 - SW3	18.89	420
83 421 212	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x12	17.20	159	M8x1x13,5 - SW3	18.89	420
83 421 306	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M5x12,5 - SW2,5	18.89	418
83 421 308	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M6x12,5 - SW3	18.89	419
83 421 310	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x12	17.20	159	M8x1x13,5 - SW3	18.89	420
83 421 312	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x12	17.20	159	M8x1x13,5 - SW3	18.89	420

Hydraulic chuck, short and slim version

▲ for solid carbide and HSS shanks to h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw



AD/B
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BD_1	BD_2	LSCX	LSCN	LB_1	THID	Article no. 83 402 ...	
		mm	mm	mm	mm	mm	mm	mm		£	
short and slim	SK 40	6	80.5	26	49.5	37	27	29.5	M5	658.06	106
	SK 40	8	80.5	28	49.5	37	27	30.0	M6	658.06	108
	SK 40	10	80.5	30	49.5	41	31	35.0	M8x1	658.06	110
	SK 40	12	80.5	32	49.5	46	36	40.0	M10x1	575.25	112
	SK 40	16	80.5	38	49.5	49	39	45.0	M12x1	658.06	116
	SK 40	20	80.5	42	49.5	51	41	47.0	M16x1	575.25	120
	SK 40	25	80.5	55	63.0	57	47	28.0	M16x1	658.06	125
	SK 40	32	80.5	63	70.0	61	51	25.5	M16x1	658.06	132
	SK 50	6	80.5	26	49.5	37	27	29.5	M5	920.97	306
	SK 50	8	80.5	28	49.5	37	27	30.0	M6	920.97	308
	SK 50	10	80.5	30	49.5	41	31	35.0	M8x1	920.97	310
	SK 50	12	80.5	32	49.5	46	36	40.0	M10x1	836.72	312
	SK 50	16	80.5	38	49.5	49	39	45.0	M12x1	920.97	316
	SK 50	20	80.5	42	49.5	51	41	42.0	M16x1	836.72	320
	SK 50	25	100.0	55	63.0	57	47	48.0	M16x1	920.97	325
	SK 50	32	100.0	63	70.0	61	51	61.0	M16x1	920.97	332

→ Min. clamping depth, Page 233

Y7

Pressure screw

Y7

Stop screw IK

Y7

Stop screw IK

Spare parts DCONWS		Article no. 83 950 ... £			Article no. 83 950 ... £		Article no. 83 950 ... £	
6	M8x1x10	13.08	439				M5x12,5 - SW2,5	18.89	418
8	M8x1x10	13.08	439	M6x14 - SW2	18.89	417	M6x12,5 - SW3	18.89	419
10	M10x1x12	13.08	440				M8x1x13,5 - SW3	18.89	420
12	M10x1x12	13.08	440				M10x1x13,5 - SW5	18.89	421
16	M10x1x12	13.08	440				M12x1x13,5 - SW5	18.89	422
20 - 32	M10x1x12	13.08	440				M16x1x13,5 - SW8	21.78	424

Accessories

Reduction sleeve
→ 17|32

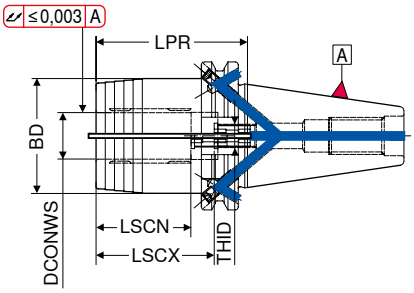
Pull studs
→ 48–49

Others
→ 17|34

Hydraulic chuck, short and stable version

▲ For solid carbide and HSS shanks to h6 tolerance or better

Scope of supply:
Base body with backstop screw and pressure screw



AD/B
G 2,5 n_{max} 25000

Y8

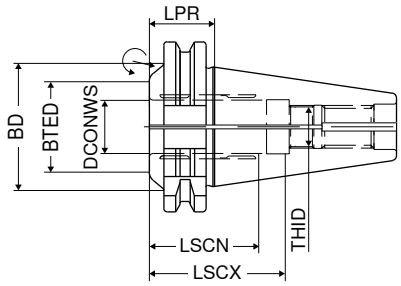
Adapter	DCONWS	LPR	BD	LSCX	LSCN	THID	Article no. 83 425 ...	
	mm	mm	mm	mm	mm		£	
SK 40	20	64.5	49.5	51	41	M16x1	447.41	120
SK 50	32	81.0	72.0	61	51	M16x1	533.13	332

→ Min. clamping depth, Page 233

Hydraulic chuck, extra short

▲ For solid carbide and HSS shanks to h6 tolerance or better

Scope of supply:
Base body with backstop screw and pressure screw



AD
G 2,5 n_{max} 25000

Y8

Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Article no. 83 403 ...	
	mm	mm	mm	mm	mm	mm		£	
SK 40	20	24.5	34	48	51	41	M16x1	523.33	120

→ Min. clamping depth, Page 233

Y7

Pressure screw

Spare parts DCONWS	Article no. 83 950 ...	
	£	
20 - 32	M10x1x12 13.08	440

Y7

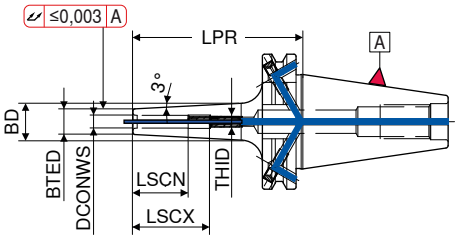
Stop screw IK

Article no. 83 950 ...	
£	
M16x1x13,5 - SW8 21.78	424

Heat shrink adapter, slim 3°

▲ For solid carbide and HSS shanks to h6 tolerance or better

TG



AD/B
G 2,5 n_{max} 25000

	Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Y8 Article no. 84 320 ...	
		mm	mm	mm	mm	mm	mm		£	
short	SK 40	3	80	9	14	28	12	M6	504.48	103
	SK 40	4	80	10	15	28	16	M6	490.07	104
	SK 40	5	80	11	16	30	20	M6	490.07	105
	SK 40	6	80	12	17	36	26	M5	428.80	106
	SK 40	8	80	14	19	36	26	M6	428.80	108
	SK 40	10	80	16	21	41	31	M8x1	428.80	110
	SK 40	12	80	18	23	47	37	M10x1	428.80	112
	SK 40	14	80	20	26	47	37	M10x1	428.80	114
	SK 40	16	80	22	28	50	40	M12x1	428.80	116
	SK 40	18	80	24	30	50	40	M12x1	428.80	118
	SK 40	20	80	26	32	52	42	M16x1	428.80	120
long	SK 40	3	120	9	16	12	12		565.74	203
	SK 40	4	120	10	17	16	16		551.32	204
	SK 40	5	120	11	18	20	20		551.32	205
	SK 40	6	120	12	22	36	26	M5	493.67	206
	SK 40	8	120	14	24	36	26	M6	493.67	208
	SK 40	10	120	16	26	41	31	M8x1	493.67	210
	SK 40	12	120	18	28	47	37	M10x1	493.67	212
	SK 40	14	120	20	30	47	37	M10x1	493.67	214
	SK 40	16	120	22	32	50	40	M12x1	493.67	216
	SK 40	18	120	24	34	50	40	M12x1	493.67	218
	SK 40	20	120	26	36	52	42	M16x1	493.67	220
extra-long	SK 40	3	160	9	19	12	12		641.41	303
	SK 40	4	160	10	20	16	16		626.99	304
	SK 40	5	160	11	21	20	20		626.99	305
	SK 40	6	160	12	24	36	26	M5	569.35	306
	SK 40	8	160	14	26	36	26	M6	569.35	308
	SK 40	10	160	16	28	41	31	M8x1	569.35	310
	SK 40	12	160	18	30	47	37	M10x1	569.35	312
	SK 40	14	160	20	32	47	37	M10x1	569.35	314
	SK 40	16	160	22	34	50	40	M12x1	569.35	316
	SK 40	18	160	24	36	50	40	M12x1	569.35	318
	SK 40	20	160	26	38	52	42	M16x1	569.35	320

→ Min. clamping depth, Page 233

Stop screw IK

Stop screw IK

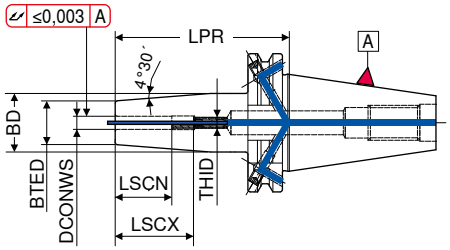
Spare parts DCONWS

	Y7 Article no. 83 950 ...		Y7 Article no. 83 950 ...	
		£		£
3 - 5	M6x14 - SW2	18.89 417		
6			M5x12,5 - SW2,5	18.89 418
8			M6x12,5 - SW3	18.89 419
10			M8x1x13,5 - SW3	18.89 420
12 - 14			M10x1x13,5 - SW5	18.89 421
16 - 18			M12x1x13,5 - SW5	18.89 422
20			M16x1x13,5 - SW8	21.78 424

Shrink fit adapters 4.5°

▲ For solid carbide and HSS shanks to h6 tolerance or better

TG



AD/B
G 2,5 n_{max} 25000
Y8

AD
G 2,5 n_{max} 25000
Y8

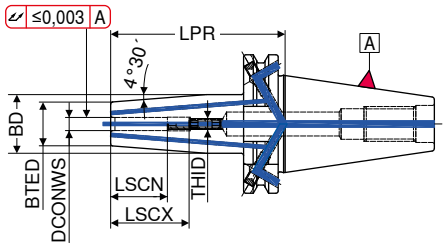
	Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Article no. 84 300 ... £		Article no. 84 300 ... £	
		mm	mm	mm	mm	mm	mm					
short	SK 30	3	80	10	17	22	12	M6			266.64	003
	SK 30	4	80	15	22	26	16	M6			259.14	004
	SK 30	5	80	15	22	30	20	M6			259.14	005
	SK 30	6	80	21	27	36	26	M5			227.94	006
	SK 30	8	80	21	27	36	26	M6			227.94	008
	SK 30	10	80	24	32	41	31	M8x1			227.94	010
	SK 30	12	80	24	32	47	37	M10x1			227.94	012
	SK 30	14	80	27	34	47	37	M10x1			227.94	014
	SK 30	16	80	27	34	50	40	M12x1			227.94	016
	SK 30	18	80	33	42	50	40	M12x1			227.94	018
	SK 30	20	80	33	42	52	42	M16x1			227.94	020
	SK 40	3	80	10	17	22	12	M6	193.25	103		
	SK 40	4	80	15	22	26	16	M6	193.25	104		
	SK 40	5	80	15	22	30	20	M6	193.25	105		
	SK 40	6	80	21	27	36	26	M5	185.28	106		
	SK 40	8	80	21	27	26	26	M6	185.28	108		
	SK 40	10	80	24	32	41	31	M8x1	185.28	110		
	SK 40	12	80	24	32	47	37	M10x1	185.28	112		
	SK 40	14	80	27	34	47	37	M10x1	185.28	114		
	SK 40	16	80	27	34	50	40	M12x1	185.28	116		
	SK 40	18	80	33	42	50	40	M12x1	185.28	118		
	SK 40	20	80	33	42	52	42	M16x1	185.28	120		
	SK 40	25	100	44	53	58	48	M16x1	185.28	125		
long	SK 40	3	120	10	20	12	12		238.41	203		
	SK 40	4	120	15	22	16	16		239.56	204		
	SK 40	5	120	15	22	20	20		239.56	205		
	SK 40	6	120	21	27	36	26	M5	239.25	206		
	SK 40	8	120	21	27	36	26	M6	239.25	208		
	SK 40	10	120	24	32	41	31	M8x1	239.25	210		
	SK 40	12	120	24	32	47	37	M10x1	239.25	212		
	SK 40	14	120	27	34	47	37	M10x1	239.25	214		
	SK 40	16	120	27	34	50	40	M12x1	239.25	216		
	SK 40	18	120	33	42	50	40	M12x1	239.25	218		
	SK 40	20	120	33	42	52	42	M16x1	239.25	220		
	SK 40	25	120	44	53	58	48	M16x1	446.82	225		
extra-long	SK 40	3	160	10	20	12	12		324.73	303		
	SK 40	4	160	15	22	16	16		317.26	304		
	SK 40	5	160	15	22	20	20		317.26	305		
	SK 40	6	160	21	27	36	26	M5	286.06	306		
	SK 40	8	160	21	27	36	26	M6	286.06	308		
	SK 40	10	160	24	32	41	31	M8x1	286.06	310		
	SK 40	12	160	24	32	47	37	M10x1	286.06	312		
	SK 40	14	160	27	34	47	37	M10x1	286.06	314		
	SK 40	16	160	27	34	50	40	M12x1	286.06	316		
	SK 40	18	160	33	42	50	40	M12x1	286.06	318		
	SK 40	20	160	33	42	52	42	M16x1	286.06	320		
	SK 40	25	160	44	53	58	48	M16x1	286.06	325		

→ Min. clamping depth, Page 233

Shrink fit adapters 4.5°

▲ For solid carbide and HSS shanks with h6 tolerance or better

TG



AD/B
G 2,5 n_{max} 25000

NEW Y8

	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	Article no. 84 317 ... £	
short	SK 40	3	80	10	17	28	12	M6	512.53	103
	SK 40	4	80	15	22	28	16	M6	495.99	104
	SK 40	5	80	15	22	30	20	M6	495.99	105
	SK 40	6	80	21	27	36	26	M5	436.31	106
	SK 40	8	80	21	27	36	26	M6	436.31	108
	SK 40	10	80	24	32	41	31	M8x1	436.31	110
	SK 40	12	80	24	32	47	37	M10x1	436.31	112
	SK 40	14	80	27	34	47	37	M10x1	436.31	114
	SK 40	16	80	27	34	50	40	M12x1	436.31	116
	SK 40	18	80	33	42	50	40	M12x1	436.31	118
	SK 40	20	80	33	42	52	42	M16x1	436.31	120
	SK 40	25	100	44	53	58	48	M16x1	436.31	125
	SK 40	32	100	44	53	62	52	M16x1	436.31	132

→ Min. clamping depth, Page 233

LSCX = maximum insertion depth
LSCN = minimum insertion depth

Y7

Stop screw IK

Y7

Stop screw IK

Y7

Sealing screw

Spare parts DCONWS		Article no. 83 950 ... £			Article no. 83 950 ... £			Article no. 83 950 ... £	
3 - 5	M6x14 - SW2	18.89	417				M2x6	1.52	512
6				M5x12,5 - SW2,5	18.89	418	M2x6	1.52	512
8				M6x12,5 - SW3	18.89	419	M2x6	1.52	512
10				M8x1x13,5 - SW3	18.89	420	M2x6	1.52	512
12 - 14				M10x1x13,5 - SW5	18.89	421	M2x6	1.52	512
16 - 18				M12x1x13,5 - SW5	18.89	422	M2x6	1.52	512
20 - 25				M16x1x13,5 - SW8	21.78	424	M2x6	1.52	512
32	M16x1 - SW5	15.15	511				M2x6	1.52	512

Accessories

Shrink fit extension
→ 17|10

Pull studs
→ 48–49

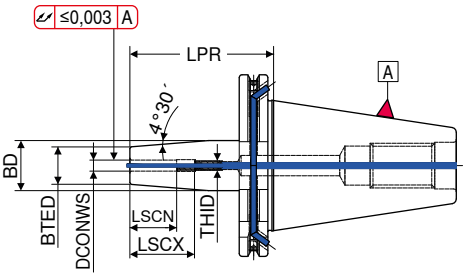
Others
→ 17|34

16

Shrink fit adapters 4.5°

▲ For solid carbide and HSS shanks to h6 tolerance or better

TG



AD/B
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Article no. 84 301 ...	
		mm	mm	mm	mm	mm	mm		£	
short	SK 50	6	80	21	27	36	26	M5	318.75	106
	SK 50	8	80	21	27	36	26	M6	318.75	108
	SK 50	10	80	24	32	41	31	M8x1	318.75	110
	SK 50	12	80	24	32	47	37	M10x1	318.75	112
	SK 50	14	80	27	34	47	37	M10x1	318.75	114
	SK 50	16	80	27	34	50	40	M12x1	318.75	116
	SK 50	18	80	33	42	50	40	M12x1	318.75	118
	SK 50	20	80	33	42	52	42	M16x1	318.75	120
	SK 50	25	100	44	53	58	48	M16x1	318.75	125
	SK 50	32	100	44	53	62	52	M16x1	318.75	132
long	SK 50	6	120	21	27	36	26	M5	351.63	206
	SK 50	8	120	21	27	36	26	M6	351.63	208
	SK 50	10	120	24	32	41	31	M8x1	351.63	210
	SK 50	12	120	24	32	47	37	M10x1	351.63	212
	SK 50	14	120	27	34	47	37	M10x1	351.63	214
	SK 50	16	120	27	34	50	40	M12x1	351.63	216
	SK 50	18	120	33	42	50	40	M12x1	351.63	218
	SK 50	20	120	33	42	52	42	M16x1	351.63	220
	SK 50	25	120	44	53	58	48	M16x1	351.63	225
	SK 50	32	120	44	53	62	52	M16x1	351.63	232
extra-long	SK 50	6	160	21	27	36	26	M5	391.80	306
	SK 50	8	160	21	27	36	26	M6	391.80	308
	SK 50	10	160	24	32	41	31	M8x1	391.80	310
	SK 50	12	160	24	32	47	37	M10x1	391.80	312
	SK 50	14	160	27	34	47	37	M10x1	391.80	314
	SK 50	16	160	27	34	50	40	M12x1	391.80	316
	SK 50	18	160	33	42	50	40	M12x1	391.80	318
	SK 50	20	160	33	42	52	42	M16x1	391.80	320
	SK 50	25	160	44	53	58	48	M16x1	391.80	325
	SK 50	32	160	44	53	62	52	M16x1	391.80	332

→ Min. clamping depth, Page 233

Y7

Stop screw IK

Spare parts DCONWS		Article no. 83 950 ...	
		£	
6	M5x12,5 - SW2,5	18.89	418
8	M6x12,5 - SW3'	18.89	419
10	M8x1x13,5 - SW3	18.89	420
12 - 14	M10x1x13,5 - SW5	18.89	421
16 - 18	M12x1x13,5 - SW5	18.89	422
20 - 32	M16x1x13,5 - SW8	21.78	424

Accessories

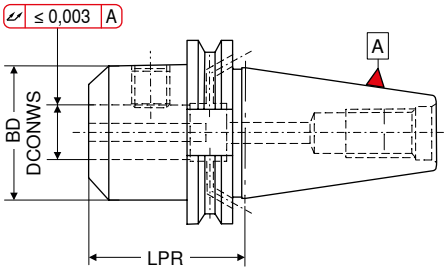
Shrink fit extension
→ 17|10

Pull studs
→ 48–49

Others
→ 17|34

Cylindrical shank adapter (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat



	Adapter	DCONWS $_{H4}$	LPR	BD	AD G 6,3 n_{max} 8000 Y8 Article no. 81 402 ...		AD G 6,3 n_{max} 8000 Y8 Article no. 82 402 ...		AD G 2,5 n_{max} 18000 Y8 Article no. 82 401 ...		ADe G 6,3 n_{max} 8000 Y8 Article no. 82 403 ...	
		mm	mm	mm	£		£		£		£	
short	SK 30	6	50	25	81.62	006						
	SK 30	8	50	28	79.57	008						
	SK 30	10	50	35	79.57	010						
	SK 30	12	50	42	79.57	012						
	SK 30	14	63	44	79.57	014						
	SK 30	16	63	48	79.57	016						
	SK 30	18	63	50	79.57	018						
	SK 30	20	70	52	79.57	020						
extra short	SK 40	16	35	48			123.47	416	146.24	416	175.94	416
	SK 40	20	35	50			123.47	420	146.24	420	175.94	420
	SK 40	25	40	50			135.25	425	157.66	425	187.38	425
	SK 40	32	75	72			122.60	432			175.48	432

SK 50 adapters and other lengths can be found on the next 2 pages

Spare parts DCONWS $_{H4}$	Y8 Grubscrew Article no. 83 950 ... £		W7 Grubscrew Article no. 62 950 ... £	
6			M6x10	0.87 006
8			M8x10	0.87 008
10			M10x12	1.67 010
12			M12x16	1.32 012
14			M12x16	1.32 012
16			M14x16	1.63 016
18			M14x16	1.63 016
20			M16x16	1.74 020
25	M16x10	1.63 275		
32	M14x10	1.61 259		

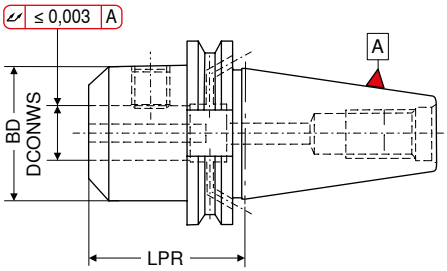
Accessories

Pull studs → 48–49

Others → 17|34

Cylindrical shank adapter (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat

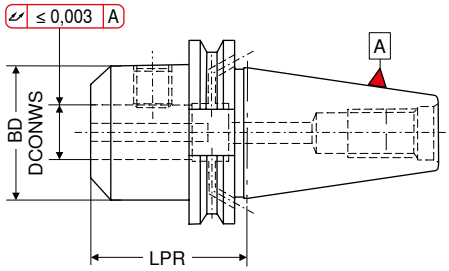


	Adapter	DCONWS $_{H4}$	LPR	BD	AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 402 ...		AD/B G 2,5 n_{max} 18000 Y8 Article no. 82 401 ...		AD/Be G 6,3 n_{max} 8000 Y8 Article no. 81 403 ...		AD/Be G 6,3 n_{max} 8000 Y8 Article no. 82 403 ...		AD/Be G 2,5 n_{max} 18000 Y8 Article no. 82 404 ...	
		mm	mm	mm	£		£		£		£		£	
short	SK 40	6	50	25	84.08	106	96.10	106			120.12	106	126.11	106
	SK 40	8	50	28	84.08	108	96.10	108			120.12	108	126.11	108
	SK 40	10	50	35	84.08	110	96.10	110			120.12	110	126.11	110
	SK 40	12	50	42	84.08	112	96.10	112			120.12	112	126.11	112
	SK 40	14	50	44	84.08	114	96.10	114			120.12	114	126.11	114
	SK 40	16	63	48	84.08	116	96.10	116			120.12	116	126.11	116
	SK 40	18	63	50	84.08	118	96.10	118			120.12	118	126.11	118
	SK 40	20	63	52	84.08	120	96.10	120			120.12	120	126.11	120
	SK 40	25	100	65	84.08	125	96.10	125			120.12	125	126.11	125
	SK 40	32	100	72	84.08	132	96.10	132			120.12	132		
	SK 40	40	120	90	84.08	140								
	SK 50	6	63	25	113.38	306	129.50	306			181.27	306		
	SK 50	8	63	28	113.38	308	129.50	308			181.27	308		
	SK 50	10	63	35	109.13	310	124.03	310			166.94	310		
	SK 50	12	63	42	109.13	312	124.03	312			166.94	312		
	SK 50	14	63	44	109.13	314	124.03	314			166.94	314		
	SK 50	16	63	48	109.13	316	124.03	316			182.78	316		
	SK 50	18	63	50	109.13	318	124.03	318			182.78	318		
	SK 50	20	63	52	109.13	320	124.03	320			182.78	320		
	SK 50	25	80	65	120.11	325	134.68	325			195.86	325		
	SK 50	32	100	72	121.34	332	137.71	332			206.21	332		
	SK 50	40	120	90	126.72	340								
long	SK 40	6	100	25	90.08	506	102.09	506	191.65	506				
	SK 40	8	100	28	90.08	508	102.09	508	191.65	508				
	SK 40	10	100	35	90.08	510	102.09	510	183.54	510				
	SK 40	12	100	42	90.08	512	102.09	512	183.54	512				
	SK 40	14	100	44	90.08	514	102.09	514	183.54	514				
	SK 40	16	100	48	90.08	516	102.09	516	208.98	516				
	SK 40	18	100	50	90.08	518	102.09	518	208.98	518				
	SK 40	20	100	52	90.08	520	102.09	520	208.98	520				
	SK 40	40	120	80					265.69	540				
	SK 50	6	100	25	182.22	706								
	SK 50	8	100	28	182.22	708								
	SK 50	10	100	35	174.83	710								
	SK 50	12	100	42	174.83	712								
	SK 50	14	100	44	174.83	714								
	SK 50	16	100	48	175.73	716								
	SK 50	18	100	50	175.73	718								
	SK 50	20	100	52	175.73	720								
	SK 50	25	100	65	186.38	725								

Spare parts and accessories on → **page 23**

Cylindrical shank adapter (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat

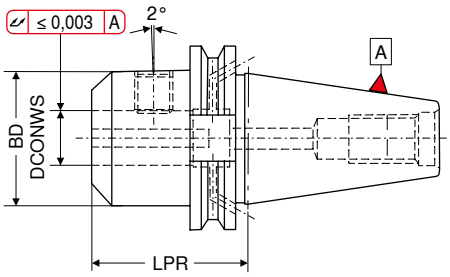


	Adapter	DCONWS $_{H4}$	LPR	BD	AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 402 ...		AD/B G 2,5 n_{max} 18000 Y8 Article no. 82 401 ...		AD/Be G 6,3 n_{max} 8000 Y8 Article no. 82 403 ...		AD/Be G 2,5 n_{max} 18000 Y8 Article no. 82 404 ...	
		mm	mm	mm	£		£		£		£	
medium length	SK 40	6	130	25	96.10	206	102.09	206			114.74	206
	SK 40	8	130	28	96.10	208	102.09	208			114.74	208
	SK 40	10	130	35	96.10	210	102.09	210			110.58	210
	SK 40	12	130	42	96.10	212	102.09	212			110.58	212
	SK 40	14	130	44	96.10	214	102.09	214			110.58	214
	SK 40	16	130	48	96.10	216	102.09	216			118.77	216
	SK 40	18	130	50	96.10	218	102.09	218			118.77	218
	SK 40	20	130	52	96.10	220	102.09	220			118.77	220
	SK 50	6	130	25	114.60	906			142.90	906		
	SK 50	8	130	28	114.60	908			142.90	908		
	SK 50	10	130	35	112.26	910			140.43	910		
	SK 50	12	130	42	112.26	912			140.43	912		
	SK 50	14	130	44	112.26	914			140.43	914		
	SK 50	16	130	48	112.57	916			148.46	916		
	SK 50	18	130	50	112.57	918			148.46	918		
	SK 50	20	130	52	112.57	920			148.46	920		
	SK 50	25	130	65	115.69	925			151.57	925		
extra-long	SK 40	6	160	25	96.10	606	108.10	606				
	SK 40	8	160	28	96.10	608	108.10	608				
	SK 40	10	160	35	96.10	610	108.10	610				
	SK 40	12	160	42	96.10	612	108.10	612				
	SK 40	14	160	44	96.10	614	108.10	614				
	SK 40	16	160	48	96.10	616	108.10	616				
	SK 40	18	160	50	96.10	618	108.10	618				
	SK 40	20	160	52	96.10	620	108.10	620				
	SK 40	25	160	65	96.10	625	108.10	625				
	SK 50	6	160	25	186.38	806						
	SK 50	8	160	28	186.38	808						
	SK 50	10	160	35	191.52	810						
	SK 50	12	160	42	191.52	812						
	SK 50	14	160	44	191.52	814						
	SK 50	16	160	48	192.10	816						
	SK 50	18	160	50	192.10	818						
	SK 50	20	160	52	192.10	820						
	SK 50	25	160	65	202.97	825						
	SK 50	32	160	72	205.89	832						

Spare parts and accessories on → **page 23**

Cylindrical Shank Adapter (Whistle Notch)

- For shanks according to DIN 6535 HE / 1835 E with angled clamping flat
- The groove in the flat face is a characteristic feature of the Whistle Notch version



	Adapter	DCONWS $_{H4}$	LPR	BD	AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 406 ...		AD/B G 2,5 n_{max} 18000 Y8 Article no. 82 407 ...	
		mm	mm	mm	£		£	
short	SK 40	6	50	25	126.05	106	148.37	106
	SK 40	8	50	28	126.05	108	148.37	108
	SK 40	10	50	35	116.74	110	139.29	110
	SK 40	12	50	42	116.74	112	139.29	112
	SK 40	14	50	44	116.74	114	139.29	114
	SK 40	16	63	48	128.62	116	150.59	116
	SK 40	18	63	50	128.62	118	150.59	118
	SK 40	20	63	52	128.62	120	150.59	120
	SK 40	25	100	65	137.87	125		
	SK 40	32	100	72	150.21	132		
	SK 50	6	63	25	184.29	306		
	SK 50	8	63	28	184.29	308		
	SK 50	10	63	35	175.78	310		
	SK 50	12	63	42	175.78	312		
	SK 50	14	63	44	175.78	314		
	SK 50	16	63	48	176.85	316		
	SK 50	18	63	50	176.85	318		
	SK 50	20	63	52	176.85	320		
	SK 50	25	80	65	193.28	325		
	SK 50	32	100	72	196.76	332		
medium length	SK 40	6	130	25	134.66	206	153.75	206
	SK 40	8	130	28	134.66	208	153.75	208
	SK 40	10	130	35	126.99	210	145.92	210
	SK 40	12	130	42	126.99	212	145.92	212
	SK 40	16	130	48	135.49	216	154.57	216
	SK 40	20	130	52	135.49	220	154.57	220
	SK 40	25	130	65	161.87	225	189.27	225
	SK 50	6	130	25	211.67	406		
	SK 50	8	130	28	211.67	408		
	SK 50	10	130	35	203.70	410		
	SK 50	12	130	42	203.70	412		
	SK 50	16	130	48	204.69	416		
	SK 50	20	130	52	204.69	420		
	SK 50	25	130	65	216.84	425		
	SK 50	32	130	72	215.82	432		

Spare parts cylindrical shank adapters (Whistle Notch)

Spare parts DCONWS $_{H4}$		W7 Grubscrew Article no. 62 950 ... £		Y8 Stop screw IK Article no. 83 950 ... £	
6	M6x10	0.87	006	M5x35	3.04	033
8	M8x10	0.87	008	M6x35	2.06	034
10	M10x12	1.67	010	M8x35	2.19	035
12 - 14	M12x16	1.32	012	M10x35	2.99	036
16 - 18	M14x16	1.63	016	M12x40	2.67	037
20	M16x16	1.74	020	M16x45	2.58	272
25	M18x2x20	3.36	025	M20x35	4.57	290
32	M20x2x20	3.51	032	M20x35	4.57	290

Accessories

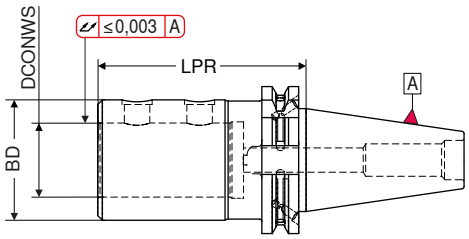
Pull studs

→ 48–49

Others

→ 17|34

Indexable insert drill adapter DIN 69871 SK



AD/B
G 6,3 n_{max} 15000

2E/45

Adapter	DCONWS	LPR	BD	Article no. 10 840 ...	
	mm	mm	mm	£	
SK 40	20	80	40	117.55	**120**
SK 40	25	85	45	117.55	**125**
SK 40	32	90	52	117.55	**132**
SK 50	20	80	40	149.36	**220**
SK 50	25	85	45	149.36	**225**
SK 50	32	90	52	149.36	**232**
SK 50	40	90	65	149.36	**240**
SK 50	50	100	75	149.36	**250**

Suitable eccentric sleeves can be found in → **Chapter 3, Indexable insert drilling.**

2A/28

Grubscrew

Spare parts DCONWS		Article no. 10 950 ...	
		£	
20	M10x1x10	3.49	**001**
25 - 32	M12x1x10	3.49	**002**
40 - 50	M16x1x12	3.49	**003**

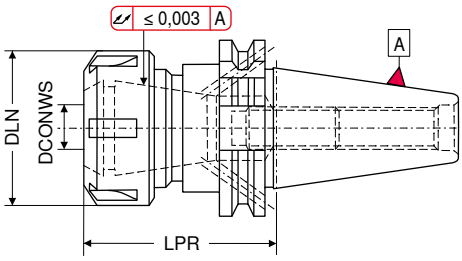
Accessories

Pull studs
→ 48–49

Others
→ 17|34

ER Collet chuck

Scope of supply:
Holder with lock nut and adjustable back stop



	Adapter	DCONWS	LPR	DLN	TQX	for collet	AD G 6,3 n_{max} 12000 Y8 Article no. 81 414 ... £		AD/B G 6,3 n_{max} 12000 Y8 Article no. 81 414 ... £		AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 414 ... £		AD/B G 2,5 n_{max} 18000 Y8 Article no. 82 415 ... £	
		mm	mm	mm	Nm									
short	SK 30	1 - 10	70	28	8 - 56	426E (ER16)	107.07	010						
	SK 30	1 - 16	70	42	24 - 104	430E (ER25)	107.07	016						
	SK 30	2 - 20	70	50	24 - 136	470E (ER32)	103.94	020						
	SK 40	1 - 10	60	32	8 - 56	426E (ER16)					84.08	110	102.09	110
	SK 40	1 - 16	70	42	24 - 104	430E (ER25)					88.16	116	102.09	116
	SK 40	2 - 20	70	50	24 - 136	470E (ER32)					88.16	120	102.09	120
	SK 40	3 - 26	70	63	176	472E (ER40)					93.06	126	105.07	126
	SK 50	1 - 10	60	32	8 - 56	426E (ER16)					177.80	310		
	SK 50	1 - 16	70	42	24 - 104	430E (ER25)					141.63	316		
	SK 50	2 - 20	70	50	24 - 136	470E (ER32)					142.87	320		
	SK 50	3 - 26	70	63	176	472E (ER40)					145.79	326		
long	SK 30	1 - 10	100	28	8 - 56	426E (ER16)	125.89	210						
	SK 30	1 - 16	100	42	24 - 104	430E (ER25)	125.89	216						
	SK 30	2 - 20	100	50	24 - 136	470E (ER32)	107.07	220						
	SK 40	1 - 10	120	32	8 - 56	426E (ER16)					96.10	410	114.11	410
	SK 40	1 - 16	120	42	24 - 104	430E (ER25)					96.10	416	114.11	416
	SK 40	2 - 20	120	50	24 - 136	470E (ER32)					96.10	420	114.11	420
	SK 40	3 - 26	100	63	176	472E (ER40)			217.40	426				
	SK 50	1 - 10	100	32	8 - 56	426E (ER16)					172.15	510		
	SK 50	1 - 16	100	42	24 - 104	430E (ER25)					183.22	516		
	SK 50	2 - 20	100	50	24 - 136	470E (ER32)					195.45	520		
	SK 50	3 - 26	100	63	176	472E (ER40)					204.53	526		
extra-long	SK 40	1 - 10	160	28	8 - 56	426E (ER16)			147.35	610				
	SK 40	2 - 16	160	42	24 - 104	430E (ER25)			221.08	616				
	SK 40	2 - 20	160	50	24 - 136	470E (ER32)			243.75	620				
	SK 40	3 - 26	160	63	176	472E (ER40)			153.56	626				
	SK 50	1 - 16	160	42	24 - 104	430E (ER25)					199.71	616		
	SK 50	2 - 20	160	50	24 - 136	470E (ER32)					221.25	620		

Spare parts	W7 Lock nut Article no. 62 950 ... £		Y8 Lock nut IK Article no. 83 950 ... £		W7 Lock nut Article no. 62 950 ... £		Y8 Y clamping key Article no. 83 357 ... £		Y8 Stop screw IK Article no. 81 950 ... £		Y8 Stop screw IK Article no. 83 950 ... £	
for collet												
426E (ER16) / SK30-SK50	25.38	044			20.19	054	22.20	116	3.41	053		
430E (ER25) / SK30			76.11	055	21.03	055	22.20	125	3.98	054		
430E (ER25) / SK40, SK50			76.11	055	21.03	055	22.20	125	4.42	055	2.67	010
470E (ER32) / SK30			81.41	056	21.56	056	32.33	132	3.41	053		
470E (ER32) / SK40, SK50			81.41	056	21.56	056	32.33	132	6.40	057	2.67	010
472E (ER40) / SK40, SK50			97.97	057	22.33	057	36.64	140	3.98	054	2.58	011

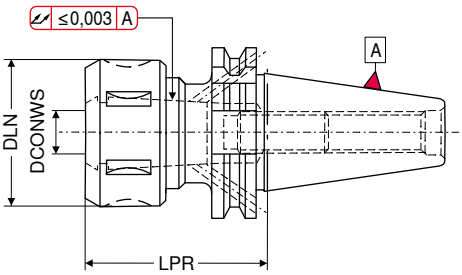
Backstop screws 81 950 ... and nut 62 950 044 only for use with article 81 414 ...!

16

OZ Collet Chuck

▲ Clamping nut with ball bearings

Scope of supply:
Holder with lock nut and adjustable back stop



	Adapter	DCONWS	LPR	DLN	TQX	for collet	AD G 6,3 n_{max} 12000 Y8 Article no. 81 410 ...		AD/B G 6,3 n_{max} 12000 Y8 Article no. 81 410 ...		AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 410 ...		AD/B G 2,5 n_{max} 18000 Y8 Article no. 82 411 ...	
		mm	mm	mm	Nm		£		£		£		£	
short	SK 30	2 - 16	60	43	24 - 104	415E / 421E	106.72	016						
short	SK 30	2 - 25	80	60	24 - 176	459E / 462E	112.23	025						
short	SK 40	2 - 16	70	43	80 - 90	415E / 421E					133.45	116	151.05	116
short	SK 40	2 - 25	70	60	90 - 100	459E / 462E					140.17	125	159.01	125
short	SK 50	2 - 16	70	43	80 - 90	415E / 421E					174.05	225		
short	SK 50	2 - 25	70	60	90 - 100	459E / 462E					193.99	232		
short	SK 50	4 - 32	70	72	110 - 120	460E / 467E					279.10	240		
long	SK 40	2 - 16	120	43	80 - 90	415E / 421E					190.08	416	212.62	416
long	SK 40	2 - 25	120	60	90 - 100	459E / 462E					198.35	425	220.78	425
long	SK 40	4 - 32	100	72	227	460E / 467E			125.39	432				
long	SK 50	2 - 16	100	43	80 - 90	415E / 421E					240.18	525		
long	SK 50	2 - 25	100	60	90 - 100	459E / 462E					256.00	532		

Spare parts

for collet		W7 Lock nut Article no. 62 950 ... £		Y8 Hook clamping key Article no. 83 354 ... £			Y8 Stop screw IK Article no. 81 950 ... £			Y8 Stop screw IK Article no. 83 950 ... £	
415E / 421E	M33x1,5	35.33	050	22.20	116	M16x15	4.42	055	M10x50	2.67	010
459E / 462E	M48x2	36.88	051	17.79	125	M16x15	4.42	055	M10x50	2.67	010
460E / 467E	M60x2,5	60.45	052	26.12	132	M16x15	4.42	055	M12x50	2.58	011

Spare part 81 950 ... only use for article 81 410 ...!

Accessories

OZ Collet → 218

Pull studs → 48–49

Others → 17|34

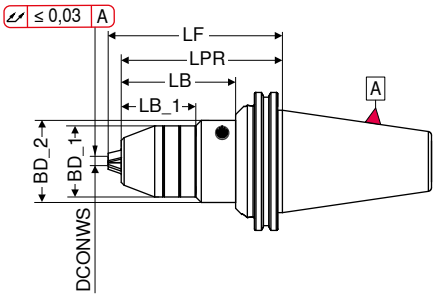
Short drill chuck

- ▲ Independent of direction of rotation
- ▲ Torque Moment = 12 Nm

Scope of supply:

Toolholder including clamping key SW4

NC 2010



Adapter	DCONWS	LPR	BD_1	BD_2	LB_1	LB	LF	A G 6,3 n_{max} 10000 Y8 Article no. 84 418 ...		AD G 6,3 n_{max} 10000 Y8 Article no. 84 419 ...		AD/B G 6,3 n_{max} 10000 Y8 Article no. 84 420 ...	
	mm	mm	mm	mm	mm	mm	mm	£		£		£	
SK 30	0,5 - 10	80	43.0			59.9	89.0	422.38	**313**				
SK 40	0,5 - 13	80	48.5			60.8	89.0	422.38	**413**	383.21	**413**		
SK 40	0,5 - 13	80	48.5		50.9		89.0					505.94	**413**
SK 40	2,5 - 16	80	51.0			60.0	90.5			376.31	**416**		
SK 40	2,5 - 16	80	51.0			60.8	90.5	350.02	**416**				
SK 40	2,5 - 16	80	51.0		50.9		90.5					527.93	**416**
SK 50	0,5 - 13	110	48.5	56	50.9	78.0	119.0			570.41	**513**		
SK 50	0,5 - 13	110	48.5	56	50.9	78.1	119.0	498.06	**513**				
SK 50	2,5 - 16	110	51.0	56	50.9	78.0	120.5			524.33	**516**		
SK 50	2,5 - 16	110	56.0		50.9	78.0	120.5	498.06	**516**				

Can be used at G 2.5 to 30,000 1/min after additional balancing !

Accessories

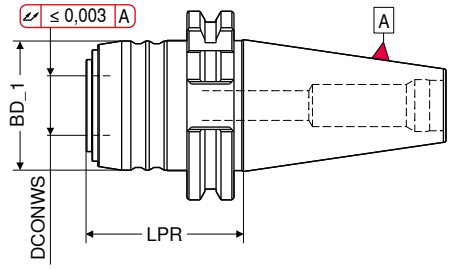
Pull studs → 48–49

Others → 17|34

Synchro tapping chuck with minimum length compensation

- For collet
- With length compensation under tension and compression (LZD)
- For synchro use
- $p_{max.}$ = 50 bar

Scope of supply:
Without insert



AD

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	LZD±	Y8 Article no. 83 416 ...	
			mm	mm	mm	mm	£	
SK 40	M3 - M12	1	53	43	20	1,0 / 0,2	272.68	**012**
SK 40	M6 - M20	2	90	60	32	1,0 / 0,2	353.71	**020**
SK 50	M3 - M12	1	53	43	20	1,0 / 0,2	296.21	**112**
SK 50	M6 - M20	2	74	60	32	1,0 / 0,2	458.46	**120**

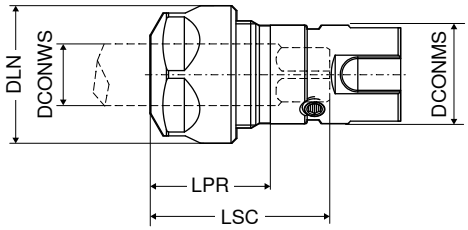
Accessories

Pull studs
→ 48–49

Others
→ 17|34

Insert for synchro quick change tapping chuck with minimum length compensation

Scope of supply:
Includes lock nut



AD

SZID	DCONWS	cutting range	LPR	DLN	LSC	for collet	DCONMS	Y8 Article no. 83 608 ...	
	mm		mm	mm	mm		mm	£	
1	2 - 10	M3 - M12	24	28	42	426E (ER16)	20	185.88	**012**
2	2 - 16	M6 - M20	28	42	59	430E (ER25)	32	216.51	**020**

Spare parts for synchronous tapping chucks

		W7			Y8			W7		Y8	
		Lock nut			Lock nut IK			Lock nut		Y clamping key	
Spare parts		**Article no. 62 950 ...**			**Article no. 83 950 ...**			**Article no. 62 950 ...**		**Article no. 83 357 ...**	
for Article no.		£			£			£		£	
83 608 012	M22x1,5 - SW25	25.38	044	M22x1,5	65.34	054				22.20	116
83 608 020				M32x1,5	76.11	055	M32x1,5	21.03	055	22.20	125

Accessories

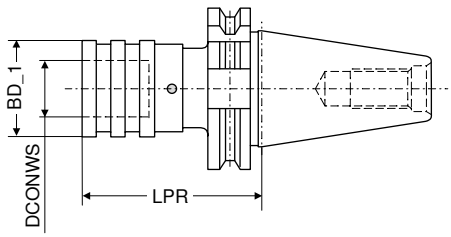
ER collet

→ 212, 214–215

16

Quick change tap chuck with length compensation

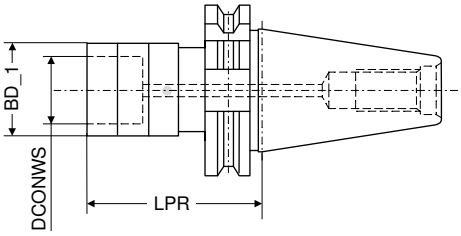
▲ With length compensation under tension and compression (LZD)



A

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	LZD±	Y8 Article no. 83 428 ...	
			mm	mm	mm	mm	£	
SK 30	M3 - M12	01	60	38	19	9	461.22	**312**
SK 30	M6 - M20	02	101	55	31	15	523.99	**320**
SK 40	M3 - M12	01	60	38	19	9	356.20	**412**
SK 40	M6 - M20	02	100	55	31	15	385.98	**420**
SK 50	M3 - M12	01	62	38	19	9	531.98	**512**
SK 50	M6 - M20	02	83	55	31	15	576.26	**520**

Quick change tap chuck without length compensation



AD

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	Y8 Article no. 83 423 ...	
			mm	mm	mm	£	
SK 30	M3 - M12	01	59	33	19	372.04	**312**
SK 30	M6 - M20	02	80	50	31	372.04	**320**
SK 40	M3 - M12	01	59	33	19	262.06	**412**
SK 40	M6 - M20	02	86	50	31	280.37	**420**
SK 50	M3 - M12	01	75	33	19	351.23	**512**
SK 50	M6 - M20	02	98	50	31	382.64	**520**

Accessories

Collet
→ 219–223

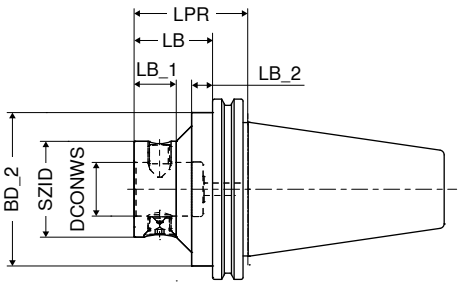
Pull studs
→ 48–49

Others
→ 17|34

Adapter with ABS Connection

Scope of supply:
Steep taper adapter (Form B) with conversion kit (Form AD) and sealing disc

ABS



AD/B
G 6,3 n_{max} 8000
NEW 3E

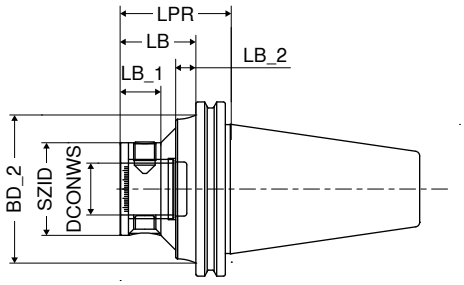
Adapter	KOMET no.	SZID	DCONWS	LPR	LB	LB_1	LB_2	BD_2	Article no. 84 201 ...
			mm	mm	mm	mm	mm	mm	£	
SK 40	A5055150	ABS 50	28	50	30.0				351.73	**04097**
SK 50	A5055350	ABS 50	28	60	40.9	22	10.9	80	411.27	**05097**

Eccentric adjuster with ABS Connection

▲ Adjustment ± 0.25 mm on diameter

Scope of supply:
Steep taper adapter (Form B) with conversion kit (Form AD) and sealing disc

ABS



AD/B
NEW W4

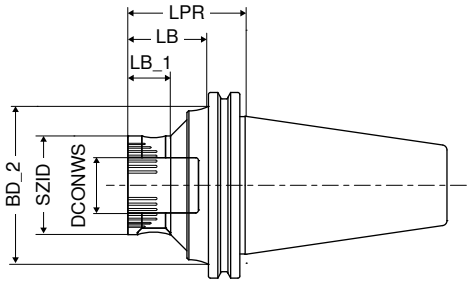
Adapter	KOMET no.	SZID	DCONWS	LPR	LB	LB_1	LB_2	BD_2	Article no. 84 204 ...
			mm	mm	mm	mm	mm	mm	£	
SK 40	A5056150	ABS 50	28	50	30.0				478.13	**04097**
SK 50	A5056350	ABS 50	28	60	40.9	22	10.9	80	536.35	**05097**

16

Torsional vibration dampers with ABS Connection

Scope of supply:
Steep taper adapter (Form B) with conversion kit (Form AD) and sealing disc

ABS



AD/B

Adapter	KOMET no.	SZID	DCONWS	LPR	LB	BD_2	LB_1	NEW 3E Article no. 84 207 ...	
			mm	mm	mm	mm	mm	£	
SK 40	A5001351	ABS 50	28	50	30.0			607.00	**04097**
SK 50	A5001451	ABS 50	28	60	40.9	80	22	676.91	**05097**

Spare parts SZID	XX Clamping screw Article no. 84 950 ...		XX Taper screw Article no. 84 950 ...		XX Set Article no. 84 950 ...	
	£		£		£	
ABS 50	11.60	**20300**	14.89	**20400**	26.43	**99800**

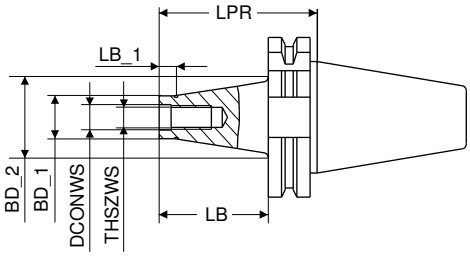
Accessories

Pull studs
→ 48–49

Extension
→ 17|27

Others
→ 17|34

Adapter for milling cutters with threaded end



Adapter	THSZWS	DCONWS	LB	BD_1	BD_2	LB_1	LPR	AD G 16 n_{max} 8000 WA Article no. 56 707 ...		AD G 6,3 n_{max} 18000 WA Article no. 56 705 ...		AD G 2,5 n_{max} 30000 WA Article no. 56 703 ...	
		mm	mm	mm	mm	mm	mm	£		£		£	
SK 30	M8	8.5	25	13.8	18.0	12	44					454.73	**081**
SK 30	M8	8.5	50	13.8	23.0	12	69					475.41	**082**
SK 30	M10	10.5	25	18.0	23.0	12	44					454.73	**101**
SK 30	M10	10.5	50	18.0	25.0	12	69					475.41	**102**
SK 30	M12	12.5	25	21.0	24.0	12	44					454.73	**121**
SK 30	M12	12.5	50	21.0	30.0	12	69					475.41	**122**
SK 30	M16	17.0	25	29.0	30.5	12	44					454.73	**161**
SK 30	M16	17.0	50	29.0	34.0	12	69					475.41	**162**
SK 40	M8	8.5	25	13.8	15.0	12	44			193.12	**081**		
SK 40	M8	8.5	50	13.8	23.0	12	69			197.85	**082**		
SK 40	M8	8.5	75	13.8	25.0	12	94			202.42	**083**		
SK 40	M10	10.5	25	18.0	23.0	12	44			193.12	**101**		
SK 40	M10	10.5	50	18.0	25.0	12	69			197.85	**102**		
SK 40	M10	10.5	75	18.0	30.0	12	94			202.42	**103**		
SK 40	M10	10.5	100	18.0	35.0	12	119			207.13	**104**		
SK 40	M12	12.5	25	21.0	24.0	12	44			193.12	**121**		
SK 40	M12	12.5	50	21.0	30.0	12	69			197.85	**122**		
SK 40	M12	12.5	75	21.0	35.0	12	94			202.42	**123**		
SK 40	M12	12.5	100	21.0	38.0	12	119			207.13	**124**		
SK 40	M16	17.0	25	29.0	29.0	12	44			193.12	**161**		
SK 40	M16	17.0	50	29.0	34.0	12	69			197.85	**162**		
SK 40	M16	17.0	75	29.0	35.0	12	94			202.42	**163**		
SK 40	M16	17.0	100	29.0	40.0	12	119			207.13	**164**		
SK 40	M16	17.0	125	29.0	44.0	12	144			211.68	**165**		
SK 40	M16	17.0	150	29.0	48.0	12	169			216.41	**166**		
SK 40	M16	17.0	200	29.0	50.0	12	219			225.70	**167**		
SK 50	M12	12.5	50	21.0	30.0	12	69	274.09	**122**				
SK 50	M12	12.5	100	21.0	38.0	12	119	283.36	**124**				
SK 50	M12	12.5	150	21.0	52.0	12	169	292.65	**126**				
SK 50	M16	17.0	50	29.0	34.0	12	69	274.09	**162**				
SK 50	M16	17.0	100	29.0	40.0	12	119	278.65	**164**				
SK 50	M16	17.0	150	29.0	48.0	12	169	287.93	**166**				
SK 50	M16	17.0	200	29.0	58.0	12	219	297.21	**167**				
SK 50	M16	17.0	250	29.0	62.0	12	269	306.65	**168**				

Accessories

Extension-Reduction set	Pull studs	Others
→ 17|19	→ 48–49	→ 17|34

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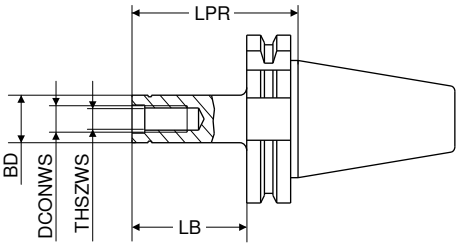
Adapter for milling cutters with threaded end



AD
G 6,3 n_{max} 18000

Adapter	THSZWS	DCONWS	LB	BD	LPR	WA Article no. 56 709 ...	
		mm	mm	mm	mm	£	
SK 40	M8	8.5	50	13.8	69	210.17	**082**
SK 40	M10	10.5	50	18.0	69	210.17	**102**
SK 40	M10	10.5	75	18.0	94	214.89	**103**
SK 40	M10	10.5	100	18.0	119	219.62	**104**
SK 40	M12	12.5	50	21.0	69	210.17	**122**
SK 40	M12	12.5	75	21.0	94	214.89	**123**
SK 40	M12	12.5	100	21.0	119	219.62	**124**
SK 40	M16	17.0	50	29.0	69	210.17	**162**
SK 40	M16	17.0	75	29.0	94	214.89	**163**
SK 40	M16	17.0	100	29.0	119	219.62	**164**

Accessories

Extension-Reduction set
→ 17|19

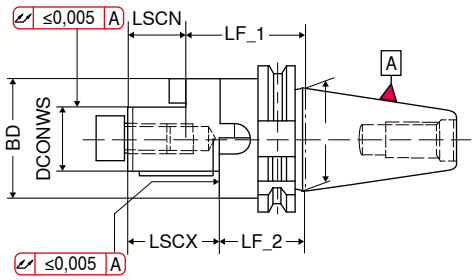
Pull studs
→ 48–49

Others
→ 17|34

Combination shell mill adapter

▲ For milling cutters with transverse or longitudinal groove according to DIN 6358

Scope of supply:
Toolholder with retaining screw, driving ring and dowel spring



A
G 6,3 n_{max} 8000
Y8
Article no.
81 429 ...

A
G 6,3 n_{max} 8000
Y8
Article no.
82 429 ...

	Adapter	DCONWS	LF_1	BD	LSCX	LSCN	LF_2	£		£	
		mm	mm	mm	mm	mm	mm				
short	SK 30	16	50	32	27	17	40	106.02	016 [1]		
	SK 30	22	50	40	31	19	38	106.02	022 [1]		
	SK 30	27	55	48	33	21	43	126.94	027 [1]		
	SK 30	32	60	58	38	24	46	133.34	032 [1]		
	SK 40	16	55	32	27	17	45			141.40	116
	SK 40	22	55	40	31	19	43			146.90	122
	SK 40	27	55	48	33	21	43			149.93	127
	SK 40	32	60	58	38	24	46			157.99	132
	SK 40	40	60	70	41	27	46			166.53	140 [1]
	SK 50	16	55	32	27	17	45			192.10	316
	SK 50	22	55	40	31	19	43			196.92	322
	SK 50	27	55	48	33	21	43			213.51	327
	SK 50	32	55	58	38	24	41			219.24	332
	SK 50	40	55	70	41	27	41			227.66	340 [1]
	SK 50	50	70	90	46	30	54			249.50	350 [1]
long	SK 40	16	100	32	27	17	90	115.53	216		
	SK 40	22	100	40	31	19	88	120.18	222		
	SK 40	27	100	48	33	21	88	122.46	227		
	SK 40	32	100	58	38	24	86	129.19	232		
	SK 40	40	100	70	41	27	86	136.12	240		

1) With cross screw

Spare parts DCONWS	Y8 Parallel key Article no. 83 950 ...		Y8 Drive ring Article no. 83 370 ...		Y8 Cross nut key Article no. 83 368 ...		Y8 Retaining screw Article no. 83 367 ...		Y8 Retaining screw Article no. 81 950 ...		Y8 Clamping screw Article no. 83 950 ...	
	£		£		£		£		£		£	
16	3.29	284	12.13	116	20.07	116	5.33	016	5.53	020	5.65	113
22	3.29	285	11.65	122	24.96	122	5.93	022	6.37	021	6.38	124
27	5.22	286	14.53	127	29.34	127	7.58	027	7.77	022	7.05	125
32	3.71	287	15.25	132	40.00	132	11.90	032	9.88	023	8.59	126
40	4.38	288	25.68	140	39.72	140	12.74	040			9.47	112
50	4.38	289	51.67	150	56.62	150	32.41	050				

Spare part 81 950 ... only use for article 81 429 ...!

Accessories

Pull studs
→ 48–49

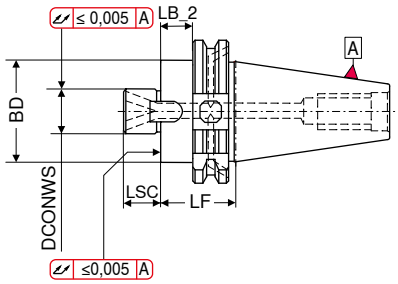
Milling Adapter Rings
→ 17|28

Others
→ 17|34

Shell mill adapter

▲ Screwed drive dogs

Scope of supply:
Toolholder with retaining screw



	Adapter	DCONWS	LB_2	LF	BD	LSC	A G 6,3 n_{max} 8000 Y8 Article no. 81 428 ...		AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 428 ...	
		mm	mm	mm	mm	mm	£		£	
short	SK 30	16	21	40	38	17	101.87	016 [2]		
	SK 30	22	21	40	43	19	101.87	022 [2]		
	SK 30	27	21	40	43	21	119.68	027 [2]		
	SK 30	32	31	50	78	24	126.60	032 [2]		
	SK 40	16	25	44	38	17			109.13	116
	SK 40	22	25	44	48	19			118.75	122
	SK 40	27	36	55	58	21			120.11	127
	SK 40	32	31	50	78	24			126.72	132
	SK 40	40	31	50	88	27			137.71	140 [1]
	SK 50	16	25	44	38	17			160.38	316
	SK 50	22	25	44	48	19			165.74	322
	SK 50	27	25	44	58	21			169.68	327
	SK 50	32	21	40	78	24			184.91	332
	SK 50	40	31	50	88	27			188.72	340 [1]
long	SK 40	16	81	100	38	17			117.28	416
	SK 40	22	81	100	48	19			124.03	422
	SK 40	27	81	100	58	21			126.72	427
	SK 40	32	81	100	78	24			133.45	432
	SK 40	40	81	100	88	27			141.63	440 [1]
	SK 50	16	81	100	38	17			224.38	616
	SK 50	22	81	100	48	19			229.21	622
	SK 50	27	81	100	58	21			235.83	627
	SK 50	32	81	100	78	24			242.90	632
	SK 50	40	81	100	88	27			247.58	640 [1]
medium length	SK 40	16	111	130	38	17			124.29	816
	SK 40	22	111	130	48	19			128.35	822
	SK 40	27	111	130	58	21			130.33	827
	SK 40	32	111	130	78	24			136.57	832
	SK 40	40	111	130	88	27			142.63	840 [1]
	SK 50	16	111	130	38	17			196.89	916
	SK 50	22	111	130	48	19			200.73	922
	SK 50	27	111	130	58	21			206.25	927
	SK 50	32	111	130	78	24			211.74	932
	SK 50	40	111	130	88	27			215.58	940
extra-long	SK 40	16	141	160	38	17			160.81	516
	SK 40	22	141	160	48	19			165.74	522
	SK 40	27	141	160	58	21			168.21	527
	SK 40	32	141	160	78	24			176.17	532
	SK 40	40	141	160	88	27			183.56	540 [1]
	SK 50	16	141	160	38	17			244.35	716
	SK 50	22	141	160	48	19			248.81	722
	SK 50	27	141	160	58	21			256.00	727
	SK 50	32	141	160	78	24			263.76	732
	SK 50	40	141	160	88	27			266.23	740 [1]

1) With cross screw and 4 holes M12, Pitch Circle diameter = 66.7 mm, coolant outlet on the outer diameter of the spigot (DCONWS)!
2) With cross screw

Spare parts facemill adapters

Spare parts DCONWS		Y8 Driver Article no. 83 950 ... £		Y8 Cross nut key Article no. 83 368 ... £		Y8 Retaining screw Article no. 83 367 ... £		Y8 Clamping screw Article no. 83 950 ... £	
16	8x9x17,5	13.66	120	20.07	116	M8	5.33	016	M8x25	5.65	113
22	10x11x20,5	14.10	121	24.96	122	M10	5.93	022	M10x25	6.38	124
27	12x13x24,3	15.55	122	29.34	127	M12	7.58	027	M12x30	7.05	125
32	14x21x21,2	15.71	123	40.00	132	M16	11.90	032	M16x35	8.59	126
40	15,9x16,3x19,5	20.92	295	39.72	140	M20	12.74	040	M20x40	9.47	112

DCONWS		Y8 Drive dogs Article no. 81 950 ... £		Y8 Drive screw Article no. 81 950 ... £		Y8 Screw for drivers Article no. 83 950 ... £	
16	8x8x14	13.66	001	M3x8	0.97	010	M3x8	0.97	296
22	10x10x17	14.10	002	M4x8	1.27	011	M4x12	1.27	297
27	12x14x20	15.55	003	M4x14	1.30	012	M5x12	1.30	136
32	14x14x22	15.38	004	M5x13	1.47	013	M5x20	1.38	137
40							M6x16	1.57	138

Spare part 81 950 ... only use for article 81 428 ...!

Accessories

Pull studs
→ 48–49

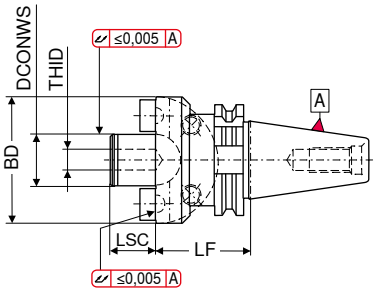
Extensions
→ 17|26

Others
→ 17|34

Large diameter facemill adapter

▲ For milling cutters with keyway or drive slot DIN 6357

Scope of supply:
Holder with integrated drive dogs according to DIN 2079 and 4 fixation screws



A
G 6,3 n_{max} 8000

Adapter	DCONWS	LF	BD	LSC	THID	Y8 Article no. 82 432 ...	
	mm	mm	mm	mm		£	
SK 40	40	60	89	30	M20	289.42	**040**
SK 50	40	70	89	30	M20	307.24	**240**
SK 50	60	70	129	40	M30	376.33	**260**

Screw for drivers

Driver

Socket head screw

Clamping screw

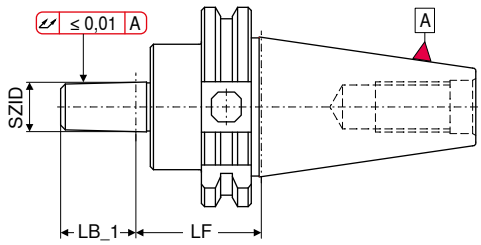
Spare parts DCONWS		Y8 Article no. 83 950 ...			Y8 Article no. 83 950 ...		2A/28 Article no. 70 950 ...		Y8 Article no. 83 950 ...	
		£			£		£		£	
40	M6x16	1.57	**138**	15,9x16,3x19,5	20.92	**295**			M12x50	7.04	**140**
60				25,4x16,3x26,5	23.59	**298**	M12x30	7.68	**181**	M16x45	14.47	**160**

Accessories

Pull studs
→ 48–49

Others
→ 17|34

Drill chuck adapter



A
G 6,3 n_{max} 8000

Adapter	SZID	LF	LB_1	Y8 Article no. 82 423 ...	
		mm	mm	£	
SK 40	B12	40	18.5	139.88	**112**
SK 40	B16	40	24.0	139.88	**116**
SK 50	B16	40	24.0	170.41	**316**
SK 50	B18	40	32.0	170.41	**318**

Spare parts SZID		Y8 Drill chuck Article no. 83 636 ... £			Y8 Drill chuck Article no. 83 636 ... £	
B12	0 - 8 mm	146.71	**012**	0 - 10 mm	173.49	**112**
B16	1 - 13 mm	207.93	**016**	3 - 16 mm	169.77	**116**
B18				3 - 16 mm	221.41	**018**

Accessories

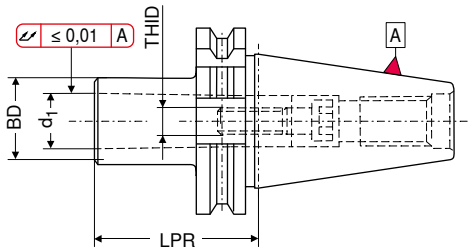
Pull studs
→ 48–49

Others
→ 17|34

16

Milling sleeve adapters DIN 6364 for DIN 228-2C Morse taper shanks with thread

Scope of supply:
Holder with retaining screw



A
G 6,3 n_{max} 8000

	Adapter	d_1	LPR mm	BD mm	THID	Y8 Article no. 82 446 ... £	
short	SK 40	MK1	50	25	M6	135.25	110
	SK 40	MK2	50	32	M10	135.25	120
	SK 40	MK3	70	40	M12	141.40	130
	SK 40	MK4	95	48	M16	146.90	140
	SK 50	MK1	45	25	M6	187.38	310
	SK 50	MK2	60	32	M10	187.38	320
	SK 50	MK3	65	40	M12	187.38	330
	SK 50	MK4	95	48	M16	197.14	340
	SK 50	MK5	120	63	M20	224.16	350

Disassembly instructions can be found in → **Chapter 17, Accessories.**

Y8
Morse taper clamping screw

Y8
Counterscrew

Y8
Hollow key with nose

Y8
Fixing ring

Spare parts for Article no.		Article no. 83 950 ... £			Article no. 83 950 ... £			Article no. 83 359 ... £			Article no. 83 950 ... £	
82 446 110	M6x30	0.91	260	M5x6	0.75	030	16 x 32	34.54	013	M16x8x6,5	10.14	265
82 446 120	M10x30	1.95	261	M5x8	0.75	031	16 x 32	34.54	013	M16x8x10,5	10.14	267
82 446 130	M12x35	1.25	018	M5x6	0.75	030	17 x 117	38.99	017	M20x1,5x10x13	13.79	269
82 446 140	M16x40	5.92	019	M5x8	0.75	031	23 x 145	47.41	023	M26x1,5x17	13.79	270
82 446 310	M6x30	0.91	260	M5x8	0.75	031	20 x 135	41.54	020	M24x10x6,5	11.97	266
82 446 320	M10x30	1.25	017	M5x8	0.75	031	20 x 135	41.54	020	M24x10x10,5	11.97	268
82 446 330	M10x30	1.25	017	M5x8	0.75	031	17 x 117	38.99	017	M20x1,5x10x13	13.79	269
82 446 340	M16x40	5.92	019	M5x8	0.75	031	23 x 145	47.41	023	M26x1,5x17	13.79	270
82 446 350	M20x50	11.08	262	M5x8	0.75	031	33 x 175	58.72	033	M36x1,5x21	17.01	271

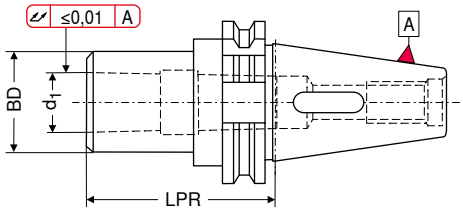
Accessories

Morse taper adapter sleeve
→ 17|4

Pull studs
→ 48–49

Others
→ 17|34

Taper sleeve DIN6383 for DIN 228-2D Morse taper shanks



	Adapter	d_1	LPR	BD	AD G 6,3 n_{max} 8000 Y8 Article no. 81 439 ...		AD G 6,3 n_{max} 8000 Y8 Article no. 82 439 ...	
			mm	mm	£		£	
short	SK 30	MK1	50	25	110.18	010		
	SK 30	MK2	65	32	100.83	020		
	SK 30	MK3	80	40	100.83	030		
	SK 40	MK1	50	25			95.66	110
	SK 40	MK2	50	32			98.37	120
	SK 40	MK3	70	40			105.19	130
	SK 40	MK4	95	48			110.56	140
	SK 50	MK1	50	25			120.11	310
	SK 50	MK2	60	32			124.03	320
	SK 50	MK3	65	40			128.40	330
	SK 50	MK4	95	48			133.45	340
	SK 50	MK5	105	63			145.79	350
long	SK 40	MK2	117	32	167.47	220		
	SK 40	MK3	133	40	186.18	230		
	SK 40	MK4	156	48	202.92	240		

Accessories

Morse taper adapter sleeve
→ 17|4

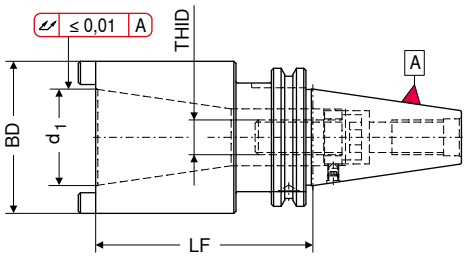
Pull studs
→ 48–49

Others
→ 17|34

Milling adapter sleeve

- For mounting tool holders according to DIN 2080
- With an extended retaining screw also tool holders according to DIN 69871, MAS-BT and ANSI-CAT can be clamped

Scope of supply:
Holder with clamping screw for DIN 2080 adapters



A
G 6,3 n_{max} 8000

A
G 6,3 n_{max} 8000

Adapter	d_1	LF	BD	THID	Y8 Article no. 81 453 ... £		Y8 Article no. 82 453 ... £	
		mm	mm					
SK 40	SK 30	40	51	M12	194.05	**030**		
SK 40	SK 40	100	70	M16			218.78	**040**
SK 50	SK 40	80	70	M16			290.54	**240**
SK 50	SK 50	120	100	M24			306.96	**250**

Clamping screw SK

Clamping Screw

Counterscrew

Counterscrew

Hollow key with nose

Fixing ring

Fixing ring

Spare parts for Article no.	Y8 Article no. 83 950 ... £		Y8 Article no. 81 950 ... £		Y8 Article no. 81 950 ... £		Y8 Article no. 83 950 ... £		Y8 Article no. 83 359 ... £		Y8 Article no. 81 950 ... £		Y8 Article no. 83 950 ... £	
81 453 030	21.35	**263**	20.93	**160**	1.17	**033**			38.99	**017**	19.38	**170**		
82 453 040	9.92	**009**					0.75	**030**	47.41	**023**			13.79	**270**
82 453 240	10.64	**264**												
82 453 250	34.98	**256**					0.75	**031**	58.87	**133**			23.52	**257**

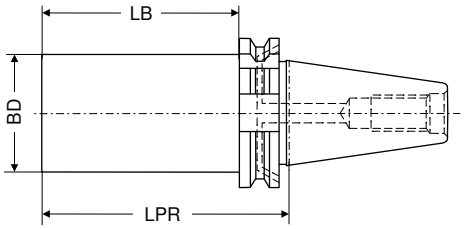
Auxiliary table for finding the required spare parts and accessories for intermediate sleeves for SK-adapters

DIN 69871 Suitable for article no.	Norm of the SK-shank Ø d_1 DIN 69871	Ø d_1 DIN 2080	Clamping screw length THID	Clamping screw SK Article No.	Retaining ring Article No.	Lock screw Article No.	Hollow key Article No.
81 453 030		SK 30	M12 x 35	81 950 160	81 950 170	81 950 033	83 359 017
82 453 040	SK 40		M16 x 70	83 950 264	83 950 270	83 950 030	83 359 023
82 453 040		SK 40	M16 x 40	83 950 009	83 950 270	83 950 030	83 359 023
82 453 240	SK 40		M16 x 70	83 950 264			
82 453 240		SK 40	M16 x 40	83 950 009			
82 453 250	SK 50		M24 x 80	83 950 256	83 950 257	83 950 031	83 359 133
82 453 250		SK 50	M24 x 50	83 950 263	83 950 257	83 950 031	83 359 133

Spare part 81 950 ... only use for article 81 453 ...!

