

CARBIDE GROOVING TOOLS





Dear customer,

We are pleased to introduce our new catalog of **CARBIDE GROOVING TOOLS**.

This catalog represents part of the most comprehensive range of grooving products available from any single manufacturer.

For more than 40 years, HORN has dedicated its resources to the design and manufacture of tooling specifically for grooving applications

As a HORN user, you gain access to this wealth of experience in grooving. Our team of engineers will be pleased to give you the help and assistance necessary to ensure you get the very best performance from our products.

If you require any further assistance or information, please do not hesitate to contact us. We look forward to our continued cooperation.

Yours sincerely

A handwritten signature in black ink that reads "Lothar Horn".

Lothar Horn



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QUALITY AND ENVIRONMENT COMMITMENT

Quality = Satisfied customers

Paul Horn GmbH, as a manufacturer of carbide cutting tools, has a very special responsibility. To exist as a successful company, we must meet the demands for both products and services that are set by the customer as well as those that we set ourselves. To achieve these goals, Paul Horn GmbH has introduced a modern Quality management System according to DIN EN ISO 9001.



The environment - our future!

To ensure the future being a company, it depends not only on turnover and profit but the acceptance of the company by both the public and the society. For the Paul Horn GmbH the environment protection is an important corporate target and indisputable part of the corporate policy. In 1999 we have adjusted our Management System according to the requirements of the ISO 14001. Already in 1997 we have got the validity according to the EG-ÖG-Audit-VO 1836/93. The Management System is certified since July 2000.

SUMMARY

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Q TECHNICAL INFORMATION

R BROACHING

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T ADDITIONAL EQUIPMENT / EXAMPLES FOR MACHINING

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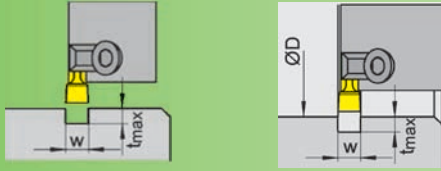
P

Q

R

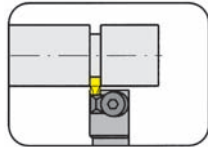
S

T



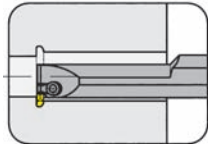
$w = .022-.209'' (0.56-5.3 \text{ mm})$ $w = .022-.209'' (0.56-5.3 \text{ mm})$
 $t_{\text{max}} = .157'' (4 \text{ mm})$ $t_{\text{max}} = .185'' (4.7 \text{ mm})$
 $D = .787'' (20 \text{ mm})$

**Grooving
- external -**

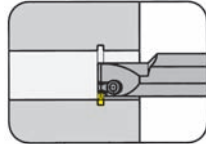


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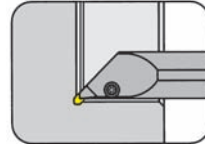
**Grooving
- internal -**



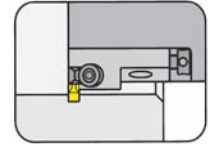
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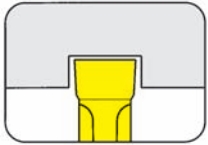


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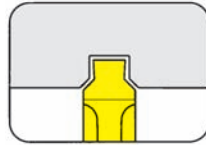


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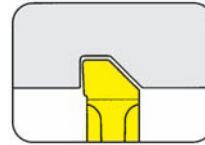
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U217/217**



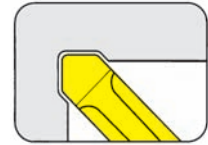
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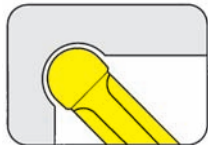
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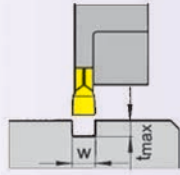
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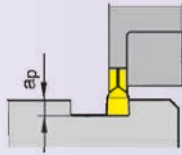
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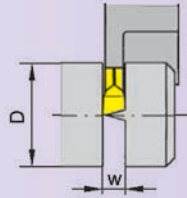
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$w = .059 - .118''$ (1.5-3 mm)
 $t_{max} = .630''$ (16 mm)

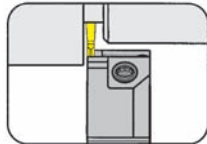


$w = .059''$ (1.5 mm)
 $a_p = .089''$ (2.25 mm)



$w = .059 - .118''$ (1.5-3 mm)
 $D = .787 - 1.260''$ (20-32 mm)

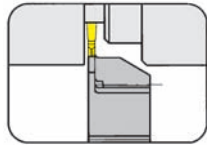
**Toolholder
with screwed clamping**



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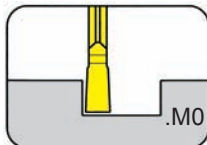
**Toolholder
with self clamping**



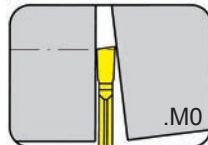
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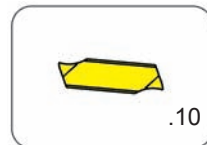
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type
S264 / 264**



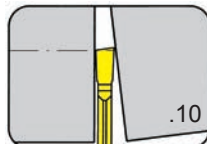
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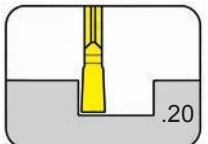
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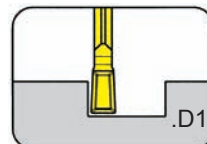
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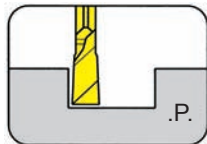
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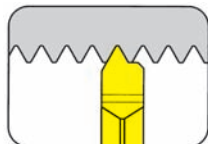
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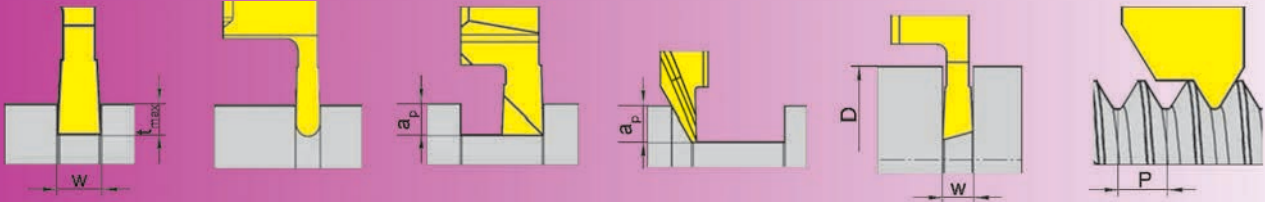
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$w = .020-.079''$ (0.5-2.0 mm)
 $t_{max} = .236''$ (6.0 mm)

$w = .020-.079''$ (0.5-2.0 mm)
 $t_{max} = .157''$ (4.0 mm)

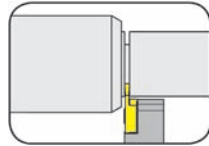
$w = .059-.118''$ (1.5-3.0 mm)
 $t_{max} = .177''$ (4.5 mm)

$a_p = .236''$ (6.0 mm)

$w = .031-.079''$ (0.8-2.0 mm)
 $t_{max} = .236''$ (6.0 mm)

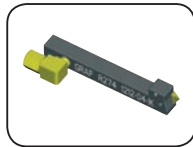
Partial profile
 $P = 0.24 - 0.4$ mm
 Full profile
 $P = 0.5 - 1.5$ mm

Toolholder

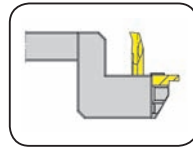


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**Toolholder
 - machine-specific -**



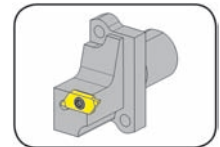
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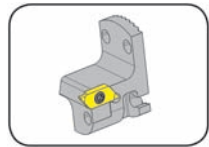
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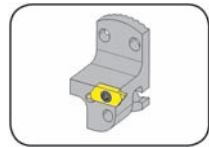
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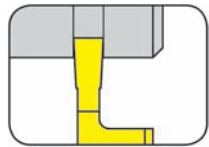


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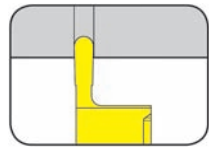


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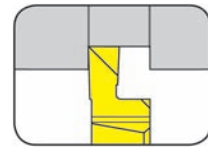
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 type
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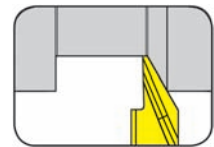
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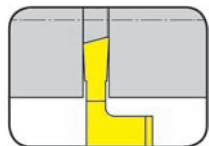
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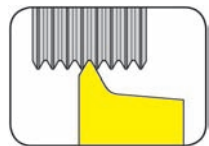
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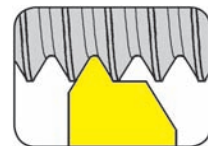
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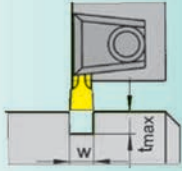
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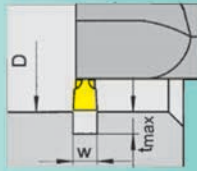
Partial profile
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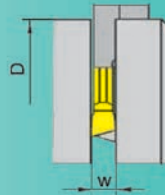
Full profile
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w = .079-.118" (2.0-3.0 mm)
t_{max} = .394" (10 mm)

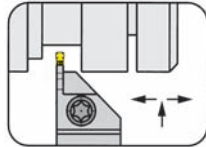


w = .043-.118" (1.1 - 3 mm)
t_{max} = .248" (6.3 mm)
D ≥ .630" (16 mm)

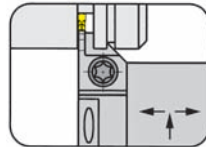


w = .079-.118" (2.0-3.0 mm)
D ≤ 1.969" (50 mm)

Grooving - external -

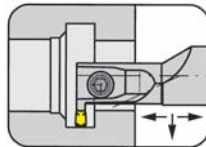


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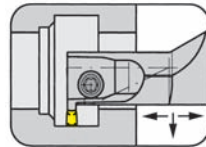


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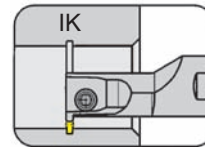
Grooving - internal -



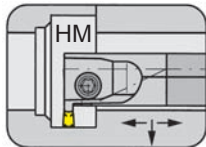
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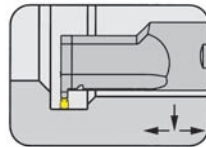
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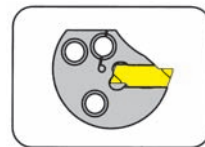
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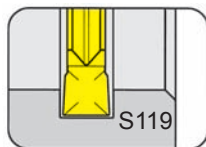
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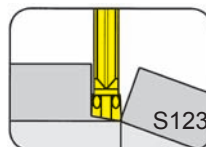


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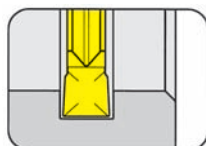


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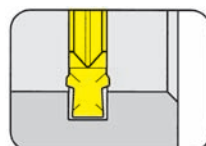


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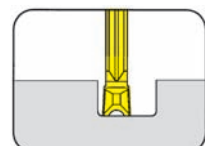
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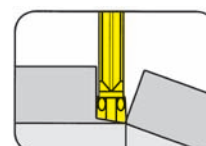
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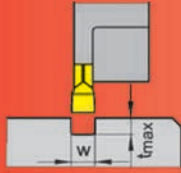
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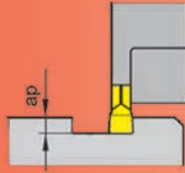
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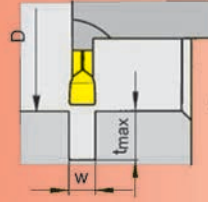
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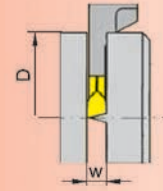
$w = .079-.236''$ (2 - 6 mm)
 $t_{max} = .709''$ (18 mm)



$w = .118-.236''$ (3 - 6 mm)
 $a_{pmax} = .157''$ (4 mm)

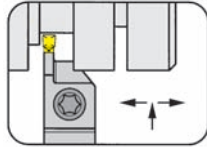


$w = .079-.236''$ (2 - 6 mm)
 $t_{max} = .512''$ (13 mm)
 $D \geq 1.102''$ (28 mm)

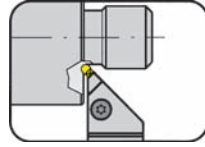


$w = .079-.236''$ (2 - 6 mm)
 $t_{max} = .709''$ (18 mm)
 $D \geq 2.205''$ (56 mm)

Grooving - external -

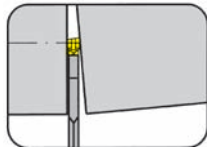


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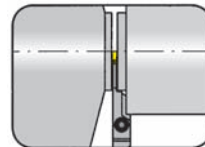


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Parting off



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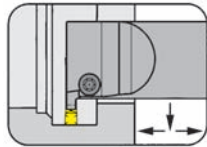


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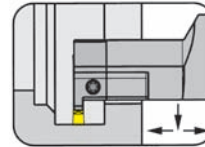


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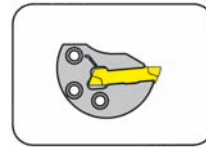
Grooving - internal -



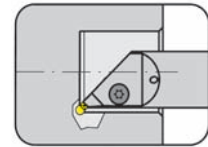
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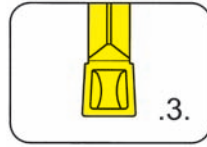


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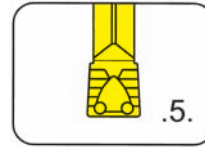


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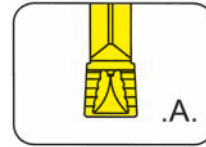
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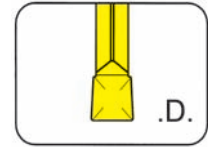
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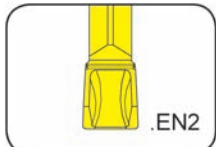
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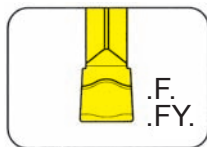
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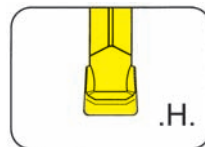
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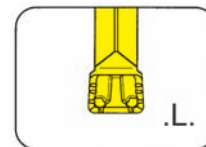
Page E44



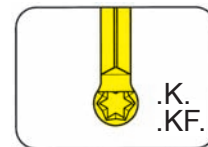
Page E45, E56



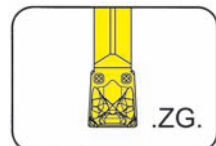
Page E46



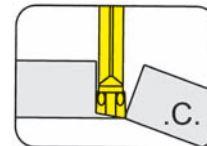
Page E47



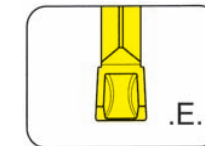
Page E48-E49



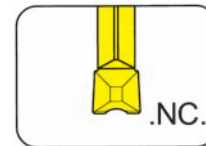
Page E50



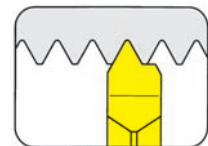
Page E52-E54



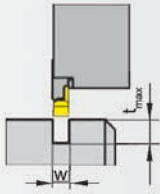
Page E55



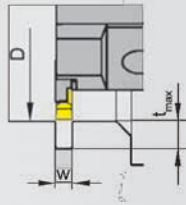
Page E57



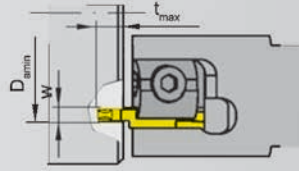
Page E58-E59



$w = .098-.394$ " (2.5 - 10 mm)
 $t_{max} = .433$ " (11 mm)



$w = .157-.394$ " (4 - 10 mm)
 $t_{max} = .354$ " (9 mm)
 $D = 2.953-7.874$ " (75 - 200 mm)

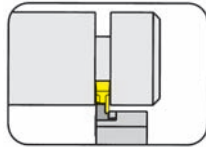


$w = .118-.394$ " (3 - 10 mm)
 $t_{max} = .315$ " (8 mm)
 $D_{a\ min} \geq 1.181$ " (30 mm)



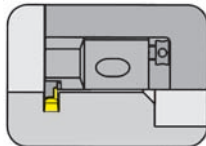
metric trapezoidal thread

**Grooving
 - external -**



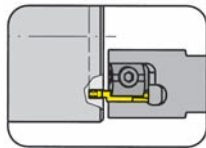
Page F2-F3

**Grooving
 - internal -**

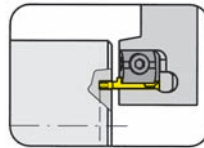


Page F4-F5

Face Grooving

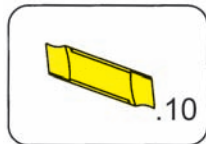


Page F8-F9



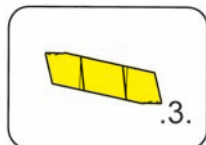
Page F10-F11

**Indexable inserts
 type
 231**



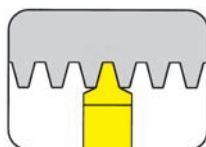
Grooving

Page F6-F7



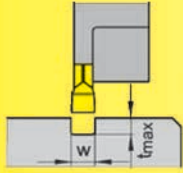
Face Grooving

Page F12

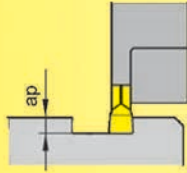


metric trapezoidal thread

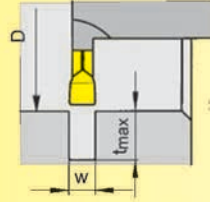
Page F13



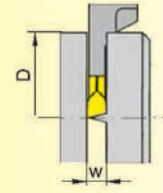
$w = .098-.394''$ (2.5-10 mm)
 $t_{max} = .984''$ (25 mm)



$w = .118-.236''$ (3-6 mm)
 $a_p \leq .157''$ (4 mm)

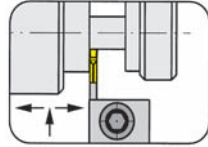


$w = .118-.394''$ (3-10 mm)
 $t_{max} = .591''$ (15 mm)
 $D \geq 1.496''$ (38 mm)

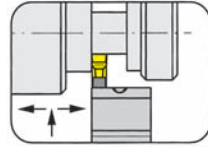


$w = .118-.157''$ (3 - 4 mm)
 $t_{max} = .984''$ (25 mm)

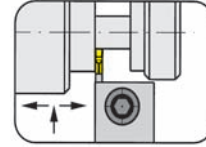
Grooving - external -



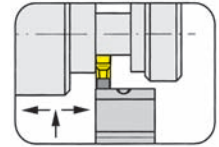
Page G2-G5, G5-G9



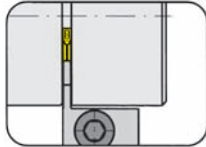
Page G6-G7, G10-G11



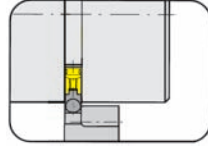
Page G12-G15, G18-G19



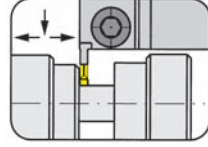
Page G16-G17, G20-G21



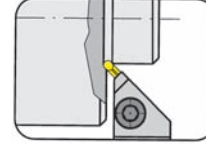
Page G22-G25



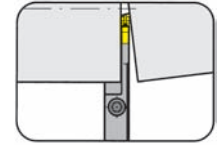
Page G26-G27



Page G28-G31

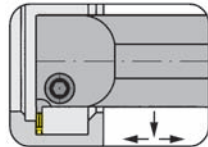


Page G32-G33

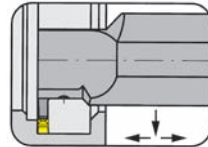


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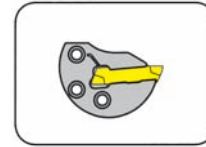
Grooving - internal -



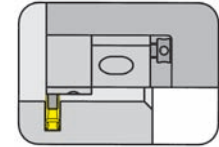
Page G37



Page G40-G49

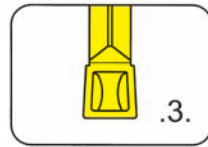


Page G50-G52

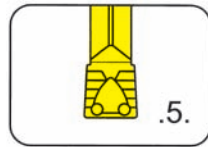


Page G53-G54

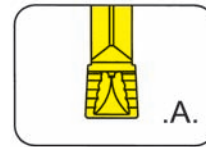
Indexable inserts type 229 / S229



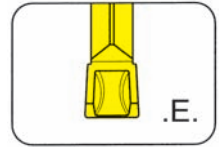
Page G56-G57



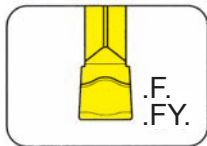
Page G58-G59



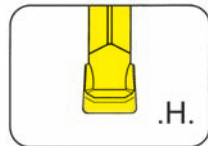
Page G60-G61



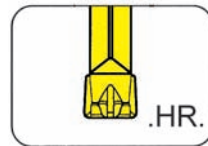
Page G62



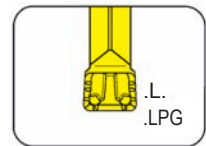
Page G64-G65



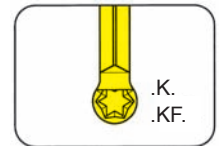
Page G66



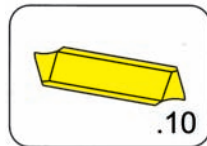
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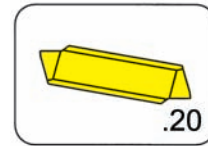
Page G68, G69



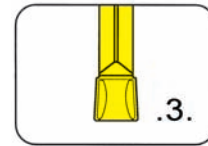
Page G70-G71



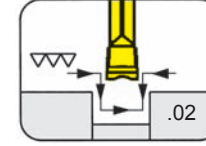
Page G72-G73



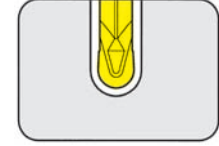
Page G74-G75



Page G76-G77

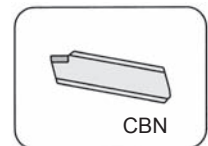


Page G78-G79



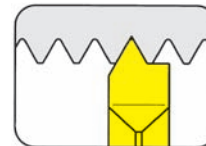
Page G80

Hard Turning Type 229

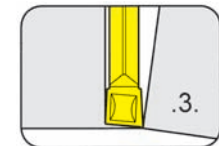


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Indexable inserts Type N229

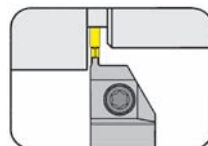


Page G82-G84

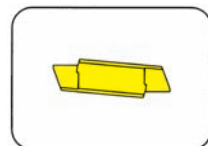


Page G85-G87

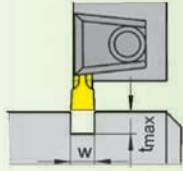
Grooving - external - type H259 / 259



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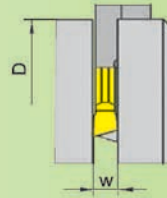
Page G89



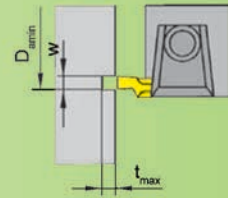
$w = .020-.248"$ (0.5-6.3 mm)
 $t_{max} = .315"$ (8.0 mm)



$w = .020-.248"$ (0.5-6.3 mm)
 $t_{max} = .217"$ (5.5 mm)
 $D \geq 1.811"$ (46 mm)

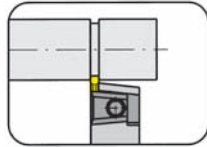


$w = .020-.248"$ (0.5-6.3 mm)
 $D = .472"$ (12 mm)
 $t_{max} = .315"$ (8 mm)

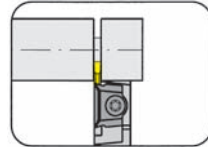


$w = .059-.118"$ (1.5 - 3 mm)
 $t_{max} = .118"$ (3 mm)
 $D_{amin} = .787"$ (20 mm)

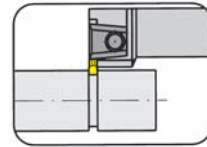
Grooving - external -



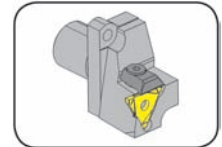
Page H2-H5,
H16-H17



Page H6



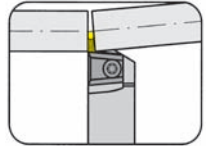
Page H10-H11



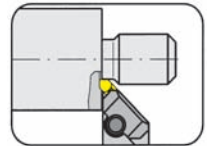
Page H12



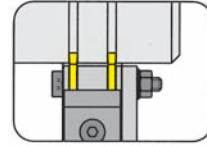
Page H13-H15



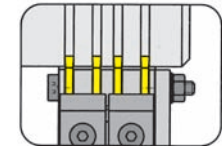
Page H19



Page H20-H21

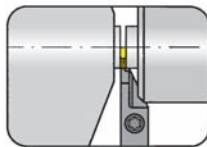


Page H22-H23

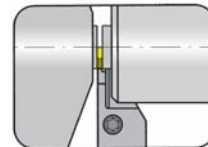


Page H24-H25

Parting off

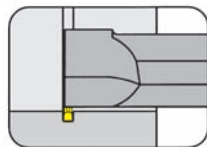


Page H7



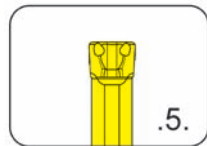
Page H8-H9

Grooving - internal -

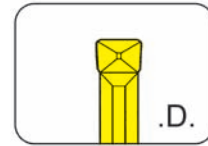


Page H26-H27

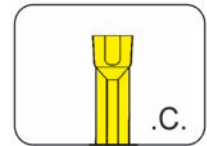
Indexable inserts type S312



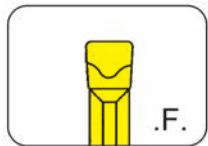
Page H28-H29



Page H30-H31

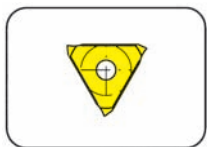


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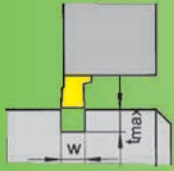


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Indexable inserts type 312



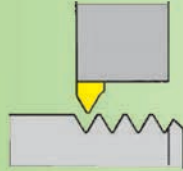
Page H33-H49,
H52-H55



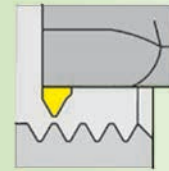
$w = .020-.295"$ (0.5 - 7.5 mm)
 $t_{max} = .197"$ (5 mm)



$w = .020-.138"$ (0.5 - 3.5 mm)
 $t_{max} = .197"$ (5 mm)
 $D \geq 1.693"$ (43 mm)

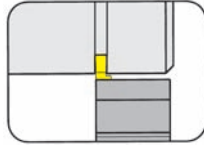


metric trapezoidal thread

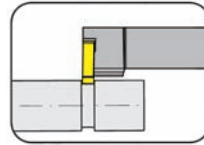


metric trapezoidal thread

**Grooving and
threading
- external -**

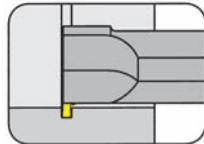


Page J2-J5

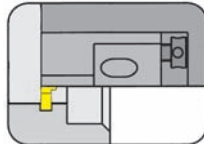


Page J6-J7

**Grooving and
threading
- internal -**



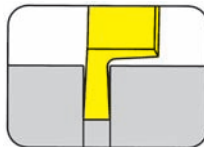
Page J8-J9



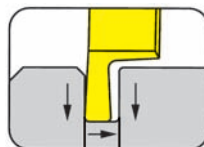
Page J10-J11

**Indexable inserts
type**

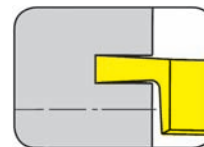
315



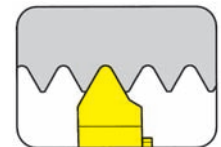
Page J12-J13



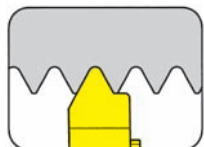
Page J14



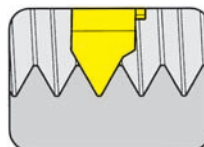
Page J15



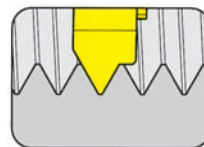
Page J16



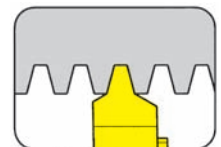
Page J17



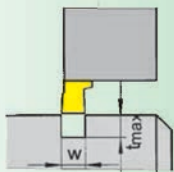
Page J18



Page J19



Page J20



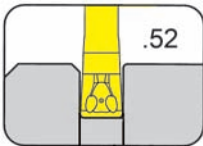
w = .059-.118" (1.5 - 3.0 mm)
t_{max} = .315" (8.0 mm)

Grooving
- external -

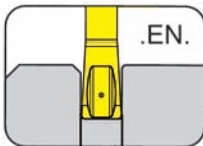


Page K2

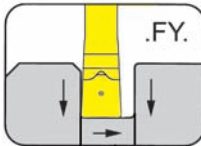
Indexable inserts
type
S316



Page K3



Page K4



Page K5

HCG - HORN Catalog Guide

INTERNAL GROOVING

Bore Ø	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.625" (15.87 mm)				•						
.709" (18 mm)				•						
.787 - 1.102" (20-28 mm)	•			•						
1.102 - 1.496" (28-38 mm)	•			•	•					
> 1.496" (38 mm)	•			•	•	•	•	•	•	
Operation Type										
Grooving	•			•	•	•	•	•	•	
Threading					•	•			•	
Profiling				•	•		•	•	•	
Width of groove inch	.022-.209			.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.049-.169	
Width of groove mm	0.56-5.3			1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	1.25-4.29	
Chapter	A	B	C	D	E	F	G	H	J	K

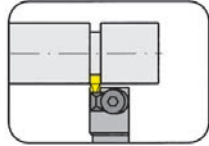
EXTERNAL GROOVING

Depth of groove up to	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.157" (4 mm)	•	•	•	•	•	•	•	•	•	•
.236" (6 mm)		•	•	•	•	•	•	•	•	•
.315" (8 mm)		•		•	•	•	•	•		•
.394" (10 mm)		•		•	•	•	•			
.433" (11 mm)		•		•	•	•	•			
.551" (14 mm)		•		•	•		•			
.630" (16 mm)		•		•	•		•			
.709" (18 mm)				•	•		•			
.984" (25 mm)				•			•			
1.000" (25.4 mm)							•			
Operation Type										
Grooving	•	•	•	•	•	•	•	•	•	•
Side Turning		•	•	•	•		•	•		
Parting Off	•	•	•	•	•		•	•		•
Threading		•	•			•	•		•	
Profiling			•		•		•	•	•	•
Axial Grooving						•			•	
Width of groove inch	.022-.209	.059-.118	.020-.118	.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.022-.169	.059-.118
Width of groove mm	0.56-5.3	1.5-3.0	0.5-3.0	1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	0.56-4.29	1.5-3.0
Chapter	A	B	C	D	E	F	G	H	J	K

Special tools upon request

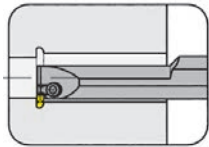
TOOLING SYSTEMS 217 **A**

**Grooving
- external -**

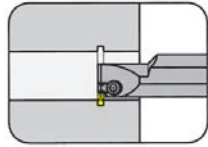


Page A2-A7

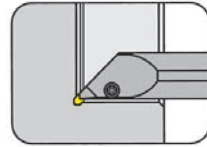
**Grooving
- internal -**



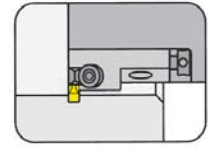
Page A8-A9,
A12-A13



Page A10-A11,
A14-A15

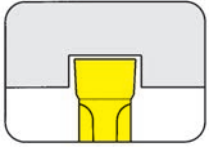


Page A16-A17

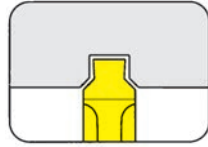


Page A18-A19

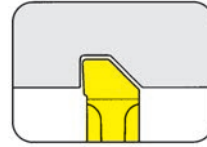
**Indexable inserts
Type
U217/217**



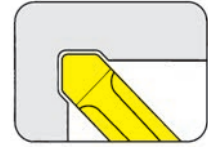
Page A20-A21



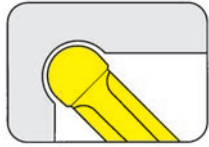
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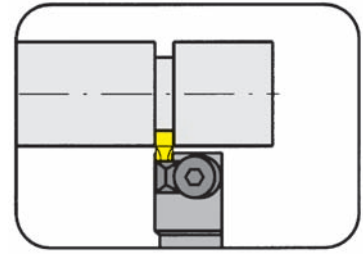
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For Technical Information please see chapter Q

TOOLHOLDER Type

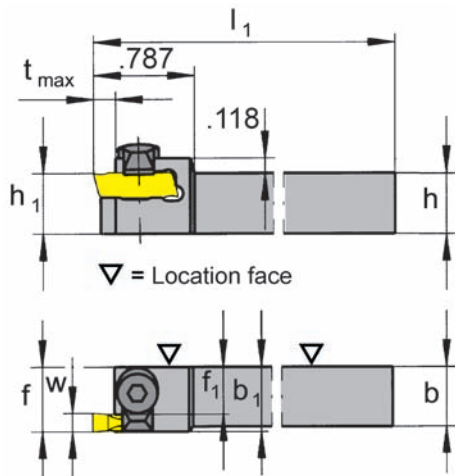
U240

Depth of groove up to .157"
Clamping range up to .106"



for use with Indexable
insert

Type 217
U217



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	b_1	f_1	f	t_{max}	Size	Clamping range
R/LU240.0375.01	.375	.375	3.000	.375	.500	.441	f_1+w-a_1	.157	01	.020 - .067
R/LU240.0500.01	.500	.500	4.000	.500	.500	.441				
R/LU240.0625.01	.625	.625	5.000	.625	.625	.566				
R/LU240.0750.01	.750	.750	5.000	.750	.750	.691				
R/LU240.1000.01	1.000	1.000	6.000	1.000	1.000	.941				
R/LU240.0375.02	.375	.375	3.000	.375	.500	.402	f_1+w-a_1	.157	02	.067 - .106
R/LU240.0500.02	.500	.500	4.000	.500	.500	.402				
R/LU240.0625.02	.625	.625	5.000	.625	.625	.527				
R/LU240.0750.02	.750	.750	5.000	.750	.750	.652				
R/LU240.1000.02	1.000	1.000	6.000	1.000	1.000	.902				

State R or L version

w, a_1 see indexable inserts

Dimensions in inch

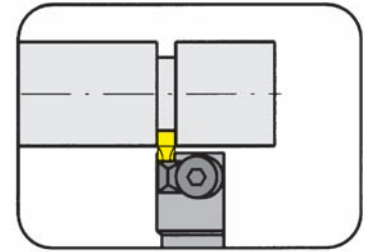
Further sizes upon request

Spare parts

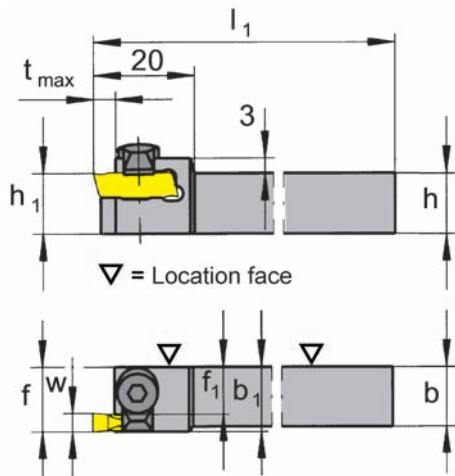
Toolholder	Clamp	Screw	Wrench
R/LU240....	8.3	5.14	SW2,5DIN911

TOOLHOLDER Type

240



Depth of groove up to .157" (4.0 mm)
Clamping range up to .106" (2.7 mm)



for use with Indexable insert

Type 217
U217

R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	b ₁	f ₁	f	t _{max}	Size	Clamping range
R/L240.1010.01	10	10	80	10	13	11.5	f ₁ +w-a ₁	4	01	0.5 - 1.7
R/L240.1212.01	12	12	100	12	13	11.5				
R/L240.1414.01	14	14	100	14	14	12.5				
R/L240.1616.01	16	16	125	16	16	14.5				
R/L240.2020.01	20	20	125	20	20	18.5				
R/L240.1010.02	10	10	80	10	13	10.5	f ₁ +w-a ₁	4	02	1.7 - 2.7
R/L240.1212.02	12	12	100	12	13	10.5				
R/L240.1414.02	14	14	100	14	14	11.5				
R/L240.1616.02	16	16	125	16	16	13.5				
R/L240.2020.02	20	20	125	20	20	17.5				

State R or L version

w, a₁ see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

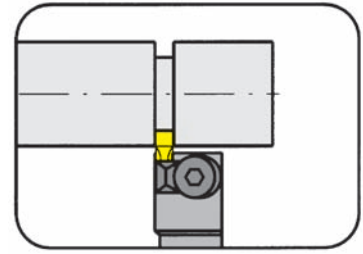
Toolholder	Clamp	Screw	Wrench
R/L240....	8.3	5.14	SW2,5DIN911

TOOLHOLDER Type

U240

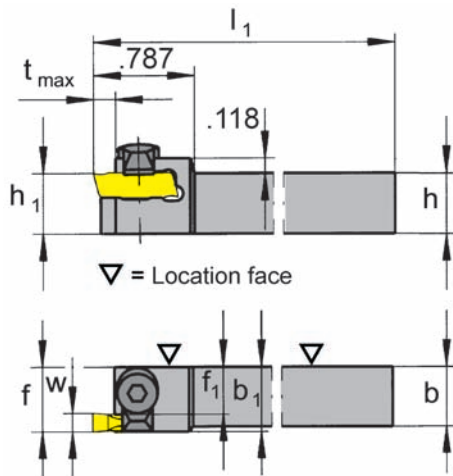
Depth of groove up to
Clamping range up to

.157"
.209"



for use with Indexable
insert

Type 217
U217



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	b_1	f_1	f	t_{max}	Size	Clamping range
R/LU240.0375.03	.375	.375	3.000	.375	.500	.362	f_1+w-a_1	.157	03	.106 - .146
R/LU240.0500.03	.500	.500	4.000	.500	.500	.362				
R/LU240.0625.03	.625	.625	5.000	.625	.625	.487				
R/LU240.0750.03	.750	.750	5.000	.750	.750	.612				
R/LU240.1000.03	1.000	1.000	6.000	1.000	1.000	.862				
R/LU240.0375.04	.375	.375	3.000	.375	.500	.374	f_1+w-a_1	.157	04	.146 - .209
R/LU240.0500.04	.500	.500	4.000	.500	.500	.374				
R/LU240.0625.04	.625	.625	5.000	.625	.625	.420				
R/LU240.0750.04	.750	.750	5.000	.750	.750	.545				
R/LU240.1000.04	1.000	1.000	6.000	1.000	1.000	.795				

State R or L version

w, a_1 see indexable inserts

Dimensions in inch

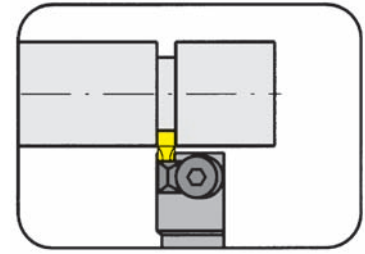
Further sizes upon request

Spare parts

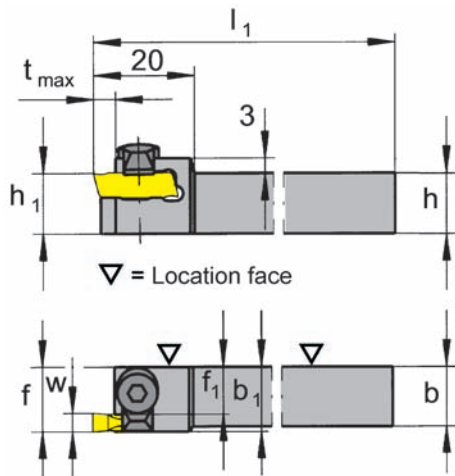
Toolholder	Clamp	Screw	Wrench
R/LU240....03	8.3	5.14	SW2,5DIN911
R/LU240....04	8.4	5.14	SW2,5DIN911

TOOLHOLDER Type

240



Depth of groove up to .157" (4.0 mm)
Clamping range up to .209" (5.3 mm)



for use with Indexable insert

Type 217
U217

R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	b_1	f_1	f	t_{max}	Size	Clamping range
R/L240.1010.03	10	10	80	10	13	9.5	f_1+w-a_1	4	03	2.7 - 3.7
R/L240.1212.03	12	12	100	12	13	9.5				
R/L240.1414.03	14	14	100	14	14	10.5				
R/L240.1616.03	16	16	125	16	16	12.5				
R/L240.2020.03	20	20	125	20	20	16.5				
R/L240.1010.04	10	10	80	10	15	9.8	f_1+w-a_1	4	04	3.7 - 5.3
R/L240.1212.04	12	12	100	12	15	9.8				
R/L240.1414.04	14	14	100	14	15	9.8				
R/L240.1616.04	16	16	125	16	16	10.8				
R/L240.2020.04	20	20	125	20	20	14.8				

State R or L version

w, a_1 see indexable inserts

Dimensions in mm

Further sizes upon request

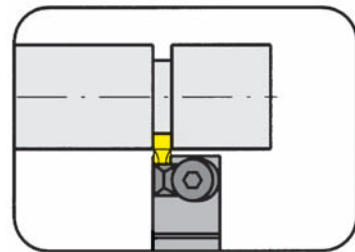
Spare parts

Toolholder	Clamp	Screw	Wrench
R/L240...03	8.3	5.14	SW2,5DIN911
R/L240...04	8.4	5.14	SW2,5DIN911

TOOLHOLDER Type

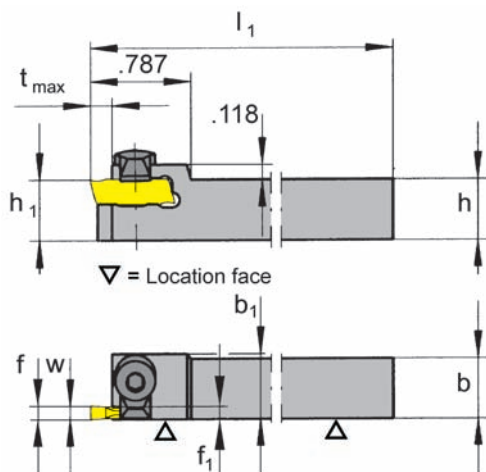
U248

Depth of groove up to .157"
Clamping range up to .106"



for use with Indexable
insert

Type 217
U217



R = right hand version shown

L = left hand version

for Swisstype machines

Part number	h	b	l ₁	h ₁	b ₁	f ₁	f	t _{max}	Size	Clamping range
R/LU248.0500.01	.500	.500	3.740	.500	.539	.059	f ₁ +a ₁	.157	01	.020 - .067
R/LU248.0500.02	.500	.500	3.740	.500	.539	.098	f ₁ +a ₁	.157	02	.067 - .106

State R or L version

w, a₁ see indexable inserts

Dimensions in inch

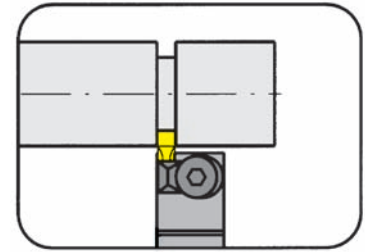
Further sizes upon request

Spare parts

Toolholder	Clamp	Screw	Wrench
R/LU248.0500.0...	8.3	5.14	SW2,5DIN911

TOOLHOLDER Type

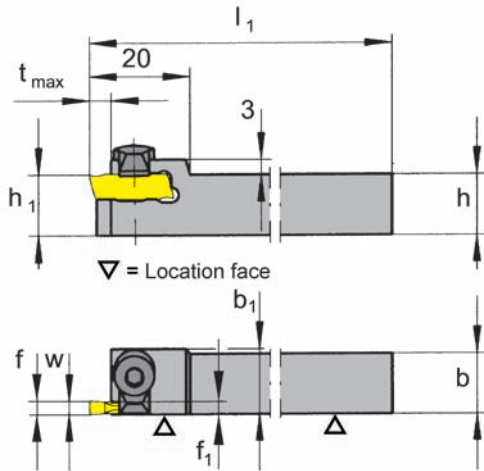
248



Depth of groove up to .157" (4.0 mm)
Clamping range up to .106" (2.7 mm)

for use with Indexable insert

Type 217
U217



R = right hand version shown

L = left hand version

for Swisstype machines

Part number	h	b	l ₁	h ₁	b ₁	f ₁	f	t _{max}	Size	Clamping range
R/L248.1212.01	12	12	95	12	13	1.5	f ₁ +a ₁	4	01	0.5 - 1.7
R/L248.1212.02	12	12	95	12	13	2.5	f ₁ +a ₁	4	02	1.7 - 2.7

State R or L version

w, a₁ see indexable inserts

Dimensions in mm

Further sizes upon request

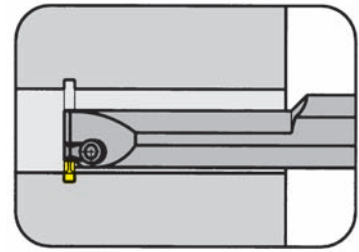
Spare parts

Toolholder	Clamp	Screw	Wrench
R/L248.1212.0...	8.3	5.14	SW2,5DIN911

TOOLHOLDER Type

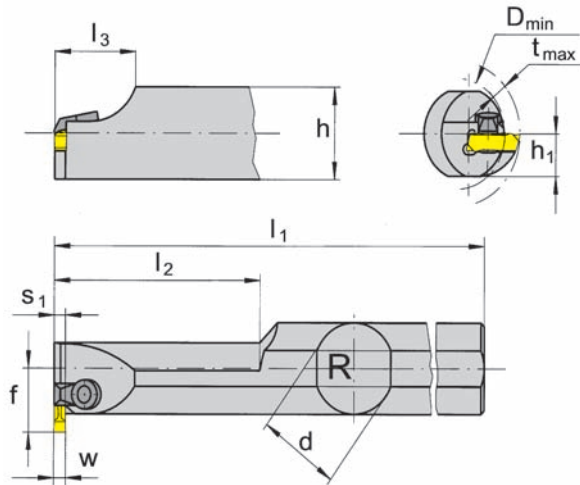
U230/U250

Bore Ø from	.787"
Depth of groove up to	.185"
Clamping range up to	.209"



for use with Indexable insert

Type 217
U217



R = right hand version shown

L = left hand version

long reach

Part number	d	l ₁	l ₂	h	h ₁	f	D _{min}	t _{max}	s ₁	l ₃	Size	Clamping range
R/LU230.0750.01	.750	7.000	2.500	.673	.337	.524	.787	.118	.059	.750	01	.035 - .067
R/LU250.1000.01	1.000	10.000	3.250	.922	.461	.689	.984	.185	.098	1.000	02	.067 - .106
R/LU250.1250.01	1.250	10.000	3.250	1.172	.586	.827	1.260	.185	.138	1.000	03	.106 - .146
R/LU230.0750.02	.750	7.000	2.500	.673	.337	.524	.787	.118	.205	.750	04	.146 - .209
R/LU250.1000.02	1.000	10.000	3.250	.922	.461	.689	.984	.185		1.000		
R/LU250.1250.02	1.250	10.000	3.250	1.172	.586	.827	1.260	.185		1.000		
R/LU230.0750.03	.750	7.000	2.500	.673	.337	.524	.787	.118		.750		
R/LU250.1000.03	1.000	10.000	3.250	.922	.461	.689	.984	.185		1.000		
R/LU250.1250.03	1.250	10.000	3.250	1.172	.586	.827	1.260	.185		1.000		
R/LU230.0750.04	.750	7.000	2.500	.673	.337	.524	.787	.118		.750		
R/LU250.1000.04	1.000	10.000	3.250	.922	.461	.689	.984	.185		1.000		
R/LU250.1250.04	1.250	10.000	3.250	1.172	.586	.827	1.260	.185		1.000		

State R or L version

w see indexable inserts

Dimensions in inch

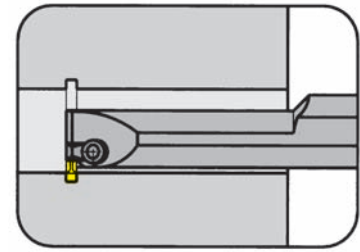
Further sizes upon request

Spare parts

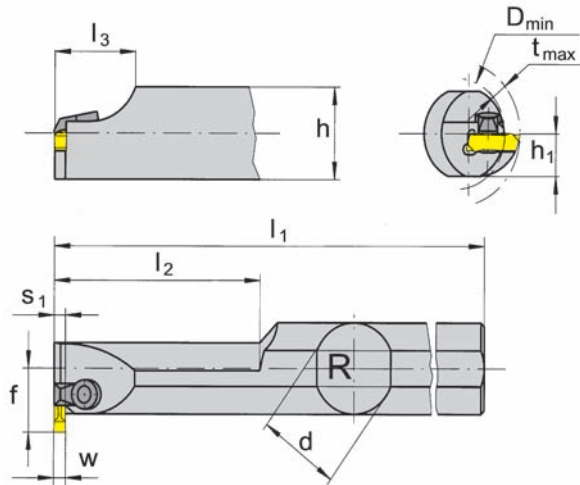
Toolholder	Clamp	Screw	Wrench
R/LU2...01/02/03	8.3	5.14	SW2,5DIN911
R/LU2...04	8.4	5.14	SW2,5DIN911

TOOLHOLDER Type

230/250



Bore Ø from .787" (20.0 mm)
 Depth of groove up to .185" (4.7 mm)
 Clamping range up to .209" (5.3 mm)

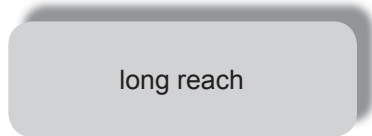


R = right hand version shown

L = left hand version

for use with Indexable insert

Type 217
 U217



Part number	d	l ₁	l ₂	h	h ₁	f	D _{min}	t _{max}	s ₁	l ₃	Size	Clamping range
R/L230.0020.01	20	180	60	18	9.0	13.3	20	3.0		18		
R/L250.0025.01	25	250	80	23	11.5	17.5	25	4.7	1.5	25	01	0.9 - 1.7
R/L250.0032.01	32	250	80	30	15.0	21.0	32	4.7		25		
R/L230.0020.02	20	180	60	18	9.0	13.3	20	3.0		18		
R/L250.0025.02	25	250	80	23	11.5	17.5	25	4.7	2.5	25	02	1.7 - 2.7
R/L250.0032.02	32	250	80	30	15.0	21.0	32	4.7		25		
R/L230.0020.03	20	180	60	18	9.0	13.3	20	3.0		18		
R/L250.0025.03	25	250	80	23	11.5	17.5	25	4.7	3.5	25	03	2.7 - 3.7
R/L250.0032.03	32	250	80	30	15.0	21.0	32	4.7		25		
R/L230.0020.04	20	180	60	18	9.0	13.3	20	3.0		18		
R/L250.0025.04	25	250	80	23	11.5	17.5	25	4.7	5.2	25	04	3.7 - 5.3
R/L250.0032.04	32	250	80	30	15.0	21.0	32	4.7		25		

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

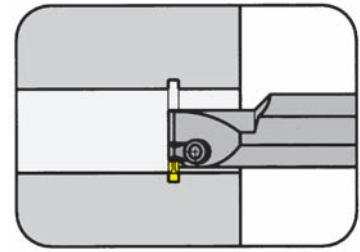
Spare parts

Toolholder	Clamp	Screw	Wrench
R/L2...01/02/03	8.3	5.14	SW2,5DIN911
R/L2...04	8.4	5.14	SW2,5DIN911

TOOLHOLDER Type

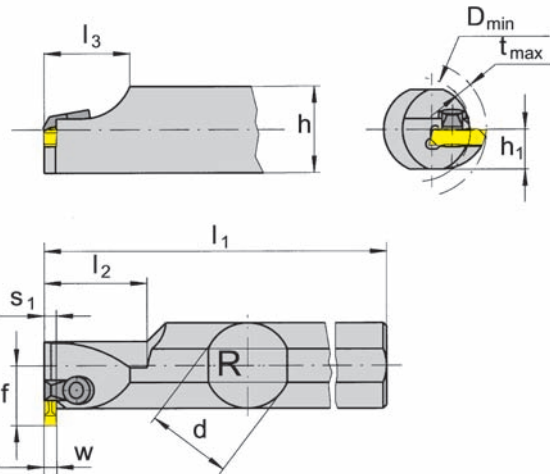
U233/U253

Bore Ø from	.787"
Depth of groove up to	.185"
Clamping range up to	.209"



for use with Indexable insert

Type 217
U217



R = right hand version shown

L = left hand version

short reach

Part number	d	l ₁	l ₂	h	h ₁	f	D _{min}	t _{max}	s ₁	l ₃	Size	Clamping range
R/LU233.0750.01	.750	5.000	1.000	.673	.337	.524	.787	.118		.750		
R/LU253.1000.01	1.000	6.000	1.250	.922	.461	.689	.984	.185	.059	1.000	01	.035 - .067
R/LU253.1250.01	1.250	6.000	1.250	1.172	.586	.827	1.260	.185		1.000		
R/LU233.0750.02	.750	5.000	1.000	.673	.337	.524	.787	.118		.750		
R/LU253.1000.02	1.000	6.000	1.250	.922	.461	.689	.984	.185	.098	1.000	02	.067 - .106
R/LU253.1250.02	1.250	6.000	1.250	1.172	.586	.827	1.260	.185		1.000		
R/LU233.0750.03	.750	5.000	1.000	.673	.337	.524	.787	.118		.750		
R/LU253.1000.03	1.000	6.000	1.250	.922	.461	.689	.984	.185	.138	1.000	03	.106 - .146
R/LU253.1250.03	1.250	6.000	1.250	1.172	.586	.827	1.260	.185		1.000		
R/LU233.0750.04	.750	5.000	1.000	.673	.337	.524	.787	.118		.750		
R/LU253.1000.04	1.000	6.000	1.250	.922	.461	.689	.984	.185	.205	1.000	04	.146 - .209
R/LU253.1250.04	1.250	6.000	1.250	1.172	.586	.827	1.260	.185		1.000		

State R or L version

w see indexable inserts

Dimensions in inch

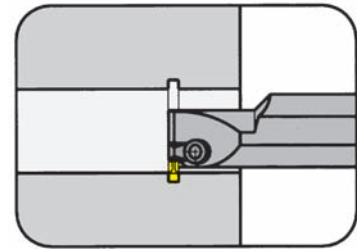
Further sizes upon request

Spare parts

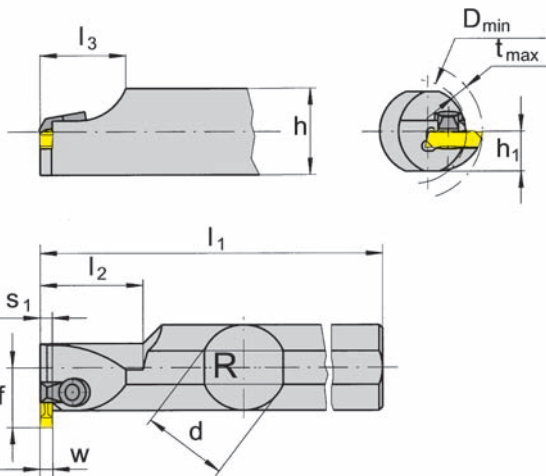
Toolholder	Clamp	Screw	Wrench
R/LU2...01/02/03	8.3	5.14	SW2,5DIN911
R/LU2...04	8.4	5.14	SW2,5DIN911

TOOLHOLDER Type

233/253



Bore Ø from .787" (20.0 mm)
 Depth of groove up to .185" (4.7 mm)
 Clamping range up to .209" (5.3 mm)



for use with Indexable insert

Type 217
 U217

short reach

R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	h	h ₁	f	D _{min}	t _{max}	s ₁	l ₃	Size	Clamping range
R/L233.0020.01	20	130	25	18	9.0	13.3	20	3.0		18		
R/L253.0025.01	25	150	30	23	11.5	17.5	25	4.7	1.5	25	01	0.9 - 1.7
R/L253.0032.01	32	150	30	30	15.0	21.0	32	4.7		25		
R/L233.0020.02	20	130	25	18	9.0	13.3	20	3.0		18		
R/L253.0025.02	25	150	30	23	11.5	17.5	25	4.7	2.5	25	02	1.7 - 2.7
R/L253.0032.02	32	150	30	30	15.0	21.0	32	4.7		25		
R/L233.0020.03	20	130	25	18	9.0	13.3	20	3.0		18		
R/L253.0025.03	25	150	30	23	11.5	17.5	25	4.7	3.5	25	03	2.7 - 3.7
R/L253.0032.03	32	150	30	30	15.0	21.0	32	4.7		25		
R/L233.0020.04	20	130	25	18	9.0	13.3	20	3.0		18		
R/L253.0025.04	25	150	30	23	11.5	17.5	25	4.7	5.2	25	04	3.7 - 5.3
R/L253.0032.04	32	150	30	30	15.0	21.0	32	4.7		25		

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

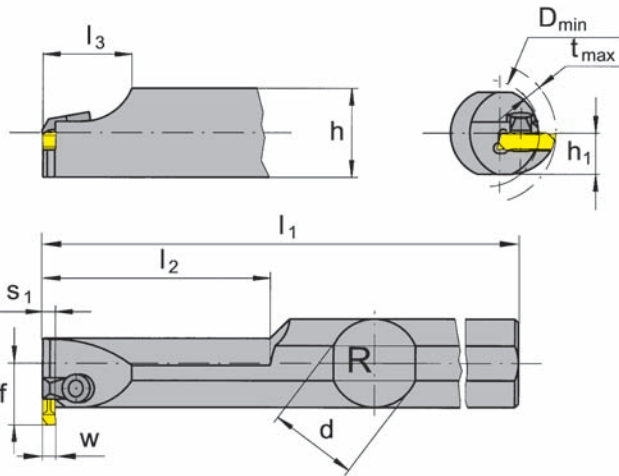
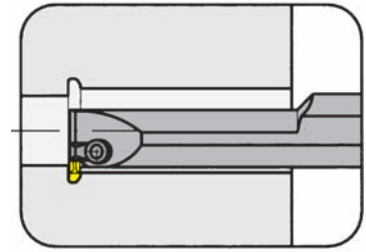
Spare parts

Toolholder	Clamp	Screw	Wrench
R/L2...01/02/03	8.3	5.14	SW2,5DIN911
R/L2...04	8.4	5.14	SW2,5DIN911

TOOLHOLDER Type

U254

Bore Ø from	.984"
Depth of groove up to	.185"
Clamping range up to	.209"



R = right hand version shown

L = left hand version

for use with Indexable insert

Type 217
U217long reach for special
insert shapes

Part number	d	l ₁	l ₂	h	h ₁	f	D _{min}	t _{max}	s ₁	l ₃	Size	Clamping range
R/LU254.1000.01	1.000	10.000	3.250	.922	.461	.689	.984	.185	.059	1.000	01	.035 - .067
R/LU254.1250.01	1.250	10.000	3.250	1.172	.586	.827	1.260	.185	.098	1.000	02	.067 - .106
R/LU254.1000.02	1.000	10.000	3.250	.922	.461	.689	.984	.185	.138	1.000	03	.106 - .146
R/LU254.1250.02	1.250	10.000	3.250	1.172	.586	.827	1.260	.185	.205	1.000	04	.146 - .209
R/LU254.1000.03	1.000	10.000	3.250	.922	.461	.689	.984	.185				
R/LU254.1250.03	1.250	10.000	3.250	1.172	.586	.827	1.260	.185				
R/LU254.1000.04	1.000	10.000	3.250	.922	.461	.689	.984	.185				
R/LU254.1250.04	1.250	10.000	3.250	1.172	.586	.827	1.260	.185				

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

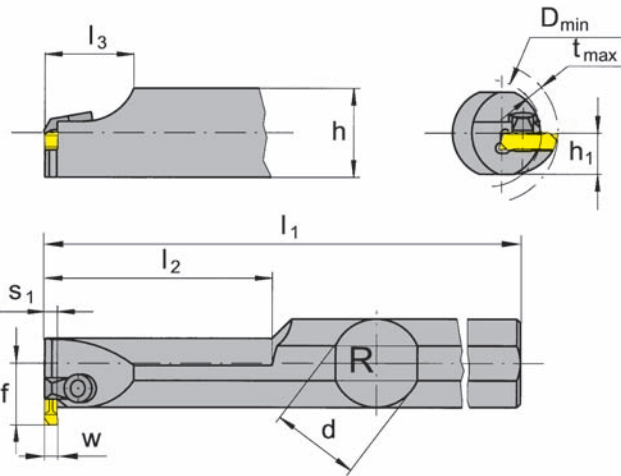
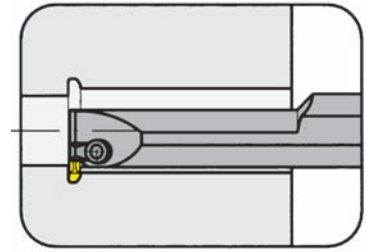
Spare parts

Toolholder	Clamp	Screw	Wrench
R/LU254.1...01/02/03	8.3	5.14	SW2,5DIN911
R/LU254.1...04	8.4	5.14	SW2,5DIN911

TOOLHOLDER Type

234/254

Bore Ø from .787" (20.0 mm)
 Depth of groove up to .185" (4.7 mm)
 Clamping range up to .209" (5.3 mm)



R = right hand version shown

L = left hand version

for use with Indexable insert

Type 217
U217



long reach for special insert shapes

Part number	d	l ₁	l ₂	h	h ₁	f	D _{min}	t _{max}	s ₁	l ₃	Size	Clamping range
R/L234.0020.01	20	180	60	18	9.0	13.3	20	3.0		18		
R/L254.0025.01	25	250	80	23	11.5	17.5	25	4.7	1.5	25	01	0.9 - 1.7
R/L254.0032.01	32	250	80	30	15.0	21.0	32	4.7		25		
R/L234.0020.02	20	180	60	18	9.0	13.3	20	3.0		18		
R/L254.0025.02	25	250	80	23	11.5	17.5	25	4.7	2.5	25	02	1.7 - 2.7
R/L254.0032.02	32	250	80	30	15.0	21.0	32	4.7		25		
R/L234.0020.03	20	180	60	18	9.0	13.3	20	3.0		18		
R/L254.0025.03	25	250	80	23	11.5	17.5	25	4.7	3.5	25	03	2.7 - 3.7
R/L254.0032.03	32	250	80	30	15.0	21.0	32	4.7		25		
R/L234.0020.04	20	180	60	18	9.0	13.3	20	3.0		18		
R/L254.0025.04	25	250	80	23	11.5	17.5	25	4.7	5.2	25	04	3.7 - 5.3
R/L254.0032.04	32	250	80	30	15.0	21.0	32	4.7		25		

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

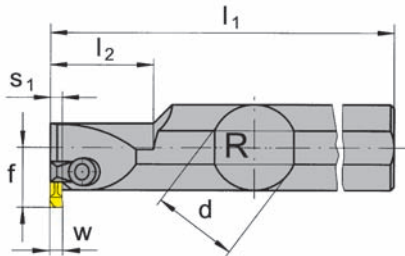
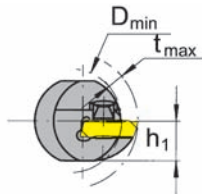
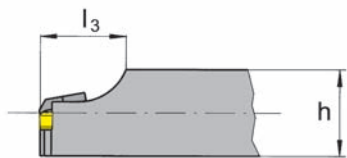
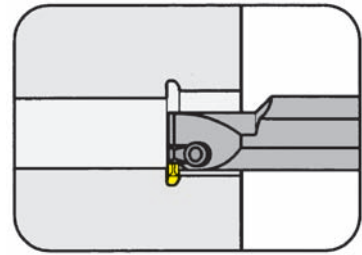
Spare parts

Toolholder	Clamp	Screw	Wrench
R/L2...01/02/03	8.3	5.14	SW2,5DIN911
R/L2...04	8.4	5.14	SW2,5DIN911

TOOLHOLDER Type

U235/U255

Bore Ø from	.787"
Depth of groove up to	.185"
Clamping range up to	.209"



for use with Indexable insert

Type 217
U217



short reach for special insert shapes

R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	h	h ₁	f	D _{min}	t _{max}	s ₁	l ₃	Size	Clamping range
R/LU235.0750.01	.750	5.000	1.000	.673	.337	.524	.787	.118		.750		
R/LU255.1000.01	1.000	6.000	1.250	.922	.461	.689	.984	.185	.059	1.000	01	.035 - .067
R/LU255.1250.01	1.250	6.000	1.250	1.172	.586	.827	1.260	.185		1.000		
R/LU235.0750.02	.750	5.000	1.000	.673	.337	.524	.787	.118		.750		
R/LU255.1000.02	1.000	6.000	1.250	.922	.461	.689	.984	.185	.098	1.000	02	.067 - .106
R/LU255.1250.02	1.250	6.000	1.250	1.172	.586	.827	1.260	.185		1.000		
R/LU235.0750.03	.750	5.000	1.000	.673	.337	.524	.787	.118		.750		
R/LU255.1000.03	1.000	6.000	1.250	.922	.461	.689	.984	.185	.138	1.000	03	.106 - .146
R/LU255.1250.03	1.250	6.000	1.250	1.172	.586	.827	1.260	.185		1.000		
R/LU235.0750.04	.750	5.000	1.000	.673	.337	.524	.787	.118		.750		
R/LU255.1000.04	1.000	6.000	1.250	.922	.461	.689	.984	.185	.205	1.000	04	.146 - .209
R/LU255.1250.04	1.250	6.000	1.250	1.172	.586	.827	1.260	.185		1.000		

State R or L version

w see indexable inserts

Dimensions in inch

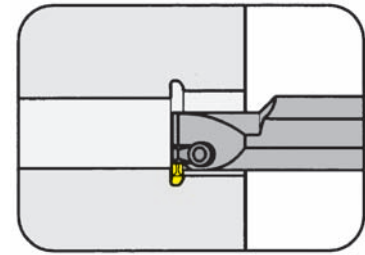
Further sizes upon request

Spare parts

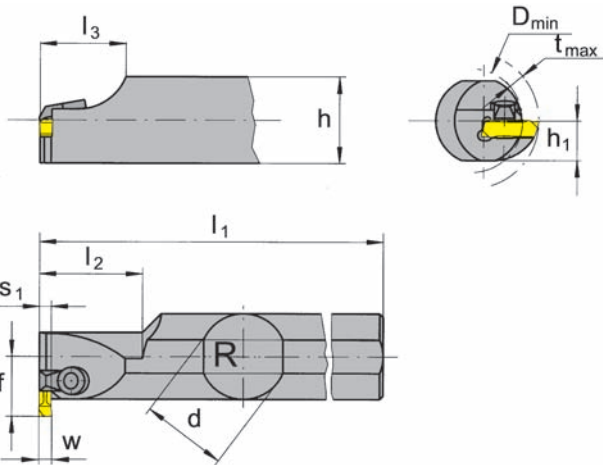
Toolholder	Clamp	Screw	Wrench
R/LU2...01/02/03	8.3	5.14	SW2,5DIN911
R/LU2...04	8.4	5.14	SW2,5DIN911

TOOLHOLDER Type

235/255



Bore Ø from .787" (20.0 mm)
 Depth of groove up to .185" (4.7 mm)
 Clamping range up to .209" (5.3 mm)



for use with Indexable insert

Type 217
 U217



short reach for special insert shapes

R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	h	h ₁	f	D _{min}	t _{max}	s ₁	l ₃	Size	Clamping range
R/L235.0020.01	20	130	25	18	9.0	13.3	20	3.0		18		
R/L255.0025.01	25	150	30	23	11.5	17.5	25	4.7	1.5	25	01	0.9 - 1.7
R/L255.0032.01	32	150	30	30	15.0	21.0	32	4.7		25		
R/L235.0020.02	20	130	25	18	9.0	13.3	20	3.0		18		
R/L255.0025.02	25	150	30	23	11.5	17.5	25	4.7	2.5	25	02	1.7 - 2.7
R/L255.0032.02	32	150	30	30	15.0	21.0	32	4.7		25		
R/L235.0020.03	20	130	25	18	9.0	13.3	20	3.0		18		
R/L255.0025.03	25	150	30	23	11.5	17.5	25	4.7	3.5	25	03	2.7 - 3.7
R/L255.0032.03	32	150	30	30	15.0	21.0	32	4.7		25		
R/L235.0020.04	20	130	25	18	9.0	13.3	20	3.0		18		
R/L255.0025.04	25	150	30	23	11.5	17.5	25	4.7	5.2	25	04	3.7 - 5.3
R/L255.0032.04	32	150	30	30	15.0	21.0	32	4.7		25		

State R or L version

w see indexable inserts

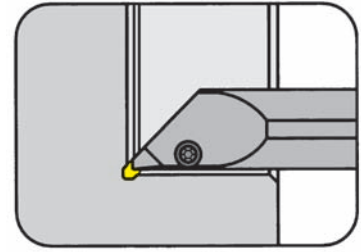
Dimensions in mm

Further sizes upon request

Spare parts

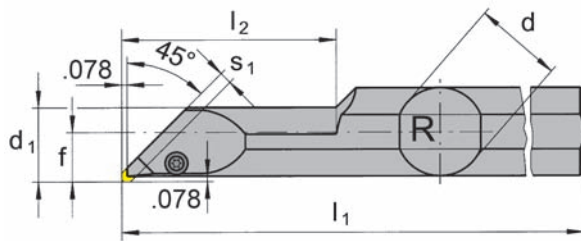
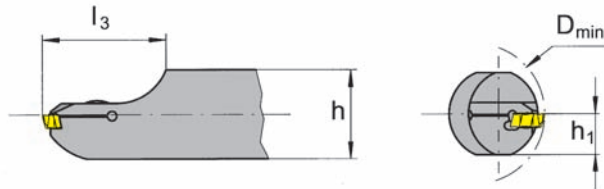
Toolholder	Clamp	Screw	Wrench
R/L2...01/02/03	8.3	5.14	SW2,5DIN911
R/L2...04	8.4	5.14	SW2,5DIN911

TOOLHOLDER Type

U245

Bore Ø from

.787"



R = right hand version shown

L = left hand version

for use with Indexable insert

Type 217

similar to DIN 509 form "F"

Part number	d	h	h ₁	l ₁	f	d ₁	s ₁	l ₂	l ₃	D _{min}	Size	Clamping range
R/LU245.0750.02	.750	.672	.336	7.000	.472	.677		2.500	1.250	.787		
R/LU245.1000.02	1.000	.922	.461	10.000	.570	.854	.098	3.250	1.750	.984	02	.067 - .106
R/LU245.1250.02	1.250	1.172	.586	10.000	.708	1.110		3.250	1.750	1.220		
R/LU245.0750.03	.750	.672	.336	7.000	.472	.677		2.500	1.250	.787		
R/LU245.1000.03	1.000	.922	.461	10.000	.570	.854	.138	3.250	1.750	.984	03	.106 - .146
R/LU245.1250.03	1.250	1.172	.586	10.000	.708	1.110		3.250	1.750	1.220		
R/LU245.0750.04	.750	.672	.336	7.000	.472	.677		2.500	1.250	.787		
R/LU245.1000.04	1.000	.922	.461	10.000	.570	.854	.205	3.250	1.750	.984	04	.146 - .209
R/LU245.1250.04	1.250	1.172	.586	10.000	.708	1.110		3.250	1.750	1.220		

State R or L version

Dimensions in inch

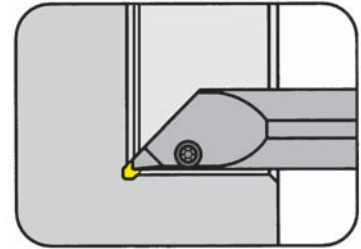
Further sizes upon request

Spare parts

Toolholder	Cylindrical Screw	TORX PLUS® Wrench
R/LU245....	51.27.984P	T15PQ

TOOLHOLDER Type

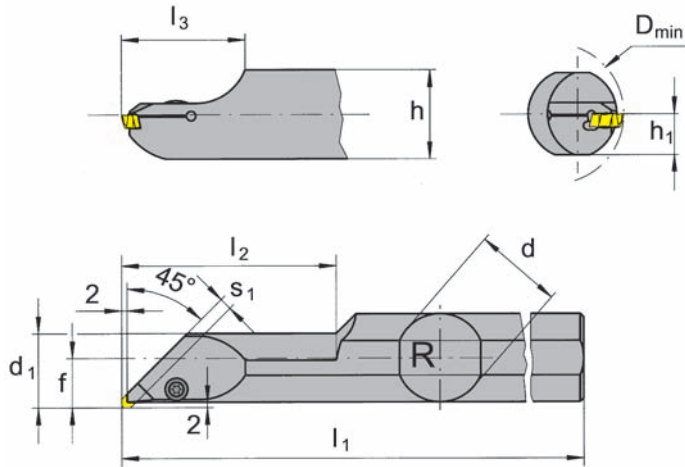
245



Bore Ø from .787" (20.0 mm)

for use with Indexable insert

Type 217



R = right hand version shown

L = left hand version

similar to DIN 509 form "F"

Part number	d	h	h ₁	l ₁	f	d ₁	s ₁	l ₂	l ₃	D _{min}	Size	Clamping range
R/L245.0020.02	20	18	9	180	12	17.2	2.5	60.43	35.60	20	02	1.7 - 2.7
R/L245.0032.02	32	30	15	250	18	28.2	2.5	80.00	41.60	31	02	1.7 - 2.7
R/L245.0020.03	20	18	9	180	12	17.2	3.5	60.00	35.00	20	03	2.7 - 3.7
R/L245.0032.03	32	30	15	250	18	28.2	3.5	80.64	41.82	31	03	2.7 - 3.7
R/L245.0020.04	20	18	9	180	12	17.2	5.2	60.99	36.17	20	04	3.7 - 5.3
R/L245.0032.04	32	30	15	250	18	28.2	5.2	80.99	42.17	31	04	3.7 - 5.3

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

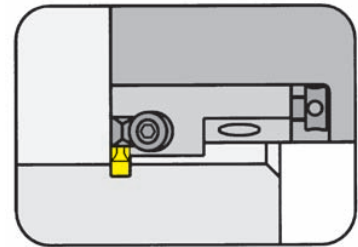
Toolholder	Cylindrical Screw	TORX PLUS®-Wrench
R/L245.00...	51.27.984P	T15PQ

CARTRIDGE Type

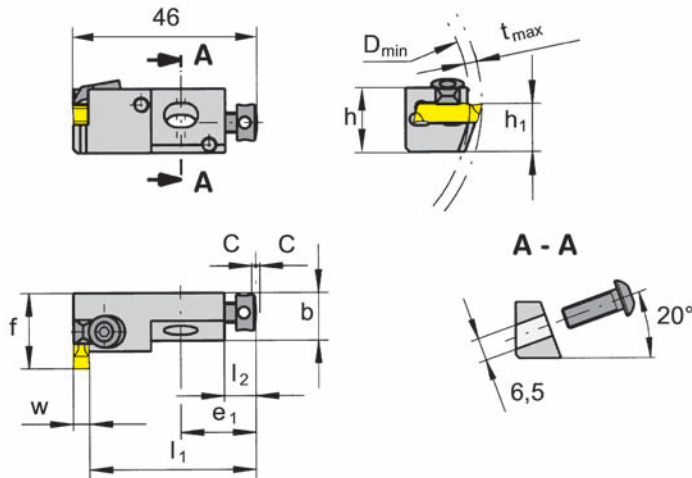
232

Bore Ø from

1.575" (40.0 mm)



for use with Indexable insert

Type 217
U217

R = right hand version shown

L = left hand version

Part number	h_1	f	h	b	l_1	D_{min}	t_{max}	e_1	l_2	c	Size	Clamping range
R/L232.1212.01	12	19	16	12	44.4	40	3	19	8	1	01	0.9 - 1.7
R/L232.1212.02	12	19	16	12	43.4	40	3	19	8	1	02	1.7 - 2.7
R/L232.1212.03	12	19	16	12	42.4	40	3	19	8	1	03	2.7 - 3.7
R/L232.1212.04	12	19	16	12	40.7	40	3	19	8	1	04	3.7 - 5.3

State R or L version

w see indexable inserts

Dimensions in mm

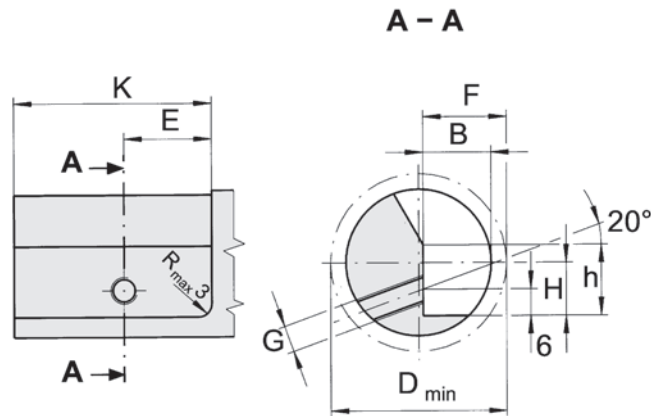
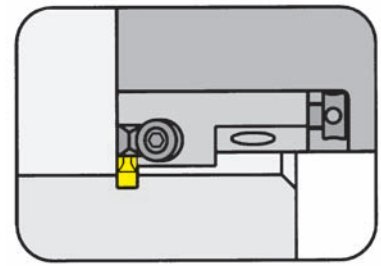
Further sizes upon request

Dimensions of seating see following page

Spare parts

Cartridge	Clamp	Screw	Screw	Adjust screw axial	Wrench
R/L232.1212.01/03	8.3	4.08.913	5.14	5.08.020	SW2,5DIN911
R/L232.1212.02	8.3	6.20.232	5.14	5.08.020	SW2,5DIN911
R/L232.1212.04	8.4	6.20.232	5.14	5.08.020	SW2,5DIN911

SEATING DIMENSIONS CARTRIDGE Type **232**



Cartridge	F	G	H	K	E	B	h	D _{min}	Fastening screw
232.1212...	19	M6	12	45	20	15,5	16	40	6.20.232

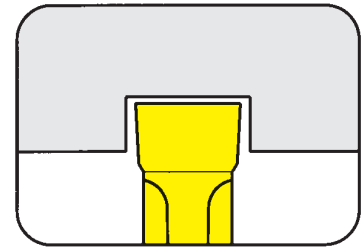
Dimensions in mm

GROOVING (external and internal)



INDEXABLE INSERT Type

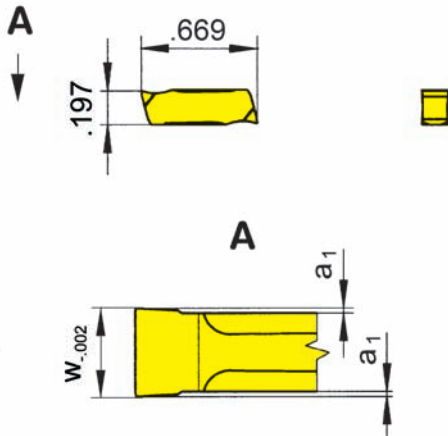
U217



Circlip grooves
Width of groove DIN471/472
.026 - .188"

for use with Toolholder

- Type 230 / U230
232 / U232
233 / U233
240 / U240
248 / U248
250 / U250
253 / U253



Indexability length
± .0008"

Part number	w	a ₁	Size	Carbide grades										
				K10	MG12	P20	H54	TN32	TN35	TI25	TF45	TF46		
U217.0026.00	.026	.002	01											
U217.0031.00	.031	.002												
U217.0034.00	.034	.002		Δ				Δ						
U217.0039.00	.039	.002						▲						
U217.0040.00	.040	.002					▲		▲					
U217.0046.00	.046	.004							▲				▲	▲
U217.0056.00	.056	.004			▲				▲				▲	▲
U217.0062.00	.062	.004		▲		▲		▲				▲	▲	
U217.0078.00	.078	.004	02	▲				▲				▲	▲	
U217.0094.00	.094	.004							▲				▲	▲
U217.0125.00	.125	.004	03	▲	▲			▲				▲	▲	
U217.0157.00	.157	.004	04					▲				▲	▲	
U217.0188.00	.188	.004							▲				▲	▲
				P	•	○	•	•	•	•	•	•	•	
				M	○	•	•	•	•	•	•	•	○	
				K	•	•	•	•	•	•	•	•	•	
				S	○	•	•	•	•	•	•	•	○	
				N	•	•	•	•	•	•	•	•	•	
				H										

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left** hand toolholders.

Max. depth of groove can be reached only with width of cut ≥ .043"

Smaller inserts have a limited depth of groove $t_{max} = .039"$ and deeper depths are depending on Ø of workpiece.

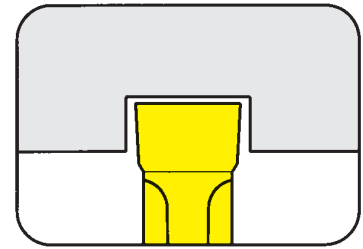
GROOVING (external and internal)



A

INDEXABLE INSERT Type

217

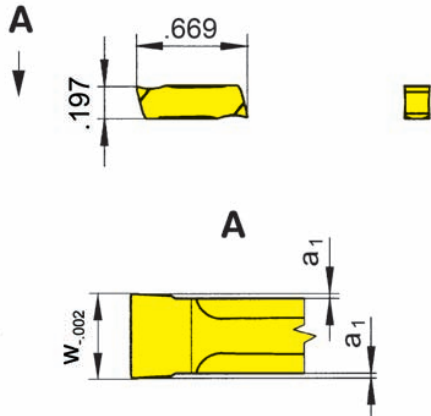


Circlip grooves
Width of circlip Nw

DIN471/472
.020 - .203"

for use with Toolholder

- Type 230 / U230
232 / U232
233 / U233
240 / U240
248 / U248
250 / U250
253 / U253



Indexability length
± .0008"

Part number	Nw	w	a ₁	Size	Carbide grades										
					K10	MG12	P20	H20	TN32	TN35	TI25	TF45	TC92		
217.0050.00	.020	.022	.002	01	▲		▲		▲						
217.0060.00	.024	.026	.002		▲		▲		▲						
217.0070.00	.028	.030	.002		▲		▲		▲						
217.0080.00	.031	.034	.002		▲		▲		▲						
217.0090.00	.035	.038	.002		▲		▲		▲						
217.0100.00	.039	.042	.002		▲		▲		▲						
217.0110.00	.043	.049	.004		▲		▲		▲						
217.0130.00	.051	.057	.004		▲		▲		▲						
217.0160.00	.063	.069	.004		▲		▲		▲	▲				▲	
217.0185.00	.073	.078	.004		02	▲		▲	▲	▲					▲
217.0215.00	.085	.090		▲			▲	▲	▲	▲					▲
217.0265.00	.104	.110		▲			▲	▲	▲	▲					▲
217.0315.00	.124	.130	.004	03	▲		▲		▲					▲	
217.0415.00	.163	.169	.004	04	▲		▲		▲					▲	
217.0515.00	.203	.208			▲		▲		▲		▲				▲
▲ on stock Δ 4 weeks					P	•		•	•	•	•			•	
• main recommendation					M	○		○		•					
○ alternative recommendation					K	•				•					
■ uncoated grades					S	○				•					
■ coated grades					N	•				•					
■ brazed/Cermet					H										

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left** hand toolholders.

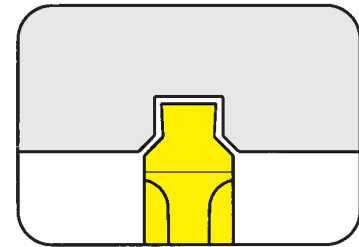
Max. depth of groove can be reached only with width of cut ≥ 1,1 mm

Smaller inserts have a limited depth of groove $t_{max} = 1$ mm and deeper depths are depending on Ø of workpiece.

A21

INDEXABLE INSERT Type

217

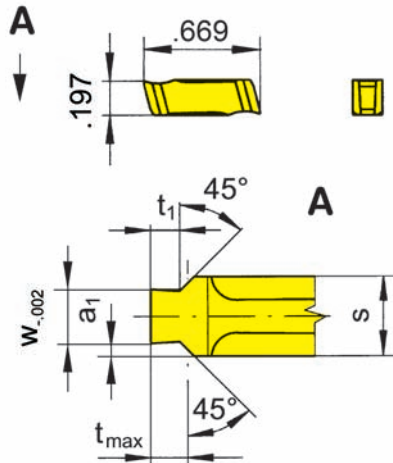


Circlip grooves
Width of circlip Nw DIN471/472
.051 - .163"

with chamfer

for use with Toolholder

- Type 234
235 / U235
240 / U240
248 / U248
254 / U254
255 / U255



Part number	Nw	w	a ₁	t ₁	t _{max}	s	Size	Carbide grades									
								MG12	P20	TN32	TN35	TI22	TF45	TC92			
217.1306.25	.051	.057	.021	.018	.022	.098	02			▲							
217.1607.33	.063	.069	.031	.024	.028		03		▲	▲							
217.1609.33	.063	.069	.031	.033	.039	.130			▲	▲							
217.1812.33	.073	.078	.026	.043	.049				▲	▲							
217.2115.43	.085	.090	.040	.053	.059	.169	04		Δ	▲							
217.2616.43	.104	.110	.030	.053	.059	.169				▲							
217.2617.43	.104	.110	.030	.063	.069	.169				▲							
217.3118.53	.124	.130	.040	.063	.069	.209				▲							
217.4120.53	.163	.169	.020	.073	.079	.209				▲							
											▲						

▲ on stock Δ 4 weeks

● main recommendation

○ alternative recommendation

■ uncoated grades

■ coated grades

■ brazed/Cermet

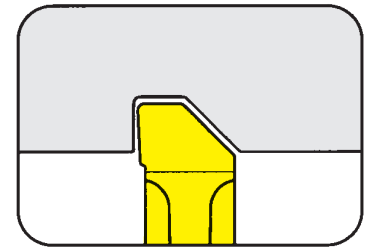
Dimensions in inch

Indexable inserts can be used in **right and left** hand toolholders.

INDEXABLE INSERT Type

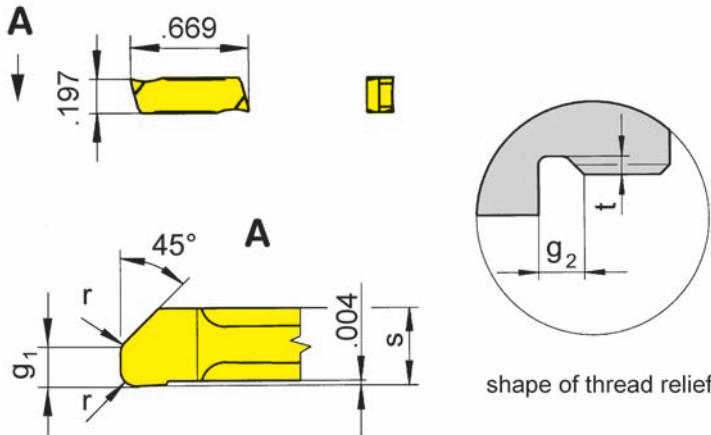
217

Thread relief DIN 76 "Short form"



for use with Toolholder

- Type
- 234
 - 235 / U235
 - 240 / U240
 - 248 / U248
 - 254 / U254
 - 255 / U255



R = right hand version shown

L = left hand version

Part number	P	r	s	g ₁	g ₂	t _{max}	Size	MG12	P20	TN32	TN35	TI22	TF45	TC92
R/L217.1060.27	0.60	.016	.106	.059	.081	.022	02		ΔΔ					
R/L217.1100.37	1.00	.024	.146	.098	.134	.035	03		▲/Δ					
R/L217.1125.53	1.25	.024	.209	.126	.167	.041	04		ΔΔ					
R/L217.1150.53	1.50	.031	.209	.150	.197	.047	04		ΔΔ					
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation □ uncoated grades ■ coated grades ■ brazed/Cermet								P	•					
								M						
								K						
								S						
								N						
								H						

Dimensions in inch

State R or L version

Carbide grades

External machining:

Use right hand inserts in right hand toolholders and left hand inserts in left hand toolholders

Internal machining:

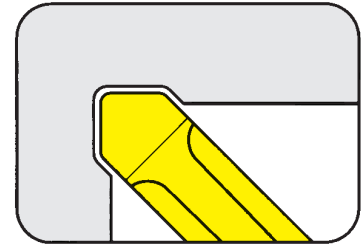
Use right hand inserts in left hand toolholders and left hand inserts in right hand toolholders

P = Pitch of Thread

INDEXABLE INSERT Type

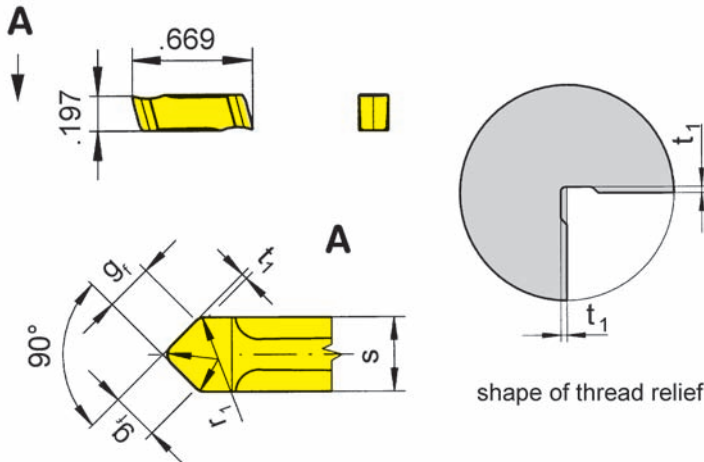
217

Corner reliefs similar to DIN 509 form "F"



for use with Toolholder

Type 245
U245



Part number	r_1	g_f	s	t_1	D_{min}	Size	Carbide grades						
							MG12	P20	TN32	TN35	TI22	TA45	
217.0602.24	.024	.067	.094	.008	.787	02		▲	▲				
217.0603.33	.024	.091	.130	.012	.906	03		▲					
<ul style="list-style-type: none"> ▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet 							P	●	●				
							M						
							K						
							S						
							N						
							H						

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left** hand toolholders.

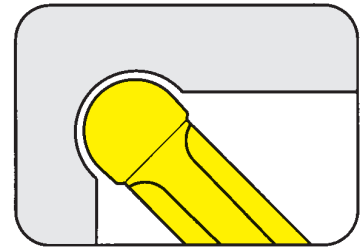
GROOVING CORNER RELIEFS (internal)



A

INDEXABLE INSERT Type

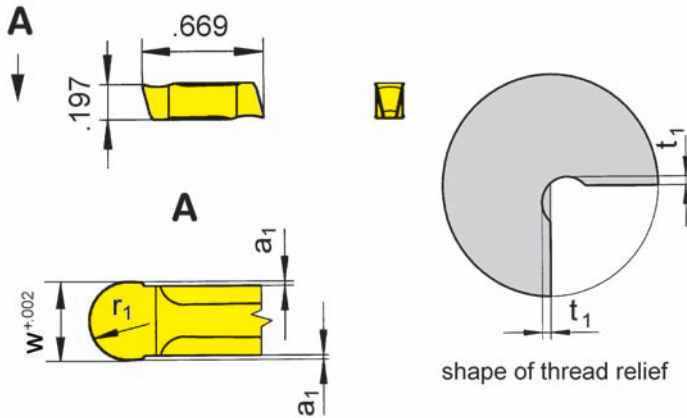
217



Full radius r .039 - .098"

for use with Toolholder

Type 245
U245



Part number	r_1	w	a_1	t_1	D_{min}	Size	Carbide grades							
							K10	P20	TN32	TN35	TI22	TF45	TC92	
217.0010.20	.039	.079	.004	.028	.787	02	▲	▲	▲	▲				▲
217.0015.30	.059	.118	.004	.039	.787	03	▲	▲	▲	▲				
217.0020.40	.079	.157	.004	.047	.787	04		▲		▲				
217.0025.50	.098	.197	.004	.059	.787		▲	▲						
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation □ uncoated grades ■ coated grades ■ brazed/Cermet							P	●	●	●	●	●	●	●
							M	○			●			
							K	●			●			
							S	○			●			
							N	●			●			
							H							

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left** hand toolholders.

HCG - HORN Catalog Guide

INTERNAL GROOVING

B

Bore Ø	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.625" (15.87 mm)				•						
.709" (18 mm)				•						
.787 - 1.102" (20-28 mm)	•			•						
1.102 - 1.496" (28-38 mm)	•			•	•					
> 1.496" (38 mm)	•			•	•	•	•	•	•	
Operation Type										
Grooving	•			•	•	•	•	•	•	
Threading					•	•			•	
Profiling				•	•		•	•	•	
Width of groove inch	.022-.209			.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.049-.169	
Width of groove mm	0.56-5.3			1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	1.25-4.29	
Chapter	A	B	C	D	E	F	G	H	J	K

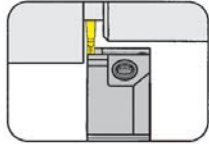
EXTERNAL GROOVING

Depth of groove up to	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.157" (4 mm)	•	•	•	•	•	•	•	•	•	•
.236" (6 mm)		•	•	•	•	•	•	•	•	•
.315" (8 mm)		•		•	•	•	•	•		•
.394" (10 mm)		•		•	•	•	•			
.433" (11 mm)		•		•	•	•	•			
.551" (14 mm)		•		•	•		•			
.630" (16 mm)		•		•	•		•			
.709" (18 mm)				•	•		•			
.984" (25 mm)				•			•			
1.000" (25.4 mm)							•			
Operation Type										
Grooving	•	•	•	•	•	•	•	•	•	•
Side Turning		•	•	•	•		•	•		
Parting Off	•	•	•	•	•		•	•		•
Threading		•	•			•	•		•	
Profiling			•		•		•	•	•	•
Axial Grooving						•			•	
Width of groove inch	.022-.209	.059-.118	.020-.118	.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.022-.169	.059-.118
Width of groove mm	0.56-5.3	1.5-3.0	0.5-3.0	1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	0.56-4.29	1.5-3.0
Chapter	A	B	C	D	E	F	G	H	J	K

Special tools upon request

TOOLING SYSTEMS 264 **B**

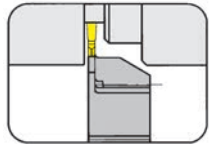
**Toolholder
with screwed clamping**



Page B2-B4



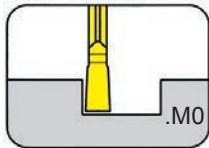
**Toolholder
with self clamping**



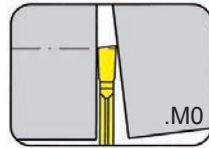
Page B5



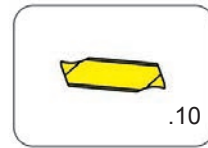
**Indexable inserts
Type
S264 / 264**



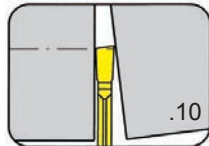
Page B6



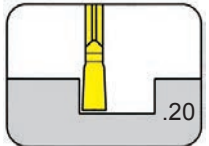
Page B7



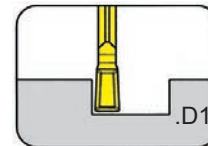
Page B8



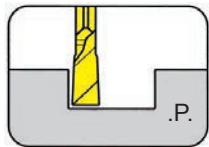
Page B9



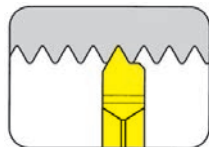
Page B10



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Page B12



Page B13

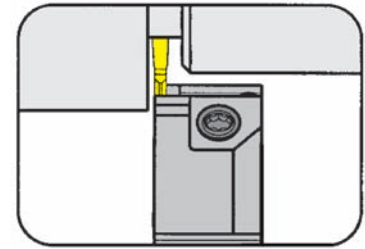
For Technical Information please see chapter Q

B

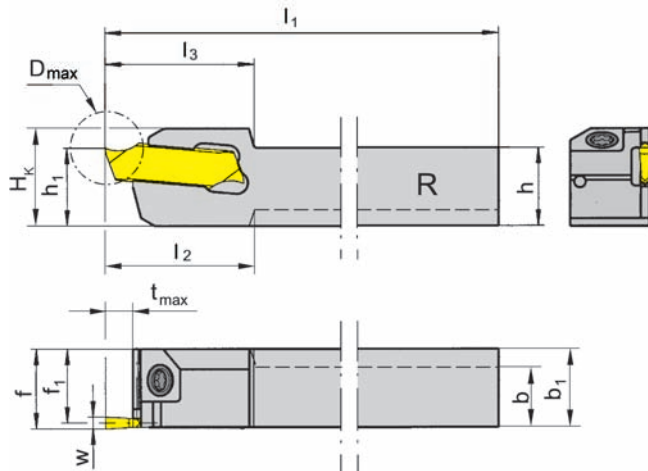
TOOLHOLDER Type

H264

with screwed clamping



Depth of groove up to .630" (16.0 mm)
Width of groove up to .079" (2.0 mm)



for use with Indexable insert

Type 264
S264



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	b ₁	f ₁	f	l ₂	t _{max}	w	D _{max}	l ₃	H _k	Size
R/LH264.0808.01	8	8		8	10	9.25	10	17.5			22		12.5	01
R/LH264.1010.01	10	10	120	10	-	9.25	10	-	4	1.5	22	17.5	12.5	
R/LH264.1212.01	12	12		12	-	11.25	12	-			22		14.5	
R/LH264.1616.01	16	16		16	-	15.25	16	-			32		18.5	
R/LH264.1010.11	10	10		10	-	9.25	10				20		12.5	01
R/LH264.1212.11	12	12	120	12	-	11.25	12	-	10	1.5	20	19.0	14.5	
R/LH264.1616.11	16	16		16		15.25	16				32		18.5	
R/LH264.1212.21	12	12	120	12	-	11.25	12	-			26	22.0	15.5	01
R/LH264.1616.21	16	16		16	-	15.25	16		13	1.5	32		19.5	
R/LH264.1010.02	10	10		10		9.00	10						12.5	02
R/LH264.1212.02	12	12	120	12	-	11.00	12	-	4	2.0	32	17.5	14.5	
R/LH264.1616.02	16	16		16		15.00	16						18.5	
R/LH264.1010.12	10	10		10		9.00	10						12.5	02
R/LH264.1212.12	12	12	120	12	-	11.00	12	-	10	2.0	32	19.0	14.5	
R/LH264.1616.12	16	16		16		15.00	16						18.5	
R/LH264.1212.22	12	12	120	12	-	11.00	12	-					14.5	02
R/LH264.1616.22	16	16		16	-	15.00	16	-	16	2.0	32	25.0	19.5	

State R or L version

Further sizes upon request

Dimensions in mm

Spare parts

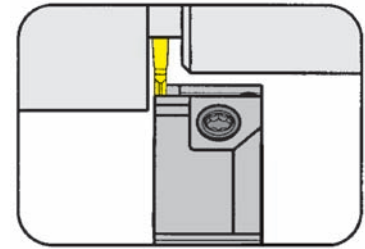
Toolholder	Screw	TORX PLUS® Wrench
R/LH264....	3.5.12T10EP	T10PL

B2

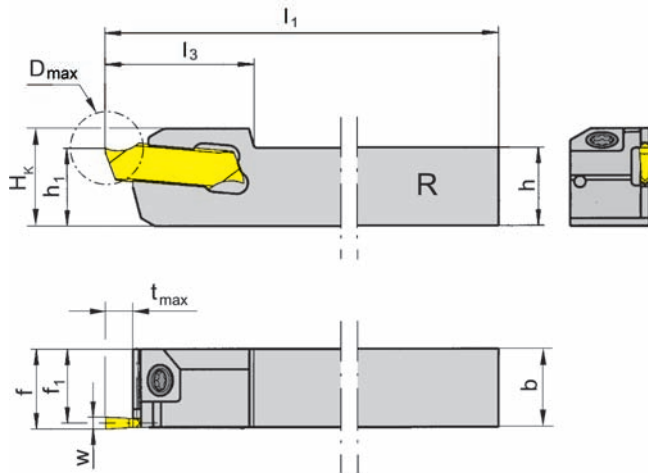
TOOLHOLDER Type

H264

with screwed clamping



Depth of groove up to .630" (16.0 mm)
Width of groove .098" (2.5 mm)



for use with Indexable insert

Type 264
S264



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	t _{max}	w	D _{max}	l ₃	H _k	Size
R/LH264.1212.03	12	12	120	12	10.75	12	4	2.5	32	17.5	14.5	03
R/LH264.1616.03	16	16	120	16	14.75	16	4	2.5	32	17.5	18.5	03
R/LH264.1212.13	12	12	120	12	10.75	12	10	2.5	32	19.0	14.5	03
R/LH264.1616.13	16	16	120	16	14.75	16	10	2.5	32	19.0	18.5	03
R/LH264.1212.23	12	12	120	12	10.75	12	16	2.5	32	25.0	14.5	03
R/LH264.1616.23	16	16	120	16	14.75	16	16	2.5	32	25.0	18.5	03

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH264.1...	3.5.12T10EP	T10PL

GROOVING and PARTING OFF

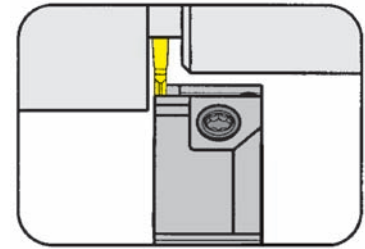


B

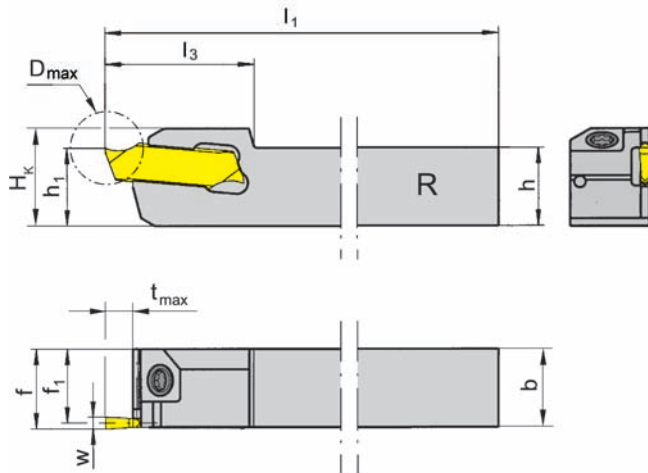
TOOLHOLDER Type

H264

with screwed clamping



Depth of groove up to .630" (16.0 mm)
Width of groove .118" (3.0 mm)



for use with Indexable insert

Type 264
S264



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	t _{max}	w	D _{max}	l ₃	H _k	Size
R/LH264.1212.04	12	12	120	12	10.5	12	5	3	32	17.5	15	04
R/LH264.1616.04	16	16	120	16	14.5	16	5	3	32	17.5	19	04
R/LH264.1212.14	12	12	120	12	10.5	12	10	3	32	19.0	15	04
R/LH264.1616.14	16	16	120	16	14.5	16	10	3	32	19.0	19	04
R/LH264.1212.24	12	12	120	12	10.5	12	16	3	32	25.0	15	04
R/LH264.1616.24	16	16	120	16	14.5	16	16	3	32	25.0	19	04

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH264.1...	3.5.12T10EP	T10PL

B4

GROOVING and PARTING OFF

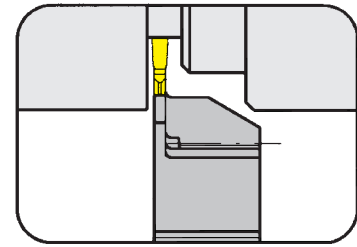


B

TOOLHOLDER Type

H264

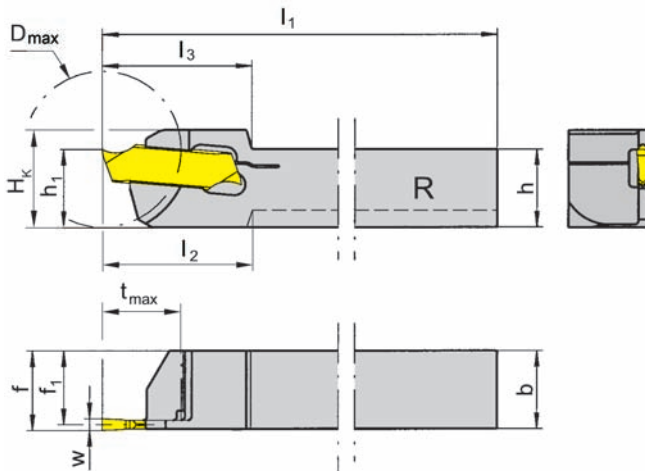
with self clamping



Depth of groove up to .394" (10.0 mm)
Width of groove up to .118" (3.0 mm)

for use with Indexable insert

Type 264
S264



R = right hand version shown

L = left hand version

Part number	h	b	I ₁	h ₁	f ₁	f	I ₂	t _{max}	w	D _{max}	I ₃	H _k	Size
R/LH264.0808.51	8	8	120	10	7.25	8	18	7	1.5	20	18	12.5	01
R/LH264.1010.61	10	10	120	10	9.25	10	-	10	1.5	20	19	12.5	01
R/LH264.1010.62	10	10	120	10	9.00	10	-	10	2.0	20	19	12.5	02
R/LH264.1212.62	12	12	120	12	11.00	12	-	10	2.0	20	19	14.5	02
R/LH264.1212.63	12	12	120	12	10.75	12	-	10	2.5	32	19	14.5	03
R/LH264.1212.64	12	12	120	12	10.50	12	-	10	3.0	32	19	14.5	04

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Wrench
R/LH264....	P39L

GROOVING and PARTING OFF



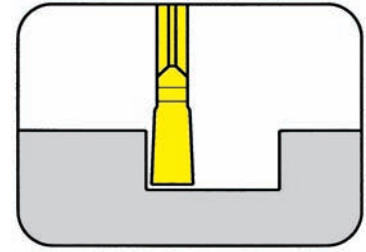
B

INDEXABLE INSERT Type

264

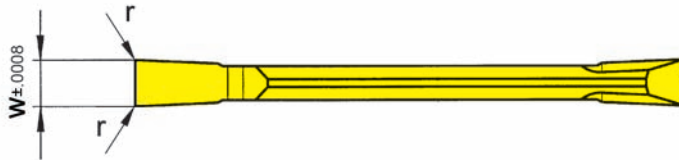
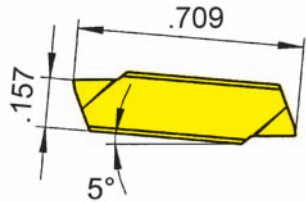
Depth of groove up to .630"
Width of groove .059 - .118"

precision ground



for use with Toolholder

Type H264



Indexability length
± .0006"

Part number	w	r	Size	MG12	TN35	T125	TA45
264.0150.M0	.059	.002	01	▲	▲		
264.0200.M0	.079	.002	02	▲	▲		
264.0250.M0	.098	.004	03	▲	▲		
264.0300.M0	.118	.004	04	▲	▲		
				P	o	•	
				M	•	•	
				K	•	•	
				S	•	•	
				N	•	•	
				H			

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

GROOVING and PARTING OFF



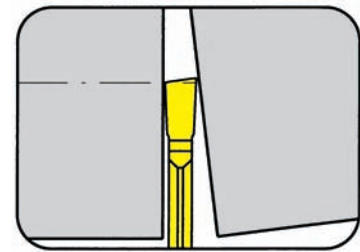
B

INDEXABLE INSERT Type

264

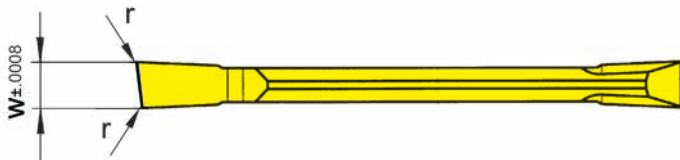
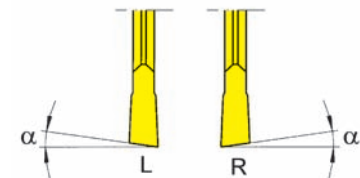
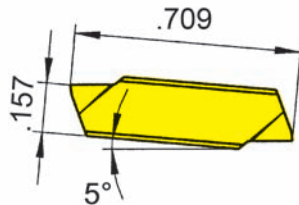
Depth of groove up to .630"
Width of groove .059 - .118"

precision ground



for use with Toolholder

Type H264



Indexability length
± .0006"

R = right hand version shown

L = left hand version

Part number	w	r	α	Size	Carbide grades			
					MG12	TN35	Ti25	TA45
R/L264.0815.M0 R/L264.1515.M0	.059	.002	8° 15°	01	▲/▲ ▲/▲	▲/▲ ▲/▲		
R/L264.0820.M0 R/L264.1520.M0	.079	.002	8° 15°	02	▲/▲ ▲/▲	▲/▲ ▲/▲		
R/L264.0825.M0 R/L264.1525.M0	.098	.004	8° 15°	03	/▲ ▲/▲	▲/▲ ▲/		
R/L264.0830.M0 R/L264.1530.M0	.118	.004	8° 15°	04	/▲ ▲/▲	▲/▲ ▲/▲		
<ul style="list-style-type: none"> ▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet 					P	○	●	
					M	●	●	
					K	●	●	
					S	●	●	
					N	●	●	
					H			

Dimensions in inch

State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

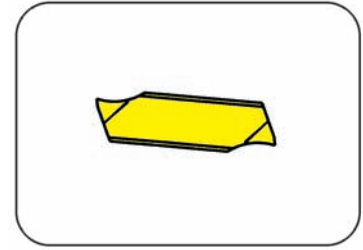
GROOVING and PARTING OFF



B

INDEXABLE INSERT Type

264

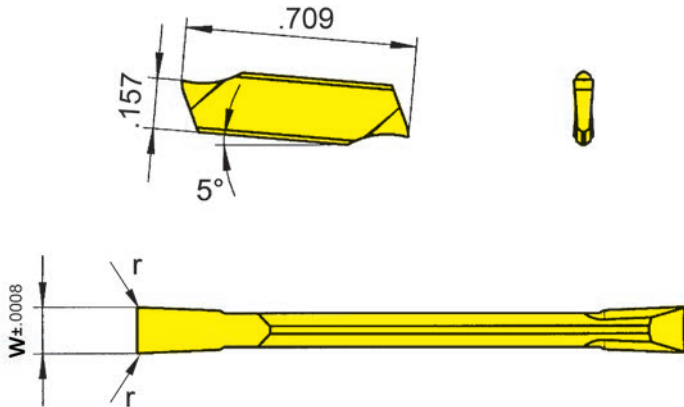


Depth of groove up to .630"
Width of groove .059 - .118"

precision ground

for use with Toolholder

Type H264



Indexability length
± .0006"

Part number	w	r	Size	Carbide grades			
				MG12	TN35	T125	TA45
264.0150.10	.059	.002	01	▲	▲		
264.0200.10	.079	.002	02	▲	▲		
264.0250.10	.098	.004	03	△	▲		
264.0300.10	.118	.004	04	▲	▲		
				P	○	●	
				M	●	●	
				K	●	●	
				S	●	●	
				N	●	●	
				H			

- ▲ on stock △ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Indexable inserts can be used in **right and left hand** toolholders.

GROOVING and PARTING OFF



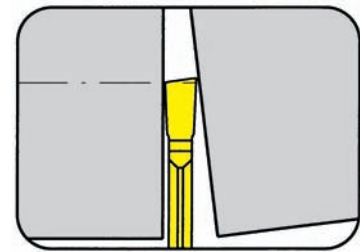
B

INDEXABLE INSERT Type

264

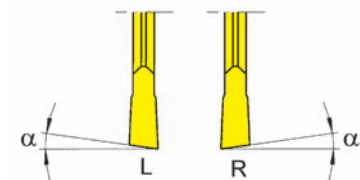
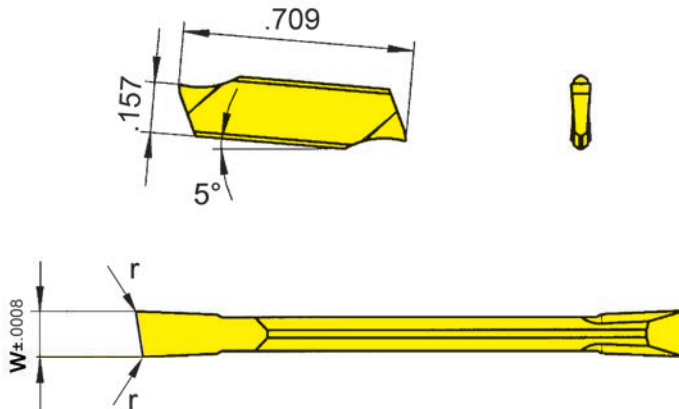
Depth of groove up to .630"
Width of groove .059 - .118"

precision ground



for use with Toolholder

Type H264



R = right hand version shown

L = left hand version

Indexability length
± .0006"

Part number	w	r	α	Size	Carbide grades			
					MG12	TN35	Ti25	TA45
R/L264.0815.10 R/L264.1515.10	.059	.002	15°	01	Δ/▲ ▲/▲	▲/▲ ▲/▲		
R/L264.0820.10 R/L264.1520.10	.079	.002	8° 15°	02	▲/▲ ▲/▲	▲/▲ ▲/▲		
R/L264.0825.10 R/L264.1525.10	.098	.004	8° 15°	03		▲/▲ ▲/▲		
R/L264.0830.10 R/L264.1530.10	.118	.004	8° 15°	04		▲/▲ ▲/▲		
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet					P	○	●	
					M	●	●	
					K	●	●	
					S	●	●	
					N	●	●	
					H			

Dimensions in inch

State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

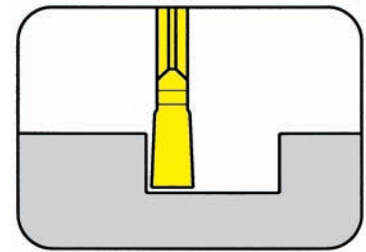
GROOVING and PARTING OFF



B

INDEXABLE INSERT Type

264

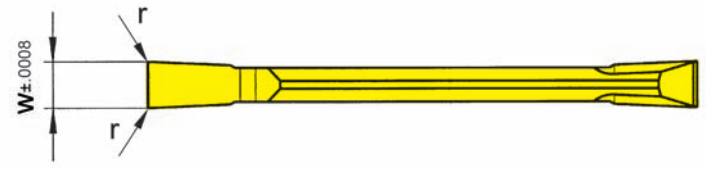
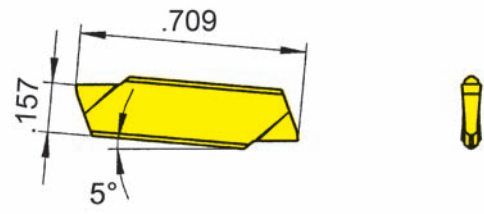


Depth of groove up to .630"
Width of groove .059 - .118"

precision ground

for use with Toolholder

Type H264



Indexability length
± .0006"

Part number	w	r	Size	MG12	TN35	T125	TA45
264.0150.20	.059	.002	01		▲		
264.0200.20	.079	.002	02		▲		
264.0250.20	.098	.004	03		▲		
264.0300.20	.118	.004	04		▲		
				P	•		
				M	•		
				K	•		
				S	•		
				N	•		
				H			

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

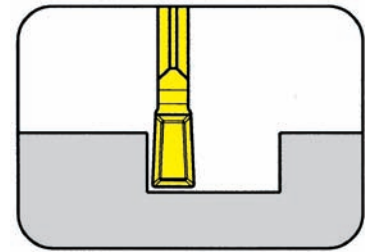
GROOVING and PARTING OFF



B

INDEXABLE INSERT Type

S264

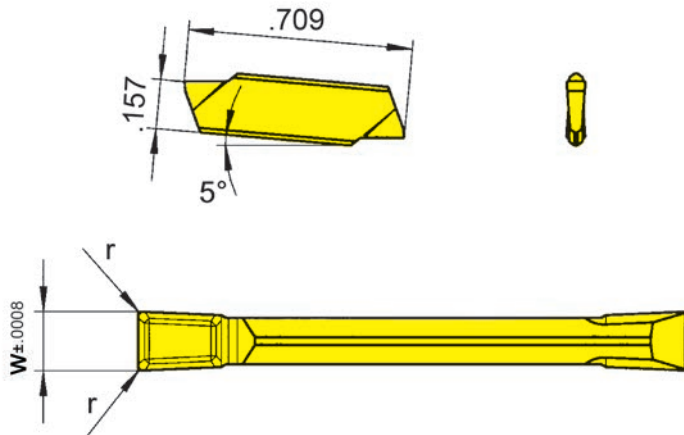


Depth of groove up to .630"
Width of groove .059 - .118"

precision sintered

for use with Toolholder

Type H264



Indexability length
± .0006"

Part number	w	r	Size	Carbide grades				
				MG12	H54	TN35	T125	TA45
S264.0150.D1	.059	.002	01	Δ		▲		
S264.0200.D1	.079	.002	02	Δ		▲		
S264.0250.D1	.098	.004	03			▲		
S264.0300.D1	.118	.004	04	Δ		▲		
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation				P	○	●		
■ uncoated grades ■ coated grades ■ brazed/Cermet				M	●	●		
				K	●	●		
				S	●	●		
				N	●	●		
				H				

Dimensions in inch

Indexable inserts can be used in **right and left hand** toolholders.

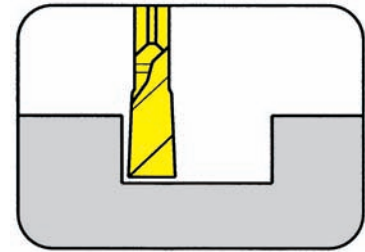
GROOVING and PARTING OFF



B

INDEXABLE INSERT Type

264

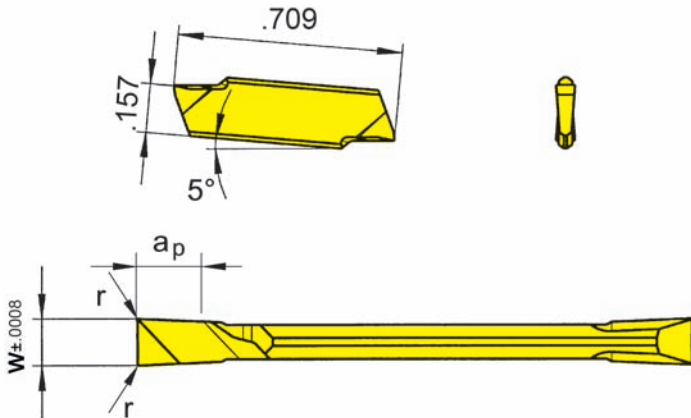


Depth of groove up to .630"
Width of groove .059 - .118"

precision ground

for use with Toolholder

Type H264



L = left hand version shown

R = right hand version

Indexability length
± .0006"

Part number	w	r	Size	Carbide grades			
				MG12	TN35	T125	TA45
R/L264.0150.P0	.059	.002	01		▲/▲	▲/▲	
R/L264.0200.P0	.079	.002	02	▲/▲	▲/▲	▲/▲	
R/L264.0250.P0	.098	.004	03	▲/	▲/▲	▲/▲	
R/L264.0300.P0	.118	.004	04	▲/▲	▲/▲	▲/▲	
				P	o	•	•
				M	•	•	•
				K	•	•	•
				S	•	•	•
				N	•	•	•
				H			

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

$$a_p = 1.5 \times w$$

Carbide grades

State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

THREADING (external) Full profile



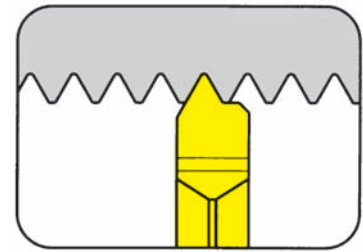
B

INDEXABLE INSERT Type

264

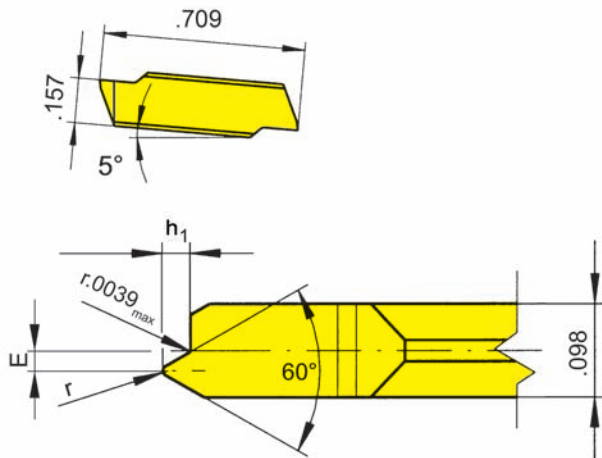
Metric ISO thread

Pitch 0.5 - 1.5 mm



for use with Toolholder

Type H264



Indexability length
± .0006"

Part number	P	r	E	h ₁	Size	Carbide grades				
						MG12	TN35	TI25	TA45	TF45
R/L264.0305.02	0.50	0.07	0.90	0.31	03					▲/▲
R/L264.0306.02	0.60	0.09	0.90	0.37		▲/▲				
R/L264.0307.02	0.70	0.10	0.80	0.43		▲/▲				
R/L264.0407.02	0.75	0.11	0.75	0.46		▲/▲				
R/L264.0408.02	0.80	0.12	0.70	0.49		▲/▲				
R/L264.0610.02	1.00	0.12	0.60	0.61		▲/▲				
R/L264.0712.02	1.25	0.15	0.50	0.77		▲/▲				
R/L264.0915.02	1.50	0.20	0.40	0.92		▲/▲				

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

	MG12	TN35	TI25	TA45	TF45
P					●
M					●
K					●
S					●
N					●
H					

Dimensions in mm

Carbide grades

State R or L version

No shims necessary. All HORN thread profiles are manufactured with **full ground radial clearance**.

HCG - HORN Catalog Guide

INTERNAL GROOVING

Bore Ø	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.625" (15.87 mm)				•						
.709" (18 mm)				•						
.787 - 1.102" (20-28 mm)	•			•						
1.102 - 1.496" (28-38 mm)	•			•	•					
> 1.496" (38 mm)	•			•	•	•	•	•	•	
Operation Type										
Grooving	•			•	•	•	•	•	•	
Threading					•	•			•	
Profiling				•	•		•	•	•	
Width of groove inch	.022-.209			.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.049-.169	
Width of groove mm	0.56-5.3			1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	1.25-4.29	
Chapter	A	B	C	D	E	F	G	H	J	K

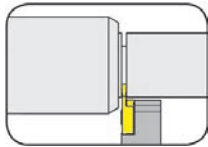
EXTERNAL GROOVING

Depth of groove up to	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.157" (4 mm)	•	•	•	•	•	•	•	•	•	•
.236" (6 mm)		•	•	•	•	•	•	•	•	•
.315" (8 mm)		•	•	•	•	•	•	•		•
.394" (10 mm)		•	•	•	•	•	•			
.433" (11 mm)		•	•	•	•	•	•			
.551" (14 mm)		•	•	•	•		•			
.630" (16 mm)		•	•	•	•		•			
.709" (18 mm)			•	•	•		•			
.984" (25 mm)			•	•			•			
1.000" (25.4 mm)			•				•			
Operation Type										
Grooving	•	•	•	•	•	•	•	•	•	•
Side Turning		•	•	•	•		•	•		
Parting Off	•	•	•	•	•		•	•		•
Threading		•	•			•	•		•	
Profiling			•		•		•	•	•	•
Axial Grooving						•			•	
Width of groove inch	.022-.209	.059-.118	.020-.118	.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.022-.169	.059-.118
Width of groove mm	0.56-5.3	1.5-3.0	0.5-3.0	1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	0.56-4.29	1.5-3.0
Chapter	A	B	C	D	E	F	G	H	J	K

Special tools upon request

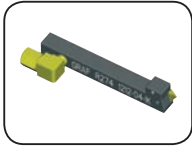
TOOLING SYSTEMS S274 **C**

Toolholder

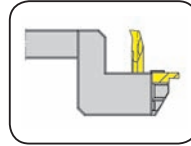


Page C2-C5

Toolholder
- machine-specific -



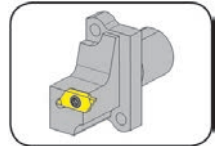
Page C6



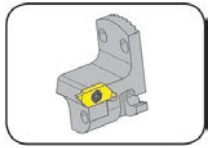
Page C7



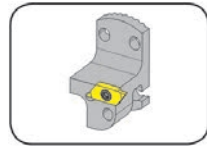
Page C8



Page C9

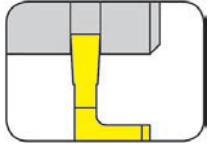


Page C10

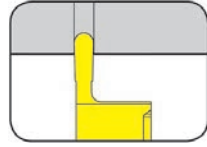


Page C11

Indexable inserts
Type
274



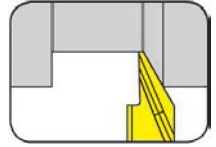
Page C12



Page C13



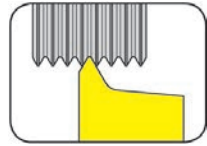
Page C14



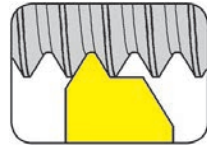
Page C15



Page C16-C17



Partial profile
Page C18



Full profile
Page C19

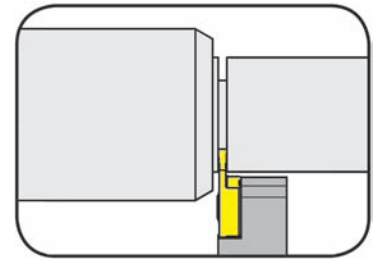
For Technical Information please see chapter Q

C

TOOLHOLDER Type

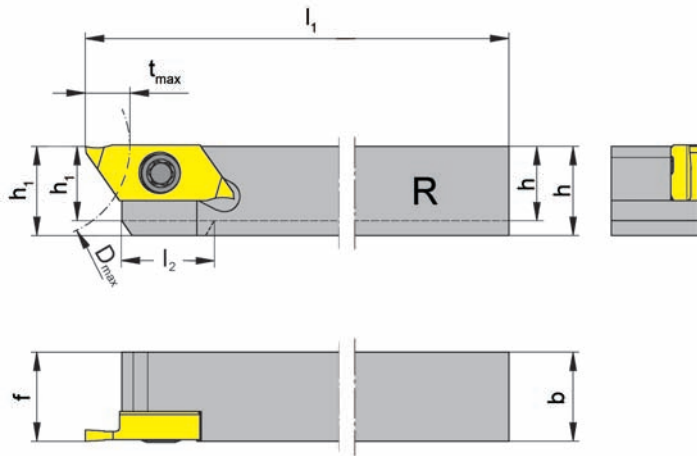
HU274

Depth of groove up to .236"
Width of groove up to .118"



for use with Indexable insert

Type S274



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	t _{max}	D _{max}	Size
R/LHU274.0312.04	.312	.312	3.996	.312	.312	.236	.984	04
R/LHU274.0375.04	.375	.375	3.996	.375	.375			
R/LHU274.0500.04	.500	.500	3.996	.500	.500			
R/LHU274.0625.04	.625	.625	5.118	.625	.625			
R/LHU274.0750.04	.750	.750	5.000	.750	.750			

State R or L version

Dimensions in inch

Further sizes upon request

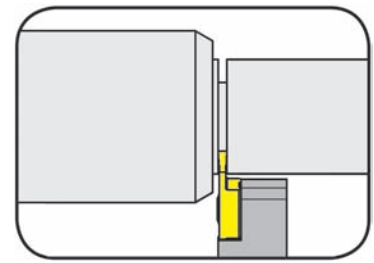
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LHU274.0...	030.3509.T15P	T15PQ

TOOLHOLDER Type

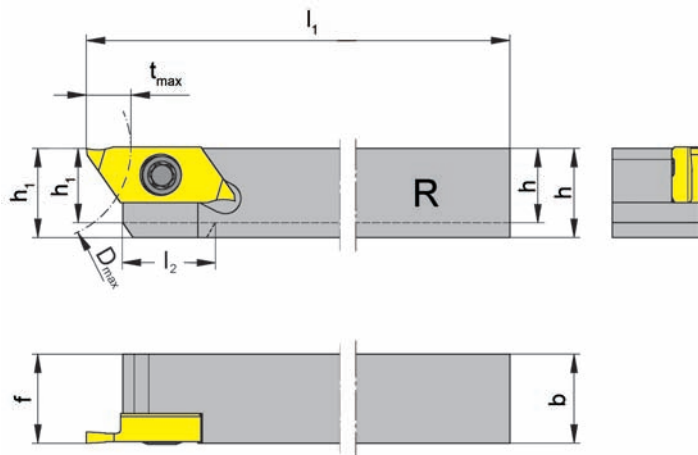
H274

Depth of groove up to .236" (6.0 mm)
Width of groove up to .118" (3.0 mm)



for use with Indexable insert

Type S274



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	t _{max}	D _{max}	Size
R/LH274.0808.04	8	8	100	8	8	6	25	04
R/LH274.1010.04	10	10	100	10	10			
R/LH274.1212.04	12	12	100	12	12			
R/LH274.1414.04	14	14	100	14	14			
R/LH274.1616.04	16	16	125	16	16			
R/LH274.2020.04	20	20	125	20	20			

State R or L version

Dimensions in mm

Further sizes upon request

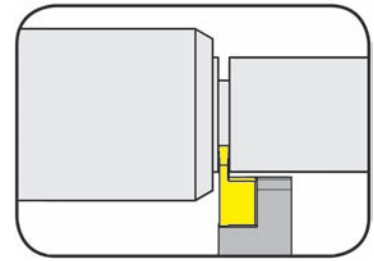
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH274....	030.3509.T15P	T15PQ

TOOLHOLDER Type

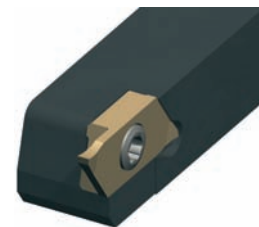
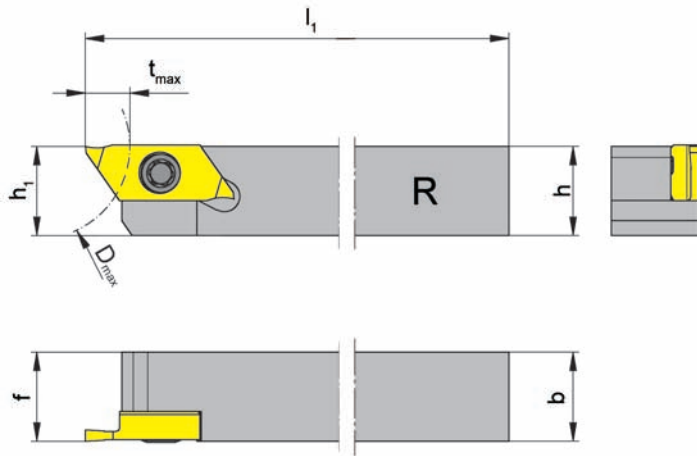
HU274

Depth of groove up to .236"
Width of groove up to .276"



for use with Indexable insert

Type S274



for special widths

R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	t _{max}	D _{max}	Size
R/LHU274.0500.07	.500	.551	3.996	.500	.551	.236	.984	07

State R or L version

Dimensions in inch

Further sizes upon request

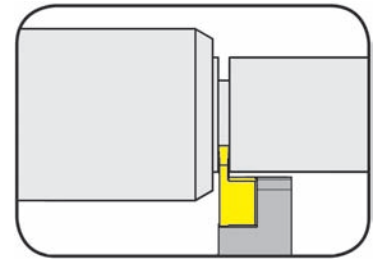
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LHU274.0500.07	030.3509.T15P	T15PQ

TOOLHOLDER Type

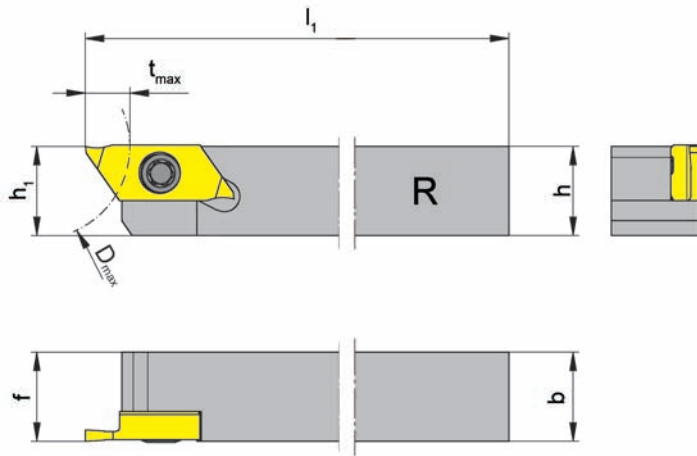
H274

Depth of groove up to .236" (6.0 mm)
Width of groove up to .276" (7.0 mm)



for use with Indexable insert

Type S274



for special widths

R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	t _{max}	D _{max}	Size
R/LH274.1214.07	12	14	100	12	14	6	25	07
R/LH274.1616.07	16	16	125	16	16	6	25	07

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH274.1...	030.3513.T15P	T15PQ

TOOLHOLDER GRAF Type

974

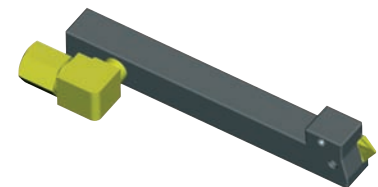
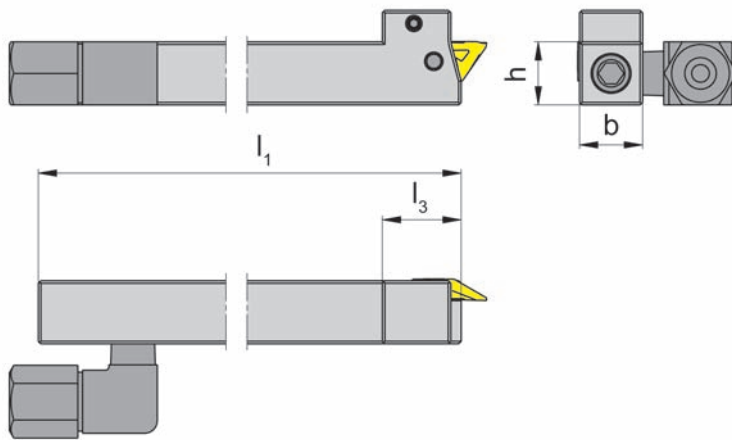
with through coolant supply



Depth of groove up to .236" (6.0 mm)
Width of groove up to .118" (3.0 mm)

for use with Indexable insert

Type S274



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	l ₃	Size
974.R/L1010.04IK	10	10	100	15	04
974.R/L1212.04IK	12	12			
974.R/L1616.04IK	16	16			
974.R/L2020.04IK	20	20			

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

Cartridge Graf	Screw	TORX PLUS®-Wrench	Coolant supply
974.R/L...	030.3509.T15P	T15PQ	004.00.22

TOOLHOLDER Type

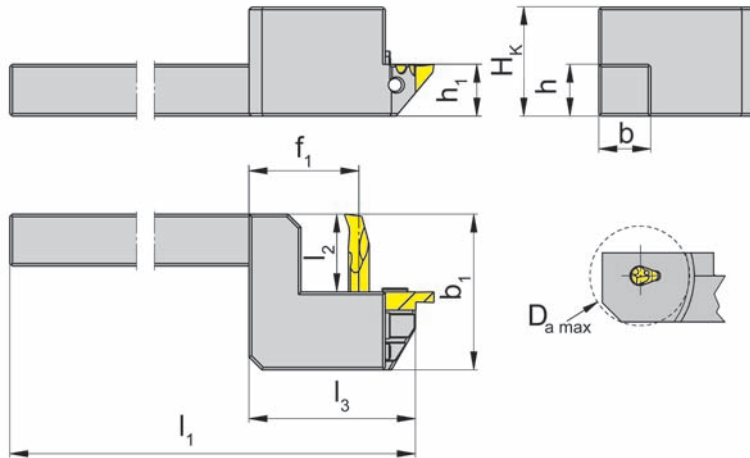
AIH

C

Bore Ø from .008" (0.2 mm)

for use with Insert

Type 105
U105
S274



R = right hand version shown

L = left hand version

Part number	l_1	l_2	h	h_1	f_1	l_3	b	b_1	$D_{a\ max}$	H_k	Remark
AIH.974.R/L1010.K04			10	10	23	35	10		20	17	
AIH.974.R/L1212.K04	130	15	12	12	23	35	12	30	20	19	*
AIH.974.R/L1616.K04			16	16	26	38	16		26	23	
AIH.974.R/L2020.K04			20	20	29	38	20		32	23	
AIH.R/L1010.K08			10	10	21		10		20	17	
AIH.R/L1212.K08	130	15	12	12	21	30	12	30	20	19	**
AIH.R/L1616.K08			16	16	24		16		26	23	
AIH.R/L2020.K08			20	20	27		20		32	23	

State R or L version

Dimensions in mm

Note:

* These toolholders can be equipped with HORN inserts type 105 and S274

** These toolholders can be equipped with HORN inserts type 105 and Graf inserts CS08

Further sizes upon request

Spare parts

Toolholder	Screw	Screw	TORX PLUS® Wrench
AIH....	030.3509.T15P	6.075T15P	T15PQ

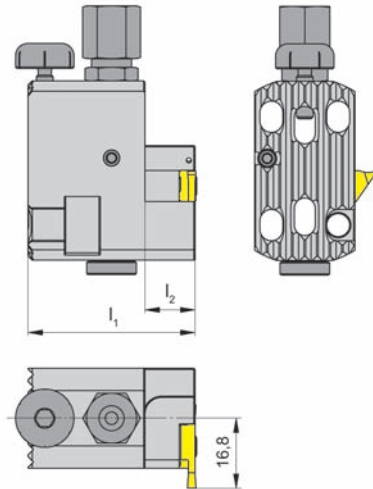
CARTRIDGE GRAF Type

R76

with through coolant supply



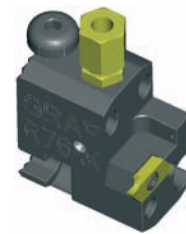
Depth of groove up to .236" (6.0 mm)
Width of groove up to .118" (3.0 mm)



R = right hand version shown

for use with Indexable insert

Type S274



Part number	l_1	l_2	Size
R76IK	40	12	04

Further sizes upon request

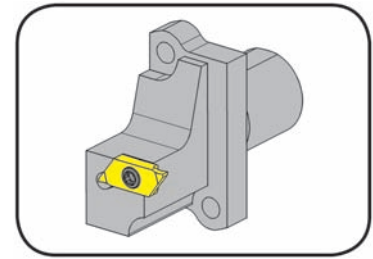
Dimensions in mm

Spare parts

Cartridge Graf	Screw	TORX PLUS® Wrench	Height adjustment screw	Coolant supply
R76IK	030.3509.T15P	T15PQ	002.00.69	004.00.19

TOOLHOLDER Type

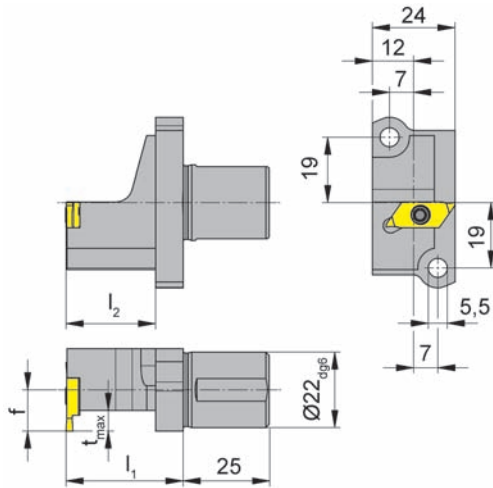
H274



Depth of groove up to .236" (6.0 mm)
Width of groove up to .118" (3.0 mm)

for use with Indexable insert

Type S274



R = right hand version shown

L = left hand version

Star SV 12/20/32
SR 10/20/32 and SB 16

Part number	l_1	l_2	f	t_{max}	Size
R/LH274.A022.09.04			9		
R/LH274.A022.12.04	34	26	12	6	04
R/LH274.A022.16.04			16		
R/LH274.A022.09.07	34	26	9	6	07
R/LH274.A022.12.07			12		

State R or L version

Dimensions in mm

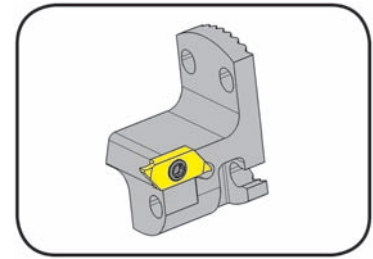
Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS®-Wrench
R/LH274.A022....	030.3513.T15P	T15PQ

CARTRIDGE Type

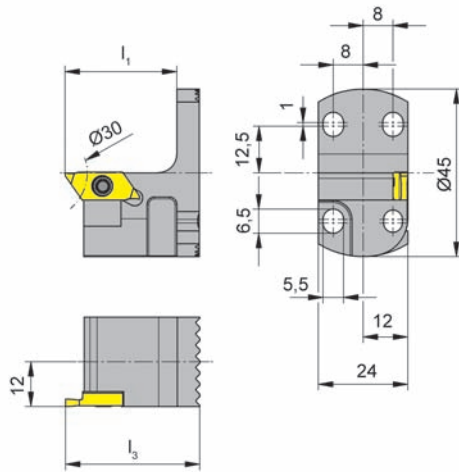
KT274



Depth of groove up to .236" (6.0 mm)
Width of groove up to .118" (3.0 mm)

for use with Indexable insert

Type S274



R = right hand version shown

L = left hand version

Part number	l_1	l_3	Size
R/LKT274.2445.04	30	36	04

State R or L version

Dimensions in mm

Further sizes upon request

Note:

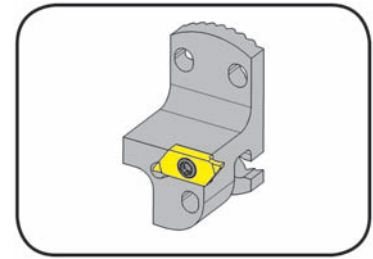
$t_{max} = .236"$ (6.0 mm) can only be reached when $D_{max} \leq 1.181"$ (30 mm)

Spare parts

Cartridge	Screw	TORX PLUS® Wrench
R/LKT274.2445.04	030.3509.T15P	T15PQ

CARTRIDGE Type

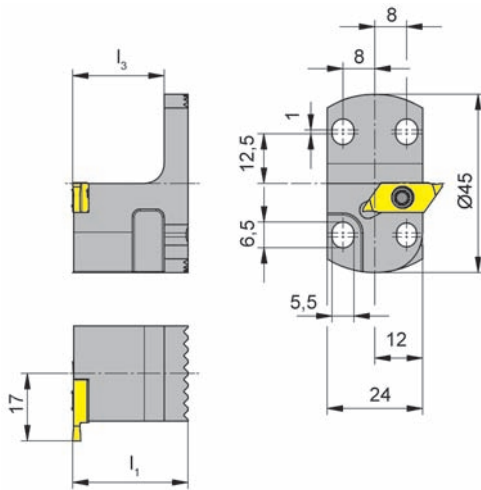
KTC274



Depth of groove up to .236" (6.0 mm)
 Width of groove up to .118" (3.0 mm)

for use with Indexable insert

Type S274



R = right hand version shown

Part number	l_1	l_3	Size
RKTC274.2445.04	29	23	04

Further sizes upon request

Dimensions in mm

$t_{max} = .236"$ (6.0 mm) can only be reached when $D_{max} \leq 1.181"$ (30 mm)

Spare parts

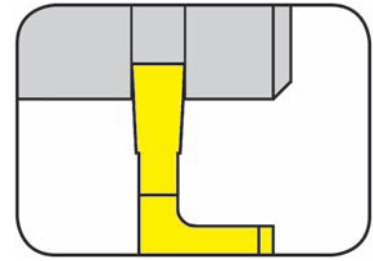
Cartridge	Screw	TORX PLUS® Wrench
RKTC274.2445.04	030.3509.T15P	T15PQ

GROOVING and PARTING OFF



INDEXABLE INSERT Type

S274

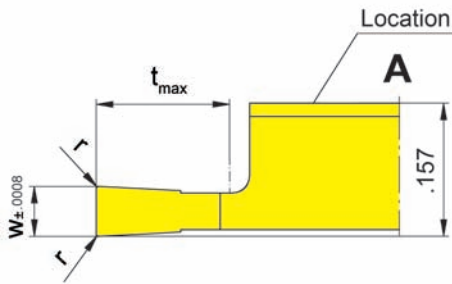
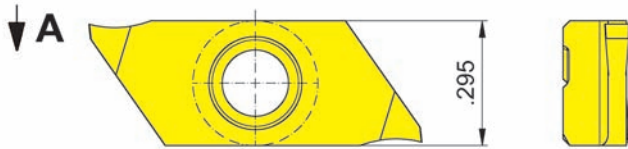


Depth of groove up to .236"
Width of groove .020 - .079"

precision ground

for use with Toolholder

Type H274
HU274



R = right hand version shown

L = left hand version

Indexability length
± .0006"

Part number	w	r	t _{max}	Size	Carbide grades				
					K10	MG12	TN35	TI25	TH35
R/LS274.0050.01.10	.020		.059	04					▲/▲
R/LS274.0070.02.10	.028		.079						▲/▲
R/LS274.0080.03.10	.031		.118						▲/▲
R/LS274.0100.03.10	.039		.118						▲/▲
R/LS274.0120.03.10	.047	.002	.118						▲/▲
R/LS274.0150.04.10	.059		.157						▲/▲
R/LS274.0150.06.10	.059		.236						▲/▲
R/LS274.0200.04.10	.079		.157						▲/▲
R/LS274.0200.06.10	.079		.236						▲/▲

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

P					●
M					●
K					●
S					●
N					●
H					

Dimensions in inch

Carbide grades

State R or L version

Note:

t_{max} = .236" can be reached only with workpiece Ø ≤ .984"

GROOVING and TURNING

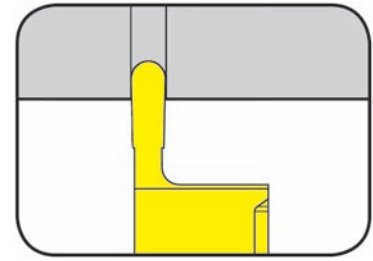


INDEXABLE INSERT Type

S274

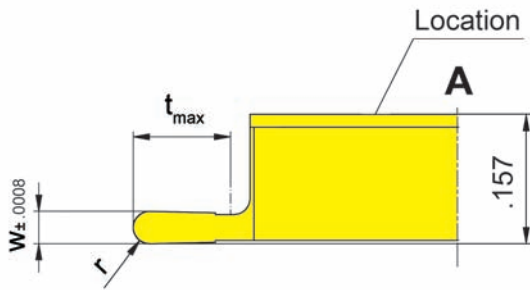
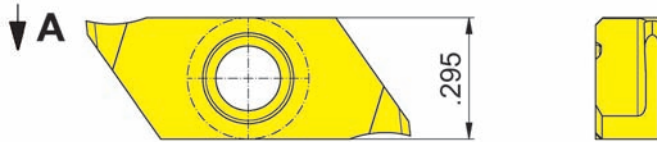
Depth of groove up to .157"
Full radius .010 - .039"

precision ground



for use with Toolholder

Type H274
HU274



R = right hand version shown

L = left hand version

Indexability length
± .0006"

Part number	w	r	t _{max}	Size	Carbide grades				
					K10	MG12	TN35	T125	TH35
R/LS274.0205.01.10	.020	.010	.059	04					▲/▲
R/LS274.0510.03.10	.039	.020	.118						▲/▲
R/LS274.1020.04.10	.079	.039	.157						▲/▲
					P				•
					M				•
					K				•
					S				•
					N				•
					H				

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R or L version

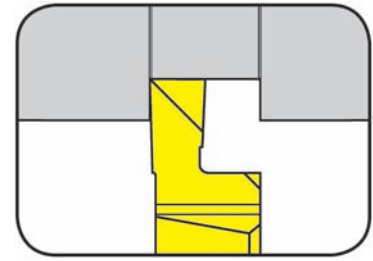
Carbide grades

INDEXABLE INSERT Type

S274

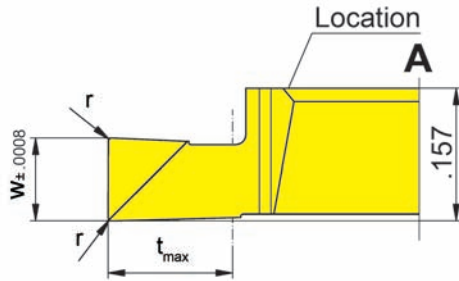
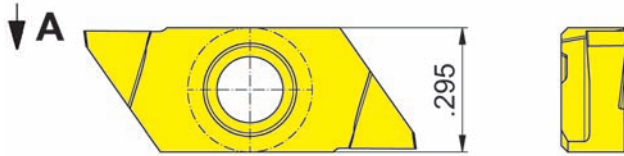
Depth of groove up to .177"
Width of groove .059 - .118"

precision ground



for use with Toolholder

Type H274
HU274



R = right hand version shown

L = left hand version

Indexability length
± .0006"

Part number	w	r	t _{max}	Size		K10	MG12	TN35	TI25	TH35
R/LS274.0150.P0	.059	.002	.089	04						▲/▲
R/LS274.0200.P0	.079	.002	.118							▲/▲
R/LS274.0250.P0	.098	.004	.148							▲/▲
R/LS274.0300.P0	.118	.004	.177							▲/▲
					P					•
					M					•
					K					•
					S					•
					N					•
					H					•

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R or L version

Carbide grades

BACKTURNING (external)

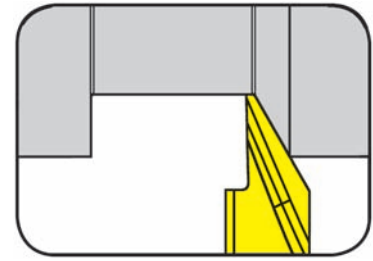


INDEXABLE INSERT Type

S274

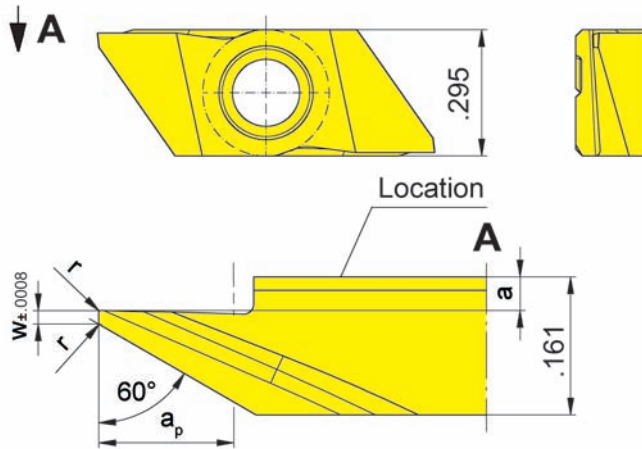
Depth of cut up to **.236"**

precision ground



for use with Toolholder

Type H274
HU274



R = right hand version shown

L = left hand version

Indexability length
 $\pm .0006"$

Part number	w	r	a _p	a	Size	γ	Carbide grades					
							K10	MG12	TN35	TI25	TF45	TH35
R/LS274.0460.04.10	.016	.002	.157	.039	04	15°						▲/▲
R/LS274.0460.04.M0						0°	▲/▲					
R/LS274.0560.06.11	.020	.004	.236	.002	04	15°						▲/▲
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation □ uncoated grades ■ coated grades ■ brazed/Cermet							P	●	■	■	■	●
							M	○	■	■	■	●
							K	●	■	■	■	●
							S	○	■	■	■	●
							N	●	■	■	■	●
							H					

Dimensions in inch

State R or L version

γ = rake angle

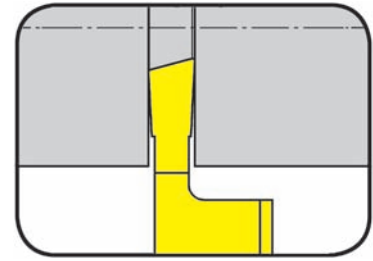
Depth of cut a_p = .236" can be reached only with workpiece Ø ≤ .984"

INDEXABLE INSERT Type

S274

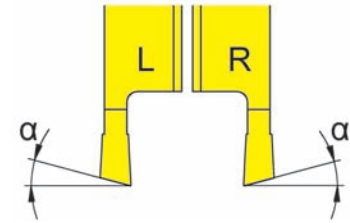
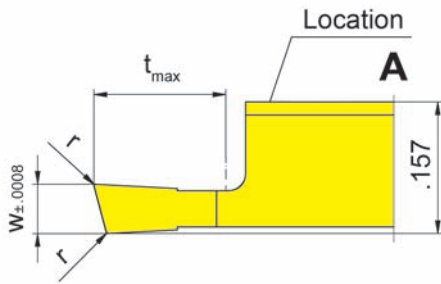
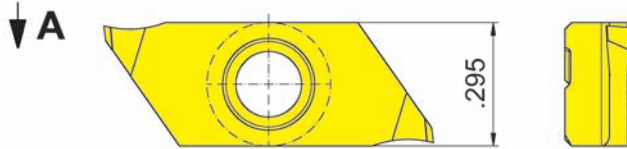
Depth of groove up to .236"
Width of groove .031 - .079"

precision ground



for use with Toolholder

Type H274
HU274



Indexability length
± .0006"

R = right hand version shown

L = left hand version

Part number	w	r	α	t _{max}	Size	Carbide grades						
						MG12	H54	TN35	TI25	TF46	TH35	
R/LS274.1508.03.10	.031			.118	04						▲/▲	
R/LS274.1510.03.10	.039	.002	15°	.118								▲/▲
R/LS274.1515.04.10	.059			.157								▲/▲
R/LS274.1520.06.10	.079			.236								▲/▲
<ul style="list-style-type: none"> ▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation □ uncoated grades ■ coated grades ■ brazed/Cermet 						P					●	
						M					●	
						K					●	
						S					●	
						N					●	
						H						

Dimensions in inch

Carbide grades

State R or L version

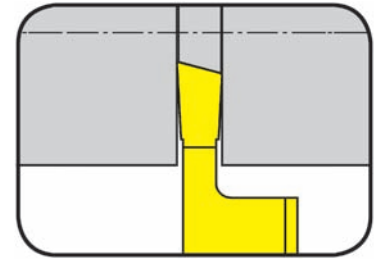
t_{max} = .236" can be reached only with workpiece Ø ≤ .984"

INDEXABLE INSERT Type

S274

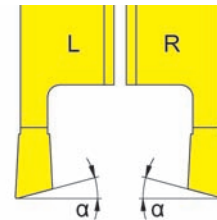
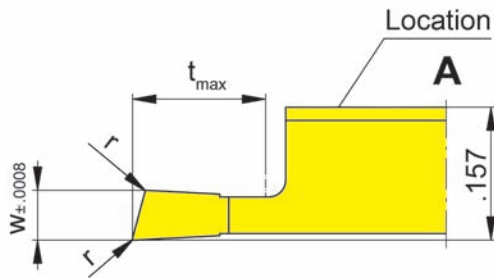
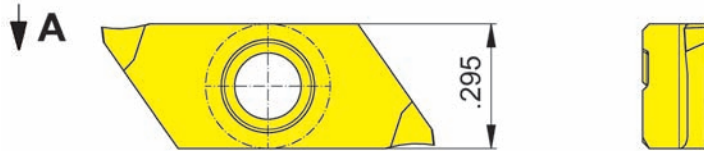
Depth of groove up to	.236"
Width of groove	.031 - .079"

precision ground



for use with Toolholder

Type H274
HU274



R = right hand version shown

L = left hand version

Indexability length
± .0006"

Part number	w	r	α	t _{max}	Size	Carbide grades		
						TN35	TI25	TH35
LS274.1508.03.10R	.031			.118	04			▲
LS274.1510.03.10R	.039			.118				▲
LS274.1515.04.10R	.059	.002	15°	.157				▲
LS274.1520.06.10R	.079			.236				▲
RS274.1508.03.10L	.031			.118	04			▲
RS274.1510.03.10L	.039			.118				▲
RS274.1515.04.10L	.059	.002	15°	.157				▲
RS274.1520.06.10L	.079			.236				▲

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Grade	TN35	TI25	TH35
P	●		●
M	●		●
K	●		●
S	●		●
N	●		●
H			

Dimensions in inch

Carbide grades

State R or L version

Note:

t_{max} = .236" can be reached only with workpiece Ø ≤ .984"

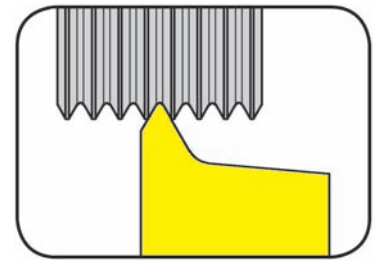
THREADING (external) Partial profile



INDEXABLE INSERT Type

S274

Metric ISO thread

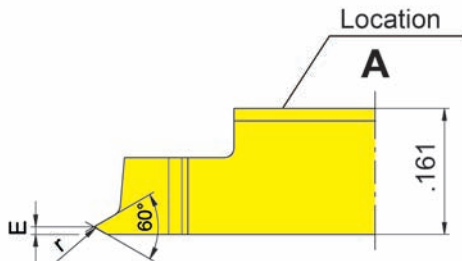
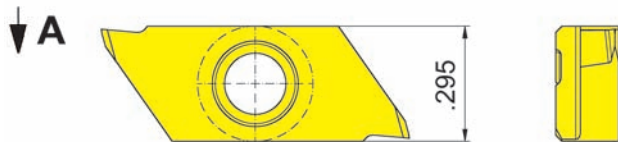


Pitch 0.25 - 0.40 mm

precision ground

for use with Toolholder

Type H274
HU274



R = right hand version shown

Indexability length
± .0006"

Part number	P	r	E	Size	Carbide grades					
					K10	MG12	P20	TN32	TI25	TH35
RS274.0102.01	0.25	0.04	0.20	04						▲
RS274.0203.01	0.35	0.05	0.25							▲
RS274.0204.01	0.40	0.06	0.30							▲
					P					●
					M					●
					K					●
					S					●
					N					●
					H					●

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in mm

Carbide grades

No shims necessary. All HORN thread profiles are manufactured with **full ground radial clearance**.