Blank

- Material: Steel 17CrNiMo5
- For production of special tools
- Diameter BD turned with 0.5 mm oversize
- Taper hardened and ground
- Special tool area in soft state



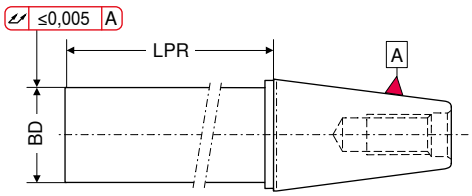
AD/B

Adapter	BD	LPR	LB	Y8 Article no. 82 458 ...	
	mm	mm	mm	£	
SK 40	63.0	250	231	156.87	**040**
SK 50	63.5	300	281	279.10	**050**

Test bar

- Without clamping slots
- MAS BT 40 special pull stud with LF = 32 mm

Scope of supply:
In wooden box



Adapter	BD	LPR	Y8 Article no. 82 456 ...	
	mm	mm	£	
SK / BT 40	40	330	734.83	**040**
SK / BT 50	50	330	908.97	**050**

Accessories

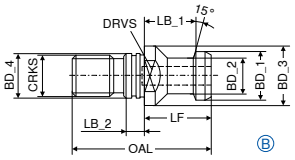
Pull studs	Others
→ 48–49	→ 17|34

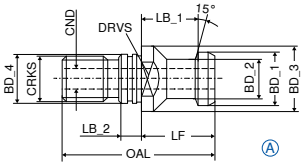
16

Pull studs for tool holders according to DIN 69871

- DIN 69872 form A and B
- For tools with or without axial coolant supply

Scope of supply:
Including O-Ring



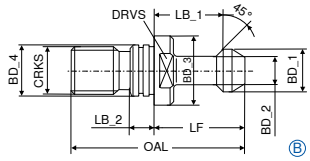


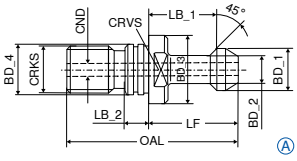
Adapter	BD_1	BD_2	BD_3	BD_4	CRKS	OAL	LF	LB_1	LB_2	CND	DRVS	TQX	form	Y8 Article no. 82 468 ...		Y8 Article no. 82 475 ...	
	mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	Nm		£		£	
SK 30	13	9	17	13	M12	44	24	19	5	3.5	14	60	A	14.11	030		
SK 40	19	14	23	17	M16	54	26	20	7	7.0	19	90	A	12.01	040		
SK 50	28	21	36	25	M24	74	34	25	10	11.5	30	145	A	17.83	050		
SK 30	13	9	17	13	M12	44	24	19	5		14	60	B			14.11	030
SK 40	19	14	23	17	M16	54	26	20	7		19	90	B			12.01	040
SK 50	28	21	36	25	M24	74	34	25	10		30	145	B			17.83	050

Pull studs for tool holders according to DIN 69871

- Similar to BT 45°, but 3 mm shorter
- For Haas, Micron and Hurco machines

Scope of supply:
Including O-Ring





Adapter	BD_1	BD_2	BD_3	BD_4	CRKS	OAL	LF	LB_1	LB_2	CND	DRVS	TQX	form	Y8 Article no. 83 535 ...		Y8 Article no. 83 538 ...	
	mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	Nm		£		£	
SK 40	15	10	23	17	M16	57	32	25	5	4	19	90	A	17.38	040		
SK 40	15	10	23	17	M16	57	32	25	5		19	90	B			20.63	040

Y8

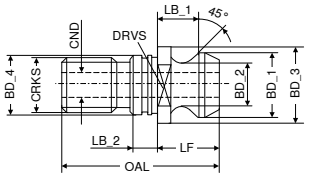
O-Ring

Spare parts BD_4		Article no. 83 476 ...	
		£	
17	BT / SK 40	2.37	040
25	BT / SK 50	2.37	050

Pull studs for tool holders according to DIN 69871

▲ Similar to ISO / DIS 7388 (ANSI-CAT only for SK 40) Form A

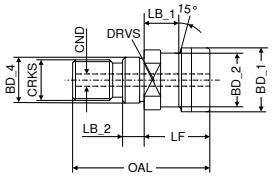
Scope of supply:
SK 50 including O-ring
SK 40 without O-ring groove



Adapter	BD_1	BD_2	BD_3	BD_4	CRKS	OAL	LF	LB_1	LB_2	CND	DRVS	TQX	Y8 Article no. 82 487 ...	
	mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	Nm	£	
SK 40	18.95	12.95	22.5	17	M16	41.26	16.40	11.15	4.0	6.0	19	90	12.01	**040**
SK 50	29.10	19.60	37.0	25	M24	65.50	25.55	17.95	5.5	11.5	30	145	18.84	**050**

Pull studs for tool holders according to DIN 69871

▲ SK 40 with circlip groove and edge protection, with and without internal thread
▲ SK 50 with circlip groove, with and without internal thread
▲ For tools according to DIN 69871 for conversion to DIN 2080

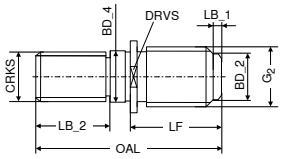


Adapter	BD_1	BD_2	BD_4	CRKS	OAL	LF	LB_1	LB_2	CND	DRVS	TQX	With internal thread Y8 Article no. 82 493 ...		Without internal thread Y8 Article no. 82 494 ...	
	mm	mm	mm		mm	mm	mm	mm	mm	mm	Nm	£		£	
SK 40	25.0	21.1	17	M16	53	25	13.6	8	7	19	90	19.65	**040**	19.65	**040**
SK 50	39.3	32.0	25	M24	65	25	13.3	10		30	145	22.41	**050** [1)]	22.41	**050**

1) With O ring

Pull studs for tool holders according to DIN 69871

▲ DECKEL thread S 20 x 2



Adapter	G_2	CRKS	OAL	LF	LB_1	LB_2	BD_2	BD_4	DRVS	Y8 Article no. 83 471 ...	
			mm	mm	mm	mm	mm	mm	mm	£	
SK 40	S 20 x 2	M16	55	33	4	17	16.7	17	22	33.78	**040**

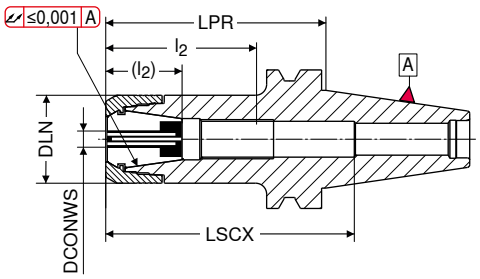
16

ER Precision Collet chuck

- For standard or sealed nuts
- Maximum size collet to ISO tolerance field H10
- For clamping a roll key is required
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P



AD
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	DLN	LSCX	l_2 (l_2)	for collet	Y8 Article no. 84 524 ...
	mm	mm	mm	mm	mm		£	
BT 30	1 - 10	50	30	73	28 - 44 (16 - 31)	426E (ER16)	198.00	**001**
BT 30	1 - 10	75	30	97	28 - 45 (14 - 31)	426E (ER16)	219.22	**002**
BT 30	1 - 10	100	30	123	28 - 44 (16 - 31)	426E (ER16)	254.51	**003**
BT 30	1 - 10	120	30	112	28 - 45 (14 - 31)	426E (ER16)	276.25	**004**
BT 30	2 - 16	60	40	77	35 - 59 (30 - 42)	430E (ER25)	226.33	**160**
BT 30	2 - 16	75	40	72	38 - 56 (23 - 39)	430E (ER25)	226.33	**161**
BT 30	2 - 16	90	40	87	38 - 56 (23 - 39)	430E (ER25)	276.25	**162**
BT 30	2 - 16	120	40	115	38 - 56 (23 - 39)	430E (ER25)	276.25	**164**
BT 30	2 - 20	60	50	69	42 - 52	470E (ER32)	173.34	**207**
BT 30	2 - 20	75	50	84	42 - 62 (24 - 45)	470E (ER32)	173.34	**208**
BT 30	2 - 20	90	50	94	42 - 62 (24 - 45)	470E (ER32)	189.79	**209**
BT 40	1 - 10	75	30	90	38 - 53 (29 - 39)	426E (ER16)	139.64	**210**
BT 40	1 - 10	90	30	120	30 - 50 (29 - 36)	426E (ER16)	165.47	**310**
BT 40	1 - 10	120	30	140	29 - 45 (29 - 35)	426E (ER16)	225.31	**410**
BT 40	1 - 10	150	30	180	29 - 45 (29 - 32)	426E (ER16)	242.91	**510**
BT 40	1 - 10	200	30	220	29 - 50 (29 - 36)	426E (ER16)	281.63	**610**
BT 40	2 - 16	60	40	92	44 - 64 (36 - 46)	430E (ER25)	158.43	**116**
BT 40	2 - 16	75	40	100	42 - 59 (36 - 41)	430E (ER25)	139.64	**216**
BT 40	2 - 16	90	40	91	42 - 59 (36 - 41)	430E (ER25)	165.47	**316**
BT 40	2 - 16	105	40	100	35 - 60 (20 - 42)	430E (ER25)	238.42	**168**
BT 40	2 - 16	120	40	91	40 - 65 (36 - 47)	430E (ER25)	242.91	**416**
BT 40	2 - 16	150	40	100	40 - 64 (36 - 45)	430E (ER25)	260.51	**516**
BT 40	2 - 16	200	40	150	40 - 64 (36 - 45)	430E (ER25)	299.23	**616**
BT 40	2 - 20	60	50	55	45 - 64 (42 - 46)	470E (ER32)	158.43	**120**
BT 40	2 - 20	75	50	100	42 - 76 (42 - 52)	470E (ER32)	139.64	**220**
BT 40	2 - 20	90	50	100	42 - 76 (42 - 52)	470E (ER32)	165.47	**320**
BT 40	2 - 20	120	50	110	42 - 71 (42 - 53)	470E (ER32)	242.91	**420**
BT 40	2 - 20	150	50	110	42 - 71 (42 - 53)	470E (ER32)	260.51	**520**
BT 40	3 - 26	75	63	78	54 - 59	472E (ER40)	178.37	**226**
BT 40	3 - 26	105	63	93	55 - 71 (48 - 53)	472E (ER40)	231.18	**326**
BT 50	2 - 20	75	50	110	45 - 70 (42 - 53)	470E (ER32)	264.04	**720**
BT 50	2 - 20	105	50	140	45 - 63 (42 - 45)	470E (ER32)	313.32	**820**
BT 50	2 - 20	165	50	200	45 - 74 (42 - 56)	470E (ER32)	471.74	**920**
BT 50	3 - 26	75	63	100	48 - 58	472E (ER40)	281.63	**726**
BT 50	3 - 26	105	63	100	48 - 58	472E (ER40)	330.92	**826**

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 3 mm longer

Spare parts, ER precision collet chuck

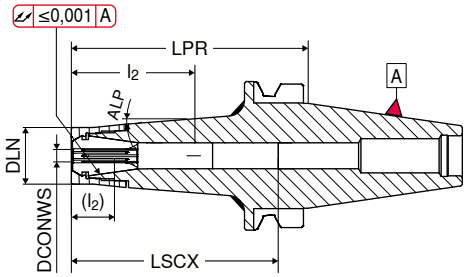
Spare parts	Y8 Lock nut IK		Y8 Lock nut			Y8 Stop screw 2			Y8 Stop screw 1	
	Article no. 84 950 ...		Article no. 84 950 ...			Article no. 83 950 ...			Article no. 83 950 ...	
for collet	£		£			£			£	
426E (ER16)	72.78	011	54.05	001	M11x1 - SW6	45.14	341	M11x1 - SW6	30.24	337
430E (ER25)	81.12	013	60.06	003	M18x1,5 - SW6	31.75	432	M18x1,5 - SW6	22.65	431
470E (ER32)	86.74	015	66.06	005	M22x1,5 - SW6	26.82	402	M22x1,5 - SW6	19.53	401
472E (ER40)	118.63	017	96.10	007				M28x1,5 - SW6	27.38	400

ER Precision tapered collet chuck

- for special tapered nuts
- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P



AD/B
G 2,5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	ALP	Y8 Article no. 84 517 ... £	
BT 40	1 - 10	100	24	72	28 - 48 (20 - 35)	426E (ER16)	4.5°	232.01	410
BT 40	1 - 10	160	24	180	28 - 48 (20 - 35)	426E (ER16)	4.5°	290.81	510

→ Transmittable torque moments, page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts	Y8 Tapered lock nut IK		Y8 Tapered lock nut			Y8 Stop screw 2			Y8 Stop screw 1	
	Article no. 84 950 ...		Article no. 84 950 ...			Article no. 83 950 ...			Article no. 83 950 ...	
for collet	£		£			£			£	
426E (ER16)	89.35	033	75.49	031	M11x1 - SW6	45.14	341	M11x1 - SW6	30.24	337

Accessories

ER collet
→ 208–211, 213

Sealing ring
→ 207

roll key
→ 17|36

roll key device
→ 17|36

Pull studs
→ 91–92

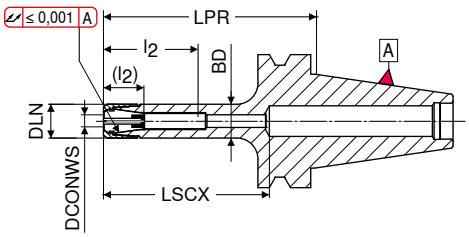
Others
→ 17|34

ER Precision collet chuck, slim version

- For Mini Clamping Nuts
- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P



Adapter	DCONWS mm	LPR mm	DLN mm	BD mm	LSCX mm	l_2 (l_2) mm	for collet	AD/B G 2,5 n_{max} 25000 Y8 Article no. 84 508 ... £		AD G 2,5 n_{max} 25000 Y8 Article no. 84 507 ... £	
BT 30	1 - 7	50	16	16	68	18 - 32 (12 - 22)	4008E (ER11)			220.16	**007**
BT 30	1 - 7	100	16	16	68	18 - 36 (12 - 26)	4008E (ER11)			243.75	**008**
BT 40	1 - 7	75	16	16	100	15 - 30 (8 - 21)	4008E (ER11)	231.86	**307**		
BT 40	1 - 7	90	16	16	68	18 - 36 (12 - 26)	4008E (ER11)	239.29	**40600**		
BT 40	1 - 7	120	16	16	140	15 - 30 (8 - 21)	4008E (ER11)	309.06	**507**		
BT 40	1 - 7	150	16	16	68	18 - 36 (12 - 26)	4008E (ER11)	322.73	**90600**		
BT 40	1 - 10	75	22	22	100	27 - 49 (16 - 32)	426E (ER16)	231.86	**216**		
BT 40	1 - 10	90	22	22	115	27 - 49 (16 - 32)	426E (ER16)	231.86	**316**		
BT 40	1 - 10	120	22	22	145	27 - 49 (16 - 32)	426E (ER16)	309.06	**416**		
BT 40	1 - 10	150	22	22	175	27 - 49 (16 - 32)	426E (ER16)	309.06	**516**		

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts for collet	Mini lock nut IK Y8 Article no. 84 950 ... £		Mini lock nut Y8 Article no. 84 950 ... £			Stop screw 2 Y8 Article no. 83 950 ... £			Stop screw 1 Y8 Article no. 83 950 ... £	
4008E (ER11)			75.49	**041**	M8x1 - SW4	43.03	**340**	M8x1 - SW4	28.66	**336**
426E (ER16)	73.51	**035**	60.30	**034**	M11x1 - SW6	45.14	**341**	M11x1 - SW6	30.24	**337**

Accessories

ER collet
→ 208–211, 213

Sealing ring
→ 207

Device
→ 17|35

Roll key
→ 17|36

Roll key device
→ 17|36

Pull studs
→ 91–92

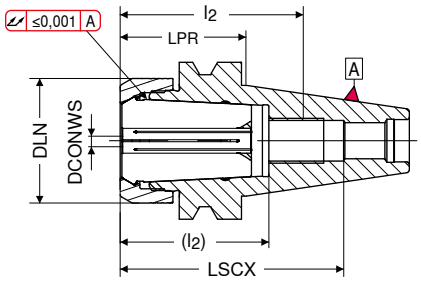
Others
→ 17|34

OZ Precision Collet Chuck

- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P



AD/B
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	DLN	LSCX	l_2 (l_2)	for collet	Y8 Article no. 84 513 ...	
	mm	mm	mm	mm	mm		£	
BT 40	2 - 25	51	50	89	70 (56)	462E	185.57	**225**

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts	Y8 Lock nut IK Article no. 84 950 ...			Y8 Stop screw 2 Article no. 83 950 ...			Y8 Stop screw 1 Article no. 83 950 ...	
for collet	£			£			£	
462E	71.74	**020**	M22x1,5 - SW6	26.82	**402**	M22x1,5 - SW6	19.53	**401**

Accessories

OZ Collet → 217

Sealing ring → 217

Roll key → 17|36

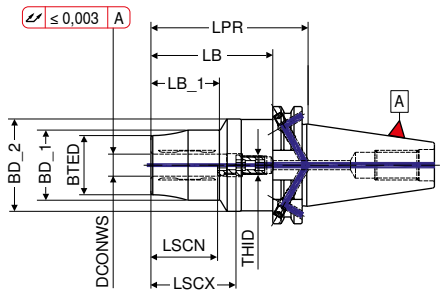
Roll key device → 17|36

Pull studs → 91–92

Others → 17|34

High pressure chuck, short version

Scope of supply:
Base body with backstop screw and pressure screw



AD/B
G 2,5 n_{max} 25000

	Adapter	DCONWS	LPR	BTED	BD_1	BD_2	LB_1	LSCX	LSCN	LB	THID	Y8 Article no. 83 526 ...	£	
		mm	mm	mm	mm	mm	mm	mm	mm	mm				
Short	BT 40	16	95	36	42	50	42	49	39	71	M12x1		898.85	116
	BT 40	20	100	42	48	50	45	51	41	76	M16x1		798.70	120
	BT 40	25	110	51	57	50	60	57	47	91	M16x1		898.85	125
	BT 40	32	120	57	63	50	65	61	51	101	M16x1		898.85	132

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Pressure pin

Pressure screw

Stop screw IK

Spare parts for Article no.		Y7 Article no. 83 950 ... £			Y7 Article no. 83 950 ... £			Y7 Article no. 83 950 ... £	
83 526 116	Ø5 x 16	7.08	433	M10x1x14	8.65	429	M12x1x18	16.71	446
83 526 120	Ø6 x 16	7.37	434	M10x1x12	17.20	159	M16x1x18,5	18.31	448
83 526 125	Ø6 x 16	7.37	434	M10x1x12	17.20	159	M16x1x22	28.95	449
83 526 132	Ø6 x 16	7.37	434	M10x1x14	8.65	429	M16x1x25	36.03	450

Cylindrical screw

Clamping key – T

Spare parts for Article no.		Y7 Article no. 83 950 ... £			Y7 Article no. 80 397 ... £	
83 526 116	M5x5 - SW2,5	2.89	157	SW5	6.09	050
83 526 120	M5x5 - SW2,5	2.89	157	SW5	6.09	050
83 526 125	M5x5 - SW2,5	2.89	157	SW5	6.09	050
83 526 132	M5x5 - SW2,5	2.89	157	SW5	6.09	050

Accessories

Reduction sleeve
→ 17|32

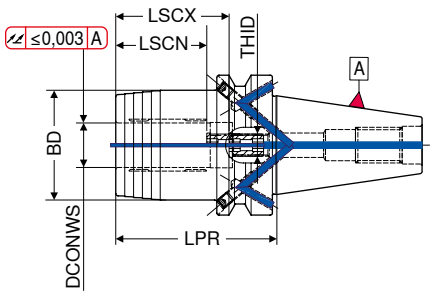
Pull studs
→ 48–49

Others
→ 17|34

High pressure chuck, short and stable version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Base body with backstop screw and pressure screw



AD/B
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	BD	LSCX	LSCN	THID	Y8 Article no. 83 513 ...	£	
	mm	mm	mm	mm	mm				
BT 40	20	72.5	49	51	40	M16x1x13,5		338.53	**120**

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Spare parts		Y7 Cylindrical screw Article no. 83 950 ...			Y7 Clamping key – T Article no. 80 397 ...			Y7 Pressure screw Article no. 83 950 ...			Y7 Stop screw IK Article no. 83 950 ...		
for Article no.		£			£			£			£		
83 513 120	M5x5 - SW2,5	2.89	**157**	SW5	6.09	**050**	M10x1x14	8.65	**429**	M16x1x13,5 - SW8	21.78	**424**

Accessories

Reduction sleeve
→ 17|32

Pull studs
→ 91–92

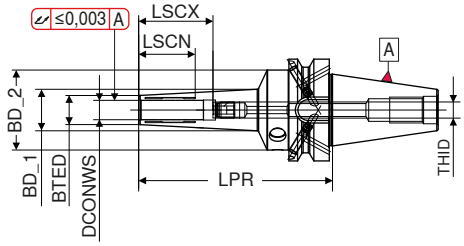
Others
→ 17|34

High pressure chuck, slim 3°

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw, pressure screw and screw plug



AD/B
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BTED	BD_1	BD_2	LSCX	LSCN	THID	Article no. 83 522 ...	
		mm	mm	mm	mm	mm	mm	mm		£	
long	BT40	3	120	9	16.55	49.5	28	12	M3	662.25	103
	BT40	4	120	10	17.55	49.5	28	16	M3	662.25	104
	BT40	5	120	11	18.55	49.5	28	20	M3	662.25	105
	BT40	6	120	12	19.55	49.5	37	27	M5	564.78	106
	BT40	8	120	14	21.55	49.5	37	27	M6	564.78	108
	BT40	10	120	16	23.65	49.5	41	31	M8x1	564.78	110
	BT40	12	120	18	25.76	49.5	46	36	M10x1	564.78	112
	BT40	16	120	24	31.45	49.5	49	39	M12x1	812.06	116
	BT40	20	120	28	35.55	49.5	51	41	M16x1	812.06	120
	BT40	6	160	16	33.53	49.5	37	27	M5	850.00	206
	BT40	8	160	18	34.60	49.5	37	27	M6	850.00	208
	BT40	10	160	20	36.27	49.5	41	31	M8x1	850.00	210
	BT40	12	160	22	37.88	49.5	46	36	M10x1	850.00	212
	BT40	6	200	16	37.88	49.5	37	27	M5	955.22	306
	BT40	8	200	18	38.90	49.5	37	27	M6	955.22	308
	BT40	10	200	20	40.57	49.5	41	31	M8x1	955.22	310
	BT40	12	200	22	42.18	49.5	46	36	M10x1	955.22	312

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Y7

Cylindrical screw

Y7

Clamping key – T

Y7

Pressure screw

Y7

Stop screw IK

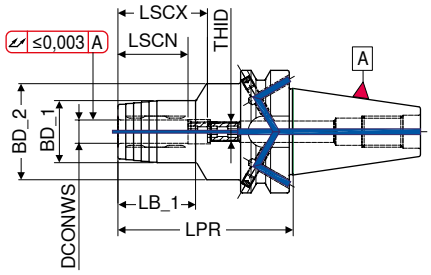
Spare parts for Article no.		Article no. 83 950 ... £			Article no. 80 397 ... £			Article no. 83 950 ... £			Article no. 83 950 ... £	
83 522 103	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M3x20 - SW1,5	13.10	172
83 522 104	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M3x20 - SW1,5	13.10	172
83 522 105	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M3x20 - SW1,5	13.10	172
83 522 106	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M5x12,5 - SW2,5	18.89	418
83 522 108	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M6x12,5 - SW3	18.89	419
83 522 110	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x12	17.20	159	M8x1x13,5 - SW3	18.89	420
83 522 112	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x12	17.20	159	M10x1x13,5 - SW5	18.89	421
83 522 116	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x12	17.20	159	M12x1x13,5 - SW5	18.89	422
83 522 120	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x12	17.20	159	M16x1x13,5 - SW8	21.78	424
83 522 206	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M5x12,5 - SW2,5	18.89	418
83 522 208	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M6x12,5 - SW3	18.89	419
83 522 210	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x12	17.20	159	M8x1x13,5 - SW3	18.89	420
83 522 212	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x12	17.20	159	M10x1x13,5 - SW5	18.89	421
83 522 306	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M5x12,5 - SW2,5	18.89	418
83 522 308	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x10	17.20	158	M6x12,5 - SW3	18.89	419
83 522 310	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x12	17.20	159	M8x1x13,5 - SW3	18.89	420
83 522 312	M5x5 - SW2,5	2.89	157	SW5	6.09	050	M10x1x12	17.20	159	M10x1x13,5 - SW5	18.89	421

Hydraulic chuck MAS BT, short and slim version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw



AD/B
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	BD_1	BD_2	LSCX	LSCN	LB_1	THID	Y8 Article no. 83 521 ...	
	mm	mm	mm	mm	mm	mm	mm		£	
BT 40	6	90	26	49.5	37	27	29	M5	658.06	**106**
BT 40	8	90	28	49.5	37	27	30	M6	658.06	**108**
BT 40	10	90	30	49.5	41	31	35	M8x1	658.06	**110**
BT 40	12	90	32	49.5	46	36	40	M10x1	575.25	**112**
BT 40	16	90	38	49.5	49	39	45	M12x1	658.06	**116**
BT 40	20	90	42	49.5	51	41	47	M16x1	575.25	**120**
BT 40	25	90	55	52.0	57	47	50	M16x1	658.06	**125**
BT 40	32	90	63	62.0	61	51	48	M16x1	658.06	**132**
BT 50	6	90	26	49.5	37	27	29	M5	920.97	**306**
BT 50	8	90	28	49.5	37	27	30	M6	920.97	**308**
BT 50	10	90	30	49.5	41	31	34	M8x1	920.97	**310**
BT 50	12	90	32	49.5	46	36	34	M10x1	836.72	**312**
BT 50	16	90	38	49.5	49	39	35	M12x1	920.97	**316**
BT 50	20	90	42	49.5	51	41	35	M16x1	836.72	**320**
BT 50	25	110	55	63.0	57	47	48	M16x1	920.97	**325**
BT 50	32	110	63	70.0	61	51	50	M16x1	920.97	**332**

→ Min. clamping depth, Page 233

Spare parts DCONWS	Y7 Pressure screw Article no. 83 950 ...			Y7 Stop screw IK Article no. 83 950 ...			Y7 Stop screw IK Article no. 83 950 ...		
		£			£			£	
6	M8x1x10	13.08	**439**				M5x12,5 - SW2,5	18.89	**418**
8	M8x1x10	13.08	**439**	M6x14 - SW2	18.89	**417**	M6x12,5 - SW3	18.89	**419**
10	M10x1x12	13.08	**440**				M8x1x13,5 - SW3	18.89	**420**
12	M10x1x12	13.08	**440**				M10x1x13,5 - SW5	18.89	**421**
16	M10x1x12	13.08	**440**				M12x1x13,5 - SW5	18.89	**422**
20 - 32	M10x1x12	13.08	**440**				M16x1x13,5 - SW8	21.78	**424**

Accessories

Reduction sleeve
→ 17|32

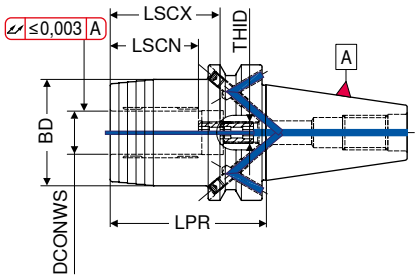
Pull studs
→ 91–92

Others
→ 17|34

Hydraulic chuck MAS BT, short and stable version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Base body with backstop screw and pressure screw



AD/B
G 2,5 n_{max} 25000

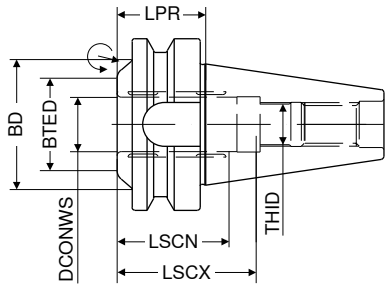
Adapter	DCONWS	LPR	BD	LSCX	LSCN	THID	Y8 Article no. 83 518 ...	£	
	mm	mm	mm	mm	mm				
BT 40	20	72.5	49.5	51	41	M16x1		447.41	**120**
BT 50	32	90.0	72.0	61	51	M16x1		533.13	**332**

→ Min. clamping depth, Page 233

Hydraulic chuck, extra short

▲ For solid carbide and HSS shanks to h6 tolerance or better

Scope of supply:
Base body with backstop screw and pressure screw



AD
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Y8 Article no. 83 523 ...	£	
	mm	mm	mm	mm	mm	mm				
BT 40	20	32.5	34	48	51	41	M16x1		523.33	**120**

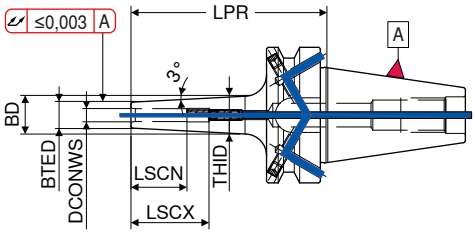
→ Min. clamping depth, Page 233

Spare parts DCONWS		Y7 Pressure screw Article no. 83 950 ...	£		Y7 Stop screw IK Article no. 83 950 ...	£	
20 - 32	M10x1x12		13.08	**440**	M16x1x13,5 - SW8	21.78	**424**

Shrink adapter, Slim 3°

▲ For solid carbide and HSS shanks to h6 tolerance or better

TG



AD/B
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Article no. 84 323 ...	
		mm	mm	mm	mm	mm	mm		£	
short	BT 40	3	90	9	15	28	12	M6	533.31	103
	BT 40	4	90	10	16	28	16	M6	518.90	104
	BT 40	5	90	11	17	30	20	M6	518.90	105
	BT 40	6	90	12	18	36	26	M5	461.23	106
	BT 40	8	90	14	20	36	26	M6	461.23	108
	BT 40	10	90	16	22	41	31	M8x1	461.23	110
	BT 40	12	90	18	24	47	37	M10x1	461.23	112
	BT 40	14	90	20	26	47	37	M10x1	461.23	114
	BT 40	16	90	22	28	50	40	M12x1	461.23	116
	BT 40	18	90	24	30	50	40	M12x1	461.23	118
	BT 40	20	90	26	32	52	42	M16x1	461.23	120
long	BT 40	3	120	9	16	12	12		594.55	203
	BT 40	4	120	10	17	16	16		583.75	204
	BT 40	5	120	11	18	20	20		583.75	205
	BT 40	6	120	12	21	36	26	M5	522.50	206
	BT 40	8	120	14	23	36	26	M6	522.50	208
	BT 40	10	120	16	25	41	31	M8x1	522.50	210
	BT 40	12	120	18	27	47	37	M10x1	522.50	212
	BT 40	14	120	20	29	47	37	M10x1	522.50	214
	BT 40	16	120	22	31	50	40	M12x1	522.50	216
	BT 40	18	120	24	33	50	40	M12x1	522.50	218
	BT 40	20	120	26	35	52	42	M16x1	522.50	220
extra-long	BT 40	3	160	9	19	12	12		670.23	303
	BT 40	4	160	10	20	16	16		659.42	304
	BT 40	5	160	11	21	20	20		659.42	305
	BT 40	6	160	12	24	36	26	M5	598.17	306
	BT 40	8	160	14	26	36	26	M6	598.17	308
	BT 40	10	160	16	28	41	31	M8x1	598.17	310
	BT 40	12	160	18	30	47	37	M10x1	598.17	312
	BT 40	14	160	20	32	47	37	M10x1	598.17	314
	BT 40	16	160	22	34	50	40	M12x1	598.17	316
	BT 40	18	160	24	36	50	40	M12x1	598.17	318
	BT 40	20	160	26	38	52	42	M16x1	598.17	320

→ Min. clamping depth, Page 233

Y7

Stop screw IK

Y7

Stop screw IK

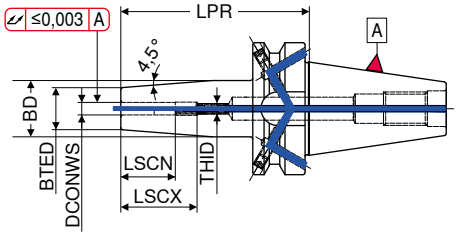
Spare parts DCONWS		Article no. 83 950 ...			Article no. 83 950 ...	
		£			£	
3 - 5	M6x14 - SW2	18.89	417			
6				M5x12,5 - SW2,5	18.89	418
8				M6x12,5 - SW3	18.89	419
10				M8x1x13,5 - SW3	18.89	420
12 - 14				M10x1x13,5 - SW5	18.89	421
16 - 18				M12x1x13,5 - SW5	18.89	422
20				M16x1x13,5 - SW8	21.78	424

16

Shrink fit adapters 4.5°

▲ For solid carbide and HSS shanks to h6 tolerance or better

TG



AD/B
G 2,5 n_{max} 25000

AD
G 2,5 n_{max} 25000

	Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Y8 Article no. 84 303 ... £		Y8 Article no. 84 303 ... £	
		mm	mm	mm	mm	mm	mm					
short	BT 30	3	85	10	17	28	12	M6			536.91	003
	BT 30	4	85	15	22	28	16	M6			518.90	004
	BT 30	5	85	15	22	30	20	M6			518.90	005
	BT 30	6	85	21	27	36	26	M5			461.23	006
	BT 30	8	85	21	27	36	26	M6			461.23	008
	BT 30	10	85	24	32	41	31	M8x1			461.23	010
	BT 30	12	85	24	32	47	37	M10x1			461.23	012
	BT 30	14	85	27	34	47	37	M10x1			461.23	014
	BT 30	16	85	27	34	50	40	M12x1			461.23	016
	BT 30	18	85	33	42	50	40	M12x1			461.23	018
	BT 30	20	85	33	42	52	42	M16x1			461.23	020
	BT 40	3	90	10	17	28	12	M6	253.68	103		
	BT 40	4	90	15	22	28	16	M6	246.55	104		
	BT 40	5	90	15	22	30	20	M6	246.55	105		
	BT 40	6	90	21	27	36	26	M5	216.98	106		
	BT 40	8	90	21	27	36	26	M6	216.98	108		
	BT 40	10	90	24	32	41	31	M8x1	216.98	110		
	BT 40	12	90	24	32	47	37	M10x1	216.98	112		
	BT 40	14	90	27	34	47	37	M10x1	216.98	114		
	BT 40	16	90	27	34	50	40	M12x1	216.98	116		
	BT 40	18	90	33	42	50	40	M12x1	216.98	118		
	BT 40	20	90	33	42	52	42	M16x1	216.98	120		
	BT 40	25	100	44	53	58	48	M16x1	216.98	125		
long	BT 40	3	120	10	20	12	12		284.71	203		
	BT 40	4	120	15	22	16	16		277.58	204		
	BT 40	5	120	15	22	20	20		277.58	205		
	BT 40	6	120	21	27	36	26	M5	248.02	206		
	BT 40	8	120	21	27	36	26	M6	248.02	208		
	BT 40	10	120	24	32	41	31	M8x1	248.02	210		
	BT 40	12	120	24	32	47	37	M10x1	248.02	212		
	BT 40	14	120	27	34	47	37	M10x1	248.02	214		
	BT 40	16	120	27	34	50	40	M12x1	248.02	216		
	BT 40	18	120	33	42	50	40	M12x1	248.02	218		
	BT 40	20	120	33	42	52	42	M16x1	248.02	220		
	BT 40	25	120	44	53	58	48	M16x1	248.02	225		
extra-long	BT 40	3	160	10	20	12	12		322.73	303		
	BT 40	4	160	15	22	16	16		315.60	304		
	BT 40	5	160	15	22	20	20		315.60	305		
	BT 40	6	160	21	27	36	26	M5	286.06	306		
	BT 40	8	160	21	27	36	26	M6	286.06	308		
	BT 40	10	160	24	32	41	31	M8x1	286.06	310		
	BT 40	12	160	24	32	47	37	M10x1	286.06	312		
	BT 40	14	160	27	34	47	37	M10x1	286.06	314		
	BT 40	16	160	27	34	50	40	M12x1	286.06	316		
	BT 40	18	160	33	42	50	40	M12x1	286.06	318		
	BT 40	20	160	33	42	52	42	M16x1	286.06	320		
	BT 40	25	160	44	53	58	48	M16x1	286.06	325		

→ Min. clamping depth, Page 233

Y7

Stop screw IK

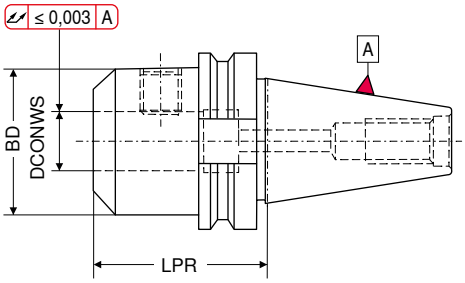
Y7

Stop screw IK

Spare parts DCONWS	Y7 Article no. 83 950 ... £		Y7 Article no. 83 950 ... £	
3 - 5	M6x14 - SW2	18.89 417		
6			M5x12,5 - SW2,5	18.89 418
8			M6x12,5 - SW3	18.89 419
10			M8x1x13,5 - SW3	18.89 420
12 - 14			M10x1x13,5 - SW5	18.89 421
16 - 18			M12x1x13,5 - SW5	18.89 422
20 - 25			M16x1x13,5 - SW8	21.78 424

Cylindrical shank adapter (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat



	Adapter	DCONWS $_{H4}$	LPR	BD	AD G 6,3 n_{max} 8000 Y8 Article no. 81 502 ...		AD G 6,3 n_{max} 8000 Y8 Article no. 82 502 ...		AD G 2,5 n_{max} 18000 Y8 Article no. 82 501 ...		ADe G 6,3 n_{max} 8000 Y8 Article no. 82 503 ...	
		mm	mm	mm	£		£		£		£	
short	BT 30	6	50	25	84.06	006						
short	BT 30	8	50	28	81.97	008						
short	BT 30	10	50	35	81.97	010						
short	BT 30	12	50	42	81.97	012						
short	BT 30	14	50	44	81.97	014						
short	BT 30	16	63	48	81.97	016						
short	BT 30	18	63	50	81.97	018						
short	BT 30	20	63	52	81.97	020						
extra short	BT 40	16	35	48			123.47	416	146.24	416	175.94	416
extra short	BT 40	20	35	50			123.47	420	146.24	420	175.94	420
extra short	BT 40	25	40	50			135.25	425	157.66	425	187.38	425
extra short	BT 40	32	75	72			122.60	432			175.48	432

W7

Grubscrew

Spare parts DCONWS $_{H4}$		Article no. 62 950 ... £	
6	M6x10	0.87	006
8	M8x10	0.87	008
10	M10x12	1.67	010
12 - 14	M12x16	1.32	012
16 - 18	M14x16	1.63	016
20	M16x16	1.74	020
25	M18x2x20	3.36	025
32	M20x2x20	3.51	032

Accessories

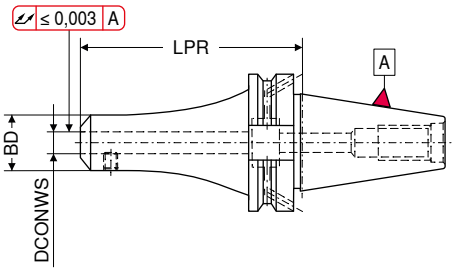
Pull studs
→ 91–92

Others
→ 17|34

16

Cylindrical shank adapter (Weldon)

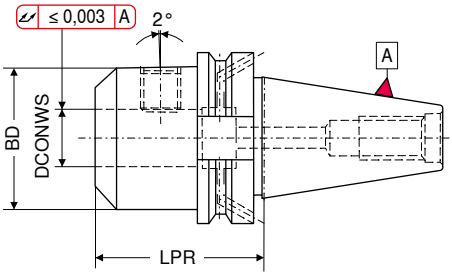
▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat



	Adapter	DCONWS $_{H4}$	LPR	BD	AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 502 ...		AD/B G 2,5 n_{max} 18000 Y8 Article no. 82 501 ...		AD/Be G 6,3 n_{max} 8000 Y8 Article no. 82 503 ...		AD/Be G 2,5 n_{max} 18000 Y8 Article no. 82 504 ...	
		mm	mm	mm	£		£		£		£	
short	BT 40	6	50	25	84.08	106	96.10	106	120.12	106	126.11	106
	BT 40	8	50	28	84.08	108	96.10	108	120.12	108	126.11	108
	BT 40	10	63	35	84.08	110	96.10	110	120.12	110	126.11	110
	BT 40	12	63	42	84.08	112	96.10	112	120.12	112	126.11	112
	BT 40	14	63	44	84.08	114	96.10	114	120.12	114	126.11	114
	BT 40	16	63	48	84.08	116	96.10	116	120.12	116	126.11	116
	BT 40	18	63	50	84.08	118	96.10	118	120.12	118	126.11	118
	BT 40	20	63	52	84.08	120	96.10	120	120.12	120	126.11	120
	BT 40	25	100	65	84.08	125	96.10	125	120.12	125	126.11	125
	BT 40	32	100	72	84.08	132	96.10	132	120.12	132		
	BT 40	40	120	90	84.08	140						
	BT 50	6	63	25	113.38	206			181.27	206		
	BT 50	8	63	28	113.38	208			181.27	208		
	BT 50	10	80	35	109.13	210			166.94	210		
	BT 50	12	80	42	109.13	212			166.94	212		
	BT 50	14	80	44	109.13	214			166.94	214		
	BT 50	16	80	48	109.13	216			182.78	216		
	BT 50	18	80	50	109.13	218			182.78	218		
	BT 50	20	80	52	109.13	220			182.78	220		
	BT 50	25	100	65	120.11	225			195.86	225		
	BT 50	32	105	72	121.34	232			206.21	232		
	BT 50	40	120	90	126.72	240						
long	BT 40	6	100	25	90.08	506	102.09	506				
	BT 40	8	100	28	90.08	508	102.09	508				
	BT 40	10	100	35	90.08	510	102.09	510				
	BT 40	12	100	42	90.08	512	102.09	512				
	BT 40	14	100	44	90.08	514	102.09	514				
	BT 40	16	100	48	90.08	516	102.09	516				
	BT 40	18	100	50	90.08	518	102.09	518				
	BT 40	20	100	52	90.08	520	102.09	520				
	BT 50	6	100	25	165.74	706						
	BT 50	8	100	28	165.74	708						
	BT 50	10	100	35	158.57	710						
	BT 50	12	100	42	158.57	712						
	BT 50	14	100	44	158.57	714						
	BT 50	16	100	48	159.01	716						
	BT 50	18	100	50	159.01	718						
	BT 50	20	100	52	159.01	720						
	BT 50	25	120	65	170.13	725						
extra-long	BT 40	6	160	25	96.10	606	108.10	606				
	BT 40	8	160	28	96.10	608	108.10	608				
	BT 40	10	160	35	96.10	610	108.10	610				
	BT 40	12	160	42	96.10	612	108.10	612				
	BT 40	14	160	44	96.10	614	108.10	614				
	BT 40	16	160	48	96.10	616	108.10	616				
	BT 40	18	160	50	96.10	618	108.10	618				
	BT 40	20	160	52	96.10	620	108.10	620				
	BT 40	25	160	65	96.10	625	108.10	625				
	BT 50	6	160	25	182.22	806						
	BT 50	8	160	28	182.22	808						
	BT 50	10	160	35	174.83	810						
	BT 50	12	160	42	174.83	812						
	BT 50	14	160	44	174.83	814						
	BT 50	16	160	48	175.73	816						
	BT 50	18	160	50	175.73	818						
	BT 50	20	160	52	175.73	820						
	BT 50	25	160	65	186.38	825						
	BT 50	32	160	72	189.63	832						

Cylindrical Shank Adapter (Whistle Notch)

- For shanks according to DIN 6535 HE / 1835 E with angled clamping flat
- The groove in the flat face is a characteristic feature of the Whistle Notch version



	Adapter	DCONWS $_{H4}$	LPR	BD	AD/B G 6,3 n_{max} 8000 Y8 Article no. 81 506 ...		AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 506 ...		AD/B G 2,5 n_{max} 18000 Y8 Article no. 82 507 ...	
		mm	mm	mm	£		£		£	
short	BT 40	6	50	25			126.05	106	148.37	106
	BT 40	8	50	28			126.05	108	148.37	108
	BT 40	10	63	35			116.74	110	139.29	110
	BT 40	12	63	42			116.74	112	139.29	112
	BT 40	14	63	44			116.74	114	139.29	114
	BT 40	16	63	48			128.62	116	150.59	116
	BT 40	18	63	50			128.62	118	150.59	118
	BT 40	20	63	52			128.62	120	150.59	120
	BT 40	25	100	65			137.87	125		
	BT 40	32	100	72			150.21	132		
	BT 40	40	120	80	134.20	140				
	BT 50	6	63	25			184.29	306		
	BT 50	8	63	28			184.29	308		
	BT 50	10	80	35			175.78	310		
	BT 50	12	80	42			175.78	312		
	BT 50	14	80	44			175.78	314		
	BT 50	16	80	48			176.85	316		
	BT 50	18	80	50			176.85	318		
	BT 50	20	80	52			176.85	320		
	BT 50	25	100	65			193.28	325		
	BT 50	32	105	72			196.76	332		
medium length	BT 40	6	130	25			134.66	206	151.48	206
	BT 40	8	130	28			134.66	208	151.48	208
	BT 40	10	130	35			126.02	210	141.76	210
	BT 40	12	130	42			126.02	212	141.76	212
	BT 40	16	130	48			135.49	216	152.42	216
	BT 40	20	130	52			135.49	220	152.42	220
	BT 40	25	130	65			161.87	225	182.12	225
	BT 50	6	130	25			211.67	406		
	BT 50	8	130	28			211.67	408		
	BT 50	10	130	35			200.23	410		
	BT 50	12	130	42			200.23	412		
	BT 50	16	130	48			201.06	416		
	BT 50	20	130	52			201.06	420		
	BT 50	25	130	65			212.51	425		
	BT 50	32	130	72			214.83	432		

Spare parts cylindrical shank adapters (Whistle Notch)

		W7			Y8			Y8	
		Grubscrew			Stop screw IK			Stop screw IK	
Spare parts DCONWS $_{H4}$		**Article no. 62 950 ...**			**Article no. 81 950 ...**			**Article no. 83 950 ...**	
		£			£			£	
6	M6x10	0.87	**006**				M5x35	3.04	**033**
8	M8x10	0.87	**008**				M6x35	2.06	**034**
10	M10x12	1.67	**010**				M8x35	2.19	**035**
12 - 14	M12x16	1.32	**012**				M10x35	2.99	**036**
16 - 18	M14x16	1.63	**016**				M12x40	2.67	**037**
20	M16x16	1.74	**020**				M16x45	2.58	**272**
25	M18x2x20	3.36	**025**				M20x35	4.57	**290**
32	M20x2x20	3.51	**032**				M20x35	4.57	**290**
40	M20x2x20	3.51	**032**	M22x1,5x15	6.40	**057**			

Stop screw 81 950 ... only use for Article 81 506 ...!

Accessories

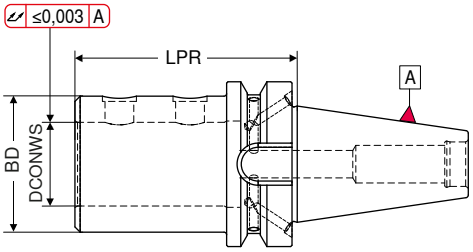
Pull studs

→ 91–92

Others

→ 17|34

Indexable insert drill adapter JIS B 6339 MAS-BT



AD/B
G 6,3 n_{max} 15000

2E/45

Adapter	DCONWS	LPR	BD	Article no. 10 841 ...	
	mm	mm	mm	£	
BT 40	20	75	40	117.55	**120**
BT 40	25	80	45	117.55	**125**
BT 40	32	85	52	117.55	**132**
BT 50	20	85	40	149.36	**220**
BT 50	25	90	45	149.36	**225**
BT 50	32	95	52	149.36	**232**
BT 50	40	105	65	149.36	**240**
BT 50	50	113	75	149.36	**250**

Suitable eccentric sleeves can be found in → **Chapter 3, Indexable insert drilling.**

2A/28

Grubscrew

Spare parts DCONWS		Article no. 10 950 ...	
		£	
20	M10x1x10	3.49	**001**
25 - 32	M12x1x10	3.49	**002**
40 - 50	M16x1x12	3.49	**003**

Accessories

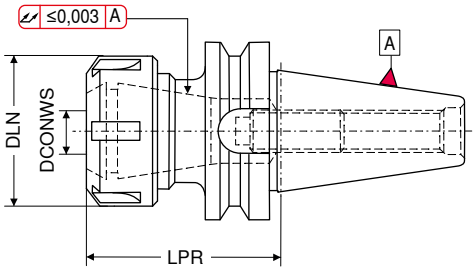
Pull studs
→ 91–92

Others
→ 17|34

16

ER-Collet chuck

Scope of supply:
Holder with lock nut and adjustable back stop



	Adapter	DCONWS	LPR	DLN	TQX	for collet	AD G 6,3 n_{max} 12000 Y8 Article no. 81 508 ...		AD/B G 6,3 n_{max} 12000 Y8 Article no. 81 508 ...		AD G 6,3 n_{max} 8000 Y8 Article no. 82 508 ...		AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 508 ...		AD/B G 2,5 n_{max} 18000 Y8 Article no. 82 509 ...	
		mm	mm	mm	Nm		£		£		£		£		£	
short	BT 30	1 - 10	70	28	8 - 56	426E (ER16)	107.07	010								
	BT 30	1 - 16	70	42	24 - 104	430E (ER25)	107.07	016								
	BT 30	2 - 20	70	50	24 - 136	470E (ER32)	107.07	020								
	BT 40	1 - 10	60	32	8 - 56	426E (ER16)							84.08	110	102.09	110
	BT 40	1 - 16	70	42	24 - 104	430E (ER25)							88.16	116	102.09	116
	BT 40	2 - 20	70	50	24 - 136	470E (ER32)							88.16	120	102.09	120
	BT 40	3 - 26	70	63	176	472E (ER40)							93.06	126	105.07	126
	BT 50	1 - 10	75	32	8 - 56	426E (ER16)					177.80	910				
	BT 50	1 - 16	75	42	24 - 104	430E (ER25)					159.36	916				
	BT 50	2 - 20	75	50	24 - 136	470E (ER32)					142.87	220				
	BT 50	4 - 26	75	63	176	472E (ER40)					145.79	226				
long	BT 30	1 - 10	100	28	8 - 56	426E (ER16)	125.89	210								
	BT 30	1 - 16	100	42	24 - 104	430E (ER25)	125.89	216								
	BT 40	1 - 10	120	32	8 - 56	426E (ER16)							96.10	410	114.11	410
	BT 40	1 - 16	120	42	24 - 104	430E (ER25)							96.10	416	114.11	416
	BT 40	2 - 20	120	50	24 - 136	470E (ER32)							96.10	420	114.11	420
	BT 40	3 - 26	100	63	176	472E (ER40)			136.96	426						
	BT 50	1 - 10	100	32	8 - 56	426E (ER16)					180.32	510				
	BT 50	1 - 16	100	42	24 - 104	430E (ER25)					166.88	516				
	BT 50	2 - 20	100	50	24 - 136	470E (ER32)					178.98	520				
	BT 50	3 - 26	100	63	176	472E (ER40)					188.27	526				
extra-long	BT 40	1 - 10	160	28	8 - 56	426E (ER16)			147.35	510						
	BT 40	1 - 16	160	42	24 - 104	430E (ER25)			183.61	516						
	BT 40	2 - 20	160	50	24 - 136	470E (ER32)			199.30	520						
	BT 40	3 - 26	160	63	176	472E (ER40)			153.56	526						
	BT 50	1 - 16	160	42	24 - 104	430E (ER25)					185.14	616				
	BT 50	2 - 20	160	50	24 - 136	470E (ER32)					204.53	620				

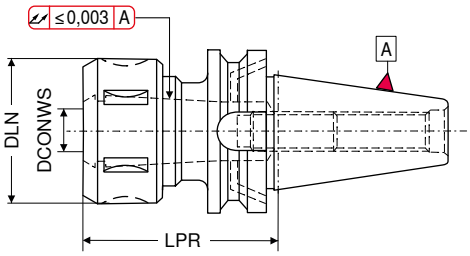
Spare parts

for collet	W7 Lock nut Article no. 62 950 ... £		Y8 Lock nut IK Article no. 83 950 ... £		W7 Lock nut Article no. 62 950 ... £		Y8 Y clamping key Article no. 83 357 ... £		Y8 Stop screw IK Article no. 81 950 ... £		Y8 Stop screw IK Article no. 83 950 ... £	
426E (ER16) / BT30-BT50	25.38	044			20.19	054	22.20	116	3.41	053		
430E (ER25) / BT30			76.11	055	21.03	055	22.20	125	3.98	054		
430E (ER25) / BT40, BT50			76.11	055	21.03	055	22.20	125	4.42	055	2.67	010
470E (ER32) / BT30			81.41	056	21.56	056	32.33	132	3.41	053		
470E (ER32) / BT40, BT50			81.41	056	21.56	056	32.33	132	6.40	057	2.67	010
472E (ER40) / BT30-BT50			97.97	057	22.33	057	36.64	140	6.40	057	2.58	011

Backstop screw 81 950... and nut 62 950 044 only for use with article 81 508...!

OZ-Collet chuck

▲ Clamping nut with ball bearings



	Adapter	DCONWS mm	LPR mm	DLN mm	TQX Nm	for collet	AD G 6,3 n_{max} 12000 Y8 Article no. 81 512 ... £		AD G 6,3 n_{max} 8000 Y8 Article no. 82 505 ... £		AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 505 ... £		AD/B G 2,5 n_{max} 18000 Y8 Article no. 82 512 ... £	
short	BT 30	2 - 16	60	43	24 - 104	415E / 421E	113.45	025						
	BT 30	2 - 25	80	60	24 - 176	459E / 462E	119.32	035						
	BT 40	2 - 16	70	43	80 - 90	415E / 421E					133.45	116	212.36	116
	BT 40	2 - 25	70	60	90 - 100	459E / 462E					140.17	125	219.85	125
	BT 50	2 - 25	90	60	90 - 100	459E / 462E			174.05	325				
	BT 50	4 - 32	100	72	110 - 120	460E / 467E			193.99	332				
long	BT 40	2 - 16	120	43	80 - 90	415E / 421E					190.08	416	212.62	416
	BT 40	2 - 25	120	60	90 - 100	459E / 462E					198.35	425	220.78	425
	BT 50	2 - 25	120	60	90 - 100	459E / 462E			222.83	525				
	BT 50	4 - 32	120	72	110 - 120	460E / 467E			244.58	532				

Spare parts

for collet		W7 Lock nut Article no. 62 950 ... £		Y8 Hook clamping key Article no. 83 354 ... £			Y8 Stop screw IK Article no. 81 950 ... £			Y8 Stop screw IK Article no. 83 950 ... £	
415E / 421E				22.20	116	M16x15	4.42	055			
415E / 421E	M33x1,5	35.33	050	22.20	116				M10x50	2.67	010
459E / 462E	M48x2	36.88	051	17.79	125				M10x50	2.67	010
459E / 462E				17.79	125	M16x15	4.42	055			
460E / 467E	M60x2,5	60.45	052	26.12	132				M10x50	2.67	010

Spare part 81 950 ... only use for article 81 512 ...!

Accessories

OZ Collet → 218

Pull studs → 91–92

Others → 17|34

16

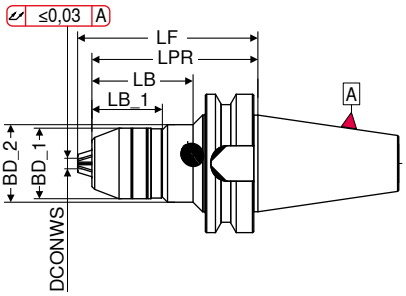
Short drill chuck

- ▲ Independent of direction of rotation
- ▲ Torque Moment = 12 Nm

Scope of supply:

Toolholder including clamping key SW4

NC 2010



Adapter	DCONWS	BD_1	BD_2	LB_1	LB	LPR	LF	A G 6,3 n_{max} 10000 Y8 Article no. 84 509 ...		AD G 6,3 n_{max} 10000 Y8 Article no. 84 510 ...		AD/B G 6,3 n_{max} 10000 Y8 Article no. 84 511 ...	
	mm	mm	mm	mm	mm	mm	mm	£		£		£	
BT 40	0,5 - 13	48.5		50.9		80	89.0	422.38	**413**	383.21	**413**		
BT 40	0,5 - 13	48.5		50.9		90	99.0					506.63	**413**
BT 40	2,5 - 16	51.0		50.9		80	90.5	350.02	**416**	376.31	**416**		
BT 50	2,5 - 16	51.0	56	50.9	73	120	130.5	498.06	**516**	524.33	**516**		

Accessories

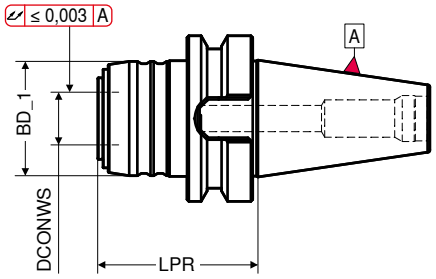
Pull studs → 91–92

Others → 17|34

Can be used with G 2.5 to 30,000 1/min by subsequent balancing !

Synchro tapping chuck with minimum length compensation

- For collets according to DIN 6499
- With length compensation under tension 1,0 mm and under compression 0,2 mm (LZD)
- p_{max} = 50 bar
- For synchro use



AD

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	LZD±	Y8 Article no. 83 515 ...	
			mm	mm	mm	mm	£	
BT 40	M3 - M12	1	61	43	20	1,0 / 0,2	272.68	**012**
BT 40	M6 - M20	2	82	60	32	1,0 / 0,2	353.71	**020**
BT 50	M3 - M12	1	72	43	20	1,0 / 0,2	296.21	**112**
BT 50	M6 - M20	2	93	60	32	1,0 / 0,2	458.46	**120**

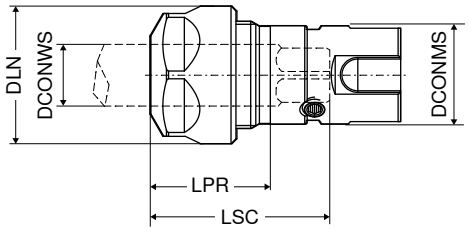
Accessories

Pull studs → 91–92

Others → 17|34

Insert for synchro quick change tapping chuck with minimum length compensation

Scope of supply:
Includes lock nut



AD

SZID	DCONWS	cutting range	LPR	DLN	LSC	for collet	DCONMS	Y8 Article no. 83 608 ...	
	mm		mm	mm	mm		mm	£	
1	2 - 10	M3 - M12	24	28	42	426E (ER16)	20	185.88	**012**
2	2 - 16	M6 - M20	28	42	59	430E (ER25)	32	216.51	**020**

16

Spare parts for synchronous tapping chucks

		W7			Y8			W7		Y8	
		Lock nut			Lock nut IK			Lock nut		Y clamping key	
Spare parts		**Article no. 62 950 ...**			**Article no. 83 950 ...**			**Article no. 62 950 ...**		**Article no. 83 357 ...**	
for Article no.		£			£			£		£	
83 608 012	M22x1,5 - SW25	25.38	**044**	M22x1,5	65.34	**054**				22.20	**116**
83 608 020				M32x1,5	76.11	**055**	M32x1,5	21.03	**055**	22.20	**125**

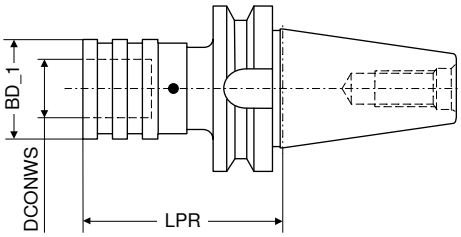
Accessories

ER collet

→ 212, 214–215

Quick change tap chuck with length compensation

▲ With length compensation under tension and compression (LZD)

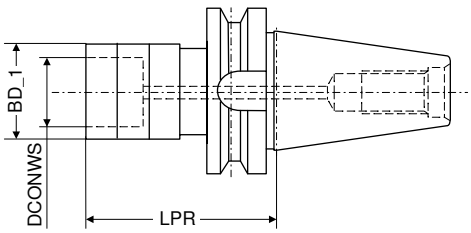


A

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	LZD±	Y8 Article no. 83 528 ...	
			mm	mm	mm	mm	£	
BT 30	M3 - M12	01	63	38	19	9	463.68	**312**
BT 30	M6 - M20	02	96	55	31	15	581.49	**320**
BT 40	M3 - M12	01	68	38	19	9	372.04	**412**
BT 40	M6 - M20	02	93	55	31	15	385.98	**420**
BT 50	M3 - M12	01	80	38	19	9	623.47	**512**
BT 50	M6 - M20	02	102	55	31	15	717.75	**520**

Quick change tap chuck without length compensation

▲ Without length compensation under tension and compression (LZD)



AD

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	Y8 Article no. 83 525 ...	
			mm	mm	mm	£	
BT 40	M3 - M12	01	67	33	19	338.04	**412**
BT 40	M6 - M20	02	90	50	31	346.02	**420**
BT 50	M3 - M12	01	78	33	19	450.61	**512**
BT 50	M6 - M20	02	101	50	31	450.61	**520**

16

Accessories

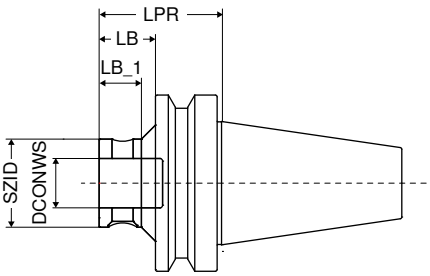
Collet
→ 219–223

Pull studs
→ 91–92

Others
→ 17|34

Adapter with ABS Connection

ABS



AD

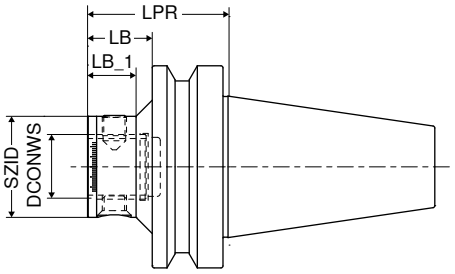
Adapter	KOMET no.	SZID	DCONWS	LPR	LB	LB_1	NEW 3E Article no. 84 202 ... £	
			mm	mm	mm	mm		
BT 40	A5500150	ABS 50	28	60	33		316.73	**04097**
BT 50	A5500350	ABS 50	28	70	32	24	362.09	**05097**

Eccentric adjuster with ABS Connection

▲ Adjustment ± 0.25 mm on diameter

Scope of supply:
Steep taper adapter (Form B) with conversion kit (Form AD) and sealing disc

ABS



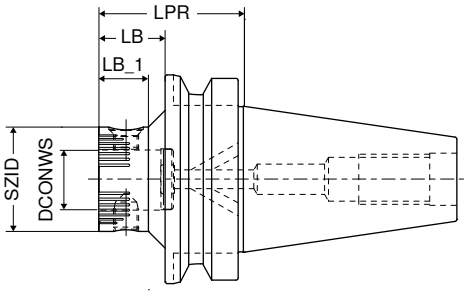
AD/B

Adapter	KOMET no.	SZID	DCONWS	LPR	LB	LB_1	NEW W4 Article no. 84 205 ... £	
			mm	mm	mm	mm		
BT 40	A5556150	ABS 50	28	60	33		478.13	**04097**
BT 50	A5556350	ABS 50	28	70	32	24	536.35	**05097**

Torsional vibration dampers with ABS Connection

Scope of supply:
Steep taper adapter (Form B) with conversion kit (Form AD) and sealing disc

ABS



AD/B

Adapter	KOMET no.	SZID	DCONWS	LPR	LB	LB_1	NEW 3E Article no. 84 208 ...	
			mm	mm	mm	mm	£	
BT 40	A5502150	ABS 50	28	60	33		680.73	**04097**
BT 50	A5502350	ABS 50	28	70	32	24	823.45	**05097**

Spare parts SZID	XX Clamping screw Article no. 84 950 ...		XX Taper screw Article no. 84 950 ...		XX Set Article no. 84 950 ...	
	£		£		£	
ABS 50	11.60	**20300**	14.89	**20400**	26.43	**99800**

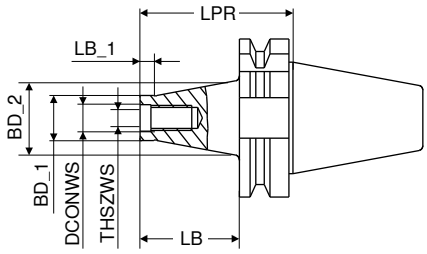
Accessories

Pull studs
→ 91–92

Extension
→ 17|27

Others
→ 17|34

Adapter for milling cutters with threaded end



AD
G 6,3 n_{max} 18000

WA

Adapter	THSZWS	DCONWS	LB	BD_1	BD_2	LB_1	LPR	Article no. 56 711 ...	
		mm	mm	mm	mm	mm	mm	£	
BT 40	M8	8.5	25	13.8	15	12	52	193.12	**081**
BT 40	M8	8.5	50	13.8	23	12	77	197.85	**082**
BT 40	M8	8.5	75	13.8	25	12	102	202.42	**083**
BT 40	M10	10.5	25	18.0	23	12	52	193.12	**101**
BT 40	M10	10.5	50	18.0	25	12	77	197.85	**102**
BT 40	M10	10.5	75	18.0	30	12	102	202.42	**103**
BT 40	M12	12.5	25	21.0	24	12	52	193.12	**121**
BT 40	M12	12.5	50	21.0	30	12	77	197.85	**122**
BT 40	M12	12.5	75	21.0	35	12	102	202.42	**123**
BT 40	M12	12.5	100	21.0	38	12	127	207.13	**124**
BT 40	M16	17.0	25	29.0	29	12	52	193.12	**161**
BT 40	M16	17.0	50	29.0	34	12	77	197.85	**162**
BT 40	M16	17.0	75	29.0	35	12	102	202.42	**163**
BT 40	M16	17.0	100	29.0	40	12	127	207.13	**164**

Accessories

Extension-Reduction set
→ 17|19

Pull studs
→ 91–92

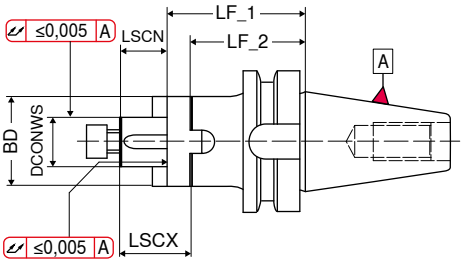
Others
→ 17|34

Combination shell mill adapter

▲ For milling cutters with transverse or longitudinal groove according to DIN 6358

Scope of supply:

Toolholder with retaining screw, driving ring and dowel spring



A
G 6,3 n_{max} 8000
Y8
Article no. 81 516 ...

A
G 6,3 n_{max} 8000
Y8
Article no. 82 516 ...

	Adapter	DCONWS	LF_1	BD	LSCX	LSCN	LF_2	£		£	
		mm	mm	mm	mm	mm	mm				
short	BT 30	16	45	32	27	17	35	109.14	016 [1]		
	BT 30	22	47	40	31	19	35	109.14	022 [1]		
	BT 30	27	49	46	33	21	37	126.94	027 [1]		
	BT 40	16	55	32	27	17	45			141.40	116
	BT 40	22	55	40	31	19	43			146.90	122
	BT 40	27	55	48	33	21	43			149.93	127
	BT 40	32	60	58	38	24	46			157.99	132
	BT 40	40	60	70	41	27	46			166.53	140 [1]
	BT 50	16	70	32	27	17	60			194.91	216
	BT 50	22	70	40	31	19	58			201.83	222
	BT 50	27	70	48	33	21	58			218.45	227
	BT 50	32	70	58	38	24	56			223.72	232
	BT 50	40	70	70	41	27	56			231.88	240 [1]
long	BT 30	16	80	32	27	17	70	138.53	916 [1]		
	BT 30	22	80	40	31	19	68	138.53	922 [1]		
	BT 30	27	90	48	33	21	78	146.99	927 [1]		
	BT 40	16	100	32	27	17	90	187.55	216		
	BT 40	22	100	40	31	19	88	187.55	222		
	BT 40	27	100	48	33	21	88	201.19	227		
	BT 40	32	100	58	38	24	86	223.00	232		
	BT 40	40	100	70	41	27	86	252.92	240		

1) With cross screw

Parallel key
Y8

Drive ring
Y8

Cross nut key
Y8

Retaining screw
Y8

Clamping screw
Y8

Spare parts DCONWS	**Article no. 83 950 ...** £		**Article no. 83 370 ...** £		**Article no. 83 368 ...** £		**Article no. 83 367 ...** £		**Article no. 83 950 ...** £	
16	3.29	284	12.13	116	20.07	116	5.33	016	5.65	113
22	3.29	285	11.65	122	24.96	122	5.93	022	6.38	124
27	5.22	286	14.53	127	29.34	127	7.58	027	7.05	125
32	3.71	287	15.25	132	40.00	132	11.90	032	8.59	126
40	4.38	288	25.68	140	39.72	140	12.74	040	9.47	112

Accessories

Pull studs
→ 91–92

Milling Adapter Rings
→ 17|28

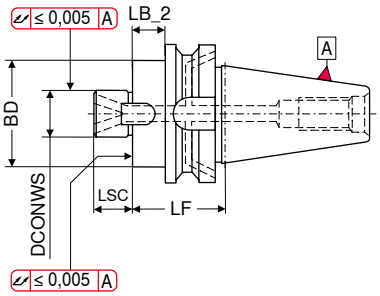
Others
→ 17|34

16

Shell mill adapter

▲ With fixed drive dogs and enlarged contact face for milling cutters with transverse groove

Scope of supply:
Toolholder with retaining screw



	Adapter	DCONWS	LB_2	LF	BD	LSC	A G 6,3 n_{max} 8000 Y8 Article no. 81 514 ...		AD G 6,3 n_{max} 8000 Y8 Article no. 82 514 ...		AD/B G 6,3 n_{max} 8000 Y8 Article no. 82 514 ...	
		mm	mm	mm	mm	mm	£		£		£	
short	BT 30	16	18	40	38	17	104.97	016 [2]				
	BT 30	22	18	40	48	19	104.97	022 [2]				
	BT 30	27	18	40	58	21	119.68	027 [2]				
	BT 30	32	28	50	78	24	130.23	032 [2]				
	BT 40	16	25	52	38	17					109.13	116
	BT 40	22	25	52	48	19					118.75	122
	BT 40	27	25	52	58	21					120.11	127
	BT 40	32	23	50	78	24					126.72	132
	BT 40	40	23	50	88	27					137.71	140 [1]
	BT 50	16	25	63	38	17			160.38	316		
	BT 50	22	25	63	48	19			165.74	322		
	BT 50	27	25	63	58	21			169.68	327		
	BT 50	32	22	60	78	24			184.91	332		
	BT 50	40	22	60	88	27			188.72	340 [1]		
long	BT 40	16	73	100	38	17					117.28	416
	BT 40	22	73	100	48	19					124.03	422
	BT 40	27	73	100	58	21					126.72	427
	BT 40	32	73	100	78	24					133.45	432
	BT 40	40	73	100	88	27					141.63	440 [1]
	BT 50	16	62	100	38	17			204.30	616		
	BT 50	22	62	100	48	19			209.26	622		
	BT 50	27	62	100	58	21			215.96	627		
	BT 50	32	62	100	78	24			222.83	632		
	BT 50	40	62	100	88	27			227.66	640 [1]		
medium length	BT 40	16	103	130	38	17					124.29	816
	BT 40	22	103	130	48	19					128.35	822
	BT 40	27	103	130	58	21					130.33	827
	BT 40	32	103	130	78	24					136.57	832
	BT 40	40	103	130	88	27					142.63	840 [1]
	BT 50	16	92	130	38	17			174.01	916		
	BT 50	22	92	130	48	19			177.69	922		
	BT 50	27	92	130	58	21			182.98	927		
	BT 50	32	92	130	78	24			188.30	932		
	BT 50	40	92	130	88	27			191.93	940 [1]		
extra-long	BT 40	16	133	160	38	17					160.81	516
	BT 40	22	133	160	48	19					165.74	522
	BT 40	27	133	160	58	21					168.21	527
	BT 40	32	133	160	78	24					176.17	532
	BT 40	40	133	160	88	27					183.56	540 [1]
	BT 50	16	122	160	38	17			224.38	716		
	BT 50	22	122	160	48	19			229.21	722		
	BT 50	27	122	160	58	21			236.05	727		
	BT 50	32	122	160	78	24			242.90	732		
	BT 50	40	122	160	88	27			247.58	740 [1]		

1) With cross screw and 4 holes M12, Pitch Circle diameter = 66.7 mm, coolant outlet on the outer diameter of the spigot (DCONWS)!
2) With cross screw

Spare parts facemill adapters

Spare parts DCONWS		Y8 Driver Article no. 83 950 ...		Y8 Cross nut key Article no. 83 368 ...		Retaining screw Article no. 83 367 ...		Y8 Clamping screw Article no. 83 950 ...	
		£		£		£		£	
16	8x9x17,5	13.66	120	20.07	116	M8	5.33	016	M8x25	5.65	113
22	10x11x20,5	14.10	121	24.96	122	M10	5.93	022	M10x25	6.38	124
27	12x13x24,3	15.55	122	29.34	127	M12	7.58	027	M12x30	7.05	125
32	14x21x21,2	15.71	123	40.00	132	M16	11.90	032	M16x35	8.59	126
40	15,9x16,3x19,5	20.92	295	39.72	140	M20	12.74	040	M20x40	9.47	112

DCONWS		Y8 Drive dogs Article no. 81 950 ...		Y8 Drive screw Article no. 81 950 ...		Y8 Screw for drivers Article no. 83 950 ...	
		£		£		£	
16	8x8x14	13.66	001	M3x8	0.97	010	M3x8	0.97	296
22	10x10x17	14.10	002	M4x8	1.27	011	M4x12	1.27	297
27	12x14x20	15.55	003	M4x14	1.30	012	M5x12	1.30	136
32	14x14x22	15.38	004	M5x13	1.47	013	M5x20	1.38	137
40							M6x16	1.57	138

Spare part 81 950 ... only use for article 81 514 ...!

Accessories

Pull studs
→ 91–92

Extensions
→ 17|26

Others
→ 17|34

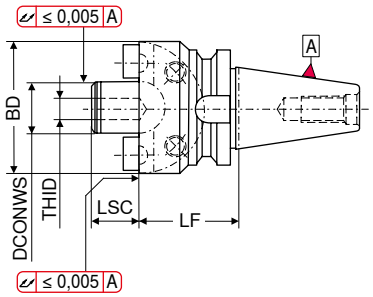
16

Large diameter facemill adapter

▲ For milling cutters with keyway or drive slot DIN 6357

Scope of supply:

Holder with integrated drive dogs according to DIN 2079 and 4 fixation screws



A

Adapter	DCONWS	LF	BD	LSC	THID	Y8 Article no. 82 519 ...	£	
	mm	mm	mm	mm				
BT 50	40	70	89	30	M20		307.24	**240**
BT 50	60	80	129	40	M30		376.33	**260**

Spare parts DCONWS		Y8 Screw for drivers Article no. 83 950 ...	£		Y8 Driver Article no. 83 950 ...	£		2A/28 Socket head screw Article no. 70 950 ...	£		Y8 clamping screw Article no. 83 950 ...	£	
40	M6x16		1.57	**138**	15,9x16,3x19,5	20.92	**295**				M12x50	7.04	**140**
60					25,4x16,3x26,5	23.59	**298**	M12x30	7.68	**181**	M16x45	14.47	**160**

Accessories

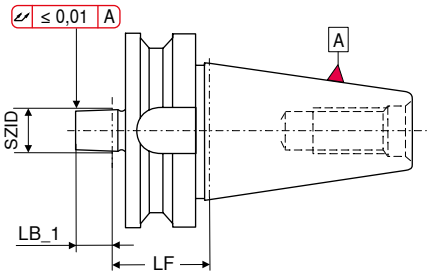
Pull studs

→ 91–92

Others

→ 17|34

Drill chuck adapter



Adapter	SZID	LF	LB_1	A G 6,3 n_{max} 8000 Y8 Article no. 81 513 ... £		A G 6,3 n_{max} 8000 Y8 Article no. 82 513 ... £	
		mm	mm				
BT 30	B12	25	18.5	90.26	**012**		
BT 30	B16	25	24.0	90.26	**016**		
BT 40	B12	40	18.5			103.01	**112**
BT 40	B16	40	24.0			118.10	**116**
BT 40	B18	32	32.0	83.70	**118**		
BT 50	B16	50	24.0			168.97	**216**
BT 50	B18	50	32.0			176.82	**218**

Spare parts SZID		Y8 Drill chuck Article no. 83 636 ... £		Y8 Drill chuck Article no. 83 636 ... £	
B12	0 - 8 mm	146.71	**012**	0 - 10 mm	173.49	**112**
B16	1 - 13 mm	207.93	**016**	3 - 16 mm	169.77	**116**
B18				3 - 16 mm	221.41	**018**

Accessories

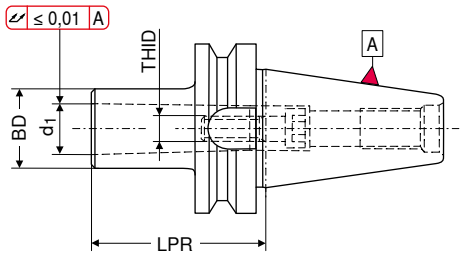
Pull studs
→ 91–92

Others
→ 17|34

16

Milling sleeve adapters DIN 6364 for DIN 228-2C Morse taper shanks with thread

Scope of supply:
Holder with retaining screw



AD
G 6,3 n_{max} 8000

AD
G 6,3 n_{max} 8000

	Adapter	d_1	LPR mm	BD mm	THID	Y8 Article no. 81 527 ... £		Y8 Article no. 82 527 ... £	
short	BT 40	MK1	50	25	M6	105.16	010		
	BT 40	MK2	50	32	M10	105.16	020		
	BT 40	MK3	70	40	M12			141.40	030
	BT 40	MK4	95	48	M16			146.90	040
	BT 50	MK1	45	25	M6			192.31	210
	BT 50	MK2	60	32	M10			187.38	220
	BT 50	MK3	65	40	M12			190.08	230
	BT 50	MK4	95	48	M16			197.14	240
	BT 50	MK5	118	63	M20			224.16	250

Disassembly instructions can be found in → **Chapter 17, Accessories.**

Counterscrew

Hollow key with nose

Fixing ring

Fixing ring

Spare parts for Article no.		Y8 Article no. 83 950 ... £			Y8 Article no. 83 359 ... £			Y8 Article no. 81 950 ... £			Y8 Article no. 83 950 ... £	
81 527 010							M16x10	16.09	150			
81 527 020							M16x8	16.09	151			
82 527 030	M5x6	0.75	030	17 x 117	38.99	017				M20x1,5x10x13	13.79	269
82 527 040	M5x6	0.75	030	23 x 145	47.41	023				M26x1,5x17	13.79	270
82 527 210	M5x8	0.75	031	20 x 135	41.54	020				M24x10x6,5	11.97	266
82 527 220	M5x8	0.75	031	20 x 135	41.54	020				M24x10x10,5	11.97	268
82 527 230	M5x8	0.75	031	17 x 117	38.99	017				M20x1,5x10x13	13.79	269
82 527 240	M5x8	0.75	031	23 x 145	47.41	023				M26x1,5x17	13.79	270
82 527 250	M5x8	0.75	031	33 x 175	58.72	033				M36x1,5x21	17.01	271

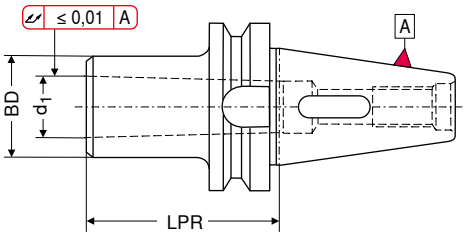
Morse taper clamping screw

Clamping Screw

Counterscrew

Spare parts for Article no.		Y8 Article no. 83 950 ... £			Y8 Article no. 81 950 ... £			Y8 Article no. 81 950 ... £	
81 527 010				M6x39	11.85	140	M5x6	1.17	033
81 527 020				M10x30	17.49	141	M5x6	1.17	033
82 527 030	M12x35	1.25	018						
82 527 040	M16x40	5.92	019						
82 527 210	M6x30	0.91	260						
82 527 220	M10x30	1.25	017						
82 527 230	M12x35	1.25	018						
82 527 240	M16x40	5.92	019						
82 527 250	M20x50	11.08	262						

Taper sleeve adapter DIN6383 for DIN 228-2D Morse taper shanks



Adapter	d_1	LPR	BD	AD G 6,3 n_{max} 8000 Y8 Article no. 81 525 ... £		AD G 6,3 n_{max} 8000 Y8 Article no. 82 525 ... £	
		mm	mm				
BT 30	MK1	45	25	110.18	**010**		
BT 30	MK2	60	32	100.83	**020**		
BT 30	MK3	75	40	100.83	**030**		
BT 40	MK1	50	25			95.66	**110**
BT 40	MK2	50	32			98.37	**120**
BT 40	MK3	70	40			105.19	**130**
BT 40	MK4	95	48			110.56	**140**
BT 50	MK1	45	25			120.11	**210**
BT 50	MK2	60	32			124.03	**220**
BT 50	MK3	65	40			170.85	**230**
BT 50	MK4	95	48			133.45	**240**
BT 50	MK5	105	63			145.79	**250**

Accessories

Morse taper adapter sleeve
→ 17|4

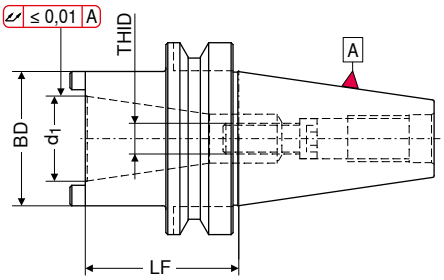
Pull studs
→ 91–92

Others
→ 17|34

Milling adapter sleeve

- For mounting tool holders according to DIN 2080
- With an extended retaining screw also tool holders according to DIN 69871, MAS-BT and ANSI-CAT can be clamped

Scope of supply:
Holder with clamping screw for DIN 2080 adapters



Adapter	d_1	LF	BD	THID	A Y8 Article no. 81 518 ...		A Y8 Article no. 82 518 ...	
		mm	mm		£		£	
BT 40	SK 30	60	51	M12	194.05	**106**		
BT 40	SK 40	100	63	M16	194.05	**110**		
BT 50	SK 40	80	70	M16			304.77	**250**

Spare parts for Article no.	Y8 Clamping screw SK Article no. 83 950 ...		Y8 Clamping Screw Article no. 81 950 ...		Y8 Counterscrew Article no. 81 950 ...		Y8 Hollow key with nose Article no. 83 359 ...		Y8 Fixing ring Article no. 81 950 ...	
	£		£		£		£		£	
81 518 106			20.93	**160**	1.17	**033**	38.99	**017**	19.38	**170**
81 518 110			28.03	**161**	1.17	**033**	47.41	**023**	27.86	**171**
82 518 250	9.92	**009**								

Required screw length when retracting of DIN 69871, MAS-BT or DIN 2080 shanks

MAS-BT Suitable for article no.:	Taper Shank Ø d_1	Clamping screw length DIN 69871, MAS-BT THID	Clamping screw length DIN 2080 THID
81 518 106	SK 30 – BT 30	M12x55	M12x35 – **81 950 160**
81 518 110	SK 40 – BT 40	M16x60	M16x35 – **81 950 161**
82 518 250	SK 50 – BT 50	M16x70 – **83 950 256**	M16x40 – **83 950 009**

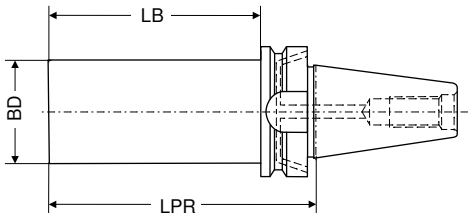
Spare part 81 950 ... only use for article 81 518 ...!

Accessories

Pull studs	Others
→ 91–92	→ 17|34

Blank

- Material: Steel 17CrNiMo5
- For production of special tools
- Diameter BD turned with 0.5 mm oversize
- Taper hardened and ground
- Special tool area in soft state

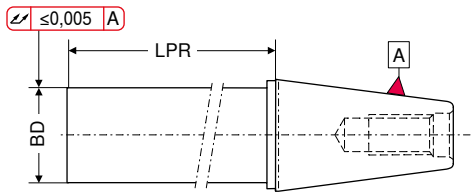


Adapter	BD	LPR	LB	AD/B Y8 Article no. 82 523 ... £		A Y8 Article no. 82 523 ... £	
	mm	mm	mm				
BT 40	63.0	250	223	156.87	**040**		
BT 50	63.5	300	262			261.17	**050**

Test bar

- Without clamping slots
- MAS BT 40 special pull stud with LF = 32 mm

Scope of supply:
In wooden box



Adapter	BD	LPR	Y8 Article no. 82 456 ... £	
	mm	mm		
SK / BT 40	40	330	734.83	**040**
SK / BT 50	50	330	908.97	**050**

Accessories

Pull studs	Others
→ 49, 91–92	→ 17|34

16

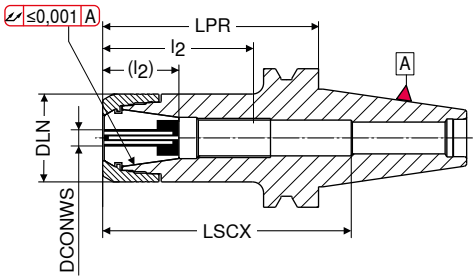
ER Precision Collet chuck – BT-FC

- ▲ With face contact
- ▲ For standard or sealed nuts
- ▲ Maximum clamping range covered according to ISO tolerance field H10
- ▲ For clamping a roll key is required
- ▲ p_{max} = 80 bar

Scope of supply:

Holder **without** nut, **without** backstop

Centro-P



AD
G 2,5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	Y8 Article no. 84 525 ... £	
BT-FC 30	1 - 10	75	30	97	28 - 45 (14 - 31)	426E (ER16)	242.21	**002**
BT-FC 30	2 - 16	75	40	72	38 - 56 (23 - 39)	430E (ER25)	245.67	**012**
BT-FC 30	2 - 20	75	50	84	42 - 62 (24 - 45)	470E (ER32)	245.67	**022**
BT-FC 40	1 - 10	75	30	90	38 - 53 (29 - 39)	426E (ER16)	269.89	**102**
BT-FC 40	2 - 16	75	40	100	42 - 59 (36 - 41)	430E (ER25)	273.35	**112**
BT-FC 40	2 - 20	75	50	100	42 - 76 (42 - 52)	470E (ER32)	273.35	**122**

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts for Article no.	Y8 Lock nut IK Article no. 84 950 ... £		Y8 Lock nut Article no. 84 950 ... £		Y8 Stop screw 2 Article no. 83 950 ... £			Y8 Stop screw 1 Article no. 83 950 ... £		
84 525 002	72.78	**011**	54.05	**001**	M11x1 - SW6	45.14	**341**	M11x1 - SW6	30.24	**337**
84 525 012	81.12	**013**	60.06	**003**	M18x1,5 - SW6	31.75	**432**	M18x1,5 - SW6	22.65	**431**
84 525 022	86.74	**015**	66.06	**005**	M22x1,5 - SW6	26.82	**402**	M22x1,5 - SW6	19.53	**401**
84 525 102	72.78	**011**	54.05	**001**	M11x1 - SW6	45.14	**341**	M11x1 - SW6	30.24	**337**
84 525 112	81.12	**013**	60.06	**003**	M18x1,5 - SW6	31.75	**432**	M18x1,5 - SW6	22.65	**431**
84 525 122	86.74	**015**	66.06	**005**	M22x1,5 - SW6	26.82	**402**	M22x1,5 - SW6	19.53	**401**

Accessories

ER collet
→ 206, 208–211, 213

Sealing ring
→ 207

Roll key
→ 17|36

Roll key device
→ 17|36

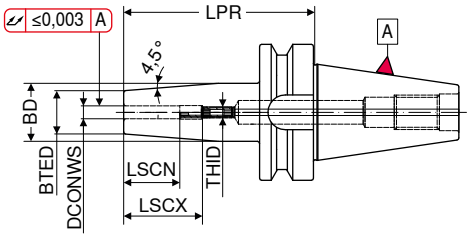
Pull studs
→ 91–92

Others
→ 17|34

Shrink fit adapters 4.5° – BT-FC

▲ For solid carbide and HSS shanks with h6 tolerance or better

TG



AD
G 2,5 n_{max} 25000

AD/B
G 2,5 n_{max} 25000

	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	Y8 Article no. 84 325 ... £		Y8 Article no. 84 325 ... £	
short	BT-FC 30	3	85	10	17	28	12	M6	202.20	003		
	BT-FC 30	4	85	15	22	28	16	M6	202.20	004		
	BT-FC 30	5	85	15	22	30	20	M6	202.20	005		
	BT-FC 30	6	85	21	27	36	26	M5	202.20	006		
	BT-FC 30	8	85	21	27	36	26	M6	202.20	008		
	BT-FC 30	10	85	24	32	41	31	M8x1	202.20	010		
	BT-FC 30	12	85	24	32	47	37	M10x1	202.20	012		
	BT-FC 30	16	85	27	34	50	40	M12x1	202.20	016		
	BT-FC 30	20	85	33	42	52	42	M16x1	202.20	020		
	BT-FC 40	3	90	10	17	28	12	M6			179.49	103
	BT-FC 40	4	90	15	22	28	16	M6			179.49	104
	BT-FC 40	5	90	15	22	30	20	M6			179.49	105
	BT-FC 40	6	90	21	27	36	26	M5			179.49	106
	BT-FC 40	8	90	21	27	36	26	M6			179.49	108
	BT-FC 40	10	90	24	32	41	31	M8x1			179.49	110
	BT-FC 40	12	90	24	32	47	37	M10x1			179.49	112
	BT-FC 40	16	90	27	34	50	40	M12x1			179.49	116
	BT-FC 40	20	90	33	42	52	42	M16x1			179.49	120
	BT-FC 40	25	100	44	53	58	48	M16x1			179.49	125

Y7

Stop screw IK

Y7

Stop screw IK

Spare parts DCONWS		Article no. 83 950 ... £			Article no. 83 950 ... £	
3 - 5	M6x14 - SW2	18.89	417			
6				M5x12,5 - SW2,5	18.89	418
8				M6x12,5 - SW3	18.89	419
10				M8x1x13,5 - SW3	18.89	420
12				M10x1x13,5 - SW5	18.89	421
16				M12x1x13,5 - SW5	18.89	422
20 - 25				M16x1x13,5 - SW8	21.78	424

Accessories

Shrink fit extension
→ 17|10

Pull studs
→ 91–92

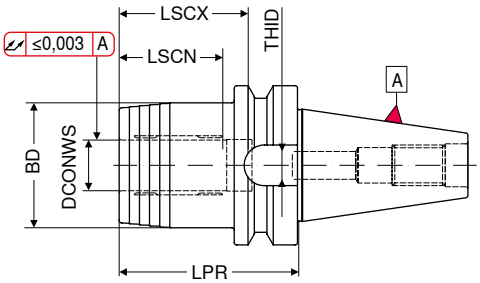
Others
→ 17|34

16

High pressure chuck, short and stable version – BT-FC

▲ With face contact
▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Base body with backstop screw and pressure screw



AD
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	BD	LSCX	LSCN	THID	Y8 Article no. 83 527 ...	£	
	mm	mm	mm	mm	mm				
BT-FC 40	20	72.5	49	51	40	M16x1x13,5		362.08	**120**

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Spare parts		Y7 Clamping key – T Article no. 80 397 ...			Y7 Pressure screw Article no. 83 950 ...			Y7 Stop screw IK Article no. 83 950 ...		
for Article no.		£			£			£		
83 527 120	SW5	6.09	**050**	M10x1x10	17.20	**158**	M8x1x13,5 - SW3	18.89	**420**

Accessories

Reduction sleeve
→ 17|32

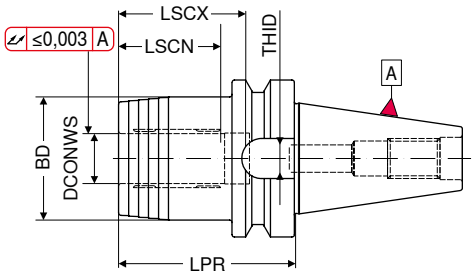
Pull studs
→ 91–92

Others
→ 17|34

Hydraulic chuck MAS BT, short and stable version – BT-FC

- With face contact
- For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Base body with backstop screw and pressure screw



AD
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	BD	LSCX	LSCN	THID	Y8 Article no. 84 518 ...	£	
	mm	mm	mm	mm	mm				
BT-FC 40	20	72.5	49.5	51	41	M16x1		325.47	**120**
BT-FC 50	32	90.0	72.0	61	51	M16x1		434.68	**332**

Pressure screw

Stop screw IK

Spare parts DCONWS	Y7 Article no. 83 950 ...	£		Y7 Article no. 83 950 ...	£	
20 - 32	M10x1x12	13.08	**440**	M16x1x13,5 - SW8	21.78	**424**

Accessories

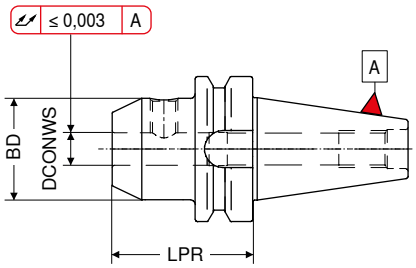
Reduction sleeve
→ 17|32

Pull studs
→ 91–92

Others
→ 17|34

Cylindrical shank adapter (Weldon) – BT-FC

- With face contact
- For shanks according to DIN 6535 / 1835 B with lateral clamping flat



AD
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS $_{H4}$	LPR	BD	Article no. 84 552 ...	
		mm	mm	mm	£	
short	BT-FC 30	6	50	25	105.21	006
	BT-FC 30	8	50	28	105.21	008
	BT-FC 30	10	50	35	105.21	010
	BT-FC 30	12	50	42	105.21	012
	BT-FC 30	16	63	48	112.88	016
	BT-FC 30	20	63	52	112.88	020
	BT-FC 40	6	50	25	133.32	106
	BT-FC 40	8	50	28	129.00	108
	BT-FC 40	10	63	35	129.00	110
	BT-FC 40	12	63	42	129.00	112
	BT-FC 40	16	63	48	129.00	116
	BT-FC 40	20	63	52	129.00	120
	BT-FC 40	25	90	65	171.50	125
	BT-FC 40	32	100	72	171.50	132
	BT-FC 50	6	63	25	197.88	306
	BT-FC 50	8	63	28	192.04	308
	BT-FC 50	10	63	35	192.04	310
	BT-FC 50	12	80	42	192.04	312
	BT-FC 50	16	80	48	192.04	316
	BT-FC 50	20	80	52	192.04	320
	BT-FC 50	25	100	65	219.83	325
	BT-FC 50	32	105	72	219.83	332

W7

Grubscrew

Spare parts DCONWS $_{H4}$		Article no. 62 950 ... £	
6	M6x10	0.87	006
8	M8x10	0.87	008
10	M10x12	1.67	010
12	M12x16	1.32	012
16	M14x16	1.63	016
20	M16x16	1.74	020
25	M18x2x20	3.36	025
32	M20x2x20	3.51	032

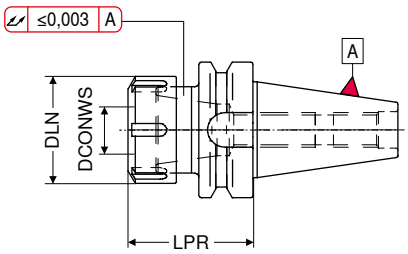
Accessories

Pull studs	Others
→ 91–92	→ 17|34

ER Collet chuck – BT-FC

▲ With face contact

Scope of supply:
Toolholder including nut



AD
G 2,5 n_{max} 20000

	Adapter	DCONWS	LPR	DLN	TQX	for collet	Y8 Article no. 84 557 ... £	
		mm	mm	mm	Nm			
short	BT-FC 30	1 - 10	63	28	56	426E (ER16)	118.72	010
	BT-FC 30	1 - 16	60	42	104	430E (ER25)	118.72	016
	BT-FC 30	2 - 20	60	50	136	470E (ER32)	118.72	020
	BT-FC 40	1 - 10	63	28	56	426E (ER16)	149.54	110
	BT-FC 40	1 - 16	60	42	104	430E (ER25)	149.54	116
	BT-FC 40	2 - 20	60	50	136	470E (ER32)	149.54	120
	BT-FC 50	1 - 16	70	42	104	430E (ER25)	203.71	316
	BT-FC 50	2 - 20	70	50	136	470E (ER32)	203.71	320
long	BT-FC 50	1 - 10	100	28	56	426E (ER16)	203.71	310

Lock nut

Lock nut

Y clamping key

Stop screw IK

Spare parts		W7 Article no. 62 950 ... £			W7 Article no. 62 950 ... £		Y8 Article no. 83 357 ... £			Y8 Article no. 81 950 ... £	
for collet											
426E (ER16) / BT30-BT50	M22x1,5 - SW25	25.38	044						M12x15	3.98	054
430E (ER25) / BT30-BT50				M32x1,5	21.03	055	22.20	125	M16x15	4.42	055
470E (ER32) / BT30-BT50				M40x1,5	21.56	056	32.33	132	M16x15	4.42	055

Accessories

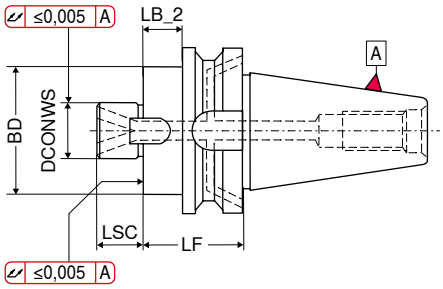
ER collet
→ 214

Pull studs
→ 91–92

Others
→ 17|34

Shell mill adapter – BT-FC

- With face contact
- With fixed drive dogs and enlarged contact face for milling cutters with transverse slot



AD
G 6,3 n_{max} 15000

Y8
Article no.
84 562 ...

	Adapter	DCONWS	LB_2	LF	BD	LSC	£	
		mm	mm	mm	mm	mm		
short	BT-FC 30	16	18	40	40	17	115.80	016
	BT-FC 30	22	18	40	50	19	115.80	022
	BT-FC 30	27	18	40	60	21	115.80	027
	BT-FC 30	32	28	50	80	24	115.80	032
	BT-FC 40	16	8	35	40	17	139.27	116
	BT-FC 40	22	8	35	50	19	139.27	122
	BT-FC 40	27	8	35	60	21	139.27	127
	BT-FC 40	32	23	50	80	24	139.27	132
	BT-FC 40	40	23	50	89	27	139.27	140
	BT-FC 50	22	12	50	50	19	161.22	322
	BT-FC 50	27	12	50	60	21	161.22	327
	BT-FC 50	32	12	50	80	24	171.50	332
	BT-FC 50	40	17	55	89	27	171.50	340

Y8

Screw for drivers

Y8

Driver

Y8

Clamping screw

Spare parts for Article no.	Article no. 84 950 ...	£		Article no. 84 950 ...	£		Article no. 83 950 ...	£	
84 562 016	M3x12	7.81	162	8x9x11	19.85	157	M8x25	5.65	113
84 562 022	M4x10	7.81	163	10x11,2x13	23.36	158	M10x25	6.38	124
84 562 027	M4x16	7.81	164	12x12,6x15	25.30	159	M12x30	7.05	125
84 562 032	M5x16	7.81	165	14x14x22,5	28.76	160	M16x35	8.59	126
84 562 116	M3x12	7.81	162	8x9x11	19.85	157	M8x25	5.65	113
84 562 122	M4x10	7.81	163	10x11,2x13	23.36	158	M10x25	6.38	124
84 562 127	M4x16	7.81	164	12x12,6x15	25.30	159	M12x30	7.05	125
84 562 132	M5x16	7.81	165	14x14x22,5	28.76	160	M16x35	8.59	126
84 562 140	M5x16	7.81	166	16x16x23	32.01	161	M20x40	9.47	112
84 562 322	M4x10	7.81	163	12x12,6x15	25.30	159	M10x25	6.38	124
84 562 327	M4x16	7.81	164	12x12,6x15	25.30	159	M12x30	7.05	125
84 562 332	M5x16	7.81	165	14x14x22,5	28.76	160	M16x35	8.59	126
84 562 340	M5x16	7.81	166	16x16x23	32.01	161	M20x40	9.47	112

Accessories

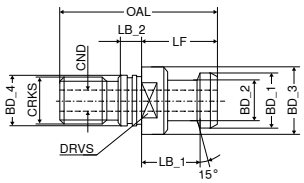
Pull studs
→ 91–92

Others
→ 17|34

Pull stud for tool holders according to JIS B 6339

▲ MAS-BT 15° Form A

Scope of supply:
Including O-Ring

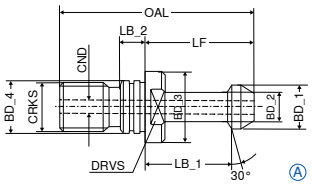


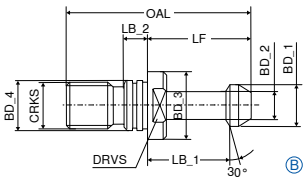
Adapter	BD_1	BD_2	BD_3	BD_4	CRKS	OAL	LF	LB_1	LB_2	CND	DRVS	TQX	Y8 Article no. 83 532 ...	
	mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	Nm	£	
BT 40	19	14	23	17	M16	54	29	23	5	5	19	90	17.44	**040**

Pull stud for tool holders according to JIS B 6339

▲ MAS-BT 30° Form A and B

Scope of supply:
Including O-Ring





Adapter	BD_1	BD_2	BD_3	BD_4	CRKS	OAL	LF	LB_1	LB_2	CND	DRVS	TQX	form	Y8 Article no. 82 533 ...		Y8 Article no. 82 531 ...	
	mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	Nm		£		£	
BT 30	11	7	16.5	12.5	M12	43	23	18	4.0	2.2	13	60	A			17.31	**030**
BT 40	15	10	23.0	17.0	M16	60	35	28	5.5	4.0	19	90	A			17.31	**040**
BT 50	23	17	38.0	25.0	M24	85	45	35	8.0	6.0	30	145	A			22.28	**050**
BT 30	11	7	16.5	12.5	M12	43	23	18	4.0		13	60	B	17.31	**030**		
BT 40	15	10	23.0	17.0	M16	60	35	28	5.5		19	90	B	14.83	**040**		
BT 50	23	17	38.0	25.0	M24	85	45	35	8.0		30	145	B	21.04	**050**		

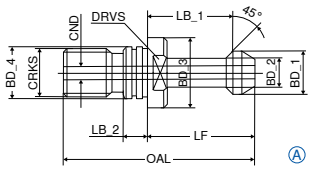
O-Ring

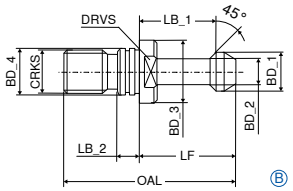
Spare parts BD_4		Y8 Article no. 83 476 ...	
		£	
17	BT / SK 40	2.37	**040**
25	BT / SK 50	2.37	**050**

Pull stud for tool holders according to JIS B 6339

▲ MAS-BT 45° Form A and B

Scope of supply:
Including O-Ring



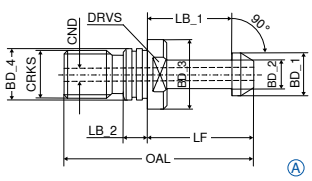


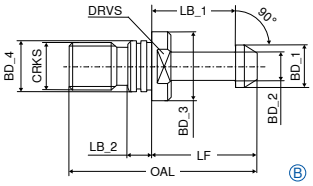
Adapter	BD_1	BD_2	BD_3	BD_4	CRKS	OAL	LF	LB_1	LB_2	CND	DRVS	TQX	form	Y8 Article no. 82 530 ... £		Y8 Article no. 82 534 ... £	
	mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	Nm					
BT 30	11	7	16.5	12.5	M12	43	23	18	4.0	2.2	13	60	A			17.31	**030**
BT 40	15	10	23.0	17.0	M16	60	35	28	5.5	4.0	19	90	A			17.31	**040**
BT 50	23	17	38.0	25.0	M24	85	45	35	8.0	6.0	30	145	A			22.28	**050**
BT 30	11	7	16.5	12.5	M12	43	23	18	4.0		13	60	B	17.31	**030**		
BT 40	15	10	23.0	17.0	M16	60	35	28	5.5		19	90	B	14.83	**040**		
BT 50	23	17	38.0	25.0	M24	85	45	35	8.0		30	145	B	21.04	**050**		

Pull stud for tool holders according to JIS B 6339

▲ MAS-BT 90° Form A and B

Scope of supply:
Including O-Ring





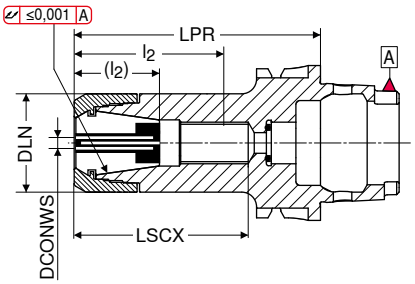
Adapter	BD_1	BD_2	BD_3	BD_4	CRKS	OAL	LF	LB_1	LB_2	CND	DRVS	TQX	form	Y8 Article no. 82 536 ... £		Y8 Article no. 82 537 ... £	
	mm	mm	mm	mm		mm	mm	mm	mm	mm	mm	Nm					
BT 40	15	10	23	17	M16	60	35	28	5.5	4	19	90	A			17.31	**040**
BT 50	23	17	38	25	M24	85	45	35	8.0	6	30	145	A			22.28	**050**
BT 40	15	10	23	17	M16	60	35	28	5.5		19	90	B	14.83	**040**		
BT 50	23	17	38	25	M24	85	45	35	8.0		30	145	B	21.04	**050**		

ER Precision Collet chuck

- For standard or sealed nuts
- Maximum size collet to ISO tolerance field H10
- For clamping a roll key is required
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P



AD
G 2,5 n_{max} 25000
Y8

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	Article no. 84 722 ... £	
HSK-A 40	1 - 10	60	30	40	32 - 54	426E (ER16)	242.71	**401**
HSK-A 40	2 - 16	60	40	40		430E (ER25)	281.00	**404**
HSK-A 40	2 - 20	61	50	45		470E (ER32)	304.36	**407**
HSK-A 50	2 - 16	60	40	37		430E (ER25)	281.00	**504**
HSK-A 50	2 - 16	70	40	49	34 - 35	430E (ER25)	281.00	**505**
HSK-A 50	2 - 20	70	50	47		470E (ER32)	304.36	**507**
HSK-A 63	1 - 10	55	30	32		426E (ER16)	271.50	**609**
HSK-A 63	1 - 10	100	30	71	28 - 45 (16 - 31)	426E (ER16)	264.15	**610**
HSK-A 63	1 - 10	130	30	87	26 - 50 (17 - 38)	426E (ER16)	304.36	**613**
HSK-A 63	1 - 10	160	30	106	28 - 45 (16 - 31)	426E (ER16)	321.15	**611**
HSK-A 63	1 - 10	200	30	136	28 - 45 (16 - 31)	426E (ER16)	542.87	**612**
HSK-A 63	2 - 16	60	40	37		430E (ER25)	271.50	**615**
HSK-A 63	2 - 16	100	40	70	35 - 55 (24 - 37)	430E (ER25)	264.15	**616**
HSK-A 63	2 - 16	130	40	89	37 - 60 (12 - 42)	430E (ER25)	327.75	**619**
HSK-A 63	2 - 16	160	40	128	35 - 60 (24 - 42)	430E (ER25)	337.45	**617**
HSK-A 63	2 - 16	200	40	148	35 - 60 (24 - 42)	430E (ER25)	542.87	**618**
HSK-A 63	2 - 20	70	50	46		470E (ER32)	264.15	**620**
HSK-A 63	2 - 20	100	50	71	41 - 57 (26 - 39)	470E (ER32)	264.15	**621**
HSK-A 63	2 - 20	130	50	101	42 - 69 (18 - 41)	470E (ER32)	327.75	**625**
HSK-A 63	2 - 20	160	50	129	52 - 70 (26 - 60)	470E (ER32)	337.45	**622**
HSK-A 63	3 - 26	80	63	56		472E (ER40)	339.34	**626** 1)
HSK-A 100	1 - 10	100	30	70	28 - 48 (16 - 35)	426E (ER16)	523.10	**110**
HSK-A 100	1 - 10	160	30	130	28 - 48 (16 - 35)	426E (ER16)	749.13	**111**
HSK-A 100	2 - 16	100	40	71	38 - 56 (20 - 40)	430E (ER25)	523.10	**116**
HSK-A 100	2 - 16	160	40	105	38 - 68 (20 - 50)	430E (ER25)	749.13	**117**
HSK-A 100	2 - 20	100	50	70	42 - 59 (24 - 40)	470E (ER32)	768.10	**121**
HSK-A 100	2 - 20	160	50	99	42 - 70 (24 - 52)	470E (ER32)	1,068.59	**122**
HSK-A 100	3 - 26	100	63	65		472E (ER40)	551.29	**126**

1) Non standard groove before tool change collar not according to DIN, not suitable for automatic tool change

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts, ER precision collet chuck

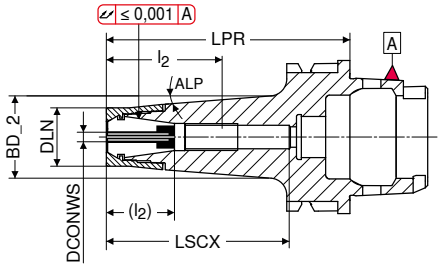
Spare parts	Y8 Lock nut IK		Y8 Lock nut			Y8 Stop screw 2			Y8 Stop screw 1	
	Article no. 84 950 ...		Article no. 84 950 ...			Article no. 83 950 ...			Article no. 83 950 ...	
for collet	£		£			£			£	
426E (ER16)	72.78	011	54.05	001	M11x1 - SW6	45.14	341	M11x1 - SW6	30.24	337
430E (ER25)	81.12	013	60.06	003	M18x1,5 - SW6	31.75	432	M18x1,5 - SW6	22.65	431
470E (ER32)	86.74	015	66.06	005	M22x1,5 - SW6	26.82	402	M22x1,5 - SW6	19.53	401
472E (ER40)	118.63	017	96.10	007				M28x1,5 - SW6	27.38	400

ER Precision tapered collet chuck

- For special tapered nuts
- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P



AD
G 2,5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	DLN mm	BD_2 mm	LSCX mm	l_2 (l_2) mm	ALP	for collet	Y8 Article no. 84 721 ... £	
HSK-A 40	1 - 7	100	16	25.3	65	15 - 34 (8 - 25)	4.5°	4008E (ER11)	304.36	307
HSK-A 40	1 - 10	60	24	28.0	43	26 - 30	2.0°	426E (ER16)	281.00	210
HSK-A 40	1 - 10	100	24	30.8	67	26 - 47 (12 - 32)	2.0°	426E (ER16)	281.00	310
HSK-A 50	1 - 7	100	16	24.0	65	15 - 34 (8 - 25)	4.5°	4008E (ER11)	304.36	507
HSK-A 50	1 - 10	65	24	28.9	44	26 - 32	4.5°	426E (ER16)	281.00	710
HSK-A 50	1 - 10	100	24	34.4	77	26 - 47 (12 - 32)	4.5°	426E (ER16)	281.00	810
HSK-A 50	1 - 10	130	24	39.4	102	26 - 47 (12 - 32)	4.5°	426E (ER16)	351.27	910
HSK-A 63	1 - 10	100	24	33.8	74	28 - 48 (20 - 35)	4.5°	426E (ER16)	264.15	610
HSK-A 63	1 - 10	160	24	36.0	106	28 - 48 (20 - 35)	2.5°	426E (ER16)	308.28	611
HSK-A 63	2 - 20	75	50		51		4.0°	470E (ER32)	183.35	632

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

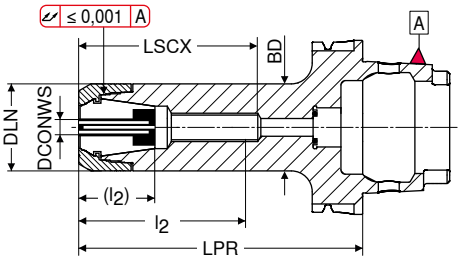
Spare parts	Y8 Tapered lock nut IK		Y8 Tapered lock nut		Y8 Lock nut IK		Y8 Lock nut		Y8 Mini lock nut		Y8 Stop screw 2		Y8 Stop screw 1	
	Article no. 84 950 ...		Article no. 84 950 ...		Article no. 84 950 ...		Article no. 84 950 ...		Article no. 84 950 ...		Article no. 83 950 ...		Article no. 83 950 ...	
for collet	£		£		£		£		£		£		£	
4008E (ER11)									75.49	041	43.03	340	28.66	336
426E (ER16)	89.35	033	75.49	031							45.14	341	30.24	337
470E (ER32)					86.74	015	66.06	005			26.82	402	19.53	401

ER Precision collet chuck, slim version

- For Mini Clamping Nuts
- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P



AD
G 2,5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	BD mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	Y8 Article no. 84 719 ... £	
HSK-A 32	1 - 7	40	16	16	24		4008E (ER11)	367.72	**107**
HSK-A 32	1 - 10	50	22	22	32		426E (ER16)	367.72	**110**
HSK-A 40	1 - 7	60	16	16	40	16 - 24	4008E (ER11)	281.00	**207**
HSK-A 50	1 - 7	130	16	16	60	15 - 32 (7 - 22)	4008E (ER11)	351.27	**407**
HSK-A 63	1 - 7	70	16	16	48	15 - 32 (7 - 22)	4008E (ER11)	269.23	**507**
HSK-A 63	1 - 7	100	16	16	68	18 - 36 (12 - 26)	4008E (ER11)	281.46	**607**
HSK-A 63	1 - 7	130	16	16	108	15 - 32 (7 - 22)	4008E (ER11)	346.57	**707**
HSK-A 63	1 - 7	160	16	16	68	18 - 36 (12 - 26)	4008E (ER11)	366.88	**608**
HSK-A 63	1 - 10	70	22	22	46	27 - 34 (14 - 20)	426E (ER16)	269.23	**610**
HSK-A 63	1 - 10	100	22	22	62	27 - 44 (14 - 30)	426E (ER16)	269.23	**710**
HSK-A 63	1 - 10	130	22	22	87	27 - 52 (14 - 38)	426E (ER16)	346.57	**810**
HSK-A 63	1 - 10	160	22	22	97	27 - 52 (14 - 38)	426E (ER16)	346.57	**910**

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Mini lock nut IK

Mini lock nut

Stop screw 2

Stop screw 1

Spare parts for collet	Y8 Article no. 84 950 ... £		Y8 Article no. 84 950 ... £			Y8 Article no. 83 950 ... £			Y8 Article no. 83 950 ... £	
4008E (ER11)			75.49	**041**	M8x1 - SW4	43.03	**340**	M8x1 - SW4	28.66	**336**
426E (ER16)	73.51	**035**	60.30	**034**	M11x1 - SW6	45.14	**341**	M11x1 - SW6	30.24	**337**

Accessories

ER collet
→ 208–211, 213

Sealing ring
→ 207

Device
→ 17|35

Roll key
→ 17|36

Roll key device
→ 17|36

Coolant transfer pipe
→ 138

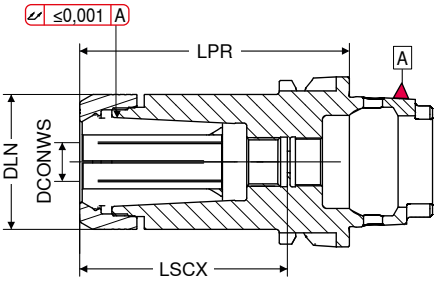
Others
→ 17|34

OZ Precision Collet Chuck

- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P



AD
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	DLN	LSCX	for collet	Y8 Article no. 84 724 ...	
	mm	mm	mm	mm		£	
HSK-A 63	2 - 25	85	50	60	462E	296.93	**626**
HSK-A 100	2 - 25	90	50	60	462E	441.42	**126**

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw
Dimension LPR is 4mm longer when using seals

Lock nut IK

Spare parts	Y8 Article no. 84 950 ...	
for collet	£	
462E	71.74	**020**

Accessories

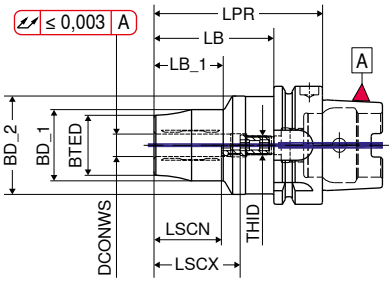
OZ Collet	Sealing ring	Roll key	Roll key device	Coolant transfer pipe	Others
→ 217	→ 217	→ 17|36	→ 17|36	→ 138	→ 17|34

High pressure chuck, short version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw



AD
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BTED	BD_1	BD_2	LB_1	LSCX	LSCN	LB	THID	Article no. 83 706 ...	£	
		mm	mm	mm	mm	mm	mm	mm	mm	mm				
short	HSK-A 63	16	95	36	42	52.5	42	49	39	69	M12x1		969.67	616
	HSK-A 63	20	100	42	48	52.5	45	51	41	74	M16x1		898.85	620
	HSK-A 63	25	120	51	57	53.0	62	57	47	94	M16x1		969.67	625
	HSK-A 63	32	125	57	63	53.0	62	61	51	99	M16x1		969.67	632

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Y7

Clamping key – T

Y7

Pressure pin

Y7

Pressure screw

Y7

Stop screw IK

Spare parts for Article no.		Article no. 80 397 ... £		Article no. 83 950 ... £		Article no. 83 950 ... £		Article no. 83 950 ... £	
83 706 616	SW5	6.09	050	Ø5 x 16	7.08	433	TR10x1,5x14	32.16	430	M12x1x18	16.71	446
83 706 620	SW5	6.09	050	Ø6 x 16	7.37	434	TR10x1,5x14	32.16	430	M16x1x18,5	18.31	448
83 706 625	SW5	6.09	050	Ø6 x 16	7.37	434	TR10x1,5x14	32.16	430	M16x1x22	28.95	449
83 706 632	SW5	6.09	050	Ø6 x 16	7.37	434	TR10x1,5x14	32.16	430	M16x1x25	36.03	450

Accessories

Reduction sleeve
→ 17|32

Coolant transfer pipe
→ 138

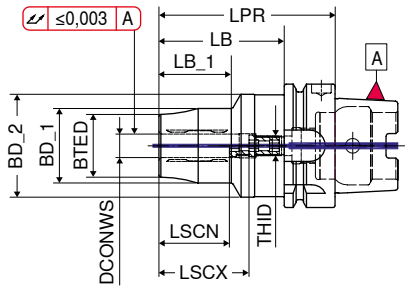
Others
→ 17|34

High pressure chuck, short and stable version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw



AD
G 2,5 n_{max} 25000

Y8

Adapter	DCONWS	LPR	BTED	BD_1	BD_2	LB_1	LSCX	LSCN	LB	THID	Article no. 83 722 ...	£	
	mm	mm	mm	mm	mm	mm	mm	mm	mm				
HSK-A 63	20	80	36	49	52.5	36	51	40	54	M8x1		367.97	**120**

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Y7

Clamping key – T

Y7

Pressure screw

Y7

Stop screw IK

Spare parts for Article no.		Article no. 80 397 ... £		Article no. 83 950 ... £		Article no. 83 950 ... £	
83 722 120	SW5	6.09	**050**	M10x1x10	17.20	**158**	M8x1x13,5 - SW3	18.89	**420**

Accessories

Reduction sleeve
→ 17|32

Coolant transfer pipe
→ 138

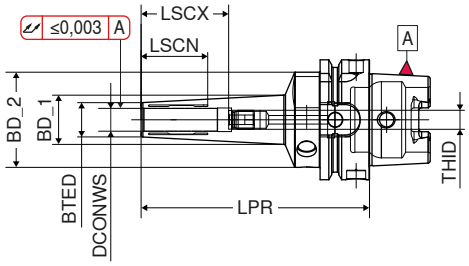
Others
→ 17|34

High pressure chuck, slim 3°

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw



AD
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BTED	BD_1	BD_2	LSCX	LSCN	THID	Article no. 83 727 ...	
		mm	mm	mm	mm	mm	mm	mm		£	
Long	HSK-A 63	3	120	9	16.65	50	28	12	M3	703.49	603
	HSK-A 63	4	120	10	17.65	50	28	16	M3	703.49	604
	HSK-A 63	5	120	11	18.65	50	28	20	M3	703.49	605
	HSK-A 63	6	120	12	19.75	50	37	27	M5	606.03	606
	HSK-A 63	8	120	14	21.75	50	37	27	M6	606.03	608
	HSK-A 63	10	120	16	23.75	50	41	31	M8x1	606.03	610
	HSK-A 63	12	120	18	25.86	50	46	36	M10x1	606.03	612
	HSK-A 63	16	120	24	31.50	50	49	39	M12x1	942.55	616
	HSK-A 63	20	120	28	35.55	50	51	41	M16x1	942.55	620
	HSK-A 63	6	160	16	33.53	50	37	27	M5	995.70	706
	HSK-A 63	8	160	18	34.55	50	37	27	M6	995.70	708
	HSK-A 63	10	160	20	36.27	50	41	31	M8x1	995.70	710
	HSK-A 63	12	160	22	37.78	50	46	36	M10x1	995.70	712
	HSK-A 63	6	200	16	37.83	50	37	27	M5	1,100.95	806
	HSK-A 63	8	200	18	38.85	50	37	27	M6	1,100.95	808
	HSK-A 63	10	200	20	40.57	50	41	31	M8x1	1,100.95	810
	HSK-A 63	12	200	22	42.07	50	46	36	M10x1	1,100.95	812

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Y7

Clamping key – T

Y7

Pressure screw

Y7

Stop screw IK

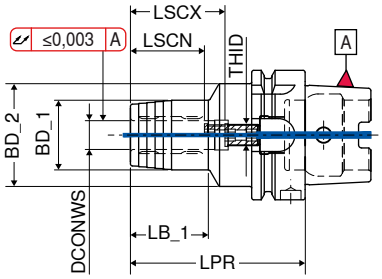
Spare parts		Article no. 80 397 ...			Article no. 83 950 ...			Article no. 83 950 ...	
for Article no.		£			£			£	
83 727 603	SW5	6.09	050	M10x1x10	17.20	158	M3x20 - SW1,5	13.10	172
83 727 604	SW5	6.09	050	M10x1x10	17.20	158	M3x20 - SW1,5	13.10	172
83 727 605	SW5	6.09	050	M10x1x10	17.20	158	M3x20 - SW1,5	13.10	172
83 727 606	SW5	6.09	050	M10x1x10	17.20	158	M5x12,5 - SW2,5	18.89	418
83 727 608	SW5	6.09	050	M10x1x10	17.20	158	M6x12,5 - SW3	18.89	419
83 727 610	SW5	6.09	050	M10x1x12	17.20	159	M8x1x13,5 - SW3	18.89	420
83 727 612	SW5	6.09	050	M10x1x12	17.20	159	M10x1x13,5 - SW5	18.89	421
83 727 616	SW5	6.09	050	M10x1x12	17.20	159	M12x1x13,5 - SW5	18.89	422
83 727 620	SW5	6.09	050	M10x1x12	17.20	159	M16x1x13,5 - SW8	21.78	424
83 727 706	SW5	6.09	050	M10x1x10	17.20	158	M5x12,5 - SW2,5	18.89	418
83 727 708	SW5	6.09	050	M10x1x10	17.20	158	M6x12,5 - SW3	18.89	419
83 727 710	SW5	6.09	050	M10x1x12	17.20	159	M8x1x13,5 - SW3	18.89	420
83 727 712	SW5	6.09	050	M10x1x12	17.20	159	M10x1x13,5 - SW5	18.89	421
83 727 806	SW5	6.09	050	M10x1x10	17.20	158	M6x12,5 - SW3	18.89	419
83 727 808	SW5	6.09	050	M10x1x10	17.20	158	M6x12,5 - SW3	18.89	419
83 727 810	SW5	6.09	050	M10x1x12	17.20	159	M8x1x13,5 - SW3	18.89	420
83 727 812	SW5	6.09	050	M10x1x12	17.20	159	M10x1x13,5 - SW5	18.89	421

Hydraulic chuck, short and slim version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw



AD
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BD_1	BD_2	LSCX	LSCN	LB_1	THID	Article no. 83 726 ...	
		mm	mm	mm	mm	mm	mm	mm		£	
short	HSK-A 63	6	70	26	49.5	37	27	24	M5	717.61	606
	HSK-A 63	8	70	28	49.5	37	27	24	M6	717.61	608
	HSK-A 63	10	80	30	49.5	41	31	32	M8x1	717.61	610
	HSK-A 63	12	85	32	49.5	46	36	40	M10x1	658.06	612
	HSK-A 63	16	90	38	49.5	49	39	46	M12x1	717.61	616
	HSK-A 63	20	90	42	49.5	51	41	48	M16x1	658.06	620
	HSK-A 63	25	120	57	52.0	57	47	63	M16x1	717.61	625
	HSK-A 63	32	125	63	53.0	61	51	61	M16x1	717.61	632

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Y7

Pressure screw

Y7

Stop screw IK

Spare parts DCONWS		Article no. 83 950 ... £			Article no. 83 950 ... £	
6	M8x1x10	13.08	439	M5x12,5 - SW2,5	18.89	418
8	M8x1x10	13.08	439	M6x12,5 - SW3	18.89	419
10	M10x1x12	13.08	440	M8x1x13,5 - SW3	18.89	420
12	M10x1x12	13.08	440	M10x1x13,5 - SW5	18.89	421
16	M10x1x12	13.08	440	M12x1x13,5 - SW5	18.89	422
20 - 32	M10x1x12	13.08	440	M16x1x13,5 - SW5	21.78	423

Accessories

Reduction sleeve
→ 17|32

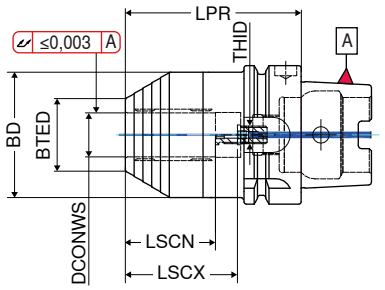
Coolant transfer pipe
→ 138

Others
→ 17|34

Hydraulic chuck, short and stable version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Base body with backstop screw and pressure screw



AD
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Y8 Article no. 83 729 ...	£
	mm	mm	mm	mm	mm	mm			
HSK-A 63	20	80	33	51.5	51	41	M8x1		607.21 **620**

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Spare parts DCONWS		Y7 Pressure screw Article no. 83 950 ...	£		Y7 Stop screw IK Article no. 83 950 ...	£	
20	M10x1x12		13.08	**440**	M16x1x13,5 - SW5	21.78	**423**

Accessories

Reduction sleeve
→ 17|32

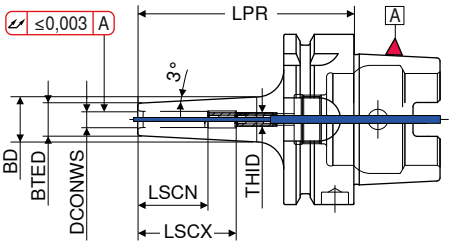
Coolant transfer pipe
→ 138

Others
→ 17|34

Shrink adapter, slim 3°

▲ For solid carbide and HSS shanks with h6 tolerance or better

TG



AD
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Article no. 84 324 ...	
		mm	mm	mm	mm	mm	mm		£	
short	HSK-A 63	3	80	9	14	28	12	M6	540.51	103
	HSK-A 63	4	80	10	15	28	16	M6	526.10	104
	HSK-A 63	5	80	11	16	30	20	M6	526.10	105
	HSK-A 63	6	80	12	17	36	26	M5	475.65	106
	HSK-A 63	8	80	14	19	36	26	M6	475.65	108
	HSK-A 63	10	85	16	21	41	31	M8x1	475.65	110
	HSK-A 63	12	90	18	24	47	37	M10x1	475.65	112
	HSK-A 63	14	90	20	26	47	37	M10x1	475.65	114
	HSK-A 63	16	95	22	28	50	40	M12x1	475.65	116
	HSK-A 63	18	95	24	30	50	40	M12x1	475.65	118
	HSK-A 63	20	100	26	33	52	42	M16x1	475.65	120
long	HSK-A 63	3	120	9	16	12	12		576.54	203
	HSK-A 63	4	120	10	17	16	16		569.35	204
	HSK-A 63	5	120	11	18	20	20		569.35	205
	HSK-A 63	6	120	12	21	36	26	M5	511.68	206
	HSK-A 63	8	120	14	23	36	26	M6	511.68	208
	HSK-A 63	10	120	16	25	41	31	M8x1	511.68	210
	HSK-A 63	12	120	18	27	47	37	M10x1	511.68	212
	HSK-A 63	14	120	20	29	47	37	M10x1	511.68	214
	HSK-A 63	16	120	22	31	50	40	M12x1	511.68	216
	HSK-A 63	18	120	24	33	50	40	M12x1	511.68	218
	HSK-A 63	20	120	26	35	52	42	M16x1	511.68	220
extra-long	HSK-A 63	3	160	9	19	12	12		630.59	303
	HSK-A 63	4	160	10	20	16	16		616.18	304
	HSK-A 63	5	160	11	21	20	20		616.18	305
	HSK-A 63	6	160	12	24	36	26	M5	533.31	306
	HSK-A 63	8	160	14	26	36	26	M6	533.31	308
	HSK-A 63	10	160	16	28	41	31	M8x1	533.31	310
	HSK-A 63	12	160	18	30	47	37	M10x1	533.31	312
	HSK-A 63	14	160	20	32	47	37	M10x1	533.31	314
	HSK-A 63	16	160	22	34	50	40	M12x1	533.31	316
	HSK-A 63	18	160	24	36	50	40	M12x1	533.31	318
	HSK-A 63	20	160	26	38	52	42	M16x1	533.31	320

→ Min. clamping depth, Page 233

Y7

Stop screw IK

Y7

Stop screw IK

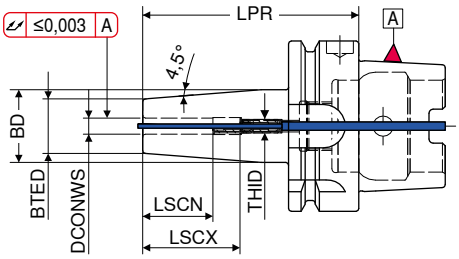
Spare parts DCONWS

		Article no. 83 950 ...			Article no. 83 950 ...	
		£			£	
3 - 5	M6x14 - SW2	18.89	417			
6				M5x12,5 - SW2,5	18.89	418
8				M6x12,5 - SW3	18.89	419
10				M8x1x13,5 - SW3	18.89	420
12 - 14				M10x1x13,5 - SW5	18.89	421
16 - 18				M12x1x13,5 - SW5	18.89	422
20				M16x1x13,5 - SW8	21.78	424

Shrink fit adapters 4.5°

▲ For solid carbide and HSS shanks with h6 tolerance or better

TG



AD
G 2,5 n_{max} 25000
Y8

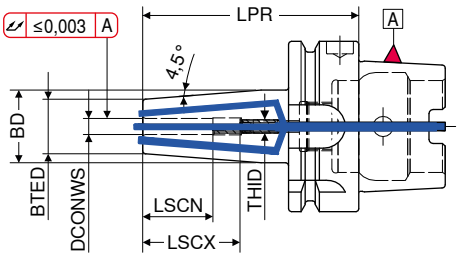
	Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Article no. 84 304 ...	£
		mm	mm	mm	mm	mm	mm			
short	HSK-A 63	3	80	10	15	22	12	M6	193.25	103
	HSK-A 63	4	80	15	22	26	16	M6	193.25	104
	HSK-A 63	5	80	15	22	30	20	M6	193.25	105
	HSK-A 63	6	80	21	27	36	26	M5	193.25	106
	HSK-A 63	8	80	21	27	36	26	M6	193.25	108
	HSK-A 63	10	85	24	32	41	31	M8x1	193.25	110
	HSK-A 63	12	90	24	32	47	37	M10x1	193.25	112
	HSK-A 63	14	90	27	34	47	37	M10x1	193.25	114
	HSK-A 63	16	95	27	34	50	40	M12x1	193.25	116
	HSK-A 63	18	95	33	42	50	40	M12x1	193.25	118
	HSK-A 63	20	100	33	42	52	42	M16x1	193.25	120
	HSK-A 63	25	115	44	53	58	48	M16x1	193.25	125
	HSK-A 63	32	120	44	53	62	52	M16x1	193.25	132
long	HSK-A 63	3	120	10	20	12	12		327.72	203
	HSK-A 63	4	120	15	22	16	16		321.75	204
	HSK-A 63	5	120	15	22	20	20		321.75	205
	HSK-A 63	6	120	21	27	36	26	M5	292.01	206
	HSK-A 63	8	120	21	27	36	26	M6	292.01	208
	HSK-A 63	10	120	24	32	41	31	M8x1	292.01	210
	HSK-A 63	12	120	24	32	47	37	M10x1	292.01	212
	HSK-A 63	14	120	27	34	47	37	M10x1	547.72	214
	HSK-A 63	16	120	27	34	50	40	M12x1	547.72	216
	HSK-A 63	18	120	33	42	50	40	M12x1	547.72	218
	HSK-A 63	20	120	33	42	52	42	M16x1	547.72	220
	HSK-A 63	25	120	44	53	58	48	M16x1	547.72	225
extra-long	HSK-A 63	3	160	10	20	12	12		366.40	303
	HSK-A 63	4	160	15	22	16	16		358.92	304
	HSK-A 63	5	160	15	22	20	20		358.92	305
	HSK-A 63	6	160	21	27	36	26	M5	329.22	306
	HSK-A 63	8	160	21	27	36	26	M6	329.22	308
	HSK-A 63	10	160	24	32	41	31	M8x1	329.22	310
	HSK-A 63	12	160	24	32	47	37	M10x1	329.22	312
	HSK-A 63	14	160	27	34	47	37	M10x1	329.22	314
	HSK-A 63	16	160	27	34	50	40	M12x1	329.22	316
	HSK-A 63	18	160	33	42	50	40	M12x1	329.22	318
	HSK-A 63	20	160	33	42	52	42	M16x1	329.22	320
	HSK-A 63	25	160	44	53	62	52	M16x1	329.22	325
extra long	HSK-A 63	6	200	21	27	36	26	M5	735.09	406
	HSK-A 63	8	200	21	27	36	26	M6	735.09	408
	HSK-A 63	10	200	24	32	41	31	M8x1	735.09	410
	HSK-A 63	12	200	24	32	47	37	M10x1	735.09	412
	HSK-A 63	14	200	27	34	47	37	M10x1	735.09	414
	HSK-A 63	16	200	27	34	50	40	M12x1	735.09	416
	HSK-A 63	18	200	33	42	50	40	M12x1	735.09	418
	HSK-A 63	20	200	33	42	52	42	M16x1	735.09	420
	HSK-A 63	25	200	44	53	62	52	M16x1	735.09	425
	HSK-A 63	32	200	44	53	62	52	M16x1	735.09	432

→ Min. clamping depth, Page 233

Shrink fit adapters 4.5°

▲ For solid carbide and HSS shanks with h6 tolerance or better

TG



AD
G 2,5 n_{max} 25000

NEW Y8

	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	Article no. 84 316 ... £	
short	HSK-A 63	3	80	10	15	28	12	M6	591.69	103
	HSK-A 63	4	80	15	22	28	16	M6	575.14	104
	HSK-A 63	5	80	15	22	30	20	M6	575.14	105
	HSK-A 63	6	80	21	27	36	26	M5	522.27	106
	HSK-A 63	8	80	21	27	36	26	M6	522.27	108
	HSK-A 63	10	85	24	32	41	31	M8x1	522.27	110
	HSK-A 63	12	90	24	32	47	37	M10x1	522.27	112
	HSK-A 63	14	90	27	34	47	37	M10x1	522.27	114
	HSK-A 63	16	95	27	34	50	40	M12x1	522.27	116
	HSK-A 63	18	95	33	42	50	40	M12x1	522.27	118
	HSK-A 63	20	100	33	42	52	42	M16x1	522.27	120
	HSK-A 63	25	115	44	53	58	48	M16x1	522.27	125
	HSK-A 63	32	120	44	53	62	52	M16x1	522.27	132

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Y7

Stop screw IK

Y7

Stop screw IK

Y7

Sealing screw

Spare parts DCONWS		Article no. 83 950 ... £			Article no. 83 950 ... £			Article no. 83 950 ... £	
3 - 4	M6x14 - SW2	18.89	417				M2x6	1.52	512
5				M5x12,5 - SW2,5	18.89	418	M2x6	1.52	512
6				M6x12,5 - SW3	18.89	419	M2x6	1.52	512
8				M8x1x13,5 - SW3	18.89	420	M2x6	1.52	512
10 - 14				M10x1x13,5 - SW5	18.89	421	M2x6	1.52	512
16 - 18	M12x1 - SW5	25.66	510				M2x6	1.52	512
20 - 32	M16x1 - SW5	15.15	511				M2x6	1.52	512

Accessories

Shrink fit extension
→ 17|10

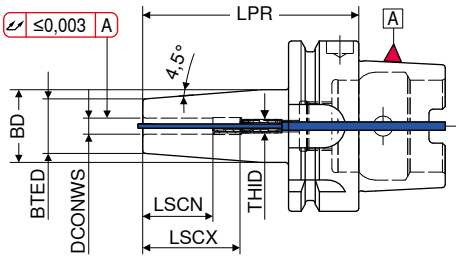
Coolant transfer pipe
→ 138

Others
→ 17|34

Shrink fit adapters 4.5°

▲ For solid carbide and HSS shanks with h6 tolerance or better

TG



AD
G 2,5 n_{max} 25000

Y8

	Adapter	DCONWS	LPR	BTED	BD	LSCX	LSCN	THID	Article no. 84 305 ...	£	
		mm	mm	mm	mm	mm	mm				
short	HSK-A 100	6	85	21	27	36	26	M5		362.40	106
	HSK-A 100	8	85	21	27	36	26	M6		362.40	108
	HSK-A 100	10	90	24	32	41	31	M8x1		362.40	110
	HSK-A 100	12	95	24	32	47	37	M10x1		362.40	112
	HSK-A 100	14	95	27	34	47	37	M10x1		362.40	114
	HSK-A 100	16	100	27	34	50	40	M12x1		362.40	116
	HSK-A 100	18	100	33	42	50	40	M12x1		362.40	118
	HSK-A 100	20	105	33	42	52	42	M16x1		362.40	120
	HSK-A 100	25	115	44	53	58	48	M16x1		362.40	125
	HSK-A 100	32	120	44	53	62	52	M16x1		362.40	132
long	HSK-A 100	6	120	21	27	36	26	M5		418.69	206
	HSK-A 100	8	120	21	27	36	26	M6		418.69	208
	HSK-A 100	10	120	24	32	41	31	M8x1		418.69	210
	HSK-A 100	12	120	24	32	47	37	M10x1		418.69	212
	HSK-A 100	14	120	27	34	47	37	M10x1		418.69	214
	HSK-A 100	16	120	27	34	50	40	M12x1		418.69	216
	HSK-A 100	18	120	33	42	50	40	M12x1		418.69	218
	HSK-A 100	20	120	33	42	52	42	M16x1		418.69	220
	HSK-A 100	25	120	44	53	58	48	M16x1		418.69	225
extra-long	HSK-A 100	6	160	21	27	36	26	M5		481.13	306
	HSK-A 100	8	160	21	27	36	26	M6		481.13	308
	HSK-A 100	10	160	24	32	41	31	M8x1		481.13	310
	HSK-A 100	12	160	24	32	47	37	M10x1		481.13	312
	HSK-A 100	14	160	27	34	47	37	M10x1		481.13	314
	HSK-A 100	16	160	27	34	50	40	M12x1		481.13	316
	HSK-A 100	18	160	33	42	50	40	M12x1		481.13	318
	HSK-A 100	20	160	33	42	52	42	M16x1		481.13	320
	HSK-A 100	25	160	44	53	58	48	M16x1		481.13	325
	HSK-A 100	32	160	44	53	62	52	M16x1		481.13	332

→ Min. clamping depth, Page 233

Y7

Stop screw IK

Spare parts DCONWS		Article no. 83 950 ...	£	
6	M5x12,5 - SW2,5		18.89	418
8	M6x12,5 - SW3		18.89	419
10	M8x1x13,5 - SW3		18.89	420
12 - 14	M10x1x13,5 - SW5		18.89	421
16 - 18	M12x1x13,5 - SW5		18.89	422
20 - 32	M16x1x13,5 - SW8		21.78	424

Accessories

Shrink fit extension
→ 17|10

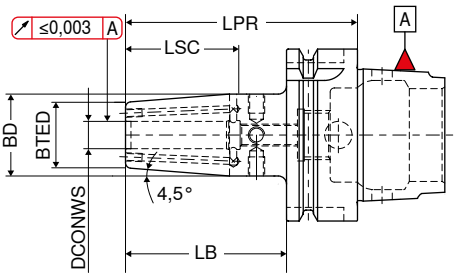
Coolant transfer pipe
→ 138

Others
→ 17|34

Shrink fit adapters 4.5°

- ▲ Version for high clamping force
- ▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Holder with adjustable back stop



AD
G 2,5 n_{max} 25000

	Adapter	DCONWS	LPR	BTED	BD	LB	LSC	Y8 Article no. 84 717 ...	£	
		mm	mm	mm	mm	mm	mm			
short	HSK-A 63	6	80	21	26	54	36.5		372.45	606
	HSK-A 63	8	80	21	26	54	36.5		372.45	608
	HSK-A 63	10	85	24	30	59	41.5		372.45	610
	HSK-A 63	12	90	24	30	64	46.5		372.45	612
	HSK-A 63	14	90	27	34	64	46.5		372.45	614
	HSK-A 63	16	95	27	34	69	49.5		372.45	616
	HSK-A 63	18	95	33	41	69	49.5		372.45	618
	HSK-A 63	20	100	33	41	74	51.5		372.45	620
	HSK-A 63	25	115	44	52	89	57.5		389.89	625
	HSK-A 63	32	120	44	52	94	61.5		519.91	632
	HSK-A 100	6	85	21	26	56	36.5		524.98	106
	HSK-A 100	8	85	21	26	56	36.5		524.98	108
	HSK-A 100	10	90	24	30	56	41.5		524.98	110
	HSK-A 100	12	95	24	30	66	46.5		524.98	112
	HSK-A 100	14	95	27	34	66	46.5		524.98	114
	HSK-A 100	16	100	27	34	71	49.5		524.98	116
	HSK-A 100	18	100	33	42	71	49.5		524.98	118
	HSK-A 100	20	105	33	42	76	51.5		524.98	120
	HSK-A 100	25	115	44	53	86	57.5		542.28	125
	HSK-A 100	32	120	44	53	91	61.5		559.84	132

→ Min. clamping depth, Page 233

Stop screw IK

Sealing screw

Spare parts DCONWS	W7 Article no. 62 950 ...	£		W7 Article no. 62 950 ...	£	
6	M5x0,8x14	8.59	402	M3x6	1.82	411
8	M6x1x16	8.59	403	M3x6	1.82	411
10	M8x1x20	9.68	404	M3x6	1.82	411
12 - 18	M10x1x20	10.80	405	M3x6	1.82	411
20	M12x1x20	11.09	406	M3x6	1.82	411
25 - 32	M12x1x20	11.09	406	M4x8	1.82	412

Sealing screw for closing of two additional coolant holes.

Accessories

Shrink fit extension
→ 17|10

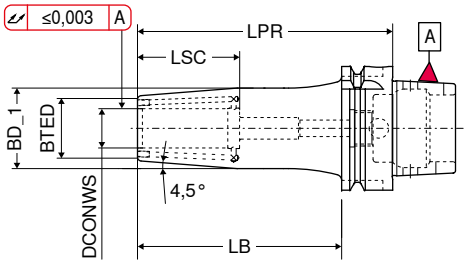
Coolant transfer pipe
→ 138

Others
→ 17|34

Shrink fit adapters 4.5°

- ▲ Version for high clamping force
- ▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Holder with adjustable back stop



AD
G 2,5 n_{max} 25000
Y8

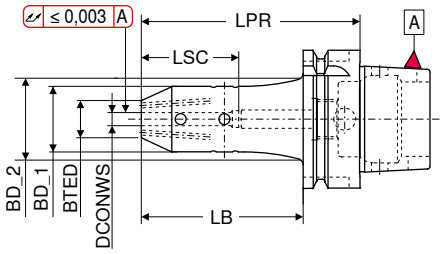
AD
G 2,5 n_{max} 25000
Y8

	Adapter	DCONWS	LPR	BTED	BD_1	LB	LSC	Article no. 84 720 ...		Article no. 84 723 ...	
		mm	mm	mm	mm	mm	mm	£		£	
medium length	HSK-A 63	6	130	21	27	104	36.5	519.91	606		
	HSK-A 63	8	130	21	27	104	36.5	519.91	608		
	HSK-A 63	10	130	24	32	104	41.5	519.91	610		
	HSK-A 63	12	130	24	32	104	46.5	519.91	612		
	HSK-A 63	14	130	27	34	104	46.5	519.91	614		
	HSK-A 63	16	130	27	34	104	49.5	519.91	616		
	HSK-A 63	18	130	33	41	104	49.5	519.91	618		
	HSK-A 63	20	130	33	41	104	51.5	519.91	620		
	HSK-A 100	6	130	21	27	101	36.5	712.23	106		
	HSK-A 100	8	130	21	27	101	36.5	712.23	108		
	HSK-A 100	10	130	24	32	101	41.5	712.23	110		
	HSK-A 100	12	130	24	32	101	46.5	712.23	112		
	HSK-A 100	14	130	27	34	101	46.5	712.23	114		
	HSK-A 100	16	130	27	34	101	49.5	712.23	116		
	HSK-A 100	18	130	33	41	101	49.5	712.23	118		
	HSK-A 100	20	130	33	41	101	51.5	712.23	120		
extra-long	HSK-A 63	6	160	21	27	134	36.5			569.74	606
	HSK-A 63	8	160	21	27	134	36.5			569.74	608
	HSK-A 63	10	160	24	32	134	41.5			569.74	610
	HSK-A 63	12	160	24	32	134	46.5			569.74	612
	HSK-A 63	14	160	27	34	134	46.5			569.74	614
	HSK-A 63	16	160	27	34	134	49.5			569.74	616
	HSK-A 63	18	160	33	41	134	49.5			569.74	618
	HSK-A 63	20	160	33	41	134	51.5			569.74	620
	HSK-A 63	25	160	44	52	134	57.5			547.08	625
	HSK-A 100	6	160	21	27	131	36.5			779.64	106
	HSK-A 100	8	160	21	27	131	36.5			779.64	108
	HSK-A 100	10	160	24	32	131	41.5			779.64	110
	HSK-A 100	12	160	24	32	131	46.5			779.64	112
	HSK-A 100	14	160	27	34	131	46.5			779.64	114
	HSK-A 100	16	160	27	34	131	49.5			779.64	116
	HSK-A 100	18	160	33	41	131	49.5			779.64	118
	HSK-A 100	20	160	33	41	131	51.5			779.64	120
	HSK-A 100	25	160	44	53	131	57.5			779.64	125
	HSK-A 100	32	160	44	53	131	61.5			779.64	132

→ Min. clamping depth, Page 233

Sidelock holder (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat



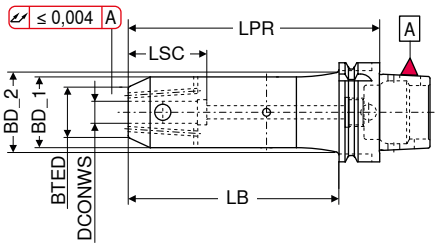
	Adapter	DCONWS $_{H5}$	LPR	BD_1	BTED	LB	LSC	BD_2	AD G 2,5 n_{max} 25000 Y8 Article no. 84 700 ...		AD G 2,5 n_{max} 25000 Y8 Article no. 84 701 ...		AD G 2,5 n_{max} 25000 Y8 Article no. 84 704 ...		AD G 2,5 n_{max} 25000 Y8 Article no. 84 705 ...	
		mm	mm	mm	mm	mm	mm	mm	£		£		£		£	
short	HSK-A 63	6	65	30	17	39	34		302.60	606	244.93	606 1)				
	HSK-A 63	8	65	32	20	39	34		302.60	608	244.93	608 1)				
	HSK-A 63	10	65	35	25	39	39		277.46	610	244.93	610 1)				
	HSK-A 63	12	80	42	30	54	44		277.46	612	250.89	612 1)				
	HSK-A 63	14	80	45	32	54	44		277.46	614	250.89	614 1)				
	HSK-A 63	16	80	48	36	54	47		277.46	616	250.89	616 1)				
	HSK-A 63	18	80	48	38	54	47		277.46	618	250.89	618 1)				
	HSK-A 63	20	80	52	40	54	49		277.46	620	250.89	620 1)				
	HSK-A 63	25	110	63	45	84	54		292.42	625	293.74	625 1)				
	HSK-A 63	32	110	72	52	84	58		327.35	632	293.74	632 1)				
	HSK-A 100	6	80	30	17	51	34		392.36	106						
	HSK-A 100	8	80	32	20	51	34		379.88	108						
	HSK-A 100	10	80	35	25	51	39		367.52	110						
	HSK-A 100	12	80	42	30	51	44		367.52	112						
	HSK-A 100	14	80	45	32	51	44		367.52	114						
	HSK-A 100	16	100	48	36	71	47		367.52	116						
	HSK-A 100	18	100	48	38	71	47		367.52	118						
	HSK-A 100	20	100	52	40	71	49		367.52	120						
	HSK-A 100	25	100	65	45	71	54		379.88	125						
	HSK-A 100	32	100	72	52	71	58		389.89	132						
	HSK-A 100	40	110	80	60	81	68		516.45	140						
long	HSK-A 63	6	100	30	17	74	34	36.2					345.03	606	260.02	606 1)
	HSK-A 63	8	100	32	20	74	34	38.2					334.98	608	275.31	608 1)
	HSK-A 63	10	100	35	25	74	39	41.2					334.98	610	250.89	610 1)
	HSK-A 63	12	100	42	30	74	44						261.66	612	194.86	612 1)
	HSK-A 63	14	100	45	32	74	44						261.66	614	194.86	614 1)
	HSK-A 63	16	100	48	36	74	47						261.66	616	194.86	616 1)
	HSK-A 63	18	100	48	38	74	47						261.66	618	194.86	618 1)
	HSK-A 63	20	100	52	40	74	49						261.66	620	194.86	620 1)

1) Without threads for balancing screws

Spare parts and accessories on → **Page 110**

Sidelock holder (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat

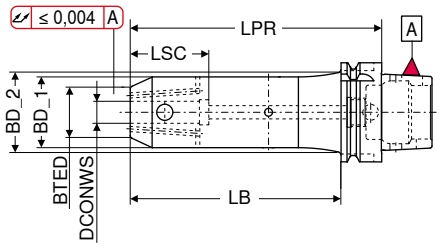


	Adapter	DCONWS	LPR	BD_1	BTED	LB	LSC	BD_2	AD G 2,5 n_{max} 25000 Y8 Article no. 84 706 ... £		AD G 2,5 n_{max} 25000 Y8 Article no. 84 708 ... £	
		mm	mm	mm	mm	mm	mm	mm				
medium length	HSK-A 63	6	130	30	17	104	34	36.2	302.49	606	213.41	606
	HSK-A 63	8	130	32	20	104	34	38.2	289.49	608	207.85	608
	HSK-A 63	10	130	35	25	104	39	41.2	289.49	610	207.85	610
	HSK-A 63	12	130	42	30	104	44	48.2	289.49	612	207.85	612
	HSK-A 63	14	130	45	32	104	44	50.5	289.49	614	207.85	614
	HSK-A 63	16	130	48	36	104	47	50.1	289.49	616	207.85	616
	HSK-A 63	18	130	48	38	104	47	50.1	289.49	618	207.85	618
	HSK-A 63	20	130	52	40	104	49		289.49	620	222.68	620
	HSK-A 63	25	130	63	45	104	54		445.38	625		
	HSK-A 63	32	130	72	52	104	58		445.38	632		

Spare parts and accessories on → **Page 110**

Sidelock holder (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat



AD
G 2,5 n_{max} 25000
Y8

	Adapter	DCONWS $_{H5}$	LPR	BD_1	BTED	LB	LSC	BD_2	Article no. 84 707 ...	
		mm	mm	mm	mm	mm	mm	mm	£	
extra-long	HSK-A 63	6	160	30	17	134	34	36.2	414.86	606
	HSK-A 63	8	160	32	20	134	34	38.2	399.92	608
	HSK-A 63	10	160	35	25	134	39	41.2	399.92	610
	HSK-A 63	12	160	42	30	134	44	48.2	399.92	612
	HSK-A 63	14	160	45	32	134	44	50.5	399.92	614
	HSK-A 63	16	160	48	36	134	47	50.1	399.92	616
	HSK-A 63	18	160	48	38	134	47	50.1	399.92	618
	HSK-A 63	20	160	52	40	134	49		399.92	620
	HSK-A 63	25	160	63	45	134	54		399.92	625
	HSK-A 100	6	160	30	17	131	34	38.2	492.45	106
	HSK-A 100	8	160	32	20	131	34	40.2	474.88	108
	HSK-A 100	10	160	35	25	131	39	43.2	467.48	110
	HSK-A 100	12	160	42	30	131	44	50.2	467.48	112
	HSK-A 100	14	160	45	32	131	44	53.2	467.48	114
	HSK-A 100	16	160	48	36	131	47	56.2	467.48	116
	HSK-A 100	18	160	48	38	131	47	56.2	467.48	118
	HSK-A 100	20	160	52	40	131	49	60.2	467.48	120
	HSK-A 100	25	160	65	45	131	54	73.2	467.48	125
	HSK-A 100	32	160	72	52	134	58	79.5	467.48	132

W7

Grubscrew

W7

Sealing screw

Spare parts DCONWS $_{H5}$		Article no. 62 950 ... £			Article no. 62 950 ... £	
6	M6x10	7.20	422	M3x6	1.82	411
8	M8x10	7.20	423	M3x6	1.82	411
10	M10x12	8.72	424	M3x6	1.82	411
12 - 14	M12x16	8.72	425	M3x6	1.82	411
16 - 18	M14x16	11.90	426	M3x6	1.82	411
20	M16x16	13.70	427	M3x6	1.82	411
25	M18x2x20	15.77	428	M4x8	1.82	412
32 - 40	M20x2x20	19.52	429	M4x8	1.82	412

Sealing screw for closing of two additional coolant holes.

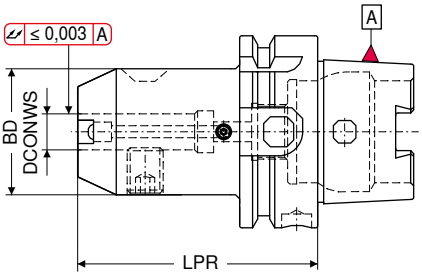
Accessories

Coolant transfer pipe
→ 138

Others
→ 17|34

Sidelock holder (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat

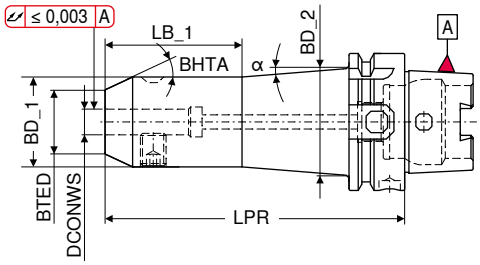


	Adapter	DCONWS $_{H4}$	LPR	BD	AD G 2,5 n_{max} 18000 Y8 Article no. 81 736 ...		AD G 2,5 n_{max} 18000 Y8 Article no. 81 731 ...		AD G 6,3 n_{max} 15000 Y8 Article no. 81 731 ...		ADe G 2,5 n_{max} 18000 Y8 Article no. 81 730 ...		ADe G 6,3 n_{max} 15000 Y8 Article no. 81 730 ...	
		mm	mm	mm	£		£		£		£		£	
short	HSK-A 32	6	60	25			258.16	306						
	HSK-A 32	8	60	28			248.62	308						
	HSK-A 32	10	65	35			248.62	310						
	HSK-A 32	12	75	42			248.62	312						
	HSK-A 32	16	75	48			248.62	316						
	HSK-A 40	6	60	25			248.62	406						
	HSK-A 40	8	60	28			239.22	408						
	HSK-A 40	10	65	34			239.22	410						
	HSK-A 40	12	70	42			239.22	412						
	HSK-A 40	16	80	48			239.22	416						
	HSK-A 40	20	80	52			239.22	420						
	HSK-A 50	6	65	25			263.02	506						
	HSK-A 50	8	65	28			248.62	508						
	HSK-A 50	10	65	35			248.62	510						
	HSK-A 50	12	80	42			248.62	512						
	HSK-A 50	16	80	48			248.62	516						
	HSK-A 50	20	80	52			248.62	520						
	HSK-A 50	25	105	65			267.86	525						
	HSK-A 50	32	120	72			267.86	532						
	HSK-A 63	6	65	25			263.02	606			335.78	606		
	HSK-A 63	8	65	28			253.60	608			317.81	608		
	HSK-A 63	10	65	35			253.60	610			317.81	610		
	HSK-A 63	12	80	42			253.60	612			317.81	612		
	HSK-A 63	14	80	44			253.60	614			317.81	614		
	HSK-A 63	16	80	48			253.60	616			317.81	616		
	HSK-A 63	18	80	50			253.60	618			317.81	618		
	HSK-A 63	20	80	52			253.60	620			317.81	620		
	HSK-A 63	25	110	65			277.41	625			335.78	625		
	HSK-A 63	32	110	72			251.93	632			381.16	632		
	HSK-A 63	40	125	80							420.57	640		
	HSK-A 100	6	80	25					346.32	106			390.29	106
	HSK-A 100	8	80	28					336.28	108			376.58	108
	HSK-A 100	10	80	35					336.28	110			376.58	110
	HSK-A 100	12	80	42					336.28	112			376.58	112
	HSK-A 100	14	80	44					336.28	114			376.58	114
	HSK-A 100	16	100	48					336.28	116			368.09	116
	HSK-A 100	18	100	50					336.28	118			376.58	118
	HSK-A 100	20	100	52					336.28	120			376.58	120
	HSK-A 100	25	100	65					361.41	125			390.29	125
	HSK-A 100	32	100	72					371.46	132			408.39	132
	HSK-A 100	40	105	80					381.60	140			476.35	140
long	HSK-A 63	6	100	25	289.84	606								
	HSK-A 63	8	100	28	287.76	608								
	HSK-A 63	10	100	35	287.76	610								
	HSK-A 63	12	100	42	287.76	612								
	HSK-A 63	16	100	48	287.76	616								
	HSK-A 63	40	125	80	319.58	640								

16

Sidelock holder (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat



	Adapter	DCONWS $_{H4}$	LPR	BD_1	BD_2	BTED	LB_1	BHTA	α°	AD G 6,3 n_{max} 15000 Y8 Article no. 81 732 ...		AD G 6,3 n_{max} 10000 Y8 Article no. 81 732 ...	
		mm	mm	mm	mm	mm	mm			£		£	
extra-long	HSK-A 63	6	160	25	34.7	15	50	25°	3.5	344.23	606		
	HSK-A 63	8	160	28	37.9	20	50	25°	3.5	344.23	608		
	HSK-A 63	10	160	35	43.7	25	60	25°	3.5	344.23	610		
	HSK-A 63	12	160	42		30		25°		344.23	612 [1)]		
	HSK-A 63	16	160	48		36		25°		344.23	616 [1)]		
	HSK-A 63	20	160	52		40		25°		353.77	620 [1)]		
	HSK-A 100	6	160	25	45.2	15	50	25°	7.5			451.77	106
	HSK-A 100	8	160	28	48.7	20	50	25°	7.5			441.60	108
	HSK-A 100	10	160	35	51.2	25	65	25°	7.5			441.60	110
	HSK-A 100	12	160	42	59.5	30	60	25°	7.5			441.60	112
	HSK-A 100	16	160	48	62.9	36	70	25°	7.5			441.60	116
	HSK-A 100	20	160	52	69.6	40	60	25°	7.5			441.60	120
	HSK-A 100	25	160	65	77.5	45	80	45°	7.5			403.70	125

1) Cylindrical shank adapter

W7

Grubscrew

Spare parts DCONWS $_{H4}$		Article no. 62 950 ...	
		£	
6	M6x10	0.87	006
8	M8x10	0.87	008
10	M10x12	1.67	010
12	M12x16	1.32	012
14	M12x16	1.32	012
16	M14x16	1.63	016
18	M14x16	1.63	016
20	M16x16	1.74	020
25	M18x2x20	3.36	025
32	M20x2x20	3.51	032
40	M20x2x20	3.51	032

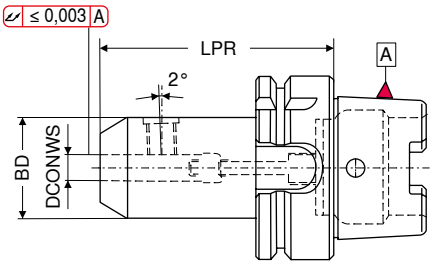
Accessories

Coolant transfer pipe
→ 138

Others
→ 17|34

Tool holder for tools with angled clamping flat (Whistle Notch)

▲ For shanks according to DIN 6535 HE / 1835 E with angled clamping flat



	Adapter	DCONWS $_{H4}$	LPR	BD	AD G 2,5 n_{max} 18000 Y8 Article no. 81 733 ...		AD G 6,3 n_{max} 15000 Y8 Article no. 81 733 ...	
		mm	mm	mm	£		£	
short	HSK-A 63	6	80	25	277.41	606		
	HSK-A 63	8	80	28	263.02	608		
	HSK-A 63	10	80	35	263.02	610		
	HSK-A 63	12	90	42	263.02	612		
	HSK-A 63	14	90	44	263.02	614		
	HSK-A 63	16	100	48	263.02	616		
	HSK-A 63	18	100	50	263.02	618		
	HSK-A 63	20	100	52	263.02	620		
	HSK-A 63	25	110	65	286.79	625		
	HSK-A 63	32	110	72	305.91	632		
	HSK-A 100	6	90	25			356.33	106
	HSK-A 100	8	90	28			346.32	108
	HSK-A 100	10	90	35			346.32	110
	HSK-A 100	12	100	42			346.32	112
	HSK-A 100	14	100	44			346.32	114
	HSK-A 100	16	100	48			346.32	116
	HSK-A 100	18	100	50			346.32	118
	HSK-A 100	20	110	52			346.32	120
	HSK-A 100	25	120	65			371.46	125
	HSK-A 100	32	120	72			381.60	132
	HSK-A 100	40	120	80			391.49	140

W7 Grubscrew

Y8 Stop screw IK

Spare parts DCONWS $_{H4}$		Article no. 62 950 ... £			Article no. 81 950 ... £	
6	M6x10	0.87	006	M5x15	2.83	050
8	M8x10	0.87	008	M6x15	2.98	051
10	M10x12	1.67	010	M8x15	3.41	052
12 - 14	M12x16	1.32	012	M10x15	3.41	053
16 - 18	M14x16	1.63	016	M12x15	3.98	054
20	M16x16	1.74	020	M16x15	4.42	055
25	M18x2x20	3.36	025	M20x15	4.89	056
32	M20x2x20	3.51	032	M20x15	4.89	056
40	M20x2x20	3.51	032	M22x1,5x15	6.40	057

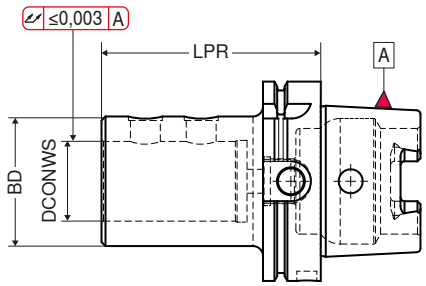
Accessories

Coolant transfer pipe
→ 138

Others
→ 17|34

16

Indexable insert drill adapter ISO 12164 HSK Form A



AD
G 6,3 n_{max} 15000

2E/45

Adapter	DCONWS	LPR	BD	Article no. 10 842 ...	
	mm	mm	mm	£	
HSK-A 63	20	80	40	158.91	**320**
HSK-A 63	25	90	45	158.91	**325**
HSK-A 63	32	90	52	158.91	**332**
HSK-A 63	40	110	65	158.91	**340**
HSK-A 100	20	90	40	178.18	**420**
HSK-A 100	25	100	45	178.18	**425**
HSK-A 100	32	100	52	178.18	**432**
HSK-A 100	40	110	65	178.18	**440**
HSK-A 100	50	120	75	178.18	**450**

Suitable eccentric sleeves can be found in → **Chapter 3, Indexable insert drilling.**

2A/28

Grubscrew

Spare parts DCONWS		Article no. 10 950 ...	
		£	
20	M10x1x10	3.49	**001**
25 - 32	M12x1x10	3.49	**002**
40 - 50	M16x1x12	3.49	**003**

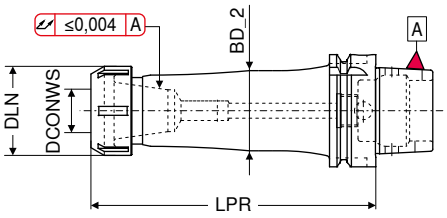
Accessories

Coolant transfer pipe
→ 138

Others
→ 17|34

ER Collet chuck

Scope of supply:
Holder with lock nut and adjustable back stop



	Adapter	DCONWS	LPR	DLN	BD_2	TQX	for collet	AD G 2,5 n_{max} 25000 Y8 Article no. 84 726 ...		AD G 2,5 n_{max} 25000 Y8 Article no. 84 732 ...		AD G 2,5 n_{max} 25000 Y8 Article no. 84 738 ...	
		mm	mm	mm	mm	Nm		£		£		£	
long	HSK-A 63	1 - 10	100	22	27	8 - 56	426E (ER16 mini)	332.36	610				
	HSK-A 63	1 - 16	100	42	37	24 - 104	430E (ER25)	380.88	616				
	HSK-A 63	2 - 20	100	50	45	24 - 136	470E (ER32)	414.21	620				
	HSK-A 63	3 - 26	100	63	52	176	472E (ER40)	482.45	626				
	HSK-A 100	1 - 10	100	22	27	8 - 56	426E (ER16 mini)	425.04	110				
	HSK-A 100	1 - 16	100	42	37	24 - 104	430E (ER25)	474.88	116				
	HSK-A 100	2 - 20	100	50	45	24 - 136	470E (ER32)	509.89	120				
	HSK-A 100	3 - 26	100	63	56	176	472E (ER40)	542.28	126				
extra-long	HSK-A 63	1 - 10	160	22	27	8 - 56	426E (ER16 mini)					405.01	610
	HSK-A 63	1 - 16	160	42	37	24 - 104	430E (ER25)					472.40	616
	HSK-A 63	2 - 20	160	50	45	24 - 136	470E (ER32)					480.89	620
	HSK-A 63	3 - 26	160	63	52	176	472E (ER40)					524.98	626
	HSK-A 100	1 - 10	200	22	27	8 - 56	426E (ER16 mini)					702.36	110
	HSK-A 100	1 - 16	200	42	37	24 - 104	430E (ER25)					702.36	116
	HSK-A 100	2 - 20	200	50	45	24 - 136	470E (ER32)					732.13	120
	HSK-A 100	3 - 26	200	63	56	176	472E (ER40)					792.13	126
	HSK-A 100	1 - 10	160	22	27	8 - 56	426E (ER16 mini)			509.89	110		
	HSK-A 100	1 - 16	160	42	37	24 - 104	430E (ER25)			559.84	116		
	HSK-A 100	2 - 20	160	50	45	24 - 136	470E (ER32)			594.70	120		
	HSK-A 100	3 - 26	160	63	56	176	472E (ER40)			644.86	126		

Spare parts	Y8 Lock nut IK Article no. 83 950 ...		W7 Lock nut Article no. 62 950 ...		Y8 Y clamping key Article no. 83 357 ...		Y8 ER Mini clamping key Article no. 83 950 ...		W7 Mini lock nut Article no. 62 950 ...		Y8 Mini IK Article no. 83 950 ...		W7 Stop screw IK Article no. 62 950 ...	
for collet	£		£		£		£		£		£		£	
426E (ER16 mini)							35.57	101	33.40	066	80.34	058	8.59	403
430E (ER25)	76.11	055	21.03	055	22.20	125							11.09	406
470E (ER32)	81.41	056	21.56	056	32.33	132							11.09	406
472E (ER40)	97.97	057	22.33	057	36.64	140							11.09	406

Accessories

ER collet
→ 206, 211–215

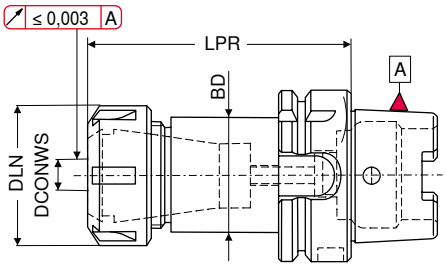
Coolant transfer pipe
→ 138

Others
→ 17|34

16

ER-Collet chuck

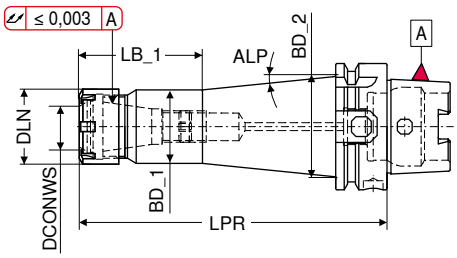
Scope of supply:
Toolholder with lock nut and adjustable back stop



	Adapter	DCONWS	LPR	DLN	BD	TQX	for collet	AD G 6,3 n_{max} 15000 Y8 Article no. 81 735 ...		AD G 2,5 n_{max} 18000 Y8 Article no. 81 735 ...		AD G 2,5 n_{max} 18000 Y8 Article no. 81 737 ...		AD G 6,3 n_{max} 15000 Y8 Article no. 81 737 ...		AD G 6,3 n_{max} 10000 Y8 Article no. 81 737 ...	
		mm	mm	mm	mm	Nm		£		£		£		£		£	
short	HSK-A 32	1 - 10	65	22	19	8 - 56	426E (ER16 mini)			267.86	316						
	HSK-A 32	1 - 16	70	35	30	24 - 104	430E (ER25 mini)			267.86	325						
	HSK-A 40	1 - 10	70	22	22	8 - 56	426E (ER16 mini)			253.60	416						
	HSK-A 40	1 - 16	80	42	35	24 - 104	430E (ER25)			248.62	425						
	HSK-A 50	1 - 10	80	22	22	8 - 56	426E (ER16 mini)			258.16	516						
	HSK-A 50	1 - 16	95	42	42	24 - 104	430E (ER25)			253.60	525						
long	HSK-A 40	2 - 20	100	50	40	24 - 136	470E (ER32)			258.16	432						
	HSK-A 50	2 - 20	100	50	50	24 - 136	470E (ER32)			258.16	532						
	HSK-A 63	1 - 10	100	22	19	8 - 56	426E (ER16 mini)			219.57	616						
	HSK-A 63	1 - 16	100	42	32	24 - 104	430E (ER25)			258.16	625						
	HSK-A 63	2 - 20	100	50	50	24 - 136	470E (ER32)			267.86	632						
	HSK-A 100	1 - 16	100	42	42	24 - 104	430E (ER25)	333.69	125								
	HSK-A 100	2 - 20	100	50	50	24 - 136	470E (ER32)	351.41	132								
medium length	HSK-A 40	1 - 16	120	35	35	24 - 104	430E (ER25 mini)					325.11	425				
	HSK-A 63	2 - 26	120	63	50	176	472E (ER40)			282.10	640						
	HSK-A 100	3 - 26	120	63	50	176	472E (ER40)	376.38	140								
extra-long	HSK-A 63	2 - 20	160	50	50	24 - 136	470E (ER32)							363.44	632		
	HSK-A 63	3 - 26	160	63	63	176	472E (ER40)							372.85	640		
	HSK-A 100	1 - 16	160	42	42	24 - 104	430E (ER25)									433.63	125
	HSK-A 100	2 - 20	160	50	50	24 - 136	470E (ER32)									446.69	132
	HSK-A 100	3 - 26	160	63	63	176	472E (ER40)									466.75	140

ER-Collet chuck

Scope of supply:
Toolholder with lock nut and adjustable back stop



	Adapter	DCONWS	LPR	DLN	BD_1	BD_2	LB_1	ALP	TQX	for collet	AD G 2,5 n_{max} 18000 Y8 Article no. 81 737 ... £		AD G 6,3 n_{max} 15000 Y8 Article no. 81 737 ... £	
		mm	mm	mm	mm	mm	mm		Nm					
medium length	HSK-A 40	1 - 10	120	22	22	29.15	47	4°	8 - 56	426E (ER16 mini)	325.11	**416**		
extra-long	HSK-A 63	1 - 10	160	22	22	35.00	57	5°	8 - 56	426E (ER16 mini)			372.85	**616**
	HSK-A 63	1 - 16	160	35	35	46.10	68	5°	24 - 104	430E (ER25 mini)			363.44	**625**

Spare parts	Y8 Lock nut IK Article no. 83 950 ... £		W7 Lock nut Article no. 62 950 ... £		Y8 Y clamping key Article no. 83 357 ... £		Y8 ER Mini clamping key Article no. 83 950 ... £		W7 Mini lock nut Article no. 62 950 ... £		Y8 Mini IK Article no. 83 950 ... £		Y8 Stop screw IK Article no. 81 950 ... £	
for collet														
426E (ER16 mini)							35.57	**101**	33.40	**066**	80.34	**058**	3.41	**053**
430E (ER25 mini)							35.02	**103**	55.62	**069**	90.49	**060**	4.42	**055**
430E (ER25)	76.11	**055**	21.03	**055**	22.20	**125**							4.42	**055**
470E (ER32)	81.41	**056**	21.56	**056**	32.33	**132**							6.40	**057**
472E (ER40)	97.97	**057**	22.33	**057**	36.64	**140**							6.40	**057**

Accessories

ER collet
→ 206, 211–215

Coolant transfer pipe
→ 138

Others
→ 17|34

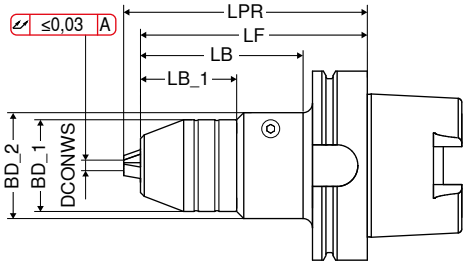
Short drill chuck

- ▲ Independent of direction of rotation
- ▲ Torque Moment = 12 Nm

Scope of supply:

Toolholder including clamping key SW4

NC 2010



AD
G 6,3 n_{max} 10000
Y8

Adapter	DCONWS	BD_1	BD_2	LB_1	LB	LPR	LF	Article no. 84 716 ...	
	mm	mm	mm	mm	mm	mm	mm	£	
HSK-A 63	0,5 - 13	48.5	56	50.9		116.9	126.0	548.51	**613**
HSK-A 63	2,5 - 16	51.0	56	50.9		116.9	127.5	579.46	**616**
HSK-A 100	0,5 - 13	48.5	56	50.9	86	120.0	129.0	779.35	**113**
HSK-A 100	2,5 - 16	51.0	56	50.9	86	120.0	130.5	814.93	**116**

Can be used with G 2.5 to 30,000 1/min by subsequent balancing !

Accessories

Others

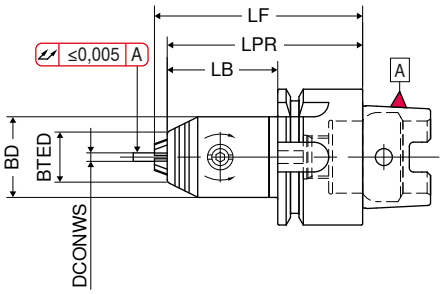
→ 17|34

Micro-precision collet chuck

- Bidirectional
- For speeds up to 60,000 1/min.