THREADING (external) Full profile



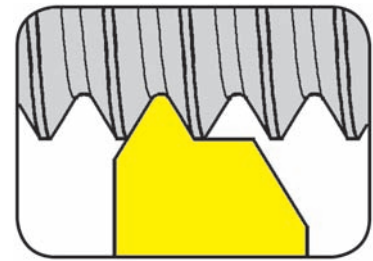
INDEXABLE INSERT Type

S274

Metric ISO thread

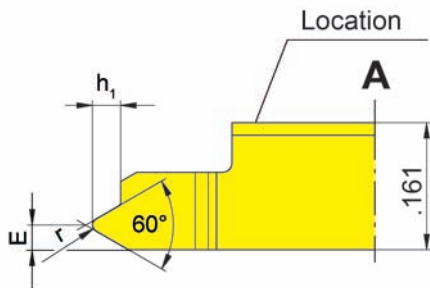
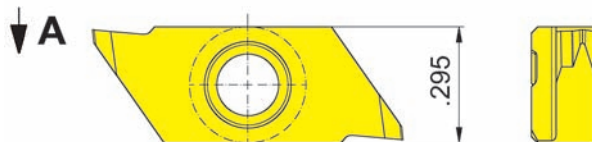
Pitch	0.50 - 1.50 mm
-------	----------------

precision ground



for use with Toolholder

Type H274
HU274



R = right hand version shown

L = left hand version

Indexability length
± .0006"

Part number	P	r	E	h ₁	Size	Carbide grades						
						K10	MG12	P20	TN32	T125	TH35	
R/LS274.0305.02	0.50	0.07	0.40	0.31	04						▲/▲	
R/LS274.0306.02	0.60	0.09	0.45	0.37								▲/▲
R/LS274.0307.02	0.70	0.10	0.50	0.43								▲/▲
R/LS274.0407.02	0.75	0.11	0.50	0.46								▲/▲
R/LS274.0408.02	0.80	0.12	0.55	0.49								▲/▲
R/LS274.0610.02	1.00	0.12	0.60	0.61								▲/▲
R/LS274.0712.02	1.25	0.15	0.70	0.77								▲/▲
R/LS274.0915.02	1.50	0.20	0.80	0.92								▲/▲

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

P						●
M						●
K						●
S						●
N						●
H						

Dimensions in mm

Carbide grades

State R or L version

No shims necessary. All HORN thread profiles are manufactured with **full ground radial clearance**.

HCG - HORN Catalog Guide

INTERNAL GROOVING

Bore Ø	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.625" (15.87 mm)				•						
.709" (18 mm)				•						
.787 - 1.102" (20-28 mm)	•			•						
1.102 - 1.496" (28-38 mm)	•			•	•					
> 1.496" (38 mm)	•			•	•	•	•	•	•	
Operation Type										
Grooving	•			•	•	•	•	•	•	
Threading					•	•			•	
Profiling				•	•		•	•	•	
Width of groove inch	.022-.209			.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.049-.169	
Width of groove mm	0.56-5.3			1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	1.25-4.29	
Chapter	A	B	C	D	E	F	G	H	J	K

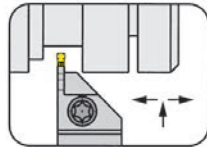
EXTERNAL GROOVING

Depth of groove up to	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.157" (4 mm)	•	•	•	•	•	•	•	•	•	•
.236" (6 mm)		•	•	•	•	•	•	•	•	•
.315" (8 mm)		•		•	•	•	•	•		•
.394" (10 mm)		•		•	•	•	•			
.433" (11 mm)		•		•	•	•	•			
.551" (14 mm)		•		•	•		•			
.630" (16 mm)		•		•	•		•			
.709" (18 mm)				•	•		•			
.984" (25 mm)				•			•			
1.000" (25.4 mm)							•			
Operation Type										
Grooving	•	•	•	•	•	•	•	•	•	•
Side Turning		•	•	•	•		•	•		
Parting Off	•	•	•	•	•		•	•		•
Threading		•	•			•	•		•	
Profiling			•		•		•	•	•	•
Axial Grooving						•			•	
Width of groove inch	.022-.209	.059-.118	.020-.118	.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.022-.169	.059-.118
Width of groove mm	0.56-5.3	1.5-3.0	0.5-3.0	1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	0.56-4.29	1.5-3.0
Chapter	A	B	C	D	E	F	G	H	J	K

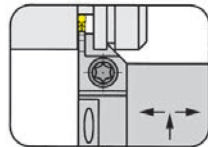
Special tools upon request

TOOLING SYSTEMS S119/S123/S223 **D**

Grooving - external -

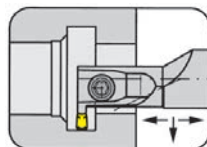


Page D2-D3

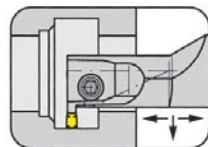


Page D5

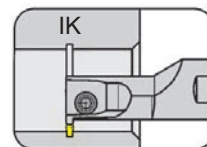
Grooving - internal -



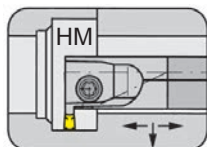
Page D6-D7



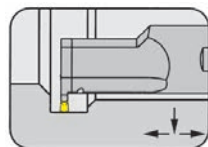
Page D9



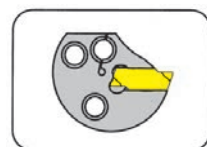
Page D10-D13



Page D14-D15



Page D16-D17



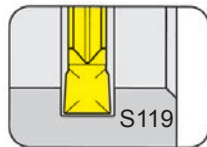
Page D19

Parting off

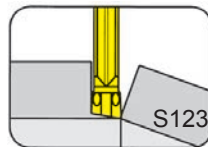


Page D4

**Insert Type
S119 / S123**

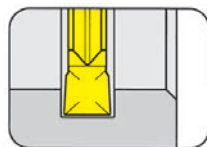


Page D20

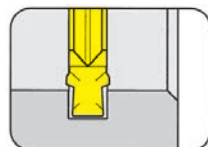


Page D21-D22

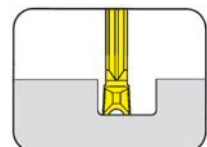
**Indexable inserts
Type
S223**



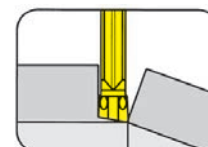
Page D23, D25



Page D24



Page D26

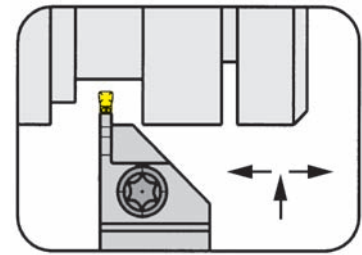


Page D27-D28

For Technical Information please see chapter Q

TOOLHOLDER Type

HU223

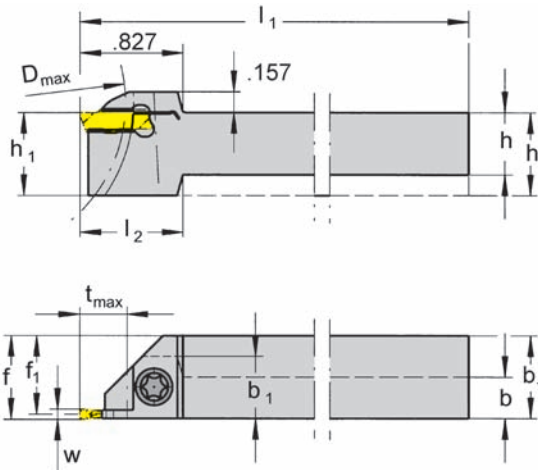


Depth of groove up to
Clamping range up to

.394"
.118"

for use with Insert

Type S123
S223



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	b ₁	t _{max}	D _{max}	Size	Clamping range
R/LHU223.0375.01	.375	.375	3.125	.500	f ₁ +w/2	.344	.750	.500	.315	.984	01	.079
R/LHU223.0500.01	.500	.500	4.000	.500		.469	-	-	.394	1.968		
R/LHU223.0625.01	.625	.625	5.000	.625		.594	-	-	.394	1.968		
R/LHU223.0750.01	.750	.750	5.000	.750		.719	-	-	.394	1.968		
R/LHU223.1000.01	1.000	1.000	6.000	1.000		.969	-	-	.394	1.968		
R/LHU223.0375.02	.375	.375	3.125	.500	f ₁ +w/2	.344	.750	.500	.315	.984	02	.098
R/LHU223.0500.02	.500	.500	4.000	.500		.469	-	-	.394	1.968		
R/LHU223.0625.02	.625	.625	5.000	.625		.594	-	-	.394	1.968		
R/LHU223.0750.02	.750	.750	5.000	.750		.719	-	-	.394	1.968		
R/LHU223.1000.02	1.000	1.000	6.000	1.000		.969	-	-	.394	1.968		
R/LHU223.0500.03	.500	.500	4.000	.500	f ₁ +w/2	.469	-	-	.394	1.968	03	.118
R/LHU223.0625.03	.625	.625	5.000	.625		.594						
R/LHU223.0750.03	.750	.750	5.000	.750		.719						
R/LHU223.1000.03	1.000	1.000	6.000	1.000		.969						

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

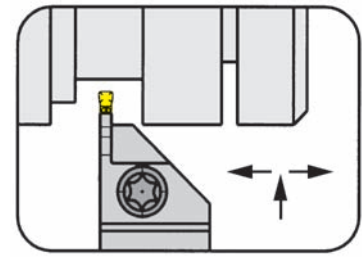
Toolholder	Screw	TORX PLUS® Wrench
R/LHU223....	5.11T15P	T15PL

D2

TOOLHOLDER Type

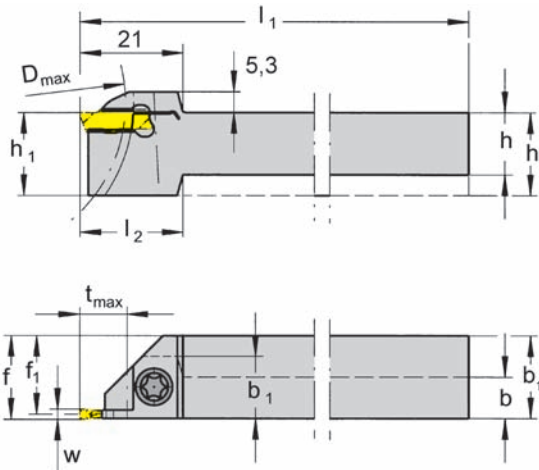
H223

Depth of groove up to .394" (10.0 mm)
Clamping range up to .118" (3.0 mm)



for use with Insert

Type S123
S223



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	b ₁	t _{max}	D _{max}	Size	Clamping range
R/LH223.1010.01	10	10	80	12	f ₁ +w/2	9.20	20	12	8	25	01	2.0
R/LH223.1212.01	12	12	100	16		11.20	21	-	10	50		
R/LH223.1616.01	16	16	125	16		15.20	-	-	10	50		
R/LH223.2020.01	20	20	125	20		19.20	-	-	10	50		
R/LH223.2525.01	25	25	150	25		24.20	-	-	10	50		
R/LH223.1010.02	10	10	80	12	f ₁ +w/2	9.05	20	12	8	25	02	2.5
R/LH223.1212.02	12	12	100	16		11.05	21	-	10	50		
R/LH223.1616.02	16	16	125	16		15.05	-	-	10	50		
R/LH223.2020.02	20	20	125	20		19.05	-	-	10	50		
R/LH223.2525.02	25	25	150	25		24.05	-	-	10	50		
R/LH223.1010.03	10	10	80	12	f ₁ +w/2	8.80	20	12	8	25	03	3.0
R/LH223.1212.03	12	12	100	16		10.80	21	-	10	50		
R/LH223.1616.03	16	16	125	16		14.80	-	-	10	50		
R/LH223.2020.03	20	20	125	20		18.80	-	-	10	50		
R/LH223.2525.03	25	25	150	25		23.80	-	-	10	50		

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

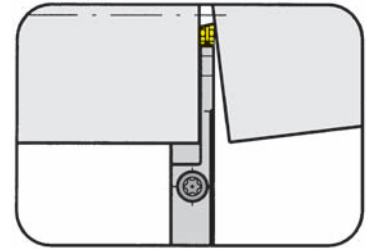
Toolholder	Screw	TORX PLUS® Wrench
R/LH223....	5.11T15P	T15PL



TOOLHOLDER Type

H223

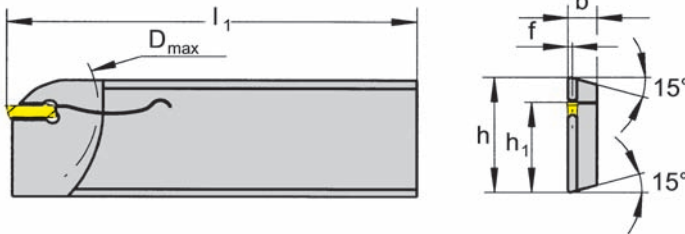
reinforced version



Depth of groove up to .984" (25.0 mm)
Clamping range up to .118" (3.0 mm)

for use with Insert

Type S123
S223



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	D _{max}	Size	Clamping range
R/LH223.2608.01 R/LH223.3208.01	26 32	7.9	110	21.4 24.8	0.80	50	01	2.0
R/LH223.2608.02 R/LH223.3208.02	26 32	7.9	110	21.4 24.8	0.95	50	02	2.5
R/LH223.2608.03 R/LH223.3208.03	26 32	7.9	110	21.4 24.8	1.20	50	03	3.0

State R or L version

w see indexable inserts

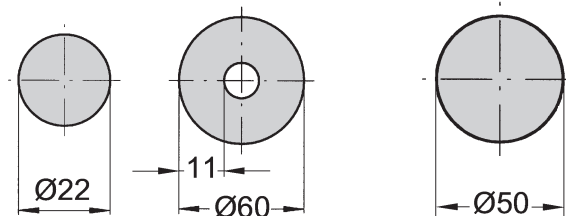
Dimensions in mm

Further sizes upon request

Parting off:

Solid bars or Tubes (S223)

Solid bars (S123)



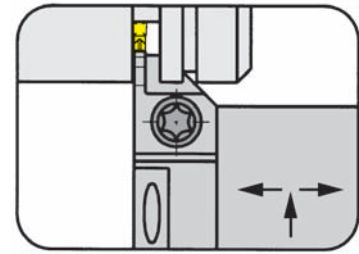
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH223....	4.15T15P	T15PL

CARTRIDGE Type

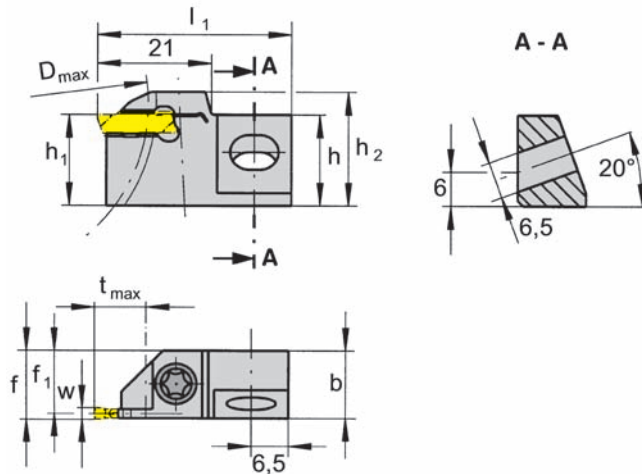
E223

Depth of groove up to .394" (10.0 mm)
Clamping range up to .118" (3.0 mm)



for use with Insert

Type S123
S223



R = right hand version shown

L = left hand version

Part number	h	h ₁	h ₂	f	b	l ₁	t _{max}	f ₁	D _{max}	Size	Clamping range
R/LE223.1212.01 R/LE223.1616.01	16	12	17.3	f ₁ +w/2	12	34	10	11.20	50	01	2.0
R/LE223.1212.02 R/LE223.1616.02	16	12	17.3	f ₁ +w/2	12	34	10	11.05	50	02	2.5
R/LE223.1212.03 R/LE223.1616.03	16	12	17.3	f ₁ +w/2	12	34	10	10.80	50	03	3.0

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

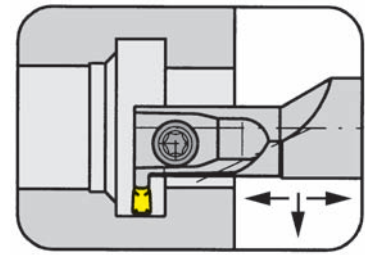
Cartridge	Screw	Screw	TORX PLUS® Wrench
R/LE223.1...	6.20.232	5.11T15P	T15PL



TOOLHOLDER Type

BU119

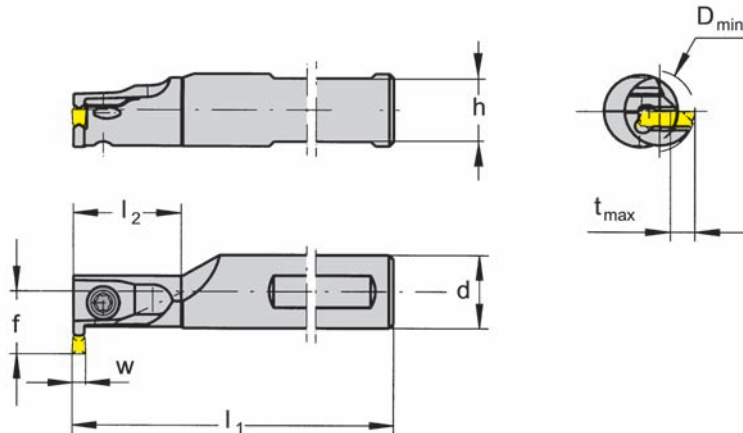
with through coolant supply



Bore Ø from	.625"
Depth of groove up to	.118"
Clamping range up to	.118"

for use with Insert

Type S119



R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	h	f	D _{min}	t _{max}	Size	Clamping range
RBU119.0625.1.32	.625	4.250	1.000	.546	.465	.625	.118	02	.079 - .117
RBU119.0625.1.33	.625	4.250	1.000	.546	.465	.625	.118	03	.118

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

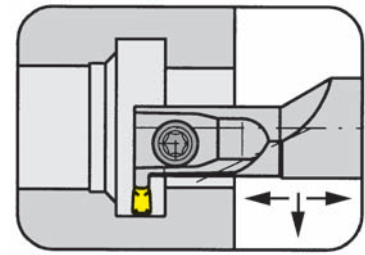
Toolholder	Screw	TORX PLUS® Wrench
RBU119.0625.1.3...	5.11T15P	T15PQ

TOOLHOLDER Type

B119

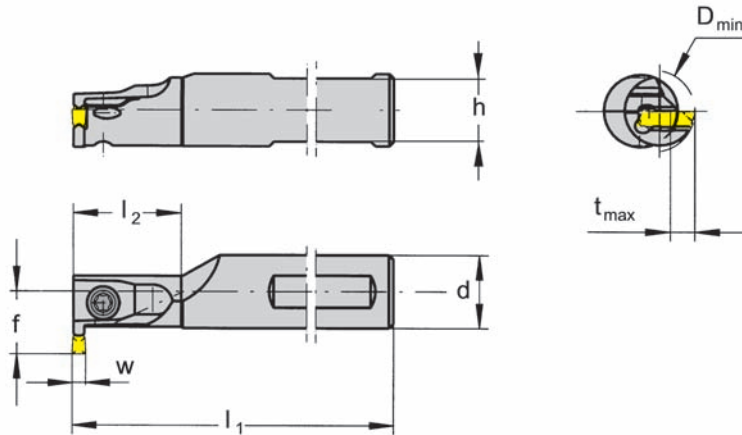
with through coolant supply

Bore Ø from	.630" (16.0 mm)
Depth of groove up to	.118" (3.0 mm)
Clamping range up to	.118" (3.0 mm)



for use with Insert

Type S119



R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	h	f	D _{min}	t _{max}	Size	Clamping range
R/LB119.0016.1.32	16	110	25	14	11.8	16	3	02	2.0 - 2.99
R/LB119.0016.1.33	16	110	25	14	11.8	16	3	03	3.0

State R or L version

w see indexable inserts

Dimensions in mm

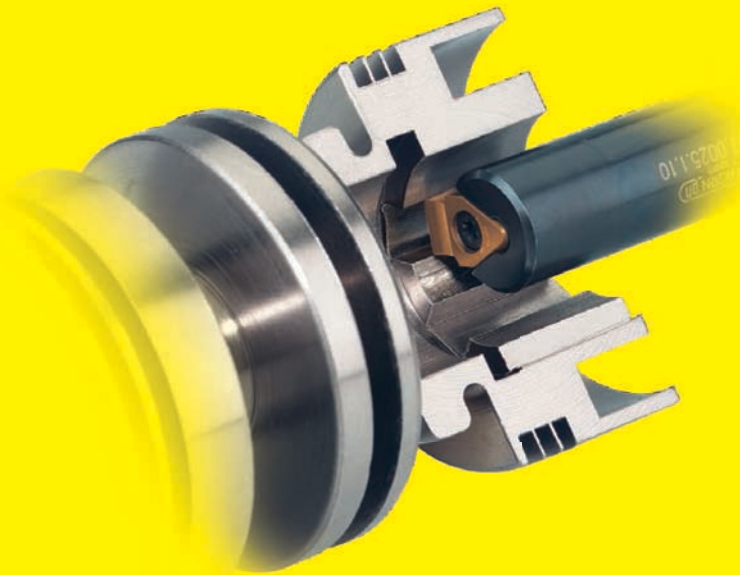
Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LB119.0016.1.3...	5.11T15P	T15PL

HORN - THE LEADERS IN GROOVING TECHNOLOGY

D



KEY TO IMPROVING PRODUCTIVITY

BROACHING

HORN - INTELLIGENT TOOL DESIGN AT WORK.



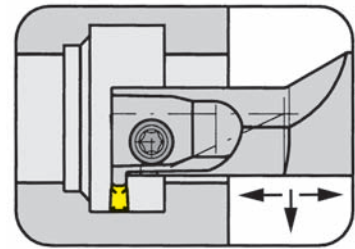
For further broaching tools, please see Chapter "R".

TOOLHOLDER Type

B223

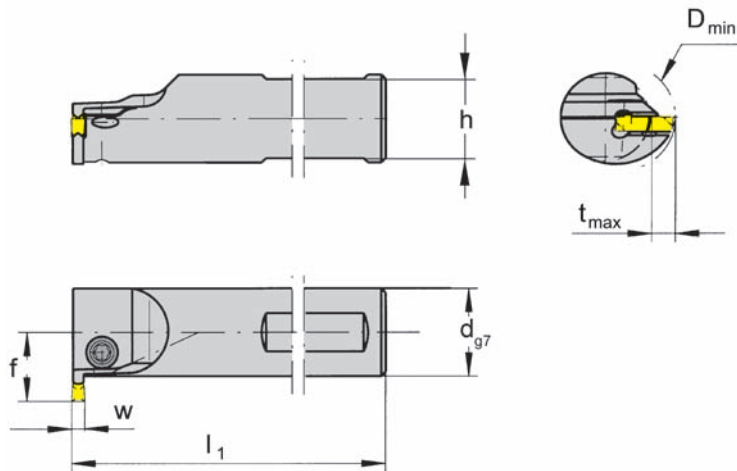
with through coolant supply

Bore Ø from	.866" (22.0 mm)
Depth of groove up to	.248" (6.3 mm)
Clamping range up to	.118" (3.0 mm)



for use with Insert

Type S223



R = right hand version shown

L = left hand version

Part number	d	l ₁	h	f	D _{min}	t _{max}	Size	Clamping range
R/LB223.0016.0.42	16	110	14	13.0	22	4.5	02	2.0 - 2.99
R/LB223.0020.0.52	20	120	18	15.7	27	5.3		
R/LB223.0025.0.62	25	150	23	19.3	33	6.3		
R/LB223.0016.0.43	16	110	14	13.0	22	4.5	03	3.0
R/LB223.0020.0.53	20	120	18	15.7	27	5.3		
R/LB223.0025.0.63	25	150	23	19.3	33	6.3		

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

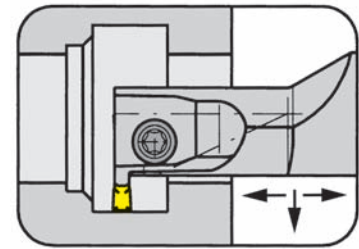
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LB223.00...	5.11T15P	T15PL

TOOLHOLDER Type

BU223

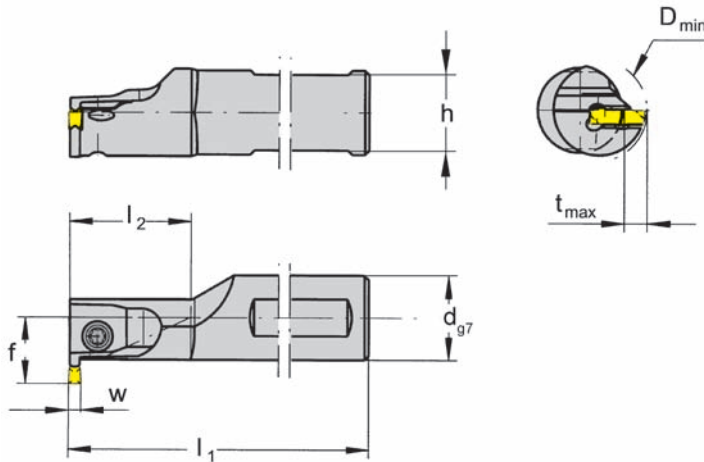
with through coolant supply



Bore Ø from	.709"
Depth of groove up to	.248"
Clamping range up to	.118"

for use with Insert

Type S223



R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	h	f	D _{min}	t _{max}	Size	Clamping range
R/LBU223.0625.1.42	.625	4.250	1.000	.546	.512	.709	.177	02	.079 - .117
R/LBU223.0750.1.52	.750	4.750	1.181	.671	.618	.787	.209		
R/LBU223.1000.1.62	1.000	6.000	2.000	.921	.740	.984	.248		
R/LBU223.0625.1.43	.625	4.250	1.000	.546	.512	.709	.177	03	.118
R/LBU223.0750.1.53	.750	4.750	1.181	.671	.618	.787	.209		
R/LBU223.1000.1.63	1.000	6.000	2.000	.921	.740	.984	.248		

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

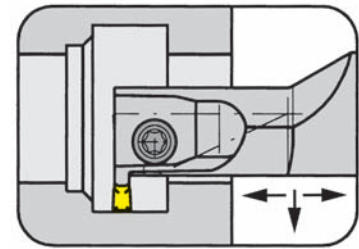
Toolholder	Screw	TORX PLUS® Wrench
R/LBU223....	5.11T15P	T15PQ

TOOLHOLDER Type

B223

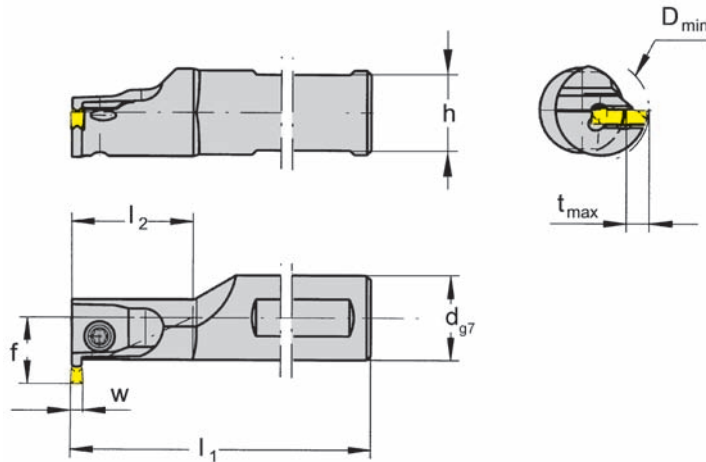
with through coolant supply

Bore Ø from	.709" (18.0 mm)
Depth of groove up to	.248" (6.3 mm)
Clamping range up to	.118" (3.0 mm)



for use with Insert

Type S223



R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	h	f	D _{min}	t _{max}	Size	Clamping range
R/LB223.0016.1.42	16	110	25	14	13.0	18	4.5	02	2.0 - 2.99
R/LB223.0020.1.52	20	120	30	18	15.7	20	5.3		
R/LB223.0025.1.62	25	150	50	23	18.8	25	6.3		
R/LB223.0016.1.43	16	110	25	14	13.0	18	4.5	03	3.0
R/LB223.0020.1.53	20	120	30	18	15.7	20	5.3		
R/LB223.0025.1.63	25	150	50	23	18.8	25	6.3		

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LB223.00...	5.11T15P	T15PL

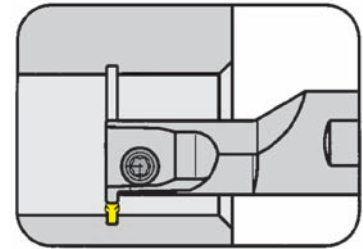
GROOVING (internal)



TOOLHOLDER Type

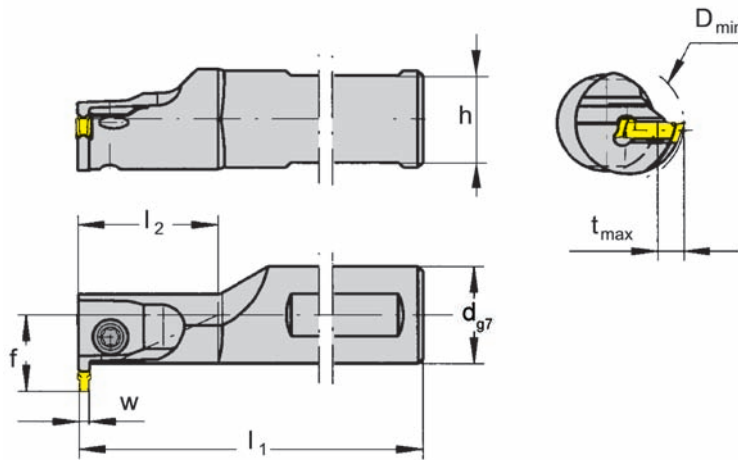
BU223

with through coolant supply



Bore Ø from
Circlip grooves

.709"
DIN471/472



for use with Indexable
insert

Type S223

R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	h	f	D _{min}	t _{max}	Size	Clamping range
R/LBU223.0625.1.22	.625	4.250	1.000	.546	.512	.709	.065	02	.079 - .117
R/LBU223.0750.1.22	.750	4.750	1.125	.671	.618	.787			

State R or L version

w see indexable circlip inserts

Dimensions in inch

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LBU223.0...	5.11T15P	T15PQ

D12

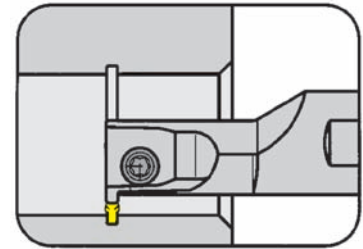
GROOVING (internal)



TOOLHOLDER Type

B223

with through coolant supply



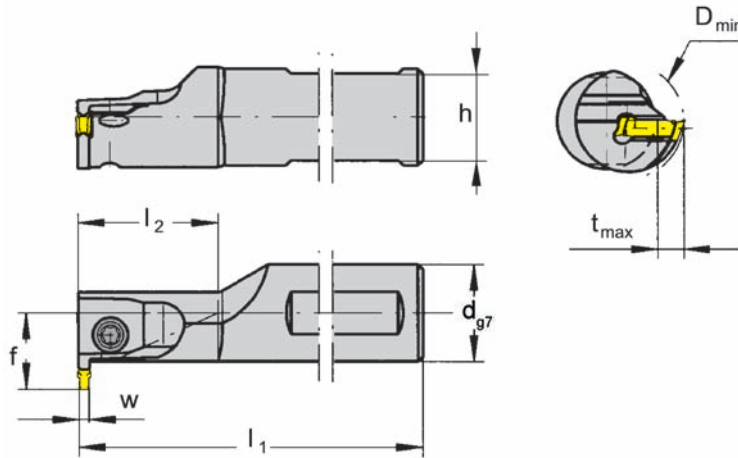
Bore Ø from
Circlip grooves

.709" (18.0 mm)
DIN 471/472

for use with Indexable
insert

Type S223

D



R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	h	f	D _{min}	t _{max}	Size	Clamping range
R/LB223.0016.1.22	16	110	25	14	13.0	18	1.65	02	2.0 - 2.99
R/LB223.0020.1.22	20	120	30	18	15.7	20			

State R or L version

w see indexable circlip inserts

Dimensions in mm

Further sizes upon request

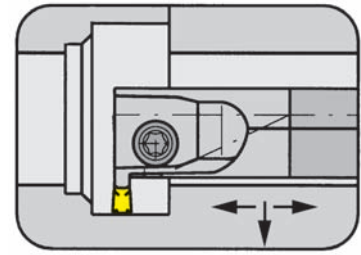
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LB223.00...	5.11T15P	T15PL

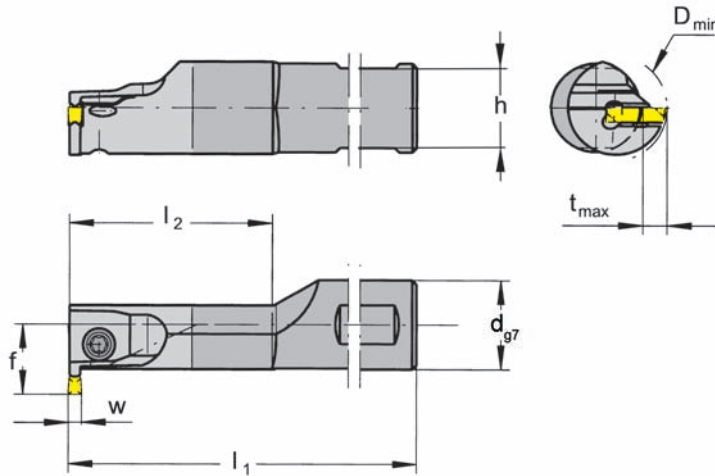
TOOLHOLDER Type

BU223

with through coolant supply



Bore Ø from .709"
 Depth of groove up to .248"
 Clamping range up to .118"



for use with Indexable insert

Type S223

R = right hand version shown

L = left hand version

Carbide shank

Part number	d	l ₁	l ₂	h	f	D _{min}	t _{max}	Size	Clamping range
R/LBU223.HM06.2.42	.625	5.000	2.000	.546	.512	.709	.177	02	.079 - .117
R/LBU223.HM07.2.52	.750	6.000	2.500	.671	.618	.787	.209		
R/LBU223.HM10.2.62	1.000	6.250	2.750	.921	.740	.984	.248		
R/LBU223.HM06.2.43	.625	5.000	2.000	.546	.512	.709	.177	03	.118
R/LBU223.HM07.2.53	.750	6.000	2.500	.671	.618	.787	.209		
R/LBU223.HM10.2.63	1.000	6.250	2.750	.921	.740	.984	.248		

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

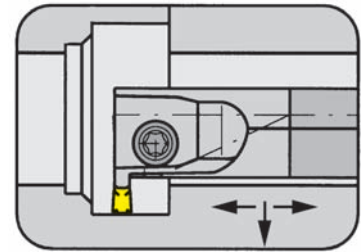
Toolholder	Screw	TORX PLUS® Wrench
R/LBU223.HM...	5.11T15P	T15PL

TOOLHOLDER Type

B223

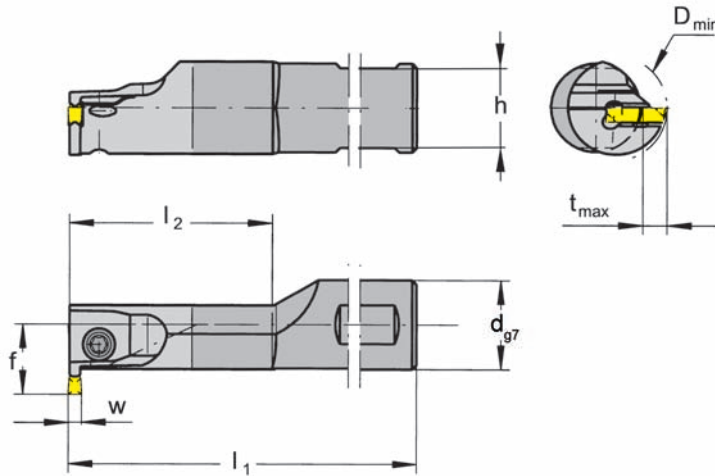
with through coolant supply

Bore Ø from .709" (18.0 mm)
 Depth of groove up to .248" (6.3 mm)
 Clamping range up to .118" (3.0 mm)



for use with Indexable insert

Type S223



R = right hand version shown

L = left hand version

Carbide shank

Part number	d	l ₁	l ₂	h	f	D _{min}	t _{max}	Size	Clamping range
R/LB223.HM16.2.42	16	130	50	14	13.0	18	4.5	02	2.0 - 2.99
R/LB223.HM20.2.52	20	150	60	18	15.7	20	5.3		
R/LB223.HM25.2.62	25	160	70	23	18.8	25	6.3		
R/LB223.HM16.2.43	16	130	50	14	13.0	18	4.5	03	3.0
R/LB223.HM20.2.53	20	150	60	18	15.7	20	5.3		
R/LB223.HM25.2.63	25	160	70	23	18.8	25	6.3		

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LB223.HM...	5.11T15P	T15PL

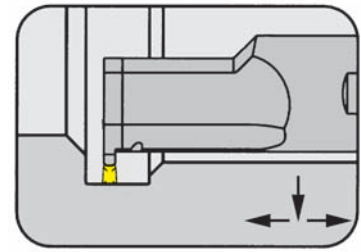


BASIC TOOLHOLDER Type

BU223

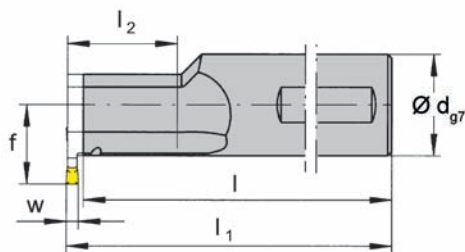
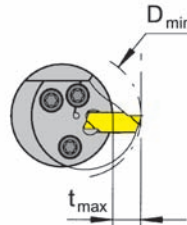
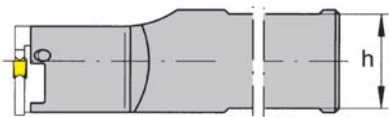
with through coolant supply

Bore Ø from	1.102"
Depth of groove up to	.248"
Width of groove up to	.118"



for use with Cassette

Type BK223



R = right hand version shown

L = left hand version

Part number	d	h	l_1	f	l_2	l
R/LBU223.1000.1.K2	1.000	.921	$l+b_1+w/2$	.768	1.181	4.846
R/LBU223.1000.2.K2					2.362	5.846
R/LBU223.1250.1.K2	1.250	1.171	$l+b_1+w/2$	.906	1.181	5.846
R/LBU223.1250.2.K2					2.362	6.846

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Note:

Dimensions for D_{min} , t_{max} , w and b_1 see cassettes

Toolholder does not include cassette!

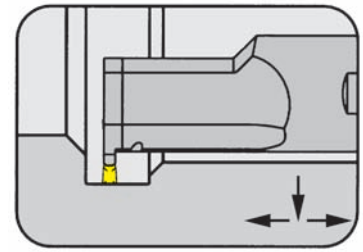
Spare parts

Basic toolholder	Screw	TORX PLUS® Wrench
R/LBU223.1...	4.09T15P	T15PL

BASIC TOOLHOLDER Type

B223

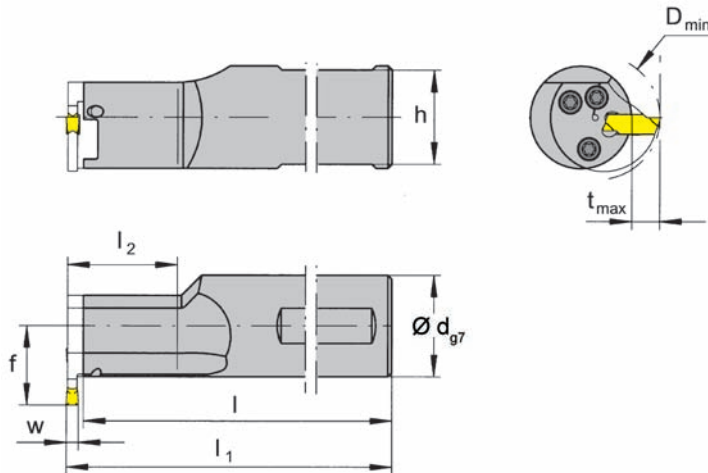
with through coolant supply



Bore Ø	1.102" (28.0 mm)
Depth of groove up to	.248" (6.3 mm)
Width of groove up to	.118" (3.0 mm)

for use with Cassette

Type BK223



R = right hand version shown

L = left hand version

Part number	d	h	l_1	f	l_2	l
R/LB223.0025.1.K2	25	23	$l+b_1+w/2$	19.5	30	116.1
R/LB223.0025.2.K2						146.1
R/LB223.0032.1.K2	32	30	$l+b_1+w/2$	23.0	30	146.1
R/LB223.0032.2.K2						176.1

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Note:

Dimensions for D_{min} , t_{max} , w and b_1 see cassettes

Toolholder does not include cassette!

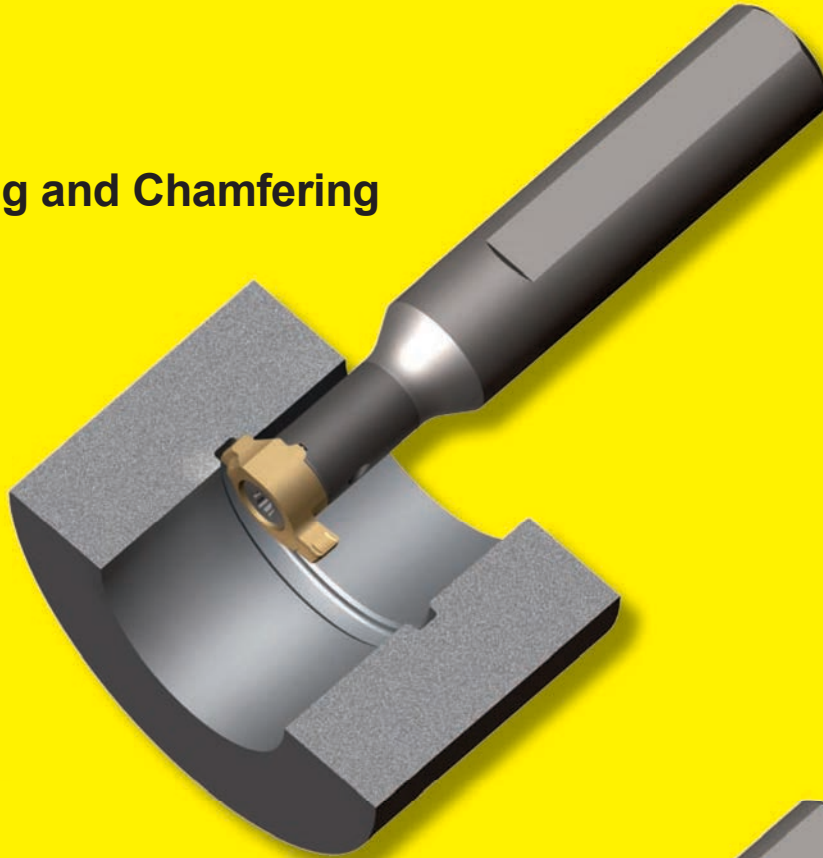
Spare parts

Basic toolholder	Screw	TORX PLUS® Wrench
R/LB223.00...	4.09T15P	T15PL

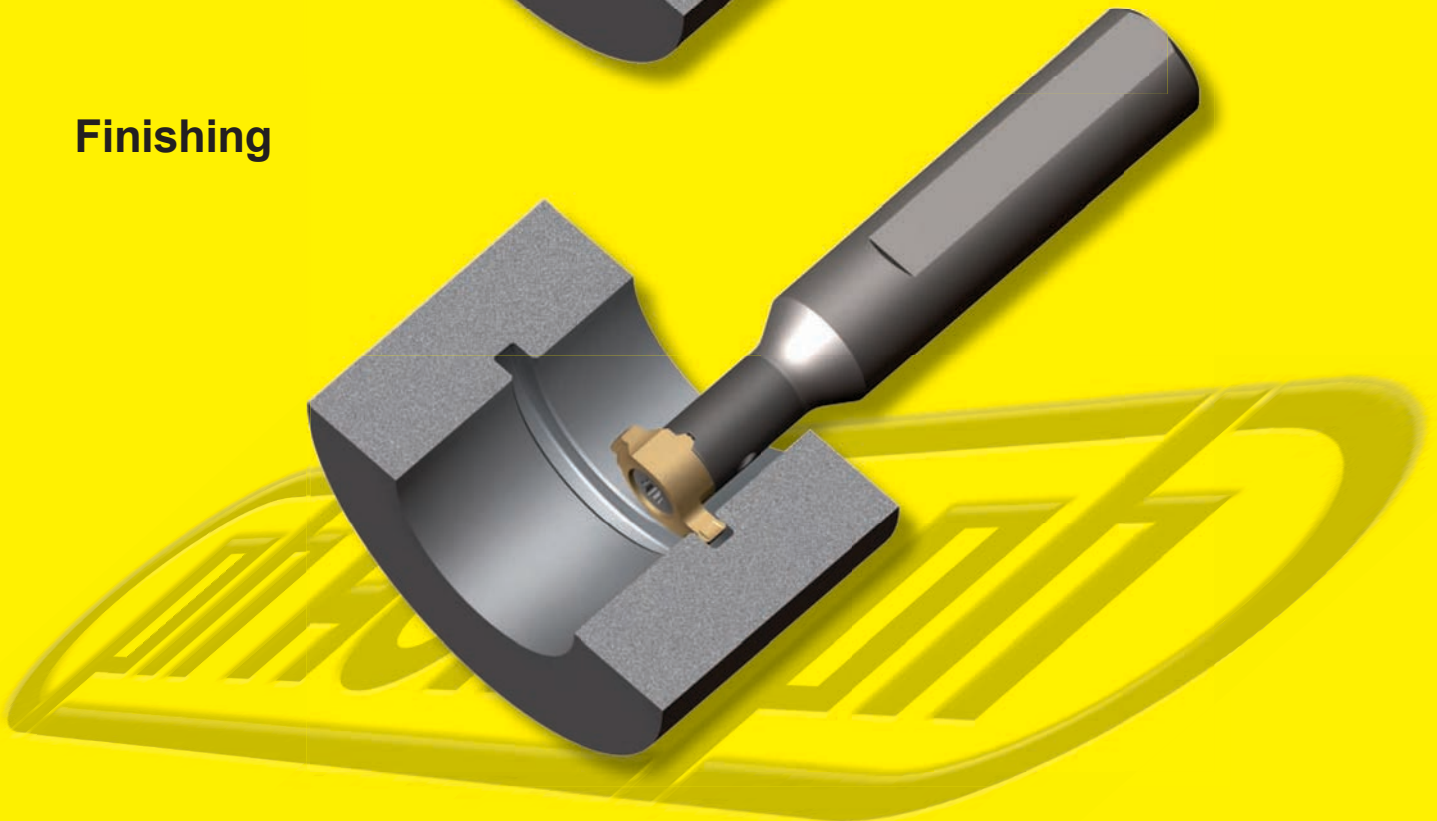
Tool change reduction
from Ø .709" (18 mm)

D

Pregrooving and Chamfering



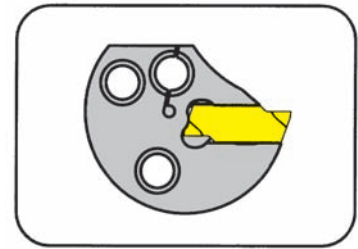
Finishing



For further information, please contact HORN USA.

CASSETTE Type

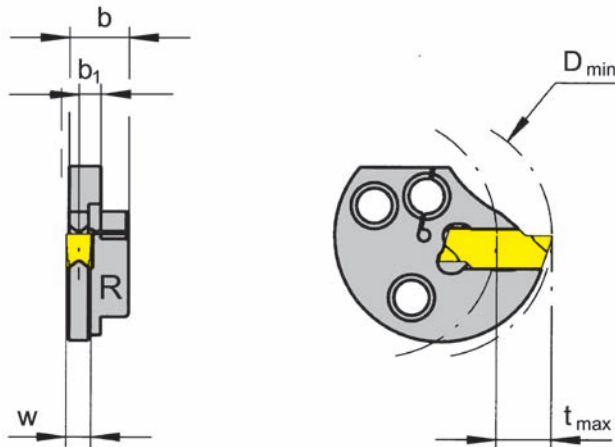
BK223



Bore Ø	1.102" (28.0 mm)
Depth of groove up to	.248" (6.3 mm)
Clamping range up to	.118" (3.0 mm)

for use with Indexable insert

Type S223



R = right hand version shown

L = left hand version

Part number	D _{min}	t _{max}	b ₁	b	Size	Clamping range
R/LBK223.0028.01	28	6.3	3.10	7.4	01	2.0
R/LBK223.0028.02	28	6.3	2.95	7.4	02	2.5
R/LBK223.0028.03	28	6.3	2.70	7.4	03	3.0

State R or L version

w see indexable inserts

Dimensions in mm

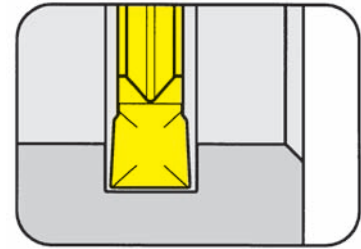
Use right hand cassettes in right hand basic toolholders and left hand cassettes in left hand basic toolholders.

Spare parts

The fastening screw is combined with the basic toolholder - no separate order required.

INSERT Type

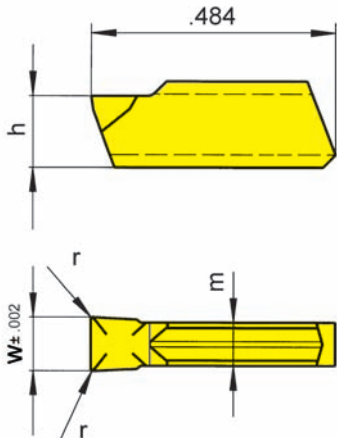
S119



Depth of groove up to .118"
Width of groove .079 - .118"

for use with Toolholder

Type B119
BU119



Part number	w	r	m	h	Size	Carbide grades				
						MG12	H54	TN35	TI25	TF45
S119.0200.32	.079	.008	.063	.144	02			▲		
S119.0250.32	.098	.008	.079	.148	02			▲		
S119.0300.32	.118	.008	.094	.156	03			▲		
						P		•		
						M		•		
						K		•		
						S		•		
						N		•		
						H				

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left** hand toolholders.

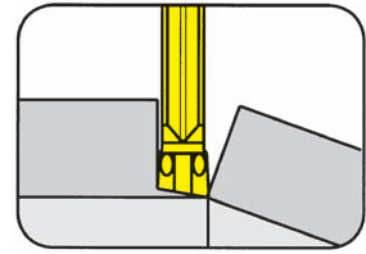
D

GROOVING and PARTING OFF



INSERT Type

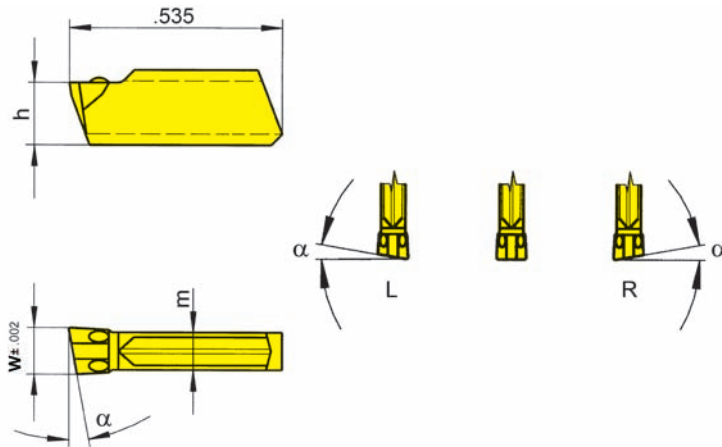
S123



Depth of groove up to .984"
 Width of groove .079 - .118"

for use with Toolholder

Type H223
 HU223



R = right hand version shown

L = left hand version

Part number	w	α	m	h	Size	Carbide grades			
						MG12	TN35	TI25	TF45
S123.0020.C0	.079	0°	.063	.144	01		Δ		Δ
R/LS123.1520.C0		15°				Δ/	/▲	▲/Δ	
R/LS123.0420.C0		4°				Δ/Δ	Δ/	Δ/	
R/LS123.0820.C0		8°				Δ/Δ	Δ/▲	/Δ	
S123.0030.C0	.118	0°	.094	.156	03		Δ		
R/LS123.0430.C0		4°					Δ/		
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation □ uncoated grades ■ coated grades ■ brazed/Cermet						P	•	•	•
						M	•	•	•
						K	•	•	•
						S	•	•	•
						N	•	•	•
						H			

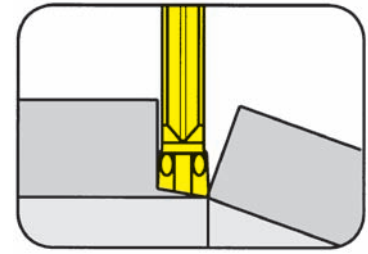
Dimensions in inch

State R or L version

Indexable inserts can be used in **right and left** hand toolholders.

INSERT Type

S123

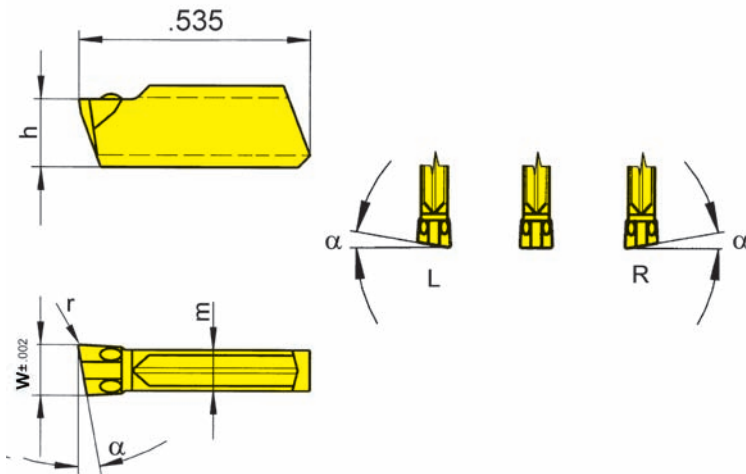


Depth of groove up to .984"
 Width of groove .079 - .118"

for use with Toolholder

Type H223
 HU223

D



R = right hand version shown

L = left hand version

Part number	w	r	α	m	h	Size	Carbide grades			
							MG12	TN35	T125	TF45
S123.0020.C1	.079	.006	0°	.063	.144	01		Δ	Δ	Δ
R/LS123.1520.C1			15°				Δ/	Δ/	Δ/	
R/LS123.0420.C1			4°				Δ/	ΔΔ	Δ/	
R/LS123.0820.C1			8°				Δ/	Δ/		
S123.0030.C1	.118	.006	0°	.094	.156	03		Δ		
R/LS123.0830.C1			8°					Δ/		
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation □ uncoated grades ■ coated grades ■ brazed/Cermet							P	•	•	•
							M	•	•	•
							K	•	•	•
							S	•	•	•
							N	•	•	•
							H			

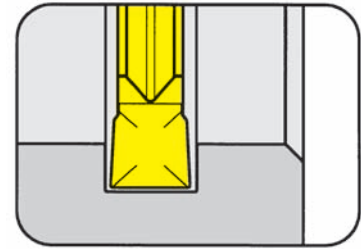
Dimensions in inch

State R or L version

Indexable inserts can be used in **right and left** hand toolholders.

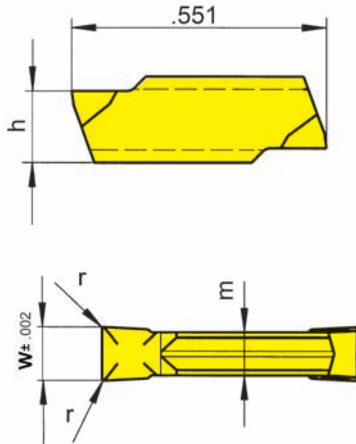
INDEXABLE INSERT Type

S223



for use with Toolholder

Depth of groove up to .433"
 Width of groove .079 - .118"



- Type
- B223
 - BK223
 - BU223
 - E223
 - H223
 - HU223

Part number	w	r	m	h	Size	Carbide grades				
						MG12	H54	TN35	T125	TF45
S223.0200.32	.079	.008	.063	.144	01	▲	▲	▲	▲	
S223.0250.32	.098	.008	.079	.148	02	▲	▲	▲	▲	
S223.0300.32	.118	.008	.094	.156	03	▲	▲	▲	▲	
						P	○	●	●	●
						M	●	●	●	●
						K	●	●	●	●
						S	●	●	●	●
						N	●	●	●	●
						H				

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Carbide grades

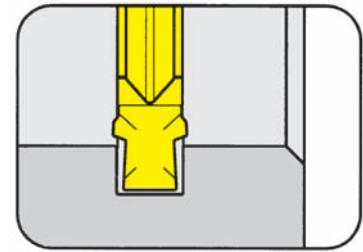
Indexable inserts can be used in **right and left hand** toolholders.



INDEXABLE INSERT Type

S223

limited depth of cut

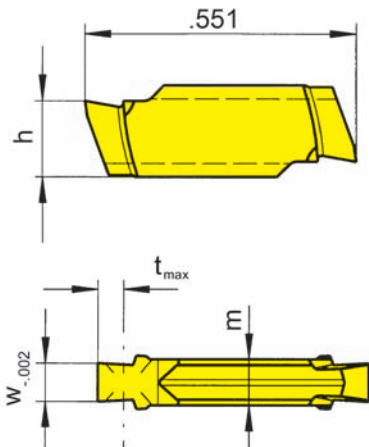


Circlip grooves
Width of circlip Nw

DIN 471/472
.043 - .085"

for use with Toolholder

Type B223...1.22
BU223...1.22
E223
H223
HU223



Part number	Nw	w	t _{max}	m	h	Size	Carbide grades				
							MG12	H54	TN35	TI25	TF46
S223.0110.32	.043	.049	.024	.075	.148	02			▲		
S223.0130.32	.051	.057	.043	.075	.148	02			▲		
S223.0160.32	.063	.069	.045	.075	.148	02			▲		
S223.0185.32	.073	.078	.055	.075	.148	02			▲		
S223.0215.32	.085	.090	.065	.075	.148	02			▲		
							P		•		
							M		•		
							K		•		
							S		•		
							N		•		
							H				

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

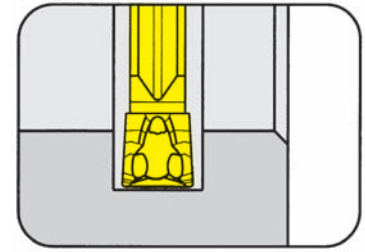
Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

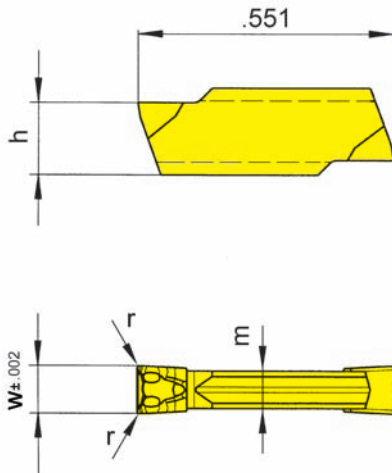
INDEXABLE INSERT Type

S223



for use with Toolholder

Depth of groove up to .433"
 Width of groove .079 - .118"



- Type
- B223
 - BK223
 - BU223
 - E223
 - H223
 - HU223



Part number	w	r	m	h	Size	Carbide grades					
						MG12	H54	TN35	TI25	TF45	TH35
S223.0200.52	.079	.008	.063	.144	01						▲
S223.0250.52	.098	.008	.075	.148	02				▲		
S223.0300.52	.118	.008	.094	.156	03						▲
						P			•		•
						M			•		•
						K			•		•
						S			•		•
						N			•		•
						H					

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

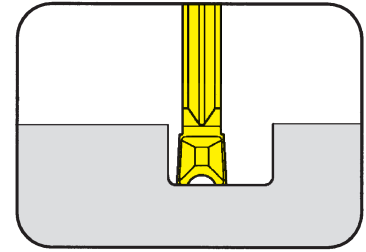
Indexable inserts can be used in **right and left hand** toolholders.

Carbide grades

INDEXABLE INSERT Type

S223

with chip forming

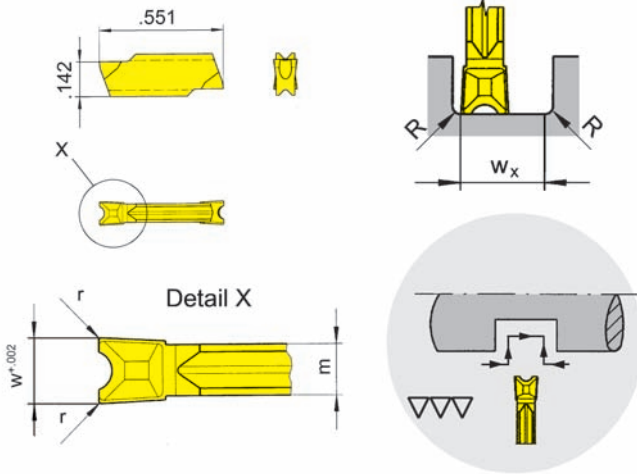


Depth of groove up to	.394"
Width of groove	.079"

precision ground

for use with Toolholder

- Type
- B223
 - BK223
 - BU223
 - E223
 - H223
 - HU223



Part number	w	r	w _x	m	Size	Carbide grades						
						K10	H54	TN32	Ti25	TF46	TC92	AL96
S223.NC20.D2	.079	.008	.106	.063	01				▲			
						P	•					
						M	•					
						K	•					
						S	•					
						N	•					
						H						

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Carbide grades

$w_x = \text{width of groove} - R_{(\text{right})} - R_{(\text{left})}$

Indexable inserts can be used in **right and left hand** toolholders.

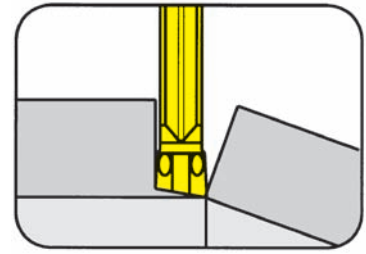
D

GROOVING and PARTING OFF



INDEXABLE INSERT Type

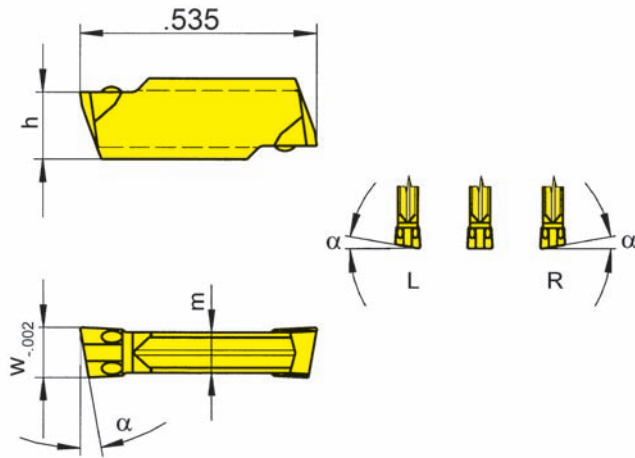
S223



Depth of groove up to .433"
Width of groove .079 - .118"

for use with Toolholder

Type H223
HU223



R = right hand version shown

L = left hand version

Part number	w	α	m	h	Size	Carbide grades			
						MG12	TN35	T125	TF45
S223.0020.C0	.079	0°	.063	.144	01		▲	▲	▲
R/LS223.1520.C0		15°				▲/▲	▲/▲	▲/▲	
R/LS223.0420.C0		4°				▲/▲	▲/▲	▲/▲	
R/LS223.0820.C0		8°				▲/▲	▲/▲	▲/▲	
S223.0025.C0	.098	0°	.075	.148	02			▲	
R/LS223.0425.C0		4°				▲/▲	▲/		
R/LS223.0825.C0		8°				▲/▲	▲/	▲/▲	
S223.0030.C0	.118	0°	.094	.156	03		▲	▲	▲
R/LS223.0430.C0		4°				▲/▲		▲/	
R/LS223.0830.C0		8°				▲/▲	▲/▲	▲/▲	
▲ on stock ▲ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet						P	●	●	●
						M	●	●	●
						K	●	●	●
						S	●	●	●
						N	●	●	●
						H			

Dimensions in inch

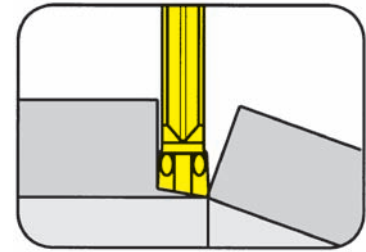
Carbide grades

State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

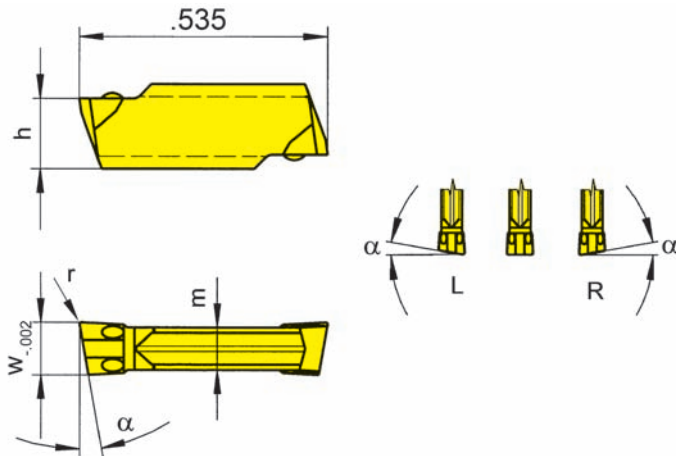
S223



for use with Toolholder

Type H223
HU223

Depth of groove up to .433"
Width of groove .079 - .118"



R = right hand version shown

L = left hand version

Part number	w	r	α	m	h	Size	Carbide grades			
							MG12	TN35	TI25	TF45
S223.0020.C1	.079	.006	0°	.063	.144	01		▲	▲	▲
R/LS223.1520.C1			15°				▲/▲	▲/▲	▲/▲	
R/LS223.0420.C1			4°				▲/▲	▲/	▲/	
R/LS223.0820.C1			8°				▲/▲	▲/	▲/▲	
S223.0025.C1	.098	.006	0°	.075	.148	02		▲	▲	▲
R/LS223.0425.C1			4°				/▲	▲/		
R/LS223.0825.C1			8°					▲/	▲/▲	
S223.0030.C1	.118	.006	0°	.094	.156	03		▲	▲	▲
R/LS223.0430.C1			4°				▲/▲	▲/		
R/LS223.0830.C1			8°				▲/	▲/	▲/	
▲ on stock ▲ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet							P	●	●	●
							M	●	●	●
							K	●	●	●
							S	●	●	●
							N	●	●	●
							H			

Dimensions in inch

State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

Facing and chamfering

Tools with ABS-attachment for facing operation of a spring seat in a pre-casted groove. The tools are used on various spindles on a transfer line. Process is facing and chamfering.

Because of the high volume of machined material the tool was designed with one cutting edge for a better swarf evacuation.

The coolant pressure used was 15 bar.

Material: GD-AISI9

Cutting data:

$$v_c = 270 \text{ m/min}$$

$$v_f = 0,1 \text{ mm}$$



HCG - HORN Catalog Guide

INTERNAL GROOVING

Bore Ø	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.625" (15.87 mm)				•	•					
.709" (18 mm)				•	•					
.787 - 1.102" (20-28 mm)	•			•	•					
1.102 - 1.496" (28-38 mm)	•			•	•					
> 1.496" (38 mm)	•			•	•	•	•	•	•	
Operation Type										
Grooving	•			•	•	•	•	•	•	
Threading					•	•			•	
Profiling				•	•		•	•	•	
Width of groove inch	.022-.209			.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.049-.169	
Width of groove mm	0.56-5.3			1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	1.25-4.29	
Chapter	A	B	C	D	E	F	G	H	J	K

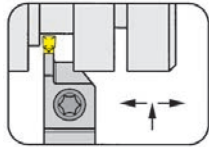
EXTERNAL GROOVING

Depth of groove up to	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.157" (4 mm)	•	•	•	•	•	•	•	•	•	•
.236" (6 mm)		•	•	•	•	•	•	•	•	•
.315" (8 mm)		•		•	•	•	•	•		•
.394" (10 mm)		•		•	•	•	•			
.433" (11 mm)		•		•	•	•	•			
.551" (14 mm)		•		•	•		•			
.630" (16 mm)		•		•	•		•			
.709" (18 mm)				•	•		•			
.984" (25 mm)				•			•			
1.000" (25.4 mm)							•			
Operation Type										
Grooving	•	•	•	•	•	•	•	•	•	•
Side Turning		•	•	•	•		•	•		
Parting Off	•	•	•	•	•		•	•		•
Threading		•	•			•	•		•	
Profiling			•		•		•	•	•	•
Axial Grooving						•			•	
Width of groove inch	.022-.209	.059-.118	.020-.118	.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.022-.169	.059-.118
Width of groove mm	0.56-5.3	1.5-3.0	0.5-3.0	1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	0.56-4.29	1.5-3.0
Chapter	A	B	C	D	E	F	G	H	J	K

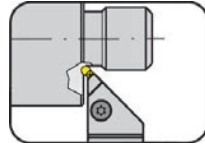
Special tools upon request

TOOLING SYSTEMS 224 **E**

**Grooving
- external -**

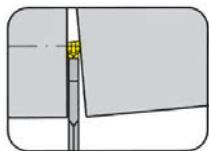


Page E2-E13

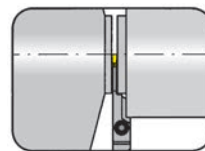


Page E15

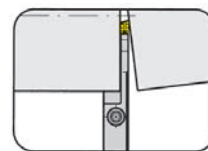
Parting off



Page E16

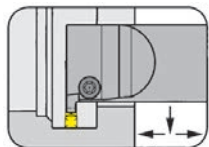


Page E17-E19

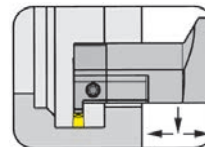


Page E20-E21

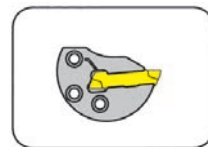
**Grooving
- internal -**



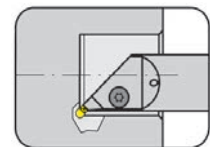
Page E23-E29



Page E30-E31

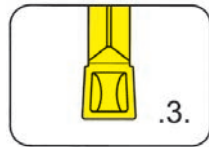


Page E33

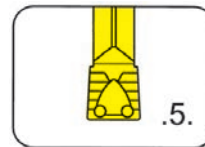


Page E34-E35

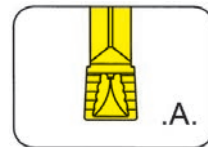
**Indexable inserts
Type
S224**



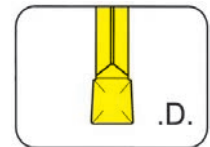
Page E36-E37



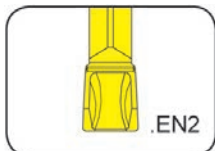
Page E38-E39



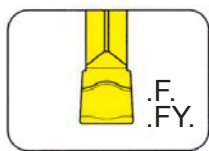
Page E40-E41



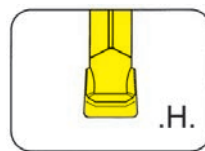
Page E42-E43



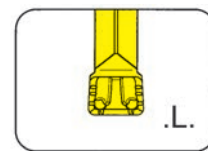
Page E44



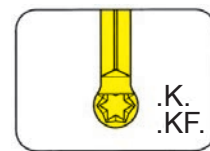
Page E45, E56



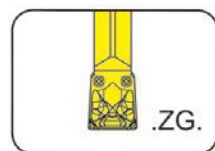
Page E46



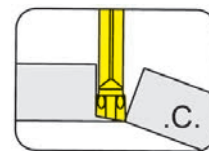
Page E47



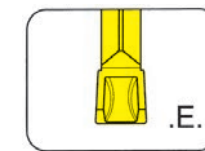
Page E48-E49



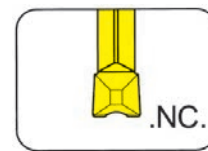
Page E50



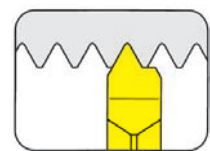
Page E52-E54



Page E55



Page E57



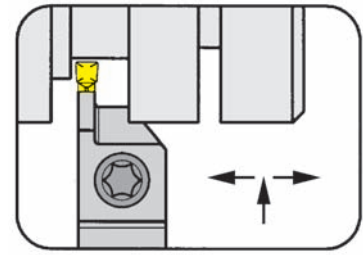
Page E58-E59

For Technical Information please see chapter Q

TOOLHOLDER Type

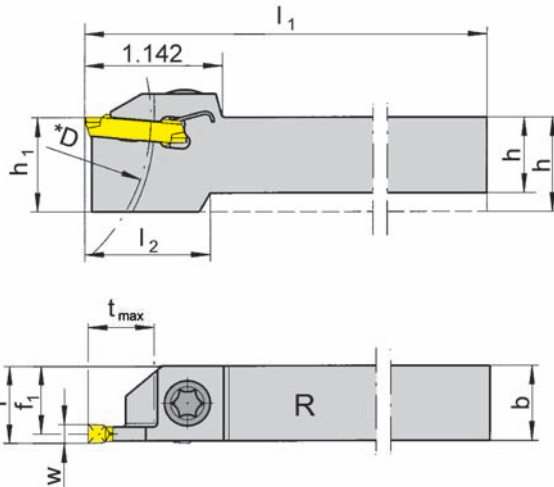
HU224

Depth of groove up to .551"
Clamping range up to .146"



for use with Indexable insert

Type NS224
S224



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/LHU224.0625.01	.625	.625	5.000	.750		.595	1.000			
R/LHU224.0750.01	.750	.750	5.000	.750	f ₁ +w/2	.720	-	.551	01	.079 - .094
R/LHU224.1000.01	1.000	1.000	6.000	1.000		.970	-			
R/LHU224.0625.02	.625	.625	5.000	.750		.588	1.000			
R/LHU224.0750.02	.750	.750	5.000	.750	f ₁ +w/2	.713	-	.551	02	.094 - .110
R/LHU224.1000.02	1.000	1.000	6.000	1.000		.963	-			
R/LHU224.0625.03	.625	.625	5.000	.750		.580	1.000			
R/LHU224.0750.03	.750	.750	5.000	.750	f ₁ +w/2	.705	-	.551	03	.110 - .146
R/LHU224.1000.03	1.000	1.000	6.000	1.000		.955	-			

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

* t_{max} up to D = 3.150"

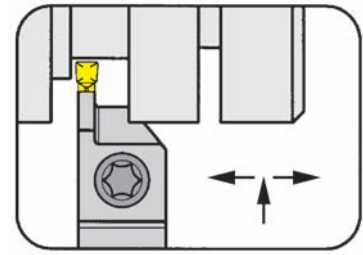
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LHU224....	6.23T25P	T25PQ

TOOLHOLDER Type

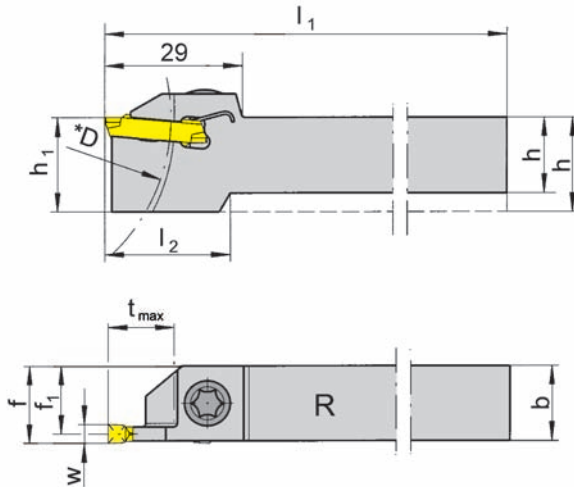
H224

Depth of groove up to .551" (14.0 mm)
Clamping range up to .146" (3.7 mm)



for use with Indexable insert

Type NS224
S224



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/LH224.1616.01	16	16	125	20		15.3	25			
R/LH224.2020.01	20	20	125	20	f ₁ +w/2	19.3	-	14	01	2.0 - 2.4
R/LH224.2525.01	25	25	150	25		24.3	-			
R/LH224.1608.02	16	8	100	20		7.1	30			
R/LH224.1616.02	16	16	125	20		15.1	25			
R/LH224.2020.02	20	20	125	20	f ₁ +w/2	19.1	-	14	02	2.4 - 2.8
R/LH224.2525.02	25	25	150	25		24.1	-			
R/LH224.1616.03	16	16	125	20		14.9	25			
R/LH224.2020.03	20	20	125	20	f ₁ +w/2	18.9	-	14	03	2.8 - 3.7
R/LH224.2525.03	25	25	150	25		23.9	-			

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

* t_{max} up to D = 80 mm

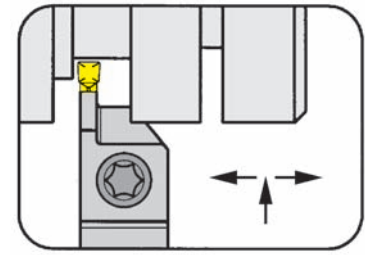
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH224.1608.02	4.15T15P	T15PQ
R/LH224....01/02/03	6.23T25P	T25PQ



TOOLHOLDER Type

HU224

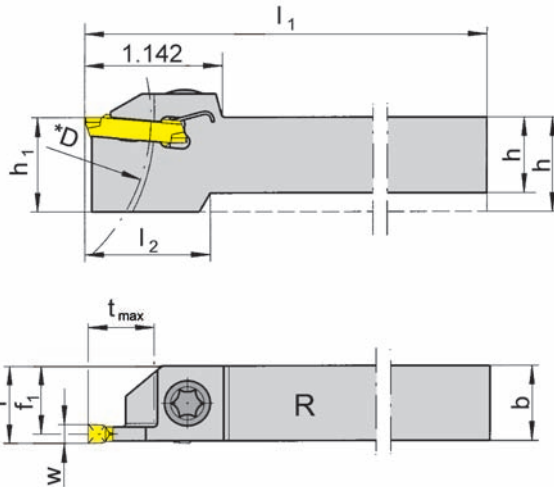


Depth of groove up to
Clamping range up to

.551"
.240"

for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/LHU224.0625.04	.625	.625	5.000	.750		.565	1.000		04	.146 - .173
R/LHU224.0750.04	.750	.750	5.000	.750	f ₁ +w/2	.690	-	.551	04	.146 - .173
R/LHU224.1000.04	1.000	1.000	6.000	1.000		.940	-			
R/LHU224.0625.05	.625	.625	5.000	.750		.676			05	.173 - .201
R/LHU224.0750.05	.750	.750	5.000	.750	f ₁ +w/2	.676	-	.551	05	.173 - .201
R/LHU224.1000.05	1.000	1.000	6.000	1.000		.926				
R/LHU224.0750.06	.750	.750	5.000	.750		.660			06	.201 - .240
R/LHU224.1000.06	1.000	1.000	6.000	1.000	f ₁ +w/2	.910	-	.551	06	.201 - .240

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

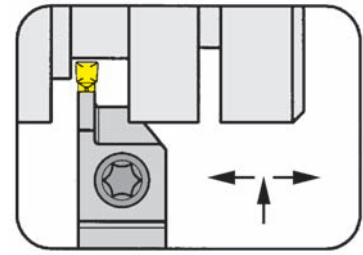
* t_{max} up to D = 3.150"

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LHU224....	6.23T25P	T25PQ

TOOLHOLDER Type

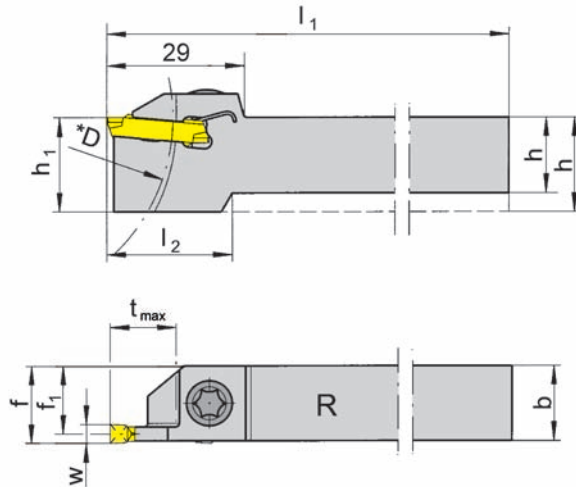
H224



Depth of groove up to .551" (14.0 mm)
Clamping range up to .240" (6.1 mm)

for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/LH224.1616.04	16	16	125	20		14.55	25			
R/LH224.2020.04	20	20	125	20	f ₁ +w/2	18.55	-	14	04	3.7 - 4.4
R/LH224.2525.04	25	25	150	25		23.55	-			
R/LH224.1616.05	16	16	125	20		18.15				
R/LH224.2020.05	20	20	125	20	f ₁ +w/2	18.15	-	14	05	4.4 - 5.1
R/LH224.2525.05	25	25	150	25		23.15				
R/LH224.2020.06	20	20	125	20	f ₁ +w/2	17.75	-	14	06	5.1 - 6.1
R/LH224.2525.06	25	25	150	25		22.75				

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

* t_{max} up to D = 80 mm

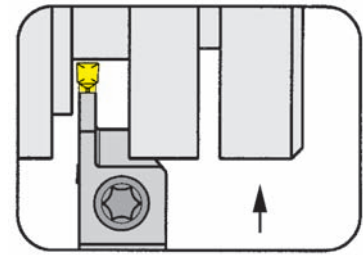
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH224....	6.23T25P	T25PQ



TOOLHOLDER Type

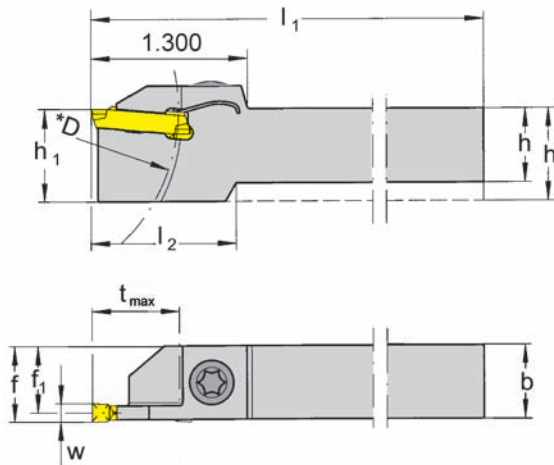
HU224



Depth of groove up to .709"
Clamping range up to .146"

for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size	Clamping range
R/LHU224.0625.21	.625	.625	5.000	.750	.595		1.125			
R/LHU224.0750.21	.750	.750	5.000	.750	.720	f ₁ +w/2	-	.709	01	.079 - .094
R/LHU224.1000.21	1.000	1.000	6.000	1.000	.970		-			
R/LHU224.0625.22	.625	.625	5.000	.750	.588		1.125			
R/LHU224.0750.22	.750	.750	5.000	.750	.713	f ₁ +w/2	-	.709	02	.094 - .110
R/LHU224.1000.22	1.000	1.000	6.000	1.000	.963		-			
R/LHU224.0625.23	.625	.625	5.000	.750	.580		1.125			
R/LHU224.0750.23	.750	.750	5.000	.750	.705	f ₁ +w/2	-	.709	03	.110 - .146
R/LHU224.1000.23	1.000	1.000	6.000	1.000	.955		-			

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

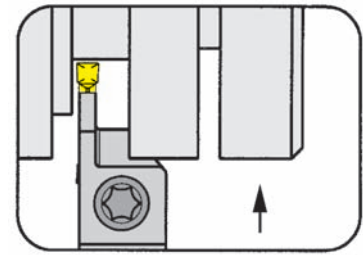
* t_{max} up to D = 3.150"

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LHU224....	6.23T25P	T25PQ

TOOLHOLDER Type

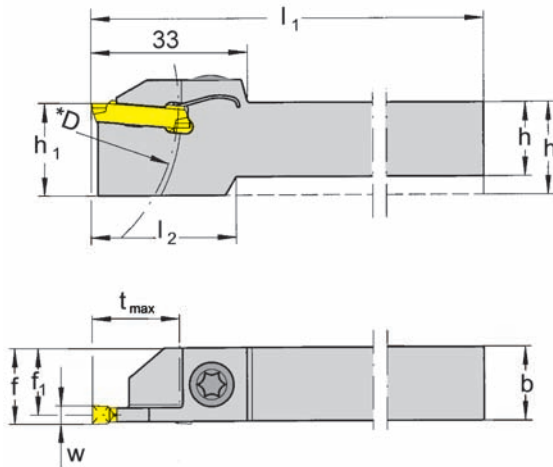
H224



Depth of groove up to .709" (18.0 mm)
Clamping range up to .146" (3.7 mm)

for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size	Clamping range
R/LH224.1212.21	12	12	125	20	11.3	f ₁ +w/2	33	18	01	2.0 - 2.4
R/LH224.1616.21	16	16	125	20	15.3		30			
R/LH224.2020.21	20	20	125	20	19.3		-			
R/LH224.2525.21	25	25	150	25	24.3		-			
R/LH224.1212.22	12	12	125	20	11.1	f ₁ +w/2	33	18	02	2.4 - 2.8
R/LH224.1616.22	16	16	125	20	15.1		30			
R/LH224.2020.22	20	20	125	20	19.1		-			
R/LH224.2525.22	25	25	150	25	24.1		-			
R/LH224.1212.23	12	12	125	20	10.9	f ₁ +w/2	33	18	03	2.8 - 3.7
R/LH224.1608.23	16	8	100	20	6.9		-			
R/LH224.1616.23	16	16	125	20	14.9		30			
R/LH224.2020.23	20	20	125	20	18.9		-			
R/LH224.2525.23	25	25	150	25	23.9		-			

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

* t_{max} up to D = 80 mm

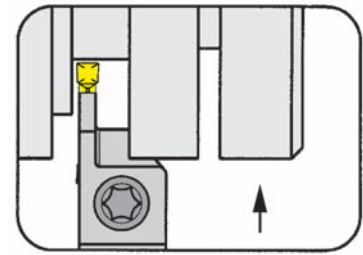
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH224....21/22/23	6.23T25P	T25PQ
R/LH224.1608.23	4.15T15P	T15PQ



TOOLHOLDER Type

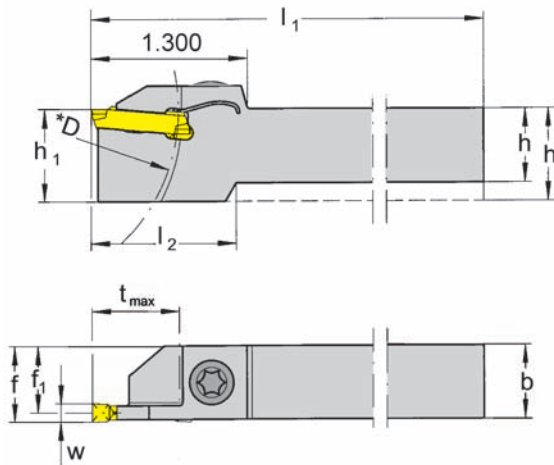
HU224



Depth of groove up to .709"
Clamping range up to .240"

for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size	Clamping range
R/LHU224.0625.24	.625	.625	5.000	.750	.565		1.125			
R/LHU224.0750.24	.750	.750	5.000	.750	.690	f ₁ +w/2	-	.709	04	.146 - .173
R/LHU224.1000.24	1.000	1.000	6.000	1.000	.940		-			
R/LHU224.0625.25	.625	.625	5.000	.750	.550		1.125			
R/LHU224.0750.25	.750	.750	5.000	.750	.676	f ₁ +w/2	-	.709	05	.173 - .201
R/LHU224.1000.25	1.000	1.000	6.000	1.000	.926		-			
R/LHU224.0625.26	.625	.625	5.000	.750	.534		1.125			
R/LHU224.0750.26	.750	.750	5.000	.750	.660	f ₁ +w/2	-	.709	06	.201 - .240
R/LHU224.1000.26	1.000	1.000	6.000	1.000	.910		-			

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

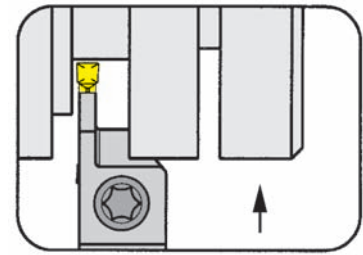
* t_{max} up to D = 3.150"

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LHU224....	6.23T25P	T25PQ

TOOLHOLDER Type

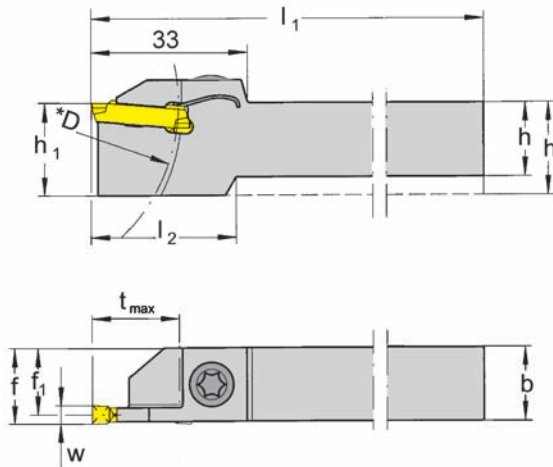
H224



Depth of groove up to .709" (18.0 mm)
Clamping range up to .240" (6.1 mm)

for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size	Clamping range
LH224.1608.24	16	8	100	16	6.55		-			
R/LH224.1616.24	16	16	125	20	14.55	f ₁ +w/2	30	18	04	3.7 - 4.4
R/LH224.2020.24	20	20	125	20	18.55		-			
R/LH224.2525.24	25	25	150	25	23.55		-			
R/LH224.1616.25	16	16	125	20	14.15		30			
R/LH224.2020.25	20	20	125	20	18.15	f ₁ +w/2	-	18	05	4.4 - 5.1
R/LH224.2525.25	25	25	150	25	23.15		-			
R/LH224.1616.26	16	16	125	20	13.75		30			
R/LH224.2020.26	20	20	125	20	17.75	f ₁ +w/2	-	18	06	5.1 - 6.1
R/LH224.2525.26	25	25	150	25	22.75		-			

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

* t_{max} up to D = 80 mm

Spare parts

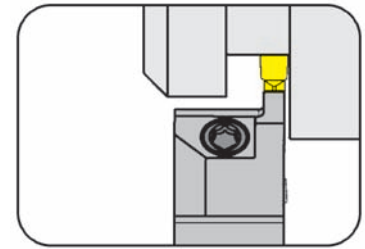
Toolholder	Screw	TORX PLUS® Wrench
LH224.1608.24	4.15T15P	T15PQ
R/LH224.....24/25/26	6.23T25P	T25PQ



TOOLHOLDER Type

H224

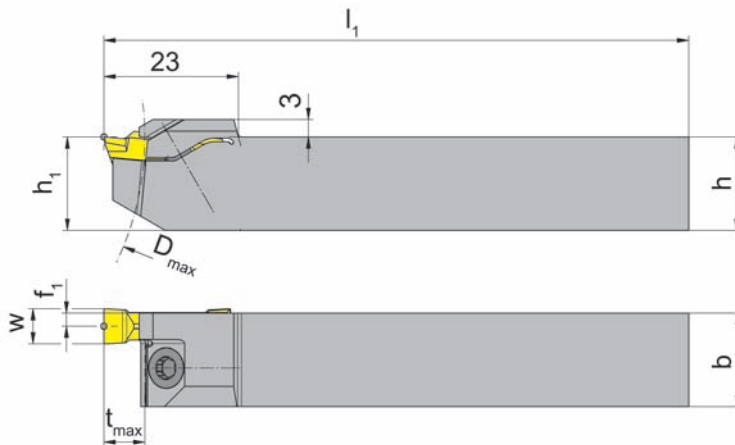
with screwed clamping



Depth of groove up to .276" (7.0 mm)
Clamping range up to .173" (4.4 mm)

for use with Indexable insert

Type S224



L = left hand version shown

R = right hand version

Part number	h	b	l ₁	h ₁	f ₁	t _{max}	D _{max}	Size	Clamping range
R/LH224.1212.61	12	12		12					
R/LH224.1616.61	16	16	100	16	0.70	7	100	01	2.0 - 2.4
R/LH224.2020.61	20	20		20					
R/LH224.1212.62	12	12		12					
R/LH224.1616.62	16	16	100	16	0.90	7	100	02	2.4 - 2.8
R/LH224.2020.62	20	20		20					
R/LH224.1212.63	12	12		12					
R/LH224.1616.63	16	16	100	16	1.10	7	100	03	2.8 - 3.7
R/LH224.2020.63	20	20		20					
R/LH224.1212.64	12	12		12					
R/LH224.1616.64	16	16	100	16	1.45	7	100	04	3.7 - 4.4
R/LH224.2020.64	20	20		20					

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

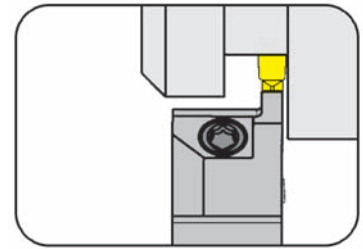
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH224....	4.12T15EP	T15PQ

TOOLHOLDER Type

H224

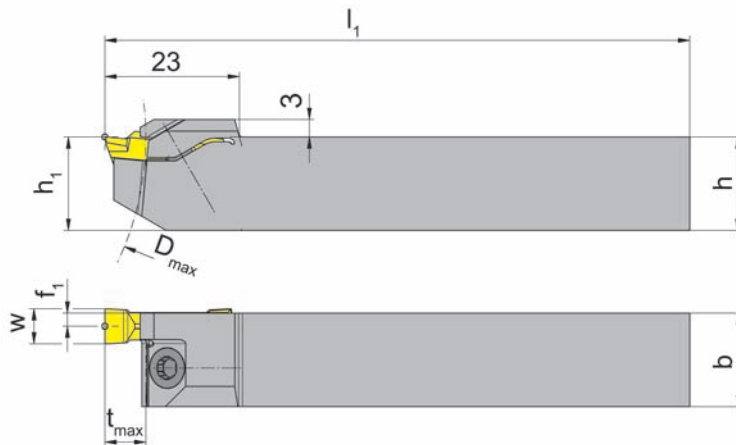
with screwed clamping



Depth of groove up to .276" (7.0 mm)
Clamping range up to .240" (6.1 mm)

for use with Indexable insert

Type S224



L = left hand version shown

R = right hand version

Part number	h	b	l ₁	h ₁	f ₁	t _{max}	D _{max}	Size	Clamping range
R/LH224.1616.65	16	16	100	16	1.85	7	100	05	4.4 - 5.1
R/LH224.2020.65	20	20	100	20	1.85	7	100	05	4.4 - 5.1
R/LH224.1616.66	16	16	100	16	2.25	7	100	06	5.1 - 6.1
R/LH224.2020.66	20	20	100	20	2.25	7	100	06	5.1 - 6.1

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

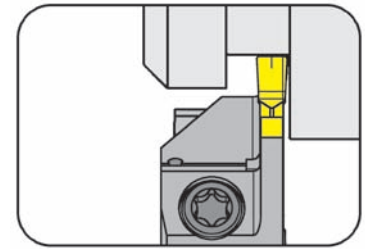
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH224....	5.13T20EP	T20PQ

E

TOOLHOLDER Type

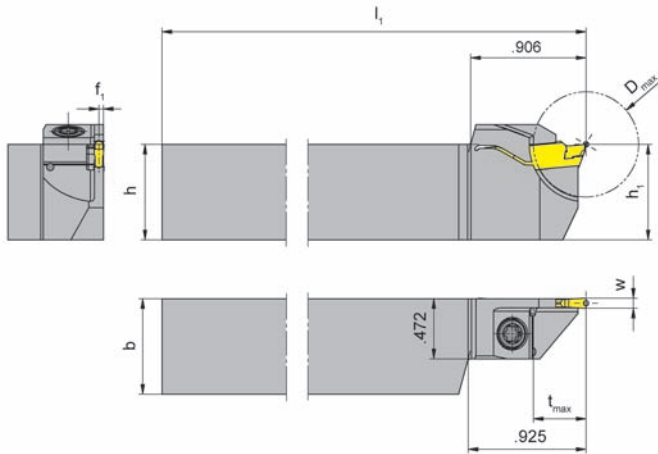
HU224



Depth of groove up to .413"
Clamping range up to .146"

for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	t _{max}	D _{max}	Size	Clamping range
R/LHU224.0625.20.61	.625	.625	3.937	.625	.028	.413	.827	01	.079 - .094
R/LHU224.0750.20.61	.750	.750	5.118	.750	.028	.413	.827	01	.079 - .094
R/LHU224.0625.20.62	.625	.625	3.937	.625	.035	.413	.827	02	.094 - .110
R/LHU224.0750.20.62	.750	.750	5.118	.750	.035	.413	.827	02	.094 - .110
R/LHU224.0625.20.63	.625	.625	3.937	.625	.043	.413	.827	03	.110 - .146
R/LHU224.0750.20.63	.750	.750	5.118	.750	.043	.413	.827	03	.110 - .146

State R or L version

w see indexable inserts

Dimensions in inch

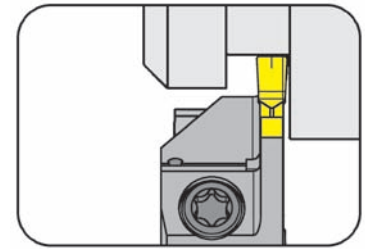
Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LHU224.0...	4.12T15EP	T15PQ

TOOLHOLDER Type

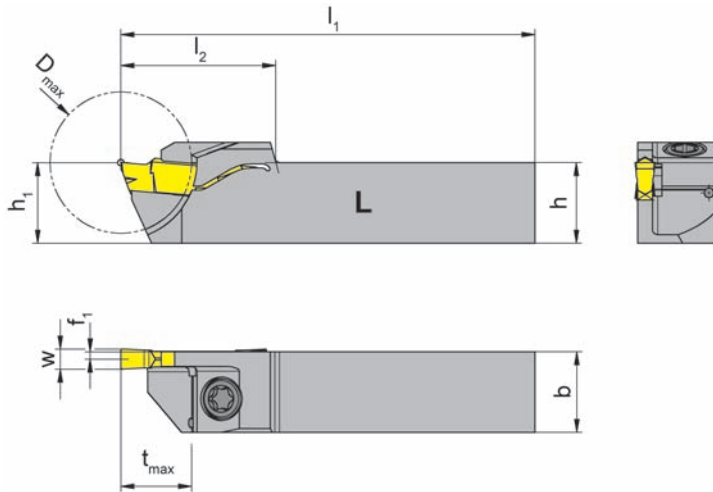
H224



Depth of groove up to .413" (10.5 mm)
Clamping range up to .146" (3.7 mm)

for use with Indexable insert

Type S224



L = left hand version shown

R = right hand version

Part number	h	b	l ₁	h ₁	f ₁	l ₂	t _{max}	D _{max}	Size	Clamping range
R/LH224.1212.20.61	12	12	100	12	0.7	23	10.5	21	01	2.0 - 2.4
R/LH224.1212.20.62	12	12	100	12	0.9	23	10.5	21	02	2.4 - 2.8
R/LH224.1212.20.63	12	12	100	12	1.1	23	10.5	21	03	2.8 - 3.7

State R or L version

w see indexable inserts

Dimensions in mm

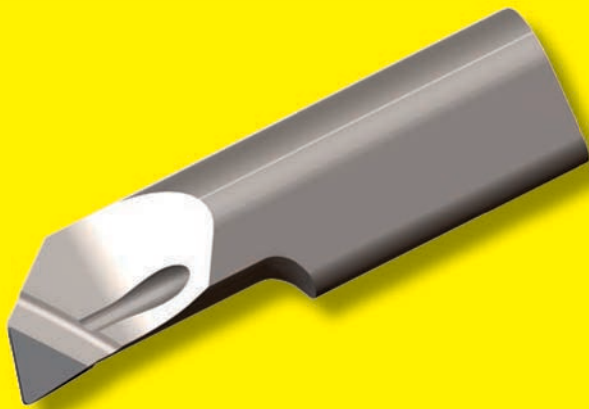
Further sizes upon request

Spare parts

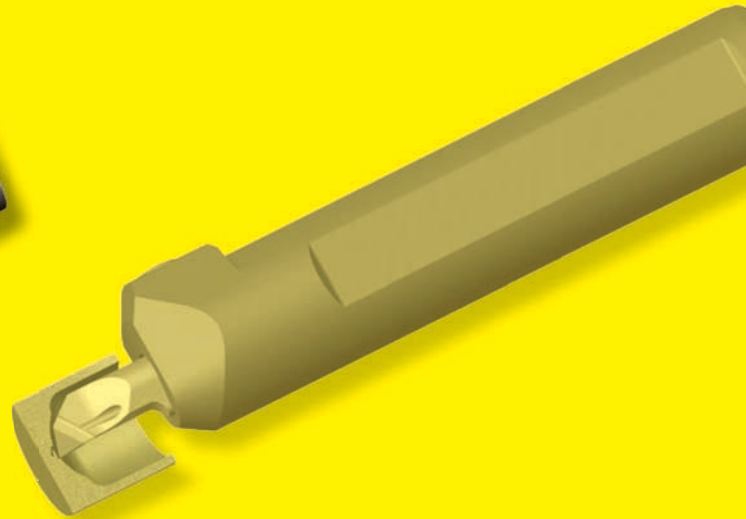
Toolholder	Screw	TORX PLUS® Wrench
R/LH224.1212.20.6...	4.12T15EP	T15PQ



HORN - THE LEADERS IN GROOVING TECHNOLOGY



Supermini®
Turning of hardened parts
from bore $\varnothing > .118''$



Supermini® and Mini Carbide Grooving Tools

PCD- or CBN-tipped inserts



Mini
PCD-tipped insert



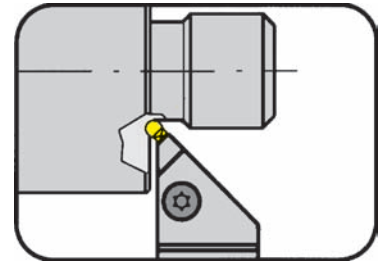
For further information, please contact HORN USA.

GROOVING CORNER RELIEFS (external)



TOOLHOLDER Type

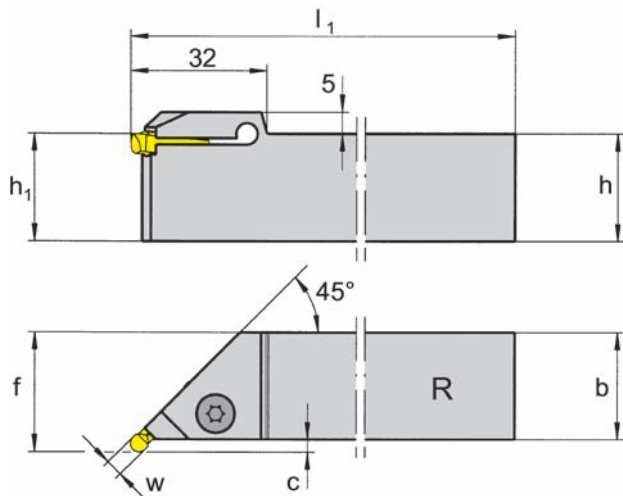
H224



Clamping range up to .240" (6.1 mm)

for use with Indexable insert

Type S224...K



R = right hand version shown

L = left hand version

only for full radius inserts
S224...K

Part number	h	b	l ₁	h ₁	f	c	Size	Clamping range
R/LH224.4520.02	20	20	125	20	23.0	2.5	02	2.0-2.8
R/LH224.4525.02	25	25	150	25	28.0			
R/LH224.4520.04	20	20	125	20	23.0	2.5	04	2.8-4.4
R/LH224.4525.04	25	25	150	25	28.0			
R/LH224.4520.06	20	20	125	20	23.5	3.0	06	4.4-6.1
R/LH224.4525.06	25	25	150	25	28.5			

State R or L version

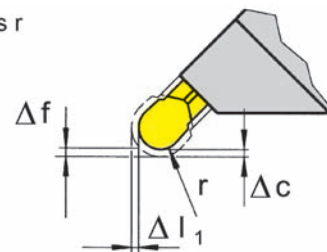
w and D_{min} see indexable inserts

Dimensions in mm

Further sizes upon request

Revision factor Δl_1 , Δc and Δf in relation to radius r

r	Δl_1	Δc	Δf
3,0	0	0	0
2,5	-0,146	-0,146	-0,146
2,0	0	0	0
1,5	-0,146	-0,146	-0,146
1,0	0	0	0



Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH224.452...	6.23T25P	T25PQ



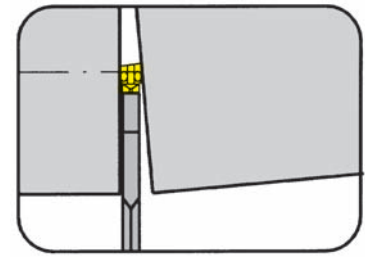
GROOVING and PARTING OFF (external)



TOOLHOLDER Type

H224

with self clamping

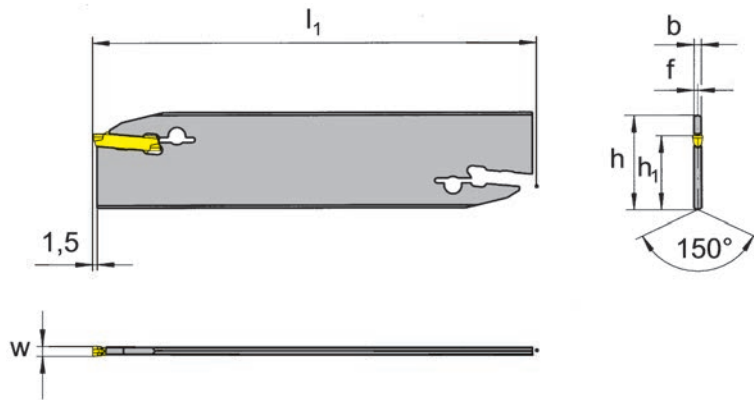


Depth of groove up to
Clamping range up to

.709" (18.0 mm)
.146" (3.7 mm)

for use with Indexable
insert

Type S224



E

Part number	h	b	l ₁	h ₁	f	t _{max}	Size	Clamping range
H224.2602.02	26	1.9	110	21.4	0.95	18	02	2.4 - 2.8
H224.2603.03	26	2.3	110	21.4	1.15	18	03	2.8 - 3.7
H224.3203.03	32	2.3	150	24.8	1.15	18	03	2.8 - 3.7

Further sizes upon request

w see indexable inserts

Dimensions in mm

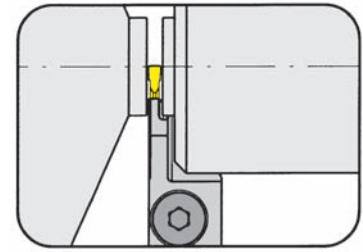
Spare parts

Toolholder	Wrench
H224....	P39L

E16

TOOLHOLDER Type

H224

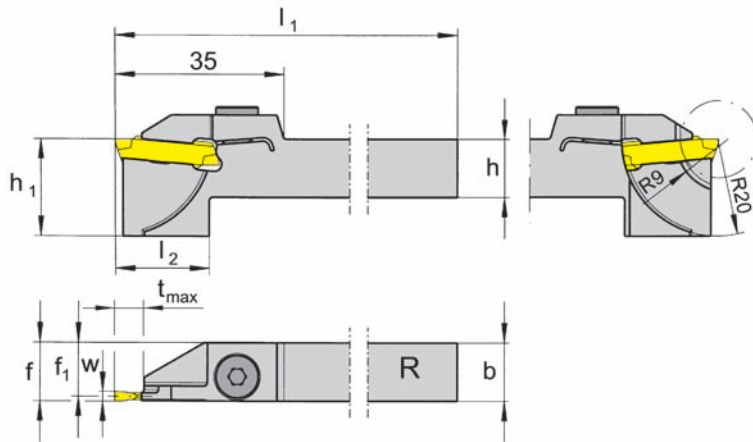


Depth of groove up to .323" (8.2 mm)
Clamping range up to .094" (2.4 mm)

for machines TRAUB (TNL12/7)

for use with Indexable insert

Type S224



R = right hand version shown

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size	Clamping range
RH224.1212.81	12	12	95	20	11.1	f ₁ +w/2	19.5	8.2	01	2.0 - 2.4

w see indexable inserts

Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
RH224.1212.81	6.17T20P	T25PQ



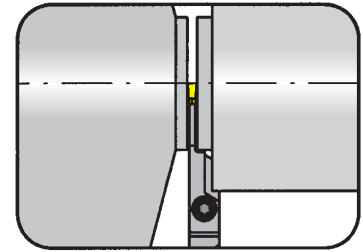
GROOVING and PARTING OFF (external)



TOOLHOLDER Type

H224

reinforced version

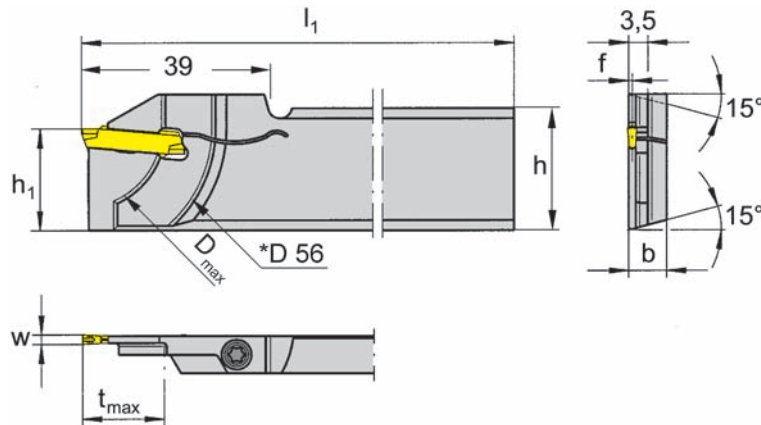


Depth of groove up to .709" (18.0 mm)
Clamping range up to .146" (3.7 mm)

for machines TRAUB (TNK28/TNK36/TNL26)

for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	t _{max}	D _{max}	Size	Clamping range
R/LH224.2608.81	26	7.9	110	21.4	0.75	18	36	01	2.0 - 2.4
R/LH224.2608.82	26	7.9	110	21.4	0.95	18	36	02	2.4 - 2.8
R/LH224.2608.83	26	7.9	110	21.4	1.10	18	36	03	2.8 - 3.7

State R or L version

w see indexable inserts

Dimensions in mm

*D 56 = D_{max} of the subspindle

Further sizes upon request

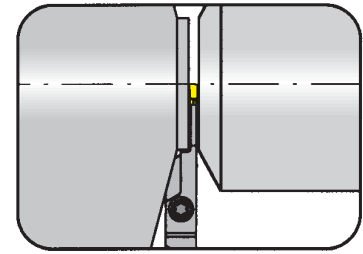
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH224.2608.8...	4.15T15P	T15PL

TOOLHOLDER Type

H224

reinforced version

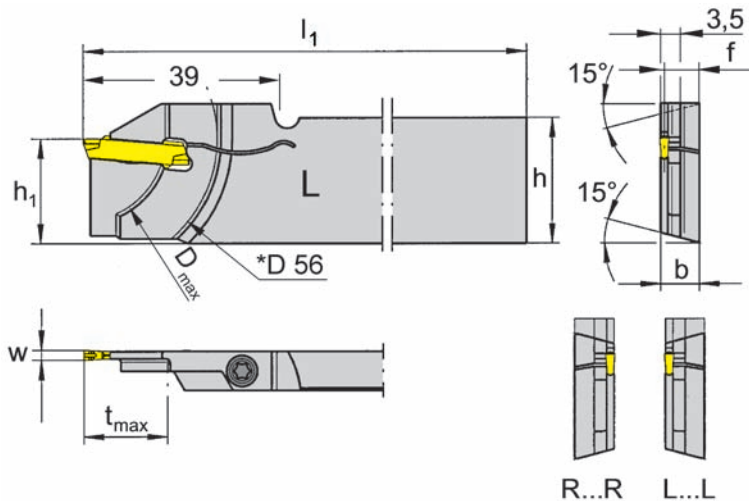


Depth of groove up to .827" (21.0 mm)
Clamping range up to .110" (2.8 mm)

for machines TRAUB (TNK28/TNK36/TNL26)

for use with Indexable insert

Type S224



L = left hand version shown

R = right hand version

Part number	h	b	l ₁	h ₁	f	t _{max}	D _{max}	Size	Clamping range
R/LH224.2608.81R/L	26	7.9	110	21.4	7.15	18	36	01	2.0 - 2.4
R/LH224.2608.82R/L	26	7.9	110	21.4	6.95	18	36	02	2.4 - 2.8
R/LH224.2608.83R/L	26	7.9	110	21.4	6.75	18	36	03	2.8 - 3.7
RH224.3208.83R	28	7.9	110	24.8	6.80	21	42		

State R or L version

w see indexable inserts

Dimensions in mm

*D 56 = D_{max} of the subspindle

* For specific clamping device on subspindle (e.g. HAINBUCH Axfixchuck)

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH224.2608.81R/L/82R/L/83R/L RH224.3208.83R	4.15T15P 5.13T20P	T15PL T20PQ



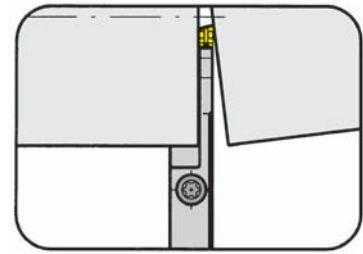
GROOVING and PARTING OFF (external)



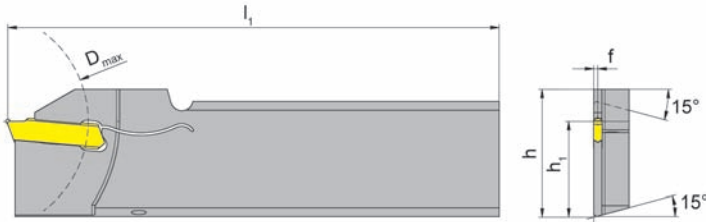
TOOLHOLDER Type

H224

reinforced version



Depth of groove up to .709" (18.0 mm)
Clamping range up to .146" (3.7 mm)



for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	t _{max}	D _{max}	Size	Clamping range
R/LH224.2608.01 R/LH224.3208.01	26 32	7.9	110	21.4 24.8	0.7	18	50	01	2.0 - 2.4
R/LH224.2608.02 R/LH224.3208.02	26 32	7.9	110	21.4 24.8	0.9	18	50	02	2.4 - 2.8
R/LH224.2608.03 R/LH224.3208.03	26 32	7.9	110	21.4 24.8	1.1	18	50	03	2.8 - 3.7

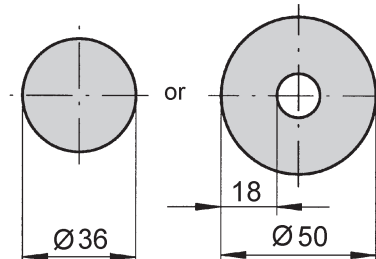
State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Parting off solid bars Parting off tubes



Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH224....	4.20T15P	T15PL

E20

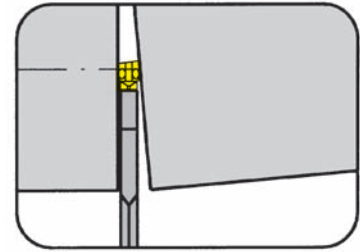
GROOVING and PARTING OFF (external)



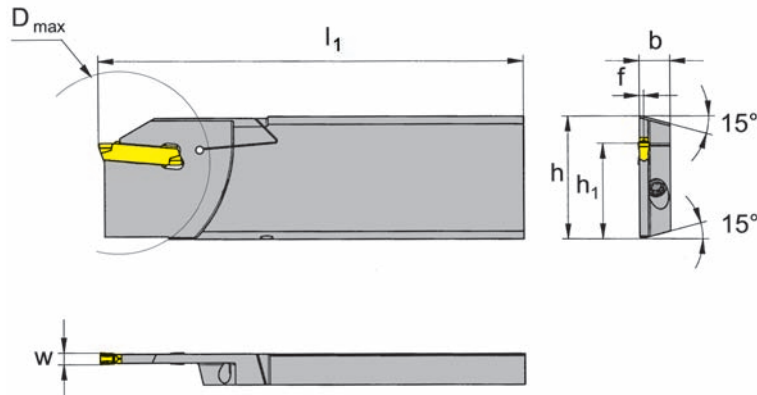
TOOLHOLDER Type

H224

with screwed clamping



Depth of groove up to .709" (18.0 mm)
Clamping range up to .146" (3.7 mm)



for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f	t_{max}	D_{max}	Size	Clamping range
R/LH224.3208.93	32	8	112	24.8	1.15	18	50	03	2.8 - 3.7

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench	Pin
R/LH224.3208.93	030.0413.T15P	T15PQ	020.0040.0999

HORN - THE LEADERS IN GROOVING TECHNOLOGY



ONE RESOURCE THAT WILL NEVER RUN DRY!

TOOLING SYSTEMS FOR THE OIL INDUSTRY: S117

- Extreme precision
- Optimal repeatability (≤ 0.005 mm)
- Extremely simple handling
- Patented reliability
- Certification according to API Q1



HORN - INTELLIGENT TOOL DESIGN AT WORK.



For further information, please contact HORN USA.

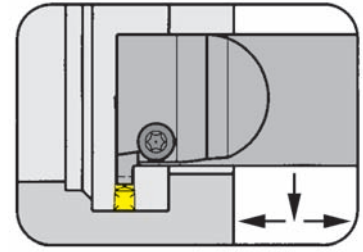
TOOLHOLDER Type

B224

Short reach

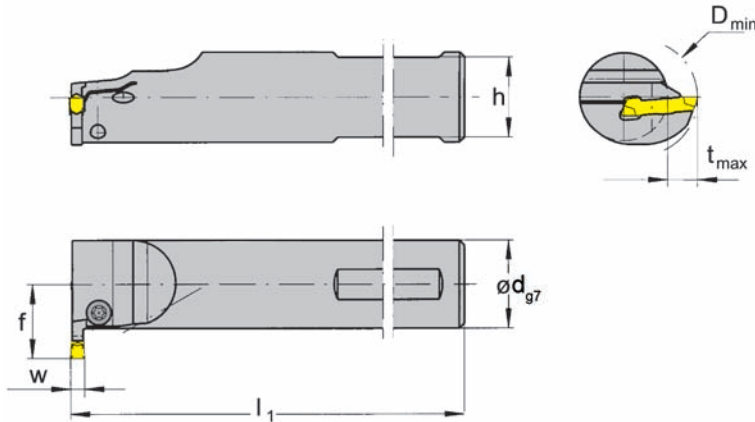
Bore \varnothing from 1.181" (30.0 mm)
 Depth of groove up to .315" (8.0 mm)
 Clamping range up to .240" (6.1 mm)

with through coolant supply



for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	D_{min}	t_{max}	d	h	l_1	f	Size	Clamping range
R/LB224.0020.0.01 R/LB224.0025.0.01	30 35	8	20 25	18 23	130	18.5 21.0	01	2.0 - 2.4
R/LB224.0020.0.02 R/LB224.0025.0.02	30 35	8	20 25	18 23	130	18.5 21.0	02	2.4 - 2.8
R/LB224.0020.0.03 R/LB224.0025.0.03 R/LB224.0032.0.03	30 35 42	8	20 25 32	18 23 30	130 130 150	18.5 21.0 24.5	03	2.8 - 3.7
R/LB224.0020.0.04 R/LB224.0025.0.04 R/LB224.0032.0.04	30 35 42	8	20 25 32	18 23 30	130 130 150	18.5 21.0 24.5	04	3.7 - 4.4
R/LB224.0020.0.05 R/LB224.0025.0.05 R/LB224.0032.0.05	30 35 42	8	20 25 32	18 23 30	130 130 150	18.5 21.0 24.5	05	4.4 - 5.1
R/LB224.0025.0.06 R/LB224.0032.0.06	35 42	8	25 32	23 30	130 150	21.0 24.5	06	5.1 - 6.1

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LB224.00...	5.13T20EP	T20PQ

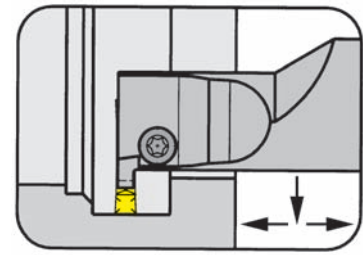
E

TOOLHOLDER Type

BU224

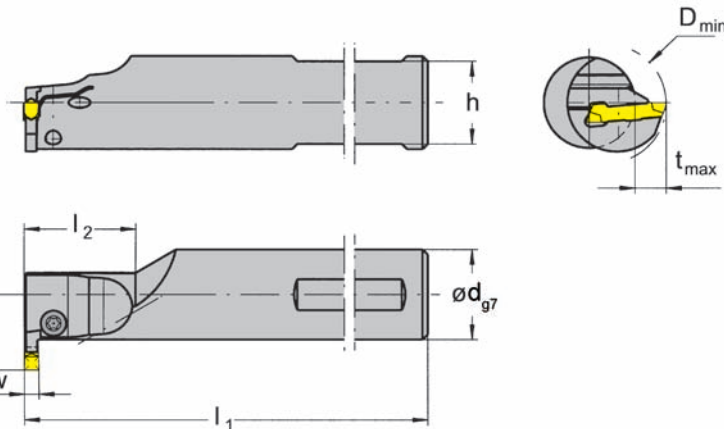
Bore Ø from	1.102"
Depth of groove up to	.315"
Clamping range up to	.240"

with through coolant supply



for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	D _{min}	t _{max}	d	h	l ₁	f	l ₂	Size	Clamping range
R/LBU224.0750.1.01 R/LBU224.1000.1.01	1.102	.315	.750 1.000	.671 .921	5.125	.728 .827	1.125	01	.079 - .094
R/LBU224.0750.1.02 R/LBU224.1000.1.02	1.102	.315	.750 1.000	.671 .921	5.125	.728 .827	1.125	02	.094 - .110
R/LBU224.0750.1.03 R/LBU224.1000.1.03 R/LBU224.1250.1.03	1.102	.315	.750 1.000 1.250	.671 .921 1.171	5.125 5.125 6.000	.728 .827 .964	1.125	03	.110 - .146
R/LBU224.0750.1.04 R/LBU224.1000.1.04 R/LBU224.1250.1.04	1.102	.315	.750 1.000 1.250	.671 .921 1.171	5.125 5.125 6.000	.728 .827 .964	1.125	04	.146 - .173
R/LBU224.0750.1.05 R/LBU224.1000.1.05	1.102	.315	1.000	.671 .921	5.125	.728 .827	1.125	05	.173 - .201
R/LBU224.1000.1.06	1.102	.315	1.000	.921	5.125	.827	1.125	06	.201 - .240

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

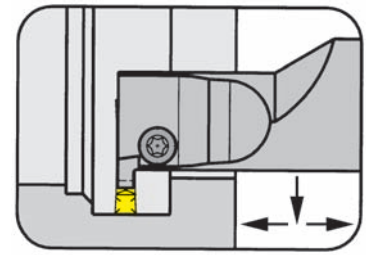
Toolholder	Screw	TORX PLUS® Wrench
R/LBU224....	5.13T20EP	T20PQ

TOOLHOLDER Type

B224

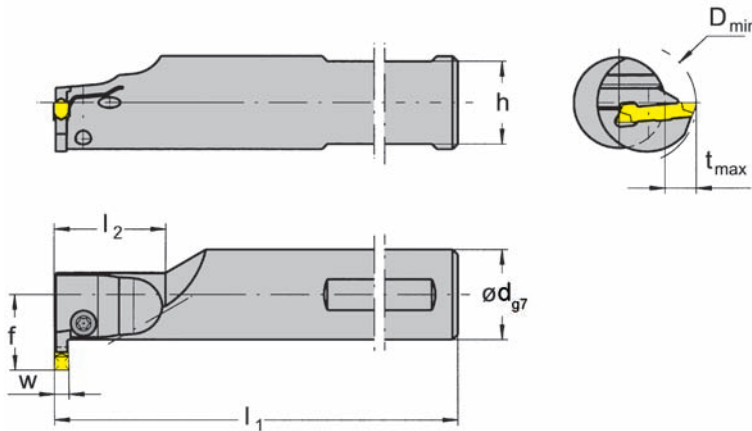
Bore \varnothing from 1.102" (28.0 mm)
 Depth of groove up to .315" (8.0 mm)
 Clamping range up to .240" (6.1 mm)

with through coolant supply



for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	D_{min}	t_{max}	d	h	l_1	f	l_2	Size	Clamping range
R/LB224.0020.1.01 R/LB224.0025.1.01	28	8	20 25	18 23	130	18.5 21.0	30	01	2.0 - 2.4
R/LB224.0020.1.02 R/LB224.0025.1.02	28	8	20 25	18 23	130	18.5 21.0	30	02	2.4 - 2.8
R/LB224.0020.1.03 R/LB224.0025.1.03 R/LB224.0032.1.03	28	8	20 25 32	18 23 30	130 130 150	18.5 21.0 24.5	30	03	2.8 - 3.7
R/LB224.0020.1.04 R/LB224.0025.1.04 R/LB224.0032.1.04	28	8	20 25 32	18 23 30	130 130 150	18.5 21.0 24.5	30	04	3.7 - 4.4
R/LB224.0025.1.05 R/LB224.0032.1.05	28	8	25 32	23 30	130 150	21.0 24.5	30	05	4.4 - 5.1
R/LB224.0025.1.06 R/LB224.0032.1.06	28	8	25 32	23 30	130 150	21.0 24.5	30	06	5.1 - 6.1

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LB224.00...	5.13T20EP	T20PQ

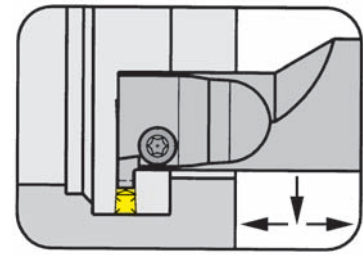


TOOLHOLDER Type

BU224

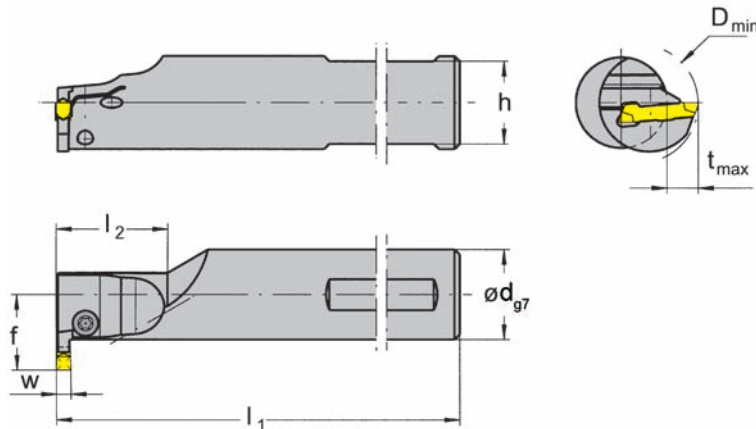
Bore Ø from	1.260"
Depth of groove up to	.512"
Clamping range up to	.240"

with through coolant supply



for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	D _{min}	t _{max}	d	h	l ₁	f	l ₂	Size	Clamping range
R/LBU224.1000.1.13	1.260	.393	1.000	.921	5.000	.925	1.125	03	.110 - .146
R/LBU224.1250.1.13		.433	1.250	1.171	6.000	1.102			
R/LBU224.1000.1.14	1.260	.393	1.000	.921	5.000	.925	1.125	04	.146 - .173
R/LBU224.1250.1.14		.433	1.250	1.171	6.000	1.102			
R/LBU224.1250.1.15	1.260	.433	1.250	1.171	6.000	1.102	1.125	05	.173 - .201
R/LBU224.1500.1.25		.512	1.500	1.421	7.000	1.338			
R/LBU224.1250.1.16	1.260	.433	1.250	1.171	6.000	1.102	1.125	06	.201 - .240
R/LBU224.1500.1.26		.512	1.500	1.421	7.000	1.338			

State R or L version

w see indexable inserts

Dimensions in inch

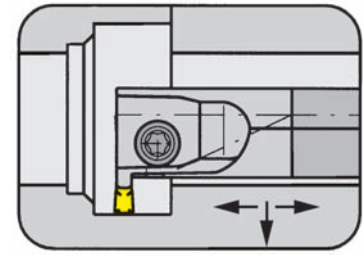
Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LBU224.1...	5.13T20EP	T20PQ

TOOLHOLDER Type

B224

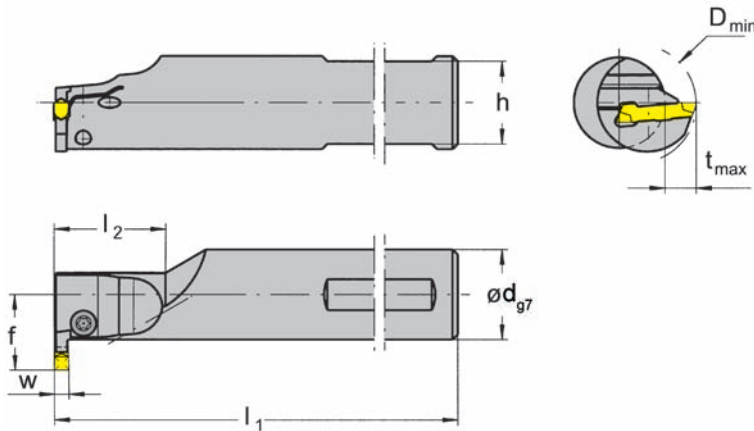


Bore \varnothing from 1.260" (32.0 mm)
 Depth of groove up to .512" (13.0 mm)
 Clamping range up to .240" (6.1 mm)

with through coolant supply

for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	D_{min}	t_{max}	d	h	l_1	f	l_2	Size	Clamping range
R/LB224.0025.1.13 R/LB224.0032.1.13	32	10 11	25 32	23 30	130 150	23.5 28.0	30	03	2.8 - 3.7
R/LB224.0025.1.14 R/LB224.0032.1.14	32	10 11	25 32	23 30	130 150	23.5 28.0	30	04	3.7 - 4.4
R/LB224.0032.1.15 R/LB224.0040.1.25	32 38	11 13	32 40	30 38	150 180	28.0 34.0	30	05	4.4 - 5.1
R/LB224.0032.1.16 R/LB224.0040.1.26	32 38	11 13	32 40	30 38	150 180	28.0 34.0	30	06	5.1 - 6.1

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LB224.00...	5.13T20EP	T20PQ



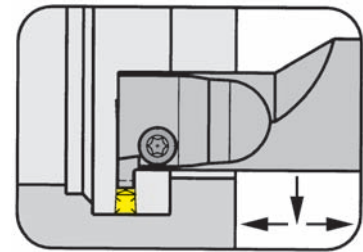
TOOLHOLDER Type

BU224

long reach

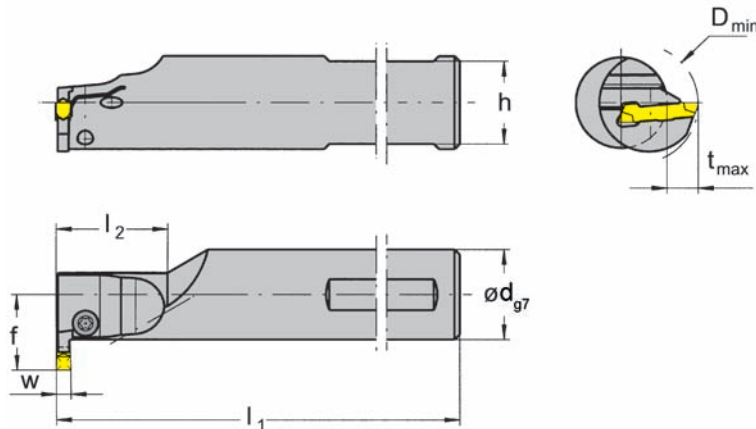
Bore Ø from	1.102"
Depth of groove up to	.433"
Clamping range up to	.173"

with through coolant supply



for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	D _{min}	t _{max}	d	h	l ₁	f	l ₂	Size	Clamping range
R/LBU224.0750.2.01 R/LBU224.1000.2.01	1.102	.315	.750 1.000	.671 .921	5.000 6.000	.728 .826	1.750 2.000	01	.079 - .094
R/LBU224.0750.2.02 R/LBU224.1000.2.02	1.102	.315	.750 1.000	.671 .921	5.000 6.000	.728 .826	1.750 2.000	02	.094 - .110
R/LBU224.1000.2.03 R/LBU224.1250.2.03 R/LBU224.1250.2.13	1.102 1.102 1.260	.315 .315 .433	1.000 1.250 1.250	.921 1.171 1.171	6.000 7.000 7.000	.826 .964 1.102	2.000	03	.110 - .146
R/LBU224.1000.2.04 R/LBU224.1250.2.04 R/LBU224.1250.2.14	1.102 1.102 1.260	.315 .315 .433	1.000 1.250 1.250	.921 1.171 1.171	6.000 7.000 7.000	.826 .964 1.102	2.000	04	.146 - .173

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

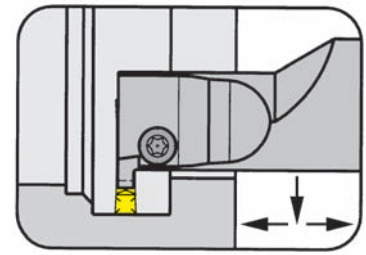
Toolholder	Screw	TORX PLUS® Wrench
R/LBU224....	5.13T20EP	T20PQ

TOOLHOLDER Type

B224

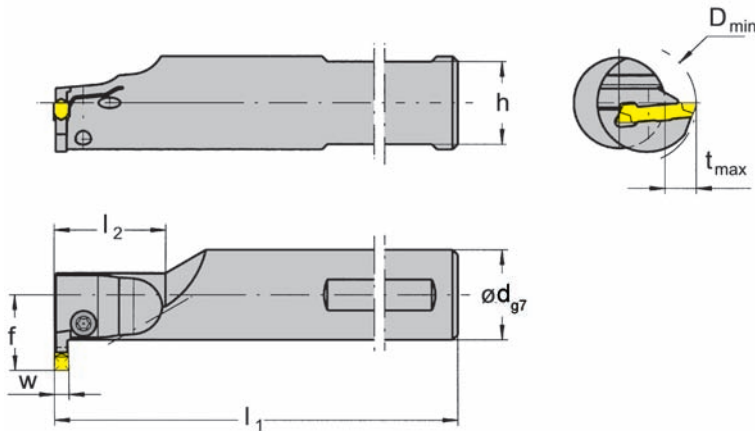
Bore Ø from	1.102" (28.0 mm)
Depth of groove up to	.433" (11.0 mm)
Clamping range up to	.173" (4.4 mm)

with through coolant supply



for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	D _{min}	t _{max}	d	h	l ₁	f	l ₂	Size	Clamping range
R/LB224.0020.2.01 R/LB224.0025.2.01	28	8	20 25	18 23	130 150	18.5 21.0	45 50	01	2.0 - 2.4
R/LB224.0020.2.02 R/LB224.0025.2.02	28	8	20 25	18 23	130 150	18.5 21.0	45 50	02	2.4 - 2.8
R/LB224.0025.2.03 R/LB224.0032.2.03 R/LB224.0032.2.13	28 28 32	8 8 11	25 32 32	23 30 30	150 180 180	21.0 24.5 28.0	50	03	2.8 - 3.7
R/LB224.0025.2.04 R/LB224.0032.2.04 R/LB224.0032.2.14	28 28 32	8 8 11	25 32 32	23 30 30	150 180 180	21.0 24.5 28.0	50	04	3.7 - 4.4

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LB224.00...	5.13T20EP	T20PQ



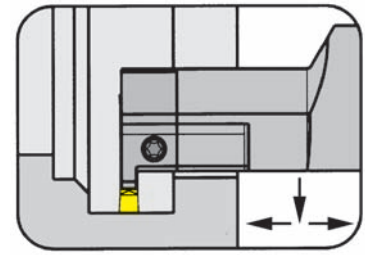
BASIC TOOLHOLDER Type

BU224

without cassette

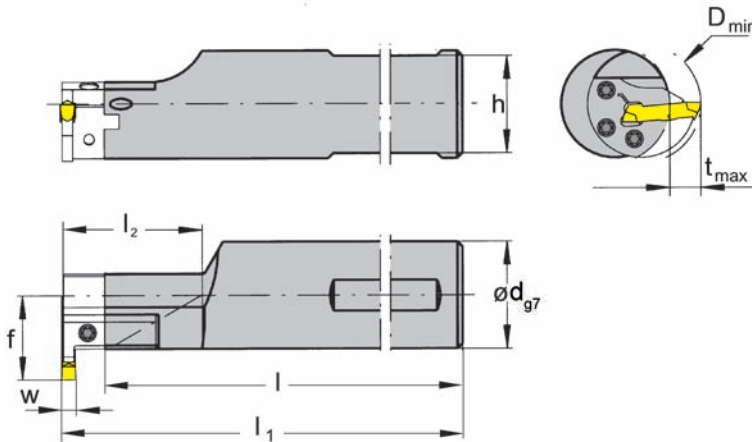
Bore Ø from	1.575"
Depth of groove up to	.433"
Width of groove up to	.240"

with through coolant supply



for use with Cassette

Type BK224



R = right hand version shown

L = left hand version

Part number	d	h	l_1	f	l_2	l
R/LBU224.1250.1.K2	1.250	1.171	$l+b_1+w/2$	1.102	1.181	5.461
R/LBU224.1250.2.K2						6.461
R/LBU224.1500.1.K2	1.500	1.421	$l+b_1+w/2$	1.260	1.181	6.461
R/LBU224.1500.2.K2						7.461

State R or L version

Dimensions in inch

Further sizes upon request

Note:

Dimensions for D_{min} , t_{max} , w and b_1 see cassettes

Spare parts

Basic toolholder	Screw	TORX PLUS® Wrench
R/LBU224.1...	030.0518.T20P	T20PQ

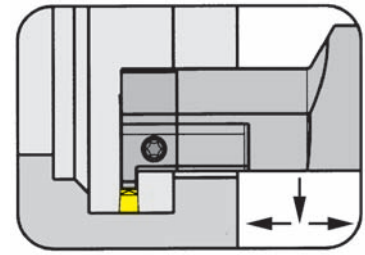
BASIC TOOLHOLDER Type

B224

without cassette

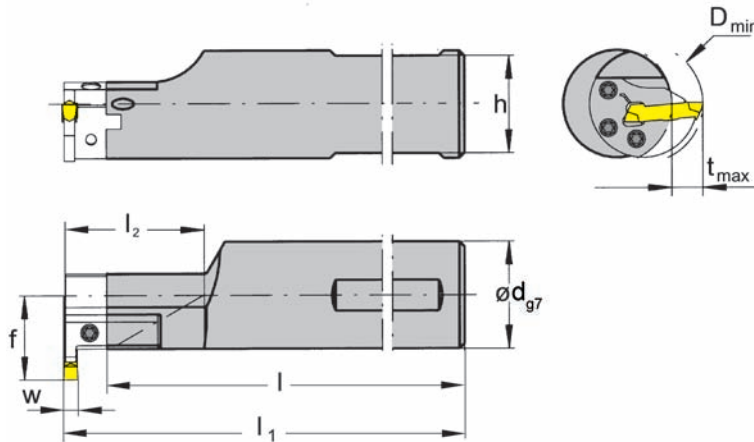
Bore \varnothing from 1.575" (40.0 mm)
 Depth of groove up to .433" (11.0 mm)
 Width of groove up to .240" (6.1 mm)

with through coolant supply



for use with Cassette

Type BK224



R = right hand version shown

L = left hand version

Part number	d	h	l_1	f	l_2	l
R/LB224.0032.1.K2	32	30	$l+b_1+w/2$	28	30	136.3
R/LB224.0032.2.K2					60	166.3
R/LB224.0040.1.K2	40	38	$l+b_1+w/2$	32	30	166.3
R/LB224.0040.2.K2					60	186.3

State R or L version

Dimensions in mm

Further sizes upon request

Note:

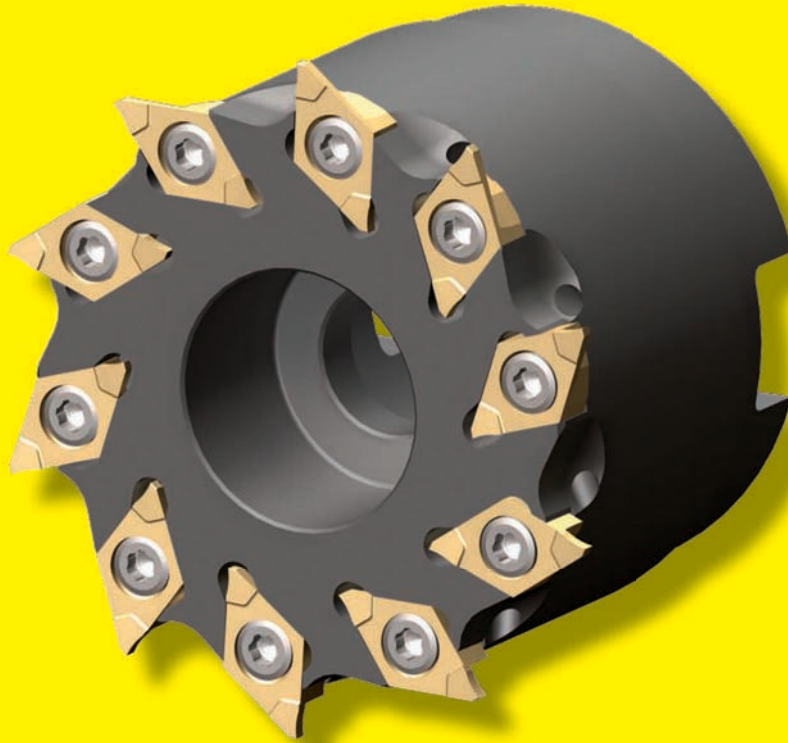
Dimensions for D_{min} , t_{max} , w and b_1 see cassettes

Spare parts

Basic toolholder	Screw	TORX PLUS® Wrench
R/LB224.00...	030.0518.T20P	T20PQ



HORN - THE LEADERS IN GROOVING TECHNOLOGY



GROOVE MILLING BY CIRCULAR INTERPOLATION

SYSTEM 275

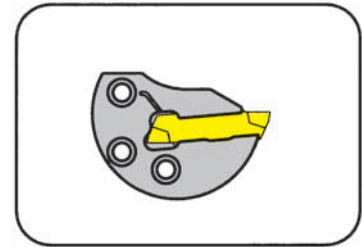
HORN - INTELLIGENT TOOL DESIGN AT WORK.



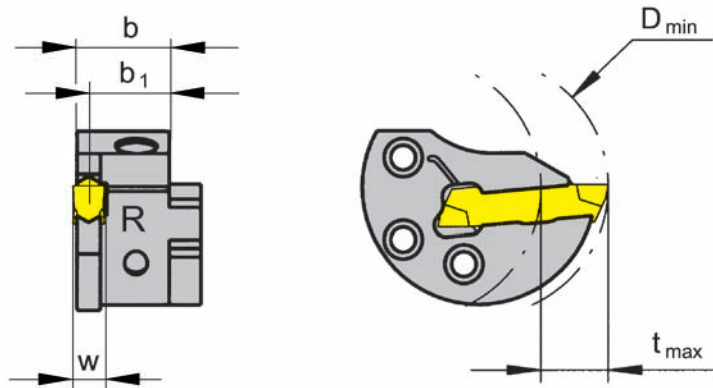
For further information, please see HORN catalog "CARBIDE MILLING TOOLS".

CASSETTE Type

BK224



Bore Ø from 1.575"
 Depth of groove up to .433"
 Clamping range .079 - .240"



for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	b ₁	b	D _{min}	t _{max}	Size	Clamping range
R/LBK224.0040.01	.500	.528	1.575	.433	01	.079 - .094
R/LBK224.0040.02	.490	.526	1.575	.433	02	.094 - .110
R/LBK224.0040.03	.480	.524	1.575	.433	03	.110 - .146
R/LBK224.0040.04	.461	.518	1.575	.433	04	.146 - .173
R/LBK224.0040.05	.441	.514	1.575	.433	05	.173 - .201
R/LBK224.0040.06	.421	.510	1.575	.433	06	.201 - .240

State R or L version

w see indexable inserts

Dimensions in inch

Use right hand cassettes in right hand basic toolholders and left hand cassettes in left hand basic toolholders.

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

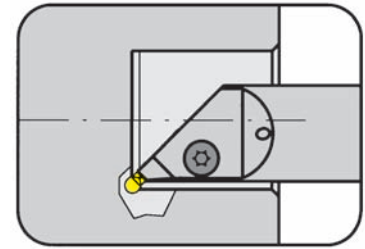
Cassette	Screw	TORX PLUS® Wrench
R/LBK224.0040.0...	5.13T20EP	T20PQ

GROOVING CORNER RELIEFS (internal)



TOOLHOLDER Type

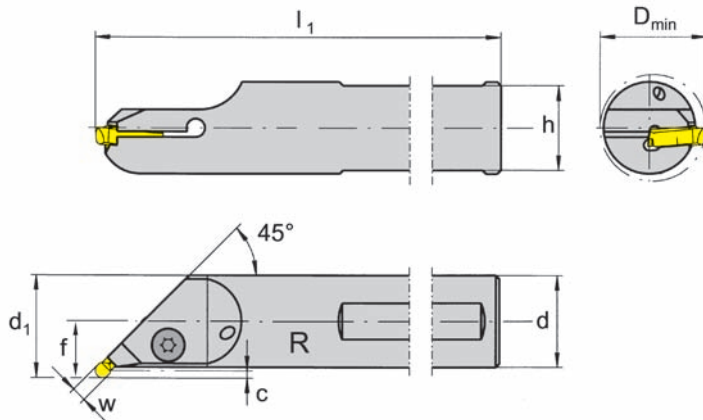
B224



Clamping range up to .240" (6.1 mm)

for use with Indexable insert

Type S224...K



R = right hand version shown

L = left hand version

only for full radius inserts
S224...K

Part number	d	h	l ₁	f	d ₁	c	D _{min}	Clamping range
R/LB224.4520.0.02	20	18	130	13.0	23.0		25.0	2.0 - 2.8
R/LB224.4525.0.02	25	23	150	15.5	28.0	2.5	29.0	
R/LB224.4532.0.02	32	30	150	19.0	35.0		36.0	
R/LB224.4540.1.02	40	38	200	23.0	43.0		44.0	
R/LB224.4540.1.04	40	38	200	23.0	43.0		44.0	2.8 - 4.4
R/LB224.4520.0.04	20	18	130	13.0	23.0	2.5	25.0	
R/LB224.4525.0.04	25	23	150	15.5	28.0		29.0	
R/LB224.4532.0.04	32	30	150	19.0	35.0		36.0	
R/LB224.4520.0.06	20	18	130	13.5	23.5		25.0	4.4 - 6.1
R/LB224.4525.0.06	25	23	150	16.0	28.5	3.0	29.5	
R/LB224.4532.0.06	32	30	150	19.0	35.5		36.5	

State R or L version

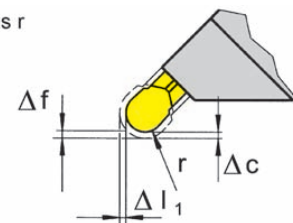
w see indexable inserts

Dimensions in mm

Further sizes upon request

Revision factor Δl_1 , Δc and Δf in relation to radius r

r	Δl_1	Δc	Δf
3,0	0	0	0
2,5	-0,146	-0,146	-0,146
2,0	0	0	0
1,5	-0,146	-0,146	-0,146
1,0	0	0	0



Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LB224.45...	6.14T25P	T25PQ

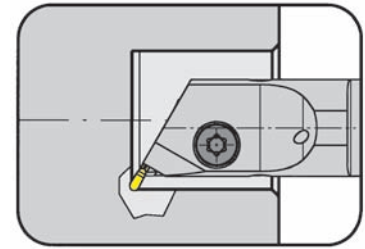
E34

GROOVING CORNER RELIEFS (internal)



TOOLHOLDER Type

B224

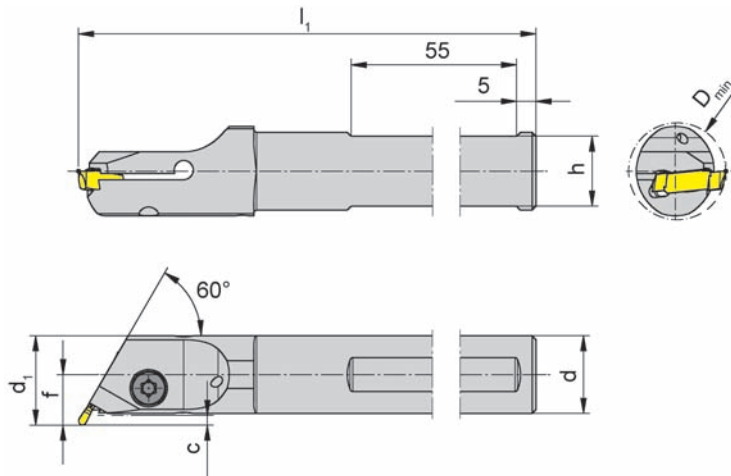


Clamping range up to

.240" (6.1 mm)

for use with Indexable insert

Type S224...K



R = right hand version shown

L = left hand version

only for full radius inserts
S224...K

Part number	d	h	l_1	f	d_1	c	D_{min}	Size	Clamping range
R/LB224.6020.0.02	20	18	150	13.0	23.0	2.5	25.0	02	2.0 - 2.8
R/LB224.6025.0.02	25	23		15.5	28.0		29.0		
R/LB224.6032.0.02	32	30		19.0	35.0		36.0		
R/LB224.6020.0.04	20	18	150	13.0	23.0	2.5	25.0	04	2.8 - 4.4
R/LB224.6025.0.04	25	23		15.5	28.0		29.0		
R/LB224.6032.0.04	32	30		19.0	35.0		36.0		
R/LB224.6020.0.06	20	18	150	13.5	23.5	3.0	25.0	06	4.4 - 6.1
R/LB224.6025.0.06	25	23		16.0	28.5		29.5		
R/LB224.6032.0.06	32	30		19.5	35.5		36.5		

State R or L version

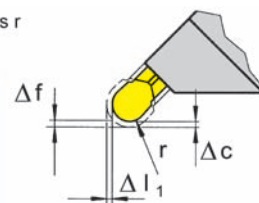
w see indexable inserts

Dimensions in mm

Further sizes upon request

Revision factor Δl_1 , Δc and Δf in relation to radius r

r	Δl_1	Δc	Δf
3,0	0	0	0
2,5	-0,25	-0,067	-0,067
2,0	0	0	0
1,5	-0,25	-0,067	-0,067
1,0	0	0	0



Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LB224.60...	6.14T25P	T25PQ



INDEXABLE INSERT Type

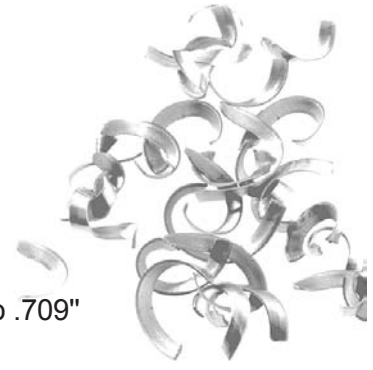
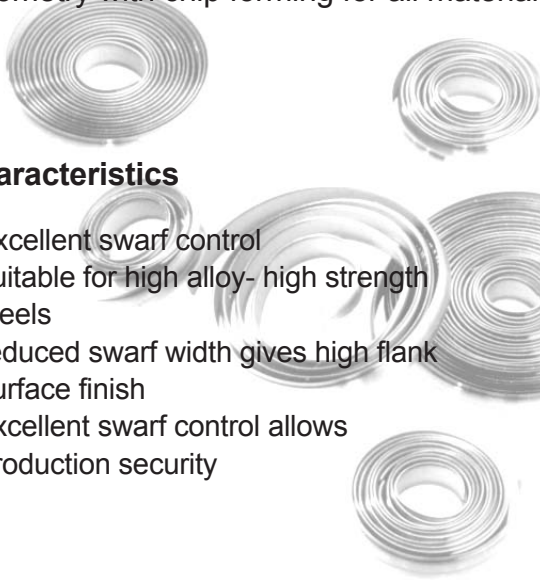
S224...3.

precision sintered



Geometry .3.

Geometry with chip forming for all materials.



Characteristics

- excellent swarf control
- suitable for high alloy- high strength steels
- reduced swarf width gives high flank surface finish
- excellent swarf control allows production security

Applications

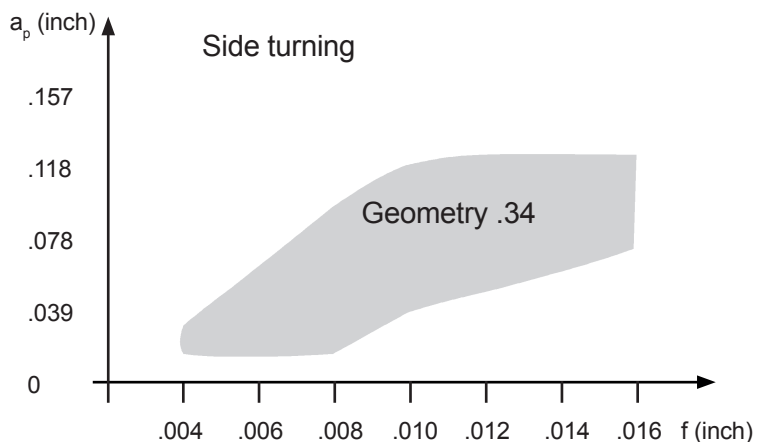
- Grooving: Depth of groove up to .709"
- Side turning: depth of cut a_p up to .118"

Feed rate f

- Grooving: f .006 up to .010 in/rev.*
- Side turning: f up to .016 in/rev.*

* dependent upon width of insert

Indexable inserts with profiles, intermediate sizes or other edge radii are available upon request. Indexable inserts can be used in **right and left hand** toolholders.

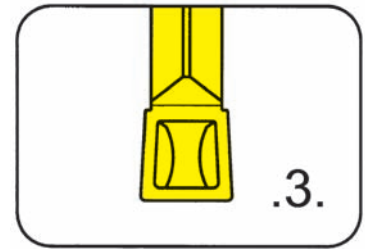


Chip control graph S224.0500.34 material 16MnCr5

INDEXABLE INSERT Type

S224

with chip former

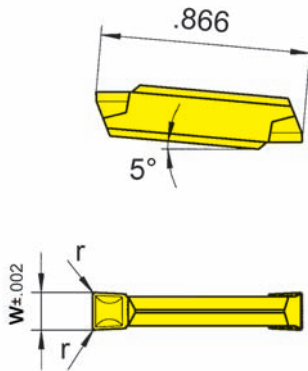


Depth of groove up to	.709"
Width of groove	.118 - .236"

precision sintered

for use with Toolholder

- Type B224
BK224
BU224
HU224
H224



Indexability length
± .002"

Part number	w	r	Size	TN32	TN35	T122	T125	TF45	TC92	AS62	AS66	AL96
				S224.0300.32 S224.0300.34	.118	.008 .016	03	▲ ▲	▲ ▲	▲ ▲	▲ ▲	▲ ▲
S224.0400.32 S224.0400.34	.157	.008 .016	04	▲ ▲	▲ ▲	▲ ▲	▲ ▲	▲ ▲	▲ ▲	▲ ▲	▲ ▲	▲ ▲
S224.0500.34 S224.0500.38	.197	.016 .031	05	▲ ▲	▲ ▲	▲ ▲	▲ ▲	▲ ▲	▲ ▲	▲ ▲	▲ ▲	▲ ▲
S224.0600.34 S224.0600.38	.236	.016 .031	06	▲ ▲	▲ ▲	▲ ▲	▲ ▲	▲ ▲	▲ ▲	▲ ▲	▲ ▲	▲ ▲
▲ on stock △ 4 weeks				P	●	●	●	●	●	●	●	●
● main recommendation				M	●	●	●	●	●	○	○	○
○ alternative recommendation				K	●	●	●	●	●	●	●	●
■ uncoated grades				S	●	●	●	●	●	○	○	○
■ coated grades				N	●	●	●	●	●	●	●	●
■ brazed/Cermet				H								

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.



INDEXABLE INSERT Type

S224...5.

precision sintered



Geometry .5.

Easy cutting geometry for materials with medium strength.

E

Characteristics

- excellent swarf on a wide feed range
- easy cutting - low power requirement
- reduced swarf width gives high flank surface finish
- excellent swarf control allows production security

Applications

- Grooving: Depth of groove up to .709"
- Side turning: depth of cut a_p up to .118"

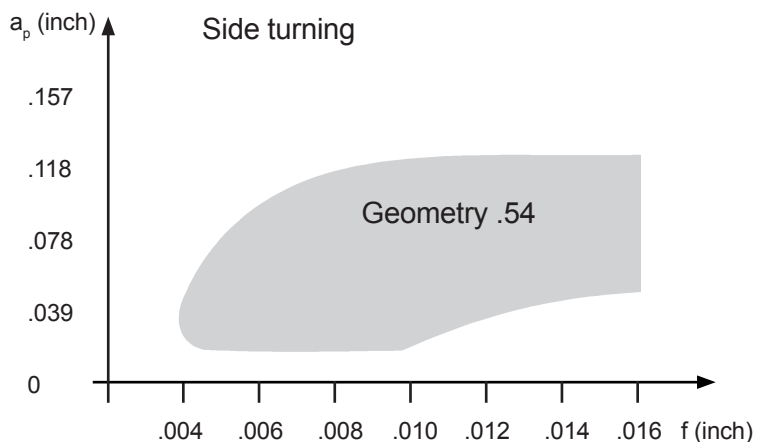


Feed rate f

- Grooving: f .006 up to .018 in/rev.*
- Side turning: f up to .024 in/rev.*

* dependent upon width of insert

Indexable inserts with profiles, intermediate sizes or other edge radii are available upon request. Indexable inserts can be used in **right and left hand** toolholders.

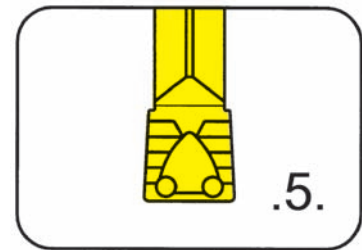


Chip control graph S224.0500.54 material 16MnCr5

INDEXABLE INSERT Type

S224

with chip forming

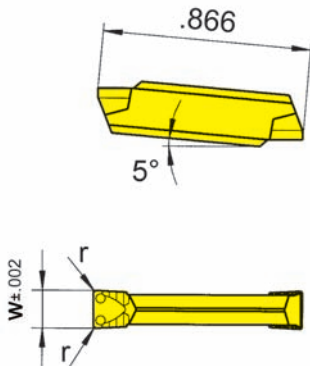


Depth of groove up to	.709"
Width of groove	.118 - .236"

precision sintered

for use with Toolholder

- Type
- B224
 - BK224
 - BU224
 - H224
 - HU224



Indexability length
± .002"

Part number	w	r	Size	Carbide grades							
				K10	TN32	TN35	TI25	TF45	TC92	AL96	
S224.0300.52	.118	.008	03		▲	▲	▲	▲	▲	▲	
S224.0300.54		.016			▲	▲	▲	▲	▲	▲	▲
S224.0400.52	.157	.008	04		▲	▲	▲	▲	▲	▲	▲
S224.0400.54		.016			▲	▲	▲	▲	▲	▲	▲
S224.0500.54	.197	.016	05		▲	▲	▲	▲	▲	▲	▲
S224.0500.58		.031				▲	▲	▲	▲	▲	▲
S224.0600.54	.236	.016	06			▲	▲	▲	▲	▲	
S224.0600.58		.031						▲			
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P	●	●	●	●	●	●	●
				M	●	●	●	●	●	●	●
				K	●	●	●	●	●	●	●
				S	●	●	●	●	●	●	●
				N	●	●	●	●	●	●	●
				H	●	●	●	●	●	●	●

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

S224...A.

precision sintered



Geometry .A.

Geometry with excellent chip breaking for materials with medium strength

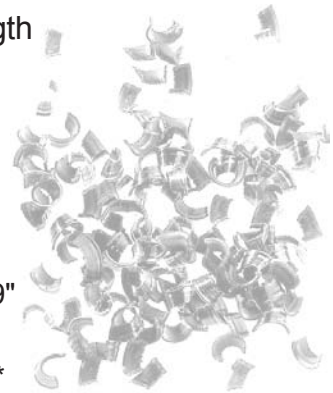
E

Characteristics

- excellent swarf on a wide feed range
- excellent swarf control, also by partial cutting
- reduced swarf width gives high flank surface finish
- excellent swarf control allows production security

Applications

- Grooving: Depth of groove up to .709"
- Side turning: depth of cut a_p up to .098"*

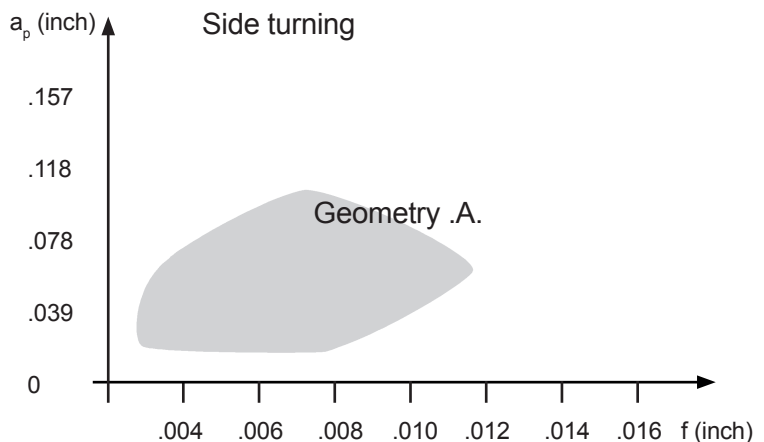


Feed rate f

- Grooving: up to .012"/rev.*
- Side turning: up to .012"/rev.*

* dependent upon width of insert

Indexable inserts with profiles, intermediate sizes or other edge radii are available upon request. Indexable inserts can be used in **right and left hand** toolholders.

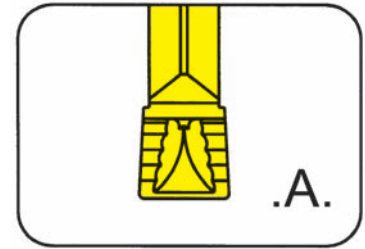


Chip control graph S224.0500.A4 material 16MnCr5

INDEXABLE INSERT Type

S224

with chip forming

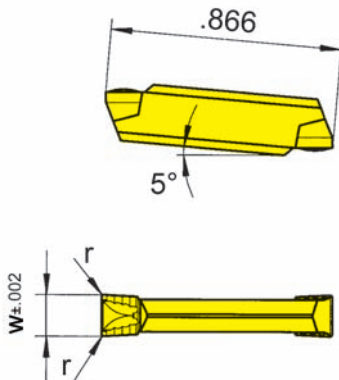


Depth of groove up to	.709"
Width of groove	.118 - .236"

precision sintered

for use with Toolholder

- Type
- B224
 - B224
 - BK224
 - BU224
 - H224
 - HU224



Indexability length
± .002"

Part number	w	r	Size	Carbide grades								
				K10	TN32	TN35	T122	T125	TF45	TC92	AL96	
S224.0300.A2	.118	.008	03		▲	▲	▲	▲	▲	▲	▲	▲
S224.0300.A4		.016			▲	▲	▲	▲	▲	▲	▲	▲
S224.0400.A2	.157	.008	04		▲	▲		▲	▲	▲		
S224.0400.A4		.016			▲	▲		▲	▲	▲	▲	
S224.0500.A4	.197	.016	05		▲	▲	▲	▲	▲	▲	▲	
S224.0500.A8		.031			▲	▲		▲	▲	▲	▲	
S224.0600.A4	.236	.016	06		▲	▲		▲				
S224.0600.A8		.031			▲	▲		▲				
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P	●	●	●	●	●	●	●	●
				M	●	●	●	●	●	●	●	●
				K	●	●	●	●	●	●	●	●
				S	●	●	●	●	●	●	●	●
				N	●	●	●	●	●	●	●	●
				H								

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.



INDEXABLE INSERT Type

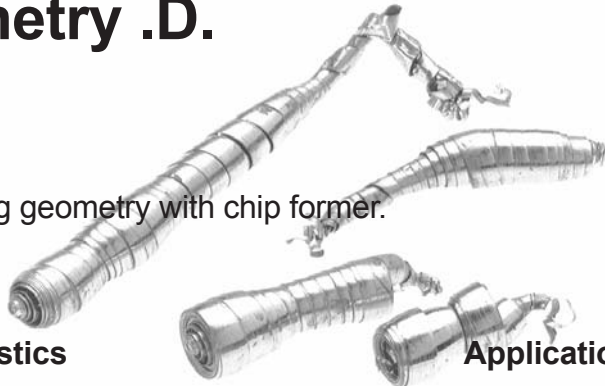
S224...D.

precision sintered



Geometry .D.

Easy cutting geometry with chip former.



E

Characteristics

- mainly used for internal grooving
- very positive geometry
- reduced swarf width gives high flank surface finish
- reduced swarf even at low feedrate



Applications

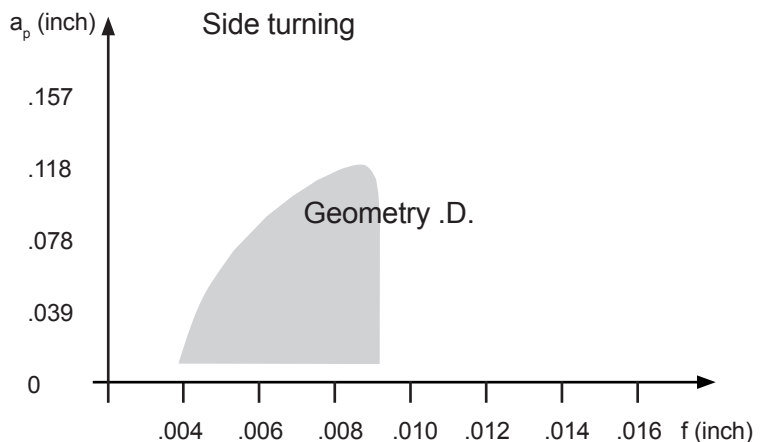
- Grooving: Depth of groove up to .709"
- Side turning: depth of cut a_p up to .118" *

Feed rate f

- Grooving: up to .006"/rev.*
- Side turning: up to .008"/rev.*

* dependent upon width of insert

Indexable inserts with profiles, intermediate sizes or other edge radii are available upon request. Indexable inserts can be used in **right and left hand** toolholders.

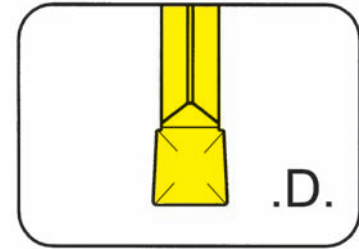


Chip control graph S224.0300.D2 material 16MnCr5

INDEXABLE INSERT Type

S224

with chip forming

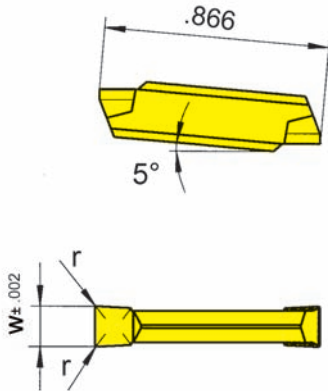


Depth of groove up to	.709"
Width of groove	.079 - .157"

D2 precision sintered / D2.G precision ground

for use with Toolholder

- Type
- B224
 - BK224
 - BU224
 - H224
 - HU224



Indexability length
± .002"

Part number	w	r	Size	Carbide grades									
				K10	H54	TN32	TN35	T122	T125	TF45	TF46	TC92	
S224.0200.D2.G S224.0200.D2	.079	.008	01		▲	▲	▲	▲	▲	▲	▲	▲	
S224.0250.D2.G S224.0250.D2	.098	.008	02			▲	▲	▲	▲	▲	▲	▲	
S224.0300.D2.G S224.0300.D2	.118	.008	03		▲	▲	▲	▲	▲	▲	▲	▲	
S224.0400.D2.G S224.0400.D2	.157	.008	04			▲	▲	▲	▲	▲	▲	▲	
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P	●	●	●	●	●	●	●	●	
				M	●		●	●	●	●	○		
				K			●	●	●	●	●		
				S			●	●	●	○			
				N			●	●	●	●			
				H									

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.



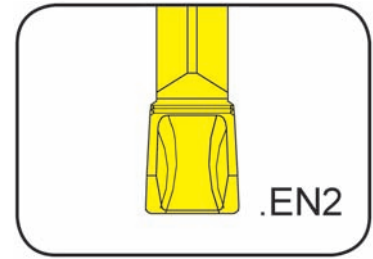
GROOVING and PARTING OFF



INDEXABLE INSERT Type

S224

with chip former

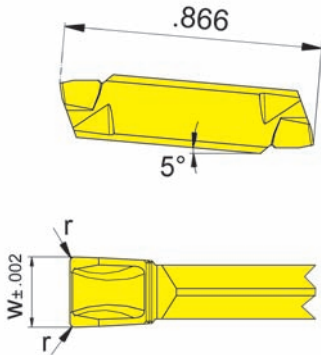


Depth of groove up to	.709"
Width of groove	.079 - .118"

precision sintered

for use with Toolholder

- Type
- B224
 - BK224
 - BU224
 - H224
 - HU224



Indexability length
± .002"

Part number	w	r	Size	Carbide grades				
				MG12	TN35	TI22	TI25	AS62
S224.0200.EN2	.079	.008	01					▲
S224.0250.EN2	.098	.008	02					▲
S224.0300.EN2	.118	.008	03					▲
				P				●
				M				
				K				
				S				
				N				
				H				

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Further sizes upon request

Indexable inserts can be used in **right and left hand** toolholders.

E

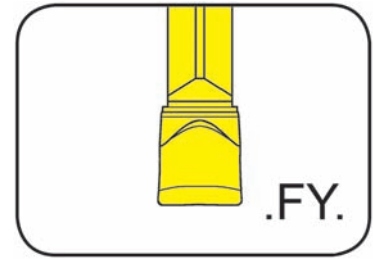
GROOVING and PARTING OFF



INDEXABLE INSERT Type

S224

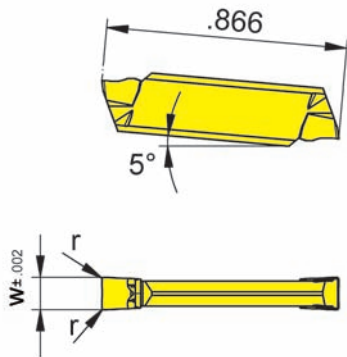
with chip forming



Depth of groove up to	.709"
Width of groove	.079 - .118"

for use with Toolholder

- Type
- B224
 - BK224
 - BU224
 - H224
 - HU224



Indexability length
± .002"



Part number	w	r	Size	Carbide grades			
				TN32	TI25	TF45	AS45
S224.0200.FY2	.079	.008	01		▲		
S224.0250.FY2	.098	.008	02		▲		
S224.0300.FY2	.118	.008	03		▲		
				P	•		
				M	•		
				K	•		
				S	•		
				N	•		
				H			

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

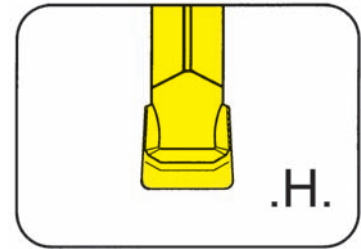
Dimensions in inch

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

S224

with chip breaker

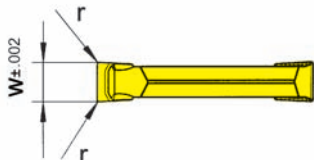
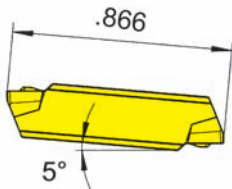


Depth of groove up to	.709"
Width of groove	.118 - .236"

precision sintered

for use with Toolholder

- Type
- B224
 - BK224
 - BU224
 - H224
 - HU224



Indexability length
± .002"

Part number	w	r	Size	Carbide grades					
				TN35	T125	TF42	TF45	TC92	AL96
S224.0300.H4	.118	.016	03			▲			▲
S224.0400.H4	.157	.016	04			▲			▲
S224.0500.H6	.197	.024	05			▲			▲
S224.0500.H8		.031					▲		▲
S224.0600.H6	.236	.024	06			▲			▲
S224.0600.H8		.031					▲		▲
▲ on stock Δ 4 weeks				P		•			•
● main recommendation				M					
○ alternative recommendation				K					•
■ uncoated grades				S					
■ coated grades				N					•
■ brazed/Cermet				H					

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

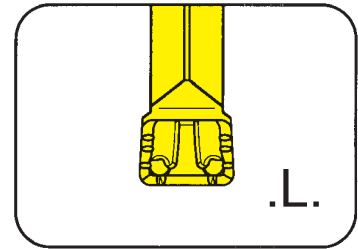
Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

S224

with chip forming

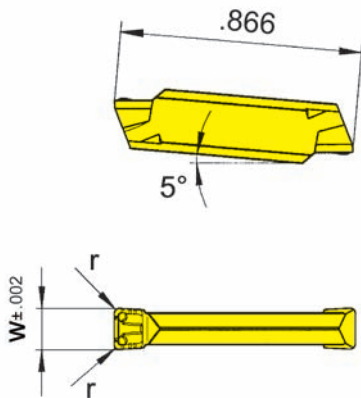


Depth of groove up to	.709"
Width of groove	.157 - .236"

precision sintered

for use with Cassette

- Type
- B224
 - BK224
 - BU224
 - H224
 - HU224



Indexability length
± .002"

Part number	w	r	Size	Carbide grades		
				Ti22	TF42	AL96
S224.0400.L4	.157	.016	04	▲	▲	▲
S224.0500.L4	.197	.016	05	▲	▲	▲
S224.0500.L6		.024		▲	▲	▲
S224.0600.L4	.236	.016	06	▲	▲	▲
S224.0600.L6		.024		▲	▲	▲
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P	●	●
				M	■	■
				K	■	●
				S	■	■
				N	■	●
				H	■	■

Dimensions in inch

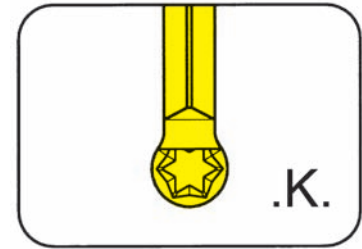
Indexable inserts can be used in **right and left hand** toolholders.



INDEXABLE INSERT Type

S224

with chip forming

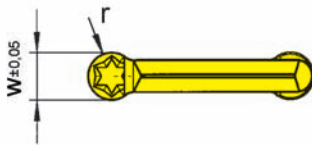
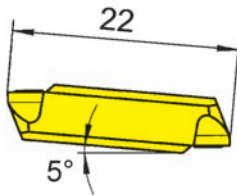


Depth of groove up to	.709"
Width of groove	.079 - .236"
Full radius	.039 - .118"

precision sintered

for use with Toolholder

Type B224
BK224
BU224
H224
HU224



Indexability length
± .002"

Part number	w	r	Size	Carbide grades										
				P20	TN32	TN35	T122	T125	TF42	TC92	AS62	AS66	AL96	
S224.0010.K2	.079	.039	01							▲		▲	▲	
S224.0015.K3	.118	.059	03		▲					▲	▲	▲	▲	▲
S224.0020.K4	.157	.079	04		▲					▲	▲	▲	▲	▲
S224.0025.K5	.197	.098	05		▲					▲	▲	▲	▲	▲
S224.0030.K6	.236	.118	06									▲	▲	
				P	•					•	•	•	•	•
				M									o	
				K									•	•
				S									o	
				N									•	•
				H										

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Carbide grades

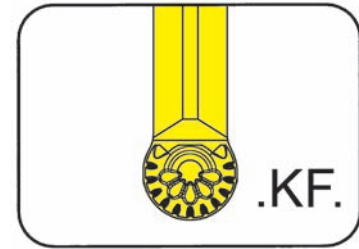
Indexable inserts can be used in **right and left hand** toolholders.

D_{min} for corner reliefs with toolholder 45°

t _{max}	S224.0010.K2	S224.0015.K3	S224.0020.K4	S224.0025.K5	S224.0030.K6
.0080" (0.5 mm)	Ø 1.339" (34 mm)	Ø 1.024" (26 mm)	Ø .866" (22 mm)	Ø .826" (21 mm)	Ø .551" (14 mm)
.039" (1.0 mm)	Ø 2.126" (54 mm)	Ø 1.417" (36 mm)	Ø 1.024" (26 mm)	Ø .866" (22 mm)	Ø .709" (18 mm)
.059" (1.5 mm)	Ø 2.126" (54 mm)	Ø 1.417" (36 mm)	Ø 1.024" (26 mm)	Ø .866" (22 mm)	Ø .709" (18 mm)
.079" (2.0 mm)	Ø 2.165" (55 mm)	Ø 1.417" (36 mm)	Ø 1.024" (26 mm)	Ø .866" (22 mm)	Ø .709" (18 mm)
.098" (2.5 mm)	Ø 2.205" (56 mm)	Ø 1.417" (36 mm)	Ø 1.024" (26 mm)	Ø .866" (22 mm)	Ø .709" (18 mm)
.118" (3.0 mm)	-	-	-	Ø .866" (22 mm)	Ø .709" (18 mm)

INDEXABLE INSERT Type

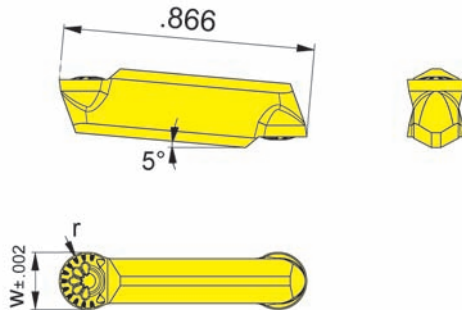
S224



Depth of groove up to	.709"
Width of groove	.118 - .236"
Full radius	.059 - .118"

for use with Toolholder

- Type
- B224
 - BK224
 - BU224
 - H224
 - HU224



Indexability length
± .002"

Part number	W	r	Size	Carbide grades								
				P20	H54	TN32	TN35	TI25	TA42	AS62	AS66	
S224.0015.KF3	.118	.059	03									▲
S224.0020.KF4	.157	.079	04									▲
S224.0025.KF5	.197	.098	05									▲
S224.0030.KF6	.236	.118	06									▲
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P								●
				M								○
				K								●
				S								○
				N								●
				H								

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

D_{min} for corner reliefs with toolholder 45°

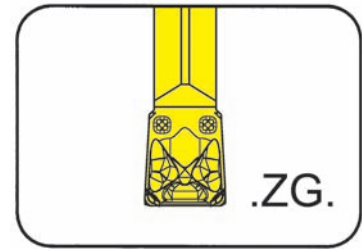
t _{max}	S224.0015.KF3	S224.0020.KF4	S224.0025.KF5	S224.0030.KF6
.0080" (0.5 mm)	Ø 1.024" (26 mm)	Ø .866" (22 mm)	Ø .826" (21 mm)	Ø .551" (14 mm)
.039" (1.0 mm)	Ø 1.417" (36 mm)	Ø 1.024" (26 mm)	Ø .866" (22 mm)	Ø .709" (18 mm)
.059" (1.5 mm)	Ø 1.417" (36 mm)	Ø 1.024" (26 mm)	Ø .866" (22 mm)	Ø .709" (18 mm)
.079" (2.0 mm)	Ø 1.417" (36 mm)	Ø 1.024" (26 mm)	Ø .866" (22 mm)	Ø .709" (18 mm)
.098" (2.5 mm)	Ø 1.417" (36 mm)	Ø 1.024" (26 mm)	Ø .866" (22 mm)	Ø .709" (18 mm)
.118" (3.0 mm)	-	-	Ø .866" (22 mm)	Ø .709" (18 mm)



INDEXABLE INSERT Type

S224

with chip forming

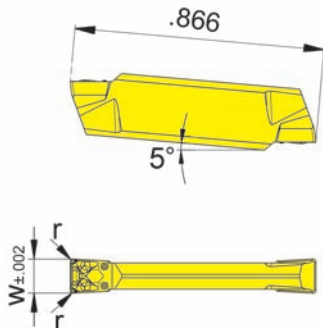


Depth of groove up to	.709"
Width of groove	.118"

ZG precision ground

for use with Toolholder

Type B224
BK224
BU224
H224
HU224



Indexability length
± .002"

Part number	w	r	Size	ALXT
S224.0300.ZG2	.118	.008	03	▲
				●
				○
				■
				■
				■
				■

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

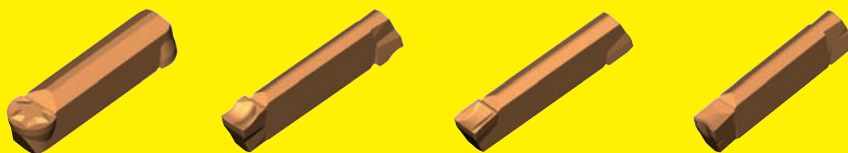
Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

E

CUTTER BODY H224

- with screwed clamping
- reinforced version
- width of groove .118" (3.0 mm)



E

INDEXABLE INSERT Type

S224...C.

precision sintered



Geometry .C.

Geometry for parting off.

E

Characteristics

- excellent swarf control on the recommended feed range
- reduced swarf width gives high flank surface finish
- excellent swarf control allows production security

Applications

- Grooving and parting off:
Depth of groove up to .709"

Feed rate f

- Parting off: .0008 up to .0039"/rev.



Please note:

The recommended feedrate has to be reduced by 20-50% with right or left hand inserts. Best tool life and surfaces will be obtained with neutral inserts. Reduce the feed rate before parting off when machining solid bars.

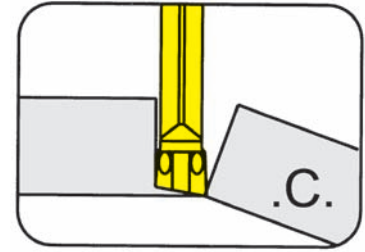
GROOVING and PARTING OFF



INDEXABLE INSERT Type

S224

with chip forming

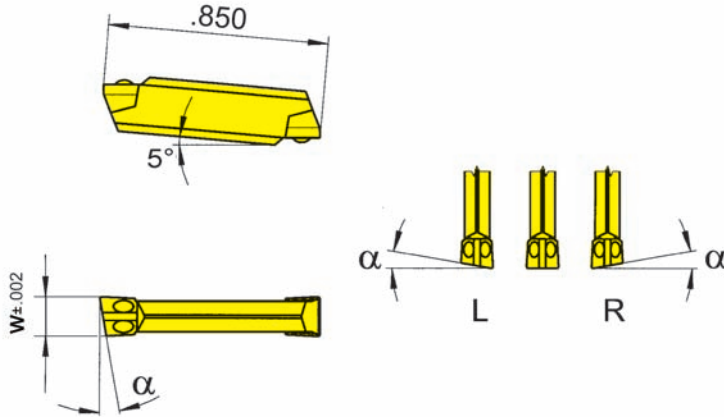


Depth of groove up to .709"
Width of groove .079 - .118"

precision sintered

for use with Toolholder

Type B224
BK224
BU224
H224
HU224



Indexability length
± .002"

Part number	w	α	Size	TN35	T125	TF45	TC92
S224.0020.C0	.079	0°	01	▲	▲	▲	
R/LS224.1520.C0		15°		▲/▲		▲/▲	Δ/Δ
R/LS224.0520.C0		5°		▲/▲		▲/▲	
R/LS224.0820.C0		8°		▲/▲		▲/▲	
S224.0025.C0	.098	0°	02	▲	▲	▲	
R/LS224.0525.C0		5°		▲/▲	▲/	▲/Δ	
R/LS224.0825.C0		8°		▲/▲		Δ/	
S224.0030.C0	.118	0°	03	▲	▲	▲	
R/LS224.0530.C0		5°		▲/▲		▲/▲	▲/Δ
R/LS224.0830.C0		8°		▲/▲		▲/Δ	
▲ on stock Δ 4 weeks				P	•	•	•
● main recommendation				M	•	•	•
○ alternative recommendation				K	•	•	•
■ uncoated grades				S	•	•	•
■ coated grades				N	•	•	•
■ brazed/Cermet				H	•	•	•

Dimensions in inch

Carbide grades

State R or L version

Further sizes upon request

Indexable inserts can be used in **right and left hand** toolholders.



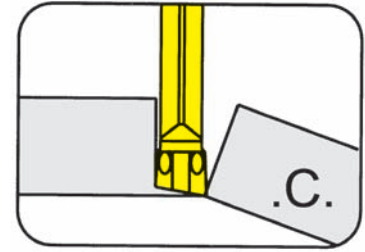
GROOVING and PARTING OFF



INDEXABLE INSERT Type

S224

with chip forming

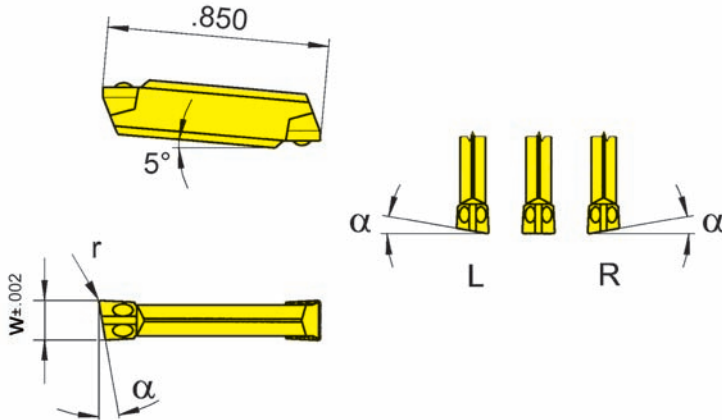


Depth of groove up to	.709"
Width of groove	.079 - .118"

precision sintered

for use with Toolholder

- Type
- B224
 - BK224
 - BU224
 - H224
 - HU224



R = right hand version shown

L = left hand version

Indexability length
± .002"

Part number	w	r	α	Size	TN35	T125	TF45	TC92
S224.0020.C1	.079	.006	0°	01	▲	▲	▲	▲
R/LS224.1520.C1			15°		▲/▲	▲/▲	▲/▲	
R/LS224.0520.C1			5°		▲/▲	▲/▲	▲/▲	
R/LS224.0820.C1			8°		▲/▲	▲/▲	▲/▲	
S224.0025.C1	.098	.006	0°	02	▲	▲	▲	▲
R/LS224.0525.C1			5°		▲/▲	▲/▲	▲/▲	
R/LS224.0825.C1			8°		▲/▲	▲/▲	▲/▲	
S224.0030.C1	.118	.006	0°	03	▲	▲	▲	▲
R/LS224.0530.C1			5°		▲/▲	▲/▲	▲/▲	
R/LS224.0830.C1			8°		▲/▲	▲/▲	▲/▲	
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet					P	●	●	●
					M	●	●	●
					K	●	●	●
					S	●	●	●
					N	●	●	●
					H	●	●	●

Dimensions in inch

Carbide grades

State R or L version

Further sizes upon request

Indexable inserts can be used in **right and left hand** toolholders.

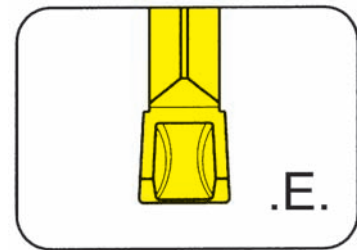
GROOVING and PARTING OFF



INDEXABLE INSERT Type

S224

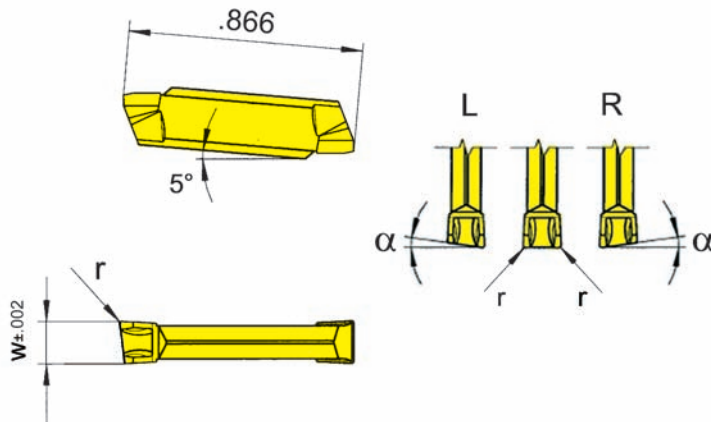
with chip former



Depth of groove up to .709"
Width of groove .079 - .157"

precision sintered

for use with Toolholder



Type B224
BK224
BU224
H224
HU224



R = right hand version shown

L = left hand version

Indexability length
± .002"

Part number	w	r	α	Size	Carbide grades													
					T122	T125	TF43	TF45	TC92	TC93	AS62	P	M	K	S	N	H	
S224.0200.E2 R/LS224.0520.E2	.079	.008	0° 5°	01			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
S224.0250.E2 R/LS224.0525.E2	.098	.008	0° 5°	02			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
S224.0300.E2 S224.0300.E4 R/LS224.0530.E2	.118	.008 .016 .008	0° 0° 5°	03	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
S224.0400.E2 S224.0400.E4	.157	.008 .016	0°	04				▲	▲									

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R or L version

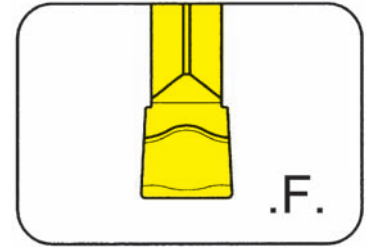
Further sizes upon request

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

S224

with chip forming

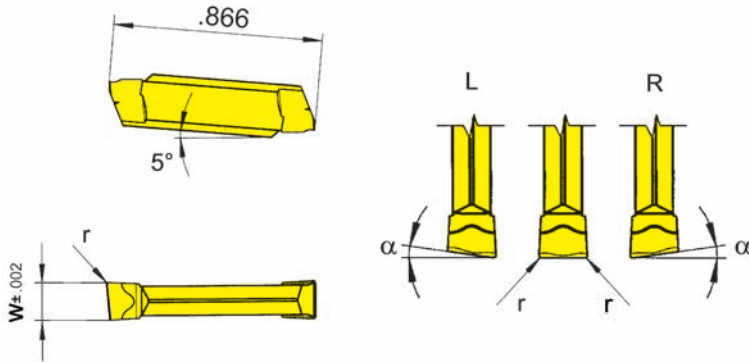


Depth of groove up to	.709"
Width of groove	.079 - .157"

precision sintered

for use with Toolholder

Type B224
BK224
BU224
H224
HU224



Indexability length
± .002"

Part number	w	r	α	Size	Carbide grades					
					T122	T125	TF42	TF43	TF45	TF46
S224.0200.F2 R/LS224.0520.F2	.079	.008	0° 5°	01	▲	▲		▲	▲	▲
S224.0250.F2 R/LS224.0525.F2	.098	.008	0° 5°	02	▲			▲	▲	▲
S224.0300.F2 R/LS224.0530.F2	.118	.008	0° 5°	03	▲/▲	▲		▲	▲	▲
S224.0400.F2	.157	.008	0°	04	▲			▲	▲	
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet					P	●	●	●	●	●
					M	●	●	●	●	○
					K	●	●	●	●	●
					S	●	●	●	●	○
					N	●	●	●	●	●
					H					

Dimensions in inch

State R or L version

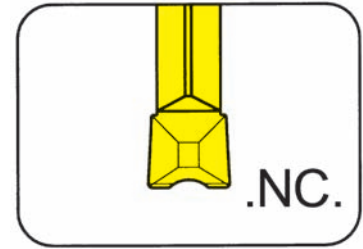
Indexable inserts can be used in **right and left hand** toolholders.

E

INDEXABLE INSERT Type

S224

with chip forming

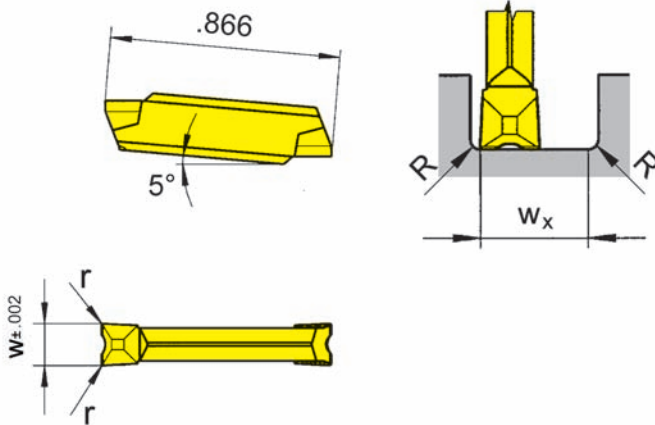


Depth of groove up to .709"
Width of groove .098 - .118"

precision ground

for use with Toolholder

Type B224
BK224
BU224
H224
HU224



Indexability length
± .002"



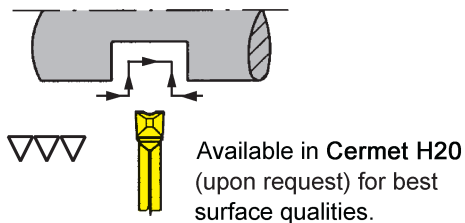
Part number	w	r	w _x	Size	Carbide grades				
					H54	Tl22	Tl25	Tl26	TA45
S224.NC25.D2	.098	.008	.142	02		▲	▲	▲	
S224.NC30.D2	.118	.008	.177	03		▲	▲	▲	
					P	•	•	•	
					M		•	o	
					K		•	•	
					S		•	o	
					N		•	•	
					H				

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

$$w_x = \text{width of groove} - R_{(\text{right})} - R_{(\text{left})}$$

Indexable inserts can be used in **right and left hand** toolholders.



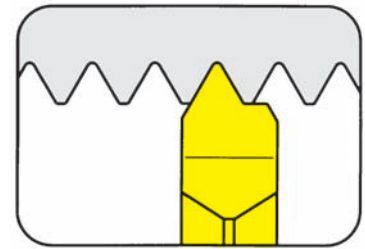
THREADING (external) Full profile



INDEXABLE INSERT Type

S224

Metric ISO thread

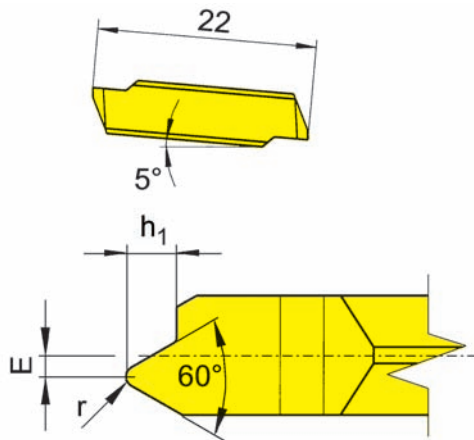


Pitch	0.5 - 2.0 mm
-------	--------------

precision ground

for use with Toolholder

Type H224
HU224



R = right hand version shown

L = left hand version

Indexability length
± .001"

Part number	P	r	E	h ₁	Size	Carbide grades		
						TN35	T125	TF45
R/LS224.0305.02	0.50	0.07	1.0	0.31	03			▲/▲
R/LS224.0407.02	0.75	0.11	0.9	0.46				▲/▲
R/LS224.0610.02	1.00	0.12	0.8	0.61				▲/▲
R/LS224.0712.02	1.25	0.15	0.7	0.77				▲/▲
R/LS224.0915.02	1.50	0.20	0.5	0.92				▲/▲
R/LS224.1017.02	1.75	0.25	0.4	1.07				▲/▲
R/LS224.1220.02	2.00	0.25	0.3	1.23				▲/▲
						P		•
						M		•
						K		•
						S		•
						N		•
						H		

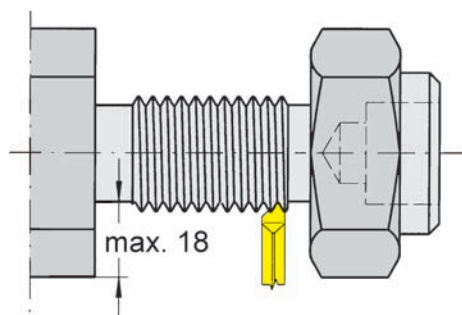
- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in mm

State R or L version

Carbide grades

No shims necessary. All HORN thread profiles are manufactured with **full ground radial clearance**.



Suitable for threading behind a shoulder

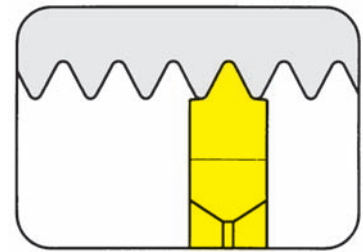
THREADING (external) Full profile



INDEXABLE INSERT Type

NS224

Whitworth pipe thread

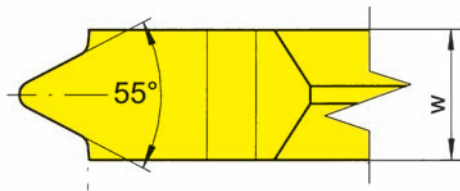
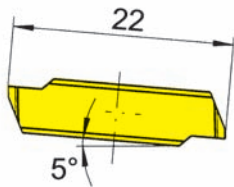


Threads per inch	28 - 11
------------------	---------

precision ground

for use with Toolholder

Type H224
HU224



R = right hand version shown

L = left hand version

Indexability length
± .001"



Part number	Threads per Inch	w	Size	TN35	TI25	TA45	TF45
NS224.5511.02	11	.106	03			▲	
NS224.5514.02	14					▲	
NS224.5519.02	19					▲	
NS224.5528.02	28					▲	
				P		•	
				M		•	
				K		•	
				S		•	
				N		•	
				H			

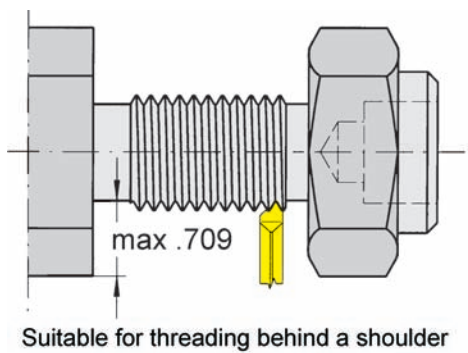
- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R or L version

Carbide grades

No shims necessary. All HORN thread profiles are manufactured with **full ground radial clearance**.



HCG - HORN Catalog Guide

INTERNAL GROOVING

Bore Ø	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.625" (15.87 mm)				•						
.709" (18 mm)				•						
.787 - 1.102" (20-28 mm)	•			•						
1.102 - 1.496" (28-38 mm)	•			•	•					
> 1.496" (38 mm)	•			•	•	•	•	•	•	
Operation Type										
Grooving	•			•	•	•	•	•	•	
Threading					•	•			•	
Profiling				•	•		•	•	•	
Width of groove inch	.022-.209			.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.049-.169	
Width of groove mm	0.56-5.3			1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	1.25-4.29	
Chapter	A	B	C	D	E	F	G	H	J	K

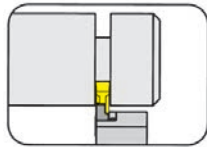
EXTERNAL GROOVING

Depth of groove up to	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.157" (4 mm)	•	•	•	•	•	•	•	•	•	•
.236" (6 mm)		•	•	•	•	•	•	•	•	•
.315" (8 mm)		•		•	•	•	•	•		•
.394" (10 mm)		•		•	•	•	•			
.433" (11 mm)		•		•	•	•	•			
.551" (14 mm)		•		•	•		•			
.630" (16 mm)		•		•	•		•			
.709" (18 mm)				•	•		•			
.984" (25 mm)				•			•			
1.000" (25.4 mm)							•			
Operation Type										
Grooving	•	•	•	•	•	•	•	•	•	•
Side Turning		•	•	•	•		•	•		
Parting Off	•	•	•	•	•		•	•		•
Threading		•	•			•	•		•	
Profiling			•		•		•	•	•	•
Axial Grooving						•			•	
Width of groove inch	.022-.209	.059-.118	.020-.118	.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.022-.169	.059-.118
Width of groove mm	0.56-5.3	1.5-3.0	0.5-3.0	1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	0.56-4.29	1.5-3.0
Chapter	A	B	C	D	E	F	G	H	J	K

Special tools upon request

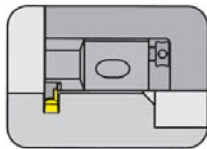
TOOLING SYSTEMS 231 **F**

Grooving
- external -



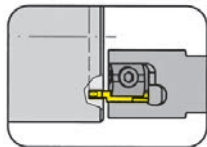
Page F2-F3

Grooving
- internal -

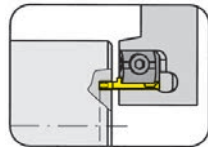


Page F4-F5

Face Grooving

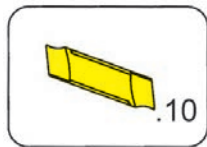


Page F8-F9



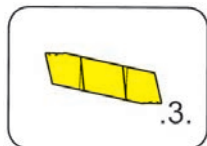
Page F10-F11

Indexable inserts
Type
231



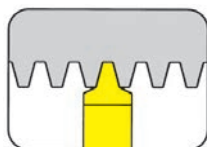
Page F6-F7

Grooving



Page F12

Face Grooving



Page F13

metric trapezoidal thread

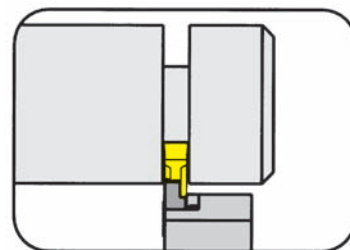
For Technical Information please see chapter Q

F

TOOLHOLDER Type

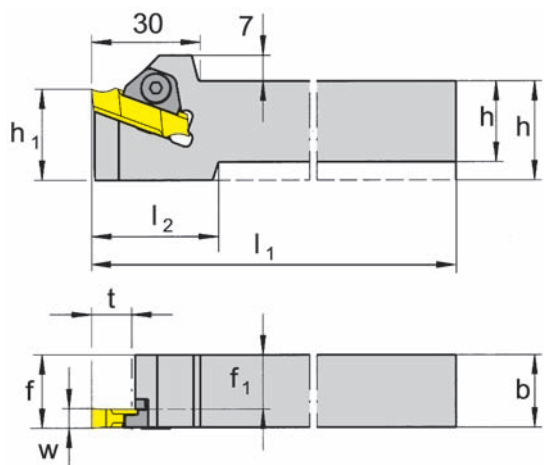
211

Depth of groove up to .433" (11.0 mm)
Clamping range up to .197" (5.0 mm)



for use with Indexable insert

Type 231



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f_1	f	l_2	t_{max}	Size	Clamping range
R/L211.2020.02	20	20	125	25	17.5		35			
R/L211.2525.02	25	25	150	25	22.5	f_1+w-a_1	-	11	02	2.5 - 3.0
R/L211.3232.02	32	32	170	32	29.5		-			
R/L211.2020.03	20	20	125	25	17.0		35			
R/L211.2525.03	25	25	150	25	22.0	f_1+w-a_1	-	11	03	3.0 - 4.0
R/L211.3232.03	32	32	170	32	29.0		-			
R/L211.2020.04	20	20	125	25	16.0		35			
R/L211.2525.04	25	25	150	25	21.0	f_1+w-a_1	-	11	04	4.0 - 5.0
R/L211.3232.04	32	32	170	32	28.0		-			

State R or L version

w, a_1 see indexable inserts

Dimensions in mm

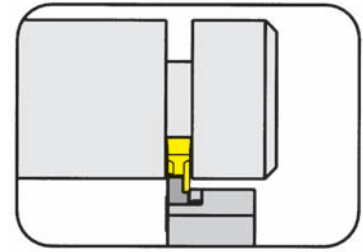
Further sizes upon request

Spare parts

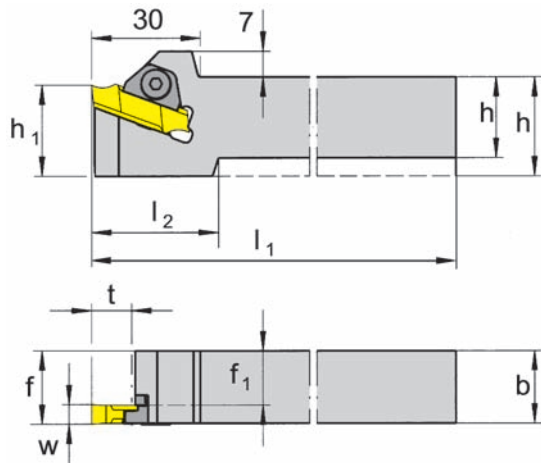
Toolholder	Clamp	Screw	Wrench
R/L211....02	2.16.2	6.19	SW3DIN911
R/L211....03	2.16.3	6.19	SW3DIN911
R/L211....04	2.16.7	6.19	SW3DIN911

TOOLHOLDER Type

211



Depth of groove up to .433" (11.0 mm)
Clamping range up to .394" (10.0 mm)



for use with Indexable insert

Type 231

F

R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f_1	f	l_2	t_{max}	Size	Clamping range
R/L211.2020.05	20	20	125	25	15		35			
R/L211.2525.05	25	25	150	25	20	f_1+w-a_1	-	11	05	5.0 - 6.5
R/L211.3232.05	32	32	170	32	27		-			
R/L211.2020.07	20	20	125	25	13		35			
R/L211.2525.07	25	25	150	25	18	f_1+w-a_1	-	11	07	6.5 - 8.5
R/L211.3232.07	32	32	170	32	25		-			
R/L211.2020.09	20	20	125	25	11		35			
R/L211.2525.09	25	25	150	25	16	f_1+w-a_1	-	11	09	8.5 - 10.0
R/L211.3232.09	32	32	170	32	23		-			

State R or L version

w, a_1 see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

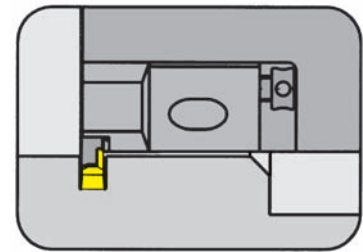
Toolholder	Clamp	Screw	Wrench
R/L211....	2.16.7	6.19	SW3DIN911

GROOVING (internal)



CARTRIDGE Type

208



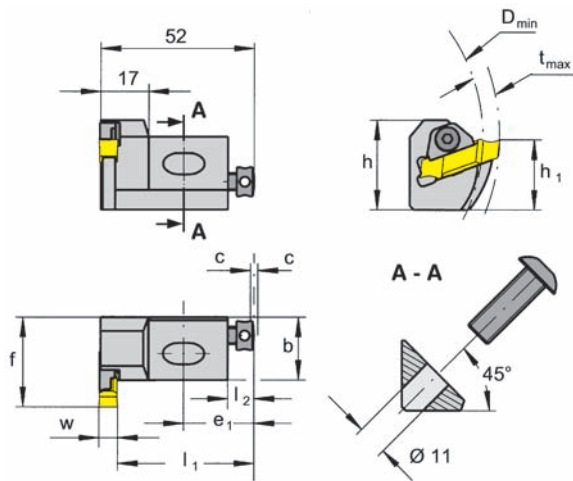
Bore Ø from 2.953" (75.0 mm)
Clamping range up to .394" (10.0 mm)

for use with Indexable insert

Type 231

Depth of groove in relation to bore Ø

D _{min}	t _{max}
75	5,0
85	6,0
95	6,5
110	7,0
140	8,0
200	9,0



R = right hand version shown

L = left hand version

Part number	h ₁	f	h	b	l ₁	e ₁	l ₂	c	Size	Clamping range
R/L208.2520.04	25	32	32	20	47.8	25	9	2	04	4.0 - 5.0
R/L208.2520.05	25	32	32	20	46.8	25	9	2	05	5.0 - 6.5
R/L208.2520.07	25	32	32	20	44.8	25	9	2	07	6.5 - 8.5
R/L208.2520.09	25	32	32	20	42.8	25	9	2	09	8.5 - 10.0

State R or L version

w see indexable inserts

Dimensions in mm

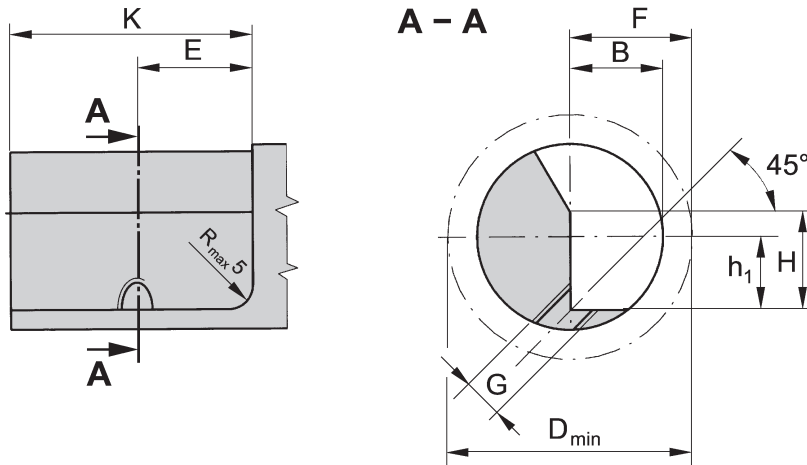
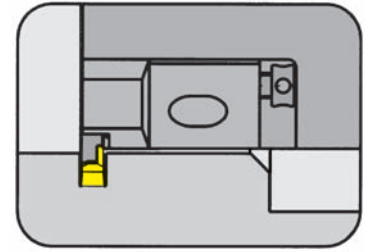
Further sizes upon request

Spare parts

Cartridge	Clamp	Screw	Screw	Axial Setscrew	Radial Setscrew	Wrench
R/L208.2520.0...	2.16.7-K	0.30.208	6.16	6.12.020	4.08.913	SW3DIN911

F4

SEATING DIMENSIONS CARTRIDGE Type **208**



R = right hand version shown

L = left hand version

Cartridge	F	G	H	K	E	B	h ₁	D _{min}	Fastening screw
R/L208.2520...	32	M10	32	25	50	20	25	75	0.30.208

State R or L version

Dimensions in mm

F

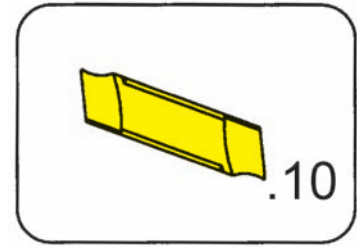
GROOVING (external)



INDEXABLE INSERT Type

231

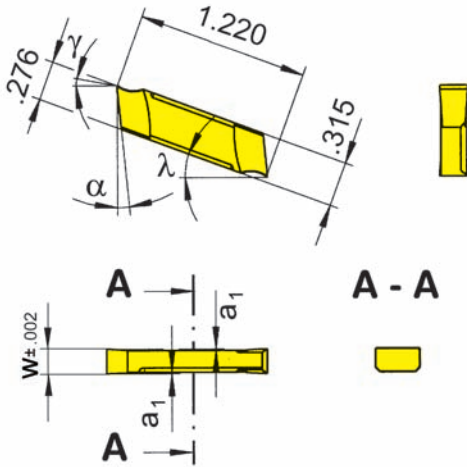
with round chip breaker



Depth of groove up to .433"
Width of groove .098 - .118"

for use with Toolholder

Type 211



R = right hand version shown

L = left hand version

Part number	w	a ₁	α	γ	λ	Size	Carbide grades				
							K10	P20	TN32	TF45	TC92
R/L231.0250.10	.098	.008	6°	20°	20°	02		▲/▲	▲/▲		
R/L231.0300.10	.118	.008	6°	20°	20°	03		▲/▲			
							P	•	•		
							M				
							K				
							S				
							N				
							H				

Dimensions in inch

State R or L version

Use right hand inserts in right hand toolholders and left hand inserts in left hand toolholders

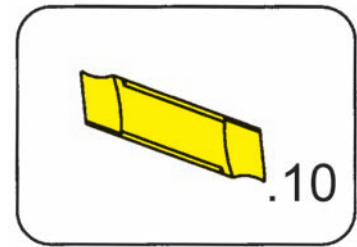
GROOVING (external and internal)



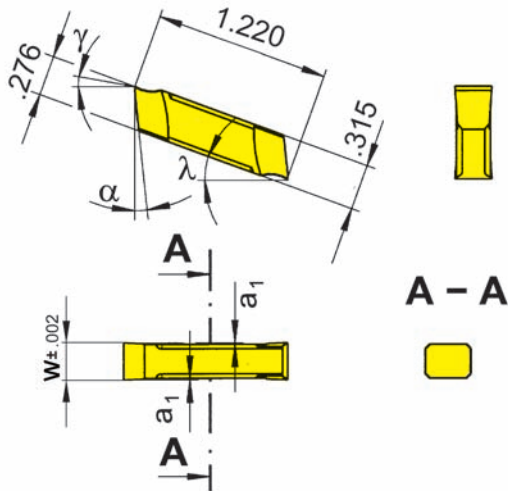
INDEXABLE INSERT Type

231

with round chip breaker



Depth of groove up to .433"
Width of groove .157 - .394"



for use with Toolholder

Type 211
208

F

Part number	w	a ₁	α	γ	λ	Toolholder	Size	Carbide grades				
								K10	P20	TN32	TF45	TC92
231.0400.10	.157	.008	6°/11°	20°/15°	20°/15°	211/208	04	▲	▲	▲		▲
231.0500.10	.197	.008	6°/11°	20°/15°	20°/15°	211/208	05	▲	▲			▲
231.0600.10	.236	.008	6°/11°	20°/15°	20°/15°	211/208	05	▲	▲			▲
231.0700.10	.276	.008	6°/11°	20°/15°	20°/15°	211/208	07	▲	▲	▲		▲
231.0800.10	.315	.008	6°/11°	20°/15°	20°/15°	211/208	07	▲	▲	▲		▲
231.1000.10	.394	.008	6°/11°	20°/15°	20°/15°	211/208	09	▲	▲	▲		▲
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation □ uncoated grades ■ coated grades ■ brazed/Cermet								P	●	●	●	●
								M	○			
								K	●			
								S	○			
								N	●			
								H				

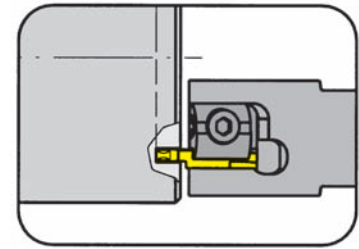
Dimensions in inch

Indexable inserts can be used in **right and left hand** toolholders.

TOOLHOLDER Type

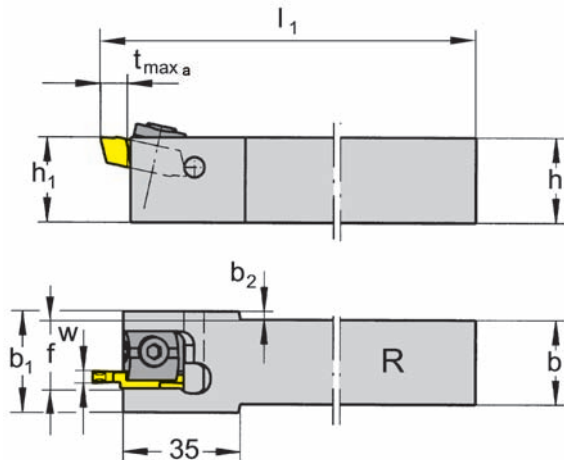
U221

from outer groove \varnothing 1.575"
 Depth of groove up to .315"
 Clamping range up to .394"



for use with Indexable insert

Type 231
 N231



R = right hand version shown

L = left hand version

Part number	h	h ₁	l ₁	b	b ₁	b ₂	f	t _{max a}	Size	Clamping range
R/LU221.0750.04	.750	.750	5.000	.750	1.102	.157	.705	.315	04	.118 - .157
R/LU221.1000.04	1.000	1.000	6.000	1.000	1.102	.059	.803	.315	04	.118 - .157
R/LU221.0750.05	.750	.750	5.000	.750	1.181	.197	.744	.315	05	.161 - .236
R/LU221.1000.05	1.000	1.000	6.000	1.000	1.181	.098	.843	.315	05	.161 - .236
R/LU221.0750.07	.750	.750	5.000	.750	1.260	.236	.783	.315	07	.240 - .315
R/LU221.1000.07	1.000	1.000	6.000	1.000	1.260	.138	.882	.315	07	.240 - .315
R/LU221.0750.09	.750	.750	5.000	.750	1.339	.275	.823	.315	09	.319 - .394
R/LU221.1000.09	1.000	1.000	6.000	1.000	1.339	.177	.921	.315	09	.319 - .394

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

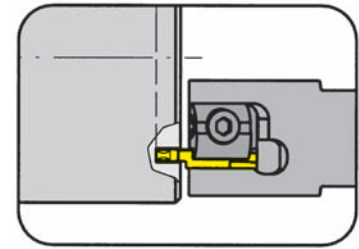
Spare parts

Toolholder	Clamp	Screw	Position Pin
R/LU221.....	01.60.12	6.20.70	3.6.28

TOOLHOLDER Type

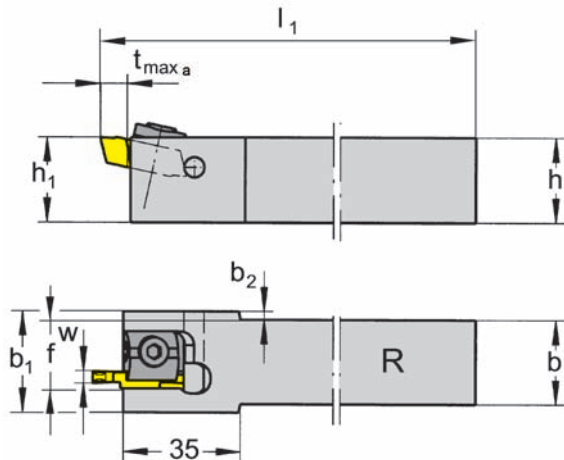
221

from outer groove \varnothing 1.575" (40.0 mm)
 Depth of groove up to .315" (8.0 mm)
 Clamping range .118 - .394" (3.0 - 10.0 mm)



for use with Indexable insert

Type 231
 N231



R = right hand version shown

L = left hand version

Part number	h	h ₁	l ₁	b	b ₁	b ₂	f	t _{max a}	Size	Clamping range
R/L221.2020.04	20	20	125	20	28	4.0	17.9	8	04	3.0 - 4.0
R/L221.2525.04	25	25	150	25	28	1.5	20.4	8	04	3.0 - 4.0
R/L221.2020.05	20	20	125	20	30	5.0	18.9	8	05	4.1 - 6.0
R/L221.2525.05	25	25	150	25	30	2.5	21.4	8	05	4.1 - 6.0
R/L221.2020.07	20	20	125	20	32	6.0	19.9	8	07	6.1 - 8.0
R/L221.2525.07	25	25	150	25	32	3.5	22.4	8	07	6.1 - 8.0
R/L221.2020.09	20	20	125	20	34	7.0	20.9	8	09	8.1 - 10.0
R/L221.2525.09	25	25	150	25	34	4.5	23.4	8	09	8.1 - 10.0

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

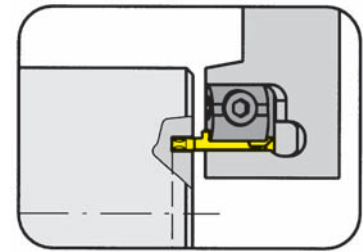
Spare parts

Toolholder	Clamp	Screw	Position Pin
R/L221.2...	01.60.12	6.20.70	3.6.28

F

TOOLHOLDER Type

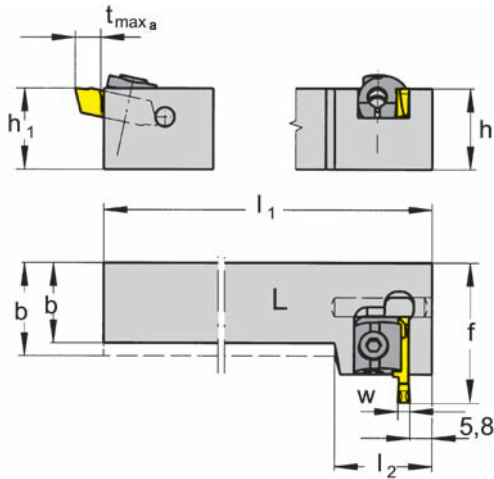
U228



from outer groove \emptyset	1.575"
Depth of groove up to	.315"
Clamping range up to	.394"

for use with Cassette

Type 231
N231



L = left hand version shown

R = right hand version

Part number	l_1	l_2	h	h_1	b	f	$t_{max a}$	Size	Clamping range
R/LU228.0750.04	5.000	1.398	.750	.750	.750	1.516	.315	04	.118 - .157
R/LU228.1000.04	6.000	1.398	1.000	1.000	1.000	1.516	.315	04	.118 - .157
R/LU228.0750.05	5.000	1.398	.750	.750	.750	1.516	.315	05	.161 - .236
R/LU228.1000.05	6.000	1.398	1.000	1.000	1.000	1.516	.315	05	.161 - .236
R/LU228.0750.07	5.000	1.398	.750	.750	.750	1.516	.315	07	.240 - .315
R/LU228.1000.07	6.000	1.398	1.000	1.000	1.000	1.516	.315	07	.240 - .315
R/LU228.0750.09	5.000	1.398	.750	.750	.750	1.516	.315	09	.319 - .394
R/LU228.1000.09	6.000	1.398	1.000	1.000	1.000	1.516	.315	09	.319 - .394

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

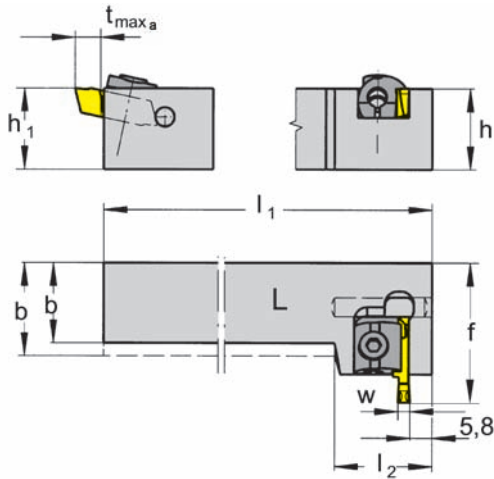
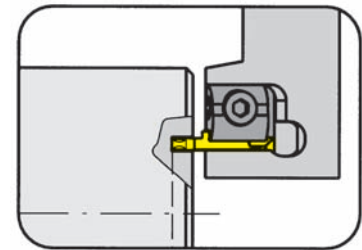
Spare parts

Toolholder	Clamp	Screw	Position Pin
R/LU228....	01.60.12	6.20.70	3.6.28

TOOLHOLDER Type

228

from outer groove \varnothing 1.575" (40.0 mm)
 Depth of groove up to .315" (8.0 mm)
 Clamping range up to .394" (10.0 mm)



for use with Indexable insert

Type 231
N231

L = left hand version shown

R = right hand version

Part number	l_1	l_2	h	h_1	b	f	$t_{max a}$	Size	Clamping range
R/L228.2020.04	125	35.5	20	20	20	38.5	8	04	3.0 - 4.0
R/L228.2525.04	150	35.5	25	25	25	38.5	8	04	3.0 - 4.0
R/L228.2020.05	125	35.5	20	20	20	38.5	8	05	4.1 - 6.0
R/L228.2525.05	150	35.5	25	25	25	38.5	8	05	4.1 - 6.0
R/L228.2020.07	125	35.5	20	20	20	38.5	8	07	6.1 - 8.0
R/L228.2525.07	150	35.5	25	25	25	38.5	8	07	6.1 - 8.0
R/L228.2020.09	125	35.5	20	20	20	38.5	8	09	8.1 - 10.0
R/L228.2525.09	150	35.5	25	25	25	38.5	8	09	8.1 - 10.0

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

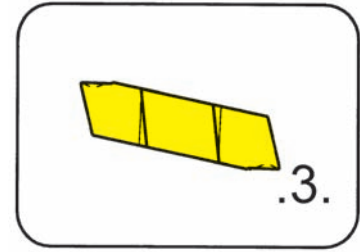
Toolholder	Clamp	Screw	Position Pin
R/L228.2...	01.60.12	6.20.70	3.6.28

F

INDEXABLE INSERT Type

231/N231

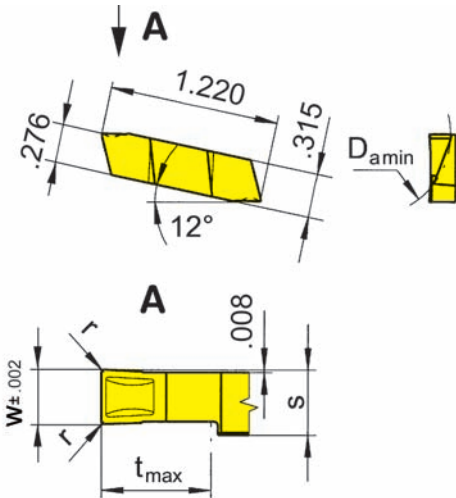
with chip former



from outer groove \emptyset 1.575"
 Depth of groove up to .315"
 Width of groove .118 - .394"

for use with Toolholder

Type 221
 228
 U221
 U228



Indexability length
 $\pm .001"$

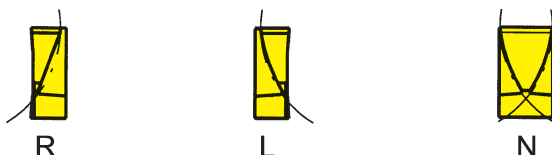
Part number	w	s	r	t _{max}	D _{a min}	Size	Carbide grades		
							TN32	TN35	TA45
R/L231.4030.32	.118	.150	.008	.315	1.575	04		▲/▲	
R/L231.4040.32	.157	.150	.008	.315	1.575	04		▲/▲	
R/L231.4050.34	.197	.228	.016	.315	1.575	05		▲/▲	
N231.4060.34	.236	.228	.016	.315	1.575	05		▲	
N231.4070.36	.276	.307	.024	.315	1.575	07		▲	
N231.4080.36	.315	.307	.024	.315	1.575	07		▲	
N231.4090.38	.354	.386	.031	.315	1.575	09		▲	
N231.4100.38	.394	.386	.031	.315	1.575	09		▲	
							P	•	
							M	•	
							K	•	
							S	•	
							N	•	
							H		

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R, L or N version

Outer- \emptyset of groove < 40 mm upon request.



R = right hand version L = left hand version N = right and left hand version

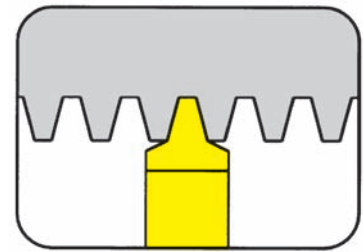
THREADING (external) Full profile



INDEXABLE INSERT Type

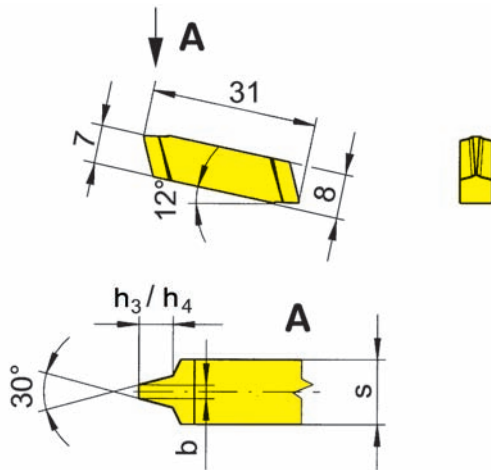
231

Pitch 7.0 - 12.0 mm



for use with Toolholder

Type 221
228
U221
U228



Metric ISO trapezoidal thread DIN 103

F

Part number	P	b	s	h ₃ / h ₄	Size	Carbide grades			
						MG12	TN35	TI25	TA45
231.4070.02	7	2.29	5.8	4.0	05		▲		
231.4580.02	8	2.66	5.8	4.5	05		▲		
231.5090.02	9	3.02	7.8	5.0	07		▲		
231.5500.02	10	3.39	7.8	5.5	07		▲		
231.6020.02	12	4.12	9.8	6.5	09		▲		
						P	•		
						M	•		
						K	•		
						S	•		
						N	•		
						H			

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in mm

No shims necessary. All HORN thread profiles are manufactured with **full ground radial clearance**.

HCG - HORN Catalog Guide

INTERNAL GROOVING

Bore Ø	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.625" (15.87 mm)				•						
.709" (18 mm)				•						
.787 - 1.102" (20-28 mm)	•			•						
1.102 - 1.496" (28-38 mm)	•			•	•					
> 1.496" (38 mm)	•			•	•	•	•	•	•	
Operation Type										
Grooving	•			•	•	•	•	•	•	
Threading					•	•			•	
Profiling				•	•		•	•	•	
Width of groove inch	.022-.209			.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.049-.169	
Width of groove mm	0.56-5.3			1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	1.25-4.29	
Chapter	A	B	C	D	E	F	G	H	J	K

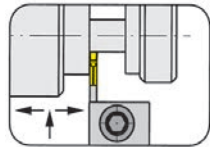
EXTERNAL GROOVING

Depth of groove up to	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.157" (4 mm)	•	•	•	•	•	•	•	•	•	•
.236" (6 mm)		•	•	•	•	•	•	•	•	•
.315" (8 mm)		•		•	•	•	•	•		•
.394" (10 mm)		•		•	•	•	•			
.433" (11 mm)		•		•	•	•	•			
.551" (14 mm)		•		•	•		•			
.630" (16 mm)		•		•	•		•			
.709" (18 mm)				•	•		•			
.984" (25 mm)				•			•			
1.000" (25.4 mm)							•			
Operation Type										
Grooving	•	•	•	•	•	•	•	•	•	•
Side Turning		•	•	•	•		•	•		
Parting Off	•	•	•	•	•		•	•		•
Threading		•	•			•	•		•	
Profiling			•		•		•	•	•	•
Axial Grooving						•			•	
Width of groove inch	.022-.209	.059-.118	.020-.118	.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.022-.169	.059-.118
Width of groove mm	0.56-5.3	1.5-3.0	0.5-3.0	1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	0.56-4.29	1.5-3.0
Chapter	A	B	C	D	E	F	G	H	J	K

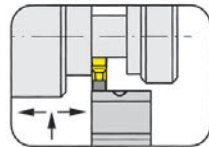
Special tools upon request

TOOLING SYSTEMS 229 / 259 **G**

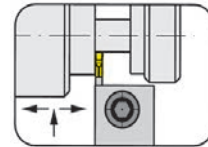
Grooving - external -



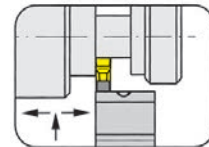
Page G2-G5, G5-G9



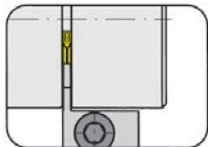
Page G6-G7, G10-G11



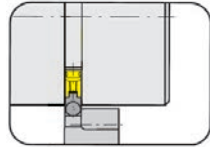
Page G12-G15, G18-G19



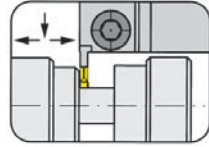
Page G16-G17, G20-G21



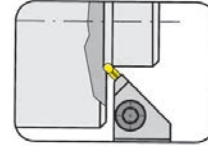
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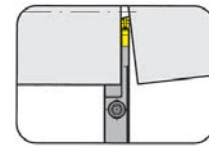
Page G26-G27



Page G28-G31

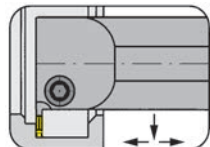


Page G32-G33

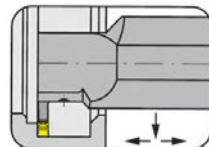


Page G34

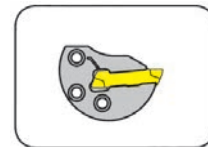
Grooving - internal -



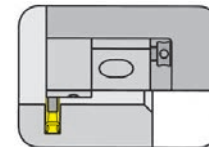
Page G37



Page G40-G49

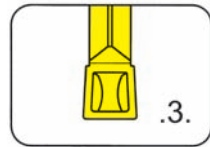


Page G50-G52

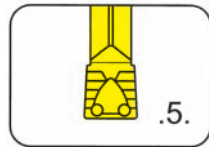


Page G53-G54

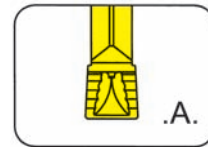
Indexable inserts type 229 / S229



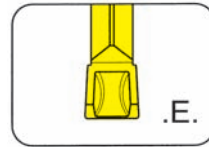
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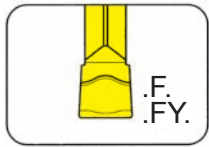
Page G58-G59



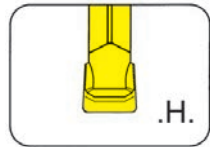
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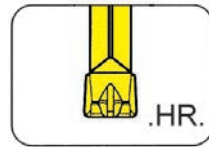
Page G62



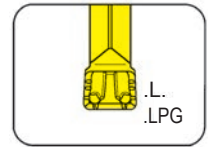
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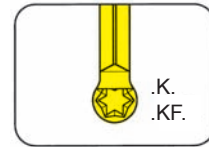
Page G66



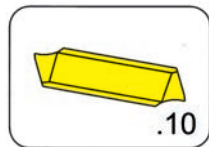
Page G67



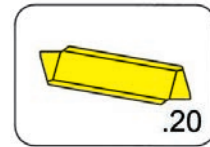
Page G68, G69



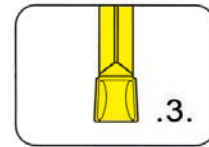
Page G70-G71



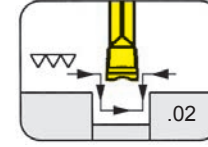
Page G72-G73



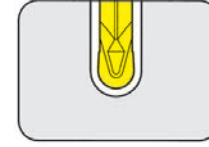
Page G74-G75



Page G76-G77

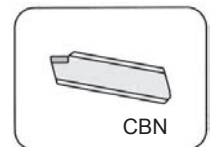


Page G78-G79



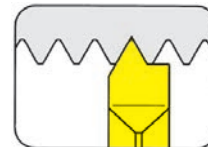
Page G80

Hard Turning Type 229

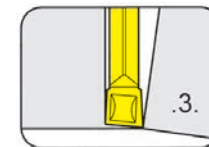


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Indexable inserts Type N229

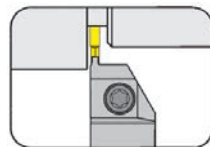


Page G82-G84

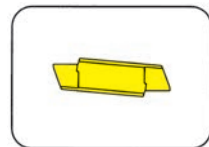


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Grooving - external - type H259 / 259



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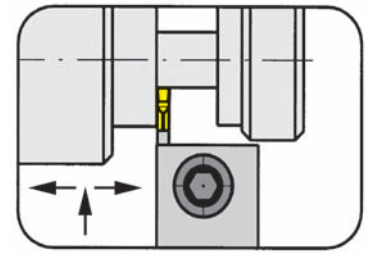


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For Technical Information please see chapter Q

TOOLHOLDER Type

U210

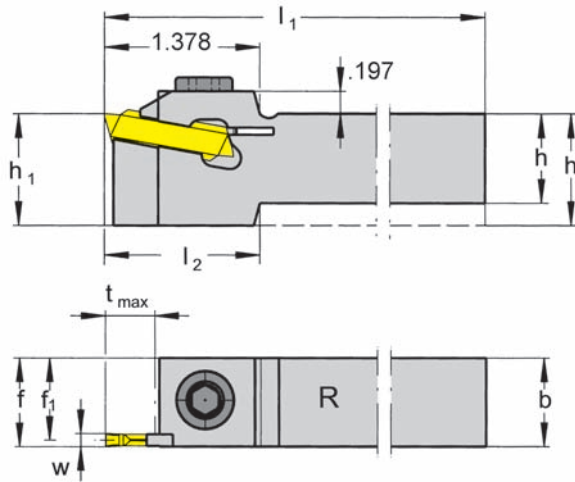


Depth of groove up to
Clamping range

.433"
.098 - .236"

for use with Indexable
insert

Type 229
N229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f	f_1	l_2	t_{max}	Size	Clamping range																																																																																		
R/LU210.0750.02	.750	.750	6.000	1.000	$f_1+w/2$.693	1.375	.433	02	.098 - .118																																																																																		
R/LU210.1000.02	1.000	1.000	6.000	1.000		.943	-				R/LU210.0625.03	.625	.625	6.000	1.000	$f_1+w/2$.568	1.750	.433	03	.118 - .157	R/LU210.0750.03	.750	.750	6.000	1.000	.693	1.375	R/LU210.1000.03	1.000	1.000	6.000	1.000	.943	-	R/LU210.1250.03	1.250	1.000	6.625	1.250		.943	-				R/LU210.0750.04	.750	.750	6.000	1.000	$f_1+w/2$.659	1.375	.433	04	.157 - .197	R/LU210.1000.04	1.000	1.000	6.000	1.000	.909	-	R/LU210.1250.04	1.250	1.000	6.625	1.250	.909	-	R/LU210.0750.05	.750	.750	6.000	1.000	$f_1+w/2$.640	1.375	.433	05	.201 - .236	R/LU210.1000.05	1.000	1.000	6.000	1.000	.890	-	R/LU210.1250.05	1.250	1.000
R/LU210.0625.03	.625	.625	6.000	1.000	$f_1+w/2$.568	1.750	.433	03	.118 - .157																																																																																		
R/LU210.0750.03	.750	.750	6.000	1.000		.693	1.375																																																																																					
R/LU210.1000.03	1.000	1.000	6.000	1.000		.943	-																																																																																					
R/LU210.1250.03	1.250	1.000	6.625	1.250		.943	-																																																																																					
R/LU210.0750.04	.750	.750	6.000	1.000	$f_1+w/2$.659	1.375	.433	04	.157 - .197																																																																																		
R/LU210.1000.04	1.000	1.000	6.000	1.000		.909	-																																																																																					
R/LU210.1250.04	1.250	1.000	6.625	1.250		.909	-																																																																																					
R/LU210.0750.05	.750	.750	6.000	1.000	$f_1+w/2$.640	1.375	.433	05	.201 - .236																																																																																		
R/LU210.1000.05	1.000	1.000	6.000	1.000		.890	-																																																																																					
R/LU210.1250.05	1.250	1.000	6.625	1.250		.890	-																																																																																					

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

R/L 210...02 max. depth of groove up to \varnothing 5.906"

Spare parts

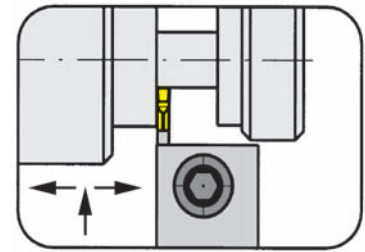
Toolholder	Screw	Wrench
R/LU210....	218.3	SW6DIN911

G2

TOOLHOLDER Type

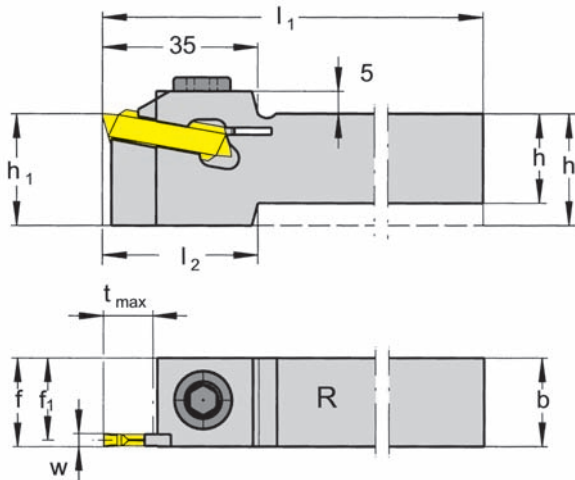
210

Depth of groove up to .433" (11.0 mm)
Clamping range .098 - .236" (2.5 - 6.0 mm)



for use with Indexable insert

Type 229
N229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f	f_1	l_2	t_{max}	Size	Clamping range
R/L210.2020.02	20	20	150	25	$f_1+w/2$	18.55	35	11	02	2.5 - 3.0
R/L210.2525.02	25	25	150	25	$f_1+w/2$	23.55	-	-	-	-
R/L210.1616.03	16	16	150	25	$f_1+w/2$	14.55	45	-	-	-
R/L210.2020.03	20	20	150	25	$f_1+w/2$	18.55	35	11	03	3.0 - 4.0
R/L210.2525.03	25	25	150	25	$f_1+w/2$	23.55	-	-	-	-
R/L210.3225.03	32	25	170	32	$f_1+w/2$	23.55	-	-	-	-
R/L210.2020.04	20	20	150	25	$f_1+w/2$	17.70	35	-	-	-
R/L210.2525.04	25	25	150	25	$f_1+w/2$	22.70	-	11	04	4.0 - 5.0
R/L210.3225.04	32	25	170	32	$f_1+w/2$	22.70	-	-	-	-
R/L210.2020.05	20	20	150	25	$f_1+w/2$	17.20	35	-	-	-
R/L210.2525.05	25	25	150	25	$f_1+w/2$	22.20	-	11	05	5.1 - 6.0
R/L210.3225.05	32	25	170	32	$f_1+w/2$	22.20	-	-	-	-

State R or L version

w see indexable inserts

Dimensions in mm

R/L 210...02 max. depth of groove up to Ø 150 mm

Further sizes upon request

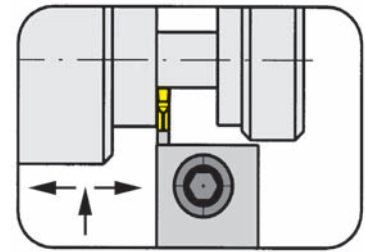
Spare parts

Toolholder	Screw	Wrench
R/L210....	218.3	SW6DIN911

G

TOOLHOLDER Type

U210

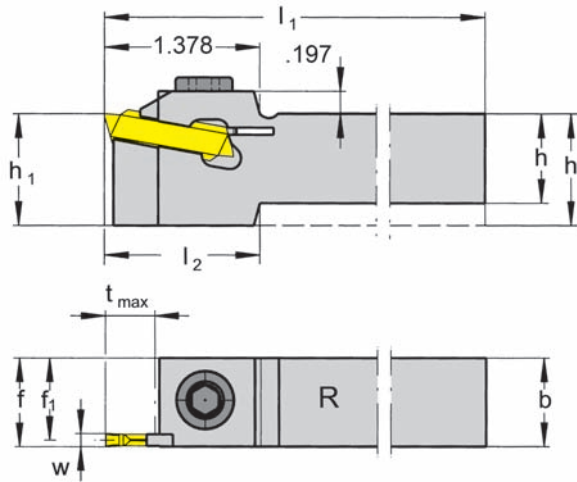


Depth of groove up to
Clamping range

.433"
.240 - .315"

for use with Indexable
insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f	f_1	l_2	t_{max}	Size	Clamping range
R/LU210.0750.07	.750	.750	6.000	1.000		.600	1.375			
R/LU210.1000.07	1.000	1.000	6.000	1.000	$f_1+w/2$	.850	-	.433	07	.240 - .315
R/LU210.1250.07	1.250	1.000	6.625	1.250		.850	-			

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

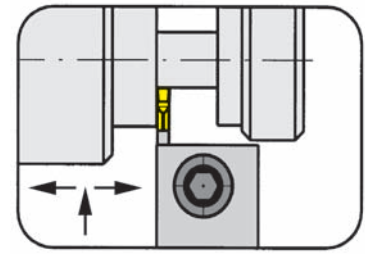
Toolholder	Screw	Wrench
R/LU210....	218.3	SW6DIN911

G4

TOOLHOLDER Type

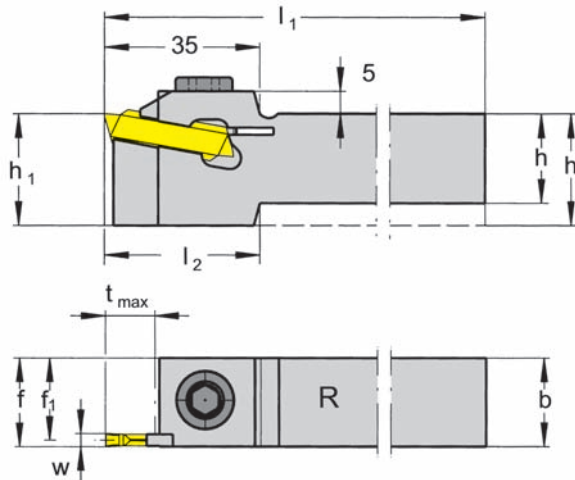
210

Depth of groove up to .433" (11.0 mm)
Clamping range .240 - .315" (6.1 - 8.0 mm)



for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/L210.2020.07	20	20	150	25		16.2	35			
R/L210.2525.07	25	25	150	25	f ₁ +w/2	21.2	-	11	07	6.1 - 8.0
R/L210.3225.07	32	25	170	32		21.2	-			
R/L210.2020.08	20	20	150	25	f ₁ +w/2	16.2	35	11	08	7.6 - 8.0
R/L210.2525.08	25	25	150	25	f ₁ +w/2	21.2	-			

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

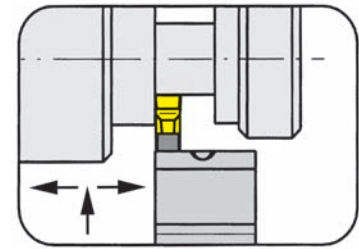
Spare parts

Toolholder	Screw	Wrench
R/L210....	218.3	SW6DIN911

G

TOOLHOLDER Type

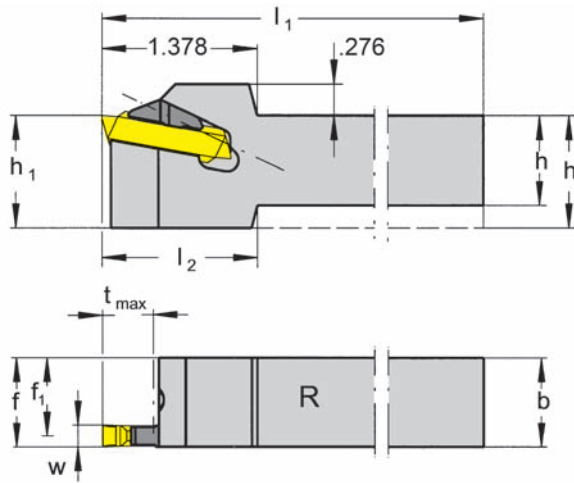
U210



Depth of groove up to .433"
Clamping range .319 - .409"

for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f	f_1	l_2	t_{max}	Size	Clamping range
R/LU210.0750.09	.750	.750	6.000	1.000		.561	1.375			
R/LU210.1000.09	1.000	1.000	6.000	1.000	$f_1+w/2$	.811	-	.433	09	.319 - .409
R/LU210.1250.09	1.250	1.000	6.625	1.250		.811	-			

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Note:

Please note type of clamp.

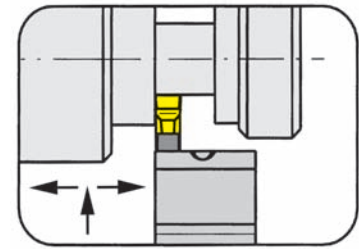
Spare parts

Toolholder	Clamp	TORX PLUS® Wrench
LU210....09	L218.5.7	T15PQ
RU210....09	R218.5.7	T15PQ

TOOLHOLDER Type

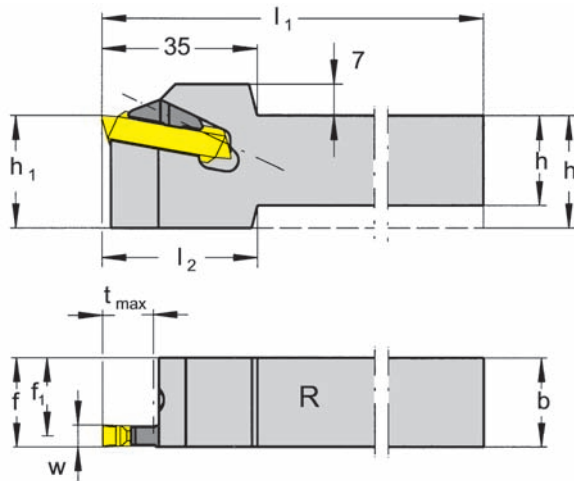
210

Depth of groove up to .433" (11.0 mm)
Clamping range .319 - .409" (8.1 - 10.4 mm)



for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/L210.2020.09	20	20	150	25		15.2	35			
R/L210.2525.09	25	25	150	25	f ₁ +w/2	20.2	-	11	09	8.1 - 10.4
R/L210.3225.09	32	25	170	32		20.2	-			

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Note:

Please note type of clamp.

Spare parts

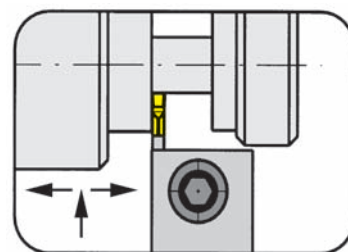
Toolholder	Clamp	TORX PLUS® Wrench
L210....09	L218.9	T15PQ
R210....09	R218.9	T15PQ



TOOLHOLDER Type

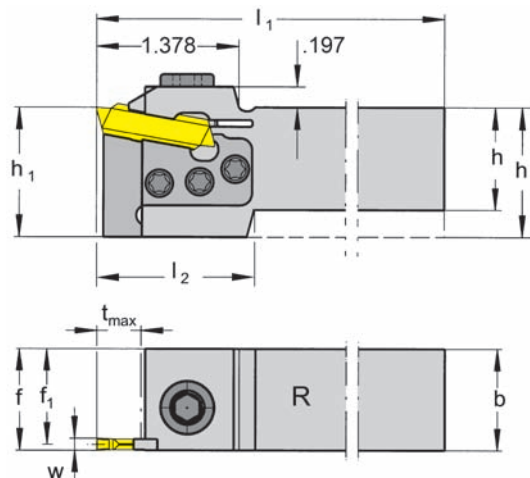
U210

with changeable cassette



Depth of groove up to
Clamping range

.433"
.118 - .315"



for use with Indexable
insert

Type 229
N229
S229

R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/LU210.1000.K3 R/LU210.1250.K3	1.000 1.250	1.000	6.000 6.625	1.250	f ₁ +w/2	.943	2.000 -	.433	03	.118 - .157
R/LU210.1000.K4 R/LU210.1250.K4	1.000 1.250	1.000	6.000 6.625	1.250	f ₁ +w/2	.909	2.000 -	.433	04	.157 - .197
R/LU210.1000.K5 R/LU210.1250.K5	1.000 1.250	1.000	6.000 6.625	1.250	f ₁ +w/2	.890	2.000 -	.433	05	.201 - .236
R/LU210.1000.K7 R/LU210.1250.K7	1.000 1.250	1.000	6.000 6.625	1.250	f ₁ +w/2	.850	2.000 -	.433	07	.240 - .315

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

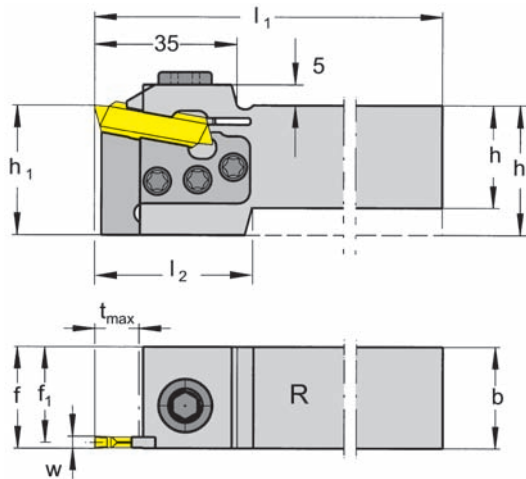
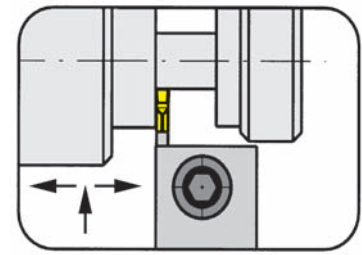
Basic toolholder	Cassette	Screw	Screw	Wrench	TORX PLUS® Wrench
R/LU210.1...K3	NK210.32.03	030.0518.T20P	218.3	SW6DIN911	T20PQ
R/LU210.1...K4	NK210.32.04	030.0518.T20P	218.3	SW6DIN911	T20PQ
R/LU210.1...K5	NK210.32.05	030.0518.T20P	218.3	SW6DIN911	T20PQ
R/LU210.1...K7	NK210.32.07	030.0518.T20P	218.3	SW6DIN911	T20PQ

BASIC TOOLHOLDER Type

210

with changeable cassette

Depth of groove up to .433" (11.0 mm)
Width of groove .118 - .315" (3.0 - 8.0 mm)



for use with Indexable insert

Type 229
N229
S229

R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f	f_1	l_2	t_{max}	Size	Clamping range
R/L210.2525.K3 R/L210.3225.K3	25 32	25	150 170	32	$f_1+w/2$	23.55	35 -	11	03	3.0 - 4.0
R/L210.2525.K4 R/L210.3225.K4	25 32	25	150 170	32	$f_1+w/2$	22.70	35 -	11	04	4.0 - 5.0
R/L210.2525.K5 R/L210.3225.K5	25 32	25	150 170	32	$f_1+w/2$	22.20	35 -	11	05	5.1 - 6.0
R/L210.2525.K7 R/L210.3225.K7	25 32	25	150 170	32	$f_1+w/2$	21.20	35 -	11	07	6.1 - 8.0

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Basic toolholder	Cassette	Screw	Screw	Wrench	TORX PLUS® Wrench
R/L210....K3	NK210.32.03	030.0518.T20P	218.3	SW6DIN911	T20PQ
R/L210....K4	NK210.32.04	030.0518.T20P	218.3	SW6DIN911	T20PQ
R/L210....K5	NK210.32.05	030.0518.T20P	218.3	SW6DIN911	T20PQ
R/L210....K7	NK210.32.07	030.0518.T20P	218.3	SW6DIN911	T20PQ



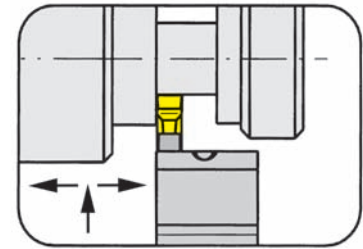
GROOVING and TURNING (external)



TOOLHOLDER Type

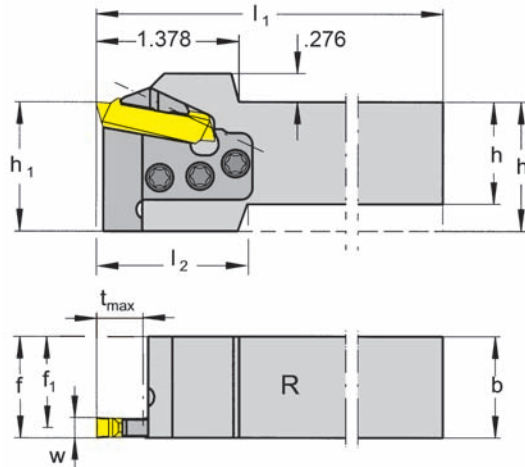
U210

with changeable cassette



Depth of groove up to
Clamping range

.433"
.319 - .409"



for use with Indexable
insert

Type 229
S229

R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/LU210.1000.K9	1.000	1.000	6.000	1.250	f ₁ +w/2	.811	2.000	.433	09	.319 - .409
R/LU210.1250.K9	1.250	1.000	6.625	1.250	f ₁ +w/2	.811	-	.433	09	.319 - .409

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Note:

Please note type of clamp.

Spare parts

Basic toolholder	Cassette	Clamp	TORX PLUS® Wrench	Screw	TORX PLUS® Wrench
LU210.1...K9	NK210.32.09	L218.9	T15PQ	030.0518.T20P	T20PQ
RU210.1...K9	NK210.32.09	R218.9	T15PQ	030.0518.T20P	T20PQ

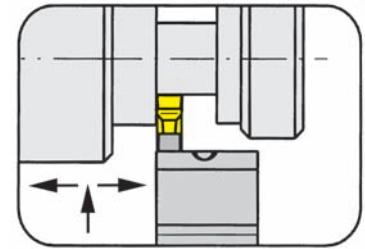
G10

G

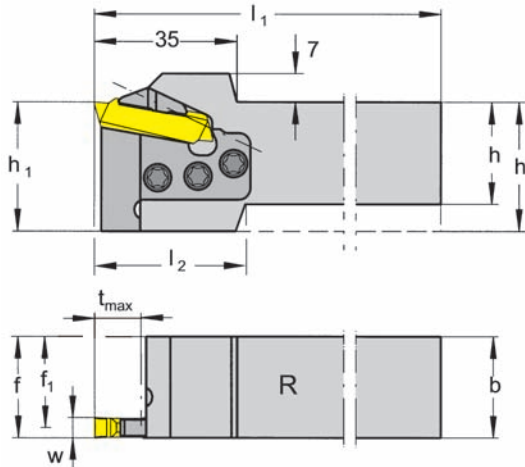
TOOLHOLDER Type

210

with changeable cassette



Depth of groove up to .433" (11.0 mm)
Clamping range .319 - .409" (8.1 - 10.4 mm)



for use with Indexable insert

Type 229
S229

R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/L210.2525.K9	25	25	150	32	f ₁ +w/2	20.2	35	11	09	8.1 - 10.4
R/L210.3225.K9	32	25	170	32	f ₁ +w/2	20.2	-	11	09	8.1 - 10.4

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Note:

Please note type of clamp.

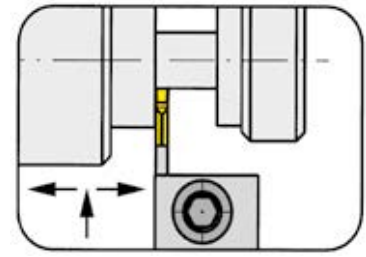
Spare parts

Basic toolholder	Cassette	Clamp	TORX PLUS® Wrench	Screw	TORX PLUS® Wrench
L210....K9	NK210.32.09	L218.9	T15PQ	030.0518.T20P	T20PQ
R210....K9	NK210.32.09	R218.9	T15PQ	030.0518.T20P	T20PQ



TOOLHOLDER Type

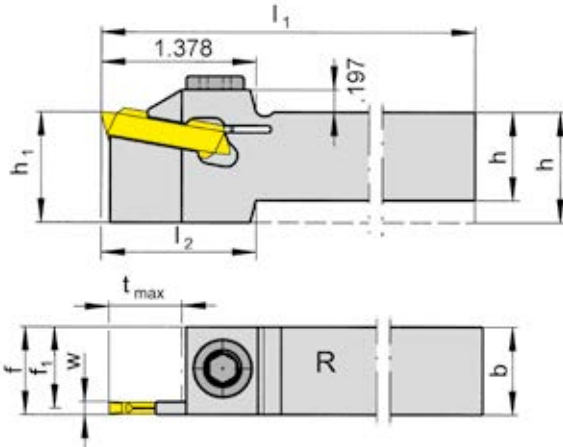
U218



Depth of groove up to **.709"**
Clamping range **.098 - .236"**

for use with Indexable insert

Type 229
N229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range																																																																																		
R/LU218.0750.02	.750	.750	6.000	1.000	f ₁ +w/2	.693	1.375	.709	02	.098 - .118																																																																																		
R/LU218.1000.02	1.000	1.000	6.000	1.000		.943	-				R/LU218.0625.03	.625	.625	6.000	1.000	f ₁ +w/2	.568	1.750	.709	03	.118 - .157	R/LU218.0750.03	.750	.750	6.000	1.000	.693	1.375	R/LU218.1000.03	1.000	1.000	6.000	1.000	.943	-	R/LU218.1250.03	1.250	1.000	6.625	1.250	.943	-	-	-	-	-	R/LU218.0750.04	.750	.750	6.000	1.000	f ₁ +w/2	.659	1.375	.709	04	.157 - .197	R/LU218.1000.04	1.000	1.000	6.000	1.000	.909	-	R/LU218.1250.04	1.250	1.000	6.625	1.250	.909	-	R/LU218.0750.05	.750	.750	6.000	1.000	f ₁ +w/2	.640	1.375	.709	05	.201 - .236	R/LU218.1000.05	1.000	1.000	6.000	1.000	.890	-	R/LU218.1250.05	1.250	1.000
R/LU218.0625.03	.625	.625	6.000	1.000	f ₁ +w/2	.568	1.750	.709	03	.118 - .157																																																																																		
R/LU218.0750.03	.750	.750	6.000	1.000		.693	1.375																																																																																					
R/LU218.1000.03	1.000	1.000	6.000	1.000		.943	-																																																																																					
R/LU218.1250.03	1.250	1.000	6.625	1.250	.943	-	-	-	-	-																																																																																		
R/LU218.0750.04	.750	.750	6.000	1.000	f ₁ +w/2	.659	1.375	.709	04	.157 - .197																																																																																		
R/LU218.1000.04	1.000	1.000	6.000	1.000		.909	-																																																																																					
R/LU218.1250.04	1.250	1.000	6.625	1.250		.909	-																																																																																					
R/LU218.0750.05	.750	.750	6.000	1.000	f ₁ +w/2	.640	1.375	.709	05	.201 - .236																																																																																		
R/LU218.1000.05	1.000	1.000	6.000	1.000		.890	-																																																																																					
R/LU218.1250.05	1.250	1.000	6.625	1.250		.890	-																																																																																					

State R or L version

w see indexable inserts

Dimensions in inch

R/LU218...02 max. depth of groove up to Ø 3.150"

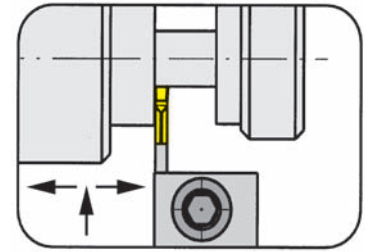
Further sizes upon request

Spare parts

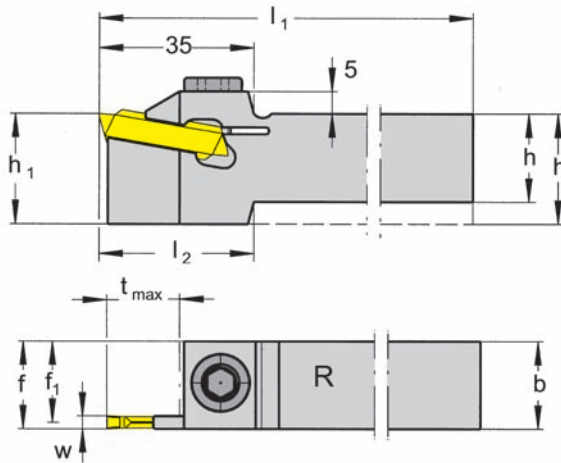
Toolholder	Screw	Wrench
R/LU218....	218.3	SW6,0DIN911

TOOLHOLDER Type

218



Depth of groove up to .709" (18.0 mm)
Clamping range .098 - .236" (2.5 - 6.0 mm)



for use with Indexable insert

Type 229
N229
S229

R = right hand version shown

L = left hand version



Part number	h	b	l_1	h_1	f	f_1	l_2	t_{max}	Size	Clamping range																																																																																			
R/L218.2020.02	20	20	150	25	$f_1+w/2$	18.55	35	18	02	2.5 - 3.0																																																																																			
R/L218.2525.02	25	25	150	25	$f_1+w/2$	23.55	-				R/L218.1616.03	16	16	150	25	$f_1+w/2$	14.55	45	18	03	3.0 - 4.0	R/L218.2020.03	20	20	150	25	18.55	35	R/L218.2525.03	25	25	150	25	23.55	-	R/L218.3225.03	32	25	170	32		23.55	-				R/L218.2020.04	20	20	150	25	$f_1+w/2$	17.70	35	18	04	4.0 - 5.0	R/L218.2525.04	25	25	150	25	22.70	-	R/L218.3225.04	32	25	170	32	22.70	-	R/L218.2020.05	20	20	150	25	$f_1+w/2$	17.20	35	18	05	5.1 - 6.0	R/L218.2525.05	25	25	150	25	22.20	-	R/L218.3225.05	32	25	170
R/L218.1616.03	16	16	150	25	$f_1+w/2$	14.55	45	18	03	3.0 - 4.0																																																																																			
R/L218.2020.03	20	20	150	25		18.55	35																																																																																						
R/L218.2525.03	25	25	150	25		23.55	-																																																																																						
R/L218.3225.03	32	25	170	32		23.55	-																																																																																						
R/L218.2020.04	20	20	150	25	$f_1+w/2$	17.70	35	18	04	4.0 - 5.0																																																																																			
R/L218.2525.04	25	25	150	25		22.70	-																																																																																						
R/L218.3225.04	32	25	170	32		22.70	-																																																																																						
R/L218.2020.05	20	20	150	25	$f_1+w/2$	17.20	35	18	05	5.1 - 6.0																																																																																			
R/L218.2525.05	25	25	150	25		22.20	-																																																																																						
R/L218.3225.05	32	25	170	32		22.20	-																																																																																						

State R or L version

w see indexable inserts

Dimensions in mm

R/L 218...02 max. depth of groove up to Ø 80 mm

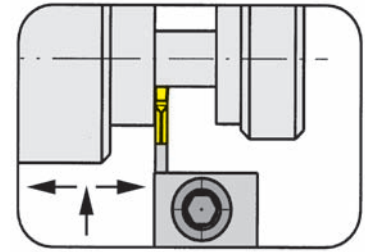
Further sizes upon request

Spare parts

Toolholder	Screw	Wrench
R/L218....	218.3	SW6DIN911

TOOLHOLDER Type

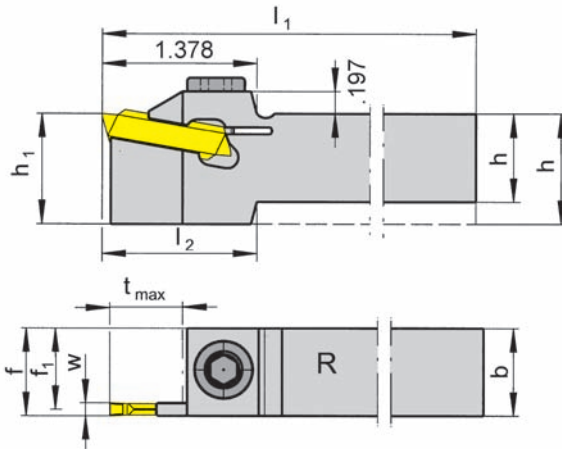
U218



Depth of groove up to .709"
Clamping range .240 - .315"

for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/LU218.0750.07	.750	.750	6.000	1.000		.600	1.375			
R/LU218.1000.07	1.000	1.000	6.000	1.000	f ₁ +w/2	.850	-	.709	07	.240 - .315
R/LU218.1250.07	1.250	1.000	6.625	1.250		.850	-			

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

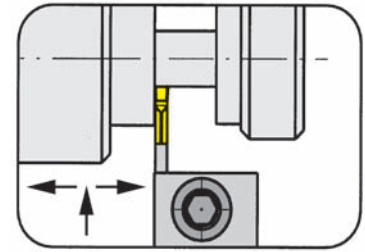
Spare parts

Toolholder	Screw	Wrench
R/LU218....	218.3	SW6DIN911

TOOLHOLDER Type

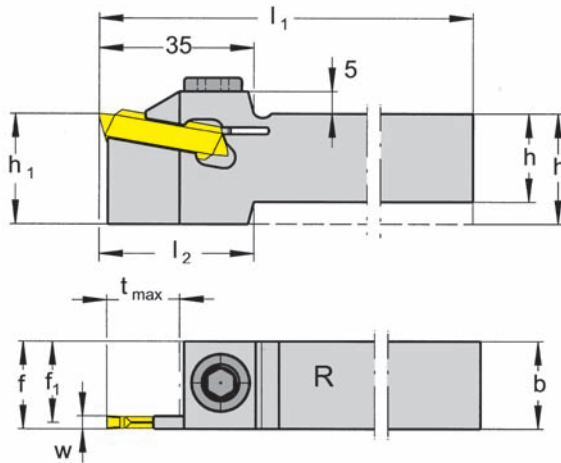
218

Depth of groove up to .709" (18.0 mm)
Clamping range .240 - .315" (6.1 - 8.0 mm)



for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f	f_1	l_2	t_{max}	Size	Clamping range
R/L218.2020.07	20	20	150	25		16.2	35			
R/L218.2525.07	25	25	150	25	$f_1+w/2$	21.2	-	18	07	6.1 - 8.0
R/L218.3225.07	32	25	170	32		21.2	-			
R/L218.2525.08	25	25	150	25	$f_1+w/2$	21.2	-	18	08	7.6 - 8.0

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

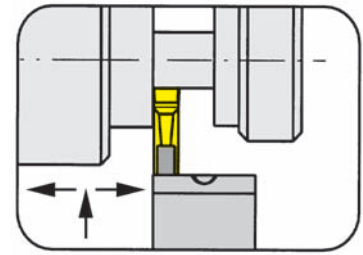
Spare parts

Toolholder	Screw	Wrench
R/L218....	218.3	SW6DIN911

G

TOOLHOLDER Type

U218

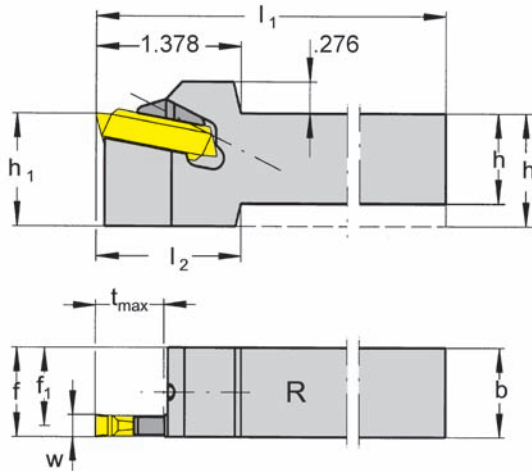


Depth of groove up to
Clamping range

.709"
.319 - .409"

for use with Indexable
insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f	f_1	l_2	t_{max}	Size	Clamping range
R/LU218.0750.09	.750	.750	6.000	1.000		.561	1.375			
R/LU218.1000.09	1.000	1.000	6.000	1.000	$f_1+w/2$	.811	-	.709	09	.319 - .409
R/LU218.1250.09	1.250	1.000	6.625	1.250		.811	-			

State R or L version

w see indexable inserts

Dimensions in inch

Note:

Please note type of clamp.

Further sizes upon request

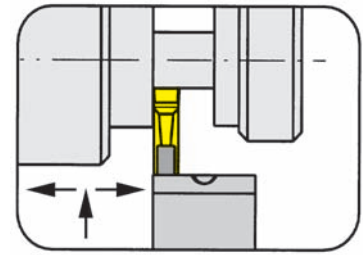
Spare parts

Toolholder	Clamp	TORX PLUS® Wrench
LU218....09	L218.9	T15PQ
RU218....09	R218.9	T15PQ

TOOLHOLDER Type

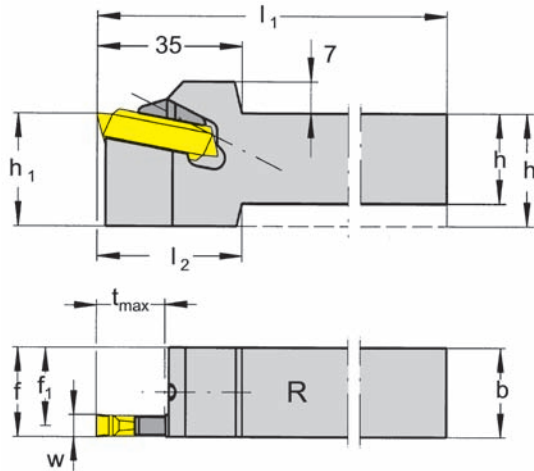
218

Depth of groove up to .709" (18.0 mm)
Clamping range .319 - .409" (8.1 - 10.4 mm)



for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/L218.2020.09	20	20	150	25		15.2	35			
R/L218.2525.09	25	25	150	25	f ₁ +w/2	20.2	-	18	09	8.1 - 10.4
R/L218.3225.09	32	25	170	32		20.2	-			

State R or L version

w see indexable inserts

Dimensions in mm

Note:

Please note type of clamp.

Further sizes upon request

Spare parts

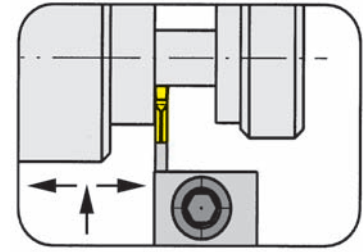
Toolholder	Clamp	TORX PLUS® Wrench
L218....09	L218.9	T15PQ
R218....09	R218.9	T15PQ

G

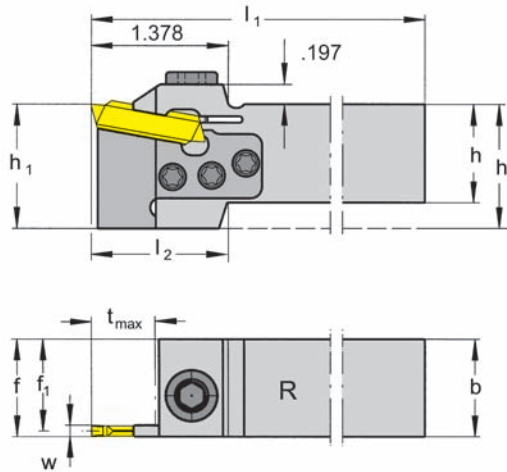
BASIC TOOLHOLDER Type

U218

with changeable cassette



Depth of groove up to .709"
Clamping range .118 - .315"



for use with Indexable insert

Type 229
N229
S229

R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/LU218.1000.K3 R/LU218.1250.K3	1.000 1.250	1.000	6.000 6.625	1.250	f ₁ +w/2	.943	2.000 -	.709	03	.118 - .157
R/LU218.1000.K4 R/LU218.1250.K4	1.000 1.250	1.000	6.000 6.625	1.250	f ₁ +w/2	.909	2.000 -	.709	04	.157 - .197
R/LU218.1000.K5 R/LU218.1250.K5	1.000 1.250	1.000	6.000 6.625	1.250	f ₁ +w/2	.890	2.000 -	.709	05	.201 - .236
R/LU218.1000.K7 R/LU218.1250.K7	1.000 1.250	1.000	6.000 6.625	1.250	f ₁ +w/2	.850	2.000 -	.709	07	.240 - .315

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

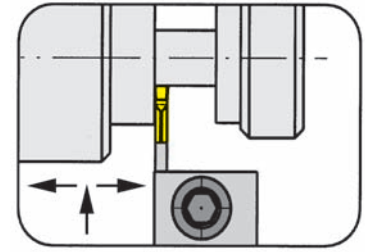
Spare parts

Basic toolholder	Cassette	Screw	Screw	Wrench	TORX PLUS® Wrench
R/LU218.1...K3	NK218.32.03	030.0518.T20P	218.3	SW6DIN911	T20PQ
R/LU218.1...K4	NK218.32.04	030.0518.T20P	218.3	SW6DIN911	T20PQ
R/LU218.1...K5	NK218.32.05	030.0518.T20P	218.3	SW6DIN911	T20PQ
R/LU218.1...K7	NK218.32.07	030.0518.T20P	218.3	SW6DIN911	T20PQ

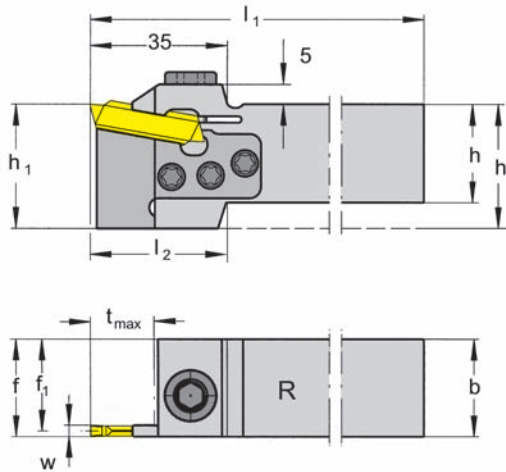
BASIC TOOLHOLDER Type

218

with changeable cassette



Depth of groove up to .709" (18.0 mm)
Clamping range .118 - .315" (3.0 - 8.0 mm)



for use with Indexable insert

Type 229
N229
S229

R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/L218.2525.K3 R/L218.3225.K3	25 32	25	150 170	32	f ₁ +w/2	23.55	35 -	18	03	3.0 - 4.0
R/L218.2525.K4 R/L218.3225.K4	25 32	25	150 170	32	f ₁ +w/2	22.70	35 -	18	04	4.0 - 5.0
R/L218.2525.K5 R/L218.3225.K5	25 32	25	150 170	32	f ₁ +w/2	22.20	35 -	18	05	5.1 - 6.0
R/L218.2525.K7 R/L218.3225.K7	25 32	25	150 170	32	f ₁ +w/2	21.20	35 -	18	07	6.1 - 8.0

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

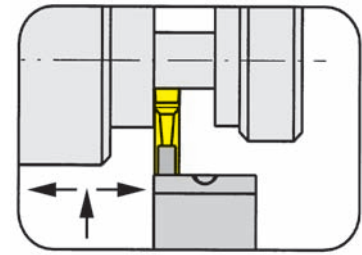
Basic toolholder	Cassette	Screw	Screw	Wrench	TORX PLUS® Wrench
R/L218....K3	NK218.32.03	030.0518.T20P	218.3	SW6DIN911	T20PQ
R/L218....K4	NK218.32.04	030.0518.T20P	218.3	SW6DIN911	T20PQ
R/L218....K5	NK218.32.05	030.0518.T20P	218.3	SW6DIN911	T20PQ
R/L218....K7	NK218.32.07	030.0518.T20P	218.3	SW6DIN911	T20PQ

G

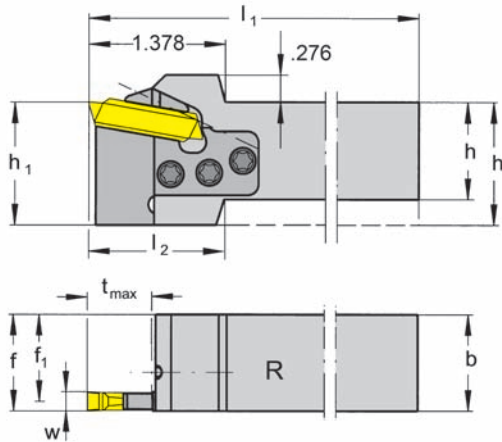
TOOLHOLDER Type

U218

with changeable cassette



Depth of groove up to .709"
Clamping range .319 - .409"



for use with Indexable insert

Type 229
S229

G

R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/LU218.1000.K9	1.000	1.000	6.000	1.250	f ₁ +w/2	.811	2.000	.709	09	.319 - .409
R/LU218.1250.K9	1.250	1.000	6.625	1.250	f ₁ +w/2	.811	-	.709	09	.319 - .409

State R or L version

w see indexable inserts

Dimensions in inch

Note:

Please note type of clamp.

Further sizes upon request

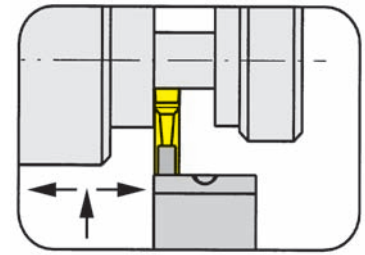
Spare parts

Basic toolholder	Cassette	Clamp	TORX PLUS® Wrench	Screw	TORX PLUS® Wrench
LU218.1...K9	NK218.32.09	L218.9	T15PQ	030.0518.T20P	T20PQ
RU218.1...K9	NK218.32.09	R218.9	T15PQ	030.0518.T20P	T20PQ

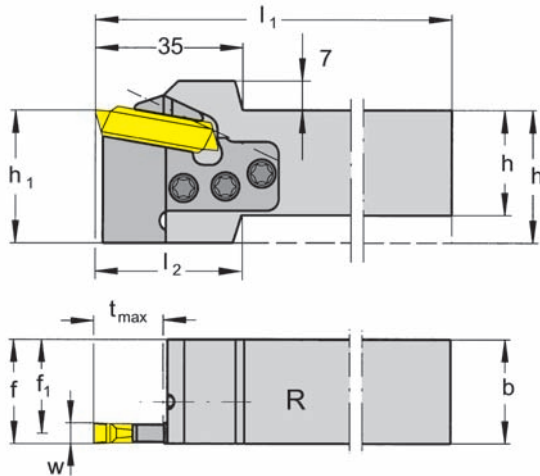
BASIC TOOLHOLDER Type

218

with changeable cassette



Depth of groove up to .709" (18.0 mm)
Clamping range .319 - .409" (8.1 - 10.4 mm)



for use with Indexable insert

Type 229
S229

R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/L218.2525.K9	25	25	150	32	f ₁ +w/2	20.2	48	18	09	8.1 - 10.4
R/L218.3225.K9	32	25	170	32	f ₁ +w/2	20.2	-	18	09	8.1 - 10.4

State R or L version

w see indexable inserts

Dimensions in mm

Note:

Please note type of clamp.

Further sizes upon request

Spare parts

Basic toolholder	Cassette	Clamp	TORX PLUS® Wrench	Screw	TORX PLUS® Wrench
L218....K9	NK218.32.09	L218.9	T15PQ	030.0518.T20P	T20PQ
R218....K9	NK218.32.09	R218.9	T15PQ	030.0518.T20P	T20PQ

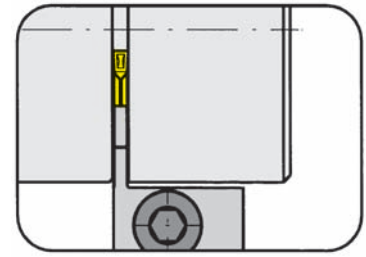
G

GROOVING (external)



TOOLHOLDER Type

U226

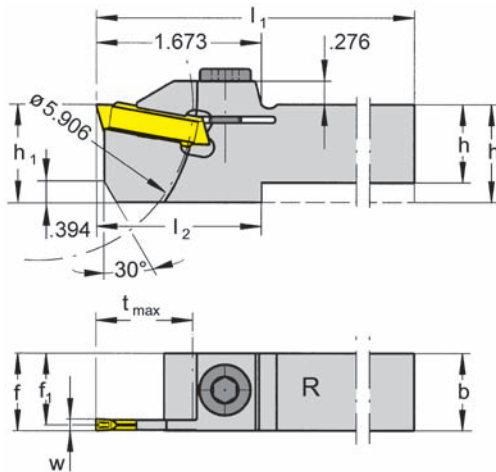


Depth of groove up to
Clamping range

1.000"
.118 - .236"

for use with Indexable
insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/LU226.0625.03	.625	.625	6.000			.568	2.000			
R/LU226.0750.03	.750	.750	6.000	1.250	f ₁ +w/2	.693	1.675	1.000	03	.118 - .157
R/LU226.1000.03	1.000	1.000	6.000			.943	1.675			
R/LU226.1250.03	1.250	1.000	6.625			.943	-			
R/LU226.0625.04	.625	.625	6.000			.534	2.000			
R/LU226.0750.04	.750	.750	6.000	1.250	f ₁ +w/2	.659	1.675	1.000	04	.157 - .197
R/LU226.1000.04	1.000	1.000	6.000			.909	1.675			
R/LU226.1250.04	1.250	1.000	6.625			.909	-			
R/LU226.0750.05	.750	.750	6.000			.640	1.675			
R/LU226.1000.05	1.000	1.000	6.000	1.250	f ₁ +w/2	.890	1.675	1.000	05	.201 - .236
R/LU226.1250.05	1.250	1.000	6.625			.890	-			

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

Toolholder	Screw	Wrench
R/LU226....	218.3	SW6DIN911

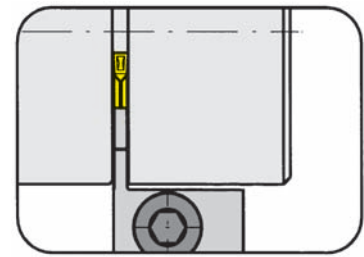
G22

GROOVING (external)

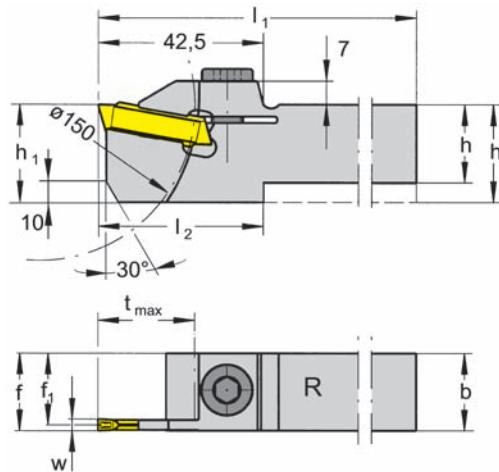


TOOLHOLDER Type

226



Depth of groove up to .984" (25.0 mm)
Clamping range .118 - .236" (3.0 - 6.0 mm)



for use with Indexable insert

Type 229
S229

R = right hand version shown

L = left hand version



Part number	h	b	l_1	h_1	f	f_1	l_2	t_{max}	Size	Clamping range
R/L226.1616.03	16	16	150			18.55	52.5			
R/L226.2020.03	20	20	150	32	$f_1+w/2$	18.55	42.5	25	03	3.0 - 4.0
R/L226.2525.03	25	25	150			23.55	-			
R/L226.3225.03	32	25	170			23.55	-			
R/L226.1616.04	16	16	150			13.70	52.5			
R/L226.2020.04	20	20	150	32	$f_1+w/2$	17.70	42.5	25	04	4.0 - 5.0
R/L226.2525.04	25	25	150			22.70	-			
R/L226.3225.04	32	25	170			22.70	-			
R/L226.2020.05	20	20	150			17.20	42.5			
R/L226.2525.05	25	25	150	32	$f_1+w/2$	22.20	42.5	25	05	5.1 - 6.0
R/L226.3225.05	32	25	170			22.20	-			

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

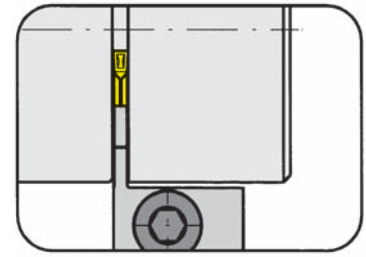
Toolholder	Screw	Wrench
R/L226....	218.3	SW6DIN911

GROOVING (external)



TOOLHOLDER Type

U226

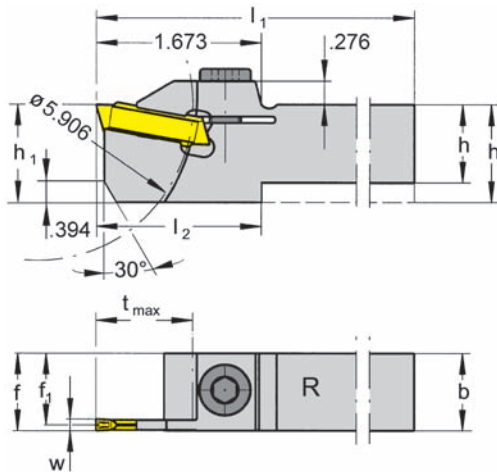


Depth of groove up to
Clamping range

1.000"
.240 - .315"

for use with Indexable
insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/LU226.1000.07	1.000	1.000	6.000	1.250	f ₁ +w/2	.850	1.675	1.000	07	.240 - .315
R/LU226.1250.07	1.250	1.000	6.625	1.250	f ₁ +w/2	.850	-	1.000	07	.240 - .315

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

Toolholder	Screw	Wrench
R/LU226.1...	218.3	SW6DIN911

G24

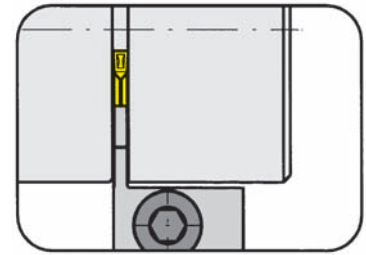
G

GROOVING (external)

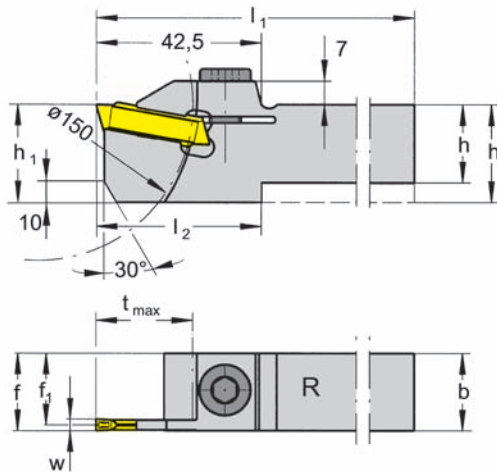


TOOLHOLDER Type

226



Depth of groove up to .984" (25.0 mm)
Clamping range .240 - .315" (6.1 - 8.0 mm)



for use with Indexable insert

Type 229
S229

R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f	f_1	l_2	t_{max}	Size	Clamping range
R/L226.2525.07	25	25	150	32	$f_1+w/2$	21.2	42.5	25	07	6.1 - 8.0
R/L226.3225.07	32	25	170	32	$f_1+w/2$	21.2	-	25	07	6.1 - 8.0
R/L226.2525.08	25	25	150	32	$f_1+w/2$	20.2	42.5	25	08	7.6 - 8.0
R/L226.3225.08	32	25	170	32	$f_1+w/2$	21.2	-	25	08	7.6 - 8.0

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	Wrench
R/L226....	218.3	SW6DIN911

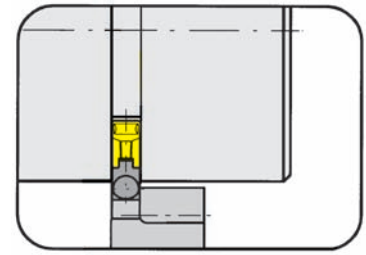
G

GROOVING (external)



TOOLHOLDER Type

U226

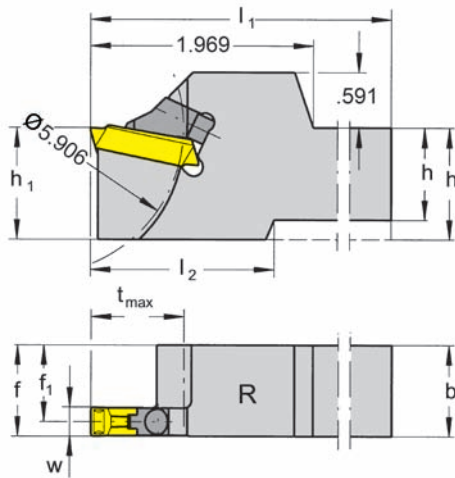


Depth of groove up to
Clamping range

1.000"
.319 - .409"

for use with Indexable
insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f	f_1	l_2	t_{max}	Size	Clamping range
R/LU226.1000.09	1.000	1.000	6.000	1.250	$f_1+w/2$	.811	1.675	1.000	09	.319 - .409
R/LU226.1250.09	1.250	1.000	6.625	1.250	$f_1+w/2$	.811	-	1.000	09	.319 - .409

State R or L version

w see indexable inserts

Dimensions in inch

Note:

Please note type of clamp.

Further sizes upon request

Spare parts

Toolholder	Clamp	TORX PLUS® Wrench
R/LU226.1...	020.1008.0041	T15PQ

G26

G

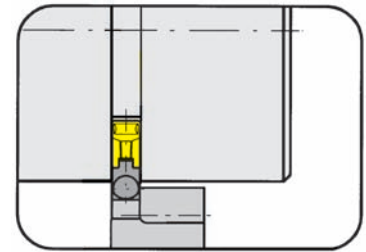
GROOVING (external)



TOOLHOLDER Type

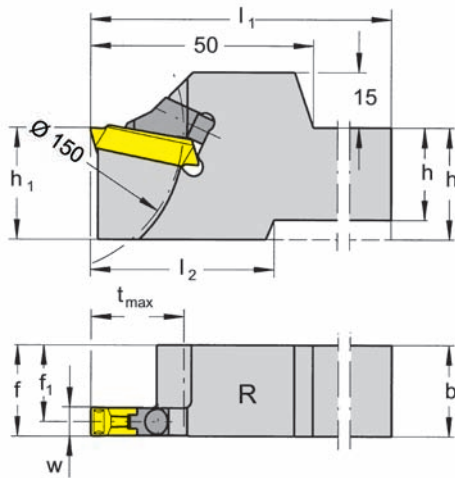
226

Depth of groove up to .984" (25.0 mm)
Clamping range .319 - .409" (8.1 - 10.4 mm)



for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/L226.2525.09	25	25	150	32	f ₁ +w/2	20.2	42.5	25	09	8.1 - 10.4
R/L226.3225.09	32	25	170	32	f ₁ +w/2	20.2	-	25	09	8.1 - 10.4

State R or L version

w see indexable inserts

Dimensions in mm

Note:

Please note type of clamp.

Further sizes upon request

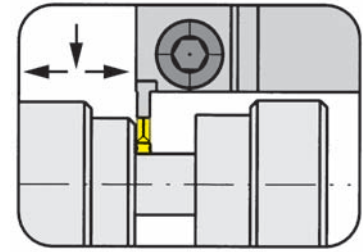
Spare parts

Toolholder	Clamp	TORX PLUS® Wrench
R/L226....	020.1008.0041	T15PQ



TOOLHOLDER Type

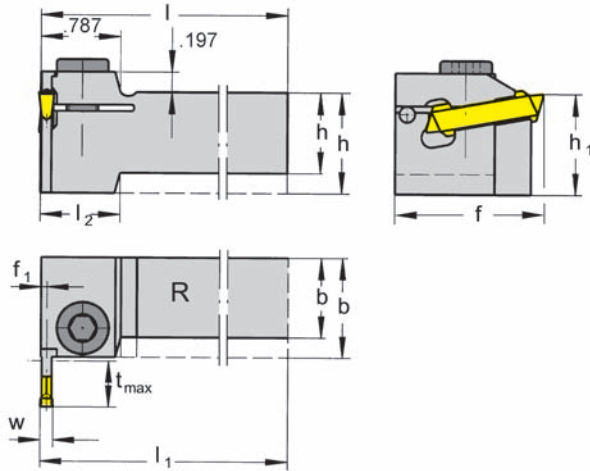
U219



Depth of groove up to **.591"**
Clamping range **.118 - .315"**

for use with Indexable insert

Type 229
N229
S229



R = right hand version shown

L = left hand version

Part number	h	h ₁	b	l	l ₁	l ₂	f	f ₁	t _{max}	Size	Clamping range
R/LU219.0750.03 R/LU219.1000.03	.750 1.000	1.000	.750 1.000	6.000	l-f ₁ +w/2	.787 -	1.472	.057	.433	03	.118 - .157
R/LU219.0750.04 R/LU219.1000.04	.750 1.000	1.000	.750 1.000	6.000	l-f ₁ +w/2	.787 -	1.472	.091	.433	04	.157 - .197
R/LU219.0750.05 R/LU219.1000.05	.750 1.000	1.000	.750 1.000	6.000	l-f ₁ +w/2	.906 -	1.772	.110	.591	05	.201 - .236
R/LU219.0750.07 R/LU219.1000.07	.750 1.000	1.000	.750 1.000	6.000	l-f ₁ +w/2	.906 -	1.772	.150	.591	07	.240 - .315

State R or L version

w see indexable inserts

Dimensions in inch

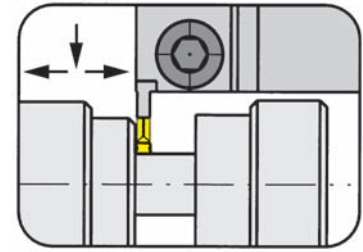
Further sizes upon request

Spare parts

Toolholder	Screw	Wrench
R/LU219....	218.3	SW6DIN911

TOOLHOLDER Type

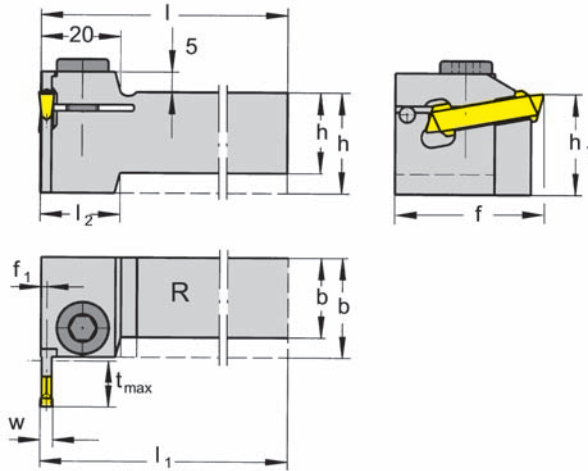
219



Depth of groove up to .591" (15.0 mm)
Clamping range .118 - .315" (3.0 - 8.0 mm)

for use with Indexable insert

Type 229
N229
S229



R = right hand version shown

L = left hand version

Part number	h	h ₁	b	l	l ₁	l ₂	f	f ₁	t _{max}	Size	Clamping range
R/L219.2020.03 R/L219.2525.03	20 25	25	20 25	150	$l-f_1+w/2$	20 -	37	1.45	11	03	3.0 - 4.0
R/L219.2020.04 R/L219.2525.04	20 25	25	20 25	150	$l-f_1+w/2$	20 -	37	2.30	11	04	4.0 - 5.0
R/L219.2020.05 R/L219.2525.05	20 25	25	20 25	150	$l-f_1+w/2$	23 -	45	2.80	15	05	5.1 - 6.0
R/L219.2020.07 R/L219.2525.07	20 25	25	20 25	150	$l-f_1+w/2$	23 -	45	3.80	15	07	6.1 - 8.0

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

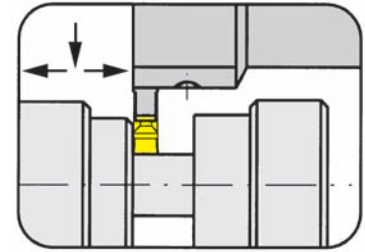
Spare parts

Toolholder	Screw	Wrench
R/L219.2...	218.3	SW6DIN911

G

TOOLHOLDER Type

U219

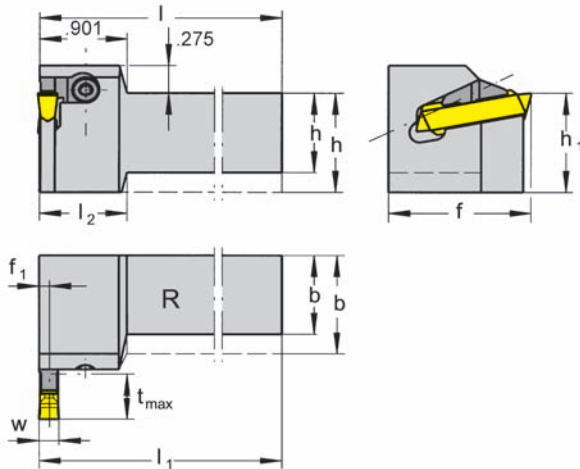


Depth of groove up to
Clamping range

.591"
.319 - .409"

for use with Indexable
insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	h ₁	b	l	l ₁	l ₂	f	f ₁	t _{max}	Size	Clamping range
R/LU219.0750.09	.750	1.000	.750	6.000	$l-f_1+w/2$	.906	1.772	.189	.591	09	.319 - .409
R/LU219.1000.09	1.000	1.000	1.000	6.000	$l-f_1+w/2$	-	1.772	.189	.591	09	.319 - .409

State R or L version

w see indexable inserts

Dimensions in inch

Note:

Please note type of clamp.

Further sizes upon request

Spare parts

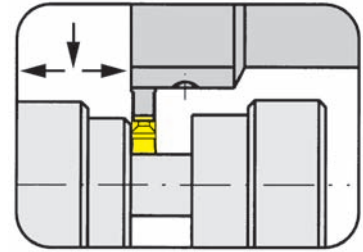
Toolholder	Clamp	TORX PLUS® Wrench
LU219....09	R218.9.32	T15PQ
RU219....09	L218.9.32	T15PQ

G30

G

TOOLHOLDER Type

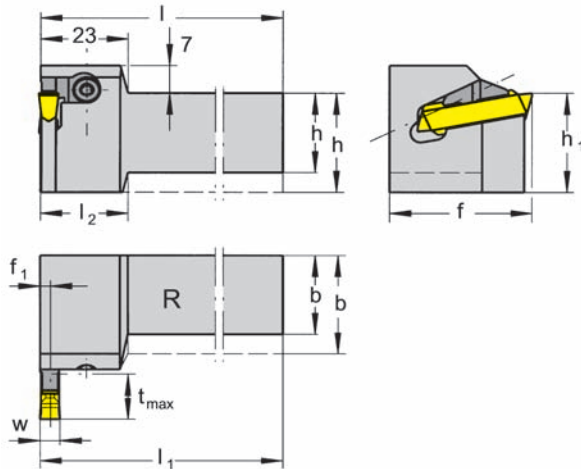
219



Depth of groove up to .591" (15.0 mm)
Clamping range .319 - .409" (8.1 - 10.4 mm)

for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	h ₁	b	l	l ₁	l ₂	f	f ₁	t _{max}	Size	Clamping range
R/L219.2020.09	20	25	20	150	l-f ₁ +w/2	23	45	4.8	15	09	8.1- 10.4
R/L219.2525.09	25	25	25	150	l-f ₁ +w/2	-	45	4.8	15	09	8.1- 10.4

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Note:

Please note type of clamp.

Spare parts

Toolholder	Clamp	TORX PLUS® Wrench
L219.2...09	R218.9.32	T15PQ
R219.2...09	L218.9.32	T15PQ

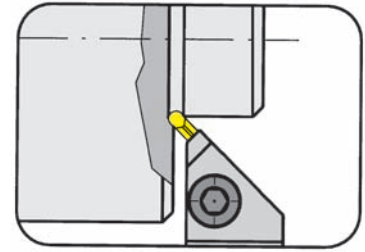
G

GROOVING CORNER RELIEFS (external)



TOOLHOLDER Type

U225

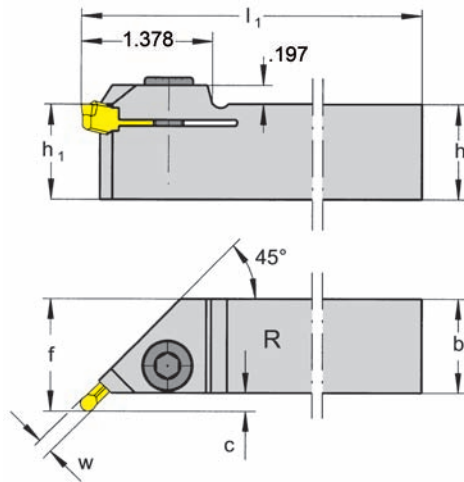


Clamping range

.118 - .197"

for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f	c	D_{min}	Size	Clamping range
R/LU225.1000.04	1.000	1.000	6.000	1.000	1.197	.197	1.968	04	.118 - .197

State R or L version

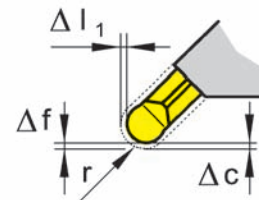
w see indexable inserts

Dimensions in inch

Further sizes upon request

Revision factor Δl_1 , Δc and Δf in relation to radius r

r	Δl_1	Δc	Δf
.098 - .118	.000	.000	.000
.078 -	-.0058	-.0058	-.0058
.059 -	-.0115	-.0115	-.0115



Spare parts

Toolholder	Screw	Wrench
R/LU225.1000.04	218.3	SW6DIN911

G32

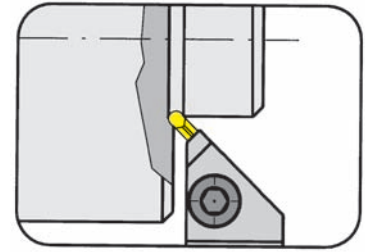
G

GROOVING CORNER RELIEFS (external)



TOOLHOLDER Type

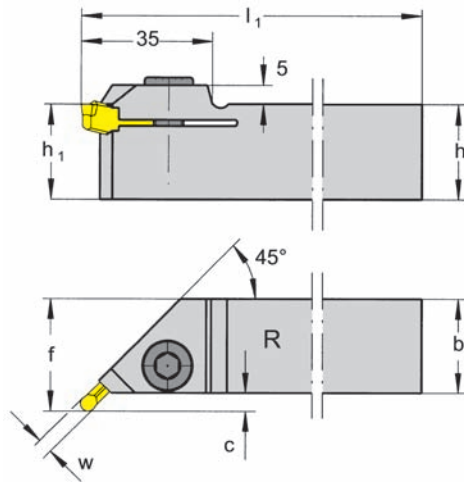
225



Clamping range .118 - .236" (3.0 - 6.0 mm)

for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f	c	D_{min}	Size	Clamping range
R/L225.2525.04	25	25	150	25	30.0	5.0	50	04	3.0 - 5.0
R/L225.2525.05	25	25	150	25	30.5	5.5	50	05	5.1 - 6.0

State R or L version

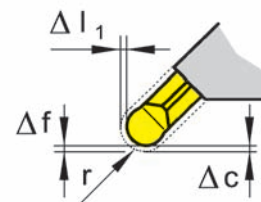
w see indexable inserts

Dimensions in mm

Further sizes upon request

Revision factor Δl_1 , Δc and Δf in relation to radius r

r	Δl_1	Δc	Δf
2,5 - 3,0	0,000	0,000	0,000
2,0	-0,147	-0,147	-0,147
1,5	-0,293	-0,293	-0,293



Spare parts

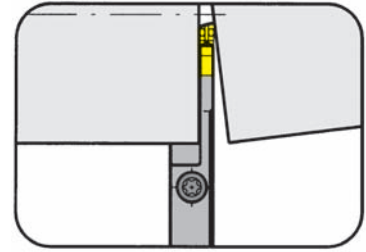
Toolholder	Screw	Wrench
R/L225.2525.0...	218.3	SW6DIN911

G

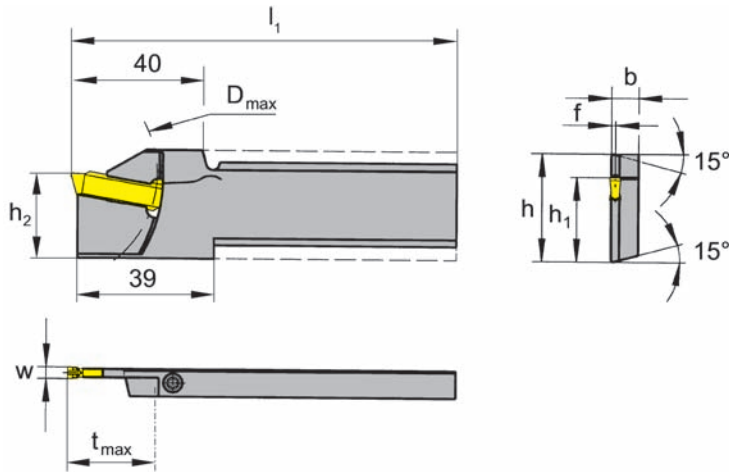
TOOLHOLDER Type

226

reinforced version



Depth of groove up to .984" (25.0 mm)
Clamping range .118 - .157" (3.0 - 4.0 mm)



for use with Indexable insert

Type 229
S229

G

R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	h ₂	f	t _{max}	D _{max}	Size	Clamping range
R/L226.2608.03	26	8	110	21.4	24.8	1.2	25	150	03	3
R/L226.3208.03	32	8	110	24.8	24.8	1.2	25	150	03	3
R/L226.2608.04	26	8	110	21.4	24.8	1.7	25	150	04	4
R/L226.3208.04	32	8	110	24.8	24.8	1.7	25	150	04	4

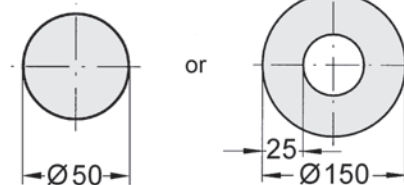
State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Parting off solid bars Parting off tubes



Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/L226....	4.15T15P	T15PQ

G34

HORN - THE LEADERS IN GROOVING TECHNOLOGY



G

Disc Milling

SYSTEM 101

HORN - INTELLIGENT TOOL DESIGN AT WORK.



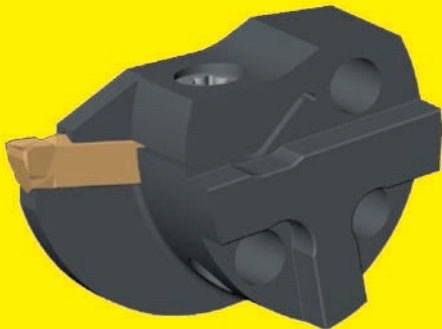
For further information, please see HORN catalog "CARBIDE MILLING TOOLS".

G35

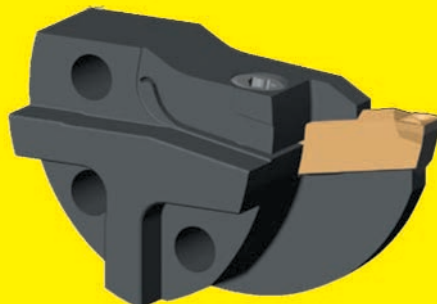
Cassettes type
BK223...
BK224...
BK229...
for internal machining



RBK223...



RBK224...



RBK229...

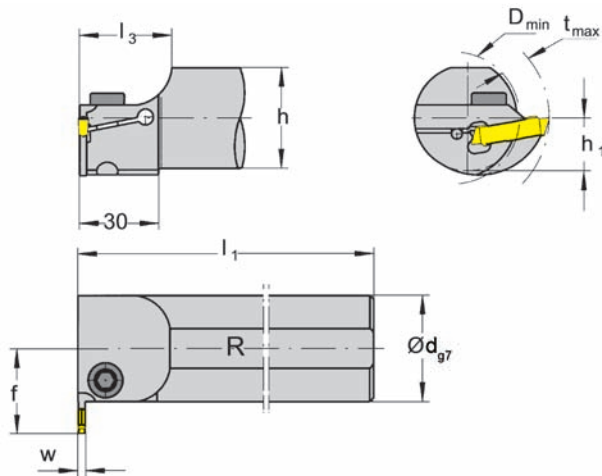
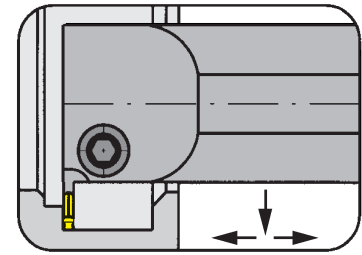
G

TOOLHOLDER Type

213

Short reach

Bore Ø from 1.811" (46.0 mm)
 Depth of groove up to .453" (11.5 mm)
 Clamping range .118 - .236" (3.0 - 6.0 mm)



for use with Indexable insert

Type 229
S229

R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₃	h	h ₁	f	D _{min}	t _{max}	Size	Clamping range
R/L213.0032.0.03	32	150	35.0	30	15	28	46	11.5	03	3.0 - 4.0
R/L213.0040.0.03	40	180	39.4	38	19	32	54			
R/L213.0032.0.04	32	150	35.0	30	15	28	46	11.5	04	4.0 - 5.0
R/L213.0040.0.04	40	180	39.4	38	19	32	54			
R/L213.0032.0.05	32	150	35.0	30	15	28	46	11.5	05	5.1 - 6.0
R/L213.0040.0.05	40	180	39.4	38	19	32	54			

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

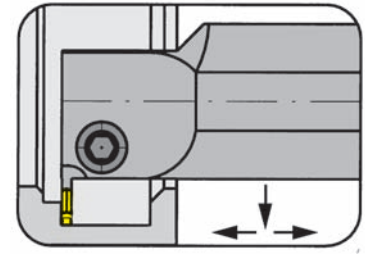
Toolholder	Screw	Wrench
R/L213.00...	218.3	SW6DIN911

G

TOOLHOLDER Type

U213

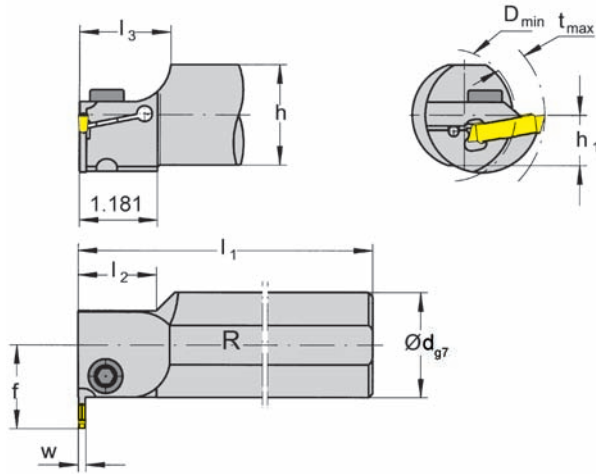
Short reach



Bore Ø from	1.496"
Depth of groove up to	.591"
Clamping range	.118 - .315"

for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	l ₃	h	h ₁	f	D _{min}	t _{max}	Size	Clamping range
R/LU213.1000.03	1.000	6.000	-	1.375	.921	.461	.964	1.496	.295	03	.118 - .157
R/LU213.1250.03	1.250	6.000	1.250	1.375	1.171	.586	1.102	1.496	.295		
R/LU213.1500.03	1.500	7.000	1.250	1.375	1.421	.711	1.260	1.968	.453		
R/LU213.2000.03	2.000	8.000	1.250	1.500	1.921	.961	1.594	2.362	.591		
R/LU213.1000.04	1.000	6.000	-	1.375	.921	.461	.964	1.496	.295	04	.157 - .197
R/LU213.1250.04	1.250	6.000	1.250	1.375	1.171	.586	1.102	1.496	.295		
R/LU213.1500.04	1.500	7.000	1.250	1.375	1.421	.711	1.260	1.968	.453		
R/LU213.2000.04	2.000	8.000	1.250	1.500	1.921	.961	1.594	2.362	.591		
R/LU213.1250.05	1.250	6.000	-	1.375	1.171	.586	1.102	1.811	.453	05	.201 - .236
R/LU213.1500.05	1.500	7.000	1.250	1.375	1.421	.711	1.260	1.968	.453		
R/LU213.2000.05	2.000	8.000	1.250	1.500	1.921	.961	1.594	2.362	.591		
R/LU213.1500.07	1.500	7.000	1.250	1.375	1.421	.711	1.260	1.968	.453	07	.240 - .315
R/LU213.2000.07	2.000	8.000		1.500	1.921	.961	1.594	2.362	.591		

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Note Toolholders with shank Ø 1.250":

The full depth of cut $t_{max} = .453"$ will be reached from $D_{min} 1.811"$

Spare parts

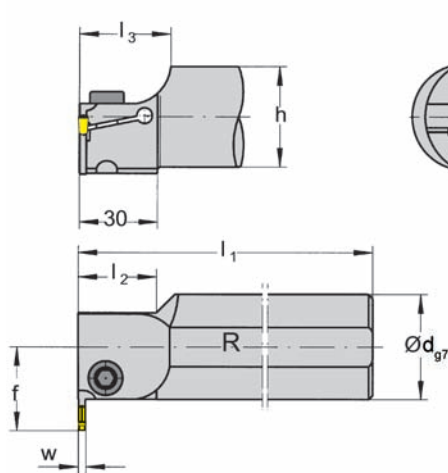
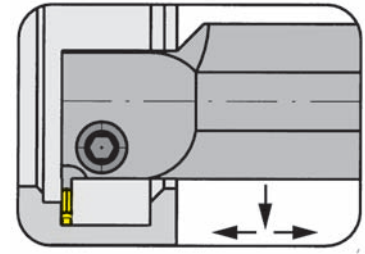
Toolholder	Screw	Wrench
R/LU213....	218.3	SW6DIN911

TOOLHOLDER Type

213

Short reach

Bore Ø from 1.496" (38.0 mm)
 Depth of groove up to .591" (15.0 mm)
 Clamping range .118 - .315" (3.0 - 8.0 mm)



for use with Indexable insert

Type 229
S229

R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	l ₃	h	h ₁	f	D _{min}	t _{max}	Size	Clamping range
R/L213.0025.03	25	150	-	31.8	23	11.5	24.5	38	7.5	03	3.0 - 4.0
R/L213.0032.03	32	150	30	35.0	30	15.0	28.0	38	7.5		
R/L213.0040.03	40	180	30	37.4	38	19.0	32.0	50	11.5		
R/L213.0050.03	50	200	30	39.1	47	23.5	40.5	60	15.0	04	4.0 - 5.0
R/L213.0025.04	25	150	-	31.8	23	11.5	24.5	38	7.5		
R/L213.0032.04	32	150	30	35.0	30	15.0	28.0	38	7.5		
R/L213.0040.04	40	180	30	37.4	38	19.0	32.0	50	11.5	05	5.1 - 6.0
R/L213.0050.04	50	200	30	39.1	47	23.5	40.5	60	15.0		
R/L213.0032.05	32	150	-	35.0	30	15.0	28.0	46	11.5		
R/L213.0040.05	40	180	30	35.0	38	19.0	32.0	50	11.5	07	6.1 - 8.0
R/L213.0050.05	50	200	30	40.0	47	23.5	40.5	60	15.0		
R/L213.0040.07	40	180	30	35.0	38	19.0	32.0	50	11.5		
R/L213.0050.07	50	200	30	40.0	47	23.5	40.5	60	15.0		

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Note toolholder with shank-Ø 25 or 32 mm

The full depth of cut $t_{max} = 11,5$ mm will be reached from D_{min} 46 mm

Spare parts

Toolholder	Screw	Wrench
R/L213.00...	218.3	SW6DIN911

G

GROOVING and TURNING (internal)

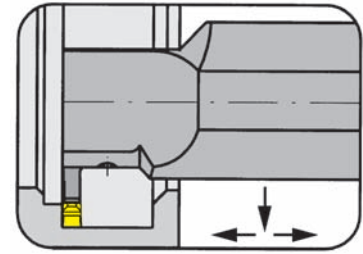


TOOLHOLDER Type

U213

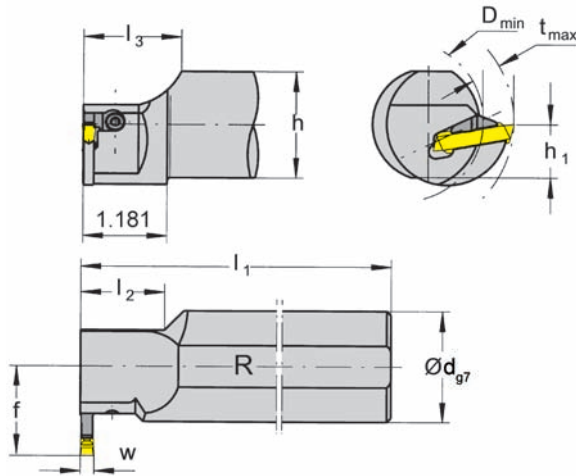
Short reach

Bore Ø from	1.968"
Depth of groove up to	.591"
Clamping range	.319 - .409"



for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	l ₃	h	h ₁	f	D _{min}	t _{max}	Size	Clamping range
R/LU213.1500.09	1.500	7.000	1.250	1.375	1.421	.711	1.260	1.968	.453	09	.319 - .409
R/LU213.2000.09	2.000	8.000	1.250	1.500	1.921	.961	1.594	2.362	.591	09	

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Note:

Please note type of clamp.