Scope of supply:

Holder including clamping wrench SW 2 x 60 mm



AD

G 2,5 n_{max} 25000

Adapter	DCONWS	LB	LPR	LF	BD	BTED	TQX	Y7 Article no. 84 710 ...	£	
	mm	mm	mm	mm	mm	mm	Nm			
HSK-A 32	0,2 - 3,4	26	46	49	19	12	2		1,138.67	**334**
HSK-A 40	0,2 - 3,4	26	46	49	19	12	2		1,227.55	**434**
HSK-A 50	0,2 - 3,4	26	52	55	19	12	2		1,270.79	**534**

Torx blade

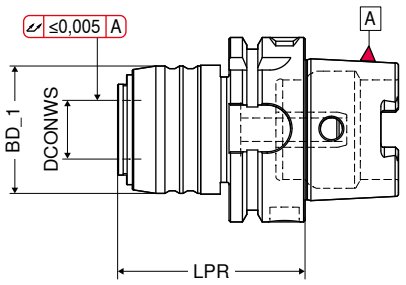
Torque screwdriver

Spare parts for Article no.	Y7 Article no. 80 950 ...	£		Y7 Article no. 80 021 ...	£	
84 710 334		8.97	**152**	1,8 Nm	116.50	**018**
84 710 434		8.97	**152**	1,8 Nm	116.50	**018**
84 710 534		8.97	**152**	1,8 Nm	116.50	**018**

16

Synchro tapping chuck with minimum length compensation

- For collets according to DIN 6499
- With length compensation under tension and under compression (LZD)
- $p_{max.}$ = 50 bar



AD

Adapter	cutting range	SZID	DCONWS	LPR	BD_1	LZD±	Y8 Article no. 83 724 ...	
			mm	mm	mm	mm	£	
HSK-A 63	M3 - M12	1	20	64	43	1,0 / 0,2	343.26	**612**
HSK-A 63	M6 - M20	2	32	97	60	1,0 / 0,2	426.94	**620**
HSK-A 100	M3 - M12	1	20	70	43	1,0 / 0,2	542.28	**112**
HSK-A 100	M6 - M20	2	32	91	60	1,0 / 0,2	641.77	**120**

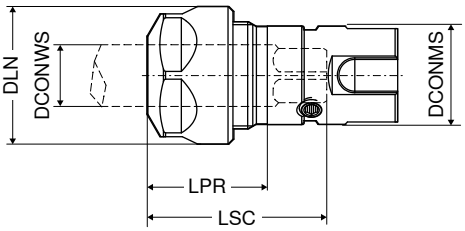
Accessories

Coolant transfer pipe
→ 138

Others
→ 17|34

Insert for synchro quick change tapping chuck with minimum length compensation

Scope of supply:
Includes lock nut



AD

SZID	DCONWS	cutting range	LPR	DLN	LSC	for collet	DCONMS	Y8 Article no. 83 608 ...	
	mm		mm	mm	mm		mm	£	
1	2 - 10	M3 - M12	24	28	42	426E (ER16)	20	185.88	**012**
2	2 - 16	M6 - M20	28	42	59	430E (ER25)	32	216.51	**020**

Spare parts for synchronous tapping chucks

		W7			Y8			W7		Y8	
		Lock nut			Lock nut IK			Lock nut		Y clamping key	
Spare parts		**Article no. 62 950 ...**			**Article no. 83 950 ...**			**Article no. 62 950 ...**		**Article no. 83 357 ...**	
for Article no.		£			£			£		£	
83 608 012	M22x1,5 - SW25	25.38	**044**	M22x1,5	65.34	**054**				22.20	**116**
83 608 020				M32x1,5	76.11	**055**	M32x1,5	21.03	**055**	22.20	**125**

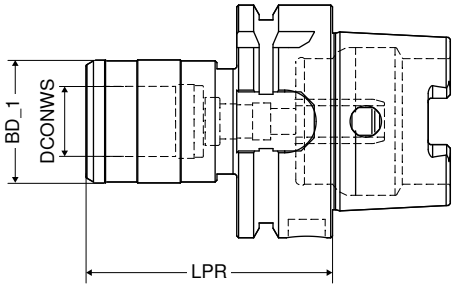
Accessories

ER collet

→ 212, 214–215

Quick change tap chuck with length compensation

▲ With length compensation under tension and under compression (LZD)

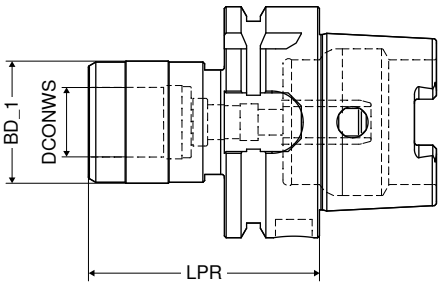


A

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	LZD±	Y8 Article no. 83 712 ...	
			mm	mm	mm	mm	£	
HSK-A 63	M3 - M12	01	72	41	19	7,5	754.51	**612**
HSK-A 63	M6 - M20	02	110	60	31	10	877.39	**620**
HSK-A 100	M3 - M12	01	80	41	19	7,5	1,272.80	**112**
HSK-A 100	M6 - M20	02	100	60	31	10	1,118.82	**120**

Quick change tap chuck without length compensation

▲ $p_{max.}$ = 50 bar



AD

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	Y8 Article no. 83 710 ...	
			mm	mm	mm	£	
HSK-A 63	M3 - M12	01	63	33	19	508.30	**612**
HSK-A 63	M6 - M20	02	89	50	31	641.77	**620**
HSK-A 100	M3 - M12	01	69	33	19	636.57	**112**
HSK-A 100	M6 - M20	02	92	50	31	783.13	**120**

Accessories

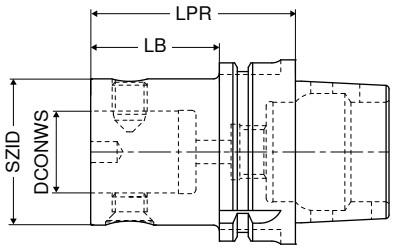
Collet → 219–223

Coolant transfer pipe → 138

Others → 17|34

Adapter with ABS Connection

ABS



AD
G 6,3 n_{max} 10000

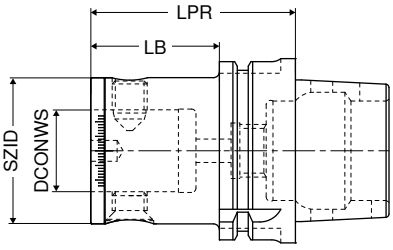
Adapter	KOMET no.	SZID	DCONWS	LPR	LB	NEW 3E Article no. 84 200 ...
			mm	mm	mm	£
HSK-A 63	A0630150	ABS 50	28	70	44	360.18 **06397**
HSK-A 100	A0650150	ABS 50	28	80	51	433.00 **10097**

Eccentric adjuster with ABS Connection

▲ Adjustment ± 0.25 mm on diameter

Scope of supply:
Eccentric adjuster with adjuster key Ø 2.8

ABS

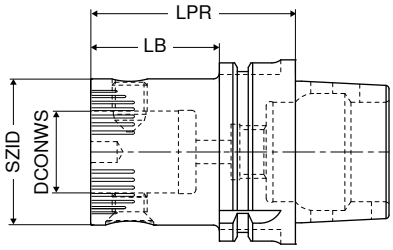


AD

Adapter	KOMET no.	SZID	DCONWS	LPR	LB	NEW W4 Article no. 84 203 ...
			mm	mm	mm	£
HSK-A 63	A0636730	ABS 50	28	70	44	545.90 **06397**
HSK-A 100	A0656730	ABS 50	28	80	51	620.34 **10097**

Torsional vibration dampers with ABS Connection

ABS



AD

NEW 3E

Adapter	KOMET no.	SZID	DCONWS	LPR	LB	Article no. 84 206 ...	
			mm	mm	mm	£	
HSK-A 63	A0630251	ABS 50	28	70	44	643.82	**06397**
HSK-A 100	A0650251	ABS 50	28	80	51	754.45	**10097**

Spare parts SZID	XX Clamping screw Article no. 84 950 ...		XX Taper screw Article no. 84 950 ...		XX Set Article no. 84 950 ...	
	£		£		£	
ABS 50	11.60	**20300**	14.89	**20400**	26.43	**99800**

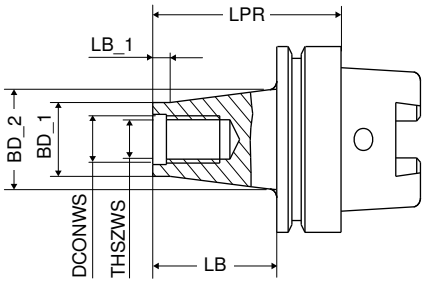
Accessories

Coolant transfer pipe
→ 138

Extension
→ 17|27

Others
→ 17|34

Adapter for milling cutters with threaded end



AD
G 2,5 n_{max} 30000

WA

Adapter	THSZWS	DCONWS	LB	BD_1	BD_2	LB_1	LPR	Article no. 56 714 ...	
		mm	mm	mm	mm	mm	mm	£	
HSK-A 63	M8	8.5	25	13.8	15	12	51	427.18	**081**
HSK-A 63	M8	8.5	50	13.8	23	12	76	431.73	**082**
HSK-A 63	M8	8.5	75	13.8	25	12	101	436.45	**083**
HSK-A 63	M8	8.5	100	13.8	30	12	126	441.02	**084**
HSK-A 63	M10	10.5	25	18.0	23	12	51	427.18	**101**
HSK-A 63	M10	10.5	50	18.0	25	12	76	431.73	**102**
HSK-A 63	M10	10.5	75	18.0	30	12	101	436.45	**103**
HSK-A 63	M10	10.5	100	18.0	35	12	126	441.02	**104**
HSK-A 63	M12	12.5	25	21.0	24	12	51	427.18	**121**
HSK-A 63	M12	12.5	50	21.0	30	12	76	431.73	**122**
HSK-A 63	M12	12.5	75	21.0	35	12	101	436.45	**123**
HSK-A 63	M12	12.5	100	21.0	38	12	126	441.02	**124**
HSK-A 63	M12	12.5	125	21.0	43	12	151	445.73	**125**
HSK-A 63	M12	12.5	150	21.0	45	12	176	450.30	**126**
HSK-A 63	M16	17.0	25	29.0	29	12	51	427.18	**161**
HSK-A 63	M16	17.0	50	29.0	34	12	76	431.73	**162**
HSK-A 63	M16	17.0	75	29.0	35	12	101	436.45	**163**
HSK-A 63	M16	17.0	100	29.0	40	12	126	441.02	**164**
HSK-A 63	M16	17.0	125	29.0	44	12	151	447.62	**165**
HSK-A 63	M16	17.0	150	29.0	48	12	176	450.30	**166**

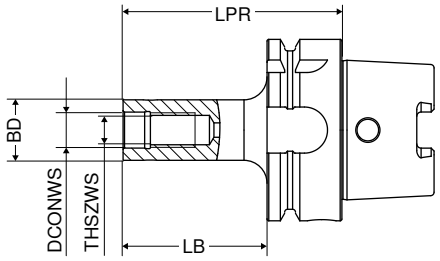
Accessories

Extension-Reduction set
→ 17|19

Coolant transfer pipe
→ 138

Others
→ 17|34

Adapter for milling cutters with threaded end



AD
G 2,5 n_{max} 25000

Adapter	THSZWS	DCONWS	BD	LB	LPR	WA Article no. 56 719 ...	
		mm	mm	mm	mm	£	
HSK-A 63	M8	8.5	13.8	50	76	309.91	**082**
HSK-A 63	M10	10.5	18.0	50	76	309.91	**102**
HSK-A 63	M10	10.5	18.0	100	126	356.30	**104**
HSK-A 63	M12	12.5	21.0	50	76	309.91	**122**
HSK-A 63	M12	12.5	21.0	100	126	356.30	**124**
HSK-A 63	M16	17.0	29.0	50	76	309.91	**162**
HSK-A 63	M16	17.0	29.0	100	126	356.30	**164**

Accessories

Extension-Reduction set
→ 17|19

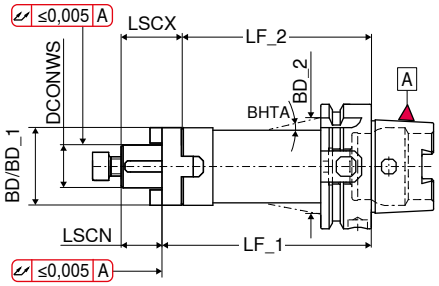
Coolant transfer pipe
→ 138

Others
→ 17|34

Combination shell mill adapter

▲ For milling cutters with transverse or longitudinal groove according to DIN 6358

Scope of supply:
Toolholder with retaining screw, driving ring and dowel spring



	Adapter	DCONWS	LF_1	LF_2	BD	BD_1	BD_2	LSCX	LSCN	BHTA	A G 6,3 n_{max} 15000 Y8 Article no. 81 738 ...		A G 6,3 n_{max} 15000 Y8 Article no. 81 738 ...		A G 6,3 n_{max} 15000 Y8 Article no. 81 739 ...		A G 6,3 n_{max} 15000 Y8 Article no. 81 740 ...	
		mm	mm	mm	mm	mm	mm	mm	mm		£		£		£		£	
short	HSK-A 63	16	60	50	32			27	17		263.14	616						
short	HSK-A 63	22	60	48	40			31	19		268.82	622						
short	HSK-A 63	27	60	48	48			33	21		280.43	627						
short	HSK-A 63	32	60	46	53			38	24		289.57	632						
short	HSK-A 63	40	70	56	70			41	27		294.95	640						
short	HSK-A 100	16	60	50	32			27	17				381.18	116				
short	HSK-A 100	22	60	48	40			31	19				385.98	122				
short	HSK-A 100	27	60	48	48			33	21				390.76	127				
short	HSK-A 100	32	60	46	58			38	24				405.01	132				
short	HSK-A 100	40	70	56	70			41	27				414.45	140				
long	HSK-A 63	16	100	90	32			27	17						294.95	616		
long	HSK-A 63	22	100	88	40			31	19						294.95	622		
long	HSK-A 63	27	100	88	48			33	21						299.65	627		
long	HSK-A 63	32	100	86	58			38	24						313.09	632		
long	HSK-A 63	40	100	86	70			41	27						363.01	640		
extra-long	HSK-A 63	16	160	150		32	43.21	27	17	4.5°							331.08	616
extra-long	HSK-A 63	22	160	148		40	47.25	31	19	3.0°							331.08	622
extra-long	HSK-A 63	27	160	148	48			33	21								335.78	627
extra-long	HSK-A 63	32	160	146		58	53.00	38	24								353.77	632
extra-long	HSK-A 63	40	160	146		70	53.00	41	27								412.97	640

These combination shell adapters are prebalanced without driving ring, dowel screw and retaining screw.

Spare parts DCONWS		Y8 Parallel key Article no. 83 950 ... £		Y8 Drive ring Article no. 83 370 ... £		Y8 Retaining screw Article no. 81 950 ... £	
16	4 x 4 x 20	3.29	284	12.13	116	M8x20 - 30 Nm	5.53 020
16	4 x 4 x 20	3.29	284	12.13	116	M8x20 - 30 Nm	5.53 020
22	6 x 6 x 25	3.29	285	11.65	122	M10x30 - 50 Nm	6.37 021
27	7 x 7 x 25	5.22	286	14.53	127	M12x35 - 80 Nm	7.77 022
32	8 x 7 x 28	3.71	287	15.25	132	M16x40 - 110 Nm	9.88 023
40	10 x 8 x 32	4.38	288	25.68	140		

Accessories

Milling Adapter Rings → 17|28

Coolant transfer pipe → 138

Others → 17|34

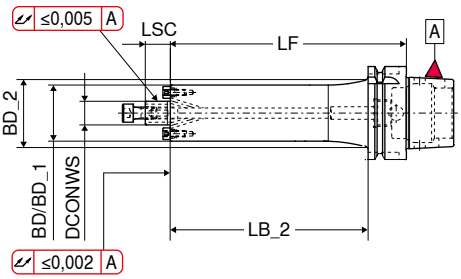
16

Shell mill adapter

▲ For milling cutters with transverse or longitudinal groove ISO 3937

Scope of supply:

Holder with fixed drive dogs, dowel spring and retaining screw



	Adapter	DCONWS	LB_2	LF	BD	BD_1	BD_2	LSC	AD G 2,5 n_{max} 25000 Y8 Article no. 84 750 ...		AD G 2,5 n_{max} 25000 Y8 Article no. 84 754 ...		AD G 2,5 n_{max} 25000 Y8 Article no. 84 755 ...		AD G 2,5 n_{max} 25000 Y8 Article no. 84 757 ...	
		mm	mm	mm	mm	mm	mm	mm	£		£		£		£	
short	HSK-A 63	16	34	60	38			17	332.36	616						
	HSK-A 63	22	34	60	48			19	345.03	622						
	HSK-A 63	27	34	60	58			21	367.52	627						
	HSK-A 63	32	34	60	72			24	387.43	632						
	HSK-A 63	40	34	70	80			27	399.92	640						
	HSK-A 100	16	31	60	38			17	399.92	116						
	HSK-A 100	22	31	60	48			19	414.86	122						
	HSK-A 100	27	31	60	58			21	429.85	127						
	HSK-A 100	32	31	60	72			24	447.41	132						
	HSK-A 100	40	41	70	80			27	467.48	140						
long	HSK-A 63	16	74	100		38	44.3	17			367.52	616				
	HSK-A 63	22	74	100		48	50.3	19			379.88	622				
	HSK-A 63	27	74	100	58			21			399.92	627				
	HSK-A 63	32	74	100	72			24			419.83	632				
	HSK-A 63	40	74	100	80			27			434.92	640				
	HSK-A 100	16	71	100		38	46.3	17			447.41	116				
	HSK-A 100	22	71	100		48	56.3	19			467.48	122				
	HSK-A 100	27	71	100		58	66.3	24			484.88	127				
	HSK-A 100	32	71	100		72	80.3	24			502.33	132				
	HSK-A 100	40	71	100	80			27			519.91	140				
medium length	HSK-A 63	16	104	130		38	44.3	17					484.86	616		
	HSK-A 63	22	104	130		48	50.3	19					484.86	622		
	HSK-A 63	27	104	130	58			21					513.86	627		
	HSK-A 63	32	104	130	72			24					513.86	632		
	HSK-A 63	40	104	130	80			27					537.57	640		
	HSK-A 100	16	101	130		38	46.3	17					516.48	116		
	HSK-A 100	22	101	130		48	56.3	19					537.57	122		
	HSK-A 100	27	101	130		58	66.3	21					571.84	127		
	HSK-A 100	32	101	130		72	80.3	24					579.73	132		
	HSK-A 100	40	101	130	80			27					608.72	140		
extra-long	HSK-A 63	16	134	160		38	44.3	17							407.49	616
	HSK-A 63	22	134	160		48	50.3	19							425.04	622
	HSK-A 63	27	134	160	58			21							439.87	627
	HSK-A 63	32	134	160	72			24							457.45	632
	HSK-A 63	40	134	160	80			27							474.88	640
	HSK-A 100	16	131	160		38	46.3	17							509.89	116
	HSK-A 100	22	131	160		48	56.3	19							519.91	122
	HSK-A 100	27	131	160		58	66.3	21							534.86	127
	HSK-A 100	32	131	160		72	80.3	24							549.82	132
	HSK-A 100	40	131	160	80			27							572.35	140

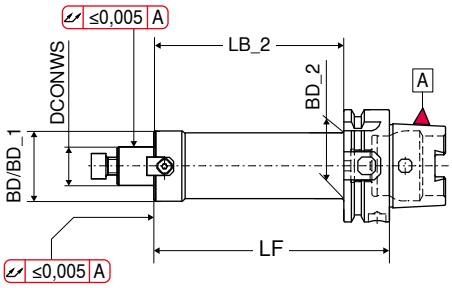
Spare parts facemill adapters

		Y8			W7			W7			Y8	
		Parallel key			Drive dogs			Differential screw			Clamping screw	
Spare parts DCONWS		**Article no. 83 950 ...**			**Article no. 62 950 ...**			**Article no. 62 950 ...**			**Article no. 83 950 ...**	
		£			£			£			£	
16	4 x 4 x 20	3.29	**284**	M4x15	22.29	**442**	M8x16 - SW6	55.07	**433**	M8x25	5.65	**113**
22	6 x 6 x 25	3.29	**285**	M5x17	22.29	**443**	M10x18 - SW8	63.37	**434**	M10x25	6.38	**124**
27	7 x 7 x 25	5.22	**286**	M6x21	22.29	**444**	M12x20 - SW10	70.01	**435**	M12x30	7.05	**125**
32	8 x 7 x 28	3.71	**287**	M6x22	22.29	**445**	M16x26 - SW12	86.47	**436**	M16x35	8.59	**126**
40	10 x 8 x 32	4.38	**288**	M6x23	22.29	**446**	M20x30 - SW14	114.27	**437**	M20x40	9.47	**112**

Shell mill adapter

- ▲ Enlarged seating surface (Ø BD)
- ▲ For face mills with transverse groove ISO 3937

Scope of supply:
Toolholder with retaining screw and drive dogs



								AD G 2,5 n_{max} 18000 Y8		A G 2,5 n_{max} 18000 Y8		A G 2,5 n_{max} 18000 Y8		AD G 2,5 n_{max} 18000 Y8	
	Adapter	DCONWS	LB_2	LF	BD	BD_1	BD_2	**Article no. 81 728 ...**		**Article no. 81 741 ...**		**Article no. 81 742 ...**		**Article no. 81 747 ...**	
		mm	mm	mm	mm	mm	mm	£		£		£		£	
short	HSK-A 63	16	24	50	38			342.41	**216**	218.18	**616**				
	HSK-A 63	22	24	50	48			348.09	**222**	222.74	**622**				
	HSK-A 63	27	34	60	58			366.77	**227**	234.24	**627**				
	HSK-A 63	32	34	60	78			373.26	**232**	243.76	**632**				
	HSK-A 63	40	34	60	88			340.48	**240** 1)	262.31	**640** 1)				
	HSK-A 100	16	21	50	38			366.96	**116**						
	HSK-A 100	22	21	50	48			376.38	**122**						
	HSK-A 100	27	21	50	58			385.98	**127**						
	HSK-A 100	32	21	50	78			400.20	**132**						
	HSK-A 100	40	31	60	88			419.24	**140** 1)						
	HSK-A 100	60	41	70	129			433.33	**160** 2)						
long	HSK-A 63	16	74	100	38							305.91	**616**	363.01	**616**
	HSK-A 63	22	74	100	48							310.72	**622**	363.01	**622**
	HSK-A 63	27	74	100		58	53					315.58	**627**	385.70	**627**
	HSK-A 63	32	74	100		78	53					315.58	**632**	385.70	**632**
	HSK-A 63	40	74	100		88	53					329.84	**640** 1)	403.70	**640** 1)

1) With cross recess screw and threaded holes M12 on the front face, pitch circle diameter = 66.7 mm
2) With threaded holes M16 on the front face, pitch circle diameter = 101.6 mm

16

Spare parts facemill adapters

Y8

Cross nut key

Y8

Retaining screw

Y8

Retaining screw

Spare parts DCONWS	Article no. 83 368 ...			Article no. 83 367 ...			Article no. 81 950 ...	
	£			£			£	
16	20.07	116	M8	5.33	016	M8x20 - 30 Nm	5.53	020
22	24.96	122	M10	5.93	022	M10x30 - 50 Nm	6.37	021
27	29.34	127	M12	7.58	027	M12x35 - 80 Nm	7.77	022
32	40.00	132	M16	11.90	032	M16x40 - 110 Nm	9.88	023
40	39.72	140	M20	12.74	040			
60								

Y8

Drive dogs

Y8

Drive screw

DCONWS		Article no. 81 950 ...			Article no. 81 950 ...	
		£			£	
16	8x8x14	13.66	001	M3x8	0.97	010
22	10x10x17	14.10	002	M4x8	1.27	011
27	12x14x20	15.55	003	M4x14	1.30	012
32	14x14x22	15.38	004	M5x13	1.47	013
40	15,9x16x21	21.93	005	M6x16	1.61	014
60	25,4x25x31	28.95	006	M12x25	7.79	015

Accessories

Extensions

→ 17|26

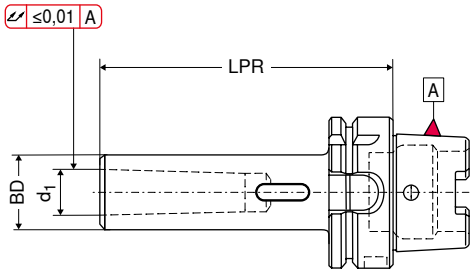
Coolant transfer pipe

→ 138

Others

→ 17|34

Milling sleeve adapter for Morse taper shanks to DIN 228-2 D



Adapter	d_1	LPR	BD	A G 6,3 n_{max} 15000 Y8 Article no. 81 744 ... £		A G 6,3 n_{max} 10000 Y8 Article no. 81 744 ... £	
		mm	mm				
HSK-A 63	MK1	100	25	248.62	**601**		
HSK-A 63	MK2	120	32	258.16	**602**		
HSK-A 63	MK3	140	40	267.86	**603**		
HSK-A 63	MK4	160	48	305.91	**604**		
HSK-A 100	MK1	110	25			306.79	**101**
HSK-A 100	MK2	120	32			321.20	**102**
HSK-A 100	MK3	150	40			331.36	**103**
HSK-A 100	MK4	170	48			361.41	**104**
HSK-A 100	MK5	200	63			438.29	**105**

Accessories

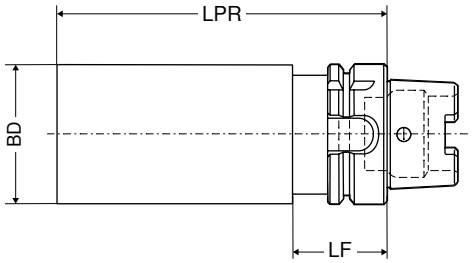
Morse taper adapter sleeve
→ 17|4

Coolant transfer pipe
→ 138

Others
→ 17|34

Blank

- Material: 20NiCrMo2
- For production of special tools
- Taper hardened and ground
- Tool 35$^{\pm 3}$ HRc



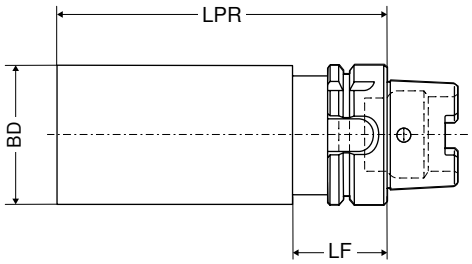
A

Y8

Adapter	BD	LPR	LF	Article no. 81 745 ...	
	mm	mm	mm	£	
HSK-A 32	35.0	150	35	181.79	**335**
HSK-A 40	40.0	150	35	191.22	**440**
HSK-A 40	52.0	200	35	210.44	**452**
HSK-A 50	52.0	200	42	229.37	**552**
HSK-A 50	63.0	200	42	229.37	**563**
HSK-A 63	63.0	200	42	239.22	**663**
HSK-A 63	80.0	250	42	267.86	**680**
HSK-A 100	63.0	200	45	301.15	**163**
HSK-A 100	80.0	250	45	351.41	**180**
HSK-A 100	97.5	250	45	431.59	**190**

Blank

- For the production of special tools
- Material: case hardened steel 16 MnCr 5
- Taper hardened and ground
- Tool production area = soft



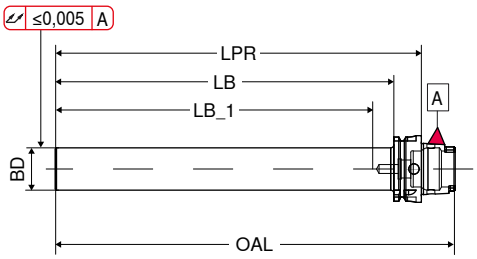
A

Y8

Adapter	BD	LPR	LF	Article no. 84 799 ...	
	mm	mm	mm	£	
HSK 63	63	200	42	223.55	**663**
HSK 63	80	250	42	256.12	**680**

Test arbor

Scope of supply:
In wooden box



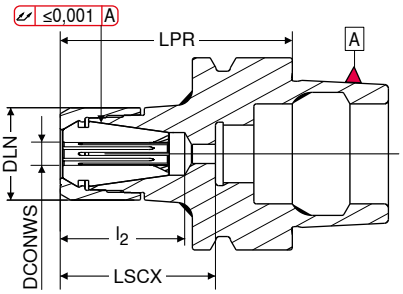
Adapter	BD	LPR	LB_1	LB	OAL	Y8 Article no. 81 746 ...	
	mm	mm	mm	mm	mm	£	
HSK-A 63	40	346	300	320	378	556.17	**063**
HSK-A 100	40	349	300	320	399	710.22	**100**

ER Precision Collet chuck

- For standard or sealed nuts
- Maximum size collet to ISO tolerance field H10
- For clamping a roll key is required
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P



AD
G 2,5 n_{max} 30000

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 mm	for collet	Y8 Article no. 84 776 ... £	
HSK-E 40	2 - 16	60	40	39		430E (ER25)	353.44	**417**
HSK-E 50	2 - 16	70	40	49	30 - 39	430E (ER25)	388.88	**516**

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts	Y8 Lock nut IK Article no. 84 950 ...		Y8 Lock nut Article no. 84 950 ...		Y8 Stop screw 1 Article no. 83 950 ...	
for collet	£		£		£	
430E (ER25)	81.12	**013**	60.06	**003**	33.50	**338**

Accessories

ER collet
→ 208–211, 213

Sealing ring
→ 207

Roll key
→ 17|36

Roll key device
→ 17|36

Coolant transfer pipe
→ 138

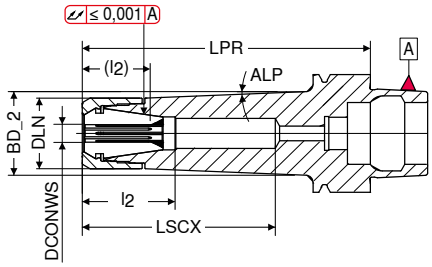
Others
→ 17|34

ER Precision tapered collet chuck

- For special tapered nuts
- Maximum clamping range covered according to ISO tolerance field H10
- Roll key required for clamping
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P



	Adapter	DCONWS	LPR	DLN	BD_2	LSCX	l_2 (l_2)	ALP	for collet	AD G 2,5 n_{max} 30000 Y8 Article no. 84 774 ...		AD G 6,3 n_{max} 42000 Y8 Article no. 84 774 ...	
		mm	mm	mm	mm	mm	mm			£		£	
short	HSK-E 25	1 - 5	35	10		16			4004E (ER08 mini)	246.08	051		
short	HSK-E 25	1 - 7	35	16		22		2.5°	4008E (ER11 mini)	223.54	071		
short	HSK-E 32	1 - 7	50	16	17.5	31	18 - 20	4.5°	4008E (ER11 mini)	318.17	307		
short	HSK-E 32	1 - 7	50	16	17.5	31	18 - 20	4.5°	4008E (ER11 mini)			626.58	321
short	HSK-E 32	1 - 7	60	16	19.2	41	18 - 28	4.5°	4008E (ER11 mini)			701.71	322
short	HSK-E 32	1 - 7	70	16	20.8	45	18 - 32	4.5°	4008E (ER11 mini)			701.71	323
short	HSK-E 40	1 - 7	50	16	17.5	31	18 - 20	4.5°	4008E (ER11 mini)	260.11	407		
short	HSK-E 50	1 - 7	60	16	19.2	37	15 - 23	4.5°	4008E (ER11 mini)	295.51	507		
short	HSK-E 25	1 - 10	45	22		30			426E (ER16 mini)	223.54	101		
short	HSK-E 32	1 - 10	55	22	25.8	40	28 - 32 (12 - 22)	4.5°	426E (ER16 mini)	318.17	310		
short	HSK-E 40	1 - 10	55	22	25.8	38	28 - 30 (12 - 20)	4.5°	426E (ER16 mini)	247.67	410		
short	HSK-E 50	1 - 10	60	22	25.4	39	28 - 31 (12 - 21)	4.5°	426E (ER16 mini)	239.29	510		
long	HSK-E 40	1 - 7	100	16	25.4	64	18 - 36 (12 - 26)	4.5°	4008E (ER11 mini)	318.17	408		
long	HSK-E 50	1 - 7	100	16	25.4	50	15 - 30 (10 - 21)	4.5°	4008E (ER11 mini)	343.85	508		
long	HSK-E 40	1 - 10	100	22	29.0	66	28 - 48 (12 - 38)	2.5°	426E (ER16 mini)	283.97	411		
long	HSK-E 50	1 - 10	100	22	28.2	72	28 - 48 (12 - 38)	2.5°	426E (ER16 mini)	293.68	511		

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, dimension in brackets ( ) = with back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts

for collet	Mini lock nut IK Y8 Article no. 84 950 ... £		Mini lock nut Y8 Article no. 84 950 ... £		Stop screw 2 Y8 Article no. 83 950 ... £		Stop screw 1 Y8 Article no. 83 950 ... £	
4004E (ER08 mini)			90.71	040				
4008E (ER11 mini)			75.49	041	43.03	340	28.66	336
426E (ER16 mini)	73.51	035	60.30	034	45.14	341	30.24	337

Accessories

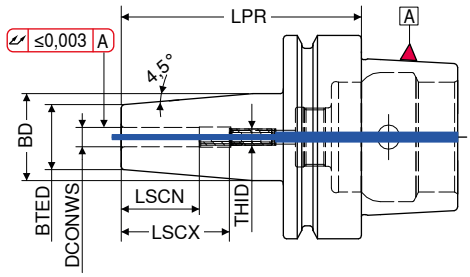
ER collet	Sealing ring	Device	Roll key	Roll key device	Coolant transfer pipe	Others
→ 208–213	→ 207	→ 17|35	→ 17|36	→ 17|36	→ 138	→ 17|34

16

Shrink fit adapters

▲ For solid carbide and HSS shanks with h6 tolerance or better

TG



AD
G 2,5 n_{max} 25000
Y8
Article no.
84 307 ...

AD
G 2,5 n_{max} 25000
Y8
Article no.
84 308 ...

AD
G 2,5 n_{max} 25000
Y8
Article no.
84 309 ...

	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	£		£		£	
short	HSK-E 32	3	60	10	15	28	12	M5	224.95	103				
	HSK-E 32	4	60	10	15	28	16	M5	224.95	104				
	HSK-E 32	5	60	10	15	30	20	M5	224.95	105				
	HSK-E 32	6	70	21	25	36	26	M5	204.04	106				
	HSK-E 32	8	70	21	25	36	26	M6	204.04	108				
	HSK-E 32	10	75	24	29	41	31	M8x1	204.04	110				
	HSK-E 32	12	80	24	29	47	37	M10x1	204.04	112				
	HSK-E 40	3	60	10	15	28	12	M6			271.92	103		
	HSK-E 40	4	60	10	15	28	16	M6			264.98	104		
	HSK-E 40	5	60	10	15	30	20	M6			264.98	105		
	HSK-E 40	6	80	21	27	36	26	M5			223.29	106		
	HSK-E 40	8	80	21	27	36	26	M6			223.29	108		
	HSK-E 40	10	80	24	32	41	31	M8x1			223.29	110		
	HSK-E 40	12	90	24	32	47	37	M10x1			223.29	112		
	HSK-E 40	14	90	27	34	47	37	M10x1			223.29	114		
	HSK-E 40	16	90	27	34	50	40	M12x1			223.29	116		
	HSK-E 50	3	80	10	15	22	12	M6					274.75	103
	HSK-E 50	4	80	15	22	26	16	M6					267.78	104
	HSK-E 50	5	80	15	22	30	20	M6					267.78	105
	HSK-E 50	6	80	21	27	36	26	M5					253.17	106
	HSK-E 50	8	80	21	27	36	26	M6					253.17	108
	HSK-E 50	10	85	24	32	41	31	M8x1					253.17	110
	HSK-E 50	12	90	24	32	47	37	M10x1					253.17	112
	HSK-E 50	14	90	27	34	47	37	M10x1					253.17	114
	HSK-E 50	16	95	27	34	50	40	M12x1					253.17	116
	HSK-E 50	18	95	33	42	50	40	M12x1					253.17	118
	HSK-E 50	20	100	33	42	52	42	M16x1					253.17	120

→ Min. clamping depth, Page 233

Y7
Stop screw IK

Y7
Thro' coolant back stop screw

Y7
Stop screw IK

Spare parts DCONWS		Article no. 83 950 ...	£		Article no. 83 950 ...	£		Article no. 83 950 ...	£	
3 - 5	M6x14 - SW2		18.89	417	M5x14 - SW2	18.89	411			
6								M5x12,5 - SW2,5	18.89	418
8								M6x12,5 - SW3	18.89	419
10								M8x1x13,5 - SW3	18.89	420
12 - 14								M10x1x13,5 - SW5	18.89	421
16 - 18								M12x1x13,5 - SW5	18.89	422
20								M16x1x13,5 - SW5	21.78	423

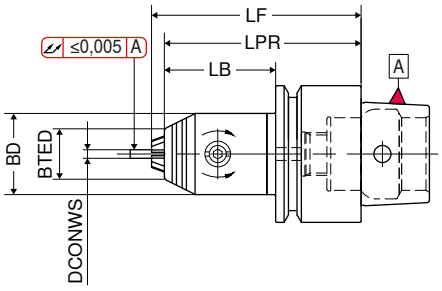
Spare part 83 950 411 only for HSK-E 32. Spare part 83 950 417 for HSK-E 40/HSK-E 50.

Micro-precision collet chuck

- Bidirectional
- For speeds up to 60,000 1/min.

Scope of supply:

Holder including clamping wrench SW 2 x 60 mm



AD

G 2,5 n_{max} 18000

Adapter	DCONWS	LB	LPR	LF	BD	BTED	TQX	Y7 Article no. 84 712 ...	£	
	mm	mm	mm	mm	mm	mm	Nm			
HSK-E 25	0,2 - 3,4	27	37	40	19	12	2		1,085.83	**234**
HSK-E 32	0,2 - 3,4	26	46	49	19	12	2		1,172.29	**334**
HSK-E 40	0,2 - 3,4	26	46	49	19	12	2		1,215.53	**434**

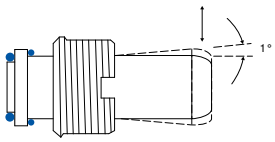
Torx blade

Torque screwdriver

Spare parts for Article no.	Y7 Article no. 80 950 ...	£			Y7 Article no. 80 021 ...	£	
84 712 234		8.97	**152**	1,8 Nm		116.50	**018**
84 712 334		8.97	**152**	1,8 Nm		116.50	**018**
84 712 434		8.97	**152**	1,8 Nm		116.50	**018**

Coolant pipe

Scope of supply:
Complete, including seals

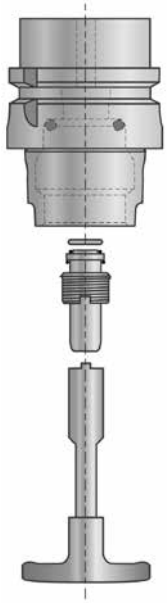


Size	G	Y8 Article no. 83 760 ...	£	
HSK 32	M10 x 1		18.96	032
HSK 40	M12 x 1		18.96	040
HSK 50	M16 x 1		18.96	050
HSK 63	M18 x 1		10.36	063
HSK 80	M20 x 1,5		20.77	080
HSK 100	M24 x 1,5		16.93	100

Key

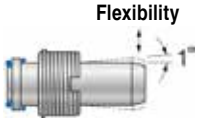
Size	Y8 Article no. 83 758 ...	£	
HSK 32		32.66	032
HSK 40		32.93	040
HSK 50		35.71	050
HSK 63		22.22	063
HSK 80		42.07	080
HSK 100		41.70	100

Coolant pipe for HSK tools

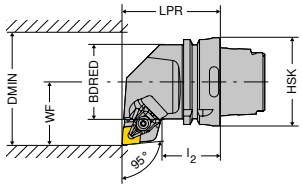


The coolant pipe is ideally mounted in vertical direction – from the bottom to the top. In this manner the sealing ring is prevented from being compressed during locating which would cause the loss of its sealing function. After mounting, the coolant pipe can be moved only to a minimum degree according to DIN (± 1°).

Flexibility



MaxiLock-D – DCLN 95° – Toolholder with top clamping



Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 504 ... £		Right-hand 2D/80 Article no. 74 503 ... £	
		mm	mm	mm	mm	mm					
HSK T63 DCLN R/L 12	HSK-T 63	70	42	53	45	100	CN.. 1204	312.25	**512**	312.25	**512**
HSK T63 DCLN R/L 16	HSK-T 63	70	42	53	45	125	CN.. 1606	312.25	**516**	312.25	**516**
HSK T63 DCLN R/L 19	HSK-T 63	70	42	53	45	125	CN.. 1906	312.25	**519**	312.25	**519**
HSK T100 DCLN R/L 12	HSK-T 100	80	45	88	55	125	CN.. 1204	366.56	**712**	366.56	**712**
HSK T100 DCLN R/L 19	HSK-T 100	80	45	88	55	125	CN.. 1906	366.56	**719**	366.56	**719**

XPress type

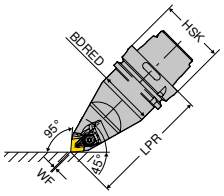
Key D

Clamping screw

Carbide type C

Spare parts for Article no.	XPress type 2A/28 Article no. 70 950 ... £		Key D Y7 Article no. 80 950 ... £		Clamping screw 2A/28 Article no. 70 950 ... £		Carbide type C 2A/28 Article no. 70 950 ... £	
74 504 512 / 74 503 512	21.61	**824**	T15 - IP	15.77 **128**	M4,5x12 - IP	2.71 **820**	7.17	**810**
74 504 516 / 74 503 516	24.26	**825**	T20 - IP	16.56 **129**	M5x14 - IP	3.85 **821**	10.95	**814**
74 504 519 / 74 503 519	26.54	**826**	T20 - IP	16.56 **129**	M5x14 - IP	3.85 **821**	11.74	**816**
74 504 712 / 74 503 712	21.61	**824**	T15 - IP	15.77 **128**	M4,5x12 - IP	2.71 **820**	7.17	**810**
74 504 719 / 74 503 719	26.54	**826**	T20 - IP	16.56 **129**	M5x14 - IP	3.85 **821**	11.74	**816**

MaxiLock-D – DCMN 95° – Toolholder with top clamping



ISO designation	Adapter	LPR	BDRED	WF	Insert	Neutral 2D/80 Article no. 74 506 ... £	
		mm	mm	mm			
HSK T63 DCMN N 12	HSK-T 63	115	53	0	CN.. 1204	428.34	**512**
HSK T100 DCMN N 12	HSK-T 100	150	88	0	CN.. 1204	503.81	**712**

XPress type

Key D

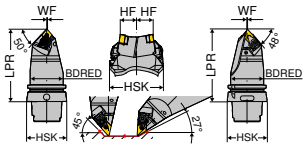
Clamping screw

Carbide type C

Spare parts for Article no.	XPress type 2A/28 Article no. 70 950 ... £		Key D Y7 Article no. 80 950 ... £		Clamping screw 2A/28 Article no. 70 950 ... £		Carbide type C 2A/28 Article no. 70 950 ... £	
74 506 512	21.61	**824**	T15 - IP	15.77 **128**	M4,5x12 - IP	2.71 **820**	7.17	**810**
74 506 712	21.61	**824**	T15 - IP	15.77 **128**	M4,5x12 - IP	2.71 **820**	7.17	**810**

16

MaxiLock-D – DCMN + DDMN – Toolholder with top clamping

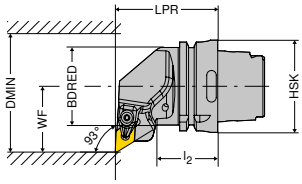


ISO designation	Adapter	LPR	BDRED	WF	HF	Insert	Neutral 2D/80 Article no. 74 600 ... £	
		mm	mm	mm	mm			
HSK T63 DCMN L 12 + DDMN L 15	HSK-T 63	115	53	0.5	20	CN.. 1204 / DN.. 1506	808.47	**501**
HSK T100 DCMN L 12 + DDMN L 15	HSK-T 100	150	88	0.5	20	CN.. 1204 / DN.. 1506	923.12	**701**

Face turning maximum 78 mm

Spare parts	2A/28 XPress type Article no. 70 950 ... £		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide Seat D Article no. 70 950 ... £		2A/28 Carbide type C Article no. 70 950 ... £	
for Article no.										
74 600 501	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**811**	7.17	**810**
74 600 701	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**811**	7.17	**810**

MaxiLock-D – DDUN 93° – Toolholder with top clamping

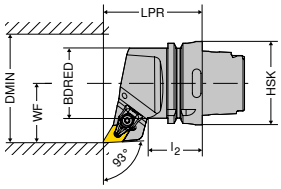


Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 516 ... £		Right-hand 2D/80 Article no. 74 515 ... £	
		mm	mm	mm	mm	mm					
HSK T63 DDUN R/L 15	HSK-T 63	70	42	53	45	125	DN.. 1506	312.25	**515**	312.25	**515**
HSK T100 DDUN R/L 15	HSK-T 100	80	45	88	55	125	DN.. 1506	366.56	**715**	366.56	**715**

Spare parts	2A/28 XPress type Article no. 70 950 ... £		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide Seat D Article no. 70 950 ... £	
for Article no.								
74 516 515 / 74 515 515	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**811**
74 516 715 / 74 515 715	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**811**

MaxiLock-D – DDJN 93° – Toolholder with top clamping

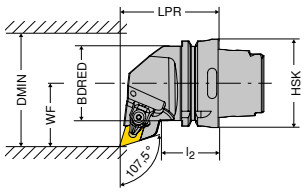


Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 512 ... £		Right-hand 2D/80 Article no. 74 511 ... £	
		mm	mm	mm	mm	mm					
HSK T63 DDJN R/L 15	HSK-T 63	75	42	53	45	125	DN.. 1506	312.25	**515**	312.25	**515**
HSK T100 DDJN R/L 15	HSK-T 100	85	45	88	55	125	DN.. 1506	366.56	**715**	366.56	**715**

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat D Article no. 70 950 ...	
for Article no.	£			£		£		£	
74 512 515 / 74 511 515	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**811**
74 512 715 / 74 511 715	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**811**

MaxiLock-D – DDHN 107.5° – Toolholder with top clamping

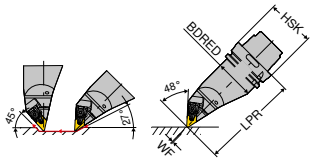


Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 508 ... £		Right-hand 2D/80 Article no. 74 507 ... £	
		mm	mm	mm	mm	mm					
HSK T63 DDHN R/L 15	HSK-T 63	70	42	53	45	125	DN.. 1506	312.25	**515**	312.25	**515**

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat D Article no. 70 950 ...	
for Article no.	£			£		£		£	
74 508 515 / 74 507 515	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**811**

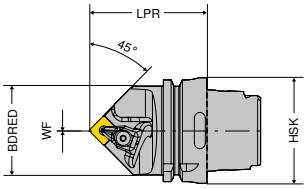
MaxiLock-D – DDMN 48° – Toolholder with top clamping



ISO designation	Adapter	LPR	BDRED	WF	Insert	Left-hand 2D/80 Article no. 74 519 ...	
		mm	mm	mm		£	
HSK T63 DDMN L 15	HSK-T 63	130	53	0	DN.. 1506	428.34	**515**
HSK T100 DDMN L 15	HSK-T 100	160	88	0	DN.. 1506	503.81	**715**

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat D Article no. 70 950 ...	
for Article no.	£		£		£		£	
74 519 515	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**811**
74 519 715	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**811**

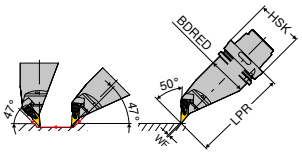
MaxiLock-D – DSDN 45° – Toolholder with top clamping



ISO designation	Adapter	LPR	BDRED	WF	Insert	Neutral 2D/80 Article no. 74 522 ...	
		mm	mm	mm		£	
HSK T63 DSDN N 12	HSK-T 63	70	53	0	SN.. 1204	312.25	**512**
HSK T63 DSDN N 15	HSK-T 63	75	53	0	SN.. 1506	312.25	**515**
HSK T100 DSDN N 12	HSK-T 100	80	88	0	SN.. 1204	366.56	**712**
HSK T100 DSDN N 19	HSK-T 100	85	88	0	SN.. 1906	366.56	**719**

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide support S Article no. 70 950 ...	
for Article no.	£		£		£		£	
74 522 512	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**813**
74 522 515	24.26	**825**	T20 - IP	16.56	**129**	M5x14 - IP	3.85	**821**	10.95	**833**
74 522 712	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	7.17	**813**
74 522 719	26.54	**826**	T20 - IP	16.56	**129**	M5x14 - IP	3.85	**821**	11.74	**817**

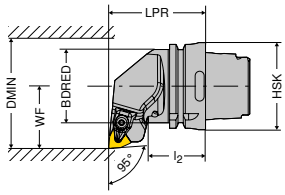
MaxiLock-D – DVMN 50° – Toolholder with top clamping



ISO designation	Adapter	LPR	BDRED	WF	Insert	Left-hand 2D/80 Article no. 74 525 ...	
		mm	mm	mm		£	
HSK T63 DVMN L 16	HSK-T 63	130	53	0	VN.. 1604	497.82	**516**
HSK T100 DVMN L 16	HSK-T 100	160	88	0	VN.. 1604	610.89	**716**

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat V Article no. 70 950 ...	
for Article no.	£		£		£		£	
74 525 516	26.15	**835**	T09 - IP	14.77	**126**	M3x7 - IP	2.85	**819**	5.08	**806**
74 525 716	26.15	**835**	T09 - IP	14.77	**126**	M3x7 - IP	2.85	**819**	5.08	**806**

MaxiLock-D – DWLN 95° – Toolholder with top clamping

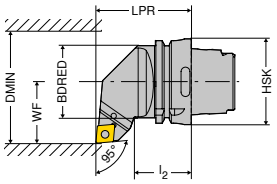


Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 529 ...		Right-hand 2D/80 Article no. 74 528 ...	
		mm	mm	mm	mm	mm		£		£	
HSK T63 DWLN R/L 08	HSK-T 63	70	42	53	45	125	WN.. 0804	312.25	**508**	312.25	**508**
HSK T100 DWLN R/L 08	HSK-T 100	80	45	88	55	125	WN.. 0804	366.56	**708**	366.56	**708**

Spare parts	2A/28 XPress type Article no. 70 950 ...		Y7 Key D Article no. 80 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat W Article no. 70 950 ...	
for Article no.	£		£		£		£	
74 529 508 / 74 528 508	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	9.03	**812**
74 529 708 / 74 528 708	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	9.03	**812**

MaxiLock-S – SCLC 95° – Toolholder with screw clamping

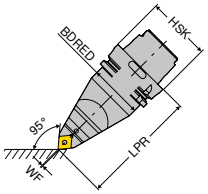


Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 541 ... £		Right-hand 2D/80 Article no. 74 540 ... £	
		mm	mm	mm	mm	mm					
HSK T63 SCLC R/L 12	HSK-T 63	70	42	53	45	100	CC.. 1204	309.24	512	309.24	512

Spare parts		2A/28 Combination Key Article no. 70 950 ... £			2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Carbide type C Article no. 70 950 ... £			2A/28 Threaded sleeve Article no. 70 950 ... £	
for Article no.											
74 541 512 / 74 540 512	T15/SW	7.53	398	M4,5x12	2.34	114	11.25	166	M4,5	4.22	170

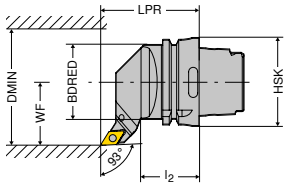
MaxiLock-S – SCMC 50° – Toolholder with screw clamping



ISO designation	Adapter	LPR	BDRED	WF	Insert	Neutral 2D/80 Article no. 74 542 ... £	
		mm	mm	mm			
HSK T63 SCMC N 12	HSK-T 63	115	53	0	CC.. 1204	422.32	512

Spare parts		2A/28 Combination Key Article no. 70 950 ... £			2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Carbide type C Article no. 70 950 ... £			2A/28 Threaded sleeve Article no. 70 950 ... £	
for Article no.											
74 542 512	T15/SW	7.53	398	M4,5x12	2.34	114	11.25	166	M4,5	4.22	170

MaxiLock-S – SDJC 93° – Toolholder with screw clamping

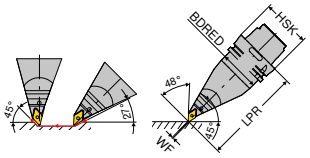


Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 544 ... £		Right-hand 2D/80 Article no. 74 543 ... £	
		mm	mm	mm	mm	mm					
HSK T63 SDJC R/L 11	HSK-T 63	70	42	53	45	100	DC.. 11T3	309.24	511	309.24	511

Spare parts		2A/28 Combination Key Article no. 70 950 ... £			2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide Seat D Article no. 70 950 ... £			2A/28 Threaded sleeve Article no. 70 950 ... £	
for Article no.											
74 544 511 / 74 543 511	T15/SW	7.53	398	M3,5x11	2.85	113	6.81	106	M3,5	4.22	171

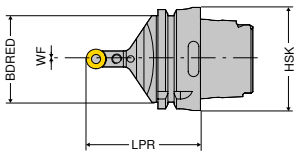
MaxiLock-S – SDMC 48° – Toolholder with screw clamping



ISO designation	Adapter	LPR	BDRED	WF	Insert	Left-hand 2D/80 Article no. 74 546 ... £	
		mm	mm	mm			
HSK T63 SDMC L 11	HSK-T 63	130	53	0	DC.. 11T3	422.32	511

Spare parts		2A/28 Combination Key Article no. 70 950 ... £			2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide Seat D Article no. 70 950 ... £			2A/28 Threaded sleeve Article no. 70 950 ... £	
for Article no.											
74 546 511	T15/SW	7.53	398	M3,5x11	2.85	113	6.81	106	M3,5	4.22	171

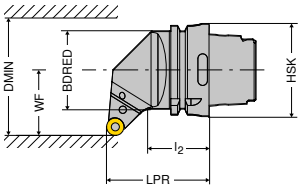
MaxiLock-N – PRDC 0° – Toolholder with lever clamping



ISO designation	Adapter	LPR	BDRED	WF	Insert	Neutral 2D/80 Article no. 74 548 ...	
		mm	mm	mm		£	
HSK T63 PRDC N 12	HSK-T 63	70	53	0	RC.. 1204 MO	312.25	**512**
HSK T100 PRDC N 12	HSK-T 100	80	88	0	RC.. 1204 MO	355.98	**712**
HSK T100 PRDC N 16	HSK-T 100	80	88	0	RC.. 1606 MO	355.98	**716**

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid carbide support R Article no. 70 950 ...	
for Article no.		£		£		£		£		£		£	
74 548 512	SW2,5	2.23	**175**	1.60	**197**	1.11	**191**	14.11	**178**	2.90	**208**	6.45	**215**
74 548 712	SW2,5	2.23	**175**	1.60	**197**	1.11	**191**	14.11	**178**	2.90	**208**	6.45	**215**
74 548 716	SW03	2.23	**176**	1.25	**196**	1.11	**192**	14.60	**387**	3.18	**390**	11.45	**384**

MaxiLock-N – PRSC – Toolholder with lever clamping

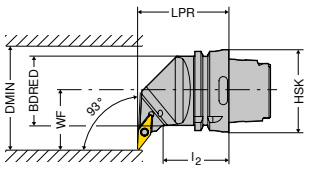


Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 552 ...		Right-hand 2D/80 Article no. 74 551 ...	
		mm	mm	mm	mm	mm		£		£	
HSK T63 PRSC R/L 12	HSK-T 63	70	44	53	45	100	RC.. 1204 MO	312.25	**512**	312.25	**512**
HSK T100 PRSC R/L 12	HSK-T 100	80	57	88	55	106	RC.. 1204 MO	355.98	**712**	355.98	**712**
HSK T100 PRSC R/L 16	HSK-T 100	80	55	88	55	125	RC.. 1606 MO	355.98	**716**	355.98	**716**

Spare parts		2A/28 Key I Article no. 70 950 ...		2A/28 Shim Article no. 70 950 ...		2A/28 Assembly pin Article no. 70 950 ...		2A/28 Lever Article no. 70 950 ...		2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid carbide support R Article no. 70 950 ...	
for Article no.		£		£		£		£		£		£	
74 552 512 / 74 551 512	SW2,5	2.23	**175**	1.60	**197**	1.11	**191**	14.11	**178**	2.90	**208**	6.45	**215**
74 552 712 / 74 551 712	SW2,5	2.23	**175**	1.60	**197**	1.11	**191**	14.11	**178**	2.90	**208**	6.45	**215**
74 552 716 / 74 551 716	SW03	2.23	**176**	1.25	**196**	1.11	**192**	14.60	**387**	3.18	**390**	11.45	**384**

MaxiLock-S – SVUC 93° – Toolholder with screw clamping

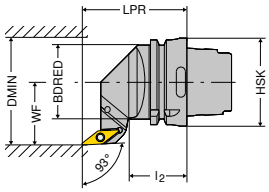


Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 557 ... £		Right-hand 2D/80 Article no. 74 558 ... £	
		mm	mm	mm	mm	mm					
HSK T63 SVUC R/L 16	HSK-T 63	70	42	53	45	100	VC.. 1604	371.00	**516**	371.00	**516**

Spare parts		2A/28 Combination Key Article no. 70 950 ... £			2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide Seat V Article no. 70 950 ... £			2A/28 Threaded sleeve Article no. 70 950 ... £	
for Article no.											
74 557 516 / 74 558 516	T15/SW	7.53	**398**	M3,5x11	2.85	**113**	9.15	**107**	M3,5	4.22	**171**

MaxiLock-S – SVJC 93° – Toolholder with screw clamping

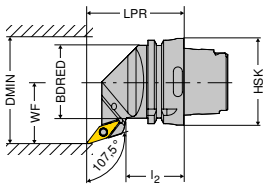


Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 556 ... £		Right-hand 2D/80 Article no. 74 555 ... £	
		mm	mm	mm	mm	mm					
HSK T63 SVJC R/L 16	HSK-T 63	75	42	53	45	100	VC.. 1604	371.00	**516**	371.00	**516**

Spare parts		2A/28 Combination Key Article no. 70 950 ... £			2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide Seat V Article no. 70 950 ... £			2A/28 Threaded sleeve Article no. 70 950 ... £	
for Article no.											
74 556 516 / 74 555 516	T15/SW	7.53	**398**	M3,5x11	2.85	**113**	9.15	**107**	M3,5	4.22	**171**

MaxiLock-S – SVHC 107.5° – Toolholder with screw clamping

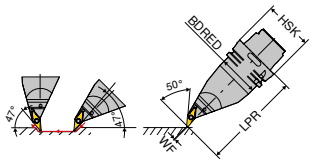


Illustrations show right-hand versions

ISO designation	Adapter	LPR	l_2	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 554 ... £		Right-hand 2D/80 Article no. 74 553 ... £	
		mm	mm	mm	mm	mm					
HSK T63 SVHC R/L 16	HSK-T 63	70	42	53	45	100	VC.. 1604	371.00	516	371.00	516

Spare parts		2A/28 Combination Key Article no. 70 950 ... £			2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide Seat V Article no. 70 950 ... £			2A/28 Threaded sleeve Article no. 70 950 ... £	
for Article no.											
74 554 516 / 74 553 516	T15/SW	7.53	398	M3,5x11	2.85	113	9.15	107	M3,5	4.22	171

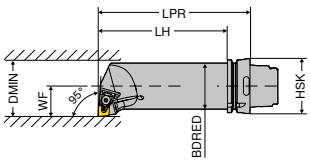
MaxiLock-S – SVMC 50° – Toolholder with screw clamping



ISO designation	Adapter	LPR	BDRED	WF	Insert	Left-hand 2D/80 Article no. 74 560 ... £	
		mm	mm	mm			
HSK T63 SVMC L 16	HSK-T 63	130	53	0	VC.. 1604	497.82	516

Spare parts		2A/28 Combination Key Article no. 70 950 ... £			2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide Seat V Article no. 70 950 ... £			2A/28 Threaded sleeve Article no. 70 950 ... £	
for Article no.											
74 560 516	T15/SW	7.53	398	M3,5x11	2.85	113	9.15	107	M3,5	4.22	171

MaxiLock-D – DCLN 95° – Boring bar with top clamping

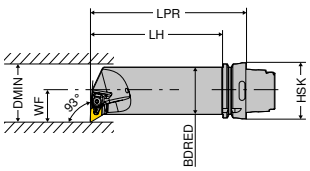


Illustrations show right-hand versions

ISO designation	Adapter	LPR mm	LH mm	BDRED mm	WF mm	DMIN mm	Insert	Left-hand 2D/80 Article no. 74 529 ... £		Right-hand 2D/80 Article no. 74 528 ... £	
HSK T63 50Q DCLN R/L 12	HSK-T 63	175	149	50	35	63	CN.. 1204	428.34	512	428.34	512

Spare parts	2A/28 XPress type Article no. 70 950 ... £		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Carbide type C Article no. 70 950 ... £	
for Article no.								
74 529 512 / 74 528 512	21.61	824	T15 - IP 15.77	128	M4,5x12 - IP 2.71	820	7.17	810

MaxiLock-D – DDUN 93° – Boring bar with top clamping



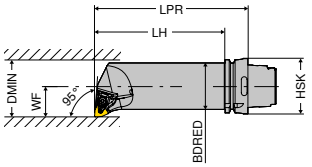
Illustrations show right-hand versions

ISO designation	Adapter	LPR mm	LH mm	BDRED mm	WF mm	DMIN mm	Insert	Left-hand 2D/80 Article no. 74 533 ... £		Right-hand 2D/80 Article no. 74 532 ... £	
HSK T63 50Q DDUN R/L 15	HSK-T 63	175	149	50	35	63	DN.. 1506	428.34	515	428.34	515

Spare parts	2A/28 XPress type Article no. 70 950 ... £		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide Seat D Article no. 70 950 ... £	
for Article no.								
74 533 515 / 74 532 515	21.61	824	T15 - IP 15.77	128	M4,5x12 - IP 2.71	820	7.17	811

16

MaxiLock-D – DWLN 95° – Boring bar with top clamping

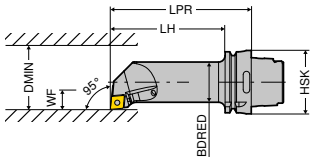


Illustrations show right-hand versions

ISO designation	Adapter	LPR	LH	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 537 ... £		Right-hand 2D/80 Article no. 74 536 ... £	
		mm	mm	mm	mm	mm					
HSK T63 50Q DWLN R/L 08	HSK-T 63	175	149	50	35	63	WN.. 0804	428.34	**508**	428.34	**508**

Spare parts	2A/28 XPress type Article no. 70 950 ... £		Y7 Key D Article no. 80 950 ... £		2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide Seat W Article no. 70 950 ... £	
for Article no.								
74 537 508 / 74 536 508	21.61	**824**	T15 - IP	15.77	**128**	M4,5x12 - IP	2.71	**820**	9.03	**812**

MaxiLock-S – SCLC 95° – Boring bar with screw clamping

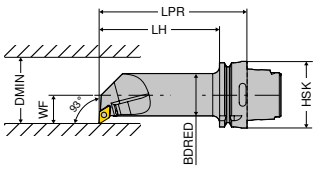


Illustrations show right-hand versions

ISO designation	Adapter	LPR	LH	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 564 ...		Right-hand 2D/80 Article no. 74 563 ...	
		mm	mm	mm	mm	mm		£		£	
HSK T63 40L SCLC R/L 12	HSK-T 63	140	114	40	27	50	CC.. 1204	425.32	**512**	425.32	**512**

Spare parts		2A/28 Combination Key Article no. 70 950 ...			2A/28 Clamping screw Article no. 70 950 ...		2A/28 Carbide type C Article no. 70 950 ...			2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.		£			£		£			£	
74 564 512 / 74 563 512	T15/SW	7.53	**398**	M4,5x12	2.34	**114**	11.25	**166**	M4,5	4.22	**170**

MaxiLock-S – SDUC 93° – Boring bar with screw clamping

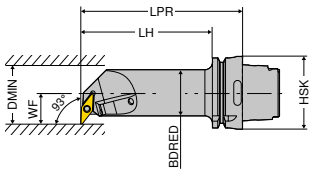


Illustrations show right-hand versions

ISO designation	Adapter	LPR	LH	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 566 ...		Right-hand 2D/80 Article no. 74 565 ...	
		mm	mm	mm	mm	mm		£		£	
HSK T63 40L SDUC R/L 11	HSK-T 63	140	114	40	27	50	DC.. 11T3	425.32	**511**	425.32	**511**

Spare parts		2A/28 Combination Key Article no. 70 950 ...			2A/28 Clamping screw Article no. 70 950 ...		2A/28 Solid Carbide Seat D Article no. 70 950 ...			2A/28 Threaded sleeve Article no. 70 950 ...	
for Article no.		£			£		£			£	
74 566 511 / 74 565 511	T15/SW	7.53	**398**	M3,5x11	2.85	**113**	6.81	**106**	M3,5	4.22	**171**

MaxiLock-S – SVUC 93° – Boring bar with screw clamping

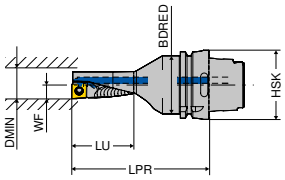


Illustrations show right-hand versions

ISO designation	Adapter	LPR	LH	BDRED	WF	DMIN	Insert	Left-hand 2D/80 Article no. 74 568 ... £		Right-hand 2D/80 Article no. 74 567 ... £	
		mm	mm	mm	mm	mm					
HSK T63 40L SVUC R/L 16	HSK-T 63	140	114	40	27	50	VC.. 1604	494.67	**516**	494.67	**516**

Spare parts		2A/28 Combination Key Article no. 70 950 ... £			2A/28 Clamping screw Article no. 70 950 ... £		2A/28 Solid Carbide Seat V Article no. 70 950 ... £			2A/28 Threaded sleeve Article no. 70 950 ... £	
for Article no.											
74 568 516 / 74 567 516	T15/SW	7.53	**398**	M3,5x11	2.85	**113**	9.15	**107**	M3,5	4.22	**171**

EcoCut – HSK-T 2.25xD

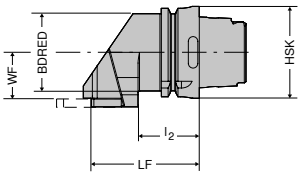


Illustrations show right-hand versions

ISO designation	Adapter	LPR	LU	BDRED	WF	DMIN	Left-hand 2D/80 Article no. 74 591 ... £		Right-hand 2D/80 Article no. 74 590 ... £	
		mm	mm	mm	mm	mm				
HSK T63 EC 25 R/L 2,25D 13	HSK-T 63	125	56.5	53	12.5	25	437.47	**525**	437.47	**525**
HSK T63 EC 32 R/L 2,25D 17	HSK-T 63	125	72.0	53	16.0	32	437.47	**532**	437.47	**532**

Spare parts		Y7 Key D Article no. 80 950 ... £		2A Clamping screw Article no. 70 950 ... £	
for Article no.					
74 590 525 / 74 591 525		13.11	**114**	2.29	**280**
74 590 532 / 74 591 532		13.11	**114**	2.29	**280**

ModularClamp MSS – HSK - T Base Holder 0°



Illustrations show right-hand versions

ISO designation	Adapter	LF	l_2	BDRED	WF	for Grooving Module	Left-hand 2D/80 Article no. 74 581 ... £		Right-hand 2D/80 Article no. 74 580 ... £	
		mm	mm	mm	mm					
HSK T63 E25 R/L 00	HSK-T 63	67	42	53	38.7	E25 R/L...	479.65	**525**	479.65	**525**
HSK T63 E32 R/L 00	HSK-T 63	74	42	53	38.7	E32 R/L...	479.65	**532**	479.65	**532**
HSK T100 E32 R/L 00	HSK-T 100	77	45	88	48.7	E32 R/L...	547.55	**732**	547.55	**732**
HSK T100 E25 R/L 00	HSK-T 100	100	45	88	48.7	E25 R/L...	547.55	**725**	547.55	**725**

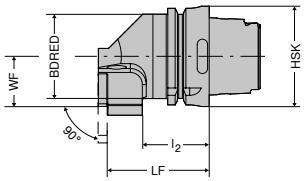
Nozzle

Key D

Clamping screw

Spare parts for Article no.		2D/81 Article no. 70 950 ... £		Y7 Article no. 80 950 ... £		2A/28 Article no. 70 950 ... £	
74 581 525 / 74 580 525	SD 12 x 8	23.36	**850**	T20	13.11	**114**	M5x18	5.20	**404**
74 581 532 / 74 580 532	SD 12 x 8	23.36	**850**	T25	13.49	**115**	M6x20	3.85	**405**
74 581 732 / 74 580 732	SD 12 x 8	23.36	**850**	T25	13.49	**115**	M6x20	3.85	**405**
74 581 725 / 74 580 725	SD 12 x 8	23.36	**850**	T20	13.11	**114**	M5x18	5.20	**404**

ModularClamp MSS – 90° HSK - T Base Holder



Illustrations show right-hand versions

ISO designation	Adapter	LF	l_2	BDRED	WF	for Grooving Module	Left-hand 2D/80 Article no. 74 583 ... £		Right-hand 2D/80 Article no. 74 582 ... £	
		mm	mm	mm	mm					
HSK T63 E32 R/L 90	HSK-T 63	63.7	42	53	31.5	E32 R/L...	479.65	**532**	479.65	**532**
HSK T100 E32 R/L 90	HSK-T 100	73.7	45	88	50.0	E32 R/L...	547.55	**732**	547.55	**732**

Nozzle

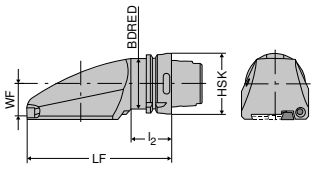
Key D

Clamping screw

Spare parts for Article no.		2D/81 Article no. 70 950 ... £		Y7 Article no. 80 950 ... £		2A/28 Article no. 70 950 ... £	
74 582 532 / 74 583 532	SD 12 x 8	23.36	**850**	T25	13.49	**115**	M6x20	3.85	**405**
74 582 732 / 74 583 732	SD 12 x 8	23.36	**850**	T25	13.49	**115**	M6x20	3.85	**405**

16

MonoClamp – HSK-T Blade Holder GX/LX/FX/SX

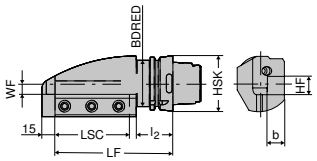


Illustrations show right-hand versions

ISO designation	Adapter	LF mm	l_2 mm	BDRED mm	WF mm	for parting blades	Left-hand 2D/80 Article no. 74 585 ... £		Right-hand 2D/80 Article no. 74 584 ... £	
HSK T63 XCLCF 32 R/L 00	HSK-T 63	150	42	53	32	XLCF R/L 32...	601.90	**532**	601.90	**532**
HSK T100 XCLCF 32 R/L 00	HSK-T 100	160	45	88	45	XLCF R/L 32...	704.84	**732**	704.84	**732**

Spare parts for Article no.		2D/81 Nozzle Article no. 70 950 ... £			Y7 Key D Article no. 80 950 ... £		2A/28 Clamping wedge Article no. 70 950 ... £			2A/28 clamping screw Article no. 70 950 ... £	
74 584 532 / 74 585 532	SD 10 x 7	23.36	**849**	T25	13.49	**115**	56.43	**860**	M6x12	2.02	**861**
74 584 732 / 74 585 732	SD 10 x 7	23.36	**849**	T25	13.49	**115**	56.43	**860**	M6x12	2.02	**861**

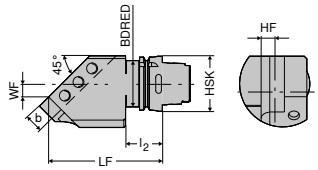
HSK-T square shank adapter 0°



Illustrations show right-hand versions

ISO designation	Adapter	LF	l_2	BDRED	WF	LSC	b	HF	Left-hand 2D/80 Article no. 74 571 ...		Right-hand 2D/80 Article no. 74 570 ...	
		mm	mm	mm	mm	mm	mm	mm	£		£	
HSK T63 SH R/L 00 2525	HSK-T 63	135	42	53	13	85.5	25	25	422.32	**525**	422.32	**532**
HSK T100 SH R/L 00 3232	HSK-T 100	145	45	88	15	87.5	32	32	555.01	**725**	555.01	**732**

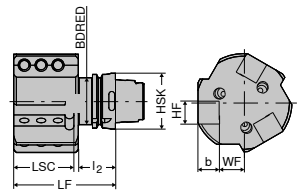
HSK-T square shank adapter 45°



Illustrations show right-hand versions

ISO designation	Adapter	LF	l_2	BDRED	WF	b	HF	Left-hand 2D/80 Article no. 74 573 ...		Right-hand 2D/80 Article no. 74 572 ...	
		mm	mm	mm	mm	mm	mm	£		£	
HSK T63 SH R/L 45 2525	HSK-T 63	140	42	53	15	25	25	454.07	**525**	454.07	**525**
HSK T100 SH R/L 45 3232	HSK-T 100	160	45	88	20	32	32	582.16	**732**	582.16	**732**

HSK-T square shank adapter 3-face 0°



ISO designation	Adapter	LF	l_2	BDRED	WF	LSC	b	HF	Left-hand 2D/80 Article no. 74 576 ...	
		mm	mm	mm	mm	mm	mm	mm	£	
HSK T63 SH3 L 00 2525	HSK-T 63	115	42	53	28	68	25	25	736.27	**525**
HSK T100 SH3 L 00 2525	HSK-T 100	120	45	88	33	70	25	25	1,043.65	**725**

Nozzle

2D/81

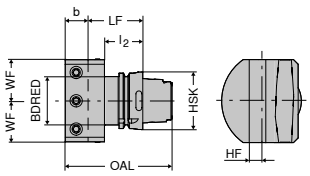
Grubscrew

2D/81

Spare parts		Article no. 70 950 ...			Article no. 70 950 ...	
Adapter		£			£	
HSK-T 100	SD 12 x 8	23.36	**850**	M12x1,75x25	2.03	**851**
HSK-T 63	SD 12 x 8	23.36	**850**	M12x1,75x25	2.03	**851**

16

HSK-T square shank adapter 90°



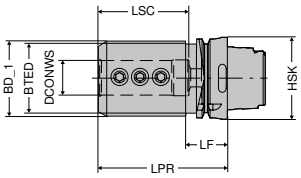
ISO designation	Adapter	LF mm	l_2 mm	BDRED mm	WF mm	OAL mm	HF mm	b mm	Neutral 2D/80 Article no. 74 575 ... £	
HSK T63 SH N 90 2525	HSK-T 63	60	42	53	45	85	25	25	431.33	**525**
HSK T100 SH N 90 3232	HSK-T 100	58	45	88	50	90	32	32	582.16	**732**

Nozzle

Grubscrew

Spare parts for Article no.		2D/81 Article no. 70 950 ... £			2D/81 Article no. 70 950 ... £	
74 575 525	SD 10 x 7	23.36	**849**	M12x1,75x25	2.03	**851**
74 575 732	SD 12 x 8	23.36	**850**	M12x1,75x25	2.03	**851**

HSK-T Boring bar holder



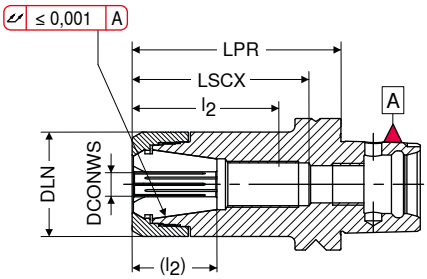
ISO designation	Adapter	LPR mm	DCONWS mm	BD_1 mm	LSC mm	LF mm	BTED mm	2D/80 Article no. 74 577 ... £	
HSK T63 BH08 80	HSK-T 63	80	8	32	41			313.68	**508**
HSK T63 BH10 80	HSK-T 63	80	10	40	41			313.68	**510**
HSK T63 BH12 80	HSK-T 63	80	12	40	41			313.68	**512**
HSK T63 BH16 80	HSK-T 63	80	16	40	51			313.68	**516**
HSK T63 BH20 80	HSK-T 63	80	20	50	51			313.68	**520**
HSK T63 BH25 90	HSK-T 63	90	25	53	61			313.68	**525**
HSK T63 BH32 95	HSK-T 63	95	32	68	61	42	53	313.68	**532**
HSK T100 BH20 90	HSK-T 100	90	20	55	56			399.72	**720**
HSK T100 BH25 95	HSK-T 100	95	25	55	61			399.72	**725**
HSK T100 BH32 110	HSK-T 100	110	32	68	61			399.72	**732**
HSK T100 BH40 120	HSK-T 100	120	40	83	81			399.72	**740**
HSK T100 BH50 125	HSK-T 100	125	50	98	91	45	88	399.72	**750**

ER Precision Collet chuck

- For standard or sealed nuts
- Maximum size collet to ISO tolerance field H10
- For clamping a roll key is required
- p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop

Centro-P



AD
G 2,5 n_{max} 25000

Adapter	DCONWS	LPR	DLN	LSCX	l_2 (l_2)	for collet	Y8 Article no. 84 112 ...	
	mm	mm	mm	mm	mm		£	
PSC 40	1 - 10	55	30	47	29 - 38	426E (ER16)	407.23	402
PSC 40	1 - 13	55	32	44		428E (ER20)	407.23	406
PSC 50	1 - 10	60	30	47	29 - 38	426E (ER16)	407.23	501
PSC 50	1 - 10	100	30	87	29 - 51 (29 - 37)	426E (ER16)	435.79	502
PSC 50	1 - 16	60	40	48		430E (ER25)	407.23	505
PSC 50	2 - 20	60	50	49		470E (ER32)	407.23	507
PSC 63	1 - 10	60	30	44		426E (ER16)	390.07	601
PSC 63	1 - 10	100	30	83	29 - 53 (25 - 39)	426E (ER16)	418.65	602
PSC 63	1 - 13	60	32	44		428E (ER20)	437.65	603
PSC 63	1 - 13	100	32	84	33 - 59	428E (ER20)	466.11	604
PSC 63	1 - 16	60	40	38		430E (ER25)	390.07	605
PSC 63	1 - 16	100	40	78	36 - 62 (30 - 45)	430E (ER25)	418.65	606
PSC 63	1 - 16	130	40	99	34 - 70 (30 - 50)	430E (ER25)	456.66	607
PSC 63	1 - 16	160	40	118	34 - 70 (30 - 50)	430E (ER25)	532.80	608
PSC 63	2 - 20	60	50	42		470E (ER32)	390.07	609
PSC 63	2 - 20	100	50	79	45 - 63 (25 - 45)	470E (ER32)	418.65	610
PSC 63	2 - 20	130	50	99	45 - 63 (25 - 53)	470E (ER32)	456.66	611
PSC 63	3 - 26	65	63	51		472E (ER40)	437.65	612
PSC 63	3 - 26	100	63	86	46 - 50	472E (ER40)	466.11	613
PSC 80	2 - 20	100	50	86	41 - 63 (27 - 45)	470E (ER32)	551.82	804
PSC 80	3 - 26	100	63	86	47 - 55	472E (ER40)	551.82	808

→ Transmittable torque moments, Page 233

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets ( ) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Lock nut IK

Lock nut

Stop screw 2

Stop screw 1

Spare parts for collet	Y8 Article no. 84 950 ... £		Y8 Article no. 84 950 ... £		Article no. 83 950 ... £		Article no. 83 950 ... £	
426E (ER16)	72.78	011	54.05	001	M11x1 - SW6	45.14 341	M11x1 - SW6	30.24 337
428E (ER20)	64.72	012	55.17	002			M14x1 - SW6	18.08 369
430E (ER25)	81.12	013	60.06	003	M18x1,5 - SW6	31.75 432	M18x1,5 - SW6	22.65 431
470E (ER32)	86.74	015	66.06	005	M22x1,5 - SW6	26.82 402	M22x1,5 - SW6	19.53 401
472E (ER40)	118.63	017	96.10	007			M28x1,5 - SW6	27.38 400

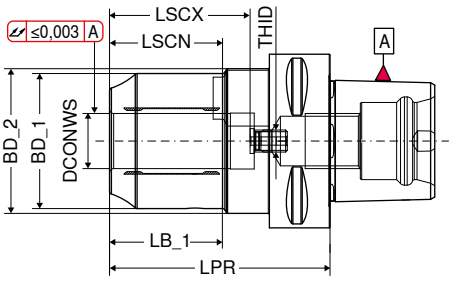
16

High pressure chuck, short and stable version

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw



AD
G 2,5 n_{max} 25000

Y8

Adapter	DCONWS	LPR	LB_1	BD_1	BD_2	LSCX	LSCN	THID	Article no. 84 108 ...	£
	mm	mm	mm	mm	mm	mm	mm			
PSC 63	20	80	41	49	52.5	51	41	M8x1	62000	684.95

→ Min. clamping depth, Page 233

LSCX = Maximum insertion depth
LSCN = Minimum insertion depth

Y7

Cylindrical screw

Y7

Clamping key – T

Y7

Pressure screw

Y7

Stop screw IK

Spare parts		Article no. 83 950 ...			Article no. 80 397 ...			Article no. 83 950 ...			Article no. 83 950 ...		
for Article no.		£			£			£			£		
84 108 62000	M5x5 - SW2,5	2.89	**157**	SW5	6.09	**050**	M10x1x14	8.65	**429**	M16x1x13,5 - SW8	21.78	**424**

Accessories

Reduction sleeve
→ 17|32

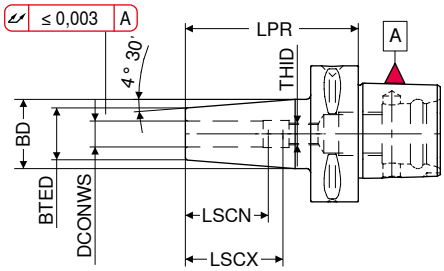
Coolant transfer pipe
→ 173

Others
→ 17|34

Shrink adapters

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Holder **without** IK back stop screw