Spare parts

Toolholder	Clamp	TORX PLUS® Wrench
LU213....09	R218.9	T15PQ
RU213....09	L218.9	T15PQ

G40

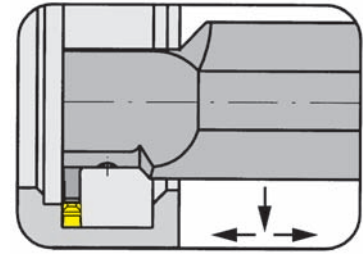


TOOLHOLDER Type

213

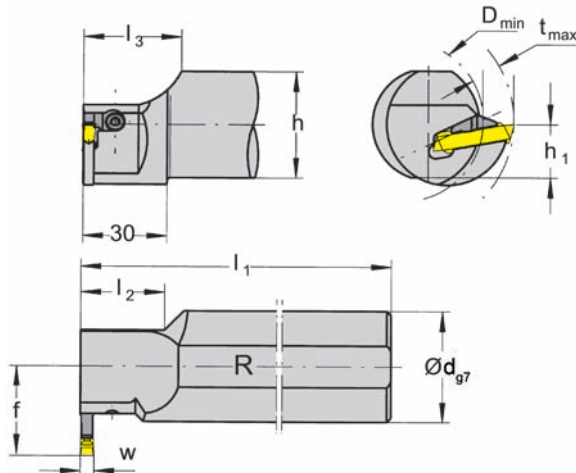
Short reach

Bore Ø from 1.969" (50.0 mm)
 Depth of groove up to .591" (15.0 mm)
 Clamping range .319 - .409" (8.1 - 10.4 mm)



for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	l ₃	h	h ₁	f	D _{min}	t _{max}	Size	Clamping range
R/L213.0040.09	40	180	30	35	38	19.0	32.0	50	11.5	09	8.1 - 10.4
R/L213.0050.09	50	200	30	40	47	23.5	40.5	60	15.0	09	8.1 - 10.4

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Note:

Please note type of clamp.

Spare parts

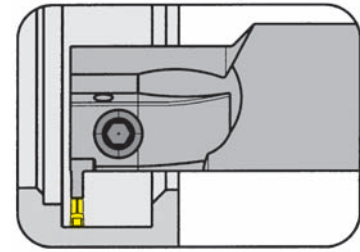
Toolholder	Clamp	TORX PLUS® Wrench
L213.00...09	R218.9	T15PQ
R213.00...09	L218.9	T15PQ



TOOLHOLDER Type

U213

Short reach

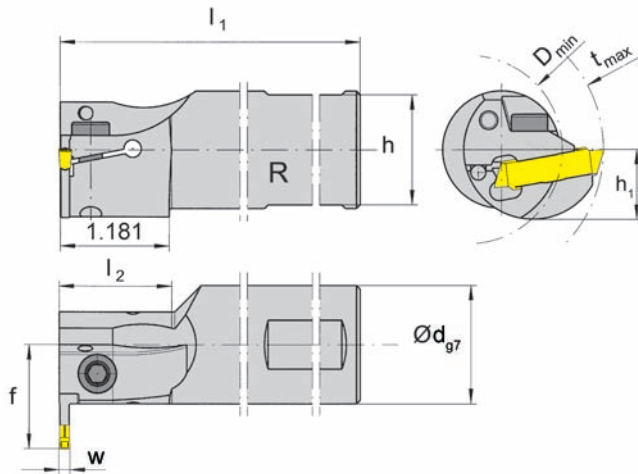


Bore Ø from	1.496"
Depth of groove up to	.453"
Clamping range	.118 - .197"

with through coolant supply

for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	h	h ₁	f	D _{min}	t _{max}	Size	Clamping range
R/LU213.1250.03IK	1.250	6.000	1.250	1.171	.586	1.102	1.496	.295	03	.118 - .157
R/LU213.1500.03IK	1.500	7.000	1.250	1.421	.711	1.260	1.969	.453	03	.118 - .157
R/LU213.1250.04IK	1.250	6.000	1.250	1.171	.586	1.102	1.496	.295	04	.157 - .197
R/LU213.1500.04IK	1.500	7.000	1.250	1.421	.711	1.260	1.969	.453	04	.157 - .197

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Note Toolholders with shank Ø 1.250":

The full depth of cut $t_{max} = .453"$ will be reached from $D_{min} 1.811"$

Spare parts

Toolholder	Screw	Wrench
R/LU213.1...	DIN912-M6x14	SW5DIN911

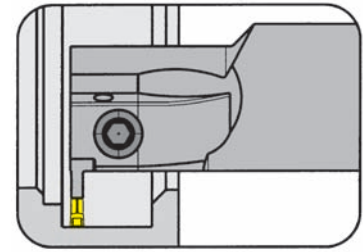
TOOLHOLDER Type

213

Short reach

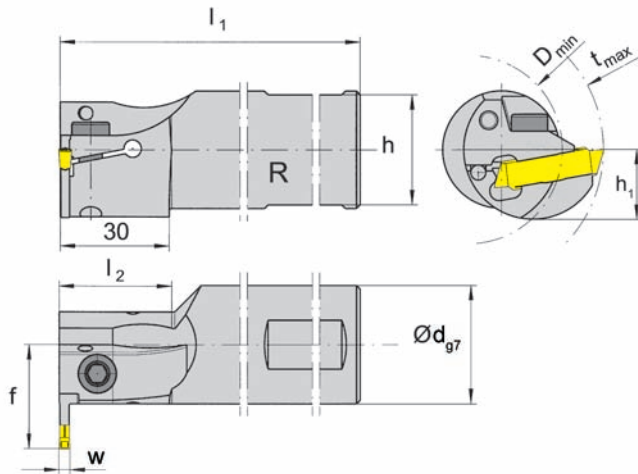
Bore Ø from 1.496" (38.0 mm)
 Depth of groove up to .453" (11.5 mm)
 Clamping range .118 - .197" (3.0 - 5.0 mm)

with through coolant supply



for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	h	h ₁	f	D _{min}	t _{max}	Size	Clamping range
R/L213.0025.03IK	25	150	-	23	11.5	24.5	38	7.5		
R/L213.0032.03IK	32	150	30	30	15.0	28.0	38	7.5	03	3.0 - 4.0
R/L213.0040.03IK	40	180	30	38	19.0	32.0	50	11.5		
R/L213.0025.04IK	25	150	-	23	11.5	24.5	38	7.5	04	4.0 - 5.0
R/L213.0032.04IK	32	150	30	30	15.0	28.0	38	7.5		

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Note toolholder with shank-Ø 25 or 32 mm

The full depth of cut t_{max} = 11,5 mm will be reached from D_{min} 46 mm

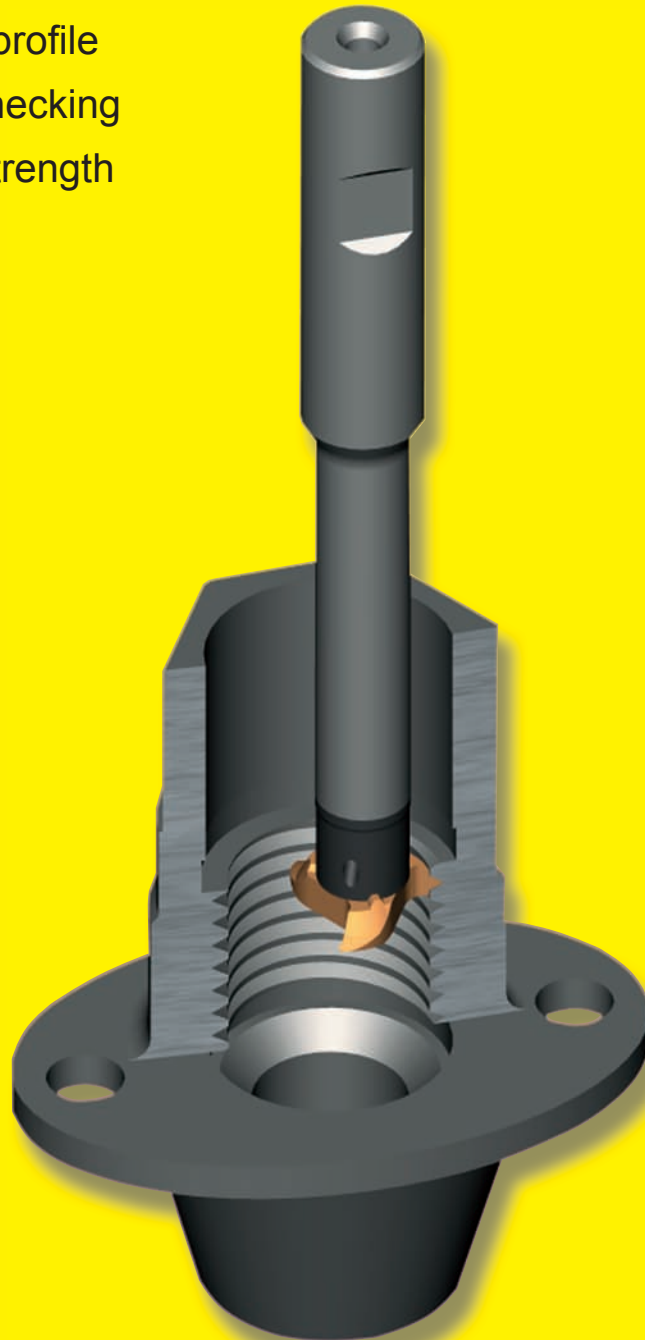
Spare parts

Toolholder	Screw	Wrench
R/L213.00...	DIN912-M6x14	SW5DIN911

G

Thread milling (by circular interpolation)

- high cylindricity
- constant milled profile
- simple thread checking
- usable in high strength materials



G

For further information, please see HORN catalog "CARBIDE MILLING TOOLS".

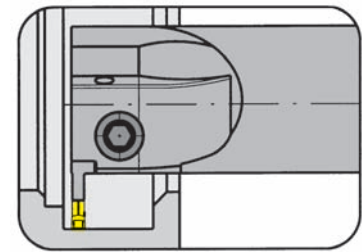
TOOLHOLDER Type

213

Short reach

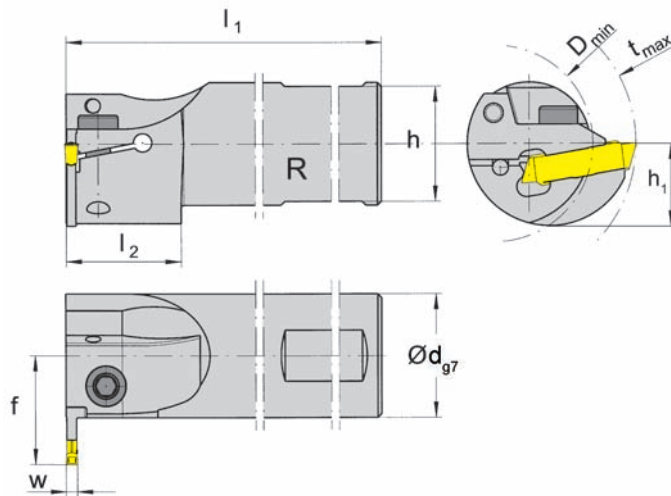
Bore Ø from 1.811" (46.0 mm)
 Depth of groove up to .453" (11.5 mm)
 Clamping range .118 - .236" (3.0 - 6.0 mm)

with through coolant supply



for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	h	h ₁	f	D _{min}	t _{max}	Size	Clamping range
R/L213.0032.0.03IK	32	150	30	30	15	28	46	11.5	03	3.0 - 4.0
R/L213.0032.0.04IK	32	150	30	30	15	28	46	11.5	04	4.0 - 5.0
R/L213.0040.0.04IK	40	180	30	38	19	32	54	11.5	04	4.0 - 5.0
R/L213.0040.0.05IK	40	180	30	38	19	32	54	11.5	05	5.1 - 6.0

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

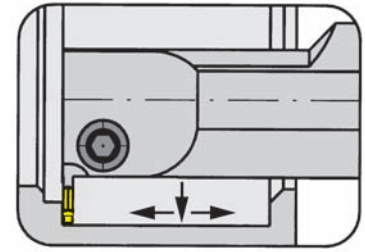
Spare parts

Toolholder	Screw	Wrench
R/L213.00...	DIN912-M6x14	SW5DIN911

G

TOOLHOLDER Type

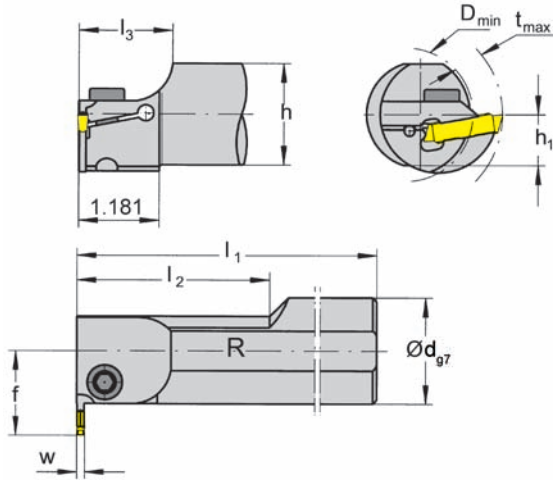
U214



Bore Ø from 1.496"
 Depth of groove up to .591"
 Clamping range .118 - .315"

for use with Indexable insert

Type 229
 S229



R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	l ₃	h	h ₁	f	D _{min}	t _{max}	Size	Clamping range
R/LU214.1250.03	1.250	8.000	2.750	1.375	1.171	.586	1.102	1.496	.295		
R/LU214.1500.03	1.500	10.000	3.250	1.375	1.421	.711	1.265	1.968	.453	03	.118 - .157
R/LU214.2000.03	2.000	10.000	4.000	1.500	1.921	.961	1.594	2.362	.591		
R/LU214.1250.04	1.250	8.000	2.750	1.375	1.171	.586	1.102	1.496	.295		
R/LU214.1500.04	1.500	10.000	3.250	1.375	1.421	.711	1.265	1.968	.453	04	.157 - .197
R/LU214.2000.04	2.000	10.000	4.000	1.500	1.921	.961	1.594	2.362	.591		
R/LU214.1250.05	1.250	8.000	-	1.375	1.171	.586	1.102	1.811	.453		
R/LU214.1500.05	1.500	10.000	3.250	1.375	1.421	.711	1.265	1.968	.453	05	.201 - .236
R/LU214.2000.05	2.000	10.000	4.000	1.500	1.921	.961	1.594	2.362	.591		
R/LU214.1500.07	1.500	10.000	3.250	1.375	1.421	.711	1.260	1.968	.453	07	.240 - .315
R/LU214.2000.07	2.000	10.000	4.000	1.500	1.921	.961	1.594	2.362	.591		

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Note Toolholders with shank Ø 1.250":

The full depth of cut t_{max} = .453" will be reached from D_{min} 1.811"

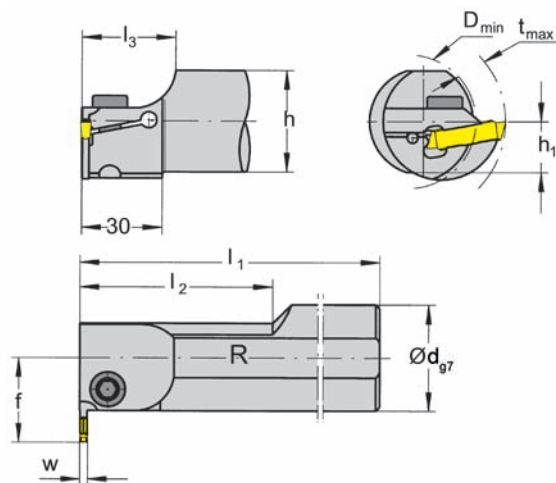
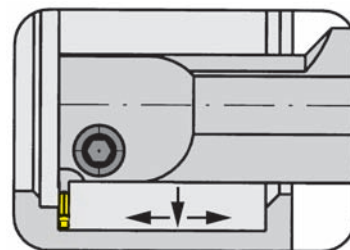
Spare parts

Toolholder	Screw	Wrench
R/LU214....	218.3	SW6DIN911

TOOLHOLDER Type

214

Bore Ø from 1.496" (38.0 mm)
 Depth of groove up to .591" (15.0 mm)
 Clamping range .118 - .315" (3.0 - 8.0 mm)



for use with Indexable insert

Type 229
S229

R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	l ₃	h	h ₁	f	D _{min}	t _{max}	Size	Clamping range
R/L214.0032.03	32	200	70	35	30	15.0	28.0	38	7.5	03	3.0 - 4.0
R/L214.0040.03	40	250	80	35	38	19.0	32.0	50	11.5		
R/L214.0050.03	50	250	100	40	47	23.5	40.5	60	15.0		
R/L214.0032.04	32	200	70	35	30	15.0	28.0	38	7.5	04	4.0 - 5.0
R/L214.0040.04	40	250	80	35	38	19.0	32.0	50	11.5		
R/L214.0050.04	50	250	100	40	47	23.5	40.5	60	15.0		
R/L214.0032.05	32	200	-	35	30	15.0	28.0	46	11.5	05	5.1 - 6.0
R/L214.0040.05	40	250	80	35	38	19.0	32.0	50	11.5		
R/L214.0050.05	50	250	100	40	47	23.5	40.5	60	15.0		
R/L214.0040.07	40	250	80	35	38	19.0	32.0	50	11.5	07	6.1 - 8.0
R/L214.0050.07	50		100	40	47	23.5	40.5	60	15.0		

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Note toolholder with shank-Ø 25 or 32 mm

The full depth of cut $t_{max} = 11,5$ mm will be reached from D_{min} 46 mm

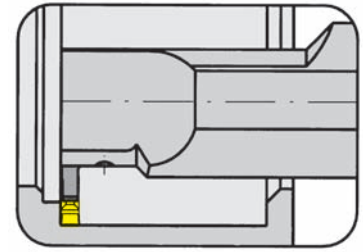
Spare parts

Toolholder	Screw	Wrench
R/L214.00...	218.3	SW6DIN911



TOOLHOLDER Type

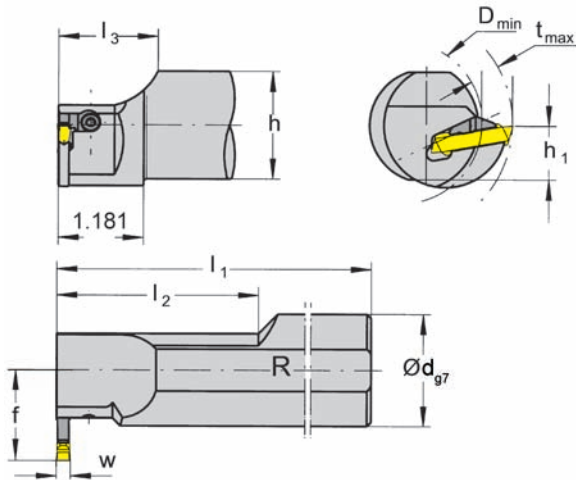
U214



Bore Ø from	1.968"
Depth of groove up to	.591"
Clamping range	.319 - .409"

for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	l ₃	h	h ₁	f	D _{min}	t _{max}	Size	Clamping range
R/LU214.1500.09	1.500	10.000	3.250	1.375	1.421	.711	1.260	1.968	.453	09	.319 - .409
R/LU214.2000.09	2.000		4.000	1.500	1.921	.961	1.594	2.362	.591		

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Note:

Please note type of clamp.

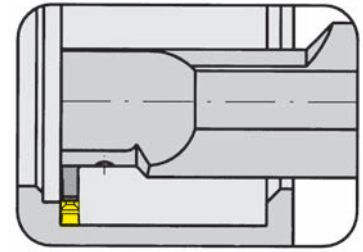
Spare parts

Toolholder	Clamp	TORX PLUS® Wrench
LU214....09	R218.9	T15PQ
RU214....09	L218.9	T15PQ

TOOLHOLDER Type

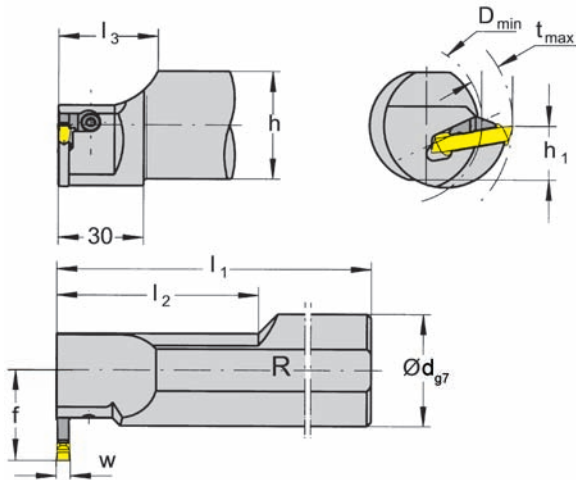
214

Bore Ø from 1.969" (50.0 mm)
 Depth of groove up to .591" (15.0 mm)
 Clamping range .319 - .409" (8.1 - 10.4 mm)



for use with Indexable insert

Type 229
 S229



R = right hand version shown

L = left hand version

Part number	d	l ₁	l ₂	l ₃	h	h ₁	f	D _{min}	t _{max}	Size	Clamping range
R/L214.0040.09	40	250	80	35	38	19.0	32.0	50	11.5	09	8.1 - 10.4
R/L214.0050.09	50		100	40	47	23.5	40.5	60	15.0		

State R or L version

w see indexable inserts

Dimensions in mm

Further shank sizes or with through coolant supply upon request.

Note:

Please note type of clamp.

Spare parts

Toolholder	Clamp	TORX PLUS® Wrench
L214.00...09	R218.9	T15PQ
R214.00...09	L218.9	T15PQ



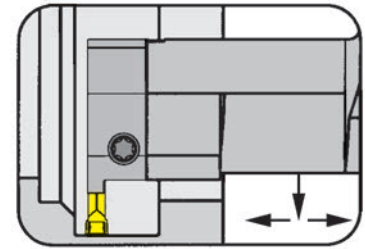
BASIC TOOLHOLDER Type

BU229

without cassette

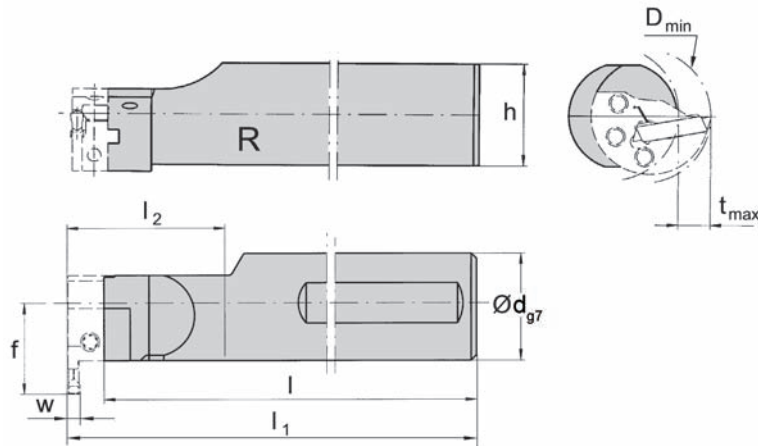
Bore Ø from	1.969"
Depth of groove up to	.591"
Width of groove up to	.236"

with through coolant supply



for use with Cassette

Type BK229



R = right hand version shown

L = left hand version

Part number	d	l	l ₁	l ₂	h	f
R/LBU229.1500.1.K2	1.500	6.923	6.923	1.250	1.421	1.398
R/LBU229.1500.2.K2	1.500	7.429	7.429	2.250	1.421	1.398

State R or L version

Dimensions in inch

Further sizes upon request

Note:

Dimensions for D_{min} , t_{max} and w see cassettes

Spare parts

Basic toolholder	Screw	TORX PLUS® Wrench
R/LBU229.1500....	030.0518.T20P	T20PQ

G50

G

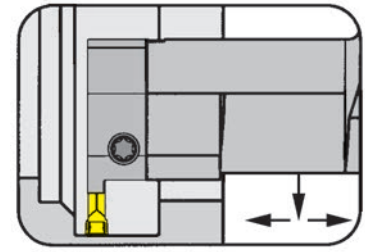
BASIC TOOLHOLDER Type

B229

without cassette

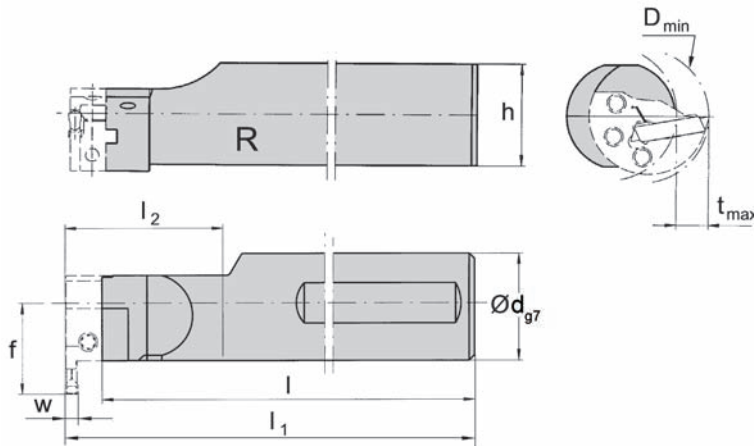
Bore Ø from 1.969" (50.0 mm)
 Depth of groove up to .591" (15.0 mm)
 Width of groove up to .236" (6.0 mm)

with through coolant supply



for use with Cassette

Type BK229



R = right hand version shown

L = left hand version

Part number	d	l	l ₁	l ₂	h	f
R/LB229.0040.1.K2	40	166.3	187	30	38	35.5
R/LB229.0040.2.K2	40	186.3	200	60	38	35.5

State R or L version

Dimensions in mm

Further sizes upon request

Note:

Dimensions for D_{min} , t_{max} and w see cassettes

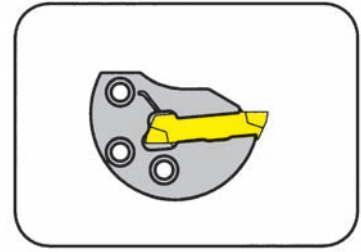
Spare parts

Basic toolholder	Screw	TORX PLUS® Wrench
R/LB229.0040....	030.0518.T20P	T20PQ

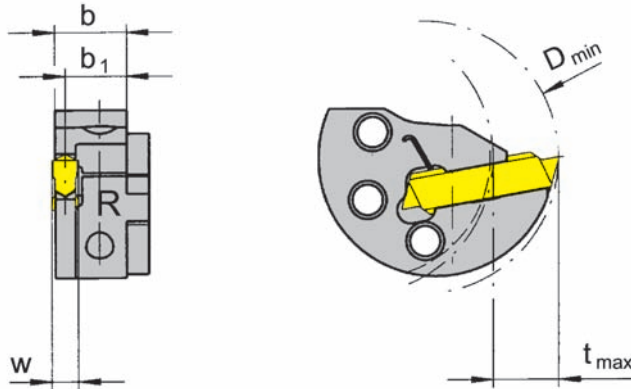
G

CASSETTE Type

BK229



Bore Ø from 1.969"
 Depth of groove up to .591"
 Clamping range .118 - .236"



for use with Indexable insert

Type 229
 S229

Depth of groove in relation to bore Ø

D _{min}	t _{max}
50	12
60	15

G

R = right hand version shown

L = left hand version

Part number	D _{min}	t _{max}	b ₁	b	D _{min}	t _{max}	Size	Clamping range
R/LBK229.0050.03	2.362	.591	.512	.561	1.969	.472	03	.118 - .158
R/LBK229.0050.04	2.362	.591	.492	.559	1.969	.472	04	.158 - .197
R/LBK229.0050.05	2.362	.591	.453	.545	1.969	.472	05	.201 - .236

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Use right hand cassettes in right hand basic toolholders and left hand cassettes in left hand basic toolholders.

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

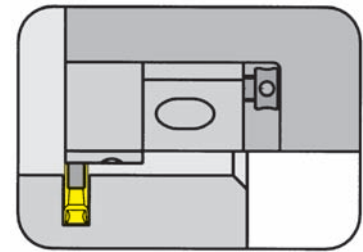
Cassette	Screw	TORX PLUS® Wrench
R/LBK229.0050.0...	5.13T20EP	T20PQ

GROOVING (internal)



CARTRIDGE Type

257



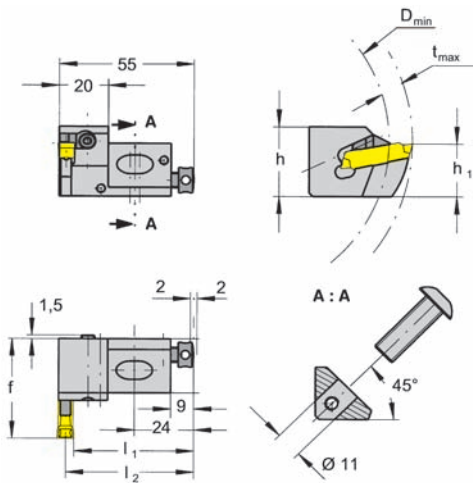
Bore \varnothing from 3.150" (80.0 mm)
 Depth of groove up to .591" (15.0 mm)
 Clamping range .201 - .409" (5.1 - 10.4 mm)

for use with Indexable insert

Type 229
S229

Depth of groove in relation to bore \varnothing

D_{min}	t_{max}
80	10
120	15



R = right hand version shown

L = left hand version

Part number	h_1	f	h	l_1	l_2	Size	Clamping range
R/L257.2222.05	22	42	29	$l_2-w/2$	52.2	05	5.1 - 6.0
R/L257.2222.09	22	42	29	$l_2-w/2$	50.2	09	8.1 - 10.4

State R or L version

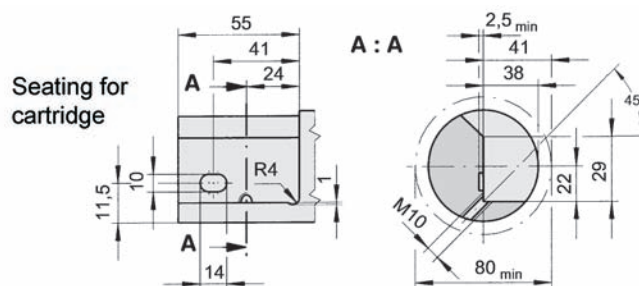
w see indexable inserts

Dimensions in mm

Further sizes upon request

Ordering note:

Please note type of clamp.



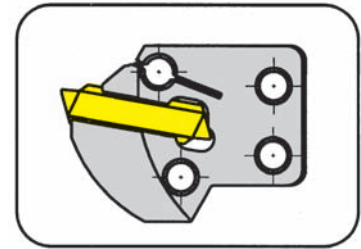
Spare parts

Cartridge	Clamp	TORX PLUS® Wrench	Screw	Screw	Axial Setscrew	Radial Setscrew	Wrench
R/L257.2222.05	R218.9.32	T15PQ	0.30.208	218.3	6.12.020	4.08.913	SW6DIN911
L257.2222.09			0.30.208		6.12.020	4.08.913	
R257.2222.09	L218.9.32	T15PQ	0.30.208		6.12.020	4.08.913	

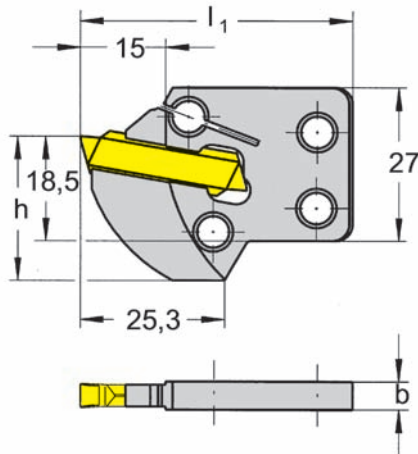


CASSETTE Type

050



Bore Ø from 2.441" (62.0 mm)
 Depth of groove up to .551" (14.0 mm)
 Width of groove up to .197" (5.0 mm)



for use with Indexable insert

Type 229
 S229

Depth of groove in relation to bore Ø

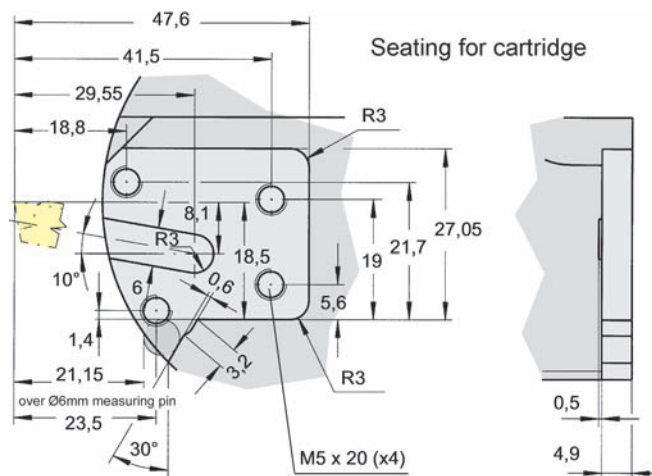
D _{min}	t _{max}
62	10
65	11
70	13
≥ 80	14

G

Part number	l ₁	h	b	Size	Clamping range
050.1827.0071	47	25.5	4.9	03	3.0 - 4.0
050.1827.0009	47	25.5	4.9	04	4.0 - 5.09

Further sizes upon request

Dimensions in mm



Spare parts

Cassette	Screw	TORX PLUS® Wrench
050.1827.00...	030.0518.T20P	T20PQ

G54

Indexable inserts

**precision or peripheral ground
with sintered geometry**



G

INDEXABLE INSERT type

S229...3.

precision sintered



Geometry .3.

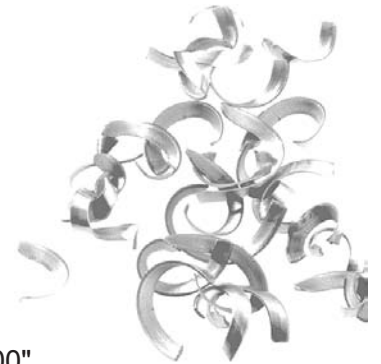
Geometry with chip forming for all materials.

Characteristics

- excellent swarf control
- suitable for high alloy- high strength steels
- reduced swarf width gives high flank surface finish
- excellent swarf control allows production security

Applications

- Grooving: Depth of groove up to 1.000"
- Side turning: Depth of cut a_p up to .157" *



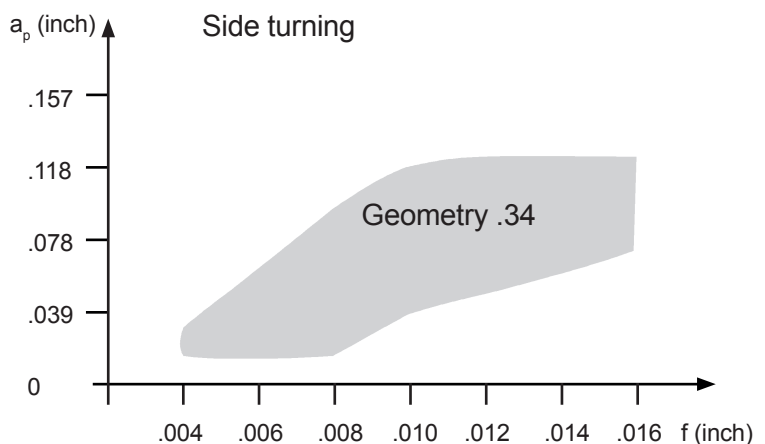
G

Feed rate f

- Grooving: .006" up to .010"/rev.*
- Side turning: up to .016"/rev.*

* dependent upon width of insert

Indexable inserts with profiles, intermediate sizes or other edge radii are available upon request. Indexable inserts can be used in **right and left hand** toolholders.

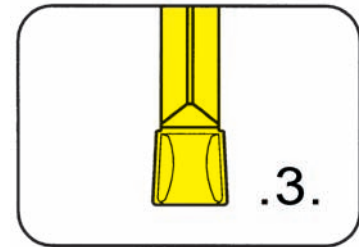


Chip control graph S229.0500.34 material 16MnCr5

INDEXABLE INSERT Type

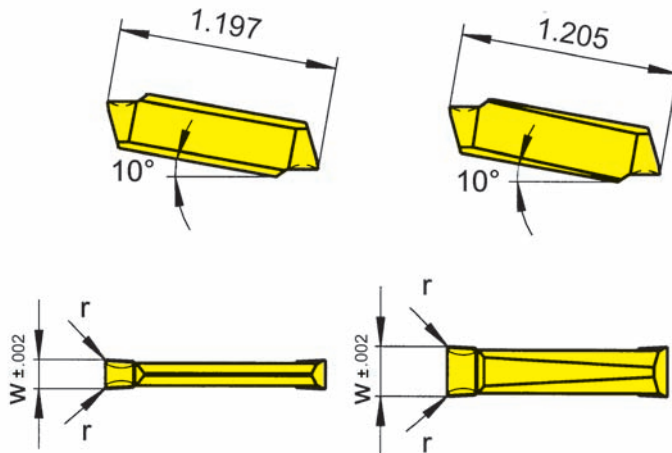
S229

with chip former



Depth of groove up to 1.000"
Width of groove .118 - .394"

precision sintered



Width = .118" - .197"

Width = .236" - .394"

Indexability length
± .002"

G

Part number	w	r	Size	Carbide grades														
				MG12	P20	H54	TN32	TN35	TI22	TI25	TA45	TF42	TF45	TC92	AL96	AS62	AS66	
S229.0300.32	.118	.008	03	▲		▲	▲	▲	▲	▲			▲	▲	▲	▲	▲	
S229.0300.34		.016												▲	▲	▲	▲	▲
S229.0400.32	.157	.008	03 / 04			▲	▲	▲	▲	▲			▲	▲	▲	▲	▲	
S229.0400.34		.016												▲	▲	▲	▲	▲
S229.0500.34	.197	.016	04				▲	▲	▲	▲			▲	▲	▲	▲	▲	
S229.0600.34	.236	.016	05				▲	▲	▲	▲			▲	▲	▲	▲	▲	
S229.0600.38		.031												▲	▲	▲	▲	▲
S229.0700.36	.276	.024	07					▲	▲	▲				▲	▲	▲	▲	
S229.0800.36	.315													▲	▲	▲	▲	▲
S229.1000.36	.394	.024	09				▲	▲	▲	▲			▲	▲	▲	▲	▲	
▲ on stock Δ 4 weeks				P	○	●	●	●	●	●	●	●	●	●	●	●	●	
● main recommendation				M	●	●	●	●	●	●	●	●	●	●	●	●	○	
○ alternative recommendation				K	●	●	●	●	●	●	●	●	●	●	●	●	●	●
■ uncoated grades				S	●	●	●	●	●	●	●	●	●	●	●	●	●	○
■ coated grades				N	●	●	●	●	●	●	●	●	●	●	●	●	●	●
■ brazed/Cermet				H	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT type

S229...5.

precision sintered



Geometry .5.

Easy cutting geometry for materials with medium strength.

Characteristics

- excellent swarf on a wide feed range
- easy cutting - low power requirement
- reduced swarf width gives high flank surface finish
- excellent swarf control allows production security

Applications

- Grooving: Depth of groove up to 1.000"
- Side turning: Depth of cut a_p up to .157"*

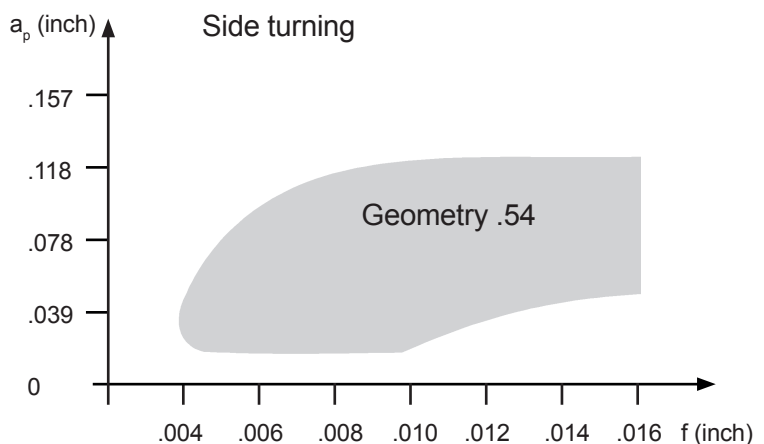
Feed rate f

- Grooving: up to .018"/rev.*
- Side turning: up to .024"/rev.*

* dependent upon width of insert

G

Indexable inserts with profiles, intermediate sizes or other edge radii are available upon request. Indexable inserts can be used in **right and left hand** toolholders.

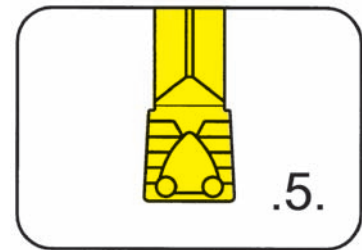


Chip control graph S229.0500.54 material 16Mn-Cr5

INDEXABLE INSERT Type

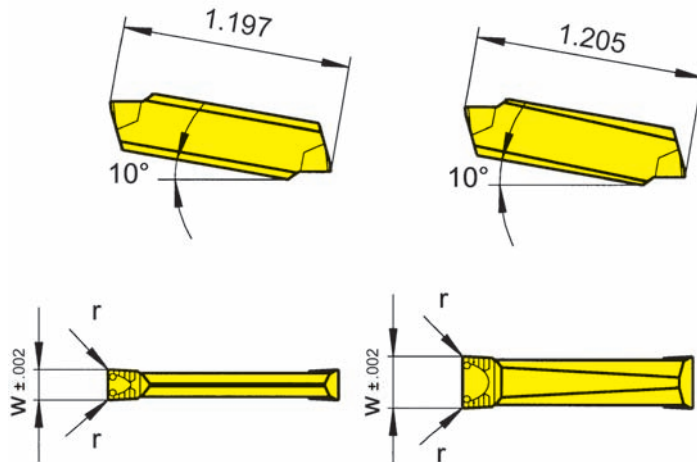
S229

with chip forming



Depth of groove up to 1.000"
Width of groove .118 - .394"

precision sintered



Width = .118" - .197"

Width = .236" - .394"

Indexability length
± .002"

G

Part number	w	r	Size	P20	H54	TN32	TN35	TI22	TI25	TA45	TF42	TF45	TC92	AS62	AL96
S229.0300.52	.118	.008	03			▲	▲	▲	▲			▲	△	▲	
S229.0300.54		.016					▲	▲	▲	▲				△	▲
S229.0400.52	.157	.008	03 / 04			▲	▲	▲	▲			▲	△	▲	
S229.0400.54		.016					▲	▲	▲	▲			▲		▲
S229.0500.54	.197	.016	04			▲	▲	▲	▲			▲	△	▲	
S229.0600.54	.236	.016	05			▲	▲		▲			▲	△	▲	▲
S229.0700.56	.276	.024	07					▲					△	▲	
S229.0800.56	.315	.024					▲		▲				△	▲	▲
S229.0800.58	.315	.031							▲			▲	△		▲
S229.0800.5K	.315	.047							▲				△		
S229.1000.56	.394	.024	09			▲		▲							
▲ on stock △ 4 weeks				P		•	•	•	•		•	•	•	•	•
• main recommendation				M			•		•			•			
o alternative recommendation				K			•		•			•			•
■ uncoated grades				S			•		•			•			
■ coated grades				N			•		•			•			•
■ brazed/Cermet				H											

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT type

S229...A.

precision sintered



Geometry .A.

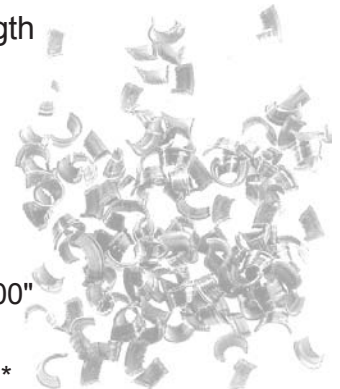
Geometry with excellent chip breaking for materials with medium strength

Characteristics

- excellent swarf on a wide feed range
- excellent swarf control, also by partial cutting
- reduced swarf width gives high flank surface finish
- excellent swarf control allows production security

Applications

- Grooving: Depth of groove up to 1.000"
- Side turning: Depth of cut a_p up to .098"*

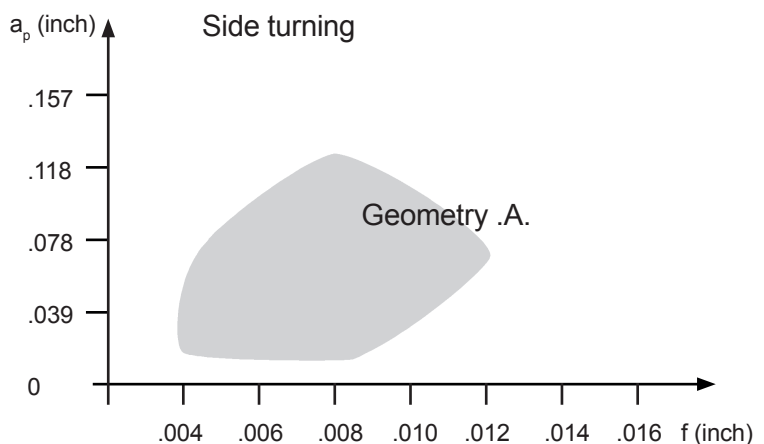


Feed rate f

- Grooving: up to .012"/rev.*
- Side turning: up to .012"/rev.*

* dependent upon width of insert

Indexable inserts with profiles, intermediate sizes or other edge radii are available upon request. Indexable inserts can be used in **right and left hand** toolholders.



Chip control graph S229.0500.A4 material 16Mn-Cr5

INDEXABLE INSERT Type

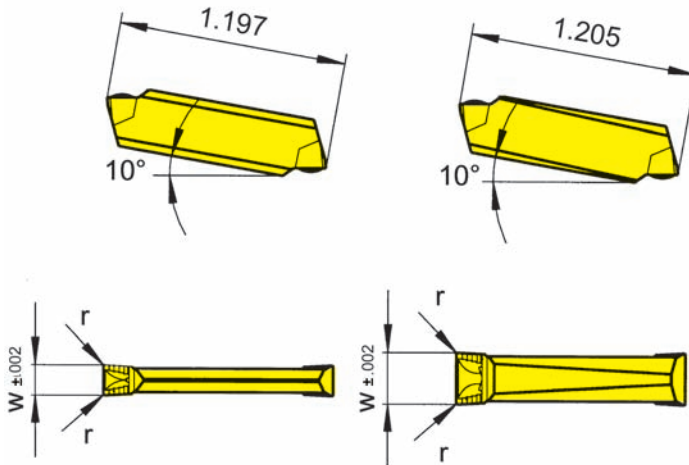
S229

with chip forming



Depth of groove up to 1.000"
Width of groove .118 - .315"

precision sintered



Width = .118" - .197"

Width = .236" - .315"

Indexability length
± .002"



Part number	w	r	Size	Carbide grades															
				P20	TN32	TN35	TI22	TI25	TA45	TF42	TF45	TC92	AS62	AL96					
S229.0300.A2 S229.0300.A4	.118	.008 .016	03		▲	▲	▲	▲											
S229.0400.A2 S229.0400.A4	.157	.008 .016	03 / 04		▲	▲	▲	▲					▲	▲	▲	▲			
S229.0500.A4	.197	.016	04		▲	▲	▲						▲	▲	▲	▲			
S229.0600.A4 S229.0600.A8	.236	.016 .031	05		▲	▲	▲	▲				▲	▲	▲	▲	▲			▲
S229.0500.A6	.197	.024	06					▲											▲
S229.0700.A6 S229.0800.A6	.276 .315	.024	07		▲		▲					▲							
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P	●	●	●	●		●	●	●	●	●	●	●	●	●	●
				M		●		●			●								
				K		●	●	●			●	●	●	●	●	●	●	●	●
				S			●				●								
				N		●		●				●							●
				H															

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

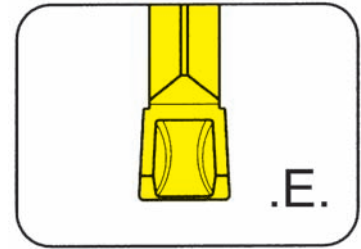
GROOVING and PARTING OFF



INDEXABLE INSERT Type

S229

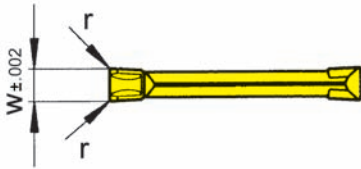
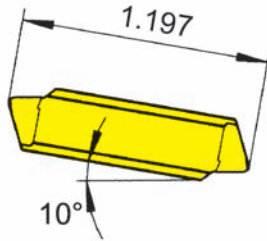
with chip former



Depth of groove up to
Width of groove

1.000"
.118 - .157"

precision sintered



Indexability length
± .002"

Part number	w	r	Size	Carbide grades									
				MG12	P20	TN32	TN35	T122	T125	TF45	TF46	TC92	AS62
S229.0300.E2	.118	.008	03						▲	▲	▲	▲	▲
S229.0300.E4		.016								▲	▲	▲	▲
S229.0400.E2	.157	.008	03 / 04						▲	▲			▲
S229.0400.E4		.016								▲			
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P					●	●	●	●	●
				M					●	●	○		
				K					●	●	●		
				S					●	●	○		
				N					●	●	●		
				H									

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

G

Machining of Ni-resist ring on "Diesel Piston"

CBN-tipped insert of type 229 is used to do the grooving application in the Ni-resist ring.

The process is pregrooving followed by profiling the flanks of the groove. To avoid a high cutting pressure which forces the possibility to damage the seating of the ring, the cutting edge of the insert has a special preparation.

Material: Ni-resist (austenitic cast iron similar to DIN1694)

Cutting data:

$v_c = 220 \text{ m/min (722 SFM)}$

$v_f = 0.06 \text{ mm (.0024")}$



G

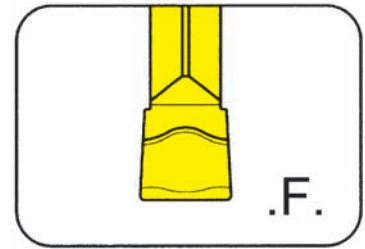
GROOVING and PARTING OFF



INDEXABLE INSERT Type

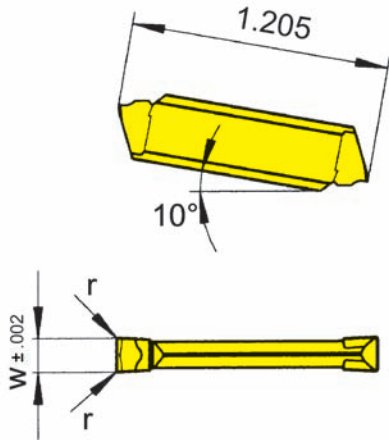
S229

with chip forming



Depth of groove up to 1.000"
Width of groove .118 - .157"

precision sintered



Indexability length
± .002"

G

Part number	w	r	Size	Carbide grades								
				K10	MG12	P20	T122	T125	TF43	TF45	TF46	AS62
S229.0300.F2	.118	.008	03				▲		▲	▲	▲	
S229.0300.F4		.016								▲	▲	
S229.0400.F2	.157	.008	03 / 04							▲	▲	
S229.0400.F4		.016								▲		
▲ on stock Δ 4 weeks				P			•		•	•	•	
• main recommendation				M						•	•	
○ alternative recommendation				K						•	•	
■ uncoated grades				S						•	•	
■ coated grades				N						•	•	
■ brazed/Cermet				H								

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

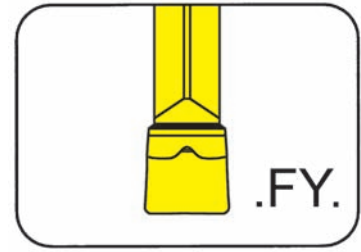
GROOVING and PARTING OFF



INDEXABLE INSERT Type

S229

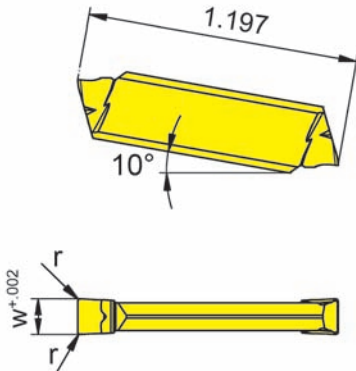
with chip forming



Depth of groove up to
Width of groove

1.000"
.118 - .157"

precision sintered



Indexability length
± .002"

G

Part number	w	r	Size		K10	P20	TN32	TI25	TF45
S229.0300.FY2	.118	.008	03					▲	
S229.0400.FY3	.157	.012	03 / 04					▲	
				P				•	
				M				•	
				K				•	
				S				•	
				N				•	
				H					

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Carbide grades

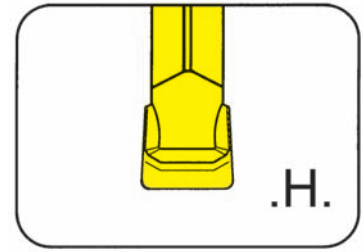
Dimensions in inch

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

S229

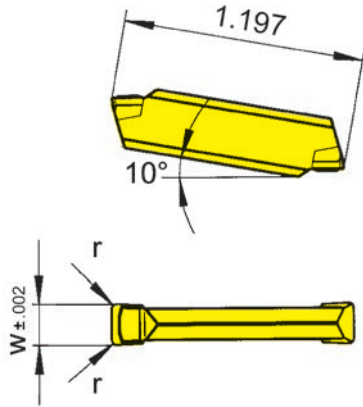
with chip breaker



Depth of groove up to
Width of groove

1.000"
.118 - .236"

precision sintered



Indexability length
± .002"

Part number	w	r	Size	Carbide grades	
				TF42	AL96
S229.0300.H4 S229.0300.H6	.118	.016 .024	03	▲	▲
S229.0400.H4 S229.0400.H6 S229.0400.H8	.157	.016 .024 .031	03 / 04	▲	▲
S229.0500.H4 S229.0500.H6 S229.0500.H8	.197	.016 .024 .031	04	▲	▲
S229.0600.H4 S229.0600.H6 S229.0600.H8 S229.0600.HK	.236	.016 .024 .031 .047	05	▲	▲
				P	•
				M	•
				K	•
				S	•
				N	•
				H	•

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

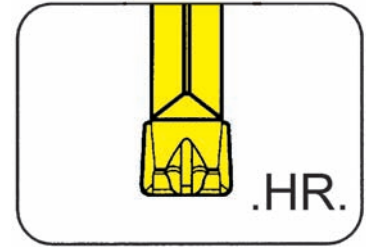
Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

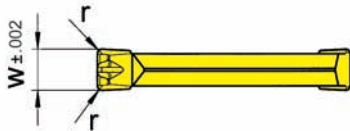
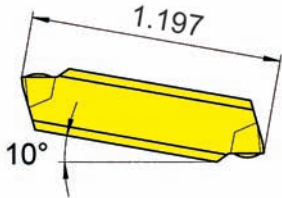
S229

with chip forming



Depth of groove up to	1.000"
Width of groove	.118 - .315"

precision sintered



Indexability length
± .002"

G

Part number	w	r	Size	Carbide grades			
				TF42	AS62	AS66	AL96
S229.0300.HR4	.118	.016	03		▲		
S229.0400.HR4	.157	.016	03 / 04		▲		
S229.0500.HR4	.197	.016	04		▲		
S229.0500.HR6		.024			▲		
S229.0500.HR8		.031			▲		
S229.0600.HR4	.236	.016	05		▲	▲	
S229.0600.HR6		.024			▲		
S229.0600.HR8		.031			▲		
S229.0800.HR8PG	.315	.031	07 / 08		▲		
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P	●	●	
				M		○	
				K		●	
				S		○	
				N		●	
				H			

Dimensions in inch

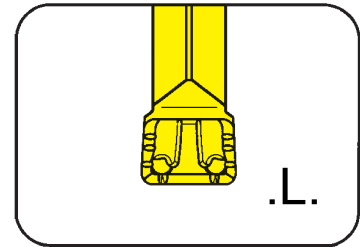
Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

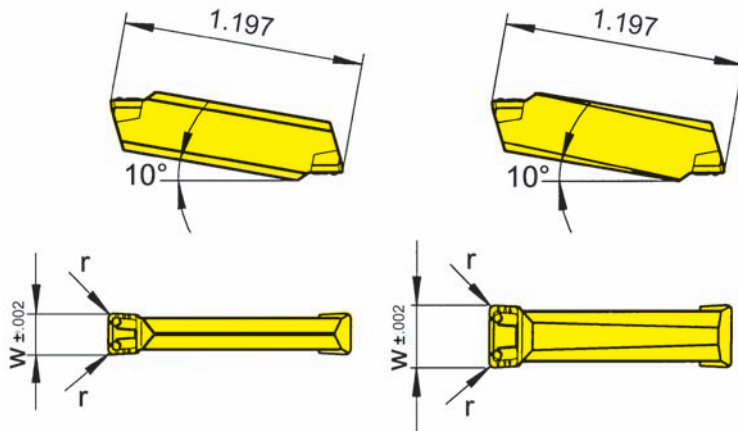
S229

with chip forming



Depth of groove up to 1.000"
Width of groove .157 - .315"

precision sintered



Width = .157" - .197"

Width = .236" - .315"

Indexability length
± .002"

G

Part number	w	r	Size	Carbide grades					
				T122	TF42	AS62	AS66	AL96	
S229.0400.L4	.157	.016	03 / 04	▲	▲	▲		▲	
S229.0500.L4	.197	.016	04	▲	▲	▲		▲	
S229.0500.L6		.024		▲	▲	▲	▲		
S229.0600.L4	.236	.016	05	▲	▲	▲		▲	
S229.0600.L6		.024		▲	▲	▲	▲	▲	
S229.0800.L6	.315	.024	07	▲	▲	▲		▲	
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation □ uncoated grades ■ coated grades ■ brazed/Cermet				P	●	●	●	●	●
				M			○		
				K			●	●	
				S			○		
				N			●	●	
				H					

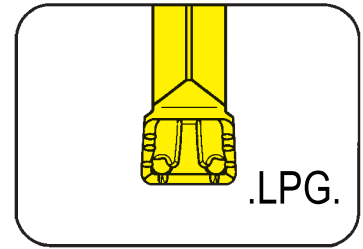
Dimensions in inch

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

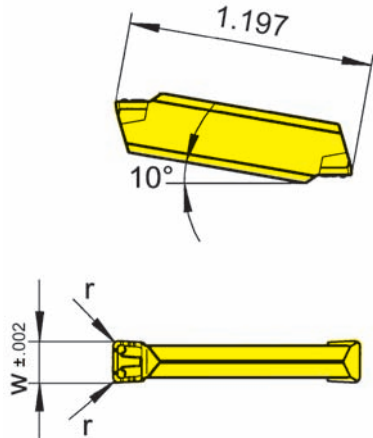
S229

with chip forming



Depth of groove up to 1.000"
Width of groove .236 - .315"

precision sintered



PG = inserts with ground periphery

Indexability length
± .002"



Part number	w	r	Size	Carbide grades			
				TI22	TF42	AS62	AL96
S229.0600.L4PG	.236	.016	05			▲	
S229.0800.L8PG	.315	.031	07			▲	
				P		•	
				M			
				K			
				S			
				N			
				H			

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

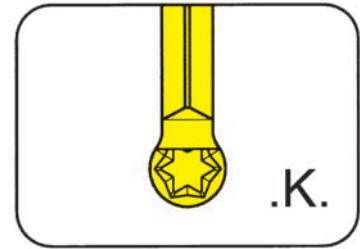
Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

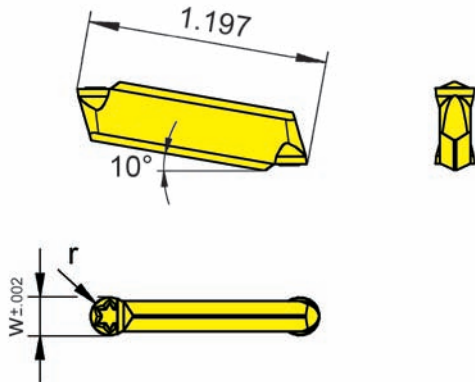
S229

with chip forming



Depth of groove up to	1.000"
Width of groove	.118 - .315"
Full radius	.059 - .157"

precision sintered



Indexability length
± .002"

Part number	w	r	Size	Carbide grades			
				TA42	TA45	AS62	AS66
S229.0015.K3	.118	.059	02 / 03			▲	▲
S229.0020.K4	.157	.079	03 / 04			▲	▲
S229.0025.K5	.197	.098	04			▲	▲
S229.0030.K6	.236	.118	05			▲	▲
S229.0040.K8	.315	.157	07 / 08			▲	
				P		•	•
				M			o
				K			•
				S			o
				N			•
				H			

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

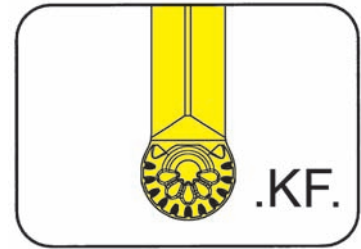
D_{min} for corner reliefs with toolholder 45°

t _{max}	S229.0015.K3	S229.0020.K4	S229.0025.K5	S229.0030.K6
.020" (0.5 mm)	Ø 1.024" (26 mm)	Ø 1.024" (26 mm)	Ø 1.260" (32 mm)	Ø 1.260" (32 mm)
.039" (1.0 mm)	Ø 2.992" (76 mm)	Ø 2.165" (55 mm)	Ø 1.654" (42 mm)	Ø 1.457" (37 mm)
.059" (1.5 mm)	Ø 3.071" (78 mm)	Ø 2.283" (58 mm)	Ø 1.772" (45 mm)	Ø 1.614" (41 mm)
.079" (2.0 mm)	Ø 3.150" (80 mm)	Ø 2.323" (59 mm)	Ø 1.811" (46 mm)	Ø 1.654" (42 mm)
.098" (2.5 mm)	Ø 3.228" (82 mm)	Ø 2.362" (60 mm)	Ø 1.850" (47 mm)	Ø 1.693" (43 mm)
.118" (3.0 mm)	Ø 3.307" (84 mm)	Ø 2.441" (62 mm)	Ø 1.890" (48 mm)	Ø 1.732" (44 mm)
.138" (3.5 mm)	Ø 3.425" (87 mm)	Ø 2.480" (63 mm)	Ø 1.929" (49 mm)	Ø 1.811" (46 mm)
.157" (4.0 mm)	Ø 3.504" (89 mm)	Ø 2.559" (65 mm)	Ø 1.969" (50 mm)	Ø 1.850" (47 mm)

INDEXABLE INSERT Type

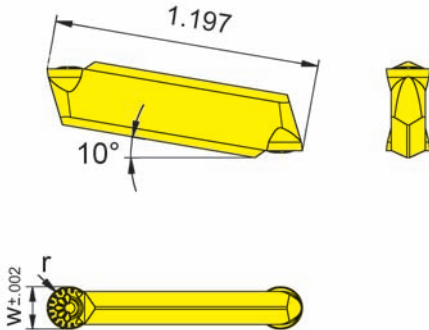
S229

with chip forming



Depth of groove up to	1.000"
Width of groove	.118 - .236"
Full radius	.059 - .118"

precision sintered



Indexability length
± .002"

G

Part number	w	r	Size	Carbide grades					
				T122	T125	TA42	TA45	AS62	AS66
S229.0015.KF3	.118	.059	02 / 03						▲
S229.0020.KF4	.157	.079	03 / 04						▲
S229.0025.KF5	.197	.098	04						▲
S229.0030.KF6	.236	.118	05						▲
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P					●
				M					○
				K					●
				S					○
				N					●
				H					

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

D_{min} for corner reliefs with toolholder 45°

t _{max}	S229.0015.KF3	S229.0020.KF4	S229.0025.KF5	S229.0030.KF6
.020" (0.5 mm)	Ø 1.024" (26 mm)	Ø 1.024" (26 mm)	Ø 1.260" (32 mm)	Ø 1.260" (32 mm)
.039" (1.0 mm)	Ø 2.992" (76 mm)	Ø 2.165" (55 mm)	Ø 1.654" (42 mm)	Ø 1.457" (37 mm)
.059" (1.5 mm)	Ø 3.071" (78 mm)	Ø 2.283" (58 mm)	Ø 1.772" (45 mm)	Ø 1.614" (41 mm)
.079" (2.0 mm)	Ø 3.150" (80 mm)	Ø 2.323" (59 mm)	Ø 1.811" (46 mm)	Ø 1.654" (42 mm)
.098" (2.5 mm)	Ø 3.228" (82 mm)	Ø 2.362" (60 mm)	Ø 1.850" (47 mm)	Ø 1.693" (43 mm)
.118" (3.0 mm)	Ø 3.307" (84 mm)	Ø 2.441" (62 mm)	Ø 1.890" (48 mm)	Ø 1.732" (44 mm)
.138" (3.5 mm)	Ø 3.425" (87 mm)	Ø 2.480" (63 mm)	Ø 1.929" (49 mm)	Ø 1.811" (46 mm)
.157" (4.0 mm)	Ø 3.504" (89 mm)	Ø 2.559" (65 mm)	Ø 1.969" (50 mm)	Ø 1.850" (47 mm)

INDEXABLE INSERT type

229...10

precision ground



Geometry .10

Easy cutting geometry without chip former

Characteristics

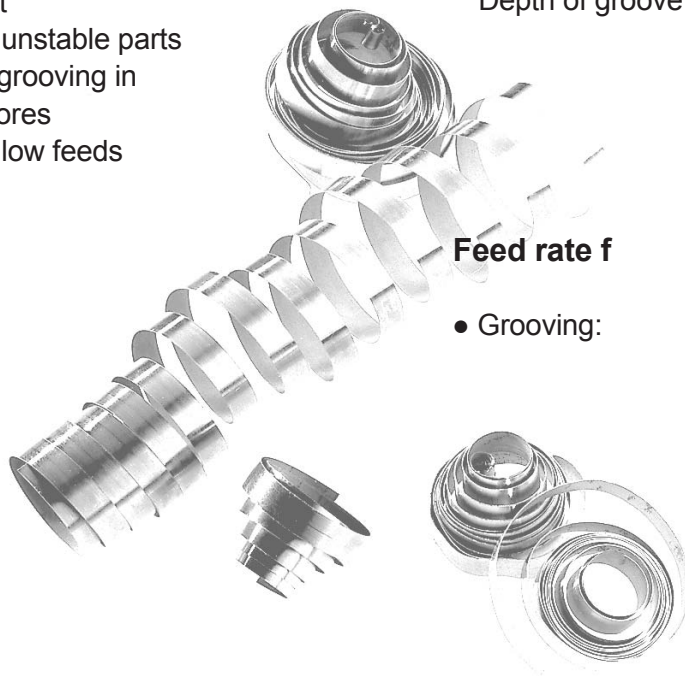
- easy cutting - low power requirement
- suitable for unstable parts
- for internal grooving in restricted bores
- suitable for low feeds

Applications

- Grooving: Depth of groove up to 1.000"

Feed rate f

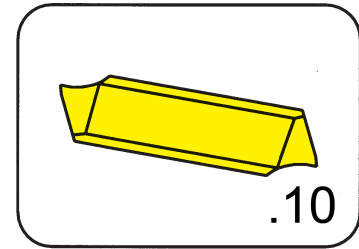
- Grooving: up to .012"/rev.



Profiling with a cutting depth of the edge radius is possible.
Indexable inserts with profiles, intermediate sizes or other edge radii are available upon request.
Indexable inserts can be used in **right and left hand** toolholders.

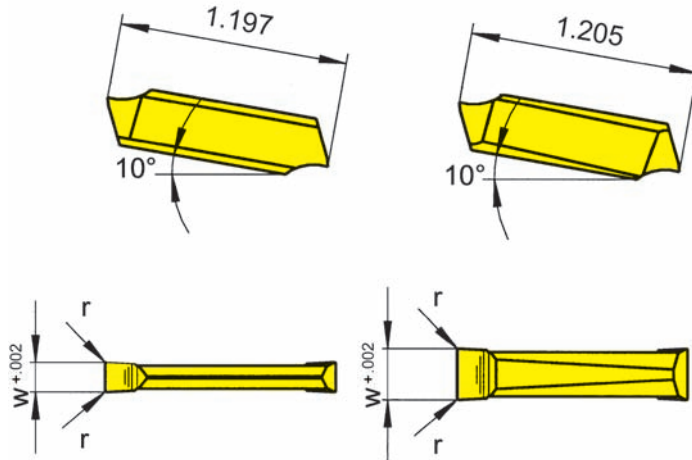
INDEXABLE INSERT Type

229



Depth of groove up to 1.000"
Width of groove .098 - .197"

precision ground



Indexability length
± .001"



Part number	w	r	Size	Carbide grades											
				K10	MG12	P20	H20	TN32	TN35	TI22	TI25	TC92	AS62		
229.0250.10	.098	.008	02					▲	▲						
229.0300.10	.118	.008	03	▲	▲	▲	▲	▲	▲					▲	▲
229.0400.10	.157	.008	03 / 04	▲		▲		▲						▲	▲
229.0500.10	.197	.008	04	▲		▲		▲						▲	▲
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P	●	○	●	●	●	●	●	●	●	●	●
				M	○	●	●	○	●	●	●	●	●	●	●
				K	●	●	●	●	●	●	●	●	●	●	●
				S	○	●	●	●	●	●	●	●	●	●	●
				N	●	●	●	●	●	●	●	●	●	●	●
				H	●	●	●	●	●	●	●	●	●	●	●

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT type

229...20

precision ground

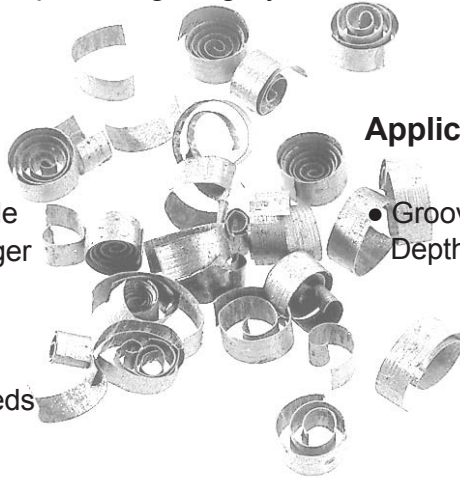


Geometry .20

Geometry without chip forming for grey cast iron and materials with higher tensile strength

Characteristics

- strong wedge angle
- for inserts with larger depth of profile
- recommended for interrupted cut
- suitable for low feeds



Applications

- Grooving: Depth of groove up to 1.000"

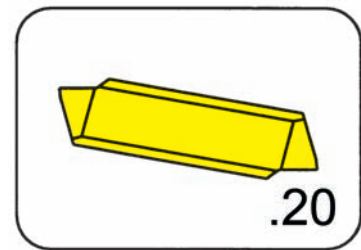
Feed rate f

- Grooving: up to .010"/rev.

Profiling with a cutting depth of the edge radius is possible. Indexable inserts with profiles, intermediate sizes or other edge radii are available upon request. Indexable inserts can be used in **right and left hand** toolholders.

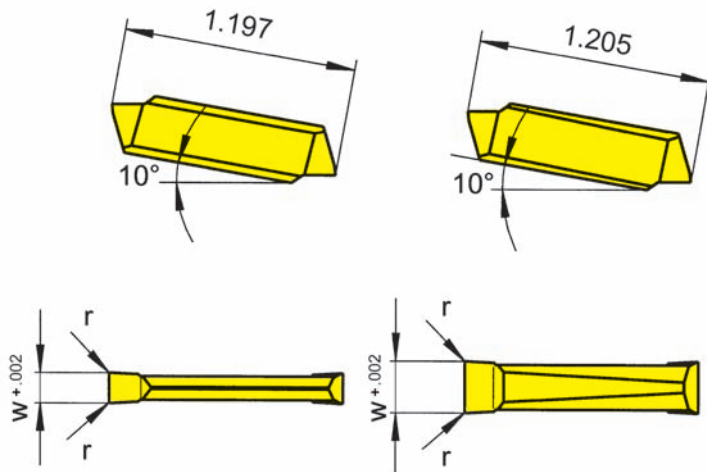
INDEXABLE INSERT Type

229



Depth of groove up to 1.000"
Width of groove .118 - .315"

precision ground



Width = .118" - .197"

Width = .236" - .315"

Indexability length
± .001"



Part number	w	r	Size	K10	MG12	P20	H20	TN32	TN35	TC92	AS62
229.0300.20	.118	.008	03	▲			▲			▲	▲
229.0400.20	.157	.008	03 / 04	▲				▲		▲	▲
229.0500.20	.197	.008	04	▲						▲	▲
229.0600.20	.236	.016	05	▲						▲	▲
229.0700.20	.276	.016	07	▲							
229.0800.20	.315	.016	07	▲							
▲ on stock Δ 4 weeks				P	•	•	•	•	•	•	•
● main recommendation				M	○		○				
○ alternative recommendation				K	•	•	•	•	•	•	•
■ uncoated grades				S	○						
■ coated grades				N	•						
■ brazed/Cermet				H							

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT type

229...3.

precision ground



Geometry .3.

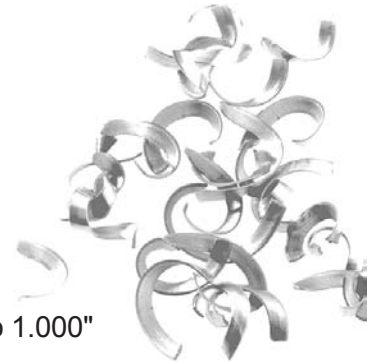
Geometry with chip forming for all materials.

Characteristics

- excellent swarf control
- suitable for high alloy- high strength steels
- reduced swarf width gives high flank surface finish
- excellent swarf control allows production security

Applications

- Grooving: Depth of groove up to 1.000"
- Side turning: Depth of cut a_p up to .157"*

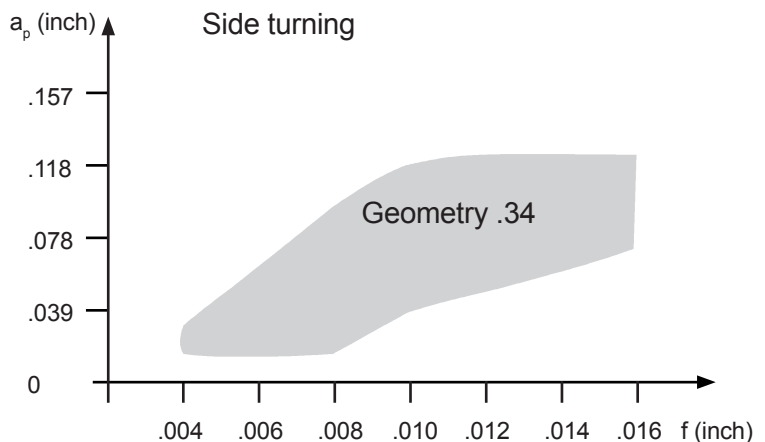


Feed rate f

- Grooving: .006" up to .010"/rev.*
- Side turning: up to .016"/rev.*

* dependent upon width of insert

Indexable inserts with profiles, intermediate sizes or other edge radii are available upon request. Indexable inserts can be used in **right and left hand** toolholders.

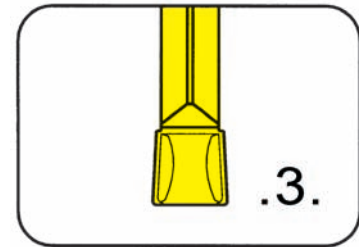


Chip control graph 229.0500.34 material 16MnCr5

INDEXABLE INSERT Type

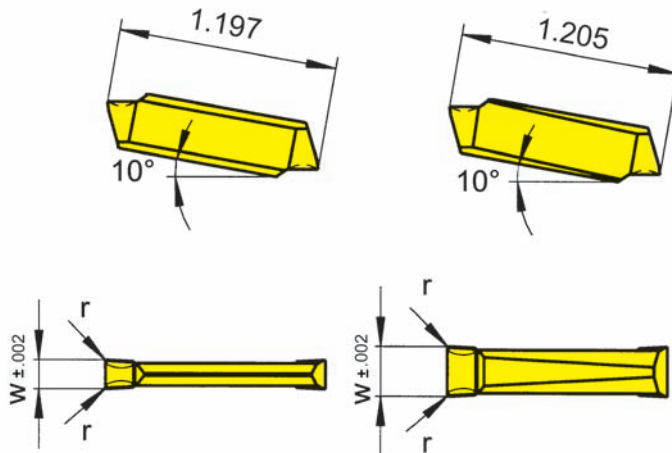
229

with chip former



Depth of groove up to 1.000"
Width of groove .118 - .394"

precision ground



Width = .118" - .197"

Width = .236" - .394"

Indexability length
± .001"

G

Part number	w	r	Size	Carbide grades										
				K10	MG12	P20	H20	TN32	TN35	TI22	TI25	TC92	AS62	
229.0300.31	.118	.008	03	▲	▲	▲		▲	▲		▲	▲	▲	
229.0300.34		.016	03 / 04					▲	▲			▲	▲	
229.0400.31	.157	.008	03 / 04	▲		▲		▲				▲	▲	
229.0400.34		.016					▲	▲				▲	▲	
229.0500.31	.197	.008	04	▲		▲		▲		▲		▲	▲	
229.0500.34		.016					▲	▲				▲	▲	
229.0600.31	.236	.016	05			▲		▲				▲	▲	
229.0600.38		.031					▲	▲				▲	▲	
229.0700.31	.276	.016	07			▲		▲				▲	▲	
229.0800.31	.315	.016	07			▲		▲				▲	▲	
229.0900.31	.354	.016	09					▲				▲	▲	
229.1000.31	.394	.016	09					▲	▲			▲	▲	
▲ on stock Δ 4 weeks				P	•	○	•	•	•	•	•	•	•	
• main recommendation				M	○	•	•	•	•	•	•	•		
○ alternative recommendation				K	•	•	•	•	•	•	•	•		
■ uncoated grades				S	○	•	•	•	•	•	•	•		
■ coated grades				N	•	•	•	•	•	•	•	•		
■ brazed/Cermet				H										

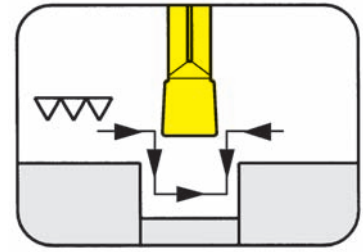
Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

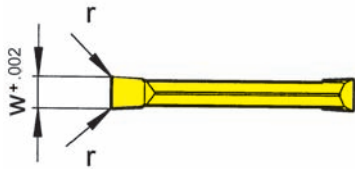
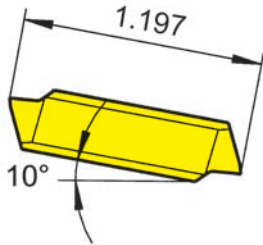
229



Depth of groove up to
Width of groove

1.000"
.118 - .157"

precision ground



Indexability length
± .001"

G

Part number	w	r	Size	Carbide grades									
				K10	MG12	P20	H20	TN32	TN35	TI22	TI25		
229.0300.02	.118	.008	03 / 04				▲						
229.0400.02	.157	.008	03 / 04				▲						
				P			•						
				M			○						
				K									
				S									
				N									
				H									

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

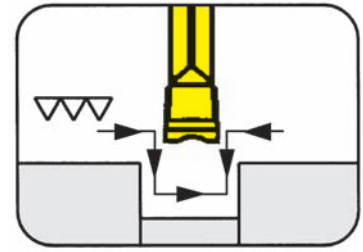
Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

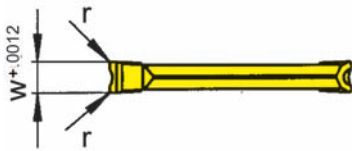
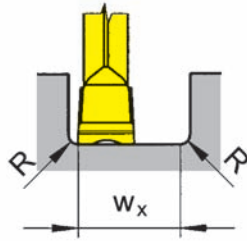
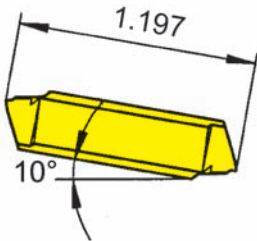
229

with chip breaker



Depth of groove up to 1.000"
Width of groove .118 - .157"

precision ground



Indexability length
± .001"

G

Part number	w	r	w _x	Size	Carbide grades								
					K10	MG12	P20	H20	TN32	TN35	TI22	TI25	
229.NC30.02	.118	.008	.177	03 / 04				▲					
229.NC40.02	.157	.008	.252	03 / 04				▲					
					P			•					
					M			○					
					K								
					S								
					N								
					H								

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

$$w_x = \text{width of groove} - R_{(\text{right})} - R_{(\text{left})}$$

Indexable inserts can be used in **right and left hand** toolholders.

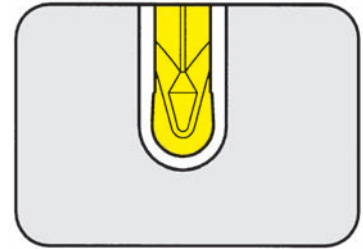
GROOVING (external and internal)



INDEXABLE INSERT Type

229

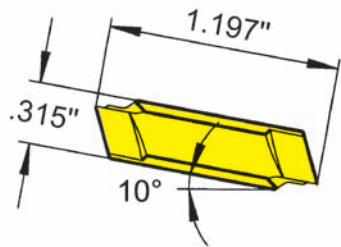
with surrounding chip breaker



Depth of groove up to
Full radius

1.000"
r .059 - .118"

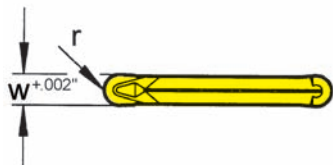
precision ground



profiling

or

corner relief



Indexability length
± .001"

G

Part number	w	r	Size	Clamping range	Carbide grades								
					K10	MG12	P20	H20	TN32	TN35	TI25	AS62	AS66
229.0015.30	.118	.059	225...04	.118 - .197		▲	▲	▲	▲			▲	
			03	.118 - .157									
229.0020.40	.157	.079	225...04	.118 - .197		▲	▲		▲			▲	
			03	.118 - .157									
229.0025.50	.197	.098	225...04	.118 - .197		▲	▲		▲			▲	▲
			04	.157 - .197									
229.0030.60	.236	.118	05	.201 - .236			▲		▲			▲	
▲ on stock Δ 4 weeks					P	○	●	●	●			●	●
● main recommendation					M	●		○					○
○ alternative recommendation					K	●							●
■ uncoated grades					S	●							○
■ coated grades					N	●							●
■ brazed/Cermet					H								

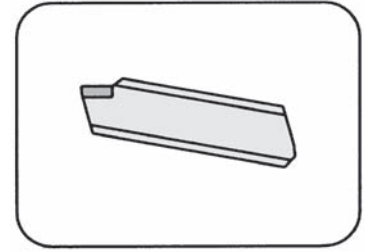
Dimensions in inch

Carbide grades

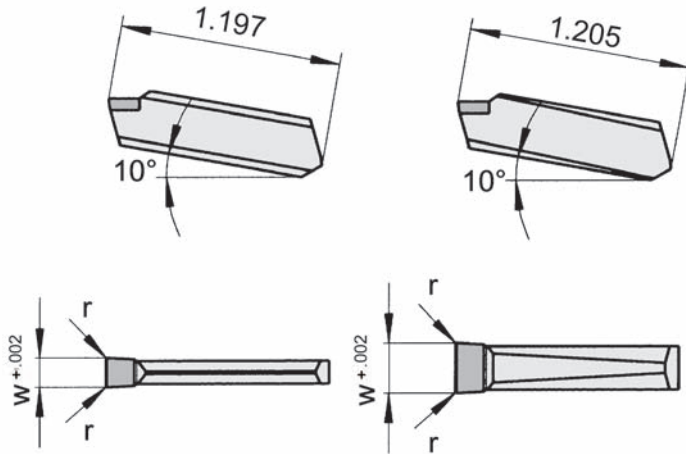
Indexable inserts can be used in **right and left hand** toolholders.

INSERT Type

229



Depth of groove up to .709"
Width of groove .118 - .236"



Width = .118" - .197"

Width = .236"

CBN tipped

G

Part number	w	r	Size	Carbide grades	
				CB10	CB50
229.0300.22.B 229.0300.24.B	.118	.008 .016	03	▲	▲
229.0400.22.B 229.0400.24.B	.157	.008 .016	04	▲	▲
229.0500.22.B 229.0500.24.B	.197	.008 .016	04	▲	▲
229.0600.24.B 229.0600.26.B	.236	.016 .024	05	▲	▲
				P	
				M	
				K	
				S	
				N	
				H	•

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left** hand toolholders.

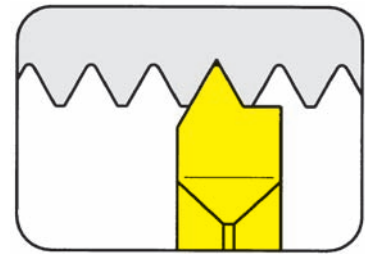
THREADING (external) Full profile



INDEXABLE INSERT Type

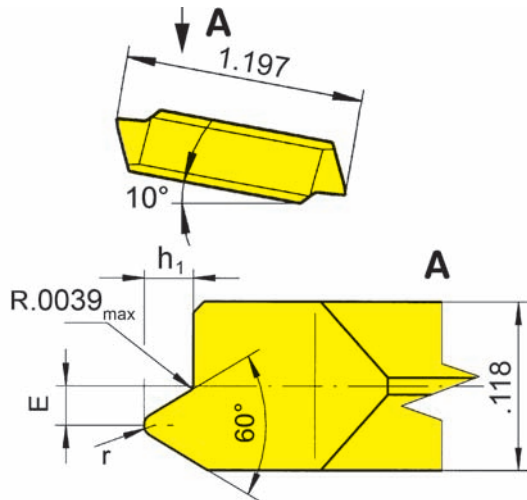
229

Metric ISO thread



Pitch	1.0 - 2.5 mm
-------	--------------

precision ground



R = right hand version shown

L = left hand cutting version shown

Indexability length
± .001"

Part number	P	r	E	h ₁	Size	Carbide grades		
						TN35	TI22	TA45
R/L229.0610.02	1.00	0.140	0.8	0.62	03 / 04	▲/▲		
R/L229.0712.02	1.25	0.175	0.8	0.78		▲/▲		
R/L229.0915.02	1.50	0.210	0.7	0.93		▲/▲		
R/L229.1017.02	1.75	0.250	0.5	1.08		▲/▲		
R/L229.1220.02	2.00	0.280	0.5	1.24		▲/▲		
R/L229.1525.02	2.50	0.360	0.3	1.54		▲/▲		

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

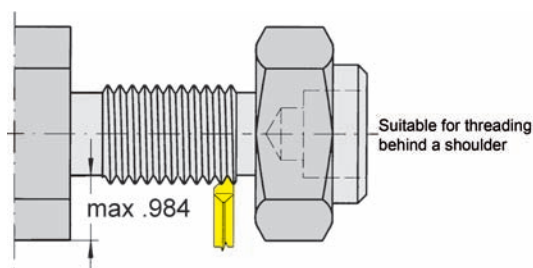
	P	M	K	S	N	H
TN35	●					
TI22	●					
TA45	●					

Dimensions in mm

Carbide grades

State R or L version

No shims necessary. All HORN thread profiles are manufactured with **full ground radial clearance**.



G82

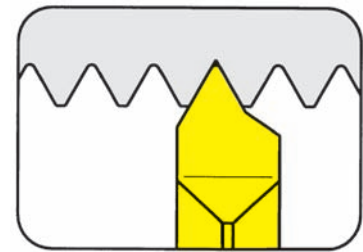
THREADING (external) Full profile



INDEXABLE INSERT Type

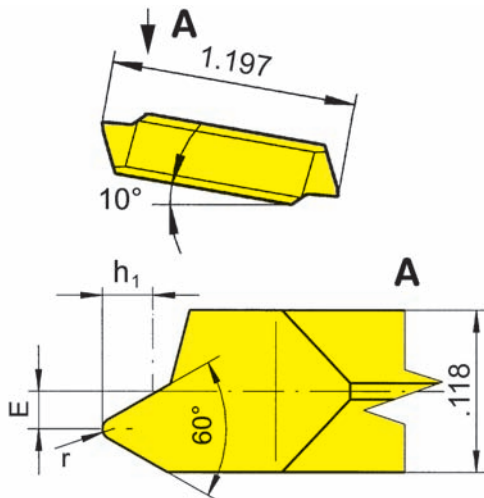
229

Metric ISO thread



Pitch	1.0 - 2.5 mm
-------	--------------

precision ground



R = right hand version shown

L = left hand cutting version shown

Indexability length
± .001"

G

Part number	P	r	E	h ₁	Size	Carbide grades		
						TN35	TI22	TA45
R/L229.0610.01	1.00	0.12	0.8	0.61	03 / 04	▲/▲		
R/L229.0712.01	1.25	0.15	0.8	0.77		▲/Δ		
R/L229.0915.01	1.50	0.20	0.7	0.92		▲/▲		
R/L229.1017.01	1.75	0.25	0.5	1.07		▲/▲		
R/L229.1220.01	2.00	0.25	0.5	1.23		▲/▲		
R/L229.1525.01	2.50	0.35	0.3	1.53		▲/Δ		

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

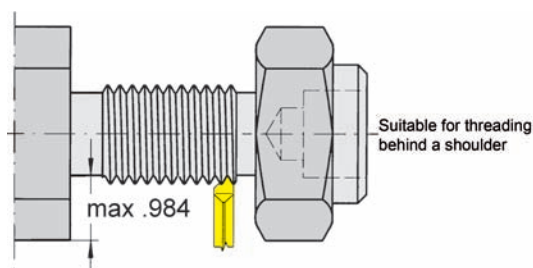
P	●	■	■
M	●	■	■
K	●	■	■
S	●	■	■
N	●	■	■
H		■	■

Dimensions in mm

Carbide grades

State R or L version

No shims necessary. All HORN thread profiles are manufactured with **full ground radial clearance**.



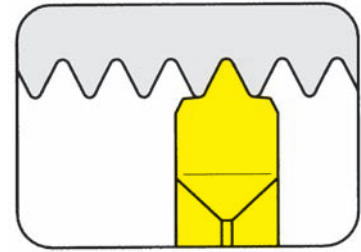
THREADING (external) Full profile



INDEXABLE INSERT Type

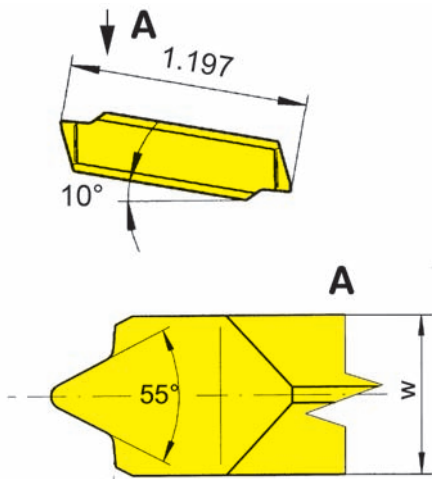
N229

Whitworth pipe thread



Threads per inch	28 - 11
------------------	---------

precision ground



Indexability length
± .001"

G

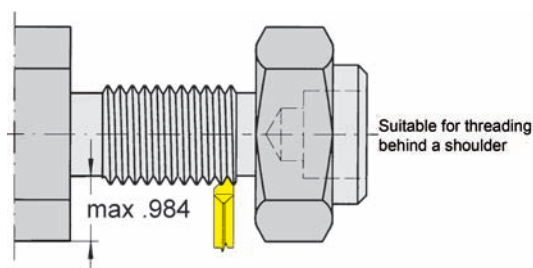
Part number	Threads per Inch	w	Size	Carbide grades					
				K10	MG12	TN32	TN35	TI25	TA45
N229.5514.02	14	.118	03 / 04	Δ	Δ		▲		▲
N229.5519.02	19	.118	03 / 04		Δ		▲		
N229.5528.02	28	.118	03 / 04		Δ		▲		
N229.5511.02	11	.138	03 / 04		Δ		▲		Δ
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P	●	○	●	●	●
				M	○	●	●	●	●
				K	●	●	●	●	●
				S	○	●	●	●	●
				N	●	●	●	●	●
				H					

Dimensions in inch

Carbide grades

No shims necessary. All HORN thread profiles are manufactured with **full ground radial clearance**.

Indexable inserts can be used in **right and left hand** toolholders.

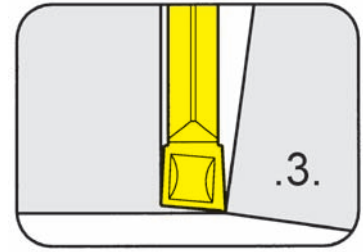


G84

INDEXABLE INSERT Type

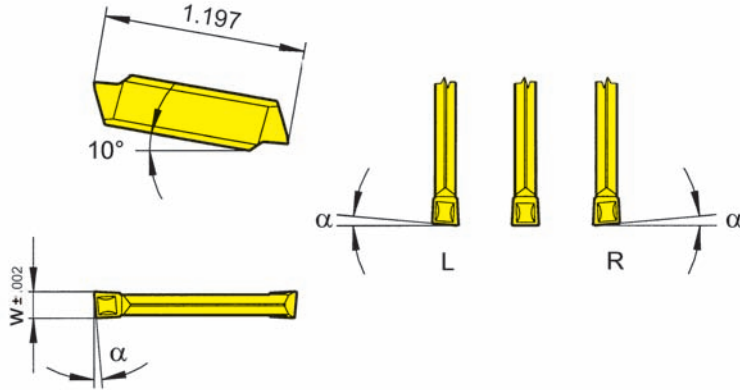
229/S229

with chip former



Depth of groove up to 1.000"
Width of groove .118 - .157"

precision sintered



R = right hand version shown

L = left hand version

Indexability length
± .002"

G

Part number	w	α	Size	Carbide grades											
				MG12	P20	H54	TN32	TN35	T122	T125	TA45	TF45	TC92	AL96	AS62
R/L229.5300.31	.118	5°	03	▲/▲			▲/▲	▲/▲		▲/▲			Δ/Δ	▲/▲	
R/LS229.0530.32		5°		▲/▲			▲/▲	▲/▲		▲/▲		▲/▲	Δ/Δ	▲/▲	
S229.0300.32		0°		▲		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
R/LS229.0540.32	.157	5°	03 / 04				▲/▲			▲/▲			▲/▲	▲/▲	
S229.0400.32		0°				▲	▲	▲	▲	▲	▲	▲	▲	▲	
				P	o	•	•	•	•	•	•	•	•	•	
				M	•	•	•	•	•	•	•	•	•	•	
				K	•	•	•	•	•	•	•	•	•	•	
				S	•	•	•	•	•	•	•	•	•	•	
				N	•	•	•	•	•	•	•	•	•	•	
				H											

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Carbide grades

State R or L version

Note:

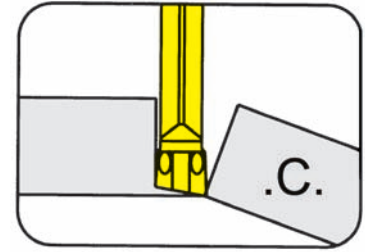
R/L229.5300.31 precision ground, length 1.181"

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

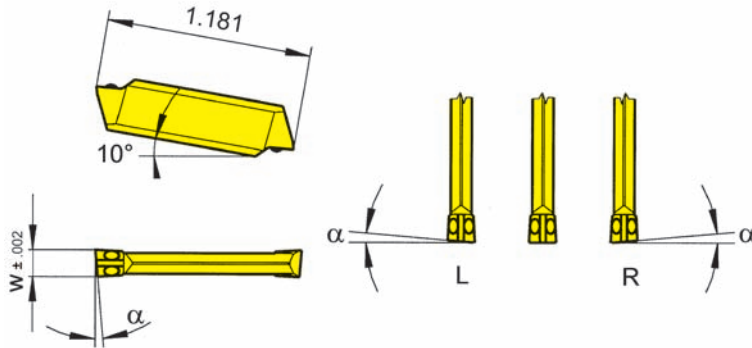
S229

with chip forming



Depth of groove up to 1.000"
Width of groove .118 - .157"

precision sintered



R = right hand version shown

L = left hand version

Indexability length
± .002"

Part number	w	α	Size	TN32	TN35	T122	T125	TA45	TF45	TC92
				R/LS229.0530.C0	.118	5°	03		▲/▲	
R/LS229.0830.C0	8°	▲/▲	▲/▲			▲/▲		▲/▲		
S229.0030.C0	0°	▲	▲	▲						
R/LS229.0540.C0	.157	5°	03 / 04		▲/▲		Δ/			
R/LS229.0840.C0		8°		▲/Δ	▲/			Δ/		
S229.0040.C0		0°		▲	▲				Δ/	
▲ on stock Δ 4 weeks				P	•		•	•	•	
• main recommendation				M	•		•	•	•	
o alternative recommendation				K	•		•	•	•	
■ uncoated grades				S	•		•	•	•	
■ coated grades				N	•		•	•	•	
■ brazed/Cermet				H						

Dimensions in inch

State R or L version

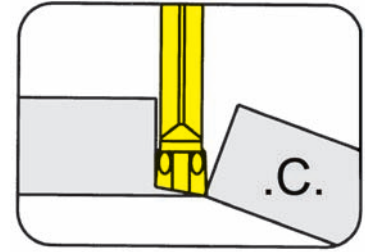
Indexable inserts can be used in **right and left hand** toolholders.

Carbide grades

INDEXABLE INSERT Type

S229

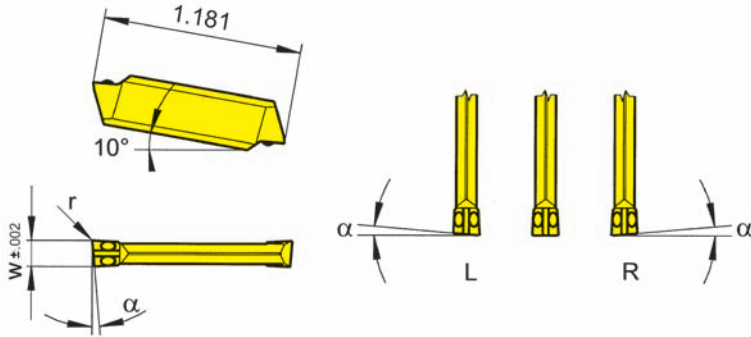
with chip forming



Depth of groove up to
Width of groove

1.000"
.118 - .157"

precision sintered



R = right hand version shown

L = left hand version

Indexability length
± .002"

G

Part number	w	r	α	Size	TN32	TN35	TI22	TI25	TF45	TC92
					R/LS229.0530.C1 R/LS229.0830.C1 S229.0030.C1	.118	.006	5° 8° 0°	03	
R/LS229.0540.C1 R/LS229.0840.C1 S229.0040.C1	.157	.006	5° 8° 0°	03 / 04		▲/▲ ▲/▲		▲/▲ ▲/▲	▲/▲ ▲	▲/▲ ▲
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation □ uncoated grades ■ coated grades ■ brazed/Cermet					P	●		●	●	●
					M	●		●	●	
					K	●		●	●	
					S	●		●	●	
					N	●		●	●	
					H					

Dimensions in inch

State R or L version

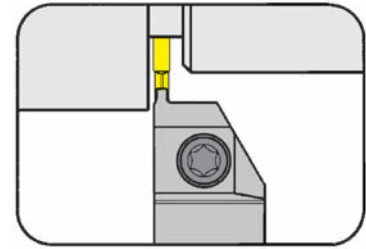
Indexable inserts can be used in **right and left hand** toolholders.

Carbide grades

TOOLHOLDER Type

H259

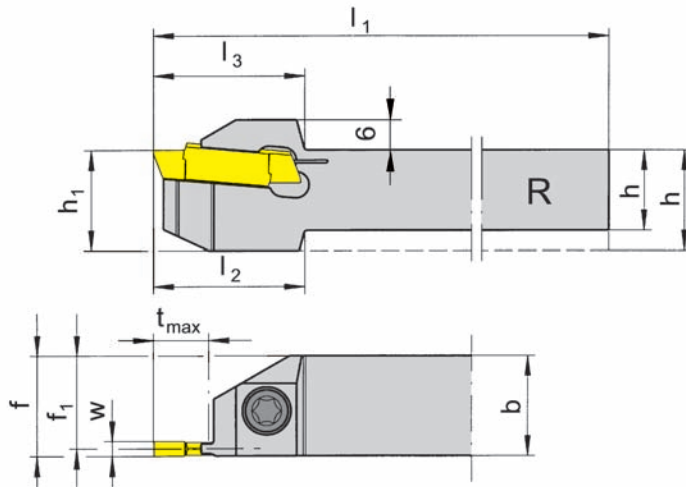
Machining brass



Depth of groove up to .709" (18.0 mm)
Width of groove up to .157" (4.0 mm)

for use with Indexable insert

Type 259



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f_1	f	l_2	t_{max}	l_3	Size
R/LH259.1616.03	16	16		20	14.55		30			
R/LH259.2020.03	20	20	135	20	18.55	$f_1+w/2$	-	11	30	03
R/LH259.2525.03	25	25		25	23.55		-			
R/LH259.1616.13	16	16		20	14.55		33			
R/LH259.2020.13	20	20	135	20	18.55	$f_1+w/2$	-	18	33	03
R/LH259.2525.13	25	25		25	23.55		-			

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH259....	6.23T25P	T25PQ

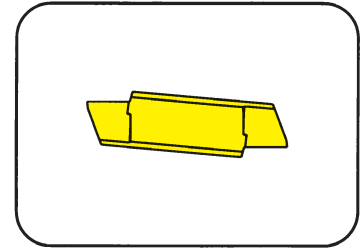
GROOVING and PARTING OFF



INDEXABLE INSERT Type

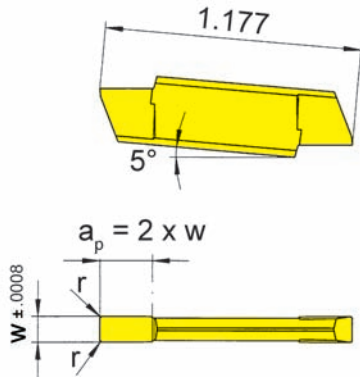
259

Machining brass



Depth of groove up to .709"
Width of groove .118 - .157"

precision ground



for use with Toolholder

Type H259

Usable length of minor cutting edge

2 x w for machining brass (Ms58)

Indexability length
± .0006"



Part number	w	r	Size	Carbide grades						
				MG12	H54	TN35	TI25	TF45	TF46	
259.0300.M1	.118	.006	03	Δ						
259.0300.M2				▲						
259.0400.M1	.157	.006	03	▲						
259.0400.M2				▲						
				P	○					
				M	●					
				K	●					
				S	●					
				N	●					
				H						

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

HCG - HORN Catalog Guide

INTERNAL GROOVING

Bore Ø	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.625" (15.87 mm)				•						
.709" (18 mm)				•						
.787 - 1.102" (20-28 mm)	•			•						
1.102 - 1.496" (28-38 mm)	•			•	•					
> 1.496" (38 mm)	•			•	•	•	•	•	•	
Operation Type										
Grooving	•			•	•	•	•	•	•	
Threading					•	•			•	
Profiling				•	•		•	•	•	
Width of groove inch	.022-.209			.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.049-.169	
Width of groove mm	0.56-5.3			1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	1.25-4.29	
Chapter	A	B	C	D	E	F	G	H	J	K

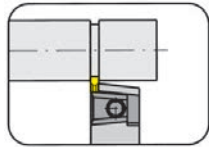
EXTERNAL GROOVING

Depth of groove up to	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.157" (4 mm)	•	•	•	•	•	•	•	•	•	•
.236" (6 mm)		•	•	•	•	•	•	•	•	•
.315" (8 mm)		•		•	•	•	•	•		•
.394" (10 mm)		•		•	•	•	•			
.433" (11 mm)		•		•	•	•	•			
.551" (14 mm)		•		•	•		•			
.630" (16 mm)		•		•	•		•			
.709" (18 mm)				•	•		•			
.984" (25 mm)				•			•			
1.000" (25.4 mm)							•			
Operation Type										
Grooving	•	•	•	•	•	•	•	•	•	•
Side Turning		•	•	•	•		•	•		
Parting Off	•	•	•	•	•		•	•		•
Threading		•	•			•	•		•	
Profiling			•		•		•	•	•	•
Axial Grooving						•			•	
Width of groove inch	.022-.209	.059-.118	.020-.118	.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.022-.169	.059-.118
Width of groove mm	0.56-5.3	1.5-3.0	0.5-3.0	1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	0.56-4.29	1.5-3.0
Chapter	A	B	C	D	E	F	G	H	J	K

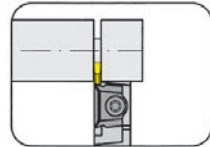
Special tools upon request

TOOLING SYSTEMS 312 **H**

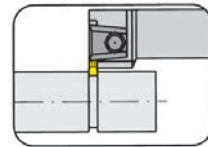
**Grooving
- external -**



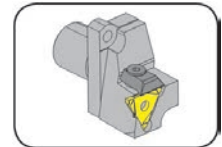
Page H2-H5,
H16-H17



Page H6



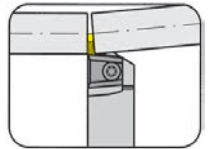
Page H10-H11



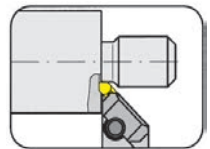
Page H12



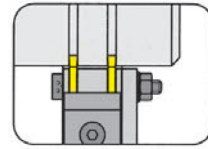
Page H13-H15



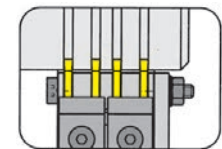
Page H19



Page H20-H21

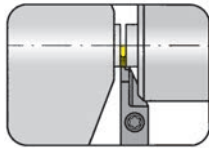


Page H22-H23

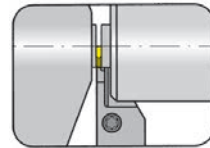


Page H24-H25

Parting off

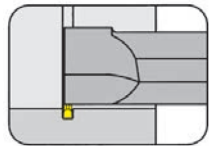


Page H7



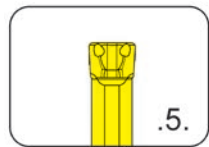
Page H8-H9

**Grooving
- internal -**

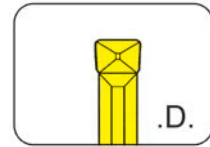


Page H26-H27

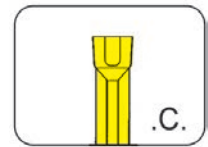
**Indexable inserts
Type
S312**



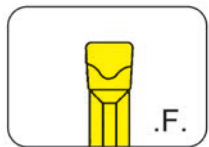
Page H28-H29



Page H30-H31



Page H50



Page H51

**Indexable inserts
Type
312**

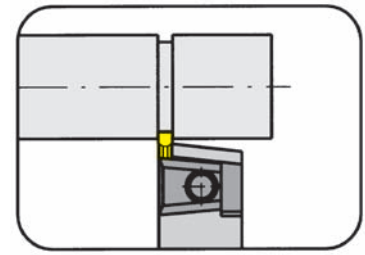


Page H33-H49,
H52-H55

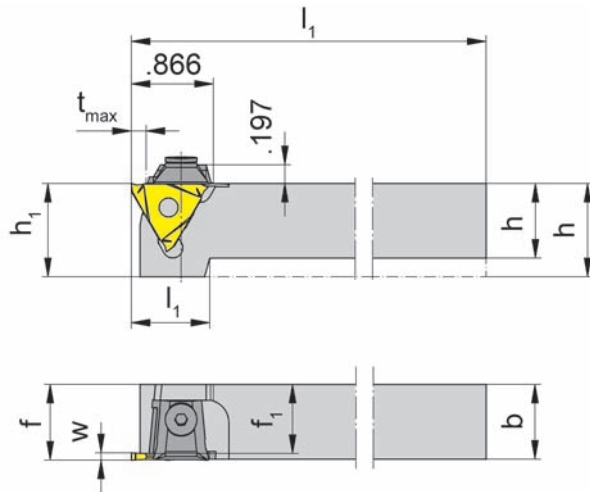
For Technical Information please see chapter Q

TOOLHOLDER Type

U360



Depth of groove up to .236"
Clamping range .020 - .114"



R = right hand version shown

L = left hand version

for use with Indexable insert

- Type 312
N312
S312
U312
US312

H

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size	Clamping range
R/LU360.0500.01	.500	.500	4.000	1.000	.441	f ₁ +w-a ₁	.944	.157	01	.020 - .075
R/LU360.0625.01	.625	.625	5.000	1.000	.566		.866			
R/LU360.0750.01	.750	.750	5.000	1.000	.691		.826			
R/LU360.1000.01	1.000	1.000	6.000	1.000	.941		-			
R/LU360.1250.01	1.250	1.250	6.625	1.250	1.191		-			
R/LU360.0500.02	.500	.500	4.000	1.000	.402	f ₁ +w-a ₁	.944	.236	02	.075 - .114
R/LU360.0625.02	.625	.625	5.000	1.000	.527		.866			
R/LU360.0750.02	.750	.750	5.000	1.000	.652		.826			
R/LU360.1000.02	1.000	1.000	6.000	1.000	.902		-			
R/LU360.1250.02	1.250	1.250	6.625	1.250	1.152		-			

State R or L version

w, a₁ see indexable inserts

Dimensions in inch

Further sizes upon request

t_{max} can be reached only with workpiece Ø ≤ 1.575"

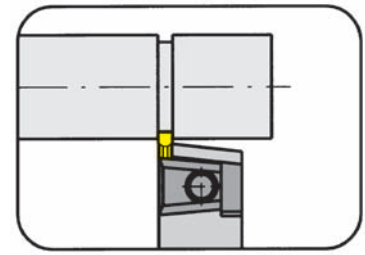
Spare parts

Toolholder	Clamp	Screw	Wrench
R/LU360.0500...01/02	11.3	6.25	SW3DIN911
R/LU360.0625...01/02	11.3	6.25	SW3DIN911
R/LU360....01/02	16.4	6.25	SW3DIN911

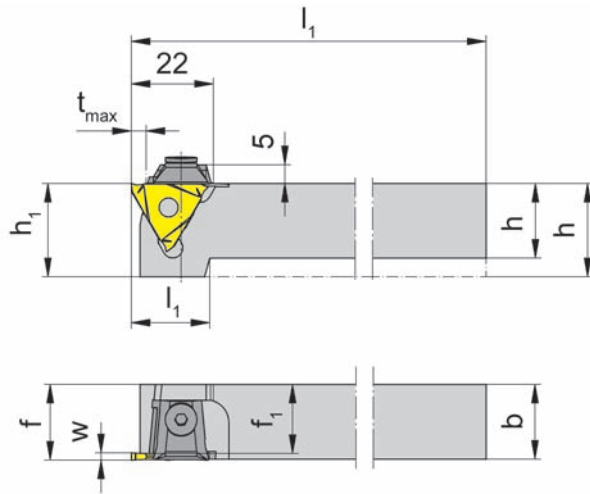
H2

TOOLHOLDER Type

360



Depth of groove up to .236" (6.0 mm)
Clamping range .020 - .114" (0.5 - 2.9 mm)



R = right hand version shown

L = left hand version

for use with Indexable insert

- Type 312
N312
S312
U312
US312

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size	Clamping range
R/L360.1212.01	12	12	100	25	10.5	f ₁ +w-a ₁	24	4	01	0.5 - 1.9
R/L360.1616.01	16	16	125	25	14.5		22			
R/L360.2020.01	20	20	125	25	18.5		21			
R/L360.2525.01	25	25	150	25	23.5		-			
R/L360.3232.01	32	32	170	32	30.5		-			
R/L360.1212.02	12	12	100	25	9.5	f ₁ +w-a ₁	24	6	02	1.9 - 2.9
R/L360.1616.02	16	16	125	25	13.5		22			
R/L360.2020.02	20	20	125	25	17.5		21			
R/L360.2525.02	25	25	150	25	22.5		-			
R/L360.3232.02	32	32	170	32	29.5		-			

State R or L version

w, a₁ see indexable inserts

Dimensions in mm

Further sizes upon request

t_{max} can be reached only with workpiece Ø ≤ 40 mm

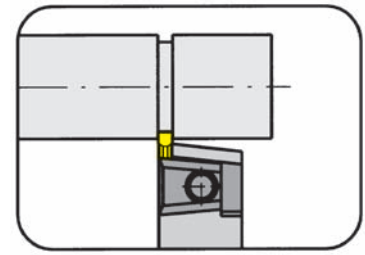
Spare parts

Toolholder	Clamp	Screw	Wrench
R/L360.1212...01/02	11.3	6.25	SW3DIN911
R/L360.1616...01/02	11.3	6.25	SW3DIN911
R/L360...01/02	16.4	6.25	SW3DIN911

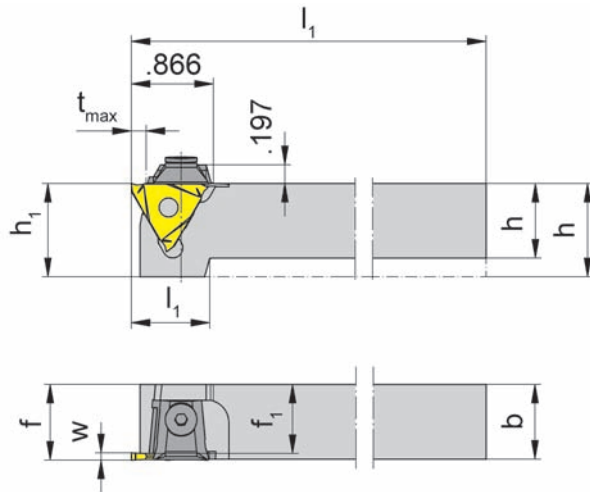
H

TOOLHOLDER Type

U360



Depth of groove up to .236"
Clamping range .114 - .248"



R = right hand version shown

L = left hand version

for use with Indexable insert

- Type 312
N312
S312
U312
US312

H

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size	Clamping range
R/LU360.0500.03	.500	.500	4.000	1.000	.362	f ₁ +w-a ₁	.944	.236	03	.114 - .154
R/LU360.0625.03	.625	.625	5.000	1.000	.487		.866			
R/LU360.0750.03	.750	.750	5.000	1.000	.612		.826			
R/LU360.1000.03	1.000	1.000	6.000	1.000	.862		-			
R/LU360.1250.03	1.250	1.250	6.625	1.250	1.112		-			
R/LU360.0625.04	.625	.625	5.000	1.000	.420	f ₁ +w-a ₁	.866	.236	04	.154 - .248
R/LU360.0750.04	.750	.750	5.000	1.000	.545		.826			
R/LU360.1000.04	1.000	1.000	6.000	1.000	.795		-			
R/LU360.1250.04	1.250	1.250	6.625	1.250	1.045		-			

State R or L version

w, a₁ see indexable inserts

Dimensions in inch

Further sizes upon request

t_{max} can be reached only with workpiece Ø ≤ 1.575"

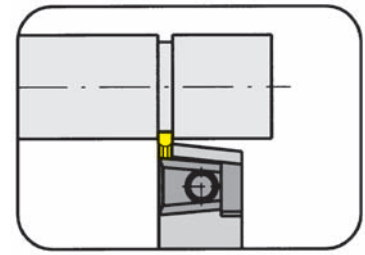
Spare parts

Toolholder	Clamp	Screw	Wrench
R/LU360.0500.03	11.3	6.25	SW3DIN911
R/LU360.0625.03	11.3	6.25	SW3DIN911
R/LU360.0625.04	13.4	6.25	SW3DIN911
R/LU360....03/04	16.4	6.25	SW3DIN911

H4

TOOLHOLDER Type

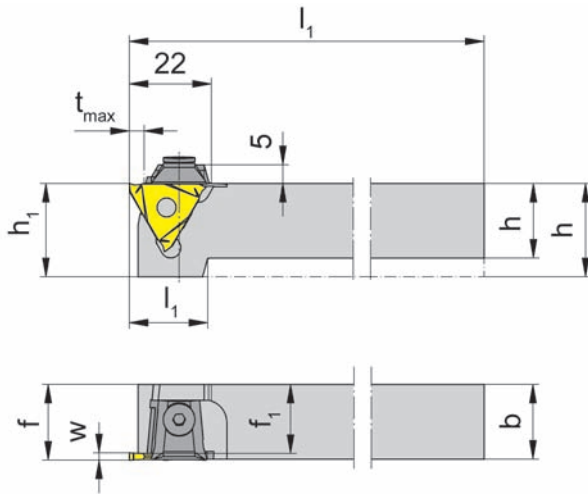
360



Depth of groove up to .236" (6.0 mm)
Clamping range .114 - .248" (2.9 - 6.3 mm)

for use with Indexable insert

Type 312
N312
S312
U312
US312



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size	Clamping range
R/L360.1212.03	12	12	100	25	8.5	f ₁ +w-a ₁	24	6	03	2.9 - 3.9
R/L360.1616.03	16	16	125	25	12.5		22			
R/L360.2020.03	20	20	125	25	16.5		21			
R/L360.2525.03	25	25	150	25	21.5		-			
R/L360.3232.03	32	32	170	32	28.5		-			
R/L360.1616.04	16	16	125	25	10.8	f ₁ +w-a ₁	22	6	04	3.9 - 6.3
R/L360.2020.04	20	20	125	25	14.8		21			
R/L360.2525.04	25	25	150	25	19.8		-			
R/L360.3232.04	32	32	170	32	26.8		-			

State R or L version

w, a₁ see indexable inserts

Dimensions in mm

Further sizes upon request

t_{max} can be reached only with workpiece Ø ≤ 40 mm

Spare parts

Toolholder	Clamp	Screw	Wrench
R/L360.1212.03	11.3	6.25	SW3DIN911
R/L360.1616.03	11.3	6.25	SW3DIN911
R/L360.1616.04	13.4	6.25	SW3DIN911
R/L360....03/04	16.4	6.25	SW3DIN911

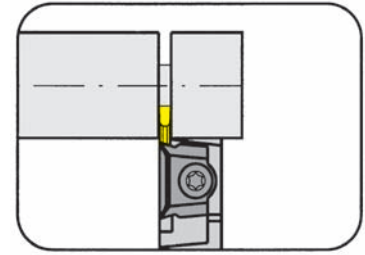
GROOVING and PARTING OFF



TOOLHOLDER Type

361

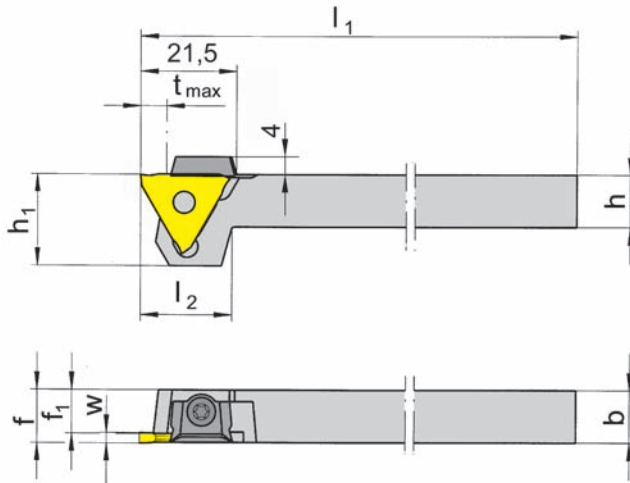
reduced head size



Depth of groove up to .236" (6.0 mm)
Clamping range .020 - .154" (0.5 - 3.9 mm)

for use with Indexable insert

Type 312
N312
S312
U312
US312



R = right hand version shown

L = left hand version

for Swisstype machines

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size	Clamping range
R/L361.1212.01	12	12	100	19	10.5	f ₁ +w-a ₁	17	4	01	0.5-1.9
R/L361.1212.02	12	12	100	19	9.5	f ₁ +w-a ₁	17	6	02	1.9-2.9
R/L361.1212.03	12	12	100	21	8.5	f ₁ +w-a ₁	21	6	03	2.9-3.9

State R or L version

w, a₁ see indexable inserts

Dimensions in mm

Further sizes upon request

t_{max} can be reached only with workpiece Ø ≤ 40 mm

Spare parts

Toolholder	Clamp	Screw	TORX PLUS® Wrench
R/L361.1212.0...	12.3	030.0422.T10P	T10PW

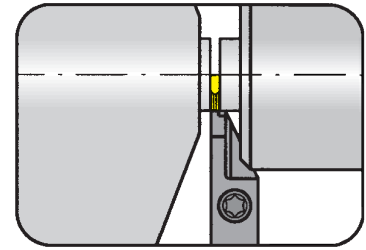
H6

H

TOOLHOLDER Type

368

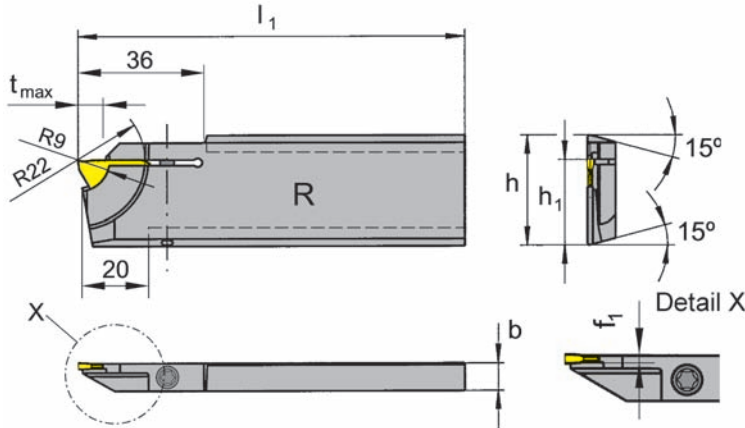
reinforced version



Depth of groove up to .315" (8.0 mm)
Clamping range .020 - .059" (0.5 - 1.5 mm)

for use with Indexable insert

Type 312
U312



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	t _{max}	Size	Clamping range
R/L368.2608.08	26			21.4	1.0			
R/L368.3208.08	32			24.8	1.0			
R/L368.2608.11	26	8	110	21.4	1.3	8	01	0.5 - 1.9
R/L368.3208.11	32			24.8	1.3			

State R or L version

Dimensions in mm

Toolholder R/L368...08 for indexable inserts:

R/L312.0805... / R/L312.0808... / R/L312.0510...
R/L312.0512... / R/L312.1210... / R/L312.0012...

Toolholder R/L368...11 for indexable inserts:

R/L312.0515... / R/L312.0015...

Further sizes upon request

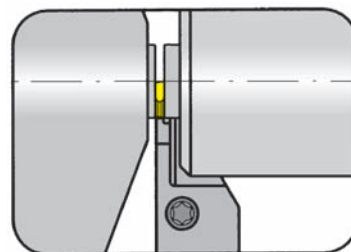
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/L368....	4.15T15P	T15PQ

H

TOOLHOLDER Type

U368

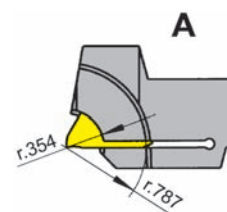
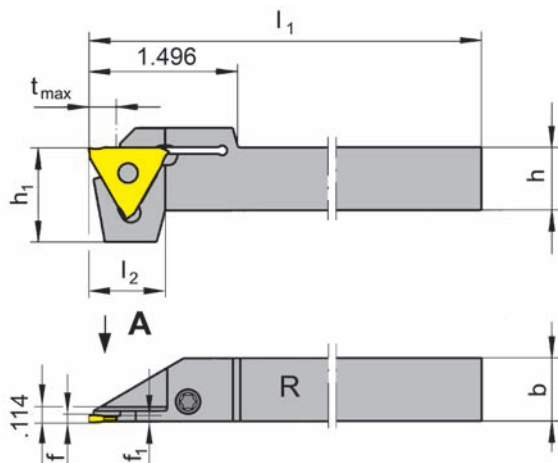


Depth of groove up to .315"
Width of groove up to .059"

for machines TRAUB (TNL12/7)

for use with Indexable insert

Type 312
U312



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size
R/LU368.0500.08	.500	.500			.039				
R/LU368.0500.11	.500	.500	3.740	.945	.051	f ₁ +a ₁	.768	.315	01
R/LU368.0625.08	.625	.625			.039				
R/LU368.0625.11	.625	.625			.051				

State R or L version

a₁ see indexable inserts

Dimensions in inch

Toolholder R/L368...08 for indexable inserts:

R/L312.0805... / R/L312.0808... / R/L312.0510...
R/L312.0512... / R/L312.1210... / R/L312.0012...

Toolholder R/L368...11 for indexable inserts:

R/L312.0515... / R/L312.0015...

Further sizes upon request

Spare parts

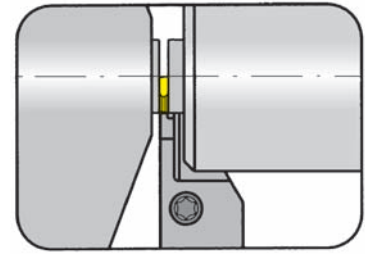
Toolholder	Screw	TORX PLUS® Wrench
R/LU368.0...	4.15T15P	T15PQ

TOOLHOLDER Type

368

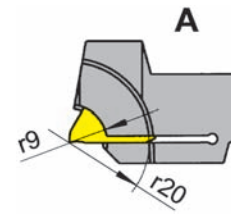
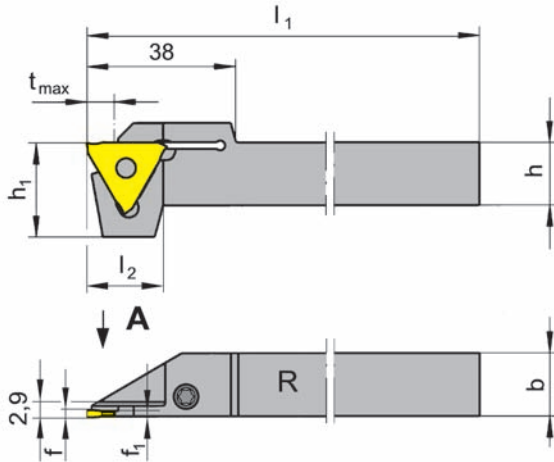
Depth of groove up to .315" (8.0 mm)
Clamping range .020 - .059" (0.5 - 1.5 mm)

for machines TRAUB (TNL12/7)



for use with Indexable insert

Type 312
U312



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size	Clamping range
R/L368.1212.08	12	12			1.0					
R/L368.1212.11	12	12			1.3					
R/L368.1616.08	16	16	95	24	1.0	f ₁ +a ₁	19.5	8	01	0.5 - 1.9
R/L368.1616.11	16	16			1.3					

State R or L version

a₁ see indexable inserts

Dimensions in mm

Toolholder R/L368...08 for indexable inserts:

R/L312.0805... / R/L312.0808... / R/L312.0510...
R/L312.0512... / R/L312.1210... / R/L312.0012...

Toolholder R/L368...11 for indexable inserts:

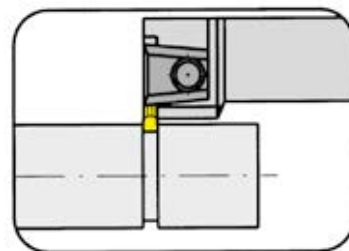
R/L312.0515... / R/L312.0015...

Further sizes upon request

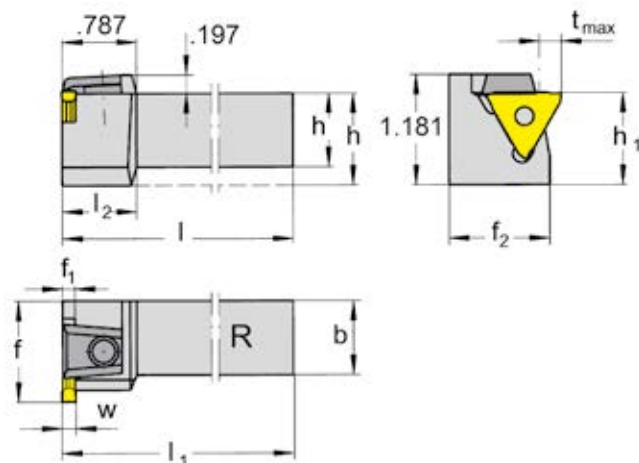
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/L368.1...	4.15T15P	T15PQ

GROOVING (external)


TOOLHOLDER Type
U369


Depth of groove up to **.236"**
Clamping range **.020 - .248"**



for use with Indexable insert

 Type 312
N312
S312
U312
US312

R = right hand version shown

L = left hand version

Part number	h	h ₁	b	l	l ₁	l ₂	f	f ₁	f ₂	t _{max}	Size	Clamping range
R/LU369.0750.01	.750	1.000	.750	5.000	l-f ₁ +w-a ₁	.750	1.026	.059	.927	.157	01	.020 - .075
R/LU369.1000.01	1.000	1.000	1.000	6.000	l-f ₁ +w-a ₁	-	1.276	.098	1.156	.236	02	.075 - .114
R/LU369.0750.02	.750	1.000	.750	5.000	l-f ₁ +w-a ₁	.750	1.026	.137	.927	.236	03	.114 - .154
R/LU369.1000.02	1.000	1.000	1.000	6.000	l-f ₁ +w-a ₁	-	1.276	.204	1.156	.236	04	.154 - .248
R/LU369.0750.03	.750	1.000	.750	5.000	l-f ₁ +w-a ₁	.750	1.026		.927			
R/LU369.1000.03	1.000	1.000	1.000	6.000	l-f ₁ +w-a ₁	-	1.276		1.156			
R/LU369.0750.04	.750	1.000	.750	5.000	l-f ₁ +w-a ₁	.750	1.026		.927			
R/LU369.1000.04	1.000	1.000	1.000	6.000	l-f ₁ +w-a ₁	-	1.276		1.156			

State R or L version

 w, a₁ see indexable inserts

Dimensions in inch

Further sizes upon request

 t_{max} can be reached only with workpiece $\varnothing \leq 1.575"$
Spare parts

Toolholder	Clamp	Screw	Wrench
R/LU369....	16.4	6.25	SW3DIN911

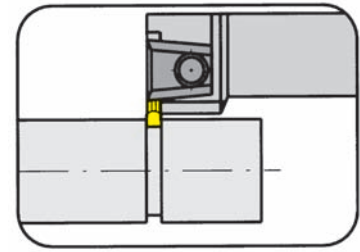
H10

GROOVING (external)



TOOLHOLDER Type

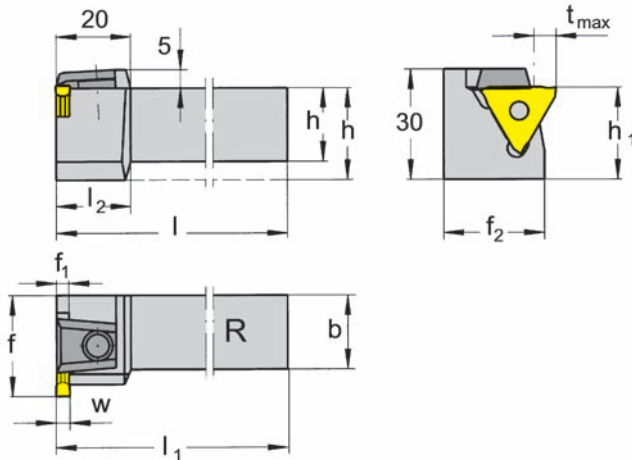
369



Depth of groove up to .236" (6.0 mm)
Clamping range .020 - .248" (0.5 - 6.3 mm)

for use with Indexable insert

Type 312
N312
S312
U312
US312



R = right hand version shown

L = left hand version

Part number	h	h ₁	b	l	l ₁	l ₂	f	f ₁	f ₂	t _{max}	Size	Clamping range
R/L369.2020.01 R/L369.2525.01	20 25	25	20 25	125 150	l-f ₁ +w-a ₁	20 -	27 32	1.5	23.5 28.5	4	01	0.5 - 1.9
R/L369.2020.02 R/L369.2525.02	20 25	25	20 25	125 150	l-f ₁ +w-a ₁	20 -	27 32	2.5	23.5 28.5	6	02	1.9 - 2.9
R/L369.2020.03 R/L369.2525.03	20 25	25	20 25	125 150	l-f ₁ +w-a ₁	20 -	27 32	3.5	23.5 28.5	6	03	2.9 - 3.9
R/L369.2020.04 R/L369.2525.04	20 25	25	20 25	125 150	l-f ₁ +w-a ₁	20 -	27 32	4.5	23.5 28.5	6	04	3.9 - 6.3

State R or L version

w, a₁ see indexable inserts

Dimensions in mm

Further sizes upon request

t_{max} can be reached only with workpiece Ø ≤ 40 mm

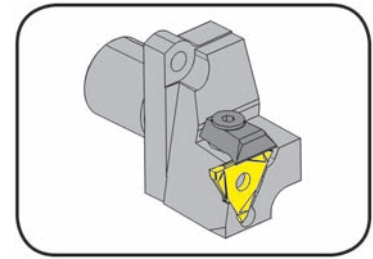
Spare parts

Toolholder	Clamp	Screw	Wrench
R/L369.2...	16.4	6.25	SW3DIN911

H

TOOLHOLDER Type

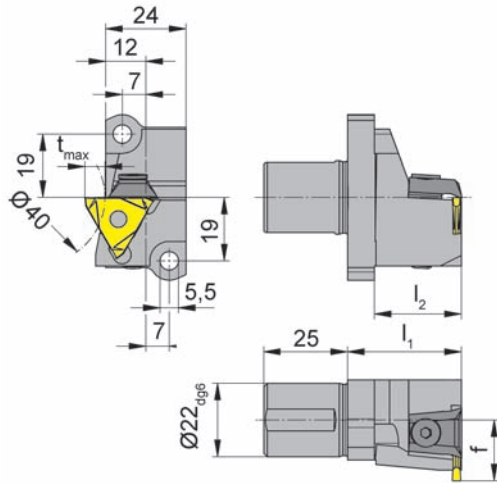
369



Depth of groove up to .236" (6.0 mm)
Clamping range .020 - .114" (0.5 - 2.9 mm)

for use with Indexable insert

Type 312
U312



L = left hand version shown

Star SV 12/20/32
SR 10/20/32 and SB 16

Part number	l_1	l_2	f	t_{max}	Size	Clamping range
L369.A022.18.01	34	26	18.2	4	01	0.5 - 1.9
L369.A022.18.02	34	26	18.2	6	02	1.9 - 2.9

Further sizes upon request

Dimensions in mm

Spare parts

Toolholder	Clamp	Screw	Wrench
L369.A022.18.0...	16.4	6.25	SW3DIN911

H12

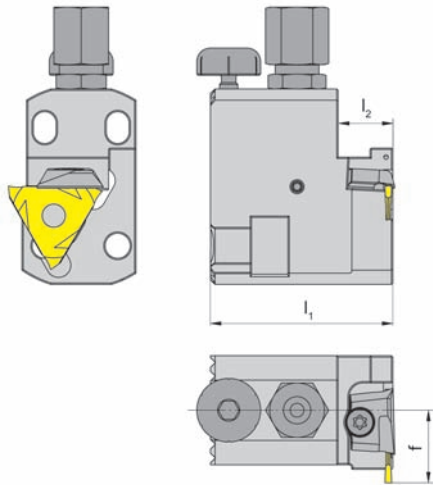
CARTRIDGE GRAF Type

64/65

with through coolant supply



Depth of groove up to .157" (4.0 mm)
Clamping range .020 - .114" (0.5 - 2.9 mm)



R = right hand version shown

L = left hand version

for use with Indexable insert

Type 312
U312



Part number	l_1	l_2	f	Size	Clamping range
R/L64IK	40	12	16	01	0.5 - 1.9
R/L65IK	40	12	16	02	1.9 - 2.9

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

Cartridge Graf	Clamp	Height adjustment screw	Coolant supply
L6...	4.082L	002.00.69	004.00.19
R6...	4.081R	002.00.69	004.00.19

H

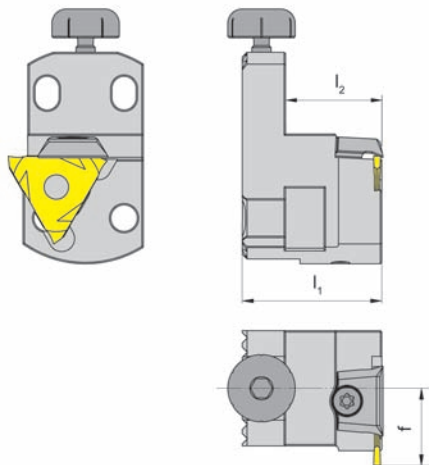
CARTRIDGE GRAF Type

64/65/99

no coolant supply



Depth of groove up to .157" (4.0 mm)
Clamping range .020 - .154" (0.5 - 3.9 mm)



for use with Indexable insert

Type 312
U312



R = right hand version shown

L = left hand version

Part number	l_1	l_2	f	Size	Clamping range
R/L64	29	20	16	01	0.5 - 1.9
R/L65	29	20	16	02	1.9 - 2.9
R/L99	29	20	16	03	2.9 - 3.9

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

Cartridge Graf	Clamp	Height adjustment screw
R/L...	4.078	002.00.69

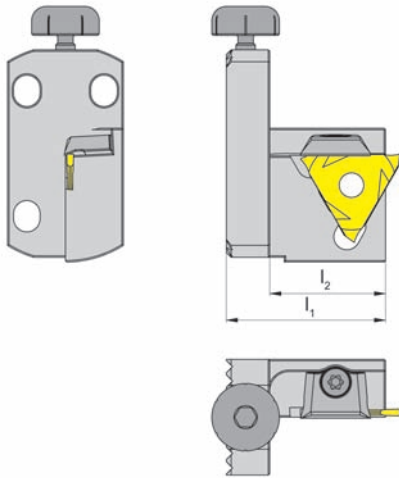
ADJUSTABLE HOLDER Type

N67/N68/N98

no coolant supply



Depth of groove up to .157" (4.0 mm)
Clamping range .020 - .154" (0.5 - 3.9 mm)



for use with Indexable insert

Type 312
U312



Part number	l_1	l_2	Size	Clamping range
N67	33	29	01	0.5 - 1.9
N68	33	29	02	1.9 - 2.9
N98	33	29	02	2.9 - 3.9

Further sizes upon request

Dimensions in mm



Spare parts

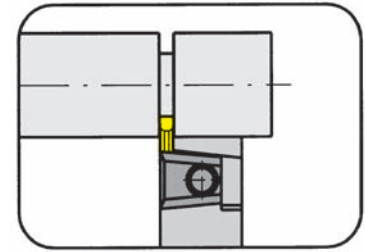
Adjustable holder	Clamp	Height adjustment screw
N...	4.078	002.00.69

GROOVING (external)



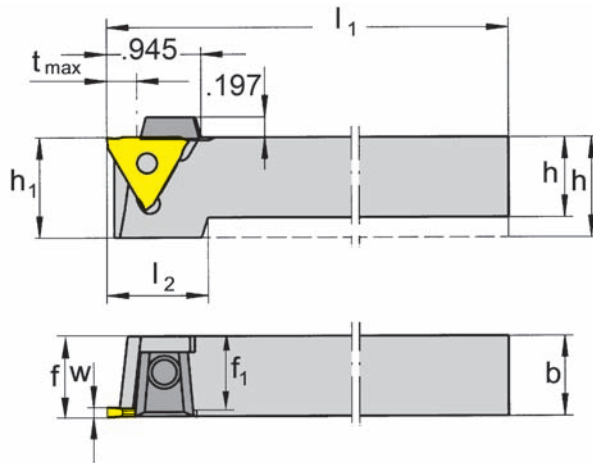
TOOLHOLDER Type

U390



Depth of groove up to
Clamping range

.315"
.075 - .209"



for use with Indexable insert

Type 312
N312
S312
U312
US312

R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f_1	f	l_2	t_{max}	Size	Clamping range
R/LU390.0750.02	.750	.750	5.000	1.000	.652	f_1+w-a_1	.866	.315	02	.075 - .114
R/LU390.1000.02	1.000	1.000	6.000	1.000	.902		-			
R/LU390.1250.02	1.250	1.250	6.625	1.250	1.152		-			
R/LU390.0750.03	.750	.750	5.000	1.000	.612	f_1+w-a_1	.866	.315	03	.114 - .154
R/LU390.1000.03	1.000	1.000	6.000	1.000	.862		-			
R/LU390.1250.03	1.250	1.250	6.625	1.250	1.112		-			
R/LU390.0750.04	.750	.750	5.000	1.000	.545	f_1+w-a_1	.866	.315	04	.154 - .209
R/LU390.1000.04	1.000	1.000	6.000	1.000	.795		-			
R/LU390.1250.04	1.250	1.250	6.625	1.250	1.045		-			

State R or L version

w, a_1 see indexable inserts

Dimensions in inch

Further sizes upon request

$t_{max} = .315"$ can be reached only with workpiece $\varnothing \leq 4.921"$

Spare parts

Toolholder	Clamp	Screw	Wrench
R/LU390....	16.4	6.25	SW3DIN911

H16

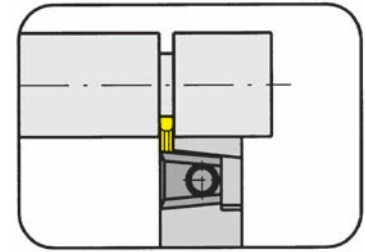
GROOVING (external)



TOOLHOLDER Type

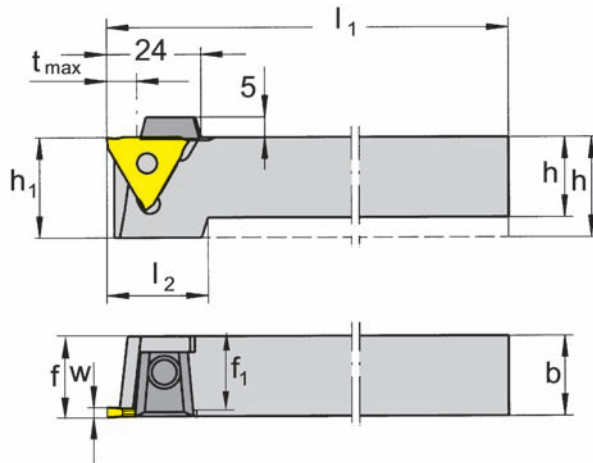
390

Depth of groove up to .315" (8.0 mm)
Clamping range .055 - .209" (1.4 - 5.3 mm)



for use with Indexable insert

Type 312
N312
S312
U312
US312



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f_1	f	l_2	t_{max}	Size	Clamping range
R/L390.2020.01	20	20	125	25	18.5	f_1+w-a_1	22	8	01	1.4 - 1.9
R/L390.2525.01	25	25	150	25	23.5	f_1+w-a_1	-	8	01	1.4 - 1.9
R/L390.2020.02	20	20	125	25	17.5	f_1+w-a_1	22	8	02	1.9 - 2.9
R/L390.2525.02	25	25	150	25	22.5	f_1+w-a_1	-	8	02	1.9 - 2.9
R/L390.3232.02	32	32	170	32	29.5	f_1+w-a_1	-	8	02	1.9 - 2.9
R/L390.2020.03	20	20	125	25	16.5	f_1+w-a_1	22	8	03	2.9 - 3.9
R/L390.2525.03	25	25	150	25	21.5	f_1+w-a_1	-	8	03	2.9 - 3.9
R/L390.3232.03	32	32	170	32	28.5	f_1+w-a_1	-	8	03	2.9 - 3.9
R/L390.2020.04	20	20	125	25	14.8	f_1+w-a_1	22	8	04	3.9 - 5.3
R/L390.2525.04	25	25	150	25	19.8	f_1+w-a_1	-	8	04	3.9 - 5.3
R/L390.3232.04	32	32	170	32	26.8	f_1+w-a_1	-	8	04	3.9 - 5.3

State R or L version

w, a₁ see indexable inserts

Dimensions in mm

Further sizes upon request

t_{max} can be reached only with workpiece $\varnothing \leq 125$ mm

Spare parts

Toolholder	Clamp	Screw	Wrench
R/L390....	16.4	6.25	SW3DIN911

H

H17

HORN - THE LEADERS IN GROOVING TECHNOLOGY



SETTING THE STANDARD

GROOVE MILLING

HORN groove milling sets the standard.
For productivity, nothing else come close.

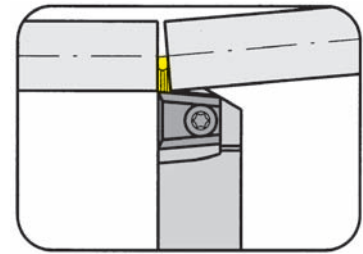
HORN - INTELLIGENT TOOL DESIGN AT WORK.



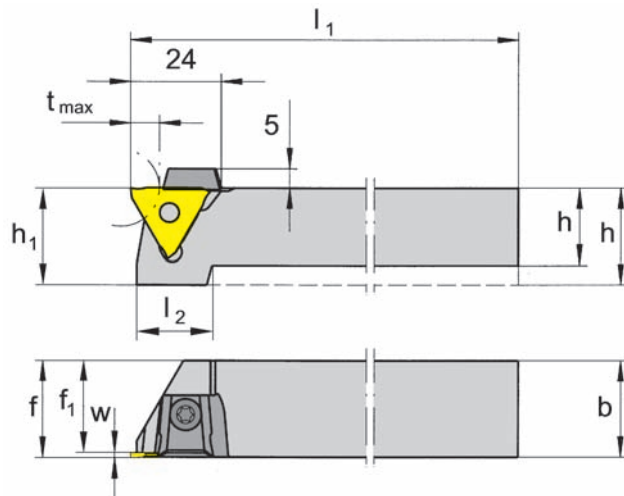
For further information, please see HORN catalog "CARBIDE MILLING TOOLS".

TOOLHOLDER Type

391



Depth of groove up to .315" (8.0 mm)
Clamping range .020 - .075" (0.5 - 1.9 mm)



R = right hand version shown

L = left hand version

for use with Indexable insert

Type 312
N312
S312
U312
US312

Part number	h	b	l_1	h_1	f_1	f	l_2	t_{max}	Size	Clamping range
R/L391.1212.01	12	12	100	21	10.5	$f_1 + w - a_1$	21	8	01	0.5-1.9
R/L391.1616.01	16	16	125	21	14.5		21			
R/L391.2020.01	20	20	125	21	18.5		21			
R/L391.2525.01	25	25	150	25	23.8	-	-			

State R or L version

w, a_1 see indexable inserts

Dimensions in mm

Further sizes upon request

t_{max} can be reached only with workpiece $\varnothing \leq 20$ mm

Spare parts

Toolholder	Clamp	Screw	Wrench	TORX PLUS® Wrench
R/L391.1212.01	12.3	030.0422.T10P	SW3DIN911	T10PL
R/L391.1616.01	14.4	5.32.3T15P		T15PQ
R/L391.2...01	16.4	6.25		

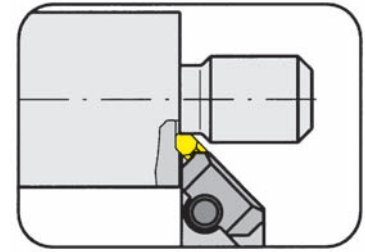


GROOVING CORNER RELIEFS (external)



TOOLHOLDER Type

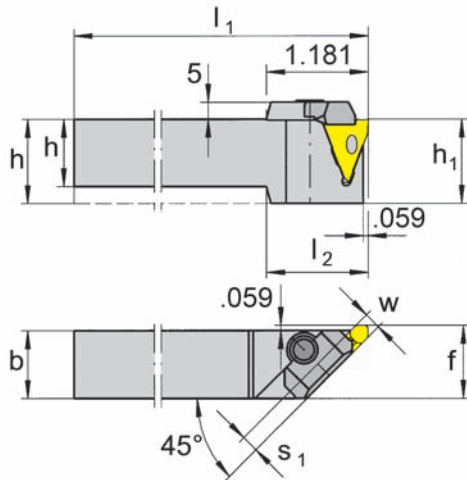
U309



Corner reliefs similar to DIN 509 form "F"

for use with Indexable insert

Type 312



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f	s_1	l_2	Size	Clamping range
R/LU309.0750.02	.750	.750	5.000	1.000	.809		1.181		
R/LU309.1000.02	1.000	1.000	6.000	1.000	1.059	.098	-	02	.075 - .114
R/LU309.1250.02	1.250	1.250	6.625	1.250	1.309		-		
R/LU309.0750.03	.750	.750	5.000	1.000	.809		1.181		
R/LU309.1000.03	1.000	1.000	6.000	1.000	1.059	.138	-	03	.114 - .154
R/LU309.1250.03	1.250	1.250	6.625	1.250	1.309		-		
R/LU309.0750.04	.750	.750	5.000	1.000	.809		1.181		
R/LU309.1000.04	1.000	1.000	6.000	1.000	1.059	.205	-	04	.154 - .209
R/LU309.1250.04	1.250	1.250	6.625	1.250	1.309		-		

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

Toolholder	Clamp	Screw	Wrench
R/LU309....	21.4	6.25	SW3DIN911

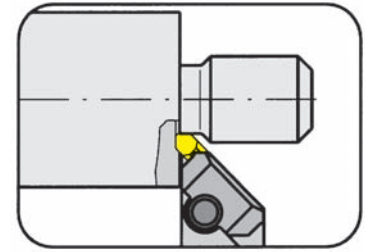
H20

GROOVING CORNER RELIEFS (external)



TOOLHOLDER Type

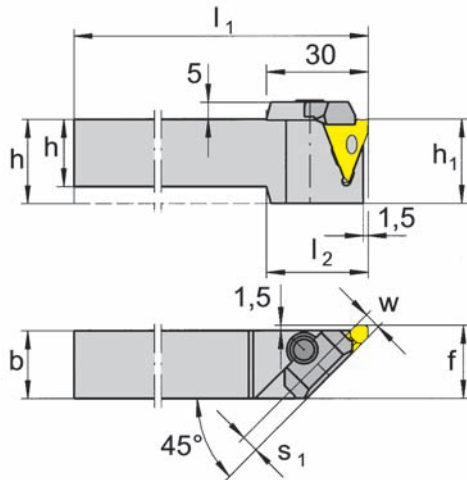
309



Corner reliefs similar to DIN 509 form "F"

for use with Indexable insert

Type 312



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f	s_1	l_2	Size	Clamping range
R/L309.2020.02	20	20	125	25	21.5	-	30	-	-
R/L309.2525.02	25	25	150	25	26.5	2.5	-	02	1.9 - 2.9
R/L309.3232.02	32	32	170	32	33.5	-	-	-	-
R/L309.2020.03	20	20	125	25	21.5	-	30	-	-
R/L309.2525.03	25	25	150	25	26.5	3.5	-	03	2.9 - 3.9
R/L309.3232.03	32	32	170	32	33.5	-	-	-	-
R/L309.2020.04	20	20	125	25	21.5	-	30	-	-
R/L309.2525.04	25	25	150	25	26.5	5.2	-	04	3.9 - 5.3
R/L309.3232.04	32	32	170	32	33.5	-	-	-	-

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Clamp	Screw	Wrench
R/L309....	21.4	6.25	SW3DIN911

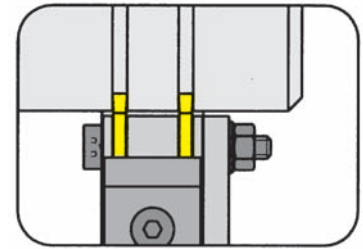
H

GROOVING (external)



TOOLHOLDER Type

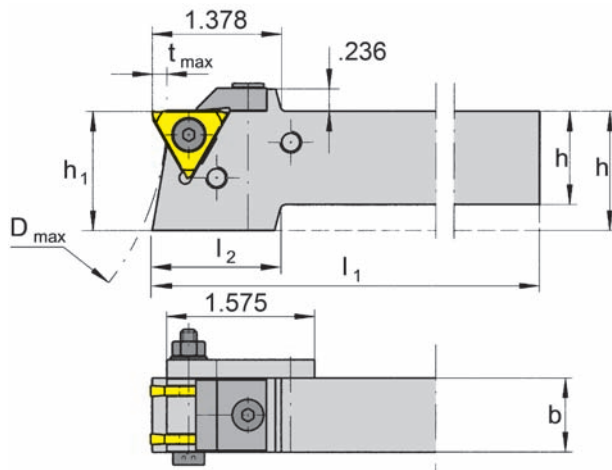
U340



Multi grooving

for use with Indexable insert

Type 312 "G"



use only with special inserts ground periphery type "G"

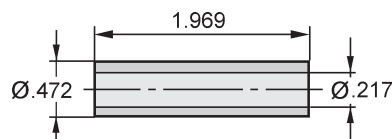
H

Part number	h	b	l ₁	h ₁	l ₂	t _{max}	D _{max}	Size
U340.0750.01	.750				1.377			
U340.1000.01	1.000	.750	6.625	1.250	1.377	.157	6.299	01
U340.1250.01	1.250				-			

Further sizes upon request

Dimensions in inch

Tube for producing spacing rings
Part number 340.0012.50
separate order required



Spare parts

Toolholder	Hex nut	Clamp	Screw	Screw	Spring Plate	Washer	Flange	Thread Ring
U340....	M5DIN439	340.0200	5.30.7984	6.16.7991	5.12.03	B5.3DIN125	24.40	12.3.8.5

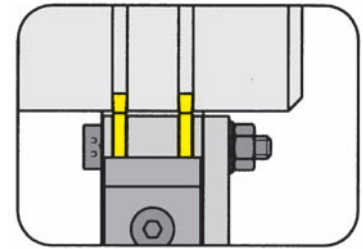
H22

GROOVING (external)



TOOLHOLDER Type

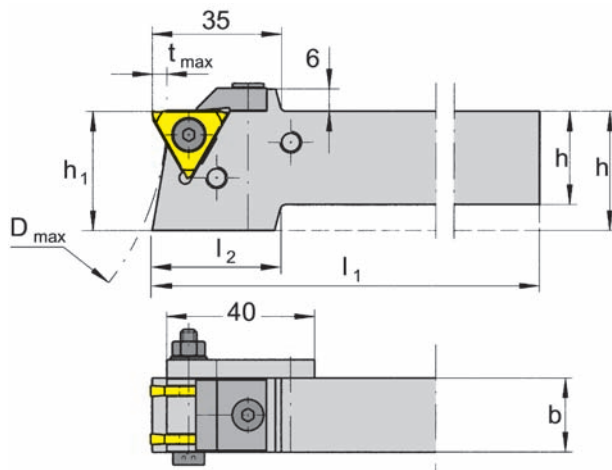
340



Multi grooving

for use with Indexable insert

Type 312 "G"



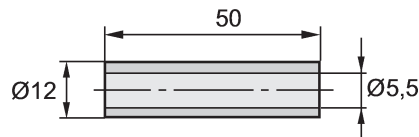
use only with special inserts ground periphery type "G"

Part number	h	b	l ₁	h ₁	l ₂	t _{max}	D _{max}	Size
340.2020.01	20				35			
340.2520.01	25	20	170	32	35	4	160	01
340.3220.01	32				-			

Further sizes upon request

Dimensions in mm

Tube for producing spacing rings
Part number 340.0012.50
separate order required



Spare parts

Toolholder	Hex nut	Clamp	Screw	Screw	Wrench	Spring Plate	Washer	Flange	Thread Ring
340....	M5DIN439	340.0200	5.30.7984	6.16.7991	SW3DIN911	5.12.03	B5.3DIN125	24.40	12.3.8.5



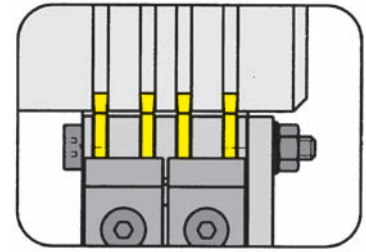
GROOVING (external)



TOOLHOLDER Type

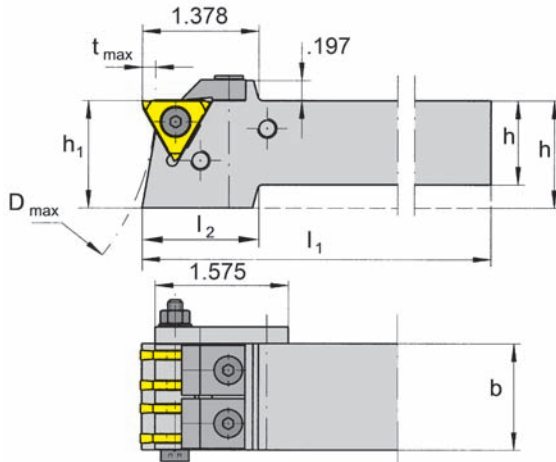
U340

Multi grooving



for use with Indexable insert

Type 312 "G"



Right hand mounted

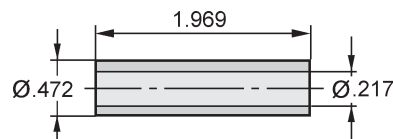
use only with special inserts ground periphery type "G"

Part number	h	b	l ₁	h ₁	l ₂	t _{max}	D _{max}	Size
U340.1000.02	1.000	1.250	6.625	1.250	1.377	.157	6.299	02
U340.1250.02	1.250	1.250	6.625	1.250	-	.157	6.299	02

Further sizes upon request

Dimensions in inch

Tube for producing spacing rings
Part number 340.0012.50
separate order required



Spare parts

Toolholder	Hex nut	Clamp	Screw	Screw	Wrench	Spring Plate	Washer	Flange	Thread Ring
U340.1...	M5DIN439	22.16	5.40.7984	6.16.7991	SW3DIN911	5.12.03	B5.3DIN125	24.40	12.3.8.5

H24

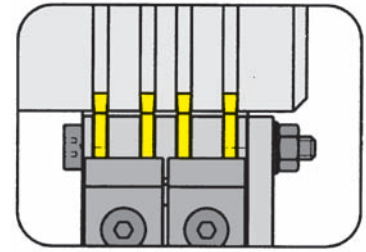
GROOVING (external)



TOOLHOLDER Type

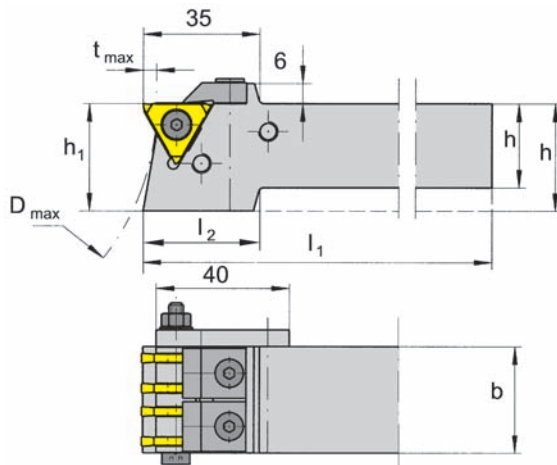
340

Multi grooving



for use with Indexable insert

Type 312 "G"



Right hand mounted

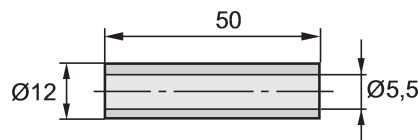
use only with special inserts ground periphery type "G"

Part number	h	b	l ₁	h ₁	l ₂	t _{max}	D _{max}	Size
340.2532.02	25	32	170	32	35	4	160	02
340.3232.02	32	32	170	32	-	4	160	02

Further sizes upon request

Dimensions in mm

Tube for producing spacing rings
Part number 340.0012.50
separate order required



Spare parts

Toolholder	Hex nut	Clamp	Screw	Screw	Wrench	Spring Plate	Washer	Flange	Thread Ring
U340.1...	M5DIN439	22.16	5.40.7984	6.16.7991	SW3DIN911	5.12.03	B5.3DIN125	24.40	12.3.8.5

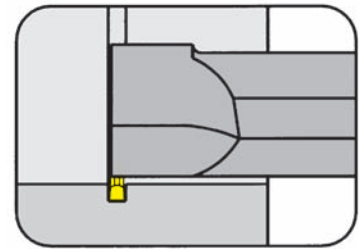


GROOVING (internal)



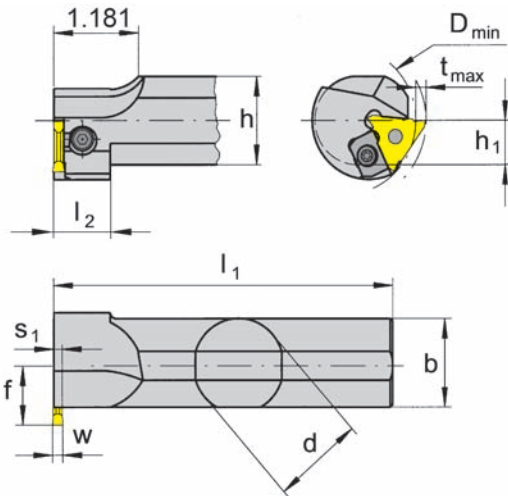
BASIC TOOLHOLDER Type

U330



Bore Ø from
Clamping range

1.811"
.020 - .248"



R = right hand version shown

L = left hand version

for use with Indexable
insert

Type 312
N312
S312
U312
US312

Depth of groove in relation to bore Ø

D _{min}	t _{max}
1.811	.079
1.968	.118
2.362	.157
3.149	.177
3.937	.197

Part number	d	l ₁	l ₂	h	h ₁	f	D _{min}	s ₁	b	Size	Clamping range
R/LU330.1000.01	1.000	6.625	.750	.921	.461	.750			1.000		
R/LU330.1250.01	1.250	8.000	.750	1.171	.586	.750	1.811	.059	1.171	01	.020 - .075
R/LU330.1500.01	1.500	10.000	-	1.421	.711	.944			1.421		
R/LU330.1000.K2	1.000	6.625	.750	.921	.461	.750			1.000		
R/LU330.1250.K2	1.250	8.000	.750	1.171	.586	.750	1.811	.098	1.171	02	.075 - .114
R/LU330.1500.K2	1.500	10.000	-	1.421	.711	.944			1.421		
R/LU330.1000.K3	1.000	6.625	.750	.921	.461	.750			1.000		
R/LU330.1250.K3	1.250	8.000	.750	1.171	.586	.750	1.811	.137	1.171	03	.114 - .154
R/LU330.1500.K3	1.500	10.000	-	1.421	.711	.944			1.421		
R/LU330.1000.K4	1.000	6.625	.750	.921	.461	.750			1.000		
R/LU330.1250.K4	1.250	8.000	.750	1.171	.586	.750	1.811	.216	1.171	04	.154 - .248
R/LU330.1500.K4	1.500	10.000	-	1.421	.711	.944			1.421		

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

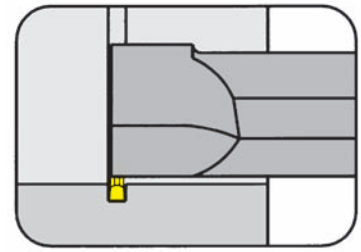
Basic toolholder	Clamp	Guide Strip	Screw	Wrench	TORX PLUS® Wrench
R/LU330.1...	15.4	020.1025.0170	5.12T20P	SW3DIN911	T20PQ

H26

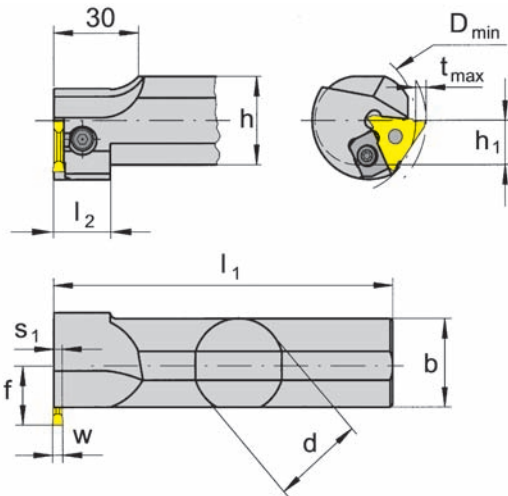
GROOVING (internal)



BASIC TOOLHOLDER Type **330**



Bore Ø from 1.811" (46.0 mm)
Clamping range .075 - .248" (1.9 - 6.3 mm)



R = right hand version shown

L = left hand version

for use with Indexable insert

Type 312
N312
S312
U312
US312

Depth of groove in relation to bore Ø

D _{min}	t _{max}
46	2,0
50	3,0
60	4,0
80	4,5
100	5,0

Part number	d	l ₁	l ₂	h	h ₁	f	D _{min}	s ₁	b	Size	Clamping range
R/L330.0025.K2	25	170	20	23	11.5	20			25		
R/L330.0032.K2	32	200	20	30	15.0	20	46	2.5	30	02	1.9 - 2.9
R/L330.0040.K2	40	250	-	38	19.0	24			38		
R/L330.0025.K3	25	170	20	23	11.5	20			25		
R/L330.0032.K3	32	200	20	30	15.0	20	46	3.5	30	03	2.9 - 3.9
R/L330.0040.K3	40	250	-	38	19.0	24			38		
R/L330.0025.K4	25	170		23	11.5	20			25		
R/L330.0032.K4	32	200	20	30	15.0	20	46	5.5	30	04	3.9 - 6.3
R/L330.0040.K4	40	250		38	19.0	24			38		

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Basic toolholder	Clamp	Guide Strip	Screw	Wrench	TORX PLUS® Wrench
R/L330.00...	15.4	020.1025.0170	5.12T20P	SW3DIN911	T20PQ

H

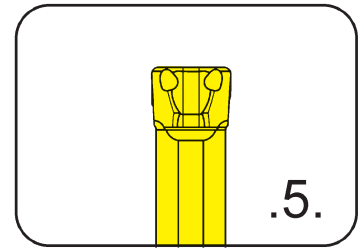
GROOVING (external and internal)



INDEXABLE INSERT Type

US312

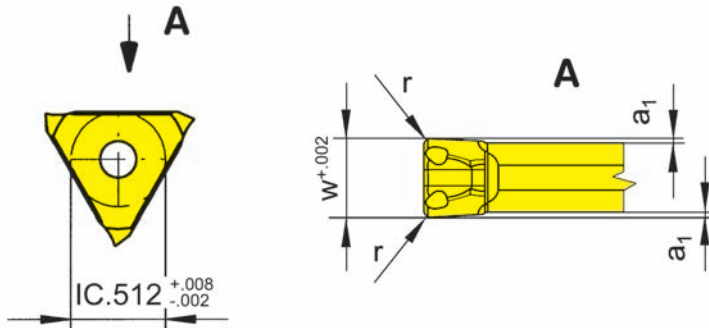
with sintered geometries



Width of groove .094 - .125"

for use with Toolholder

- Type 330 / U330
 360 / U360
 361
 369 / U369
 390 / U390



Geometry .5

H

Part number	w	r	a ₁	Size	TN32	TN35	TI25	TF45	TF46	AS62	AS63
US312.0094.58	.094	.008	.010	02					▲		
US312.0125.58	.125	.008	.010	03					▲		
▲ on stock Δ 4 weeks					P				•		
● main recommendation					M				○		
○ alternative recommendation					K				•		
■ uncoated grades					S				○		
■ coated grades					N				•		
■ brazed/Cermet					H						

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

GROOVING (external and internal)



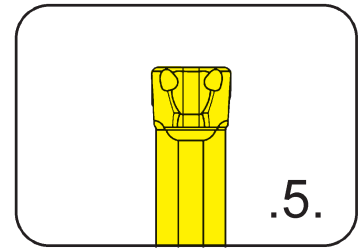
INDEXABLE INSERT Type

S312

with sintered geometries

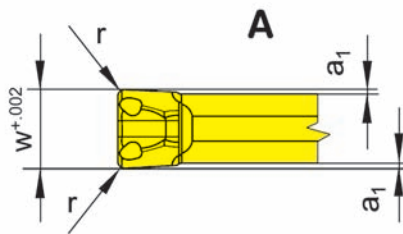
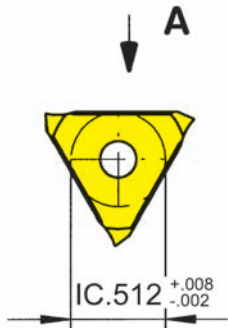
Width of groove

.098 - .197"



for use with Toolholder

Type 330 / U330
360 / U360
361
369 / U369
390 / U390



Geometry .5

Part number	w	r	a ₁	Size	Carbide grades											
					K10	MG12	P20	TN32	TN35	T125	TF45	TF46	TC92	AL96		
S312.0250.52 S312.0250.54	.098	.008 .016	.010	02					▲	●	▲	▲	▲	▲	▲	▲
S312.0300.52 S312.0300.54	.118	.008 .016	.010	03				▲	▲	▲	▲	▲	▲	▲	▲	▲
S312.0400.52 S312.0400.54	.157	.008 .016	.010	04				▲	▲	▲	▲	▲	▲	▲	▲	▲
S312.0500.52 S312.0500.54	.197	.008 .016	.010	04				▲	▲	▲	▲	▲	▲	▲	▲	▲
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet					P				●	●	●	●	●	●	●	●
					M					●	●	●	○			
					K					●	●	●	●	●	●	●
					S					●	●	●	○			
					N					●	●	●	●	●		●
					H											

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

H

GROOVING (external and internal)



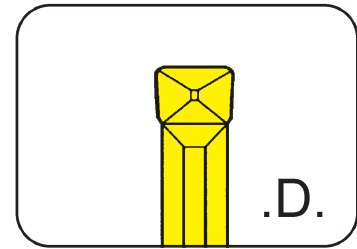
INDEXABLE INSERT Type

US312

with sintered geometries

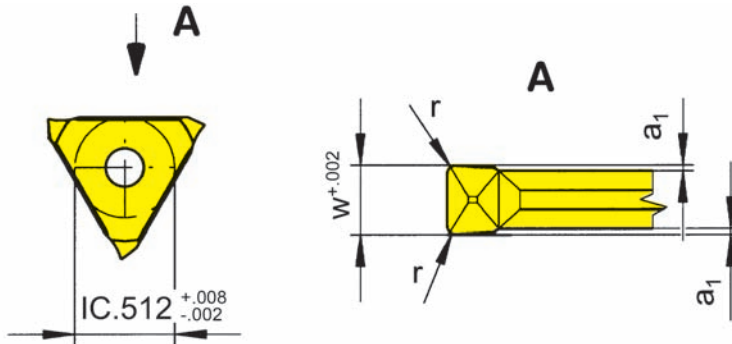
Width of groove

.094 - .125"



for use with Toolholder

Type 330 / U330
360 / U360
361
369 / U369
390 / U390



Geometry .D

H

Part number	w	r	a ₁	Size	TN32	TN35	T125	TF45	TF46	AS62	AS63
US312.0094.D16	.094	.016	.010	02			▲				
US312.0094.D8		.008						▲			
US312.0125.D8	.125	.008	.010	03				▲	▲		
					P		•	•	•		
					M		•	•	○		
					K		•	•	•		
					S		•	•	○		
					N		•	•	•		
					H						

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

GROOVING and PARTING OFF



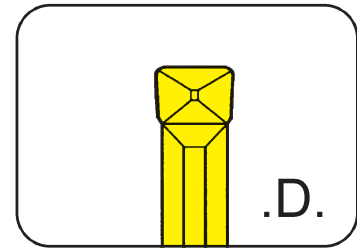
INDEXABLE INSERT Type

S312

with sintered geometries

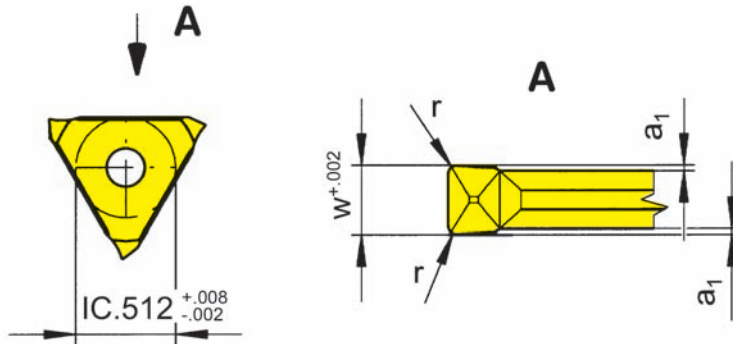
Width of groove

.079 - .118"



for use with Toolholder

Type 330 / U330
360 / U360
361
369 / U369
390 / U390



R = right hand version shown

L = left hand version

Geometry .D

Part number	w	r	a ₁	Size	Carbide grades																							
					TN32	T125	TF45	TF46	TC92	AS62	AS66	P	M	K	S	N	H											
S312.0200.D2	.079	.008	.010	02	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	○	○	○	○	○	○
S312.0200.D4		.016			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
S312.0250.D2	.098	.008	.010	02	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
S312.0250.D4		.016			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
S312.0300.D2	.118	.008	.010	03	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
S312.0300.D4		.016			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲

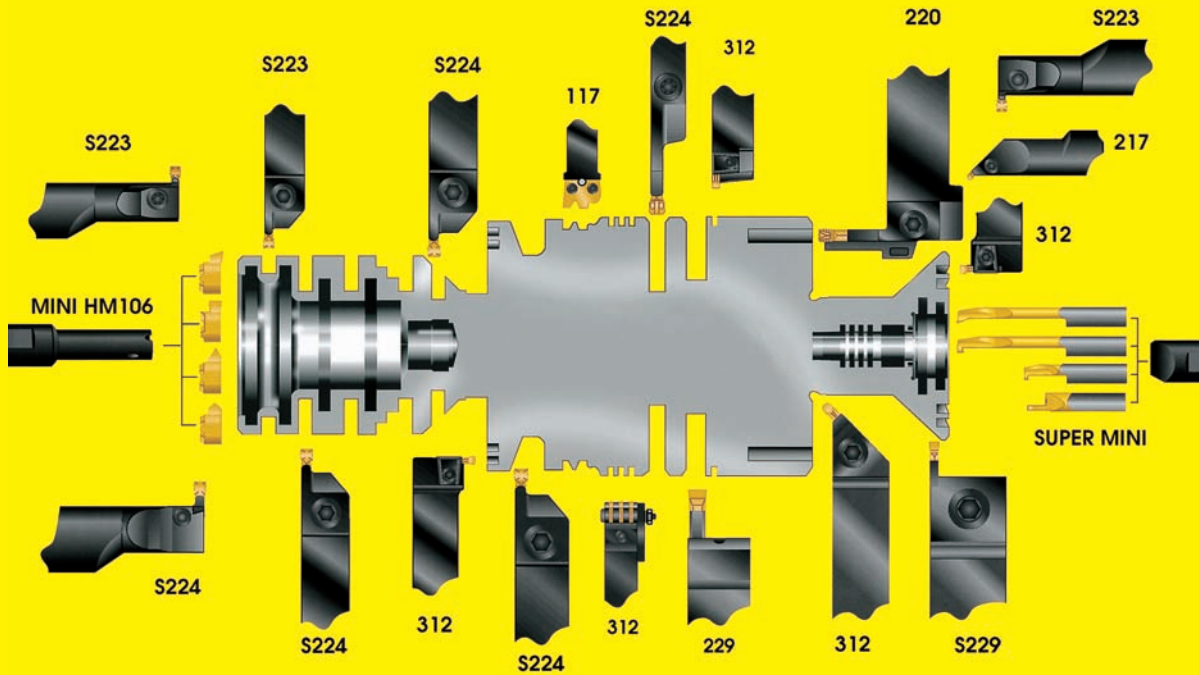
▲ on stock Δ 4 weeks
● main recommendation
○ alternative recommendation
■ uncoated grades
■ coated grades
■ brazed/Cermet

Dimensions in inch

Indexable inserts can be used in **right and left hand** toolholders.

H

HORN - THE LEADERS IN GROOVING TECHNOLOGY



THERE IS ALWAYS A (GROOVING) SOLUTION...

...and if it doesn't already exist, we will find it.

HORN has developed the world's most effective range of grooving technology by providing solutions to problems that others have walked away from.

Many of our 12.000+ standard catalog items were developed as specials - but many customers had the same requirements leading to standards.

Even though our standard catalog range is very broad, it is dwarfed by our database of over 85.000 special solutions.

So your problem might be something that we've already encountered. If we haven't, then we like a challenge.

HORN - INTELLIGENT TOOL DESIGN AT WORK.

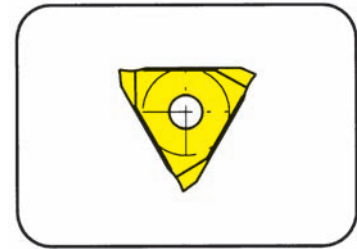
For further information, please contact HORN USA.

GROOVING (external)



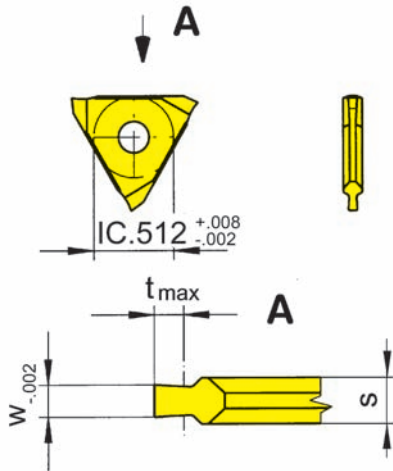
INDEXABLE INSERT Type

312



Circlip grooves
Width of circlip Nw

DIN 471/472
.020 - .039"



for use with Toolholder

Type 360 / U360
361
369 / U369

Indexability length
± .0008"

Part number	Nw	w	t _{max}	s	Size	MG12	P20	H20	TN32	TN35	TI25	TA45
312.0050.15	.020	.022	.028	.059	01				▲			
312.0060.15	.024	.026	.031			▲						
312.0070.15	.028	.030	.043			▲						
312.0080.15	.031	.034	.047			▲						
312.0090.15	.035	.038	.055			▲						
312.0100.15	.039	.042	.063			▲						
						P			●			
						M						
						K						
						S						
						N						
						H						

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.



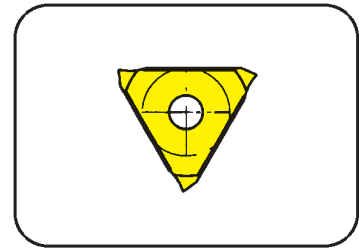
GROOVING (external and internal)



INDEXABLE INSERT Type

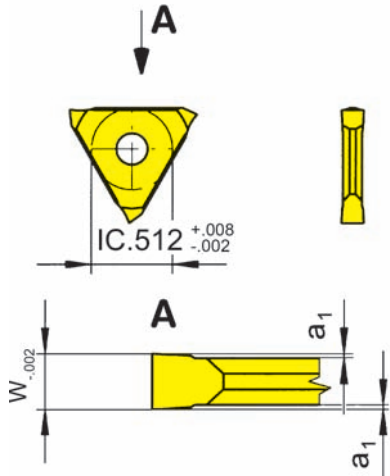
U312

with round chip breaker



Width of groove

.026 - .250"



for use with Toolholder

Type 330 / U330
360 / U360
361
369 / U369
390 / U390

Indexability length
± .0008"

H

Part number	w	a ₁	Size	MG12	H54	TN32	TN35	TI25	TF45	TF46	
U312.0026.00	.026	.003	01					▲		▲	
U312.0031.00	.031	.003		▲		▲		▲	▲	▲	
U312.0040.00	.040	.003		▲		▲		▲	▲	▲	
U312.0046.00	.046	.004						▲	▲	▲	
U312.0056.00	.056	.008		▲				▲	▲	▲	
U312.0062.00	.062	.008				▲	▲	▲	▲	▲	
U312.0078.00	.078	.008		▲		▲		▲	▲	▲	
U312.0088.00	.088	.008	02					▲	▲	▲	
U312.0094.00	.094								▲	▲	▲
U312.0125.00	.125	.008	03	▲		▲			▲	▲	
U312.0157.00	.157	.008	04					▲		▲	
U312.0188.00	.188										▲
U312.0250.00	.250										
▲ on stock Δ 4 weeks				P	○	●	●	●	●	●	
● main recommendation				M	●	●	●	●	●	○	
○ alternative recommendation				K	●	●	●	●	●	●	
■ uncoated grades				S	●	●	●	●	●	○	
■ coated grades				N	●	●	●	●	●	●	
■ brazed/Cermet				H	●	●	●	●	●	●	

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

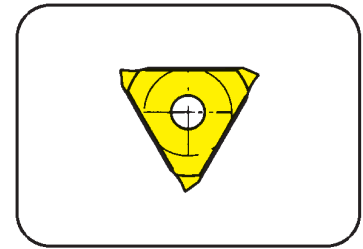
GROOVING (external and internal)



INDEXABLE INSERT Type

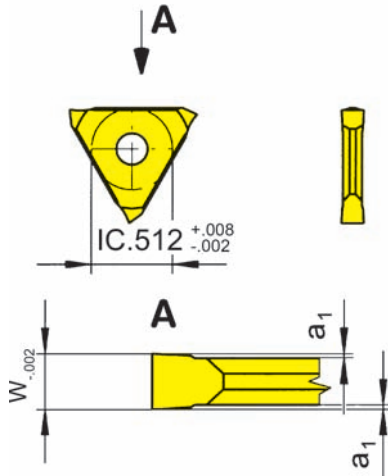
312

with round chip breaker



Circlip grooves
Width of circlip Nw

DIN 471/472
.020 - .203"



for use with Toolholder

Type 330 / U330
360 / U360
361
369 / U369
390 / U390

Indexability length
± .0008"

Part number	Nw	w	a ₁	Size	Carbide grades									
					K10	MG12	P20	H20	TN32	TN35	TI25	TF45	TF46	TC92
312.0050.00	.020	.022	.003	01	▲		▲		▲			▲	▲	
312.0060.00	.024	.026	.003		▲		▲		▲			▲	▲	
312.0070.00	.028	.030	.003		▲		▲		▲			▲	▲	
312.0080.00	.031	.034	.003		▲		▲		▲			▲	▲	
312.0090.00	.035	.038	.003		▲		▲		▲	▲		▲	▲	
312.0100.00	.039	.042	.004		▲		▲		▲	▲		▲	▲	
312.0110.00	.043	.049	.008		▲		▲		▲	▲		▲	▲	▲
312.0130.00	.051	.057	.008		▲		▲		▲	▲		▲	▲	▲
312.0160.00	.063	.069	.008		▲		▲		▲	▲		▲	▲	▲
312.0185.00	.073	.078	.008		▲	▲			▲	▲	▲	▲	▲	▲
312.0215.00	.085	.090	.008	02	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
312.0265.00	.104	.110	.008		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
312.0315.00	.124	.130	.008	03	▲		▲	▲	▲	▲		▲	▲	▲
312.0415.00	.163	.169	.008		04	▲		▲	▲	▲	▲		▲	▲
312.0515.00	.203	.208	.008	▲			▲	▲	▲	▲	▲		▲	▲
▲ on stock Δ 4 weeks					P	•	○	•	•	•	•	•	•	•
• main recommendation					M	○	•		○	•	•	•	○	
○ alternative recommendation					K	•	•			•	•	•	•	
■ uncoated grades					S	○	•			•	•	•	○	
■ coated grades					N	•	•			•	•	•	•	
■ brazed/Cermet					H									

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

H

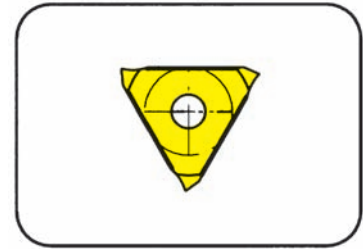
GROOVING (external and internal)



INDEXABLE INSERT Type

U312

with round chip breaker

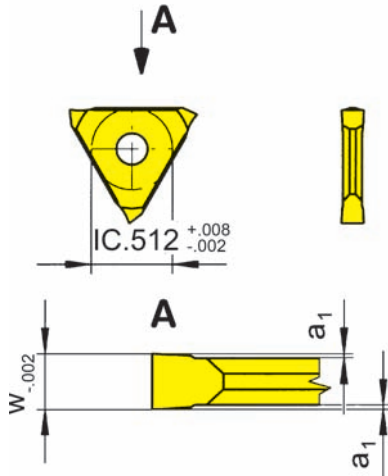


Circlip grooves
Width of groove
DIN 471/472
.062"

recommended for interrupted cut

for use with Toolholder

Type 360 / U360
361
369 / U369
390 / U390



Indexability length
± .0008"

H

Part number	w	a ₁	Size	Carbide grades				
				MG12	H54	TN35	Ti25	TF46
U312.0062.80	.062	.008	01			▲		
				P		•		
				M		•		
				K		•		
				S		•		
				N		•		
				H				

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Indexable inserts can be used in **right and left hand** toolholders.

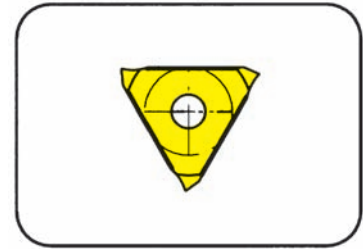
GROOVING (external)



INDEXABLE INSERT Type

312

with round chip breaker



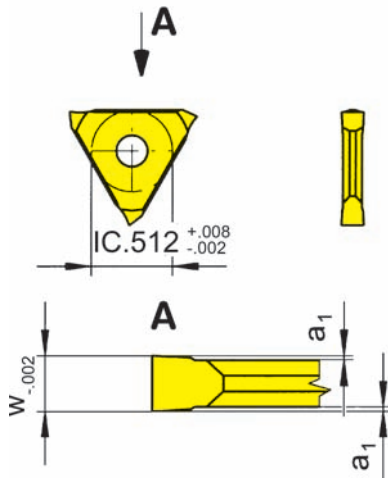
Circlip grooves
Width of circlip Nw

DIN 471/472
.043 - .203"

recommended for interrupted cut

for use with Toolholder

Type 360 / U360
361
369 / U369
390 / U390



Indexability length
± .0008"

Part number	Nw	w	a ₁	Size	Carbide grades					
					MG12	P20	TN32	TN35	TI25	TA45
312.0110.80	.043	.049	.008	01				▲		
312.0130.80	.051	.057			▲					
312.0160.80	.063	.069			▲					
312.0185.80	.073	.078			▲					
312.0215.80	.085	.090	.008	02				▲		
312.0265.80	.104	.110			▲					
312.0315.80	.124	.130	.008	03				▲		
312.0415.80	.163	.169			▲					
312.0515.80	.203	.208	.008	04				▲		
<ul style="list-style-type: none"> ▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet 					P			●		
					M			●		
					K			●		
					S			●		
					N			●		
					H					

Dimensions in inch

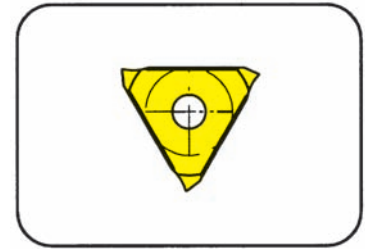
Indexable inserts can be used in **right and left hand** toolholders.

H

INDEXABLE INSERT Type

U312

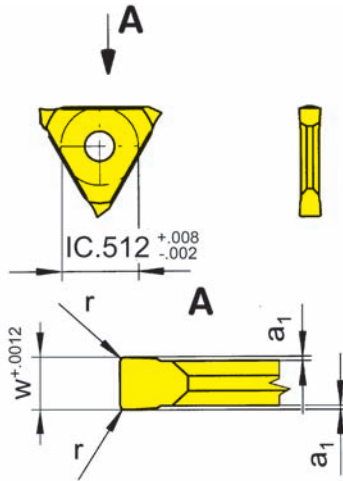
with round chip breaker



Depth of groove up to .315"
Width of groove .062 - .250"

for use with Toolholder

Type 360 / U360
361
369 / U369



Indexability length
± .0008"

H

Part number	w	r	a ₁	Size	Carbide grades						
					MG12	TN35	T122	T125	TF45	TF46	AS62
U312.0062.04	.062	.004	.010	01		Δ		▲		▲	
U312.0062.08		.008				▲		▲			
U312.0094.08	.094	.008	.010	02	▲			▲		▲	
U312.0094.16		.016				▲		▲			
U312.0094.32		.032				▲		▲			
U312.0125.08	.125	.008	.010	03				▲		▲	
U312.0125.16		.016				▲		▲			
U312.0250.08	.250	.008	.010	04				▲		▲	
					P	○	●	●	●	●	●
					M	●	●	●	●	○	●
					K	●	●	●	●	●	●
					S	●	●	●	●	○	●
					N	●	●	●	●	●	●
					H						

▲ on stock Δ 4 weeks
● main recommendation
○ alternative recommendation
■ uncoated grades
■ coated grades
■ brazed/Cermet

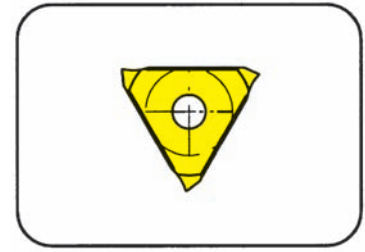
Dimensions in inch

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

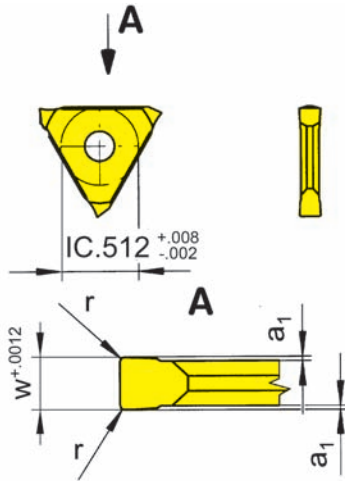
312

with round chip breaker



Depth of groove up to
Width of groove

.236"
.059 - .157"



for use with Toolholder

Type 360 / U360
361
369 / U369

Indexability length
 $\pm .0008''$

Part number	w	r	a ₁	Size	Carbide grades											
					K10	MG12	P20	H20	TN32	TN35	TI22	TI25	TF45	AS62		
312.0150.02	.059	.008	.010	01			▲		▲	▲		▲				
312.0200.02	.079	.008	.010	02	▲		▲	▲	▲	▲		▲	▲			
312.0200.04						▲	▲	▲								
312.0300.02	.118	.008	.010	03			▲	▲	▲			▲				
312.0300.06						▲	▲	▲								
312.0300.08					.031	▲	▲	▲								
312.0400.02	.157	.008	.010	04			▲	▲	▲							
312.0400.08					.031	▲	▲	▲								
312.0400.12					.047	▲	▲	▲								
▲ on stock Δ 4 weeks					P	●		●	●	●	●	●	●	●	●	●
● main recommendation					M	○		○		●		●	●	●	●	●
○ alternative recommendation					K	●				●		●	●	●	●	●
■ uncoated grades					S	○				●		●	●	●	●	●
■ coated grades					N	●				●		●	●	●	●	●
■ brazed/Cermet					H											

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.



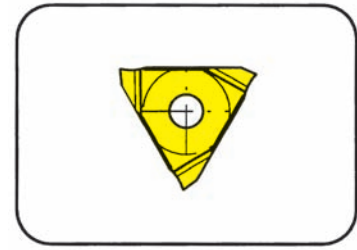
GROOVING (external and internal)



INDEXABLE INSERT Type

312

with round chip breaker



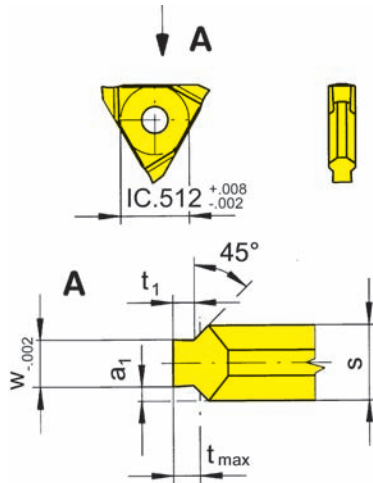
Circlip grooves
Width of circlip Nw

DIN471/472
.043 - .203"

with chamfer

for use with Toolholder

Type 330 / U330
360 / U360
361
369 / U369



Indexability length
± .0008"

H

Part number	Nw	w	a ₁	t ₁	t _{max}	s	Size	Carbide grades							
								MG12	P20	TN32	TN35	TI25	TA45		
312.1101.25	.043	.049	.025	.007	.008	.098	02			▲					
312.1102.25	.043	.049	.025	.009	.010					▲					
312.1103.25	.043	.049	.025	.011	.012					▲					
312.1104.25	.043	.049	.025	.013	.014					▲					
312.1105.25	.043	.049	.025	.014	.016					▲					
312.1306.25	.051	.057	.021	.018	.022					▲					
312.1607.33	.063	.069	.031	.024	.028	.130	03			▲					
312.1608.33	.063	.069	.031	.030	.033					▲					
312.1609.33	.063	.069	.031	.033	.039					▲					
312.1810.33	.073	.078	.026	.033	.039					▲					
312.1812.33	.073	.078	.026	.043	.049					▲					
312.2115.43	.085	.090	.040	.053	.059					▲					
312.2616.43	.104	.110	.030	.053	.059	.169	04		▲	▲					
312.2617.43	.104	.110	.030	.063	.069					▲	▲				
312.3118.53	.124	.130	.040	.063	.069					▲	▲				
312.4120.53	.163	.169	.020	.073	.079					▲	▲				
312.4125.53	.163	.169	.020	.093	.098					▲	▲				
312.5130.63	.203	.208	.020	.112	.118					▲	▲				
								P	•	•					
								M							
								K							
								S							
								N							
								H							

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

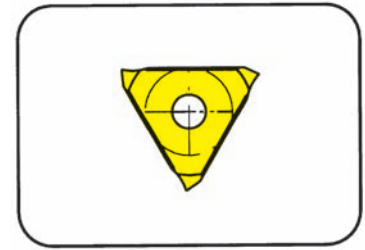
Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

H40

INDEXABLE INSERT Type

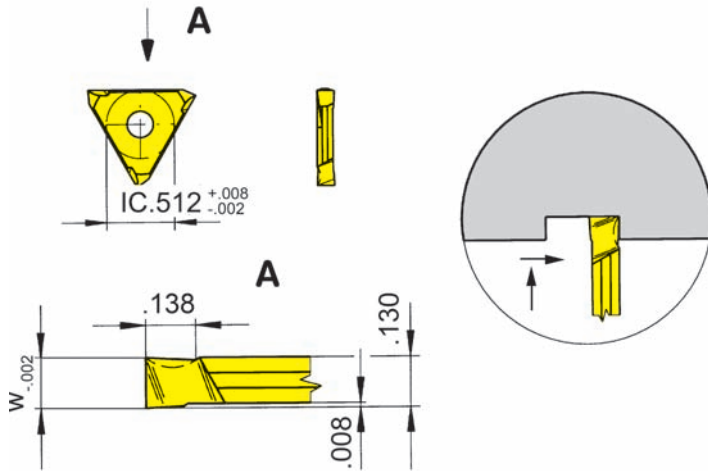
312



Depth of cut up to **.138"**

for use with Toolholder

Type 360 / U360
361



L = left hand version shown

R = right hand version

Indexability length
 $\pm .0008"$

Part number	w	Size	Carbide grades							
			MG12	P20	TN32	TN35	TI22	TF45	TC92	
R/L312.3031.33	.130	03		▲▲	▲/▲					▲/▲
▲ on stock Δ 4 weeks			P	•	•					•
● main recommendation			M							
○ alternative recommendation			K							
■ uncoated grades			S							
■ coated grades			N							
■ brazed/Cermet			H							

Dimensions in inch

State R or L version

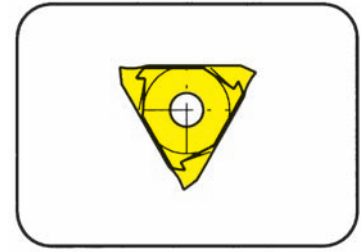
Indexable inserts can be used in **right and left hand** toolholders.

The special cutting geometry permits a positive chip breaking angle when keeping a straight and right angled cutting edge.



INDEXABLE INSERT Type

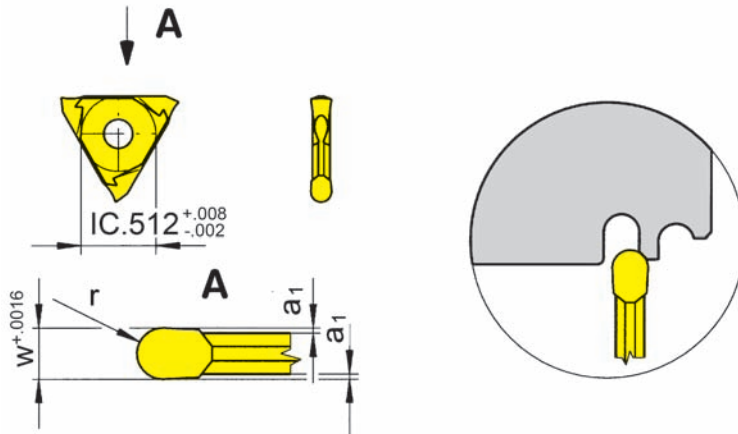
U312



Depth of groove up to $.315''$
Full radius $r .031 - .062''$

for use with Toolholder

Type 360 / U360
361
369 / U369



Indexability length
 $\pm .0008''$

H

Part number	w	r	a ₁	Size	Carbide grades						
					MG12	P20	TN32	TN35	TI22	TF46	TC92
U312.0031.62	.062	.031	.010	01					▲	▲	
U312.0039.78	.078	.039	.010	01					▲	▲	
U312.0047.94	.094	.047	.010	02					▲	▲	
U312.0062.12	.125	.062	.010	03			▲		▲	▲	
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation □ uncoated grades ■ coated grades ■ brazed/Cermet					P		●		●	●	
					M					○	
					K					●	
					S					○	
					N					●	
					H						

Dimensions in inch

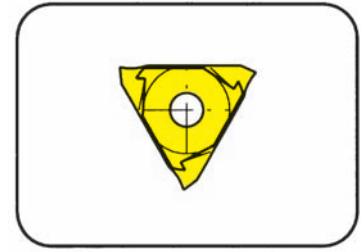
Further radii upon request

Note:
Width of groove .062" recommended only for grooving

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

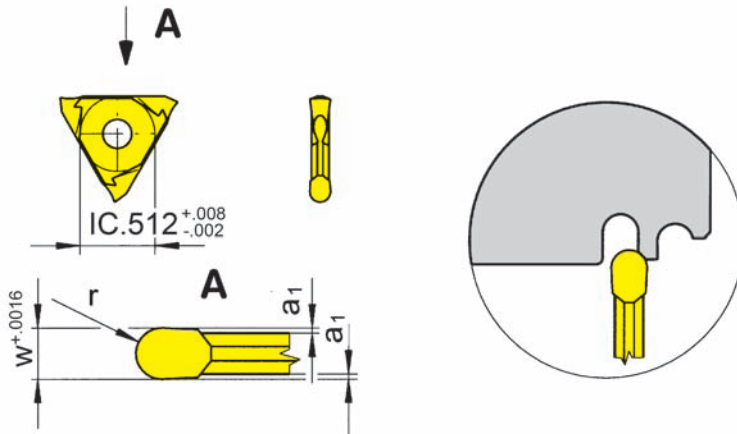
312



Depth of groove up to $.236''$
Full radius $r .010 - .079''$

for use with Toolholder

Type 360 / U360
361
369 / U369



Indexability length $\pm .0008''$

Part number	w	r	a ₁	Size	Carbide grades					
					MG12	P20	TN32	TN35	TI22	TC92
312.0050.02	.020	.010	.003	01		▲	▲			
312.0100.05	.039	.020	.004		▲	▲				
312.0120.06	.047	.024	.008		▲	▲				
312.0160.08	.063	.031	.010		▲	▲				
312.0200.10	.079	.039	.010		▲	▲				
312.0250.12	.098	.049	.010	02	▲	▲				
312.0300.15	.118	.059	.010		▲	▲				
312.0400.20	.157	.079	.010	03	▲	▲				
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet					P					
					M					
					K					
					S					
					N					
					H					

Dimensions in inch

Further radii upon request

Note:

Width of groove up to $.063''$ recommended only for grooving

Indexable inserts can be used in **right and left hand** toolholders.

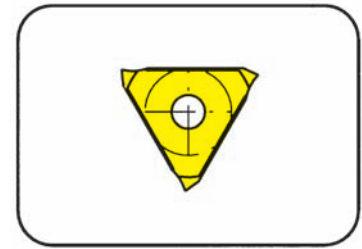


GROOVING (external)



INDEXABLE INSERT Type

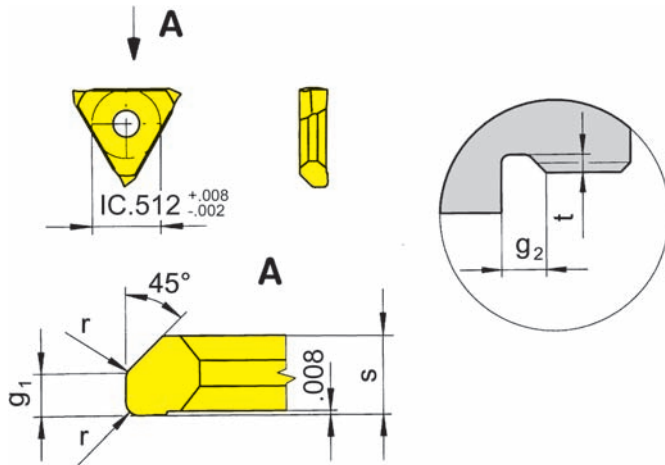
312



Thread relief DIN 76 "Short form"

for use with Toolholder

Type 360 / U360
361
369 / U369



R = right hand version shown

L = left hand version

Indexability length
± .0008"

Part number	P mm	r	s	g ₁	g ₂	t _{max}	Size	Carbide grades							
								MG12	P20	TN32	TN35	TI22	TF45	TC92	
R/L312.1050.17	0.50	.008	.067	.024	.039	.016	01				▲/				
R/L312.1080.27	0.80	.016		.037	.063	.026					▲/▲				
R/L312.1100.27	1.00	.024	.106	.047	.079	.031	02		▲/		▲/				
R/L312.1125.27	1.25	.024		.059	.098	.039					▲/▲				
R/L312.1150.37	1.50	.031	.146	.073	.118	.045	03				▲/▲				
R/L312.1200.53	2.00	.039	.209	.098	.157	.059	04		▲/▲						

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch and mm

State R or L version

Use right hand inserts in right hand toolholders and left hand inserts in left hand toolholders

P = Pitch of Thread

P	●			●						
M				●						
K				●						
S				●						
N				●						
H										

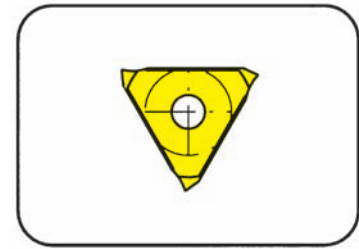
Carbide grades

GROOVING (external)



INDEXABLE INSERT Type

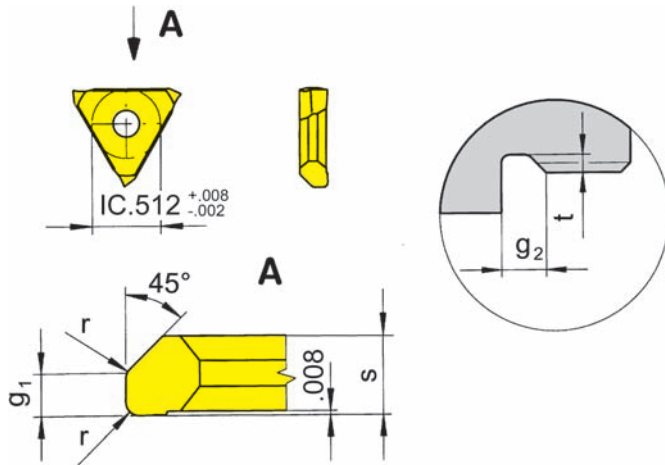
312



Thread relief DIN 76 "Standard form"

for use with Toolholder

Type 360 / U360
361
369 / U369



R = right hand version shown

L = left hand version

Indexability length
± .0008"

Part number	P mm	r	s	g ₁	g ₂	t _{max}	Size	MG12	P20	TN32	TN35	TI22	TF45	TC92
R/L312.3050.17	0.5	.008	.067	.043	.059	.016	01				/▲			
R/L312.3060.27	0.6	.016	.106	.051	.071	.020	02				▲/			
R/L312.3100.37	1.0	.024	.146	.087	.118	.031	03				▲/			
R/L312.3150.53	1.5	.031	.209	.132	.177	.045	04				▲/			
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet								P			●			
								M			●			
								K			●			
								S			●			
								N			●			
								H						

Dimensions in inch and mm

State R or L version

Use right hand inserts in right hand toolholders and left hand inserts in left hand toolholders

P = Pitch of Thread

H

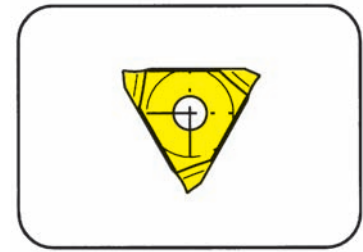
Carbide grades

GROOVING CORNER RELIEFS (external)



INDEXABLE INSERT Type

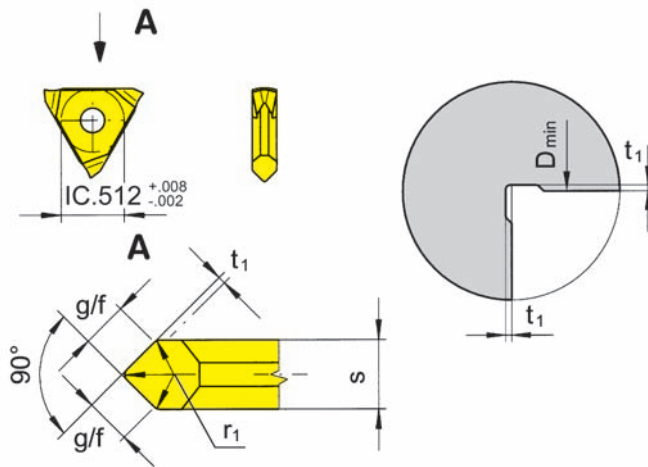
312



Corner reliefs similar to DIN 509 form "F"

for use with Toolholder

Type 309 / U309



Indexability length
± .0008"

H

Part number	r ₁	g _f	s	t ₁	D _{min}	Size	Carbide grades						
							MG12	P20	TN32	TN35	TF45	TC92	
312.0602.24	.024	.067	.094	.008	.748	02		▲					▲
312.0603.33	.024	.091	.130	.012	.906	03		▲					
312.1002.30	.039	.083	.118	.008	.787			▲					
312.1004.50	.039	.142	.197	.016	1.142	04		▲					
312.1603.50	.063	.142	.197	.012	.984			▲					
							P	•					•
							M						
							K						
							S						
							N						
							H						

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

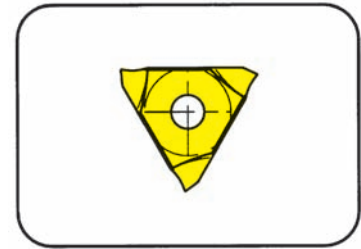
Indexable inserts can be used in **right and left hand** toolholders.

GROOVING CORNER RELIEFS (external)



INDEXABLE INSERT Type

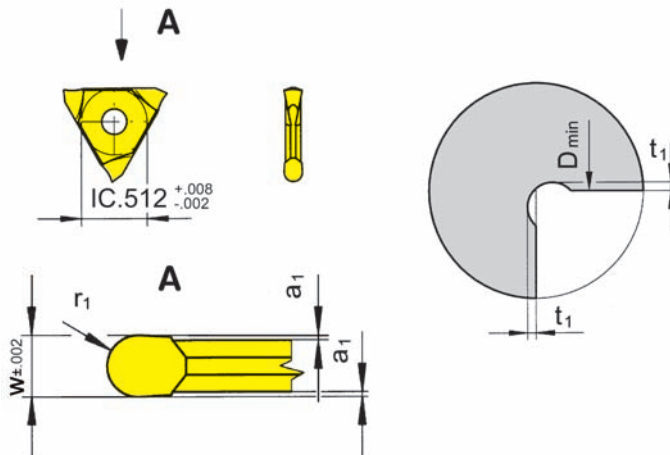
312



Full radius $r \ .039 - .098''$

for use with Toolholder

Type 309 / U309



Indexability length $\pm .0008''$

Part number	r_1	w	a_1	t_1	D_{min}	Size	K10	P20	TN32	TN35	TI22	TF45	TC92
312.0010.20	.039	.079	.008	.028	.866	02	▲	▲	▲	▲			▲
312.0015.30	.059	.118	.008	.039	1.063	03	▲	▲	▲				▲
312.0020.40	.079	.157	.008	.047	1.181	04	▲	▲	▲				▲
312.0025.50	.098	.197	.008	.059	1.378	04	▲	▲	▲				▲
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation □ uncoated grades ■ coated grades ■ brazed/Cermet							P	●	●	●	●	●	●
							M	○			●		
							K	●			●		
							S	○			●		
							N	●			●		
							H						

Dimensions in inch

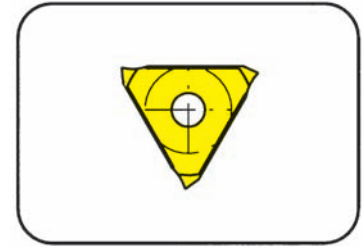
Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.



INDEXABLE INSERT Type

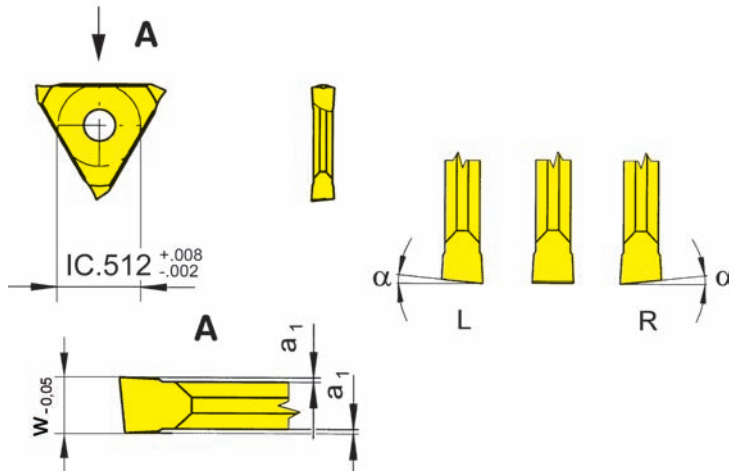
312



Depth of groove up to $.197''$
 Width of groove $.042 - .057''$

for use with Toolholder

Type 360 / U360
 361



R = right hand version shown

L = left hand version

Part number	w	α	a_1	Size	Carbide grades									
					K10	MG12	P20	H54	TN32	TN35	TI25	TF45	TF46	TC92
312.0100.00	.042	0°	.004	01 / 02	▲		▲		▲	▲		▲	▲	
312.0130.00	.057	0°	.008	01 / 02	▲		▲		▲	▲		▲	▲	▲
R/L312.0614.00		6°					▲/▲	▲/▲	▲/▲	▲/▲				
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation □ uncoated grades ■ coated grades ■ brazed/Cermet					P	●		●	●	●	●	●	●	●
					M	○			●	●	●	●	○	
					K	●			●	●	●	●	●	●
					S	○			●	●	●	●	○	
					N	●			●	●	●	●	●	
					H									

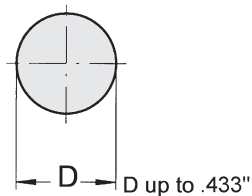
Dimensions in inch

State R or L version

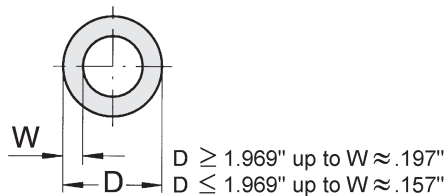
Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

Parting off solid bars

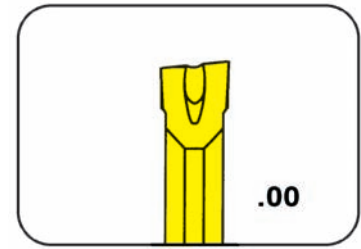


Parting off tubes



INDEXABLE INSERT Type

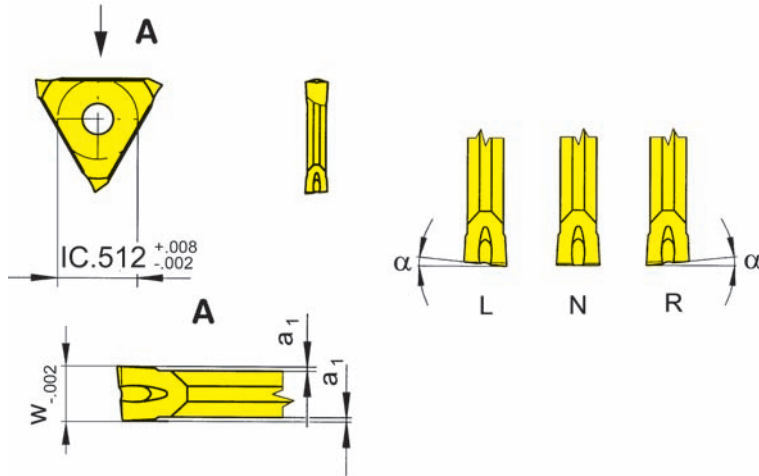
312



Depth of groove up to $.197''$
 Width of groove $.057 - .090''$

for use with Toolholder

Type 360 / U360
 361



R = right hand version shown

L = left hand version

Part number	w	a ₁	α	Size	Carbide grades								
					K10	P20	TN32	TN35	TI25	TF45	TF46	TC92	
N312.0014.00	.057	.008	0°	01 / 02									
N312.0018.00	.078		0°										
R/L312.0518.00	.078		5°			▲▲	▲▲	▲▲					
N312.0021.00	.090	.008	0°	02				▲					
R/L312.0521.00	.090		5°			▲▲	▲▲	▲▲					
					P	•	•	•		•			•
					M			•		•			
					K			•		•			
					S			•		•			
					N			•		•			
					H								

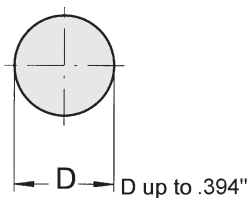
- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

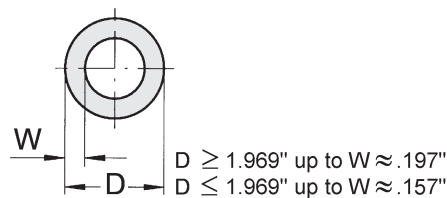
State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

Parting off solid bars



Parting off tubes

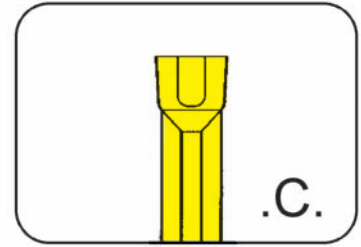


H

INDEXABLE INSERT Type

S312

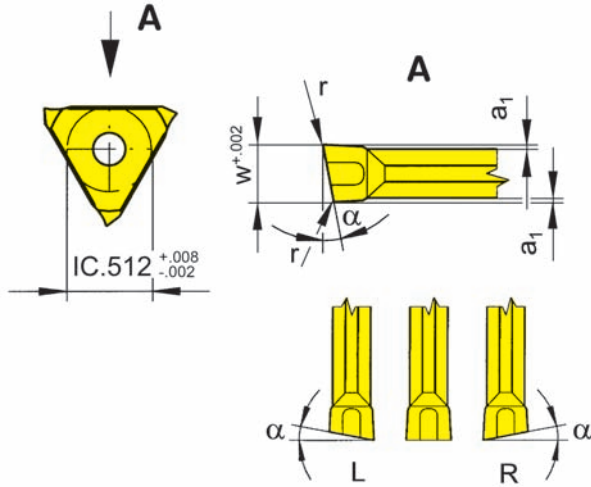
with sintered geometries



Depth of groove up to $.197''$
 Width of groove $.079 - .118''$

for use with Toolholder

Type 360 / U360
 361
 369 / U369



R = right hand version shown

L = left hand version

Geometry .C

H

Part number	w	r	a ₁	α	Size	K10	P20	TN32	TI25	TF45	TF46	TC92
S312.0200.C2 R/LS312.0520.C2	.079	.008	.010	0° 5°	02				▲ ▲/▲		▲ ▲/▲	
S312.0250.C2 R/LS312.0525.C2	.098	.008	.010	0° 5°	02				▲ ▲/▲		▲ ▲/▲	
S312.0300.C2 R/LS312.0530.C2	.118	.008	.010	0° 5°	03				▲ ▲/▲		▲ ▲/▲	
▲ on stock Δ 4 weeks						P			•		•	
• main recommendation						M			•		•	
○ alternative recommendation						K			•		•	
■ uncoated grades						S			•		•	
■ coated grades						N			•		•	
■ brazed/Cermet						H						

Dimensions in inch

State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

Carbide grades

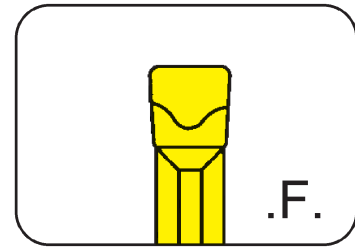
GROOVING and PARTING OFF



INDEXABLE INSERT Type

S312

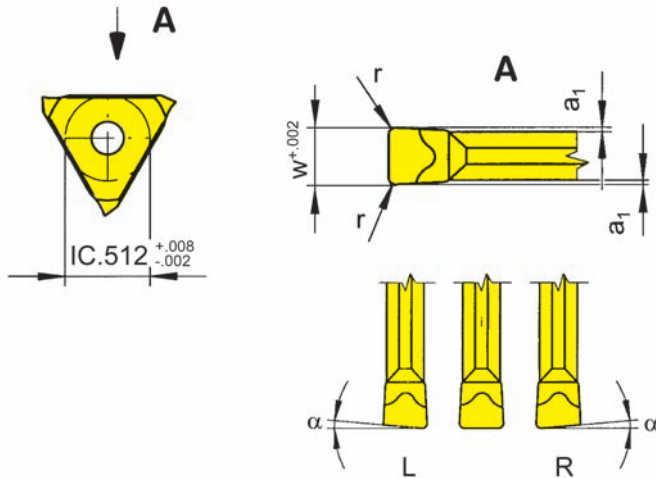
with sintered geometries



Width of groove .079 - .197"

for use with Toolholder

- Type 330 / U330
360 / U360
361
369 / U369
390 / U390



R = right hand version shown

L = left hand version

Geometry .F.

Part number	w	r	a ₁	α	Size	Carbide grades								
						K10	MG12	P20	TN32	TI25	TF45	TF46	TC92	AL96
R/LS312.0520.F2 S312.0200.F2	.079	.008	.010	5° 0°	02					▲/▲ ▲		▲/▲ ▲		
R/LS312.0525.F2 S312.0250.F2	.098	.008	.010	5° 0°	02					▲/▲ ▲		▲/▲ ▲		
S312.0400.F2 S312.0400.F4	.157	.008 .016	.010	0°	04					▲		▲		
S312.0500.F2 S312.0500.F4	.197	.008 .016	.010	0°	04							▲		
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet						P				●		●		
						M				●		○		
						K				●		●		
						S				●		○		
						N				●		●		
						H								

Dimensions in inch

State R or L version

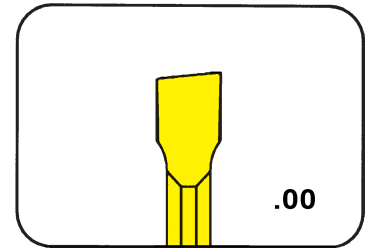
Indexable inserts can be used in **right and left hand** toolholders.



INDEXABLE INSERT Type

312

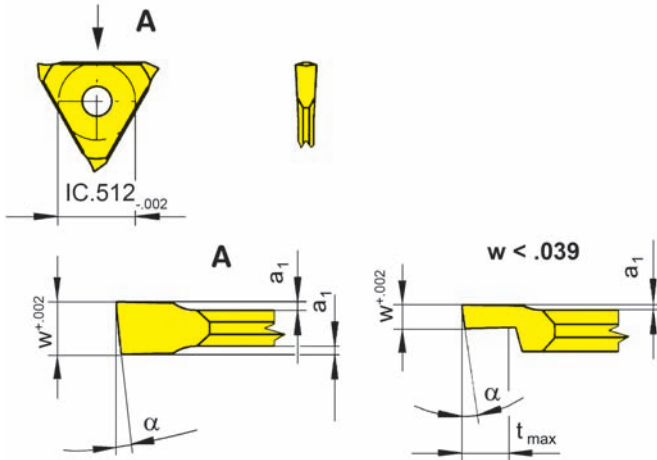
with round chip breaker



Depth of groove up to .315"
Width of groove .020 - .059"

for use with Toolholder

Type 368 / U368



R = right hand version shown

L = left hand version

Part number	w	t _{max}	a ₁	α	Size	Carbide grades			
						K10	TN35	TF45	TC92
R/L312.0805.00	.020	.039	.004	8°	01			▲/▲	
R/L312.0808.00	.031	.059	.004	8°				▲/▲	
R/L312.1210.00	.039	.315	.004	12°			▲/▲	▲/▲	
R/L312.0510.00	.039	.315	.004	5°				▲/▲	
R/L312.0512.00	.047	.315	.008	5°				▲/▲	
R/L312.0515.00	.059	.315	.008	5°				▲/▲	
						P	•	•	
						M	•	•	
						K	•	•	
						S	•	•	
						N	•	•	
						H			

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Carbide grades

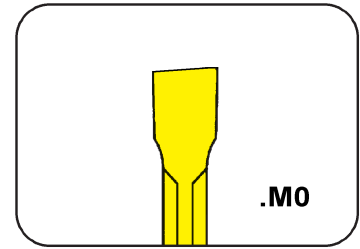
State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

H

INDEXABLE INSERT Type

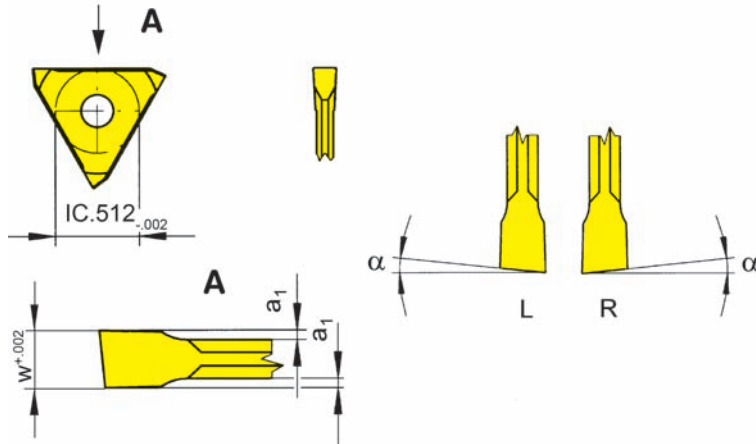
312



Depth of groove up to $.315''$
 Width of groove $.047 - .059''$

for use with Toolholder

Type 368 / U368



R = right hand version shown

L = left hand version

Part number	w	a ₁	α	Size	Carbide grades			
					K10	TN35	TF45	TC92
R/L312.0512.M0	.047	.008	5°	01	/Δ		▲/Δ	
R/L312.0515.M0	.059	.008	5°	01	▲/		▲/Δ	
					P	•	•	•
					M	○	•	•
					K	•	•	•
					S	○	•	•
					N	•	•	•
					H			

Dimensions in inch

State R or L version

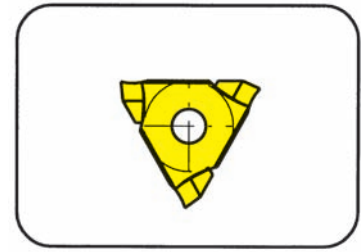
Indexable inserts can be used in **right and left hand** toolholders.

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

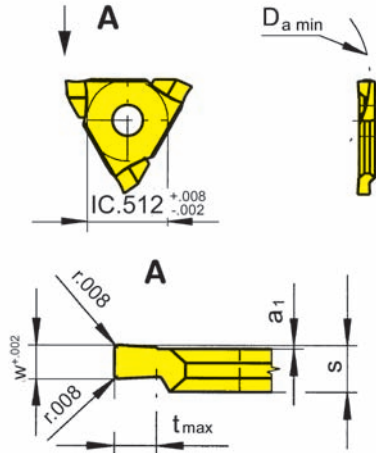


INDEXABLE INSERT Type

312



from outer groove \emptyset .787"
 Depth of groove up to .118"
 Width of groove .059 - .118"



for use with Toolholder

Type 360 / U360
 361
 369 / U369

R = right hand version shown

L = left hand version

Indexability length
 $\pm .0008"$

H

Part number	w	s	t _{max}	D _{a min}	a ₁	Size	Carbide grades		
							TN35	TI25	TA45
R/L312.2015.02	.059	.106	.079	.787	.008	02	▲/▲		
R/L312.3020.02	.079	.106	.118	1.181	.008	02	▲/▲		
R/L312.3030.02	.118	.146	.118	1.181	.008	03	▲/▲		
							P	•	
							M	•	
							K	•	
							S	•	
							N	•	
							H		

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch
 State R or L version

Note for toolholder type 360
 Use right hand inserts in left hand toolholders and left hand inserts in right hand toolholders

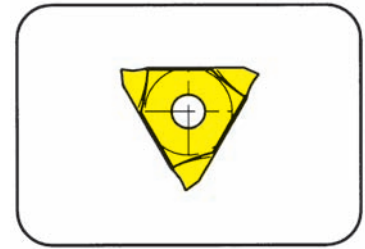
Note for toolholder type 369
 Use right hand inserts in right hand toolholders and left hand inserts in left hand toolholders

GROOVING (external)



INDEXABLE INSERT Type

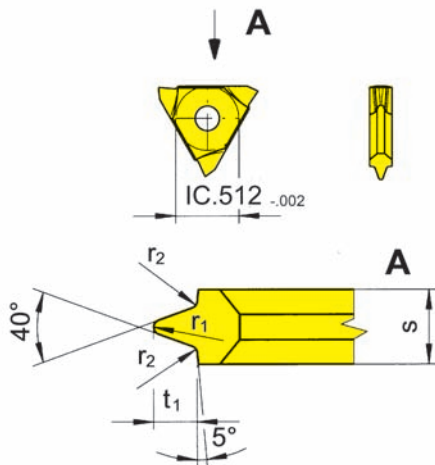
312



Poly-V-belt grooves profile "J"

for use with Toolholder

Type 360 / U360
361
369 / U369



Indexability length
± .0008"

Part number	s	t ₁	r ₂	Size	P20	TN32
312.0223.30	.118	.091	.008	03	▲	▲
					●	●
					○	○
					■	■
					■	■
					■	■
					■	■
					■	■

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

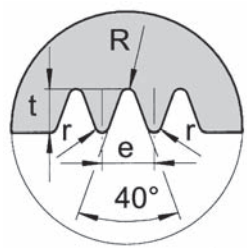
Carbide grades

Dimensions in inch

Indexable insert 312.0223.30 for single grooving

Indexable inserts can be used in **right and left hand** toolholders.

Shape of groove:
Poly-V-belt grooves profile "J"



e	t		R		r
± .001	max	min	max	min	
.092	.092	.082	.015	.010	.008



HCG - HORN Catalog Guide

INTERNAL GROOVING

Bore Ø	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.625" (15.87 mm)				•						
.709" (18 mm)				•						
.787 - 1.102" (20-28 mm)	•			•						
1.102 - 1.496" (28-38 mm)	•			•	•					
> 1.496" (38 mm)	•			•	•	•	•	•	•	
Operation Type										
Grooving	•			•	•	•	•	•	•	
Threading					•	•			•	
Profiling				•	•		•	•	•	
Width of groove inch	.022-.209			.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.049-.169	
Width of groove mm	0.56-5.3			1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	1.25-4.29	
Chapter	A	B	C	D	E	F	G	H	J	K

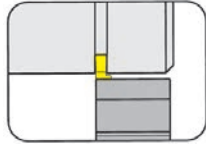
EXTERNAL GROOVING

Depth of groove up to	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.157" (4 mm)	•	•	•	•	•	•	•	•	•	•
.236" (6 mm)		•	•	•	•	•	•	•	•	•
.315" (8 mm)		•		•	•	•	•	•		•
.394" (10 mm)		•		•	•	•	•			
.433" (11 mm)		•		•	•	•	•			
.551" (14 mm)		•		•	•		•			
.630" (16 mm)		•		•	•		•			
.709" (18 mm)				•	•		•			
.984" (25 mm)				•			•			
1.000" (25.4 mm)							•			
Operation Type										
Grooving	•	•	•	•	•	•	•	•	•	•
Side Turning		•	•	•	•		•	•		
Parting Off	•	•	•	•	•		•	•		•
Threading		•	•			•	•		•	
Profiling			•		•		•	•	•	•
Axial Grooving						•			•	
Width of groove inch	.022-.209	.059-.118	.020-.118	.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.022-.169	.059-.118
Width of groove mm	0.56-5.3	1.5-3.0	0.5-3.0	1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	0.56-4.29	1.5-3.0
Chapter	A	B	C	D	E	F	G	H	J	K

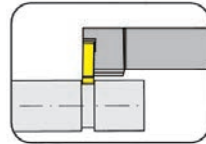
Special tools upon request

TOOLING SYSTEMS 315 **J**

**Grooving and
threading
- external -**

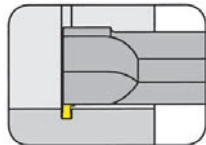


Page J2-J5

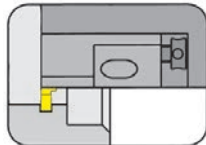


Page J6-J7

**Grooving and
threading
- internal -**



Page J8-J9

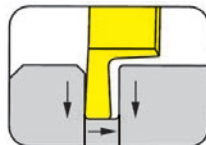


Page J10-J11

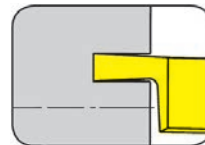
**Indexable inserts
Type
315**



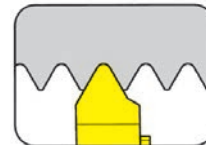
Page J12-J13



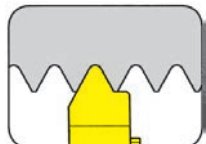
Page J14



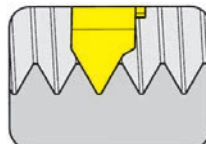
Page J15



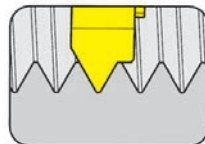
Page J16



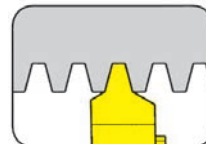
Page J17



Page J18



Page J19



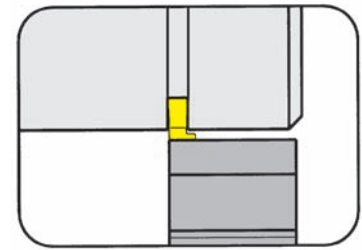
Page J20

For Technical Information please see chapter Q

J

TOOLHOLDER Type

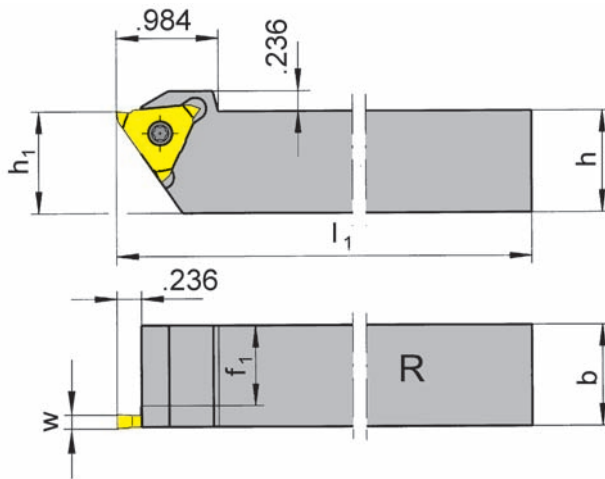
U356



Depth of groove up to .236"
Width of groove up to .209"

for use with Indexable insert

Type 315



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	Size
R/LU356.0750.05	.750	.750	5.000	.750	.545	05
R/LU356.1000.05	1.000	1.000	6.000	1.000	.795	
R/LU356.1250.05	1.250	1.250	6.693	1.250	1.045	

State R or L version

w see indexable inserts

Dimensions in inch

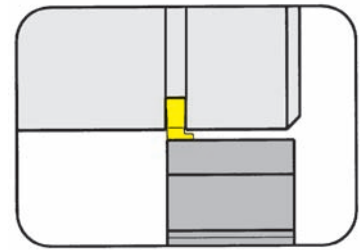
Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LU356....	5.12T20P	T20PQ

TOOLHOLDER Type

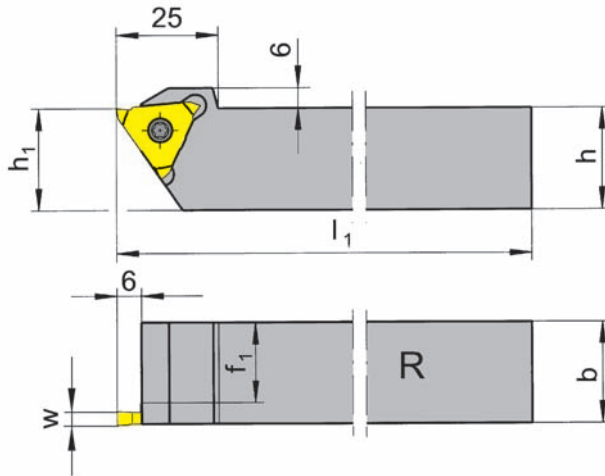
356



Depth of groove up to .197" (5.0 mm)
Width of groove up to .287" (7.3 mm)

for use with Indexable insert

Type 315



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	Size
R/L356.1616.03	16	16	125	20	13.0	03
R/L356.2020.03	20	20	125	20	17.0	
R/L356.2525.03	25	25	150	25	22.0	
R/L356.3232.03	32	32	150	32	29.0	
R/L356.1616.05	16	16	125	20	10.8	05
R/L356.2020.05	20	20	125	20	14.8	
R/L356.2525.05	25	25	150	25	19.8	
R/L356.3232.05	32	32	150	32	26.8	
R/L356.2020.07	20	20	125	20	13.0	07
R/L356.2525.07	25	25	150	25	18.0	
R/L356.3232.07	32	32	150	32	25.0	

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/L356....03/05	5.12T20P	T20PQ
R/L356....07	5.15T20P	T20PQ

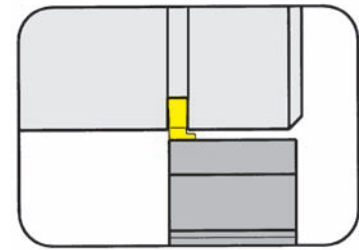


TOOLHOLDER Type

356

Depth of groove up to
Width of groove up to

.197" (5.0 mm)
.406" (10.3 mm)

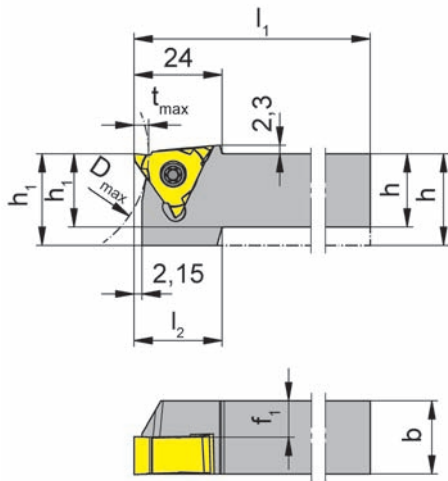


for use with Indexable insert

Type 315

Depth of groove in relation to outer-Ø

D _{max}	t _{max}
30	5.0
40	4.5
60	4.0
115	3.5
185	3.0



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	l ₂	h ₁	f ₁	Size
R/L356.1616.13	16	16	125	21	20	13.0	03
R/L356.1616.15	16	16	125	21	20	10.8	05
R/L356.2020.15	20	20	125	21	20	14.8	
R/L356.2525.15	25	25	150	-	25	19.8	06
R/L356.1616.16	16	16	125	21	20	10.0	
R/L356.2020.16	20	20	125	21	25	14.0	
R/L356.2525.16	25	25	150	-	25	19.0	07
R/L356.2020.17	20	20	125	21	25	13.0	
R/L356.2525.17	25	25	150	-		18.1	
R/L356.2020.10	20	20	125	21	25	10.0	10

State R or L version

Dimensions in mm

Further sizes upon request

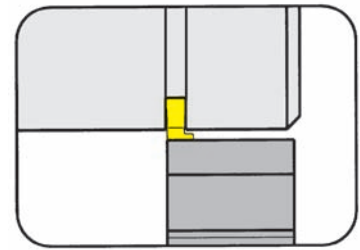
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/L356....13/15	5.12T20P	T20PQ
R/L356....10/16/17	5.15T20P	T20PQ

TOOLHOLDER Type

356

Depth of groove up to .197" (5.0 mm)
Width of groove up to .524" (13.3 mm)

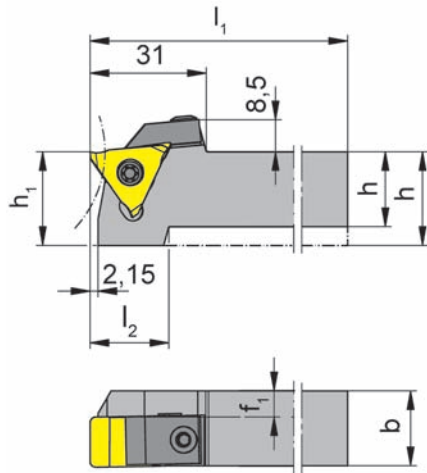


for use with Indexable insert

Type 315

Depth of groove in relation to outer-Ø

D _{max}	t _{max}
30	5.0
40	4.5
60	4.0
115	3.5
185	3.0



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	l ₂	h ₁	f ₁	Size
R/L 356.2020.2.13	20	20	125	21	20	7	13
R/L 356.2525.2.13	25	25	150	-	25	12	

State R or L version

Dimensions in mm

Further sizes upon request

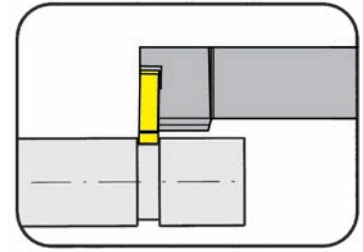
Spare parts

Toolholder	Clamp	Screw	TORX PLUS® Wrench
R/L356.2...	010.2013.0468	5.15T20P	T20PQ

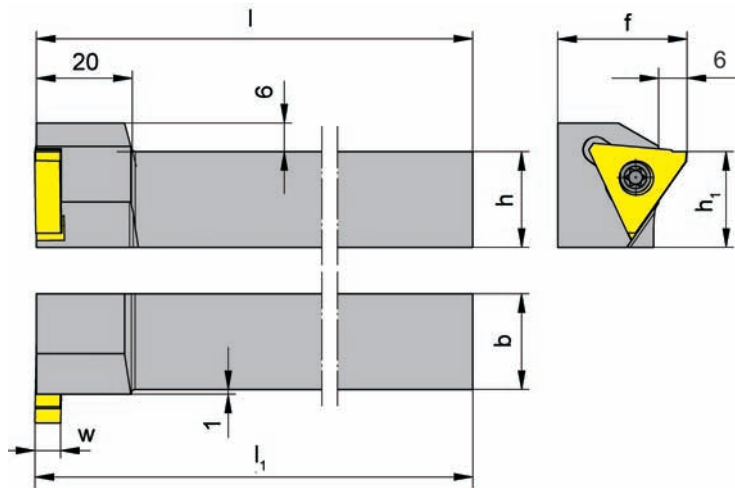


TOOLHOLDER Type

357



Depth of groove up to .197" (5.0 mm)
Width of groove up to .209" (5.3 mm)



for use with Indexable insert

Type 315
A315

R = right hand version shown

L = left hand version

Part number	h	h ₁	b	l	l ₁	f	Size
R/L357.2020.05	20	25	20	125	125.3	27	05
R/L357.2525.05	25	25	25	150	150.3	32	05

State R or L version

w see indexable inserts

Dimensions in mm

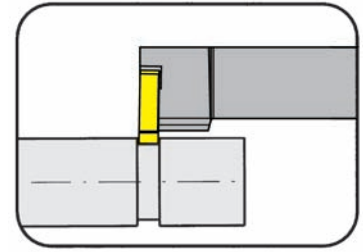
Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/L357.2...	5.12T20P	T20PQ

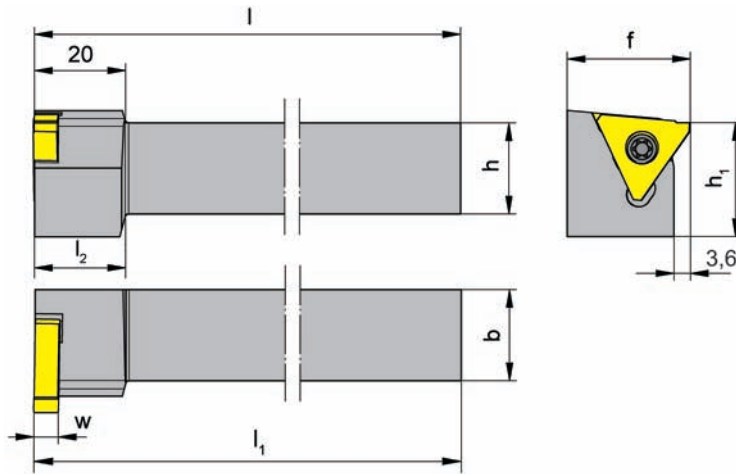
TOOLHOLDER Type

357



Depth of groove up to
Width of groove up to

.197" (5.0 mm)
.209" (5.3 mm)



for use with Indexable insert

Type 315
A315

R = right hand version shown

L = left hand version

Part number	h	h ₁	b	l	l ₁	l ₂	f	Size
R/L 357.2020.15	20	25	20	125	125.3	20	27	05
R/L 357.2525.15	25	25	25	150	150.3	-	32	

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

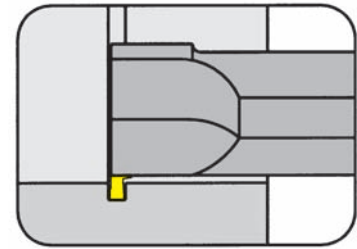
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/L357.2...	5.12T20P	T20PQ



TOOLHOLDER Type

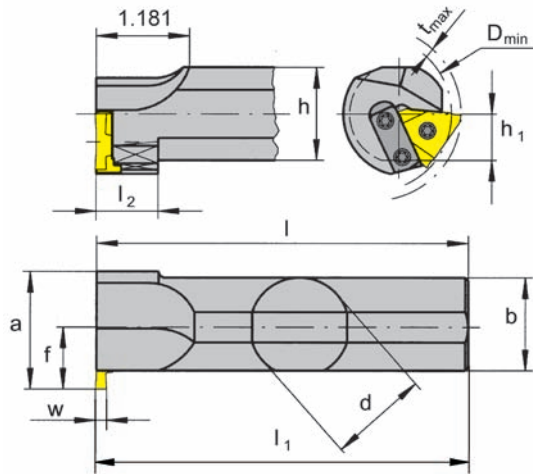
U333



Bore Ø from 1.693"
Width of groove up to .209"

for use with Indexable insert

Type 315



Depth of groove in relation to bore Ø

D_{min}	t_{max}
1.693	.070
1.811	.079
1.968	.118
2.362	.157
3.149	.177
4.000	.197

R = right hand version shown

L = left hand version

Part number	d	l	l_1	l_2	h	h_1	f	D_{min}	b	a	Size
R/LU333.1000.05	1.000	6.625	6.637	.750	.921	.461	.787		1.000	1.496	05
R/LU333.1250.05	1.250	8.000	8.012	.750	1.171	.586	.787	1.693	1.171	1.496	05
R/LU333.1500.05	1.500	10.000	10.012	-	1.421	.711	.944		1.421		

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

Toolholder	Guide Strip	Screw	TORX PLUS® Wrench
R/LU333.1...	020.7000.0193	5.12T20P	T20PQ

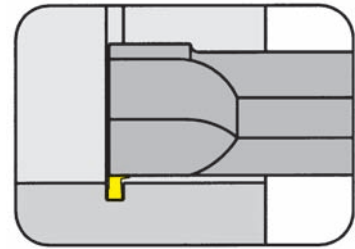
J8

TOOLHOLDER Type

333

Bore Ø from
Width of groove up to

1.693" (43.0 mm)
.209" (5.3 mm)

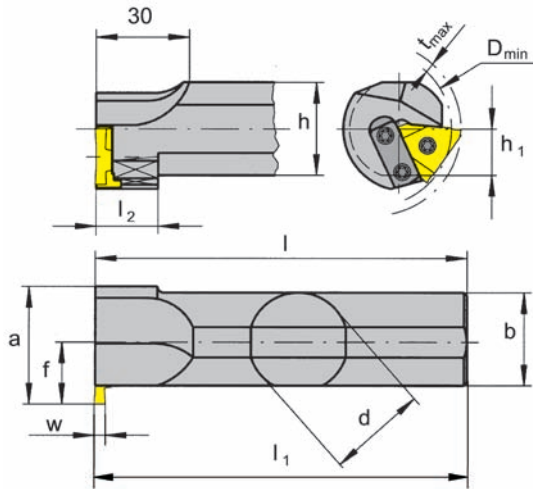


for use with Indexable
insert

Type 315

Depth of groove in relation to bore Ø

D_{min}	t_{max}
43	1.8
46	2.0
50	3.0
60	4.0
80	4.5
100	5.0



Part number	d	l	l ₁	l ₂	h	h ₁	f	D _{min}	b	a	Size
R/L333.0025.03	25	170	170.3	20	23	11.5	20	43	25	38	03
R/L333.0032.03	32	200	200.3	20	30	15.0	20	43	30	38	03
R/L333.0025.05	25	170	170.3	20	23	11.5	20	43	25	38	05
R/L333.0032.05	32	200	200.3	20	30	15.0	20	43	30	38	05
R/L333.0040.05	40	250	250.3	-	38	19.0	24	45	38	44	

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

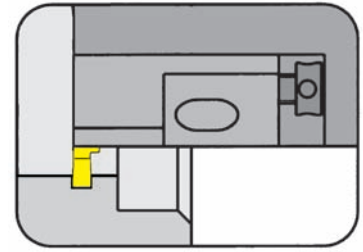
Spare parts

Toolholder	Guide Strip	Screw	TORX PLUS® Wrench
R/L333.00...	020.7000.0193	5.12T20P	T20PQ



CARTRIDGE Type

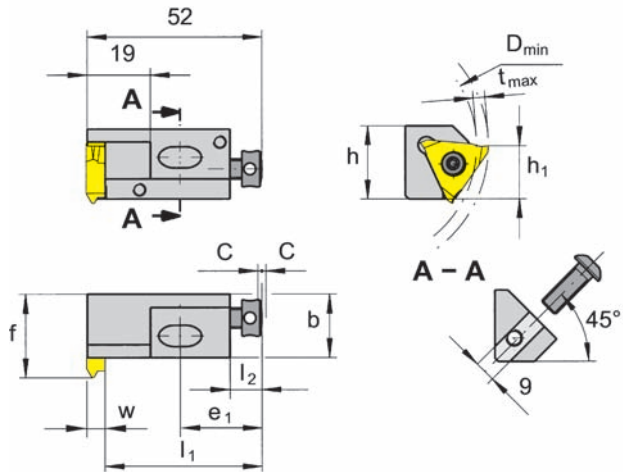
357



Bore \varnothing from 1.969" (50.0 mm)
 Width of groove up to .209" (5.3 mm)

for use with Indexable insert

Type 315



Depth of groove in relation to bore \varnothing

D_{min}	t_{max}
50	3,0
60	4,0
80	4,5
100	5,0

R = right hand version shown

L = left hand version

Part number	h_1	f	h	b	l_1	e_1	l_2	c	Size
R/L357.1619.05	16	25	21	19	46.8	24	9	2	05

State R or L version

w see indexable inserts

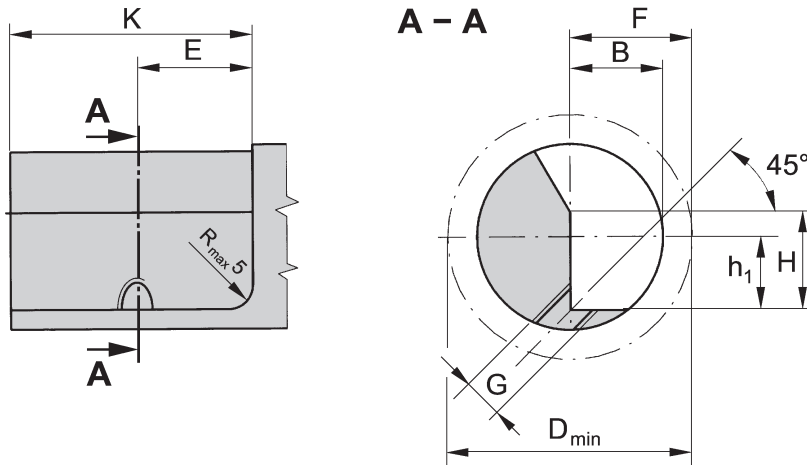
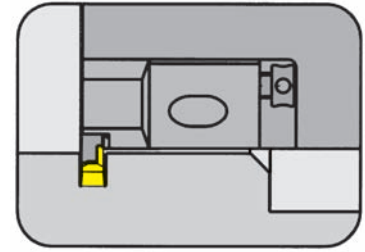
Dimensions in mm

Dimensions of seating see following page

Spare parts

Cartridge	Screw	Screw	Axial Setscrew	Radial Setscrew	TORX PLUS® Wrench
R/L357.1619.05	8.25.351	5.12T20P	6.12.020	4.08.913	T20PQ

SEATING DIMENSIONS CARTRIDGE Type **357**



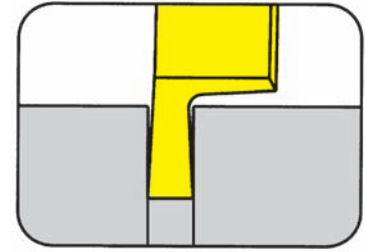
Cartridge	F	G	H	K	E	B	h ₁	D _{min}	Fastening screw
357.1619.05	25	M8	21	50	24	19	16	50	8.25.351

Dimensions in mm



INDEXABLE INSERT Type

315

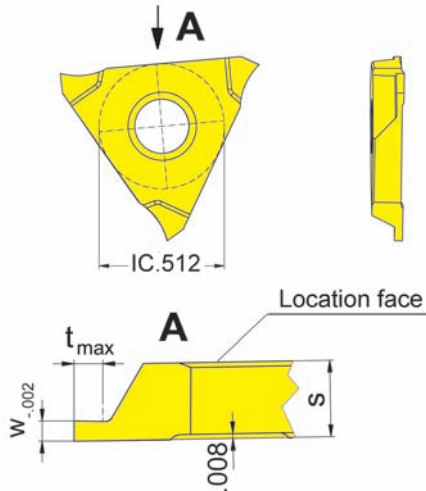


Circlip grooves
Width of circlip Nw

DIN471/472
.020 - .039"

for use with Toolholder

Type 356...03



R = right hand version shown

L = left hand version

Part number	Nw	w	t _{max}	s	Size	TN32	TN35	T125	TA45
R/L315.0050.32.00	.020	.022	.028	.126	03	Δ/Δ			
R/L315.0060.32.00	.024	.026	.031			Δ/Δ			
R/L315.0070.32.00	.028	.030	.043			Δ/Δ			
R/L315.0080.32.00	.031	.034	.047			Δ/Δ			
R/L315.0090.32.00	.035	.038	.055			Δ/Δ			
R/L315.0100.32.00	.039	.042	.063			Δ/Δ			
<ul style="list-style-type: none"> ▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation □ uncoated grades ■ coated grades ■ brazed/Cermet 						P	●		
						M			
						K			
						S			
						N			
						H			

Carbide grades

Dimensions in inch

State R or L version

External machining:

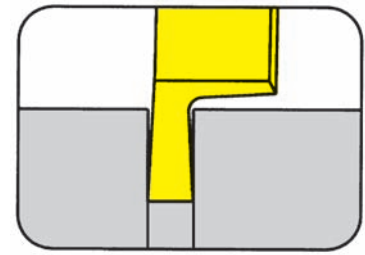
Right hand insert in right hand toolholder 356, left hand insert in left hand toolholder 356.

GROOVING (external and internal)



INDEXABLE INSERT Type

315

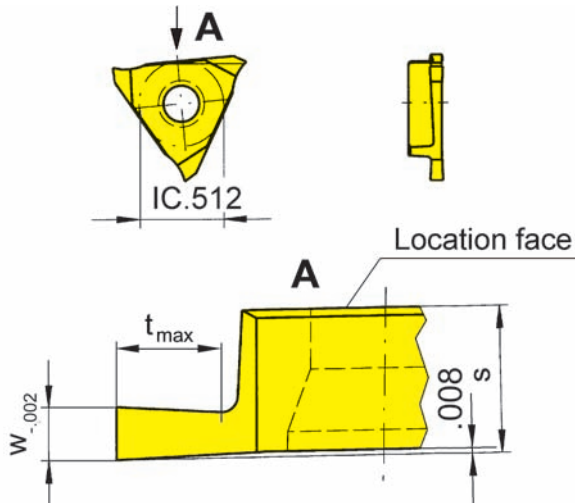


Circlip grooves
Width of circlip Nw

DIN471/472
.043 - .163"

for use with Toolholder

Type 333
U333
356
U356



R = right hand version shown

L = left hand version

Part number	Nw	w	t _{max}	s	Size	TN35	T125	TF45	TF46	TC92	AL96
R/L315.0110.00	.043	.049	.079	.213	05	▲▲		▲/Δ			
R/L315.0130.00	.051	.057	.079	.213	05	▲▲		▲/Δ			
R/L315.0160.00	.063	.069	.118	.213	05	▲▲		/Δ			
R/L315.0185.00	.073	.078	.118	.213	05	▲▲		Δ/Δ			Δ/
R/L315.0215.00	.085	.090	.157	.213	05	▲▲		/Δ			Δ/
R/L315.0265.00	.104	.110	.157	.213	05	▲▲		Δ/Δ			Δ/
R/L315.0315.00	.124	.130	.197	.213	05	▲▲		▲/Δ		Δ/	
R/L315.0415.00	.163	.169	.197	.213	05	▲▲		▲/Δ			/Δ
						P	•	•	•	•	•
						M	•	•	•	•	•
						K	•	•	•	•	•
						S	•	•	•	•	•
						N	•	•	•	•	•
						H					

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R or L version

Carbide grades

External machining:

Right hand insert in right hand toolholder 356, left hand insert in left hand toolholder 356.

Internal machining:

Right hand insert in left hand toolholder 333/357, left hand insert in right hand toolholder 333/357.

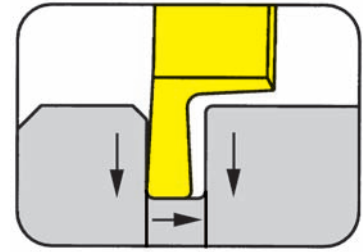


INDEXABLE INSERT Type

315

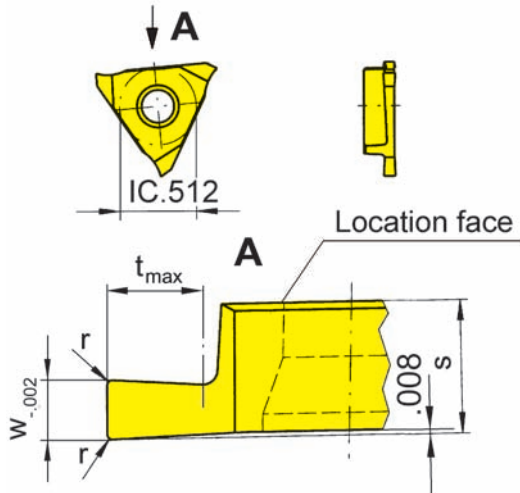
Depth of groove up to
Width of groove

.157"
.079 - .118"



for use with Toolholder

Type 333
U333
356
U356
357



R = right hand version shown

L = left hand version

Indexability length
± .001"

Part number	w	r	s	t _{max}	Size	TN35	TF45	TF46	TC92	AL96
R/L315.0200.02	.079	.008	.213	.118	05	▲/▲				
R/L315.0200.04	.079	.016	.213	.118	05	▲/Δ				
R/L315.0300.02	.118	.008	.213	.157	05	▲/▲			/Δ	
R/L315.0300.04	.118	.016	.213	.157	05	Δ/Δ	Δ/			

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

	P	M	K	S	N	H
TN35	●	●	●	●	●	●
TF45	●	●	●	●	●	●
TF46	●	●	●	●	●	●
TC92	●	●	●	●	●	●
AL96	●	●	●	●	●	●

Dimensions in inch

State R or L version

Carbide grades

External machining:

Right hand insert in right hand toolholder 356, left hand insert in left hand toolholder 356.

Internal machining:

Right hand insert in left hand toolholder 333/357, left hand insert in right hand toolholder 333/357.

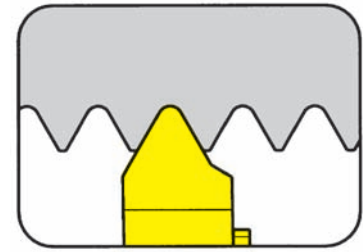
THREADING (external) Partial profile



INDEXABLE INSERT Type

315

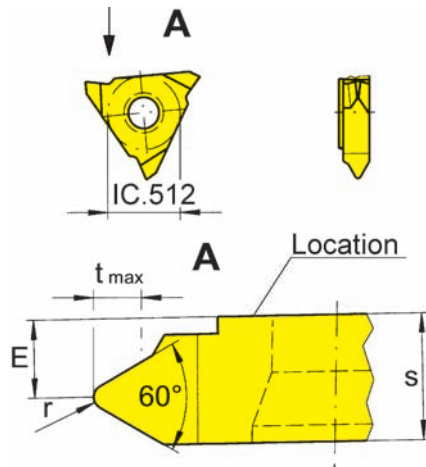
Metric ISO thread



Pitch	1.0 - 6.0 mm
-------	--------------

for use with Toolholder

Type 356
U356



R = right hand version shown

L = left hand version

Part number	P	t _{max}	r	E	s	Size	Carbide grades			
							TN35	TI25	TA45	
R/L315.0610.01	1.00	0.61	0.12	4.50	5.45	05	▲/Δ			
R/L315.0712.01	1.25	0.77	0.15	4.50	5.45	05	▲/Δ			
R/L315.0915.01	1.50	0.92	0.20	4.15	5.45	05	▲/▲			
R/L315.1017.01	1.75	1.07	0.25	4.15	5.45	05	▲/Δ			
R/L315.1220.01	2.00	1.23	0.25	4.15	5.45	05	▲/Δ			
R/L315.1525.01	2.50	1.53	0.35	3.80	5.45	05	▲/Δ			
R/L315.1830.01	3.00	1.84	0.40	3.60	5.45	05	▲/Δ			
R/L315.3060.01	3.00-6.00	4.15	0.40	3.00	6.10	05	▲/▲			
R/L315.2135.01	3.50	2.15	0.50	3.40	5.45	05	Δ/Δ			
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet							P	•		
							M	•		
							K	•		
							S	•		
							N	•		
							H			

Dimensions in mm

State R or L version

Carbide grades

No shims necessary. All HORN thread profiles are manufactured with **full ground radial clearance**.

External machining:

Right hand insert in right hand toolholder 356, left hand insert in left hand toolholder 356.



THREADING (external) Full profile

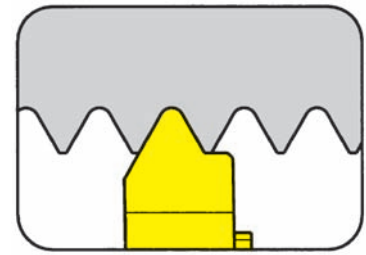


INDEXABLE INSERT Type

315

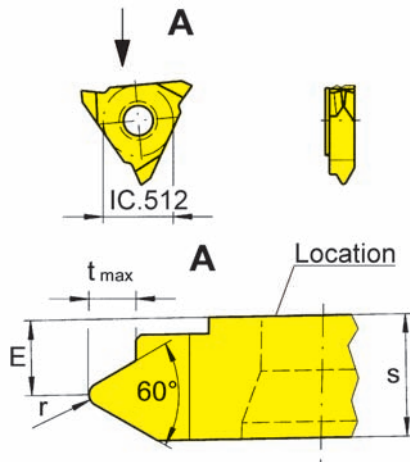
Metric ISO thread

Pitch	1.0 - 6.0 mm
-------	--------------



for use with Toolholder

Type 356
U356



R = right hand version shown

L = left hand version

Part number	P	t _{max}	r	E	s	Size	Carbide grades		
							TN35	TI25	TA45
R/L315.0610.02	1.00	0.61	0.12	4.50	5.45	05	▲/▲		
R/L315.0712.02	1.25	0.77	0.15	4.50	5.45	05	▲/Δ		
R/L315.0915.02	1.50	0.92	0.20	4.15	5.45	05	▲/▲		
R/L315.1017.02	1.75	1.07	0.25	4.15	5.45	05	▲/Δ		
R/L315.1220.02	2.00	1.23	0.25	4.15	5.45	05	▲/▲		
R/L315.1525.02	2.50	1.53	0.35	3.80	5.45	05	▲/Δ		
R/L315.1830.02	3.00	1.84	0.40	3.60	5.45	05	▲/▲		
R/L315.2135.02	3.50	2.15	0.50	3.40	5.45	05	▲/Δ		
R/L315.2440.02	4.00	2.45	0.55	3.30	5.45	05	▲/▲		
R/L315.3050.02	5.00	3.07	0.70	4.00	6.50	05	▲/Δ		
R/L315.3660.02	6.00	3.68	0.85	4.10	7.00	05	▲/Δ		
							P	•	
							M	•	
							K	•	
							S	•	
							N	•	
							H	•	

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in mm

State R or L version

Carbide grades

No shims necessary. All HORN thread profiles are manufactured with **full ground radial clearance**.

External machining:

Right hand insert in right hand toolholder 356, left hand insert in left hand toolholder 356.

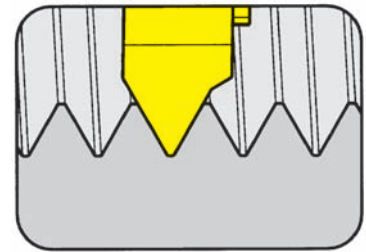
THREADING (internal) Partial profile



INDEXABLE INSERT Type

315

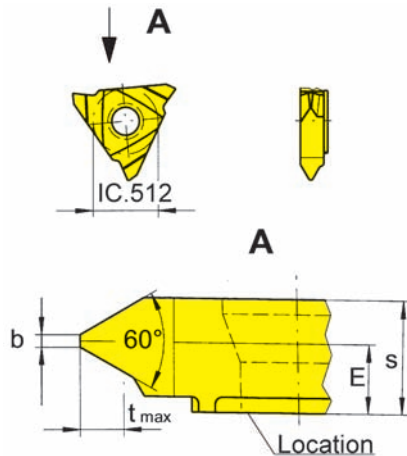
Metric ISO thread



Pitch	1.0 - 3.5 mm
-------	--------------

for use with Toolholder

Type 333
U333
357



R = right hand version shown

L = left hand version

Part number	P	t _{max}	E	b	s	D _{min}	Size	TN35	TI25	TA45
R/L315.0510.01	1.0	0.55	4.85	0.12	5.45	40	05	Δ/Δ		
R/L315.0815.01	1.5	0.81	4.65	0.18	5.45	40	05	Δ/Δ		
R/L315.1020.01	2.0	1.08	4.45	0.25	5.45	40	05	Δ/		
R/L315.1325.01	2.5	1.35	4.25	0.31	5.45	43	05	Δ/		
R/L315.1630.01	3.0	1.62	4.05	0.37	5.45	43	05	Δ/		
R/L315.1835.01	3.5	1.89	3.90	0.43	5.45	43	05	Δ/		
								P	•	
								M	•	
								K	•	
								S	•	
								N	•	
								H	•	

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in mm

State R or L version

Carbide grades

No shims necessary. All HORN thread profiles are manufactured with **full ground radial clearance**.

Internal machining:

Right hand threading insert in right hand toolholder 333/357, left hand threading insert in left hand toolholder 333/357



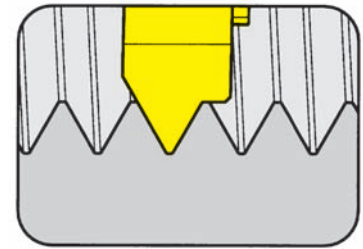
THREADING (internal) Full profile



INDEXABLE INSERT Type

315

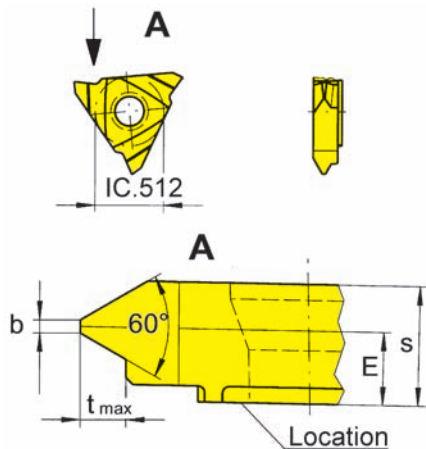
Metric ISO thread



Pitch	1.0 - 3.5 mm
-------	--------------

for use with Toolholder

Type 333
U333
357



R = right hand version shown

L = left hand version

Part number	P	t _{max}	E	b	s	D _{min}	Size	TN35	T125	TA45
R/L315.0510.02	1.0	0.55	4.85	0.12	5.45	40	05	Δ/		
R/L315.0815.02	1.5	0.81	4.65	0.18	5.45	40	05	▲/		
R/L315.1020.02	2.0	1.08	4.45	0.25	5.45	40	05	▲/Δ		
R/L315.1325.02	2.5	1.35	4.25	0.31	5.45	43	05	▲/		
R/L315.1630.02	3.0	1.62	4.05	0.37	5.45	43	05	▲/Δ		
R/L315.1835.02	3.5	1.89	3.90	0.43	5.45	43	05	Δ/		

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

P	●	■	■
M	●	■	■
K	●	■	■
S	●	■	■
N	●	■	■
H	●	■	■

Dimensions in mm

State R or L version

Carbide grades

No shims necessary. All HORN thread profiles are manufactured with **full ground radial clearance**.

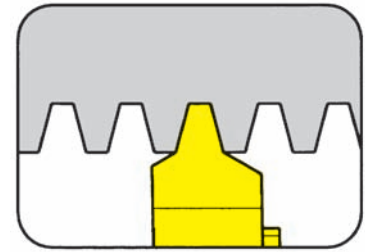
Internal machining:

Right hand threading insert in right hand toolholder 333/357, left hand threading insert in left hand toolholder 333/357

INDEXABLE INSERT Type

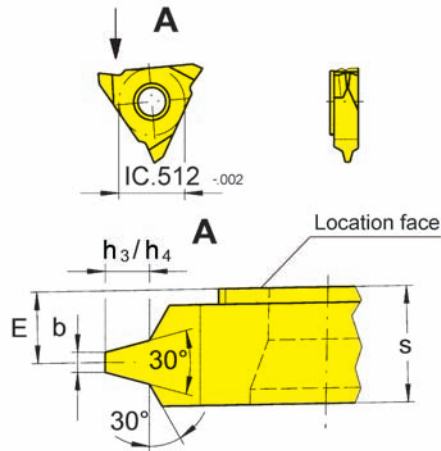
315

Pitch 1.5 - 6.0 mm



for use with Toolholder

Type 333
U333
356
U356
357



R = right hand version shown

L = left hand version

Metric ISO trapezoidal thread DIN 103

Part number	P	E	b	s	D _{min}	h ₃ / h ₄	Size	TN35	T125	TA45
R/L315.1015.02	1.5	4.5	0.47	5.45	43	0.90	05	▲/△		
R/L315.1320.02	2.0	4.3	0.60	5.45	43	1.25	05	▲/△		
R/L315.1730.02	3.0	4.0	0.96	5.45	43	1.75	05	▲/▲		
R/L315.2240.02	4.0	3.6	1.33	5.45	43	2.25	05	▲/▲		
R/L315.2750.02	5.0	3.3	1.70	5.45	43	2.75	05	▲/▲		
R/L315.3560.02	6.0	3.0	1.93	5.45	43	3.50	05	▲/▲		
								P	•	
								M	•	
								K	•	
								S	•	
								N	•	
								H	•	

- ▲ on stock △ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in mm

State R or L version

Carbide grades

No shims necessary. All HORN thread profiles are manufactured with **full ground radial clearance**.

External machining:

Right hand insert in right hand toolholder 356, left hand insert in left hand toolholder 356.

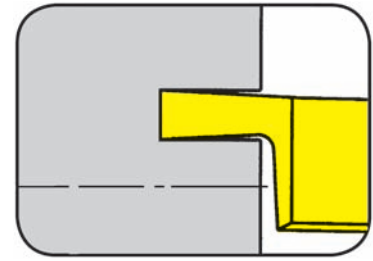
Internal machining:

Right hand insert in left hand toolholder 333/357, left hand insert in right hand toolholder 333/357.



INDEXABLE INSERT Type

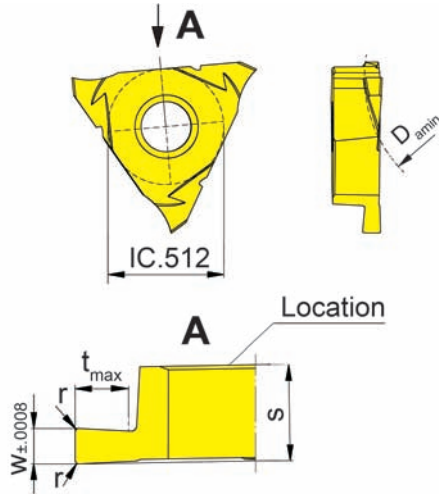
A315



Depth of groove up to .118"
Width of groove .059 - .118"

for use with Toolholder

Type 356
U356
357



R = right hand version shown

L = left hand version

Part number	w	s	r	t _{max}	D _{a min}	Size	Carbide grades				
							TN32	TN35	TI22	TA45	TH35
LA315.2015.02R	.059			.079	.787						▲
LA315.3020.02R	.079	.213	.008	.118	1.181	05					▲
LA315.3030.02R	.118			.118	1.181						▲
RA315.2015.02L	.059			.079	.787						▲
RA315.3020.02L	.079	.213	.008	.118	1.181	05					▲
RA315.3030.02L	.118			.118	1.181						▲
							P				•
							M				•
							K				•
							S				•
							N				•
							H				•

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch
State R or L version

Carbide grades

HORN - THE LEADERS IN GROOVING TECHNOLOGY



LEGENDARY CAPABILITIES

DS END MILLING

J

HORN - INTELLIGENT TOOL DESIGN AT WORK.



For further information, please see HORN catalog "CARBIDE MILLING TOOLS".

HCG - HORN Catalog Guide

INTERNAL GROOVING

Bore Ø	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.625" (15.87 mm)				•						
.709" (18 mm)				•						
.787 - 1.102" (20-28 mm)	•			•						
1.102 - 1.496" (28-38 mm)	•			•	•					
> 1.496" (38 mm)	•			•	•	•	•	•	•	
Operation Type										
Grooving	•			•	•	•	•	•	•	
Threading					•	•			•	
Profiling				•	•		•	•	•	
Width of groove inch	.022-.209			.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.049-.169	
Width of groove mm	0.56-5.3			1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	1.25-4.29	
Chapter	A	B	C	D	E	F	G	H	J	K

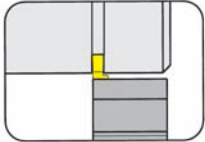
EXTERNAL GROOVING

Depth of groove up to	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.157" (4 mm)	•	•	•	•	•	•	•	•	•	•
.236" (6 mm)		•	•	•	•	•	•	•	•	•
.315" (8 mm)		•		•	•	•	•	•		•
.394" (10 mm)		•		•	•	•	•			
.433" (11 mm)		•		•	•	•	•			
.551" (14 mm)		•		•	•		•			
.630" (16 mm)		•		•	•		•			
.709" (18 mm)				•	•		•			
.984" (25 mm)				•			•			
1.000" (25.4 mm)							•			
Operation Type										
Grooving	•	•	•	•	•	•	•	•	•	•
Side Turning		•	•	•	•		•	•		
Parting Off	•	•	•	•	•		•	•		•
Threading		•	•			•	•		•	
Profiling			•		•		•	•	•	•
Axial Grooving						•			•	
Width of groove inch	.022-.209	.059-.118	.020-.118	.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.022-.169	.059-.118
Width of groove mm	0.56-5.3	1.5-3.0	0.5-3.0	1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	0.56-4.29	1.5-3.0
Chapter	A	B	C	D	E	F	G	H	J	K

Special tools upon request

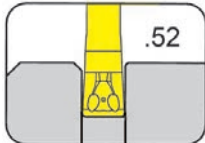
TOOLING SYSTEMS S316 **K**

Grooving
- external -

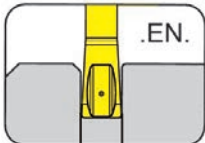


Page K2

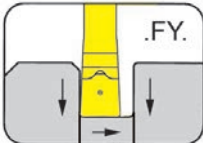
Indexable inserts
Type
S316



Page K3



Page K4



Page K5

For Technical Information please see chapter Q



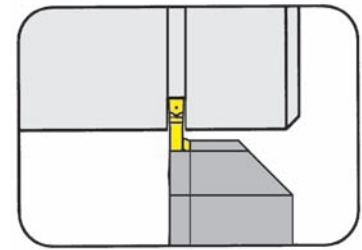
K

GROOVING (external)



TOOLHOLDER Type

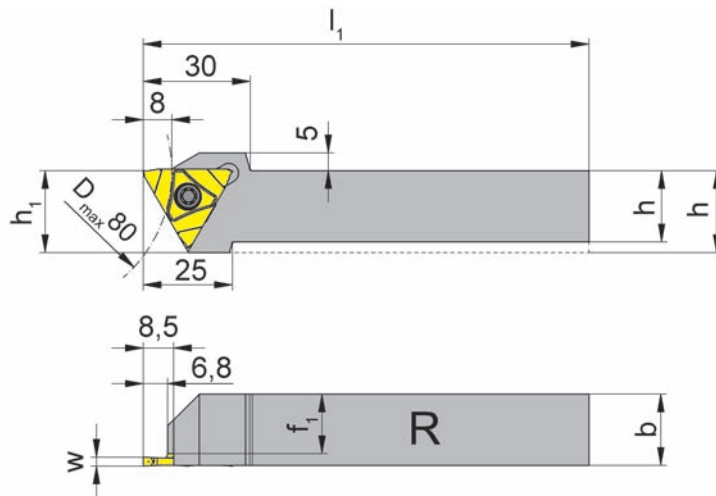
H316



Depth of groove up to .315" (8.0 mm)
Width of groove up to .059 - .118" (1.5 - 3.0 mm)

for use with Indexable insert

Type S316



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	Size
R/LH316.1616.S3.03	16	16	125	23	12.7	03
R/LH316.2020.S3.03	20	20	125	23	16.7	
R/LH316.2525.S3.03	25	25	150	25	21.7	
R/LH316.3225.S3.03	32	25	150	32	21.7	

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

K

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH316....	5.12T20P	T20PQ

K2

GROOVING (external)

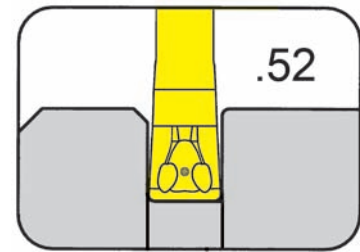


INDEXABLE INSERT Type

S316

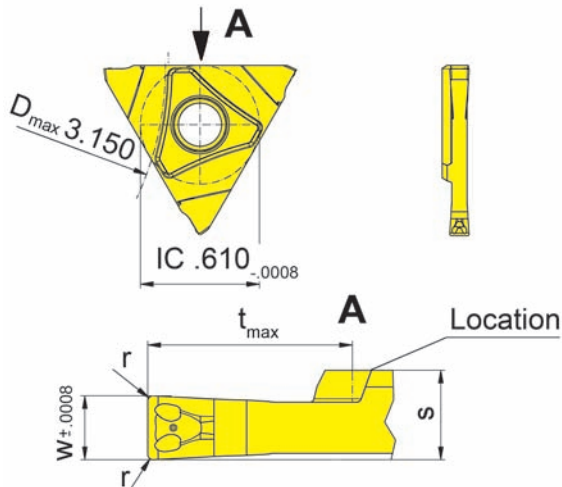
Depth of groove up to	.315"
Width of groove	.079 - .118"

precision sintered



for use with Toolholder

Type H316...S3.03



R = right hand version shown

L = left hand version

Indexability length
± .001"

Part number	w	r	s	t _{max}	Size	Carbide grades				
						TN35	TI25	TF45	TF46	AS45
R/LS316.0200.52	.079									▲/▲
R/LS316.0250.52	.098	.008	.138	.315	03					▲/▲
R/LS316.0300.52	.118									▲/▲
						P				●
						M				
						K				
						S				
						N				
						H				

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R or L version

External machining:

Use right hand inserts in right hand toolholders and left hand inserts in left hand toolholders

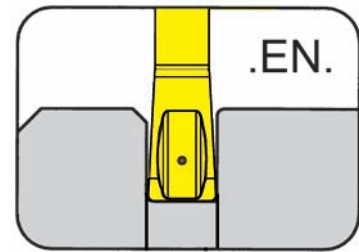


GROOVING (external)



INDEXABLE INSERT Type

S316

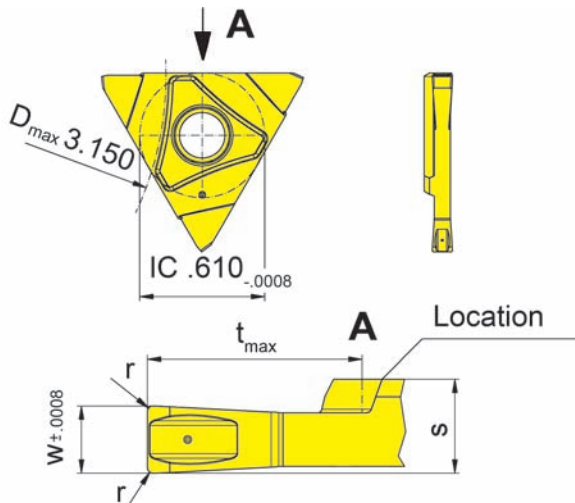


Depth of groove up to .315"
Width of groove .079 - .118"

precision sintered

for use with Toolholder

Type H316...S3.03



R = right hand version shown

L = left hand version

Indexability length
± .001"

Part number	w	r	s	t _{max}	Size	Carbide grades				
						TN35	TI25	TF45	TF46	AS6G
R/LS316.0200.EN2	.079									▲/▲
R/LS316.0250.EN2	.098	.008	.138	.315	03					▲/▲
R/LS316.0300.EN2	.118									▲/▲
						P				•
						M				•
						K				•
						S				•
						N				•
						H				•

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R or L version

External machining:

Use right hand inserts in right hand toolholders and left hand inserts in left hand toolholders

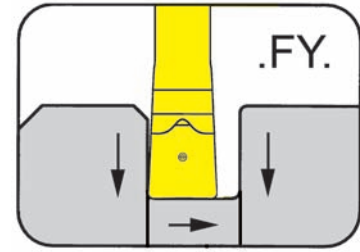


INDEXABLE INSERT Type

S316

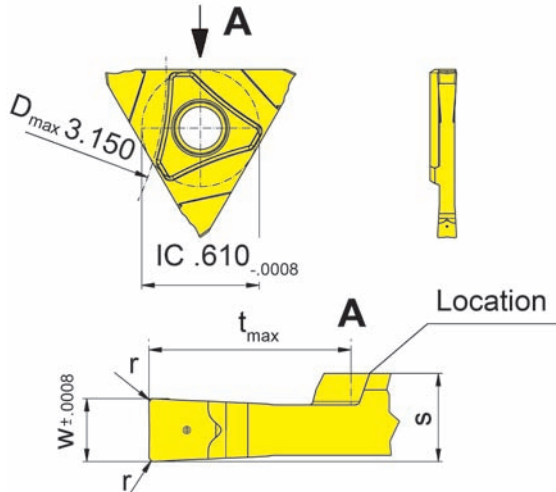
Depth of groove up to .315"
 Width of groove .059 - .118"

precision sintered



for use with Toolholder

Type H316



R = right hand version shown

L = left hand version

Indexability length
± .001"

Part number	w	r	s	t _{max}	Size	Carbide grades			
						TN35	TI25	TF45	TF46
R/LS316.0150.FY1	.059	.004	.130	.315	03		▲/▲		
R/LS316.0200.FY2	.079	.008	.138			▲/▲			
R/LS316.0250.FY2	.098	.008	.138			▲/▲			
R/LS316.0300.FY2	.118	.008	.138			▲/▲			
						P	•		
						M	•		
						K	•		
						S	•		
						N	•		
						H			

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R or L version

External machining:

Use right hand inserts in right hand toolholders and left hand inserts in left hand toolholders



HCG - HORN Catalog Guide

INTERNAL GROOVING

Bore Ø	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.625" (15.87 mm)				•						
.709" (18 mm)				•						
.787 - 1.102" (20-28 mm)	•			•						
1.102 - 1.496" (28-38 mm)	•			•	•					
> 1.496" (38 mm)	•			•	•	•	•	•	•	
Operation Type										
Grooving	•			•	•	•	•	•	•	
Threading					•	•			•	
Profiling				•	•		•	•	•	
Width of groove inch	.022-.209			.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.049-.169	
Width of groove mm	0.56-5.3			1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	1.25-4.29	
Chapter	A	B	C	D	E	F	G	H	J	K

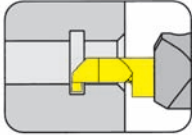
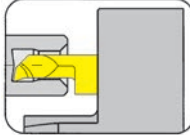
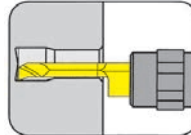
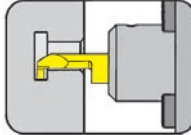
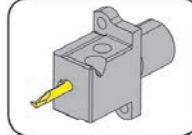




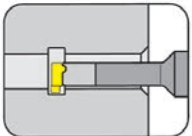
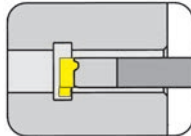
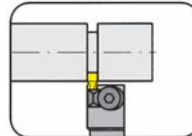
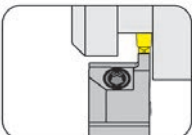
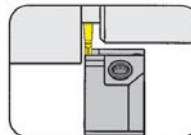
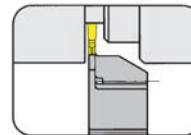
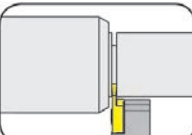
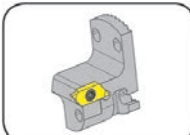
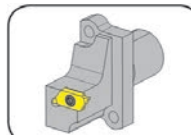
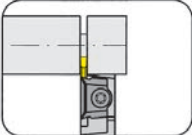
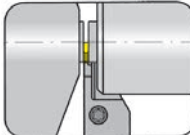
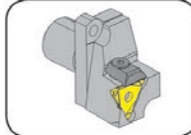
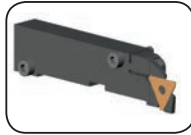
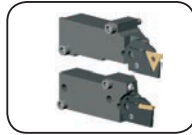
EXTERNAL GROOVING

Depth of groove up to	Product line									
	217	264	S274	S223	S224	231	S229/229	S312/312	315	S316
.157" (4 mm)	•	•	•	•	•	•	•	•	•	•
.236" (6 mm)		•	•	•	•	•	•	•	•	•
.315" (8 mm)		•		•	•	•	•	•		•
.394" (10 mm)		•		•	•	•	•			
.433" (11 mm)		•		•	•	•	•			
.551" (14 mm)		•		•	•		•			
.630" (16 mm)		•		•	•		•			
.709" (18 mm)				•	•		•			
.984" (25 mm)				•			•			
1.000" (25.4 mm)							•			
Operation Type										
Grooving	•	•	•	•	•	•	•	•	•	•
Side Turning		•	•	•	•		•	•		
Parting Off	•	•	•	•	•		•	•		•
Threading		•	•			•	•		•	
Profiling			•		•		•	•	•	•
Axial Grooving						•			•	
Width of groove inch	.022-.209	.059-.118	.020-.118	.049-.118	.079-.236	.098-.394	.098-.394	.020-.250	.022-.169	.059-.118
Width of groove mm	0.56-5.3	1.5-3.0	0.5-3.0	1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	0.56-4.29	1.5-3.0
Chapter	A	B	C	D	E	F	G	H	J	K

Special tools upon request

TOOLS FOR SWISS TYPE MACHINES L

for Inserts Type

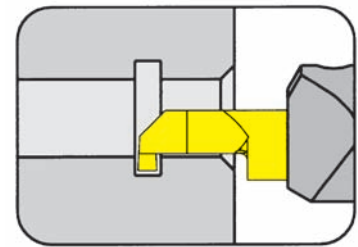
105					
	Page L2, L6, L13	Page L3-L4	Page L5	Page L7-L11	Page L12
					Additional equipment
	Page L14	Page L15	Page L37-L42	Page L43-L46	Page L47-L48
108		111		217	
	Page L16		Page L17		Page L18-L19
S224		264			
	Page L20-L21		Page L22-L24	Page L25	
S274					
	Page L26	Page L27	Page L28-L29		
312					
	Page L30	Page L31	Page L32	Page L33	Page L34-L35

Inserts for pages L2-L17 and L41-L42 -
See the respective chapters in the Supermini® / Mini catalog.

TOOLHOLDER Type

H105

with screwed clamping

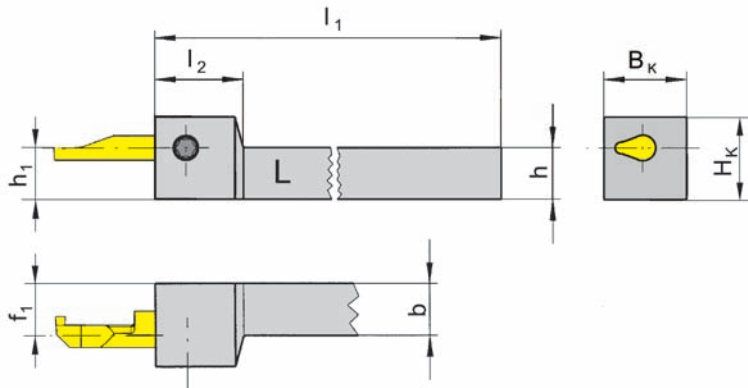


Bore Ø from

.008" (0.2 mm)

for use with Insert

Type 105
U105



L = left hand version shown

R = right hand version

Part number	l_1	l_2	h	h_1	f_1	b	B_K	H_k
R/LH105.0808.01	90	17	8	8	7.5	8	16	14
R/LH105.1010.01	90	17	10	10	7.5	10	16	16
R/LH105.1212.01	90	17	12	12	7.5	12	16	18
R/LH105.1616.01	110	17	16	16	7.5	16	16	22

State R or L version

Dimensions in mm

Further sizes upon request

L

Spare parts

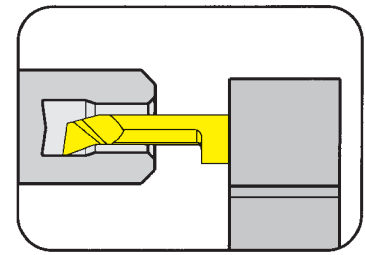
Toolholder	Screw	TORX PLUS® Wrench
R/LH105....	6.075T15P	T15PQ

L2

TOOLHOLDER Type

HC105

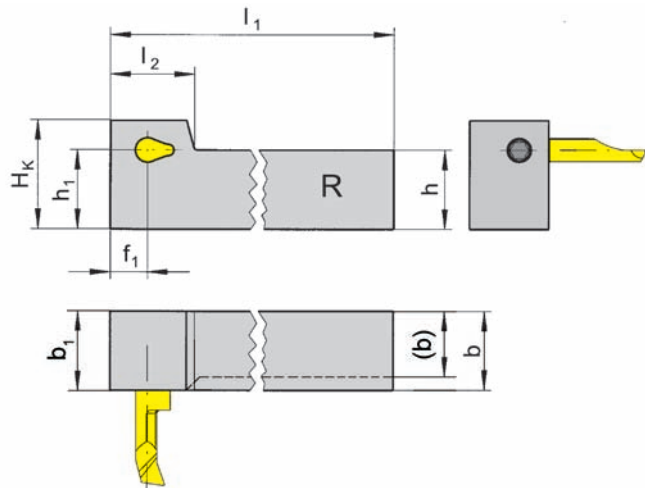
with screwed clamping



Bore Ø from .008" (0.2 mm)

for use with Insert

Type 105
U105



R = right hand version shown

L = left hand version

Part number	l_1	l_2	h	h_1	f_1	b	b_1	H_k
R/LHC105.1212.01	90	17	12	12	7.5	12	16	18
R/LHC105.1616.01	130	17	16	16	7.5	16	16	22

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

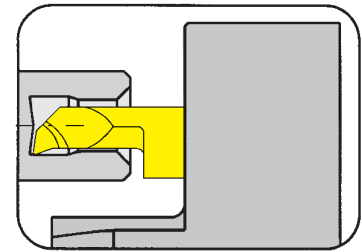
Toolholder	Screw	TORX PLUS® Wrench
R/LHC105.1...	6.075T15P	T15PQ

L

TOOLHOLDER Type

HC105

with screwed clamping

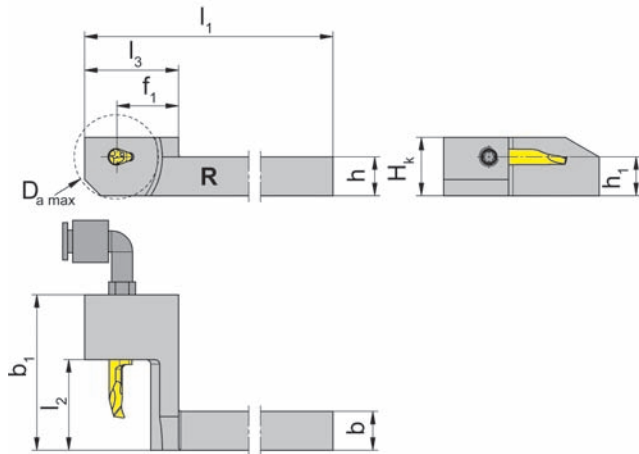


Bore Ø from .008" (0.2 mm)

Coolant supply through cranked fitting

for use with Insert

Type 105
U105



L = left hand version shown

R = right hand version

Part number	l_1	l_2	h	h_1	f_1	l_3	b	b_1	$D_{a \max}$	H_k	Remark
R/LHC105.0707.21	99	18	7	7	19	29	7	32.0	26	13	*
R/LHC105.0808.21	99	18	8	8	19	29	8	32.0	26	13	*
RHC105.1010.11		8						22.7			*
R/LHC105.1010.21	99	18	10	10	19	29	10	38.0	26	16	
R/LHC105.1010.41		28						48.0			
R/LHC105.1212.21	99	18	12	12	19	29	12	38.0	26	18	
R/LHC105.1212.41		28						48.0			
R/LHC105.1616.21	104	18	16	16	24	34	16	38.0	36	22	
R/LHC105.1616.41		28						48.0			

State R or L version

Dimensions in mm

Further sizes upon request

Note:

* = no through coolant supply!

Spare parts

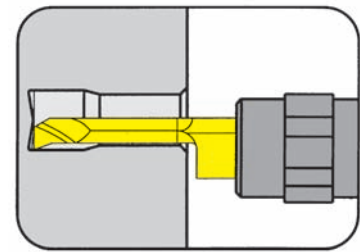
Toolholder	Screw	TORX PLUS® Wrench	Screwed angle fitting
R/LHC105...07./08...	6.075T15P	T15PQ	-
RHC105...11	6.075T15P	T15PQ	-
R/LHC105.1...21/41	6.075T15P	T15PQ	KQ2L06-M5

TOOLHOLDER Type

B105

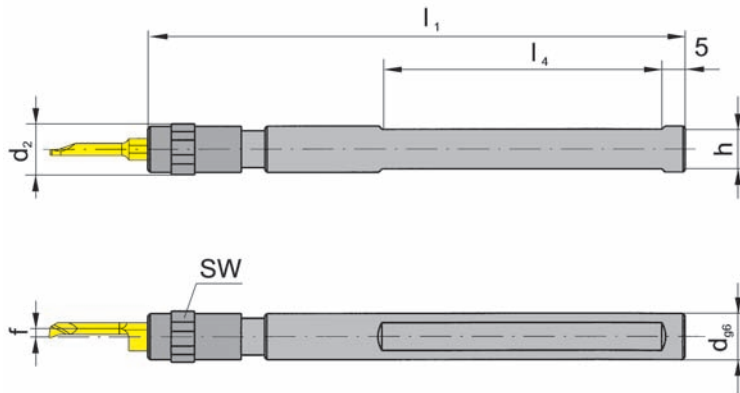
with through coolant supply

Bore Ø from $\leq .118''(3.0\text{mm})$ or $\geq .197''(5.0\text{mm})$



for use with Insert

Type 105/U105
 (Ø $\leq .118''/3.0\text{mm}$)
 (Ø $\geq .197''/5.0\text{mm}$)



Picture = right hand cutting version shown

Part number	d	l_1	h	d_2	l_4	Bore Range	SW
B105.0010.9.01	10	100	9	11	50	* ≤ 3.0	10
B105.0012.11.01	12		11				
B105.0016.11.01	16	100	15	16	50	* ≥ 5.0	13

Further sizes upon request

f see inserts type 105

Dimensions in mm

* only valid for standard inserts

Ordering note:

Toolholders can be used with right and left hand inserts.

Spare parts

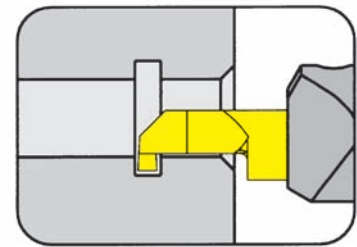
Toolholder	Chucking nut
B105.0010.9.01	020.0010.1719
B105.001...01	020.0016.1999



TOOLHOLDER Type

B105

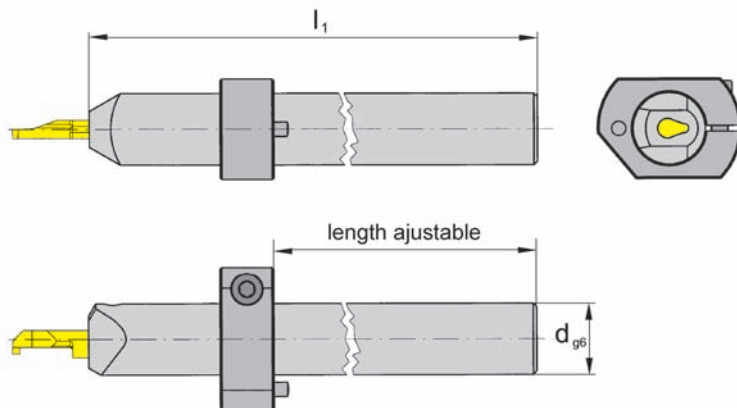
with through coolant supply



Bore Ø from	.008" (0.2 mm)
Depth of groove up to	.098" (2.5 mm)
Width of groove up to	.079" (2.0 mm)

for use with Insert

Type 105
U105



Picture = right hand cutting version shown

Part number	d	l ₁
B105.0020.2.01	20	150
B105.0025.2.01	25	

Further sizes upon request

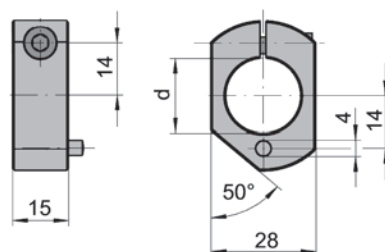
Dimensions in mm

Ordering note:

Toolholders can be used with right and left hand inserts.

Adjusting ring is not combined with the toolholder - separate order required!

Adjusting ring



Part number "Adjusting ring"	d	Type of machine
020.0020.1665	20	Tornos DECO
020.0025.2234	25	

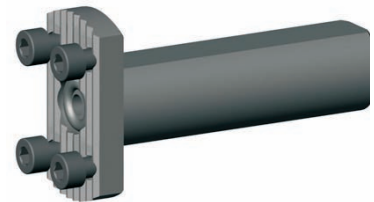
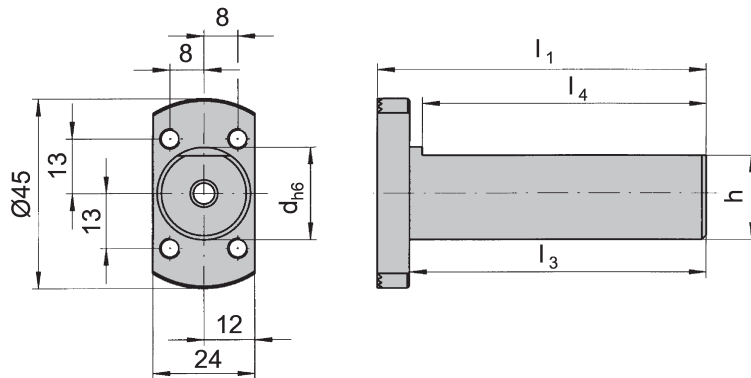
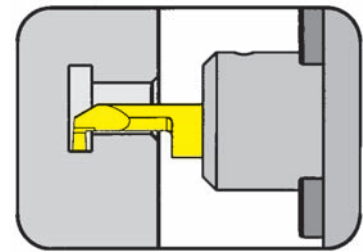
BASIC TOOLHOLDER Type

BGT

without cartridge

Adjustable round shanks for toolholder BKT105.2445.01/2

with through coolant supply



Part number	d	l ₁	h	l ₃	l ₄	Machine tool
BGT001.0010.50	10	57.50	9	50	47	
BGT001.0016.21 BGT001.0R16.21	16	28.50	14	21	18	Star
BGT001.0020.100	20	107.50	18	100	97	Tornos
BGT001.0022.30 BGT001.0022.70	22	36.35 77.50	20	30 70	27 67	Star
BGT001.0025.70	25	77.50	23	70	67	
BGT001.0028.80	28	87.50	26	81	77	Traub

Further sizes upon request

Dimensions in mm

Note:

BGT001.0022.30 without through coolant supply

Spare parts

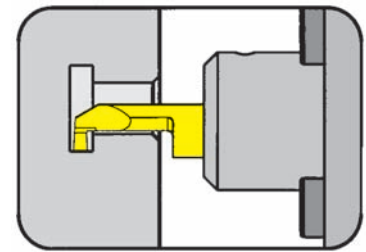
Basic toolholder	Screw	O-ring
BGT001.0...	DIN912M5X10	DIN37707X3

L

ADJUSTABLE HOLDER Type **BKT**

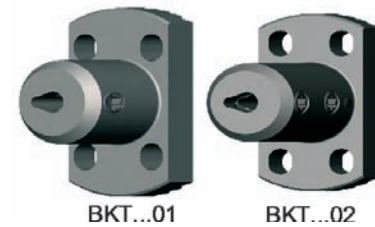
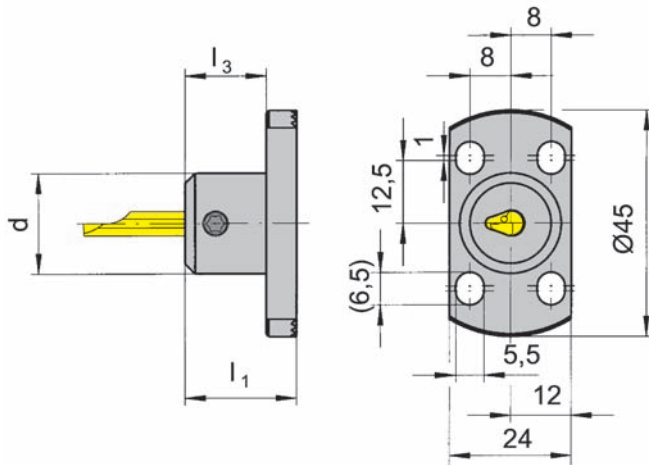
Bore Ø from .008" (0.2 mm)
 Depth of groove up to .098" (2.5 mm)
 Width of groove up to .079" (2.0 mm)

with through coolant supply



for use with Insert

Type 105
 U105



Part number	d	l ₁	l ₃
BKT105.2445.01	20	22	16
BKT105.2445.02	20	32	26

Further sizes upon request

Dimensions in mm

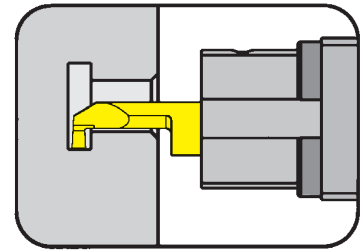
Spare parts

Adjustable holder	Screw	TORX PLUS® Wrench
BKT105.2445.0...	6.075T15P	T15PQ

BASIC TOOLHOLDER Type

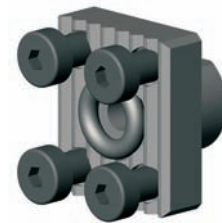
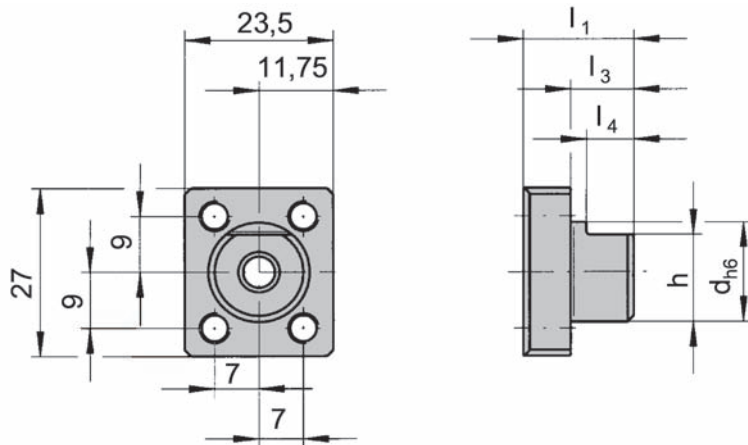
BGT

without cartridge



Adjustable round shanks for toolholder BKT105.2327.01

with through coolant supply



Part number	d	l ₁	h	l ₃	l ₄	Machine tool
BGT001.1627.10	16	17.5	14	10	7.5	Star

Further sizes upon request

Dimensions in mm

Spare parts

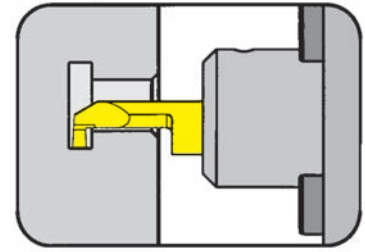
Basic toolholder	Screw	O-ring
BGT001.1627.10	DIN912M5X10	DIN37707X3

L

BASIC TOOLHOLDER Type

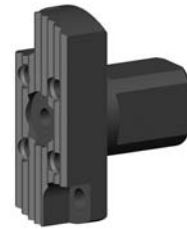
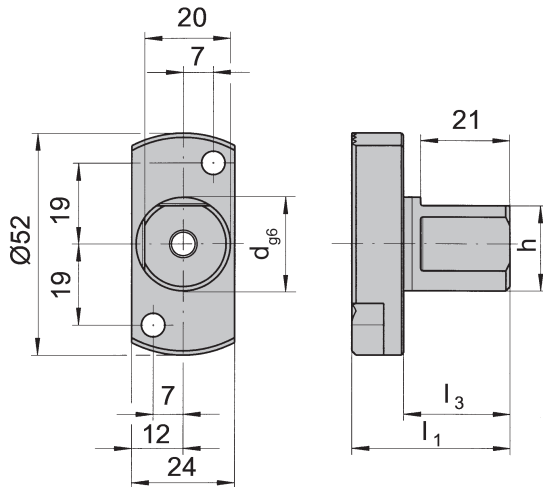
BGT

without cartridge



Adjustable round shanks for toolholder BKT105.2327.01

with through coolant supply



Part number	d	l ₁	h	l ₃
BGT001.0R22.25	22	37	20	25

Further sizes upon request

Dimensions in mm

Spare parts

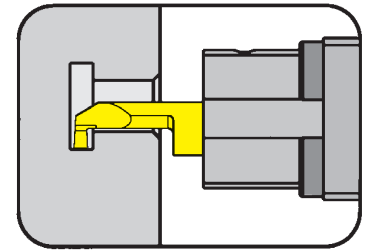
Basic toolholder	Screw
BGT001.0R22.25	DIN912M5X10

ADJUSTABLE HOLDER Type

BKT

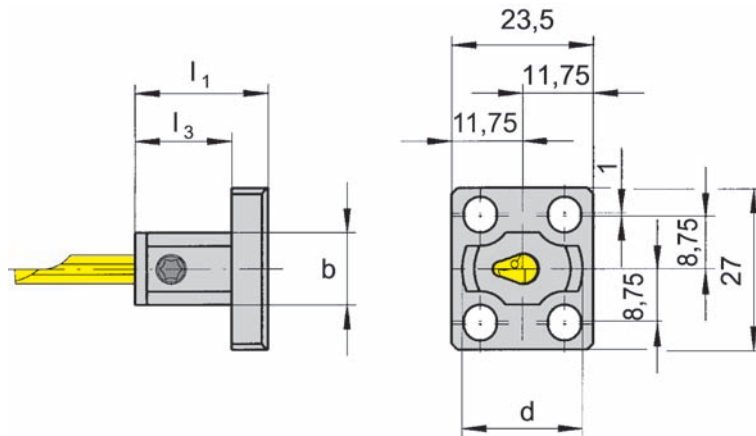
Bore \varnothing from .008" (0.2 mm)
 Depth of groove up to .098" (2.5 mm)
 Width of groove up to .079" (2.0 mm)

with through coolant supply



for use with Insert

Type 105
 U105



BKT105.2327.01

Part number	d	l ₁	l ₃	b
BKT105.2327.01	20	22	16	12

Further sizes upon request

Dimensions in mm

Spare parts

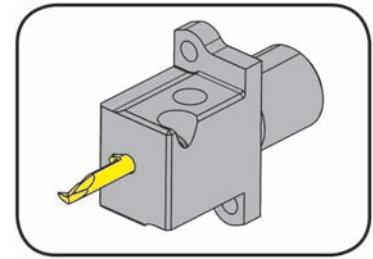
Adjustable holder	Screw	TORX PLUS® Wrench
BKT105.2327.01	6.075T15P	T15PQ



TOOLHOLDER Type

B105

with through coolant supply

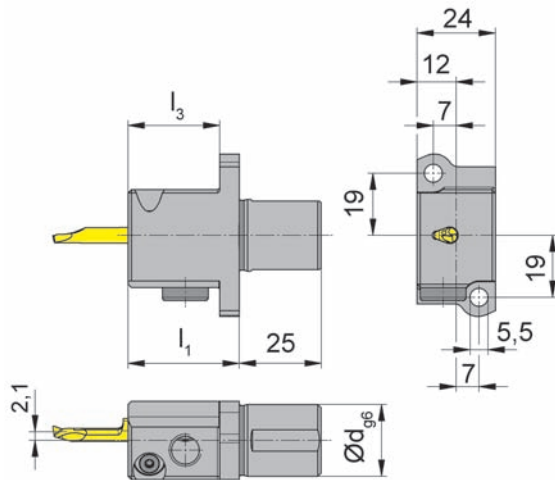


Bore Ø from	.008" (0.2 mm)
Depth of groove	.098" (2.5 mm)
Width of groove	.079" (2.0 mm)

Through coolant supply G1/8"

for use with Insert

Type 105
U105



Picture = left hand cutting version shown

Star SV 12/20/32
SR 10/20/32 and SB 16

Part number	d	l_1	l_3
LB105.A022.26.31	22	34	28

Further sizes upon request

Dimensions in mm

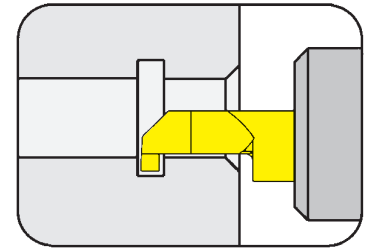
Spare parts

Toolholder	Tensioning wedge	Screw	TORX PLUS® Wrench
LB105.A022.26.31	070.0010.0118	DIN7984-M5x12	T10PL

TOOLHOLDER Type

VDI

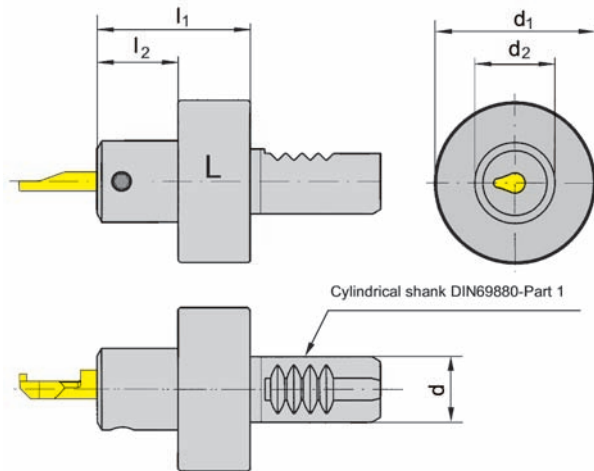
with through coolant supply



Bore Ø from .008" (0.2 mm)

for use with Insert

Type 105
U105



L = left hand version shown

R = right hand version

Part number	d	l ₁	l ₂	d ₂	d ₁
VDI16.R/L105.20.01	16	38	20	20	40
VDI20.R/L105.20.01	20	38	20	20	50
VDI25.R/L105.20.01	25	38	20	20	58
VDI30.R/L105.20.01	30	38	20	20	68
VDI40.R/L105.20.01	40	38	20	20	83

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
VDI...	6.075T15P	T15PQ

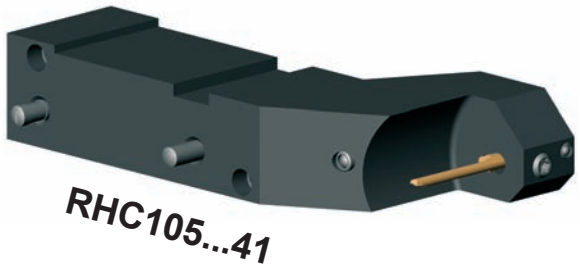
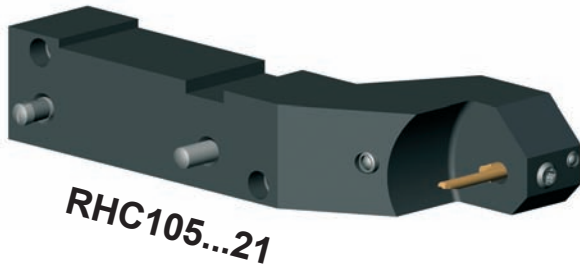


Tools for Tornos DECO2000

for Insert

Type 105 / U105

Bore Ø from .008" (0.2 mm)



Basic toolholder	Insert	Machine
RHC105.0710.21	105...21 l ₂ up to 15 mm	DECO7/10
RHC105.0710.41	105...41 l ₂ up to 25 mm	

Dimensions in mm

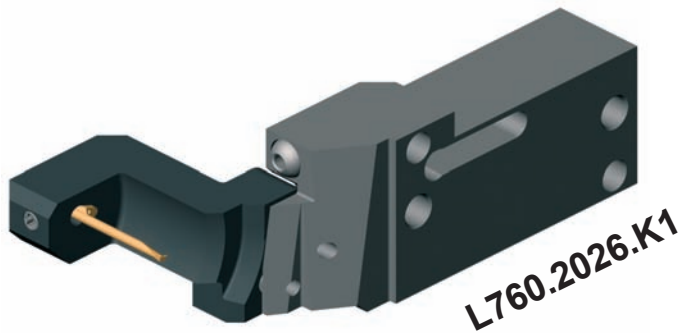
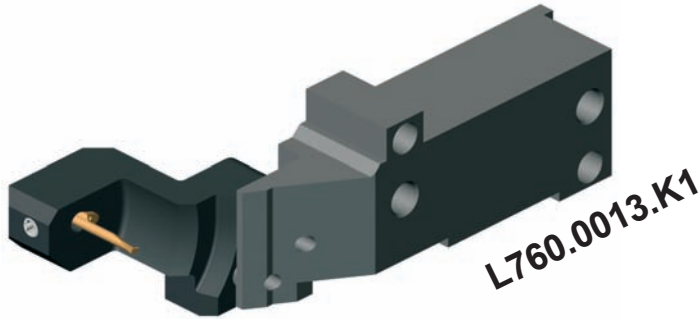
L

Tools for Tornos DECO2000

for Cassettes

Type RKC760

Bore Ø from .008" (0.2 mm)



Basic toolholder	Cassette	Insert	Machine
L760.0013.K1	RKC760.0105.21	105...21 l ₂ up to 15 mm	DECO13
L760.2026.K1	RKC760.0105.41	105...41 l ₂ up to 25 mm	DECO20/26

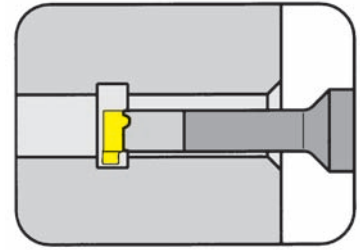
Dimensions in mm

L

TOOLHOLDER Type

B108

with through coolant supply

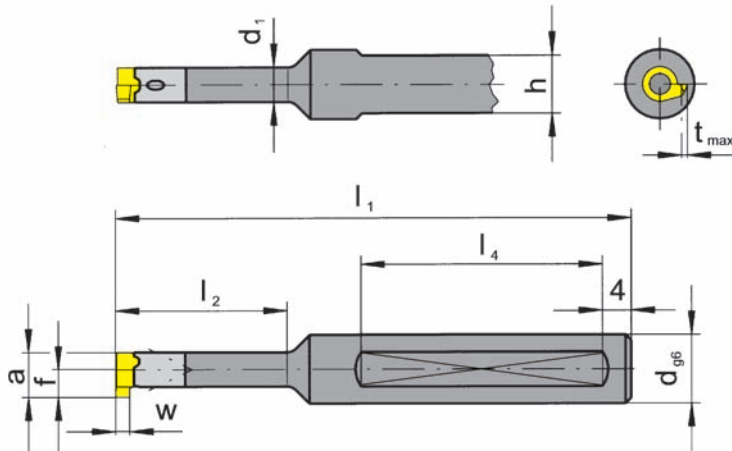


Bore Ø from .315" (8.0 mm)
Width of groove up to .079" (2.0 mm)

Material of shank: Carbide - Giving a good vibration resistance

for use with Insert

Type 108
S108
U108



Picture = right hand cutting version shown

Part number	d	l ₁	l ₂	h	f	t _{max}	w	a	l ₄	d ₁
B108.0008.00	8	60	12.5	7	4.8	1	2	7.8	35	6
B108.0008.01	8	70	21.0	7	4.8	1	2	7.8	40	6

Further sizes upon request

Dimensions in mm

Ordering note:

Toolholders can be used with right and left hand inserts.
Toolholders with damaged seating can be repaired by HORN.