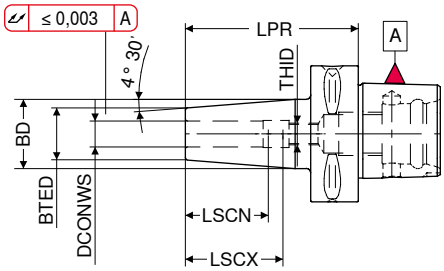
	Adapter	LPR	DCONWS	BTED	BD	LSCX	LSCN	THID	AD G 6,3 n_{max} 15000 Y8 Article no. 84 104 ...		AD G 6,3 n_{max} 15000 Y8 Article no. 84 105 ...		AD G 6,3 n_{max} 15000 Y8 Article no. 84 106 ...	
		mm	mm	mm	mm	mm	mm		£		£		£	
short	PSC 32	65	6	21	27	36	26	M5	250.48	306				
	PSC 32	65	8	21	27	36	26	M6	250.48	308				
	PSC 32	70	10	24	32	41	31	M8x1	250.48	310				
	PSC 32	75	12	24	32	47	37	M10x1	250.48	312				
	PSC 40	75	6	21	27	36	26	M5	255.26	406				
	PSC 40	75	8	21	27	36	26	M6	255.26	408				
	PSC 40	75	10	24	32	41	31	M8x1	255.26	410				
	PSC 40	75	12	24	32	47	37	M10x1	255.26	412				
	PSC 40	80	14	27	34	47	37	M10x1	255.26	414				
	PSC 40	80	16	27	34	50	40	M12x1	255.26	416				
	PSC 40	80	18	33	42	50	40	M12x1	255.26	418				
	PSC 40	85	20	33	42	52	42	M16x1	255.26	420				
	PSC 50	65	3	12	17				316.37	503				
	PSC 50	65	4	12	17				316.37	504				
	PSC 50	65	5	12	17				316.37	505				
	PSC 50	75	6	21	30	36	26	M5	262.62	506				
	PSC 50	75	8	21	30	36	26	M6	262.62	508				
	PSC 50	75	10	24	33	41	31	M8x1	262.62	510				
	PSC 50	75	12	24	33	47	37	M10x1	262.62	512				
	PSC 50	80	14	27	34	47	37	M10x1	262.62	514				
	PSC 50	80	16	27	34	50	40	M12x1	262.62	516				
	PSC 50	80	18	33	42	50	40	M12x1	262.62	518				
	PSC 50	85	20	33	42	52	42	M16x1	262.62	520				
	PSC 50	90	25	44	53	58	48	M16x1	262.62	525				
long	PSC 50	120	6	21	32	36	26	M5			316.37	506		
	PSC 50	120	8	21	32	36	26	M6			316.37	508		
	PSC 50	120	10	24	34	41	31	M8x1			316.37	510		
	PSC 50	120	12	24	34	47	37	M10x1			316.37	512		
	PSC 50	120	14	27	36	47	37	M10x1			316.37	514		
	PSC 50	120	16	27	36	50	40	M12x1			316.37	516		
	PSC 50	120	18	33	42	50	40	M12x1			316.37	518		
	PSC 50	120	20	33	42	52	42	M16x1			316.37	520		
	PSC 50	120	25	44	53	58	48	M16x1			316.37	525		
short	PSC 63	80	3	12	17				389.73	603				
	PSC 63	80	4	12	17				389.73	604				
	PSC 63	80	5	12	17				389.73	605				
	PSC 63	80	6	21	27	36	26	M5	328.63	606				
	PSC 63	80	8	21	27	36	26	M6	328.63	608				
	PSC 63	80	10	24	32	41	31	M8x1	328.63	610				
	PSC 63	80	12	24	32	47	37	M10x1	328.63	612				
	PSC 63	85	14	27	34	47	37	M10x1	328.63	614				
	PSC 63	85	16	27	34	50	40	M12x1	328.63	616				
	PSC 63	85	18	33	42	50	40	M12x1	328.63	618				
	PSC 63	85	20	33	42	52	42	M16x1	328.63	620				
	PSC 63	90	25	44	53	58	48	M16x1	328.63	625				
	PSC 63	95	32	44	53	61	51	M16x1	328.63	632				
long	PSC 63	120	6	21	32	36	26	M5			389.73	606		
	PSC 63	120	8	21	32	36	26	M6			389.73	608		
	PSC 63	120	10	24	32	41	31	M8x1			389.73	610		
	PSC 63	120	12	24	32	47	37	M10x1			389.73	612		
	PSC 63	120	14	27	36	47	37	M10x1			389.73	614		
	PSC 63	120	16	27	36	50	40	M12x1			389.73	616		
	PSC 63	120	18	33	44	50	40	M12x1			389.73	618		
	PSC 63	120	20	33	44	52	42	M16x1			389.73	620		
	PSC 63	120	25	44	53	58	48	M16x1			389.73	625		
	PSC 63	120	32	44	53	61	51	M16x1			389.73	632		

→ Min. clamping depth, Page 233

Shrink adapters

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:
Holder **without** IK back stop screw



AD
G 6,3 n_{max} 15000
Y8

AD
G 6,3 n_{max} 15000
Y8

AD
G 6,3 n_{max} 15000
Y8

	Adapter	LPR mm	DCONWS mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	Article no. 84 104 ... £		Article no. 84 105 ... £		Article no. 84 106 ... £	
extra-long	PSC 63	160	6	21	32	36	26	M5					426.34	606
	PSC 63	160	8	21	32	36	26	M6					426.34	608
	PSC 63	160	10	24	34	41	31	M8x1					426.34	610
	PSC 63	160	12	24	34	47	37	M10x1					426.34	612
	PSC 63	160	14	27	36	47	37	M10x1					426.34	614
	PSC 63	160	16	27	36	50	40	M12x1					426.34	616
	PSC 63	160	18	33	44	50	40	M12x1					426.34	618
	PSC 63	160	20	33	44	52	42	M16x1					426.34	620
	PSC 63	160	25	44	53	58	48	M16x1					426.34	625
	PSC 63	160	32	44	53	61	51	M16x1					426.34	632
short	PSC 80	85	6	21	27	36	26	M5	353.11	806				
	PSC 80	85	8	21	27	36	26	M6	353.11	808				
	PSC 80	85	10	24	32	41	31	M8x1	353.11	810				
	PSC 80	85	12	24	32	47	37	M10x1	353.11	812				
	PSC 80	90	14	27	34	47	37	M10x1	353.11	814				
	PSC 80	90	16	27	34	50	40	M12x1	353.11	816				
	PSC 80	90	18	33	42	50	40	M12x1	353.11	818				
	PSC 80	90	20	33	42	52	42	M16x1	353.11	820				
	PSC 80	95	25	44	53	58	48	M16x1	353.11	825				
	PSC 80	100	32	44	53	61	51	M16x1	353.11	832				
long	PSC 80	120	6	21	32	36	26	M5			421.44	806		
	PSC 80	120	8	21	32	36	26	M6			421.44	808		
	PSC 80	120	10	24	34	41	31	M8x1			421.44	810		
	PSC 80	120	12	24	34	47	37	M10x1			421.44	812		
	PSC 80	120	14	27	36	47	37	M10x1			421.44	814		
	PSC 80	120	16	27	36	50	40	M12x1			421.44	816		
	PSC 80	120	18	33	44	50	40	M12x1			421.44	818		
	PSC 80	120	20	33	44	52	42	M16x1			421.44	820		
	PSC 80	120	25	44	53	58	48	M16x1			421.44	825		
	PSC 80	120	32	44	53	61	51	M16x1			421.44	832		

→ Min. clamping depth, Page 233

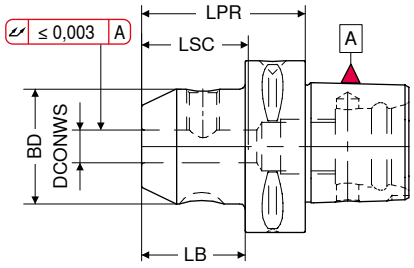
Y8

Backstop screw IK

Spare parts DCONWS	Article no. 84 950 ... £	
6	12.71	140
8	12.71	141
10	12.71	142
12 - 14	12.71	143
16 - 18	12.71	144
20 - 32	12.71	145

Cylindrical shank adapter (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat

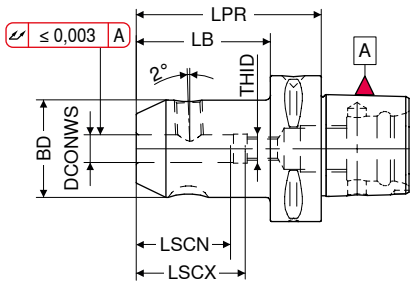


AD
G 6,3 n_{max} 15000
Y8

Adapter	DCONWS	LPR	BD	LB	LSC	Article no. 84 100 ...	
	mm	mm	mm	mm	mm	£	
PSC 32	6	45	25	30	35	206.41	**306**
PSC 32	8	45	28	30	35	206.41	**308**
PSC 32	10	50	35	35	39	206.41	**310**
PSC 32	12	55	42	40	44	206.41	**312**
PSC 40	6	50	25	30	35	226.00	**406**
PSC 40	8	50	28	30	35	226.00	**408**
PSC 40	10	50	35	30	39	226.00	**410**
PSC 40	12	55	42	35	44	226.00	**412**
PSC 40	14	55	44	35	44	226.00	**414**
PSC 40	16	55	48	35	47	226.00	**416**
PSC 50	6	50	25	30	35	230.90	**506**
PSC 50	8	50	28	30	35	230.90	**508**
PSC 50	10	55	35	35	39	230.90	**510**
PSC 50	12	60	42	40	44	230.90	**512**
PSC 50	14	60	44	40	44	230.90	**514**
PSC 50	16	60	48	40	47	230.90	**516**
PSC 50	18	60	50	40	47	230.90	**518**
PSC 50	20	60	52	40	47	230.90	**520**
PSC 50	25	80	65	60	54	230.90	**525**
PSC 63	6	55	25	33	35	255.26	**606**
PSC 63	8	55	28	33	35	255.26	**608**
PSC 63	10	60	35	38	39	255.26	**610**
PSC 63	12	60	42	38	44	255.26	**612**
PSC 63	14	60	44	38	44	255.26	**614**
PSC 63	16	65	48	43	47	255.26	**616**
PSC 63	18	65	50	43	47	255.26	**618**
PSC 63	20	65	52	43	49	255.26	**620**
PSC 63	25	80	65	58	54	255.26	**625**
PSC 63	32	90	72	68	58	255.26	**632**
PSC 63	40	100	80	78	75	255.26	**640**
PSC 80	6	70	25	40	35	279.76	**806**
PSC 80	8	70	28	40	35	279.76	**808**
PSC 80	10	70	35	40	39	279.76	**810**
PSC 80	12	70	42	40	44	279.76	**812**
PSC 80	14	70	44	40	44	279.76	**814**
PSC 80	16	70	48	50	47	279.76	**816**
PSC 80	18	70	50	40	47	279.76	**818**
PSC 80	20	70	52	40	49	279.76	**820**
PSC 80	25	80	65	50	54	279.76	**825**
PSC 80	32	80	72	50	58	279.76	**832**
PSC 80	40	110	80	80	75	279.76	**840**
PSC 80	50	120	100	90	83	279.76	**850**

Cylindrical Shank Adapter (Whistle Notch)

▲ For shanks according to DIN 6535 HE / 1835 E with angled clamping flat



AD
G 6,3 n_{max} 15000

Y8

Adapter	DCONWS	LPR	BD	LB	LSCX	LSCN	THID	Article no. 84 102 ...	
	mm	mm	mm	mm	mm	mm		£	
PSC 32	6	70	25	55	38	28	M5	206.41	**306**
PSC 32	8	70	28	55	38	28	M6	206.41	**308**
PSC 32	10	70	35	55	41	31	M8	206.41	**310**
PSC 32	12	75	42	60	47	37	M10	206.41	**312**
PSC 40	6	70	25	50	38	28	M5	226.00	**406**
PSC 40	8	70	28	50	38	28	M6	226.00	**408**
PSC 40	10	70	35	50	41	31	M8	226.00	**410**
PSC 40	12	75	42	55	47	37	M10	226.00	**412**
PSC 40	14	75	44	55	47	37	M10	226.00	**414**
PSC 50	6	70	25	50	38	28	M5	230.90	**506**
PSC 50	8	70	28	50	38	28	M6	230.90	**508**
PSC 50	10	70	35	50	41	31	M8	230.90	**510**
PSC 50	12	75	42	55	47	37	M10	230.90	**512**
PSC 50	14	75	44	55	47	37	M10	230.90	**514**
PSC 50	16	80	48	60	50	40	M12	230.90	**516**
PSC 50	18	80	50	60	50	40	M12	230.90	**518**
PSC 50	20	85	52	65	52	42	M16	230.90	**520**
PSC 63	6	75	25	53	38	28	M5	255.26	**606**
PSC 63	8	75	28	53	38	28	M6	255.26	**608**
PSC 63	10	75	35	53	41	31	M8	255.26	**610**
PSC 63	12	80	42	58	47	37	M10	255.26	**612**
PSC 63	14	80	44	58	47	37	M10	255.26	**614**
PSC 63	16	80	48	58	50	40	M12	255.26	**616**
PSC 63	18	80	50	58	50	40	M12	255.26	**618**
PSC 63	20	85	52	63	52	42	M16	255.26	**620**
PSC 63	25	90	65	68	58	48	M16	255.26	**625**
PSC 63	32	95	72	73	61	51	M16	255.26	**632**
PSC 80	6	65	25	35	38	28	M5	279.76	**806**
PSC 80	8	65	28	35	38	28	M6	279.76	**808**
PSC 80	10	65	35	35	41	31	M8	279.76	**810**
PSC 80	12	70	42	40	47	37	M10	279.76	**812**
PSC 80	14	70	44	40	47	37	M10	279.76	**814**
PSC 80	16	75	48	45	50	40	M12	279.76	**816**
PSC 80	18	75	50	45	50	40	M12	279.76	**818**
PSC 80	20	80	52	50	52	42	M16	279.76	**820**
PSC 80	25	90	65	60	58	48	M16	279.76	**825**
PSC 80	32	95	72	65	61	51	M16	279.76	**832**

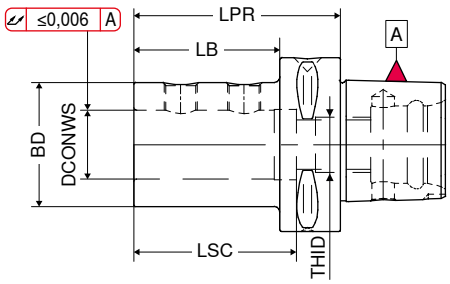
Y8

Backstop screw IK

Spare parts DCONWS		Article no. 84 950 ...	
		£	
6	M5	12.71	**146**
8	M6	12.71	**147**
10	M8	12.71	**148**
12 - 14	M10	12.71	**149**
16 - 18	M12	12.71	**150**
20 - 32	M16	12.71	**151**

Indexable insert drill adapter ISO 26623-1 PSC

▲ Run out ≤ 0.005 mm



AD

Adapter	DCONWS	LPR	BD	LB	LSC	THID	Y8 Article no. 84 128 ... £	
	mm	mm	mm	mm	mm			
PSC 32	16	60	36	45	49	M10x1	340.87	**316**
PSC 32	20	60	40	45	54	M10x1	340.87	**320**
PSC 40	16	60	36	40	49	M10x1	353.11	**416**
PSC 40	20	60	40	40	54	M10x1	353.11	**420**
PSC 40	25	80	45	50	59	M12x1	353.11	**425**
PSC 50	16	65	36	45	49	M10x1	377.49	**516**
PSC 50	20	65	40	45	54	M10x1	377.49	**520**
PSC 50	25	70	45	50	59	M12x1	377.49	**525**
PSC 50	32	75	52	55	63	M12x1	377.49	**532**
PSC 63	16	70	36	48	49	M10x1	377.49	**616**
PSC 63	20	70	40	48	54	M10x1	377.49	**620**
PSC 63	25	75	45	53	59	M12x1	377.49	**625**
PSC 63	32	75	52	53	63	M12x1	377.49	**632**
PSC 63	40	85	65	63	73	M16x1	377.49	**640**
PSC 63	50	115	75	93	83	M16x1	377.49	**650**
PSC 80	16	80	36	50	49	M10x1	450.84	**816**
PSC 80	20	80	40	50	54	M10x1	450.84	**820**
PSC 80	25	85	45	55	59	M12x1	450.84	**825**
PSC 80	32	90	52	60	63	M12x1	450.84	**832**
PSC 80	40	95	65	65	73	M16x1	450.84	**840**
PSC 80	50	100	75	70	83	M16x1	450.84	**850**

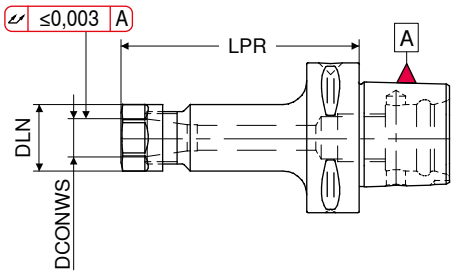
Y8

Grubscrew

Spare parts DCONWS		Article no. 83 950 ... £	
16 - 20	M10x1x10	6.79	**180**
25 - 32	M10x1x12	6.79	**181**
40 - 50	M16x1x13	6.06	**182**

ER Collet chuck

▲ Without an internal thread



AD

G 6,3 n_{max} 15000

Adapter	DCONWS	LPR	DLN	TQX	for collet	Y8 Article no. 84 114 ... £	
	mm	mm	mm	Nm			
PSC 32	1 - 10	45	28	8 - 56	426E (ER16)	182.04	**304**
PSC 40	1 - 10	55	28	8 - 56	426E (ER16)	194.29	**404**
PSC 50	1 - 10	60	28	8 - 56	426E (ER16)	206.41	**504**
PSC 50	1 - 10	100	28	8 - 56	426E (ER16)	243.14	**506**
PSC 63	1 - 10	60	28	8 - 56	426E (ER16)	206.41	**604**
PSC 63	1 - 10	100	28	8 - 56	426E (ER16)	243.14	**606**
PSC 80	1 - 10	60	28	8 - 56	426E (ER16)	230.90	**804**
PSC 80	1 - 10	100	28	8 - 56	426E (ER16)	267.51	**806**

W7

Lock nut

Spare parts for collet		Article no. 62 950 ... £	
426E (ER16)	M22x1,5 - SW25	25.38	**044**

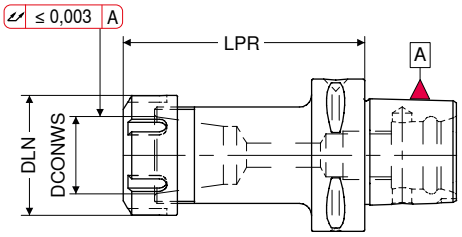
Accessories

ER collet

→ 211, 213

ER Collet chuck

▲ Without an internal thread



AD
G 6,3 n_{max} 15000

Y8

Adapter	DCONWS mm	LPR mm	DLN mm	TQX Nm	for collet	Article no. 84 115 ... £	
PSC 32	1 - 13	45	34	16 - 80	428E (ER20)	182.04	**306**
PSC 40	1 - 13	55	34	16 - 80	428E (ER20)	194.29	**404**
PSC 40	1 - 16	55	42	24 - 104	430E (ER25)	194.29	**406**
PSC 40	2 - 20	55	50	24 - 136	470E (ER32)	194.29	**408**
PSC 50	1 - 13	60	34	16 - 80	428E (ER20)	206.41	**502**
PSC 50	1 - 13	100	34	16 - 80	428E (ER20)	255.26	**504**
PSC 50	1 - 16	60	42	24 - 104	430E (ER25)	206.41	**506**
PSC 50	1 - 16	100	42	24 - 104	430E (ER25)	255.26	**508**
PSC 50	2 - 20	60	50	24 - 136	470E (ER32)	218.66	**510**
PSC 50	2 - 20	100	50	24 - 136	470E (ER32)	267.51	**512**
PSC 50	3 - 26	65	63	176	472E (ER40)	226.00	**514**
PSC 50	3 - 26	100	63	176	472E (ER40)	274.87	**516**
PSC 63	1 - 13	60	34	16 - 80	428E (ER20)	206.41	**602**
PSC 63	1 - 13	100	34	16 - 80	428E (ER20)	255.26	**604**
PSC 63	1 - 16	60	42	24 - 104	430E (ER25)	206.41	**606**
PSC 63	1 - 16	100	42	24 - 104	430E (ER25)	255.26	**608**
PSC 63	2 - 20	60	50	24 - 136	470E (ER32)	218.66	**610**
PSC 63	2 - 20	100	50	24 - 136	470E (ER32)	267.51	**612**
PSC 63	3 - 26	65	63	176	472E (ER40)	226.00	**614**
PSC 63	3 - 26	100	63	176	472E (ER40)	274.87	**616**
PSC 80	1 - 13	65	34	16 - 80	428E (ER20)	279.76	**802**
PSC 80	1 - 13	100	34	16 - 80	428E (ER20)	365.23	**804**
PSC 80	1 - 16	70	42	24 - 104	430E (ER25)	279.76	**806**
PSC 80	1 - 16	100	42	24 - 104	430E (ER25)	365.23	**808**
PSC 80	2 - 20	70	50	24 - 136	470E (ER32)	279.76	**810**
PSC 80	2 - 20	100	50	24 - 136	470E (ER32)	365.23	**812**
PSC 80	3 - 26	80	63	176	472E (ER40)	279.76	**814**
PSC 80	3 - 26	100	63	176	472E (ER40)	365.23	**816**

Spare parts

for collet	W7 Lock nut Article no. 62 950 ...	£		Y8 Lock nut IK Article no. 83 950 ...	£		W7 Lock nut Article no. 62 950 ...	£	
428E (ER20)	M25x1,5 - SW30	20.47	**045**						
430E (ER25)				M32x1,5	76.11	**055**	M32x1,5	21.03	**055**
470E (ER32)				M40x1,5	81.41	**056**	M40x1,5	21.56	**056**
472E (ER40)				M50x1,5	97.97	**057**	M50x1,5	22.33	**057**

Accessories

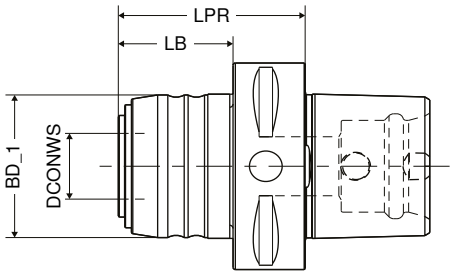
ER collet

→ 211, 213

16

Synchronised quick change tap chuck with minimal length compensation

- Length compensation under tension and compression (LZD)
- For collet types DIN 6499
- $p_{max.}$ = 50 bar

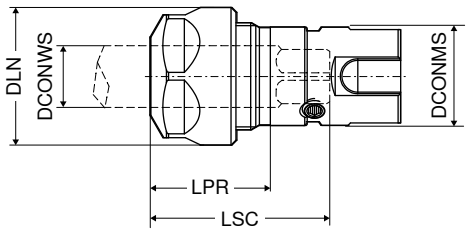


AD

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	LB	LZD±	Y8 Article no. 84 140 ...	
			mm	mm	mm	mm	mm	£	
PSC 63	M3 - M12	1	57	43	20	35	1,0 / 0,2	834.37	**612**
PSC 63	M6 - M20	2	77	60	32	55	1,0 / 0,2	938.27	**620**

Insert for synchro quick change tapping chuck with minimum length compensation

Scope of supply:
Includes lock nut



AD

SZID	DCONWS	cutting range	LPR	DLN	LSC	for collet	DCONMS	Y8 Article no. 83 608 ...	
	mm		mm	mm	mm		mm	£	
1	2 - 10	M3 - M12	24	28	42	426E (ER16)	20	185.88	**012**
2	2 - 16	M6 - M20	28	42	59	430E (ER25)	32	216.51	**020**

Spare parts		W7 Lock nut Article no. 62 950 ...		Y8 Lock nut IK Article no. 83 950 ...		W7 Lock nut Article no. 62 950 ...		Y8 Y clamping key Article no. 83 357 ...	
for Article no.		£		£		£		£	
83 608 012	M22x1,5 - SW25	25.38	**044**	M22x1,5	65.34	**054**				22.20	**116**
83 608 020				M32x1,5	76.11	**055**	M32x1,5	21.03	**055**	22.20	**125**

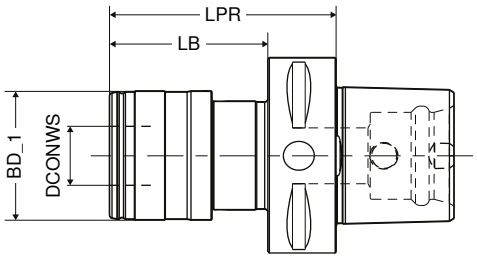
Accessories

ER collet

→ 212, 214–215

Quick change tap chuck with length compensation

▲ Length compensation under tension and compression (LZD)



A

Adapter	cutting range	SZID	LPR	BD_1	DCONWS	LB	LZD±	Y8 Article no. 84 142 ...	
			mm	mm	mm	mm	mm	£	
PSC 63	M3 - M12	01	73	41	19	51	7,5	865.86	**612**
PSC 63	M6 - M20	02	97	60	31	75	10	972.91	**620**

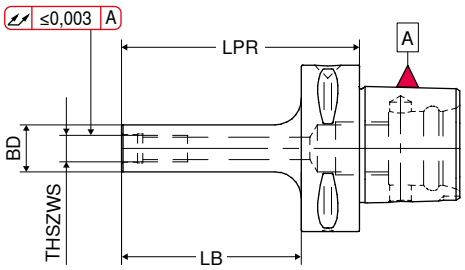
Accessories

Collet

→ 219–223

16

Adapter for screw-in milling cutter



AD
G 2,5 n_{max} 20000
Y8

Adapter	THSZWS	LPR	BD	LB	Article no. 84 110 ...	
		mm	mm	mm	£	
PSC 32	M8	60	13	45	279.76	**302**
PSC 32	M10	70	18	55	279.76	**306**
PSC 40	M8	70	13	50	287.11	**402**
PSC 40	M10	80	18	60	287.11	**405**
PSC 40	M12	80	21	60	287.11	**408**
PSC 50	M8	70	13	50	292.00	**502**
PSC 50	M10	80	18	60	292.00	**505**
PSC 50	M12	80	21	60	292.00	**508**
PSC 50	M16	80	29	60	292.00	**512**
PSC 63	M8	70	13	48	316.37	**602**
PSC 63	M10	90	18	68	316.37	**605**
PSC 63	M12	100	21	78	316.37	**608**
PSC 63	M16	100	29	78	316.37	**612**

Accessories

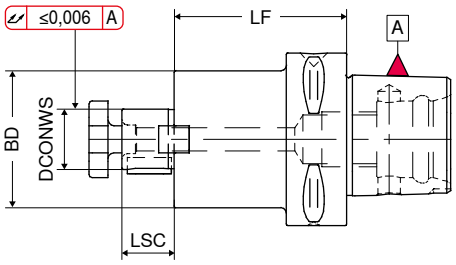
Coolant transfer pipe

→ 173

Shell mill adapters

▲ For cutters with longitudinal or transverse groove

Scope of supply:
Holder with clamping screw and drive key



G 6,3 n_{max} 15000

Adapter	DCONWS	LF	BD	LSC	Y8 Article no. 84 122 ...
	mm	mm	mm	mm	£
PSC 40	16	28	40	17	218.66 **401**
PSC 40	16	63	40	17	230.90 **402**
PSC 40	22	40	50	19	218.66 **411**
PSC 40	22	63	50	19	230.90 **412**
PSC 50	16	28	40	17	218.66 **501**
PSC 50	16	63	40	17	230.90 **502**
PSC 50	22	28	50	19	218.66 **511**
PSC 50	22	63	50	19	230.90 **512**
PSC 50	27	32	50	21	218.66 **521**
PSC 50	27	63	50	21	230.90 **522**
PSC 50	32	40	63	24	218.66 **531**
PSC 50	32	63	63	24	230.90 **532**
PSC 63	16	63	40	17	243.14 **602**
PSC 63	22	28	63	19	230.90 **611**
PSC 63	22	63	50	19	243.14 **612**
PSC 63	27	28	58	21	230.90 **621**
PSC 63	27	63	58	21	243.14 **622**
PSC 63	32	22	63	24	230.90 **631**
PSC 63	32	86	63	24	243.14 **632**
PSC 63	40	40	70	27	267.51 **641**
PSC 80	16	63	40	17	287.11 **802**
PSC 80	22	30	50	19	276.15 **811**
PSC 80	22	63	50	19	287.11 **812**
PSC 80	27	30	58	21	276.15 **821**
PSC 80	27	63	58	21	287.11 **822**
PSC 80	32	30	63	24	276.15 **831**
PSC 80	32	86	63	24	287.11 **832**
PSC 80	40	40	70	27	276.15 **841**

Drive key

Drive dog

Cross nut key

Retaining screw

Clamping screw

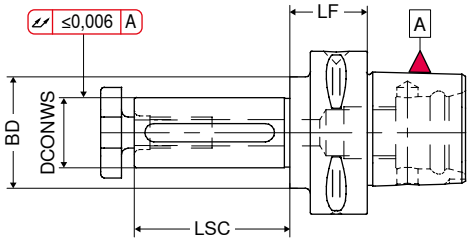
Spare parts DCONWS	Y8 Article no. 84 950 ... £		Y8 Article no. 84 950 ... £		Y8 Article no. 83 368 ... £			Y8 Article no. 83 367 ... £			Y8 Article no. 83 950 ... £	
16	4.78	**108**	10.84	**113**	20.07	**116**	M8	5.33	**016**	M8x25	5.65	**113**
22	4.78	**109**	12.71	**114**	24.96	**122**	M10	5.93	**022**	M10x25	6.38	**124**
27	4.78	**110**	13.76	**115**	29.34	**127**	M12	7.58	**027**	M12x30	7.05	**125**
32	4.78	**111**	15.62	**116**	40.00	**132**	M16	11.90	**032**	M16x35	8.59	**126**
40	4.78	**112**	17.37	**117**	39.72	**140**	M20	12.74	**040**	M20x40	9.47	**112**

16

Milling arbor

- For cutters with long drive slot
- Runout ≤ 0.005 mm

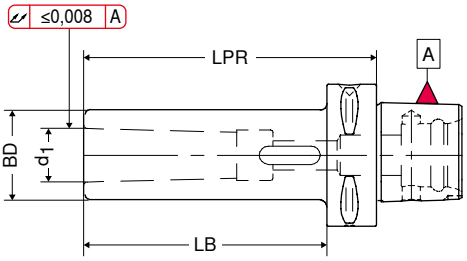
Scope of supply:
Holder with clamping screw and drive key



Adapter	DCONWS	LF	BD	LSC	Y8 Article no. 84 124 ...
	mm	mm	mm	mm	£
PSC 32	16	20	28	30	218.66 **316**
PSC 40	16	25	28	30	230.90 **416**
PSC 40	22	25	36	40	230.90 **422**
PSC 40	27	25	40	60	230.90 **427**
PSC 50	16	25	28	30	230.90 **516**
PSC 50	22	25	36	40	230.90 **522**
PSC 50	27	25	43	60	230.90 **527**
PSC 50	32	25	50	60	230.90 **532**
PSC 63	16	30	28	30	230.90 **616**
PSC 63	22	30	36	40	230.90 **622**
PSC 63	27	30	43	60	230.90 **627**
PSC 63	32	25	48	60	230.90 **632**
PSC 63	40	25	56	60	230.90 **640**
PSC 80	16	40	28	30	267.51 **816**
PSC 80	22	40	36	40	267.51 **822**
PSC 80	27	30	43	60	267.51 **827**
PSC 80	32	30	48	60	267.51 **832**
PSC 80	40	30	56	60	267.51 **840**
PSC 80	50	30	70	60	267.51 **850**
PSC 80	60	30	60	60	267.51 **860**

Spare parts DCONWS	Y8 Drive key Article no. 84 950 ... £		Y8 Cross nut key Article no. 83 368 ... £			Y8 Retaining screw Article no. 83 367 ... £	
16	4.78	**101**	20.07	**116**	M8	5.33	**016**
22	4.78	**102**	24.96	**122**	M10	5.93	**022**
27	4.78	**103**	29.34	**127**	M12	7.58	**027**
32	4.78	**104**	40.00	**132**	M16	11.90	**032**
40	4.78	**105**	39.72	**140**	M20	12.74	**040**
50	4.78	**106**	56.62	**150**	M24	32.41	**050**
60	4.78	**107**					

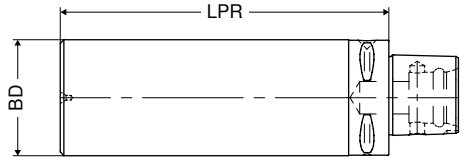
Taper sleeve DIN6383 for DIN 228-2D Morse taper shanks



Adapter	d_1	LPR	BD	LB	Y8 Article no. 84 126 ... £	
		mm	mm	mm		
PSC 40	MK2	110	32	90	230.90	**402**
PSC 40	MK3	130	40	119	243.14	**403**
PSC 50	MK2	110	32	90	243.14	**502**
PSC 50	MK3	130	40	110	255.26	**503**
PSC 50	MK4	150	48	132	267.51	**504**
PSC 63	MK2	110	32	88	243.14	**602**
PSC 63	MK3	130	40	108	255.26	**603**
PSC 63	MK4	150	48	128	267.51	**604**
PSC 80	MK2	120	32	90	279.76	**802**
PSC 80	MK3	140	40	110	304.13	**803**
PSC 80	MK4	160	48	130	328.63	**804**

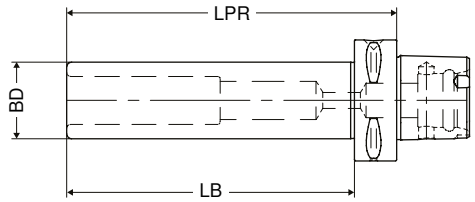
Blank

- Material: 25CrMoV4
- For production of special tools
- Taper hardened and ground
- Special tool area in soft state



Adapter	LPR	BD	Y8 Article no. 84 134 ...
	mm	mm	£
PSC 40	95	40	169.79 **402**
PSC 40	120	40	182.04 **403**
PSC 40	165	60	194.29 **404**
PSC 40	75	80	218.66 **405**
PSC 40	120	80	230.90 **406**
PSC 40	85	100	243.14 **408**
PSC 50	125	50	194.29 **502**
PSC 50	150	50	206.41 **503**
PSC 50	175	75	230.90 **504**
PSC 50	80	90	243.14 **506**
PSC 50	150	95	255.26 **508**
PSC 50	90	110	243.14 **510**
PSC 63	180	63	230.90 **602**
PSC 63	195	75	243.14 **604**
PSC 63	85	110	243.14 **606**
PSC 63	180	120	365.23 **608**
PSC 63	95	130	279.76 **610**
PSC 80	200	80	279.76 **802**
PSC 80	160	120	279.76 **804**
PSC 80	90	130	267.51 **806**
PSC 80	200	145	304.13 **808**

Test bar



Adapter	LPR	BD	LB	Y8 Article no. 84 136 ...	
	mm	mm	mm	£	
PSC 32	175	25	160	822.83	**030**
PSC 40	180	25	160	912.62	**040**
PSC 50	235	32	215	974.90	**050**
PSC 63	322	40	300	1,026.20	**060**
PSC 80	330	40	300	1,231.45	**080**

Coolant pipe

Scope of supply:
Complete, including seals

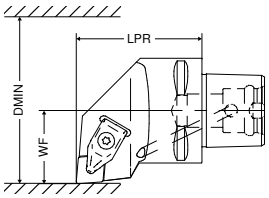
Size	G	Y8 Article no. 84 116 ... £	
PSC 40	M14 x 1,5	43.20	**04000**
PSC 50	M16 x 1,5	45.42	**05000**
PSC 63	M20 x 1,5	47.66	**06300**
PSC 80	M20 x 1,5	59.37	**08000**

Key

Size	Y8 Article no. 84 117 ... £	
PSC 40	38.80	**04000**
PSC 50	41.56	**05000**
PSC 63	44.40	**06300**
PSC 80	60.04	**08000**

16

Toolholder DCLN 95°/80°

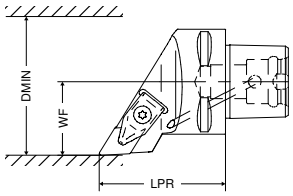


Illustrations show right-hand versions

ISO designation	Adapter	WF	LPR	DMIN	Insert	Left-hand Y8 Article no. 84 151 ... £		Right-hand Y8 Article no. 84 150 ... £	
		mm	mm	mm					
PSC40 DCLN R/L 27050-12	PSC 40	27	50	75	CN.. 1204	254.68	**400**	254.68	**400**
PSC50 DCLN R/L 35060-12	PSC 50	35	60	95	CN.. 1204	284.07	**500**	284.07	**500**
PSC63 DCLN R/L 45065-12	PSC 63	45	65	110	CN.. 1204	328.03	**600**	328.03	**600**

Spare parts	Y8 Clamping claw Article no. 84 950 ...		Y8 Clamping screw Article no. 84 950 ...		Y8 Carbide seat Article no. 84 950 ...		Y8 Threaded bush Article no. 84 950 ...	
Adapter	£		£		£		£	
PSC 40	84.08	**118**	19.37	**132**	21.81	**136**	10.50	**121**
PSC 50	84.08	**118**	19.37	**132**	21.81	**136**	10.50	**121**
PSC 63	84.08	**118**	19.37	**132**	21.81	**136**	10.50	**121**

Toolholder – DDJN 93°/55°

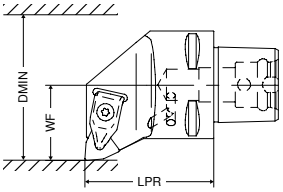


Illustrations show right-hand versions

ISO designation	Adapter	WF	LPR	DMIN	Insert	Left-hand Y8 Article no. 84 153 ... £		Right-hand Y8 Article no. 84 152 ... £	
		mm	mm	mm					
PSC40 DDJN R/L 27055-15	PSC 40	27	55	85	DN.. 1506	254.68	**400**	254.68	**400**
PSC50 DDJN R/L 35060-15	PSC 50	35	60	95	DN.. 1506	284.07	**500**	284.07	**500**
PSC63 DDJN R/L 45065-15	PSC 63	45	65	110	DN.. 1506	328.03	**600**	328.03	**600**

Spare parts	Y8 Clamping claw Article no. 84 950 ...		Y8 Clamping screw Article no. 84 950 ...		Y8 Carbide seat Article no. 84 950 ...	
Adapter	£		£		£	
PSC 40	84.08	**118**	19.37	**132**	26.59	**137**
PSC 50	84.08	**118**	19.37	**132**	26.59	**137**
PSC 63	84.08	**118**	19.37	**132**	26.59	**137**

Toolholder – DWLN 95°/80°

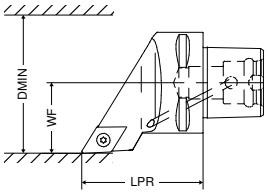


Illustrations show right-hand versions

ISO designation	Adapter	WF	LPR	DMIN	Insert	Left-hand Y8 Article no. 84 155 ... £		Right-hand Y8 Article no. 84 154 ... £	
		mm	mm	mm					
PSC40 DWLN R/L 27050-08	PSC 40	27	50	75	WN.. 0804	254.68	**400**	254.68	**400**
PSC50 DWLN R/L 35060-08	PSC 50	35	60	95	WN.. 0804	284.07	**500**	284.07	**500**
PSC63 DWLN R/L 45065-08	PSC 63	45	65	110	WN.. 0804	328.03	**600**	328.03	**600**

Spare parts		Y8 Clamping claw Article no. 84 950 ... £		Y8 Clamping screw Article no. 84 950 ... £		Y8 Carbide seat Article no. 84 950 ... £	
Adapter							
PSC 40		84.08	**118**	20.77	**133**	21.81	**138**
PSC 50		84.08	**118**	20.77	**133**	21.81	**138**
PSC 63		84.08	**118**	20.77	**133**	21.81	**138**

Toolholder – SDJC 93°/55°

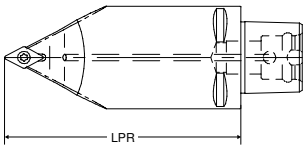


Illustrations show right-hand versions

ISO designation	Adapter	WF	LPR	DMIN	Insert	Left-hand Y8 Article no. 84 157 ... £		Right-hand Y8 Article no. 84 156 ... £	
		mm	mm	mm					
PSC40 SDJC R/L 27050-11	PSC 40	27	50	80	DC.. 11T3	254.68	**400**	254.68	**400**
PSC50 SDJC R/L 35060-11	PSC 50	35	60	95	DC.. 11T3	284.07	**500**	284.07	**500**
PSC63 SDJC R/L 45065-11	PSC 63	45	65	110	DC.. 11T3	328.03	**600**	328.03	**600**

Spare parts		Y8 Clamping screw Article no. 84 950 ... £		Y8 Carbide seat Article no. 84 950 ... £	
Adapter					
PSC 40		23.21	**134**	16.09	**139**
PSC 50		23.21	**134**	16.09	**139**
PSC 63		23.21	**134**	16.09	**139**

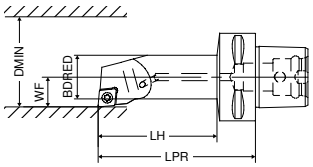
Toolholder – SDNC 62,5°/55°

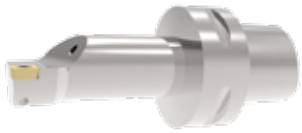


ISO designation	Adapter	LPR mm	Insert	Neutral Y8 Article no. 84 158 ... £	
PSC40 SDNC N 00115-11	PSC 40	115	DC.. 11T3	364.65	**400**
PSC50 SDNC N 00115-11	PSC 50	115	DC.. 11T3	382.97	**500**
PSC63 SDNC N 00115-11	PSC 63	115	DC.. 11T3	438.01	**600**

Spare parts	Y8 Clamping screw Article no. 84 950 ...		Y8 Carbide seat Article no. 84 950 ...	
Adapter	£		£	
PSC 40	23.21	**134**	16.09	**139**
PSC 50	23.21	**134**	16.09	**139**
PSC 63	23.21	**134**	16.09	**139**

Boring bar SCLC 95°/80°





Illustrations show right-hand versions

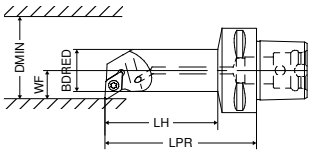
ISO designation	Adapter	WF	LPR	BDRED	LH	DMIN	Insert	Left-hand Y8 Article no. 84 171 ... £		Right-hand Y8 Article no. 84 170 ... £	
		mm	mm	mm	mm	mm					
PSC40 SCLC R/L 13080-09	PSC 40	13	80	20	57	25	CC.. 09T3	346.34	**400**	346.34	**400**
PSC50 SCLC R/L 17090-09	PSC 50	17	90	25	68	32	CC.. 09T3	382.97	**500**	382.97	**500**

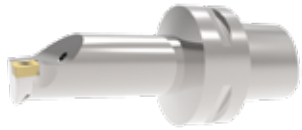
Y8

Clamping screw

Spare parts	Article no. 84 950 ... £	
Adapter		
PSC 40	10.95	**152**
PSC 50	10.95	**152**

Boring bar SDUC 93°/55°





Illustrations show right-hand versions

ISO designation	Adapter	WF	LPR	BDRED	LH	DMIN	Insert	Left-hand Y8 Article no. 84 173 ... £		Right-hand Y8 Article no. 84 172 ... £	
		mm	mm	mm	mm	mm					
PSC40 SDUC R/L 13080-11	PSC 40	13	80	20	57	25	DC.. 11T3	346.34	**400**	346.34	**400**
PSC50 SDUC R/L 17090-11	PSC 50	17	90	25	67	32	DC.. 11T3	382.97	**500**	382.97	**500**
PSC50 SDUC R/L 22110-11	PSC 50	22	110	32	67	40	DC.. 11T3	382.97	**501**	382.97	**501**

Y8

Clamping screw

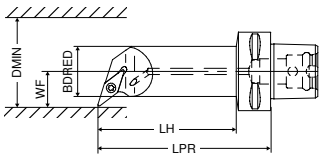
Y8

Carbide seat

Spare parts	Article no. 84 950 ... £		Article no. 84 950 ... £	
Adapter				
PSC 40	23.21	**134**	16.09	**139**
PSC 50	23.21	**134**	16.09	**139**

16

Boring bar SVQC 107,5°/35°



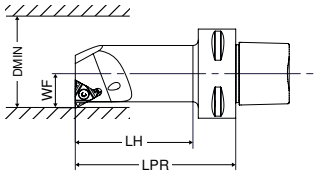
Illustrations show right-hand versions

ISO designation	Adapter	WF	LPR	BDRED	LH	DMIN	Insert	Left-hand Y8 Article no. 84 175 ... £		Right-hand Y8 Article no. 84 174 ... £	
		mm	mm	mm	mm	mm					
PSC40 SVQC R/L 18090-16	PSC 40	18	90	25	68	32	VC.. 1604	438.01	**400**	438.01	**400**
PSC50 SVQC R/L 22110-16	PSC 50	22	110	32	88	40	VC.. 1604	474.61	**500**	474.61	**500**
PSC63 SVQC R/L 22120-16	PSC 63	22	120	32	94	40	VC.. 1604	547.97	**600**	547.97	**600**
PSC63 SVQC R/L 27145-16	PSC 63	27	145	40	120	50	VC.. 1604	547.97	**601**	547.97	**601**

Clamping screw

Spare parts	Y8 Article no. 84 950 ... £	
Adapter		
PSC 40	19.37	**132**
PSC 50	19.37	**132**
PSC 63	19.37	**132**

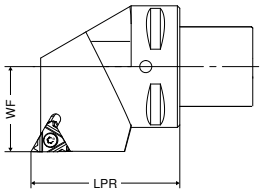
Internal threading holder



Illustrations show right-hand versions

ISO designation	Adapter	WF	LPR	LH	DMIN	Left-hand Y8 Article no. 84 197 ...		Right-hand Y8 Article no. 84 196 ...	
		mm	mm	mm	mm	£		£	
PSC40 SI R/L 12060-16.IK	PSC 40	12	60	37	20	510.20	410	510.20	410
PSC40 SI R/L 14060-16.IK	PSC 40	14	60	38	25	510.20	412	510.20	412
PSC40 SI R/L 17070-16.IK	PSC 40	17	70	48	32	510.20	414	510.20	414
PSC40 SI R/L 22090-16.IK	PSC 40	22	90	69	40	510.20	416	510.20	416
PSC40 SI R/L 27080-16.IK	PSC 40	27	80	60	50	510.20	418	510.20	418
PSC40 SI R/L 15065-22.IK	PSC 40	15	65	42	25	510.20	420	510.20	420
PSC40 SI R/L 19070-22.IK	PSC 40	19	70	48	32	510.20	422	510.20	422
PSC40 SI R/L 22090-22.IK	PSC 40	22	90	69	40	510.20	424	510.20	424
PSC40 SI R/L 27080-22.IK	PSC 40	27	80	60	50	510.20	426	510.20	426
PSC50 SI R/L 12060-16.IK	PSC 50	12	60	35	20	567.79	510	567.79	510
PSC50 SI R/L 14060-16.IK	PSC 50	14	60	36	25	567.79	512	567.79	512
PSC50 SI R/L 17070-16.IK	PSC 50	17	70	47	32	567.79	514	567.79	514
PSC50 SI R/L 22090-16.IK	PSC 50	22	90	68	40	567.79	516	567.79	516
PSC50 SI R/L 27105-16.IK	PSC 50	27	105	84	50	567.79	518	567.79	518
PSC50 SI R/L 15065-22.IK	PSC 50	15	65	41	25	567.79	520	567.79	520
PSC50 SI R/L 19070-22.IK	PSC 50	19	70	47	32	567.79	522	567.79	522
PSC50 SI R/L 22090-22.IK	PSC 50	22	90	68	40	567.79	524	567.79	524
PSC50 SI R/L 27105-22.IK	PSC 50	27	105	84	50	567.79	526	567.79	526
PSC63 SI R/L 14070-16.IK	PSC 63	14	70	42	25	653.15	610	653.15	610
PSC63 SI R/L 17075-16.IK	PSC 63	17	75	48	32	653.15	612	653.15	612
PSC63 SI R/L 22090-16.IK	PSC 63	22	90	64	40	653.15	614	653.15	614
PSC63 SI R/L 27105-16.IK	PSC 63	27	105	80	50	653.15	616	653.15	616
PSC63 SI R/L 19075-22.IK	PSC 63	19	75	48	32	653.15	620	653.15	620
PSC63 SI R/L 22090-22.IK	PSC 63	22	90	64	40	653.15	622	653.15	622
PSC63 SI R/L 27105-22.IK	PSC 63	27	105	80	50	653.15	624	653.15	624

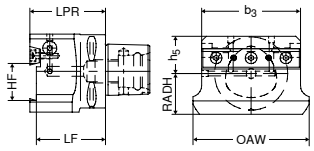
External threading holder



Illustrations show right-hand versions

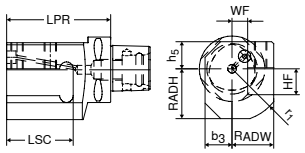
ISO designation	Adapter	LPR	WF	Left-hand Y8 Article no. 84 191 ...		Right-hand Y8 Article no. 84 190 ...	
		mm	mm	£		£	
PSC40 SE R/L 27050-16.IK	PSC 40	50	27	365.23	412	365.23	412
PSC40 SE R/L 27050-22.IK	PSC 40	50	27	365.23	422	365.23	422
PSC50 SE R/L 35060-16.IK	PSC 50	60	35	403.02	512	403.02	512
PSC50 SE R/L 35060-22.IK	PSC 50	60	35	403.02	522	403.02	522
PSC63 SE R/L 45065-16.IK	PSC 63	65	45	462.60	612	462.60	612
PSC63 SE R/L 45065-22.IK	PSC 63	65	45	462.60	622	462.60	622
PSC80 SE R/L 55080-22.IK	PSC 80	80	55	488.38	822	488.38	822

Radial parting blade holder, right / left



Adapter	HF	LPR	OAW	b_3	h_5	RADH	LF	Neutral Y8 Article no. 84 132 ...	
	mm	mm	mm	mm	mm	mm	mm	£	
PSC 63	26	65	91	75	30	30	60	389.73	626
PSC 63	32	65	100	85	32	35	88	389.73	632

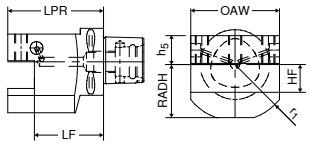
Square section adapter, single face



Illustrations show right-hand versions

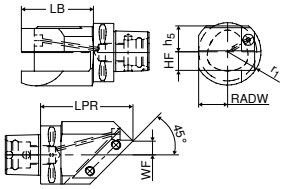
Adapter	HF	LPR	b_3	RADW	r_1	WF	h_5	RADH	LSC	Left-hand Y8 Article no. 84 611 ...		Right-hand Y8 Article no. 84 610 ...	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	£		£	
PSC 50	20	80	26	35	45	15	26	43	53	316.37	520	316.37	520
PSC 50	25	90	26	40	51	15	26	48	64	316.37	525	316.37	525
PSC 50	32	115	26	47	61	15	26	55	90	316.37	532	316.37	532
PSC 63	20	90	26	35	45	15	26	43	53	365.23	620	365.23	620
PSC 63	25	100	26	40	51	15	26	48	64	365.23	625	365.23	625
PSC 63	32	125	26	47	61	15	26	55	90	365.23	632	365.23	632
PSC 80	20	90	26	35	45	15	26	43	53	438.60	820	438.60	820
PSC 80	25	100	26	40	51	15	26	48	64	438.60	825	438.60	825
PSC 80	32	125	26	47	61	15	26	55	90	438.60	832	438.60	832

Square section adapter



Adapter	HF	LPR	OAW	r_1	RADH	h_5	LF	Neutral Y8 Article no. 84 602 ...	
	mm	mm	mm	mm	mm	mm	mm	£	
PSC 50	20	70	70	45	69	43	50	316.37	520
PSC 50	25	80	80	51	74	48	55	328.63	525
PSC 50	32	90	90	61	81	55	58	353.11	532
PSC 63	20	80	70	45	69	43	60	365.23	620
PSC 63	25	90	80	51	74	48	65	389.73	625
PSC 63	32	100	90	61	81	55	68	414.09	632
PSC 80	20	80	70	45	69	43	60	389.73	820
PSC 80	25	90	80	51	74	48	65	414.09	825
PSC 80	32	100	90	61	81	55	68	438.60	832

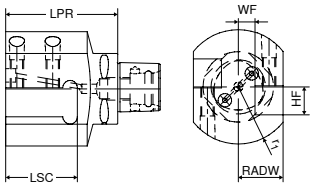
Square section adapter 45°

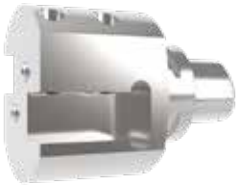


Illustrations show right-hand versions

Adapter	HF	LPR	RADW	r_1	WF	h_5	LB	Left-hand Y8 Article no. 84 605 ...		Right-hand Y8 Article no. 84 604 ...	
	mm	mm	mm	mm	mm	mm	mm	£		£	
PSC 50	20	100	31	36	15	26	80	316.37	**520**	316.37	**520**
PSC 63	20	100	32	36	15	28	78	377.49	**620**	377.49	**620**
PSC 80	32	135	45	70	17	40	105	426.34	**832**	426.34	**832**

Square section adapter, double face

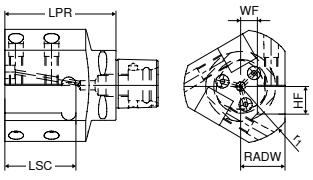




Illustrations show right-hand versions

Adapter	HF	LPR	RADW	r_1	WF	LSC	Left-hand Y8 Article no. 84 613 ...		Right-hand Y8 Article no. 84 612 ...	
	mm	mm	mm	mm	mm	mm	£		£	
PSC 50	20	80	35	45	15	53	536.31	**520**	536.31	**520**
PSC 50	25	90	40	51	15	64	548.56	**525**	548.56	**525**
PSC 50	32	115	47	61	15	90	560.68	**532**	560.68	**532**
PSC 63	20	90	35	45	15	53	560.68	**620**	560.68	**620**
PSC 63	25	100	40	51	15	64	572.93	**625**	572.93	**625**
PSC 63	32	125	47	61	15	90	585.18	**632**	585.18	**632**
PSC 80	20	90	35	45	15	53	670.64	**820**	670.64	**820**
PSC 80	25	100	40	51	15	64	682.91	**825**	682.91	**825**
PSC 80	32	125	47	61	15	90	695.15	**832**	695.15	**832**

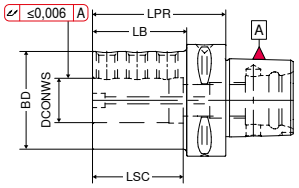
Square section adapter, triple face



Illustrations show right-hand versions

Adapter	HF	LPR	RADW	r_1	WF	LSC	Left-hand Y8 Article no. 84 615 ...		Right-hand Y8 Article no. 84 614 ...	
	mm	mm	mm	mm	mm	mm	£		£	
PSC 50	20	80	35	45	15	53	719.50	**520**	719.50	**520**
PSC 50	25	90	40	51	15	64	731.76	**525**	731.76	**525**
PSC 50	32	115	47	61	15	90	756.24	**532**	756.24	**532**
PSC 63	20	90	35	45	15	53	841.72	**620**	841.72	**620**
PSC 63	25	100	40	51	15	64	878.34	**625**	878.34	**625**
PSC 63	32	125	47	61	15	90	902.84	**632**	902.84	**632**
PSC 80	20	90	35	45	15	53	1,012.79	**820**	1,012.79	**820**
PSC 80	25	100	40	51	15	64	1,037.17	**825**	1,037.17	**825**
PSC 80	32	125	47	61	15	90	1,061.66	**832**	1,061.66	**832**

Boring bar holder



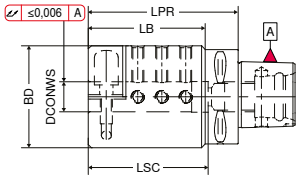
Adapter	DCONWS	LPR	BD	LB	LSC	Y8 Article no. 84 130 ...	
	mm	mm	mm	mm	mm	£	
PSC 50	6	70	40	50	40	279.76	**506**
PSC 50	8	70	44	50	40	279.76	**508**
PSC 50	10	70	44	50	45	279.76	**510**
PSC 50	12	70	44	50	45	279.76	**512**
PSC 50	16	75	44	55	45	279.76	**516**
PSC 50	20	75	50	75	51	279.76	**520**
PSC 50	25	80	55	50	51	279.76	**525**
PSC 50	32	90	72	70	60	279.76	**532**
PSC 63	6	75	40	53	40	279.76	**606**
PSC 63	8	75	44	53	40	279.76	**608**
PSC 63	10	75	44	53	45	279.76	**610**
PSC 63	12	75	44	53	45	279.76	**612**
PSC 63	16	75	44	53	45	279.76	**616**
PSC 63	20	75	50	53	51	279.76	**620**
PSC 63	25	75	55	53	51	279.76	**625**
PSC 63	32	75	72	52	60	279.76	**632**
PSC 63	40	105	70	82	90	279.76	**640**

Grubscrew

Spare parts DCONWS		Article no. 84 950 ... £	
6	M6x16	6.44	**153**
8	M8x16	6.44	**154**
10	M10x16	6.44	**155**
12 - 40	M12x14	6.44	**156**

Boring bar adapter, split version

- Vibration-damped
- Ideally suited for large overhangs



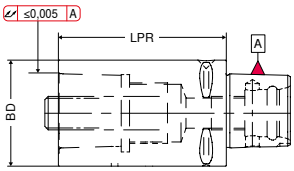
Adapter	DCONWS	LPR	BD	LB	LSC	Y8 Article no. 84 131 ...	
	mm	mm	mm	mm	mm	£	
PSC 63	6	80	40	58	60	340.87	**606**
PSC 63	8	85	45	63	65	340.87	**608**
PSC 63	10	85	50	63	65	340.87	**610**
PSC 63	12	100	63	78	80	340.87	**612**
PSC 63	16	100	63	78	80	340.87	**616**
PSC 63	20	100	68	78	80	340.87	**620**
PSC 63	25	100	68	78	80	340.87	**625**
PSC 63	32	100	72	78	80	340.87	**632**

Spare parts DCONWS	Y8 Grubscrew Article no. 83 950 ...			Y8 Grubscrew Article no. 84 950 ...			Y8 Stop screw IK Article no. 81 950 ...		
		£			£			£	
6							M5x15	2.83	**050**
8	M6x20	3.28	**462**						
10				M6x16	6.44	**153**			
12 - 20	M8x20	3.28	**468**						
25	M8x25	3.28	**467**						
32	M10x20	3.28	**471**						

16

Extension, axial clamping

▲ Run out ≤ 0,002mm



Adapter	BD	LPR	Y8 Article no. 84 620 ...	
	mm	mm	£	
PSC 32	32	60	230.90	**301**
PSC 32	32	80	230.90	**302**
PSC 40	40	60	243.14	**401**
PSC 40	40	80	243.14	**402**
PSC 50	50	80	255.26	**501**
PSC 50	50	100	255.26	**502**
PSC 63	63	100	267.51	**601**
PSC 63	63	140	267.51	**602**
PSC 80	80	100	279.76	**801**
PSC 80	80	125	279.76	**802**

Threaded ring

Tightening screw

Spare parts	Y8 Article no. 84 950 ...			Y8 Article no. 84 950 ...	
Adapter	£			£	
PSC 32	39.19	**127**	SW8	28.45	**122**
PSC 40	39.19	**128**	SW8	32.07	**123**
PSC 50	39.19	**129**	SW10	32.07	**124**
PSC 63	78.25	**130**	SW14	35.69	**126**
PSC 80	78.25	**130**	SW14	35.69	**126**

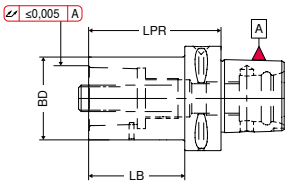
Accessories

Hollow nose keys

→ 187

Cylindrical reduction

▲ Run out ≤ 0,002mm



Adapter	BD	LPR	LB	Y8 Article no. 84 624 ...
	mm	mm	mm	£
PSC 40	32	55	35	218.66 **403**
PSC 50	32	60	40	243.14 **503**
PSC 50	40	65	45	243.14 **504**
PSC 63	32	70	48	255.26 **603**
PSC 63	40	80	58	255.26 **604**
PSC 63	50	80	58	255.26 **605**
PSC 80	32	60	30	267.51 **803**
PSC 80	40	70	40	267.51 **804**
PSC 80	50	80	50	267.51 **805**
PSC 80	63	80	50	267.51 **806**
PSC 80X	63	80	48	353.11 **816**
PSC 80X	80	100	68	353.11 **818**

Threaded ring

Tightening screw

Spare parts	Y8 Article no. 84 950 ...			Y8 Article no. 84 950 ...	
Adapter	£			£	
PSC 40	39.19	**128**	SW8	32.07	**123**
PSC 50	39.19	**129**	SW10	32.07	**124**
PSC 63	78.25	**130**	SW14	35.69	**126**
PSC 80	78.25	**130**	SW14	35.69	**126**
PSC 80X	78.25	**130**	SW14	35.69	**126**

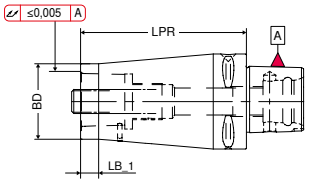
Accessories

Hollow nose keys

→ 187

Tapered reduction

▲ Run out ≤ 0,002mm



Adapter	BD	LPR	LB_1	Y8 Article no. 84 625 ...	
	mm	mm	mm	£	
PSC 40	32	70	12	218.66	**403**
PSC 50	40	85	12	243.14	**504**
PSC 63	50	110	12	255.26	**605**
PSC 80	63	120	12	279.76	**806**
PSC 80X	80	150	12	353.11	**818**

Threaded ring

Tightening screw

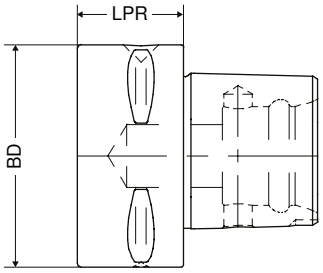
Spare parts	Y8 Article no. 84 950 ...			Article no. 84 950 ...	
Adapter	£			£	
PSC 40	39.19	**128**	SW8	32.07	**123**
PSC 50	39.19	**129**	SW10	32.07	**124**
PSC 63	78.25	**130**	SW14	35.69	**126**
PSC 80	78.25	**130**	SW14	35.69	**126**
PSC 80X	78.25	**130**	SW14	35.69	**126**

Accessories

Hollow nose keys

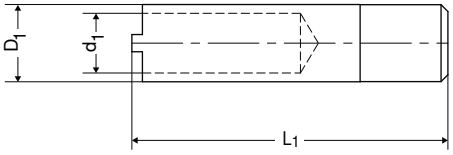
→ 187

Sealing plugs



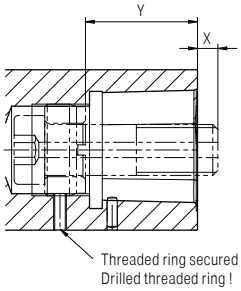
Adapter	BD	LPR	Y8 Article no. 84 135 ...
	mm	mm	£
PSC 40	40	28	122.21 040
PSC 50	50	28	122.21 050
PSC 63	63	30	144.14 060
PSC 80	80	38	156.38 080

Hollow nose key for clamping screw for PSC extensions and reductions



Adapter	D_1 mm	L_1 mm	d_1 mm	Y8 Article no. 84 651 ... £
PSC 32	16	80	12.5	63.64 032
PSC 40	20	80	15.0	67.17 040
PSC 50	22	90	17.0	67.17 050
PSC 63/80/80X	34	110	21.0	74.21 063

Installation instructions: clamping screw for PSC extensions and reductions

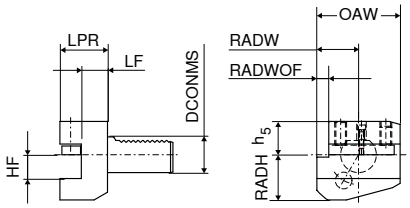


X = Screw leading edge
Y = Threaded ring insertion depth

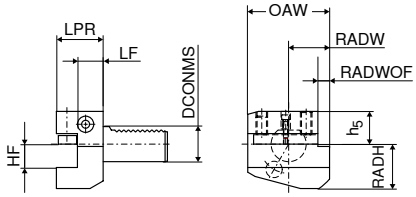
Adapter	X mm	Y mm
PSC 32	5	24
PSC 40	5	29
PSC 50	6	36
PSC 63	8	44
PSC 80	0	53
PSC 80X	0	53

16

Radial tool holders, short



B2



B1

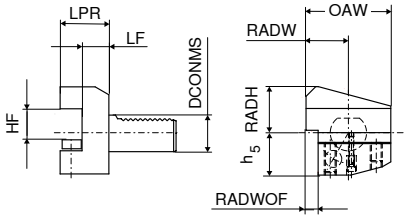
B2

B1

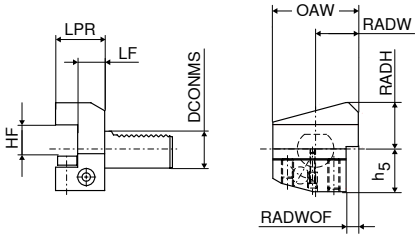
DCONMS h6	HF 0/-0,1	OAW	RADW	RADWOF	h5	RADH	LF 0/+0,5	LPR	Left-hand Y8 Article no. 82 189 ...		Right-hand Y8 Article no. 82 185 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	£		£	
16	12	42	23.0	5.0	20.0	22	13.0	24	245.72	160	176.64	160
16	12	42	23.0	5.0	20.0	22	23.0	34	200.10	161		
20	16	55	30.0	7.0	25.0	30	16.0	30	150.79	200	160.97	200
20	16	55	30.0	7.0	25.0	30	26.0	40	196.55	201	185.73	201
20	16	55	30.0	7.0	25.0	30	18.0	30	548.66	202 1)	524.40	202 1)
20	16	55	30.0	7.0	25.0	30	25.5	40			464.09	203 1)
25	16	55	30.0	7.0	25.0	30	16.0	30	321.55	250	252.75	250
30	20	70	35.0	10.0	28.0	38	18.5	40	163.29	300	148.04	300
30	20	70	35.0	10.0	28.0	35	32.0	50			1,142.07	302 1)
30	20	70	35.0	10.0	28.0	38	42.0	60	258.18	301	245.01	301
40	25	85	42.5	12.5	32.5	48	18.5	44	165.46	400	151.07	400
50	32	100	50.0	16.0	35.0	60	30.0	55	256.54	500	252.33	500

1) Height adjustable +/- 1 mm

Radial tool holders, overhead, short

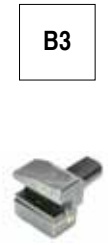


B4



B3

B4



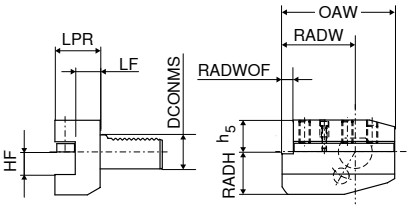
B3

DCONMS h6	HF 0/-0,1	OAW	RADW	RADWOF	h5	RADH	LF 0/+0,5	LPR	Left-hand Y8 Article no. 82 196 ...		Right-hand Y8 Article no. 82 193 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	£		£	
16	12	42	23.0	5.0	20.0	22	13.0	24			186.20	160
20	16	55	30.0	7.0	25.0	30	16.0	30	159.36	200	160.97	200
20	16	55	30.0	7.0	25.0	30	26.0	40	350.31	201	233.69	201
20	16	55	30.0	7.0	25.0	30	18.5	30	686.11	202 1)	567.33	202 1)
20	16	55	30.0	7.0	25.0	30	26.0	40	914.08	203 1)	595.45	203 1)
25	16	55	30.0	7.0	25.0	30	16.0	30	336.00	250	259.14	250
30	20	70	35.0	10.0	35.0	38	42.0	60	258.18	301	258.18	301
30	20	70	35.0	10.0	35.0	38	18.5	40	165.46	300	152.53	300
40	25	85	42.5	12.5	42.5	48	18.5	44	169.97	400	161.31	400
50	32	100	50.0	16.0	50.0	60	30.0	55	301.47	500	256.54	500

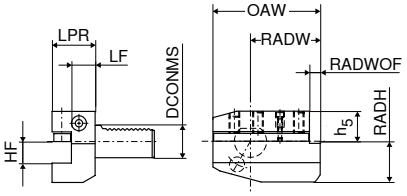
1) Height adjustable +/- 1 mm

Spare parts can be found in → **Chapter 17, Accessories**

Radial tool holders, long



B6



B5

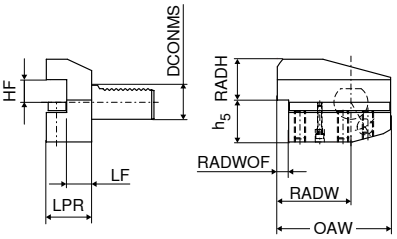
B6

B5

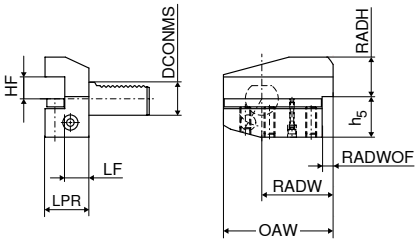
DCONMS h6	HF 0/-0,1	OAW	RADW	RADWOF	h5	RADH	LF 0/+0,5	LPR	Left-hand Y8 Article no. 82 202 ...		Right-hand Y8 Article no. 82 199 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	£		£	
20	16	75	50.0	7.0	25.0	30	16.0	30	253.77	200	267.20	200
20	16	75	50.0	7.0	25.0	30	26.0	40	282.98	201	259.31	201
20	16	75	50.0	7.0	25.0	30	18.0	30			666.34	202 1)
30	20	100	65.0	10.0	28.0	38	18.5	40	191.32	300	185.95	300
30	20	100	65.0	10.0	28.0	38	42.0	60	279.29	301	475.11	301
40	25	118	75.5	12.5	32.5	48	18.5	44	189.87	400	193.66	400
50	32	130	80.0	16.0	35.0	60	30.0	55	359.15	500	354.87	500

1) Height adjustable +/- 1 mm

Radial tool holders, overhead, long



B8



B7

B8

B7

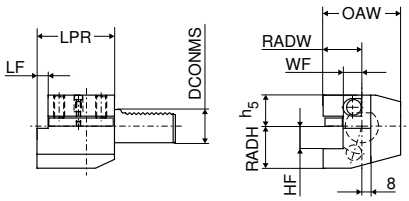
DCONMS h6	HF 0/-0,1	OAW	RADW	RADWOF	h5	RADH	LF 0/+0,5	LPR	Left-hand Y8 Article no. 82 208 ...		Right-hand Y8 Article no. 82 205 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	£		£	
20	16	75	50.0	7.0	25.0	30	16.0	30	268.74	200	216.68	200
20	16	75	50.0	7.0	25.0	30	26.0	40			353.42	201
20	16	75	50.0	7.0	25.0	30	18.0	30			655.73	202 1)
30	20	100	65.0	10.0	35.0	38	18.5	40	218.63	300	191.32	300
30	20	100	65.0	10.0	35.0	38	42.0	60			282.60	301
40	25	118	75.5	12.5	42.5	48	18.5	44	212.09	400	212.09	400
50	32	130	80.0	16.0	50.0	60	30.0	55	345.03	500	360.91	500

1) Height adjustable +/- 1 mm

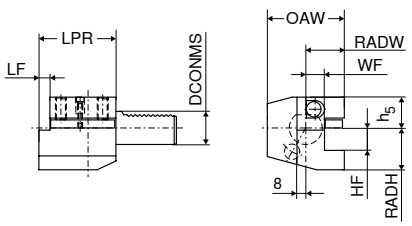
Spare parts can be found in → **Chapter 17, Accessories**

16

Axial tool holders



C2



C1

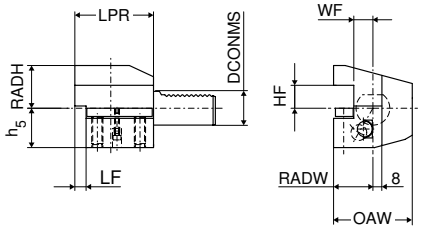
C2

C1

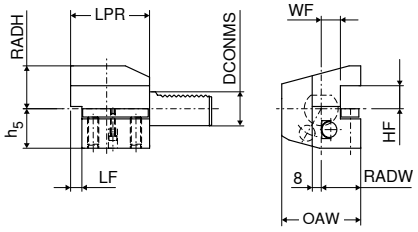
DCONMS h6	HF 0/-0,1	OAW	RADW	WF 0/+0,3	h5	RADH	LPR	LF	Left-hand Y8 Article no. 82 214 ...		Right-hand Y8 Article no. 82 211 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	£		£	
16	12	43	24.0	13.0	20.0	22	44	5.0			242.16	160
20	16	65	40.0	26.0	25.0	30	50		188.13	200	190.45	201
20	16	65	40.0	25.5	25.0	30	50				678.54	202 1)
20	16	52	27.0	13.0	25.0	30	55	7.0			221.89	200
25	16	58	33.0	19.0	25.0	30	55	7.0	231.41	250	233.00	250
30	20	70	35.0	17.0	28.0	38	70	10.0			171.71	300
30	20	76	41.0	23.0	28.0	38	70	10.0	183.03	300		
40	25	90	47.5	25.5	32.5	48	85	12.5	202.08	400		
40	25	85	42.5	20.5	32.5	48	85	12.5			199.75	400
50	32	100	50.0	25.5	35.0	60	100	16.0			291.26	500
50	32	105	55.0	30.5	35.0	60	100	16.0	365.11	500		

1) Height adjustable +/- 1 mm

Axial tool holders, overhead



C4



C3

C4

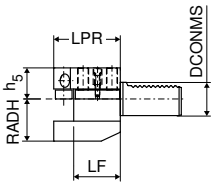
C3

DCONMS h6	HF 0/-0,1	OAW	RADW	WF 0/+0,3	h5	RADH	LPR	LF	Left-hand Y8 Article no. 82 220 ...		Right-hand Y8 Article no. 82 217 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	£		£	
16	12	43	24.0	13.0	20.0	22	44	5.0			218.23	160
20	16	65	40.0	26.0	25.0	30	50		201.35	200	230.10	201
20	16	65	40.0	25.5	30.0	25	50				874.92	202 1)
20	16	65	40.0	25.5	25.0	30	50		706.57	201 1)		
20	16	52	27.0	13.0	25.0	30	55	7.0			273.59	200
25	16	58	33.0	19.0	25.0	30	55	7.0	254.93	250	254.93	250
30	20	70	35.0	17.0	35.0	38	70	10.0			175.36	300
30	20	76	41.0	23.0	35.0	38	70	10.0	184.49	300		
40	25	85	42.5	20.5	42.5	48	85	12.5			202.08	400
40	25	90	47.5	25.5	42.5	48	85	12.5	202.08	400		
50	32	100	50.0	25.5	50.0	60	100	16.0			296.34	500
50	32	105	55.0	30.5	50.0	60	100	16.0	252.33	500		

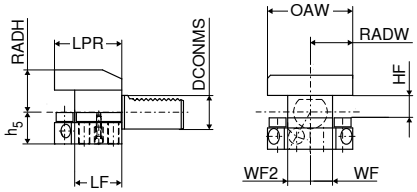
1) Height adjustable +/- 1 mm

Spare parts can be found in → **Chapter 17, Accessories**

Multiple tool holders



D1



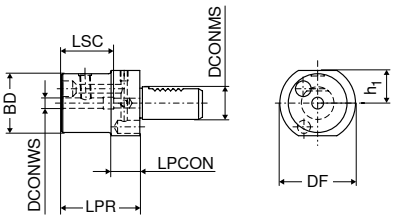
D2

D1 D2

DCONMS h6	HF 0/-0,1	RADW	WF 0/+0,3	WF2 0/+0,3	OAW	h5	RADH	LF 0/+0,5	LPR	Y8 Article no. 82 222 ...		Y8 Article no. 82 224 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	£		£	
25	16	33.0	19.0	19.0	66	22.0	30	34	48	398.03	250		
25	16	33.0	19.0	19.0	66	25.0	30	34	48			416.98	250
30	20	35.0	17.0	23.0	76	28.0	38	42	60	403.70	300		
30	20	35.0	17.0	23.0	76	35.0	38	42	60			403.70	300
40	25	42.5	20.5	25.5	90	32.5	48	50	72	422.73	400		
40	25	42.5	20.5	25.5	90	42.5	48	50	72			422.73	400

Cylindrical tool holders

- For tools with cylindircal shank to DIN 6535 and DIN 1835 Form E (Whistle Notch)
- Coolant supply either centrally through the tool or via the adjustable ball spray nozzles



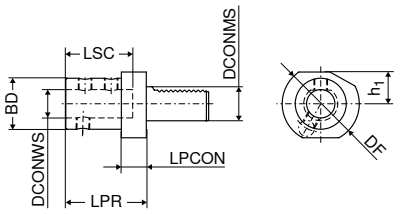
E

DCONMS h6	DCONWS	DF	BD	h1	LPR	LPCON	LSC	Y8 Article no. 83 269 ...	
mm	mm	mm	mm	mm	mm	mm	mm	£	
20	6	50	45	23.0	60	22	40	271.21	206
20	8	50	45	23.0	60	22	40	259.14	208
20	10	50	45	23.0	60	22	44	259.14	210
20	12	50	45	23.0	60	22	49	259.14	212
20	14	50	45	23.0	62	22	49	259.14	214
20	16	50	45	23.0	67	22	52	250.44	216
20	18	50	45	23.0	67	22	52	250.44	218
20	20	50	45	23.0	67	22	52	250.44	220
30	6	68	52	28.0	67	22	35	280.08	306
30	8	68	52	28.0	67	22	35	268.16	308
30	10	68	52	28.0	67	22	39	268.16	310
30	12	68	52	28.0	67	22	44	268.16	312
30	14	68	52	28.0	67	22	44	258.88	314
30	16	68	52	28.0	67	22	47	257.70	316
30	18	68	52	28.0	67	22	47	268.16	318
30	20	68	52	28.0	67	22	52	257.70	320
40	6	83	52	32.5	67	22	35	312.75	406
40	8	83	52	32.5	67	22	35	300.86	408
40	10	83	52	32.5	67	22	39	300.86	410
40	12	83	52	32.5	67	22	44	300.86	412
40	14	83	52	32.5	67	22	44	300.86	414
40	16	83	52	32.5	67	22	47	290.54	416
40	18	83	52	32.5	67	22	47	290.54	418
40	20	83	52	32.5	67	22	52	290.54	420

Spare parts can be found in → **Chapter 17, Accessories**

Cylindrical tool holders for indexable insert drills

▲ For drilling tools with internal coolant supply



E1

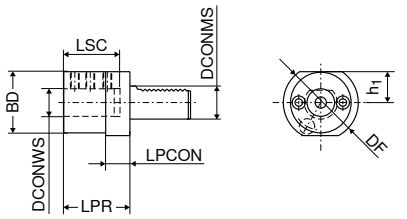
DCONMS h6	DCONWS H6	DF	BD	h_1	LPR	LPCON	LSC	Y8 Article no. 82 274 ...	
mm	mm	mm	mm	mm	mm	mm	mm	£	
20	16	50	36	23.0	67	18	54	144.11	**200**
20	20	50	40	23.0	67	18	54	144.11	**201**
20	25	50	45	23.0	71	18	59	144.11	**202**
25	16	58	36	25.0	67	18	54	212.09	**250**
25	20	58	40	25.0	67	18	54	212.09	**251**
25	25	58	45	25.0	71	18	59	212.09	**252**
30	16	68	36	28.0	67	22	54	133.51	**300**
30	20	68	40	28.0	67	22	54	133.51	**301**
30	25	68	45	28.0	71	22	59	133.51	**302**
30	32	68	52	28.0	75	22	63	133.51	**303**
30	40	68	60	28.0	87	22	73	193.84	**304**
40	16	83	36	32.5	67	22	54	151.07	**400**
40	20	83	40	32.5	67	22	54	151.07	**401**
40	25	83	45	32.5	75	22	59	151.07	**402**
40	32	83	52	32.5	75	22	63	151.07	**403**
40	40	83	60	32.5	90	22	73	151.07	**404**
50	20	98	40	35.0	80	30	54	213.39	**500**
50	25	98	45	35.0	80	30	59	213.39	**501**
50	32	98	52	35.0	80	30	63	213.39	**502**
50	40	98	60	35.0	90	30	73	213.39	**503**
50	50	98	70	35.0	100	30	83	193.15	**504**

Spare parts can be found in → **Chapter 17, Accessories**

Boring bar holder

▲ For turning tools with cylindrical shank
▲ Coolant supply either through the tool or via the ball-shaped spray nozzle

E2



DCONMS $_{h6}$	DCONWS $_{H7}$	DF	BD	h_1	LPR	LPCON	LSC	Y8 Article no. 82 268 ...	
mm	mm	mm	mm	mm	mm	mm	mm	£	
16	6	40	32	18.0	44	13	34	218.46	**160** [1]
16	8	40	32	18.0	44	13	34	166.71	**161** [1]
16	10	40	32	18.0	44	13	34	166.71	**162** [1]
16	12	40	40	18.0	44	13	34	166.71	**163** [1]
16	16	40	40	18.0	44	13	34	166.71	**164** [1]
20	8	50	40	23.0	50	18	41	155.00	**200**
20	10	50	40	23.0	50	18	41	155.00	**201**
20	12	50	40	23.0	50	18	41	155.00	**202**
20	16	50	40	23.0	50	18	41	155.00	**203**
20	20	50	50	23.0	50	18	41	155.00	**204**
20	25	50	50	23.0	60	18	51	155.00	**205**
25	8	58	40	25.0	50	18	41	252.75	**250**
25	10	58	40	25.0	50	18	41	252.75	**251**
25	12	58	40	25.0	50	18	41	252.75	**252**
25	16	58	40	25.0	50	18	41	252.75	**253**
25	20	58	58	25.0	50	18	41	252.75	**254**
25	25	58	58	25.0	60	18	51	252.75	**255**
30	8	68	55	28.0	60	22	51	151.07	**300**
30	10	68	55	28.0	60	22	51	151.07	**301**
30	12	68	55	28.0	60	22	51	151.07	**302**
30	16	68	55	28.0	60	22	51	151.07	**303**
30	20	68	55	28.0	60	22	51	151.07	**304**
30	25	68	55	28.0	60	22	51	151.07	**305**
30	32	68	68	28.0	75	22	61	151.07	**306**
40	8	83	55	32.5	75	22	61	154.00	**400**
40	10	83	55	32.5	75	22	61	154.00	**401**
40	12	83	55	32.5	75	22	61	154.00	**402**
40	16	83	55	32.5	75	22	61	154.00	**403**
40	20	83	55	32.5	75	22	61	154.00	**404**
40	25	83	55	32.5	75	22	61	154.00	**405**
40	32	83	83	32.5	75	22	61	154.00	**406**
40	40	83	83	32.5	90	22	76	154.00	**407**
50	12	98	68	35.0	90	30	76	221.83	**500**
50	16	98	68	35.0	90	30	76	221.83	**501**
50	20	98	68	35.0	90	30	76	221.83	**502**
50	25	98	68	35.0	90	30	76	212.68	**503**
50	32	98	68	35.0	90	30	76	212.68	**504**
50	40	98	98	35.0	90	30	76	212.68	**505**
50	50	98	98	35.0	100	30	86	212.68	**506**