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
B108.0008.0...	2.6.5T8EP	T8PL

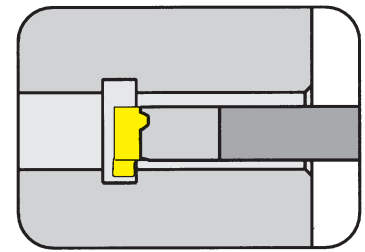
TOOLHOLDER Type

B111

with through coolant supply

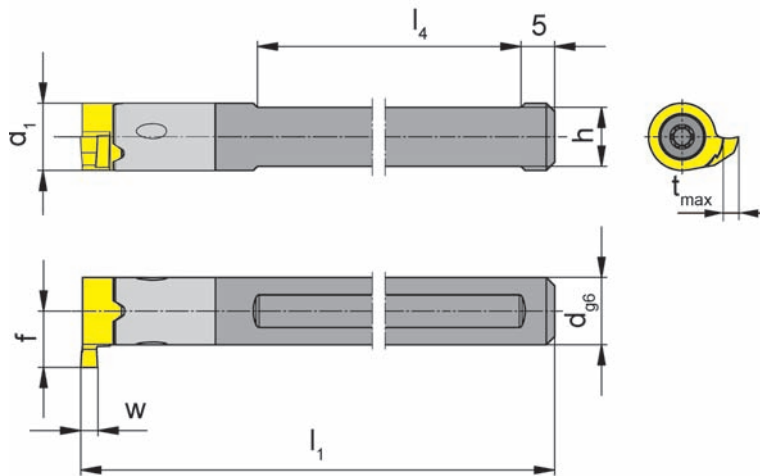
Bore Ø from	.433" (11.0 mm)
Depth of groove	.091" (2.3 mm)
Width of groove up to	.118" (3.0 mm)

Material of shank: Carbide - Giving a good vibration resistance



for use with Insert

Type 111
S111
U111



Picture = right hand cutting version shown

Part number	d	l ₁	h	f	t _{max}	w	a	l ₄	d ₁
B111.0008.01	8	80	7	6.7	2.3	3	10.7	55	8

Further sizes upon request

Dimensions in mm

Ordering note:

Toolholders can be used with right and left hand inserts.
Toolholders with damaged seating can be repaired by HORN.

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
B111.0008.01	3.5.12T10EP	T10PL

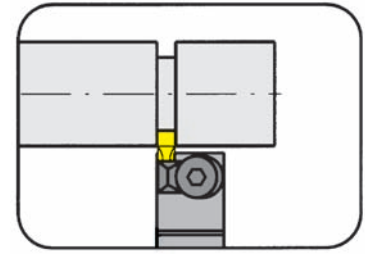
L

GROOVING (external)



TOOLHOLDER Type

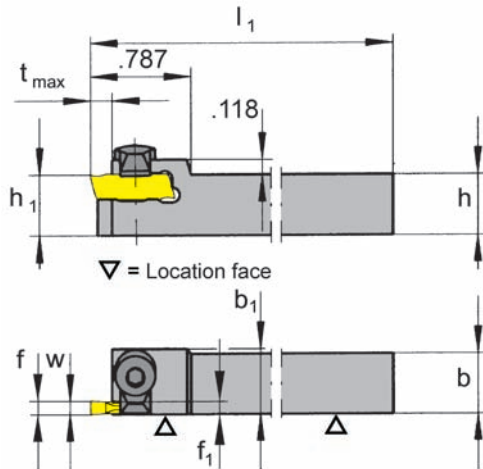
U248



Depth of groove up to .157"
Clamping range up to .106"

for use with Indexable insert

Type 217
U217



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	b ₁	f ₁	f	t _{max}	Size	Clamping range
R/LU248.0500.01	.500	.500	3.740	.500	.539	.059	f ₁ +a ₁	.157	01	.020 - .067
R/LU248.0500.02	.500	.500	3.740	.500	.539	.098	f ₁ +a ₁	.157	02	.067 - .106

State R or L version

w, a₁ see indexable inserts

Dimensions in inch

Further sizes upon request

L

Spare parts

Toolholder	Clamp	Screw	Wrench
R/LU248.0500.0...	8.3	5.14	SW2,5DIN911

L18

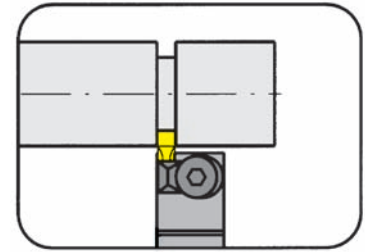
GROOVING (external)



TOOLHOLDER Type

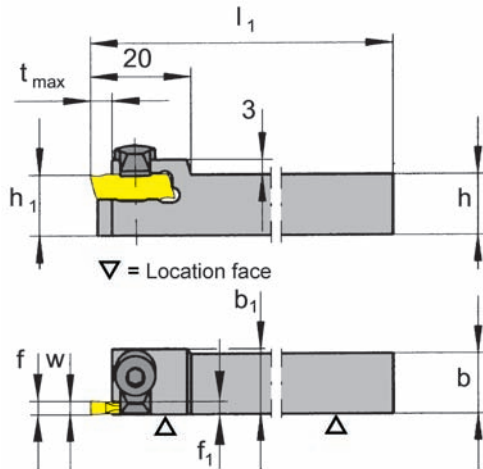
248

Depth of groove up to .157" (4.0 mm)
Clamping range up to .106" (2.7 mm)



for use with Indexable insert

Type 217
U217



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	b ₁	f ₁	f	t _{max}	Size	Clamping range
R/L248.1212.01	12	12	95	12	13	1.5	f ₁ +a ₁	4	01	0.5 - 1.7
R/L248.1212.02	12	12	95	12	13	2.5	f ₁ +a ₁	4	02	1.7 - 2.7

State R or L version

w, a₁ see indexable inserts

Dimensions in mm

Further sizes upon request

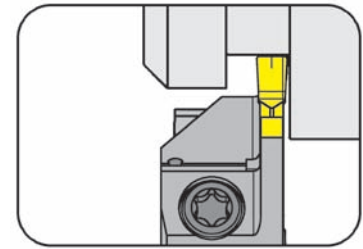
Spare parts

Toolholder	Clamp	Screw	Wrench
R/L248.1212.0...	8.3	5.14	SW2,5DIN911

L

TOOLHOLDER Type

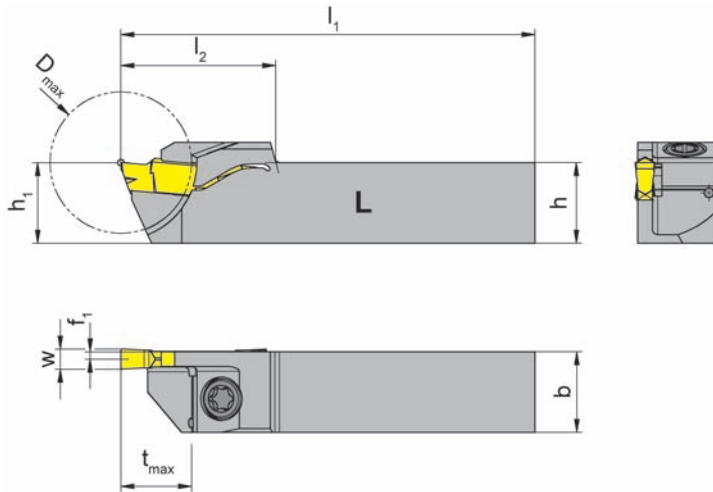
H224



Depth of groove up to .413" (10.5 mm)
Clamping range up to .146" (3.7 mm)

for use with Indexable insert

Type S224



L = left hand version shown

R = right hand version

Part number	h	b	l ₁	h ₁	f ₁	l ₂	t _{max}	D _{max}	Size	Clamping range
R/LH224.1212.20.61	12	12	100	12	0.7	23	10.5	21	01	2.0 - 2.4
R/LH224.1212.20.62	12	12	100	12	0.9	23	10.5	21	02	2.4 - 2.8
R/LH224.1212.20.63	12	12	100	12	1.1	23	10.5	21	03	2.8 - 3.7

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

L

Spare parts

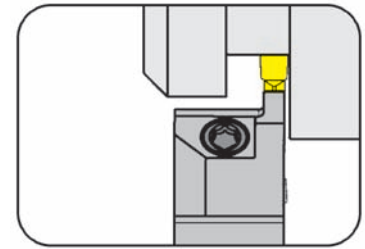
Toolholder	Screw	TORX PLUS® Wrench
R/LH224.1212.20.6...	4.12T15EP	T15PQ

L20

TOOLHOLDER Type

H224

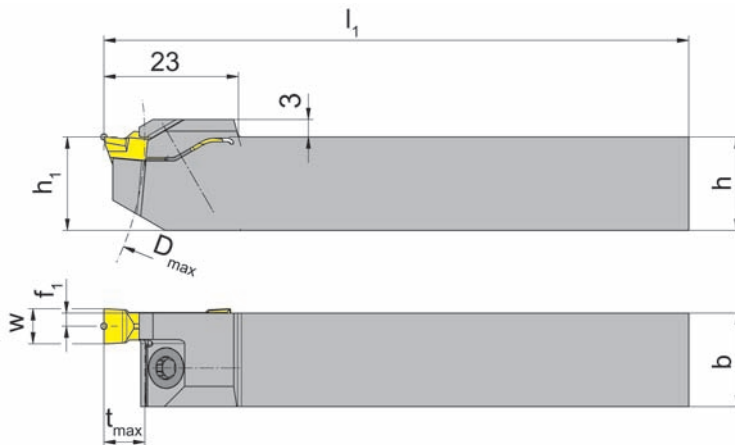
with screwed clamping



Depth of groove up to .276" (7.0 mm)
Clamping range up to .173" (4.4 mm)

for use with Indexable insert

Type S224



L = left hand version shown

R = right hand version

Part number	h	b	l ₁	h ₁	f ₁	t _{max}	D _{max}	Size	Clamping range
R/LH224.1212.61	12	12		12					
R/LH224.1616.61	16	16	100	16	0.70	7	100	01	2.0 - 2.4
R/LH224.2020.61	20	20		20					
R/LH224.1212.62	12	12		12					
R/LH224.1616.62	16	16	100	16	0.90	7	100	02	2.4 - 2.8
R/LH224.2020.62	20	20		20					
R/LH224.1212.63	12	12		12					
R/LH224.1616.63	16	16	100	16	1.10	7	100	03	2.8 - 3.7
R/LH224.2020.63	20	20		20					
R/LH224.1212.64	12	12		12					
R/LH224.1616.64	16	16	100	16	1.45	7	100	04	3.7 - 4.4
R/LH224.2020.64	20	20		20					

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

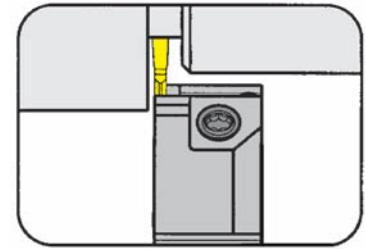
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH224....	4.12T15EP	T15PQ

TOOLHOLDER Type

H264

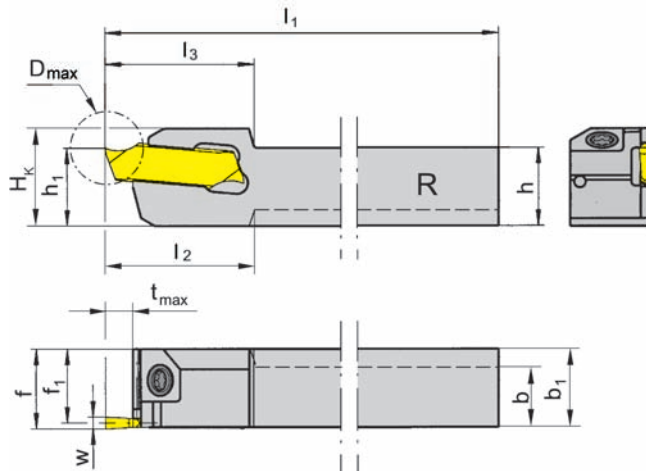
with screwed clamping



Depth of groove up to .630" (16.0 mm)
Width of groove up to .079" (2.0 mm)

for use with Indexable insert

Type 264
S264



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	b ₁	f ₁	f	l ₂	t _{max}	w	D _{max}	l ₃	H _k	Size
R/LH264.0808.01	8	8		8	10	9.25	10	17.5			22		12.5	
R/LH264.1010.01	10	10	120	10	-	9.25	10	-	4	1.5	22	17.5	12.5	01
R/LH264.1212.01	12	12		12	-	11.25	12	-			22		14.5	
R/LH264.1616.01	16	16		16	-	15.25	16	-			32		18.5	
R/LH264.1010.11	10	10		10	-	9.25	10				20		12.5	
R/LH264.1212.11	12	12	120	12	-	11.25	12	-	10	1.5	20	19.0	14.5	01
R/LH264.1616.11	16	16		16		15.25	16				32		18.5	
R/LH264.1212.21	12	12	120	12	-	11.25	12	-			26	22.0	15.5	01
R/LH264.1616.21	16	16		16	-	15.25	16		13	1.5	32		19.5	
R/LH264.1010.02	10	10		10		9.00	10						12.5	
R/LH264.1212.02	12	12	120	12	-	11.00	12	-	4	2.0	32	17.5	14.5	02
R/LH264.1616.02	16	16		16		15.00	16						18.5	
R/LH264.1010.12	10	10		10		9.00	10						12.5	
R/LH264.1212.12	12	12	120	12	-	11.00	12	-	10	2.0	32	19.0	14.5	02
R/LH264.1616.12	16	16		16		15.00	16						18.5	
R/LH264.1212.22	12	12	120	12	-	11.00	12	-					14.5	
R/LH264.1616.22	16	16		16	-	15.00	16	-	16	2.0	32	25.0	19.5	02

State R or L version

Further sizes upon request

Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH264....	3.5.12T10EP	T10PL

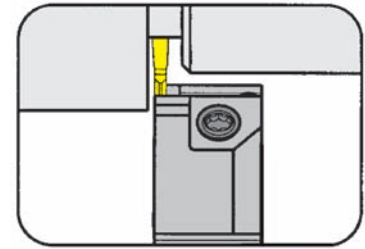
GROOVING and PARTING OFF



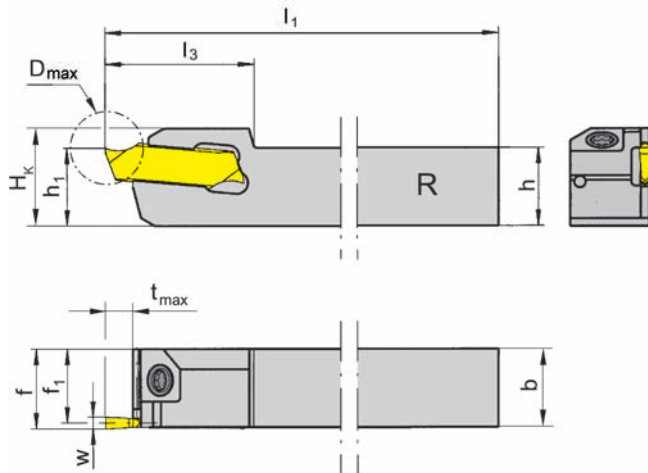
TOOLHOLDER Type

H264

with screwed clamping



Depth of groove up to .630" (16.0 mm)
Width of groove .098" (2.5 mm)



for use with Indexable insert

Type 264
S264



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	t _{max}	w	D _{max}	l ₃	H _k	Size
R/LH264.1212.03	12	12	120	12	10.75	12	4	2.5	32	17.5	14.5	03
R/LH264.1616.03	16	16	120	16	14.75	16	4	2.5	32	17.5	18.5	03
R/LH264.1212.13	12	12	120	12	10.75	12	10	2.5	32	19.0	14.5	03
R/LH264.1616.13	16	16	120	16	14.75	16	10	2.5	32	19.0	18.5	03
R/LH264.1212.23	12	12	120	12	10.75	12	16	2.5	32	25.0	14.5	03
R/LH264.1616.23	16	16	120	16	14.75	16	16	2.5	32	25.0	18.5	03

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH264.1...	3.5.12T10EP	T10PL



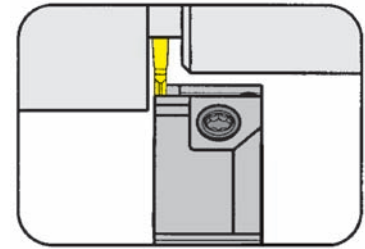
GROOVING and PARTING OFF



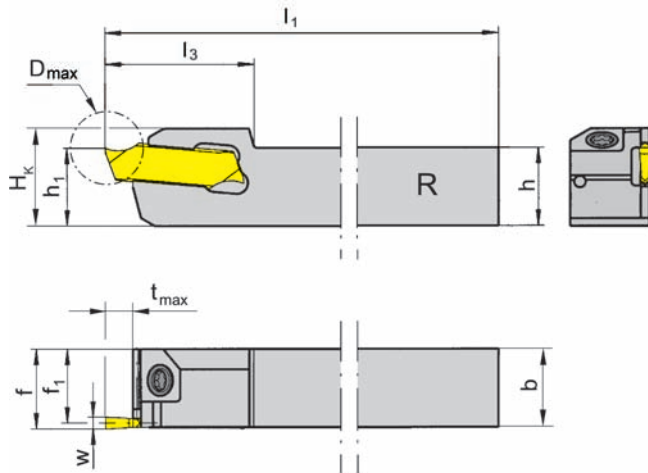
TOOLHOLDER Type

H264

with screwed clamping



Depth of groove up to .630" (16.0 mm)
Width of groove .118" (3.0 mm)



for use with Indexable insert

Type 264
S264



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	t _{max}	w	D _{max}	l ₃	H _k	Size
R/LH264.1212.04	12	12	120	12	10.5	12	5	3	32	17.5	15	04
R/LH264.1616.04	16	16	120	16	14.5	16	5	3	32	17.5	19	04
R/LH264.1212.14	12	12	120	12	10.5	12	10	3	32	19.0	15	04
R/LH264.1616.14	16	16	120	16	14.5	16	10	3	32	19.0	19	04
R/LH264.1212.24	12	12	120	12	10.5	12	16	3	32	25.0	15	04
R/LH264.1616.24	16	16	120	16	14.5	16	16	3	32	25.0	19	04

State R or L version

Dimensions in mm

Further sizes upon request

L

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH264.1...	3.5.12T10EP	T10PL

L24

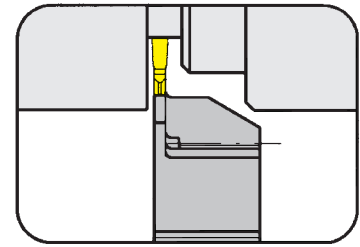
GROOVING and PARTING OFF



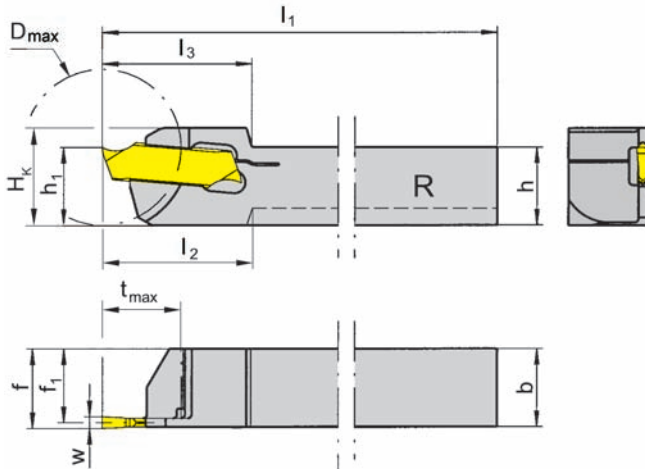
TOOLHOLDER Type

H264

with self clamping



Depth of groove up to .394" (10.0 mm)
Width of groove up to .118" (3.0 mm)



for use with Indexable insert

Type 264
S264



R = right hand version shown

L = left hand version

Part number	h	b	I ₁	h ₁	f ₁	f	I ₂	t _{max}	w	D _{max}	I ₃	H _k	Size
R/LH264.0808.51	8	8	120	10	7.25	8	18	7	1.5	20	18	12.5	01
R/LH264.1010.61	10	10	120	10	9.25	10	-	10	1.5	20	19	12.5	01
R/LH264.1010.62	10	10	120	10	9.00	10	-	10	2.0	20	19	12.5	02
R/LH264.1212.62	12	12	120	12	11.00	12	-	10	2.0	20	19	14.5	02
R/LH264.1212.63	12	12	120	12	10.75	12	-	10	2.5	32	19	14.5	03
R/LH264.1212.64	12	12	120	12	10.50	12	-	10	3.0	32	19	14.5	04

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

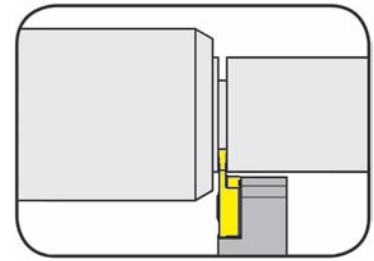
Toolholder	Wrench
R/LH264....	P39L



TOOLHOLDER Type

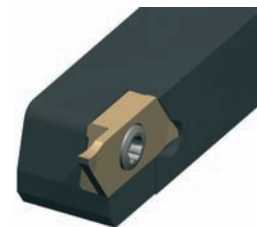
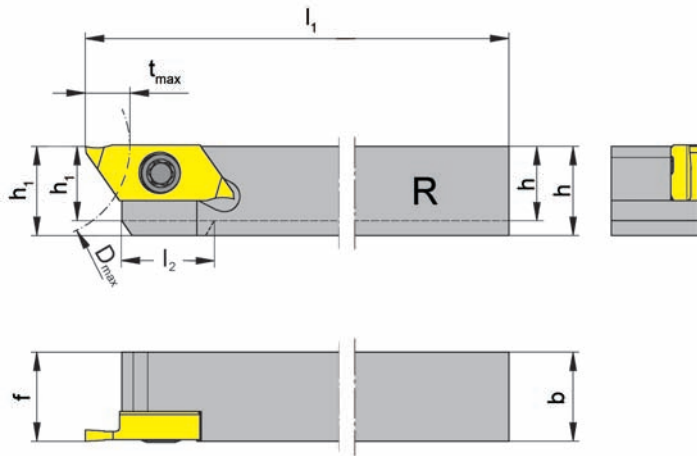
H274

Depth of groove up to .236" (6.0 mm)
Width of groove up to .118" (3.0 mm)



for use with Indexable insert

Type S274



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	t _{max}	D _{max}	Size
R/LH274.0808.04	8	8	100	8	8	6	25	04
R/LH274.1010.04	10	10	100	10	10			
R/LH274.1212.04	12	12	100	12	12			
R/LH274.1414.04	14	14	100	14	14			
R/LH274.1616.04	16	16	125	16	16			
R/LH274.2020.04	20	20	125	20	20			

State R or L version

Dimensions in mm

Further sizes upon request

L

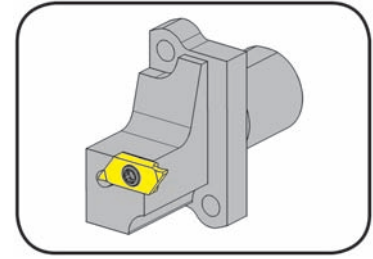
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH274....	030.3509.T15P	T15PQ

L26

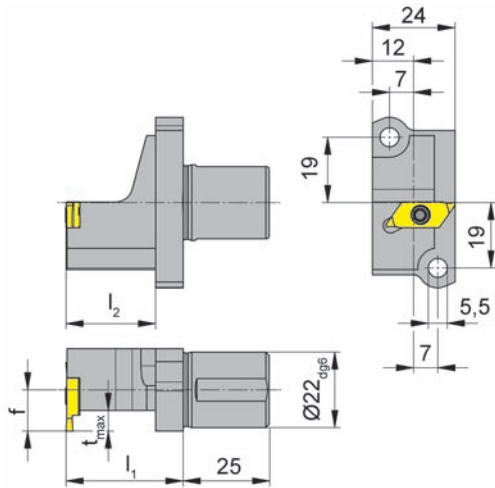
TOOLHOLDER Type

H274



Depth of groove up to
Width of groove up to

.236" (6.0 mm)
.118" (3.0 mm)



R = right hand version shown

L = left hand version

for use with Indexable
insert

Type S274

Star SV 12/20/32
SR 10/20/32 and SB 16

Part number	l_1	l_2	f	t_{max}	Size
R/LH274.A022.09.04			9		
R/LH274.A022.12.04	34	26	12	6	04
R/LH274.A022.16.04			16		
R/LH274.A022.09.07	34	26	9	6	07
R/LH274.A022.12.07			12		

State R or L version

Dimensions in mm

Further sizes upon request

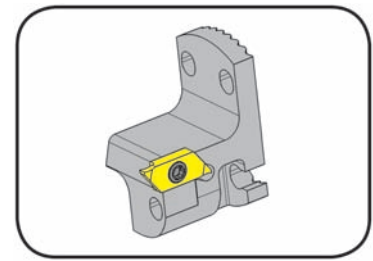
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH274.A022....	030.3513.T15P	T15PQ

L

CARTRIDGE Type

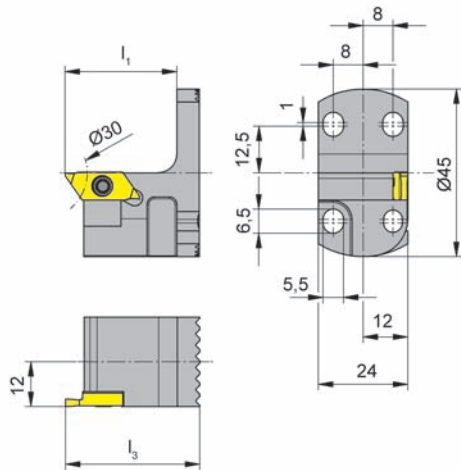
KT274



Depth of groove up to .236" (6.0 mm)
Width of groove up to .118" (3.0 mm)

for use with Indexable insert

Type S274



R = right hand version shown

L = left hand version

Part number	l_1	l_3	Size
R/LKT274.2445.04	30	36	04

State R or L version

Dimensions in mm

Further sizes upon request

Note:

$t_{max} = .236"$ (6.0 mm) can be reached only when $D_{max} \leq 1.181"$ (30 mm)

L

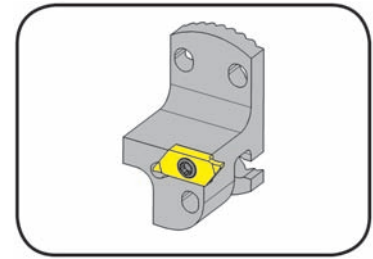
Spare parts

Cartridge	Screw	TORX PLUS® Wrench
R/LKT274.2445.04	030.3509.T15P	T15PQ

L28

CARTRIDGE Type

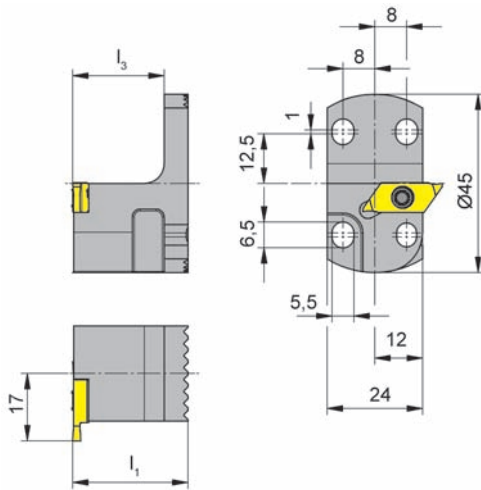
KTC274



Depth of groove up to .236" (6.0 mm)
Width of groove up to .118" (3.0 mm)

for use with Indexable insert

Type S274



R = right hand version shown

Part number	l_1	l_3	Size
RKTC274.2445.04	29	23	04

Further sizes upon request

Dimensions in mm

$t_{max} = .236"$ (6.0 mm) can be reached only when $D_{max} \leq 1.181"$ (30 mm)

Spare parts

Cartridge	Screw	TORX PLUS® Wrench
RKTC274.2445.04	030.3509.T15P	T15PQ

L

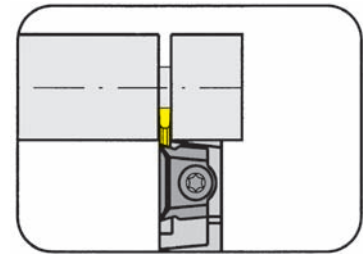
GROOVING and PARTING OFF



TOOLHOLDER Type

361

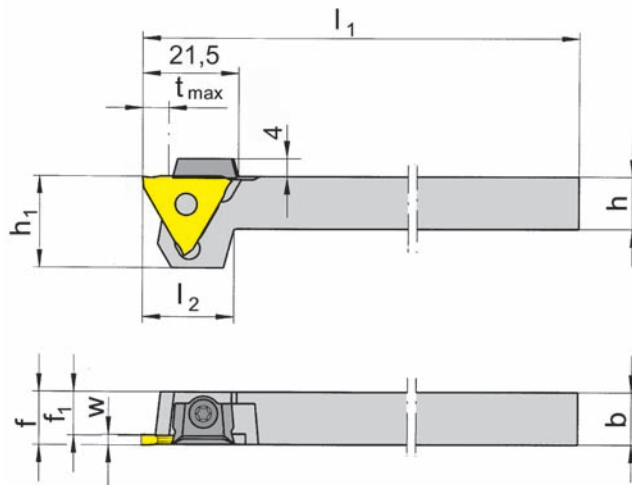
reduced head size



Depth of groove up to .236" (6.0 mm)
Clamping range .020 - .154" (0.5 - 3.9 mm)

for use with Indexable insert

Type 312
N312
S312
U312
US312



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size	Clamping range
R/L361.1212.01	12	12	100	19	10.5	f ₁ +w-a ₁	17	4	01	0.5-1.9
R/L361.1212.02	12	12	100	19	9.5	f ₁ +w-a ₁	17	6	02	1.9-2.9
R/L361.1212.03	12	12	100	21	8.5	f ₁ +w-a ₁	21	6	03	2.9-3.9

State R or L version

w, a₁ see indexable inserts

Dimensions in mm

Further sizes upon request

t_{max} can be reached only with workpiece Ø ≤ 40 mm

L

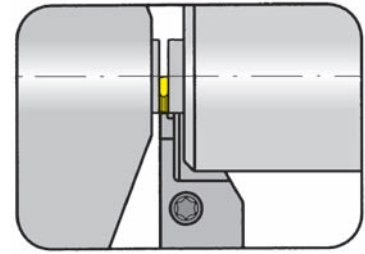
Spare parts

Toolholder	Clamp	Screw	TORX PLUS® Wrench
R/L361.1212.0...	12.3	030.0422.T10P	T10PW

L30

TOOLHOLDER Type

368

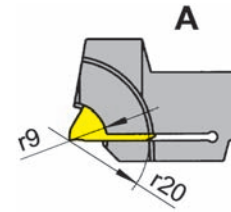
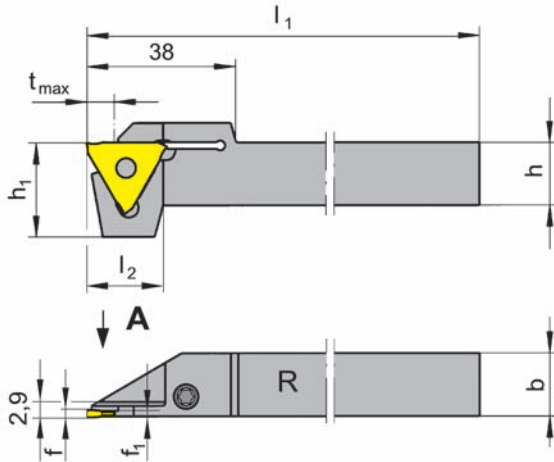


Depth of groove up to .315" (8.0 mm)
Width of groove up to .059" (1.5 mm)

for machines TRAUB (TNL12/7)

for use with Indexable insert

Type 312
U312



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size	Clamping range
R/L368.1212.08	12	12			1.0					
R/L368.1212.11	12	12	95	24	1.3	f ₁ +a ₁	19.5	8	01	0.5 - 1.9
R/L368.1616.08	16	16			1.0					
R/L368.1616.11	16	16			1.3					

State R or L version

a₁ see indexable inserts

Dimensions in mm

Toolholder R/L368...08 for indexable inserts:

R/L312.0805... / R/L312.0808... / R/L312.0510...
R/L312.0512... / R/L312.1210... / R/L312.0012...

Toolholder R/L368...11 for indexable inserts:

R/L312.0515... / R/L312.0015...

Further sizes upon request

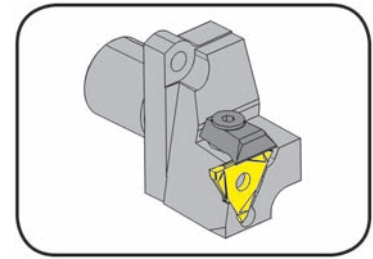
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/L368.1...	4.15T15P	T15PQ

L

TOOLHOLDER Type

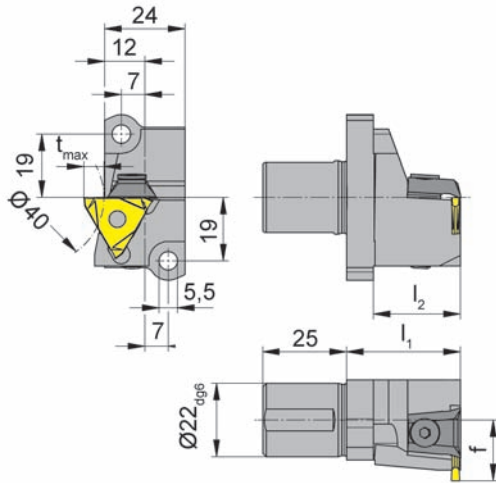
369



Depth of groove up to .236" (6.0 mm)
Clamping range up to .020 - .114" (0.5 - 2.9 mm)

for use with Indexable insert

Type 312
U312



L = left hand version shown

Star SV 12/20/32
SR 10/20/32 and SB 16

Part number	l_1	l_2	f	t_{max}	Size	Clamping range
L369.A022.18.01	34	26	18.2	4	01	0.5 - 1.9
L369.A022.18.02	34	26	18.2	6	02	1.9 - 2.9

Further sizes upon request

Dimensions in mm

L

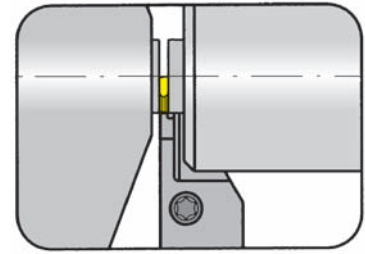
Spare parts

Toolholder	Clamp	Screw	Wrench
L369.A022.18.0...	16.4	6.25	SW3DIN911

L32

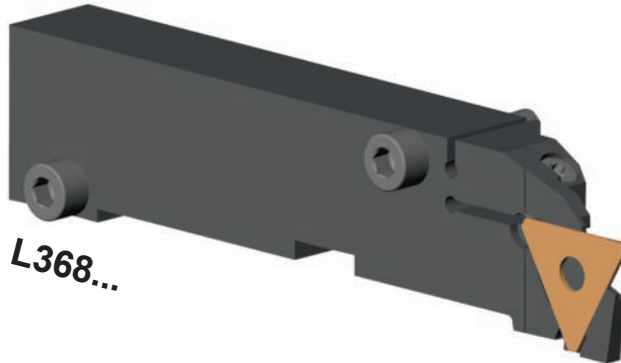
Tools for Tornos DECO2000

Depth of groove up to .315" (8.0 mm)
 Width of groove up to .059" (1.5 mm)



for use with Indexable insert

Type 312
 U312



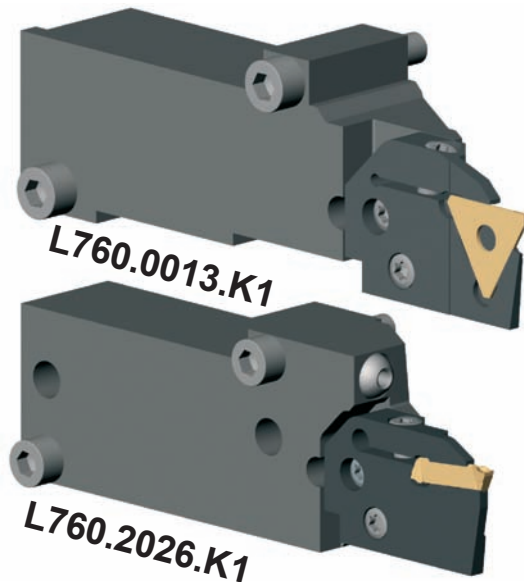
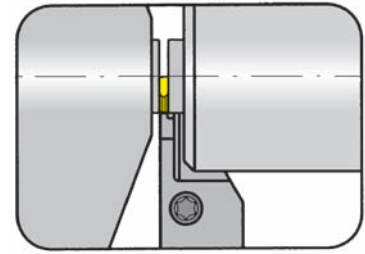
Basic toolholder	t _{max}	w	Indexable inserts	Machine
L368.0710.08	8	0.5 - 1.2	R/L312.0805... R/L312.0808... R/L312.0510... R/L312.0512... R/L312.1210... 312.0012...	DECO7/10
L368.0710.11	8	1.5	R/L312.0515... 312.0015...	

Dimensions in mm



Tools for Tornos DECO2000

Depth of groove up to .591" (15.0 mm)
Width of groove up to .146" (3.7 mm)



for Cassettes

Type LNK368
LNK760

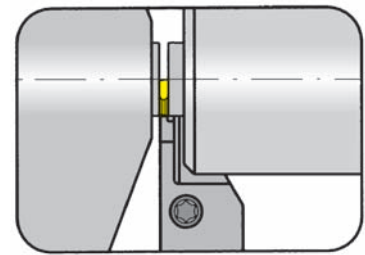


Basic toolholder	Cassette	t _{max}	w	Indexable inserts	Machine
L760.0013.K1	LNK368.0760.08	8	0.5 - 1.2	R/L312.0805... R/L312.0808... R/L312.0510... R/L312.0512... R/L312.1210... 312.0012...	DECO13
	LNK368.0760.11	8	1.5	R/L312.0515... 312.0015...	
L760.2026.K1	LNK760.0224.01 LNK760.0224.02 LNK760.0224.03	15	2.0 - 2.4 2.4 - 2.8 2.8 - 3.7	S224...	DECO20/26

Dimensions in mm

Tools for Tornos DECO2000

Depth of groove up to .591" (15.0 mm)
 Width of groove up to .146" (3.7 mm)



for Basic toolholder

Type L760.0013.K1
 L760.2026.K1



LNK368...



LNK760...



Cassette	t _{max}	w	Indexable inserts	Machine
LNK368.0760.08	9	0.5 - 1.2	R/L312.0805... R/L312.0808... R/L312.0510... R/L312.0512... R/L312.1210... 312.0012...	DECO13 DECO20/26
LNK368.0760.11	9	1.5	R/L312.0515... 312.0015...	
LNK760.0224.01 LNK760.0224.02 LNK760.0224.03	15	2.0 - 2.4 2.4 - 2.8 2.8 - 3.7	S224...	

Dimensions in mm





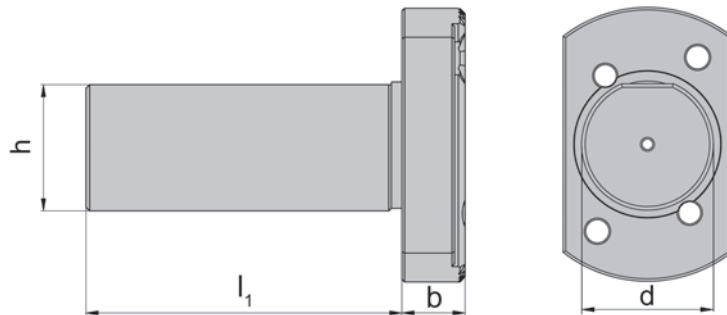
L

BASIC TOOLHOLDER Type

G

without cartridge

for adjustable holder Graf type N and HORN
BKT105.2445.01/2



Part number	d	l ₁	h	b	Machine tool	
G016021	16,00	21	14	6	Star	
G016040		40			Traub/Manurhin	
G034040	3/4"	40	18	6	Citizen	
G034050		50				
G034120		120				
G020030	20,00	30	18	6	Citizen	
G020040		40			Hanwha	
G020100		100			Tornos	
G020150		150			Manurhin/Tornos	
G022023	22,00	23	20	6	Star	
G022025SR16/20R		25				12
G022030		30				6
G022030SR32		30				12
G022070		70				6

Further sizes upon request

Dimensions in mm and inch

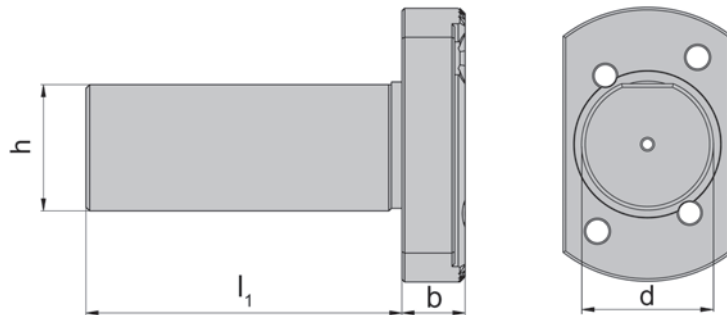
L

BASIC TOOLHOLDER Type

G

without cartridge

for adjustable holder Graf type N and HORN
BKT105.2445.01/2



Part number	d	l ₁	h	b	Machine tool
G025060	25,0	60	23	12	Hanwha
G025070		70		6	Manurhin/Tornos
G025100		100		6	Manurhin/Tornos
G025160		160		6	Manurhin/Tornos
G010060	1"	60	23	6	Citizen
G010100		100			
G028006	28,0	6	26	12	Hanwha
G028080		80			Traub
G030045	30,0	45	27	12	Maier
G033040	33,0	40	31	12	Hanwha
G034020	34,0	20	32	12	Maier
G034044		44			Maier/Hanwha

Further sizes upon request

Dimensions in mm and inch

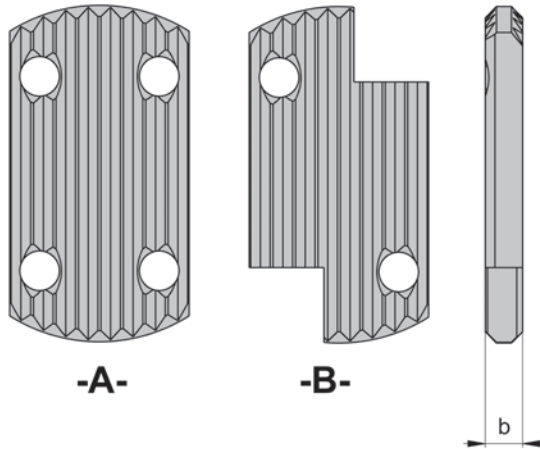
L

ADAPTOR Type

Z

without cartridge

for adjustable holder Graf type N and HORN
BKT105.2445.01/2



Part number	b	Form
Z5	5	A
Z10	10	
Z15	15	
Z20	20	
Z25	25	
Z30	30	
Z5SR16/20R	5	B
Z10SR16/20R	10	
Z15SR16/20R	15	
Z20SR16/20R	20	
Z25SR16/20R	25	
Z30SR16/20R	30	

Further sizes upon request

Dimensions in mm



PLATE BETWEEN GRAF Type

N

without Cartridge

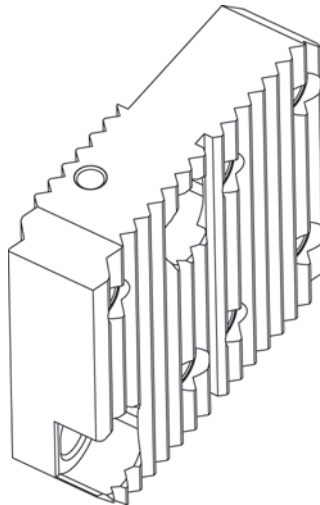


for adjustable holder Graf type N and HORN BKT105.2445.01/2

for back working

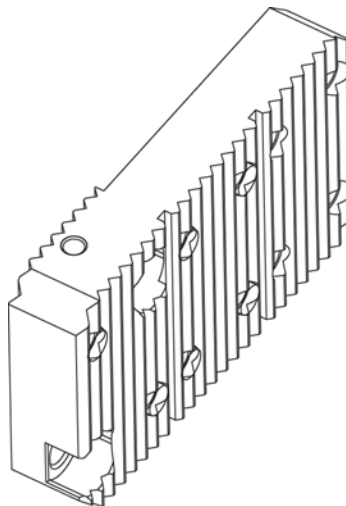
Part number N11

For alternatively 2 cartridges



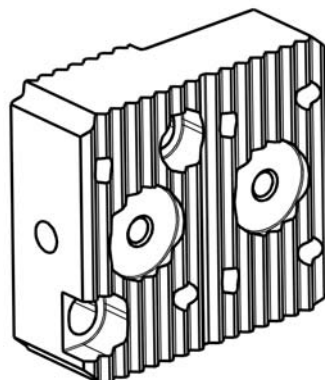
Part number N12

For alternatively 3 cartridges



Part number N93IK

with through coolant supply



L

ADJUSTABLE HOLDER Type **N**

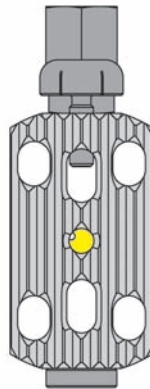
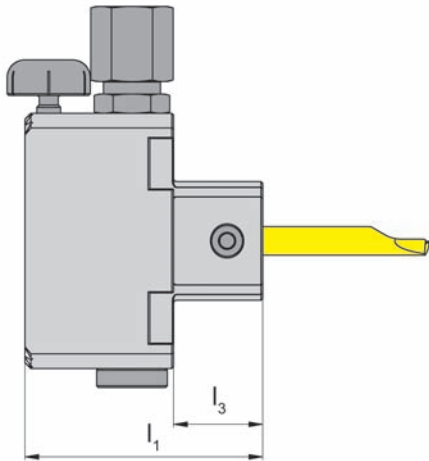


Bore Ø from	.008" (0.2 mm)
Depth of groove up to	.098" (2.5 mm)
Width of groove up to	.079" (2.0 mm)

with through coolant supply

for use with Insert

Type 105
U105



Part number	l_1
N09IK	40

Further sizes upon request

Dimensions in mm

Spare parts

Adjustable holder	Screw	Height adjustment screw	Coolant supply
N09IK	6.075T15P	002.00.69	004.00.19



ADJUSTABLE HOLDER Type **N**

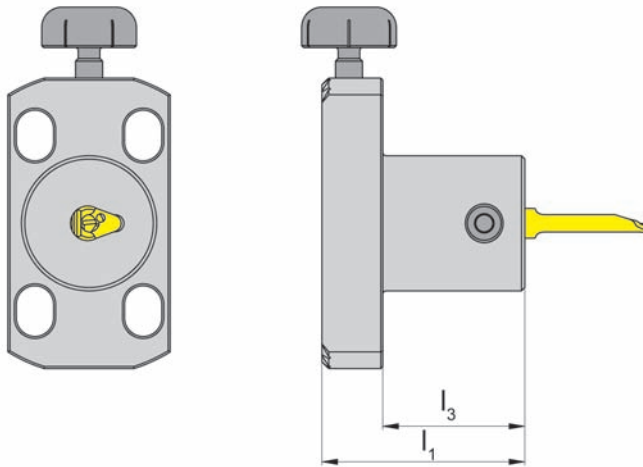


Bore Ø from	.008" (0.2 mm)
Depth of groove up to	.098" (2.5 mm)
Width of groove up to	.079" (2.0 mm)

no through coolant supply

for use with Insert

Type 105
U105



Part number	l_1
N09	30

Further sizes upon request

Dimensions in mm

L

Spare parts

Adjustable holder	Screw	Height adjustment screw
N09	6.075T15P	002.00.69

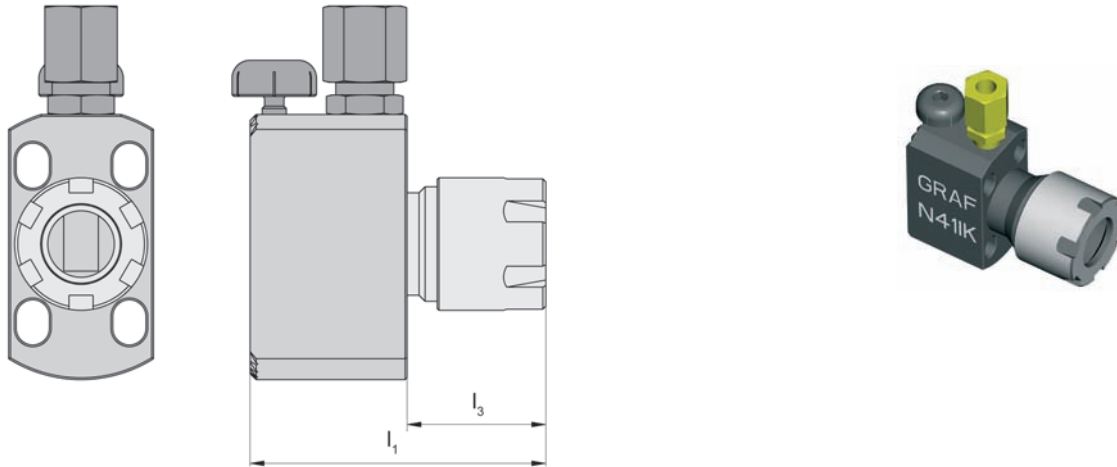
L42

ADJUSTABLE HOLDER Type **N**



with chucking nut ER16 / E20 system Graf

with through coolant supply



Part number	l_1	Remark
N07IK	54	ER16
N41IK	64	ER20

Further sizes upon request

Dimensions in mm

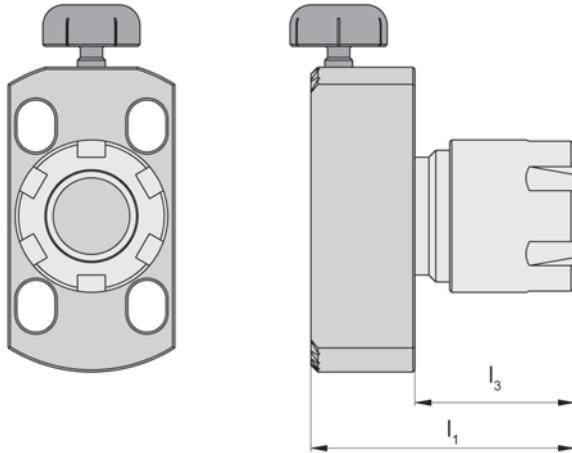
Spare parts

Adjustable holder	Chucking nut	Height adjustment screw	Coolant supply	Set of seals D3
N07IK	62.000.16	002.00.69	004.00.19	64.600.16.3-10
N41IK	62.000.20	002.00.69	004.00.19	64.600.20.3-13

ADJUSTABLE HOLDER Type **N**



with chucking nut ER16 system Graf



for use with Basic toolholder

Type Horn BGT
Graf G



Part number	l_1	Remark
N07	37	ER16

Further sizes upon request

Dimensions in mm

L

Spare parts

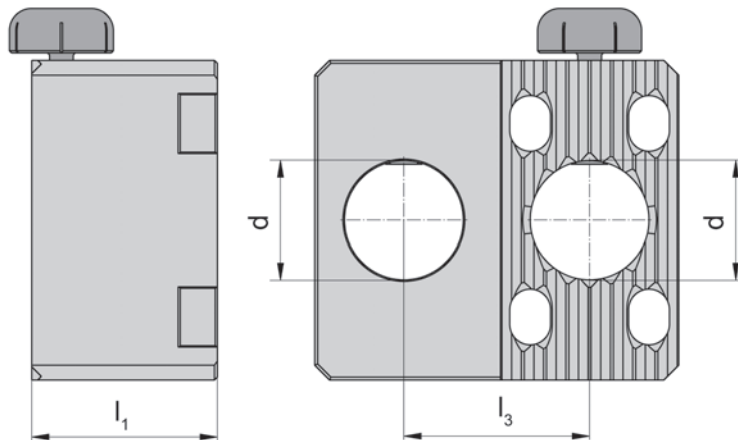
Adjustable holder	Chucking nut	Height adjustment screw
N07	62.000.16	002.00.69

L44

ADJUSTABLE HOLDER Type **N**

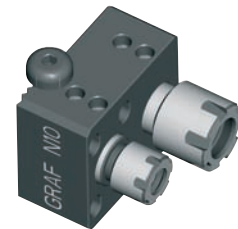


for collet holders ER11 / ER16 system Graf



for use with Basic toolholder

Type Horn BGT
Graf G



Part number	l_1
N10	25

Further sizes upon request

Dimensions in mm

Spare parts

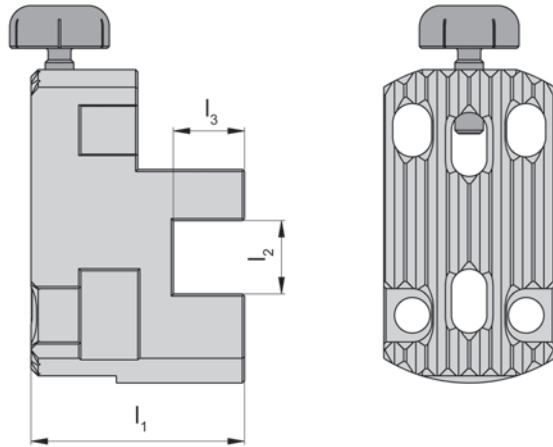
Adjustable holder	Threaded pin	Height adjustment screw	Collet holder
N10	002.00.11	002.00.69	GZ66.1620.11ER11



ADJUSTABLE HOLDER Type **N**



for square shank system Graf



for use with Basic toolholder

Type Horn BGT
Graf G



Part number	l_1
N06	10

Further sizes upon request

Dimensions in mm

L

Spare parts

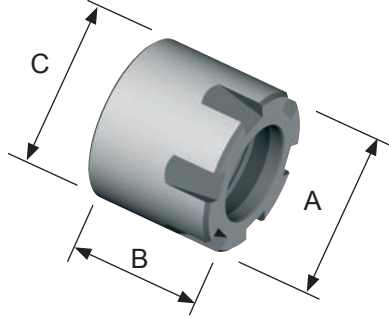
Adjustable holder	Threaded pin	Height adjustment screw
N06	002.00.11	002.00.69

L46

Chucking nut

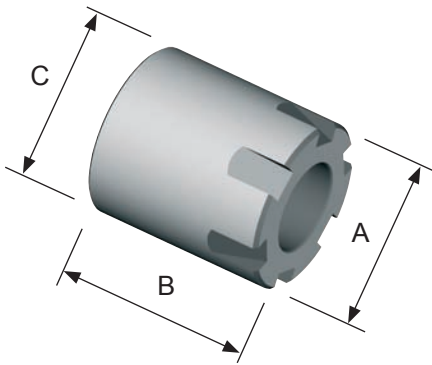


ER-M



ER-M	A	B	C
62 000 08-ER 8	12	10,8	M10x0,75
62 000 11-ER 11	16	12	M13x0,75
62 000 16-ER 16	22	18	M19x1
62 000 20-ER 20	28	19	M24x1
62 000 25-ER 25	35	20	M30x1

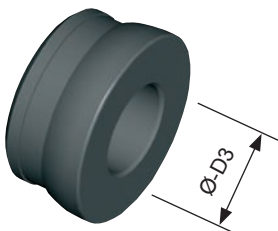
ER-MA sealed



ER-MA	A	B	C
62 600 16-ER 16	22	24.5	M19x1
62 600 20-ER 20	28	26.5	M24x1
62 600 25-ER 25	35	27.5	M30x1

Dimensions in mm

Sealing rings for chucking nuts ER-MA...



completed set:

Part number	Ø D3
64 600 16-ER 16	3.0-3.5...9.5-10.0 mm
64 600 20-ER 20	3.0-3.5...12.5-13.0 mm
64 600 25-ER 25	3.0-3.5...15.5-16.0 mm

Dimensions in mm

The sealing rings can be ordered separately.

Example:

Part number	Diameter range	possible from-up to
ER 16 64 600 16 <u>30</u>	3.01 - 3.50	3 - 10
ER 20 64 600 20 <u>45</u>	4.51 - 5.00	3 - 13
ER 25 64 600 25 <u>80</u>	8.01 - 8.50	3 - 16

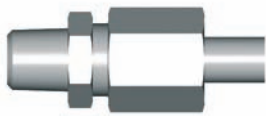
Dimensions in mm

Standard connection for through cooling

for pipe \varnothing 6 mm

Connection for through cooling
004.00.19

M8 x 1



for pipe \varnothing 6 mm

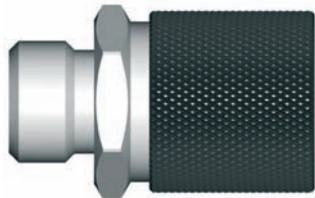


Connection for through cooling
004.00.22

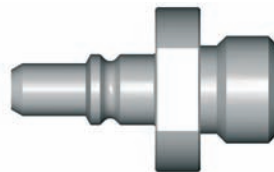
M8 x 1

Clip connection for through cooling

M10 x 1

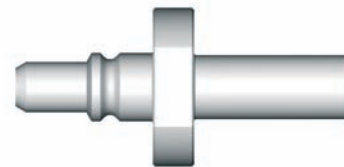


Clip connection
004.00.49



Plug

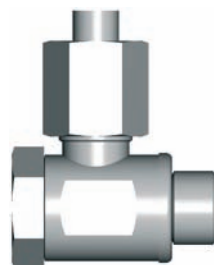
M8 x 1 - 004.00.56
G1/8" - 004.00.57



Plug

\varnothing 6 mm - 004.00.59

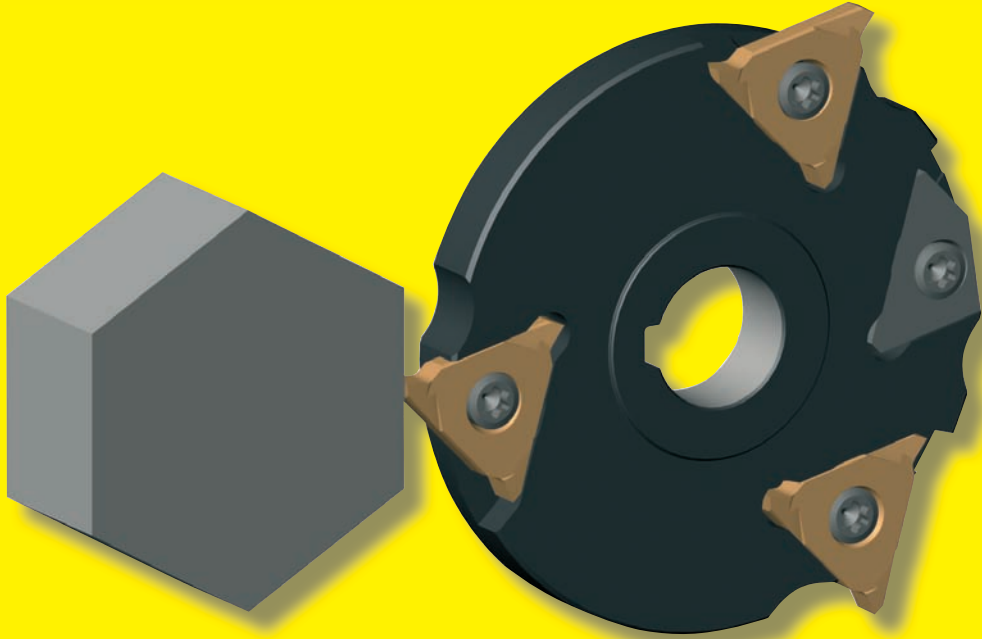
for pipe \varnothing 6 mm



Coupling

M8 x 1 - 004.00.61
G1/8" - 004.00.16

HORN - THE LEADERS IN GROOVING TECHNOLOGY



POLYGON MILLING

HORN - INTELLIGENT TOOL DESIGN AT WORK.



L

For further information, please see HORN catalog "CARBIDE MILLING TOOLS".

HCG - HORN Catalog Guide

MODULAR TOOLING SYSTEM

Couplings	Toolholder system												
	Supermini®	Mini	100	117	264	274	360	356	368	224	220	B224	B229
HORN Polygon shank			•				•	•	•	•	•	•	•
KM			•				•	•	•	•	•	•	•
KM Micro	•	•			•	•							
HSK-C63			•				•	•		•	•	•	•
HSK-T63			•				•	•		•	•	•	•
HSK-T40 (...840...)			•		•	•	•	•	•	•			
HSKW (Schütte...849...)	•		•	•			•	•	•	•	•		
HORN Polygon shank (Schütte...849...)	•		•	•			•	•	•	•	•		

Machining													
Internal grooving	•	•										•	•
Extern. grooving			•		•	•	•	•	•	•	•		
Face grooving							•	•		•	•		
Parting off			•		•	•	•	•	•	•	•		
Profiling				•									

Cassette			•		•	•	•	•	•	•	•	•	•
----------	--	--	---	--	---	---	---	---	---	---	---	---	---

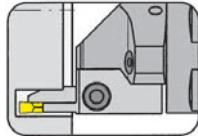
Cassette type	Inserts type												
R/L/NK100			S100										
R/L/NK264					S264								
R/L/NK274						S274							
R/L/NK360							S312 312						
R/L/NK356								315					
R/L/NK368									S312 312				
R/L/NK,R/LIK,R/LAK224										S224			
R/L/NK,R/LIK,R/LAK220											S229 229		
R/LBK224												S224	
R/LBK229													S229 229

Chapter	M
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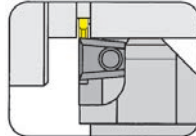
Inserts can be selected in the chapters of the responsible tooling system.

MODULAR TOOLING SYSTEM **M**

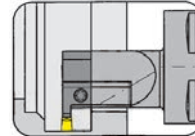
HORN Polygon shank



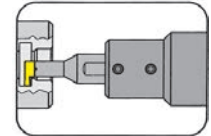
Page M4-M5



Page M6-M7

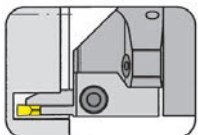


Page M8-M9

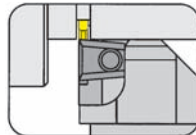


Page M10

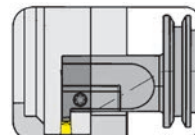
HORN-KM



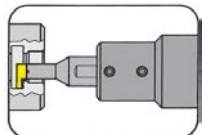
Page M12-M13



Page M14-M15

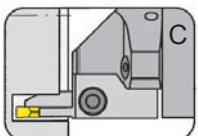


Page M16-M17

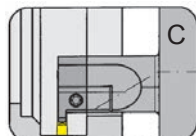


Page M18

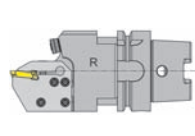
HORN HSK-C63
HORN HSK-T63



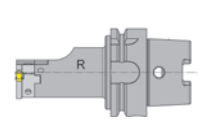
Page M20-M21



Page M22-M23



Page M26-M29



Page M30-M31

Cassettes

radial
Page M33-M40

axial
Page M42-M57

HORN HSK-T40

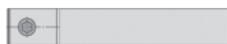


Page M59

Cassettes

Page M60-M66

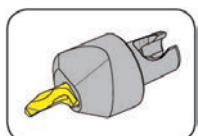
HORN KM16 Micro



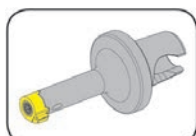
Page M68



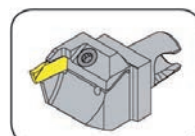
Page M69



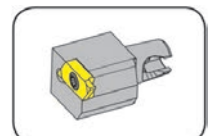
Page M70-M71



Page M72-M73

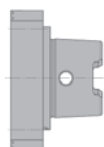


Page M74-M75

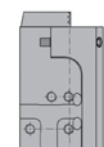


Page M76-M77

HORN 849



Page M81-M82



Page M87-M88

Cassettes

Page
M83-M86
M89-M90

M

Adapters for the modular systems HORN Polygon shank according to ISO 26623-3, HORN-KM and HORN-HSK with different cassettes are suitable for grooving, parting off and face grooving.

Excellent stability is guaranteed through the HORN designed interface between the cassette and adapter. The cassettes are available for four insert systems - 312, S224, S229 and S100.

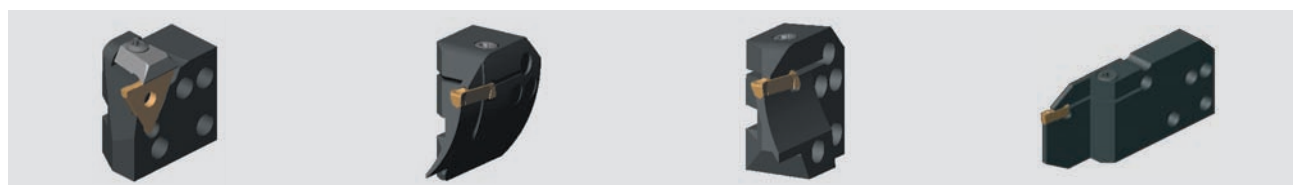
Modular Tooling System

External machining

Coupling system	HORN Polygon shank ISO 26623-3	KM	HSK DIN 69893
0° straight			
90° cranked			
Version	right and left hand		

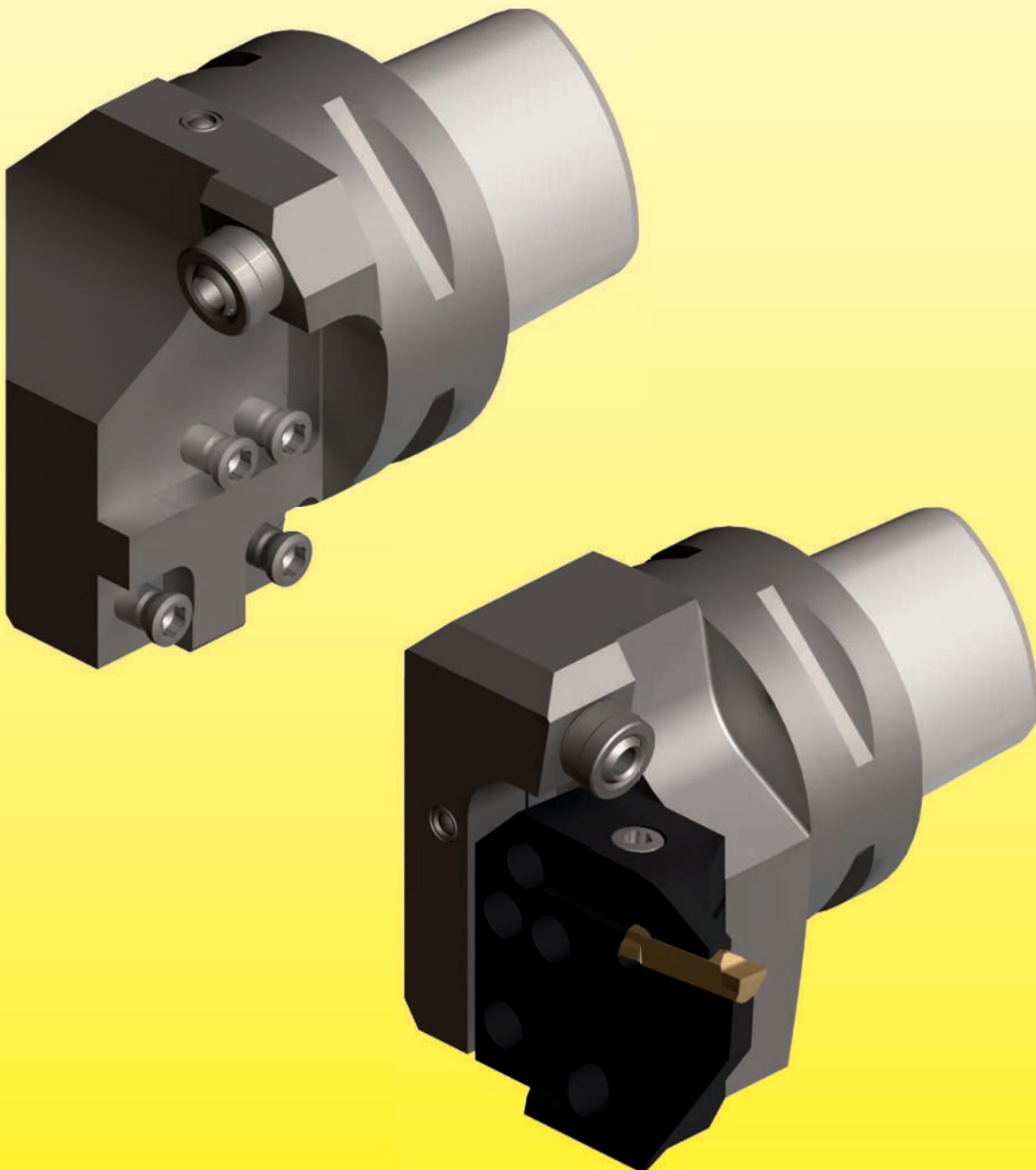
Cassette program

type	Insert		RNK/LNK	RIK/LIK	RAK/LAK	Tool length
360	312		•	-	-	
224	S224		•	•	•	$l = l_1 + l_k$ (Cassette)
220	S229		•	•	•	
220	S100		•	-	-	



M

HORN Polygon shank according to ISO 26623-3



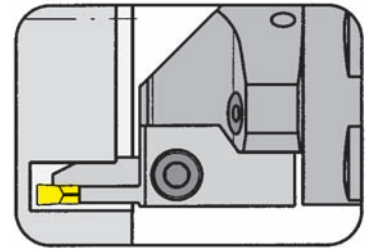
M

M3

BASIC TOOLHOLDER Type

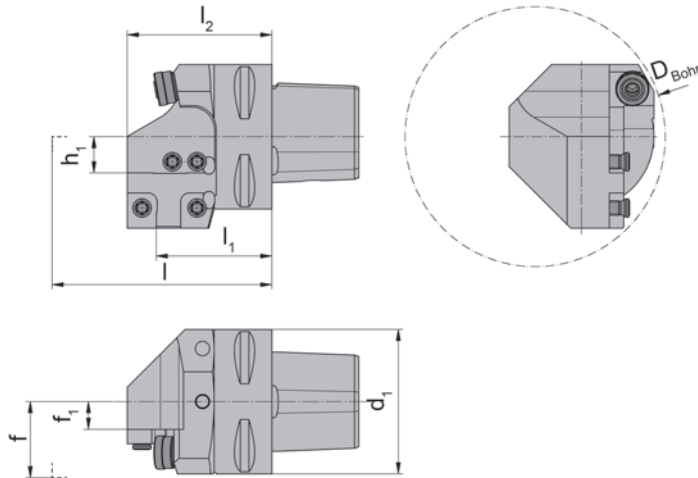
220C

without cassette



Basic toolholder for cassettes type 100/220/224/356/360

with through coolant supply



R = right hand version shown

L = left hand version

HORN Polygon shank according to ISO 26623-3

Part number	l_1	h_1	f_1	f	l_2	l
R/L220.00C3.K1	36	12.5	4.6	f_1+f_3	50	l_1+l_k
R/L220.00C4.K1	40		4.6		50	
R/L220.00C5.K1	40		9.6		50	
R/L220.00C6.K1	42		16.1		52	

State R or L version

Dimensions in mm

Further sizes upon request

Note:

Dimensions for D_{min} , t_{max} and w see cassettes

M

Spare parts

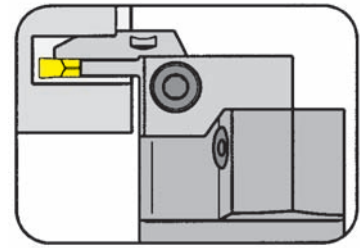
Basic toolholder	Screw	TORX PLUS® Wrench	Coolant spray nozzle
R/L220.00C...	5.12T20P	T20PQ	020.1008.2977

M4

BASIC TOOLHOLDER Type

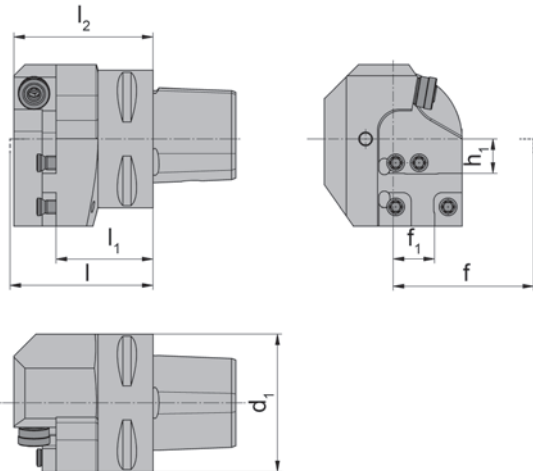
220C

without cassette



Basic toolholder for cassettes type 100/220/224/356/360

with through coolant supply



R = right hand version shown

L = left hand version

HORN Polygon shank according to ISO 26623-3

Part number	l_1	h_1	f_1	f	l_2	l
R/L220.00C3.K2	31.2		10.0		46.5	
R/L220.00C4.K2	35.2	12.5	10.0		50.5	
R/L220.00C5.K2	35.2		15.0	f_1+l_k	50.5	l_1+f_3
R/L220.00C6.K2	37.2		21.5		52.5	

State R or L version

Dimensions in mm

Further sizes upon request

Note:

Dimensions for D_{min} , t_{max} and w see cassettes

Spare parts

Basic toolholder	Screw	TORX PLUS® Wrench	Coolant spray nozzle
R/L220.00C...	5.12T20P	T20PQ	020.1008.2977

M

M5

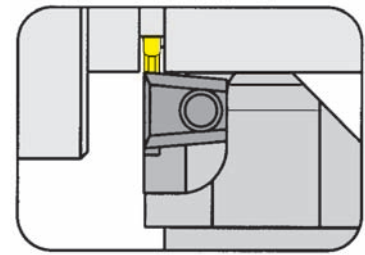
GROOVING (external)



TOOLHOLDER Type

360C

with cassette

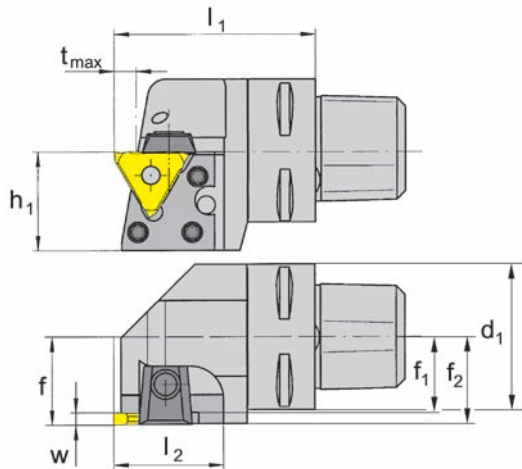


Depth of groove up to .236" (6.0 mm)
Clamping range .020 - .114" (0.5 - 2.9 mm)

with through coolant supply

for use with Indexable insert

Type 312
U312



R = right hand version shown

L = left hand version

HORN Polygon shank according to ISO 26623-3

Part number	l_1	h_1	f_1	f	l_2	t_{max}	f_2	Size	Clamping range
R/L360.00C3.K1	45	27.3	15.0	f_1+w-a_1	31	4	16.5	01	0.5 - 1.9
R/L360.00C4.K1	50	27.3	19.0				20.5		
R/L360.00C5.K1	50	27.3	24.0				25.5		
R/L360.00C6.K1	55	31.5	30.5				32.0		
R/L360.00C3.K2	45	27.3	14.0	f_1+w-a_1	31	6	16.5	02	1.9 - 2.9
R/L360.00C4.K2	50	27.3	18.0				20.5		
R/L360.00C5.K2	50	27.3	23.0				25.5		
R/L360.00C6.K2	55	31.5	29.5				32.0		

State R or L version

w, a_1 see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Cassette	Clamp	TORX PLUS® Wrench	Screw	Wrench
L360.00C...K1	LK360.00.01	16.4	T15PQ	030.0410.T15P	SW3DIN911
L360.00C...K2	LK360.00.02	16.4	T15PQ	030.0410.T15P	SW3DIN911
R360.00C...K1	RK360.00.01	16.4	T15PQ	030.0410.T15P	SW3DIN911
R360.00C...K2	RK360.00.02	16.4	T15PQ	030.0410.T15P	SW3DIN911

M6

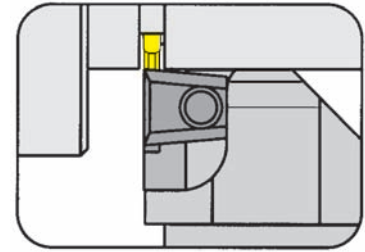
M

GROOVING (external)



TOOLHOLDER Type

360C
with cassette

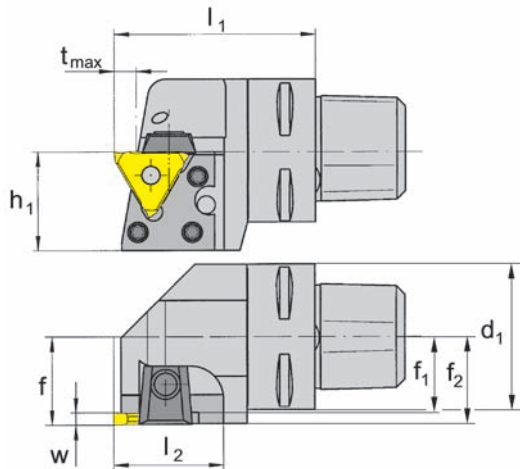


Depth of groove up to .236" (6.0 mm)
Clamping range .114 - .248" (2.9 - 6.3 mm)

with through coolant supply

for use with Indexable insert

Type 312
U312



R = right hand version shown

L = left hand version

HORN Polygon shank according to ISO 26623-3

Part number	l_1	h_1	f_1	f	l_2	t_{max}	f_2	Size	Clamping range
R/L360.00C3.K3	45	27.3	13.0	f_1+w-a_1	31	6	16.5	03	2.9 - 3.9
R/L360.00C4.K3	50	27.3	17.0				20.5		
R/L360.00C5.K3	50	27.3	22.0				25.5		
R/L360.00C6.K3	55	31.5	28.5				32.0		
R/L360.00C3.K4	45	27.3	11.3	f_1+w-a_1	31	6	16.5	04	3.9 - 6.3
R/L360.00C4.K4	50	27.3	15.3				20.5		
R/L360.00C5.K4	50	27.3	20.3				25.5		
R/L360.00C6.K4	55	31.5	26.8				32.0		

State R or L version

w, a_1 see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

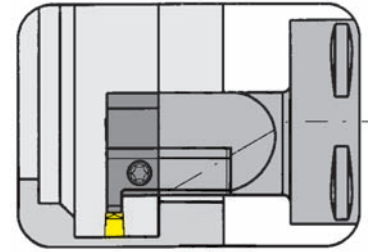
Toolholder	Cassette	Clamp	TORX PLUS® Wrench	Screw	Wrench
L360.00C...K3	LK360.00.03	16.4	T15PQ	030.0410.T15P	SW3DIN911
L360.00C...K4	LK360.00.04	16.4	T15PQ	030.0410.T15P	SW3DIN911
R360.00C...K3	RK360.00.03	16.4	T15PQ	030.0410.T15P	SW3DIN911
R360.00C...K4	RK360.00.04	16.4	T15PQ	030.0410.T15P	SW3DIN911



BASIC TOOLHOLDER Type

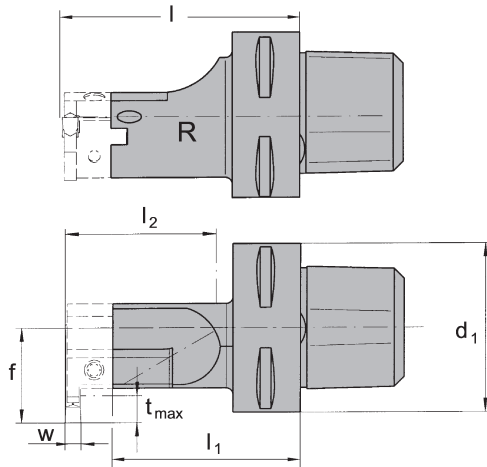
B224C

without cassette



Basic toolholder for cassettes type BK224

with through coolant supply



R = right hand version shown

L = left hand version

HORN Polygon shank according to ISO 26623-3

Part number	d ₁	l	l ₁	l ₂	f
R/LB224.00C3.1.K2 R/LB224.00C3.2.K2	32	$l_1 + b_1 + w/2$	39.3 54.3	35 50	32
R/LB224.00C4.1.K2 R/LB224.00C4.2.K2	40	$l_1 + b_1 + w/2$	49.3 69.3	40 60	32
R/LB224.00C5.1.K2 R/LB224.00C5.2.K2	50	$l_1 + b_1 + w/2$	59.3 79.3	50 70	32
R/LB224.00C6.1.K2 R/LB224.00C6.2.K2	63	$l_1 + b_1 + w/2$	69.3 89.3	58 78	32

State R or L version

Dimensions in mm

Further sizes upon request

Note:

Dimensions for D_{min} , t_{max} and w see cassettes

M

Spare parts

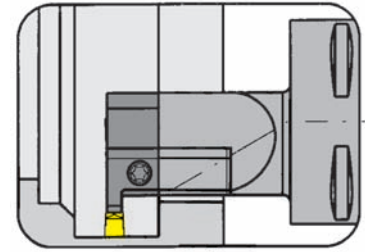
Basic toolholder	Screw	TORX PLUS® Wrench
R/LB224.00C...	030.0518.T20P	T20PQ

M8

BASIC TOOLHOLDER Type

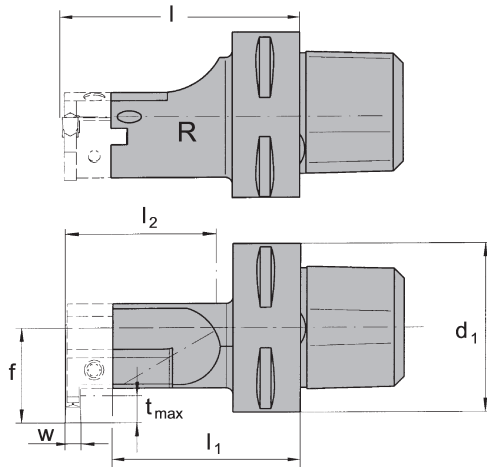
B229C

without cassette



Basic toolholder for cassettes type BK229

with through coolant supply



R = right hand version shown

L = left hand version

HORN Polygon shank according to ISO 26623-3

Part number	l	l ₁	l ₂	f
R/LB229.00C3.1.K2	$l_1 + b_1 + w/2$	38.5	35	35.5
R/LB229.00C3.2.K2		53.5	50	
R/LB229.00C4.1.K2	$l_1 + b_1 + w/2$	48.5	40	35.5
R/LB229.00C4.2.K2		68.5	60	
R/LB229.00C5.1.K2	$l_1 + b_1 + w/2$	58.5	50	35.5
R/LB229.00C5.2.K2		78.5	70	
R/LB229.00C6.1.K2	$l_1 + b_1 + w/2$	68.5	58	35.5
R/LB229.00C6.2.K2		88.5	78	

State R or L version

Dimensions in mm

Further sizes upon request

Note:

Dimensions for D_{min} , t_{max} and w see cassettes

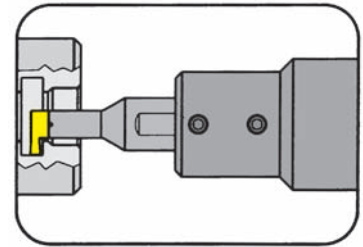
Spare parts

Basic toolholder	Screw	TORX PLUS® Wrench
R/LB229.00C...	030.0518.T20P	T20PQ

M

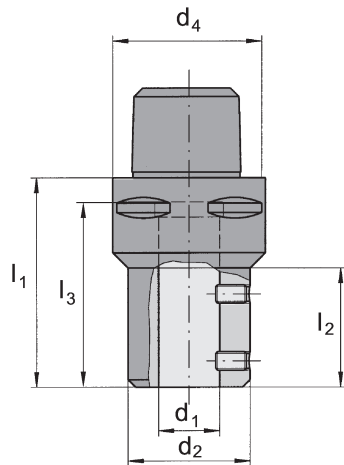
ADAPTOR Type

001C



HORN Polygon shank according ISO 26623-3

for cylindrical shanks with standard clamping flat



Part number	l_1	l_2	l_3	d_2	d_1	d_4
001.00C3.16	65	-	55	40	16	32
001.00C3.20	70	-	58	40	20	32
001.00C4.16	65	-	55	40	16	40
001.00C4.20	70	-	58	40	20	40
001.00C5.16	65	44	55	40	16	50
001.00C5.20	70	49	58	40	20	50
001.00C6.20	70	45	58	40	20	63

Further sizes upon request

Dimensions in mm

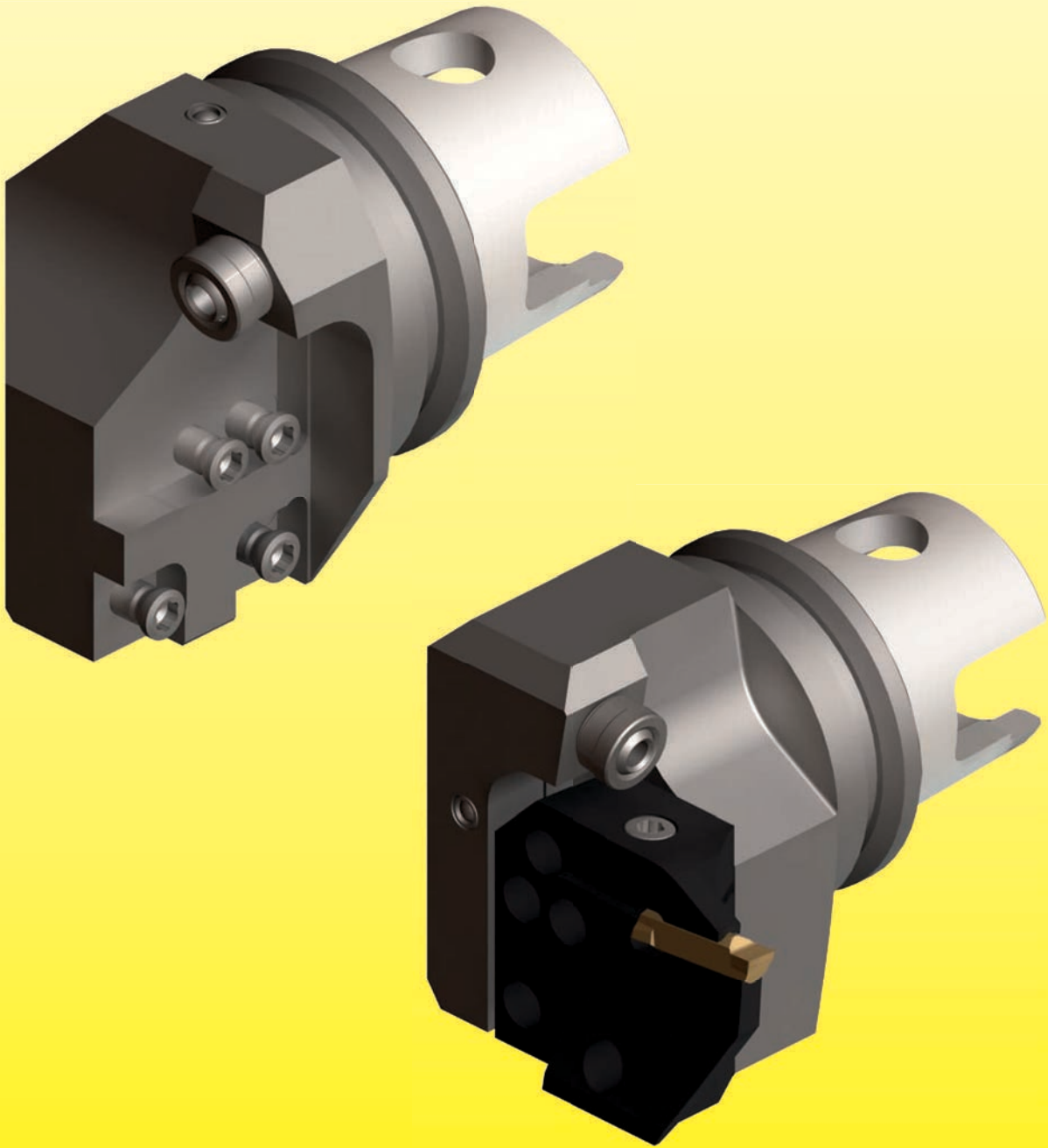
M

Spare parts

Adaptor	Screw	Wrench
001.00C...	DIN1835-B M10x12	SW5DIN911

M10

Toolholder HORN-KM

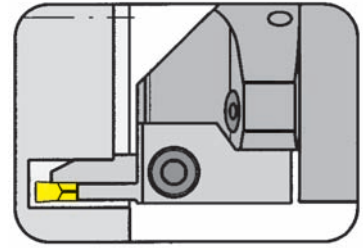


M

BASIC TOOLHOLDER Type

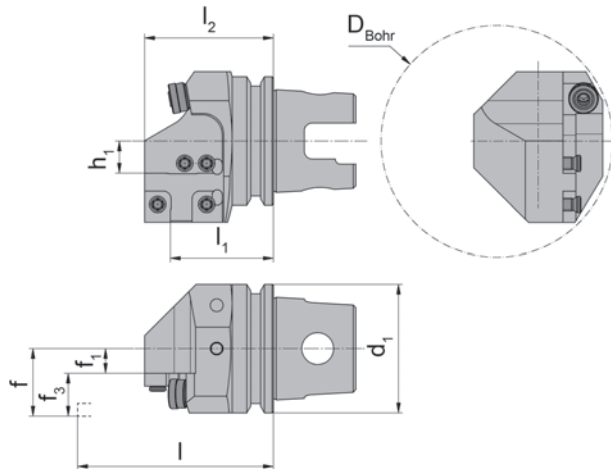
220KM

without cassette



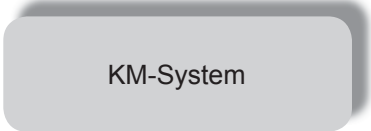
Basic toolholder for cassettes type 100/220/224/356/360

with through coolant supply



R = right hand version shown

L = left hand version



Part number	l_1	h_1	f_1	f	l_2	l
R/L220.KM40.K1	40	12.5	4.6	f_1+f_3	50	l_1+l_k
R/L220.KM50.K1			9.6			
R/L220.KM63.K1			16.1			

State R or L version

Dimensions in mm

Further sizes upon request

Note:

Dimensions for D_{min} , t_{max} and w see cassettes



Spare parts

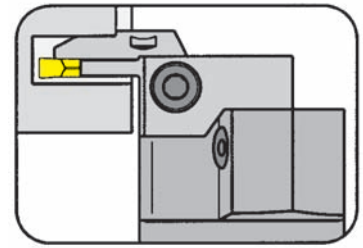
Basic toolholder	Screw	TORX PLUS® Wrench	Coolant spray nozzle
R/L220.KM...	5.12T20P	T20PQ	020.1008.2977

M12

BASIC TOOLHOLDER Type

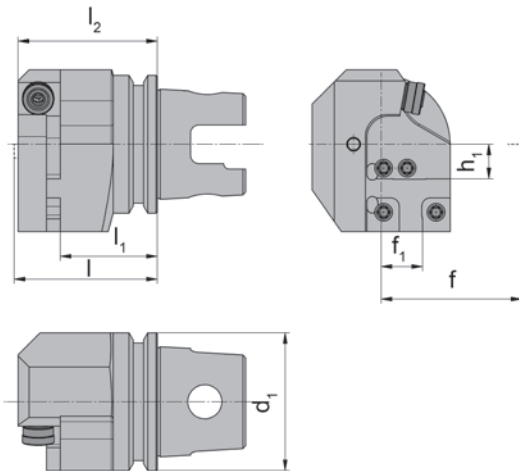
220KM

without cassette



Basic toolholder for cassettes type 100/220/224/356/360

with through coolant supply



R = right hand version shown

L = left hand version

KM-System

Part number	l_1	h_1	f_1	f	l_2	l
R/L 220.KM40.K2			10.0			
R/L 220.KM50.K2	35.2	12.5	15.0	f_1+l_k	50.5	l_1+f_3
R/L 220.KM63.K2			21.5			

State R or L version

Dimensions in mm

Further sizes upon request

Note:

Dimensions for D_{min} , t_{max} and w see cassettes

Spare parts

Basic toolholder	Screw	TORX PLUS® Wrench	Coolant spray nozzle
R/L220.KM...	5.12T20P	T20PQ	020.1008.2977

M

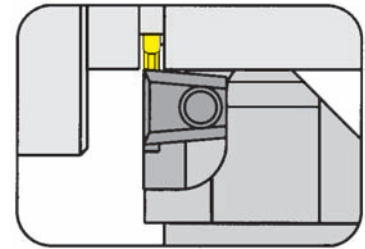
GROOVING (external)



TOOLHOLDER Type

360KM

with cassette

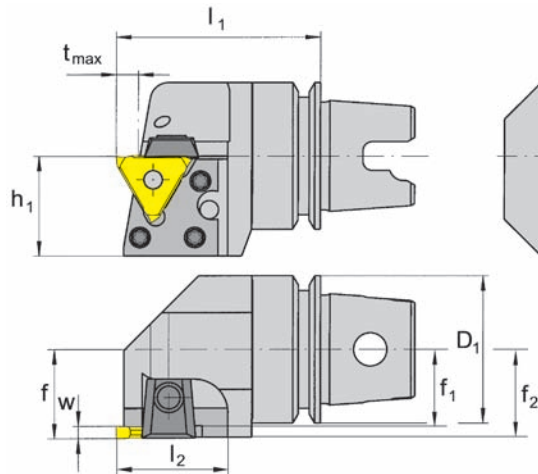


Depth of groove up to .236" (6.0 mm)
Clamping range .020 - .114" (0.5 - 2.9 mm)

with through coolant supply

for use with Indexable insert

Type 312
U312



R = right hand version shown

L = left hand version

KM-System

Part number	l_1	h_1	f_1	f	l_2	t_{max}	f_2	Size	Clamping range
R/L360.KM40.K1	40	27.3	19.0	$f_1 + w - a_1$	31	4	20.5	01	0.5 - 1.9
R/L360.KM50.K1	45	27.3	24.0				25.5		
R/L360.KM63.K1	50	31.5	30.5				32.0		
R/L360.KM40.K2	40	27.3	18.0	$f_1 + w - a_1$	31	6	20.5	02	1.9 - 2.9
R/L360.KM50.K2	45	27.3	23.0				25.5		
R/L360.KM63.K2	50	31.5	29.5				32.0		

State R or L version

w, a_1 see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Cassette	Clamp	TORX PLUS® Wrench	Screw	Wrench
L360.KM...K1	LK360.00.01	16.4	T15PQ	030.0410.T15P	SW3DIN911
L360.KM...K2	LK360.00.02	16.4	T15PQ	030.0410.T15P	SW3DIN911
R360.KM...K1	RK360.00.01	16.4	T15PQ	030.0410.T15P	SW3DIN911
R360.KM...K2	RK360.00.02	16.4	T15PQ	030.0410.T15P	SW3DIN911

M14

M

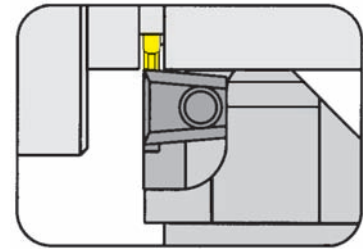
GROOVING (external)



TOOLHOLDER Type

360KM

with cassette

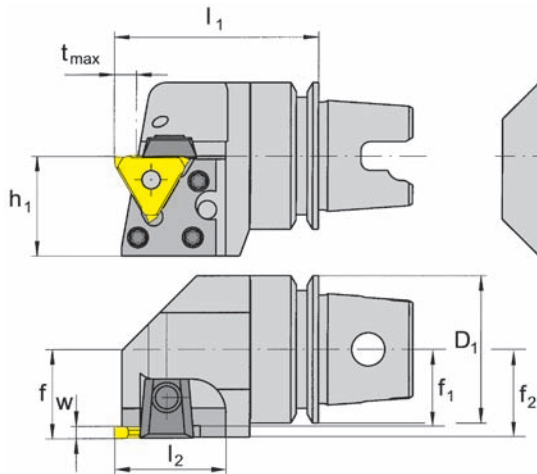


Depth of groove up to .236" (6.0 mm)
Clamping range .114 - .248" (2.9 - 6.3 mm)

with through coolant supply

for use with Indexable insert

Type 312
U312



R = right hand version shown

L = left hand version

KM-System

Part number	l_1	h_1	f_1	f	l_2	t_{max}	f_2	Size	Clamping range
R/L360.KM40.K3	40	27.3	17.0				20.5		
R/L360.KM50.K3	45	27.3	22.0	f_1+w-a_1	31	6	25.5	03	2.9 - 3.9
R/L360.KM63.K3	50	31.5	28.5				32.0		
R/L360.KM40.K4	40	27.3	15.3				20.5		
R/L360.KM50.K4	45	27.3	20.3	f_1+w-a_1	31	6	25.5	04	3.9 - 6.3
R/L360.KM63.K4	50	31.5	26.8				32.0		

State R or L version

w, a_1 see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Cassette	Clamp	TORX PLUS® Wrench	Screw	Wrench
L360.KM...K3	LK360.00.03	16.4	T15PQ	030.0410.T15P	SW3DIN911
L360.KM...K4	LK360.00.04	16.4	T15PQ	030.0410.T15P	SW3DIN911
R360.KM...K3	RK360.00.03	16.4	T15PQ	030.0410.T15P	SW3DIN911
R360.KM...K4	RK360.00.04	16.4	T15PQ	030.0410.T15P	SW3DIN911

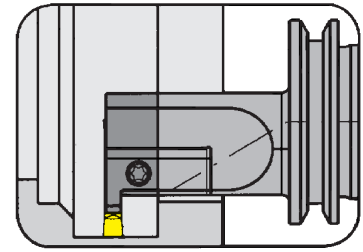
M

M15

BASIC TOOLHOLDER Type

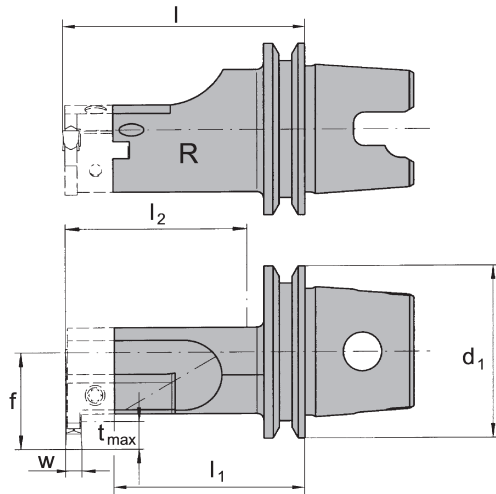
B224KM

without cassette



Basic toolholder for cassettes type BK224

with through coolant supply



R = right hand version shown

L = left hand version

KM-System

Part number	l	l ₁	l ₂	f
R/LB224.KM40.1.K2	$l_1 + b_1 + w/2$	49.3	48	32
R/LB224.KM40.2.K2		69.3	68	
R/LB224.KM50.1.K2	$l_1 + b_1 + w/2$	59.3	54	32
R/LB224.KM50.2.K2		79.3	74	
R/LB224.KM63.1.K2	$l_1 + b_1 + w/2$	69.3	62	32
R/LB224.KM63.2.K2		89.3	82	

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Note:

Dimensions for D_{min} , t_{max} and w see cassettes

M

Spare parts

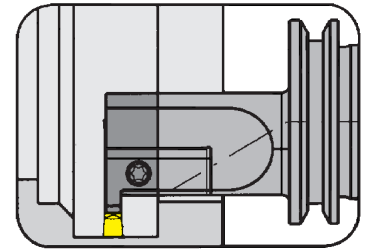
Basic toolholder	Screw	TORX PLUS® Wrench
R/LB224.KM...	030.0518.T20P	T20PQ

M16

BASIC TOOLHOLDER Type

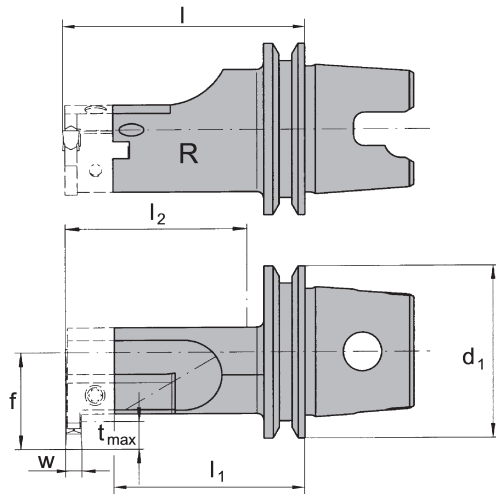
B229KM

without cassette



Basic toolholder for cassettes type BK229

with through coolant supply



R = right hand version shown

L = left hand version

KM-System

Part number	l	l ₁	l ₂	f
R/LB229.KM40.1.K2	$l_1 + b_1 + w/2$	48.5	48	35.5
R/LB229.KM40.2.K2		68.5	68	
R/LB229.KM50.1.K2	$l_1 + b_1 + w/2$	58.5	54	35.5
R/LB229.KM50.2.K2		78.5	74	
R/LB229.KM63.1.K2	$l_1 + b_1 + w/2$	68.5	62	35.5
R/LB229.KM63.2.K2		88.5	82	

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Note:

Dimensions for D_{min} , t_{max} and w see cassettes

Spare parts

Basic toolholder	Screw	TORX PLUS® Wrench
R/LB229.KM...	030.0518.T20P	T20PQ

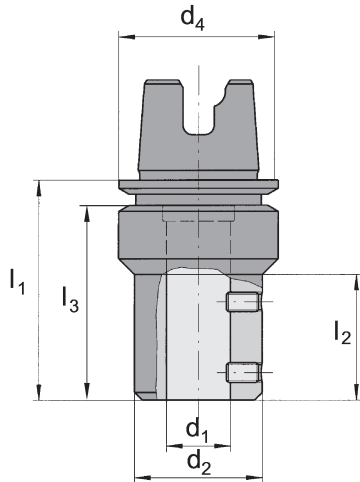
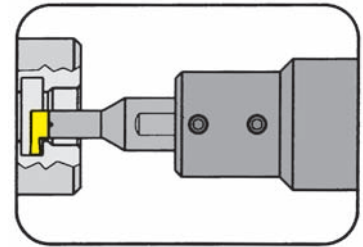
M

ADAPTOR Type

001KM

Cylindrical adapter for boring bars KM-System Ø 16 / 20 mm

for cylindrical shanks with standard clamping flat



Part number	l_1	l_2	l_3	d_2	d_1	d_4
001.KM40.16	65	-	55	40	16	40
001.KM40.20	70	-	58	40	20	40
001.KM50.16	65	44	55	40	16	50
001.KM50.20	70	49	55	40	20	50
001.KM63.16	65	40	55	40	16	63
001.KM63.20	70	45	58	40	20	63

Further sizes upon request

Dimensions in mm

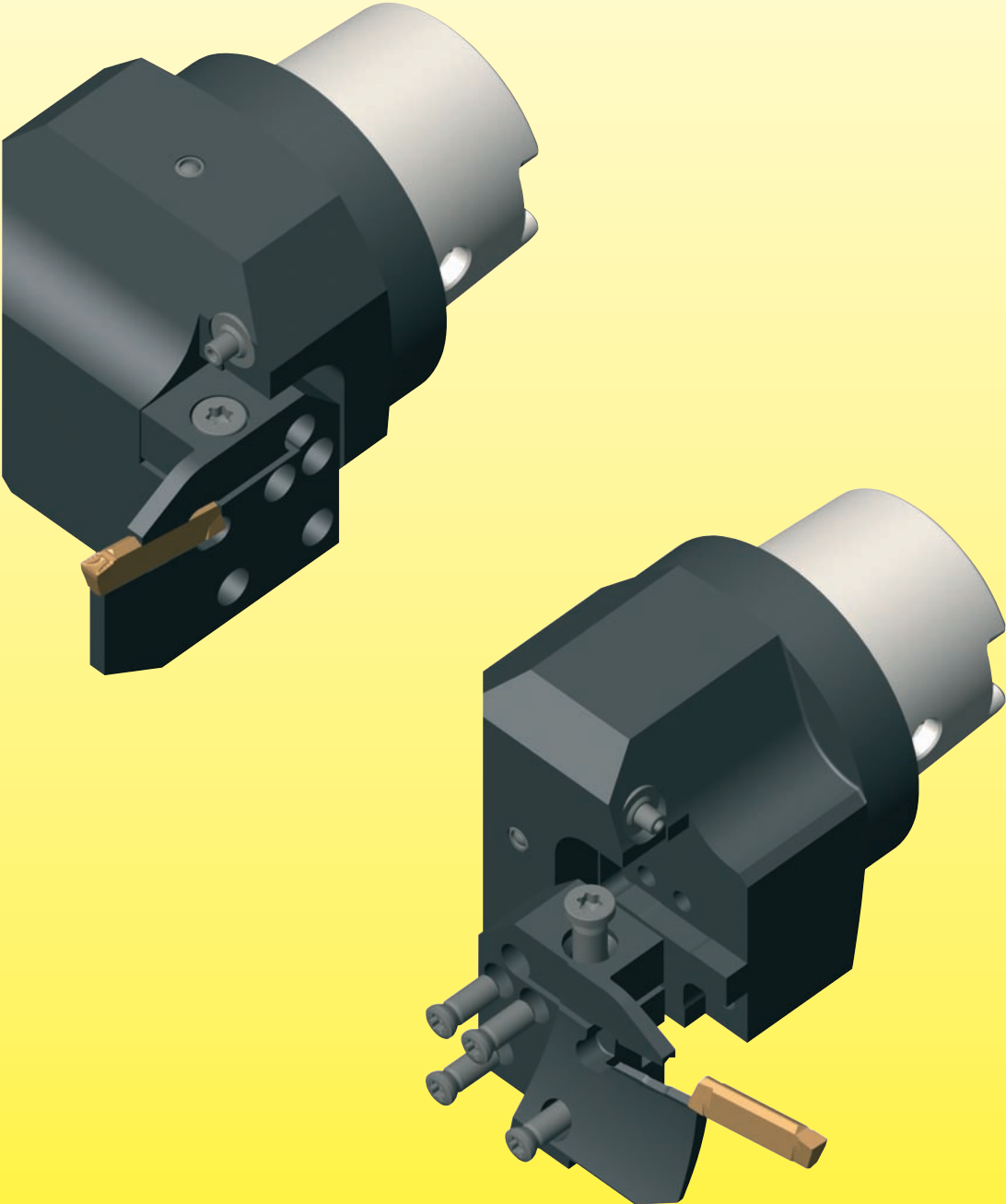
M

Spare parts

Adaptor	Screw	Wrench
001.KM...	DIN1835-B M10x12	SW5DIN911

M18

HORN HSK-C63 DIN 69893

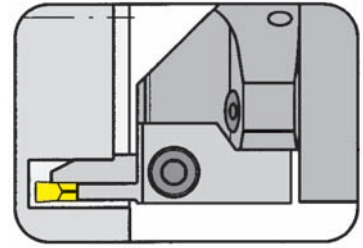


M

BASIC TOOLHOLDER Type

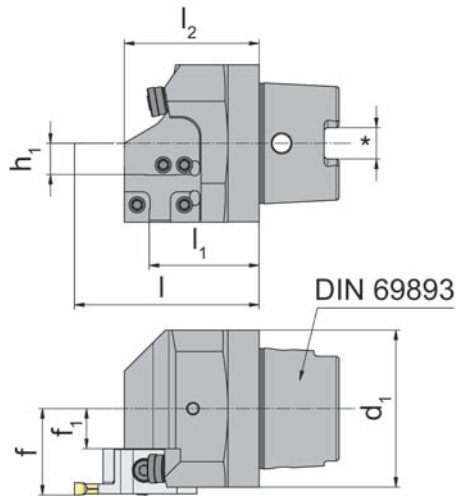
HSK-220

without cassette



Basic toolholder for cassettes type 100/220/224/356/360

for manual tool change, with through coolant supply



R = right hand version shown

L = left hand version

HORN HSK-C63 DIN
69893

Part number	l_1	h_1	f_1	f	l_2	l
HSK-R/L220.0063.K1	44	12.5	16.1	f_1+f_3	54	l_1+l_k

State R or L version

Dimensions in mm

Further sizes and versions (e.g. HSK-B50) upon request

Note:

Dimensions for D_{min} , t_{max} and w see cassettes

M

Spare parts

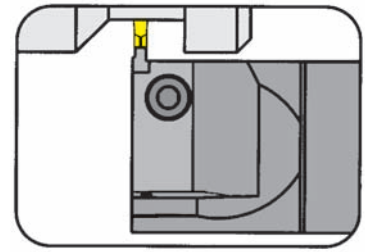
Basic toolholder	Screw	TORX PLUS® Wrench	Coolant spray nozzle
HSK-R/L220.0063.K1	5.12T20P	T20PQ	020.1008.2977

M20

BASIC TOOLHOLDER Type

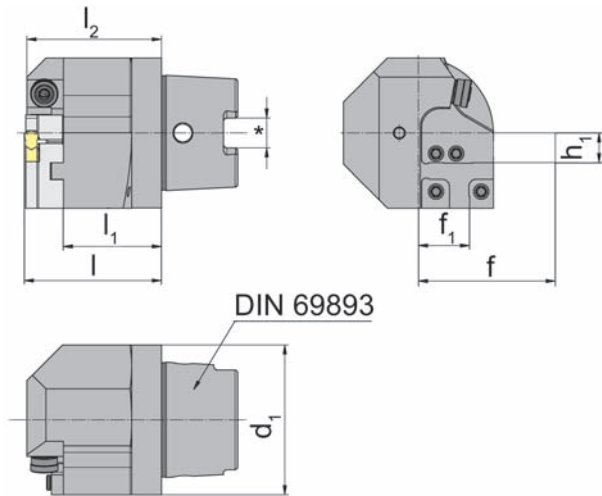
HSK-220

without cassette



Basic toolholder for cassettes type 100/220/224/356/360

for manual tool change, with through coolant supply



R = right hand version shown

L = left hand version

HORN HSK-C63 DIN 69893

Part number	l_1	h_1	f_1	f	l_2	l
HSK-R/L220.0063.K2	41.2	12.5	21.5	f_1+l_k	56.5	l_1+f_3

State R or L version

Dimensions in mm

Further sizes and versions (e.g. HSK-B50) upon request

Note:

Dimensions for D_{min} , t_{max} and w see cassettes

Spare parts

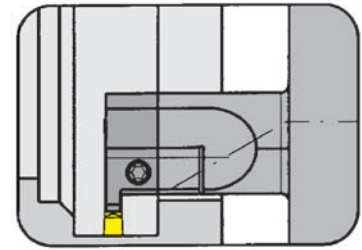
Basic toolholder	Screw	TORX PLUS® Wrench	Coolant spray nozzle
HSK-R/L220.0063.K2	5.12T20P	T20PQ	020.1008.2977

M

BASIC TOOLHOLDER Type

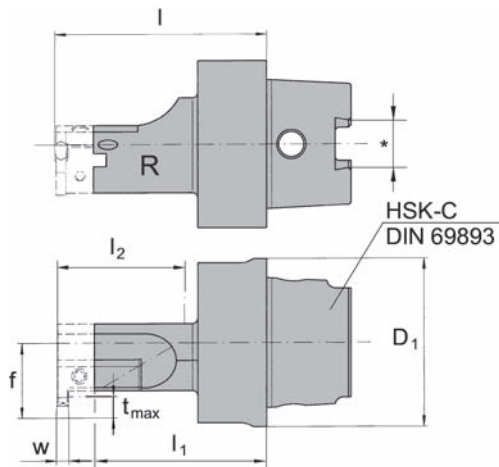
HSK224

without cassette



Basic toolholder for cassettes type BK224

for manual tool change, with through coolant supply



R = right hand version shown

L = left hand version

HORN HSK-C63 DIN
69893

Part number	l	l ₁	l ₂	f
HSKR/L224.0063.1.K2	$l_1 + b_1 + w/2$	70.3	58	32
HSKR/L224.0063.2.K2		90.3	78	

State R or L version

Dimensions in mm

Further sizes and versions (e.g. HSK-B50) upon request

Note:

Dimensions for D_{min} , t_{max} and w see cassettes

M

Spare parts

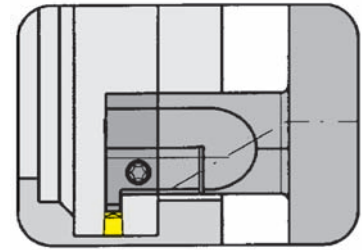
Basic toolholder	Screw	TORX PLUS® Wrench
HSKR/L224.0063....	030.0518.T20P	T20PQ

M22

BASIC TOOLHOLDER Type

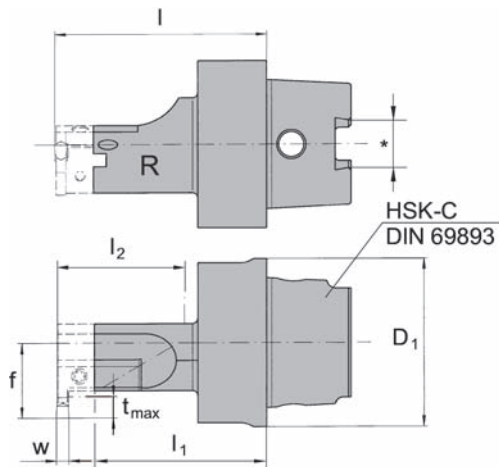
HSK229

without cassette



Basic toolholder for cassettes type BK229

for manual tool change, with through coolant supply



R = right hand version shown

L = left hand version

HORN HSK-C63 DIN 69893

Part number	l	l ₁	l ₂	f
HSKR/L229.0063.1.K2	$l_1 + b_1 + w/2$	70.3	58	35.5
HSKR/L229.0063.2.K2		90.3	78	

State R or L version

Dimensions in mm

Further sizes and versions (e.g. HSK-B50) upon request

Note:

Dimensions for D_{min} , t_{max} and w see cassettes

Spare parts

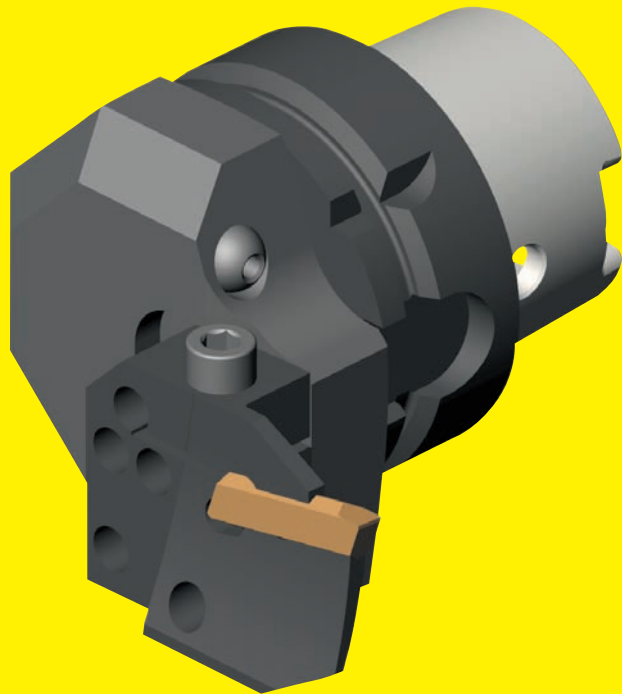
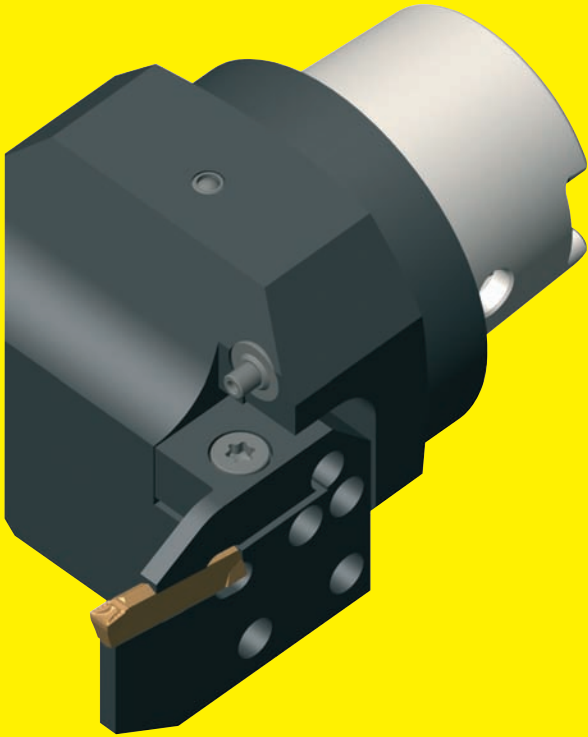
Basic toolholder	Screw	TORX PLUS® Wrench
HSKR/L229.0063....	030.0518.T20P	T20PQ

M

HORN HSK-C63 DIN 69893

Stock item

- **without** tool changing groove
- with reduced groove tolerance



HORN HSK-T....

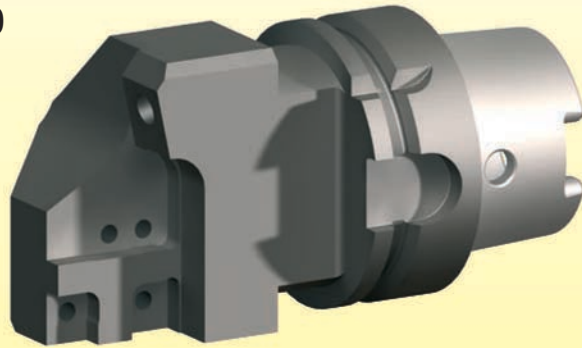
- with reduced groove tolerance

The tool length will be increased compared to type "C" due to the tool changing groove.

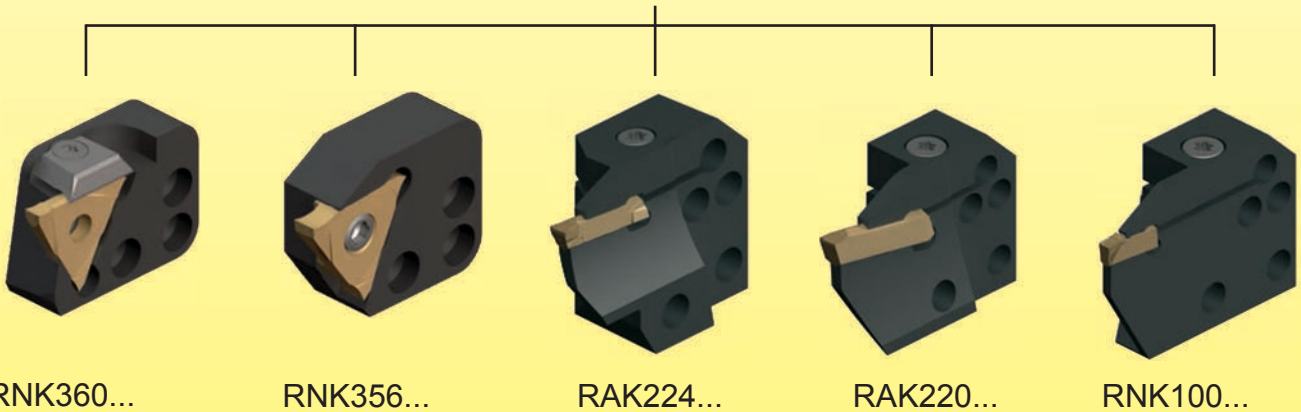
M

HORN HSK-T63 DIN 12164-3

Basic toolholder HSK-T63..220
for external machining



Pocket seat system 220



Basic toolholder HSK-T63...224 / ...229
for internal machining



RBK229...



Pocket seat system B224 / B229
for boring bars

M

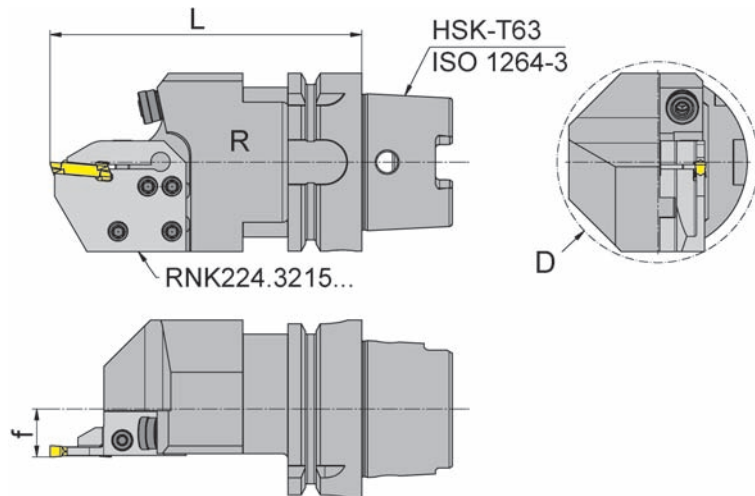
BASIC TOOLHOLDER Type

HSK-T220

without cassette

for using on multi-tasking machines

with through coolant supply



R = right hand version shown

L = left hand version

Pocket seat system 220

Part number	Cassette	...NK224...			...NK220...			...NK356...			...NK360...		
		L	D	f	L	D	f	L	D	f	L	D	f
HSKT63.L220.110.K1	L	110			117			110			100		
HSKT63.L220.120.K1		120			127			120			110		
HSKT63.L220.130.K1		130	71.2	17	137	71.2	17	130	71.5	16.9	120	74.7	19.8
HSKT63.L220.150.K1		150			157			150			140		
HSKT63.L220.175.K1		175			182			175			165		
HSKT63.R220.110.K1	R	110			117			110			100		
HSKT63.R220.120.K1		120			127			120			110		
HSKT63.R220.130.K1		130	71.2	17	137	71.2	17	130	71.5	16.9	120	74.7	19.8
HSKT63.R220.150.K1		150			157			150			140		
HSKT63.R220.175.K1		175			182			157			165		
for Indexable Insert		S224			S229			315			312		

Further sizes upon request

Dimensions in mm

M

Spare parts

Basic toolholder	Screw	TORX PLUS® Wrench	Coolant spray nozzle	Coolant tube
HSKT63.R/L220.1...	5.12T20P	T20PQ	020.1008.2977	HSK63KMZ

M26

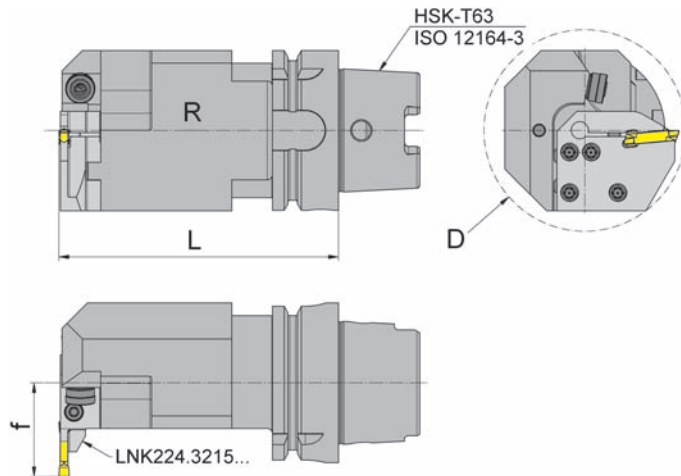
BASIC TOOLHOLDER Type

HSK-T220

without cassette

for using on multi-tasking machines

with through coolant supply



R = right hand version shown

L = left hand version

Pocket seat system 220

Part number	Cassette	...AK224...			...AK220...			...NK356...			...NK360...		
		L	D	f	L	D	f	L	D	f	L	D	f
HSKT63.L220.110.K2	R	110			110			109.9			112.8		
HSKT63.L220.130.K2		130	79.5	37	130	88.1	44	129.9	74	37	132.8	79.2	27
HSKT63.L220.150.K2		150			150			149.9			152.8		
HSKT63.L220.175.K2		175			175			174.9			177.8		
HSKT63.R220.110.K2	L	110			110			109.9			112.8		
HSKT63.R220.130.K2		130	79.5	37	130	88.1	44	129.9	74	37	132.8	79.2	27
HSKT63.R220.150.K2		150			150			149.9			152.8		
HSKT63.R220.175.K2		175			175			174.9			177.8		
for Indexable Insert		S224			S229			315			312		

Further sizes upon request

Dimensions in mm

Spare parts

Basic toolholder	Screw	TORX PLUS® Wrench	Coolant spray nozzle	Coolant tube
HSKT63.R/L220.1...	5.12T20P	T20PQ	020.1008.2977	HSK63KMZ

M

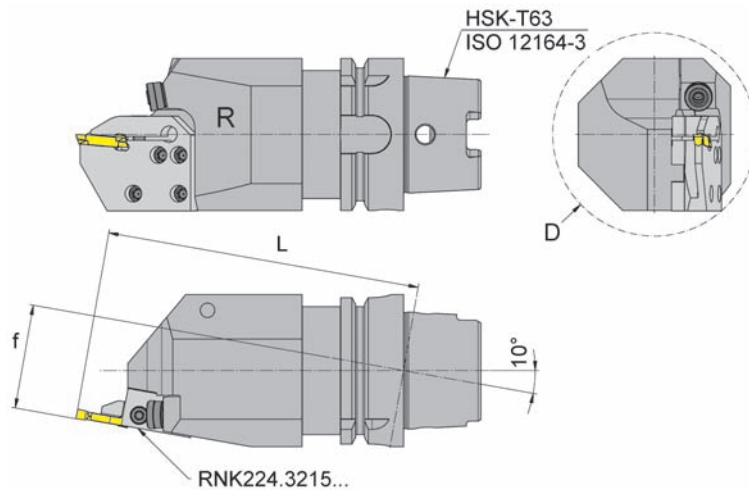
BASIC TOOLHOLDER Type

HSK-T220

without cassette

for using on multi-tasking machines with 10° orientation to spindle

with through coolant supply



R = right hand version shown

L = left hand version

Pocket seat system 220

Part number	Cassette	...NK224...			...NK220...			...NK356...			...NK360...		
		L	D	f	L	D	f	L	D	f	L	D	f
HSKT63.L220.110.K3	L	110			117			110			100		
HSKT63.L220.120.K3		120			127			120			110		
HSKT63.L220.130.K3		130	83.8	39.7	137	84.1	33.7	130	84.4	39.6	120	88.7	42.5
HSKT63.L220.150.K3		150			157			150			140		
HSKT63.L220.175.K3		175			182			175			165		
HSKT63.R220.110.K3	R	110			117			110			100		
HSKT63.R220.120.K3		120			127			120			110		
HSKT63.R220.130.K3		130	83.8	39.7	137	84.1	33.7	130	84.4	39.6	120	88.7	42.5
HSKT63.R220.150.K3		150			157			150			140		
HSKT63.R220.175.K3		175			182			157			165		
for Indexable Insert		S224			S229			315			312		

Further sizes upon request

Dimensions in mm

M

Spare parts

Basic toolholder	Screw	TORX PLUS® Wrench	Coolant spray nozzle	Coolant tube
HSKT63.R/L220.1...	5.12T20P	T20PQ	020.1008.2977	HSK63KMZ

M28

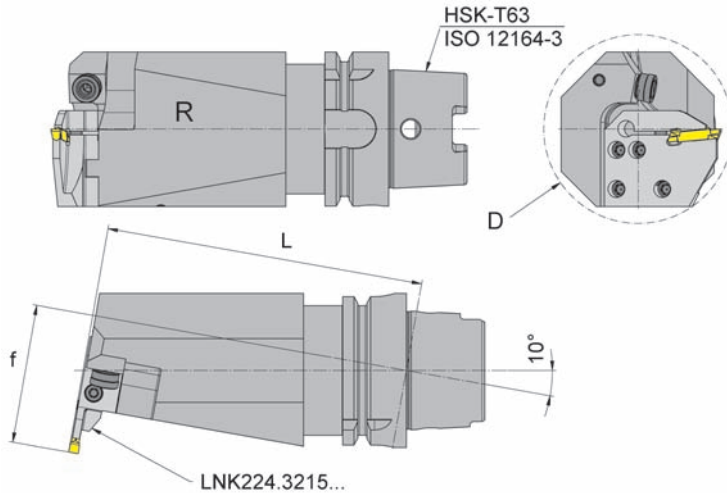
BASIC TOOLHOLDER Type

HSK-T220

without cassette

for using on multi-tasking machines with 10° orientation to spindle

with through coolant supply



R = right hand version shown

L = left hand version

Pocket seat system 220

Part number	Cassette	...AK224...			...AK220...			...NK356...			...NK360...		
		L	D	f	L	D	f	L	D	f	L	D	f
HSKT63.L220.110.K4	R	110			110			109.9			112.8		
HSKT63.L220.130.K4		130	75.8	53.2	130	83.7	60.2	129.9	72	33.2	132.8	76.5	43.2
HSKT63.L220.150.K4		150			150			149.9			152.8		
HSKT63.L220.175.K4		175			175			174.9			177.8		
HSKT63.R220.110.K4	L	110			110			109.9			112.8		
HSKT63.R220.130.K4		130	75.8	53.2	130	83.7	60.2	129.9	72	33.2	132.8	76.5	43.2
HSKT63.R220.150.K4		150			150			149.9			152.8		
HSKT63.R220.175.K4		175			175			174.9			177.8		
for Indexable Insert		S224			S229			315			312		

Further sizes upon request

Dimensions in mm

Spare parts

Basic toolholder	Screw	TORX PLUS® Wrench	Coolant spray nozzle	Coolant tube
HSKT63.R/L220.1...	5.12T20P	T20PQ	020.1008.2977	HSK63KMZ

M

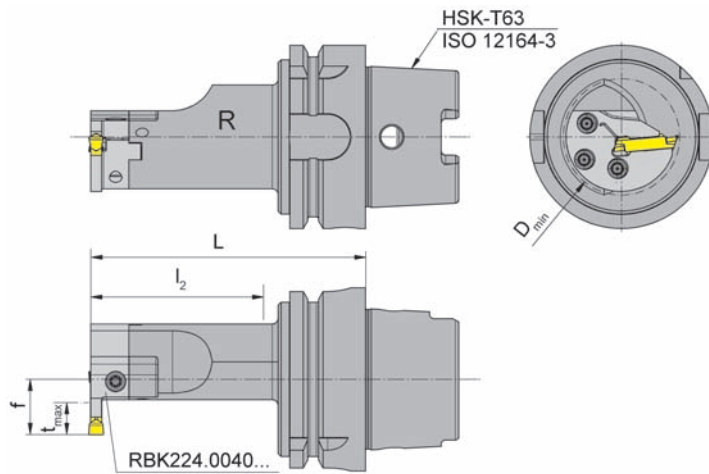
BASIC TOOLHOLDER Type

HSK-T224

without cassette

for using on multi-tasking machines

with through coolant supply



R = right hand version shown

L = left hand version

Pocket seat system 224

Part number	Cassette	L	D _{min}	t _{max}	f	l ₂
HSKT63.LB224.095.K2	LBK224	95	39	11	19	60
HSKT63.LB224.115.K2		115				80
HSKT63.RB224.095.K2	RBK224	95	39	11	19	60
HSKT63.RB224.115.K2		115				80
for Indexable Insert			S224			

Further sizes upon request

Dimensions in mm

M

Spare parts

Basic toolholder	Screw	TORX PLUS® Wrench	Coolant tube
HSKT63....	030.0518.T20P	T20PQ	HSK63KMZ

M30

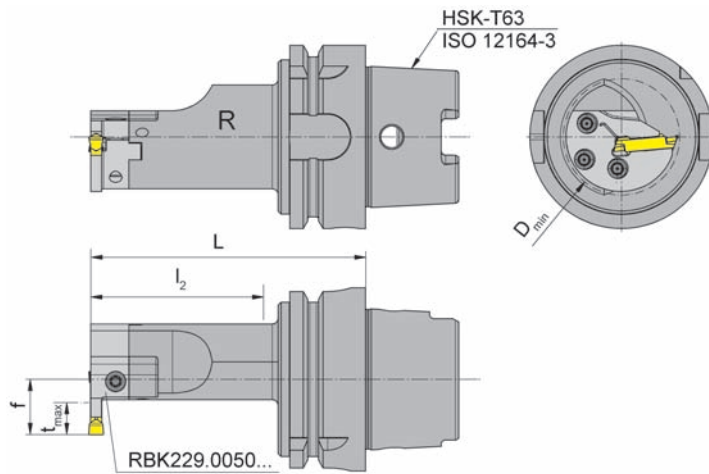
BASIC TOOLHOLDER Type

HSK-T229

without cassette

for using on multi-tasking machines

with through coolant supply



R = right hand version shown

L = left hand version

Pocket seat system 229

Part number	Cassette	L	D _{min}	t _{max}	D _{min}	t _{max}	f	l ₂
HSKT63.LB229.095.K2	LBK229	95	50	12	60	15	24.2	60
HSKT63.LB229.115.K2		115						80
HSKT63.RB229.095.K2	RBK229	95	50	12	60	15	24.2	60
HSKT63.RB229.115.K2		115						80
for Indexable Insert		S229						

Further sizes upon request

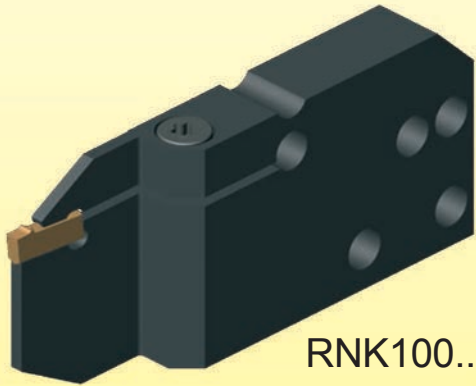
Dimensions in mm

Spare parts

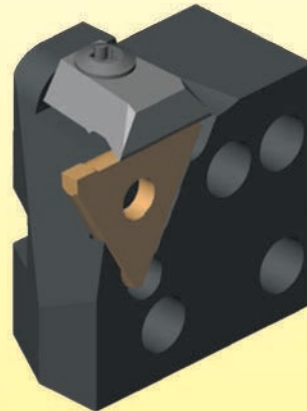
Basic toolholder	Screw	TORX PLUS® Wrench	Coolant tube
HSKT63.R/LB229....	030.0518.T20P	T20PQ	HSK63KMZ

M

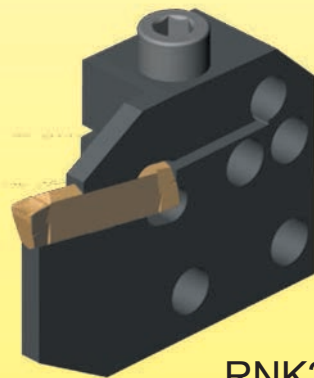
**Cassettes type RNK and LNK
- external -**



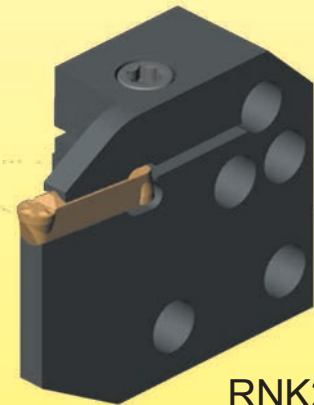
RNK100...



RNK360...



RNK220...

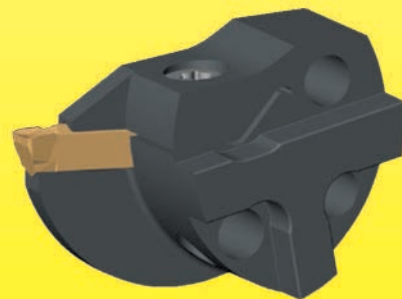


RNK224...

**Cassettes type RBK and LBK
- internal -**



RBK229...

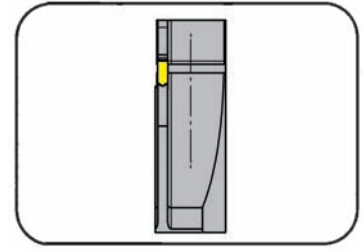


RBK224...

M

CASSETTE Type

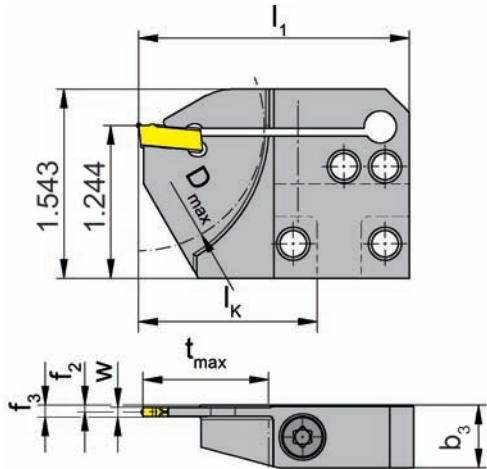
NK100



Depth of groove up to 1.024"
Width of groove .098 - .118"

for use with Insert

Type S100



R = right hand version shown

Part number	l_1	t_{max}	D_{max}	f_2	f_3	l_k
RNK100.5625.02L RNK100.5625.03L	2.205	1.024	2.047	.055 .065	$f_2+w/2$	1.457
RNK100.7025.02L RNK100.7025.03L	2.756	1.024	2.047	.055 .065	$f_2+w/2$	2.008

For basic toolholder R...K1 and L...K2

w see inserts

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

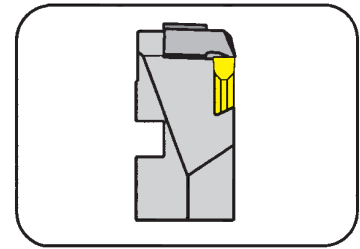
Further sizes upon request

Spare parts

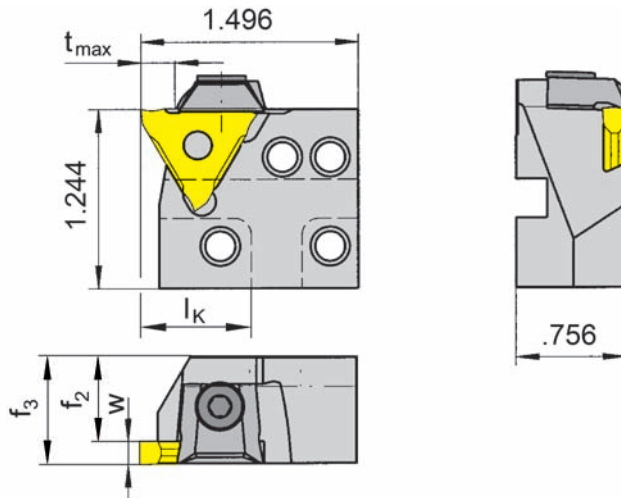
Cassette	Screw	TORX PLUS® Wrench
RNK100....	5.13T20P	T20PQ

CASSETTE Type

NK360



Depth of groove up to .236"
Clamping range .020 - .248"



for use with Indexable insert

Type 312
U312

R = right hand version shown

L = left hand version

Part number	t_{max}	f_2	f_3	l_k	Clamping range
R/LNK360.0220.01	.157	.697	$f_2 + w - a_1$	.748	.020 - .075
R/LNK360.0220.02	.236	.657	$f_2 + w - a_1$	.748	.075 - .114
R/LNK360.0220.03	.236	.618	$f_2 + w - a_1$	.748	.114 - .154
R/LNK360.0220.04	.236	.551	$f_2 + w - a_1$	.748	.154 - .248

State R or L version

w, a_1 see indexable inserts

Dimensions in inch

t_{max} can be reached only with workpiece $\varnothing \leq 1.575$ "

Further sizes upon request

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

M

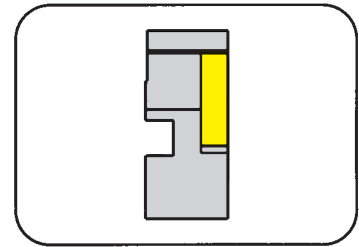
Spare parts

Cassette	Clamp	TORX PLUS® Wrench
R/LNK360.0220.0...	14.4	T15PQ

M34

CASSETTE Type

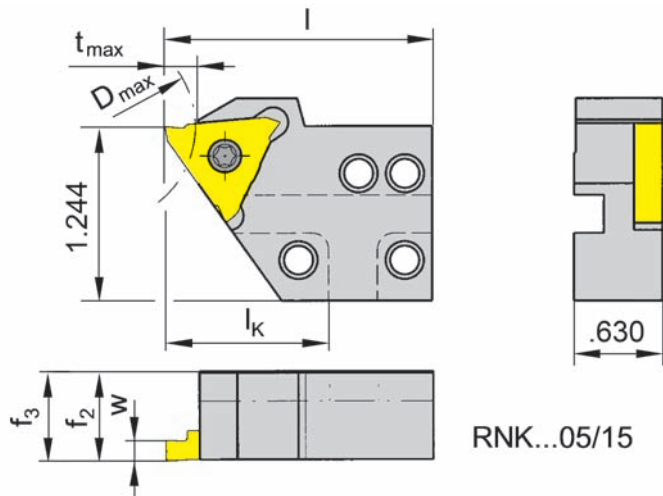
NK356



Depth of groove up to .236"
Clamping range .043 - .260"

for use with Indexable insert

Type 315



R = right hand version shown

L = left hand version

Part number	t _{max}	D _{max}	f ₂	f ₃	l	l _k	Clamping range
R/LNK356.0220.05	.236	-			1.890	1.142	
R/LNK356.0220.15	.236	-	.642	f ₃ =f ₂	1.496	.748	.043 - .213
R/LNK356.1220.16	.197	1.378			1.496	.748	

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

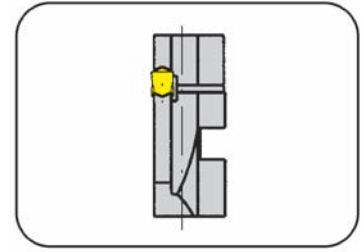
Cassette	Screw	TORX PLUS® Wrench
R/LNK356....	5.12T20P	T20PQ

M

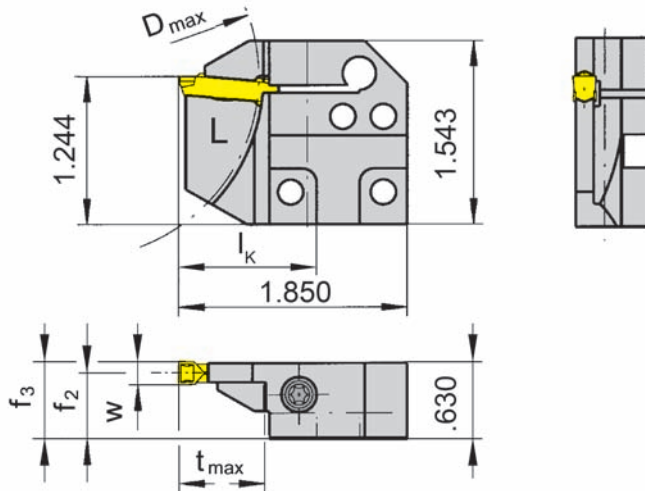
M35

CASSETTE Type

NK224



Depth of groove up to .709"
Clamping range .079 - .236"



L = left hand version shown

R = right hand version

for use with Indexable insert

Type S224

Part number	t _{max}	D _{max}	f ₂	f ₃	I _k	Clamping range
R/LNK224.3215.01	.709	3.150	.606	f ₂ +w/2	1.142	.079 - .095
R/LNK224.3215.02	.709	3.150	.596	f ₂ +w/2	1.142	.095 - .110
R/LNK224.3215.03	.709	3.150	.587	f ₂ +w/2	1.142	.110 - .146
R/LNK224.3215.04	.709	3.150	.567	f ₂ +w/2	1.142	.146 - .173
R/LNK224.3215.05	.709	3.150	.547	f ₂ +w/2	1.142	.173 - .201
R/LNK224.3215.06	.709	3.150	.528	f ₂ +w/2	1.142	.201 - .236

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

M

Spare parts

Cassette	Screw	TORX PLUS® Wrench
R/LNK224.3215.0...	5.13T20P	T20PQ

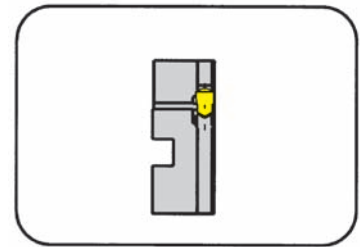
M36

GROOVING (external)

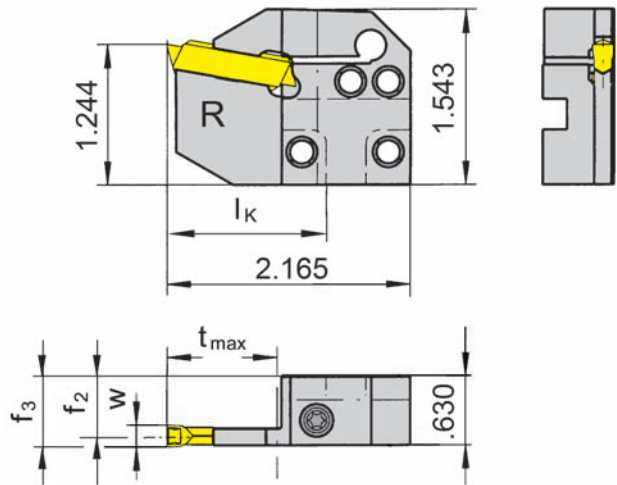


CASSETTE Type

NK220



Depth of groove up to .984"
Clamping range .118 - .240"



R = right hand version shown

L = left hand version

for use with Indexable insert

Type 229
S229

Part number	t_{max}	f_2	f_3	l_k	Clamping range
R/LNK220.3215.03	.984	.587	$f_2 + w/2$	1.417	.118 - .150
R/LNK220.3215.04	.984	.567	$f_2 + w/2$	1.417	.150 - .173
R/LNK220.3215.05	.984	.547	$f_2 + w/2$	1.417	.173 - .200
R/LNK220.3215.06	.984	.528	$f_2 + w/2$	1.417	.201 - .240

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

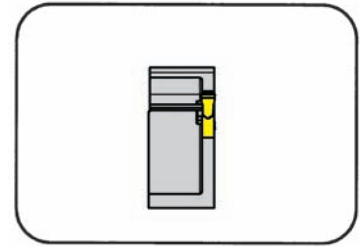
Cassette	Screw	TORX PLUS® Wrench
R/LNK220.3215.0...	6.23T25P	T25PQ

M

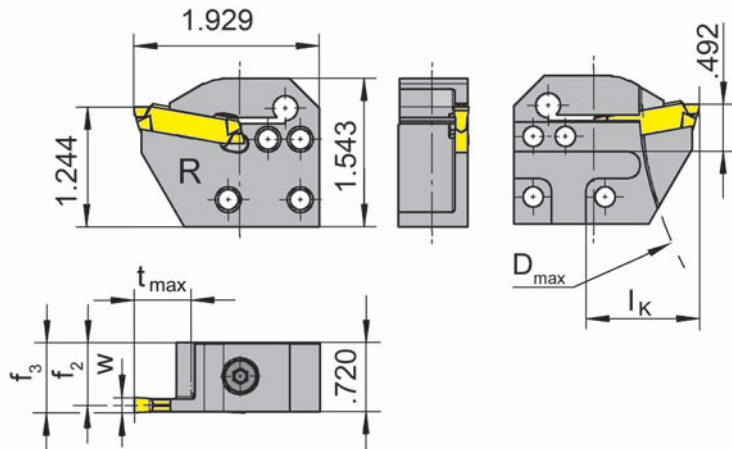
M37

CASSETTE Type

NK220



Depth of groove up to .591"
Clamping range .118 - .240"



for use with Indexable insert

Type 229
N229
S229

R = right hand version shown

L = left hand version

Part number	t _{max}	D _{max}	f ₂	f ₃	l _k	Clamping range
R/LNK220.3218.13	.591	7.087	.673	f ₂ +w/2	1.181	.118 - .150
R/LNK220.3218.14	.591	7.087	.654	f ₂ +w/2	1.181	.150 - .173
R/LNK220.3218.15	.591	7.087	.634	f ₂ +w/2	1.181	.173 - .200
R/LNK220.3218.16	.591	7.087	.616	f ₂ +w/2	1.181	.201 - .240

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

M

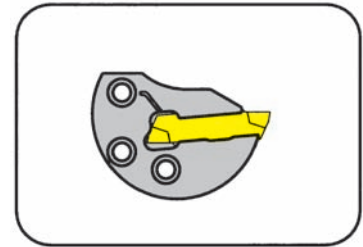
Spare parts

Cassette	Screw	TORX PLUS® Wrench
R/LNK220.3218.1...	6.23T25P	T25PQ

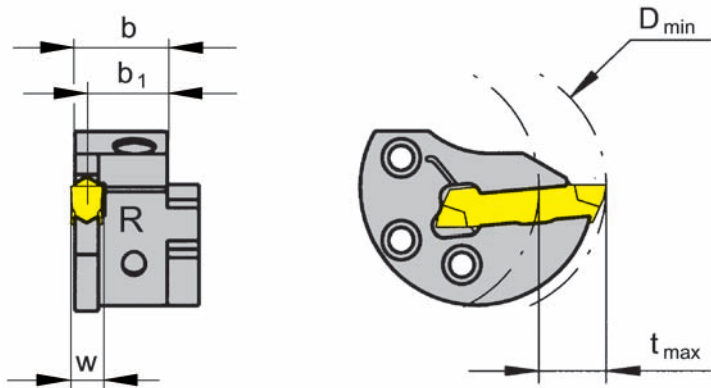
M38

CASSETTE Type

BK224



Bore Ø from 1.575"
 Depth of groove up to .433"
 Clamping range .079 - .240"



for use with Indexable insert

Type S224

R = right hand version shown

L = left hand version

Part number	b ₁	b	D _{min}	t _{max}	Size	Clamping range
R/LBK224.0040.01	.500	.528	1.575	.433	01	.079 - .094
R/LBK224.0040.02	.490	.526	1.575	.433	02	.094 - .110
R/LBK224.0040.03	.480	.524	1.575	.433	03	.110 - .146
R/LBK224.0040.04	.461	.518	1.575	.433	04	.146 - .173
R/LBK224.0040.05	.441	.514	1.575	.433	05	.173 - .201
R/LBK224.0040.06	.421	.510	1.575	.433	06	.201 - .240

State R or L version

w see indexable inserts

Dimensions in inch

Use right hand cassettes in right hand basic toolholders and left hand cassettes in left hand basic toolholders.

Ordering note:

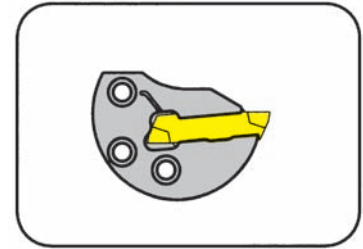
The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

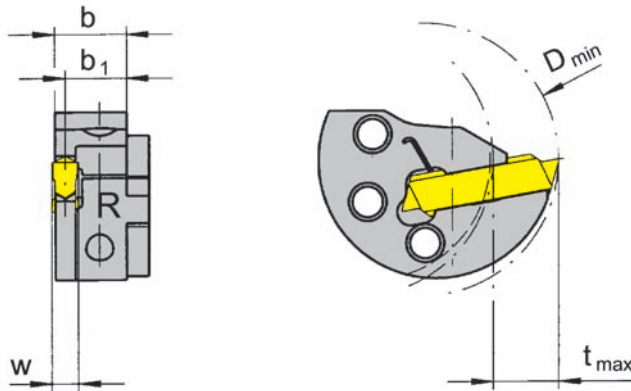
Cassette	Screw	TORX PLUS® Wrench
R/LBK224.0040.0...	5.13T20EP	T20PQ

CASSETTE Type

BK229



Bore Ø from 1.969"
 Depth of groove up to .472"
 Clamping range .118 - .236"



for use with Indexable insert

Type 229
 S229

R = right hand version shown

L = left hand version

Part number	D _{min}	t _{max}	b ₁	b	D _{min}	t _{max}	Size	Clamping range
R/LBK229.0050.03	2.362	.591	.512	.561	1.969	.472	03	.118 - .158
R/LBK229.0050.04	2.362	.591	.492	.559	1.969	.472	04	.158 - .197
R/LBK229.0050.05	2.362	.591	.453	.545	1.969	.472	05	.201 - .236

State R or L version

w see indexable inserts

Dimensions in inch

Use right hand cassettes in right hand basic toolholders and left hand cassettes in left hand basic toolholders.

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

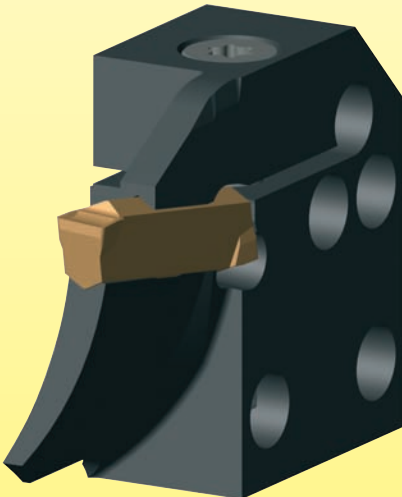
M

Spare parts

Cassette	Screw	TORX PLUS® Wrench
R/LBK229.0050.0...	5.13T20EP	T20PQ

M40

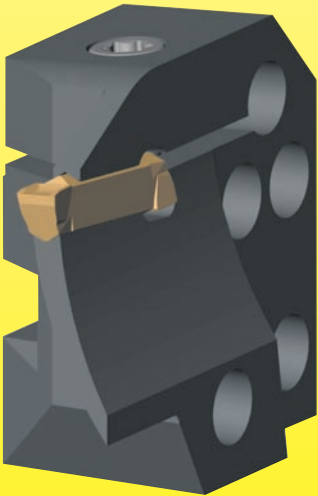
Cassettes for face grooving



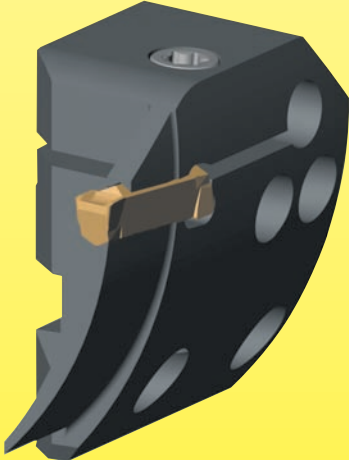
RIK220...



RAK220...



RAK224...

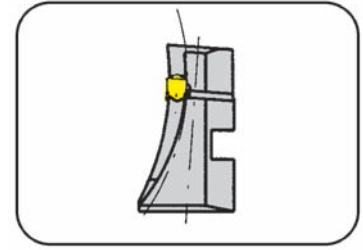


RIK224...

M

CASSETTE Type

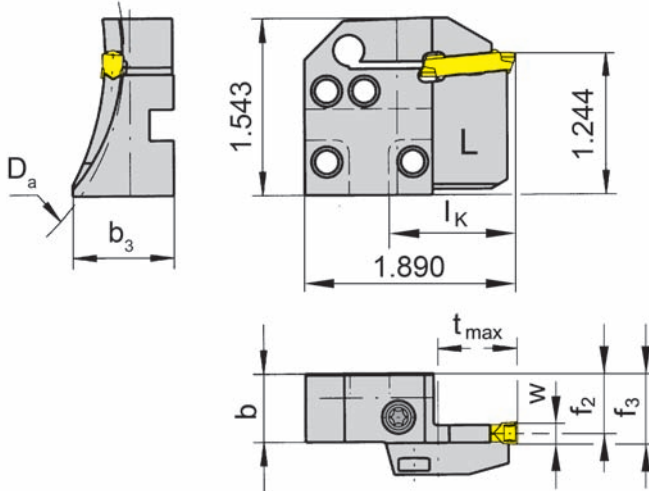
LAK224



Outer groove \varnothing 1.496 - 39.370"
 Depth of groove up to .551"
 Width of groove .118 - .157"

for use with Indexable insert

Type S224



L = left hand version

Part number	$D_{a \min}$	$D_{a \max}$	t_{\max}	b	b_3	f_2	f_3	w	l_K
LAK224.5060.03	1.969	2.362			.827				
LAK224.6075.03	2.362	2.953			.827				
LAK224.7590.03	2.953	3.543			.827				
LAK224.9011.03	3.543	4.331			.827				
LAK224.1113.03	4.331	5.118	.551	.618	.827	.587	$f_2+w/2$	.118	1.142
LAK224.1318.03	5.118	7.087			.787				
LAK224.1830.03	7.087	11.811			.748				
LAK224.3000.03	11.811	39.370			.646				
LAK224.3847.04	1.496	1.850			.827				
LAK224.4760.04	1.850	2.362			.827				
LAK224.6075.04	2.362	2.953			.827				
LAK224.7590.04	2.953	3.543			.827				
LAK224.9013.04	3.543	5.118	.551	.618	.827	.567	$f_2+w/2$	.157	1.142
LAK224.1318.04	5.118	7.087			.827				
LAK224.1830.04	7.087	11.811			.748				
LAK224.3000.04	11.811	39.370			.657				

For basic toolholder L...K1 and R...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

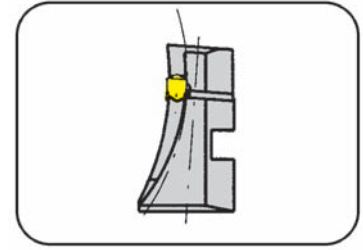
Cassette	Screw	TORX PLUS® Wrench
LAK224....	5.13T20P	T20PQ

M42

M

CASSETTE Type

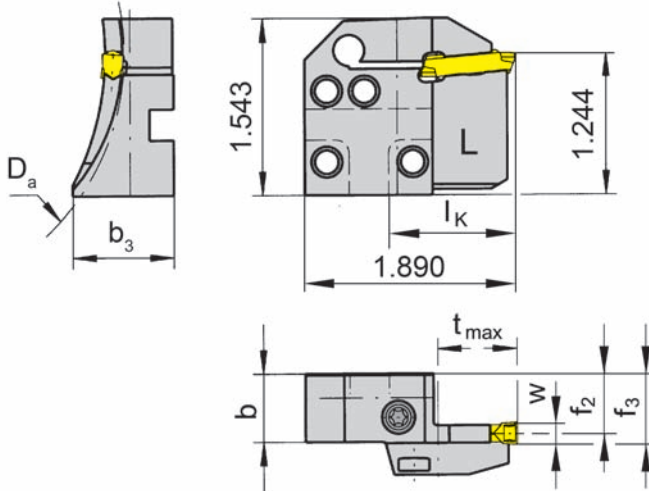
LAK224



Outer groove \varnothing 1.496 - 39.370"
 Depth of groove up to .551"
 Width of groove .197 - .236"

for use with Indexable insert

Type S224



L = left hand version

Part number	$D_{a \min}$	$D_{a \max}$	t_{max}	b	b_3	f_2	f_3	w	l_K
LAK224.3847.05	1.496	1.850			.827				
LAK224.4760.05	1.850	2.362			.827				
LAK224.6075.05	2.362	2.953			.827				
LAK224.7590.05	2.953	3.543			.827				
LAK224.9013.05	3.543	5.118	.551	.618	.827	.547	$f_2+w/2$	.197	1.142
LAK224.1318.05	5.118	7.087			.827				
LAK224.1830.05	7.087	11.811			.748				
LAK224.3000.05	11.811	39.370			.657				
LAK224.6075.06	2.362	2.953			.906				
LAK224.7590.06	2.953	3.543			.906				
LAK224.9013.06	3.543	5.118			.827				
LAK224.1318.06	5.118	7.087	.551	.618	.827	.528	$f_2+w/2$	.236	1.142
LAK224.1830.06	7.087	11.811			.748				
LAK224.3000.06	11.811	39.370			.657				

For basic toolholder L...K1 and R...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

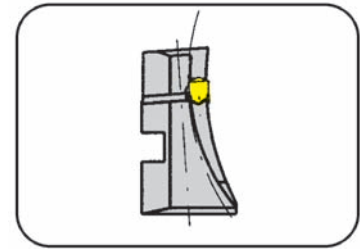
Spare parts

Cassette	Screw	TORX PLUS® Wrench
LAK224....	5.13T20P	T20PQ

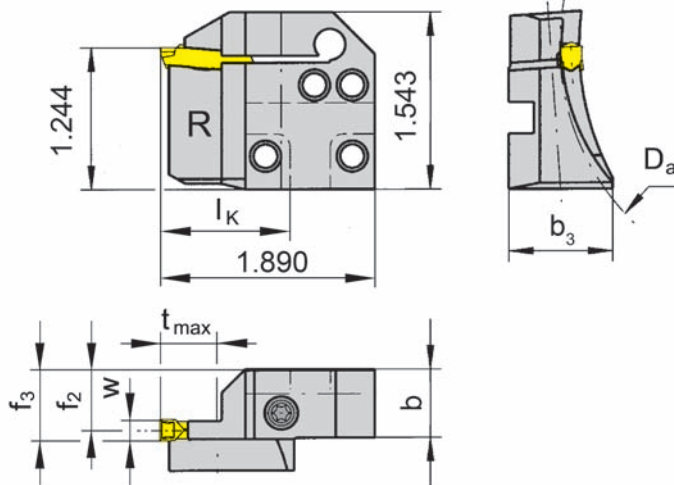
M

CASSETTE Type

RAK224



Outer groove \varnothing 1.496 - 39.370"
 Depth of groove up to .551"
 Width of groove .118 - .157"



R = right hand version

for use with Indexable insert

Type S224

Part number	D _{a min}	D _{a max}	t _{max}	b	b ₃	f ₂	f ₃	w	l _k
RAK224.5060.03	1.969	2.362			.827				
RAK224.6075.03	2.362	2.953			.827				
RAK224.7590.03	2.953	3.543			.827				
RAK224.9011.03	3.543	4.331			.827				
RAK224.1113.03	4.331	5.118	.551	.618	.827	.587	f ₂ +w/2	.118	1.142
RAK224.1318.03	5.118	7.087			.787				
RAK224.1830.03	7.087	11.811			.748				
RAK224.3000.03	11.811	39.370			.646				
RAK224.3847.04	1.496	1.850			.827				
RAK224.4760.04	1.850	2.362			.827				
RAK224.6075.04	2.362	2.953			.827				
RAK224.7590.04	2.953	3.543			.827				
RAK224.9013.04	3.543	5.118	.551	.618	.827	.567	f ₂ +w/2	.157	1.142
RAK224.1318.04	5.118	7.087			.827				
RAK224.1830.04	7.087	11.811			.748				
RAK224.3000.04	11.811	39.370			.657				

For basic toolholder R...K1 and L...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

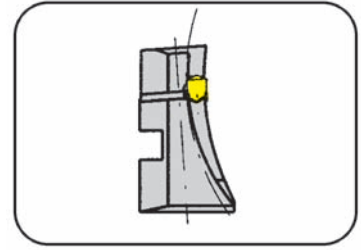
Cassette	Screw	TORX PLUS® Wrench
RAK224....	5.13T20P	T20PQ

M44

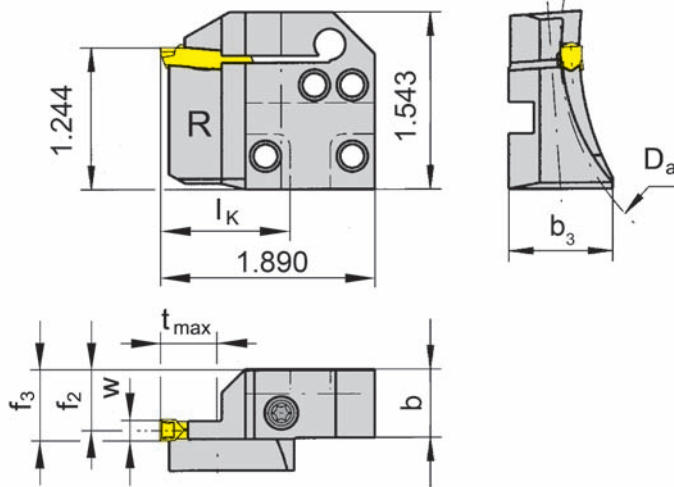
M

CASSETTE Type

RAK224



Outer groove \varnothing 1.496 - 39.370"
 Depth of groove up to .551"
 Width of groove .197 - .236"



R = right hand version

for use with Indexable insert

Type S224

Part number	$D_{a \min}$	$D_{a \max}$	t_{\max}	b	b_3	f_2	f_3	w	l_k
RAK224.3847.05	1.496	1.850			.827				
RAK224.4760.05	1.850	2.362			.827				
RAK224.6075.05	2.362	2.953			.827				
RAK224.7590.05	2.953	3.543			.827				
RAK224.9013.05	3.543	5.118	.551	.618	.827	.547	$f_2+w/2$	.197	1.142
RAK224.1318.05	5.118	7.087			.827				
RAK224.1830.05	7.087	11.811			.748				
RAK224.3000.05	11.811	39.370			.657				
RAK224.6075.06	2.362	2.953			.906				
RAK224.7590.06	2.953	3.543			.906				
RAK224.9013.06	3.543	5.118			.827				
RAK224.1318.06	5.118	7.087	.551	.618	.827	.528	$f_2+w/2$	.236	1.142
RAK224.1830.06	7.087	11.811			.748				
RAK224.3000.06	11.811	39.370			.657				

For basic toolholder R...K1 and L...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

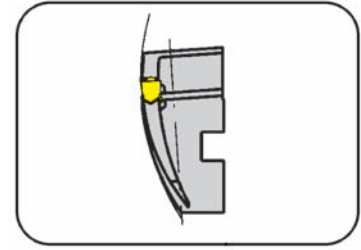
Spare parts

Cassette	Screw	TORX PLUS® Wrench
RAK224....	5.13T20P	T20PQ

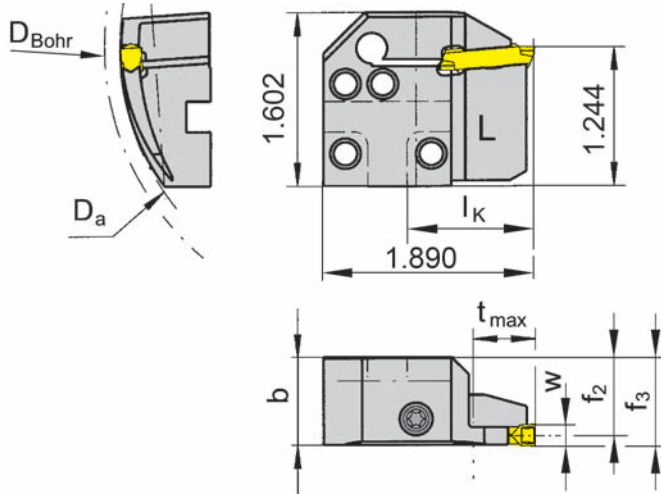
M

CASSETTE Type

LIK224



Outer groove \varnothing 1.496 - 39.370"
 Depth of groove up to .551"
 Width of groove .118 - .157"



for use with Indexable insert

Type S224

L = left hand version

Part number	D _{a min}	D _{a max}	t _{max}	b	f ₂	f ₃	D _{Bohr}	w	l _K
LIK224.5060.03	1.969	2.362					3.543		
LIK224.6075.03	2.362	2.953					3.543		
LIK224.7590.03	2.953	3.543					3.543		
LIK224.9011.03	3.543	4.331	.551	.748	.705	f ₂ +w/2	3.543	.118	1.142
LIK224.1113.03	4.331	5.118					4.331		
LIK224.1318.03	5.118	7.087					5.118		
LIK224.1830.03	7.087	11.811					7.087		
LIK224.3847.04	1.496	1.850					3.543		
LIK224.4760.04	1.850	2.362					3.543		
LIK224.6075.04	2.362	2.953					3.543		
LIK224.7590.04	2.953	3.543					3.543		
LIK224.9013.04	3.543	5.118	.551	.748	.685	f ₂ +w/2	3.543	.157	1.142
LIK224.1318.04	5.118	7.087					5.118		
LIK224.1830.04	7.087	11.811					7.087		
LIK224.3000.04	11.811	39.370					11.811		

For basic toolholder L...K1 and R...K2

Further sizes upon request

Dimensions in inch

Ordering note:

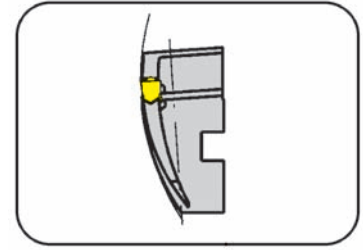
The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

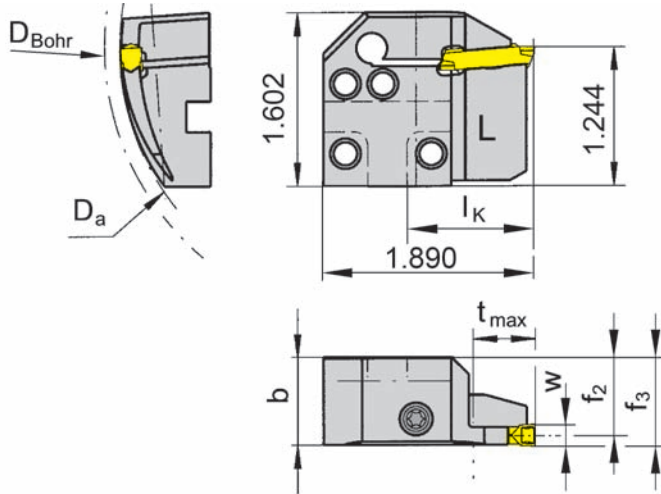
Cassette	Screw	TORX PLUS® Wrench
LIK224....	5.13T20P	T20PQ

CASSETTE Type

LIK224



Outer groove \varnothing	1.496 - 39.370"
Depth of groove up to	.551"
Width of groove	.197 - .236"



for use with Indexable insert

Type S224

L = left hand version

Part number	$D_{a \min}$	$D_{a \max}$	t_{\max}	b	f_2	f_3	D_{Bohr}	w	l_K
LIK224.3847.05	1.496	1.850					3.543		
LIK224.4760.05	1.850	2.362					3.543		
LIK224.6075.05	2.362	2.953					3.543		
LIK224.7590.05	2.953	3.543					3.543		
LIK224.9013.05	3.543	5.118	.551	.748	.665	$f_2+w/2$	3.543	.197	1.142
LIK224.1318.05	5.118	7.087					5.118		
LIK224.1830.05	7.087	11.811					7.087		
LIK224.3000.05	11.811	39.370					11.811		
LIK224.6075.06	2.362	2.953					3.543		
LIK224.7590.06	2.953	3.543					3.543		
LIK224.9013.06	3.543	5.118					3.543		
LIK224.1318.06	5.118	7.087	.551	.748	.646	$f_2+w/2$	5.118	.236	1.142
LIK224.1830.06	7.087	11.811					7.087		
LIK224.3000.06	11.811	39.370					11.811		

For basic toolholder L...K1 and R...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

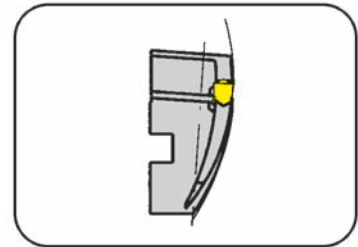
Spare parts

Cassette	Screw	TORX PLUS® Wrench
LIK224....	5.13T20P	T20PQ

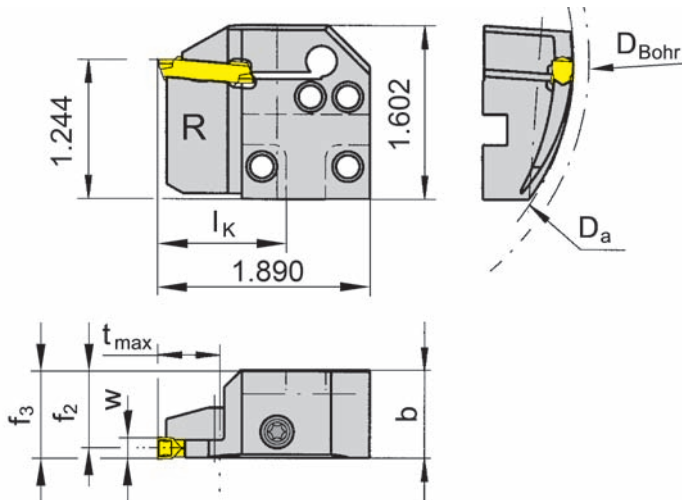
M

CASSETTE Type

RIK224



Outer groove \varnothing 1.496 - 39.370"
 Depth of groove up to .551"
 Width of groove .118 - .157"



R = right hand version

for use with Indexable insert

Type S224

Part number	D _{a min}	D _{a max}	t _{max}	b	f ₂	f ₃	D _{Bohr}	w	l _k
RIK224.5060.03	1.969	2.362					3.543		
RIK224.6075.03	2.362	2.953					3.543		
RIK224.7590.03	2.953	3.543					3.543		
RIK224.9011.03	3.543	4.331	.551	.748	.705	f ₂ +w/2	3.543	.118	1.142
RIK224.1113.03	4.331	5.118					4.331		
RIK224.1318.03	5.118	7.087					5.118		
RIK224.1830.03	7.087	11.811					7.087		
RIK224.3847.04	1.496	1.850					3.543		
RIK224.4760.04	1.850	2.362					3.543		
RIK224.6075.04	2.362	2.953					3.543		
RIK224.7590.04	2.953	3.543					3.543		
RIK224.9013.04	3.543	5.118	.551	.748	.685	f ₂ +w/2	3.543	.157	1.142
RIK224.1318.04	5.118	7.087					5.118		
RIK224.1830.04	7.087	11.811					7.087		
RIK224.3000.04	11.811	39.370					11.811		

For basic toolholder R...K1 and L...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

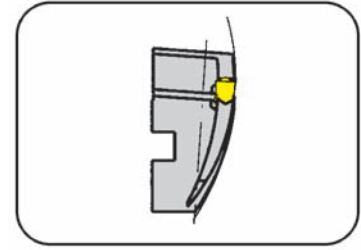
Cassette	Screw	TORX PLUS® Wrench
RIK224....	5.13T20P	T20PQ

M48

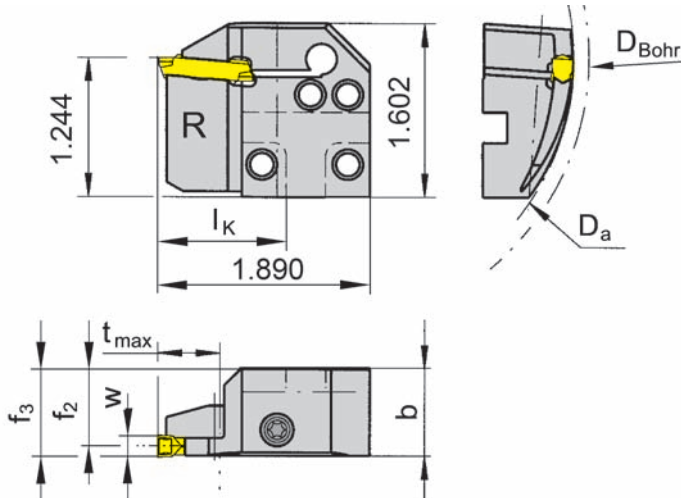
M

CASSETTE Type

RIK224



Outer groove \varnothing 1.496 - 39.370"
 Depth of groove up to .551"
 Width of groove .197 - .236"



R = right hand version

for use with Indexable insert

Type S224

Part number	D _{a min}	D _{a max}	t _{max}	b	f ₂	f ₃	D _{Bohr}	w	l _k
RIK224.3847.05	1.496	1.850					3.543		
RIK224.4760.05	1.850	2.362					3.543		
RIK224.6075.05	2.362	2.953					3.543		
RIK224.7590.05	2.953	3.543					3.543		
RIK224.9013.05	3.543	5.118	.551	.748	.665	f ₂ +w/2	3.543	.197	1.142
RIK224.1318.05	5.118	7.087					5.118		
RIK224.1830.05	7.087	11.811					7.087		
RIK224.3000.05	11.811	39.370					11.811		
RIK224.6075.06	2.362	2.953					3.543		
RIK224.7590.06	2.953	3.543					3.543		
RIK224.9013.06	3.543	5.118					3.543		
RIK224.1318.06	5.118	7.087	.551	.748	.646	f ₂ +w/2	5.118	.236	1.142
RIK224.1830.06	7.087	11.811					7.087		
RIK224.3000.06	11.811	39.370					11.811		

For basic toolholder R...K1 and L...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

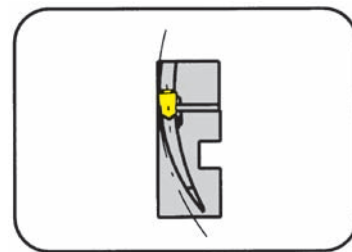
Spare parts

Cassette	Screw	TORX PLUS® Wrench
RIK224....	5.13T20P	T20PQ

M

CASSETTE Type

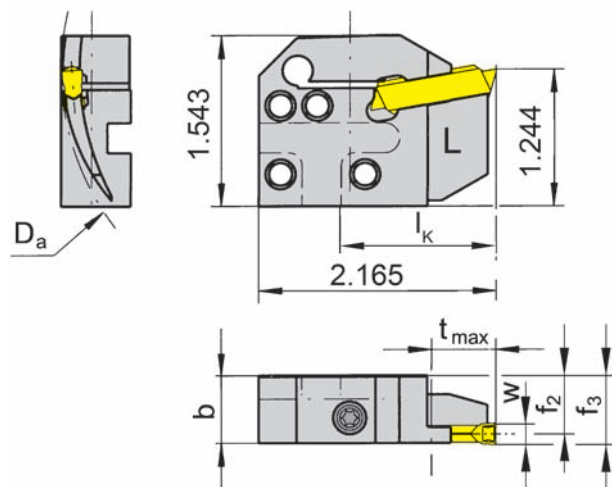
LIK220



Outer groove \varnothing 2.362 - 11.811"
 Depth of groove up to .591"
 Width of groove .157 - .236"

for use with Indexable insert

Type S229



L = left hand version

Part number	$D_{a \text{ min}}$	$D_{a \text{ max}}$	t_{max}	b	f_2	f_3	w	l_k
LIK220.6575.14	2.559	2.953	.394					
LIK220.7595.14	2.953	3.740	.591					
LIK220.9513.14	3.740	5.118	.591	.618	.567	$f_2+w/2$	.157	1.417
LIK220.1318.14	5.118	7.087	.591					
LIK220.1830.14	7.087	11.811	.591					
LIK220.6075.15	2.362	2.953	.394					
LIK220.7595.15	2.953	3.740	.591					
LIK220.9513.15	3.740	5.118	.591	.618	.547	$f_2+w/2$	.197	1.417
LIK220.1318.15	5.118	7.087	.591					
LIK220.1830.15	7.087	11.811	.591					
LIK220.6075.16	2.362	2.953	.394					
LIK220.7595.16	2.953	3.740	.591					
LIK220.9513.16	3.740	5.118	.591	.618	.528	$f_2+w/2$	.236	1.417
LIK220.1318.16	5.118	7.087	.591					
LIK220.1830.16	7.087	11.811	.591					

For basic toolholder L...K1 and R...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

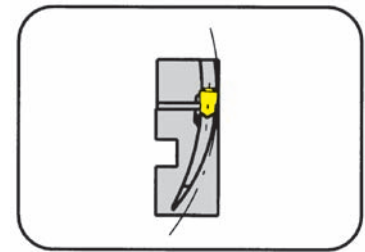
Spare parts

Cassette	Screw	TORX PLUS® Wrench
LIK220....	6.23T25P	T25PQ

M50

CASSETTE Type

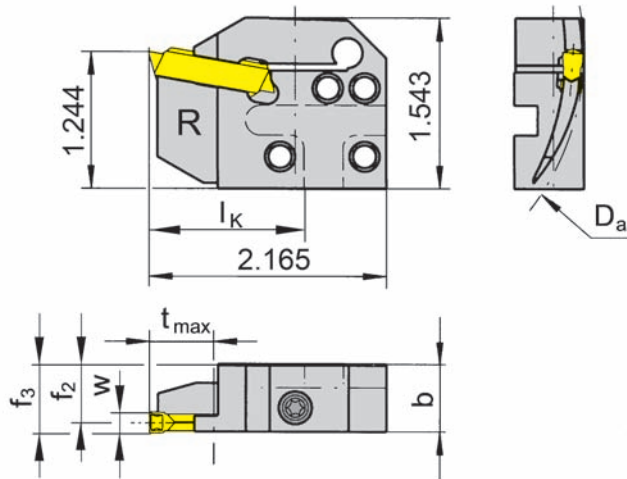
RIK220



Outer groove \varnothing	2.362 - 11.811"
Depth of groove up to	.591"
Width of groove	.157 - .236"

for use with Indexable insert

Type S229



R = right hand version

Part number	$D_{a \min}$	$D_{a \max}$	t_{\max}	b	f_2	f_3	w	l_k
RIK220.6575.14	2.559	2.953	.394					
RIK220.7595.14	2.953	3.740	.591					
RIK220.9513.14	3.740	5.118	.591	.618	.567	$f_2+w/2$	.157	1.417
RIK220.1318.14	5.118	7.087	.591					
RIK220.1830.14	7.087	11.811	.591					
RIK220.6075.15	2.362	2.953	.394					
RIK220.7595.15	2.953	3.740	.591					
RIK220.9513.15	3.740	5.118	.591	.618	.547	$f_2+w/2$	.197	1.417
RIK220.1318.15	5.118	7.087	.591					
RIK220.1830.15	7.087	11.811	.591					
RIK220.6075.16	2.362	2.953	.394					
RIK220.7595.16	2.953	3.740	.591					
RIK220.9513.16	3.740	5.118	.591	.618	.528	$f_2+w/2$	.236	1.417
RIK220.1318.16	5.118	7.087	.591					
RIK220.1830.16	7.087	11.811	.591					

For basic toolholder R...K1 and L...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

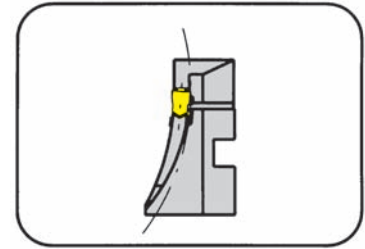
Spare parts

Cassette	Screw	TORX PLUS® Wrench
RIK220....	6.23T25P	T25PQ

M

CASSETTE Type

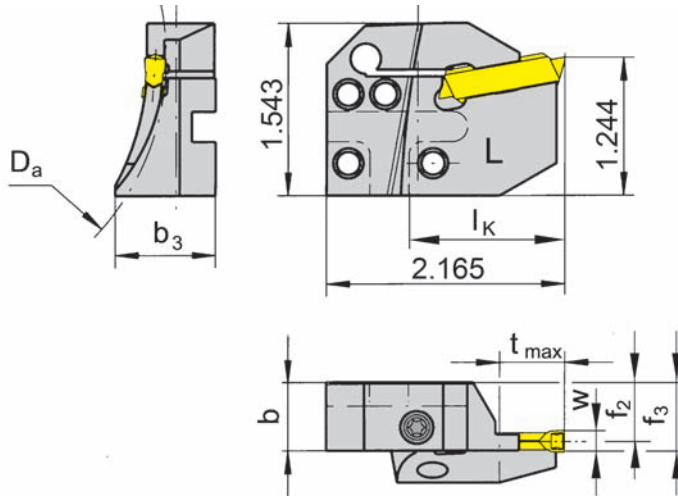
LAK220



Outer groove \varnothing 2.362 - 11.811"
 Depth of groove up to .591"
 Width of groove .157 - .236"

for use with Indexable insert

Type S229



L = left hand version

Part number	$D_{a \text{ min}}$	$D_{a \text{ max}}$	t_{max}	b	b_3	f_2	f_3	w	l_K
LAK220.6575.14	2.559	2.953	.394		.906				
LAK220.7595.14	2.953	3.740	.591		.906				
LAK220.9513.14	3.740	5.118	.591	.618	.835	.567	$f_2+w/2$	.157	1.417
LAK220.1318.14	5.118	7.087	.591		.835				
LAK220.1830.14	7.087	11.811	.591		.748				
LAK220.6075.15	2.362	2.953	.394		.906				
LAK220.7595.15	2.953	3.740	.591		.906				
LAK220.9513.15	3.740	5.118	.591	.618	.906	.547	$f_2+w/2$	.197	1.417
LAK220.1318.15	5.118	7.087	.591		.835				
LAK220.1830.15	7.087	11.811	.591		.748				
LAK220.6075.16	2.362	2.953	.394		.906				
LAK220.7595.16	2.953	3.740	.591		.906				
LAK220.9513.16	3.740	5.118	.591	.618	.906	.528	$f_2+w/2$	.236	1.417
LAK220.1318.16	5.118	7.087	.591		.835				
LAK220.1830.16	7.087	11.811	.591		.748				

For basic toolholder L...K1 and R...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

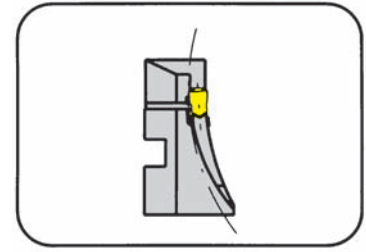
Cassette	Screw	TORX PLUS® Wrench
LAK220....	6.23T25P	T25PQ

M52

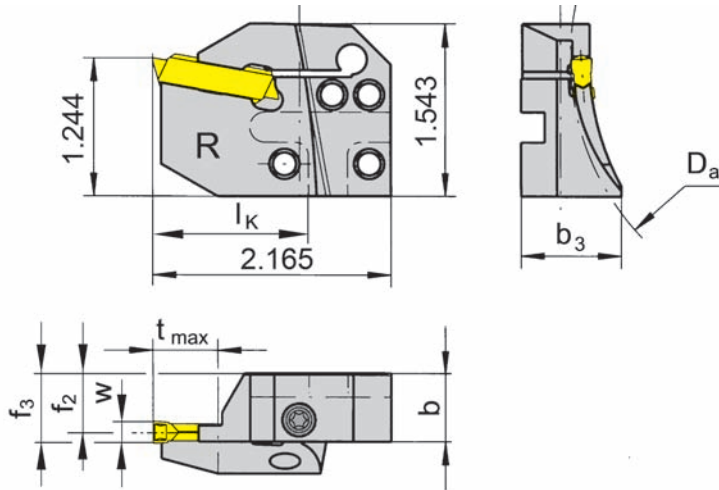
M

CASSETTE Type

RAK220



Outer groove \varnothing 2.362 - 11.811"
 Depth of groove up to .591"
 Width of groove .157 - .236"



for use with Indexable insert

Type S229

R = right hand version shown

Part number	D _{a min}	D _{a max}	t _{max}	b	b ₃	f ₂	f ₃	w	l _k
RAK220.6575.14	2.559	2.953	.394		.906				
RAK220.7595.14	2.953	3.740	.591		.906				
RAK220.9513.14	3.740	5.118	.591	.618	.835	.567	f ₂ +w/2	.157	1.417
RAK220.1318.14	5.118	7.087	.591		.835				
RAK220.1830.14	7.087	11.811	.591		.748				
RAK220.6075.15	2.362	2.953	.394		.906				
RAK220.7595.15	2.953	3.740	.591		.906				
RAK220.9513.15	3.740	5.118	.591	.618	.906	.547	f ₂ +w/2	.197	1.417
RAK220.1318.15	5.118	7.087	.591		.835				
RAK220.1830.15	7.087	11.811	.591		.748				
RAK220.6075.16	2.362	2.953	.394		.906				
RAK220.7595.16	2.953	3.740	.591		.906				
RAK220.9513.16	3.740	5.118	.591	.618	.906	.528	f ₂ +w/2	.236	1.417
RAK220.1318.16	5.118	7.087	.591		.835				
RAK220.1830.16	7.087	11.811	.591		.748				

For basic toolholder R...K1 and L...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

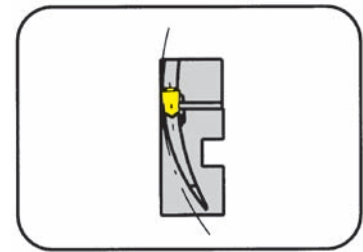
Spare parts

Cassette	Screw	TORX PLUS® Wrench
RAK220....	6.23T25P	T25PQ

M

CASSETTE Type

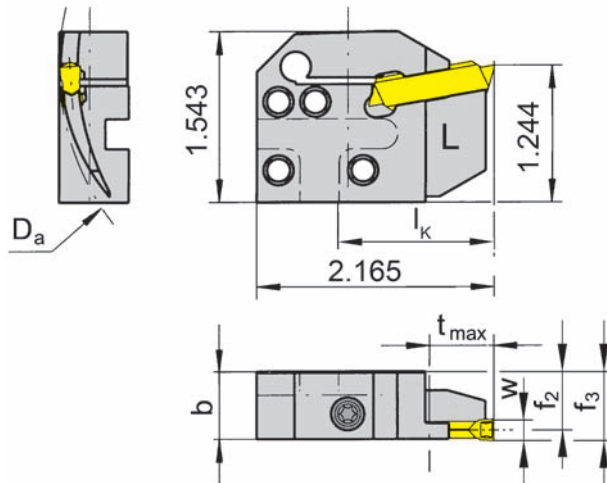
LIK220



Outer groove \varnothing	2.362 - 39.370"
Depth of groove up to	.984"
Width of groove	.157 - .236"

for use with Indexable insert

Type S229



L = left hand version

Part number	$D_{a \min}$	t_{\max}	$D_{a \max}$	t_{\max}	b	f_2	f_3	w	l_k
LIK220.6575.04	2.559	.394	2.953	.591					
LIK220.7595.04	2.953	.591	3.740	.984					
LIK220.9513.04	3.740	.984	5.118	.984	.618	.567	$f_2+w/2$	.157	1.417
LIK220.1318.04	5.118	.984	7.087	.984					
LIK220.1830.04	7.087	.984	11.811	.984					
LIK220.3000.04	11.811	.984	39.370	.984					
LIK220.6075.05	2.362	.394	2.953	.669					
LIK220.7595.05	2.953	.669	3.740	.984					
LIK220.9513.05	3.740	.984	5.118	.984	.618	.547	$f_2+w/2$	.197	1.417
LIK220.1318.05	5.118	.984	7.087	.984					
LIK220.1830.05	7.087	.984	11.811	.984					
LIK220.3000.05	11.811	.984	39.370	.984					
LIK220.6075.06	2.362	.394	2.953	.669					
LIK220.7595.06	2.953	.669	3.740	.984					
LIK220.9513.06	3.740	.984	5.118	.984	.618	.528	$f_2+w/2$	.236	1.417
LIK220.1318.06	5.118	.984	7.087	.984					
LIK220.1830.06	7.087	.984	11.811	.984					
LIK220.3000.06	11.811	.984	39.370	.984					

For basic toolholder L...K1 and R...K2

Further sizes upon request

Dimensions in inch

Spare parts

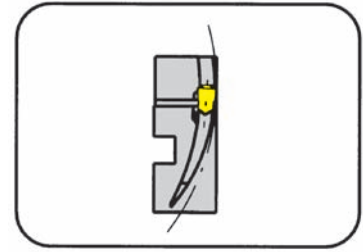
Cassette	Screw	TORX PLUS® Wrench
LIK220....	6.23T25P	T25PQ

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

CASSETTE Type

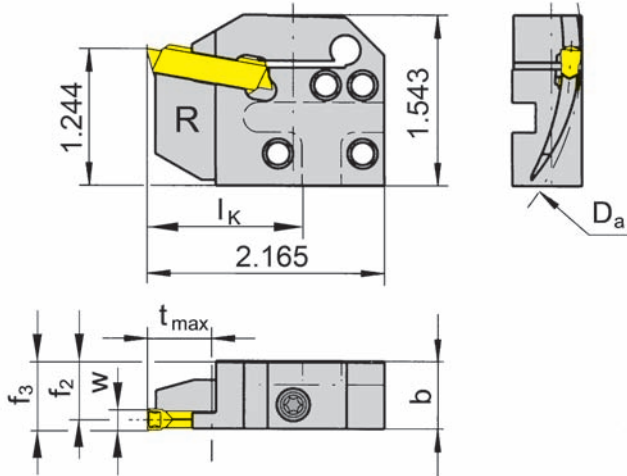
RIK220



Outer groove \varnothing 2.362 - 39.370"
 Depth of groove up to .984"
 Width of groove .157 - .236"

for use with Indexable insert

Type S229



R = right hand version

Part number	D _{a min}	t _{max}	D _{a max}	t _{max}	b	f ₂	f ₃	w	l _k
RIK220.6575.04	2.559	.394	2.953	.591					
RIK220.7595.04	2.953	.591	3.740	.984					
RIK220.9513.04	3.740	.984	5.118	.984	.618	.567	f ₂ +w/2	.157	1.417
RIK220.1318.04	5.118	.984	7.087	.984					
RIK220.1830.04	7.087	.984	11.811	.984					
RIK220.3000.04	11.811	.984	39.370	.984					
RIK220.6075.05	2.362	.394	2.953	.669					
RIK220.7595.05	2.953	.669	3.740	.984					
RIK220.9513.05	3.740	.984	5.118	.984	.618	.547	f ₂ +w/2	.197	1.417
RIK220.1318.05	5.118	.984	7.087	.984					
RIK220.1830.05	7.087	.984	11.811	.984					
RIK220.3000.05	11.811	.984	39.370	.984					
RIK220.6075.06	2.362	.394	2.953	.669					
RIK220.7595.06	2.953	.669	3.740	.984					
RIK220.9513.06	3.740	.984	5.118	.984	.618	.528	f ₂ +w/2	.236	1.417
RIK220.1318.06	5.118	.984	7.087	.984					
RIK220.1830.06	7.087	.984	11.811	.984					
RIK220.3000.06	11.811	.984	39.370	.984					

For basic toolholder R...K1 and L...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

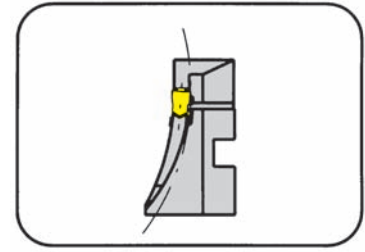
Spare parts

Cassette	Screw	TORX PLUS® Wrench
RIK220....	6.23T25P	T25PQ

M

CASSETTE Type

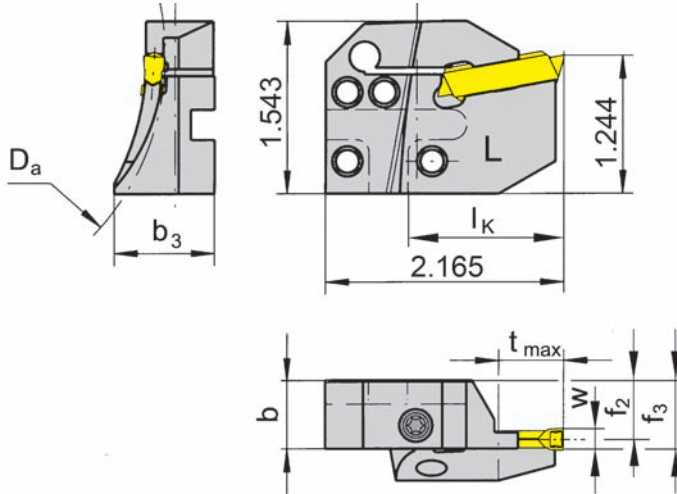
LAK220



Outer groove \varnothing 2.362 - 39.370"
 Depth of groove up to .984"
 Width of groove .157 - .236"

for use with Indexable insert

Type S229



L = left hand version

Part number	D _{a min}	t _{max}	D _{a max}	t _{max}	b	b ₃	f ₂	f ₃	w	l _K
LAK220.6575.04	2.559	.394	2.953	.591						
LAK220.7595.04	2.953	.591	3.740	.984						
LAK220.9513.04	3.740	.984	5.118	.984						
LAK220.1318.04	5.118	.984	7.087	.984	.618		.567	f ₂ +w/2	.157	1.417
LAK220.1830.04	7.087	.984	11.811	.984						
LAK220.3000.04	11.811	.984	39.370	.984						
LAK220.6075.05	2.362	.394	2.953	.669						
LAK220.7595.05	2.953	.669	3.740	.984						
LAK220.9513.05	3.740	.984	5.118	.984						
LAK220.1318.05	5.118	.984	7.087	.984	.618		.547	f ₂ +w/2	.197	1.417
LAK220.1830.05	7.087	.984	11.811	.984						
LAK220.3000.05	11.811	.984	39.370	.984						
LAK220.6075.06	2.362	.394	2.953	.669						
LAK220.7595.06	2.953	.669	3.740	.984						
LAK220.9513.06	3.740	.984	5.118	.984						
LAK220.1318.06	5.118	.984	7.087	.984	.618		.528	f ₂ +w/2	.236	1.417
LAK220.1830.06	7.087	.984	11.811	.984						
LAK220.3000.06	11.811	.984	39.370	.984						

For basic toolholder L...K1 and R...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

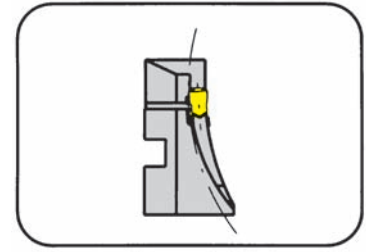
Cassette	Screw	TORX PLUS® Wrench
LAK220....	6.23T25P	T25PQ

M56

M

CASSETTE Type

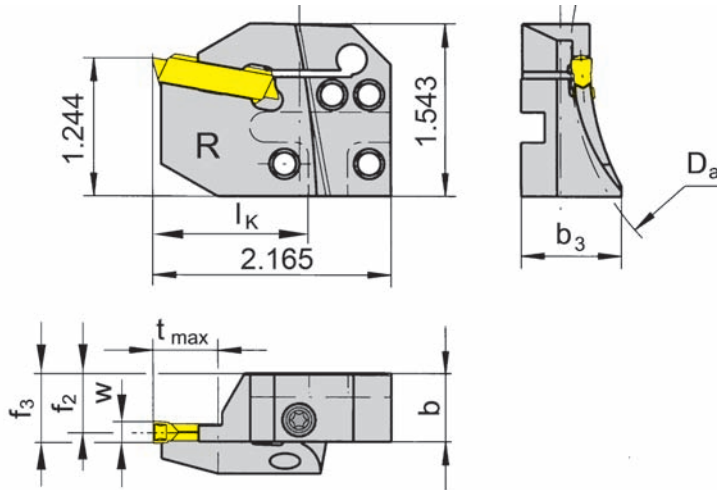
RAK220



Outer groove \varnothing 2.362 - 39.370"
 Depth of groove up to .984"
 Width of groove .157 - .236"

for use with Indexable insert

Type S229



R = right hand version

Part number	D _{a min}	t _{max}	D _{a max}	t _{max}	b	b ₃	f ₂	f ₃	w	l _K
RAK220.6575.04	2.559	.394	2.953	.591		.906				
RAK220.7595.04	2.953	.591	3.740	.984		.906				
RAK220.9513.04	3.740	.984	5.118	.984		.835				
RAK220.1318.04	5.118	.984	7.087	.984	.618	.835	.567	f ₂ +w/2	.157	1.417
RAK220.1830.04	7.087	.984	11.811	.984		.835				
RAK220.3000.04	11.811	.984	39.370	.984		.661				
RAK220.6075.05	2.362	.394	2.953	.669		.906				
RAK220.7595.05	2.953	.669	3.740	.984		.906				
RAK220.9513.05	3.740	.984	5.118	.984		.906				
RAK220.1318.05	5.118	.984	7.087	.984	.618	.835	.547	f ₂ +w/2	.197	1.417
RAK220.1830.05	7.087	.984	11.811	.984		.835				
RAK220.3000.05	11.811	.984	39.370	.984		.661				
RAK220.6075.06	2.362	.394	2.953	.669		.906				
RAK220.7595.06	2.953	.669	3.740	.984		.906				
RAK220.9513.06	3.740	.984	5.118	.984		.906				
RAK220.1318.06	5.118	.984	7.087	.984	.618	.835	.528	f ₂ +w/2	.236	1.417
RAK220.1830.06	7.087	.984	11.811	.984		.835				
RAK220.3000.06	11.811	.984	39.370	.984		.661				

For basic toolholder R...K1 and L...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

Cassette	Screw	TORX PLUS® Wrench
RAK220....	6.23T25P	T25PQ

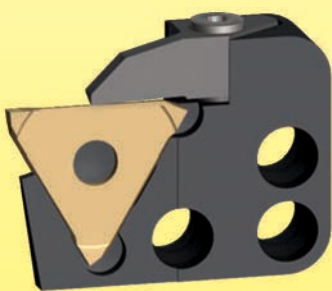
M

HORN HSK-T40 DIN 12164-3

Basic toolholder HSK-T40..840
for external machining



Pocket seat system 840



RNK368.0840...



RNK360.0840...



RNK264.0840...



RNK356.0840...



RNK274.0840...



RNK224.0840...



RNK100.0840...

M

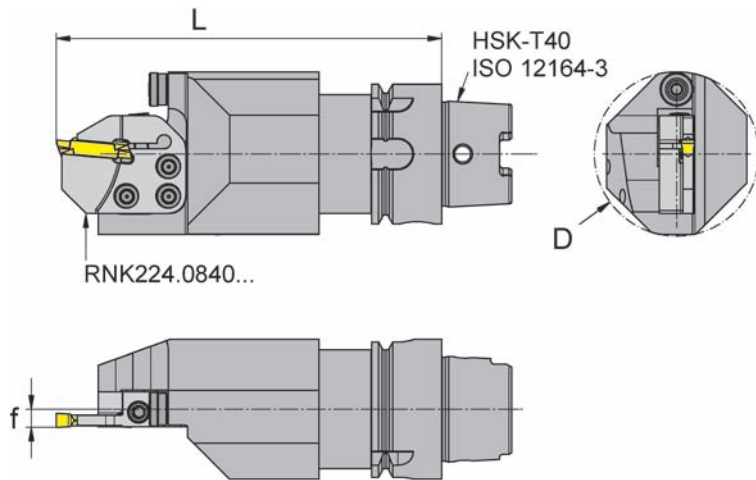
M58

BASIC TOOLHOLDER Type

HSK-T40

with through coolant supply

for using on multi-tasking machines



for use with Indexable insert

Type NS224
S224

Pocket seat system 840

R = right hand version shown

L = left hand version

Part number	Cassette	...NK224...			...NK368...			...NK356...			...NK360...		
		L	D	f	L	D	f	L	D	f	L	D	f
HSKT40.L840.110.K1	L	110	47	5.2	110	47	3.7	110	47	6.4	110	47	*
HSKT40.R840.110.K1	R									7.3			
for Indexable Insert		S224			312			315			312		

* see Cassettes

Part number	Cassette	...NK100...			...NK264...			...NK274...		
		L	D	f	L	D	f	L	D	f
HSKT40.L840.110.K1	L	110	47	5,2	110	47	5,2	110	47	5,0
HSKT40.R840.110.K1	R									
for Indexable Insert		S100			S264			S274		

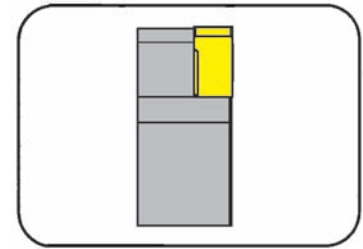
Dimensions in mm

Spare parts

Basic toolholder	Screw	TORX PLUS® Wrench	Coolant spray nozzle	Coolant tube
HSKT40.R/L840.110.K1	5.12T20P	T20PQ	020.1008.2977	HSK40KMZ

CASSETTE Type

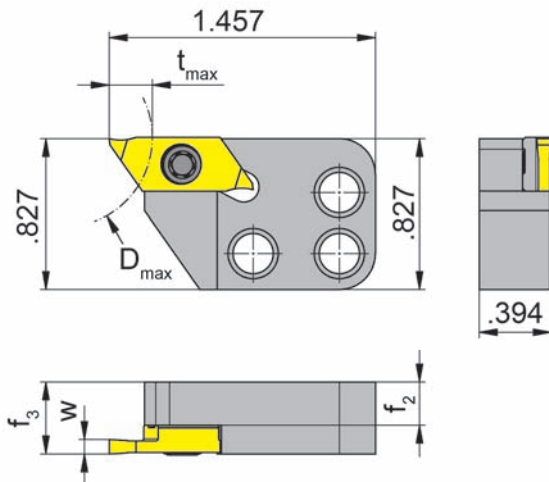
NK274



Depth of groove up to .236"
Clamping range .020 - .157"

for use with Indexable insert

Type S274



R = right hand version shown

L = left hand version

Part number	t_{max}	D_{max}	f_2	f_3	Clamping range
R/LNK274.0840.1.04	.236	.984	.236	f_2+w	.020 - .158

State R or L version

Dimensions in inch

Further sizes upon request

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

M

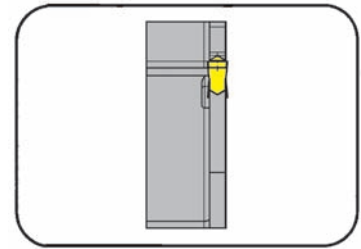
Spare parts

Cassette	Screw	TORX PLUS® Wrench
R/LNK274.0840.1.04	030.3509.T15P	T15PQ

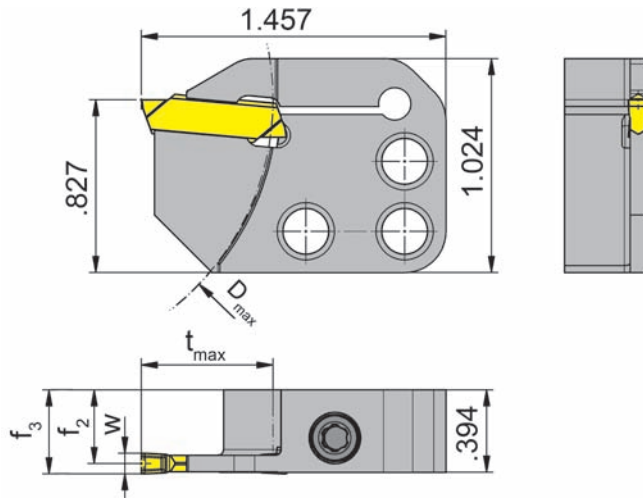
M60

CASSETTE Type

NK264



Depth of groove up to .630"
Clamping range .059 - .118"



for use with Indexable insert

Type S264

R = right hand version shown

L = left hand version

Part number	t_{max}	D_{max}	f_2	f_3	Clamping range
R/LNK264.0840.1.01	.512				.059
R/LNK264.0840.1.02	.630	2.559	.402	$f_2 + w/2$	.079
R/LNK264.0840.1.03	.630				.098
R/LNK264.0840.1.04	.630				.118

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Ordering note:

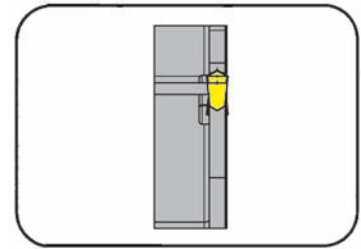
The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

Cassette	Screw	TORX PLUS® Wrench
R/LNK264.0840.1.0...	4.20T15P	T15PL

CASSETTE Type

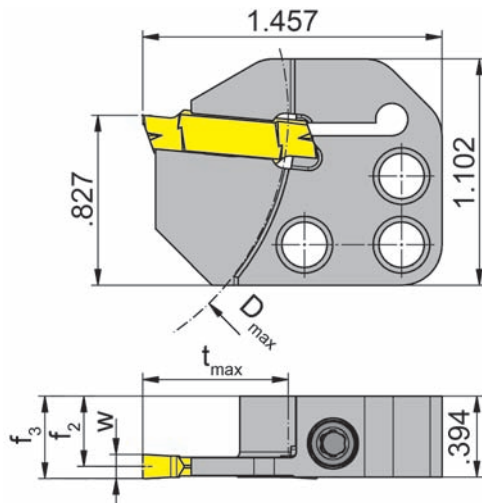
NK224



Depth of groove up to .709"
Clamping range .079 - .236"

for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	t _{max}	D _{max}	f ₂	f ₃	Clamping range
R/LNK224.0840.1.01			.362		.079 - .095
R/LNK224.0840.1.02			.352		.095 - .110
R/LNK224.0840.1.03			.343		.110 - .146
R/LNK224.0840.1.04	.709	2.559	.323	f ₂ +w/2	.146 - .173
R/LNK224.0840.1.05			.303		.173 - .201
R/LNK224.0840.1.06			.283		.201 - .236

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

M

Spare parts

Cassette	Screw	TORX PLUS® Wrench
R/LNK224.0840.1.0...	5.12T20P	T20PQ

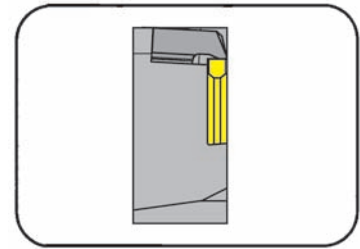
M62

GROOVING (external)



CASSETTE Type

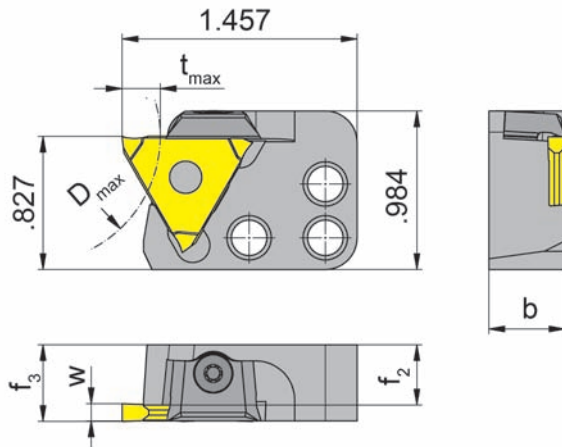
NK360



Depth of groove up to .236"
Clamping range .020 - .248"

for use with Indexable insert

Type 312
U312



R = right hand version shown

L = left hand version

Part number	b	t _{max}	D _{max}	f ₂	f ₃	Clamping range
R/LNK360.0840.1.01	.472	.157	1.575	.413	f ₂ +w-a ₁	.020 - .075
R/LNK360.0840.1.02	.472	.236		.374		.075 - .114
R/LNK360.0840.1.03	.472	.236	.335	.114 - .154		
R/LNK360.0840.1.04	.630	.236	.425	.154 - .248		

State R or L version

w, a₁ see indexable inserts

Dimensions in inch

Further sizes upon request

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

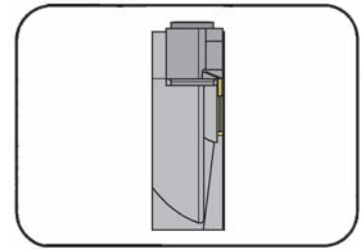
Cassette	Clamp	Screw	TORX PLUS® Wrench
R/LNK360.0840.1.01/02/03	12.3	030.0422.T10P	T10PL
R/LNK360.0840.1.04	14.4	5.32.3T15P	T15PQ

M

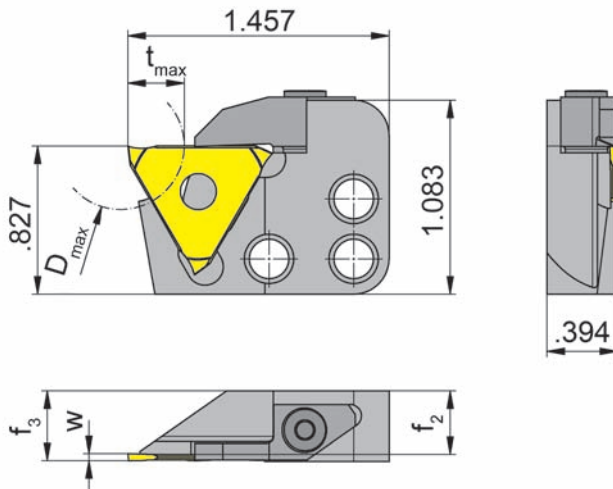
M63

CASSETTE Type

NK368



Depth of groove up to .315"
Clamping range .020 - .059"



for use with Indexable insert

Type 312
U312

R = right hand version shown

L = left hand version

Part number	t_{max}	D_{max}	f_2	f_3	Clamping range
R/LNK368.0840.1.08	.315	.709	.354	f_2+w	.020 - .047
R/LNK368.0840.1.11	.315	.709	.343	f_2+w	.047 - .059

State R or L version

w, a_1 see indexable inserts

Dimensions in inch

Further sizes upon request

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

M

Spare parts

Cassette	Clamp	Screw	TORX PLUS® Wrench
R/LNK368.0840.1....	010.0004.0427	030.400P.0602	T10PL

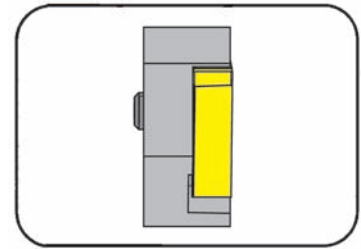
M64

GROOVING (external)



CASSETTE Type

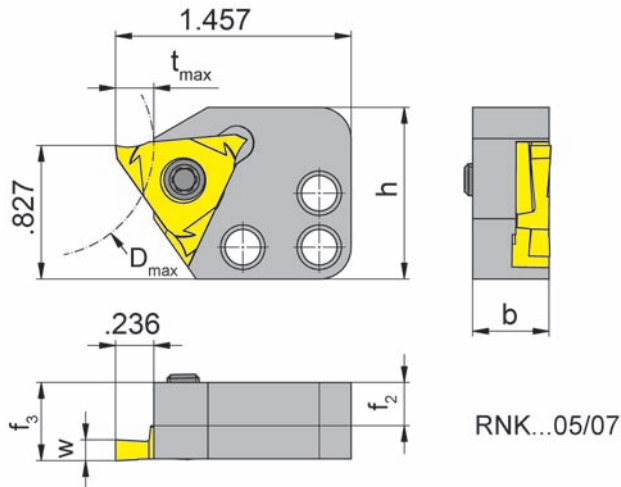
NK356



Depth of groove up to .197"
Clamping range .128 - .295"

for use with Indexable insert

Type 315



R = right hand version shown

L = left hand version

Part number	h	b	t _{max}	D _{max}	f ₂	f ₃	Clamping range
R/LNK356.0840.1.05	1.063	.472	.197	-	.268	f ₂ +w	.020 - .209
R/LNK356.0840.1.07	1.063	.512	.197	-	.236	f ₂ +w	.260 - .295
R/LNK356.0840.1.16	.921	.472	.197	1.378	.236	f ₂ +w	.201 - .260
R/LNK356.0840.1.17	.921	.512	.197	1.378	.240	f ₂ +w	.260 - .295

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

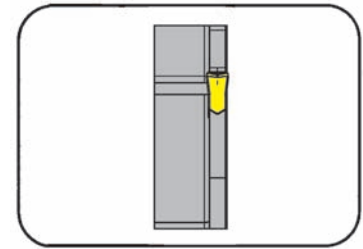
Cassette	Screw	TORX PLUS® Wrench
R/LNK356.0840.1....	5.12T20P	T20PQ

M

M65

CASSETTE Type

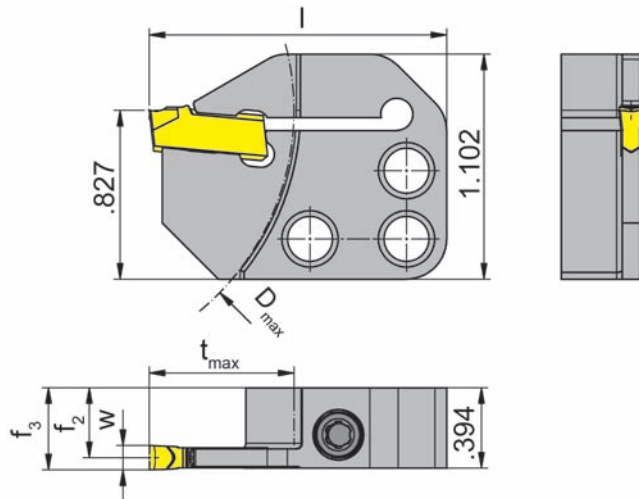
NK100



Depth of groove up to .984"
Clamping range .079 - .197"

for use with Insert

Type S100



R = right hand version shown

L = left hand version

Part number	t_{max}	D_{max}	f_2	f_3	l	Clamping range
R/LNK100.0840.1.01			.362			.079
R/LNK100.0840.1.02			.354			.098
R/LNK100.0840.1.03	.709	2.559	.343	$f_2 + w/2$	1.457	.118
R/LNK100.0840.1.04			.323			.157
R/LNK100.0840.1.05			.303			.197
R/LNK100.0840.3.02	.984	2.559	.354	$f_2 + w/2$	1.732	.098
R/LNK100.0840.3.03			.343			.118

State R or L version

w see inserts

Dimensions in inch

Further sizes upon request

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

M

Spare parts

Cassette	Screw	TORX PLUS® Wrench
R/LNK100.0840....	4.20T15P	T15PL

M66

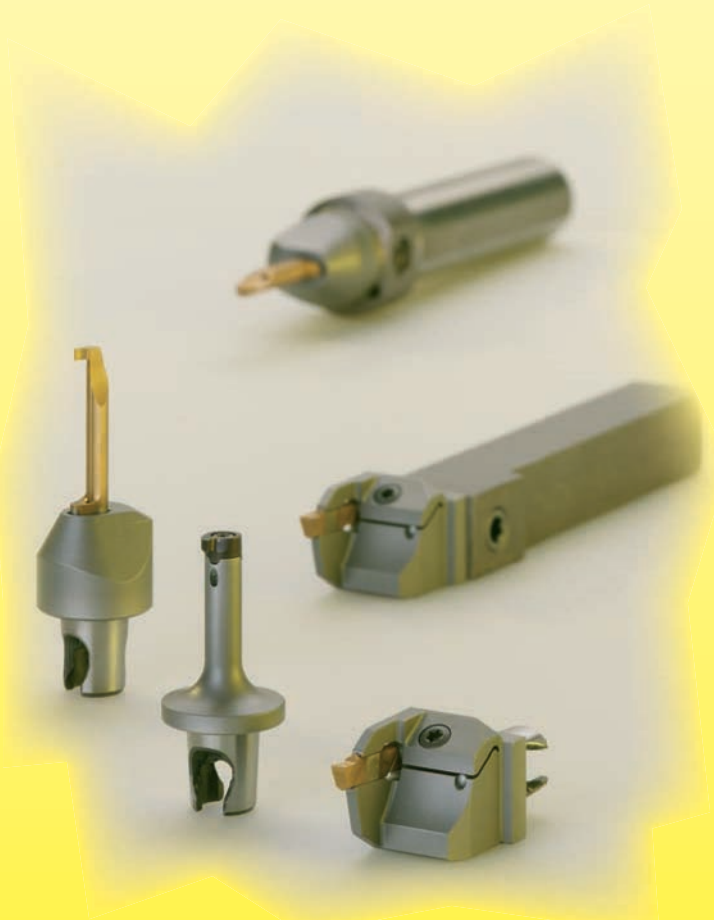
HORN KM16 Micro

for external and internal machining

Supermini® 105 from \varnothing 0.2 mm

Mini 108 from \varnothing 8.0 mm

Grooving system 264



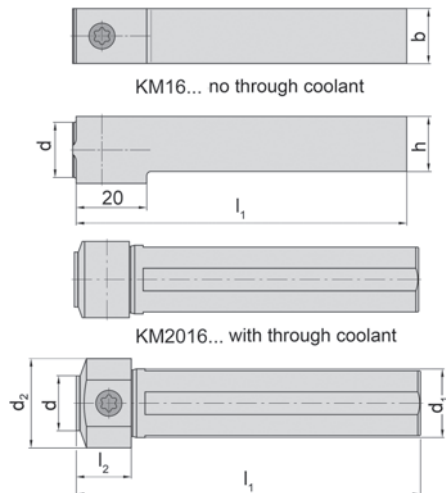
Grooving system 274

for straight and cranked tool-holder



M

Basic toolholder for use with toolholder ...KM16...



System Kennametal
KM16 Micro

Part number	d	l ₁	l ₂	h	b	d ₁	d ₂
KM16 NCM 1616 100	16	100	-	16	16	-	-
KM2016 NCM SS20 16	20	100	16	-	-	20	26
KM2016 NCM SS22 16	20	100	16	-	-	22	28

Dimensions in mm

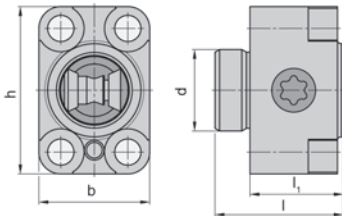
M

Spare parts

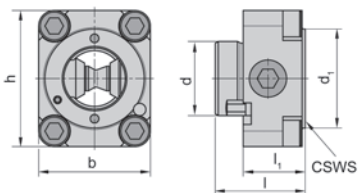
Basic toolholder	Screw	TORX PLUS® Blade
KM16 NCM 1616 100	KM16-NSPKG	DT27PQ
KM2016 NCM SS2...	KM16-NAPKG	DT27PQ

M68

Basic toolholder for use with toolholder ...KM16...



KM16... no through coolant



KM2016... with through coolant

System Kennametal
KM16 Micro

Part number	d	l	l ₁	h	b	d ₁
KM16NCMSF1928	14	22	16	27.5	19	-
KM2016NCMSF2434	20	22	16	33.0	25	20

Further sizes upon request

Dimensions in mm

Spare parts

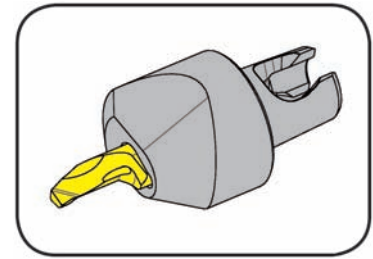
Flange	Screw	TORX PLUS® Blade
KM16NCMSF1928 KM2016NCMSF2434	KM16-NSPKG KM16-NAPKG	DT27PQ DT27PQ

M

TOOLHOLDER Type

B105KM

with through coolant supply

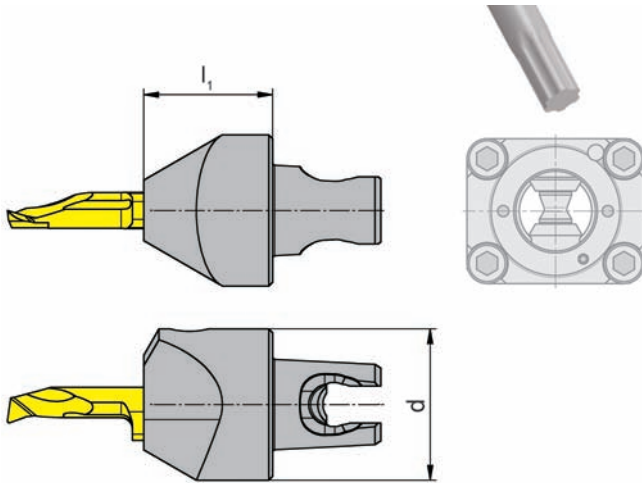


Bore Ø from

.008" (0.2 mm)

for use with Insert

Type 105
U105



System Kennametal
KM16 Micro

Part number	d	l ₁
B105.KM16.90.01	20	17

Further sizes upon request

Dimensions in mm

M

Spare parts

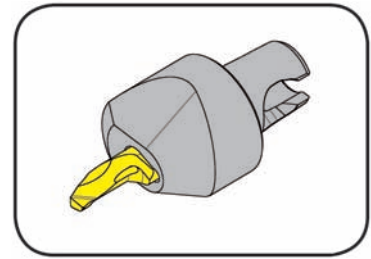
Toolholder	Screw	TORX PLUS® Wrench
B105.KM16.90.01	6.075T15P	T15PQ

M70

TOOLHOLDER Type

B105KM

with through coolant supply

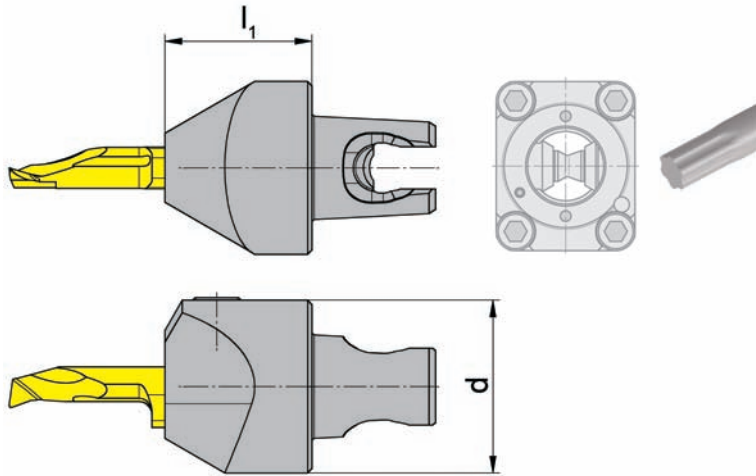


Bore Ø from

.008" (0.2 mm)

for use with Insert

Type 105
U105



System Kennametal
KM16 Micro

Part number	d	l ₁
B105.KM16.01	20	17

Further sizes upon request

Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
B105.KM16.01	6.075T15P	T15PQ

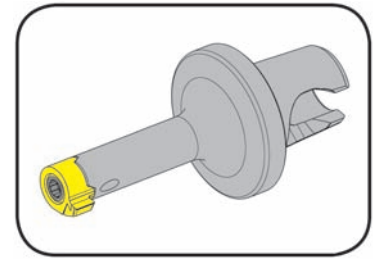
M

M71

TOOLHOLDER Type

B108KM

with through coolant supply

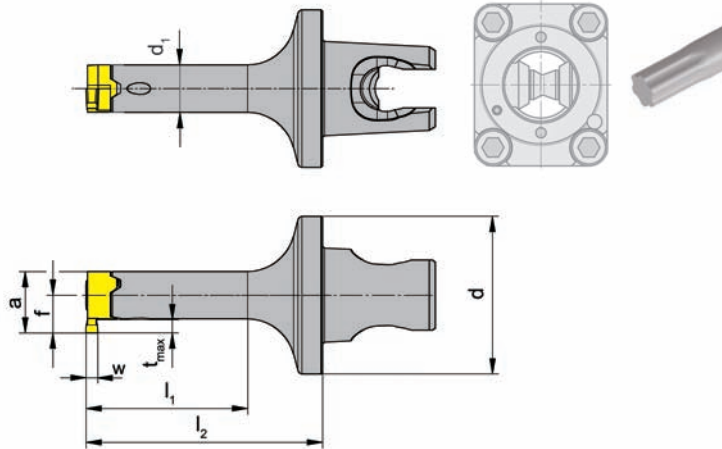


Bore Ø from

.315" (8.0 mm)

for use with Insert

Type 108
U108



System Kennametal
KM16 Micro

Part number	d	l ₁	l ₂	f	t _{max}	a
B108.KM16.01	20	21	30	4.8	1	7.8
B108.KM16.02	20	26	35	4.8	1	7.8

Further sizes upon request

w see inserts

Dimensions in mm

M

Spare parts

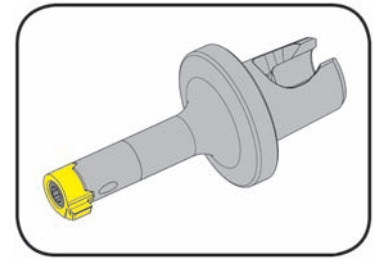
Toolholder	Screw	TORX PLUS® Wrench
B108.KM16.0...	2.6.5T8EP	T8PL

M72

TOOLHOLDER Type

B108KM

with through coolant supply

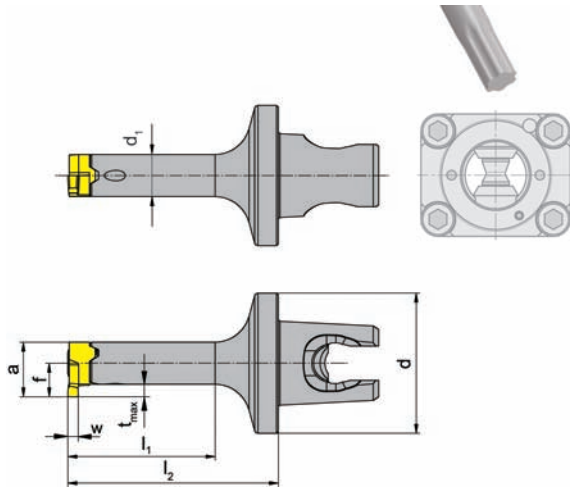


Bore Ø from

.315" (8.0 mm)

for use with Insert

Type 108
U108



System Kennametal
KM16 Micro

Part number	d	l ₁	l ₂	f	t _{max}	a
B108.KM16.90.01	20	21	30	4.8	1	7.8
B108.KM16.90.02		26	35			

Further sizes upon request

w see inserts

Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
B108.KM16.90.0...	2.6.5T8EP	T8PL

M

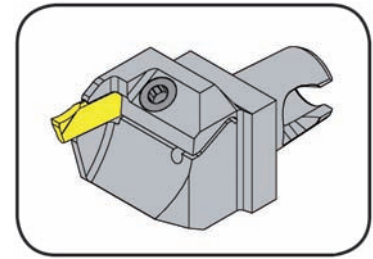
M73

GROOVING and TURNING (external)



TOOLHOLDER Type

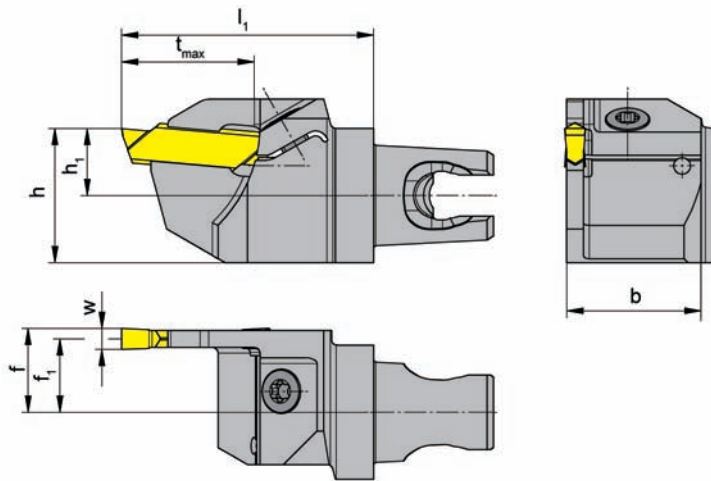
H264KM



Width of groove .059 - .079" (1.5 - 2.0 mm)

for use with Indexable insert

Type 264
S264



L = left hand version shown

R = right hand version

System Kennametal
KM16 Micro

Part number	h	b	l ₁	h ₁	f	f ₁	t _{max}	D _{max}	Size
R/LH264.KM16.01	16	16	24	8	10	9.25	4	32	01
R/LH264.KM16.11			24				10		
R/LH264.KM16.21			27				13		
R/LH264.KM16.02	16	16	24	8	10	9.00	4	32	02
R/LH264.KM16.12			24				10		
R/LH264.KM16.22			30				16		

State R or L version

w see indexable inserts

Dimensions in mm

M

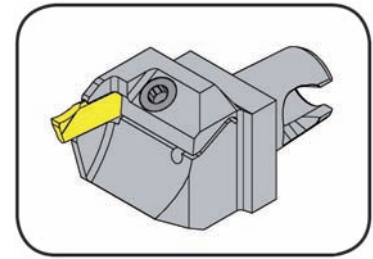
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH264.KM16....	3.5.12T10EP	T10PL

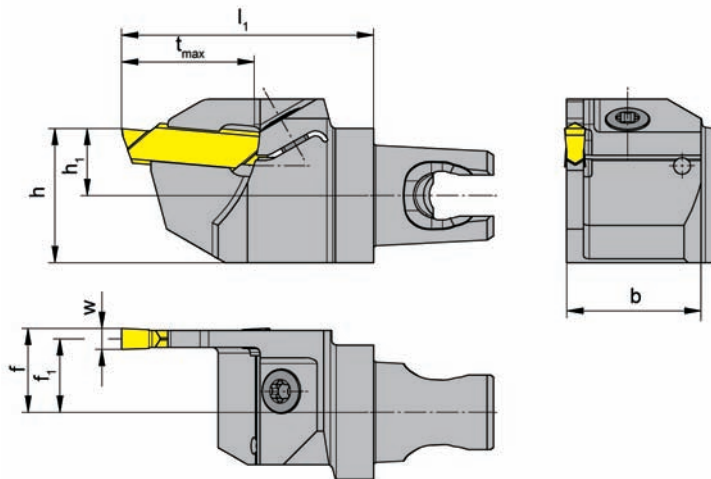
M74

TOOLHOLDER Type

H264KM



Width of groove .098 - .118" (2.5 - 3.0 mm)



for use with Indexable insert

Type 264
S264

System Kennametal
KM16 Micro

L = left hand version shown

R = right hand version

Part number	h	b	l ₁	h ₁	f	f ₁	t _{max}	D _{max}	Size
R/LH264.KM16.03	16	16	24	8	10	8.75	4	32	03
R/LH264.KM16.13			24				10		
R/LH264.KM16.23			30				16		
R/LH264.KM16.04	16	16	24	8	10	8.50	5	32	04
R/LH264.KM16.14			24				10		
R/LH264.KM16.24			30				16		

State R or L version

w see indexable inserts

Dimensions in mm

Spare parts

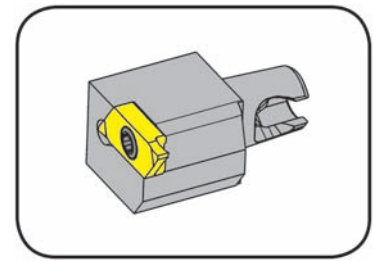
Toolholder	Screw	TORX PLUS® Wrench
R/LH264.KM16....	3.5.12T10EP	T10PL

M

M75

TOOLHOLDER Type

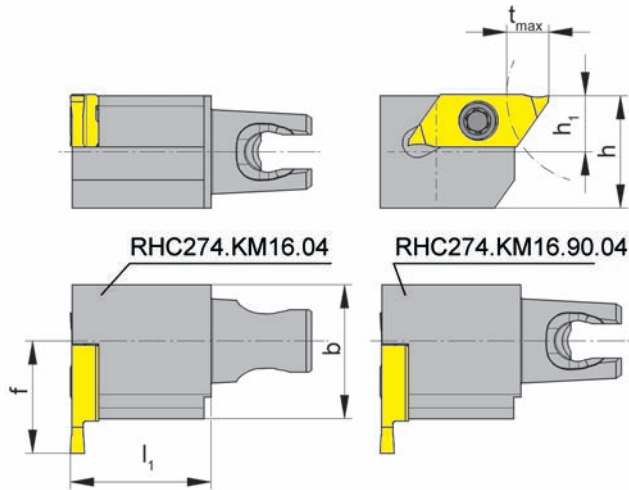
HC274KM



Width of groove .020 - .079" (0.5 - 2.0 mm)

for use with Indexable insert

Type S274



R = right hand version shown

L = left hand version

System Kennametal
KM16 Micro

Part number	h	b	l ₁	h ₁	f	t _{max}	D _{max}	Size
R/LHC274.KM16.04 R/LHC274.KM16.90.04	16	19.1	20	8	16	6	25	04

State R or L version

w see indexable inserts

Dimensions in mm

M

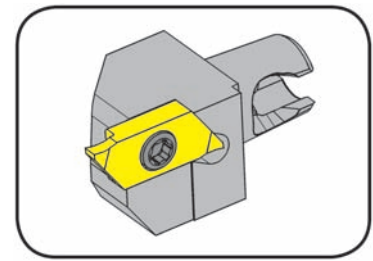
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LHC274.KM16....	030.3509.T15P	T15PQ

M76

TOOLHOLDER Type

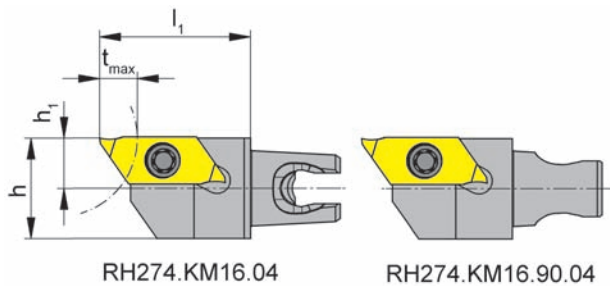
H274KM



Width of groove .020 - .079" (0.5 - 2.0 mm)

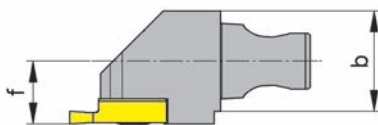
for use with Indexable insert

Type S274



RH274.KM16.04

RH274.KM16.90.04



R = right hand version shown

L = left hand version

System Kennametal
KM16 Micro

Part number	h	b	l ₁	h ₁	f	t _{max}	D _{max}	Size
R/LH274.KM16.04 R/LH274.KM16.90.04	16	16	24	8	10	6	25	04

State R or L version

w see indexable inserts

Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH274.KM16....	030.3509.T15P	T15PQ

M



Torque screw driver with scale
 - variable torque setting
 - adjusted torque is shown on display

D 15 VL

Model 1-5 Nm

The Torque can be adjusted with a special torque setter (id.)
 Ergonomical form gives perfect handling abilities. Acoustic signal when setted torque is reached.
 (Standard: EN ISO 6798, BS EN 26789, ASME B 107.14.M.)
 (Precision: $\pm 6 \%$)



D 28 VL

Model 2-8 Nm



Torque setter

Device for setting the required torque.

Handle: Celluloseacetat with micro structured surface

Blade: Octogonal (8 flats) blade, hardened galvanized

ED 28 VL



Blade for TORX-Plus® screws

Blade: High quality Chrome-Vanadium steel, through hardened, chrome plated. Wiha Chrome Blade guarantees maximum precision.

Colored code green

Utilization: For controlled screw setting with definite torque in combination with Wiha torque screw driver handle.

DT8PK

DT10PK

DT15PK

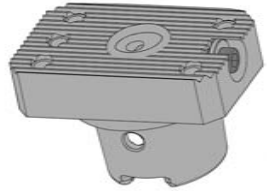
DT20PK

DT25PK

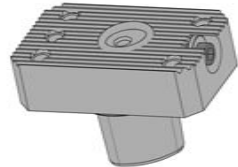
M



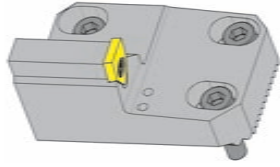
HSKW...849
Page M90



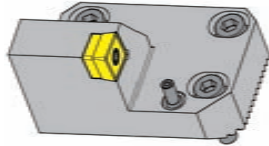
OR



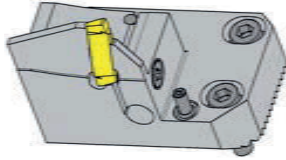
N849.00C...
Page M91



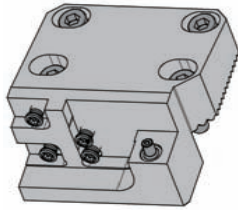
N849.0117...
Page M92-93



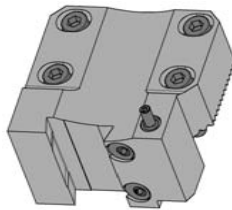
R849...
Page M94



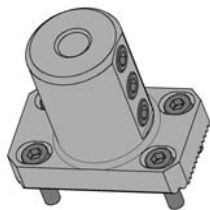
R/L849.0226...
Page M95



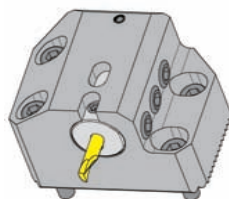
R/L849.0220...
Page M96



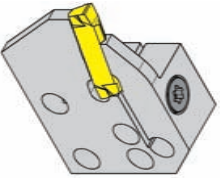
R849.26008R.13.00
Page M97



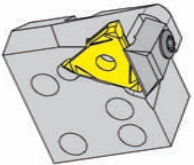
N849.00...N60.K1
Page M98



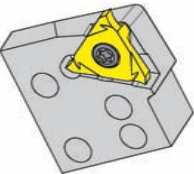
N849.00...R50.K2
Page M99



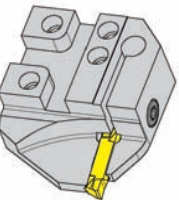
220...



360...



356...



224...

Cassettes



Monobloc, height-adjustable

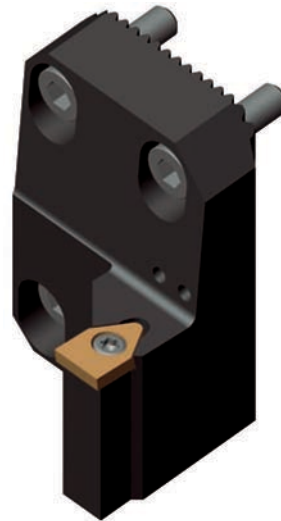
R849.SCLCR...

for DIN Insert



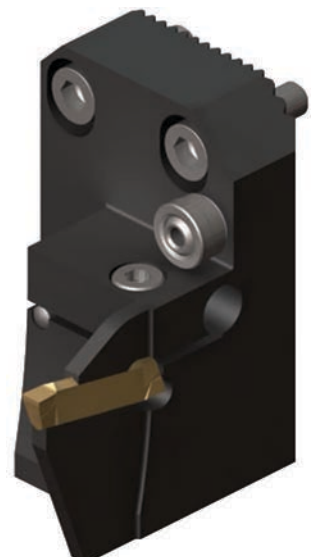
N849.0117R...

for Profiled insert S117...



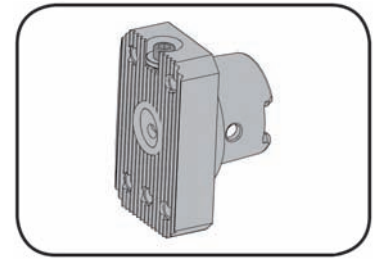
R849.0226R...

for Insert S229...

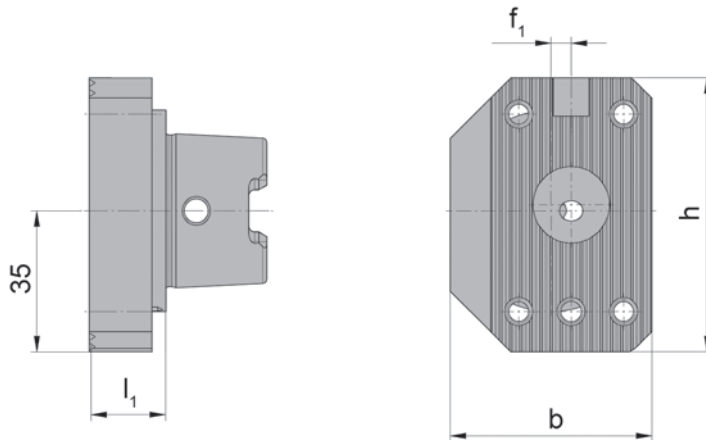


M

BASIC TOOLHOLDER Type **849**



Multispindle Serie SCX



Drive slots with reduced tolerance per ICTM

Part number	Coupling System	h	b	f ₁	Cassette
HSKW-N849.0040.01	HSK-C40 ICTM	68	40	-	N/R/L849...
HSKW-L849.0050.01	HSK-C50 ICTM		50	5	N/L849...
HSKW-R849.0050.01	HSK-C50 ICTM		50	5	N/R849...

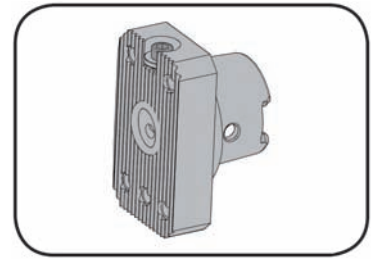
Dimensions in mm

Spare parts

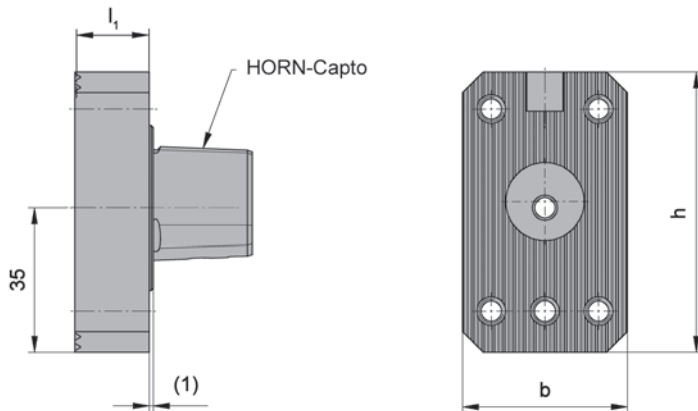
Basic toolholder	Adjust screw axial	Wrench	O-ring
HSKW-...	030.0006.0503	SW4DIN911	DIN3771-14x2.65B

M

BASIC TOOLHOLDER Type **849C**



Multispindle Serie SCX



HORN-Capto

Part number	Coupling System	h	b	l ₁	Cassette
N849.00C3.01	C3	68	40	18.5	N/L/R849...
N849.00C4.01	C4	68	40	18.5	N/L/R849...

Dimensions in mm

M

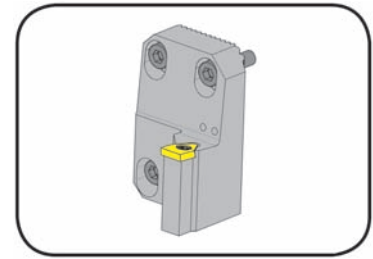
Spare parts

Basic toolholder	Adjust screw axial	Wrench	O-ring
N849.00C...	030.0006.0503	SW4DIN911	DIN3771-14x2.65B

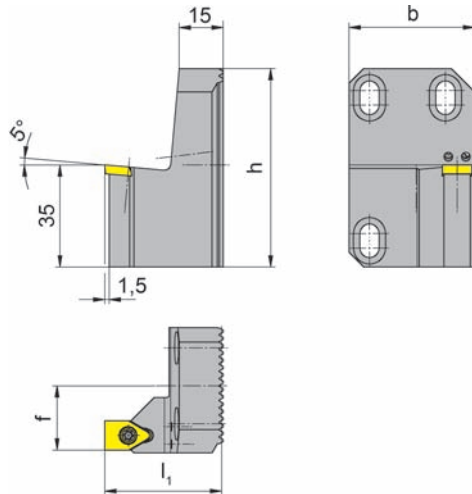
M82

CASSETTE Type

849



Multispindle Serie SCX



Height-adjustable
+3,0/-1,0 mm

Part number	h	b	l ₁	f	Insert
N849.0117R.10.00	68	43	40	22.0	S117...10...
N849.0117R.12.00		43	40	22.0	S117...12...
N849.0117R.16.00		43	45	21.0/22.0	S117...14.../16...
N849.0117R.20.00		43	50	21.0/22.5	S117...18/...20...
N849.0117R.26.00		43	55	22.0	S117...26...
N849.0117R.32.00		41	40	22.0	S117...32...

Dimensions in mm

For available inserts, geometries and carbide grades please see the **Chapter O / Profiling**.

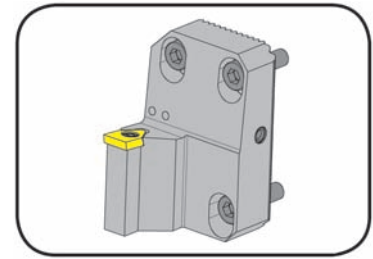
Spare parts

Cassette	Screw	Screw	Wrench	TORX PLUS® Wrench
N849.0117R.1...00	DIN912-M6x20	4.09T15P	SW5DIN911	T15PQ
N849.0117R....00	DIN912-M6x20	5.12T20P	SW5DIN911	T20PQ
N849.0117R.2...00	DIN912-M6x20	6.17T20P	SW5DIN911	T20PQ

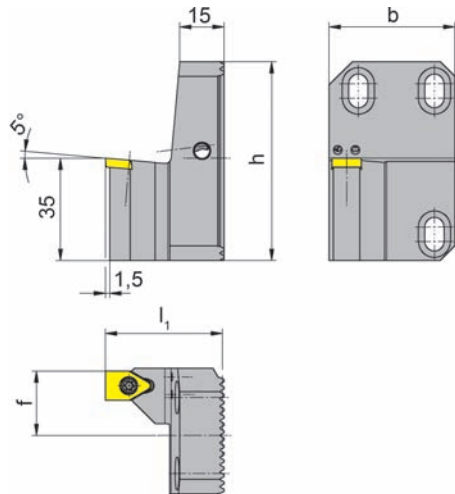
M

CASSETTE Type

849



Multispindle Serie SCX



Height-adjustable
+3,0/-1,0 mm

Part number	h	b	l ₁	f	Insert
N849.0117L.10.00	68	43	40	22.0	S117...10...
N849.0117L.12.00		43	40	22.0	S117...12...
N849.0117L.16.00		43	45	21.0/22.0	S117...14.../16...
N849.0117L.20.00		43	50	21.0/22.5	S117...18.../20...
N849.0117L.26.00		43	55	22.0	S117...26...
N849.0117L.32.00		41	40	22.0	S117...32...

Dimensions in mm

For available inserts, geometries and carbide grades please see the **Chapter O / Profiling**.

M

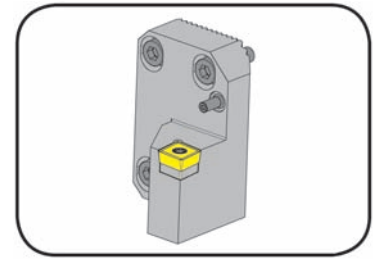
Spare parts

Cassette	Screw	Screw	Wrench	TORX PLUS® Wrench
N849.0117L.1...00	DIN912-M6x20	4.09T15P	SW5DIN911	T15PQ
N849.0117L....00	DIN912-M6x20	5.12T20P	SW5DIN911	T20PQ
N849.0117L.2...00	DIN912-M6x20	6.17T20P	SW5DIN911	T20PQ

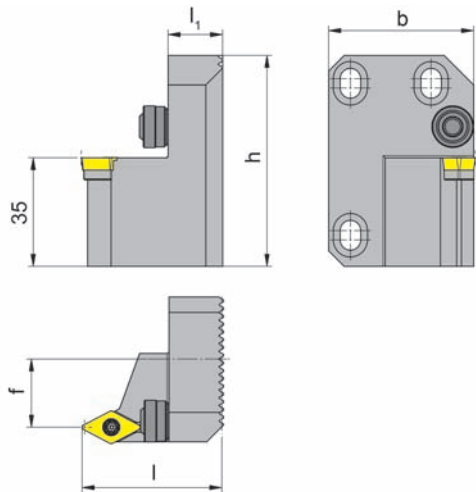
M84

CASSETTE Type

849



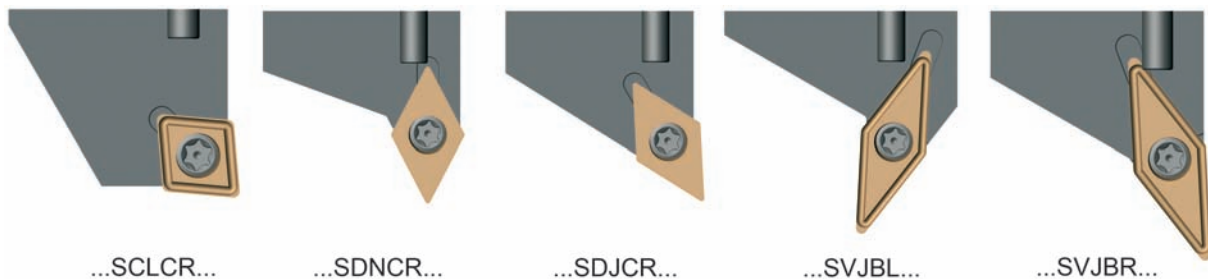
Multispindle Serie SCX



Height-adjustable
± 1,0 mm

Part number	h	b	l ₁	f	l	Insert
R849.SCLCR.12.00	68	45.1	17	27.0	45	CCMT 120408
R849.SCLCR.09.00		45.5		27.0	45	CCMT 09T308
R849.SDNCR.11.00		45.5		22.0	45	DCMT 11T308
R849.SVJBR.16.00		46.2		27.0	50	VBMT 160408
R849.SDJCR.11.00		46.7		27.0	45	DCMT 11T308
R849.SVJBL.16.00		49.5		14.9	50	VBMT 160408

Dimensions in mm



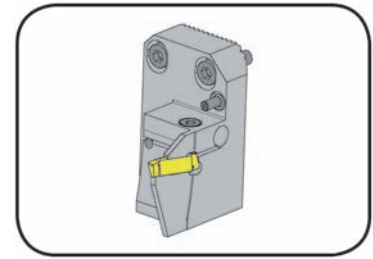
Spare parts

Cassette	Coolant spray nozzle
R849.S...	020.1210.2966

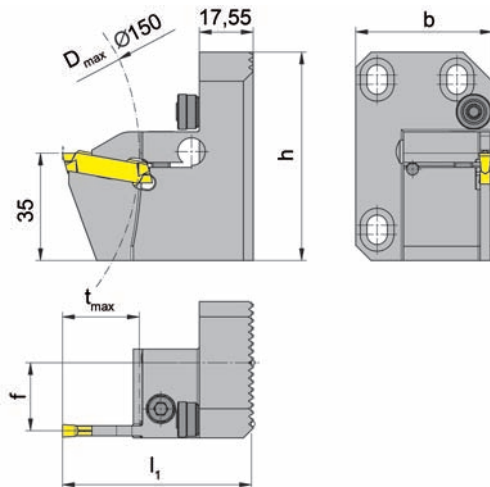
M

CASSETTE Type

849



Multispindle Serie SCX



Height-adjustable
± 1,0 mm

Part number	h	b	l ₁	f	t _{max}	Insert
L849.0226L.00.03	68	45.5	61.5	23.0	25	S229.0300/0400...
L849.0226L.00.04				22.2		S229.0400/0500...
L849.0226L.00.05				21.7		S229.0600...
L849.0226L.00.07				20.7		S229.0800...
R849.0226R.00.03	68	45.5	61.5	23.0	25	S229.0300/0400...
R849.0226R.00.04				22.2		S229.0400/0500...
R849.0226R.00.05				21.7		S229.0600...
R849.0226R.00.07				20.7		S229.0800...

Dimensions in mm

For available inserts, geometries and carbide grades please see the **Chapter G / System 229**.

M

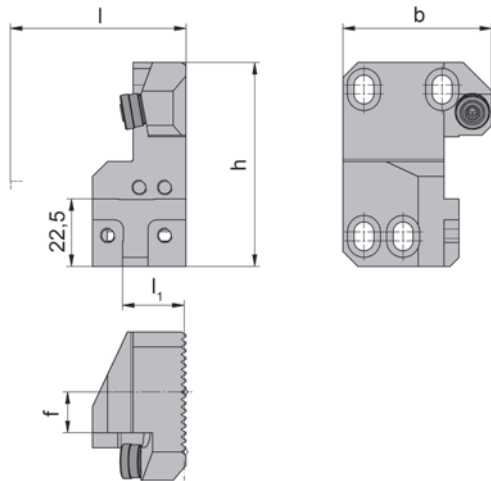
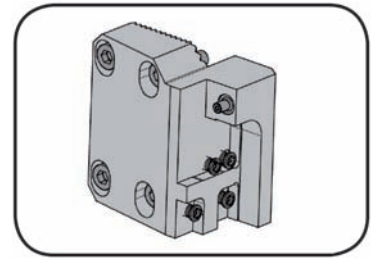
Spare parts

Cassette	Screw	Screw	Wrench	TORX PLUS® Wrench	Coolant spray nozzle
R/L849.0226R/L.00.0...	DIN912-M6x20	6.23T25P	SW5DIN911	T25PQ	020.1008.2976

M86

ADAPTER FOR CASSETTES Type 849

Multispindle Serie SCX



Height-adjustable
± 1,0 mm

Part number	h	b	l ₁	f	l	Cassette
L849.0220L.49.00 R849.0220R.49.00	68	49.5	20.5	13.6	l ₁ +l _k	LNK... RNK...
L849.0220L.41.00 R849.0220R.41.00	68	65.5	14.5	30.6	l ₁ +l _k	LNK... RNK...

l_k see cassettes

Dimensions in mm

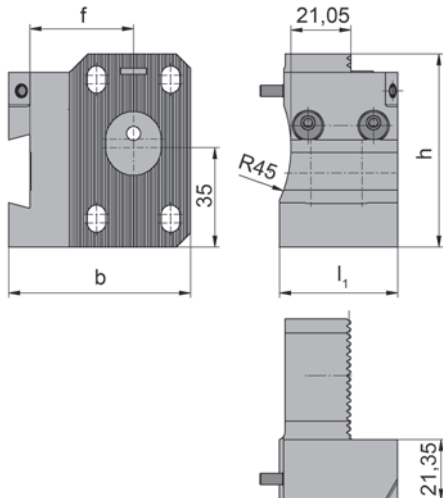
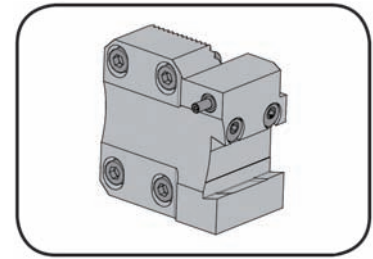
Spare parts

Adapter for cassettes	Screw	Screw	Wrench	TORX PLUS® Wrench	Coolant spray nozzle
R/L849.0220R/L.4...	DIN912-M6x20	5.12T20P	SW5DIN911	T20PQ	020.1008.2976

M

ADAPTOR FOR BLADES Type **849**

Multispindle Serie SCX



Height-adjustable
± 1,0 mm

Part number	h	b	l ₁	f	Blade
R849.2608R.13.00	68	63.8	41.5	36.3	...2608...

Dimensions in mm

For the available blades please see the **Chapter P / Parting off**.

M

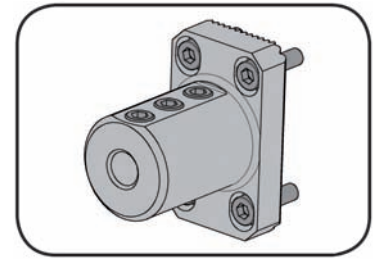
Spare parts

Adaptor for blades	Screw	Wrench	Wedge	Coolant spray nozzle
R849.2608R.13.00	DIN912-M6x25	SW5DIN911	020.0011.1002	020.1008.2977

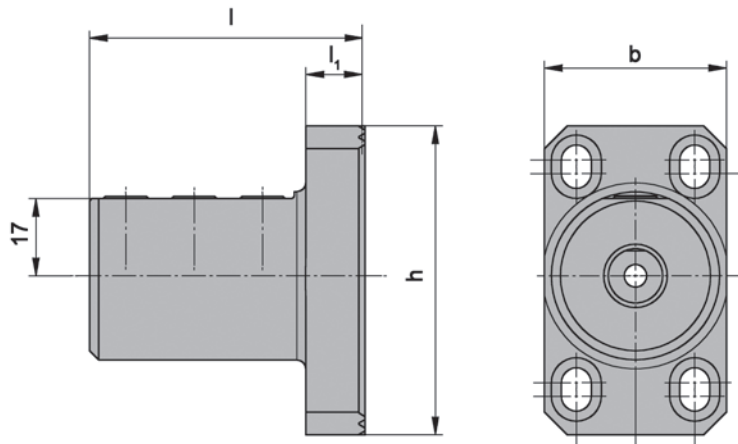
M88

CASSETTE Type

849



Multispindle Serie SCX



Height-adjustable
± 1,0 mm

Part number	h	b	l ₁	l	Boring bar
N849.0012N.60.K1	68	40	12.45	60	Ø 12
N849.0016N.60.K1					Ø 16
N849.0020N.60.K1					Ø 20

Dimensions in mm

For the available boring bars please see our SuperMini & Mini catalog (KMINI100US)

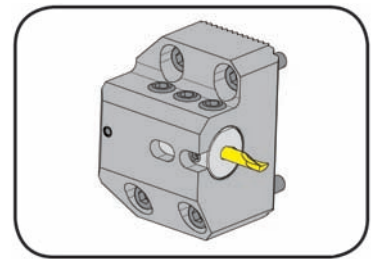
Spare parts

Cassette	Screw	Wrench	Threaded pin
N849.00...	DIN912-M6x20	SW5DIN911	DIN1835-M10x12

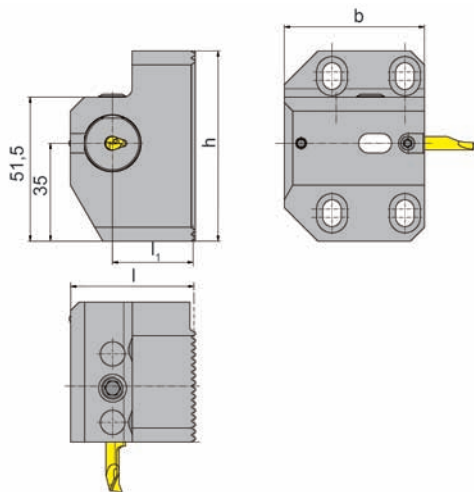
M

CASSETTE Type

849



Multispindle Serie SCX



Length adjustable + 2 mm

Height-adjustable
± 1,0 mm

Part number	h	b	l ₁	l	Boring bar
R849.0012R.50.K2	68	50	29	40	B105.0012.0351
R849.0016R.50.K2				42	B105.0016.0352
R849.0020R.50.K2				44	B105.0020.0325

Dimensions in mm

Ordering note:

Boring bars are not included - separate order required!

For the available inserts please see our Supermini® & Mini catalog (KMINI100US)

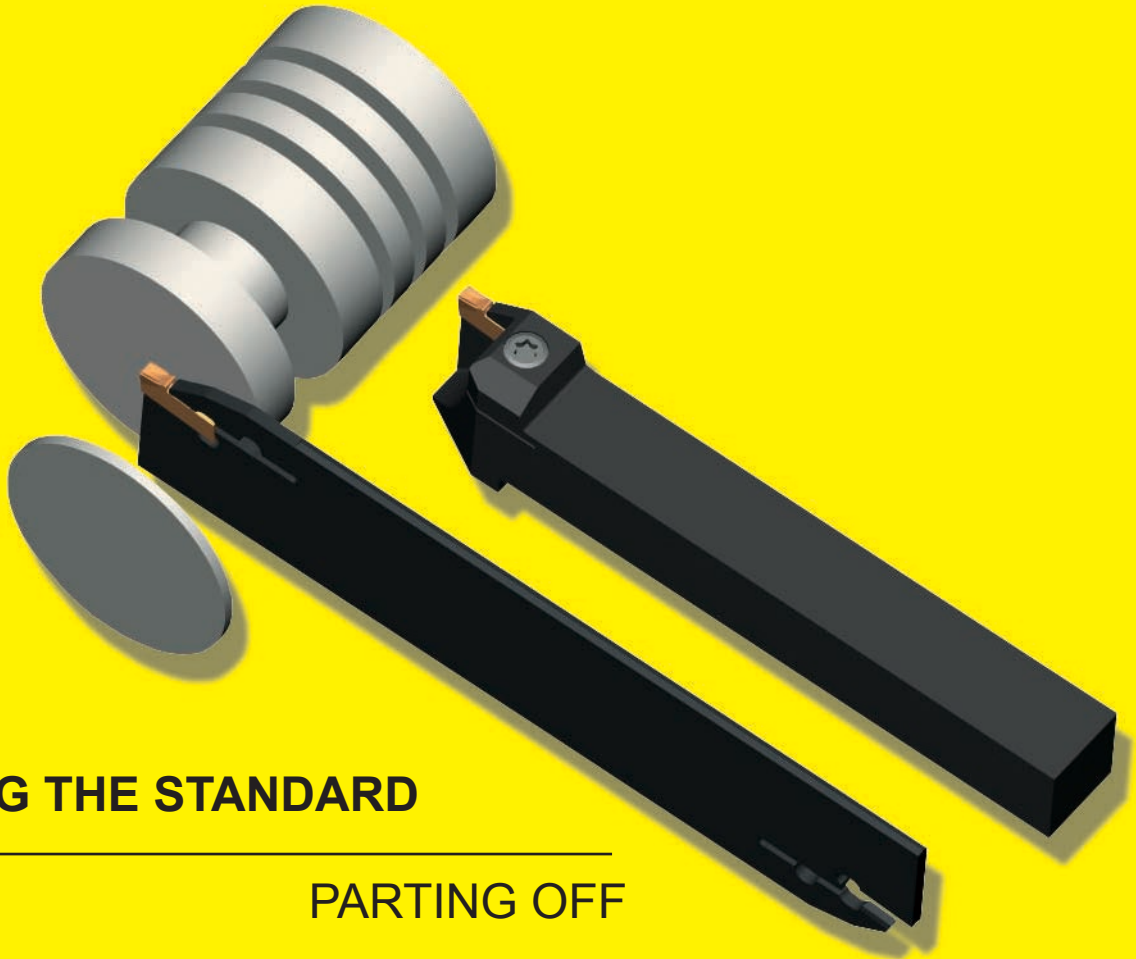
M

Spare parts

Cassette	Screw	Screw	Screw	Adjust screw axial	Wrench	Threaded pin	Wrench
R849.0012R.50.K2	DIN912-M6x20	DIN912-M6x40	DIN913-M8x12	030.5060.0596	SW2,5DIN911	030.1008.0648	SW4DIN911
R849.0016R.50.K2	DIN912-M6x20	DIN912-M6x40	DIN913-M8x12	030.5060.0596	SW5DIN911		SW4DIN911
R849.0020R.50.K2	DIN912-M6x20	DIN912-M6x40	DIN913-M8x12	030.5060.0596	SW5DIN911		SW4DIN911

M90

HORN - THE LEADERS IN GROOVING TECHNOLOGY



SETTING THE STANDARD

PARTING OFF

HORN Toolholder and blades

HORN - INTELLIGENT TOOL DESIGN AT WORK.



M

For further information, please see chapter "P".

HCG - HORN Catalog Guide

FACE GROOVING

Outer groove Ø	Product line							
	105	A105	A110	114	312	231/N231	S224	S229
from .204" (5 mm)	•							
from .394" (10 mm)		•						
from .472" (12 mm)				•				
from .787" (20 mm)			•		•			
from 1.496" (38 mm)							•	
from 1.575" (40 mm)						•		
from 2.362" (60 mm)								•

Depth of groove	Product line							
	105	A105	A110	114	312	231/N231	S224	S229
up to .118" (3 mm)					•			
up to .236" (6 mm)	•			•				
up to .315" (8 mm)						•		
up to .551" (14 mm)								
up to .591" (15 mm)		•						
up to .709" (18 mm)							•	
up to .984" (25 mm)								•
up to 1.181" (30 mm)			•					

Width of groove inch	.039 - .125	.079 - .118	.118	.039 - .125	.059 - .125	.118 - .394	.118 - .236	.157 - .236
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Width of groove mm	1.0 - 3.18	2.0 - 3.0	3.0	1.0 - 3.18	1.5 - 3.18	3.0 - 10.0	3.0 - 6.0	4.0 - 6.0
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Chapter	N
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Special tools upon request

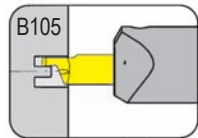
FACE GROOVING **N**

Range

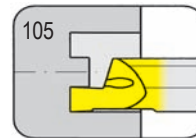
Toolholder

Inserts

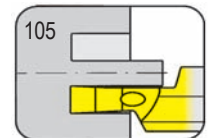
Outer groove Ø $\geq .197''$
 Depth of groove max. $.236''$
 Width of groove up to $.125''$



Page N2-N7

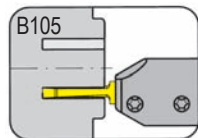


Page N8-N13

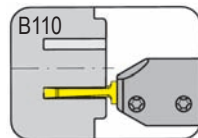


Page N14

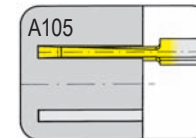
Outer groove Ø $\geq .394 / .787''$
 Depth of groove max. $.591 / 1.181''$
 Width of groove up to $.118''$



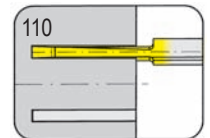
Page N16-N17



Page N20-N21

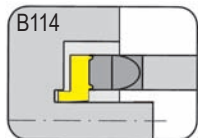


Page N18

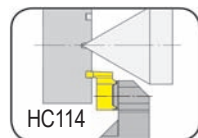


Page N22-N23

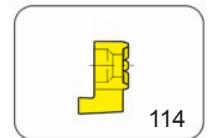
Outer groove Ø $\geq .472''$
 Depth of groove max. $.236''$
 Width of groove up to $.125''$



Page N26-N29

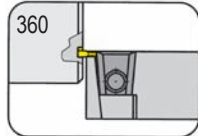


Page N30-N31

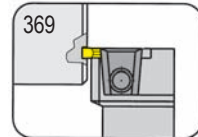


Page N32-N39

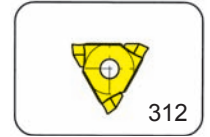
Outer groove Ø $\geq .787''$
 Depth of groove max. $.118''$
 Width of groove up to $.125''$



Page N42-N43

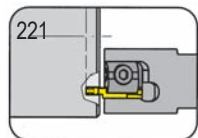


Page N44-N45

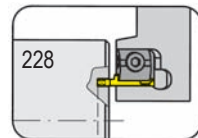


Page N46-N47

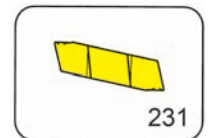
Outer groove Ø $\geq 1.575''$
 Depth of groove max. $.709''$
 Width of groove up to $3 - .394''$



Page N50-N51

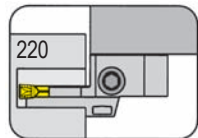


Page N52-N53

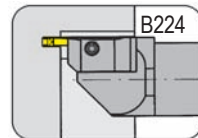


Page N54

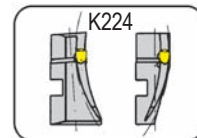
Outer groove Ø $1.496 - 39.370''$
 Depth of groove max. $.709''$
 Width of groove up to $.236''$



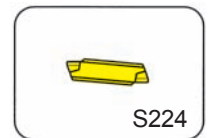
Page N56-N59



Page N60-N61

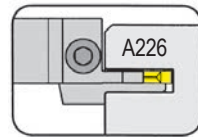


Page N62-N69

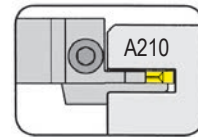


Page N70-N72

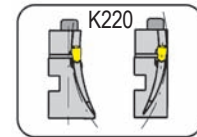
Outer groove Ø $2.362 - 39.370''$
 Depth of groove max. $.984''$
 Width of groove up to $.236''$



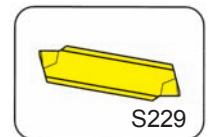
Page N74-N77



Page N78-N81



Page N82-N97



Page N98-N101

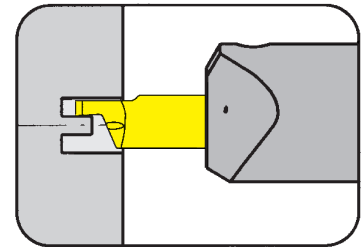
For Technical Information please see chapter Q

TOOLHOLDER Type

BU105

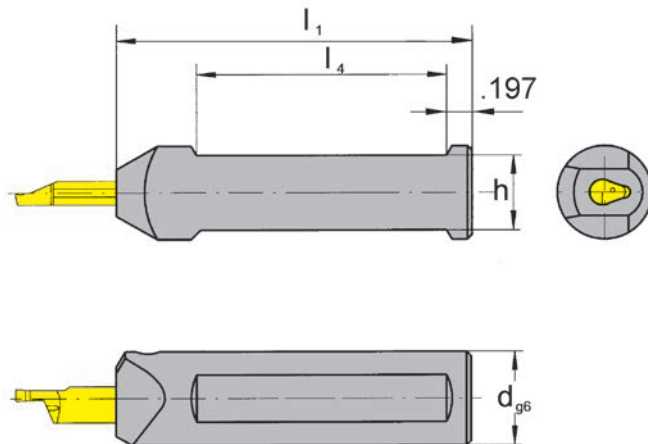
with through coolant supply

from outer groove \emptyset	.197"
Depth of groove up to	.236"
Width of groove up to	.125"



for use with Insert

Type 105
U105



Picture = left hand cutting version shown

Part number	d	l ₁	h	l ₄
BU105.0500.01	.500	2.950	.433	2.160
BU105.0625.01	.625	2.950	.551	2.160
BU105.0750.01	.750	3.540	.671	2.750
BU105.1000.01	1.000	3.540	.921	2.750

Further sizes upon request

Dimensions in inch

Ordering note:

Toolholders can be used with right and left hand inserts.

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
BU105....	6.075T15P	T15PQ

N2

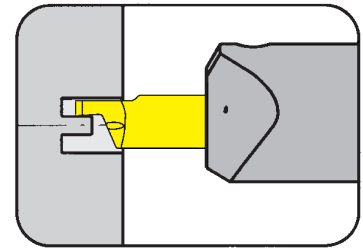
TOOLHOLDER Type

B105

with through coolant supply

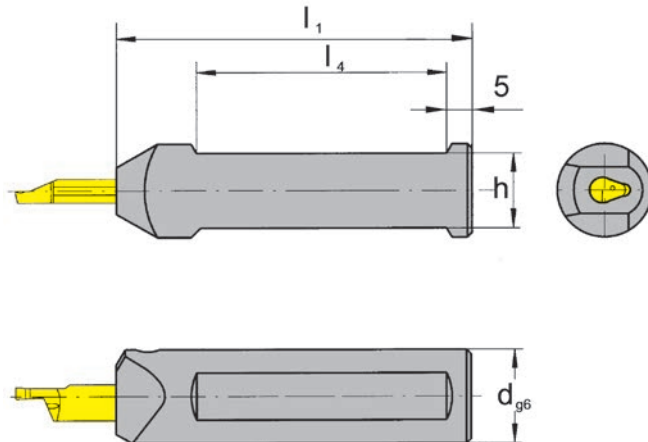
from outer groove \varnothing
Depth of groove up to
Width of groove up to

.197" (5.0 mm)
.236" (6.0 mm)
.125" (3.18 mm)



for use with Insert

Type 105
U105



Picture = left hand cutting version shown

Part number	d	l ₁	h	l ₄
B105.0010.01	10	75	9	50
B105.0012.01	12	75	11	50
B105.0016.01	16	75	14	50
B105.0020.01	20	90	18	55
B105.0025.01	25	100	23	55

Further sizes upon request

Dimensions in mm

Ordering note:

Toolholders can be used with right and left hand inserts.

Spare parts

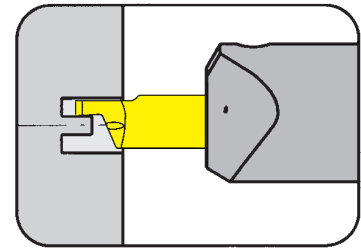
Toolholder	Screw	TORX PLUS®-Wrench
B105.00...	6.075T15P	T15PQ



TOOLHOLDER Type

B105/BU105

with through coolant supply

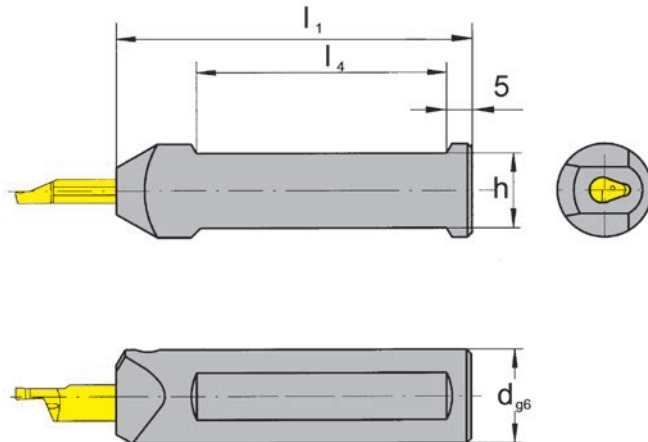


from outer groove \varnothing
Depth of groove up to
Width of groove up to

.197" (5.0 mm)
.236" (6.0 mm)
.125" (3.18 mm)

for use with Insert

Type 105
U105



Picture = left hand cutting version shown

Part number	d	l ₁	h	l ₄	l ₅	Remark
B105.0022.01	22.00	90	20.00	55	5	-
B105.0028.01	28.00	120	26.00	72	12	**
BU105.0750.5.01	3/4"	90	17.04	70	5	**
BU105.1000.5.01	1"	90	23.40	65	5	**

Further sizes upon request

Dimensions in mm and inch

** Adapter of cooling M12x1,5 for Traub

Ordering note:

Toolholders can be used with right and left hand inserts.

Spare parts

Toolholder	Screw	TORX PLUS®-Wrench
B/BU105...	6.075T15P	T15PQ

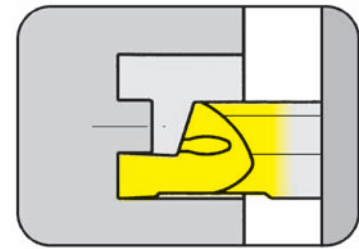
TOOLHOLDER Type

H105

with screwed clamping

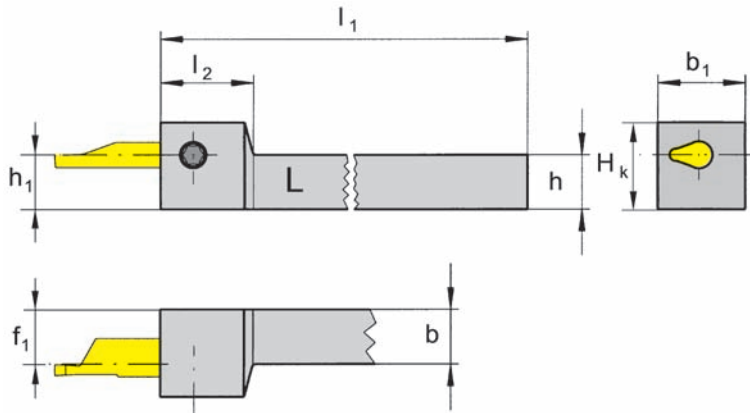
from outer groove \varnothing .197" (5.0 mm)
 Depth of groove up to .236" (6.0 mm)
 Width of groove up to .125" (3.18 mm)

with through coolant supply



for use with Insert

Type 105
 U105



L = left hand toolholder shown

R = right hand toolholder

Part number	l_1	l_2	h	h_1	f_1	b	b_1	H_k
R/LH105.0808.01	90	17	8	8	7.5	8	16	14
R/LH105.1010.01	90	17	10	10	7.5	10	16	16
R/LH105.1212.01	90	17	12	12	7.5	12	16	18
R/LH105.1616.01	110	17	16	16	7.5	16	16	22

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH105....	6.075T15P	T15PQ



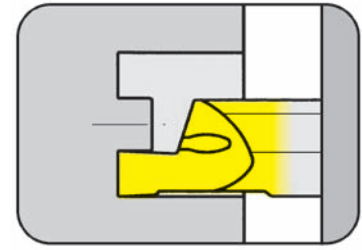
TOOLHOLDER Type

HC105

with screwed clamping

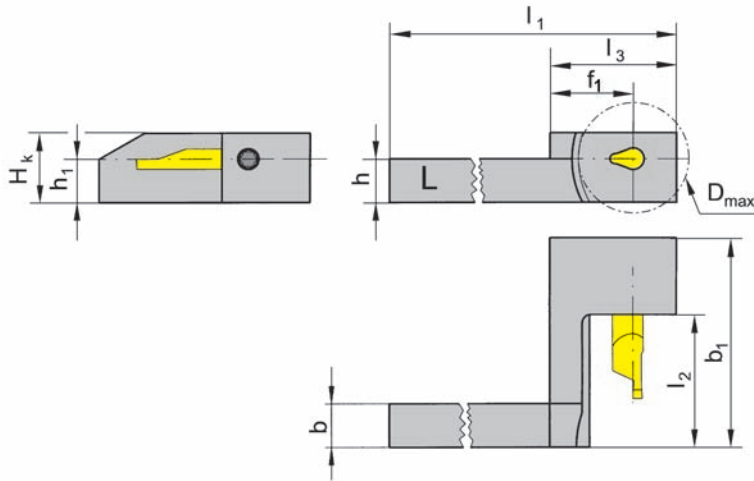
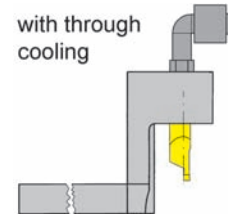
from outer groove \varnothing	.197" (5.0 mm)
Depth of groove up to	.236" (6.0 mm)
Width of groove up to	.125" (3.18 mm)

Coolant supply through cranked fitting



for use with Insert

Type 105
U105



L = left hand toolholder shown

R = right hand toolholder

Part number	l_1	l_2	h	h_1	f_1	l_3	b	b_1	D_{max}	H_k	Remark
R/LHC105.0707.21	99	18	7	7	19	29	7	32.0	26	13	*
R/LHC105.0808.21	99	18	8	8	19	29	8	32.0	26	13	*
RHC105.1010.11	99	8	10	10	19	29	10	22.7	26	16	*
R/LHC105.1010.21	99	18	10	10	19	29	10	38.0	26	16	
R/LHC105.1010.41		28						48.0			
R/LHC105.1212.21	99	18	12	12	19	29	12	38.0	26	18	
R/LHC105.1212.41		28						48.0			
R/LHC105.1616.21	104	18	16	16	24	34	16	38.0	36	22	
R/LHC105.1616.41		28						48.0			

State R or L version

Dimensions in mm

Further sizes upon request

Note:

* = no through coolant supply!

Spare parts

Toolholder	Screw	TORX PLUS® Wrench	Screwed angle fitting
R/LHC105...07./08...	6.075T15P	T15PQ	-
RHC105...11	6.075T15P	T15PQ	-
R/LHC105.1...21/41	6.075T15P	T15PQ	KQ2L06-M5

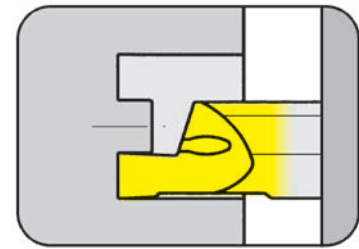
TOOLHOLDER Type

VDI

with through coolant supply

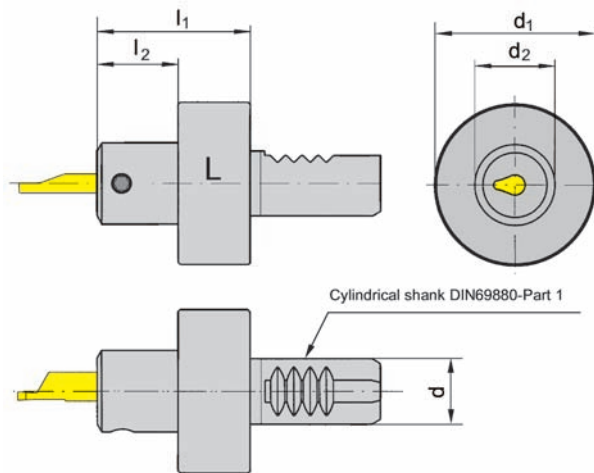
from outer groove \varnothing
Depth of groove up to
Width of groove up to

.197" (5.0 mm)
.236" (6.0 mm)
.125" (3.18 mm)



for use with Insert

Type 105
U105



L = left hand toolholder shown

R = right hand toolholder

Part number	d	l_1	l_2	d_2	d_1
VDI16.R/L105.20.01	16	38	20	20	40
VDI20.R/L105.20.01	20	38	20	20	50
VDI25.R/L105.20.01	25	38	20	20	58
VDI30.R/L105.20.01	30	38	20	20	68
VDI40.R/L105.20.01	40	38	20	20	83

State R or L version

Dimensions in mm

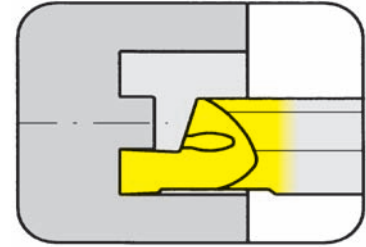
Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS®-Wrench
VDI...	6.075T15P	T15PQ

INSERT Type

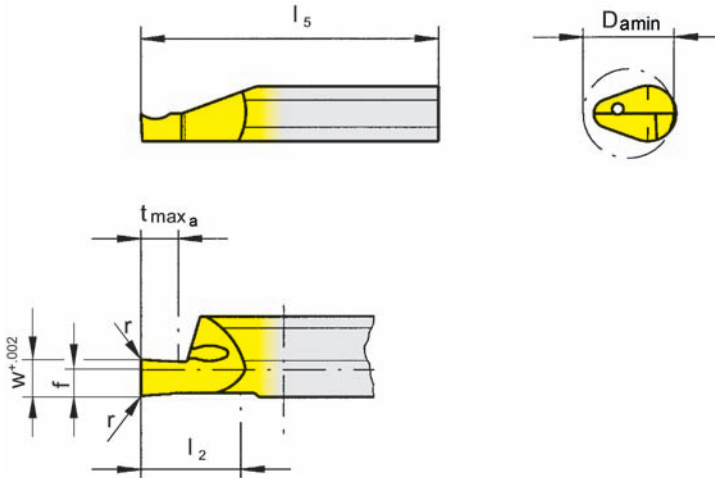
105



from outer groove \emptyset .197"
 Depth of groove up to .197"
 Width of groove up to .079"

for use with Toolholder

Type BU105
 B105
 H105
 HC105
 VDI



R = right hand version shown

L = left hand version

Part number	w	r	f	l ₂	l ₅	t _{max a}	D _{a min}	Carbide grades					
								MG12	TN35	TI25	TF45	TH35	
R/L105.0510.1.8	.039					.079	.197	▲/▲		▲/▲			
R/L105.0515.1.8	.059	.002	.079	.394	.984	.118	.197	▲/▲		▲/▲			
R/L105.0520.1.8	.079					.197		▲/▲		▲/▲			
R/L105.0510.2.8	.039					.079		▲/▲		▲/▲			
R/L105.0515.2.8	.059	.002	.079	.591	1.378	.118	.197	▲/▲		▲/▲			
R/L105.0520.2.8	.079					.197		▲/▲		▲/▲			
								P	o	•	•	•	•
								M	•	•	•	•	•
								K	•	•	•	•	•
								S	•	•	•	•	•
								N	•	•	•	•	•
								H					

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

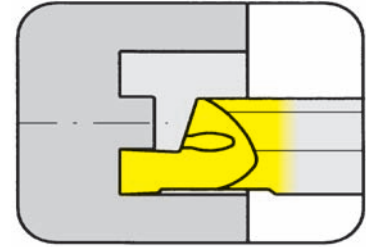
State R or L version

Carbide grades



INSERT Type

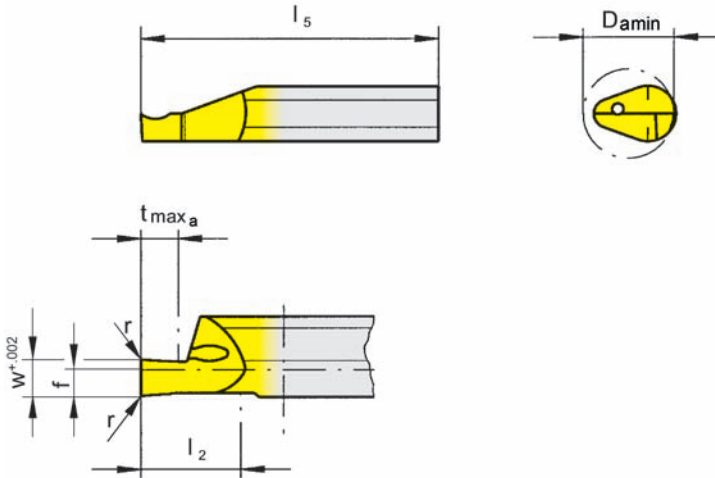
105



from outer groove \emptyset .236"
 Depth of groove up to .197"
 Width of groove up to .079"

for use with Toolholder

Type BU105
 B105
 H105
 HC105
 VDI



R = right hand version shown

L = left hand version

Part number	w	r	f	l ₂	l ₅	t _{max a}	D _{a min}						
								MG12	TN35	TI25	TF45	TH35	
R/L105.0610.1.8	.039					.079		▲/▲		▲/▲			
R/L105.0615.1.8	.059	.002	.079	.394	.984	.118	.236	△△		▲/▲			
R/L105.0620.1.8	.079					.197		▲/△		▲/▲			
R/L105.0610.2.8	.039					.079		△△		△/▲			
R/L105.0615.2.8	.059	.002	.079	.591	1.378	.118	.236	△/		▲/△			
R/L105.0620.2.8	.079					.197		△△		▲/▲			
								P	o	•	•	•	•
								M	•	•	•	•	•
								K	•	•	•	•	•
								S	•	•	•	•	•
								N	•	•	•	•	•
								H					

▲ on stock △ 4 weeks
 • main recommendation
 o alternative recommendation
 □ uncoated grades
 ■ coated grades
 ■ brazed/Cermet

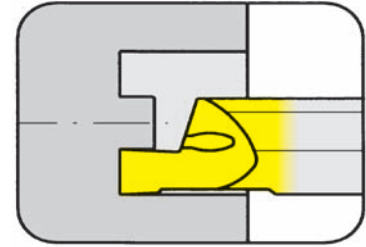
Carbide grades

Dimensions in inch
 State R or L version



INSERT Type

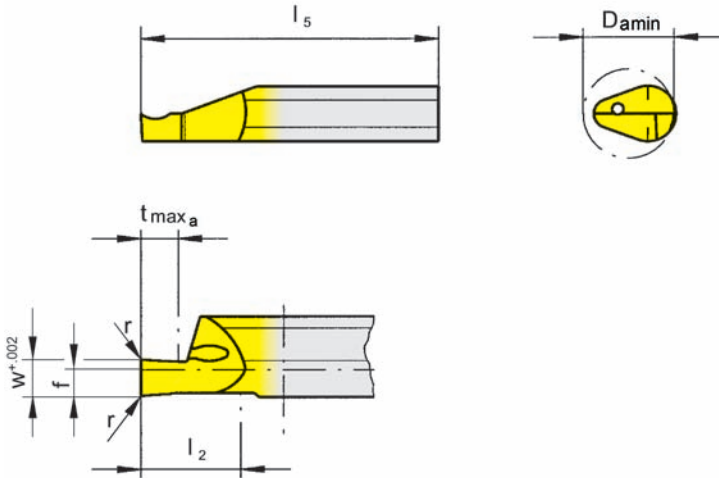
105



from outer groove \emptyset .315"
 Depth of groove up to .236"
 Width of groove up to .118"

for use with Toolholder

Type BU105
 B105
 H105
 HC105
 VDI



R = right hand version shown

L = left hand version

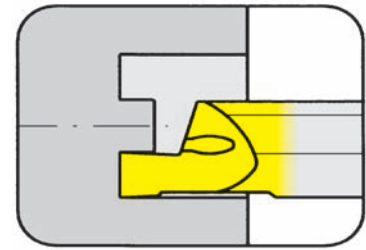
Part number	w	r	f	l ₂	l ₅	t _{max a}	D _{a min}	Carbide grades				
								MG12	TN35	TI25	TF45	TH35
R/L105.0810.1.8	.039					.079				▲/▲		
R/L105.0815.1.8	.059					.118				▲/▲		
R/L105.0820.1.8	.079	.006	.079	.394	.984	.157	.315			▲/▲		
R/L105.0825.1.8	.098					.197				▲/▲		
R/L105.0830.1.8	.118					.236				▲/▲		
R/L105.0810.2.8	.039					.079				▲/▲		
R/L105.0815.2.8	.059					.118				▲/▲		
R/L105.0820.2.8	.079	.006	.079	.591	1.378	.157	.315			▲/▲		
R/L105.0825.2.8	.098					.197				▲/▲		
R/L105.0830.2.8	.118					.236				▲/▲		
									P		•	
									M		•	
									K		•	
									S		•	
									N		•	
									H			

Dimensions in inch

State R or L version

INSERT Type

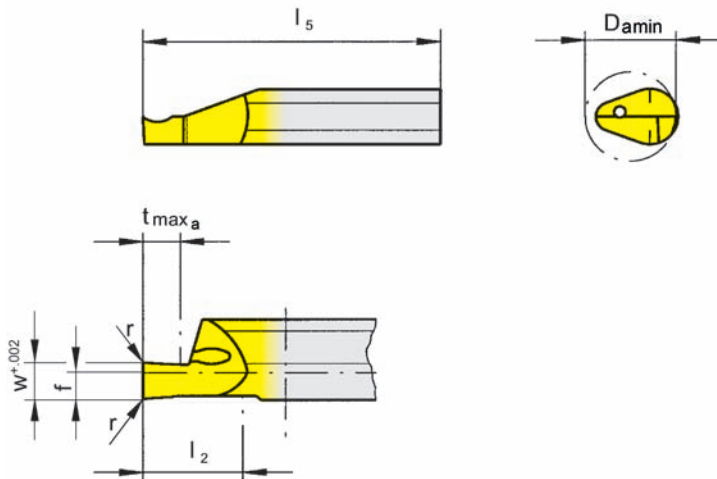
U105



from outer groove \emptyset .315"
 Depth of groove up to .236"
 Width of groove up to .125"

for use with Toolholder

Type BU105
 B105
 H105
 HC105
 VDI



R = right hand version shown

L = left hand version

Part number	w	r	f	l ₂	l ₅	t _{max a}	D _{a min}	Carbide grades				
								MG12	TN35	TI25	TF45	TH35
R/LU105.0846.1.8	.046					.098			▲/▲		▲/	
R/LU105.0862.1.8	.062					.118			▲/▲		▲/	
R/LU105.0878.1.8	.078	.006	.079	.394	.984	.157	.315		▲/▲		▲/	
R/LU105.0894.1.8	.094					.197			▲/▲		▲/	
R/LU105.0812.1.8	.125					.236			▲/▲		▲/	
R/LU105.0846.2.8	.046					.098			▲/▲		▲/	
R/LU105.0862.2.8	.062					.118			▲/▲		▲/	
R/LU105.0878.2.8	.078	.006	.079	.591	1.378	.157	.315		▲/▲		▲/	
R/LU105.0894.2.8	.094					.197			▲/▲		▲/	
R/LU105.0812.2.8	.125					.236			▲/▲		▲/	
▲ on stock Δ 4 weeks									P	•	•	
• main recommendation									M	•	•	
o alternative recommendation									K	•	•	
■ uncoated grades									S	•	•	
■ coated grades									N	•	•	
■ brazed/Cermet									H			

Dimensions in inch

Carbide grades

State R or L version



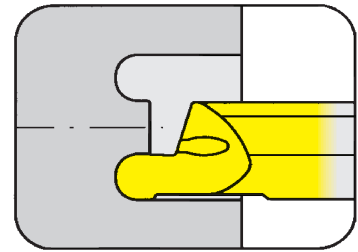
FACE GROOVING



INSERT Type

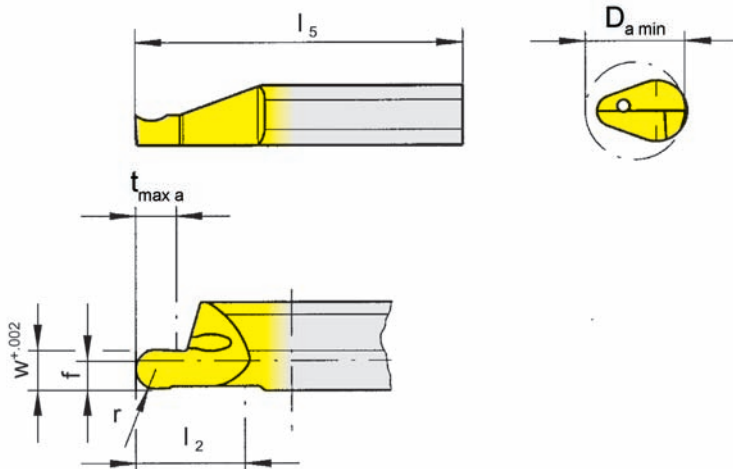
105

from outer groove \emptyset .315"
 Depth of groove up to .236"
 Width of groove up to .118"



for use with Toolholder

Type BU105
 B105
 H105
 HC105
 VDI



R = right hand version shown

L = left hand version

Full radius

Part number	w	r	f	l ₂	l ₅	t _{max a}	D _{a min}	Carbide grades				
								MG12	TN35	TI25	TF45	TH35
R/L105.8V10.1.8	.039	.020				.079			▲/▲			
R/L105.8V16.1.8	.063	.031				.118			▲/▲			
R/L105.8V20.1.8	.079	.039	.079	.394	.984	.157	.315		▲/▲			
R/L105.8V25.1.8	.098	.049				.197			▲/▲			
R/L105.8V30.1.8	.118	.059				.236			▲/▲			
R/L105.8V10.2.8	.039	.020				.079			▲/▲			
R/L105.8V16.2.8	.063	.031				.118			▲/▲			
R/L105.8V20.2.8	.079	.039	.079	.591	1.378	.157	.315		▲/▲			
R/L105.8V25.2.8	.098	.049				.197			▲/▲			
R/L105.8V30.2.8	.118	.059				.236			▲/▲			
								P	•			
								M	•			
								K	•			
								S	•			
								N	•			
								H				

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R or L version

Carbide grades

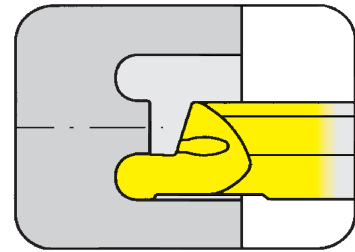
N

N12

INSERT Type

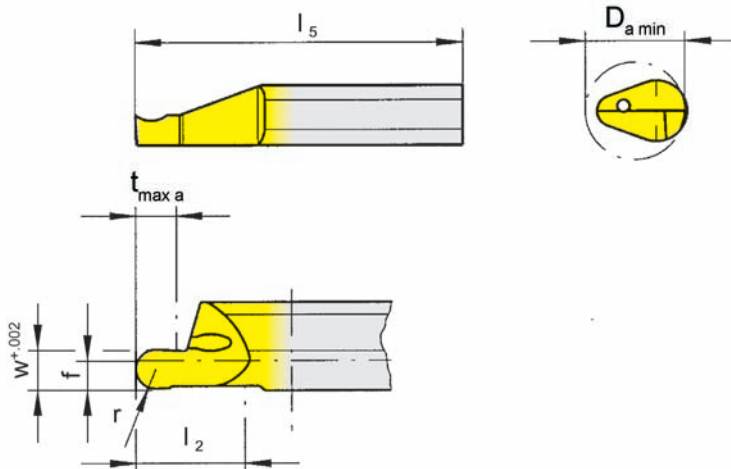
U105

from outer groove \emptyset .315"
 Depth of groove up to .236"
 Width of groove up to .125"



for use with Toolholder

Type BU105
 B105
 H105
 HC105
 VDI



R = right hand version shown

L = left hand version

Full radius

Part number	w	r	f	l ₂	l ₅	t _{max a}	D _{a min}	Carbide grades				
								MG12	TN35	T125	TF45	TH35
R/LU105.FF46.1.8	.046	.023				.098			▲/▲		▲/	
R/LU105.FF62.1.8	.062	.031				.118			▲/▲		▲/	
R/LU105.FF78.1.8	.078	.039	.079	.394	.984	.157	.315		▲/▲		▲/	
R/LU105.FF94.1.8	.094	.047				.197			▲/		▲/	
R/LU105.FF12.1.8	.125	.062				.236			▲/▲		▲/	
R/LU105.FF46.2.8	.046	.023				.098				▲/	▲/	
R/LU105.FF62.2.8	.062	.031				.118				▲/	▲/	
R/LU105.FF78.2.8	.078	.039	.079	.591	1.378	.157	.315		▲/		▲/	
R/LU105.FF94.2.8	.094	.047				.197			▲/		▲/	
R/LU105.FF12.2.8	.125	.062				.236			▲/		▲/	

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

P	●	●	●	●
M	●	●	●	●
K	●	●	●	●
S	●	●	●	●
N	●	●	●	●
H	●	●	●	●

Dimensions in inch

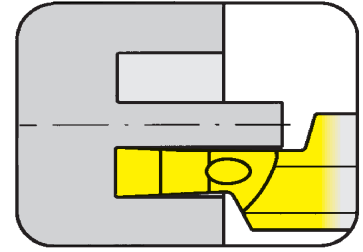
Carbide grades

State R or L version



INSERT Type

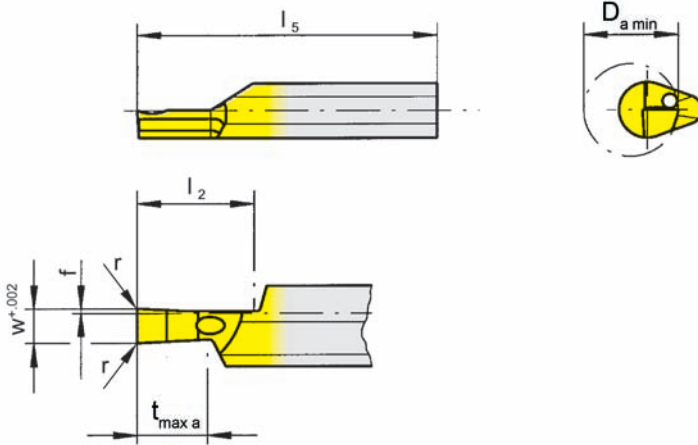
105



from outer groove \emptyset .315"
 Depth of groove up to .236"
 Width of groove up to .118"

for use with Toolholder

Type BU105
 B105
 H105
 HC105
 VDI



R = right hand version shown

L = left hand version

Part number	w	r	f	l ₂	l ₅	t _{max a}	D _{a min}	Carbide grades				
								MG12	TN35	TI25	TF45	TH35
R/L105.0810.1.9	.039					.079			▲/▲			
R/L105.0815.1.9	.059					.118			▲/▲			
R/L105.0820.1.9	.079	.006	.016	.394	.984	.157	.315		▲/▲			
R/L105.0825.1.9	.098					.197			▲/▲			
R/L105.0830.1.9	.118					.236			▲/▲			
								P		•		
								M		•		
								K		•		
								S		•		
								N		•		
								H				

Dimensions in inch

State R or L version

Insert Type A105 - precision ground -



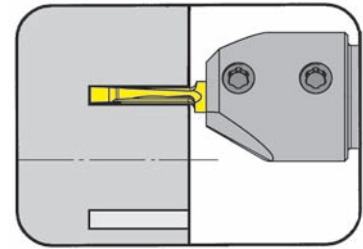
from Outer groove Ø	.394" (10.0 mm)
Depth of groove up to	.591" (15.0 mm)
Width of groove	.079 - .118" (2.0 - 3.0 mm)

TOOLHOLDER Type

BU105

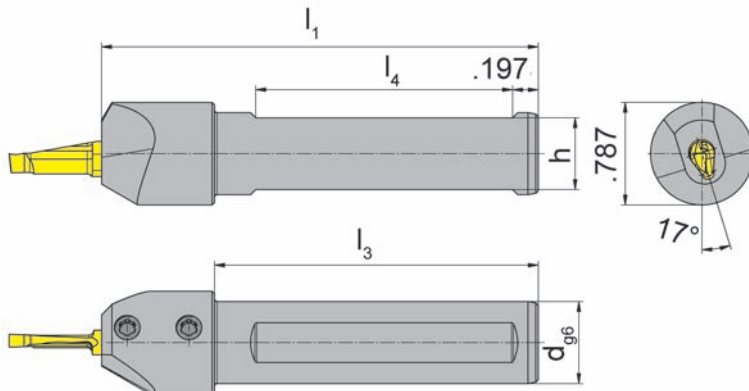
with through coolant supply

from outer groove \varnothing .394"
 Depth of groove up to .591"
 Width of groove up to .118"



for use with Insert

Type A105



L = left hand version shown

R = right hand version

Part number	d	l ₁	h	l ₃	l ₄
R/LBU105.0625.12.2	.625	3.347	.546	2.480	1.969
R/LBU105.0750.12.2	.750	3.937	.671	-	2.165
R/LBU105.1000.12.2	1.000		.921		

State R or L version

Dimensions in inch

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS®-Wrench
R/LBU105....	6.075T15P	T15PQ

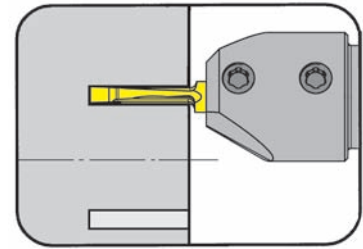


TOOLHOLDER Type

B105

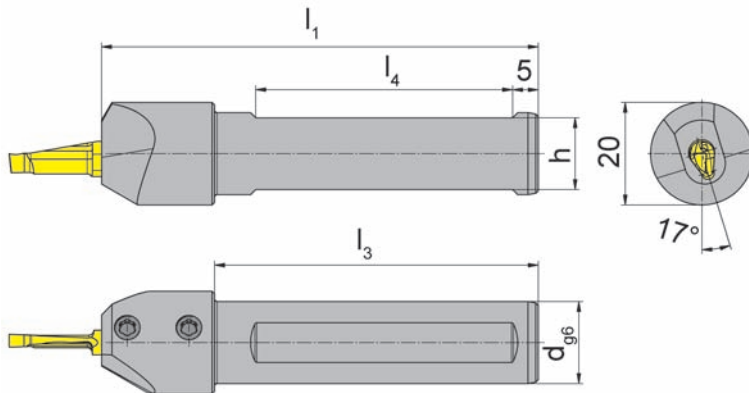
with through coolant supply

from outer groove \varnothing	.394" (10.0 mm)
Depth of groove	.591" (15.0 mm)
Width of groove	.079 - .118" (2.0 - 3.0 mm)



for use with Insert

Type A105



L = left hand version shown

R = right hand version

Part number	d	l ₁	h	l ₃	l ₄
R/LB105.0016.12.2	16	85	14	63	50
R/LB105.0020.12.2	20	100	18	-	55

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

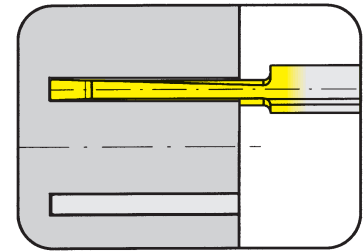
Toolholder	Screw	TORX PLUS®-Wrench
R/LB105.00...	6.075T15P	T15PQ



INSERT Type

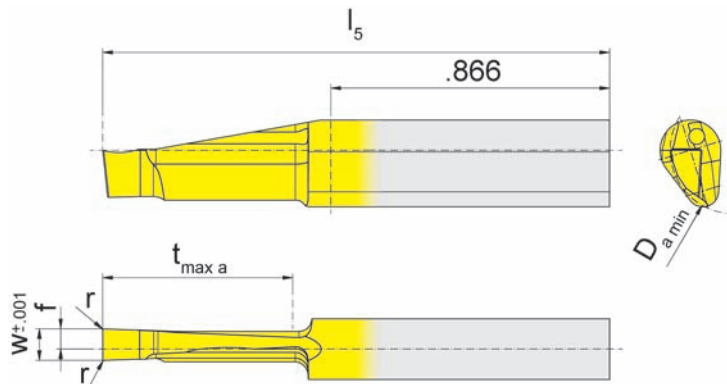
A105

from outer groove \emptyset .394"
 Depth of groove up to .591"
 Width of groove up to .118"



for use with Toolholder

Type R/LBU105...12.2
 R/LB105...12.2



L = left hand version shown

R = right hand version

Part number	w	r	f	l_5	$t_{max a}$	D_{amin}		MG12	TN35	TI25	TF45	TH35
R/LA105.1020.2.2	.079		.055							▲/▲		
R/LA105.1025.2.2	.098	.004	.063	1.575	.591	.394				▲/▲		
R/LA105.1030.2.2	.118		.075							▲/▲		
								P		•		
								M		•		
								K		•		
								S		•		
								N		•		
								H				

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Carbide grades

Dimensions in inch

State R or L version

Note:

Use insert RA105 in toolholder RB105
 Use insert LA105 in toolholder LB105

Face grooving with full width of the full depth only possible between D_{amin} .394" - 1.575"!

**Insert Type A110
- precision ground -**



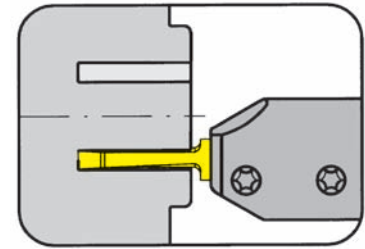
from Outer groove \varnothing .787" (20 mm)
Depth of groove up to 1.181" (30 mm)

TOOLHOLDER Type

BU110

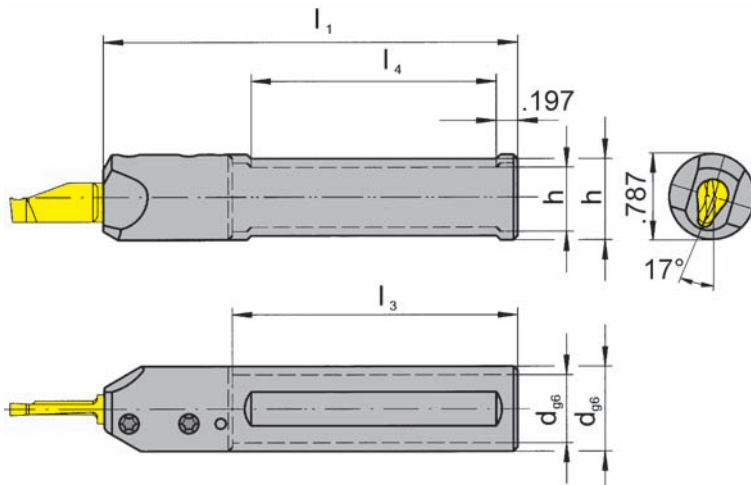
with through coolant supply

from outer groove \varnothing	.787"
Depth of groove up to	1.181"
Width of groove up to	.118"



for use with Insert

Type A110



R = right hand version shown

L = left hand version

Part number	d	l_1	h	l_3	l_4
R/LBU110.0625.16.2	.625	3.397	.551	2.756	2.165
R/LBU110.0750.16.2	.750		.709	-	

State R or L version

Dimensions in inch

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS®-Wrench
R/LBU110.0...	6.075T15P	T15PQ

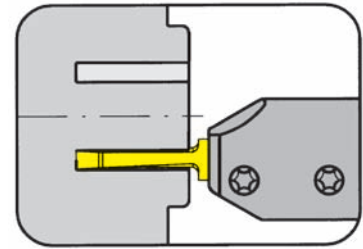
N20

TOOLHOLDER Type

B110

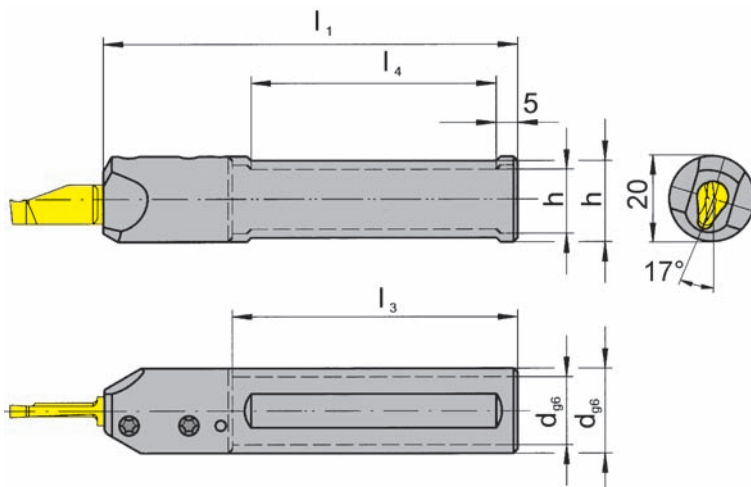
with through coolant supply

from outer groove \varnothing	.787" (20.0 mm)
Depth of groove	1.181" (30.0 mm)
Width of groove up to	.118" (3.0 mm)



for use with Insert

Type A110



R = right hand version shown

L = left hand version

Part number	d	l_1	h	l_3	l_4
R/LB110.0016.16.2	16	100	14	70	55
R/LB110.0020.16.2	20	100	18	-	55

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

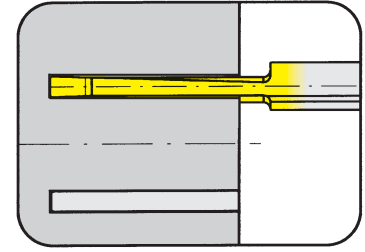
Toolholder	Screw	TORX PLUS®-Wrench
R/LB110.00...	6.075T15P	T15PQ



INSERT Type

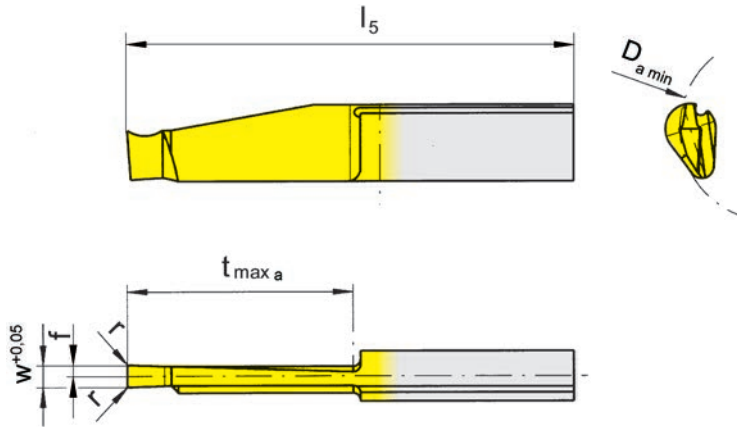
A110

from outer groove \emptyset .787"
 Depth of groove up to 1.181"
 Width of groove up to .118"



for use with Toolholder

Type R/LB110...16.2
 R/LBU110...16.2



L = left hand version shown

R = right hand version

Part number	w	r	f	l ₅	t _{max a}	D _{a min}	Carbide grades				
							MG12	TN35	TI25	TF45	TH35
R/LA110.2030.3.0	.118	.008	.059	1.969	.787	.787		▲/▲	▲/▲		▲/▲
R/LA110.2030.5.0							▲/▲	▲/▲		▲/▲	
R/LA110.5030.3.0	.118	.008	.059	1.969	.787	1.969			▲/▲		
R/LA110.5030.5.0								▲/▲			
							P	•	•		•
							M	•	•		•
							K	•	•		•
							S	•	•		•
							N	•	•		•
							H				

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Carbide grades

State R or L version

Note:

Use insert RA110 in toolholder RB110
 Use insert LA110 in toolholder LB110

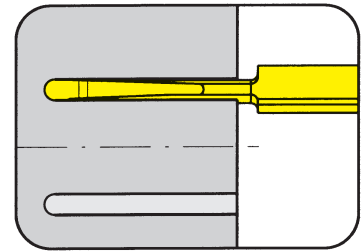
Face grooving with full width of the full depth only possible between D_{amin} .787" - 1.969".



INSERT Type

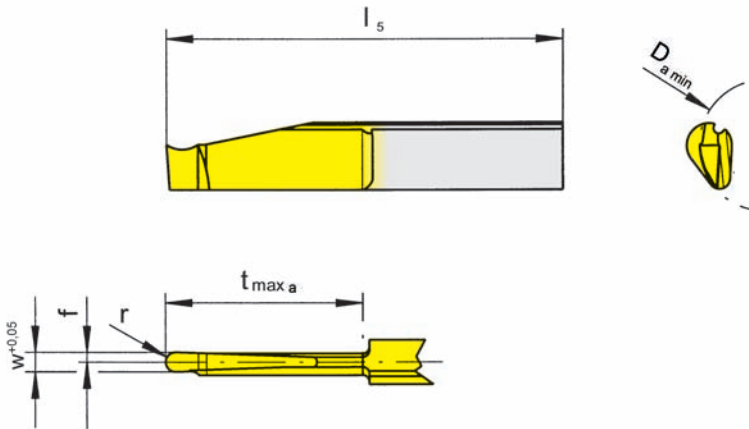
A110

from outer groove \emptyset .787"
 Depth of groove up to 1.181"
 Width of groove up to .118"



for use with Toolholder

Type R/LB110...16.2
 R/LBU110...16.2



L = left hand version shown

R = right hand version

Full radius

Part number	w	r	f	l_5	$t_{max a}$	$D_{a min}$		MG12	TN35	Ti25	TF45	TH35
R/LA110.2030.15.5.0	.118	.059	.059	2.362	1.181	.787			▲/▲			
								P	•			
								M	•			
								K	•			
								S	•			
								N	•			
								H				

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R or L version

Note:

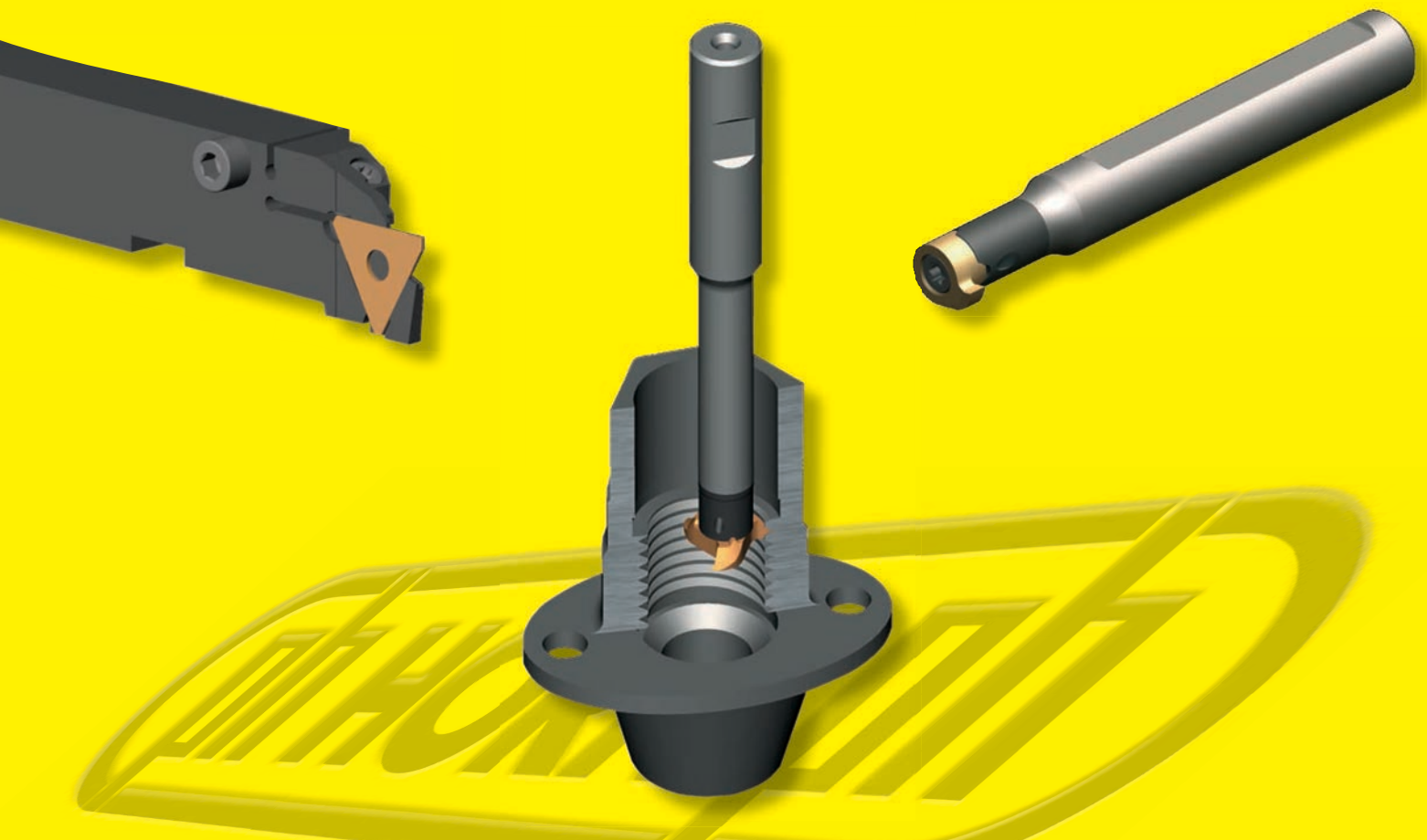
Use insert RA110 in toolholder RB110
 Use insert LA110 in toolholder LB110

Face grooving with full width of the full depth only possible between D_{amin} .787" - 1.969".