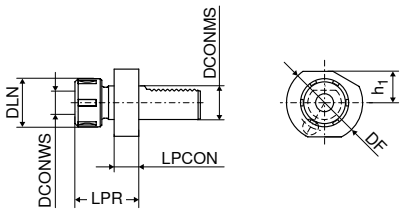
1) Coolant supply through pipe joint

Spare parts + accessories can be found in → **Chapter 17, Accessories**

16

OZ-Collet chuck

E3

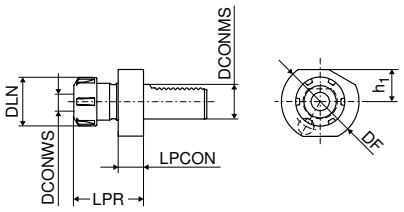


DCONMS h6	DCONWS	DF	DLN	h_1	LPR	LPCON	for collet	Y8 Article no. 82 285 ...	
mm	mm	mm	mm	mm	mm	mm		£	
20	2 - 16	50	43	23.0	57	18	415E / 421E (OZ)	279.29	**202**
30	2 - 16	68	43	28.0	57	22	415E / 421E (OZ)	286.65	**301**
30	2 - 25	68	60	28.0	75	22	459E / 462E (OZ)	286.65	**302**
40	2 - 25	83	60	32.5	75	22	459E / 462E (OZ)	299.84	**402**
40	4 - 32	83	72	32.5	90	22	460E / 467E (OZ)	313.00	**403**
50	2 - 25	98	60	35.0	75	30	459E / 462E (OZ)	454.24	**500**
50	4 - 32	98	72	35.0	90	30	460E / 467E (OZ)	448.20	**501**

Collets can be found on → **Page 217+218.**

ER Collet chucks

E4



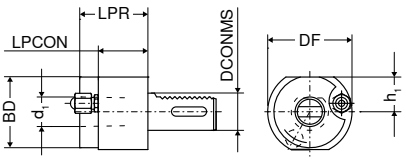
DCONMS h6	DCONWS	DF	DLN	h_1	LPR	LPCON	for collet	Y8 Article no. 82 286 ...	
mm	mm	mm	mm	mm	mm	mm		£	
16	1 - 10	40	28	18.0	45.5	14	426E (ER16)	254.67	**160**
16	1 - 13	40	34	18.0	44.0	14	428E (ER20)	252.01	**161**
20	1 - 16	50	42	23.0	57.0	18	430E (ER25)	207.45	**202**
20	2 - 20	50	50	23.0	62.0	18	470E (ER32)	216.89	**203**
25	1 - 16	58	42	25.0	57.0	18	430E (ER25)	342.82	**250**
25	2 - 20	58	50	25.0	62.0	18	470E (ER32)	347.05	**251**
30	1 - 16	68	42	28.0	57.0	22	430E (ER25)	204.77	**300**
30	2 - 20	68	50	28.0	75.0	22	470E (ER32)	204.96	**301**
40	1 - 16	83	42	32.5	63.0	22	430E (ER25)	222.03	**400**
40	2 - 20	83	50	32.5	75.0	22	470E (ER32)	222.03	**401**
40	3 - 26	83	63	32.5	75.0	22	472E (ER40)	218.05	**402**
50	2 - 20	94	50	35.0	75.0	30	470E (ER32)	323.37	**500**
50	3 - 26	94	63	35.0	63.0	30	472E (ER40)	323.37	**501**

Collets can be found on → **Page 208–213.**

Morse taper adapters

▲ For taper shanks with ejector tang

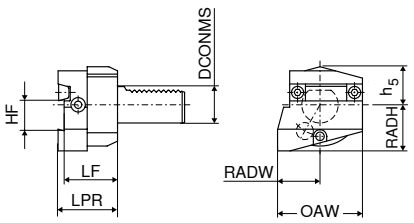
F1



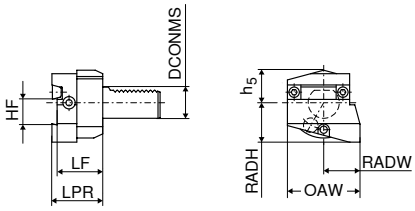
DCONMS $_{h6}$ mm	d_1	BD mm	DF mm	h_1 mm	LPR mm	LPCON mm	Y8 Article no. 82 277 ... £	
20	MK1		50	23.0	23		153.73	**200**
20	MK2		50	23.0	87		153.73	**201**
30	MK1		68	28.0	27		150.92	**300**
30	MK2		68	28.0	27		151.96	**301**
30	MK3	58	68	28.0	55	40	151.96	**302**
40	MK2	55	83	32.5	36	22	154.71	**401**
40	MK3	58	83	32.5	36	22	154.71	**402**
40	MK4	68	83	32.5	80	22	154.71	**403**
50	MK2	55	98	35.0	36	30	234.62	**500**
50	MK3	58	98	35.0	36	30	234.62	**501**
50	MK4	68	98	35.0	50	30	234.62	**502**

Parting blade holders, height adjustable

- Vertical adjustment ± 1 mm
- Suitable for internal cooling through the parting blade
- Axially parallel, adjustable external coolant supply



left

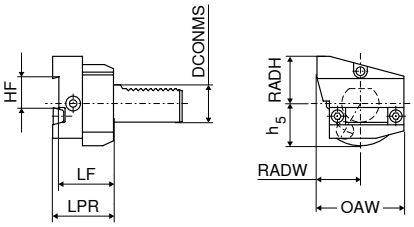


right

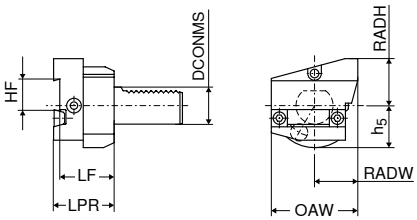
DCONMS h6 mm	OAW mm	RADW mm	HF mm	h_5 mm	RADH mm	LF mm	LPR mm	Left-hand Y8 Article no. 82 237 ... £		Right-hand Y8 Article no. 82 236 ... £	
25	53	28.0	26	25.0	30	35	40			645.15	**250**
30	70	35.0	26	28.0	38	44	49	542.70	**300**	542.70	**300**
30	70	35.0	32	30.5	38	44	49	688.14	**302**	688.14	**302**
40	73	42.5	26	32.0	48	44	49	712.92	**040**	712.92	**040**
40	85	42.5	32	32.0	48	44	49	641.34	**400**	559.20	**400**

Parting blade holders, height adjustable, overhead

- Vertical adjustment ± 1 mm
- Suitable for internal cooling through the parting blade
- Axially parallel, adjustable external coolant supply



left

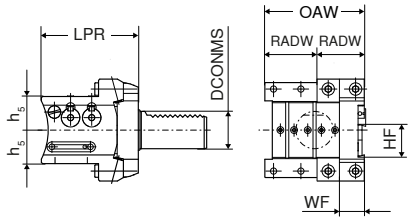


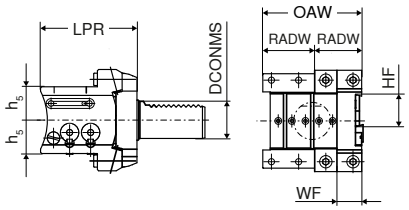
right

DCONMS h6 mm	OAW mm	RADW mm	HF mm	h_5 mm	RADH mm	LF mm	LPR mm	Left-hand Y8 Article no. 82 243 ... £		Right-hand Y8 Article no. 82 242 ... £	
30	70	35.0	26	34.0	38	44	49	815.79	**300**	815.79	**300**
30	70	35.0	32	30.5	38	44	49	688.14	**302**	771.60	**302**
40	73	42.5	26	32.0	48	44	49	712.92	**040**	712.92	**040**
40	85	42.5	32	32.0	48	44	49	558.41	**400**	558.41	**400**

Parting blade holders, height adjustable

- Vertical adjustment ± 1 mm
- Suitable for internal cooling through the parting blade
- Axially parallel, adjustable external coolant supply





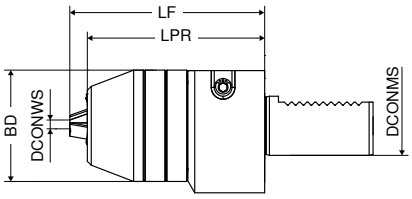
DCONMS h6	OAW	RADW	HF	h5	WF	LPR	Universal Y8 Article no. 82 238 ...		Universal-overhead Y8 Article no. 82 244 ...	
mm	mm	mm	mm	mm	mm	mm	£		£	
30	80	40	26	27	20	78	1,096.08	**300**	1,096.08	**300**
40	80	40	26	27	20	88	1,216.17	**400**	1,216.17	**400**
40	80	40	32	32	20	88	1,216.17	**402**	1,216.17	**402**

Short drill chuck NC2010

- ▲ Coolant supply via 3 adjustable ball-shaped spray nozzles in the housing
- ▲ Independent of direction of rotation

Scope of supply:

Basic body including chuck key SW 4

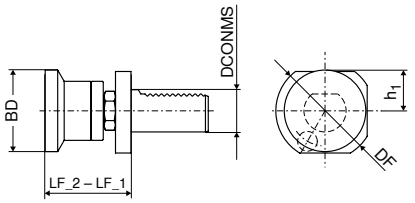


DCONMS h6	DCONWS	BD	LPR	LF	Y8 Article no. 84 297 ...	
mm	mm	mm	mm	mm	£	
20	0,5 - 10	48.5	40	50	535.14	**210** 1)
30	0,5 - 13	56.5	90	99	539.23	**313**
30	2,5 - 16	56.5	90	99	572.21	**316**
40	0,5 - 13	56.5	90	99	539.23	**413**
40	2,5 - 16	56.5	90	99	572.21	**416**

1) Without Through Coolant

Material stops

- ▲ Revolving, length adjustable

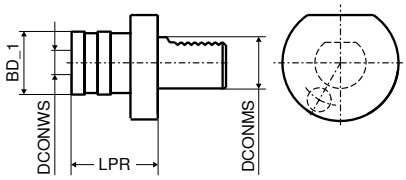


DCONMS h6	BD	DF	h_1	LF_2	LF_1	Y8 Article no. 83 292 ...	
mm	mm	mm	mm	mm	mm	£	
20	26	50	23.0	50	70	536.41	**200** 1)
20	32	50	23.0	50	70	572.16	**201** 1)
20	42	50	23.0	50	70	559.70	**202** 1)
30	32	68	28.0	62	95	385.33	**300**
30	42	68	28.0	62	95	385.33	**301**
30	58	68	28.0	62	95	392.81	**302**
40	32	83	32.5	62	95	424.17	**400**
40	42	83	32.5	62	95	424.17	**401**
40	58	83	32.5	62	95	424.17	**402**

1) Without VDI location

Quick-change tap chucks GSF

▲ LZD = Length compensation under tension and compression



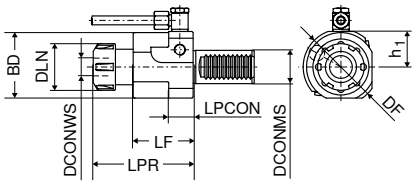
DCONMS $_{h6}$ mm	cutting range	SZID	DCONWS mm	BD_1 mm	LPR mm	LZD± mm	Y8 Article no. 83 307 ... £	
20	M3 - M12	01	19	38	55	9	594.58	**112**
25	M3 - M12	01	19	38	55	9	594.58	**212**
30	M3 - M12	01	19	38	55	9	455.84	**312**
40	M3 - M12	01	19	38	55	9	510.76	**412**
20	M6 - M20	02	31	55	77	15	649.48	**120**
25	M6 - M20	02	31	55	77	15	649.48	**220**
30	M6 - M20	02	31	55	77	15	602.42	**320**
40	M6 - M20	02	31	55	77	15	628.69	**420**

Quick change adapters can be found on → **Page 219–223.**

Tap holders with length compensation GML

▲ LZD = Length compensation under tension and compression

▲ For ER collets with internal square ISO 15488-A (DIN 6499-A)

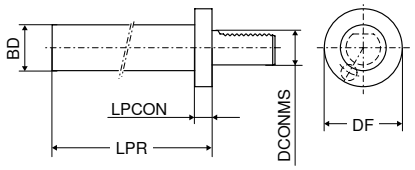


DCONMS mm	DCONWS mm	DLN mm	BD mm	DF mm	h_1 mm	LPR mm	LF mm	LPCON mm	LZD mm	for collet	Y8 Article no. 83 290 ... £	
20	0,5 - 10	28	45	50	23.0	65	40	18	6,0 / 1,5	4031E (ER16)	765.57	**213**
30	1 - 16	42	62	68	28.0	90	54	42	8,0 / 2,0	4282E (ER25)	769.18	**316**
40	1 - 16	42	62	83	32.5	85	49	42	8,0 / 2,0	4282E (ER25)	769.18	**416**

ER collets can be found on → **Pages 208–213.**

Test arbors

▲ Radial run-out ≤ 0.02 mm

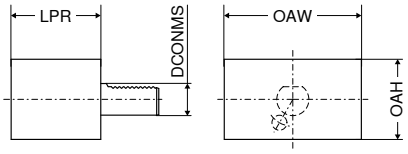


DCONMS	BD h5	DF	LPR	LPCON	Y8 Article no. 83 324 ...	
mm	mm	mm	mm	mm	£	
16	30	40	120	15	341.27	**016**
20	40	50	150	15	371.20	**020**
30	40	68	200	15	400.92	**030**
40	40	83	200	15	423.07	**040**
50	40	98	200	15	462.18	**050**

Tool holders, rough machined, rectangular

▲ Manufactured from C45

A1

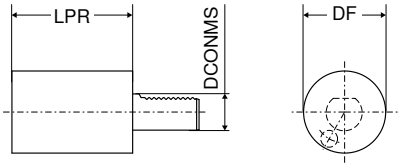


DCONMS h6	LPR	OAW	OAH	Y8 Article no. 82 327 ...	
mm	mm	mm	mm	£	
16	44	78	44	160.67	**160**
20	65	100	60	278.26	**200**
25	75	100	60	218.63	**250**
30	85	130	76	279.29	**300**
40	100	151	96	302.93	**400**
50	125	160	120	422.31	**500**

Tool holders, rough machined, round

▲ Manufactured from C45

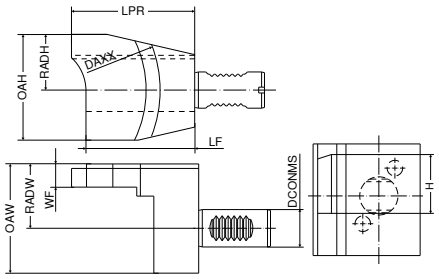
A2



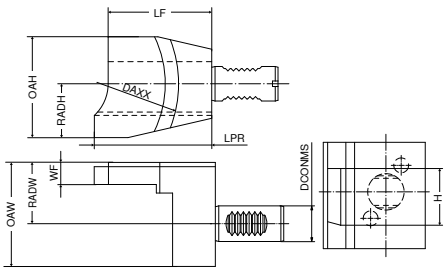
DCONMS $_{h6}$	LPR	DF	Y8 Article no. 82 330 ...	
mm	mm	mm	£	
16	60	40	115.78	**160**
20	70	50	101.00	**200**
25	80	58	158.50	**250**
25	200	58	182.16	**253**
30	100	68	118.34	**300**
30	240	68	143.71	**303**
40	120	83	138.68	**400**
40	320	83	209.38	**403**
50	135	98	194.72	**500**
50	400	98	314.37	**502**

Parting blade holder

▲ Doubles = reciprocally interlocked VDI shank



double – overhead



double

DCONMS	OAH	RADH	OAW	RADW	WF	LPR	LF	DAXX	H	double-overhead Y7 Article no. 65 170 ...		double Y7 Article no. 65 170 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	£		£	
20	94	47	95	60	15.5	85.5	75	176	26	1,181.53	**040** [1]	1,181.53	**039** [1]
25	73	39	72	43	15.5	85.0	75	176	26	1,181.53	**042** [1]	1,181.53	**041** [1]
25	73	39	72	43	15.5	85.0	75	176	32	1,181.53	**044** [1]	1,181.53	**043** [1]
30	100	50	95	60	15.5	85.5	75	176	26	1,181.53	**046** [1]	1,181.53	**045** [1]
30	100	50	95	60	15.5	85.5	75	176	32	1,181.53	**048** [1]	1,181.53	**047** [1]
40	100	50	95	60	15.5	85.5	75	176	26	1,274.11	**050** [1]	1,274.11	**049** [1]
40	100	50	95	60	15.5	85.5	75	176	32	1,274.11	**052** [1]	1,274.11	**051** [1]

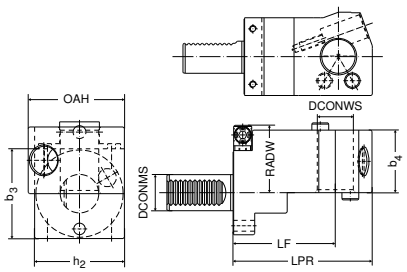
1) Not ex-stock

With star turrets, there is the danger of a collision for failure to comply to the machine-default nominal maximum height (LPR).

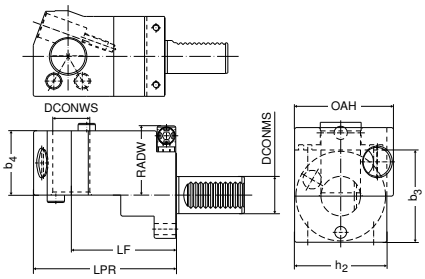
16

90° VDI to VDI adapter, double sided

▲ For rotating toolholder



left



right

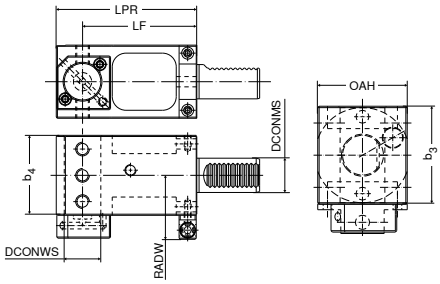
DCONMS	DCONWS	OAH	h_2	b_3	b_4	RADW	LF	LPR	Left-hand Y7 Article no. 65 170 ...		Right-hand Y7 Article no. 65 170 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	£		£	
25	20	60	54	60	44	48.0	75	100	889.05	**012** [1]	889.05	**011** [1]
25	25	63	54	60	44	48.0	75	100	889.05	**014**	889.05	**013** [1]
30	30	75	70	70	52	56.0	85	115	1,022.26	**004**	1,022.26	**006** [1]
30	30	75	70	70	52	56.0	100	130	1,053.99	**003** [1]	1,053.99	**005**
40	40	93	85	85	60	67.5	100	138	1,236.42	**008**	1,236.42	**007**
40	40	93	85	85	60	67.5	120	158	1,236.42	**009**	1,236.42	**010** [1]
50	50	109	90	100	72	73.5	120	165	1,447.78	**002** [1]	1,447.78	**001** [1]

1) Not ex-stock

With star turrets, there is the danger of a collision for failure to comply to the machine-default nominal maximum height (LPR).

Boring bar holder with through coolant

▲ Delivered as left hand tool
▲ Can be re-assembled as right hand tool
▲ External coolant supply avaialble



left

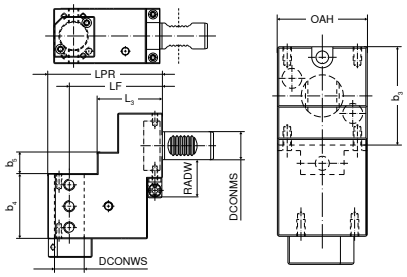
DCONMS	DCONWS	OAH	b_3	b_4	RADW	LF	LPR	right / left Y7 Article no. 65 170 ...	
mm	mm	mm	mm	mm	mm	mm	mm	£	
25	25	54	60	60	48.0	75	97.5	704.29	**065**
30	32	64	70	70	56.0	85	108.0	825.28	**062**
30	32	64	70	70	56.0	100	123.0	857.17	**063**
40	40	76	85	85	67.5	100	132.0	1,036.65	**067**
40	40	76	85	85	67.5	120	152.0	1,071.49	**068**
50	50	85	100	100	73.5	120	160.0	1,236.42	**066** [1]

1) Not ex-stock

With star turrets, there is the danger of a collision for failure to comply to the machine-default nominal maximum height (LPR).

Boring bar holder, with offset, with through coolant

- Doubles = reciprocally interlocked VDI shank
- External coolant supply available



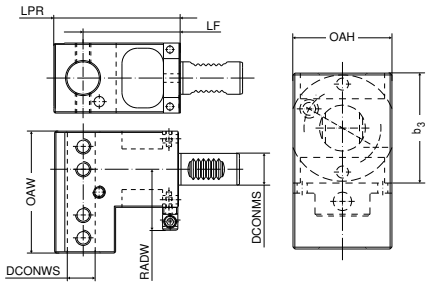
DCONMS	DCONWS	OAH	b_3	b_4	RADW	b_5	LF	LPR	L_3	double Y7 Article no. 65 170 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	£	
25	25	54	60	60	48.0	20	75	97.5	48	1,059.92	**069**
30	32	64	70	70	56.0	30	100	123.0	70	1,239.39	**070** 1)
40	40	85	85	85	67.5	40	100	132.0	63	1,453.55	**071** 1)

1) Not ex-stock

With star turrets, there is the danger of a collision for failure to comply to the machine-default nominal maximum height (LPR).

Double boring bar holder with through coolant

- Doubles = reciprocally interlocked VDI shank
- For use of two boring bars for main and sub-spindle machining
- External coolant supply available



DCONMS	DCONWS	OAH	b_3	OAW	RADW	LF	LPR	double Y7 Article no. 65 170 ...	
mm	mm	mm	mm	mm	mm	mm	mm	£	
25	25	54	60	96	48.0	75	97.5	1,193.33	**080** 1)
30	32	64	70	120	56.0	85	108.0	1,268.33	**082** 1)
30	32	64	70	120	56.0	100	123.0	1,268.33	**083** 1)
40	40	76	85	120	67.5	120	152.0	1,375.40	**084**

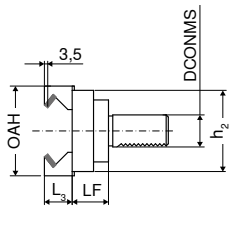
1) Not ex-stock

With star turrets, there is the danger of a collision for failure to comply to the machine-default nominal maximum height (LPR).

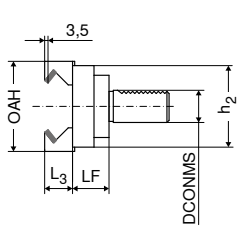
Bar pullers for disc turrets, radial

- Two adjustable, spring-mounted, replaceable grippers are fitted to the main body. Each of these is equipped with a carbide insert. The grippers are set to a slightly smaller diameter than the bar and then pressed onto the bar in an axial direction (x axis) by the tool turret.
- GA = Gripper set

Scope of supply:
Bar puller incl. GA 1 for VDI 16, and GA 3 from VDI 20



left



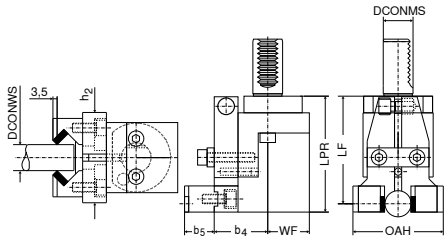
right

DCONMS h6	DCONWS	RADW	WF	b4	OAH	h2	LF	L3	suitable for GA	Left-hand Y7 Article no. 80 309 ...		Right-hand Y7 Article no. 80 306 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm		£		£	
16	2 - 22	35.0	28.5	26.5	73	55	27.8	24.5	1			1,654.11	**160**
20	2 - 42	60.5	54.0	36.0	86	76	33.7	26.0	3			1,954.96	**200**
30	2 - 65	60.5	54.0	36.0	102	76	33.7	26.0	3 - 4			1,954.96	**300**
30	2 - 65	47.5	41.0	49.0	102	76	33.7	26.0	3 - 4	1,954.96	**300**		
40	2 - 65	60.5	54.0	41.5	122	76	33.7	26.0	3 - 4	2,735.61	**400**	2,735.61	**400**

Bar pullers for star turrets

- Two adjustable, spring-mounted, replaceable grippers are fitted to the main body. Each of these is equipped with a carbide insert. The grippers are set to a slightly smaller diameter than the bar and then pressed onto the bar in an axial direction (x axis) by the tool turret.
- 90° angle head
- GA = Gripper set

Scope of supply:
Bar puller with GA 3

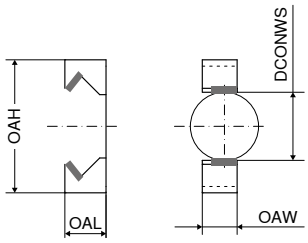


left

DCONMS h6	DCONWS	LPR	LF	OAH	h2	b4	b5	WF	suitable for GA	Left-hand Y7 Article no. 80 310 ...	
mm	mm	mm	mm	mm	mm	mm	mm	mm		£	
30	2 - 65	97	90.5	86	76	46.7	26	34.0	3 - 4	2,147.58	**300**
40	2 - 65	97	90.5	102	76	59.7	26	41.5	3 - 4	2,806.77	**400**

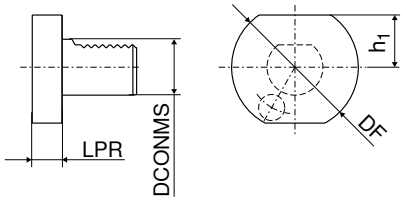
Gripper accessories

▲ For bar pullers 80 306 ... / 80 309 ... / 80 310 ...
▲ Price per pair

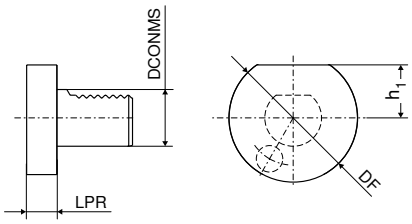


GA	DCONWS	OAL	OAW	OAH	Y7 Article no. 80 312 ...	
	mm	mm	mm	mm	£	
1	2 - 22	24.5	13	58	357.81	022
3	2 - 42	26.0	22	86	357.81	042
4	42 - 65	29.5	22	102	478.77	065

Protection plugs



Steel



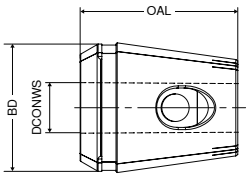
Plastic

DCONMS h8	DF	h_1	LPR	Steel Y8 Article no. 82 317 ...		Plastic Y8 Article no. 83 318 ...	
mm	mm	mm	mm	£		£	
16	40	18.0	16	35.06	160	29.30	160
20	50	23.0	16	69.61	200	11.88	200
25	58	25.0	16	53.00	250		
30	68	28.0	16	37.19	300	11.85	300
40	83	32.5	20	43.73	400	13.65	400
50	98	35.0	20	85.65	500	19.41	500

ER wedge collet with pull out protection, for precision collet chuck

- Similar to DIN ISO 15488-B
- Slotted
- Double taper collet

Centro-P WD	ER 5 µm



BD = 32.7
OAL = 40
ER 32

DCONWS		Y8 Article no. 83 629 ...	
mm		£	
12		171.42	120
14		171.42	140
16		171.42	160
18		171.42	180

Y8

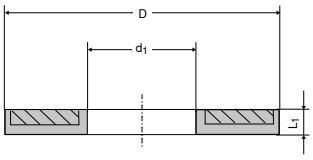
Conical spring

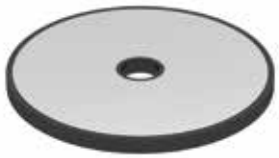
Spare parts DCONWS		Article no. 83 950 ...	
		£	
12 - 18	CP 32	10.28	455

Sealing rings for precision collet chucks

- For sealing when using tools with internal cooling
- Sealing range: nominal diameter –0,1 mm / +0,4 mm
- Can be applied up to 80 bar

Centro-P



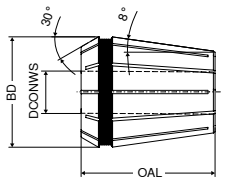


	D = 12.6 L_1 = 2 426E (ER16)		D = 15.8 L_1 = 2 428E (ER20)		D = 20.2 L_1 = 2 430E (ER25)		D = 26.2 L_1 = 2 444E / OZ (ER32)		D = 34.2 L_1 = 2 472E (ER40)	
	Y8		Y8		Y8		Y8		Y8	
d_1	Article no. 83 690 ...		Article no. 83 694 ...		Article no. 83 691 ...		Article no. 83 692 ...		Article no. 83 693 ...	
mm	£		£		£		£		£	
1.0	27.52	010								
1.5	27.52	015								
2.0	25.06	020	28.15	020	25.06	020	30.49	020		
2.5	25.06	025	28.15	025	25.06	025	30.49	025		
3.0	23.86	030	21.76	030	23.86	030	24.84	030	29.73	030
3.5	23.86	035	21.76	035	23.86	035	24.84	035	29.73	035
4.0	23.86	040	21.76	040	23.86	040	24.84	040	29.73	040
4.5	23.86	045	21.76	045	23.86	045	24.84	045	29.73	045
5.0	23.86	050	21.76	050	23.86	050	24.84	050	29.73	050
5.5	23.86	055	21.76	055	23.86	055	24.84	055	29.73	055
6.0	23.86	060	21.76	060	23.86	060	24.84	060	29.73	060
6.5	23.86	065	21.76	065	23.86	065	24.84	065	29.73	065
7.0	23.86	070	21.76	070	23.86	070	24.84	070	29.73	070
7.5	23.86	075	21.76	075	23.86	075	24.84	075	29.73	075
8.0	23.86	080	21.76	080	23.86	080	24.84	080	29.73	080
8.5	23.86	085	21.76	085	23.86	085	24.84	085	29.73	085
9.0	23.86	090	21.76	090	23.86	090	24.84	090	29.73	090
9.5	23.86	095	21.76	095	23.86	095	24.84	095	29.73	095
10.0	23.86	100	21.76	100	23.86	100	24.84	100	29.73	100
10.5			21.76	105	23.86	105	24.84	105	29.73	105
11.0			21.76	110	23.86	110	24.84	110	29.73	110
11.5			21.76	115	23.86	115	24.84	115	29.73	115
12.0			21.76	120	23.86	120	24.84	120	29.73	120
12.5			21.76	125	23.86	125	24.84	125	29.73	125
13.0			21.76	130	23.86	130	24.84	130	29.73	130
13.5					23.86	135	24.84	135	29.73	135
14.0					23.86	140	24.84	140	29.73	140
14.5					23.86	145	24.84	145	29.73	145
15.0					23.86	150	24.84	150	29.73	150
15.5					23.86	155	24.84	155	29.73	155
16.0					23.86	160	24.84	160	29.73	160
16.5							24.84	165	29.73	165
17.0							24.84	170	29.73	170
17.5							24.84	175	29.73	175
18.0							24.84	180	29.73	180
18.5							24.84	185	29.73	185
19.0							24.84	190	29.73	190
19.5							24.84	195	29.73	195
20.0							24.84	200	29.73	200
20.5									29.73	205
21.0									29.73	210
21.5									29.73	215
22.0									29.73	220
22.5									29.73	225
23.0									29.73	230
23.5									29.73	235
24.0									29.73	240
24.5									29.73	245
25.0									29.73	250
25.5									29.73	255
26.0									29.73	260

Precision ER collet for precision collet chuck

- DIN ISO 15488-B (old DIN 6499-B)
- 12 times slotted
- Double taper collet
- Coloured ring as identification of precision collet
- ER08: 5 µm runout and repeatability

Centro-P Coated | **ER-B 2 µm**



DCONWS mm		BD = 8.5 OAL = 13.6 4004 E / ER08 Y8 Article no. 84 577 ... £		BD = 11.5 OAL = 18 4008 E / ER11 Y8 Article no. 84 585 ... £		BD = 17 OAL = 27.5 426 E / ER16 Y8 Article no. 84 596 ... £		BD = 26 OAL = 34 430 E / ER25 Y8 Article no. 84 597 ... £		BD = 33 OAL = 40 470 E / ER32 Y8 Article no. 84 598 ... £		BD = 41 OAL = 46 472 E / ER40 Y8 Article no. 84 599 ... £	
1.0		94.45	010	91.31	010	89.74	010						
1.1						160.51	011						
1.2						160.51	012						
1.4						160.51	014						
1.5		94.45	015	91.31	015	89.74	015						
1.6						160.51	016						
1.8						160.51	018						
2.0		83.88	020	80.26	020	76.66	020	79.35	020	81.16	020		
2.2						142.48	022						
2.4						142.48	024						
2.5		83.88	025	80.26	025	76.66	025	79.35	025				
2.6						142.48	026						
2.8						142.48	028						
3.0		71.24	030	67.65	030	64.92	030 1)	66.74	030	67.65	030	99.17	030
3.2						126.26	032						
3.4						111.78	034						
3.5		71.24	035	67.65	035	82.66	035	86.59	035				
3.6						126.26	036						
3.8						126.26	038						
4.0		71.24	040	67.65	040	64.92	040 1)	66.74	040	67.65	040 1)	86.57	040
4.5		71.24	045	67.65	045	82.66	045	86.59	045				
5.0		71.24	050	67.65	050	64.92	050 1)	66.74	050	67.65	050	86.57	050
5.5				67.65	055	82.66	055	86.59	055				
5.6						126.26	056						
6.0				67.65	060	64.92	060 1)	66.74	060 1)	67.65	060 1)	86.57	060
6.3						126.26	063						
6.5				67.65	065	82.66	065	86.59	065				
7.0				67.65	070	64.92	070 1)	66.74	070	67.65	070	86.57	070
7.1						126.26	071						
7.5						82.66	075	86.59	075				
8.0						64.92	080 1)	66.74	080 1)	67.65	080 1)	86.57	080
8.5						82.66	085	86.59	085				
9.0						64.92	090	66.74	090	67.65	090	86.57	090
9.5						82.66	095	86.59	095				
10.0						64.92	100 1)	66.74	100 1)	67.65	100 1)	86.57	100
10.5								86.59	105				
11.0								66.74	110	67.65	110	86.57	110
11.5								86.59	115				
12.0								66.74	120 1)	67.65	120 1)	86.57	120
12.5								86.59	125				
13.0								66.74	130	67.65	130	86.57	130
13.5								86.59	135				
14.0								66.74	140 1)	67.65	140 1)	86.57	140
14.5								86.59	145				
15.0								66.74	150	67.65	150	86.57	150
15.5								86.59	155				
16.0								66.74	160 1)	67.65	160 1)	86.57	160
17.0										67.65	170	86.57	170
18.0										67.65	180	86.57	180
19.0										67.65	190	86.57	190
20.0										67.65	200 1)	86.57	200
21.0												86.57	210
22.0												86.57	220
23.0												86.57	230
24.0												86.57	240
25.0												86.57	250
26.0												86.57	260
	Set in wooden box					418.42	999	505.01	999	580.75	999		

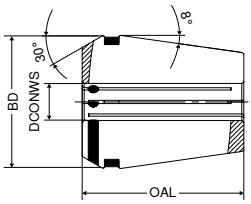
1) Included in the set

Clamping range covered: H10 corresponding to shank Ø DCONWS

ER precision collet, sealed, for precision collet chuck

- Similar to DIN ISO 15488-A
- 8 slotted
- Coloured ring as identification of precision collet
- $p_{max.}$ = 120 bar

Centro-P Coated | **ER-A 2 µm**

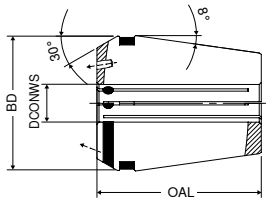


DCONWS	BD = 11.3 OAL = 18 425 E / ER11		BD = 16.7 OAL = 27.5 425 E / ER16		BD = 25.7 OAL = 34 429 E / ER25		BD = 32.7 OAL = 40 469 E / ER32		BD = 40.7 OAL = 46 471 E / ER40	
	Y8		Y8		Y8		Y8		Y8	
	Article no. 84 536 ...		Article no. 84 537 ...		Article no. 84 538 ...		Article no. 84 539 ...		Article no. 84 540 ...	
mm	£		£		£		£		£	
3	85.01	030	88.37	030	89.74	030	92.90	030		
4	85.01	040	88.37	040	93.79	040	85.01	040		
5	92.90	050	85.01	050	89.74	050	92.90	050		
6	85.01	060	88.37	060	93.79	060	85.01	060	97.61	060
7			85.01	070	89.74	070	92.90	070		
8			88.37	080	93.79	080	85.01	080	97.61	080
9			85.01	090	89.74	090	92.90	090		
10			88.37	100	93.79	100	85.01	100	97.61	100
11					89.74	110	92.90	110		
12					93.79	120	85.01	120	97.61	120
13					89.74	130	92.90	130		
14					93.79	140	85.01	140	97.61	140
15					89.74	150	92.90	150		
16					93.79	160	85.01	160	97.61	160
17							92.90	170		
18							85.01	180	97.61	180
19							92.90	190		
20							85.01	200	97.61	200
22									107.06	220
25									97.61	250

ER precision collet, sealed with coolant channels, for precision collet chuck

- Similar to DIN ISO 15488-A
- 8 slotted
- Coloured ring as identification of precision collet

Centro-P Coated | **ER-A 2 µm**

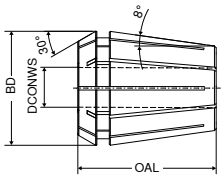


	BD = 16.7 OAL = 27.5 425 E / ER16		BD = 25.7 OAL = 34 429 E / ER25		BD = 32.7 OAL = 40 469 E / ER32		BD = 40.7 OAL = 46 471 E / ER40	
	Y8		Y8		Y8		Y8	
DCONWS	**Article no.** **84 548 ...**		**Article no.** **84 549 ...**		**Article no.** **84 550 ...**		**Article no.** **84 551 ...**	
mm	£		£		£		£	
4	116.50	**040**	124.37	**040**	129.09	**040**		
6	116.50	**060**	124.37	**060**	129.09	**060**		
8	116.50	**080**	124.37	**080**	129.09	**080**		
10			124.37	**100**	129.09	**100**	149.57	**100**
12			124.37	**120**	129.09	**120**	149.57	**120**
14			124.37	**140**	129.09	**140**		
16					129.09	**160**	149.57	**160**
18					129.09	**180**		
20					129.09	**200**	149.57	**200**
25							149.57	**250**

ER precision collet

- ▲ DIN ISO 15488-B (old DIN 6499-B)
- ▲ 12 times slotted
- ▲ Double taper collet

Coated | **ER-B 5 µm**



DCONWS mm		BD = 11.5 OAL = 18 4008 E / ER11		BD = 17 OAL = 27.5 426 E / ER16		BD = 21 OAL = 31.5 428 E / ER20		BD = 26 OAL = 34 430 E / ER25		BD = 33 OAL = 40 470 E / ER32		BD = 41 OAL = 46 472 E / ER40	
		Y8		Y8		Y8		Y8		Y8		Y8	
		Article no. 84 576 ...		Article no. 84 578 ...		Article no. 84 579 ...		Article no. 84 580 ...		Article no. 84 581 ...		Article no. 84 582 ...	
		£		£		£		£		£		£	
1.0		39.13	010	37.80	010	38.96	010 1)	41.11	010 1)				
1.5		39.13	015	37.80	015 1)	38.96	015 1)	41.11	015 1)				
2.0		39.13	020	37.80	020	38.96	020	41.11	020	43.42	020 1)		
2.5		39.13	025	37.80	025 1)	38.96	025 1)	41.11	025	43.42	025 1)		
3.0		31.70	030	29.89	030	30.87	030	31.70	030	33.85	030	58.61	030 1)
3.5		31.70	035										
4.0		31.70	040	29.89	040	30.87	040	31.70	040	33.85	040	43.75	040
4.5		31.70	045										
5.0		31.70	050	29.89	050	30.87	050	31.70	050	33.85	050	43.75	050
5.5		31.70	055										
6.0		31.70	060	29.89	060	30.87	060	31.70	060	33.85	060	43.75	060
6.5		31.70	065										
7.0		31.70	070	29.89	070	30.87	070	31.70	070	33.85	070	43.75	070
8.0				29.89	080	30.87	080	31.70	080	33.85	080	43.75	080
9.0				29.89	090	30.87	090	31.60	090	33.85	090	43.75	090
10.0				29.89	100	30.87	100	31.70	100	33.85	100	43.75	100
11.0						30.87	110	31.70	110	33.85	110	43.75	110
12.0						30.87	120	31.70	120	33.85	120	43.75	120
13.0						30.87	130	31.70	130	33.85	130	43.75	130
14.0								31.70	140	33.85	140	43.75	140
15.0								31.70	150	33.85	150	43.75	150
16.0								31.70	160	33.85	160	43.75	160
17.0										33.85	170	43.75	170
18.0										33.85	180	43.75	180
19.0										33.85	190	43.75	190
20.0										33.85	200	43.75	200
21.0												43.75	210
22.0												43.75	220
23.0												43.75	230
24.0												43.75	240
25.0												43.75	250
26.0												43.75	260
	Set in wooden box	472.11	999	341.70	999	415.98	999	526.59	999	658.62	999	1,064.72	999

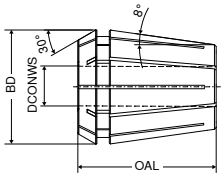
1) Not included in the set

Clamping range covered: up to Ø 2 mm = 0.5 mm, from Ø 2.5 mm = 1 mm

ER collet

- DIN ISO 15488-B (old DIN 6499-B)
- 12 times slotted
- Double taper clamping

ER-B
10 µm



DCONWS mm		BD = 8.5 OAL = 13.6 4004 E / ER08 Y8 Article no. 84 574 ... £		BD = 17 OAL = 27.5 426 E / ER16 Y8 Article no. 83 665 ... £		BD = 26 OAL = 34 430 E / ER25 Y8 Article no. 83 667 ... £		BD = 33 OAL = 40 470 E / ER32 Y8 Article no. 83 668 ... £	
1.0		42.11	010 [1]						
1.0				35.71	010				
1.5		42.11	015 [1]						
2.0				35.71	020	38.69	020		
2.0		42.11	020 [1]						
2.5		42.11	025 [1]						
3.0		34.99	030 [1]						
3.0				28.41	030	30.32	030	32.28	030
3.5		34.99	035 [1]						
4.0		34.99	040 [1]						
4.0				28.41	040	30.32	040	32.28	040
4.5		34.99	045 [1]						
5.0		34.99	050 [1]						
5.0				28.41	050	30.32	050	32.28	050
6.0				28.41	060	30.32	060	32.28	060
7.0				28.41	070	30.32	070	32.28	070
8.0				28.41	080	30.32	080	32.28	080
9.0				28.41	090	30.32	090	32.28	090
10.0				28.41	100	30.32	100	32.28	100
11.0						30.32	110	32.28	110
12.0						30.32	120	32.28	120
13.0						30.32	130	32.28	130
14.0						30.32	140	32.28	140
15.0						30.32	150	32.28	150
16.0						30.32	160	32.28	160
17.0								32.28	170
18.0								32.28	180
19.0								32.28	190
20.0								32.28	200
	Set in wooden box	369.76	999 [1]						

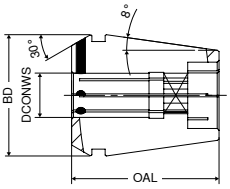
1) Type Coated - coated collet

Clamping range covered: up tp Ø 2 mm = 0.5 mm, from Ø 3 mm = 1 mm

ER precision tap collet

- Similar to DIN ISO 15488-A
- 8 slotted
- For Centro-P and standard collet chucks
- $p_{max.}$ = 120 bar

Coated | **ER-A 10 µm**

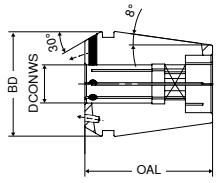


	BD = 16.7 OAL = 27.5 4031 E / ER16		BD = 25.7 OAL = 34 4282 E / ER25		BD = 32.7 OAL = 40 4537 E / ER32	
	Y8		Y8		Y8	
DCONWS	**Article no.** **84 531 ...**		**Article no.** **84 533 ...**		**Article no.** **84 534 ...**	
mm	£		£		£	
2.8	82.60	**028**				
3.5	62.98	**035**	69.27	**035**		
4.0	62.98	**040**	69.27	**040**	85.25	**040**
4.5	62.98	**045**	69.27	**045**	85.25	**045**
6.0	62.98	**060**	69.27	**060**	85.25	**060**
7.0	62.98	**070**	69.27	**070**	85.25	**070**
8.0	62.98	**080**	69.27	**080**	85.25	**080**
9.0	62.98	**090**	69.27	**090**	85.25	**090**
10.0			69.27	**100**	85.25	**100**
11.0			69.27	**110**	85.25	**110**
12.0			69.27	**120**	85.25	**120**
14.0			69.27	**140**	85.25	**140**
16.0			69.27	**160**	85.25	**160**
18.0					85.25	**180**
20.0					85.25	**200**

ER precision collet, sealed with coolant channels

- Similar to DIN ISO 15488-A
- 8 slotted
- For Centro-P and standard collet chucks

Coated | **ER-A 10 µm**

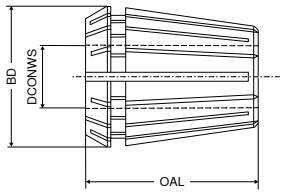


	BD = 16.7 OAL = 27.5 4537 E / ER16		BD = 25.7 OAL = 34 4537 E / ER25		BD = 32.7 OAL = 40 4537 E / ER32	
	Y8		Y8		Y8	
DCONWS	**Article no.** **84 567 ...**		**Article no.** **84 568 ...**		**Article no.** **84 569 ...**	
mm	£		£		£	
3.5	114.26	**035**				
4.5	114.26	**045**	126.54	**045**	137.09	**045**
6.0	114.26	**060**	126.54	**060**	137.09	**060**
7.0	114.26	**070**	126.54	**070**	137.09	**070**
8.0	114.26	**080**	126.54	**080**	137.09	**080**
9.0			126.54	**090**	137.09	**090**
10.0			126.54	**100**	137.09	**100**
11.0			126.54	**110**	137.09	**110**
12.0			126.54	**120**	137.09	**120**
14.0			126.54	**140**	137.09	**140**
16.0					137.09	**160**
18.0					137.09	**180**
20.0					137.09	**200**

ER precision collet

- ▲ DIN ISO 15488-B (old DIN 6499-B)
- ▲ Double taper collet
- ▲ 16 times slotted

ER-B
20 µm



DCONWS mm		BD = 17 OAL = 27.5 426 E / ER16 Y8 Article no. 82 673 ... £		BD = 21 OAL = 31.5 428 E / ER20 Y8 Article no. 82 674 ... £		BD = 26 OAL = 34 430 E / ER25 Y8 Article no. 82 675 ... £		BD = 33 OAL = 40 470 E / ER32 Y8 Article no. 82 676 ... £		BD = 41 OAL = 46 472 E / ER40 Y8 Article no. 82 677 ... £	
1		25.48	01000	24.89	01000 [1]						
2		25.48	02000	24.89	02000 [1]	25.67	02000 [1]				
3		20.90	03000	16.85	03000	17.72	03000	19.18	03000	24.23	03000
4		20.90	04000	16.85	04000	17.72	04000	19.18	04000	24.23	04000
5		20.90	05000	16.85	05000	17.72	05000	19.18	05000	24.23	05000
6		20.90	06000	16.85	06000	17.72	06000	19.18	06000	24.23	06000
7		20.90	07000	16.85	07000	17.72	07000	19.18	07000	24.23	07000
8		20.90	08000	16.85	08000	17.72	08000	19.18	08000	24.23	08000
9		20.90	09000	16.85	09000	17.72	09000	19.18	09000	24.23	09000
10		20.90	10000	16.85	10000	17.72	10000	19.18	10000	24.23	10000
11				16.85	11000	17.72	11000	19.18	11000	24.23	11000
12				16.85	12000	17.72	12000	19.18	12000	24.23	12000
13				16.85	13000	17.72	13000	19.18	13000	24.23	13000
14						17.72	14000	19.18	14000	24.23	14000
15						17.72	15000	19.18	15000	24.23	15000
16						17.72	16000	19.18	16000	24.23	16000
17								19.18	17000	24.23	17000
18								19.18	18000	24.23	18000
19								19.18	19000	24.23	19000
20								19.18	20000	24.23	20000
21										24.23	21000
22										24.23	22000
23										24.23	23000
24										24.23	24000
25										24.23	25000
26										24.23	26000
	Set in wooden box	335.27	99900	335.27	99900	335.27	99900	358.77	99900	564.29	99900

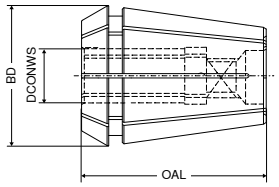
1) Not included in the set

Clamping range covered: up to Ø 3 mm = 0.5 mm, from Ø 4 mm = 1 mm

ER collet with internal square

- DIN ISO 15488-A (old DIN 6499-A)
- 8 times slotted
- Double taper collets for holding taps on synchronised spindle machines, without compensating lengths

ER-A
15 µm



DCONWS	BD = 25.7 OAL = 34 430 E / ER25		BD = 32.7 OAL = 40 470 E / ER32		BD = 40.7 OAL = 46 472 E / ER40	
	Y8		Y8		Y8	
	Article no. 82 650 ...		Article no. 82 651 ...		Article no. 82 652 ...	
mm	£		£		£	
4.5	77.49	04500	85.09	04500		
5.5	77.49	05500	85.09	05500		
6.0	77.49	06000	85.09	06000		
7.0	77.49	07000	85.09	07000	100.05	07000
8.0	77.49	08000	85.09	08000	100.05	08000
9.0	77.49	09000	85.09	09000	100.05	09000
10.0	77.49	10000	85.09	10000	100.05	10000
11.0	77.49	11000	85.09	11000	100.05	11000
12.0	77.49	12000	85.09	12000	100.05	12000
14.0			85.09	14000	100.05	14000
16.0			85.09	16000	100.05	16000
18.0					100.05	18000
20.0					100.05	20000

Wooden boxes for collets

- For collets form A+B

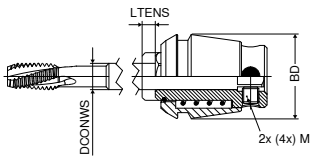
Size	Piece	Y8 Article no. 83 689 ... £	
4004 E / ER08	9	27.54	008
4008 E / ER11	13	41.24	011
426 E / ER16	10	31.13	116
428 E / ER20	11	49.39	020
430 E / ER25	14	51.47	025
470 E / ER32	18	66.69	032
472 E / ER40	24	84.25	040

16

Tapping Collet Form ET (ER) with length compensation

- DIN ISO 15488 (old DIN 6499)
- With pull out length compensation (LTENS)
- The spring force is adapted to the thread size
- Anti-rotation by 2 and/or 4 clamping screws on the shank square drive

ER
10 µm



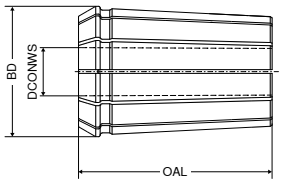
	BD = 17 LTENS = 7 426 E / ER16		BD = 21 LTENS = 7 428 E / ER20		BD = 26 LTENS = 8 430 E / ER25		BD = 33 LTENS = 10 470 E / ER32		BD = 41 LTENS = 13 472 E / ER40	
	Y7		Y7		Y7		Y7		Y7	
DCONWS	**Article no.** **80 661 ...**		**Article no.** **80 662 ...**		**Article no.** **80 663 ...**		**Article no.** **80 664 ...**		**Article no.** **80 665 ...**	
mm	£		£		£		£		£	
2.2	217.03	**022**	217.03	**022**						
2.5	217.03	**025**	217.03	**025**	230.12	**025**				
2.8	217.03	**028**	217.03	**028**	230.12	**028**				
3.0	217.03	**030**	217.03	**030**	230.12	**030**				
3.5	217.03	**035**	217.03	**035**	230.12	**035**				
4.0	217.03	**040**	217.03	**040**	230.12	**040**				
4.5	217.03	**045**	217.03	**045**	230.12	**045**	244.93	**045**		
5.0							244.93	**050**		
5.5	217.03	**055**	217.03	**055**	230.12	**055**	244.93	**055**		
6.0	217.03	**060**	217.03	**060**	230.12	**060**	244.93	**060**	268.89	**060**
7.0			217.03	**070**	230.12	**070**	244.93	**070**	268.89	**070**
8.0					230.12	**080**	244.93	**080**	268.89	**080**
9.0					230.12	**090**	244.93	**090**	276.53	**090**
10.0					230.12	**100**	244.93	**100**	276.53	**100**
11.0							244.93	**110**	276.53	**110**
12.0							244.93	**120**	276.53	**120**
14.0									276.53	**140**
16.0									276.53	**160**

When using CNC machines apply canned cycles with a feed rate or pitch of only 95 % with small threads and up to 99 % with large threads. In this way when reversing the rotation of the spindle an optimum length compensation in both directions is guaranteed.

OZ Precision collet for precision collet chuck

- DIN ISO 10897-B (old DIN 6388-B)
- Ø = 10 mm 10 slots, Ø > 10 mm 12 slots
- Double angle collets

OZ-B 3 µm | **Centro-P**



BD = 35.05
OAL = 52
462 E / OZ

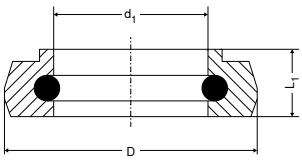
DCONWS mm	Y8 Article no. 83 660 ... £	
3	86.60	030
4	86.60	040
6	86.60	060
8	86.60	080
10	86.60	100
12	86.60	120
14	86.60	140
16	86.60	160
18	86.60	180
20	86.60	200
25	86.60	250

Clamping range covered: H10 corresponding to shank Ø DCONWS

Sealing ring for OZ Collet Chuck 462E

- For use for sealing tools with through coolant
- Seal diameter: Nominal diameter - 0.5 mm
- Use up to 150 bar

OZ-B 5 µm



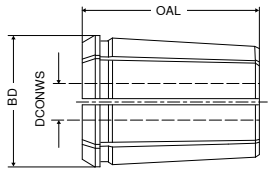
D = 31
L_1 = 4
462E

d_1 mm	Y8 Article no. 83 675 ... £	
4	37.12	040
5	37.12	050
6	37.12	060
8	37.12	080
10	37.12	100
12	37.12	120
14	37.12	140
16	37.12	160
18	37.12	180
20	37.12	200
22	37.12	220
25	37.12	250

16

OZ-collets

- ▲ DIN ISO 10897-B (old DIN 6388-B)
- ▲ Ø = 10 mm 10 slots, Ø > 10 mm 12 slots

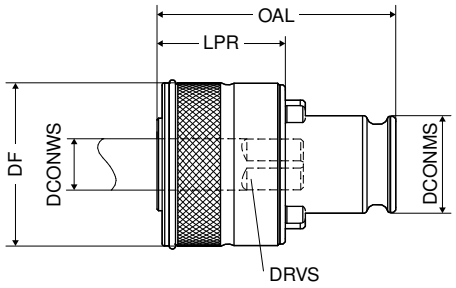


	OZ-B 6 µm		OZ-B 6 µm		OZ-B 10 µm		OZ-B 20 µm		OZ-B 20 µm		OZ-B 20 µm	
	BD = 25.5 OAL = 40 415 E / OZ		BD = 35.05 OAL = 52 462 E / OZ		BD = 43.7 OAL = 60 467 E / OZ		BD = 25.5 OAL = 40 415 E / OZ		BD = 35.05 OAL = 52 462 E / OZ		BD = 43.7 OAL = 60 467 E / OZ	
	Y8		Y8		Y8		Y8		Y8		Y8	
DCONWS	Article no. 83 651 ...		Article no. 83 652 ...		Article no. 83 653 ...		Article no. 82 653 ...		Article no. 82 654 ...		Article no. 82 655 ...	
mm	£		£		£		£		£		£	
2.0							36.55	02000	41.60	02000		
2.5							36.55	02500	41.60	02500		
3.0	52.19	030					30.06	03000	35.64	03000		
3.5							30.06	03500	35.64	03500		
4.0	52.19	040	61.39	040			30.06	04000	35.64	04000	56.07	04000
4.5							30.06	04500	35.64	04500	56.07	04500
5.0	52.19	050	61.39	050			30.06	05000	35.64	05000	56.07	05000
5.5							30.06	05500	35.64	05500	56.07	05500
6.0	52.19	060	61.39	060			30.06	06000	35.64	06000	56.07	06000
6.5							30.06	06500	35.64	06500	56.07	06500
7.0							30.06	07000	35.64	07000	56.07	07000
7.5							30.06	07500	35.64	07500	56.07	07500
8.0	52.19	080	61.39	080			30.06	08000	35.64	08000	56.07	08000
8.5							30.06	08500	35.64	08500	56.07	08500
9.0							30.06	09000	35.64	09000	56.07	09000
9.5							30.06	09500	35.64	09500	56.07	09500
10.0	52.19	100	61.39	100	80.38	100	30.06	10000	35.64	10000	56.07	10000
10.5							30.06	10500	35.64	10500	56.07	10500
11.0							30.06	11000	35.64	11000	56.07	11000
11.5							30.06	11500	35.64	11500	56.07	11500
12.0	52.19	120	61.39	120	80.38	120	30.06	12000	35.64	12000	56.07	12000
12.5							30.06	12500	35.64	12500	56.07	12500
13.0							30.06	13000	35.64	13000	56.07	13000
13.5							30.06	13500	35.64	13500	56.07	13500
14.0			61.39	140	80.38	140	30.06	14000	35.64	14000	56.07	14000
14.5							30.06	14500	35.64	14500	56.07	14500
15.0							30.06	15000	35.64	15000	56.07	15000
15.5							30.06	15500	35.64	15500	56.07	15500
16.0	52.19	160	61.39	160	80.38	160	30.06	16000	35.64	16000	56.07	16000
16.5									35.64	16500	56.07	16500
17.0									35.64	17000	56.07	17000
17.5									35.64	17500	56.07	17500
18.0			61.39	180	80.38	180			35.64	18000	56.07	18000
18.5									35.64	18500	56.07	18500
19.0									35.64	19000	56.07	19000
19.5									35.64	19500	56.07	19500
20.0			61.39	200	80.38	200			35.64	20000	56.07	20000
20.5									35.64	20500	56.07	20500
21.0									35.64	21000	56.07	21000
21.5									35.64	21500	56.07	21500
22.0									35.64	22000	56.07	22000
22.5									35.64	22500	56.07	22500
23.0									35.64	23000	56.07	23000
23.5									35.64	23500	56.07	23500
24.0									35.64	24000	56.07	24000
24.5									35.64	24500	56.07	24500
25.0			61.39	250	80.38	250			35.64	25000	56.07	25000
25.5											56.07	25500
26.0											56.07	26000
26.5											56.07	26500
27.0											56.07	27000
27.5											56.07	27500
28.0											56.07	28000
28.5											56.07	28500
29.0											56.07	29000
29.5											56.07	29500
30.0					80.38	300					56.07	30000
30.5											56.07	30500
31.0											56.07	31000
31.5											56.07	31500
32.0					80.38	320					56.07	32000

The collet has a clamping range of 0.5 mm (+0.1 / -0.4 mm)

Quick change tap adapter with overload clutch

- ▲ Adapter with adjustable overload clutch
- ▲ For use with taps



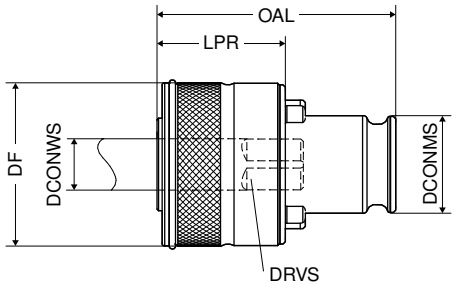
A

Y8

SZID	DCONWS	DRVS	DIN 371	DIN 374 / 376	DF	DCONMS	OAL	LPR	Article no. 83 612 ...	
	mm	mm			mm	mm	mm	mm	£	
01	2.8	2.1	M2		33	19	46.5	25	100.22	**100**
01	2.8	2.1	M2,5		33	19	46.5	25	100.22	**101**
01	3.5	2.7	M3		33	19	46.5	25	100.22	**102**
01	4.0	3.0	M3,5		33	19	46.5	25	100.22	**103**
01	4.5	3.4	M4		33	19	46.5	25	100.22	**104**
01	6.0	4.9	M4,5		33	19	46.5	25	100.22	**105**
01	6.0	4.9	M5		33	19	46.5	25	100.22	**106**
01	4.5	3.4		M6	33	19	46.5	25	100.22	**107**
01	6.0	4.9	M6		33	19	46.5	25	100.22	**108**
01	5.5	4.3		M7	33	19	46.5	25	100.22	**109**
01	7.0	5.5	M7		33	19	46.5	25	100.22	**110**
01	6.0	4.9		M8	33	19	46.5	25	100.22	**111**
01	8.0	6.2	M8		33	19	46.5	25	100.22	**112**
01	9.0	7.0	M9		33	19	46.5	25	100.22	**113**
01	7.0	5.5		M10	33	19	46.5	25	100.22	**114**
01	10.0	8.0	M10		33	19	46.5	25	100.22	**115**
01	8.0	6.2		M11	33	19	46.5	25	100.22	**116**
01	9.0	7.0		M12	33	19	46.5	25	100.22	**117**
02	6.0	4.9	M4,5 - M6		50	31	69.0	34	131.19	**200**
02	6.0	4.9	M7 (DIN 352)		50	31	69.0	34	131.19	**201**
02	7.0	5.5	M7		50	31	69.0	34	131.19	**202**
02	6.0	4.9		M8	50	31	69.0	34	131.19	**203**
02	8.0	6.2	M8		50	31	69.0	34	131.19	**204**
02	9.0	7.0	M9		50	31	69.0	34	131.19	**205**
02	7.0	5.5		M10	50	31	69.0	34	131.19	**206**
02	10.0	8.0	M10		50	31	69.0	34	131.19	**207**
02	8.0	6.2		M11	50	31	69.0	34	131.19	**208**
02	9.0	7.0		M12	50	31	69.0	34	131.19	**209**
02	11.0	9.0		M14	50	31	69.0	34	131.19	**210**
02	12.0	9.0		M16	50	31	69.0	34	131.19	**211**
02	14.0	11.0		M18	50	31	69.0	34	131.19	**212**
02	16.0	12.0		M20	50	31	69.0	34	131.19	**213**

Quick change tap adapter with overload clutch, with through coolant

- Adapter with adjustable overload clutch
- For use with taps



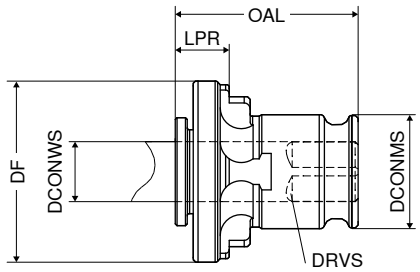
AD

Y8

SZID	DCONWS mm	DRVS mm	DIN 371	DIN 374 / 376	DF mm	DCONMS mm	OAL mm	LPR mm	Article no. 83 616 ... £	
01	3.5	2.7	M3	M4,5 - M5	33	19	46.5	25	166.92	100
01	4.5	3.4	M4	M6	33	19	46.5	25	166.92	102
01	5.5	4.3		M7	33	19	46.5	25	166.92	104
01	6.0	4.9	M4,5 - M6	M8	33	19	46.5	25	166.92	106
01	7.0	5.5	M7	M10	33	19	46.5	25	166.92	108
01	8.0	6.2	M8	M11	33	19	46.5	25	166.92	110
01	9.0	7.0	M9	M12	33	19	46.5	25	166.92	112
01	10.0	8.0	M10		33	19	46.5	25	166.92	114
01	11.0	9.0		M14	33	19	46.5	25	166.92	116
02	6.0	4.9	M4,5 - M6	M8	50	31	69.0	34	202.64	200
02	7.0	5.5	M7	M10	50	31	69.0	34	202.64	202
02	8.0	6.2	M8	M11	50	31	69.0	34	202.64	204
02	9.0	7.0	M9	M12	50	31	69.0	34	202.64	206
02	10.0	8.0	M10		50	31	69.0	34	202.64	208
02	11.0	9.0		M14	50	31	69.0	34	202.64	210
02	12.0	9.0	M12	M16	50	31	69.0	34	202.64	212
02	14.0	11.0		M18	50	31	69.0	34	202.64	214
02	16.0	12.0		M20	50	31	69.0	34	202.64	216

Quick change tap adapter

- Normal version without overload clutch
- For mounting taps
- For right-hand and left-hand threads



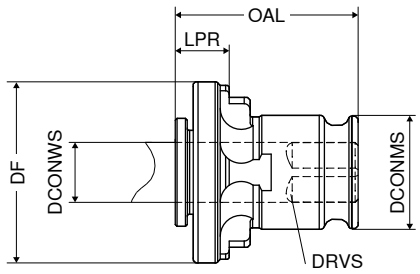
A

Y8

SZID	DCONWS	DRVS	DIN 371	DIN 374 / 376	DF	DCONMS	OAL	LPR	Article no. 83 610 ... £	
	mm	mm			mm	mm	mm	mm		
01	3.5	2.7	M3		30	19	28.5	7	38.36	**100**
01	4.5	3.4	M4		30	19	28.5	7	38.36	**101**
01	4.0	3.0	M3,5		30	19	28.5	7	38.36	**102**
01	2.8	2.1	M2 - M2,6		30	19	28.5	7	38.36	**103**
01	5.5	4.3		M7	30	19	28.5	7	38.36	**104**
01	6.0	4.9	M4,5 - M6	M8	30	19	28.5	7	38.36	**105**
01	7.0	5.5	M7	M10	30	19	28.5	7	38.36	**106**
01	8.0	6.2	M8	M11	30	19	28.5	7	38.36	**107**
01	9.0	7.0	M9	M12	30	19	28.5	7	38.36	**108**
01	10.0	8.0	M10		30	19	28.5	7	38.36	**109**
01	11.0	9.0		M14	30	19	28.5	7	38.36	**110**
02	6.0	4.9	M4,5 - M6		46	31	46.0	11	52.75	**200**
02	7.0	5.5	M7		46	31	46.0	11	52.75	**201**
02	8.0	6.2	M8		46	31	46.0	11	52.75	**202**
02	9.0	7.0	M9		46	31	46.0	11	52.75	**203**
02	10.0	8.0	M10		46	31	46.0	11	52.75	**204**
02	11.0	9.0		M14	46	31	46.0	11	52.75	**205**
02	12.0	9.0		M16	46	31	46.0	11	52.75	**206**
02	14.0	11.0		M18	46	31	46.0	11	52.75	**207**
02	16.0	12.0		M20	46	31	46.0	11	52.75	**208**
02	18.0	14.5		M22 - M24	46	31	46.0	11	52.75	**209**

Quick change tap adapter, with through coolant

- Normal version without overload clutch
- For mounting taps
- For right-hand and left-hand threads

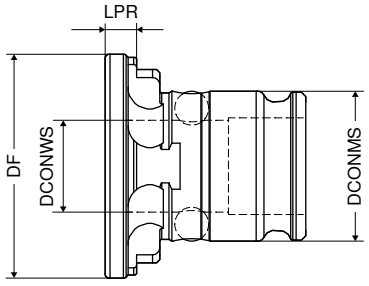


AD

SZID	DCONWS	DRVS	DIN 371	DIN 374 / 376	DF	DCONMS	OAL	LPR	Y8 Article no. 83 614 ...
	mm	mm			mm	mm	mm	mm	£	
01	3.5	2.7		M4,5 - M5	30	19	28.5	7	76.56	**100**
01	4.5	3.4	M4	M6	30	19	28.5	7	76.56	**102**
01	5.5	4.3		M7	30	19	28.5	7	76.56	**104**
01	6.0	4.9	M4,5 - M6	M8	30	19	28.5	7	76.56	**106**
01	7.0	5.5	M7	M10	30	19	28.5	7	76.56	**108**
01	8.0	6.2	M8	M11	30	19	28.5	7	76.56	**110**
01	9.0	7.0	M9	M12	30	19	28.5	7	76.56	**112**
01	10.0	8.0	M10		30	19	28.5	7	76.56	**114**
02	6.0	4.9	M4,5 - M6	M8	46	31	46.0	11	100.22	**200**
02	7.0	5.5	M7	M10	46	31	46.0	11	100.22	**202**
02	8.0	6.2	M8	M11	46	31	46.0	11	100.22	**204**
02	9.0	7.0	M9	M12	46	31	46.0	11	100.22	**206**
02	10.0	8.0	M10		46	31	46.0	11	100.22	**208**
02	11.0	9.0		M14	46	31	46.0	11	100.22	**210**
02	12.0	9.0	M12	M16	46	31	46.0	11	100.22	**212**
02	14.0	11.0		M18	46	31	46.0	11	100.22	**214**
02	16.0	12.0		M20	46	31	46.0	11	100.22	**216**

Reducing adapter for quick change adapters

- Reducing adapter for reducing size 02 to 01. In this way the clamping ranges can be extended to smaller sizes.

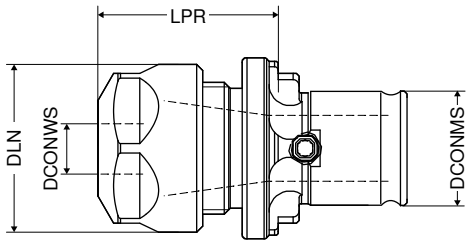


AD

SZID	DF	DCONMS	DCONWS	LPR	Y8 Article no. 83 624 ...
	mm	mm	mm	mm	£	
02	46	31	19	8.5	118.10	**200**

Quick change tap adapters

▲ Adapters for collets ER 16 / ER 25

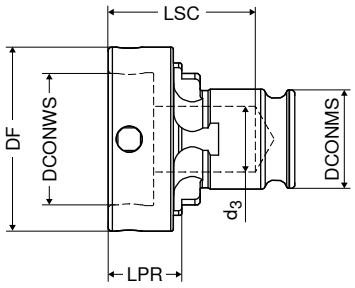


AD

SZID	DCONWS	DLN	DCONMS	LPR	for collet	Y8 Article no. 83 618 ...	
	mm	mm	mm	mm		£	
01	1 - 10	28	19	29.5	ER 16	162.12	010
02	2 - 16	42	31	38.5	ER 25	228.63	016

Quick change adapter for dies

▲ For mounting dies according to DIN 223



A

SZID	for size	cutting range	DF	DCONMS	DCONWS	LPR	d_3	LSC	Y8 Article no. 83 622 ...	
			mm	mm	mm	mm	mm	mm	£	
01	16 x 5	M1 - M4	25	19	16	9	12.5	23	164.44	116
01	20 x 5	M3 - M4	30	19	20	9	12.5	23	220.12	120
01	20 x 7	M4,5 - M6	30	19	20	11	12.5	25	153.27	121
01	25 x 9	M7 - M9	35	19	25	14	12.5	28	220.12	125
01	30 x 11	M10 - M11	40	19	30	16	12.5	30	220.12	130
01	38 x 10	M12x1 - M15x1,5	48	19	38	15	14.2	29	220.12	138
01	38 x 14	M12 - M14	48	19	38	19	14.2	33	153.27	139
02	20 x 5	M3 - M4	30	31	20	22	15.0	57	231.11	220
02	20 x 7	M4,5 - M6	30	31	20	22	15.0	57	215.28	221
02	25 x 9	M7 - M9	35	31	35	22	15.0	57	215.28	225
02	30 x 11	M10 - M11	40	31	30	22	22.0	57	215.28	230
02	38 x 10	M12x1 - M15x1,5	48	31	38	22	22.0	57	231.11	238
02	38 x 14	M12 - M14	48	31	38	25	22.0	60	215.28	239
02	45 x 14	M16x1 - M20x2	57	31	45	29	22.0	64	231.11	245
02	45 x 14	M16 - M20	57	31	45	29	22.0	64	215.28	246

Driven Tools

CERATIZIT offers an extensive range of driven tool holders to suit the turrets and machines of the leading manufacturers. There are virtually no limits to the types available. Below is a small selection of our holder portfolio.

Examples from our driven tooling range

Axial drilling and milling head

Radial drilling and milling head

Double radial drilling and milling head

Rear offset radial drilling and milling head

Double axial drilling and milling head

Offset axial drilling and milling head

Swivel head

Modular milling

Summary of machine turret manufacturers and interfaces for which CERATIZIT can supply driven tools

- Sauter
- Baruffaldi
- Duplomatic
- DIN1809
- DIN5480
- DIN5482
- Baruffaldi Toem
- Bevel gear milling
- Spline / tooth milling
- BMT (bolt on)

Technical Advice

Are you interested in our driven tools ? If so please contact your technical sales engineer who will be glad to assist you. Alternatively, you can contact our office based internal technical sales engineers who can be reached on our freephone number.

Enquiry Form

Should you have questions about driven tools you can find a detailed questionnaire on our website in the download area. Carefully complete the form and send it via e-mail or printed fax.

Modular quick-change system for driven tools

You want to optimize your setup time? CERATIZIT offers you several options!
With each axial and radial driven tool you are prepared through the exchange of different modules for different machining demands.

Varia VX

The new quick change system for heavy duty machining

The face & taper contact interface ensures maximum concentricity.
The torque is transmitted via a form-fitting polygon, which can transmit up to 200 Nm.

Clamping and releasing takes place via a segmented gear wheel equipped with 3 multifunctional cams. When tightened with a radially mounted clamping screw, the 3-point clamping pulls the tool evenly into its operating position. When releasing the tool force is applied mechanically via a sliding cam and the tool is released for removal from the adapter.

The advantages at a glance

- Cutting tools are preset off the machine
- Quick change thanks to only one clamping point
- No risk of injury when changing tools
- Transverse force-free clamping of the tools
- Safe torque transmission
- No loose parts

System Preci-Flex® – The stable solution for long tool life and high surface quality

The internal cone of the driven tool is suitable for any commercial type ER collets.Through taper & face contact ≤ 0.01 mm system concentricity and ≤ 0.005 mm repeatability is achieved and four plane-side clamp screws achieve maximum system stability and rigidity.

The program includes base holders for the collet sizes ER20, ER25, ER32, ER40 and ER50 and collet holders with male or female nut, adapters Weldon, Whistle Notch, shrink, boring bars, Shell mill arbors, hydraulic chucks, Test arbors and blanks.
Also available for static VDI holders and rotating SK and HSK holders.

Solidfix® – The quick way to change (≤ 20 seconds), a module

Solidfix® Modules can be mounted with one hand. Simply insert the module, so that twisting the security bayonet retains the module. Tighten with an allen-key through 180 ° rotation.

Through centering taper and large square face a concentricity of ≤ 0.005 mm is obtained at 30 mm distance from the end face.

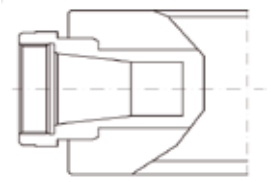
The program includes basic holders in accordance with the collet sizes ER11M, ER16M, ER20, ER25, ER32 and ER40 and collet holders with male or female nut, Weldon, Whistle Notch, shrink, boring adapters, Shell mill arbors, hydraulic chucks, control pins, blanks and plugs. Also available for static VDI holders and rotating SK and HSK holders.

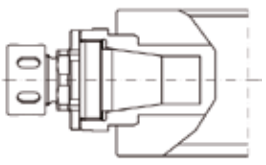
Modifix® – The universal solution for driven standard collet chucks

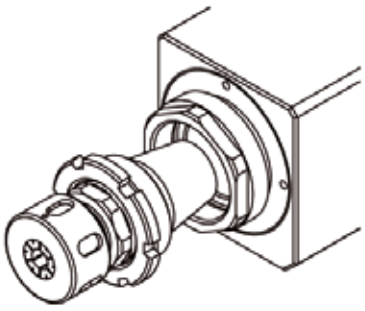
Modifix® adapters are available for both collet chucks with internal and external locknut. You use your existing collet holder driven units and only require the relevant Modifix® adapter. It offers high flexibility and low investment.

Modifix® for driven tools with internal threads

Modifix® for driven tools with external threads







The program includes adapters for the collet sizes ER20, ER25, ER32 and ER40. Collet holders, Weldon tool holders and Shell mill arbors are available.

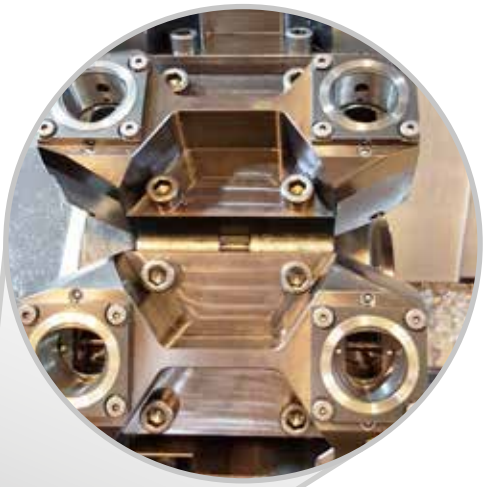
For orders please contact our your local Technical Sales Engineer or our Technicians in the office

Quick-Change

The tool holder range comprises both innovative and technologically proven solutions for all common CNC turning centres. We offer solutions that are perfectly tailored to the make of machine, regardless of whether the machine has a BMT, VDI or other connection type.

Every Quick-Change system has a standardised interface to DIN/ISO requirements and is available for HSK-T 40/63/100 and PSC 40/50/63 sizes. The tool change itself is carried out quickly and easily, minimising idle times and thus boosting productivity.

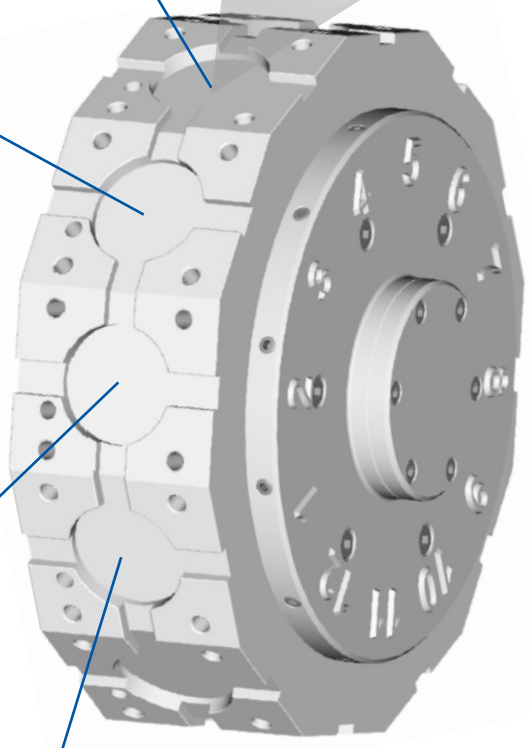
Tool holder single and straight



Tool holder double and straight

Single angle tool holder

Double angle tool holder

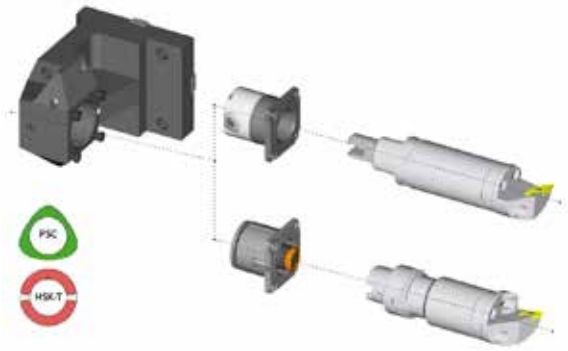


Turret BMT/VDI/...

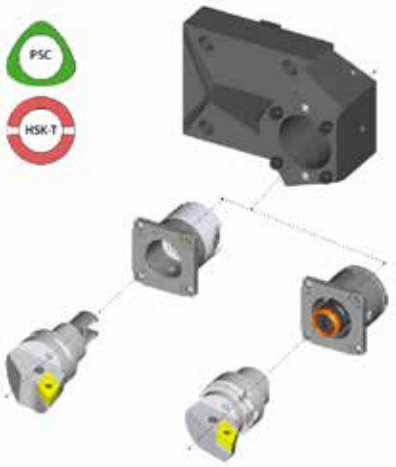
HSK/PSC clamping units

The tool holders are fitted with either an HSK or PSC clamping unit.

Clamping units are available in sizes HSK 40/63/100 and PSC 40/50/63.

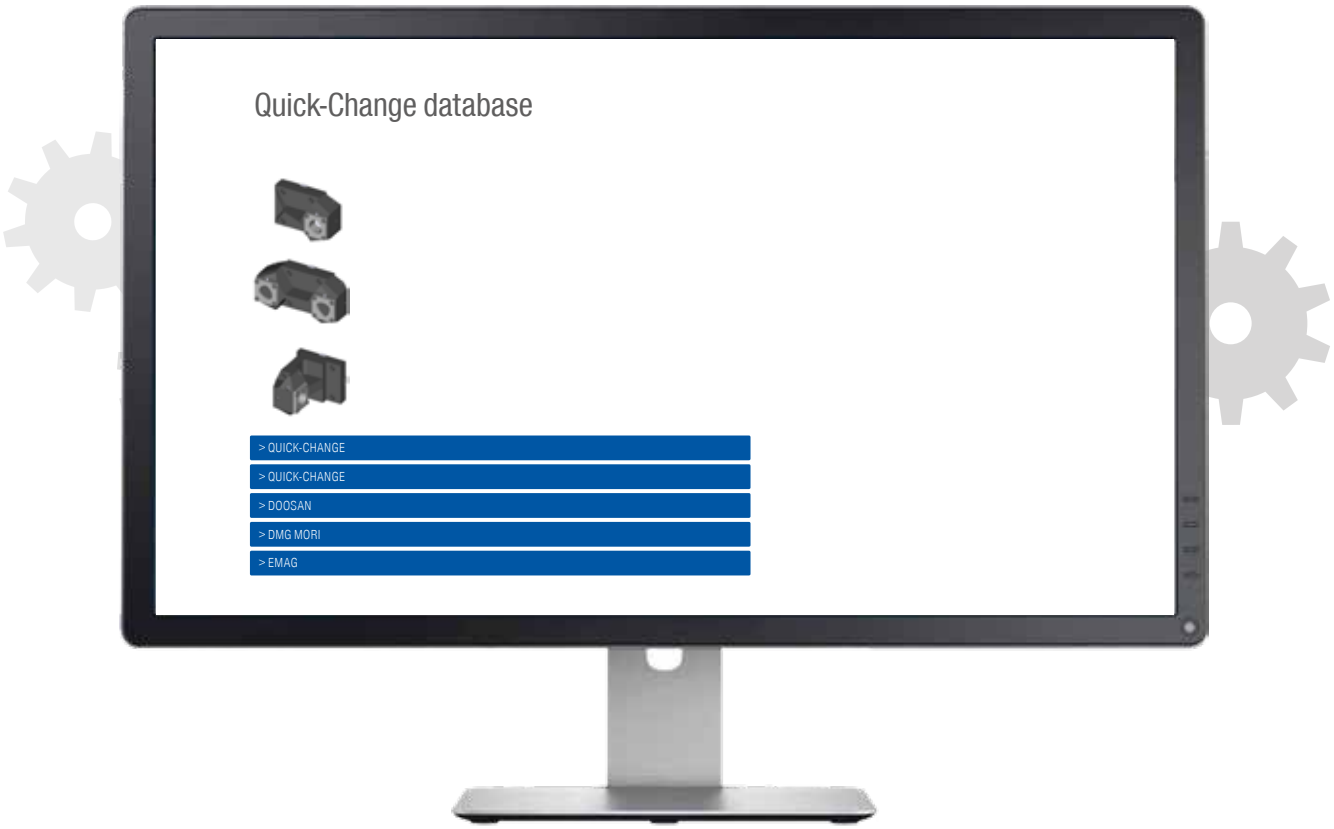


The toolholders permit the flexibility to be adapted to the customer's requirements.



Online database

Our Quick-Change tool holders are individually adapted to turning machines to ensure the greatest-possible levels of flexibility and efficiency. Using the online database, systems of previously specified machine types can be evaluated in order to obtain an initial overview.



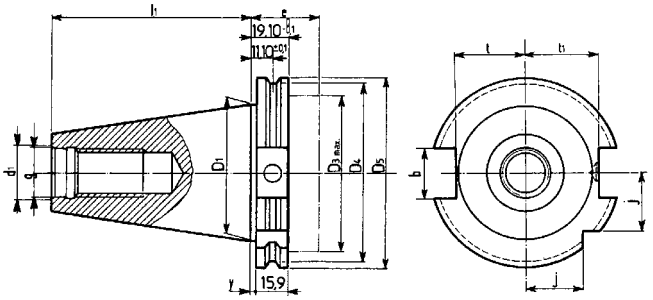
Information on enquiry process

To make the enquiry process as easy as possible, please use our enquiry form to enter the most important machine data and information on the machining process. Please fill in this form carefully and send it to us via email or fax.
→ **cutting.tools/en/download**

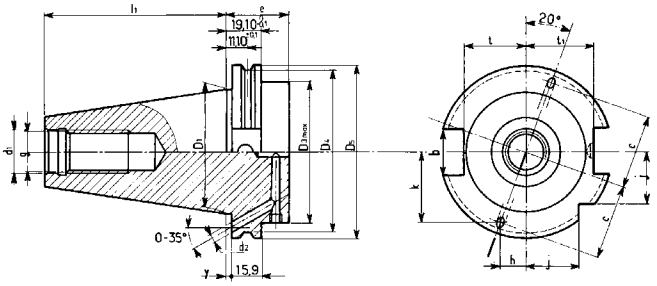
If you have any questions regarding the ordering process or the form itself, your Technical Sales Engineer will be happy to help.

Technical data for steep taper tools

DIN 69871 Form A

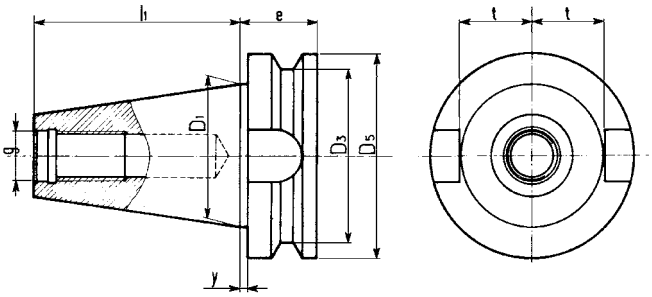


DIN 69871 Form B



	D_1 mm	$D_{3\,max}$ mm	D_4 mm	D_5 mm	$l_{10}^{+0,2}$ mm	g	d_1 H7 mm	e mm	y ±0,1 mm	t mm	t_1 mm	j mm	d_2 mm	h mm	k mm	c mm	b mm
SK 30	31,75	45	44,30	50	47,8	M 12	13	35	3,2	16,4	19	15					16,1
SK 40	44,45	50	56,25	63,55	68,4	M 16	17	35	3,2	22,8	25	18,5	4	9,2	25,4	27	16,1
SK 50	69,85	80	91,25	97,5	101,75	M 24	25	35	3,2	35,5	37,7	30	6	14,4	39,5	42	25,7

MAS-BT

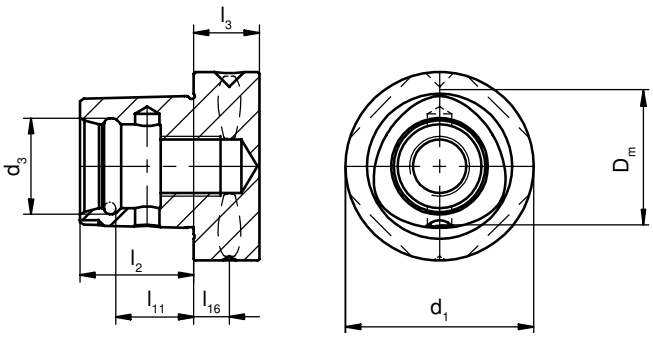


Maximum recommended rpm for steep taper toolholders:

SK / BT 30 to 20,000 $^1/_{min.}$
SK / BT 40 to 20,000 $^1/_{min.}$
SK / BT 50 to 16,000 $^1/_{min.}$

	D_1 mm	D_3 mm	D_5 mm	l_1 mm	g	e mm	t mm	y mm	b mm
BT 30	31,75	38	46	48,4	M 12	22	16,3	2	16,1
BT 40	44,45	53	63	65,4	M 16	27	22,5	2	16,1
BT 50	69,85	85	100	101,8	M 24	38	35,3	3,2	25,7

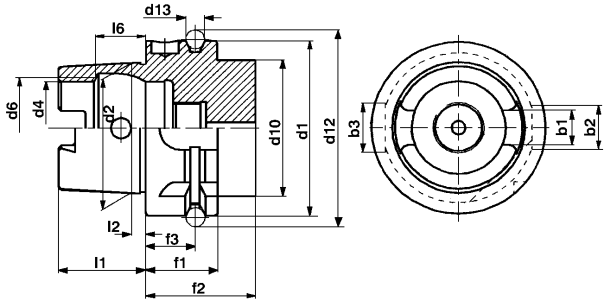
Technical Data for Polygon shank adapters



Shank size	d_1 mm	d_3 ±0,05 mm	l_2 ±0,1 mm	l_3 mm	l_{11} ±0,1 mm	l_{16} mm	D_m mm
32	32	16,5	19	15	13,5	9	22
40	40	20	24	20	17,5	12	28
50	50	24	30	20	22	12	35
63	63	32	38	22	26	12	44
80	80	38	48	30	34	12	55

Technical Data for HSK Adapters

HSK DIN 69893 A+C



Maximum rpm recommended for HSK adapters:

HSK-A 32 to 50.000 $^{1}/_{min.}$
HSK-A 40 to 42.000 $^{1}/_{min.}$
HSK-A 50 to 30.000 $^{1}/_{min.}$
HSK-A 63 to 25.000 $^{1}/_{min.}$
HSK-A 100 to 16.000 $^{1}/_{min.}$

	b_1 mm	b_2 mm	b_3 mm	d_1 mm	d_2 mm	d_4 mm	d_6 mm	d_{10} mm	d_{12} mm	d_{13} mm	f_1 mm	f_2 mm	f_3 mm	l_1 mm	l_2 mm	l_6 mm
HSK 32	7,05	7	9	32	24	17	19	26	37	4	20	35	16	16	3,2	8,92
HSK 40	8,05	9	11	40	30	21	23	34	45	4	20	35	16	20	4	11,42
HSK 50	10,54	12	14	50	38	26	29	42	59,3	7	26	42	18	25	5	14,13
HSK 63	12,54	16	18	63	48	34	37	53	72,3	7	26	42	18	32	6,3	18,13
HSK 100	20,02	20	22	100	75	53	58	88	109,75	7	29	45	20	50	10	28,56

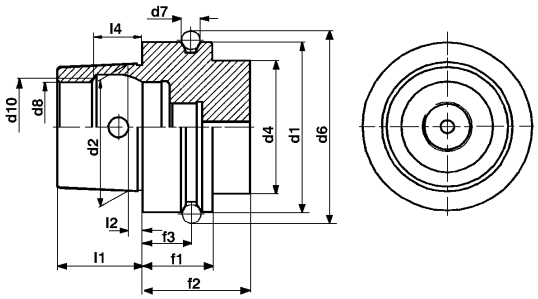
DIN 69893 Form A

- Applied for machining centres, milling and special machines with automatic tool change
- **Central axial coolant supply via the coolant pipe**
- Torque transmission via 2 driving grooves at the taper end
- 2 grooves on the flange for the tool magazine, positioning notch, bore for data storage medium DIN 69873 in the flange

DIN 69893 Form C

- Applied for machine spindles without automatic tool change as well as tool extensions and reducers
- **Central axial coolant supply via the coolant pipe**
- Torque transmission via 2 driving grooves at the taper end

HSK DIN 69893 E



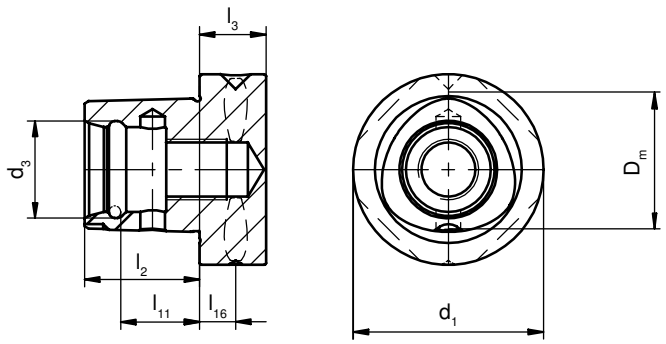
	d_1 mm	d_2 mm	d_4 mm	d_6 mm	d_7 mm	d_8 mm	d_{10} mm	f_1 mm	f_2 mm	f_3 mm	l_1 mm	l_2 mm	l_4 mm
HSK 40	40	30	34	45	4	21	23	20	35	16	20	4	11,42
HSK 50	50	38	42	59,3	7	26	29	26	42	18	25	5	14,13
HSK 63	63	48	53	72,3	7	34	37	26	42	18	32	6,3	18,13

DIN 69893 Form E

- Applied for high rpm (HSC) for high speed spindles with automatic tool change
- Rotation symmetrical, without driving grooves
- Torque transmission through friction
- **Possibility of central coolant supply via coolant pipe**

Technical Information for Polygon Shank Adapters

To dimensions of ISO 26623-1



Shank size	d_1	d_3 ± 0,05	l_2 ± 0,1	l_3	l_{11} ± 0,1	l_{16}	D_m
32	32	16,5	19	15	13,5	9	22
40	40	20	24	20	17,5	12	28
50	50	24	30	20	22	12	35
63	63	32	38	22	26	12	44
80	80	38	48	30	34	12	55

Advantages of the PSC interface

The repeatability of the PSC shank is ± 2 microns

The tapered polygon in conjunction with the tight tolerance provides backlash-free centering also acts as pull back. The PSC cone has very high rigidity and bending strength. The main advantages of this interface are the transmittable torque stability, the resistance against radial forces acting on the tool and the exact center height. This means high feed rates can be achieved on large material cross sections. The PSC interface is ideally suited for all machining operations such as drilling, turning and milling.

High Pressure Chuck – Ideal for the MonsterMill Solid Carbide Milling Cutters

HPC milling with optimum damping

High pressure clamping with optimum damping properties was the aim in the development of the high-pressure chuck. Here, all applications over a continuous operation test were covered over thousands of machining operations. In addition, extensive continuous pressure and positive pressure tests, and vibration measurements were carried out directly on the machine spindle.

The main technical characteristics of the high-pressure Milling Chuck are

- High damping properties
- Spindle-friendly
- Maximum stability and strength
- High holding force and torque transmission
- 3 µm radial run-out
- Balanced to G2,5 at $n_{max.}$ 25.000 1/min.
- Short tool change time
- No additional peripherals required
- MMS suitable
- Maintenance free

Clamping of shanks with flats possible with or without reduction sleeve

HSS shank DIN1835 and
Solid Carbide shank DIN6535

Clamping Force Comparison with Different Systems

This comparison shows the higher retention forces of the Milling Chuck. Especially with larger diameters high holding force is important when HPC machining so that the tool is not pulled out of the holder. Milling Chuck now offers this process reliability.

The main applications for Milling Chuck

- HPC Milling
- HSC Milling
- Hard Machining
- Drilling
- Reaming

Key Benefits

- Increased Process Security
- Longer Tool Life
- Improved Surface Quality
- Extended spindle life

Shank diameter in mm	16	18	20	25	32
Holder Type	Maximum transmissible torque with shank tolerance h6 in Nm				
Shrink fit adapter	200	290	450	530	700
Standard hydraulic chucks	160	200	330	400	650
High Pressure Milling Chuck	280 - 380	360 - 450	550 - 650	650 - 750	800 - 890

Minimum clamping depth the same as for hydraulic chucks

Transmittable torques and static clamping torques

Static clamping moments of the CentroP collet chuck with different torque values measured at the tightening nut

Clamping diameter (d1 h6)	2	3	3,5	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	mm
ER 16 torque moment 30 Nm	2	3,5	5																						Nm
ER 16 torque moment 50 Nm				12	20	30	45	60	72	80															Nm
ER 25 torque moment 40 Nm				10	20	40																			Nm
ER 25 torque moment 75 Nm							62	75	85	95															Nm
ER 25 torque moment 90 Nm											122	145	160	175	190	200									Nm
ER 32 torque moment 60 Nm				20	30	40																			Nm
ER 32 torque moment 120 Nm							75	90	110	120	135	150	160	180	190										Nm
ER 32 torque moment 140 Nm																220	240	260	280	300					Nm
ER 40 torque moment 70 Nm				60	75	90	100																		Nm
ER 40 torque moment 110 Nm								110	125	140	150														Nm
ER 40 torque moment 150 Nm												200	220	240	260	300	350								Nm
ER 40 torque moment 200 Nm																			420	440	460	480	515	530	Nm
OZ 462 E torque moment 200 Nm				10	35	55	75	95	120	140	160	185	205	230	250	270	295	315	340						Nm

Permissible transmitted torque (Md) for Hydraulic Chucks

For direct clamping

Clamping diameter (d1 h6)	6	8	10	12	14	16	18	20	25	32	mm
Md with shank at minimum size	20	30	47	80	100	160	200	330	400	650	Nm
Md with shank at maximum size	30	45	85	140	160	230	270	400	470	730	Nm

For clamping with reduction Ø 32 mm

Clamping diameter (d1 h6)	6	8	10	12	14	16	18	20	25	mm
Md with shank at minimum size	30	45	60	120	120	180	220	250	330	Nm
Md with shank at maximum size	45	65	110	170	170	230	300	320	440	Nm

For clamping with reduction Ø 20 mm

Clamping diameter (d1 h6)	3	4	5	6	8	10	12	14	16	mm
Md with shank at minimum size	6	9	16	30	55	90	120	135	190	Nm
Md with shank at maximum size	10	12	22	40	75	120	150	170	260	Nm

For clamping with reduction Ø 12 mm

Clamping diameter (d1 h6)	3	4	5	6	8	mm
Md with shank at minimum size	3	4	7	12	18	Nm
Md with shank at maximum size	4	8	12	20	26	Nm

Minimum shank clamping depths for hydraulic chucks

Shank diameter	6	8	10	12	14	16	18	20	25	32	mm
Minimum clamping depth	27	27	31	36	36	39	39	41	47	51	mm

Permissible transmitted torque (Md) for high pressure chuck

Minimum shank clamping depths for high pressure chuck

Shank diameter	16	18	20	25	32	mm
Minimum clamping depth	39	39	41	47	51	mm

For direct clamping

Clamping diameter (d1 h6)	16	18	20	25	32	mm
Md with shank at minimum size	280	360	550	650	800	Nm
Md with shank at maximum size	380	450	650	750	890	Nm

Minimum permissible shank torques and clamping depths for shrink fit holders

Shank diameter	3	4	5	6	8	10	12	14	16	18	20	25	32	mm
Minimum clamping depth	12	16	20	26	26	31	37	37	40	40	42	48	52	mm
Permissible torque moment	4	11	17	24	45	82	145	190	200	290	450	530	700	Nm

Solid drilling and bore machining

1 HSS drilling
2 Solid carbide drilling
3 Indexable insert drilling
4 Reaming and Countersinking
5 Spindle Tooling

Threading

6 Taps and thread formers
7 Circular and Thread Milling
8 Thread turning

Turning

9 Turning Tools
10 EcoCut
11 Grooving Tools
12 Miniature turning tools

Milling

13 HSS Milling Cutters
14 Solid Carbide milling cutters
15 Milling tools with indexable inserts

Tool Clamping

16 Adapters
17 Accessories 17

18 Material examples and article no. index

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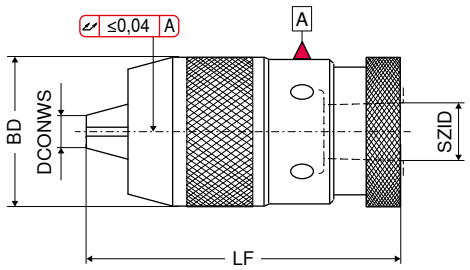
Drill chuck

- ▲ for manual and key clamping
- ▲ through-hardened and ground

Scope of supply:
Holder with clamping key



SZID	DCONWS	LF	BD	Y8 Article no. 83 636 ...	
	mm	mm	mm	£	
B12	0 - 8	73	35	146.71	**012**
B12	0 - 10	92	43	173.49	**112**
B16	1 - 13	106	50	207.93	**016**
B16	3 - 16	110	57	169.77	**116**
B18	3 - 16	110	57	221.41	**018**

NC clamping key

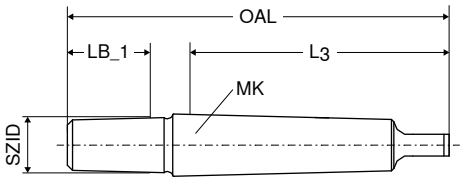
Spare parts DCONWS	Y8 Article no. 83 302 ...	
	£	
0 - 10	16.57	**010**
0 - 8	15.55	**008**
1 - 13	13.68	**013**
3 - 16	16.25	**016**

Suitable adapters can be found in → **Chapter 16 Adapters, Page 43+79.**

17

Drill chuck adapter DIN 238

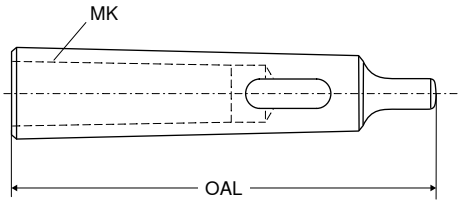
▲ through-hardened and ground



Adapter	SZID	L_3 mm	LB_1 mm	OAL mm	Y8 Article no. 83 642 ... £	
MK1	B12	62.0	18.5	89.0	13.56	**120**
MK1	B16	62.0	24.0	97.0	13.56	**160**
MK1	B18	62.0	32.0	106.0	13.56	**180**
MK2	B12	75.0	18.5	106.5	13.56	**121**
MK2	B16	75.0	24.0	110.5	13.56	**161**
MK2	B18	75.0	32.0	117.5	13.85	**181**
MK3	B12	94.0	18.5	125.0	13.56	**122**
MK3	B16	94.0	24.0	134.0	13.56	**162**
MK3	B18	94.0	32.0	141.0	18.41	**182**
MK4	B16	117.5	24.0	159.0	31.14	**163**
MK4	B18	117.5	32.0	168.0	31.14	**183**
MK5	B16	149.5	24.0	196.0	117.46	**164**
MK5	B18	149.5	32.0	204.5	117.46	**184**

Reduction sleeve DIN 2185

▲ through-hardened, ground internally and externally



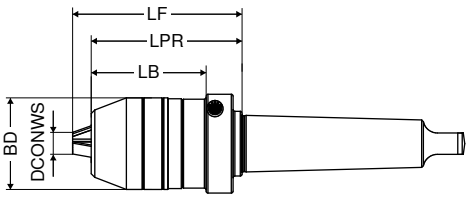
for size	OAL mm	Y8 Article no. 83 644 ... £	
MK1 - MK0	80	23.00	**010**
MK2 - MK1	92	24.67	**020**
MK3 - MK1	99	26.47	**130**
MK3 - MK2	112	28.27	**030**
MK4 - MK1	124	35.11	**240**
MK4 - MK2	124	35.11	**140**
MK4 - MK3	140	51.24	**040**
MK5 - MK2	156	66.95	**250**
MK5 - MK3	156	70.54	**150**
MK5 - MK4	171	73.79	**050**

Short drill chuck

- bidirectional
- torque moment = 12 Nm
- with Morse taper

Scope of supply:
Holder with clamping key

NC 2010



A

Y8

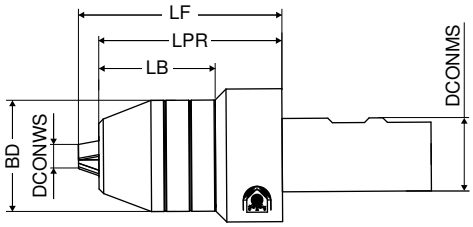
Adapter	DCONWS	BD	LB	LPR	LF	Article no. 84 314 ...	
	mm	mm	mm	mm	mm	£	
MK3	0,5 - 13	48.5	64	84	93.0	438.85	**313**
MK3	2,5 - 16	51.0	64	84	94.5	452.79	**316**
MK4	2,5 - 16	51.0	64	84	94.5	485.04	**416**

Short drill chuck

- bidirectional
- torque moment = 12 Nm
- with cylindrical shank

Scope of supply:
Holder with clamping key

NC 2010

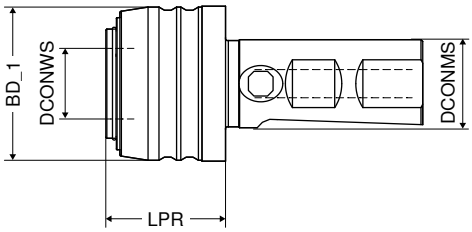


A
G 6,3 n_{max} 10000
Y8

DCONMS	DCONWS	BD	LB	LPR	LF	Article no. 84 311 ...	
mm	mm	mm	mm	mm	mm	£	
25	0,5 - 13	48.5	50.9	80	89.0	484.88	**213**
32	0,5 - 13	48.5	50.9	80	89.0	484.88	**313**
32	2,5 - 16	51.0	50.9	80	90.5	612.01	**316**

Synchro quick change tapping chuck with minimum length compensation

- for collets according to DIN 6499
- with length compensation under tension and under compression (LZD)
- $p_{max.}$ = 50 bar
- SZID = for tool size



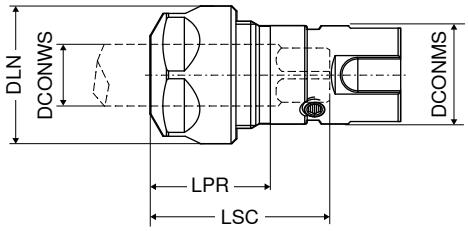
AD

DCONWS mm	cutting range	SZID	LPR mm	BD_1 mm	DCONMS mm	LZD± mm	Y8 Article no. 83 641 ... £	
20	M3 - M12	1	35	43.5	25	1,0 / 0,2	225.31	**012**
32	M6 - M20	2	56	60.0	25	1,0 / 0,2	256.82	**020**

Insert for synchro quick change tapping chuck with minimum length compensation

Scope of supply:
Includes lock nut

- SZID = for tool size



AD

SZID	DCONWS mm	cutting range	LPR mm	DLN mm	LSC mm	for collet	DCONMS mm	Y8 Article no. 83 608 ... £	
1	2 - 10	M3 - M12	24	28	42	426E (ER16)	20	185.88	**012**
2	2 - 16	M6 - M20	28	42	59	430E (ER25)	32	216.51	**020**

Spare parts

Lock nut

Lock nut

Lock nut IK

Y clamping key

for Article no.		W7 Article no. 62 950 ... £			W7 Article no. 62 950 ... £			Y8 Article no. 83 950 ... £		Y8 Article no. 83 357 ... £	
83 608 012	M22x1,5 - SW25	25.38	**044**				M22x1,5	65.34	**054**	22.20	**116**
83 608 020				M32x1,5	21.03	**055**	M32x1,5	76.11	**055**	22.20	**125**

Accessories

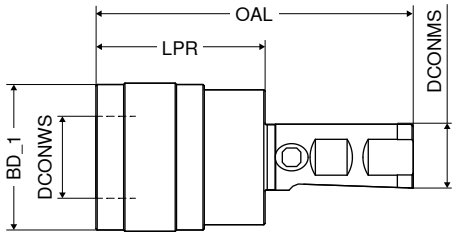
ER collet

→ 16|212, 214–215

17

Quick change tap chuck with length compensation

- with cylindrical shank
- with length compensation under tension and compression (LZD)
- Quick change adapters
- SZID = for tool size



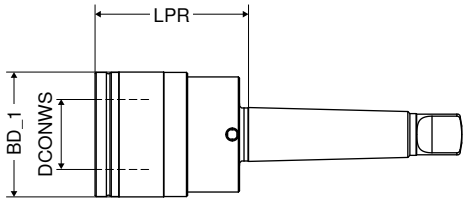
A

Y8

DCONMS mm	cutting range	SZID	LPR mm	BD_1 mm	DCONWS mm	OAL mm	LZD± mm	Article no. 83 648 ... £	
20	M3 - M12	01	41	38	19	91	9	333.69	**112**
20	M6 - M20	02	63	55	31	138	15	457.29	**120**
25	M3 - M12	01	41	38	19	97	9	333.69	**212**
25	M6 - M20	02	63	55	31	119	15	412.11	**220**
32	M3 - M12	01	41	38	19	102	9	340.65	**312**
32	M6 - M20	02	63	55	31	124	15	426.37	**320**

DIN 228B – Quick change tap chuck with length compensation

- with Morse taper shank
- with length compensation under tension and compression (LZD)
- SZID = for tool size



A

Y8

Adapter	cutting range	SZID	LPR mm	BD_1 mm	DCONWS mm	LZD± mm	Article no. 83 646 ... £	
MK 2	M3 - M12	01	46	38	19	9	290.70	**212**
MK 3	M3 - M12	01	46	38	19	9	285.88	**312**
MK 3	M6 - M20	02	69	55	31	15	357.51	**320**
MK 4	M6 - M20	02	70	55	31	15	357.51	**420**

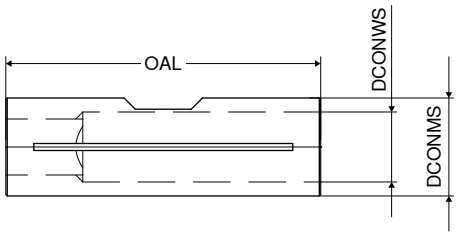
Accessories

Collet

→ 16|219, 221–223

Clamping sleeve for taps in Weldon chucks

- ▲ for machines with rigid tapping
- ▲ for safe clamping of taps

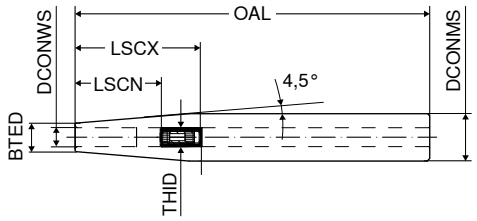


DCONWS $_{H7}$	DCONMS $_{f6}$	OAL	Y7 Article no. 80 696 ...	
mm	mm	mm	£	
3.5	6	26	71.20	**035**
4.0	8	26	69.00	**040**
4.5	8	26	69.00	**045**
6.0	10	30	66.69	**060**
7.0	10	31	66.69	**070**
8.0	12	38	66.69	**080**
9.0	12	38	66.69	**090**
10.0	14	42	66.69	**100**
11.0	14	42	66.69	**110**
12.0	16	44	66.69	**120**
14.0	18	45	66.69	**140**
16.0	20	46	66.69	**160**

Shrink fit extension

- For solid carbide and HSS shanks with h6 tolerance or better
- DRVS = Key size of the adjustment screw

TG



AD

DCONMS h6	DCONWS	BTED	OAL	LSCX	LSCN	THID	DRVS	Y8 Article no. 84 310 ...	
mm	mm	mm	mm	mm	mm		mm	£	
12	3	8	150					201.06	**003**
12	4	8	150					201.06	**004**
12	5	10	150					201.06	**005**
12	6	10	150	36	26	M5	2.5	201.06	**006**
16	3	10	150					201.06	**103**
16	4	10	150					201.06	**104**
16	5	10	150					201.06	**105**
16	6	10	150	36	26	M5	2.5	201.06	**106**
16	8	12	150	36	26	M6	3.0	201.06	**108**
20	3	10	150					201.06	**203**
20	4	10	150					201.06	**204**
20	5	10	150					201.06	**205**
20	6	10	150	36	26	M5	2.5	201.06	**206**
20	8	12	150	36	26	M6	3.0	201.06	**208**
20	10	14	150	42	32	M8x1	3.0	201.06	**210**
20	12	16	150	47	37	M10x1	5.0	201.06	**212**
25	3	10	150					201.06	**303**
25	4	10	150					201.06	**304**
25	5	15	150					201.06	**305**
25	6	20	150	36	26	M5	2.5	201.06	**306**
25	8	20	150	36	26	M6	3.0	201.06	**308**
25	10	20	150	42	32	M8x1	3.0	201.06	**310**
25	12	20	150	47	37	M10x1	5.0	201.06	**312**
25	14	20	150	47	37	M10x1	5.0	201.06	**314**
25	16	22	150	50	40	M10x1	5.0	201.06	**316**
32	6	20	150	36	26	M5	2.5	201.06	**406**
32	8	20	150	36	26	M6	3.0	201.06	**408**
32	10	24	150	42	32	M8x1	3.0	201.06	**410**
32	12	24	150	47	37	M10x1	5.0	201.06	**412**
32	14	27	150	47	37	M10x1	5.0	201.06	**414**
32	16	27	150	50	40	M10x1	5.0	201.06	**416**
32	18	27	150	50	40	M10x1	5.0	201.06	**418**
32	20	27	150	52	42	M10x1	5.0	201.06	**420**

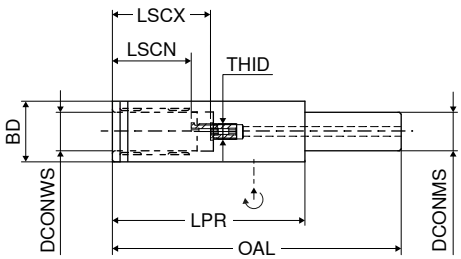
Note the minimum clamping depth in → **Chapter 16 Adapters, Page 233.**

Hydraulic expansion extension especially for Hydraulic Chucks

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw



AD
G 2,5 n_{max} 25000

DCONWS	DCONMS	BD	LPR	OAL	LSCX	LSCN	THID	Y8 Article no. 84 313 ...	£	
mm	mm	mm	mm	mm	mm	mm				
12	20	25.0	100	150	46	36	M6		702.67	**112**
20	20	31.5	100	150	51	41	M10x1		702.67	**120**
20	32	31.5	90	150	51	41	M10x1		702.67	**132**
20	32	31.5	90	200	51	41	M10x1		726.43	**232**

Note the minimum clamping depth in → **Chapter 16 Adapters, Page 233.**

Y7

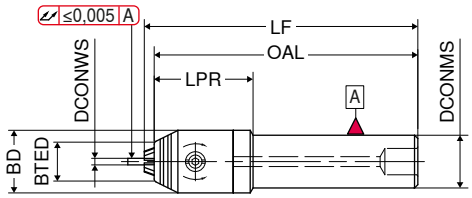
Stop screw IK

Spare parts for Article no.		Article no. 83 950 ...	£	
84 313 112	M6x12,5 - SW3		18.89	**419**
84 313 120	M10x1x13,5 - SW5		18.89	**421**
84 313 132	M10x1x13,5 - SW5		18.89	**421**
84 313 232	M10x1x13,5 - SW5		18.89	**421**

Micro-precision collet chuck

- bidirectional
- for speeds up to 60,000 1/min.

Scope of supply:
Holder including clamping wrench SW 2 x 60 mm



AD
G 2,5 n_{max} 18000

DCONMS	DCONWS	LPR	OAL	LF	BD	BTED	TQX	Y7 Article no. 84 315 ...	£	
mm	mm	mm	mm	mm	mm	mm	Nm			
16	0,2 - 3,4	30	80	83	19	12	2		864.81	**161**
16	0,2 - 3,4	30	100	103	19	12	2		910.45	**162**
16	0,2 - 3,4	30	160	163	19	12	2		996.94	**163**
20	0,2 - 3,4	28	80	83	19	12	2		864.81	**201**
20	0,2 - 3,4	28	100	103	19	12	2		910.45	**202**
20	0,2 - 3,4	28	160	163	19	12	2		996.94	**203**

Torx blade

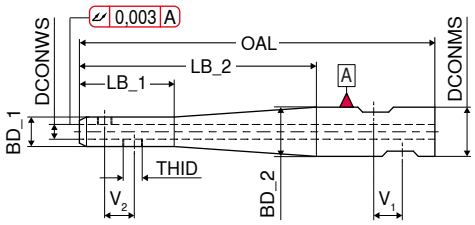
Torque screwdriver

Spare parts for Article no.	Y7 Article no. 80 950 ...	£			Y7 Article no. 80 021 ...	£	
84 315 161		8.97	**152**	1,8 Nm		116.50	**018**
84 315 162		8.97	**152**	1,8 Nm		116.50	**018**
84 315 163		8.97	**152**	1,8 Nm		116.50	**018**
84 315 201		8.97	**152**	1,8 Nm		116.50	**018**
84 315 202		8.97	**152**	1,8 Nm		116.50	**018**
84 315 203		8.97	**152**	1,8 Nm		116.50	**018**

Micro-extension

- ▲ for shanks with lateral claming flat to DIN 6535 HB / 1835 B
- ▲ with option for Synchro-Plus tapping (available on request)

Scope of supply:
Holder with shank clamping screw



AD

DCONWS mm	BD_1 mm	LB_1 mm	LB_2 mm	OAL mm	DCONMS mm	BD_2 mm	V_1 mm	V_2 mm	THID	TQX Nm	Y7 Article no. 80 641 ... £	
6	12	40	40	85	12	12	10	10	M6 x 0,5	7	210.32	**006**
6	12	40	100	150	20	20	10	10	M6 x 0,5	7	256.58	**106**
8	15	40	40	88	16	15	10	10	M8 x 0,75	8	208.22	**008**
8	15	40	100	150	20	20	10	10	M8 x 0,75	8	250.27	**108**
10	18	40	40	90	20	18	10	10	M10 x 1	12	208.22	**010**
10	18	40	100	150	20	20	10	10	M10 x 1	12	250.27	**110**
12	21	40	40	90	20	21	10	10	M12 x 1	15	208.22	**012**
12	21	40	100	150	20	21	10	10	M12 x 1	15	250.27	**112**
14	23	40	40	90	20	23	10	10	M12 x 1	15	212.42	**014**
14	23	40	100	150	20	23	10	10	M12 x 1	15	256.58	**114**
16	26	40	50	106	25	26	10	12	M14 x 1	18	216.62	**016** 1)
16	26	40	100	156	25	26	10	12	M14 x 1	18	271.32	**116** 1)
18	28	40	50	106	25	28	10	12	M14 x 1	18	227.13	**018** 1)
18	28	40	100	156	25	28	10	12	M14 x 1	18	277.61	**118** 1)
20	31	40	50	110	32	31	10	14	M16 x 1	20	225.05	**020** 1)
20	31	40	100	160	32	31	10	14	M16 x 1	20	273.42	**120** 1)

1) only pre-balanced design

Y7

Clamping screw

Spare parts DCONWS		Y7 Article no. 80 950 ... £	
6	M6x0,5 TX10	14.82	**206**
8	M8x0,75 TX10	14.82	**208**
10	M10x1 SW-5	14.82	**210**
12 - 14	M12x1 SW-5	15.25	**212**
16 - 18	M14x1 SW-5	15.66	**214**
20	M16x1 SW-5	16.10	**216**

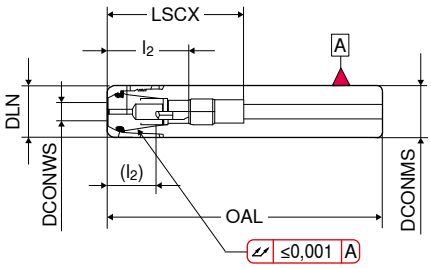
Mini ER precision collet chuck

- ▲ maximum clamping range covered according to ISO tolerance field H10
- ▲ roll key required for clamping

Scope of supply:

Holder without nut, without backstop

Centro-P



AD

DCONMS mm	DCONWS mm	DLN mm	OAL mm	LSCX mm	l_2 (l_2) mm	for collet	Y8 Article no. 84 456 ... £	
10	1 - 5	10	150	16		4004E (ER08)	325.10	**005**
10	1 - 5	10	200	16		4004E (ER08)	312.45	**006**
16	1 - 7	16	150	68	18 - 36 (12 - 26)	4008E (ER11)	239.29	**007**
16	1 - 7	16	200	68	18 - 36 (12 - 26)	4008E (ER11)	247.79	**008**
16	1 - 10	22	150	68	28 - 48 (16 - 35)	426E (ER16)	239.29	**010**
20	1 - 10	22	150	68	28 - 48 (16 - 35)	426E (ER16)	211.90	**102**
20	1 - 10	22	200	68	28 - 48 (16 - 35)	426E (ER16)	247.79	**104**

LSCX = clamping depth without back stop screw for shanks
l_2 = with back stop screw 1, dimension in brackets ( ) = with back stop screw 2
dimension OAL when using tightening nuts with seals 4 mm longer

Spare parts for collet	Y8 Mini lock nut IK Article no. 84 950 ... £		Y8 Mini lock nut Article no. 84 950 ... £		Y8 Stop screw 2 Article no. 83 950 ... £			Y8 Stop screw 1 Article no. 83 950 ... £		
4004E (ER08)			90.71	**040**						
4008E (ER11)			75.49	**041**	M8x1 - SW4	43.03	**340**	M8x1 - SW4	28.66	**336**
426E (ER16)	73.51	**035**	60.30	**034**	M11x1 - SW6	45.14	**341**	M11x1 - SW6	30.24	**337**

Accessories

ER collet
→ 16|208–213

Device
→ 35

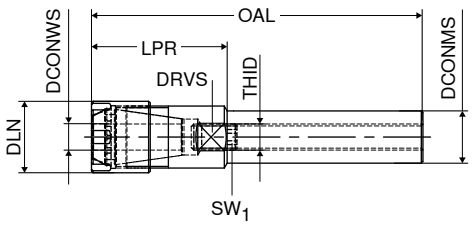
roll key
→ 36

roll key device
→ 36

The transferable torques can be found in → **Chapter 16 Adapters, Page 233.**

ER collet chuck with mini clamping nut

▲ with cylindrical shank

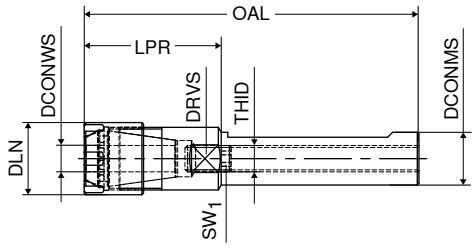


AD

DCONMS h6 mm	DCONWS mm	OAL mm	LPR mm	DLN mm	THID	DRVS mm	SW1 mm	for collet	Y8 Article no. 83 453 ... £	
8	1 - 5	79	24	12		9		4004E (ER08)	123.56	**081**
12	1 - 5	155	18	12	M5	10	2.5	4004E (ER08)	261.35	**122**
16	1 - 7	182	22	16	M7,5x0,5	14	4.0	4008E (ER11)	256.77	**163**
16	1 - 10	117	37	22	M11x1	17	4.0	426E (ER16)	261.35	**164**
16	1 - 10	197	37	22	M11x1	17	4.0	426E (ER16)	256.77	**165**
20	1 - 10	166	25	22	M11x1	17	5.0	426E (ER16)	184.16	**204**
25	1 - 13	166	37	28	M14x1	22	5.0	428E (ER20)	213.06	**254**
25	1 - 16	190	40	35	M18x1	27		430E (ER25)	268.40	**256**

ER collet chuck with mini clamping nut

▲ with cylindrical shank and clamping flat



AD

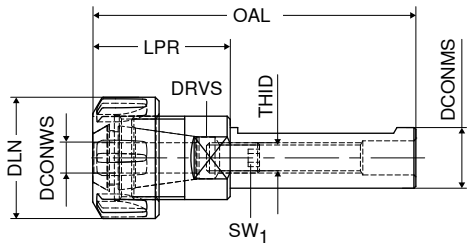
DCONMS h6 mm	DCONWS mm	OAL mm	LPR mm	DLN mm	THID	DRVS mm	SW1 mm	for collet	Y8 Article no. 83 454 ... £	
20	1 - 10	166	25	22	M11x1	17	5	426E (ER16)	184.16	**204**
20	1 - 13	137	37	28	M11x1	22	5	428E (ER20)	132.41	**206**
20	1 - 16	146	46	35	M11x1	27	5	430E (ER25)	154.39	**208**
25	1 - 13	166	28	28	M14x1	22	5	428E (ER20)	213.06	**254**
25	1 - 16	190	40	35	M18x1	27		430E (ER25)	268.40	**256**

Spare parts for ER collet chuck with mini lock nut

Spare parts for collet	Y8 ER Mini clamping key Article no. 83 950 ... £		W7 Mini lock nut Article no. 62 950 ... £		Y8 Stop screw IK Article no. 83 950 ... £	
4004E (ER08)	33.35	099	M10x0,75 55.90	067	M5x0,8 2.50	003
4008E (ER11)	33.35	100	M13x0,75 50.22	065	M7,5x0,5 2.92	004
426E (ER16)	35.57	101	M19x1 33.40	066	M11x1 3.32	006
426E (ER16)	35.57	101	M19x1 33.40	066	M8x1,25 3.20	005
428E (ER20)	35.02	102	M24x1 55.62	068	M14x1 3.49	007
430E (ER25)	35.02	103	M30x1 55.62	069	M18x1 3.74	008

ER Collet Chuck

▲ with cylindrical shank and clamping flat



AD

DCONMS h6 mm	DCONWS mm	OAL mm	LPR mm	DLN mm	THID	DRVS mm	SW_1 mm	for collet	Y8 Article no. 83 455 ... £	
40	2 - 20	100		50	M22x1,5	36		470E (ER32)	156.88	401
40	2 - 20	160		50	M22x1,5	36		470E (ER32)	193.70	402
40	3 - 30	139	59	63	M28x1,5	40	6	472E (ER40)	179.85	405

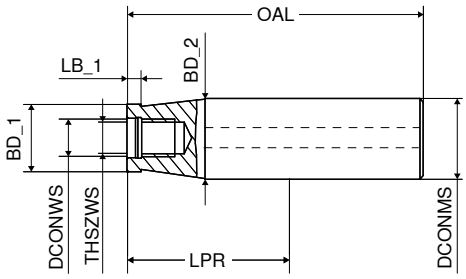
Spare parts for collet		W7 Lock nut Article no. 62 950 ... £		Y8 Y clamping key Article no. 83 357 ... £		Y8 Stop screw IK Article no. 83 950 ... £		Y8 Stop screw Article no. 83 950 ... £	
470E (ER32)	M40x1,5	21.56	056	32.33	132			M22x1,5x20 4.84	095
472E (ER40)	M50x1,5	22.33	057	36.64	140	M28x1,5x25 5.96	096		

Accessories

ER collet

→ 16|206, 211–215

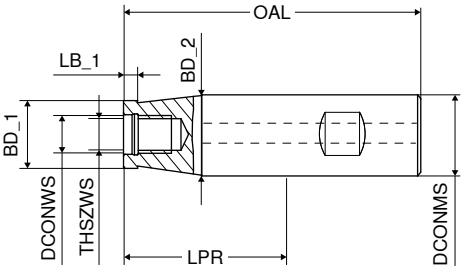
Cylindrical milling bar for cutters with threaded end



AD

DCONMS h6	THSZWS	DCONWS	LPR	BD_1	LB_1	BD_2	OAL	WA Article no. 56 727 ...	
mm		mm	mm	mm	mm	mm	mm	£	
12	M5	5.5	20	9.5	7.8	11.5	65	112.42	052
12	M6	6.5	20	11.5	7.8	11.5	65	104.20	060
12	M6	6.5	40	11.5	7.8	11.5	85	112.41	062
16	M8	8.5	20	13.8	7.8	15.8	68	116.31	081
16	M8	8.5	40	13.8	7.8	15.8	88	125.05	082
20	M10	10.5	25	18.0	7.8	19.8	75	121.17	101
20	M10	10.5	45	18.0	7.8	19.8	95	131.00	102
25	M12	12.5	50	21.0	7.8	24.8	106	136.81	122
32	M16	17.0	50	29.0	12.0	31.8	110	147.58	162

Milling bar for cutters with threaded end (Weldon)

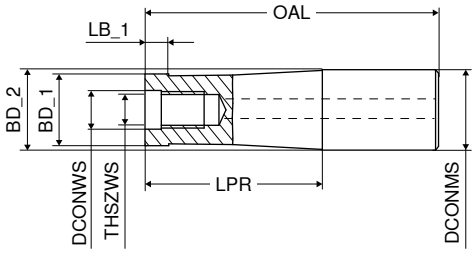


AD

DCONMS h6	THSZWS	DCONWS	LPR	BD_1	LB_1	BD_2	OAL	WA Article no. 56 729 ...	
mm		mm	mm	mm	mm	mm	mm	£	
12	M6	6.5	20	11.5	7.8	11.5	65	104.20	060
12	M6	6.5	40	11.5	7.8	11.5	85	112.41	062
16	M8	8.5	20	13.8	12.0	15.8	68	116.31	081
16	M8	8.5	40	13.8	8.0	15.8	88	125.05	082
20	M10	10.5	25	18.0	8.0	19.8	75	121.17	101
20	M10	10.5	45	18.0	12.0	19.8	95	131.00	102
25	M12	12.5	30	21.0	12.0	24.9	86	126.16	121
25	M12	12.5	50	21.0	8.0	24.9	106	136.81	122
32	M16	17.0	50	29.0	12.0	31.8	110	147.58	162

Screw-in adapter with cylindrical shank

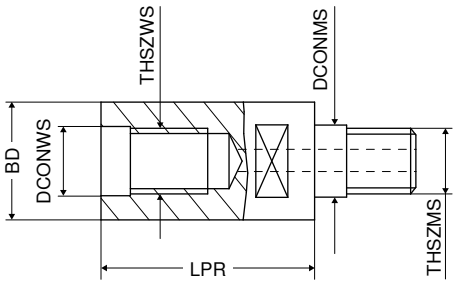
▲ vibration-damped



								AD		AD		A	
								VHM		Densimet		Densimet	
								WC		WC		WC	
DCONMS h6	THSZWS	DCONWS	LPR	BD_1	LB_1	BD_2	OAL	**Article no. 56 743 ...**		**Article no. 56 744 ...**		**Article no. 56 721 ...**	
mm		mm	mm	mm	mm	mm	mm	£		£		£	
12	M5	5.5	40	9.5	9	11.3	85			416.42	**052**	408.47	**052**
12	M5	5.5	60	9.5	9	11.3	105			450.08	**053**	435.46	**053**
12	M5	5.5	80	9.5	9	11.3	125			500.56	**054**	468.99	**054**
12	M6	6.5	20	11.5		11.5	65	548.41	**060**				
12	M6	6.5	40	11.5		11.5	85	585.66	**062**				
12	M6	6.5	60	11.5		11.5	105	649.29	**063**				
12	M6	6.5	80	11.5		11.5	125	710.70	**064**				
12	M6	6.5	100	11.5		11.5	145	772.12	**065**				
16	M8	8.5	40	14.2	9	15.3	88	621.26	**082**	511.06	**082**	511.33	**082**
16	M8	8.5	60	14.2	9	15.3	108	686.62	**083**	553.14	**083**	563.67	**083**
16	M8	8.5	80	14.2	9	15.3	128	740.06	**084**	605.72	**084**	596.17	**084**
16	M8	8.5	100	14.2	9	15.3	148	728.26	**085**	666.71	**085**	650.89	**085**
16	M8	8.5	120	14.2	9	15.3	168	778.68	**086**	734.01	**086**	705.25	**086**
16	M8	8.5	150	14.2	9	15.3	198			925.39	**087**	885.66	**087**
20	M10	10.5	60	18.5	9	19.3	110	789.80	**103**	645.67	**103**	647.49	**103**
20	M10	10.5	80	18.5	9	19.3	130	805.03	**104**	719.30	**104**	707.53	**104**
20	M10	10.5	100	18.5	9	19.3	150	965.97	**105**	803.42	**105**	778.24	**105**
20	M10	10.5	120	18.5	9	19.3	170	995.83	**106**	891.74	**106**	868.09	**106**
20	M10	10.5	140	18.5	9	19.3	190	1,109.92	**107**	1,038.97	**107**	1,017.24	**107**
25	M12	12.5	75	23.0	9	24.3	131			969.56	**124**	956.81	**124**
25	M12	12.5	80	23.0	9	24.3	136	859.86	**124**				
25	M12	12.5	100	23.0	9	24.3	156	1,105.72	**125**	1,072.62	**125**	1,101.93	**125**
25	M12	12.5	120	23.0	9	24.3	176	1,243.73	**126**				
25	M12	12.5	125	23.0	9	24.3	181			1,173.57	**126**	1,177.47	**126**
25	M12	12.5	140	23.0	9	24.3	196	1,436.75	**127**				
25	M12	12.5	150	23.0	9	24.3	206			1,318.70	**127**	1,310.28	**127**
25	M12	12.5	160	23.0	9	24.3	216	1,629.78	**128**				
25	M12	12.5	175	23.0	9	24.3	231			1,493.26	**128**	1,485.23	**128**
32	M16	17.0	100	29.0	9	31.5	160	1,831.58	**165** 1)				
32	M16	17.0	150	29.0	9	31.5	210	2,222.03	**166** 1)				
32	M16	17.0	200	29.0	9	31.5	260	2,678.28	**167** 1)				
32	M16	17.0	250	29.0	9	31.5	310	3,217.90	**168** 1)				
32	M16	17.0	300	29.0	9	31.5	360	3,678.54	**169** 1)				
36	M16	17.0	100	31.5	9	34.3	160					2,126.65	**165** 1)
36	M16	17.0	150	31.5	9	34.3	210					2,607.89	**166** 1)
36	M16	17.0	200	31.5	9	34.3	260					3,326.10	**167** 1)

1) On request

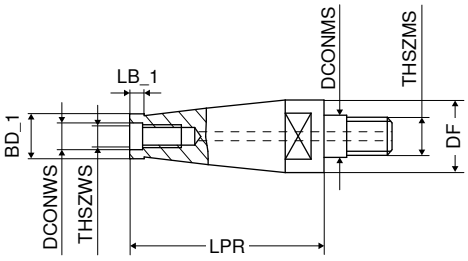
Extensions for milling cutters with threaded end



AD

THSZWS	THSZMS	DCONWS	DCONMS	LPR	BD	WA Article no. 56 733 ...	
		mm	mm	mm	mm	£	
M8	M8	8.5	8.5	40	13.8	126.16	**081**
M8	M8	8.5	8.5	60	13.8	155.40	**082**
M10	M10	10.5	10.5	40	18.0	131.00	**101**
M10	M10	10.5	10.5	60	18.0	160.25	**102**
M12	M12	12.5	12.5	40	21.0	135.85	**121**
M12	M12	12.5	12.5	60	21.0	165.09	**122**
M16	M16	17.0	17.0	40	29.0	140.70	**161**
M16	M16	17.0	17.0	60	29.0	170.10	**162**

Reductions for milling cutters with threaded end

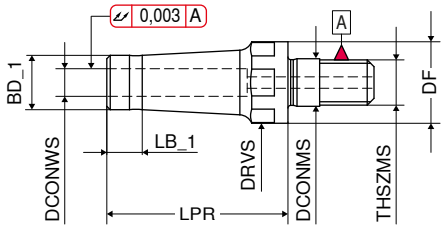


AD

THSZWS	THSZMS	DCONMS	DCONWS	LPR	BD_1	DF	LB_1	WA Article no. 56 735 ...	
		mm	mm	mm	mm	mm	mm	£	
M6	M8	8.5	6.5	20	9.5	13.8	7.8	111.52	**060**
M8	M10	10.5	8.5	40	13.8	18.0	7.8	131.00	**081**
M8	M12	12.5	8.5	60	13.8	21.0	7.8	141.64	**082**
M10	M12	12.5	10.5	40	18.0	21.0	7.8	135.85	**101**
M10	M16	17.0	10.5	60	18.0	29.0	7.8	165.09	**102**
M12	M16	17.0	12.5	40	21.0	29.0	7.8	135.85	**121**

17

Threaded shrink adapter



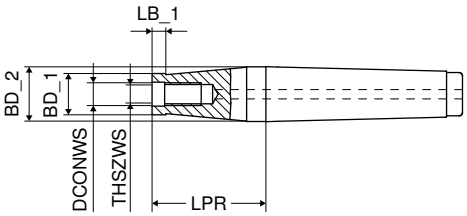
AD

WA

THSZMS	DCONWS	BD_1	LPR	LB_1	DF	DCONMS	TQX	DRVS	Article no. 56 708 ...
	mm	mm	mm	mm	mm	mm	Nm	mm	£	
M10	6	12	40	7.8	18	10.5	30	17	150.19	**061**
M12	6	12	40	7.8	21	12.5	50	19	150.19	**062**
M16	6	12	40	7.8	29	17.0	100	27	150.19	**063**
M10	8	16	40	7.8	18	10.5	30	17	150.19	**081**
M12	8	16	40	7.8	21	12.5	50	19	150.19	**082**
M16	8	16	40	7.8	29	17.0	100	27	150.19	**083**
M10	10	18	60		18	10.5	30	17	150.19	**101**
M12	10	20	60	7.8	21	12.5	50	19	150.19	**102**
M16	10	20	60	7.8	29	17.0	100	27	150.19	**103**
M12	12	21	60		21	12.5	50	19	150.19	**122**
M16	12	24	60	7.8	29	17.0	100	27	150.19	**123**

Note the minimum clamping depth in → **Chapter 16 Adapters, Page 233.**

Morse taper milling bar for cutters with threaded end



AD

Adapter	THSZWS	DCONWS	BD_1	LB_1	BD_2	LPR	WA Article no. 56 731 ...	
		mm	mm	mm	mm	mm	£	
MK2	M8	8.5	13.8	8.5	18.0	20	78.19	**081**
MK2	M8	8.5	13.8	8.5	18.0	40	83.20	**082**
MK2	M8	8.5	13.8	8.5	18.0	60	87.09	**083**
MK3	M8	8.5	13.8	8.5	24.1	80	91.92	**084**
MK3	M8	8.5	13.8	8.5	24.1	100	97.73	**085**
MK2	M10	10.5	18.0		18.0	20	78.19	**101**
MK2	M10	10.5	18.0		18.0	40	83.20	**102**
MK2	M10	10.5	18.0		18.0	60	87.09	**103**
MK3	M10	10.5	18.0	8.5	24.1	80	91.92	**104**
MK3	M10	10.5	18.0	8.5	24.1	100	97.73	**105**
MK3	M12	12.5	21.0	8.5	24.0	10	76.31	**121**
MK3	M12	12.5	21.0	8.5	24.1	30	78.19	**122**
MK3	M12	12.5	21.0	8.5	24.1	45	82.09	**123**
MK3	M12	12.5	21.0	8.5	24.1	60	86.01	**124**
MK3	M12	12.5	21.0	8.5	24.1	75	91.92	**125**
MK3	M12	12.5	21.0	8.5	24.1	85	100.68	**126**
MK3	M12	12.5	21.0	8.5	24.1	95	106.46	**127**
MK4	M12	12.5	21.0	8.5	31.6	120	152.58	**129**
MK4	M16	17.0	29.0	12.0	31.6	10	83.20	**161**
MK4	M16	17.0	29.0	12.0	31.6	35	85.03	**162**
MK4	M16	17.0	29.0	12.0	31.6	50	92.87	**163**
MK4	M16	17.0	29.0	9.0	31.6	65	99.61	**164**
MK4	M16	17.0	29.0	12.0	31.6	80	108.36	**165**
MK4	M16	17.0	29.0	12.0	31.6	95	120.24	**166**
MK5	M16	17.0	29.0	9.0	44.7	150	171.03	**168**
MK5	M16	17.0	29.0	9.0	44.7	180	181.81	**169**

MultiChange Programme Overview

The highly stable "MultiChange" exchangeable head system enables an extremely fast tool change. Designed to be durable and for a very high radial run-out accuracy, this exchangeable head system is probably the most stable and precise exchangeable head system on the market. The following chapters contain suitable exchangeable heads for almost every application.

Solid carbide drilling

- Solid Carbide NC Spot Drill
  ◁ 90°, 120°, 142° / Ø 8, 10, 12, 16, 20 mm / ZEFP* 2

→ **Chapter 2, Solid carbide drilling**

*ZEFP = Number of teeth

Reaming and Countersinking

- Through hole reamers
  Ø 8–30.2 mm incl. special diameters / ZEFP 4-6
- Blind hold reamers
  Ø 12.2–30.2 mm incl. special diameters / ZEFP 6

→ **Chapter 4, Reaming and countersinking**

*ZEFP = Number of teeth

Solid Carbide milling cutters

- PCD shoulder mills
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 2
- Solid carbide shoulder mills
  Type N, PCR-UNI, PCR-ALU / Ø 8, 10, 12, 16, 20 mm / ZEFP 3+4
- Solid carbide rough and finish milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 4–6
- Solid carbide finish milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 6
- Solid carbide high-feed cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 6
- Solid carbide ball-nosed end mills
  Ø 10, 12, 16, 20 mm / ZEFP* 4
- Solid carbide torus bull nose milling cutters
  Ø 8, 10, 12, 16, 20 mm / ZEFP* 3+4
- Solid carbide quarter round cutter
  Ø 8, 10, 12, 16, 20 mm
- Solid carbide deburring cutters
  Ø 10, 12, 16, 20 mm / ZEFP* 4+6

→ **Chapter 14, Solid carbide milling cutters**

*ZEFP = Number of teeth

Tool holder

- Steel Holder Extra Short
  Cylindrical / Tapered 87°
  Length 60–90 mm
  for KLG 8, 10, 12, 16, 20 mm 23+24

- Short Holder Steel/Solid Carbide
  cylindrical
  Length 85–120 mm
  for KLG 8, 10, 12, 16, 20 mm 24+25

- Holder Steel /Solid Carbide, Short
  87° taper
  Length 85–120 mm
  for KLG 8, 10, 12, 16, 20 mm 23

- Solid Carbide Holder Medium
  Cylindrical / Tapered 87°
  Length 110–150 mm
  for KLG 8, 10, 12, 16, 20 mm 23+25

- Holder Steel/Solid Carbide, Long
  cylindrical
  Length 150–200 mm
  for KLG 8, 10, 12, 16, 20 mm 24+25

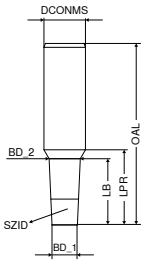
- Holder Steel/Solid Carbide, Long
  87° taper
  Length 150–200 mm
  for KLG 8, 10, 12, 16, 20 mm 23

- Steel/Solid Carbide Holder Extra Long
  cylindrical
  Length 200–250 mm
  For Ø 16 and 20 mm 24+25

MultiChange – Holders

▲ tapered 87°
▲ SZID = Coupling Size

Scope of supply:
Holder without mounting key



SZID	BD_1	BD_2	DCONMS	OAL	LB	LPR	Steel		Steel		Solid carbide		Solid carbide		Solid carbide	
							A		A		HA		HA		HA	
							Y8		Y8		Y8		Y8		Y8	
							Article no. 84 001 ...		Article no. 84 004 ...		Article no. 84 005 ...		Article no. 84 007 ...		Article no. 84 010 ...	
	mm	mm	mm	mm	mm	mm	£		£		£		£		£	
06	7.8	9.4	10	60	18	19	147.80	080								
06	7.8	9.4	10	85	43	44			175.00	080	296.32	080				
06	7.8	9.4	10	110	68	69							327.92	080		
06	7.8	9.4	10	150	108	109									377.88	080
08	9.8	12.0	16	70	25	29	150.21	100								
08	9.8	13.0	16	90	38	41			179.41	100	323.17	100				
08	9.8	14.9	16	110	60	61							362.89	100		
08	9.8	15.4	16	150	100	101									422.36	100
10	11.8	14.2	16	70	27	29	166.52	120								
10	11.8	15.2	16	90	40	41			183.15	120	323.17	120				
10	11.8	16.6	20	110	56	59							463.48	120		
10	11.8	19.5	20	150	98	99									499.16	120
12	15.8	18.2	20	80	27	29	178.74	160								
12	15.8	19.5	20	105	53	54			220.53	160	454.34	160				
12	15.8	19.5	20	130	78	79							542.68	160		
12	15.8	19.5	20	150	98	99									556.75	160
16	19.8	23.2	25	90	39	41	209.68	200								
16	19.8	24.5	25	120	60	61			257.91	200	556.92	200				
16	19.8	24.5	25	150	90	91							629.65	200		
16	19.8	24.5	25	200	140	141									706.43	200

Assembly instructions can be found on → **Page 38**

Accessories

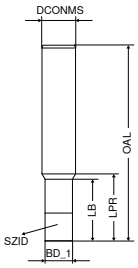
insertion key
→ 38

adjustable wrench
→ 38

MultiChange – Holders

- ▲ cylindrical
- ▲ only suitable for milling
- ▲ SZID = Coupling Size

Scope of supply:
Holder without mounting key



SZID	BD_1	DCONMS	OAL	LB	LPR	Steel	Steel	Steel	Steel
						A	A	A	A
						Y8	Y8	Y8	Y8
						Article no. 84 000 ...	Article no. 84 002 ...	Article no. 84 008 ...	Article no. 84 011 ...
	mm	mm	mm	mm	mm	£	£	£	£
06	7.8	10	60	17	19	134.23 080			
06	7.8	10	85	42	44		157.49 080		
06	7.8	10	150	107	109			220.53 080	
08	9.8	12	70	22	24	136.45 100			
08	9.8	12	90	42	44		161.41 100		
08	9.8	12	150	102	104			225.97 100	
10	11.8	16	70	17	21	151.37 120			
10	11.8	16	90	37	41		164.82 120		
10	11.8	16	150	97	101			230.74 120	
12	15.8	16	80	30	31	162.58 160			
12	15.8	16	105	55	56		198.45 160		
12	15.8	16	150	100	101			277.95 160	
12	15.8	16	200	150	151				503.60 160
16	19.8	25	90	26	31	190.63 200			
16	19.8	25	120	56	61		232.08 200		
16	19.8	25	200	136	141			324.85 200	
16	19.8	25	250	186	191				559.66 200

Assembly instructions can be found on → **Page 38**

Accessories

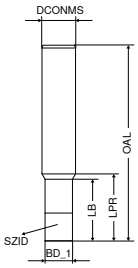
insertion key
→ 38

adjustable wrench
→ 38

MultiChange – Holders

- ▲ cylindrical
- ▲ only suitable for milling
- ▲ SZID = Coupling Size

Scope of supply:
Holder without mounting key



Solid carbide | Solid carbide | Solid carbide | Solid carbide

HA | HA | HA | HA

Y8 | Y8 | Y8 | Y8

SZID	BD_1	DCONMS	OAL	LB	LPR	Article no. 84 003 ...		Article no. 84 006 ...		Article no. 84 009 ...		Article no. 84 012 ...	
	mm	mm	mm	mm	mm	£		£		£		£	
06	7.8	10	85	42	44	296.32	080						
06	7.8	10	110	67	69			327.92	080				
06	7.8	10	150	107	109					377.88	080		
08	9.8	12	90	42	44	313.96	100						
08	9.8	12	110	62	64			341.85	100				
08	9.8	12	150	102	104					400.96	100		
10	11.8	16	90	37	41	323.17	120						
10	11.8	16	110	57	61			362.89	120				
10	11.8	16	150	97	101					422.36	120		
12	15.8	16	105	55	56	351.69	160						
12	15.8	16	130	80	81			479.99	160				
12	15.8	16	150	100	101					544.68	160		
12	15.8	16	200	150	151							719.04	160
16	19.8	25	120	56	61	556.92	200						
16	19.8	25	150	86	91			629.65	200				
16	19.8	25	200	136	141					706.43	200		
16	19.8	25	250	186	191							1,088.37	200

Assembly instructions can be found on → **Page 38**

Accessories

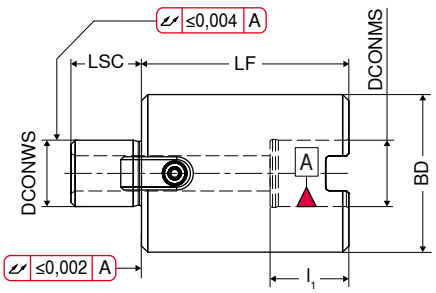
insertion key
→ 38

adjustable wrench
→ 38

Extension for Shell mill arbors

▲ variable applications through usage of one or two extensions (max. 2 x 50 mm possible)

Scope of supply:
Holder without clamping screw



DCONWS $_{h5}$	DCONMS $_{H5}$	LF	BD	LSC	l_1	Y8 Article no. 82 648 ...
mm	mm	mm	mm	mm	mm	£
16	16	75	38	17	19	115.45 **075**
16	16	50	38	17	19	114.65 **050**
22	22	50	48	19	21	117.40 **150**
22	22	75	48	19	21	118.54 **175**
27	27	75	58	21	23	125.19 **275**
27	27	50	58	21	23	122.91 **250**
32	32	75	78	24	26	138.01 **375**
32	32	50	78	24	26	133.29 **350**
40	40	50	88	27	29	165.40 **450**
40	40	75	88	27	29	171.88 **475**

Spare parts

Screw for drivers

Driver

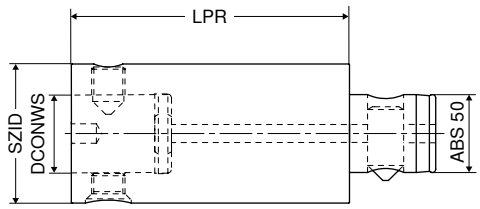
Retaining screw

Retaining screw

for Article no.		Y8 Article no. 83 950 ... £		for Article no.		Y8 Article no. 83 950 ... £		for Article no.		Y8 Article no. 82 649 ... £		for Article no.		Y8 Article no. 82 649 ... £	
82 648 075	M3x8	0.97	**296**	8x9x17,5		13.66	**120**					M8x100		5.54	**075**
82 648 050	M3x8	0.97	**296**	8x9x17,5		13.66	**120**	M8x125		6.49	**001**	M8x80		3.99	**050**
82 648 150	M4x12	1.27	**297**	10x11x20,5		14.10	**121**	M10x125		9.61	**100**	M10x80		6.34	**150**
82 648 175	M4x12	1.27	**297**	10x11x20,5		14.10	**121**					M10x100		8.37	**175**
82 648 275	M5x12	1.30	**136**	12x13x24,3		15.55	**122**					M12x100		12.51	**275**
82 648 250	M5x12	1.30	**136**	12x13x24,3		15.55	**122**	M12x125		14.70	**200**	M12x80		9.27	**250**
82 648 375	M5x20	1.38	**137**	14x21x21,2		15.71	**123**					M16x100		18.97	**375**
82 648 350	M5x20	1.38	**137**	14x21x21,2		15.71	**123**	M16x125		21.57	**300**	M16x80		13.62	**350**
82 648 450	M6x16	1.57	**138**	15,9x16,3x19,5		20.92	**295**								
82 648 475	M6x16	1.57	**138**	15,9x16,3x19,5		20.92	**295**								

When using two extension pieces (max. 2x50 mm) please use a tightening bolt with a length of 125 mm.

Extension with ABS Connection



AD

Adapter	KOMET no.	SZID	DCONWS	LPR	NEW 3E Article no. 84 209 ...	
			mm	mm	£	
ABS 50	A2000550	ABS 50	28	50	265.64	**05097**
ABS 50	A2000050	ABS 50	28	65	265.64	**06597**
ABS 50	A2000250	ABS 50	28	100	265.64	**10097**
ABS 50	A2000150	ABS 50	28	150	265.64	**15097**

Spare parts	XX Clamping screw		XX Set		XX Set		XX Positioning pin		XX Pendulum bolt		XX Coolant pipe		XX Taper screw	
	Article no. 84 950 ...		Article no. 84 950 ...		Article no. 84 950 ...		Article no. 84 950 ...		Article no. 84 950 ...		Article no. 84 950 ...		Article no. 84 950 ...	
Adapter	£		£		£		£		£		£		£	
ABS 50	11.60	**20300**	53.45	**99900**	26.43	**99800**	13.70	**20200**	33.07	**20000**	6.73	**20100**	14.89	**20400**

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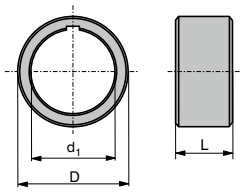
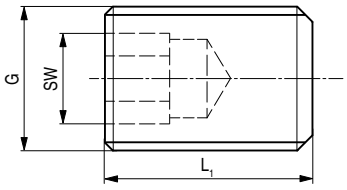
Milling Adapter Rings DIN 2084 Form B



d_1 mm	D mm	L mm	Y8 Article no. 83 385 ... £	
13	22	2	11.44	013
	22	3	11.50	113
	22	4	11.97	213
	22	5	12.37	313
	22	6	13.00	413
	22	10	14.48	513
16	26	2	10.13	016
	26	3	10.13	116
	26	4	10.28	216
	26	5	10.67	316
	26	6	11.02	416
	26	10	15.65	516
	26	20	19.91	616
	26	30	24.81	716
22	34	2	10.44	022
	34	3	10.67	122
	34	4	10.81	222
	34	5	11.84	322
	34	6	13.35	422
	34	10	18.36	522
	34	20	23.01	622
	34	30	30.51	722
27	41	2	11.50	027
	41	3	11.79	127
	41	4	13.00	227
	41	5	13.48	327
	41	6	15.12	427
	41	10	18.76	527
	41	20	25.27	627
	41	30	33.80	727
32	47	2	12.84	032
	47	3	13.63	132
	47	4	14.82	232
	47	5	16.05	332
	47	6	16.99	432
	47	10	20.70	532
	47	20	31.29	632
	47	30	38.01	732
40	55	2	14.92	040
	55	3	16.57	140
	55	4	18.28	240
	55	5	19.91	340
	55	6	21.47	440
	55	10	28.78	540
	55	20	39.59	640
	55	30	48.89	740

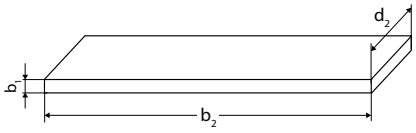
Screw for cylindrical adapters E2



G	L_1 mm	SW mm	Y8 Article no. 83 950 ... £	
M6	12	3	3.37	461
M6	16	3	3.28	462
M6	25	3	3.37	463
M8	10	4	3.37	464
M8	12	4	3.37	465
M8	16	4	3.37	466
M8	20	4	3.28	467
M8	25	4	3.28	468
M8	30	4	3.37	469
M10	16	5	3.37	470
M10	20	5	3.28	471
M10	25	5	4.01	472
M10	30	5	3.70	473
M12	12	6	4.01	474
M12	16	6	4.01	475
M12	20	6	4.01	476
M12	25	6	4.01	477

Levelling plates

- ▲ for axial and radial tool holders
- ▲ without mounting thread



b_1 mm	b_2 mm	d_2 mm	Y8 Article no. 83 950 ... £	
4	38	14	19.24	210
4	48	14	16.46	211
4	54	14	16.46	212
4	55	12	19.24	213
4	69	16	16.46	214
4	73	14	16.46	215
4	75	12	19.24	216
4	99	16	16.46	217
5	84	20	18.89	218
5	117	20	16.46	219
7	99	25	16.46	220
7	120	25	22.41	221
7	129	25	19.24	222
7	143	25	19.24	223

Clamping screw for cylindrical adapters E1

Thread	Y8 Article no. 83 950 ... £	
M10x1x10	6.79	180
M12x1x12	6.79	181
M16x1x13	6.06	182

Lock nut with external thread form ER for sealing rings with internal cooling

for size	Thread	SW mm	Y8 Article no. 83 950 ... £	
ER 16	M24x1	19	82.81	328
ER 20	M28x1,5	22	86.88	329
ER 25	M32x1,5	24	85.05	330
ER 32	M40x1,5	32	92.49	335

Zeta® – Clamping adapter

for size	Y7 Article no. 83 950 ... £	
ER 16	46.66	495
ER 20	46.66	496
ER 25	49.53	497
ER 32	59.09	498
ER 40	63.19	499

Zeta® – Nut

for size	Thread	$M_{max.}$ Nm	Y7 Article no. 83 950 ... £	
ER 16	M24x1	60	92.97	480
ER 20	M28x1,5	75	85.82	481
ER 25	M32x1,5	100	89.30	482
ER 32	M40x1,5	130	103.56	483
ER 40	M50x1,5	150	116.10	484

Zeta® – Torque Socket

for size		Y7 Article no. 83 950 ... £	
ER 16	3/8"	57.68	500
ER 20	3/8"	60.54	501
ER 25	1/2"	61.73	502
ER 32	1/2"	68.67	503
ER 40	1/2"	81.12	504

Zeta® – Torque Wrench Adapter

▲ Warning: interface of torque adapter is a 16 mm diameter round shank adapter

for size	Y7 Article no. 83 950 ... £	
ER 16	85.19	505
ER 20	86.62	506
ER 25	89.24	507
ER 32	89.24	508
ER 40	96.19	509

Zeta® – Clamping key

for size	Y7 Article no. 83 950 ... £	
ER 16	80.70	490
ER 20	86.62	491
ER 25	89.24	492
ER 32	89.24	493
ER 40	96.19	494

Pipe joints

▲ steel pipe

Thread	Pipe Ø mm	form	Y7 Article no. 83 950 ... £	
M8x1	5	A	14.10	372
M10x1	6	A	30.65	373
M10x1	8	A	17.97	374
M8x1	5	B	14.10	375
M10x1	6	B	30.65	376
M10x1	8	B	30.65	377

Ball-shaped spray nozzle

	Y8 Article no. 83 950 ... £	
Ø 8 - M 5	5.20	200
Ø 10 - M 6	6.56	201
Ø 14 - M 8	6.47	202

O-Ring

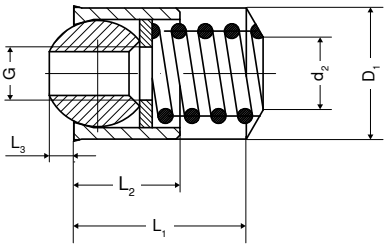
for	Ø	Y8 Article no. 83 950 ... £	
VDI 16	15 x 1,5	1.57	205
VDI 20	18,77 x 1,78	1.57	206
VDI 30	28,3 x 1,78	1.82	207
VDI 40	37,77 x 2,62	2.10	208
VDI 50	47,29 x 2,62	2.10	209

Coolant pipe with ball pin

▲ p_{max} = 80 bar

	Y7 Article no. 83 950 ... £	
Ø 9	63.06	441
Ø 11	66.54	442

Spray nozzle element

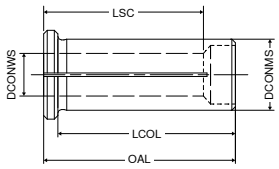


D_1 mm	G	L_1 mm	L_2 mm	L_3 mm	d_2 mm	Y8 Article no. 83 950 ... £	
9.88	M4	13	8	2.2	5.5	13.67	247
11.88	M6	15	10	3.0	6.8	13.67	248
13.88	M6	17	12	4.0	6.8	13.67	249

17

Reducing sleeves for hydraulic and high pressure chucks

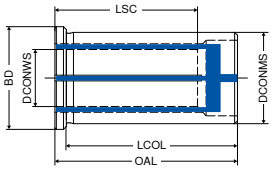
▲ thro' coolant to 80 bar



DCONMS	DCONWS	OAL	LCOL	LSC	Y8 Article no. 83 609 ...	
mm	mm	mm	mm	mm	£	
12	3	40	36	29	214.98	103
12	4	40	36	29	214.98	104
12	5	40	36	29	214.98	105
12	6	40	36	36	214.98	106
12	8	40	36	37	214.98	108
20	3	54	50	28	201.93	203
20	4	54	50	28	201.93	204
20	5	54	50	28	201.93	205
20	6	54	50	36	156.88	206
20	8	54	50	37	156.88	208
20	10	54	50	40	156.88	210
20	12	54	50	45	156.88	212
20	14	54	50	45	156.88	214
20	16	54	50	48	156.88	216
25	6	60	56	37	164.69	256
25	8	60	56	37	164.69	258
25	10	60	56	40	164.69	260
25	12	60	56	46	164.69	262
25	14	60	56	47	164.69	264
25	16	60	56	48	164.69	266
25	18	60	56	48	164.69	268
25	20	60	56	50	164.69	270
32	6	64	60	36	201.93	306
32	8	64	60	36	201.93	308
32	10	64	60	40	201.93	310
32	12	64	60	45	201.93	312
32	14	64	60	46	201.93	314
32	16	64	60	48	201.93	316
32	18	64	60	49	201.93	318
32	20	64	60	50	201.93	320
32	25	64	60	56	201.93	325

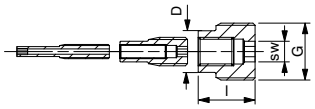
Reduction sleeves with coolant hole for hydraulic and high pressure chucks

▲ with coolant holes, for flexible diameter application



DCONMS	DCONWS	BD	OAL	LCOL	LSC	NEW Y8 Article no. 83 611 ...	
mm	mm	mm	mm	mm	mm	£	
12	3	16	44	40	29	349.08	10300
12	4	16	44	40	29	349.08	10400
12	5	16	44	40	29	349.08	10500
12	6	16	44	40	36	349.08	10600
12	8	16	44	40	37	349.08	10800
20	3	25	54	50	28	219.69	20300
20	4	25	54	50	28	219.69	20400
20	5	25	54	50	28	219.69	20500
20	6	25	54	50	36	219.69	20600
20	8	25	54	50	37	219.69	20800
20	10	25	54	50	40	219.69	21000
20	12	25	54	50	45	219.69	21200
20	14	25	54	50	45	219.69	21400
20	16	25	54	50	48	219.69	21600
32	6	36	64	60	36	248.42	30600
32	8	36	64	60	36	248.42	30800
32	10	36	64	60	40	248.42	31000
32	12	36	64	60	45	248.42	31200
32	14	36	64	60	46	248.42	31400
32	16	36	64	60	48	248.42	31600
32	18	36	64	60	49	248.42	31800
32	20	36	64	60	50	248.42	32000
32	25	36	64	60	56	248.42	32500

Stop screw for use with reducing sleeves in hydraulic chuck



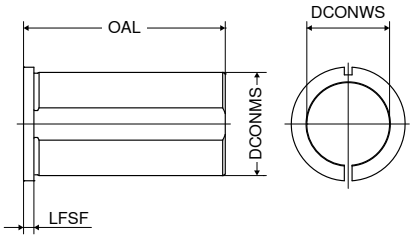
G	D mm	Y7 Article no. 83 950 ... £	
M4x0,5x26 - SW2	2.8	18.89	425
M8x1x19 - SW2,5	5.8	18.89	428
M10x1x16 - SW3	5.8	18.89	426
M16x1x16 - SW5	11.7	18.89	427

Adaptation for the use of stop screws for reducing sleeves

DCONMS in mm			
12		83 950 425	83 950 426
20	83 950 425	83 950 428	83 950 427
25	83 950 425	83 950 428	83 950 427
32		83 950 428	83 950 427

Slotted reduction sleeves

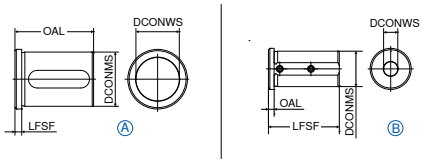
- for cylindrical and other tool holders
- for tools with cylindrical shank



DCONMS	DCONWS	OAL	LFSF	Y8 Article no. 83 271 ...	
mm	mm	mm	mm	£	
20	6	30	4	98.02	206
20	8	30	4	77.17	208
20	10	30	4	77.17	210
20	12	30	4	77.17	212
20	15	30	4	77.17	215
20	16	30	4	77.17	216
25	6	40	4	110.23	256
25	8	40	4	82.24	258
25	10	40	4	82.24	260
25	12	40	4	82.24	262
25	15	40	4	87.84	265
25	16	40	4	82.24	266
25	20	40	4	82.24	270
32	6	50	4	106.46	326
32	8	50	4	82.24	328
32	10	50	4	82.24	330
32	12	50	4	82.24	332
32	15	50	4	82.24	335
32	16	50	4	82.24	336
32	20	50	4	82.24	340
40	10	78	4	99.12	410
40	12	78	4	99.12	412
40	15	78	4	99.12	415
40	16	78	4	99.12	416
40	20	78	4	99.12	420
40	25	78	4	99.12	425
40	32	78	4	99.12	432
50	20	88	4	133.02	520
50	25	88	4	133.02	525
50	32	88	4	133.02	532
50	40	88	4	133.02	540

Reduction sleeves for direct clamping

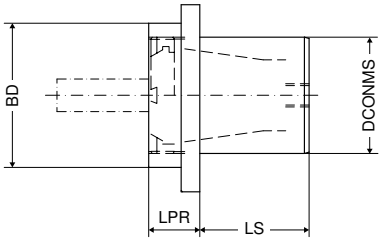
- for tools with cylindrical shank



DCONMS	DCONWS	OAL	LFSF	Fig.	Y8 Article no. 83 272 ...	
mm	mm	mm	mm		£	
25	6	50	4	B	131.77	256
25	8	50	4	B	100.48	258
25	10	50	4	B	100.48	260
25	12	50	4	B	100.48	262
25	14	50	4	A	92.54	264
25	16	50	4	A	100.48	266
25	20	50	4	A	100.48	270
32	6	58	5	B	135.97	326
32	8	58	5	B	135.97	328
32	10	58	5	B	103.32	330
32	12	58	5	B	103.32	332
32	16	58	5	A	103.32	336
32	20	58	5	A	103.32	340
32	25	58	5	A	103.32	345
40	8	58	5	B	165.19	408
40	10	58	5	B	135.97	410
40	12	58	5	B	135.97	412
40	16	58	5	A	135.97	416
40	20	58	5	A	135.97	420
40	25	58	5	A	135.97	425
40	32	58	5	A	135.97	432
50	12	75	5	B	153.40	512
50	16	75	5	A	153.40	516
50	20	75	5	A	153.40	520
50	25	75	5	A	153.40	525
50	32	75	5	A	153.40	532
50	40	75	5	A	153.40	540

Collet chuck for boring bar holder

Scope of supply:
Collet adapter with lock nut



DCONMS	for collet	BD	LS	LPR	Y7 Article no. 83 950 ...	
mm		mm	mm	mm	£	
25	428E (ER20)	35	29	18	386.53	390
32	430E (ER25)	40	32	20	417.60	391 1)
40	470E (ER32)	50	38	20	464.00	392 1)

1) Not ex-stock

Taper wiper

▲ version made from hard wood with suede inserts

Adapter	Y8 Article no. 83 715 ... £	
MK 1	11.19	001
MK 2	13.56	002
MK 3	17.44	003
MK 4	21.46	004
MK 5	30.58	005
HSK 32	73.95	320
HSK 40	80.34	400
HSK 50	81.53	500
HSK 63	77.41	630
HSK 80	123.05	800
HSK 100	117.75	100
SK 30	20.50	130
SK 40	24.27	140
SK 50	31.57	150

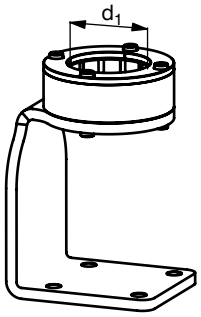
Assembly device for ISO adapters

▲ aluminium

Adapter	Y7 Article no. 80 720 ... £	
SK 30	199.51	030
SK 40	199.51	040
SK 50	331.90	050

Assembly fixture for tool holders

▲ gripping by roller
▲ secure clamping
▲ quick assembly, no additional clamping necessary

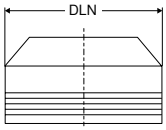


Adapter	d_1 mm	Y7 Article no. 80 722 ... £	
HSK 32, PSC 32	32.0	288.02	032
HSK 40, PSC 40	40.0	288.02	040
MAS-BT 30	46.0	252.91	046
DIN 69871 / DIN 2080 - SK 30, HSK 50, PSC 50	50.0	252.91	050
DIN 69871 / DIN 2080 - SK 40, HSK 63, PSC 63, MAS-BT 40, ANSI-CAT 40	63.0	252.91	063
DIN 69871 - SK 50	97.5	503.30	097
HSK 100, MAS-BT 50, ANSI-CAT 50	100.0	503.30	100

Safety Note: The clamping devices must be free of oil and grease to avoid slipping!

ER Standard lock nut for precision collet chuck

Centro-P



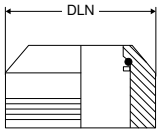
for seals

for collet	clamping range mm	DLN mm	TQX Nm	Y8 Article no. 84 950 ... £		Y8 Article no. 84 950 ... £	
426E (ER16)	1 - 10	30	50	54.05	001	72.78	011
428E (ER20)	1 - 13	32	70	55.17	002	64.72	012
430E (ER25)	2 - 16	40	85	60.06	003	81.12	013
470E (ER32)	2 - 20	50	135	66.06	005	86.74	015
472E (ER40)	3 - 26	63	190	96.10	007	118.63	017

OZ Standard lock nut for precision collet chuck

▲ can be used without sealing ring

Centro-P

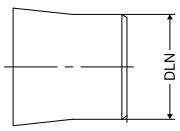


for seals

for collet	clamping range mm	DLN mm	TQX Nm	Y8 Article no. 84 950 ... £		Y8 Article no. 84 950 ... £	
462E (OZ)	2 - 25	50	140	68.05	009	71.74	020

Tapered lock nut for precision collet chuck

Centro-P

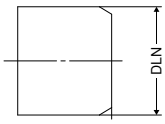


for seals

for collet	clamping range mm	DLN mm	TQX Nm	Y8 Article no. 84 950 ... £		Y8 Article no. 84 950 ... £	
426E (ER16)	1 - 10	24	50	75.49	031		
426E (ER16)	1 - 10	24	25			89.35	033

Mini lock nut for precision collet chuck

Centro-P



for seals

for collet	clamping range mm	DLN mm	TQX Nm	Y8 Article no. 84 950 ... £		Y8 Article no. 84 950 ... £	
4004E (ER08)	1 - 5	10	5 - 8	90.71	040		
4008E (ER11)	1 - 7	16	10	75.49	041		
4008E (ER11)	Ø 3,0	16	10	157.05	042 1)		
4008E (ER11)	Ø 4,0	16	10	157.05	043 1)		
4008E (ER11)	Ø 5,0	16	10	157.05	044 1)		
4008E (ER11)	Ø 6,0	16	10	157.05	045 1)		
4008E (ER11)	Ø 7,0	16	10	157.05	046 1)		
426E (ER16)	1 - 10	22	28	60.30	034	73.51	035

1) directly sealed

Collet removal aid for Mini lock nut for precision collet chuck

Centro-P

for collet	Y8 Article no. 84 950 ... £	
4004E / ER 08	45.14	070
4008E / ER 11	63.50	072

17

Roll key

- ▲ version CP = for Centro-P lock nuts
- ▲ version STD = for standard lock nuts

for size	d_1 mm	Y8 Article no. 84 950 ... £	
4004E / ER08 CP mini	10	266.73	**050**
4008E / ER 11 CP mini / mini	16	122.96	**080** 1)
426E / ER 16 CP / ER 16 mini	22	109.52	**026**
426E / ER 16 CP konisch / CP mini	24	122.96	**082** 2)
426E / ER 16 CP	30	109.52	**027**
426E / ER 16 STD	32	109.52	**028**
428E / ER 20 STD	35	109.52	**029**
430E / ER 25 CP	40	128.39	**054**
430E / ER 25 STD	42	120.77	**055**
470E / ER 32 CP + STD / OZ462E CP	50	120.37	**056**
472E / ER 40 CP + STD	63	137.10	**057**

1) Special key for mini lock nuts

2) Key for tapered lock nuts / Special key for mini lock nuts

Additional roll key device for torque key

- ▲ version CP = for Centro-P lock nuts
- ▲ version STD = for standard lock nuts

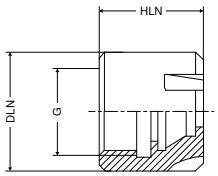
for size	d_1 mm	$M_{max.}$ Nm	Square mm	Y8 Article no. 84 950 ... £	
4008E / ER 11 CP	16	20 - 100	9 x 12	122.99	**060** 1)
426E / ER 16 CP / ER 16 mini	22	20 - 100	9 x 12	109.52	**170**
426E / ER 16 CP	24	20 - 100	9 x 12	122.99	**061** 1)
426E / ER 16 CP	30	20 - 100	14 x 18	109.52	**171**
426E / ER 16 STD	32	20 - 100	14 x 18	109.52	**172**
426E / ER 20 STD	35	20 - 100	14 x 18	109.52	**173**
430E / ER 25 CP	40	40 - 200	14 x 18	122.99	**065**
430E / ER 25 STD	42	40 - 200	14 x 18	122.99	**066**
470E / ER 32 CP + STD / OZ 462E CP	50	40 - 200	14 x 18	122.99	**067**
472E / ER 40 CP + STD	63	40 - 200	14 x 18	122.99	**068**

1) for mini and tapered lock nuts

Torque key

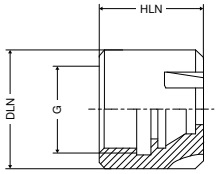
$M_{max.}$ Nm	Square mm	Y8 Article no. 84 435 ... £	
5-30	9 x 12	226.56	**030**
10-80	9 x 12	268.08	**080**
20 - 200	14 x 18	273.76	**200**

Mini ER lock nut



for collet	G	DLN	HLN	TQX	W7 Article no. 62 950 ...	
		mm	mm	Nm	£	
4004E (ER08)	M10x0,75	12	11.0	8	55.90	067
4008E (ER11)	M13x0,75	16	12.0	18	50.22	065
426E (ER16)	M19x1	22	18.0	28	33.40	066
428E (ER20)	M24x1	28	19.5	35	55.62	068
430E (ER25)	M30x1	35	21.0	40	55.62	069

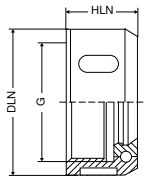
Mini ER lock nut for sealing rings



for collet	G	DLN	HLN	TQX	for seals Y8 Article no. 83 950 ...	
		mm	mm	Nm	£	
426E (ER16-DS)	M19x1	22	22.0	28	80.34	058
428E (ER20-DS)	M24x1	28	23.2	35	85.84	059
430E (ER25-DS)	M30x1	35	24.7	40	90.49	060

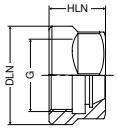
OZ lock nut Form B + C

▲ with ball bearings



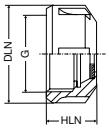
for collet	G	DLN	HLN	TQX	W7 Article no. 62 950 ...	
		mm	mm	Nm	£	
415E / 421E (OZ)	M33x1,5	43	24.0	85	35.33	050
459E / 462E (OZ)	M48x2	60	30.0	140	36.88	051
460E / 467E (OZ)	M60x2,5	72	33.5	170	60.45	052

ER Lock nut



for collet	G	DLN	HLN	for seals W7 Article no. 62 950 ...		for seals Y8 Article no. 83 950 ...	
		mm	mm	£		£	
426E (ER16)	M22x1,5 - SW25	28	18.0	25.38	044		
428E (ER20)	M25x1,5 - SW30	34	19.5	20.47	045		
428E (ER20)	M25x1,5 - SW30	34	22.5			74.23	053

ER Lock nut



for collet	G	DLN	HLN	for seals W7 Article no. 62 950 ...		for seals Y8 Article no. 83 950 ...	
		mm	mm	£		£	
426E (ER16)	M22x1,5	32	17.0	20.19	054		
426E (ER16)	M22x1,5	32	22.0			65.34	054
430E (ER25)	M32x1,5	42	20.0	21.03	055		
430E (ER25)	M32x1,5	42	24.7			76.11	055
470E (ER32)	M40x1,5	50	22.3	21.56	056		
470E (ER32)	M40x1,5	50	27.0			81.41	056
472E (ER40)	M50x1,5	63	25.3	22.33	057		
472E (ER40)	M50x1,5	63	30.7			97.97	057

MultiChange – Spanner

SW mm	$M_{max.}$ Nm	Y8 Article no. 84 357 ... £	
6	5	10.88	006
8	12,5	11.20	008
10	15	12.59	010
13	20	13.62	013
16	25	18.34	016
19	25	27.10	019 1)
21	25	29.66	021 1)
24	25	31.25	024 1)

1) only for MultiChange reamers

MultiChange – Spanner Head

SW mm	$M_{max.}$ Nm	Square mm	Y8 Article no. 84 358 ... £	
6	5	9 x 12	78.51	006
8	12,5	9 x 12	78.51	008
10	15	9 x 12	78.51	010
13	20	9 x 12	78.51	013
16	25	9 x 12	78.51	016
19	25	9 x 12	125.94	190
21	25	9 x 12	176.09	210
24	25	9 x 12	176.09	240
19	25	14 x 18	158.30	019 1)
21	25	14 x 18	192.90	021 1)
24	25	14 x 18	192.90	024 1)

1) only for MultiChange reamers

Suitable torque keys can be found on → **Page 36.**

Assembly instructions for MultiChange head

- Cleaning of cone, thread and face of the milling head
- Cleaning of cone and thread face of the holder
- Cleaning of cone, thread and face of the holders
- Cutter head screwed clockwise by hand into the holder (be careful if using gloves)
- Clamp the exchange milling head with the torque wrench and the correct spanner to the specified tightening torque (according to table).
- The gap between the head and holder must be closed (force and positive connection)

Torque wrench must be horizontally aligned to key area, take care not to tilt in the key area

Important for the sensitive tuning is an additional placing of the hand on the exchange milling head. This means the torque can be better maintained.

TORX® Screwdriver

	Y7 Article no. 80 950 ... £	
T06 - 60 mm	8.37	100
T07 - 60 mm	8.37	101
T08 - 60 mm	8.37	102
T09 - 60 mm	9.01	103
T10 - 80 mm	9.09	104
T15 - 80 mm	9.36	105
T20 - 100 mm	9.61	106
T25 - 100 mm	10.47	107
T30 115	11.14	092

TORX® MagicSpring®

	Y7 Article no. 80 950 ... £	
MS T06 - 60 mm	11.15	108
MS T07 - 60 mm	10.30	109
MS T08 - 60 mm	10.30	110
MS T09 - 60 mm	11.73	111
MS T10 - 80 mm	12.05	112
MS T15 - 80 mm	12.26	113
MS T20 - 100 mm	13.11	114
MS T25 - 100 mm	13.49	115
MS T30 - 100 mm	14.15	131

TORX PLUS® MagicSpring®

	Y7 Article no. 80 950 ... £	
MS T06 - IP - 60 mm	13.68	123
MS T07 - IP - 60 mm	13.49	124
MS T08 - IP - 60 mm	13.49	125
MS T09 - IP - 60 mm	14.77	126
MS T10 - IP - 80 mm	15.31	127
MS T15 - IP - 80 mm	15.77	128
MS T20 - IP - 100 mm	16.56	129
MS T25 - IP - 100 mm	19.11	130

A stainless steel spring holds MagicSpring ® Torx and Torx Plus screws in place.

TORX PLUS® Screwdriver

	Y7 Article no. 80 950 ... £	
T06 - IP - 60 mm	10.68	116
T07 - IP - 60 mm	10.47	117
T08 - IP - 60 mm	8.72	039
T09 - IP - 60 mm	11.31	118
T10 - IP - 80 mm	11.73	119
T15 - IP - 80 mm	12.05	120
T20 - IP - 100 mm	12.90	121
T25 - IP - 100 mm	13.49	122

TorqueFix® Handle

- with fixed torque moment
- Standard: EN ISO 6798, BS EN 26789, ASME B107.14M
- Accuracy: ± 6 %, based on national standards
- Bits to be clamped in the universal holder only

$M_{max.}$ Nm	Y7 Article no. 80 021 ... £	
0,6	117.66	006
0,7	103.32	007
0,8	105.65	008
1,0	105.65	010
1,2	116.50	012
1,6	116.50	016
1,8	116.50	018
2,0	116.50	020
2,2	116.50	022
3,0	123.15	030
3,2	123.15	032
4,0	123.15	040
5,0	123.15	050
5,5	138.19	055
6,0	138.19	060

TorqueVario®-S

- Patented handle

Scope of supply:

incl. Torque-Setter setting tool

$M_{max.}$ Nm	Y7 Article no. 80 950 ... £	
0,4 - 1,0	164.17	046
0,5 - 2,0	163.58	191
0,8 - 5,0	154.29	192
2,0 - 7,0	183.22	193

Torque-Fix-Tplus T-handle torque wrench

- with fixed torque
- Standards: EN ISO 6798, BS EN 26789, ASME B107.14M
- Accuracy: ± 6%, based on national standards
- for holding Tplus interchangeable torque blades

Scope of supply:
incl. Plastic box and inspection report

$M_{max.}$ Nm	SW mm	Y7 Article no. 80 950 ... £	
8	6	211.89	183
12	6	230.12	140

Torque Vario-STplus torque tool handle

- with variable torque adjustment
- Norm: EN ISO 6798, BS EN 26789, ASME B107.14M
- Accuracy: ± 6%, traceable to national standards
- for holding Torque Tplus interchangeable blades

Scope of supply:
incl. Plastic box and inspection report

$M_{max.}$ Nm	SW mm	Y7 Article no. 80 950 ... £	
5 - 14	6	238.71	182

Tplus interchangeable torque blade

- for T-handle torque tools

$M_{max.}$ Nm	SW mm	Y7 Article no. 80 950 ... £	
12	(6) 4	10.85	144

Interchangeable blade for Hex drive for Micro Precision Chucks

- 175 mm long

for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... £	
SW1,5	0,9	8.97	151
SW2	1,8	8.97	152
SW2,5	3,8	8.97	153
SW3	5,5	8.97	154
SW4	8,0	8.97	155

Replaceable Blade for TORX®

- 175 mm long

for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... £	
T5 -SW4	0,4	7.26	048
T6 -SW4	0,6	6.69	031
T7 -SW4	0,9	6.69	032
T8 -SW4	1,3	6.69	033
T9 -SW4	2,5	6.69	034
T10 -SW4	3,8	6.69	035
T15 -SW4	5,5	6.69	036
T20 -SW4	8,0	6.69	037
T25 -SW4	8,0	6.69	038

Replaceable Blade for TORX PLUS®

- 175 mm long

for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... £	
T05IP -SW4	0,5	6.69	049
T06IP -SW4	0,8	6.69	050
T07 - IP -SW4	1,3	6.69	051
T08 - IP -SW4	2,0	6.69	043
T09IP -SW4	3,0	6.69	052
T10IP -SW4	4,5	6.69	053
T15 - IP -SW4	6,6	6.69	054
T20 - IP -SW4	8,0	6.69	055
T25IP -SW4	8,0	6.69	056

Universal holder for Bits

▲ 162 mm long

	Y7 Article no. 80 950 ...	£	
DIN3126-C/E 6,3-1/4"		10.12	014

Quick change holder for Torque Tplus Bits

▲ for T handle torque tool

	Y7 Article no. 80 950 ...	£	
DIN3126-C/E 6,3-1/4"		36.70	172

TORX® Bits short (25 mm)

▲ DIN3126-C 6,3 - 1/4"

for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... £	
T06	0,9	1.47	015
T07	1,7	1.47	016
T08	2,6	1.47	017
T09	3,4	1.47	018
T10	4,5	1.47	019
T15	7,7	1.47	020
T20	12,7	1.47	021
T25	19,0	1.47	022
T30	37,4	1.24	093

TORX® Bits long (50 mm)

▲ DIN3126-E 6,3 - 1/4"

for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... £	
T06	0,9	4.71	023
T07	1,7	4.71	024
T08	2,6	4.71	025
T09	3,4	4.71	026
T10	4,5	4.71	027
T15	7,7	4.71	028
T20	12,7	4.71	029
T25	19,0	4.71	030
T30	37,4	5.72	094

TORX® Bits long (70 mm)

▲ DIN3126-E 6,3 - 1/4"

for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... £	
T06	0,9	6.07	173
T07	1,7	6.07	174
T08	2,6	6.07	175
T09	3,4	6.07	176
T10	4,5	6.07	177
T15	7,7	6.07	178
T20	12,7	6.07	179
T25	19,0	6.07	180
T30	37,4	6.07	181

TORX PLUS® Bits short (25 mm)

▲ DIN3126-C 6,3 - 1/4"

for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... £	
T05 - IP	0,5	3.53	065
T06 - IP	0,9	3.53	066
T07 - IP	1,7	3.53	067
T08 - IP	2,6	3.53	068
T09 - IP	3,4	3.53	069
T10 - IP	4,5	3.53	070
T15 - IP	7,7	3.53	071
T20 - IP	12,7	3.53	072
T25 - IP	19,0	3.53	073

TORX PLUS® Bits long (50 mm)

▲ DIN3126-E 6,3 - 1/4"

for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... £	
T05 - IP	0,5	7.04	074
T06 - IP	0,9	7.04	075
T07 - IP	1,7	7.04	076
T08 - IP	2,6	7.16	040
T09 - IP	3,4	7.04	077
T10 - IP	4,5	7.04	078
T15 - IP	7,7	7.04	079
T20 - IP	12,7	7.04	080
T25 - IP	19,0	7.04	081

TORX® Screwdriver

for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... £	
T05x35	0,5	6.06	082
T06x35	0,9	6.14	083
T07x35	1,7	6.14	084
T08x40	2,6	6.14	085
T09x40	3,4	6.65	086
T10x40	4,5	6.65	087
T15x45	7,7	6.99	088
T20x45	12,7	7.65	089

Clamping key

Size	$M_{max.}$ Nm	Y7 Article no. 80 397 ... £	
SW 2	1,9	4.78	020
SW 2,5	3,8	4.96	025
SW 3	6,6	4.78	030
SW 4	16	4.78	040
SW 5	30	6.09	050
SW 6	52	5.98	060
SW 8	120	7.43	080
SW 10	220	12.39	100

TORX® Screwdriver sets

	Y7 Article no. 80 950 ... £	
T06, T07, T08, T09, T10, T15, T20	57.60	090

TORX PLUS® Screwdriver

for size	$M_{max.}$ Nm	Y7 Article no. 80 950 ... £	
T05 - IP x35	0,5	7.67	057
T06 - IP x35	0,9	7.67	058
T07 - IP x35	1,7	7.50	059
T08 - IP x40	2,6	8.30	060
T09 - IP x40	3,4	8.14	061
T10 - IPx40	4,5	8.14	062
T15 - IP x45	7,7	8.60	063
T20 - IP x45	12,7	9.56	064

TORX PLUS® Screwdriver sets

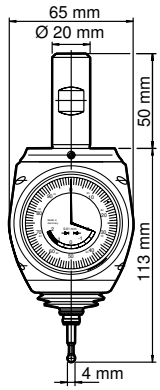
	Y7 Article no. 80 950 ... £	
IP06, IP07, IP08, IP09, IP10, IP15, IP20	89.76	091

Universal 3D-Tester

- quick and accurate positioning
- for locating and/or setting the zero point of the workpiece
- with adjustable concentricity
- usable in all 3 axes (x, y, z)
- for all CNC and erosion machines (insulation between stylus and case)
- reading of actual dimensions is independent of direction
- reading precision 0.01 mm

Scope of supply:

3D tester including tracer insert, Allen key and pin key for the replacement of the tracer insert



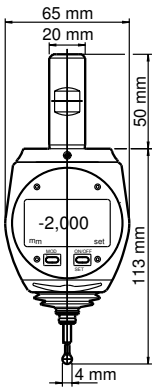
	XX Article no. 85 290 ...	
	£	
Universal 3D-Tester	315.30	**100**

Digital 3D-Tester

- quick and accurate positioning
- for locating and/or setting the zero point of the workpiece
- with adjustable concentricity
- usable in all 3 axes (x, y, z)
- for all CNC and erosion machines (insulation between stylus and case)
- reading of actual dimensions is independent of direction
- reading precision 0.001 mm

Scope of supply:

3D tester including tracer insert, Allen key and pin key for the replacement of the tracer insert



	XX Article no. 85 291 ...	
	£	
Digital 3D-Tester	717.55	**100**

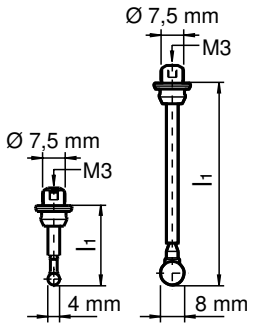
Zero height setting gauge

- to determine the point of reference and/or for adjusting tools “to zero”
- plate Ø 10 mm
- plate is hardened, non magnetic

	h mm	Y7 Article no. 85 900 ... £	
Zero height setting gauge	100	210.32	**018**

Stylus for 3D-Tester

- with movement of 2 mm beyond the zero point a break-off ceramic insert prevents damage to the unit
- if the stylus is broken remove and insert a new stylus
- check concentricity and adjust if necessary



l_1 mm	XX Article no. 85 290 ... £	
25	24.74	**102**
65	52.71	**104**

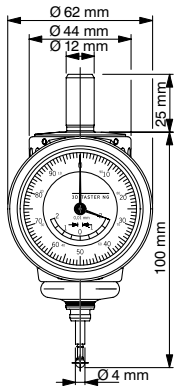
17

Universal 3D-Tester HQ

- fast and accurate positioning at reference edges
- development of the existing universal 3D-Testers
- improved mechanics
- compact size
- characterised by over travel safety
- functionality as with 85 290 100
- accuracy 0,01 mm

Scope of supply:

3D tester including tracer insert, Allen key and pin key for the replacement of the tracer insert



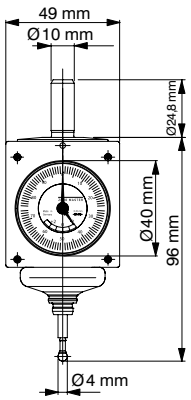
	XX Article no. 85 292 ... £	
Universal 3D-Tester HQ	330.31	**100**

Universal 3D-Tester Mini

- fast and accurate positioning at reference edges
- very small universal 3D-Tester
- particularly suitable for machines with small spindle taper e.g. SK 30 or HSK 32
- low overhang length thanks to short housing
- characterised by over travel safety
- functionality as with 85 290 100
- accuracy 0,01 mm

Scope of supply:

3D tester including tracer insert, Allen key and pin key for the replacement of the tracer insert



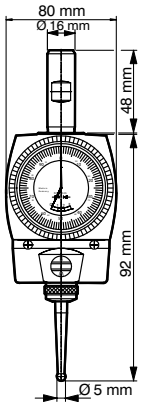
	XX Article no. 85 295 ... £	
Universal 3D-Tester Mini	315.30	**100**

Centre finder

- centralise holes and features quickly and accurately
- simple operation
- dial gauge remains in the operators vision during process
- centring accuracy 0,003 mm

Scope of supply:

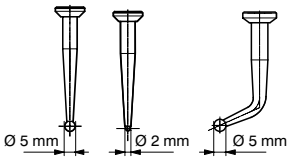
3D-Tester incl. straight stylus and telescopic stop



	XX Article no. 85 299 ... £	
Centre finder	416.19	**100**

Range with probe tip Ø 5 mm holes Ø 6–125 mm, shaft Ø 0–125 mm

Stylii for Centre Finder



	XX Article no. 85 299 ... £	
Straight stylus / Ball-Ø 2 mm	31.53	**102**
Straight stylus / Ball-Ø 5 mm	30.93	**104**
Curved stylus / Ball Ø 5 mm	37.85	**106**

Telescopic rod for Centre Finder

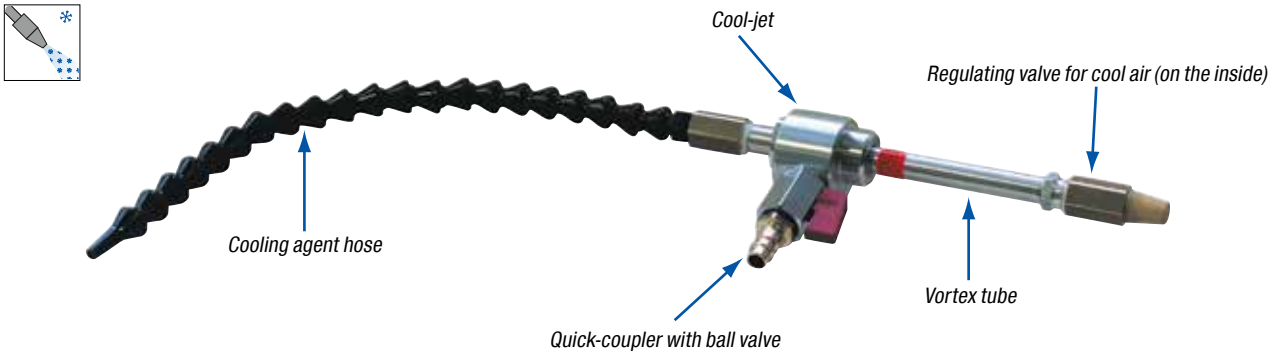
D mm	L_1 mm	XX Article no. 85 299 ... £	
6	478	12.38	**111**

Advantages with the use of the cool air nozzle

The main advantages are that cooling agent disposal is not required and tool life increases up to 100% when dry machining.

In order to improve the service life when dry machining, we recommend the use of our cooling nozzle, which is applicable with a normal compressed air connection from a pressure of 6 bar.

Not only for **cooling the tool and workpiece** it is primarily **for chip removal** to preventchip **jamming**.



Cool-jet	Y7 Article no. 81 900 ...	£	
3–7 bar air pressure, at -46 °C		1,205.18	100

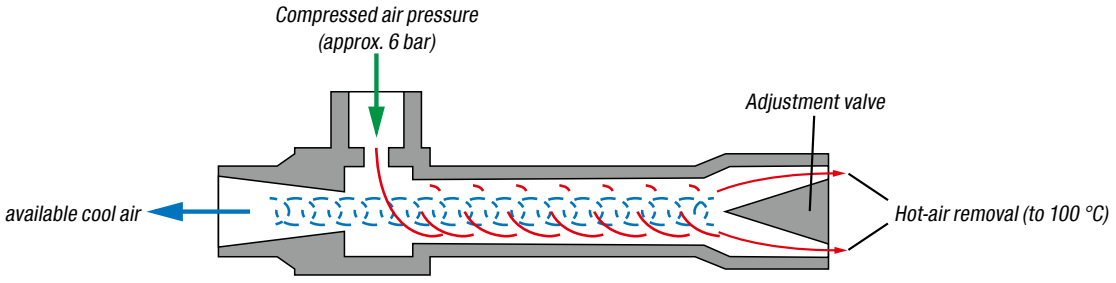
Accessories	Y7 Article no. 81 900 ...	£	
Magnetic plate Ø 80 mm without clamping arm		64.52	101
Spare tube, length 300 mm		64.52	104
Jet silencer (air filter)		13.55	105
Clamping arm, length 75 mm		190.39	106
Complete set (with magnetic set and clamping arm), weight 0,4 kg		251.26	107

Technical description – operating instruction

The principle of the cold-air nozzle is based on the use of vortex tubes. Ordinary air is divided into cold and hot air streams.

Without additional power supply or moving parts the cool air nozzle can produce **cooling performance of up to 733 W** or **Temperatures of approx. -42 °C** are produced and requires only operating pressure air of approx. 6 bar.

A water trap or service unit should be mounted. A regulating valve in the hot-air outlet regulates the temperatures and currents.



Utilizable air temperature measured at the effective discharge of the vortex tube (not the nozzle end)

Entrance pressure				
	3 bar	-31 °C	up to	-6 °C
	4 bar	-35 °C	up to	-8 °C
	5 bar	-39 °C	up to	-10 °C
	6 bar	-42 °C	up to	-11 °C
	7 bar	-46 °C	up to	-13 °C

Air consumption at an inlet temperature of + 21 ° C and an inlet pressure of 6.9 bar: 7,08 l / sec. (25.5 m³ / h)

In order to operate the regulating valve, the silencer must be unscrewed – there is a burn danger! The valve of the hot air side can reach up to 100 °C: Before contact, allow cooling!

Solid drilling and bore machining

1 HSS drilling

2 Solid carbide drilling

3 Indexable insert drilling

4 Reaming and Countersinking

5 Spindle Tooling

Threading

6 Taps and thread formers

7 Circular and Thread Milling

8 Thread turning

Turning

9 Turning Tools

10 EcoCut

11 Grooving Tools

12 Miniature turning tools

Milling

13 HSS Milling Cutters

14 Solid Carbide milling cutters

15 Milling tools with indexable inserts

Tool Clamping

16 Adapters

17 Accessories

18 Material examples and article no. index

Extended Material Examples for the Cutting Data Tables

	Index	Material	Strength N/mm² / HB / HRC
P	1.1	General construction steel	< 800 N/mm²
	1.2	Free cutting steel	< 800 N/mm²
	1.3	Hardened steel, non alloyed	< 800 N/mm²
	1.4	Alloyed hardened steel	< 1000 N/mm²
	1.5	Tempering steel, unalloyed	< 850 N/mm²
	1.6	Tempering steel, unalloyed	< 1000 N/mm²
	1.7	Tempering steel, alloyed	< 800 N/mm²
	1.8	Tempering steel, alloyed	< 1300 N/mm²
	1.9	Steel castings	< 850 N/mm²
	1.10	Nitriding steel	< 1000 N/mm²
	1.11	Nitriding steel	< 1200 N/mm²
	1.12	Roller bearing steel	< 1200 N/mm²
	1.13	Spring steel	< 1200 N/mm²
	1.14	High-speed steel	< 1300 N/mm²
	1.15	Cold working tool steel	< 1300 N/mm²
	1.16	Hot working tool steel	< 1300 N/mm²
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²
	2.2	Stainless steel, ferritic	< 750 N/mm²
	2.3	Stainless steel, martensitic	< 900 N/mm²
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²
	2.6	Stainless steel, austenitic	< 750 N/mm²
	2.7	Heat resistant steel	< 1100 N/mm²
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²
	3.5	White malleable cast iron	270–450 N/mm²
	3.6	White malleable cast iron	500–650 N/mm²
	3.7	Black malleable cast iron	300–450 N/mm²
	3.8	Black malleable cast iron	500–800 N/mm²
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²
	4.2	Aluminium alloys < 0.5 % Si	< 500 N/mm²
	4.3	Aluminium alloy 0.5–10 % Si	< 400 N/mm²
	4.4	Aluminium alloys 10–15 % Si	< 400 N/mm²
	4.5	Aluminum alloys > 15 % Si	< 400 N/mm²
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²
	4.7	Copper wrought alloys	< 700 N/mm²
	4.8	Special copper alloys	< 200 HB
	4.9	Special copper alloys	< 300 HB
	4.10	Special copper alloys	> 300 HB
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²
	4.12	Long-chipping brass	< 600 N/mm²
	4.13	Thermoplastics	
	4.14	Duroplastics	
	4.15	Fibre-reinforced plastics	
	4.16	Magnesium and magnesium alloys	< 850 N/mm²
	4.17	Graphite	
	4.18	Tungsten and tungsten alloys	
	4.19	Molybdenum and molybdenum alloys	
S	5.1	Pure nickel	
	5.2	Nickel alloys	
	5.3	Nickel alloys	< 850 N/mm²
	5.4	Nickel molybdenum alloys	
	5.5	Nickel-chromium alloys	< 1300 N/mm²
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²
	5.7	Heat resistant alloys	< 1300 N/mm²
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²
	5.9	Pure titanium	< 900 N/mm²
	5.10	Titanium alloys	< 700 N/mm²
	5.11	Titanium alloys	< 1200 N/mm²
H	6.1		< 45 HRC
	6.2		46–55 HRC
	6.3	Tempered steel	56–60 HRC
	6.4		61–65 HRC
	6.5		65–70 HRC

On the following 13 pages you will find an extension of the material examples to our usual indexes with additional international standards.

Overview of standards:

DIN

Deutsche **I**ndustrie **N**orm (German Standard)

AFNOR

Association **F**rancaise de **N**ormalisation (French Standard)

UNI

Unificazione **I**taliana (Italian Standard)

ČSN

Czechoslovakian Standard

BS

British **S**tandards

SIS

Standardiseringen **i** **S**verige (Swedish Standard)

UNE

Spanish Standard

JIS

Japanese **I**ndustrial **S**tandard

GOST

Soviet Standard

UNS

Unified **N**umbering **S**ystem

USA

Under **USA** several American standards are summarized

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
P	1.1	1.0037	St 37-2	E 24-2		11 343				STKM 12 C			
		1.0044	St 44-2	E 28-2	Fe 430 B FN	11 443	4360-43 B	1412		SM 41 B			A 570 Gr. 40
		1.0050	St 50-2	A 50-2	Fe 490	11 500	4360-50 B	2172		SS 50	BSt 5 ps; sp		A 570 Gr. 50
		1.0060	St 60-2	A 60-2	Fe 590; Fe 60-2	11 600	4360-SSE; SSC			SM 58	St 6 ps; sp		
		1.0116	St 37-3	E 24-3; E 24-4	Fe 360 D FF	11 378	4360-40 C	1312; 1313			St 3 kp; ps; sp		A 573 Gr. 58
		1.0570	St 52-3	E 36-3; E 36-4	Fe 510 B; C; D	11 523	4360-50 B	2132		SM 50 YA	17 GS		
	1.2	1.0711	9 S 20		CF 9 S 22		220 M 07			SUM 21		G 12120	1212
		1.0715	9 SMn 28	S 250	CF 9 SMn 28	11 109	230 M 07	1912	F-211 / F-2111	SUM 22		G 12130	1213
		1.0718	9 SMnPb 28	S 250 Pb	CF 9 SMnPb 28			1914	F-212 / F-2112	SUM 22 L		G 12134	12 L 13
		1.0721	10 S 20	10 F 1	CF 10 S 20	10 110	210 M 15		F-2121				1108
		1.0722	10 SPb 20	10 PbF 2	CF 10 SPb 20				F-2122				11 L 08
		1.0723	15 S 20				210 A 15	1922		SUM 32			
		1.0736	9 SMn 36	S 300	CF 9 SMn 36		240 M 07		F-2113			G 12150	1215
		1.0737	9 SMnPb 36	S 300 Pb	CF 9 SMnPb 36			1926	F-2114			G 12144	12 L 14
		1.0726	35 S 20	35 MF 4		11 140	212 M 36	1957	F-210.G			G 11400	1140
		1.0727	45 S 20	45 MF 4			212 M 44	1973				G 11460	1146
		1.0728	60 S 20	60 MF 4									
		1.0757	46 SPb 2										
	1.3	1.0301	C 10	AF 34 C 10; XC 10	C 10	12 010	045 M 10			S 10 C	10	G 10100	1010
		1.0401	C 15	AF3 7 C 12; XC 18	C 15; C 16	12 020	080 M 15	1350	F-111			G 10170	1015
		1.0481	17 Mn 4			11 748							
		1.1121	Ck 10	XC 10	C 10	12 010	045 M 10	1265	F-1510	S 10 C; S 9 CK	08; 10	G 10100	1010
		1.1141	Ck 15	XC 15; XC 18	C 15; C 16	12 020	080 M 15	1370	F-1511	S 15 C; S 15 CK	15	G 10170	1015
	1.4	1.5732	14 NiCr 10	14 NC 11	16 NiCr 11				F-1540	SNC 415 (H)			3415
		1.5752	14 NiCr 14	12 NC 15		16 240	655 M 13		F-1540	SNC 815 (H)		G 33106	3310; 9314
		1.5860	14 NiCr 18			16 523							
		1.5919	15 CrNi 6	16 NC 6	16 CrNi 4	16 220	S 107						
		1.5920	18 CrNi 8	20 NC 6		13 231							
		1.6523	21 NiCrMo 2	20 NCD 2	20 NiCrMo 2		805 M 20	2506	F-1522	SNCM 220 (H)		G 86170	8620
		1.6587	17 CrNiMo 6	18 NCD 6	18 NiCrMo 7		820 A 16						
		1.7012	13 Cr 2										
		1.7015	15 Cr 3	12 C 3		14 120	523 M 15			SCr 415 (H)	15Ch	G 50150	5015
		1.7131	16 MnCr 5	16 MC 5	16 MnCr 5	14 220	527 M 17	2511	F-1516 / F-1517	SCR 415	18ChG	G 51170	5115
		1.7139	16 MnCrS 5						F-150D				
		1.7147	20 MnCr 5	20 MC 5	20 MnCr 5	14 221				SMnC 420 (H)	18ChG	G 51200	5120
		1.7149	20 MnCrS 5						F-1551				
		1.7262	15 CrMo 5	12 CD 4	12 CrMo 4					SCM 415 (H)			
		1.7264	20 CrMo 5	18 CD 4						SCM 421			
		1.7271	23 CrMoB 3 3										
		1.7311	20 CrMo 2						F-1523				
		1.7321	20 MoCr 4	20 CD 4									
		1.7323	20 MoCrS 4	20 CD 4 S									
		1.7325	25 MoCr 4	25 CD 4									
		1.7326	25 MoCrS 4	25 CD 4 S									
	1.5	1.0402	C 22	AF 42 C 20	C 20; C 21	12 024	050 A 20	1450	F-112		20	G 10200	1020
		1.0406	C 25	AF 50 C 30	C 25	12 030	070 M 26						1025
		1.0501	C 35	AF 55 C 35	C 35	12 040	060 A 35	1550	F-113		35	G 10350	1035
		1.0503	C 45	AF 65 C 45	C 45	12 050	080 M 46	1650	F-114		45	G 10430	1045
		1.0511	C 40	AF 60 C 40	C 40	12 041							1040
		1.0528	C 30			12 031							
		1.0535	C 55	AF 70 C55	C 55	12 060	070 M 55	1655			55		1055
		1.1151	Ck 22	XC 25; XC 18	C 20		050 A 20			S 20 C; S 20 CK	20		1023
		1.1158	Ck 25	XC 25	C 25	12 030	070 M 26			S 25 C	25	G 10250	1025

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P	1.5	1.1178	Ck 30										
		1.1181	Ck 35	XC 38 H1:XC 32	C 35	12 040	080 M 36	1572		S 35 C	35	G 10340	1035
		1.1186	Ck 40	XC 42 H1	C 40	12 041	080 M 40			S 40 C	40		1040
		1.1191	Ck 45	XC 48	C 45	12 050	080 M 46	1672		S 45 C	45	G 10420	1045
	1.6	1.0540	C 50			12 051							
		1.0601	C 60	CC 55	C 60	12 061	080 A 62				60	G 10600	1060
		1.1203	Ck 55	XC 55	C50	12 060	070 M 55			S 55 C	55		1055
		1.1206	Ck 50	XC 48 H1		12 051	080 M 50				50		1050
		1.1221	Ck 60	XC 60	C60	12 061	080 A 62	1665; 1678		S 58 C	60; 60G	G 10640	1060
	1.7	1.1133	20 Mn 5	20 M 5	G 22 Mn 3	42 2714	120 M 19		F-1515	SMnC 420		G 10220	1022; 1518
		1.5121	46 MnSi 4										
		1.5131	50 MnSi 4										
		1.5141	53 MnSi 4										
		1.5710	36 NiCr 6	35 NC 6		16 240	640 A 35			SNC 236			3135
		1.6546	40 NiCrMo 2 2	40 NCD 2	40 NiCrMo 2 (KB)		311-Type 7		F-1204	SNCM 240	38ChGNM	G 87400	8740
		1.6565	40 NiCrMo 6	40 NCD 6			311-Type 6		F-1272	SNCM 439	40Ch2N2MA		4340
		1.7003	38 Cr 2	38 C 2	38 Cr 2								
		1.7006	46 Cr 2	42 C 2	45 Cr 2								5045
		1.7020	32 Cr 2										
		1.7030	28 Cr 4				530 A 30				30Ch		5130
		1.7033	34 Cr 4	32 C 4	34 Cr 4 (KB)		530 A 32			SCr 430 (H)	35Ch	G 51320	5132
		1.7218	25 CrMo 4	25 CD 4	25 CrMo 4 (KB)	15 130	1717 CDS 110	2225		SCM 420; SCM 430	30ChM	G 41300	4130
		1.7220	34 CrMo 4	35 CD 4	35 CrMo 4	15 131	708 A 37	2234	F-1250	SCM 432; SCCrM 3	AS38ChGM	G 41350	4135; 4137
		1.7223	41 CrMo 4	42 CD 4 TS	41 CrMo 4		708 M 40	2244		SCM 440	40 ChFA	G 41420	4142; 4140
		1.7225	42 CrMo 4	42 CD 4	42 CrMo 4	15 142	708 M 40	2244	F-1252	SCM 440 (H)		G 41400	4142; 4140
		1.7228	50 CrMo 4	50 CR MO4			708 A 47			SCM 445 (H)	50ChFA	G 41470	4150
		1.8159	50 CrV 4	50 CV 4	51 CrV 4	15 260	735 A 50	2230		SUP 10	50ChGFA	G 61500	6150
	1.8	1.1157	40 Mn 4	35 M 5			150 M 36				40G	G 10390	1039
		1.1165	30 Mn 5	35 M 5		13 141	120 M 36			SMn 433 H; SCMn 2	30GSL		1330
		1.1167	36 Mn 5	40 M 5		42 2715	150 M 36	2120	F-1203	SMn 438 (H); SCMn 3	35G2; 35GL	G 13350	1335
		1.1170	28 Mn 6	20 M 5	C 28 Mn	13 141	150 M 28			SCMn 1	30G		1330
		1.3561	44 Cr 2										
		1.3563	43 CrMo 4										
		1.3565	48 CrMo 4	48 CD 4			817 M 40			SNC 836			
		1.5120	38 MnSi 4										
		1.5121	46 MnSi 4										
		1.5122	37 MnSi 4			13 240							
		1.5131	50 MnSi 4										
		1.5141	53 MnSi 4										
		1.5223	42 MnV 7			13 242							
		1.5710	36 NiCr 6	35 NC 6		16 240	640 A 35			SNC 236			3135
		1.5736	36 NiCr 10	30 NC 11	35 NiCr 9					SNC 631 (H)			3435
		1.5755	31 NiCr 14	18 NC 13		16 440	653 M 31		F-123	SNC 836			
		1.6511	36 CrNiMo 4	40 NCD 3	38 NiCrMo 4 (KB)	16 341	816 M 40		F-1280		40 ChN2MA	G 98400	9840
		1.6513	28 NiCrMo 4										
		1.7003	38 Cr 2	38 C 2	38 Cr 2								
		1.7006	46 Cr 2	42 C 2	45 Cr 2								5045
		1.7030	28 Cr 4				530 A 30				30Ch		5130
		1.7033	34 Cr 4	32 C 4	34 Cr 4 (KB)	PH 41 4141	530 A 32			SCr 430 (H)	35Ch	G 51320	5132
		1.7034	37 Cr 4	38 C 4	38 Cr 4	14 140	530 A 36		F-1201	SCr 435 H	40Ch		5135
		1.7035	41 Cr 4	42 C 4	41 Cr 4		530 M 40		F-1202 / F-1211	SCr 440 (H)	40Ch	G 51400	5140
		1.7218	25 CrMo 4	25 CD 4 S	25 CrMo 4 (KB)	15 130	1717 CDS 110	2225	F-222	SCM 420; SCM 430	30ChM	G 41300	4130
		1.7220	34 CrMo 4	35 CD 4	35 CrMo 4	15 131	708 A 37	2234	F-1250	SCM 432; SCCrM 3	AS38ChGM	G 41350	4135; 4137

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P		1.7223	41 CrMo 4	42 CD 4 TS	41 CrMo 4		708 M 40	2244		SCM 440	40 ChFA	G 41420	4142; 4140
		1.7225	42 CrMo 4	42 CD 4	42 CrMo 4	15 142	708 M 40	2244		SCM 440 (H)		G 41400	4142; 4140
		1.7228	50 CrMo 4	50 CR MO4			708 A 47			SCM 445 (H)	50ChFA	G 41470	4150
		1.7561	42 CrV 6			15 241							
		1.7735	14 CrMoV 6 9	15 CDV 6									
		1.8159	50 CrV 4	50 CV 4	51 CrV 4	15 260	735 A 50	2230		SUP 10	50ChGFA	G 61500	6150
		1.3563	43 CrMo 4										
		1.3565	48 CrMo 4				817 M 40			SNC 836			
		1.5120	38 MnSi 4										
		1.5121	46 MnSi 4										
		1.5122	37 MnSi 4			13 240							
		1.5223	42 MnV 7			13 242							
		1.5710	36 NiCr 6	35 NC 6		16 240	640 A 35			SNC 236			3135
		1.5736	36 NiCr 10	30 NC 11	35 NiCr 9					SNC 631 (H)			3435
		1.5864	35 NiCr 18			16 640			F-122				
		1.6511	36 CrNiMo 4	40 NCD 3	38 NiCrMo 4 (KB)	16 341	816 M 40				40 ChN2MA	G 98400	9840
		1.6580	30 CrNiMo 8	30 CND 8	30 NiCrMo 8		823 M 30		F-1272	SNCM 431			
		1.6582	34 CrNiMo 6	35 NCD 6	35 NiCrMo 6 (KW)	16 342	817 M 40	2541	F-128 / F-1270	SNCM 447	38Ch2N2MA		4340
		1.7033	34 Cr 4	32 C 4	34 Cr 4 (KB)		530 A 32			SCr 430 (H)	35Ch	G 51320	5132
		1.7034	37 Cr 4	38 C 4	38 Cr 4	14 140	530 A 36			SCr 435 H	40Ch		5135
		1.7035	41 Cr 4	42 C 4	41 Cr 4		530 M 40			SCr 440 (H)	40Ch	G 51400	5140
		1.7045	42 Cr 4	42 C 4 TS	41 Cr 4		530 A 40	2245		SCr 440	40Ch		5140
		1.7218	25 CrMo 4	25 CD 4 S	25 CrMo 4 (KB)	15 130	1717 CDS 110	2225		SCM 420; SCM 430	30ChM	G 41300	4130
		1.7220	34 CrMo 4	35 CD 4	35 CrMo 4	15 131	708 A 37	2234		SCM 432; SCCrM 3	AS38ChGM	G 41350	4135; 4137
		1.7223	41 CrMo 4	42 CD 4 TS	41 CrMo 4		708 M 40	2244		SCM 440	40 ChFA	G 41420	4142; 4140
		1.7225	42 CrMo 4	42 CD 4	42 CrMo 4	15 142	708 M 40	2244		SCM 440 (H)		G 41400	4142; 4140
		1.7228	50 CrMo 4	50 CR MO4			708 A 47			SCM 445 (H)	50ChFA	G 41470	4150
		1.7361	32 CrMo 12	30 CD 12	32 CrMo 12	15 230	722 M 24	2240	F-124A				
		1.7561	42 CrV 6			15 241							
		1.7707	30 CrMoV 9			15 330							
		1.7735	14 CrMoV 6 9										
		1.8159	50 CrV 4	50 CV 4	51 CrV 4	15 260	735 A 50	2230		SUP 10	50ChGFA	G 61500	6150
		1.8161	58 CrV 4			15 261							
	1.9	0.9650	G-X 260 Cr 27										
		1.1118	GS-24 Mn 6			42 2714							
		1.1167	GS-36 Mn 5			42 2715							
		1.6511	GS-36 CrNiMo 4			16 341							
		1.6582	GS-34 CrNiMo 6			16 342							
		1.6750	GS-20 NiCrMo 3 7										
	1.10	1.8504	34 CrAl 6			14 340							
		1.8506	34 CrAlS 5									K 23745	
		1.8507	34 CrAlMo 5	30 CAD 6.12	34 CrAlMo 7		905 M 31		F-1741			K 23545	A 355 Cl. D
		1.8509	41 CrAlMo 7	40 CAD 6.12	41 CrAlMo 7	15 340	905 M 39	2940	F-1740	SACM 645	38ChMJuA	K 24065	A 355 Cl. A
	1.11	1.8515	31 CrMo 12	30 CD 12	31 CrMo 12		722 M 24	2240	F-1712				
		1.8519	31 CrMoV 9						F-1721				
		1.8521	15 CrMoV 5 9										
		1.8523	39 CrMoV 13 9		36 CrMoV 13 9		897 M 39						
		1.8550	34 CrAlNi 7									K 52440	
	1.12	1.3505	100 Cr 6	100 C 6	100 Cr 6	14 100	534 A 99	2258	F-131 / F-1310	SUJ 2	SchCh 15	G 52986	52100
		1.3520	100 CrMn 6			14 209							
		1.3543	X 102 CrMo 17	Z 100 CD 17									

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P	1.13	1.0904	55 Si 7	55 S 7	55 Si 8		250 A 53	2085; 2090			55S2		9255
		1.0961	60 SiCr 7	60 SC 7	60 SiCr 8					SUP 7			9262
		1.1231	Ck 67	XC 68	C 70	12 071	060 A 67	1770			70	G 10700	1070
		1.1248	Ck 75	XC 75	C 75	12 081	060 A 78	1774; 1778			75	G 10780	1078; 1080
		1.1274	Ck 101	XC 100			060 A 96	1870		SUP 4		G 10950	1095
		1.2101	62 SiMnCr 4										
		1.2103	58 SiCr 8			19 452							
		1.5026	55 Si 7										
		1.7103	67 SiCr 5										
		1.7176	55 Cr 3	55 C 3	55 Cr 3		527 A 60	2253	F-1431	SUP 9 (A)	50ChGA	G 51550	5155
		1.8159	50 CrV 4	50 CV 4	51 CrV 4	15 260	735 A 50	2230	F-143 / F-1430	SUP 10	50ChGFA	G 61500	6150
	1.14	1.3202	S 12-1-4-5			19 858						T 12015	T15
		1.3207	S 10-4-3-10	Z 130 WKCDV 10-10-04	HS 10-4-3-10	19 861	BT 42		F-5553	SKH 57			
		1.3243	S 6-5-2-5	Z 85 WDKCV 06-05-05	HS 6-5-2-5	19 852		2723	F-5613	SKH 55	R6M5K5		
		1.3246	S 7-4-2-5	Z 110 WKCDV 07-05-04	HS 7-4-2-5	19 851						T 11341	M 41
		1.3247	S 2-10-1-8	Z 110 DKCWV 09-08-04	HS 2-9-1-8		BM 42			SKH 51		T 11342	M 42
		1.3249	S 2-9-2-8				BM 34					T 11333	M 33; M 34
		1.3255	S 18-1-2-5	Z 80 WKCV 18-05-04-0	HS 18-1-1-5	19 855	BT 4			SKH 3		T 12004	T 4
		1.3257	S 18-1-2-15										
		1.3265	S 18-1-2-10		HS 18-0-1-10	19 860	BT 5			SKH 4 A		T 12005	T 5
		1.3302	S 12-1-4			19 810							
		1.3318	S 12-1-2			19 802							
		1.3333	S 3-3-2		HS 3-3-2	19 820							
		1.3343	S 6-5-2	Z 85 WDCV 06-05-04-0	HS 6-5-2	19 830	BM 2	2722	F-5603	SKH 9; SKH 51	R6AM5	T 11302	M 2
		1.3344	S 6-5-3	Z 120 WDCV 06-05-04	HS 6-5-3		BM 4			SKH 52; SKH 53		T 11323	M 3 Cl. 2
		1.3346	S 2-9-1	Z 85 DCWV 08-04-02-0	HS 1-8-1		BM 1				H41	T 11301	H 41; M 1
		1.3348	S 2-9-2	Z 100 DCWV 09-04-02	HS 2-9-2			2782				T 11307	M 7
		1.3355	S 18-0-1	Z 80 WCV 18-04-01	HS 18-0-1	19 824	BT 1			SKH 2	R18	T 12001	T 1
	1.15	1.2067	100 Cr 6	Y 100 C 6			BL 3					T 61203	L 3
		1.2080	X 210 Cr 12	Z 200 C 12	X 210 Cr 13 KU	19 436	BD 3			SKD 1	Ch12	T 30403	D 3
		1.2083	X 42 Cr 13	Z 40 C 14	X 41 Cr 13 KU	19 435			F-5263	SUS 420 J 2			
		1.2101	62 SiMnCr 4										
		1.2103	58 SiCr 8			19 452							
		1.2108	90 CrSi 5										
		1.2162	21 MnCr 5	20 NC 5		19 487				SCR 420 H			
		1.2210	115 CrV 3	100 C 3	107 CrV 3 KU	19 421						T 61202	L 2
		1.2312	40 CrMnMoS 8 6	40 CMD 8 + S									
		1.2316	X 36 CrMo 17	Z 38 CD 17	X 38 CrMo 16 1 KU								
		1.2330	35 CrMo 4	34 CD 4	35 CrMo 4		708 A 37	2234			35 HM	T 51620	4135
		1.2332	47 CrMo 4	42 CD 4	40 CrMo 4		708 M 40	2244					4142
		1.2341	X 6 CrMo 4										
		1.2363	X 100 CrMoV 5 1	Z 100 CDV 5	X 100 CrMoV 5 1 KU	19 571	BA 2	2260	F-5227	SKD 12		T 30102	A 2
		1.2369	81 CrMov 42 16										
		1.2379	X 155 CrVMo 12 1	Z 160 CDV 12	X 155 CrV-Mo 12 1 KU	19 573	BD 2		F-5211	SKD 11		T 30402	D 2
		1.2419	105 WCr 6	105 WC 13	107 WCr 5 KU					SKS 31	ChWG		
		1.2436	X 210 CrW 12	Z 200 CW 12	X 215 CrW 12 1 KU	19 437		2312	F-5213	SKD 2			
		1.2510	100 MnCrW 4	90 MWCV 5	95 MnWCr 5 KU	19 314	BO 1	2140	F-5220	SKS 3		T 31501	O 1
		1.2516	120 WV 4	110 WC 20	110 W 4 KU	19 711	BF 1						
		1.2542	45 WCrV 7		45 WCrV 8 KU	19 732	BS 1	2710				T 41901	S 1
		1.2550	60 WCrV 7	55 WC 20	55 WCrV 8 KU	19 735							
		1.2601	X 165 CrMoV 12		X 165 CrMoW 12 KU	19 572		2310					
		1.2711	54 NiCrMoV 6	55 NCDV 6		19 662							
		1.2713	55 NiCrMoV 6	55 NCDV 7		19 662			F-520.S	SKT 4	5ChNM	T 61206	L 6

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P		1.2721	50 NiCr 13										
		1.2735	15 NiCr 14	10 NC 12		16 240				SNC 22		T 51606	
		1.2762	75 CrMoNiW 6 7										
		1.2764	X 19 NiCrMo 4										
		1.2767	X 45 NiCrMo 4	Y 35 NCD 16	42 NiCrMo 15 7	19 655							
		1.2826	60 MnSiCr 4										
		1.2833	100 V 1	Y1 105 V	102 V 2 KU	19 356	BW 2			SKS 43		T 72302	W 210
		1.2842	90 MnCrV 8	90 MV 8	90 MnVCr 8 KU	19 314	BO 2					T 31502	O 2
		1.2885	X 32 CrMoCoV 3 3 3	30 DCKV 28									
		1.6356	X 2 NiCoMoTi 18 12 4										
		1.6358	X 2 NiCoMoTi 18 9 5										
		1.6359	X 2 NiCrMo 18 8 5	Maraging 250								K 92890	
	1.16	1.2311	40 CrMnMo 7			19 520							
		1.2343	X 38 CrMoV 5 1	Z 38 CDV 5	X 37 CrMoV 5 1 KU	19 552	BH 11		F-5317	SKD 6	4Ch5MFS	T 28811	H 11
		1.2344	X 40 CrMoV 5 1	Z 40 CDV 5	X 40 CrMo 5 1 1 KU	19 554	BH 13	2242	F-5318	SKD 61	4Ch5MF1S	T 20813	H 13
		1.2365	X 32 CrMoV 3 3	32 DCV 28	30 CrMoV 12 27 KU	19 541	BH 10			SKD 7	3Ch3M3F	T 20810	H 10
		1.2367	X 38 CrMoV 5 3										
		1.2567	X 30 WCrV 5 3	Z 32 WCV 5	X 30 WCrV 5 3 KU	19 720				SKD 4			
		1.2581	X 30 WCrV 9 3	Z 30 WCV 9	X 30 WCrV 9 3 KU	19 721	BH 21			SKD 5	3Ch2W8F	T 20821	H 21
		1.2706	X 3 NiCrMo 18 8 5	E-Z 2 NKD 18		19 662						K 93120	
		1.2713	55 NiCrMoV 6	55 NCDV 7		19 662				SKT 4	5ChNM	T 61206	L 6
		1.2714	56 NiCrMoV7										
		1.2738	40 CrMnNiMo 8						F-5303				
		1.2744	57 NiCrMoV 7 7										
M	2.1	1.3941	G-X 4 CrNi 18 13										
		1.3944	G-X 5 CrNi 18 11										
		1.3951	G-X 4 CrNiMoN 22 15										
		1.3952	G-X 4 CrNiMoN 18 14										
		1.3953	G-X 2 CrNiMo 18 15										
		1.3955	G-X 12 CrNi 18 11										
		1.3959	G-X 10 CrNiNb 16 13										
		1.3964	G-X 4 CrNiMnMoN 19 1										
		1.4001	G-X 7 Cr 13	Z 8 C 13 FF		17 020			F-8401				
		1.4006	G-X 10 Cr 13	Z 10 C 13 M		17 021			F-3401				
		1.4008	G-X 8 CrNi 13	Z 12 CN 13 M		42 2904							
		1.4027	G-X 20 Cr 14	Z 20 C 13 M		42 2906	420 C 29			SCS 2	20Ch13L		
		1.4034	G-X 46 Cr 13	Z 40 C 14 M		17 024			F-3405				
		1.4059	G-X 22 CrNi 17										
		1.4085	G-X 70 Cr 29										
		1.4086	G-X 120 Cr 29										
		1.4107	G-X 8 CrNi 12			42 2904							
		1.4120	G-X 20 CrMo 13										
		1.4122	G-X 35 CrMo 17			17 137							
		1.4136	G-X 70 CrMo 29 2										
		1.4138	G-X 120 CrMo 29 2										
		1.4306	G-X 2 CrNi 18 9			17 249			F-3503				
		1.4308	G-X 6 CrNi 18 9	Z 6 CN 18.10 M		42 2930	304 C 15	2333	F-8411	SCS 13	07Ch18N9L		CF-8
		1.4312	G-X 10 CrNi 18 8			42 2931							
		1.4313	G-X 5 CrNi 13 4										
		1.4339	G-X 32 CrNi 28 10										
		1.4340	G-X 40 CrNi 27 4										
		1.4347	G-X 8 CrNi 26 7										
		1.4404	G-X 2 CrNiMo 18 10			17 349			F-3533				

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M	2.1	1.4405	G-X 5 CrNiMo 16 5										
		1.4407	G-X 5 CrNiMo 13 4										
		1.4408	G-X 6 CrNiMo 18 10			42 2940			F-8414				
		1.4414	G-X 4 CrNiMo 13 4										
		1.4437	G-X 6 CrNiMo 18 12			42 2940							
		1.4439	G-X 3 CrNiMo 17 13 5						F-3544				
		1.4446	G-X 2 CrNiMo 17 13 4										
		1.4448	G-X 6 CrNiMo 17 13										
		1.4463	G-X 6 CrNiMo 24 8 2										
		1.4464	G-X 40 CrNiMo 27 5										
		1.4465	G-X 2 CrNiMoN 25 25										
		1.4500	G-X 7 NiCrMoCuNb 25										
		1.4531	G-X 2 NiCrMoCuN 20 1										
		1.4536	G-X 2 NiCrMoCuN 25 2										
		1.4540	G-X 4 CrNiCuNb 16 4										
		1.4552	G-X 5 CrNiNb 18 9			42 2933			F-8413				
		1.4580	G-X 10 CrNiMoNb 18 1						F-3536				
		1.4581	G-X 5 CrNiMoNb 18 10	Z 4 CNDNb 18.12 M	GX 6 CrMoNb 20 11	42 2941	318 C 17			SCS 22			
		1.4585	G-X 7 CrNiMoCuNb 18										
		1.4729	G-X 40 CrSi 13										
		1.4740	G-X 40 CrSi 17										
		1.4743	G-X 160 CrSi 18										
		1.4745	G-X 40 CrSi 23										
		1.4761	G-X 120 CrSi 23										
		1.4776	G-X 40 CrSi 29										
		1.4777	G-X 130 CrSi 29										
		1.4809	G-X 40 CrNi 23 14										
		1.4815	G-X 8 CrNi 19 10										
		1.4820	G-X 12 CrNi 26 5										
		1.4822	G-X 40 CrNi 24 5										
		1.4823	G-X 40 CrNiSi 27 4										
		1.4825	G-X 25 CrNiSi 18 9			42 2932							
		1.4826	G-X 40 CrNiSi 22 9			42 2934							
		1.4832	G-X 25 CrNiSi 20 14										
		1.4837	G-X 40 CrNiSi 25 12			42 2936							
		1.4840	G-X 15 CrNi 25 20										
		1.4848	G-X 40 CrNiSi 25 20		GX 40 CrNi 26 20	42 2952							
		1.4849	G-X 40 NiCrSiNb 38 1										
		1.4852	G-X 40 NiCrNb 35 25										
		1.4855	G-X 30 CrNiSiNb 24 2										
		1.4857	G-X 40 NiCrSi 35 25										
		1.4859	G-X 10 NiCrNb 32 20										
		1.4865	G-X 40 NiCrSi 38 18		GX 50 NiCr 39 19		330 C 40			SCH 15; SCH 16			
		1.4868	G-X 50 CrNi 30 30										
		1.4873	G-X 45 CrNiW 18 9										
		1.4927	G-X 5 CrNi 22 10										
		1.4928	G-X 12 CrNiMo-CoVN 12										
		1.4930	G-X 14 CrCoMo 13 10										
		1.4931	G-X 22 CrMoV 12 1										
		1.4957	G-X 15 CrNiCo 21 20										
		1.4968	G-X 7 CrNiNb 16 13										
		1.4988	G-X 8 CrNiMoVNb 16 1										
		1.6901	G-X 8 CrNi 18 10										

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
M	2.1	1.6902	G-X 6 CrNi 18 10										
		1.6905	G-X 5 CrNiNb 18 10										
		1.6982	G-X 3 CrNi 13 4										
	2.2	1.4000	X 6 Cr 13	Z 6 C 13	X 6 Cr 13	17 020	403 S 17	2301		SUS 403	08Ch13	S 40300	403
		1.4002	X 6 CrAl 13	Z 6 CA 13	X 6 CrAl 13		405 S 17	2302	F-3111	SUS 405		S 40500	405
		1.4016	X 6 Cr 17	Z 8 C 17	X 8 Cr 17	17 040	430 S 15	2320	F-3113	SUS 430	12Ch17	S 43000	430
		1.4105	X 4 CrMoS 18						F-3114				
		1.4510	X 6 CrTi 17	Z 8 CT 17	X 6 CrTi 17					SUS 430 LX	08Ch17T	S 43036	XM 8; 430 Ti
		1.4511	X 8 CrNb 17	Z 8 CNb 17	X 6 CrNb 17				F-3122	SUS 430 LX			
		1.4512	X 5 CrTi 12	Z 6 CT 12	X 6 CrTi 12		409 S 19		F-3121	SUH 409		S 40900	409
		1.4528	X 105 CrCoMo 18 2										
	2.3	1.4006	X 10 Cr 13	Z 12 C 13	X 12 Cr 13	17 021	410 S 21	2302	F-3401	SUS 410	12Ch13	S 41000	410; CA-15
		1.4021	X 20 Cr 13	Z 20 C 13	X 20 Cr 13	17 022	420 S 37	2303	F-3402	SUS 420 J 1	20Ch13	S 42000	420
		1.4024	X 15 Cr 13	Z 13 C 13		17 021	420 S 29			SUS 410 J 1			
		1.4031	X 38 Cr 13	Z 40 C 14	X 40 Cr 14	17 024		2304	F-3404	SUS 420 J 2	40Ch13		
		1.4034	X 46 Cr 13	Z 40 C 14	X 40 Cr 14	17 029	420 S 45		F-3405		40Ch13		
		1.4057	X 20 CrNi 17 2	Z 15 CN 16.02	X 16 CrNi 16	17 145	431 S 29	2321	F-3427	SUS 431	20Ch17N2	S 43100	431
		1.4106	X 2 CrMoSiS 18 2 1										
		1.4108	X 100 CrMo 13										
		1.4109	X 65 CrMo 14										
		1.4112	X 90 CrMoV 18									S 44003	
		1.4113	X 6 CrMo 17	Z 8 CD 17.01	X 8 CrMo 17		434 S 17	2325	F-3116	SUS 434		S 43400	434
		1.4116	X 45 CrMoV 15						F-3422				
		1.4125	X 105 CrMo 17	Z 100 CD 17	X 105 CrMo 17					SUS 440 C		S 44004	440 C
	2.4	1.4028	X 30 Cr 13	Z 30 C 13	X 30 Cr 13	17 023	420 S 45	2304		SUS 420 J 2	30Ch13		
		1.4104	X 12 CrMoS 17	Z 10 CF 17	X 10 CrS 17	17 140		2383	F-3403	SUS 430 F		S 43020	430 F
		1.4313	X 5 CrNi 13 4	Z 5 CN 13.4	X 6 CrNi 13 04		425 C 11	2385		SCS 5			CA 6-NM
	2.5	1.4410	X 2 CrNiMoN 25 7 4	Z2 CND 25 07 04 Az					F-3552				F53
		1.4460	X 8 CrNiMo 27 5	Z5 CND 25 05 AZ									329 LN
		1.4462	X 2 CrNiMoN 22 5 3	Z2 CND 22 05 03 AZ (Uranus 45 N)		17 381			F-3308			S 31803	329 A (F51)
		1.4501	X 2 CrNiMoCuWN 25 7 4	Z2 CNDUW 25 07 04 Az (Zeron 100)								S 32760	F55
		1.4507	X 2 CrNiMOCuN 25 6 3	Z3 CNDU 25 07 Az (Uranus 52 N)								S 32750	F61
		1.4539	X 1 NiCrMoCu 25 20 5	Z2 NCDU 25 20 (Uranus B6)									904L
		1.4542	X 7 CrNiCu 16 4 4	Z7 CNU 17 04 04 (17-4PH)									630
		1.4547	X 1 CrNiMoCuN 20 18 17	Z1 CNDU 20 18 06 Az (254 SMO)									F44
		1.4821	X 20 CrNiSi 25 4	Z20 CNS 25 04									
			X 5 CrNiCu 15 5	E-Z5 CNU 15 05 (15-5PH)					F-3308				
	2.6	1.4301	X 5 CrNi 18 10	Z6 CN 18-09		17 240			F-3504				304
		1.4305	X 8 CrNiS 18 9	Z8 CNF 18-03		17 243							303
		1.4306	X 2 CrNi 19-11	Z3 CN 18-10		17 249			F-3503				304 L
		1.4311	X 2 CrNiN 18 10			17 249							304 LN
		1.4401	X 5 CrNiMo 17 12 2	Z6 CND 17 12 02		17 346			F-3543				316
		1.4404	X 2 CrNiMo 17 12 2	Z3 CND 17 12 02		17 349							316 L
		1.4429	X 2 CrNiMoN 17 11 2	Z3 CND 17 11 03 Az									316 LN
		1.4449	X 3 CrNiMo 18 12 3										
		1.4541	X 6 CrNiTi 18 10			17 248							321
		1.4550	X 10 CrNiNb 18-9	Z10 CNNb 18-10		17 245			F-3552 / F-3524				347
		1.4568	X 7 CrNiAl 17 7										17-7 PH
		1.4571	X 6 CrNiMoTi 17 12 2	Z 6 CNT 17.12	X 6 CrNiMoTi 17 12	17 348	320 S 31	2350	F-3535		10Ch17N-13M2T	S 31635	316 Ti
	2.7	1.4747	X 80 CrNiSi 20										
		1.4841	X 15 CrNiSi 25-20	Z15 CNS 25-20									314
		1.4876	X 10 NiCrAlTi 32 21	Z10 NCAT 32-21 (Incoloy 800)					F-3314				

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K	3.1	0.6010	GG-10	Ft 10 D	G 10	42 2410		01 10-00		FC 10	Sc 10		A48-20 B
		0.6015	GG-15	Ft 15 D	G 15	42 2415	Grade 150	01 15-00	FG-15	FC 15	Sc 15		A48-25 B
		0.6020	GG-20	Ft 20 D	G 20	42 2420	Grade 220	01 20-00	FG-20	FC 20	Sc 20		A48-30 B
		0.6025	GG-25	Ft 25 D	G 25	42 2425	Grade 260	01 25-00	FG-25	FC 25	Sc 25		A48-40 B
	3.2	0.6030	GG-30	Ft 30 D	G 30	42 2430	Grade 300	01 30-00	FG-30	FC 30	Sc 30		A48-45 B
		0.6035	GG-35	Ft 35 D	G 35	42 2435	Grade 350	01 35-00	FG-35	FC 35	Sc 35		A48-50 B
		0.6040	GG-40	Ft 40 D		42 2440	Grade 400	01 40-00			Sc 40		A48-60 B
	3.3	0.7033	GGG-35.3			42 2303							
		0.7040	GGG-40	FGS 400-12	GS 400-12	42 2304	SNG 420/12	0717-02	FGE 38-17	FCD 40	VC 42-12		60 40 18
		0.7043	GGG-40.3	FGS 370-17	GSO 42/17	42 2314	SNG 370/17	0717-15			VC 42-12		
		0.7050	GGG-50	FGS 500-7	GS 500/7	42 2305	SNG 500/7	0727-02	FGE 50-7	FCD 50	VC 50-2		65-45-12
	3.4	0.7060	GGG-60	FGS 600-3	GS 600/3	42 2306	SNG 600/3	0732-03		FCD 60	VC 60-2		80-55-06
		0.7070	GGG-70	FGS 700-2	GS 700-2	42 2307	SNG 700/2	0737-01	FGS 70-2	FCD 70	VC 70-2		100-70-03
		0.7080	GGG-80	FGS 800-2	GS 800-2	42 2308	SNG 800/2				VC 80-2		120-90-02
	3.5	0.8035	GTW-35-04			42 2536			GTW 35				
		0.8040	GTW-40-05			42 2540							
		0.8045	GTW-45-07										
	3.6	0.8055	GTW-55										
		0.8065	GTW-65										
	3.7	0.8135	GTS-35-10	MN 35-10		42 2533	B 340/12		GTS 35				
		0.8145	GTS-45-06			42 2545	P 440/7		GTS 45				
	3.8	0.8155	GTS-55-04	MP 50-5		42 2555	P 510/4		GTS 55				
		0.8165	GTS-65-02	MP 60-3			P 570/3		GTS 65				
		0.8170	GTS-70-02	IP 70-2			P 690/2		GTS 70				
N	4.1	3.0205	Al99	1200 (A4)	9001/1	42 4009			L-3001				
		3.0255	Al99.5	1050 A	9001/2	42 4004			L-3051				
		3.0256	E-Al H			42 4105							
		3.0275	Al99.7	1070 A		42 4003			L-3071				
		3.0285	Al99.8	1080 A (A8)		42 4002			L-3081				
		3.0305	Al99.9										
		3.3308	Al99,9Mg0,5										
	4.2	3.0515	AlMn1			42 4432			L-3810				
		3.1255	AlCuSiMn		9002/3								2014
		3.1325	AlCuMg1	2017 A (AU4G)					L-3120				2017 A
		3.1355	AlCuMg2	2024 (AU4G1)	9002/4	42 4203			L-3140				2024
		3.1655	AlCuBiPb	2011 (AU5PbBi)	9002/5				L-3192				2011
		3.3315	AlMg1	5005 (AlMg1)					L-3350				
		3.3545	AlMg4Mn	5086 (AG4MC)	9005/5				L-3322				5083
		3.3547	AlMg4,5Mn0,7	5083 (AlMg5Mn0,7)			N8		L-3321	A 5083			A95083
		3.4335	AlZn4,5Mg1	7020 (AZ5G)	9007/1	42 4441			L-3741				7020
		3.4365	AlZnMgCu1.5	7075 (AZ5GU)		42 4222			L-3710				7075
	4.3	3.1371	G-AlCu4TiMg										
		3.1645	AlCuMgPb	2030 (AU4PB)		42 4254			L-3121				
		3.1841	G-AlCu4Ti										
		3.2134	G-AlSi5Cu1Mg										
		3.2151	G-AlSi6Cu4			42 4357							
		3.2161	G-AlSi8Cu3										
		3.2315	AlMgSi1		9006/4	42 4400							6082
		3.2341	G-AlSi5Mg										
		3.2371	G-AlSi7Mg			42 4334							
		3.2373	G-AlSi9Mg			42 4331							
		3.2381	G-AlSi10Mg			42 4331							
		3.2383	G-AlSi10Mg(Cu)			42 4331							

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
N	4.3	3.3206	AlMgSi0,5	6060 (AGS)		42 4401			L-3441				6063
		3.3207	E-AlMgSi0,5		9006/3								6101
		3.3214	AlMgSi0,5		9006/2								6061
		3.3241	G-AlMg3Si										
		3.3261	G-AlMg5Si			42 4515							
		3.3292	GD-AlMg9			42 4519							
		3.3541	G-AlMg3										
		3.3543	G-AlMg3(Cu)										
		3.3561	G-AlMg5										
		3.3591	G-AlMg10										
	4.4	3.2581	G-AlSi12			42 4330							
		3.2583	G-AlSi12(Cu)			42 4330							
	4.5		G-AlSi18										
			G-AlSi17Cu4										
			G-AlSi25CuNiMg										
			G-AlSi21CuNiMg										
	4.6	2.0040	OF-Cu			42 3000							
		2.0060	E-Cu57			42 3001							
		2.0065	E-Cu58			42 3001							
		2.0070	SE-Cu										
		2.0076	SW-Cu										
		2.0090	SF-Cu			42 3003							
		2.1522	CuSi2Mn										
	4.7	2.0205	CuZn0.5										
		2.0850	CuNi2Be										
		2.0853	CuNi1.5Si										
		2.0855	CuNi2Si			42 3054							
		2.0857	CuNi3Si										
		2.1160	CuPb1P										
		2.1191	CuAg0.1P										
		2.1203	CuAg0.1										
		2.1245	CuBe1.7										
		2.1247	CuBe2										
		2.1248	CuBe2Pb										
		2.1265	CuCd0.5										
		2.1266	CuCd1										
		2.1285	CuCo2Be										
		2.1310	CuFe2P										
		2.1322	CuMg0.4										
		2.1323	CuMg0.7										
		2.1356	CuMn3										
		2.1363	CuMn2										
		2.1366	CuMn5										
		2.1491	CuAsP										
		2.1498	CuSP										
		2.1546	CuTeP										
		2.1580	CuZr										
	4.8	2.0916	CuAl5										
		2.1525	CuSi3Mn										
			Ampco 8-16										
	4.9	2.0987	CuAl11Ni6Fe5										
			Ampco 18-26										

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
N	4.10	2.1247	CuBe2F125										
			Ampco M-4										
	4.11	2.0331	CuZn36Pb1.5			42 3214							
		2.0371	CuZn38Pb1.5			42 3222							
		2.0375	CuZn36Pb3										
		2.0380	CuZn39Pb2			42 3223							
		2.0401	CuZn39Pb3										
		2.0402	CuZn40Pb2			42 3223							
		2.0410	CuZn44Pb2										
		2.0460	CuZn20Al2										
		2.0470	CuZn28Sn1										
		2.0490	CuZn31Si1										
		2.0500	CuZn23Al6Mn-4Fe3										
		2.0510	CuZn37Al1			42 3231							
		2.0525	CuZn38SnAl										
		2.0530	CuZn38Sn1			42 3237							
		2.0540	CuZn35Ni2										
		2.0550	CuZn40Al2										
		2.0561	CuZn40Al1			42 3231							
		2.0572	CuZn40Mn1			42 3234							
		2.0580	CuZn40Mn1Pb										
	4.12	2.0220	CuZn5			42 3200							
		2.0230	CuZn10			42 3201							
		2.0240	CuZn15			42 3202							
		2.0250	CuZn20			42 3203							
		2.0261	CuZn28										
		2.0265	CuZn30			42 3210							
		2.0280	CuZn33			42 3212							
		2.0321	CuZn37		C2700	42 3213							
		2.0332	CuZn37Pb0.5										
		2.0335	CuZn36										
		2.0360	CuZn40			42 3220							
		2.0372	CuZn39Pb0.5			42 3221							
		2.1080	CuSn6Zn6										
		2.1293	CuCrZr			42 3039							
	4.13	PE	Baylon	Lacqtène	Alkathene		Eraclene			Mirason			Alathon
		PE	Dekalen	Natène	Carlona		Fertene			Novatec			Bakelite
		PE	Ertalen		Escorene		Rumiten			Rexlon			Chemplex
		PE	Hostalen							Sholex			Dylan
		PE	Lupolen							Sumikathene			Fortiflex
		PE	Supralen							Suntec			Marlex
		PE	Symalen							Staflene			Microthene
		PE	Vestolen							Yukalon			Paxon
		PE											Petrothene
		PE											Poly-Eth
		PE											Rigidex
		PE											Rotothene
		PP	Daplen	Eltex P	Carlona P		Kastilen			Noblene			Pro-fax
		PP	Hostalen PP	Lacqtène P	Propathene		Moplen			Poly-Pro			Rexene
		PP	Luparen	Napryl	Procom					Sho-Allomer			Tenite
		PP	Novolen		Propyply								
		PP	Symalen PP		Propafoil								
		PP	Vestolen PP										

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
N	4.13	PVC	Coroplast	Ekavyl	Breon		Raivinil	Pevikon		Nipeon			Dalvin
		PVC	Hostalit		Carina		Sicron			Nipolit			Geon
		PVC	Mipolam		Corvic		Vipla			Vinika			Kohinor
		PVC	Opalon		Scon		Viplast			Vinichlon			Marvinol
		PVC	Rhodopas		Shell PVC								Pliovic
		PVC	Soflex		Welvic								Vygen
		PVC	Solvec										
		PVC	Supradur										
		PVC	Trosiplast										
		PVC	Trovidur										
		PVC	Vestolit										
		PVC	Vinidur										
		PVC	Vinnol										
		PVC	Vinoflex										
		PVC	Vinylite										
			Delrin, Hostalen										
			Makrolon, Novodur										
			Acrylglas										
	4.14		Ferrozell, Bakelit										
			Pertinax										
			Resopal										
	4.15		GFK										
			CFK										
			AFK										
	4.16	3.5101	G-MgZn4SE1Zr1										
		3.5102	G-MgZn5Th2Zr1										
		3.5103	G-MgSE3Zn2Zr1										
		3.5105	G-MgTh3Zn2Zr1										
		3.5106	G-MgAg3Se2Zr1										
		3.5200	MgMn2										
		3.5312	MgAl3Zn										
		3.5470	GD-MgAl4Si1										
		3.5612	MgAl6Zn										
		3.5612	GD-MgAl6Zn1										
		3.5662	G-MgAl6										
		3.5812	MgAl8Zn			42 4911							
		3.5812	G-MgAl8Zn1			42 4911							
		3.5912	G-MgAl9Zn1			42 4911							
	4.17	Graphit	R8340										
		Graphit	R8500X										
		Graphit	Technograph 15										
		Graphit	Technograph 30										
		Graphit	R8510										
		Graphit	R8650										
		Graphit	Union Poco EDM C-3										
		Graphit	Union Poco EDM1										
		Graphit	Union Poco EDM3										
	4.18		W-NiFe (Densimet W)										
			W-Cu80/20										
			W93NiFe (Denal)										
	4.19		Mo, Mo-50Re										
			TZC, TZM										
			MHC, ODS										

	Index	Material number	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	GOST	UNS	USA
S	5.1	1.3911	RNi24			42 3481							
		1.3926	RNi12			42 3484							
		1.3927	RNi8			42 3484							
	5.2	1.3912	Ni36	Invar									
		1.3921	Ni49										
		1.3924	Ni54										
	5.5	2.4375	NiCu30Al	Monel K 500									
		2.4603	NiCr30FeMo	Hastelloy X									
		2.4617		Hastelloy B-2									
		2.4640	NiCr15Fe	Inconel 600									
		2.4668	NiCr19Fe18Nb5Mg	Inconel 718									
		2.4812		Hastelloy C									
		2.4816	NiCr15Fe	Inconel 600			NA 14			NCF 600		N 06600	
		2.4856	NiCr22Mo9Nb	Inconel 625									
		2.4858	NiCr21Mo				NA 16			NCF 825		N 08825	
		2.4983		Udimet 500									
	5.4	2.4610	NiMo16Cr16Ti	Hastelloy C-4									
		2.4886	SG-NiMo16Cr16W										
		2.4819		Hastelloy C-276									
	5.5	2.4360	NiCu30Fe	Monel 400		42 3431							
		2.4375	NiCu30Al	Monel K 500									
		2.4603	NiCr30FeMo	Hastelloy X									
		2.4630	NiCr20Ti	Nimonic 75			HR 5						
		2.4631	NiCr20TiAl	Nimonic 80 A			HR 401; 601			NCF 80 A		N 07080	
		2.4632	NiCr20Co18Ti	Nimonic 90									
		2.4634	NiCo20Cr15MoAlTi	Nimonic 105									
		2.4640	NiCr15Fe	Inconel 600									
		2.4662	NiCr13Mo6Ti3	Nimonic 901									
		2.4668	NiCr19Fe18Nb5Mg	Inconel 718									
		2.4670		Nimocast 713									
		2.4674		Nimocast PK 24									
		2.4812		Hastelloy C									
		2.4816	NiCr15Fe	Inconel 600			NA 14			NCF 600		N 06600	
		2.4856	NiCr22Mo9Nb	Inconel 625									
		2.4858	NiCr21Mo				NA 16			NCF 825		N 08825	
		2.4951	NiCr20Ti	Nimonic 75			HR 5						
		2.4952	NiCr20TiAl	Nimonic 80 A									
		2.4969	NiCr20Co18Ti	Nimonic 90									
		2.4973	NiCr19Co11MoTi										
		2.4983		Udimet 500									
		2.6554		Waspaloy									
				Nimonic 80									
	5.6	2.4711	CoCr20Ni15Mo										
		2.4964	CoCr20W15Ni										
		2.4979	CoCr28MoNi										
		2.4989	CoCr20NiW										
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		1.4724	X 10 CrAl 13	Z 10 C 13	X 10 CrAl 12	17 125	403 S 17		F-3152		10Ch13SJu		
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		1.4747	X 80 CrNiSi 20	Z 80 CSN 20.02	X 80 CrSiNi 20		443 S 65			SUH 4		S 65006	HNV 6
		1.4762	X 10 CrAl 24	Z 10 CAS 24	X 16 Cr 26	17 153			F-3154			S 44600	446
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		2.4851	NiCr23Fe, Inconel 601	Inconel 601									
		2.4667	SG-NiCr19NbMoTi										
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