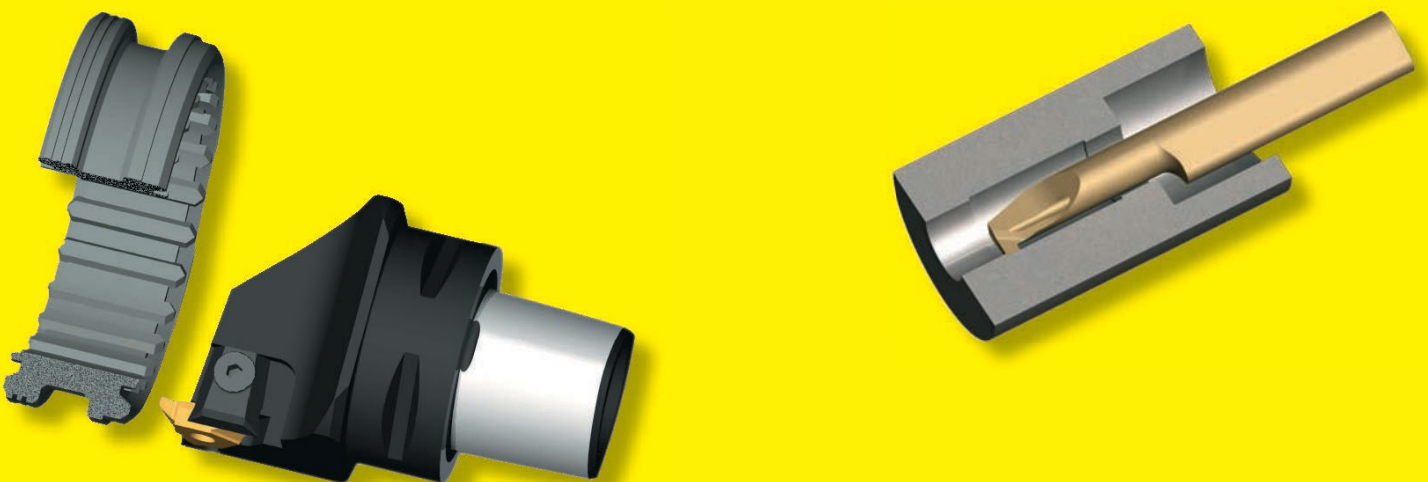
Carbide grades



SOLUTIONS PLUS Program

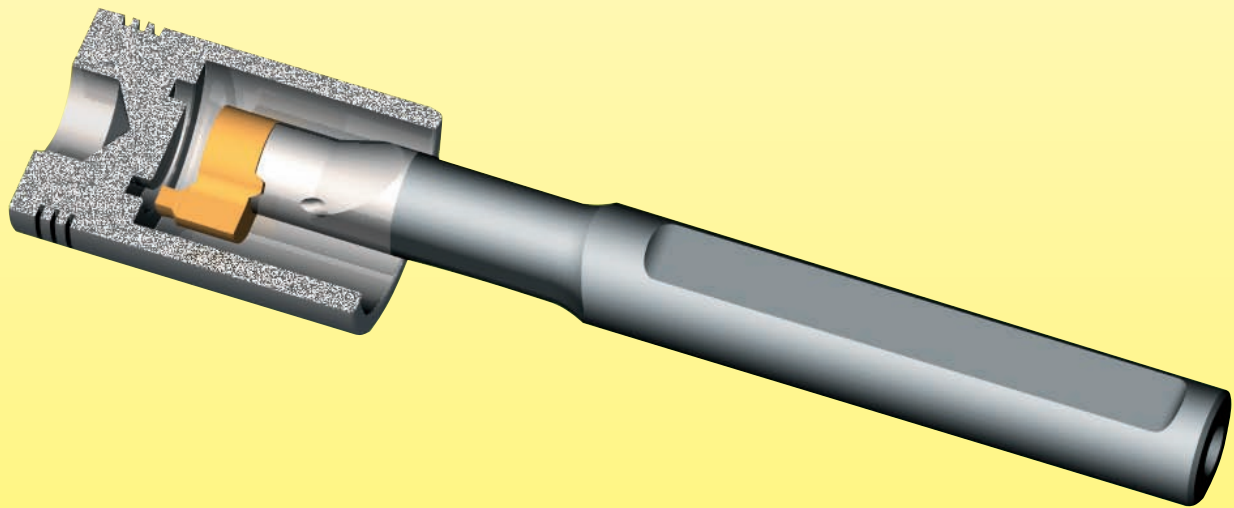


**Need faster delivery?
Inquire about our Solutions Plus Program.**



N

**Insert Type 114
- precision ground -**



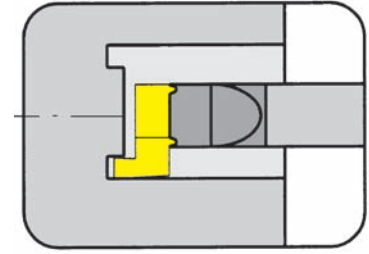
from Outer groove \varnothing
Depth of groove up to

.472" (12 mm)
.236" (6 mm)

TOOLHOLDER Type

BU114

with through coolant supply

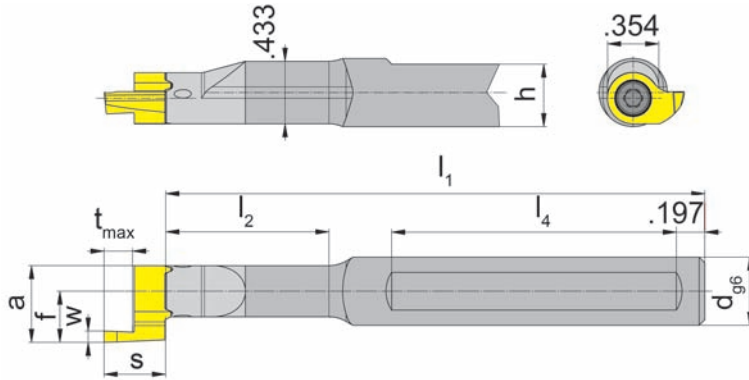


Depth of bore up to	2.520"
Depth of groove up to	.256"
Width of groove up to	.125"

Material of shank: Carbide - Giving a good vibration resistance

for use with Insert

Type 114
S114
U114



Picture = right hand cutting version shown

Part number	d	l ₁	l ₂	h	l ₄	Remark
BU114.ST05.00	.500	2.744	.559	.460	1.570	* Steel toolholder
BU114.0500.01		3.728	1.130			
BU114.0500.02	.500	4.122	1.563	.460	1.970	
BU114.0500.03		4.909	2.311			
BU114.ST06.00	.625	2.941	.559	.585	1.570	* Steel toolholder
BU114.0625.01		3.728	1.130			
BU114.0625.02	.625	4.122	1.563	.585	1.970	
BU114.0625.03		4.909	2.311			

Further sizes upon request

w, a, s, t_{max} and f see inserts

Dimensions in inch

Note:

Toolholders can be used in right and left hand inserts.
Toolholders with damaged seating can be repaired by HORN.

* Steel toolholder is not repairable.

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
BU114....	4.12T15EP	T15PQ

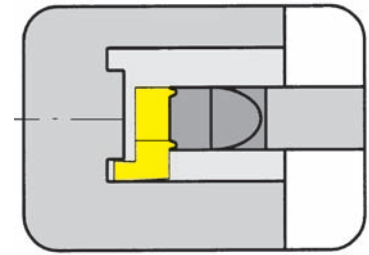
TOOLHOLDER Type

B114

with through coolant supply

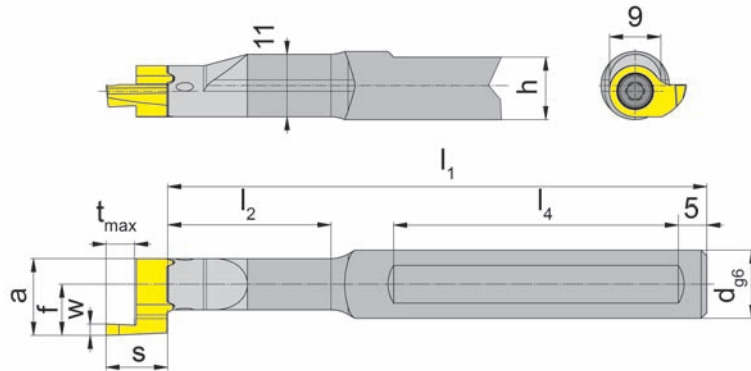
Depth of bore up to	2.520" (64.0 mm)
Depth of groove up to	.236" (6.0 mm)
Width of groove up to	.125" (3.18 mm)

Material of shank: Carbide - Giving a good vibration resistance



for use with Insert

Type 114
S114
U114



Picture = right hand cutting version shown

Part number	d	l ₁	l ₂	h	l ₄
B114.0012.00	12	69.7	14.2	11	40
B114.0012.01		94.7	28.7		50
B114.0012.02		104.7	39.7		50
B114.0012.03		124.7	58.7		50
B114.0016.00	16	74.7	14.2	15	40
B114.0016.01		94.7	28.7		50
B114.0016.02		104.7	39.7		50
B114.0016.03		124.7	58.7		50

Further sizes upon request

w, a, s, t_{max} and f see inserts

Dimensions in mm

Ordering note:

Toolholders can be used with right and left hand inserts.
Toolholders with damaged seating can be repaired by HORN.

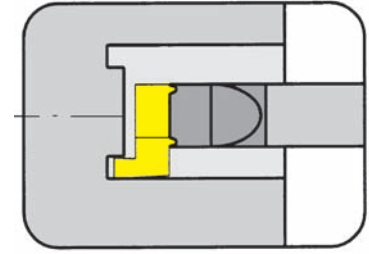
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
B114.001...	4.12T15EP	T15PQ

TOOLHOLDER Type

B114

with through coolant supply

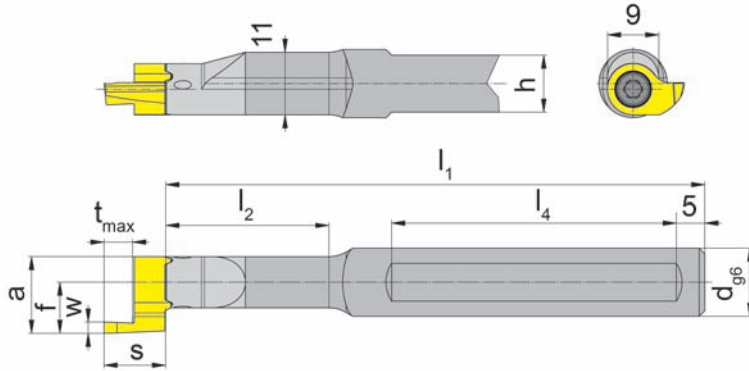


Bore Ø from	.551" (14.0 mm)
Depth of groove up to	.256" (6.5 mm)
Width of groove up to	.125" (3.18 mm)

Material of shank: Carbide - Giving a good vibration resistance

for use with Insert

Type 114
S114
U114



Picture = right hand cutting version shown

with 2 clamping flats

Part number	d	l ₁	l ₂	h	l ₄
B114.0012.2.00	12	69.7	14.2	11	40
B114.0012.2.01		94.7	28.7		50
B114.0012.2.02		104.7	39.7		50
B114.0012.2.03		124.7	58.7		50
B114.0016.2.00	16	74.7	14.2	15	40
B114.0016.2.01		94.7	28.7		50
B114.0016.2.02		104.7	39.7		50
B114.0016.2.03		124.7	58.7		50

Further sizes upon request

w, a, s, t_{max} and f see inserts

Dimensions in mm

Ordering note:

Toolholders can be used with right and left hand inserts.
Toolholders with damaged seating can be repaired by HORN.

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
B114.001...	4.12T15EP	T15PQ

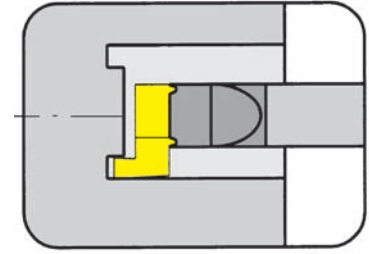
N28



TOOLHOLDER Type

B114

with through coolant supply

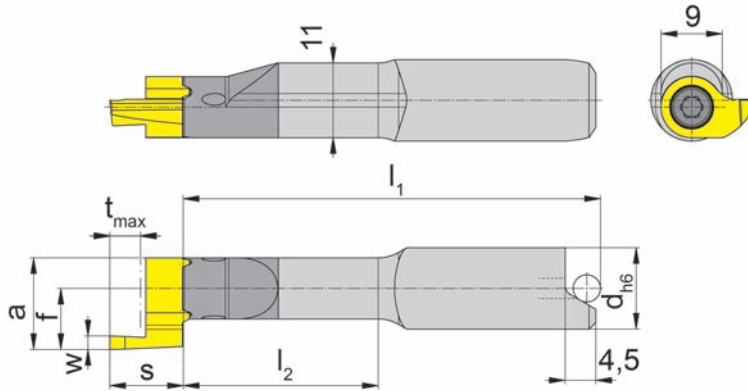


Bore Ø from	.551" (14.0 mm)
Depth of groove up to	.256" (6.5 mm)
Width of groove up to	.125" (3.18 mm)

Material of shank: Carbide - Giving a good vibration resistance

for use with Insert

Type 114
S114
U114



Picture = right hand cutting version shown

for shrinkage location
S = orientation

Part number	d	l ₁	l ₂
B114.0012.00S	12	47.4	14.2
B114.0012.01S		61.4	28.7
B114.0012.02S		72.4	39.7
B114.0012.03S		91.4	58.7

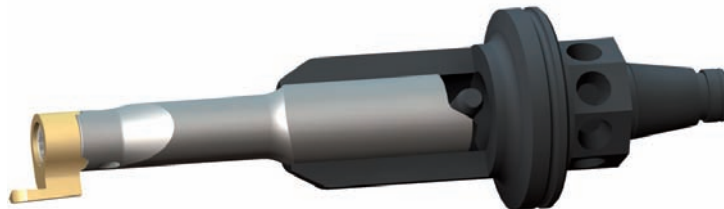
Further sizes upon request

w, a, s, t_{max} and f see inserts

Dimensions in mm

Ordering note:

Toolholders can be used with right and left hand inserts.
Toolholders with damaged seating can be repaired by HORN.



Example of assembly System „W&F“

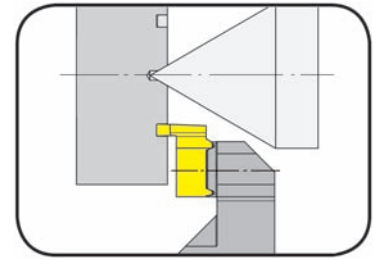
Spare parts

Toolholder	Screw	TORX PLUS®-Wrench
B114.0012.0...	4.12T15EP	T15PQ

TOOLHOLDER Type

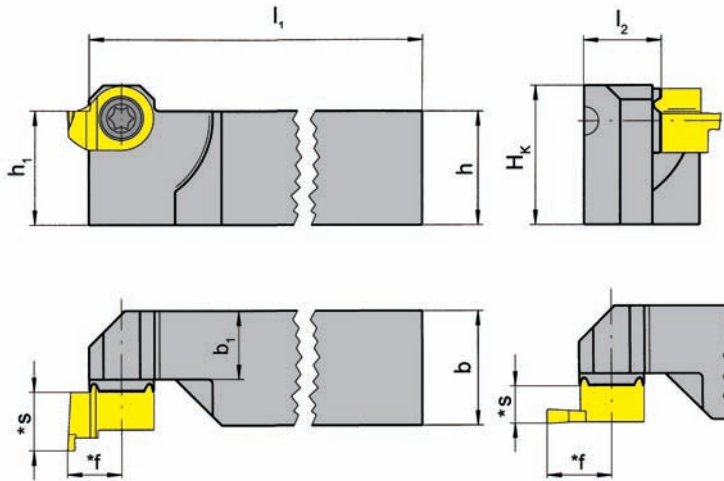
HCU114

from outer groove \varnothing .472"
 Depth of groove up to .236"
 Width of groove up to .125"



for use with Insert

Type 114
 S114
 U114



R = right hand version shown

L = left hand version

axial and radial

Part number	h	h ₁	l ₁	l ₂	b	b ₁	H _k
R/LHCU114.0500.01	.500	.500	3.819	.441	.500	.374	.642
R/LHCU114.0625.01	.625	.625	4.803	.441	.625	.374	.768
R/LHCU114.0750.01	.750	.750	4.803	.559	.750	.492	.894
R/LHCU114.1000.01	1.000	1.000	5.787	.815	1.000	.728	1.142

Further sizes upon request

* see inserts

Dimensions in inch

State R or L version

Right hand toolholders use left hand inserts.
 Left hand toolholders use right hand inserts.

Spare parts

Toolholder	Screw	TORX PLUS®-Wrench
R/LHCU114....	4.12T15EP	T15PQ

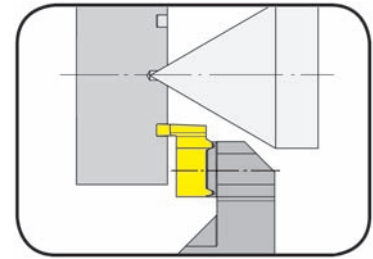
N30



TOOLHOLDER Type

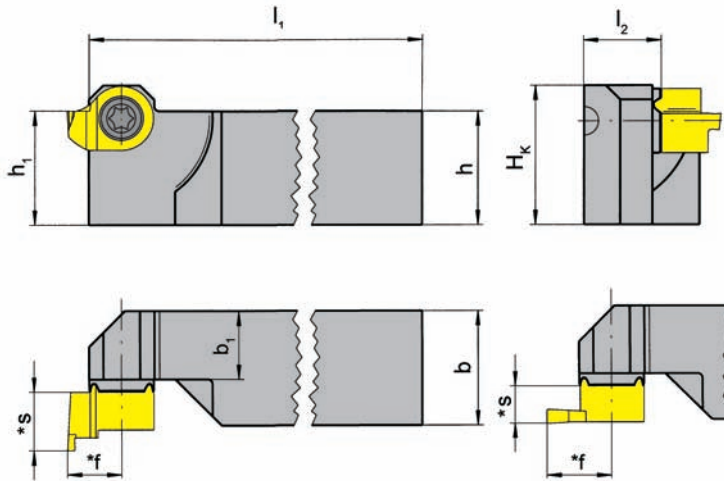
HC114

from outer groove \varnothing .472" (12.0 mm)
 Depth of groove up to .236" (6.0 mm)
 Width of groove up to .125" (3.18 mm)



for use with Insert

Type 114
 S114
 U114



R = right hand version shown

L = left hand version

axial and radial

Part number	h	h ₁	l ₁	l ₂	b	b ₁	H _k
R/LHC114.1212.01	12	12	122	11.2	12	9.5	15.6
R/LHC114.1616.01	16	16	122	11.2	16	9.5	19.6
R/LHC114.2020.01	20	20	122	15.2	20	13.5	23.6
R/LHC114.2525.01	25	25	147	20.2	25	18.5	28.6

Further sizes upon request

* see inserts

Dimensions in mm

State R or L version

Right hand toolholders use left hand inserts.
 Left hand toolholders use right hand inserts.

Spare parts

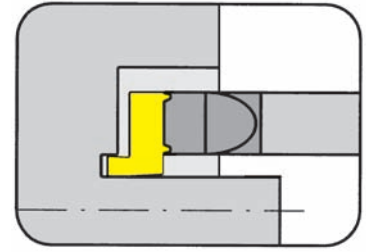
Toolholder	Screw	TORX PLUS®-Wrench
R/LHC114....	4.12T15EP	T15PQ



INSERT Type

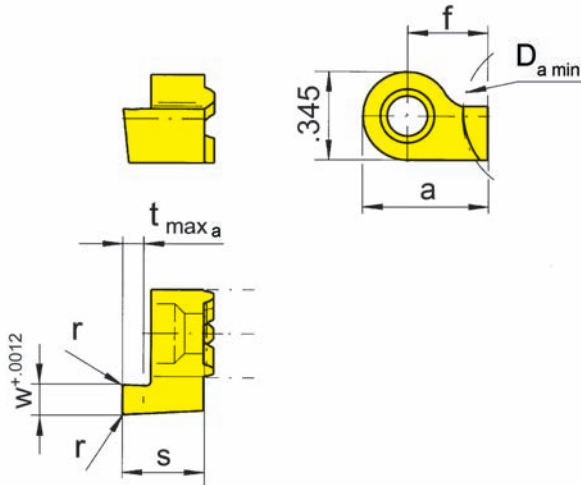
U114

from outer groove \varnothing	.472"
Depth of groove up to	.118"
Width of groove	.046 - .125"



for use with Toolholder

Type B114
BU114
HC114
HCU114



R = right hand version shown

L = left hand version

Machining **BEHIND**
centerline

Part number	w	r	s	f	a	t _{max a}	D _{a min}		MG12	TN35	TI25	TF45	TH35
R/LU114.1246.00	.046					.059				▲/▲			
R/LU114.1262.00	.062					.098				▲/▲			
R/LU114.1278.00	.078	.008	.327	.295	.472	.118	.472			▲/▲			
R/LU114.1294.00	.094					.118				▲/▲			
R/LU114.1225.00	.125					.118				▲/▲			
▲ on stock Δ 4 weeks									P	•			
• main recommendation									M	•			
o alternative recommendation									K	•			
■ uncoated grades									S	•			
■ coated grades									N	•			
■ brazed/Cermet									H				

Dimensions in inch

Carbide grades

State R or L version

Note:

R = rotation counter clockwise!

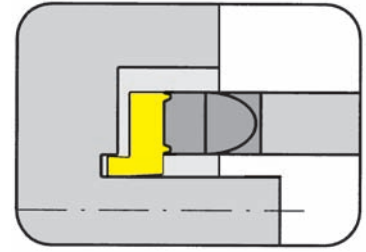
Using the face grooving insert type 114 on toolholder type B114 the size l_1 and l_2 will be extended by .327".



INSERT Type

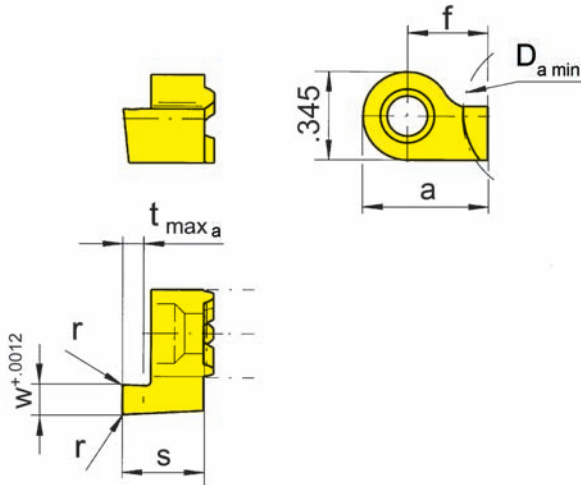
114

from outer groove \emptyset .472"
 Depth of groove up to .236"
 Width of groove .039 - .118"



for use with Toolholder

Type B114
 BU114
 HC114
 HCU114



R = right hand version shown

L = left hand version

Machining **BEHIND**
 centerline

Part number	w	r	s	f	a	t _{max a}	D _{a min}	Carbide grades						
								MG12	TN35	TI25	TF45	TH35		
R/L114.1210.00	.039	-				.059			▲/▲					
R/L114.1215.00	.059	.008				.098			▲/▲					
R/L114.1220.00	.079	.008	.327	.295	.472	.118	.472		▲/▲					
R/L114.1225.00	.098	.008				.118			▲/▲					
R/L114.1230.00	.118	.008				.118			▲/▲					
R/L114.1220.5.00	.079	.008	.425	.295	.472	.197	.472		▲/▲					
R/L114.1225.5.00	.098	.008							▲/▲					
R/L114.1230.6.00	.118	.008	.465	.295	.472	.236	.472		▲/▲					
									P	•				
									M	•				
									K	•				
									S	•				
									N	•				
									H					

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R or L version

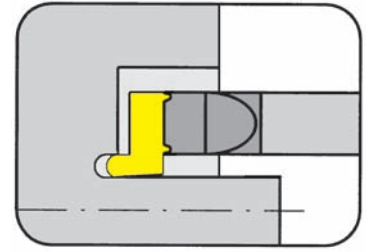
Note:
 R = rotation counter clockwise!
 Using face grooving insert type 114 on toolholder type B114, the size I₁ and I₂ will be extended by:
 .327" for inserts R/L114...00
 .425" for inserts R/L114...5.00
 .465" for inserts R/L114...6.00



INSERT Type

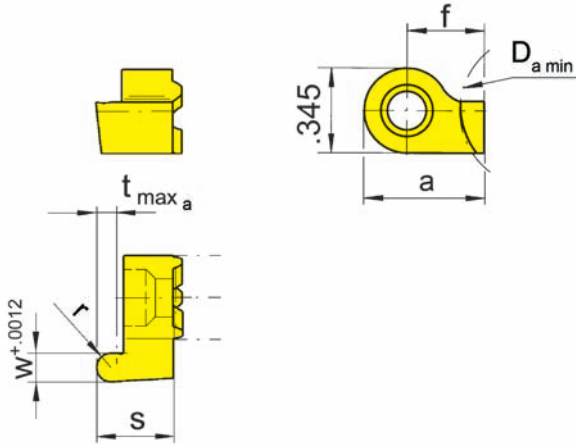
U114

from outer groove \emptyset	.472"
Depth of groove up to	.118"
Depth of groove	.046 - .125"



for use with Toolholder

Type B114
BU114
HC114
HCU114



R = right hand version shown

L = left hand version

Full radius
Machining **BEHIND**
centerline

Part number	w	r	s	f	a	t _{max a}	D _{a min}		MG12	TN35	TI25	TF45	TH35
R/LU114.1223.46	.046	.023				.059				▲/▲			
R/LU114.1231.62	.062	.031				.098				▲/▲			
R/LU114.1239.78	.078	.039	.327	.295	.472	.118	.472			▲/▲			
R/LU114.1247.94	.094	.047				.118				▲/▲			
R/LU114.1262.12	.125	.062				.118				▲/▲			
▲ on stock Δ 4 weeks									P	•			
• main recommendation									M	•			
o alternative recommendation									K	•			
■ uncoated grades									S	•			
■ coated grades									N	•			
■ brazed/Cermet									H				

Dimensions in inch

Carbide grades

State R or L version

Note:

R = rotation counter clockwise!

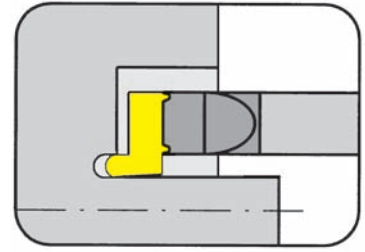
Using the face grooving insert type 114 on toolholder type B114 the size l_1 and l_2 will be extended by .327".



INSERT Type

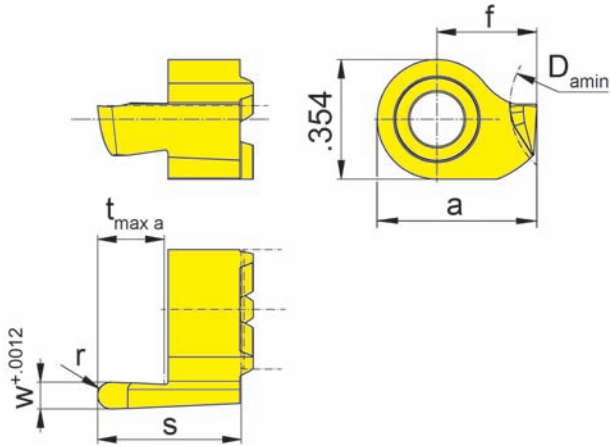
114

from outer groove \emptyset .472"
 Depth of groove up to .236"
 Width of groove .079 - .118"



for use with Toolholder

Type B114
 BU114
 HC114
 HCU114



R = right hand version shown

L = left hand version

Full radius
 Machining **BEHIND**
 centerline

Part number	w	r	s	f	a	t _{max a}	D _{a min}		MG12	TN35	TI25	TF45	TH35
R/L114.1220.5.10	.079	.039	.425			.197				▲/▲			
R/L114.1225.5.12	.098	.049	.425	.295	.472	.197	.472			▲/▲			
R/L114.1230.6.15	.118	.059	.465			.236				▲/▲			
									P	•			
									M	•			
									K	•			
									S	•			
									N	•			
									H				

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R or L version

Note:

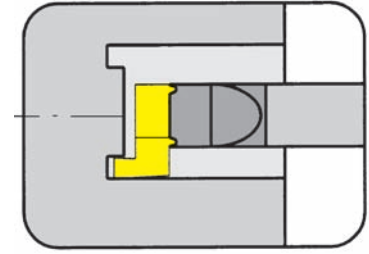
R = rotation counter clockwise!
 Using the face grooving insert type 114 on toolholder type B114 the size I₁ and I₂ will be extended by:
 .425" for inserts R/L114...10/12
 .465" for inserts R/L114...15

Carbide grades



INSERT Type

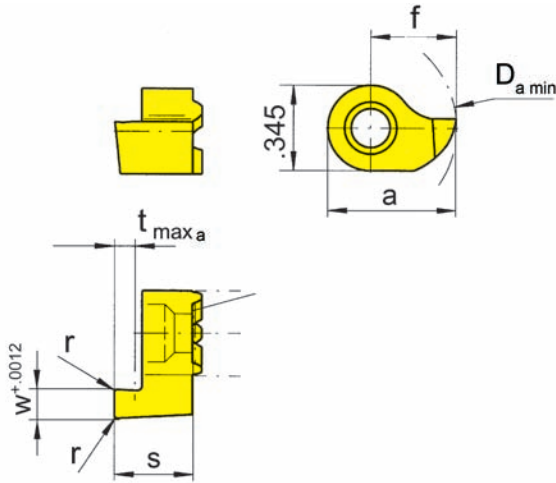
U114



from outer groove \emptyset .551"
 Depth of groove up to .118"
 Width of groove .046 - .125"

for use with Toolholder

Type B114
 BU114
 HC114
 HCU114



R = right hand version shown

L = left hand version

Machining **IN-FRONT** of centerline

Part number	w	r	s	f	a	t _{max a}	D _{a min}		MG12	TN35	TI25	TF45	TH35
R/LU114.1446.00	.046	-				.059				▲/▲			
R/LU114.1462.00	.062	.008				.098				▲/▲			
R/LU114.1478.00	.078	.008	.327	.354	.531	.118	.551			▲/▲			
R/LU114.1494.00	.094	.008				.118				▲/▲			
R/LU114.1425.00	.125	.008				.118				▲/▲			
▲ on stock Δ 4 weeks									P	•			
• main recommendation									M	•			
o alternative recommendation									K	•			
■ uncoated grades									S	•			
■ coated grades									N	•			
■ brazed/Cermet									H				

Dimensions in inch

Carbide grades

State R or L version

Note:

R = rotation clockwise!

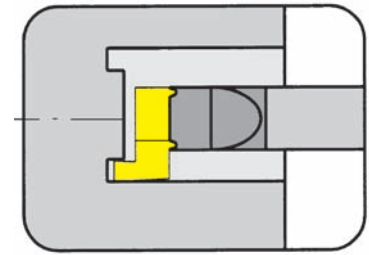
Using the face grooving insert type 114 on toolholder type B114 the size l_1 and l_2 will be extended by .327".



INSERT Type

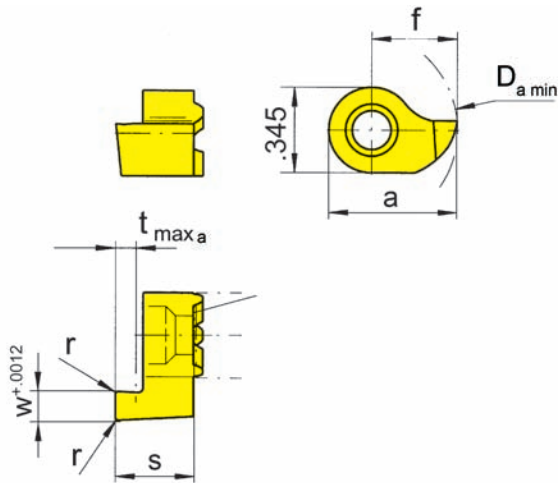
114

from outer groove \varnothing .551"
 Depth of groove up to .236"
 Width of groove .039 - .118"



for use with Toolholder

Type B114
 BU114
 HC114
 HCU114



R = right hand version shown

L = left hand version

Machining **IN-FRONT** of centerline

Part number	w	r	s	f	a	t _{max a}	D _{a min}		MG12	TN35	TI25	TF45	TH35
R/L114.1410.00	.039	-				.059			▲/	▲/▲			
R/L114.1415.00	.059	.008				.098				▲/▲			
R/L114.1420.00	.079	.008	.327	.354	.531	.118	.551			▲/▲			
R/L114.1425.00	.098	.008				.118				▲/▲			
R/L114.1430.00	.118	.008				.118			▲/	▲/▲			
R/L114.1420.5.00	.079	.008	.425	.354	.531	.197	.551			▲/▲			
R/L114.1425.5.00	.098	.008								▲/▲			
R/L114.1430.6.00	.118	.008	.465	.354	.531	.236	.551			▲/▲			
									P	o	•		
									M	•	•		
									K	•	•		
									S	•	•		
									N	•	•		
									H				

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R or L version

Note:

R = rotation clockwise!

Using face grooving insert type 114 on toolholder type B114, the size I₁ and I₂ will be extended by:

- .327" for inserts R/L114...00
- .425" for inserts R/L114...5.00
- .465" for inserts R/L114...6.00

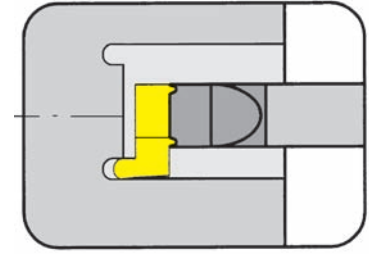
	MG12	TN35	TI25	TF45	TH35
P	o	•			
M	•	•			
K	•	•			
S	•	•			
N	•	•			
H					

Carbide grades



INSERT Type

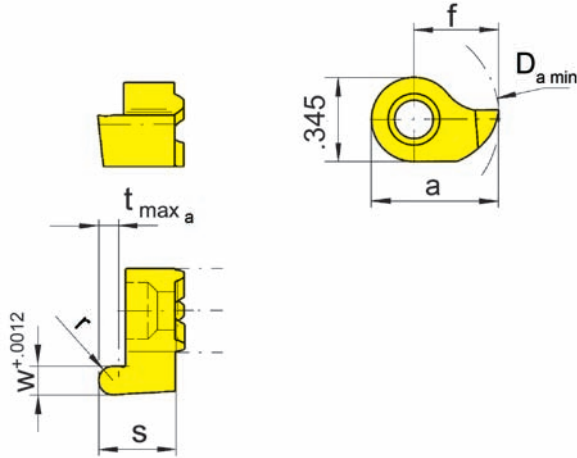
U114



from outer groove \varnothing	.551"
Depth of groove up to	.118"
Width of groove	.046 - .125"

for use with Toolholder

Type B114
BU114
HC114
HCU114



R = right hand version shown

L = left hand version

Full radius
Machining **IN-FRONT** of centerline

Part number	w	r	s	f	a	t _{max a}	D _{a min}	MG12	TN35	TI25	TF45	TH35
R/LU114.1423.46	.046	.023				.059			▲/			
R/LU114.1431.62	.062	.031				.098			▲/▲			
R/LU114.1439.78	.078	.039	.327	.354	.531	.118	.551		▲/▲			
R/LU114.1447.94	.094	.047				.118			▲/▲			
R/LU114.1462.12	.125	.062				.118			▲/▲			
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet								P	•			
								M	•			
								K	•			
								S	•			
								N	•			
								H				

Dimensions in inch

Carbide grades

State R or L version

Note:

R = rotation clockwise!

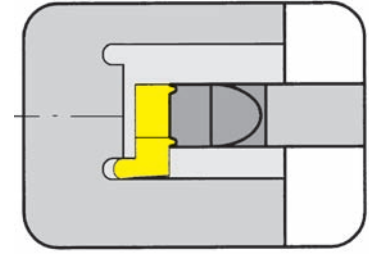
Using the face grooving insert type 114 on toolholder type B114 the size l_1 and l_2 will be extended by .327".



INSERT Type

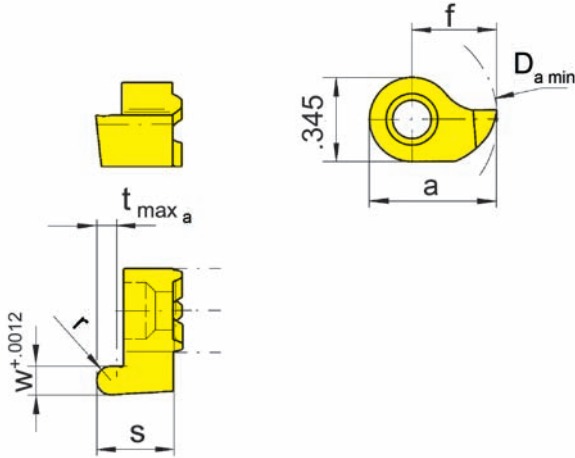
114

from outer groove \varnothing .551"
 Depth of groove up to .118"
 Width of groove .039 - .118"



for use with Toolholder

Type B114
 BU114
 HC114
 HCU114



R = right hand version shown

L = left hand version

Full radius
 Machining **IN-FRONT** of
 centerline

Part number	w	r	s	f	a	t _{max a}	D _{a min}	Carbide grades				
								MG12	TN35	TI25	TF45	TH35
R/L114.1410.05	.039	.020				.059		▲/▲				
R/L114.1416.08	.063	.031				.098		▲/▲				
R/L114.1420.10	.079	.039	.327	.354	.531	.118	.551	▲/▲				
R/L114.1425.12	.098	.049				.118		▲/▲				
R/L114.1430.15	.118	.059				.118		▲/▲				
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet								P	•			
								M	•			
								K	•			
								S	•			
								N	•			
								H				

Dimensions in inch

Carbide grades

State R or L version

Note:

R = rotation counter clockwise!

Using the face grooving insert type 114 on toolholder type B114 the size l_1 and l_2 will be extended by:

.425" for inserts R/L114...10/12

.465" for inserts R/L114...15



D 15 VL

Model 1-5 Nm

Torque screw driver with scale
 - variable torque setting
 - adjusted torque is shown on display

The Torque can be adjusted with a special torque setter (id.)
 Ergonomical form gives perfect handling abilities. Acoustic signal when setted torque is reached.
 (Standard: EN ISO 6798, BS EN 26789, ASME B 107.14.M.)
 (Precision: $\pm 6 \%$)



D 28 VL

Model 2-8 Nm

Torque setter

Device for setting the required torque.

Handle: Celluloseacetat with micro structured surface
 Blade: Octogonal (8 flats) blade, hardened galvanized



ED 28 VL

Blade for TORX-Plus® screws

Blade: High quality Chrome-Vanadium steel, through hardened, chrome plated.

Wiha Chrome Blade guarantees maximum precision.

Colored code green

Utilization: For controlled screw setting with definite torque in combination with Wiha torque screw driver handle.



DT8PK

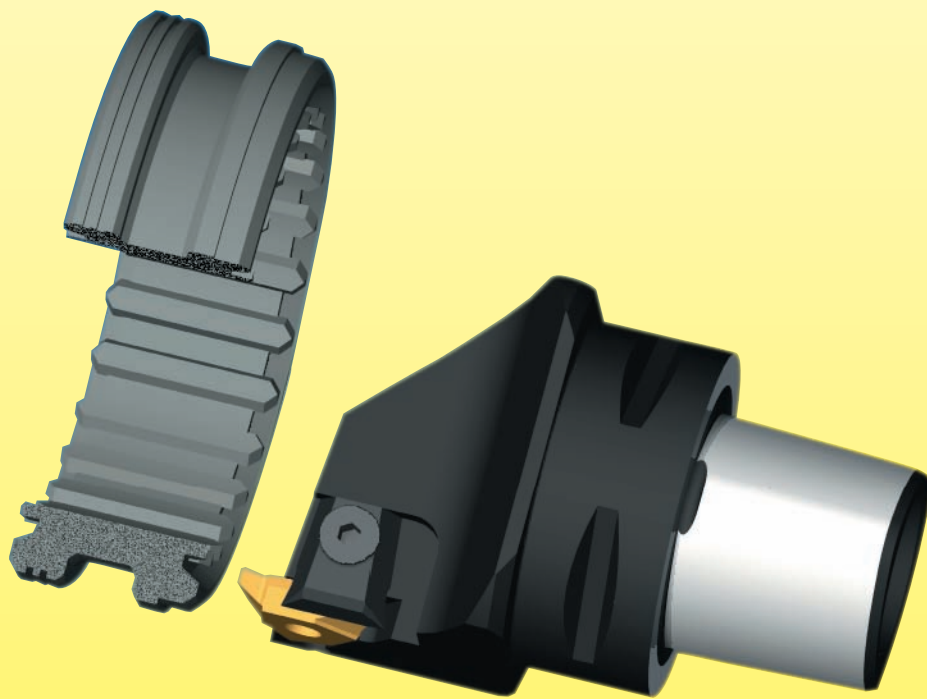
DT10PK

DT15PK

DT20PK

DT25PK

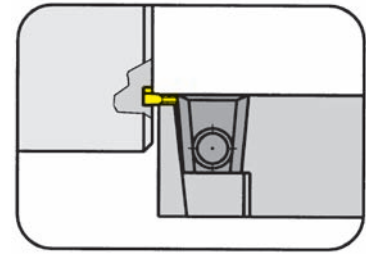
Indexable Insert Type 312 - precision ground -



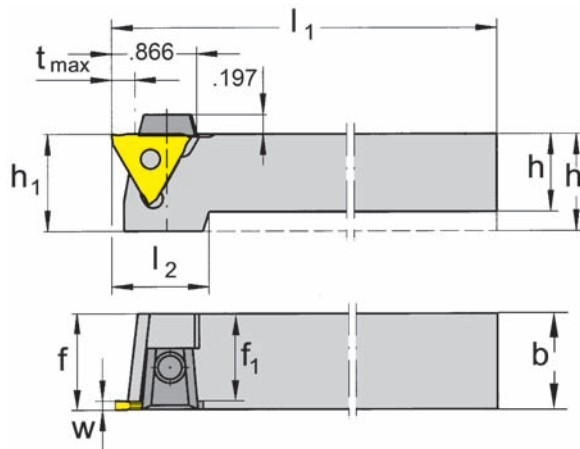
from Outer groove \varnothing .787" (20 mm)
Depth of groove up to .118" (3 mm)

TOOLHOLDER Type

U360



from outer groove \emptyset .787"
 Depth of groove up to .118"
 Clamping range .075 - .154"



for use with Indexable insert

Type 312
 U312

R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f_1	f	l_2	$t_{max a}$	Size	Clamping range
R/LU360.0500.02	.500	.500	4.000	1.000	.402	f_1+w-a_1	.944	.118	02	.075 - .114
R/LU360.0625.02	.625	.625	5.000	1.000	.527		.866			
R/LU360.0750.02	.750	.750	5.000	1.000	.652		.826			
R/LU360.1000.02	1.000	1.000	6.000	1.000	.902		-			
R/LU360.1250.02	1.250	1.250	6.625	1.250	1.152		-			
R/LU360.0500.03	.500	.500	4.000	1.000	.362	f_1+w-a_1	.944	.118	03	.114 - .154
R/LU360.0625.03	.625	.625	5.000	1.000	.487		.866			
R/LU360.0750.03	.750	.750	5.000	1.000	.612		.826			
R/LU360.1000.03	1.000	1.000	6.000	1.000	.862		-			
R/LU360.1250.03	1.250	1.250	6.625	1.250	1.112		-			

State R or L version

w, a_1 see indexable inserts

Dimensions in inch

Further sizes upon request

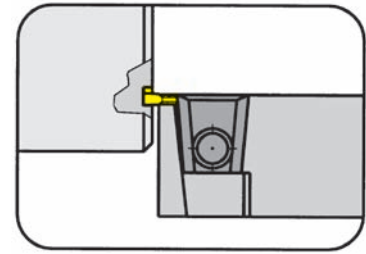
Spare parts

Toolholder	Clamp	Screw	Wrench
R/LU360.0...02/03	11.3	6.25	SW3DIN911
R/LU360....02/03	16.4	6.25	SW3DIN911

TOOLHOLDER Type

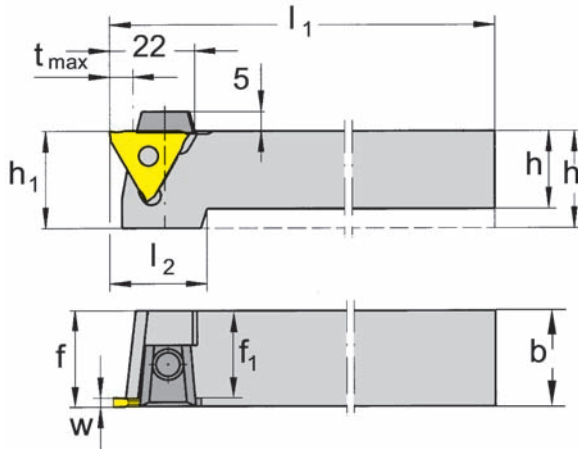
360

from outer groove \varnothing .787" (20.0 mm)
 Depth of groove up to .118" (3.0 mm)
 Clamping range .075 - .154" (1.9 - 3.9 mm)



for use with Indexable insert

Type 312
 U312



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f_1	f	l_2	$t_{max a}$	Size	Clamping range
R/L360.1212.02	12	12	100	25	9.5	$f_1 + w - a_1$	24	3	02	1.9 - 2.9
R/L360.1616.02	16	16	125	25	13.5		22			
R/L360.2020.02	20	20	125	25	17.5		21			
R/L360.2525.02	25	25	150	25	22.5		-			
R/L360.3232.02	32	32	170	32	29.5		-			
R/L360.1212.03	12	12	100	25	8.5	$f_1 + w - a_1$	24	3	03	2.9 - 3.9
R/L360.1616.03	16	16	125	25	12.5		22			
R/L360.2020.03	20	20	125	25	16.5		21			
R/L360.2525.03	25	25	150	25	21.5		-			
R/L360.3232.03	32	32	170	32	28.5		-			

State R or L version

w, a_1 see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

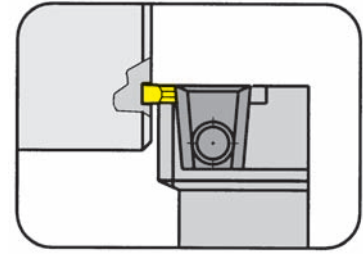
Toolholder	Clamp	Screw	Wrench
R/L360.1...02/03	11.3	6.25	SW3DIN911
R/L360....02/03	16.4	6.25	SW3DIN911

GROOVING (external)



TOOLHOLDER Type

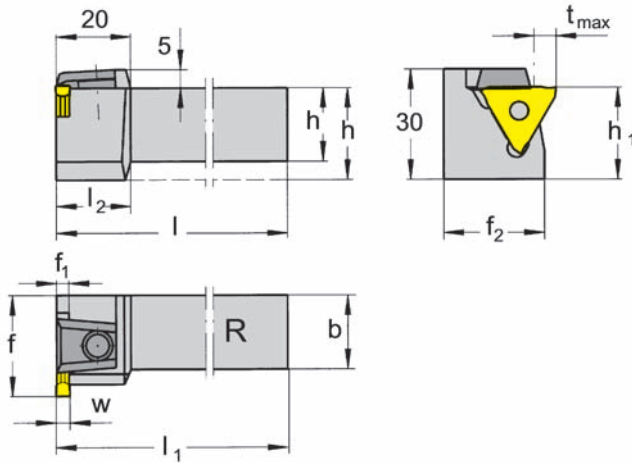
U369



from outer groove \emptyset .787"
 Depth of groove up to .118"
 Clamping range .075 - .154"

for use with Indexable insert

Type 312
 U312



R = right hand version shown

L = left hand version

Part number	h	h ₁	b	l	l ₁	l ₂	f	f ₁	f ₂	t _{max a}	Size	Clamping range
R/LU369.0750.02	.750	1.000	.750	5.000	$l-f_1+w-a_1$	.750	1.026	.098	.927	.118	02	.075 - .114
R/LU369.1000.02	1.000	1.000	1.000	6.000	$l-f_1+w-a_1$	-	1.276	.098	.177	.118	02	.075 - .114
R/LU369.0750.03	.750	1.000	.750	5.000	$l-f_1+w-a_1$	.750	1.026	.137	.927	.118	03	.114 - .154
R/LU369.1000.03	1.000	1.000	1.000	6.000	$l-f_1+w-a_1$	-	1.276	.137	.177	.118	03	.114 - .154

State R or L version

w, a₁ see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

Toolholder	Clamp	Screw	Wrench
R/LU369....	16.4	6.25	SW3DIN911

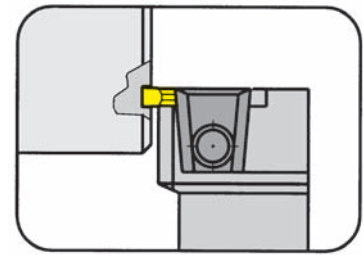
N44



TOOLHOLDER Type

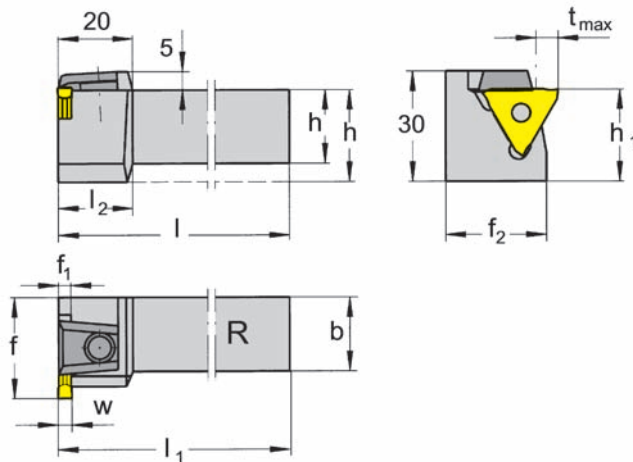
369

from outer groove \varnothing .787" (20.0 mm)
 Depth of groove up to .118" (3.0 mm)
 Clamping range .075 - .154" (1.9 - 3.9 mm)



for use with Indexable insert

Type 312
 U312



R = right hand version shown

L = left hand version

Part number	h	h ₁	b	l	l ₁	l ₂	f	f ₁	f ₂	t _{max a}	Size	Clamping range
R/L 369.2020.02	20	25	20	125	l-f ₁ +w-a ₁	20	27	2.5	23.5	3	02	1.9 - 2.9
R/L 369.2525.02	25	25	25	150	l-f ₁ +w-a ₁	-	32	2.5	28.5	3	02	1.9 - 2.9
R/L 369.2020.03	20	25	20	125	l-f ₁ +w-a ₁	20	27	3.5	23.5	3	03	2.9 - 3.9
R/L 369.2525.03	25	25	25	150	l-f ₁ +w-a ₁	-	32	3.5	28.5	3	03	2.9 - 3.9

State R or L version

w, a₁ see indexable inserts

Dimensions in mm

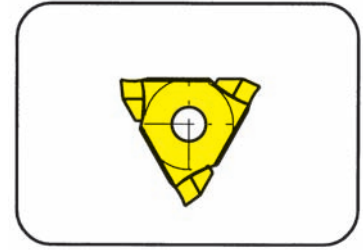
Further sizes upon request

Spare parts

Toolholder	Clamp	Screw	Wrench
R/L369.2...	16.4	6.25	SW3DIN911

INDEXABLE INSERT Type

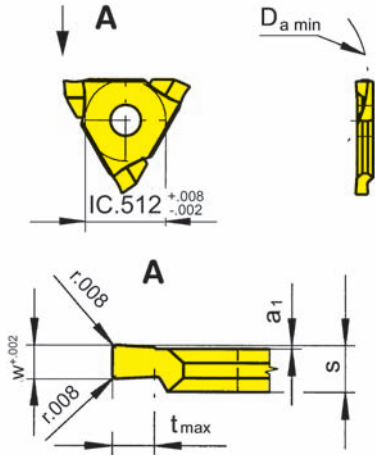
U312



from outer groove \varnothing	.787"
Depth of groove up to	.118"
Width of groove	.062 - .125"

for use with Toolholder

Type 360
369
U360
U369



R = right hand version shown

L = left hand version

Indexability length
 $\pm .0008$ "

Part number	w	s	t _{max}	D _{a min}	a ₁	Size	Carbide grades			
							TN32	TN35	T122	TA45
R/LU312.2062.08	.062	.106	.079	.787	.008	02		▲/▲		
R/LU312.3094.08	.094	.146	.118	1.181	.008	03		Δ/Δ		
R/LU312.3125.08	.125	.146	.118	1.181	.008	03		▲/▲		
							P	•		
							M	•		
							K	•		
							S	•		
							N	•		
							H			

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R or L version

Note for toolholder type 360

Use right hand inserts in left hand toolholders and left hand inserts in right hand toolholders

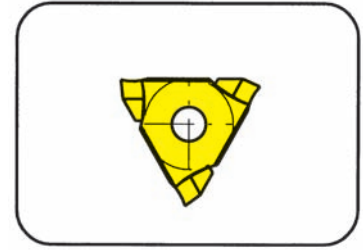
Note for toolholder type 369

Use right hand inserts in right hand toolholders and left hand inserts in left hand toolholders



INDEXABLE INSERT Type

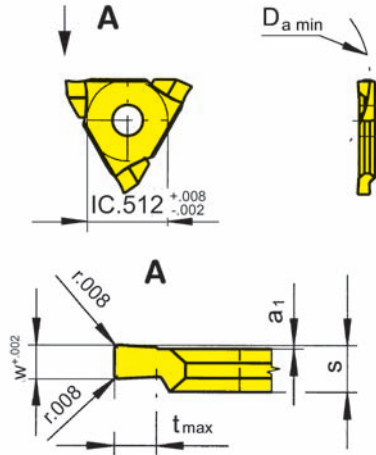
312



from outer groove \varnothing .787"
 Depth of groove up to .118"
 Width of groove .059 - .118"

for use with Toolholder

Type 360
 369
 U360
 U369



R = right hand version shown

L = left hand version

Indexability length
 $\pm .0008''$

Part number	w	s	t _{max}	D _{a min}	a ₁	Size	Carbide grades		
							TN35	TI25	TA45
R/L312.2015.02	.059	.106	.079	.787	.008	02	▲/▲		
R/L312.3020.02	.079	.106	.118	1.181	.008	02	▲/▲		
R/L312.3030.02	.118	.146	.118	1.181	.008	03	▲/▲		
							P	•	•
							M	•	•
							K	•	•
							S	•	•
							N	•	•
							H		

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch
 State R or L version

Note for toolholder type 360
 Use right hand inserts in left hand toolholders and left hand inserts in right hand toolholders

Note for toolholder type 369
 Use right hand inserts in right hand toolholders and left hand inserts in left hand toolholders



HORN - THE LEADERS IN GROOVING TECHNOLOGY



HIGH POLISH TURNING

MCD TOOLS

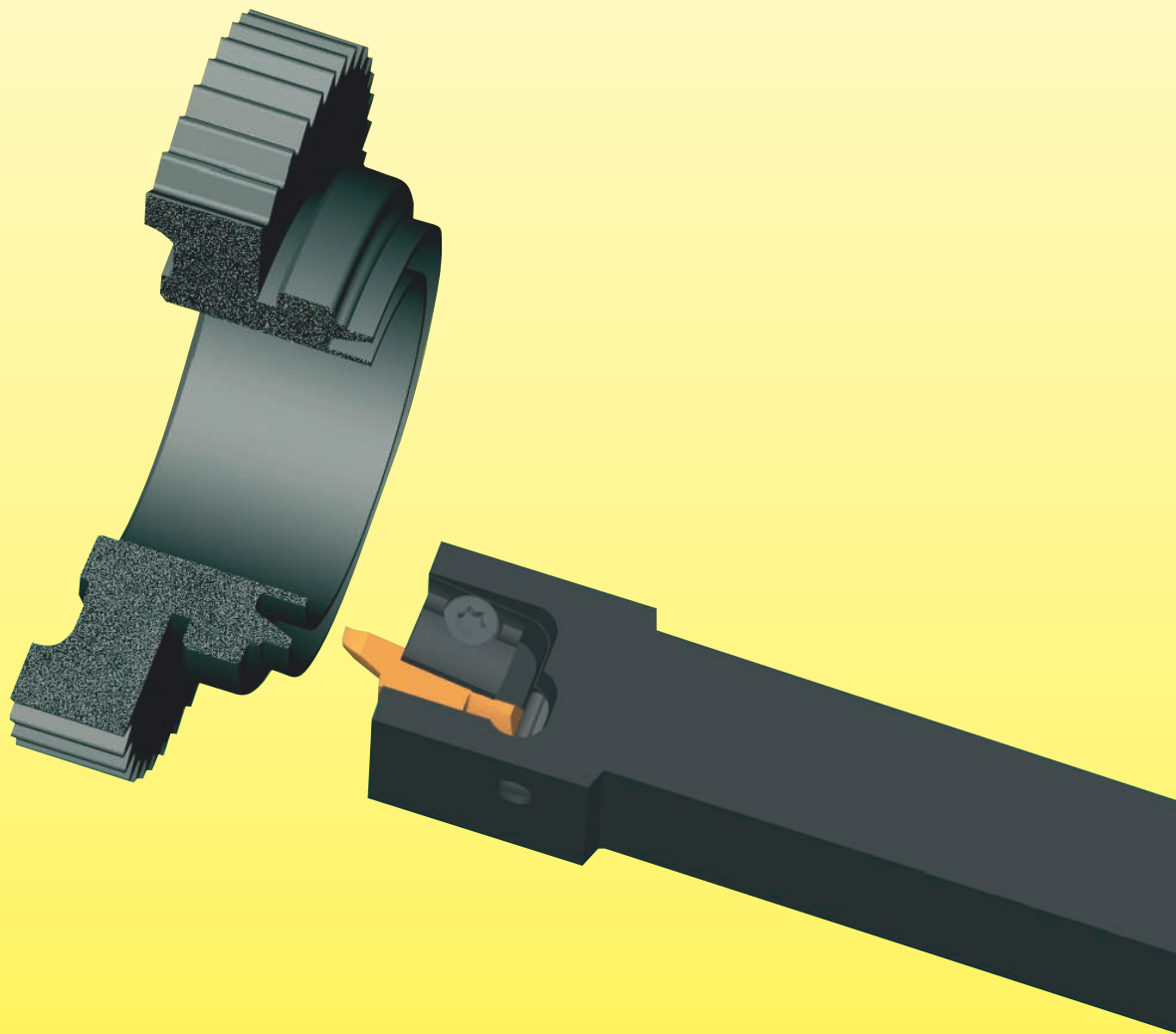
HORN - INTELLIGENT TOOL DESIGN AT WORK.



N

For further information, please see CHAPTER "S".

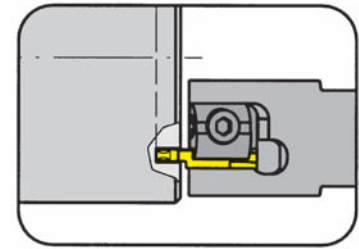
Indexable Insert Type 231 - precision ground -



from Outer groove \varnothing 1.574" (40 mm)
Depth of groove up to .315" (8 mm)

TOOLHOLDER Type

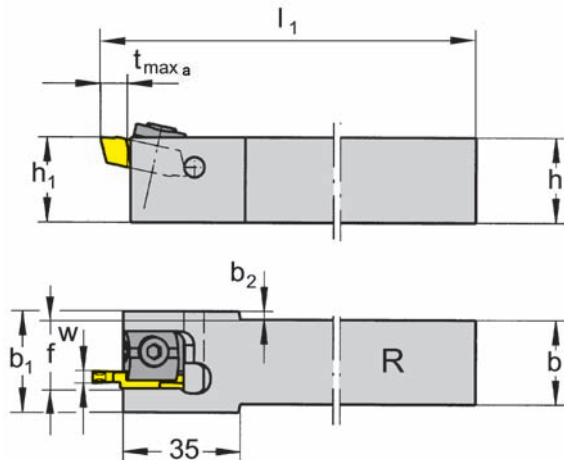
U221



from outer groove \varnothing 1.575"
 Depth of groove up to .315"
 Clamping range .118 - .394"

for use with Indexable insert

Type 231
 N231



R = right hand version shown

L = left hand version

Part number	h	h ₁	l ₁	b	b ₁	b ₂	f	t _{max a}	Size	Clamping range
R/LU221.0750.04	.750	.750	5.000	.750	1.102	.157	.705	.315	04	.118 - .157
R/LU221.1000.04	1.000	1.000	6.000	1.000	1.102	.059	.803	.315	04	.118 - .157
R/LU221.0750.05	.750	.750	5.000	.750	1.181	.197	.744	.315	05	.161 - .236
R/LU221.1000.05	1.000	1.000	6.000	1.000	1.181	.098	.843	.315	05	.161 - .236
R/LU221.0750.07	.750	.750	5.000	.750	1.260	.236	.783	.315	07	.240 - .315
R/LU221.1000.07	1.000	1.000	6.000	1.000	1.260	.138	.882	.315	07	.240 - .315
R/LU221.0750.09	.750	.750	5.000	.750	1.339	.275	.823	.315	09	.319 - .394
R/LU221.1000.09	1.000	1.000	6.000	1.000	1.339	.177	.921	.315	09	.319 - .394

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

Toolholder	Clamp	Screw	Position Pin
R/LU221.....	01.60.12	6.20.70	3.6.28

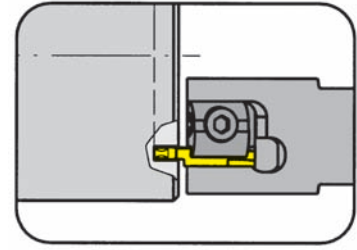
N50



TOOLHOLDER Type

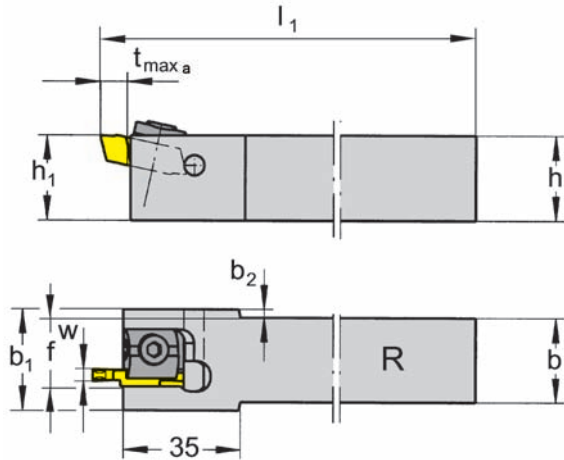
221

from outer groove \varnothing 1.575" (40.0 mm)
 Depth of groove up to .315" (8.0 mm)
 Clamping range .118 - .394" (3.0 - 10.0 mm)



for use with Indexable insert

Type 231
N231



R = right hand version shown

L = left hand version

Part number	h	h ₁	l ₁	b	b ₁	b ₂	f	t _{max a}	Size	Clamping range
R/L221.2020.04	20	20	125	20	28	4.0	17.9	8	04	3.0 - 4.0
R/L221.2525.04	25	25	150	25	28	1.5	20.4	8	04	3.0 - 4.0
R/L221.2020.05	20	20	125	20	30	5.0	18.9	8	05	4.1 - 6.0
R/L221.2525.05	25	25	150	25	30	2.5	21.4	8	05	4.1 - 6.0
R/L221.2020.07	20	20	125	20	32	6.0	19.9	8	07	6.1 - 8.0
R/L221.2525.07	25	25	150	25	32	3.5	22.4	8	07	6.1 - 8.0
R/L221.2020.09	20	20	125	20	34	7.0	20.9	8	09	8.1 - 10.0
R/L221.2525.09	25	25	150	25	34	4.5	23.4	8	09	8.1 - 10.0

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

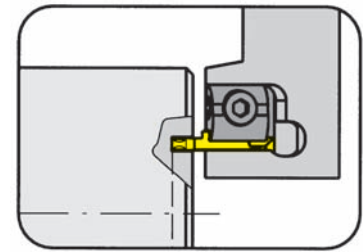
Spare parts

Toolholder	Clamp	Screw	Position Pin
R/L221.2...	01.60.12	6.20.70	3.6.28



TOOLHOLDER Type

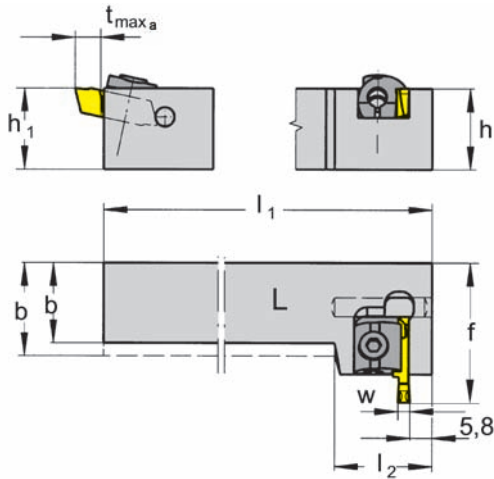
U228



from outer groove \varnothing	1.575"
Depth of groove up to	.315"
Clamping range up to	.394"

for use with Cassette

Type 231
N231



L = left hand version shown

R = right hand version

Part number	l_1	l_2	h	h_1	b	f	$t_{max a}$	Size	Clamping range
R/LU228.0750.04	5.000	1.398	.750	.750	.750	1.516	.315	04	.118 - .157
R/LU228.1000.04	6.000	1.398	1.000	1.000	1.000	1.516	.315	04	.118 - .157
R/LU228.0750.05	5.000	1.398	.750	.750	.750	1.516	.315	05	.161 - .236
R/LU228.1000.05	6.000	1.398	1.000	1.000	1.000	1.516	.315	05	.161 - .236
R/LU228.0750.07	5.000	1.398	.750	.750	.750	1.516	.315	07	.240 - .315
R/LU228.1000.07	6.000	1.398	1.000	1.000	1.000	1.516	.315	07	.240 - .315
R/LU228.0750.09	5.000	1.398	.750	.750	.750	1.516	.315	09	.319 - .394
R/LU228.1000.09	6.000	1.398	1.000	1.000	1.000	1.516	.315	09	.319 - .394

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

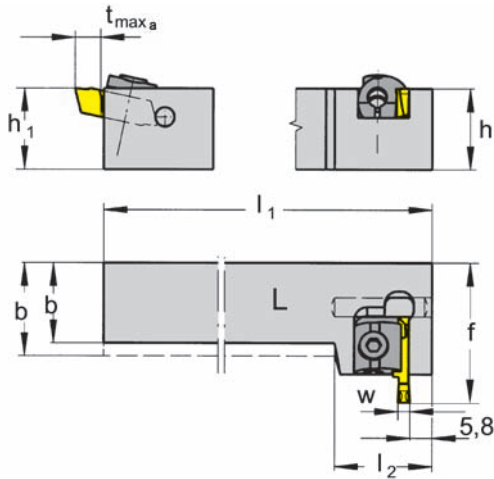
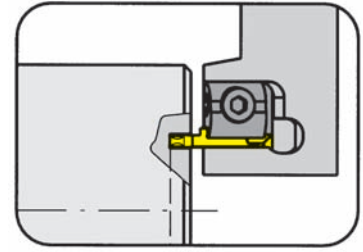
Toolholder	Clamp	Screw	Position Pin
R/LU228....	01.60.12	6.20.70	3.6.28

N52

TOOLHOLDER Type

228

from outer groove \varnothing 1.575" (40.0 mm)
 Depth of groove up to .315" (8.0 mm)
 Clamping range up to .394" (10.0 mm)



for use with Indexable insert

Type 231
N231

L = left hand version shown

R = right hand version

Part number	l_1	l_2	h	h_1	b	f	$t_{max a}$	Size	Clamping range
R/L228.2020.04	125	35.5	20	20	20	38.5	8	04	3.0 - 4.0
R/L228.2525.04	150	35.5	25	25	25	38.5	8	04	3.0 - 4.0
R/L228.2020.05	125	35.5	20	20	20	38.5	8	05	4.1 - 6.0
R/L228.2525.05	150	35.5	25	25	25	38.5	8	05	4.1 - 6.0
R/L228.2020.07	125	35.5	20	20	20	38.5	8	07	6.1 - 8.0
R/L228.2525.07	150	35.5	25	25	25	38.5	8	07	6.1 - 8.0
R/L228.2020.09	125	35.5	20	20	20	38.5	8	09	8.1 - 10.0
R/L228.2525.09	150	35.5	25	25	25	38.5	8	09	8.1 - 10.0

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Clamp	Screw	Position Pin
R/L228.2...	01.60.12	6.20.70	3.6.28



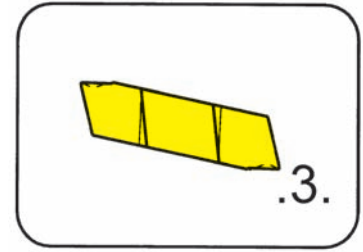
FACE GROOVING



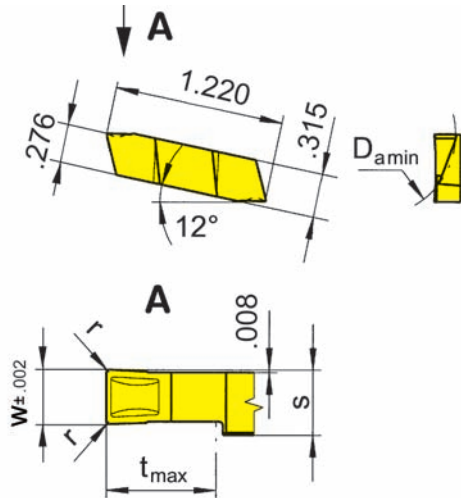
INDEXABLE INSERT Type

231/N231

with chip former



from outer groove \varnothing 1.575"
 Depth of groove up to .315"
 Width of groove .118 - .394"



for use with Toolholder

Type 221
 228
 U221
 U228

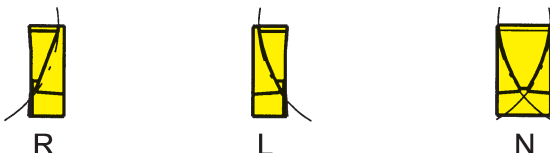
Indexability length
 ± .001"

Part number	w	s	r	t _{max}	D _{a min}	Size	Carbide grades						
							MG12	P20	TN32	TN35	TI22	TF45	TC92
R/L231.4030.32	.118	.150	.008	.315	1.575	04				▲/▲			
R/L231.4040.32	.157	.150	.008	.315	1.575	04				▲/▲			
R/L231.4050.34	.197	.228	.016	.315	1.575	05				▲/▲			
N231.4060.34	.236	.228	.016	.315	1.575	05				▲			
N231.4070.36	.276	.307	.024	.315	1.575	07				▲			
N231.4080.36	.315	.307	.024	.315	1.575	07				▲			
N231.4090.38	.354	.386	.031	.315	1.575	09				▲			
N231.4100.38	.394	.386	.031	.315	1.575	09				▲			
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet							P			●			
							M			●			
							K			●			
							S			●			
							N			●			
							H						

Dimensions in inch

State R, L or N version

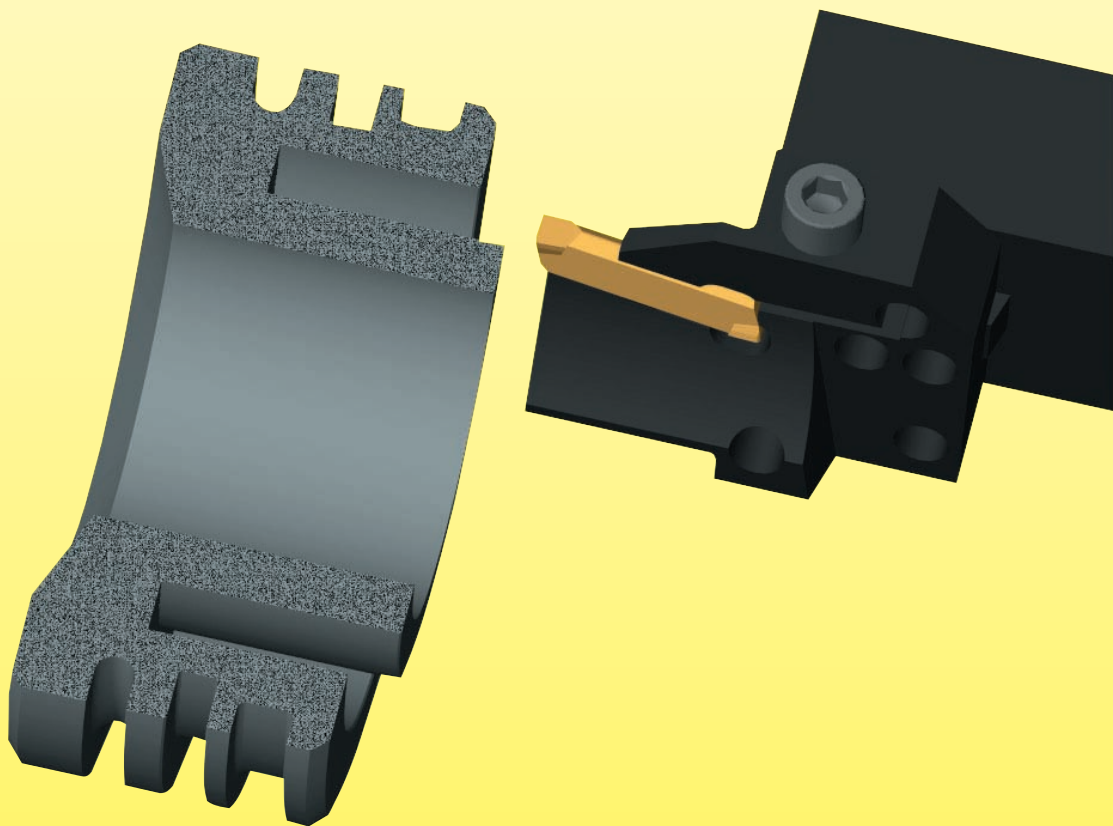
Outer- \varnothing of groove < 40 mm upon request.



R = right hand version L = left hand version N = right and left hand version

N54

Indexable Insert Type S224 + S229 - precision sintered -



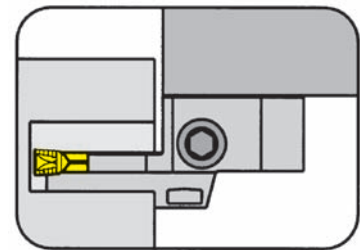
Outer groove \varnothing 1.496 - 39.370" (38 - 1000 mm)
Depth of groove up to .984" (25 mm)

N

BASIC TOOLHOLDER Type

U220

without cassette

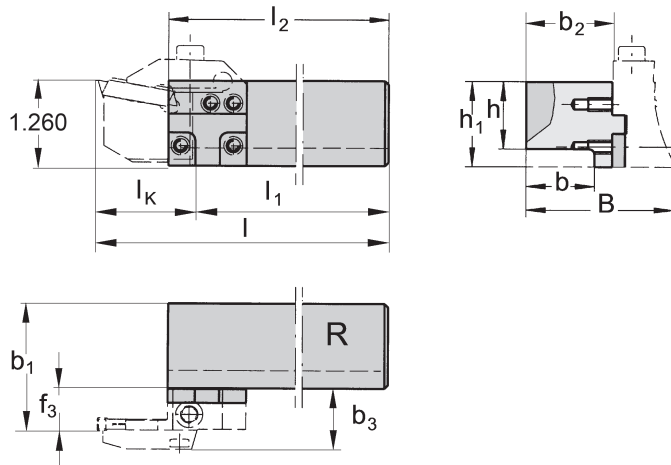


Basic toolholder for cassettes type 220/224

Shank parallel to the axis of workpiece

for use with Cassette

Type R/L/NAK220
R/L/NAK224



R = right hand version shown

L = left hand version

Part number	h	l_1	h_1	b	b_1	b_2	l_2	l	B
R/LU220.0625.K1	.625			.625		1.000	2.500		
R/LU220.0750.K1	.750			.750		1.000	3.000		
R/LU220.1000.K1	1.000	l_2-10	1.250	1.000	b_2+f_3	1.250	3.750	l_1+l_k	b_2+b_3
R/LU220.1250.K1	1.250			-		1.250	4.250		

State R or L version

l_k , b_3 and f_3 see cassettes

Dimensions in inch

Further sizes upon request

Use right hand basic toolholder for right hand cassettes and left hand basic toolholder for left hand cassettes.

Spare parts

Basic toolholder	Screw	TORX PLUS®-Wrench
R/LU220....	5.12T20P	T20PQ

N56

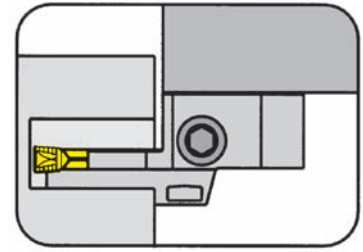
FACE GROOVING



BASIC TOOLHOLDER Type

220

without cassette

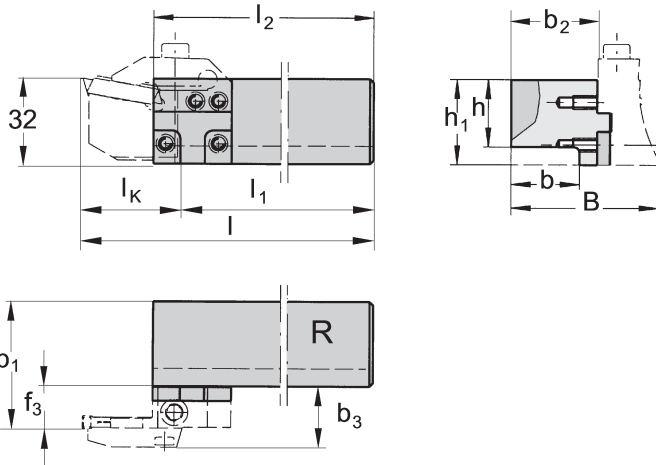


Basic toolholder for cassettes type 220/224

Shank parallel to the axis of workpiece

for use with Cassette

Type R/L/NAK220
R/L/NAK224



R = right hand version shown

L = left hand version

Part number	h	l_1	h_1	b	b_1	b_2	l_2	l	B
R/L220.1616.K1	16			16		25	64		
R/L220.2020.K1	20			20		27	74		
R/L220.2525.K1	25	l_2-10	32	25	b_2+f_3	32	94	l_1+l_K	b_2+b_3
R/L220.3225.K1	32			-		25	109		
R/L220.3232.K1	32			-		32	109		

State R or L version

l_K , b_3 and f_3 see cassettes

Dimensions in mm

Further sizes upon request

Use right hand basic toolholder for right hand cassettes and left hand basic toolholder for left hand cassettes.

Spare parts

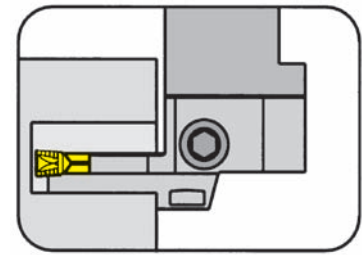
Basic toolholder	Screw	TORX PLUS®-Wrench
R/L220....	5.12T20P	T20PQ



BASIC TOOLHOLDER Type

U220

without cassette

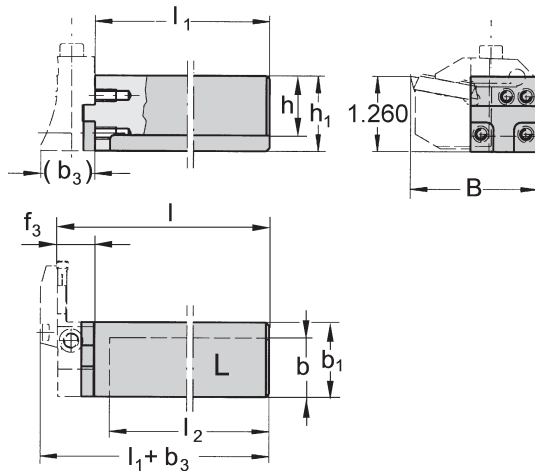


Basic toolholder for cassettes type 220/224

Shank 90° to the axis of workpiece

for use with Cassette

Type R/L/NAK220
R/L/NAK224



L = left hand version shown

R = right hand version

Part number	h	h ₁	l ₁	b	b ₁	l ₂	l	B
R/LU220.0625.K2	.625		2.750	.625	1.000	2.375		l _k + .748
R/LU220.0750.K2	.750		3.350	.750	1.000	3.000		l _k + .748
R/LU220.1000.K2	1.000	1.250	4.000	1.000	1.250	3.625	l ₁ +f ₃	l _k + .866
R/LU220.1250.K2	1.250		4.500	-	1.250	4.500		l _k + .866

State R or L version

l_k, b₃ and f₃ see cassettes

Dimensions in inch

Further sizes upon request

Use right hand basic toolholder for left hand cassettes and left hand basic toolholder for right hand cassettes.

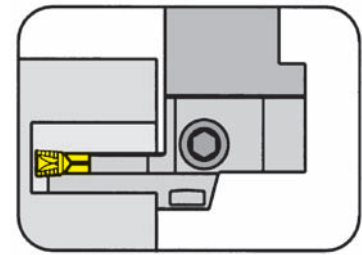
Spare parts

Basic toolholder	Screw	TORX PLUS® Wrench
R/LU220....	5.12T20P	T20PQ

BASIC TOOLHOLDER Type

220

without cassette

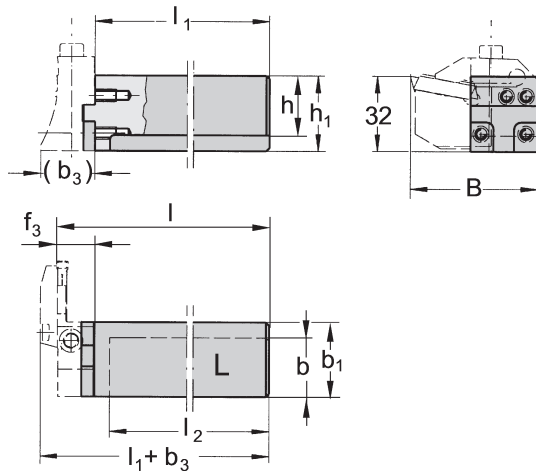


Basic toolholder for cassettes type 220/224

Shank 90° to the axis of workpiece

for use with Cassette

Type R/L/NAK220
R/L/NAK224



L = left hand version shown

R = right hand version

Part number	h	h ₁	l ₁	b	b ₁	l ₂	l	B
R/L220.1616.K2	16		70	16	29	60		l _k +19
R/L220.2020.K2	20		85	20	29	75		l _k +19
R/L220.2525.K2	25	32	100	25	32	93	l ₁ +f ₃	l _k +22
R/L220.3225.K2	32		115	-	29	108		l _k +19
R/L220.3232.K2	32		115	-	32	115		l _k +22

State R or L version

l_k, b₃ and f₃ see cassettes

Dimensions in mm

Further sizes upon request

Use right hand basic toolholder for left hand cassettes and left hand basic toolholder for right hand cassettes.

Spare parts

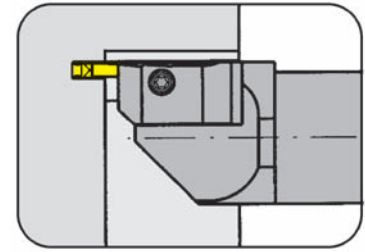
Basic toolholder	Screw	TORX PLUS® Wrench
R/L220....	5.12T20P	T20PQ



BASIC TOOLHOLDER Type

BU224

without cassette

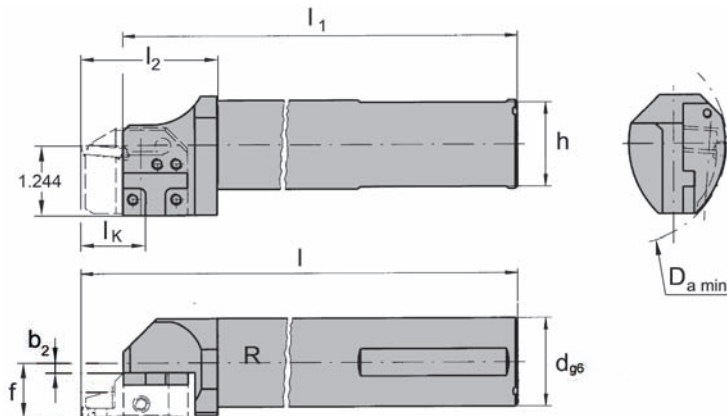


Basic toolholder for cassettes type 220/224

with through coolant supply

for use with Cassette

Type RIK224
LIK224



R = right hand version shown

L = left hand version

Part number	h	l ₁	b ₂	f	D _{Bohr}	l ₂	d	l
R/LBU224.1250.K1	1.171	7.126	.016	.780	3.543	2.323	1.250	7.874
R/LBU224.1500.K1	1.421	9.094	.173	.937	3.543	2.323	1.500	9.843

State R or L version

D_{a min} / f₃ see cassettes

Dimensions in inch

Further sizes upon request

Spare parts

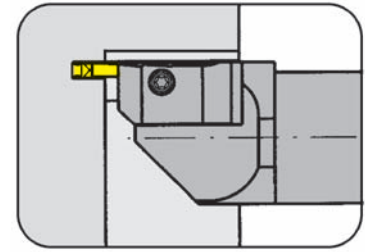
Basic toolholder	Screw	TORX PLUS® Wrench
R/LBU224.1...	5.12T20P	T20PQ

N60

BASIC TOOLHOLDER Type

B224

without cassette

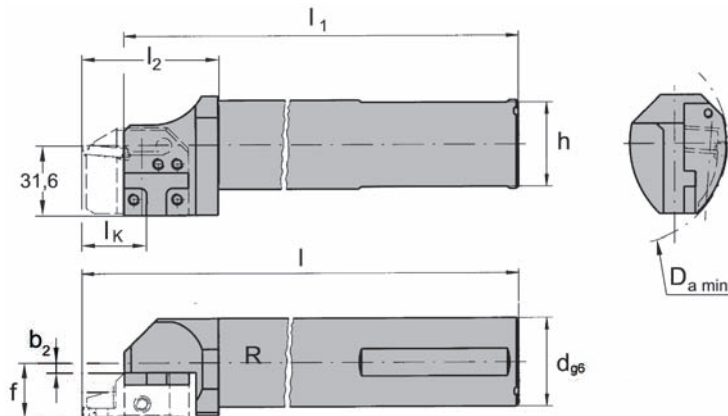


Basic toolholder for cassettes type RIK/LIK224

with through coolant supply

for use with Cassette

Type RIK224
LIK224



R = right hand version shown

L = left hand version

Part number	h	l ₁	b ₂	f	D _{Bohr}	l ₂	d	l
R/LB224.0032.K1	30	181	0.41	b ₂ +f ₃	90	59	32	200
R/LB224.0040.K1	38	231	4.41	b ₂ +f ₃	90	59	40	250

State R or L version

D_{a min} / f₃ see cassettes

Dimensions in mm

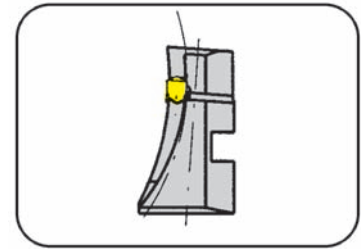
Further sizes upon request

Spare parts

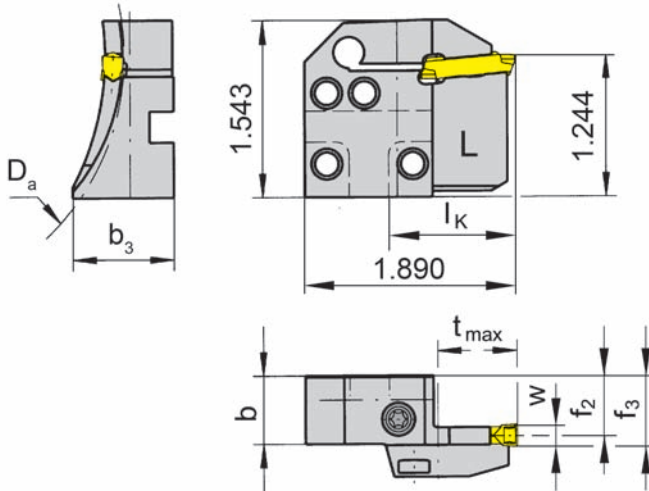
Basic toolholder	Screw	TORX PLUS® Wrench
R/LB224.00...	5.12T20P	T20PQ

CASSETTE Type

LAK224



Outer groove \varnothing 1.496 - 39.370"
 Depth of groove up to .551"
 Width of groove up to .157"



for use with Indexable insert

Type S224

L = left hand version

Part number	D _{a min}	D _{a max}	t _{max}	b	b ₃	f ₂	f ₃	w	l _K
LAK224.5060.03	1.969	2.362			.827				
LAK224.6075.03	2.362	2.953			.827				
LAK224.7590.03	2.953	3.543			.827				
LAK224.9011.03	3.543	4.331			.827				
LAK224.1113.03	4.331	5.118	.551	.618	.827	.587	f ₂ +w/2	.118	1.142
LAK224.1318.03	5.118	7.087			.787				
LAK224.1830.03	7.087	11.811			.748				
LAK224.3000.03	11.811	39.370			.646				
LAK224.3847.04	1.496	1.850			.827				
LAK224.4760.04	1.850	2.362			.827				
LAK224.6075.04	2.362	2.953			.827				
LAK224.7590.04	2.953	3.543			.827				
LAK224.9013.04	3.543	5.118	.551	.618	.827	.567	f ₂ +w/2	.157	1.142
LAK224.1318.04	5.118	7.087			.827				
LAK224.1830.04	7.087	11.811			.748				
LAK224.3000.04	11.811	39.370			.657				

For basic toolholder L...K1 and R...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

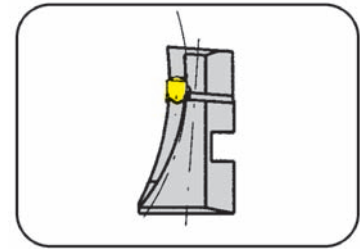
Spare parts

Cassette	Screw	TORX PLUS® Wrench
LAK224....	5.13T20P	T20PQ

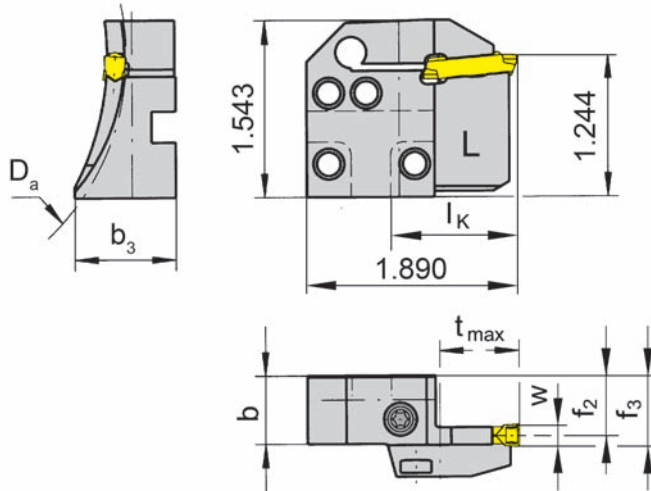
N62

CASSETTE Type

LAK224



Outer groove \varnothing 1.496 - 39.370"
 Depth of groove up to .551"
 Width of groove up to .236"



L = left hand version

for use with Indexable insert

Type S224

Part number	$D_{a \min}$	$D_{a \max}$	t_{\max}	b	b_3	f_2	f_3	w	l_k
LAK224.3847.05	1.496	1.850			.827				
LAK224.4760.05	1.850	2.362			.827				
LAK224.6075.05	2.362	2.953			.827				
LAK224.7590.05	2.953	3.543			.827				
LAK224.9013.05	3.543	5.118	.551	.618	.827	.547	$f_2+w/2$	.197	1.142
LAK224.1318.05	5.118	7.087			.827				
LAK224.1830.05	7.087	11.811			.748				
LAK224.3000.05	11.811	39.370			.657				
LAK224.6075.06	2.362	2.953			.906				
LAK224.7590.06	2.953	3.543			.906				
LAK224.9013.06	3.543	5.118			.827				
LAK224.1318.06	5.118	7.087	.551	.618	.827	.528	$f_2+w/2$	.236	1.142
LAK224.1830.06	7.087	11.811			.748				
LAK224.3000.06	11.811	39.370			.657				

For basic toolholder L...K1 and R...K2

Further sizes upon request

Dimensions in inch

Ordering note:

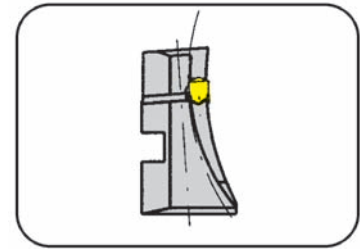
The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

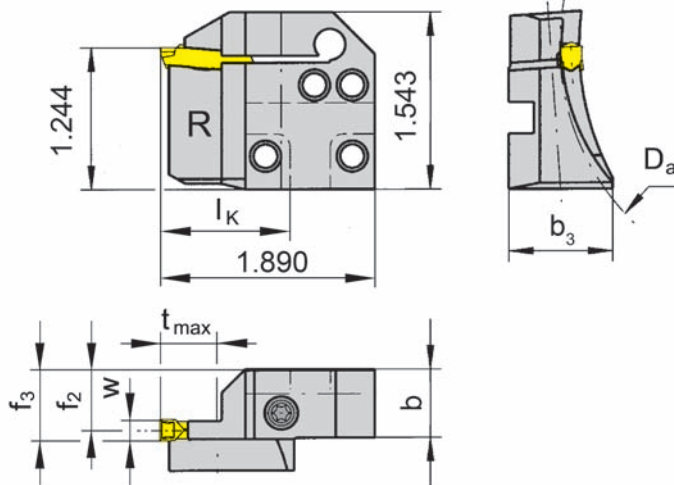
Cassette	Screw	TORX PLUS® Wrench
LAK224....	5.13T20P	T20PQ

CASSETTE Type

RAK224



Outer groove \varnothing 1.496 - 39.370"
 Depth of groove up to .551"
 Width of groove up to .157"



R = right hand version

for use with Indexable insert

Type S224

Part number	D _{a min}	D _{a max}	t _{max}	b	b ₃	f ₂	f ₃	w	l _k
RAK224.5060.03	1.969	2.362			.827				
RAK224.6075.03	2.362	2.953			.827				
RAK224.7590.03	2.953	3.543			.827				
RAK224.9011.03	3.543	4.331			.827				
RAK224.1113.03	4.331	5.118	.551	.618	.827	.587	f ₂ +w/2	.118	1.142
RAK224.1318.03	5.118	7.087			.787				
RAK224.1830.03	7.087	11.811			.748				
RAK224.3000.03	11.811	39.370			.646				
RAK224.3847.04	1.496	1.850			.827				
RAK224.4760.04	1.850	2.362			.827				
RAK224.6075.04	2.362	2.953			.827				
RAK224.7590.04	2.953	3.543			.827				
RAK224.9013.04	3.543	5.118	.551	.618	.827	.567	f ₂ +w/2	.157	1.142
RAK224.1318.04	5.118	7.087			.827				
RAK224.1830.04	7.087	11.811			.748				
RAK224.3000.04	11.811	39.370			.657				

For basic toolholder R...K1 and L...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

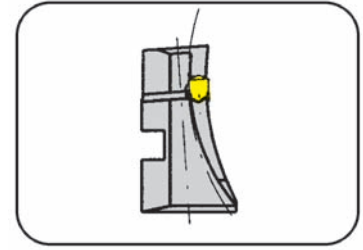
Spare parts

Cassette	Screw	TORX PLUS® Wrench
RAK224....	5.13T20P	T20PQ

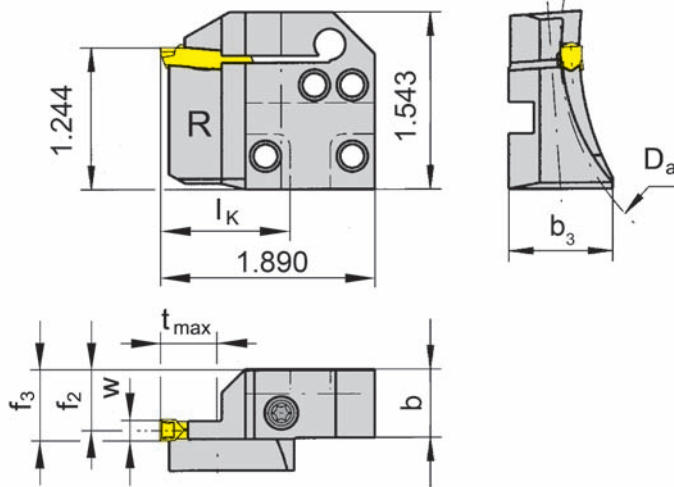
N64

CASSETTE Type

RAK224



Outer groove \varnothing 1.496 - 39.370"
 Depth of groove up to .551"
 Width of groove up to .236"



R = right hand version

for use with Indexable insert

Type S224

Part number	D _{a min}	D _{a max}	t _{max}	b	b ₃	f ₂	f ₃	w	l _k
RAK224.3847.05	1.496	1.850			.827				
RAK224.4760.05	1.850	2.362			.827				
RAK224.6075.05	2.362	2.953			.827				
RAK224.7590.05	2.953	3.543			.827				
RAK224.9013.05	3.543	5.118	.551	.618	.827	.547	f ₂ +w/2	.197	1.142
RAK224.1318.05	5.118	7.087			.827				
RAK224.1830.05	7.087	11.811			.748				
RAK224.3000.05	11.811	39.370			.657				
RAK224.6075.06	2.362	2.953			.906				
RAK224.7590.06	2.953	3.543			.906				
RAK224.9013.06	3.543	5.118			.827				
RAK224.1318.06	5.118	7.087	.551	.618	.827	.528	f ₂ +w/2	.236	1.142
RAK224.1830.06	7.087	11.811			.748				
RAK224.3000.06	11.811	39.370			.657				

For basic toolholder R...K1 and L...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

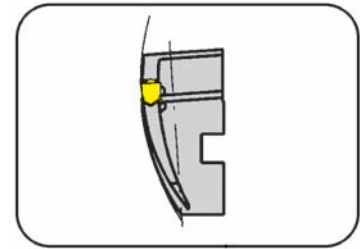
Spare parts

Cassette	Screw	TORX PLUS® Wrench
RAK224....	5.13T20P	T20PQ

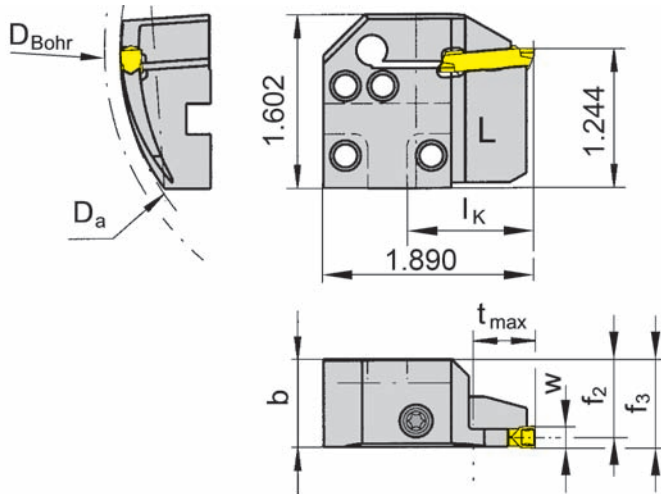


CASSETTE Type

LIK224



Outer groove \varnothing 1.496 - 39.370"
 Depth of groove up to .551"
 Width of groove up to .157"



for use with Indexable insert

Type S224

L = left hand version

Part number	D _{a min}	D _{a max}	t _{max}	b	f ₂	f ₃	D _{Bohr}	w	l _K
LIK224.5060.03	1.969	2.362					3.543		
LIK224.6075.03	2.362	2.953					3.543		
LIK224.7590.03	2.953	3.543					3.543		
LIK224.9011.03	3.543	4.331	.551	.748	.705	f ₂ +w/2	3.543	.118	1.142
LIK224.1113.03	4.331	5.118					4.331		
LIK224.1318.03	5.118	7.087					5.118		
LIK224.1830.03	7.087	11.811					7.087		
LIK224.3847.04	1.496	1.850					3.543		
LIK224.4760.04	1.850	2.362					3.543		
LIK224.6075.04	2.362	2.953					3.543		
LIK224.7590.04	2.953	3.543					3.543		
LIK224.9013.04	3.543	5.118	.551	.748	.685	f ₂ +w/2	3.543	.157	1.142
LIK224.1318.04	5.118	7.087					5.118		
LIK224.1830.04	7.087	11.811					7.087		
LIK224.3000.04	11.811	39.370					11.811		

For basic toolholder L...K1 and R...K2

Further sizes upon request

Dimensions in inch

Ordering note:

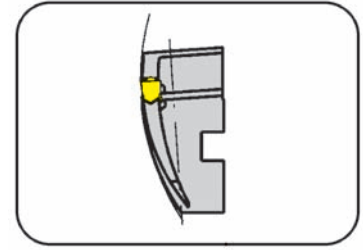
The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

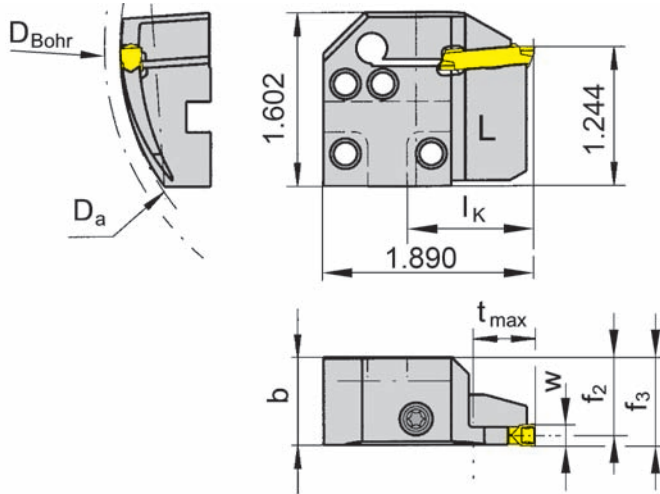
Cassette	Screw	TORX PLUS® Wrench
LIK224....	5.13T20P	T20PQ

CASSETTE Type

LIK224



Outer groove \varnothing 1.496 - 39.370"
 Depth of groove up to .551"
 Width of groove up to .236"



for use with Indexable insert

Type S224

L = left hand version

Part number	D _{a min}	D _{a max}	t _{max}	b	f ₂	f ₃	D _{Bohr}	w	l _K
LIK224.3847.05	1.496	1.850					3.543		
LIK224.4760.05	1.850	2.362					3.543		
LIK224.6075.05	2.362	2.953					3.543		
LIK224.7590.05	2.953	3.543					3.543		
LIK224.9013.05	3.543	5.118	.551	.748	.665	f ₂ +w/2	3.543	.197	1.142
LIK224.1318.05	5.118	7.087					5.118		
LIK224.1830.05	7.087	11.811					7.087		
LIK224.3000.05	11.811	39.370					11.811		
LIK224.6075.06	2.362	2.953					3.543		
LIK224.7590.06	2.953	3.543					3.543		
LIK224.9013.06	3.543	5.118	.551	.748	.646	f ₂ +w/2	3.543	.236	1.142
LIK224.1318.06	5.118	7.087					5.118		
LIK224.1830.06	7.087	11.811					7.087		
LIK224.3000.06	11.811	39.370					11.811		

For basic toolholder L...K1 and R...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

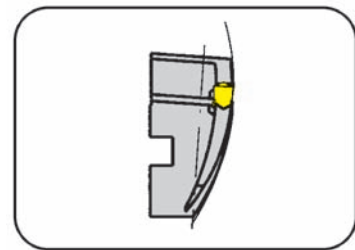
Spare parts

Cassette	Screw	TORX PLUS® Wrench
LIK224....	5.13T20P	T20PQ

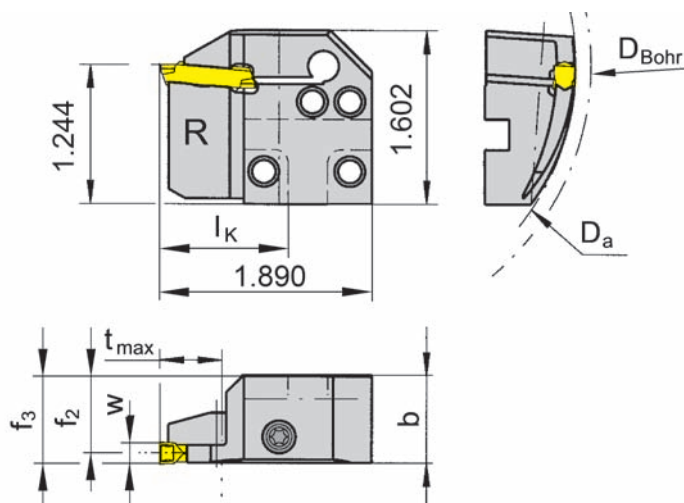


CASSETTE Type

RIK224



Outer groove \varnothing 1.496 - 39.370"
 Depth of groove up to .551"
 Width of groove up to .157"



R = right hand version

for use with Indexable insert

Type S224

Part number	D _{a min}	D _{a max}	t _{max}	b	f ₂	f ₃	D _{Bohr}	w	l _k
RIK224.5060.03	1.969	2.362					3.543		
RIK224.6075.03	2.362	2.953					3.543		
RIK224.7590.03	2.953	3.543					3.543		
RIK224.9011.03	3.543	4.331	.551	.748	.705	f ₂ +w/2	3.543	.118	1.142
RIK224.1113.03	4.331	5.118					4.331		
RIK224.1318.03	5.118	7.087					5.118		
RIK224.1830.03	7.087	11.811					7.087		
RIK224.3847.04	1.496	1.850					3.543		
RIK224.4760.04	1.850	2.362					3.543		
RIK224.6075.04	2.362	2.953					3.543		
RIK224.7590.04	2.953	3.543					3.543		
RIK224.9013.04	3.543	5.118	.551	.748	.685	f ₂ +w/2	3.543	.157	1.142
RIK224.1318.04	5.118	7.087					5.118		
RIK224.1830.04	7.087	11.811					7.087		
RIK224.3000.04	11.811	39.370					11.811		

For basic toolholder R...K1 and L...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

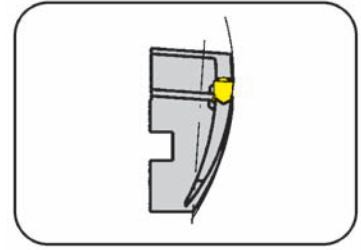
Spare parts

Cassette	Screw	TORX PLUS® Wrench
RIK224....	5.13T20P	T20PQ

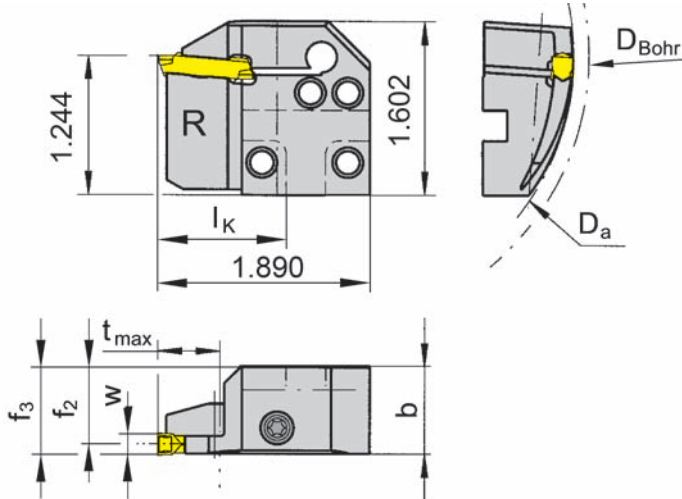
N68

CASSETTE Type

RIK224



Outer groove \varnothing 1.496 - 39.370"
 Depth of groove up to .551"
 Width of groove up to .236"



R = right hand version

for use with Indexable insert

Type S224

Part number	D _{a min}	D _{a max}	t _{max}	b	f ₂	f ₃	D _{Bohr}	w	l _k
RIK224.3847.05	1.496	1.850					3.543		
RIK224.4760.05	1.850	2.362					3.543		
RIK224.6075.05	2.362	2.953					3.543		
RIK224.7590.05	2.953	3.543					3.543		
RIK224.9013.05	3.543	5.118	.551	.748	.665	f ₂ +w/2	3.543	.197	1.142
RIK224.1318.05	5.118	7.087					5.118		
RIK224.1830.05	7.087	11.811					7.087		
RIK224.3000.05	11.811	39.370					11.811		
RIK224.6075.06	2.362	2.953					3.543		
RIK224.7590.06	2.953	3.543					3.543		
RIK224.9013.06	3.543	5.118					3.543		
RIK224.1318.06	5.118	7.087	.551	.748	.646	f ₂ +w/2	5.118	.236	1.142
RIK224.1830.06	7.087	11.811					7.087		
RIK224.3000.06	11.811	39.370					11.811		

For basic toolholder R...K1 and L...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

Cassette	Screw	TORX PLUS® Wrench
RIK224....	5.13T20P	T20PQ



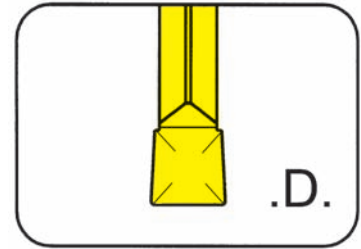
FACE GROOVING



INDEXABLE INSERT Type

S224

with chip forming

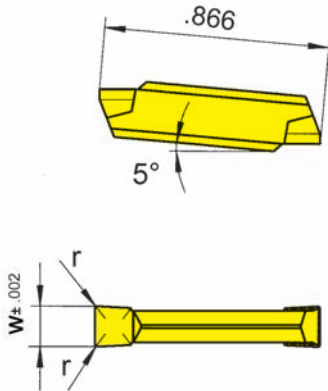


Depth of groove up to .709"
Width of groove .118 - .157"

D2 precision sintered / D2.G precision ground

for use with Cassette

Type L/RAK224
L/RIK224



Indexability length
± .002"

Part number	w	r	Size	Carbide grades							
				H54	TN32	TN35	TI22	TI25	TF45	TF46	
S224.0300.D2.G	.118	.008	03				▲		▲	▲	
S224.0300.D2				▲	▲	▲	▲	▲	▲	▲	
S224.0400.D2.G	.157	.008	04			▲					
S224.0400.D2					▲	▲	▲	▲	▲	▲	
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P	●	●	●	●	●	●	
				M	●	●	●	●	●	○	
				K	●	●	●	●	●	●	
				S	●	●	●	●	●	○	
				N	●	●	●	●	●	●	
				H	●	●	●	●	●	●	

Dimensions in mm

Carbide grades

Indexable inserts can be used in right and left hand cassettes L/RAK224 and L/RIK224.



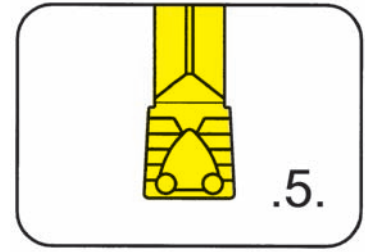
FACE GROOVING



INDEXABLE INSERT Type

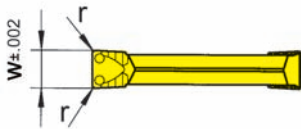
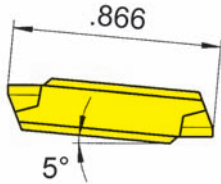
S224

with chip forming



Depth of groove up to	.709"
Width of groove	.118 - .197"

precision sintered



for use with Cassette

Type L/RAK224
L/RIK224

Indexability length
± .002"

Part number	w	r	Size	Carbide grades				
				TN32	TN35	TI25	TF45	AL96
S224.0300.52	.118	.008	03	▲	▲	▲	▲	▲
S224.0300.54		.016		▲	▲	▲	▲	▲
S224.0400.52	.157	.008	04	▲	▲	▲	▲	▲
S224.0400.54		.016		▲	▲	▲	▲	▲
S224.0500.54	.197	.016	05	▲	▲	▲	▲	▲
S224.0500.58		.031		▲	▲	▲	▲	▲
				P	•	•	•	•
				M	•	•	•	•
				K	•	•	•	•
				S	•	•	•	•
				N	•	•	•	•
				H				

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in mm

Indexable inserts can be used in right and left hand cassettes L/RAK224 and L/RIK224.



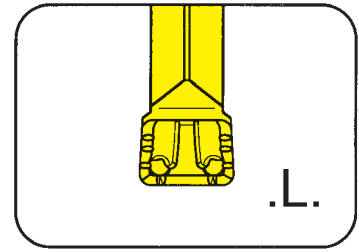
FACE GROOVING



INDEXABLE INSERT Type

S224

with chip forming

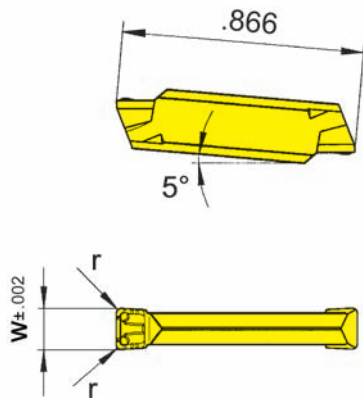


Depth of groove up to	.709"
Width of groove	.157 - .236"

precision sintered

for use with Cassette

Type L/RAK224
L/RIK224



Indexability length
± .002"

Part number	w	r	Size	Carbide grades		
				Ti22	TF42	AL96
S224.0400.L4	.157	.016	04	▲	▲	▲
S224.0500.L4	.197	.016	05	▲	▲	▲
S224.0500.L6		.024		▲	▲	▲
S224.0600.L4	.236	.016	06	▲	▲	▲
S224.0600.L6		.024		▲	▲	▲
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P	●	●
				M	■	■
				K	■	●
				S	■	■
				N	■	●
				H	■	■

Dimensions in mm

Indexable inserts can be used in right and left hand cassettes L/RAK224 and L/RIK224.



HORN - THE LEADERS IN GROOVING TECHNOLOGY



From bore \varnothing .276" (7.0 mm)

Mini SYSTEM 107

HORN - INTELLIGENT TOOL DESIGN AT WORK.



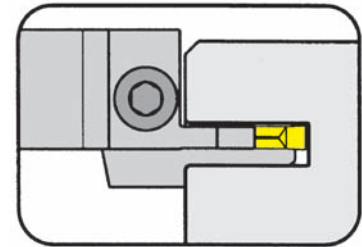
For further information, please contact HORN USA.

N

N73

TOOLHOLDER Type

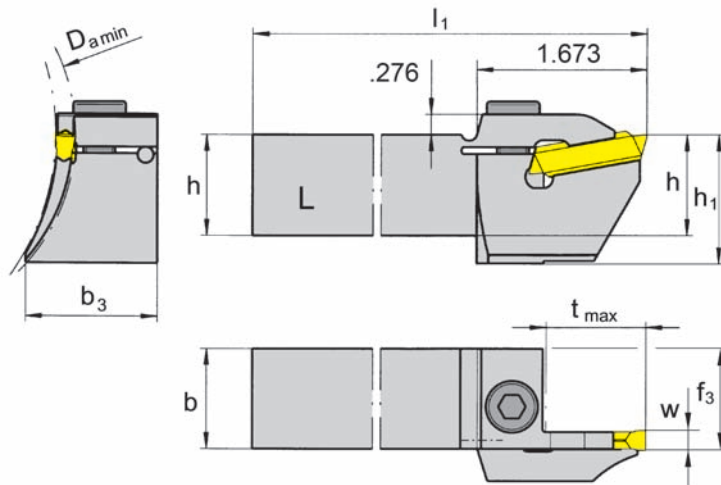
LAU226



from outer groove \varnothing 3.740"
 Depth of groove up to .984"
 Width of groove up to .197"

for use with Indexable insert

Type S229



L = left hand version

Part number	$D_{a \min}$	$D_{a \max}$	t_{\max}	h	h_1	l_1	b	b_3	f_3	Size
LAU226.07.1318.04	5.118	7.087		.750			.750	.984	205.0	04
LAU226.07.9513.04	3.740	5.118		.750			.750	1.024	205.0	
LAU226.10.1318.04	5.118	7.087	.984	1.000	1.260	6.004	1.000	1.197	259.0	
LAU226.10.9513.04	3.740	5.118		1.000			1.000	1.236	259.0	
LAU226.07.1318.05	5.118	7.087		.750			.750	.984	205.0	05
LAU226.07.9513.05	3.740	5.118		.750			.750	1.102	205.0	
LAU226.10.1318.05	5.118	7.087	.984	1.000	1.260	6.004	1.000	1.197	259.0	
LAU226.10.9513.05	3.740	5.118		1.000			1.000	1.315	259.0	

Further sizes upon request

w see indexable inserts

Dimensions in inch

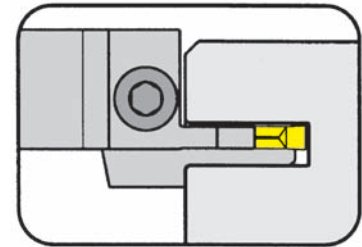
Spare parts

Toolholder	Screw	Wrench
LAU226....	218.3	SW6.911

N74

TOOLHOLDER Type

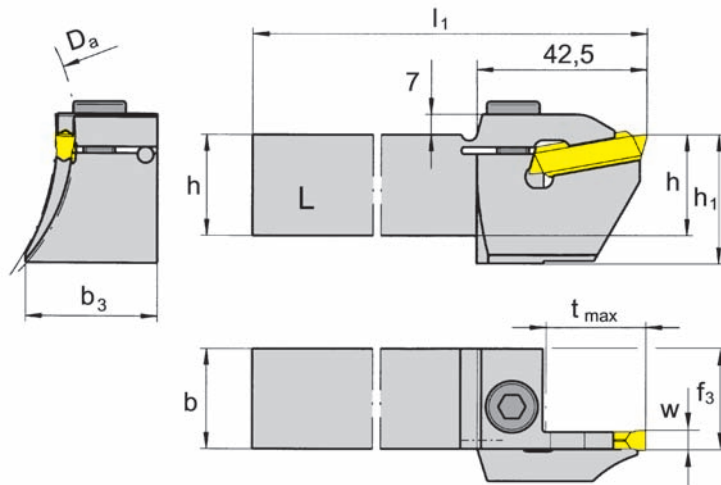
LA226



from outer groove \emptyset 3.740" (95.0 mm)
 Depth of groove up to .984" (25.0 mm)
 Width of groove up to .197" (5.0 mm)

for use with Indexable insert

Type S229



L = left hand version

Part number	$D_{a \text{ min}}$	$D_{a \text{ max}}$	t_{max}	h	h_1	l_1	b	b_3	f_3	Size
LA226.20.1318.04	130	180		20			20	25	205.0	04
LA226.20.9513.04	95	130	25	20	32	150	20	26	205.0	
LA226.25.1318.04	130	180		25			25	30	255.0	
LA226.25.9513.04	95	130		25			25	31	255.0	
LA226.20.1318.05	130	180		20			20	25	205.0	05
LA226.20.9513.05	95	130	25	20	32	150	20	28	205.0	
LA226.25.1318.05	130	180		25			25	30	255.0	
LA226.25.9513.05	95	130		25			25	33	255.0	

Further sizes upon request

w see indexable inserts

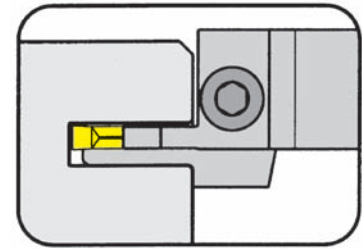
Dimensions in mm

Spare parts

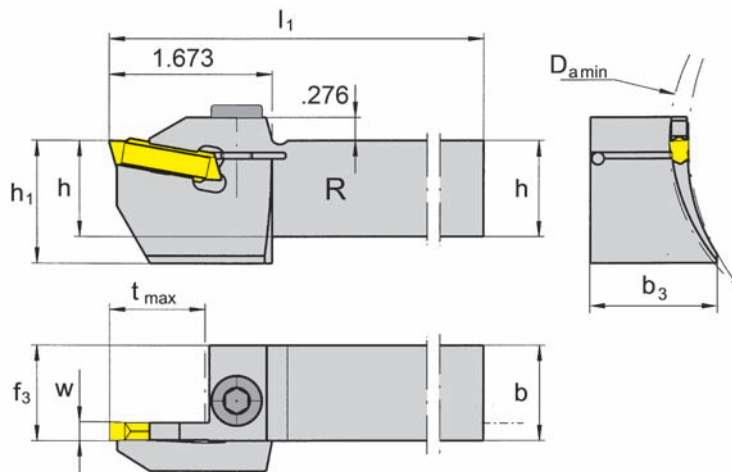
Toolholder	Screw	Wrench
LA226.2...	218.3	SW6.911

TOOLHOLDER Type

RAU226



from outer groove \emptyset 3.740"
 Depth of groove up to .984"
 Width of groove up to .197"



for use with Indexable insert

Type S229

R = right hand version

Part number	D _{a min}	D _{a max}	t _{max}	h	h ₁	l ₁	b	b ₃	f ₃	Size
RAU226.07.1318.04	5.118	7.087		.750			.750	.984	205.0	04
RAU226.07.9513.04	3.740	5.118		.750			.750	1.024	205.0	
RAU226.10.1318.04	5.118	7.087	.984	1.000	1.260	6.004	1.000	1.197	259.0	
RAU226.10.9513.04	3.740	5.118		1.000			1.000	1.236	259.0	
RAU226.07.1318.05	5.118	7.087		.750			.750	.984	205.0	05
RAU226.07.9513.05	3.740	5.118		.750			.750	1.102	205.0	
RAU226.10.1318.05	5.118	7.087	.984	1.000	1.260	6.004	1.000	1.197	259.0	
RAU226.10.9513.05	3.740	5.118		1.000			1.000	1.315	259.0	

Further sizes upon request

w see indexable inserts

Dimensions in inch

Spare parts

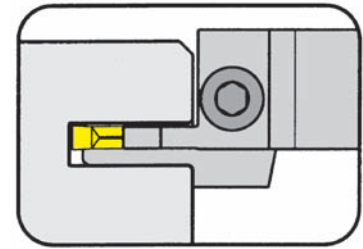
Toolholder	Screw	Wrench
RAU226....	218.3	SW6DIN911

N76

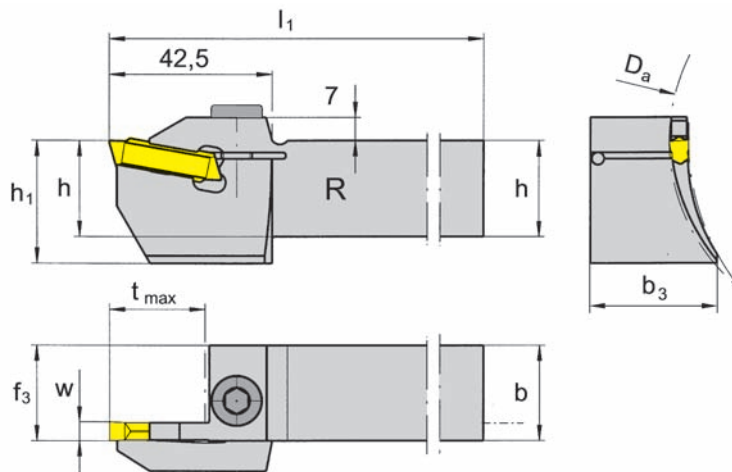


TOOLHOLDER Type

RA226



from outer groove \varnothing 3.740" (95.0 mm)
 Depth of groove up to .984" (25.0 mm)
 Width of groove up to .197" (5.0 mm)



for use with Indexable insert

Type S229

R = right hand version

Part number	$D_{a \text{ min}}$	$D_{a \text{ max}}$	t_{max}	h	h_1	l_1	b	b_3	f_3	Size
RA226.20.1318.04	130	180		20			20	25	205.0	04
RA226.20.9513.04	95	130	25	20	32	150	20	26	205.0	
RA226.25.1318.04	130	180		25			25	30	255.0	
RA226.25.9513.04	95	130		25			25	31	255.0	
RA226.20.1318.05	130	180		20			20	25	205.0	05
RA226.20.9513.05	95	130	25	20	32	150	20	28	205.0	
RA226.25.1318.05	130	180		25			25	30	255.0	
RA226.25.9513.05	95	130		25			25	33	255.0	

Further sizes upon request

w see indexable inserts

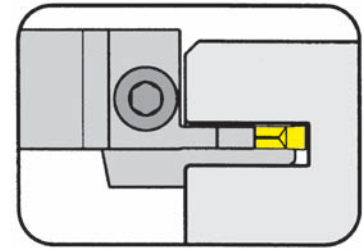
Dimensions in mm

Spare parts

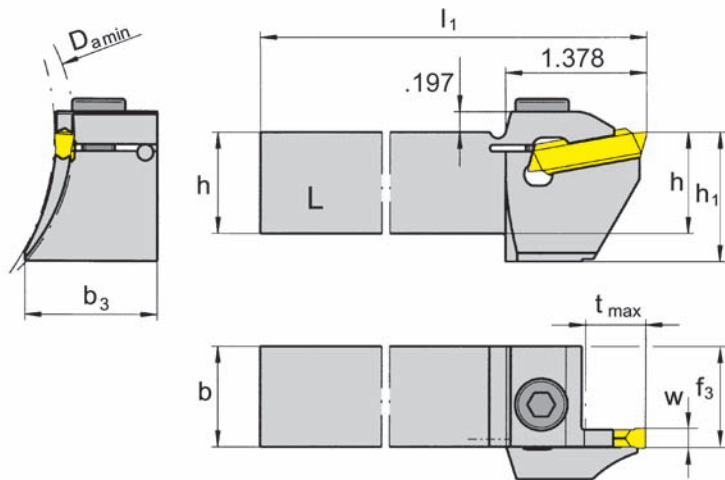
Toolholder	Screw	Wrench
RA226.2...	218.3	SW6.911

TOOLHOLDER Type

LAU210



from outer groove \varnothing 3.740"
 Depth of groove up to .591"
 Width of groove up to .197"



for use with Indexable insert

Type 229
 N229
 S229

L = left hand version

Part number	D _{a min}	D _{a max}	t _{max}	h	h ₁	l ₁	b	b ₃	f ₃	Size
LAU210.07.1318.14	5.118	7.087		.750		6.004	.750	.984	205.0	04
LAU210.07.9513.14	3.740	5.118		.750	1.260	6.004	.750	1.024	205.0	
LAU210.10.1318.14	5.118	7.087	.591	1.000		6.000	1.000	1.197	259.0	
LAU210.10.9513.14	3.740	5.118		1.000		6.004	1.000	1.236	259.0	
LAU210.07.1318.15	5.118	7.087		.750			.750	.984	205.0	05
LAU210.07.9513.15	3.740	5.118		.750	1.260	6.004	.750	1.102	205.0	
LAU210.10.1318.15	5.118	7.087	.591	1.000			1.000	1.197	259.0	
LAU210.10.9513.15	3.740	5.118		1.000			1.000	1.315	259.0	

Further sizes upon request

w see indexable inserts

Dimensions in inch

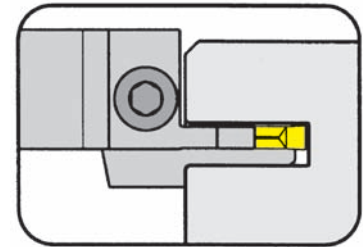
Spare parts

Toolholder	Screw	Wrench
LAU210....	218.3	SW6.911

N78

TOOLHOLDER Type

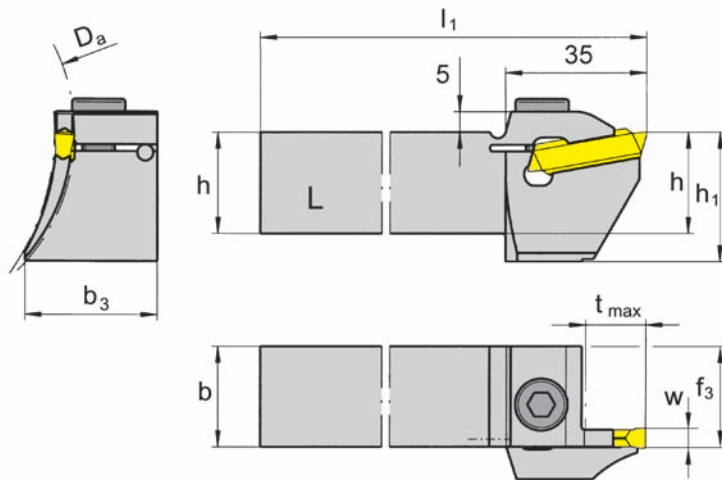
LA210



from outer groove \varnothing 3.740" (95.0 mm)
 Depth of groove up to .591" (15.0 mm)
 Width of groove up to .315" (8.0 mm)

for use with Indexable insert

Type S229



L = left hand version

Part number	$D_{a \text{ min}}$	$D_{a \text{ max}}$	t_{max}	h	h_1	l_1	b	b_3	f_3	w
LA210.20.1318.14	130	180	15	20	32	150	20	25.0	205.0	4
LA210.20.9513.14	95	130		20			26.0	205.0		
LA210.25.1318.14	130	180		25			30.0	255.0		
LA210.25.9513.14	95	130		25			31.0	255.0		
LA210.20.1318.15	130	180	15	20	32	150	20	25.0	205.0	5
LA210.20.9513.15	95	130		20			28.0	205.0		
LA210.25.1318.15	130	180		25			30.0	255.0		
LA210.25.9513.15	95	130		25			33.0	255.0		
LA210.25.1318.18	130	180	15	25	32	150	25	30.5	255.0	8

Further sizes upon request

w see indexable inserts

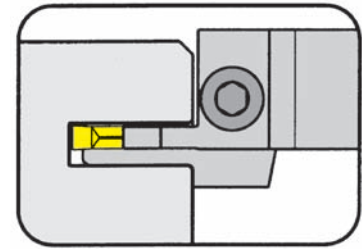
Dimensions in mm

Spare parts

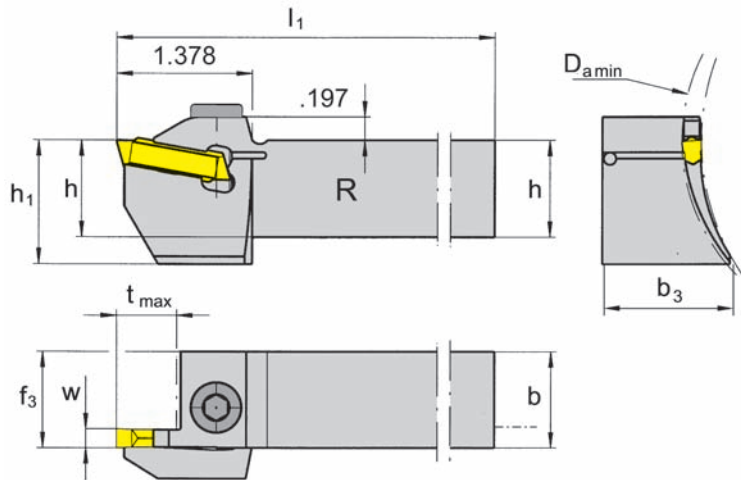
Toolholder	Screw	Wrench
LA210.2...	218.3	SW6.911

TOOLHOLDER Type

RAU210



from outer groove \emptyset 3.740"
 Depth of groove up to .591"
 Width of groove up to .197"



for use with Indexable insert

Type 229
 N229
 S229

R = right hand version

Part number	D _{a min}	D _{a max}	t _{max}	h	h ₁	l ₁	b	b ₃	f ₃	Size
RAU210.07.1318.14	5.118	7.087		.750		6.004	.750	.984	205.0	04
RAU210.07.9513.14	3.740	5.118		.750	1.260	6.004	.750	1.024	205.0	
RAU210.10.1318.14	5.118	7.087	.591	1.000		6.000	1.000	1.197	259.0	
RAU210.10.9513.14	3.740	5.118		1.000		6.004	1.000	1.236	259.0	
RAU210.07.1318.15	5.118	7.087		.750			.750	.984	205.0	05
RAU210.07.9513.15	3.740	5.118		.750	1.260	6.004	.750	1.102	205.0	
RAU210.10.1318.15	5.118	7.087	.591	1.000			1.000	1.197	259.0	
RAU210.10.9513.15	3.740	5.118		1.000			1.000	1.315	259.0	

Further sizes upon request

w see indexable inserts

Dimensions in inch

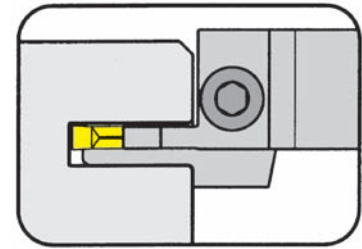
Spare parts

Toolholder	Screw	Wrench
RAU210....	218.3	SW6DIN911

N80

TOOLHOLDER Type

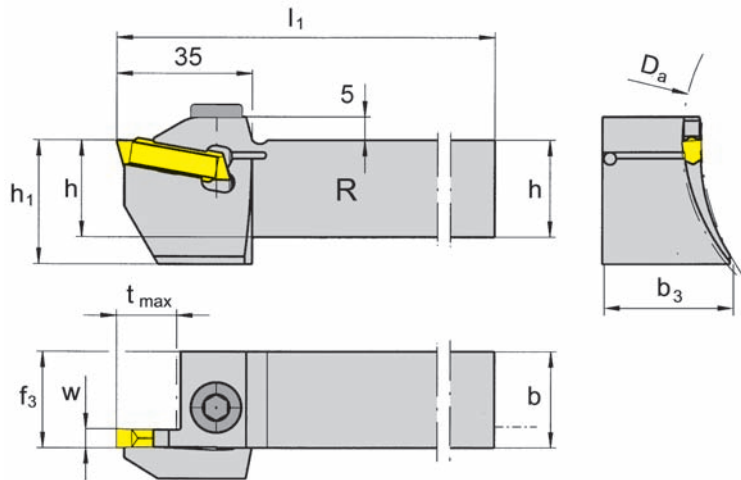
RA210



from outer groove \varnothing 3.740" (95.0 mm)
 Depth of groove up to .591" (15.0 mm)
 Width of groove up to .315" (8.0 mm)

for use with Indexable insert

Type S229



R = right hand version

Part number	$D_{a \min}$	$D_{a \max}$	t_{\max}	h	h_1	l_1	b	b_3	f_3	Size
RA210.20.1318.14	130	180		20			20	25.0	205.0	04
RA210.20.9513.14	95	130	15	20	32	150	20	26.0	205.0	
RA210.25.1318.14	130	180		25			25	30.0	255.0	
RA210.25.9513.14	95	130		25			25	31.0	255.0	
RA210.20.1318.15	130	180		20			20	25.0	205.0	05
RA210.20.9513.15	95	130		20			20	28.0	205.0	
RA210.25.1318.15	130	180	15	25	32	150	25	30.0	255.0	
RA210.25.9513.15	95	130		25			25	33.0	255.0	
RA210.32.1318.15	130	180		32			32	37.0	325.0	
RA210.25.1318.18	130	180	15	25	32	150	25	30.5	255.0	

Further sizes upon request

w see indexable inserts

Dimensions in mm

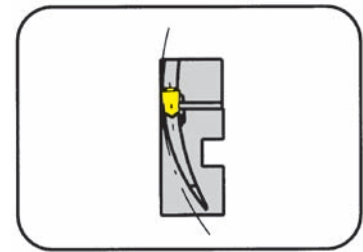
Spare parts

Toolholder	Screw	Wrench
RA210....	218.3	SW6.911



CASSETTE Type

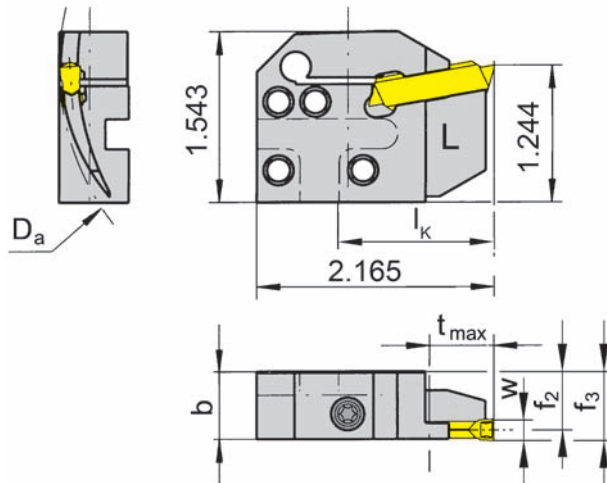
LIK220



Outer groove \varnothing	2.362 - 11.811"
Depth of groove up to	.591"
Width of groove up to	.236"

for use with Indexable insert

Type S229



L = left hand version

Part number	$D_{a \min}$	$D_{a \max}$	t_{\max}	b	f_2	f_3	w	l_k
LIK220.6575.14	2.559	2.953	.394					
LIK220.7595.14	2.953	3.740	.591					
LIK220.9513.14	3.740	5.118	.591	.618	.567	$f_2+w/2$	.157	1.417
LIK220.1318.14	5.118	7.087	.591					
LIK220.1830.14	7.087	11.811	.591					
LIK220.6075.15	2.362	2.953	.394					
LIK220.7595.15	2.953	3.740	.591					
LIK220.9513.15	3.740	5.118	.591	.618	.547	$f_2+w/2$	.197	1.417
LIK220.1318.15	5.118	7.087	.591					
LIK220.1830.15	7.087	11.811	.591					
LIK220.6075.16	2.362	2.953	.394					
LIK220.7595.16	2.953	3.740	.591					
LIK220.9513.16	3.740	5.118	.591	.618	.528	$f_2+w/2$	.236	1.417
LIK220.1318.16	5.118	7.087	.591					
LIK220.1830.16	7.087	11.811	.591					

For basic toolholder L...K1 and R...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

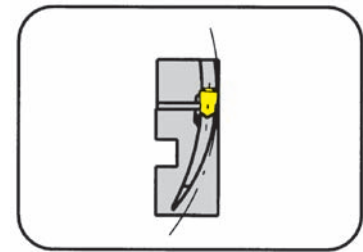
Spare parts

Cassette	Screw	TORX PLUS® Wrench
LIK220....	6.23T25P	T25PQ

N82

CASSETTE Type

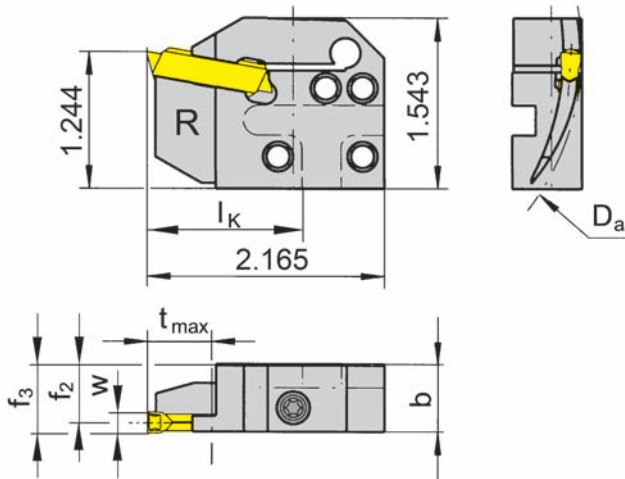
RIK220



Outer groove \varnothing 2.362 - 11.811"
 Depth of groove up to .591"
 Width of groove up to .236"

for use with Indexable insert

Type S229



R = right hand version

Part number	$D_{a \min}$	$D_{a \max}$	t_{\max}	b	f_2	f_3	w	l_k
RIK220.6575.14	2.559	2.953	.394					
RIK220.7595.14	2.953	3.740	.591					
RIK220.9513.14	3.740	5.118	.591	.618	.567	$f_2+w/2$	.157	1.417
RIK220.1318.14	5.118	7.087	.591					
RIK220.1830.14	7.087	11.811	.591					
RIK220.6075.15	2.362	2.953	.394					
RIK220.7595.15	2.953	3.740	.591					
RIK220.9513.15	3.740	5.118	.591	.618	.547	$f_2+w/2$	.197	1.417
RIK220.1318.15	5.118	7.087	.591					
RIK220.1830.15	7.087	11.811	.591					
RIK220.6075.16	2.362	2.953	.394					
RIK220.7595.16	2.953	3.740	.591					
RIK220.9513.16	3.740	5.118	.591	.618	.528	$f_2+w/2$	.236	1.417
RIK220.1318.16	5.118	7.087	.591					
RIK220.1830.16	7.087	11.811	.591					

For basic toolholder R...K1 and L...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

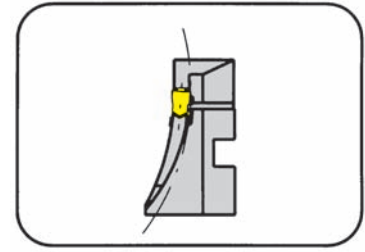
Spare parts

Cassette	Screw	TORX PLUS® Wrench
RIK220....	6.23T25P	T25PQ

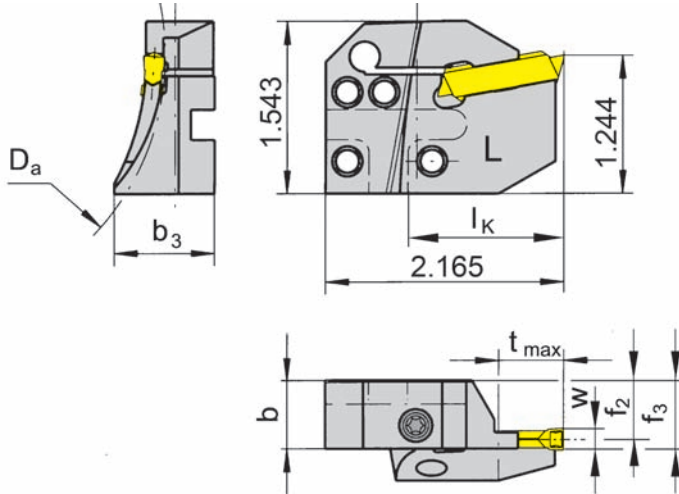


CASSETTE Type

LAK220



Outer groove \varnothing 2.362 - 11.811"
 Depth of groove up to .591"
 Width of groove up to .236"



for use with Indexable insert

Type S229

L = left hand version

Part number	$D_{a \text{ min}}$	$D_{a \text{ max}}$	t_{max}	b	b_3	f_2	f_3	w	l_K
LAK220.6575.14	2.559	2.953	.394		.906				
LAK220.7595.14	2.953	3.740	.591		.906				
LAK220.9513.14	3.740	5.118	.591	.618	.835	.567	$f_2+w/2$	.157	1.417
LAK220.1318.14	5.118	7.087	.591		.835				
LAK220.1830.14	7.087	11.811	.591		.748				
LAK220.6075.15	2.362	2.953	.394		.906				
LAK220.7595.15	2.953	3.740	.591		.906				
LAK220.9513.15	3.740	5.118	.591	.618	.906	.547	$f_2+w/2$	.197	1.417
LAK220.1318.15	5.118	7.087	.591		.835				
LAK220.1830.15	7.087	11.811	.591		.748				
LAK220.6075.16	2.362	2.953	.394		.906				
LAK220.7595.16	2.953	3.740	.591		.906				
LAK220.9513.16	3.740	5.118	.591	.618	.906	.528	$f_2+w/2$	.236	1.417
LAK220.1318.16	5.118	7.087	.591		.835				
LAK220.1830.16	7.087	11.811	.591		.748				

For basic toolholder L...K1 and R...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

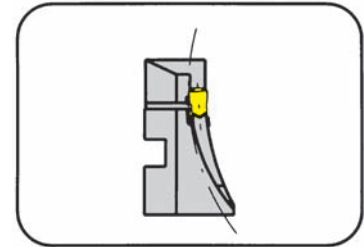
Cassette	Screw	TORX PLUS® Wrench
LAK220....	6.23T25P	T25PQ

N84



CASSETTE Type

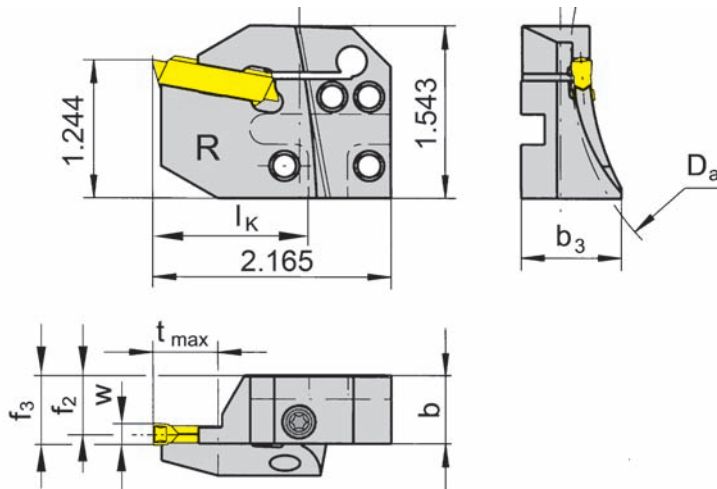
RAK220



Outer groove \emptyset 2.362 - 11.811"
 Depth of groove up to .591"
 Width of groove up to .236"

for use with Indexable insert

Type S229



R = right hand version shown

Part number	D _{a min}	D _{a max}	t _{max}	b	b ₃	f ₂	f ₃	w	l _k
RAK220.6575.14	2.559	2.953	.394		.906				
RAK220.7595.14	2.953	3.740	.591		.906				
RAK220.9513.14	3.740	5.118	.591	.618	.835	.567	f ₂ +w/2	.157	1.417
RAK220.1318.14	5.118	7.087	.591		.835				
RAK220.1830.14	7.087	11.811	.591		.748				
RAK220.6075.15	2.362	2.953	.394		.906				
RAK220.7595.15	2.953	3.740	.591		.906				
RAK220.9513.15	3.740	5.118	.591	.618	.906	.547	f ₂ +w/2	.197	1.417
RAK220.1318.15	5.118	7.087	.591		.835				
RAK220.1830.15	7.087	11.811	.591		.748				
RAK220.6075.16	2.362	2.953	.394		.906				
RAK220.7595.16	2.953	3.740	.591		.906				
RAK220.9513.16	3.740	5.118	.591	.618	.906	.528	f ₂ +w/2	.236	1.417
RAK220.1318.16	5.118	7.087	.591		.835				
RAK220.1830.16	7.087	11.811	.591		.748				

For basic toolholder R...K1 and L...K2

Further sizes upon request

Dimensions in inch

Ordering note:

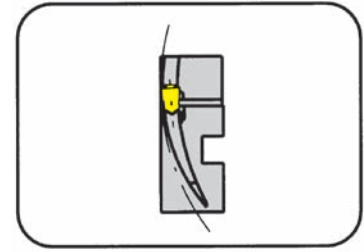
The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

Cassette	Screw	TORX PLUS® Wrench
RAK220....	6.23T25P	T25PQ

CASSETTE Type

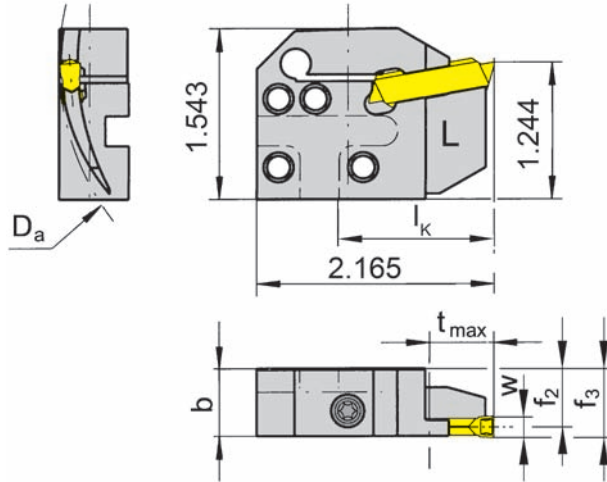
LIK220



Outer groove \varnothing	2.362 - 39.370"
Depth of groove up to	.984"
Width of groove up to	.236"

for use with Indexable insert

Type S229



L = left hand version

Part number	$D_{a \text{ min}}$	t_{max}	$D_{a \text{ max}}$	t_{max}	b	f_2	f_3	w	l_k
LIK220.6575.04	2.559	.394	2.953	.591					
LIK220.7595.04	2.953	.591	3.740	.984					
LIK220.9513.04	3.740	.984	5.118	.984	.618	.567	$f_2+w/2$	.157	1.417
LIK220.1318.04	5.118	.984	7.087	.984					
LIK220.1830.04	7.087	.984	11.811	.984					
LIK220.3000.04	11.811	.984	39.370	.984					
LIK220.6075.05	2.362	.394	2.953	.669					
LIK220.7595.05	2.953	.669	3.740	.984					
LIK220.9513.05	3.740	.984	5.118	.984	.618	.547	$f_2+w/2$	.197	1.417
LIK220.1318.05	5.118	.984	7.087	.984					
LIK220.1830.05	7.087	.984	11.811	.984					
LIK220.3000.05	11.811	.984	39.370	.984					
LIK220.6075.06	2.362	.394	2.953	.669					
LIK220.7595.06	2.953	.669	3.740	.984					
LIK220.9513.06	3.740	.984	5.118	.984	.618	.528	$f_2+w/2$	.236	1.417
LIK220.1318.06	5.118	.984	7.087	.984					
LIK220.1830.06	7.087	.984	11.811	.984					
LIK220.3000.06	11.811	.984	39.370	.984					

For basic toolholder L...K1 and R...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

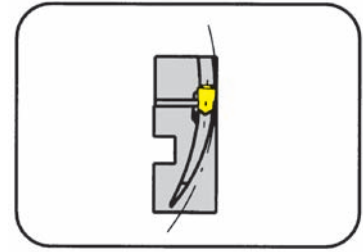
Spare parts

Cassette	Screw	TORX PLUS® Wrench
LIK220....	6.23T25P	T25PQ

N86

CASSETTE Type

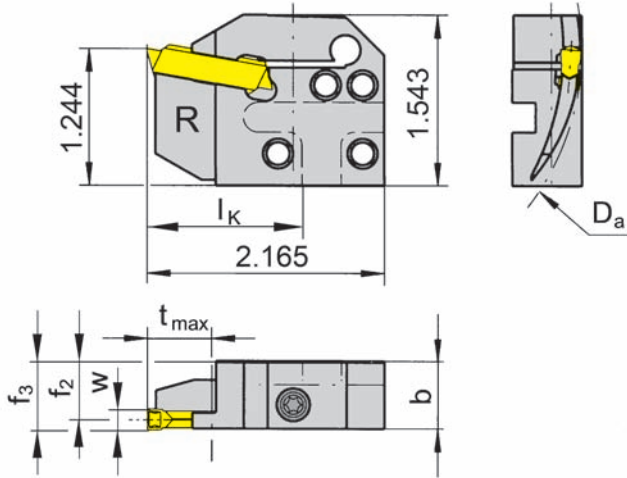
RIK220



Outer groove \varnothing 2.362 - 39.370"
 Depth of groove up to .984"
 Width of groove up to .236"

for use with Indexable insert

Type S229



R = right hand version

Part number	D _{a min}	t _{max}	D _{a max}	t _{max}	b	f ₂	f ₃	w	l _k
RIK220.6575.04	2.559	.394	2.953	.591					
RIK220.7595.04	2.953	.591	3.740	.984					
RIK220.9513.04	3.740	.984	5.118	.984	.618	.567	f ₂ +w/2	.157	1.417
RIK220.1318.04	5.118	.984	7.087	.984					
RIK220.1830.04	7.087	.984	11.811	.984					
RIK220.3000.04	11.811	.984	39.370	.984					
RIK220.6075.05	2.362	.394	2.953	.669					
RIK220.7595.05	2.953	.669	3.740	.984					
RIK220.9513.05	3.740	.984	5.118	.984	.618	.547	f ₂ +w/2	.197	1.417
RIK220.1318.05	5.118	.984	7.087	.984					
RIK220.1830.05	7.087	.984	11.811	.984					
RIK220.3000.05	11.811	.984	39.370	.984					
RIK220.6075.06	2.362	.394	2.953	.669					
RIK220.7595.06	2.953	.669	3.740	.984					
RIK220.9513.06	3.740	.984	5.118	.984	.618	.528	f ₂ +w/2	.236	1.417
RIK220.1318.06	5.118	.984	7.087	.984					
RIK220.1830.06	7.087	.984	11.811	.984					
RIK220.3000.06	11.811	.984	39.370	.984					

For basic toolholder R...K1 and L...K2

Further sizes upon request

Dimensions in inch

Ordering note:

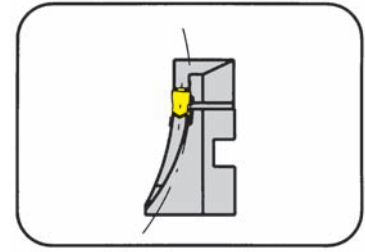
The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

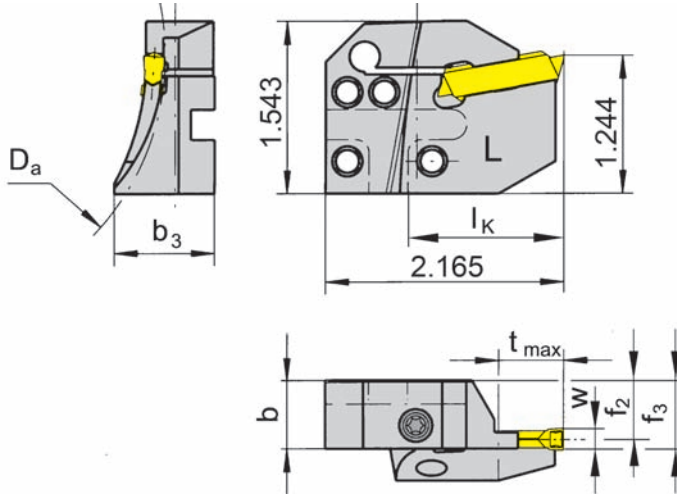
Cassette	Screw	TORX PLUS® Wrench
RIK220....	6.23T25P	T25PQ

CASSETTE Type

LAK220



Outer groove \varnothing 2.362 - 39.370"
 Depth of groove up to .984"
 Width of groove up to .236"



for use with Indexable insert

Type S229

L = left hand version

Part number	$D_{a \min}$	t_{\max}	$D_{a \max}$	t_{\max}	b	b_3	f_2	f_3	w	l_k
LAK220.6575.04	2.559	.394	2.953	.591		.906				
LAK220.7595.04	2.953	.591	3.740	.984		.906				
LAK220.9513.04	3.740	.984	5.118	.984		.835				
LAK220.1318.04	5.118	.984	7.087	.984	.618	.835	.567	$f_2+w/2$	.157	1.417
LAK220.1830.04	7.087	.984	11.811	.984		.835				
LAK220.3000.04	11.811	.984	39.370	.984		.661				
LAK220.6075.05	2.362	.394	2.953	.669		.906				
LAK220.7595.05	2.953	.669	3.740	.984		.906				
LAK220.9513.05	3.740	.984	5.118	.984		.906				
LAK220.1318.05	5.118	.984	7.087	.984	.618	.835	.547	$f_2+w/2$	.197	1.417
LAK220.1830.05	7.087	.984	11.811	.984		.835				
LAK220.3000.05	11.811	.984	39.370	.984		.661				
LAK220.6075.06	2.362	.394	2.953	.669		.906				
LAK220.7595.06	2.953	.669	3.740	.984		.906				
LAK220.9513.06	3.740	.984	5.118	.984		.906				
LAK220.1318.06	5.118	.984	7.087	.984	.618	.835	.528	$f_2+w/2$	.236	1.417
LAK220.1830.06	7.087	.984	11.811	.984		.835				
LAK220.3000.06	11.811	.984	39.370	.984		.661				

For basic toolholder L...K1 and R...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

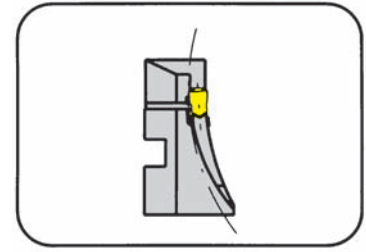
Cassette	Screw	TORX PLUS® Wrench
LAK220....	6.23T25P	T25PQ

N88



CASSETTE Type

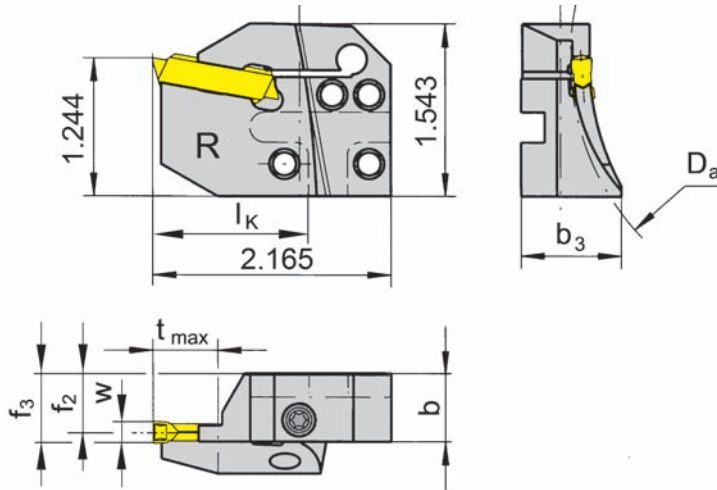
RAK220



Outer groove \varnothing 2.362 - 39.370"
 Depth of groove up to .984"
 Width of groove up to .236"

for use with Indexable insert

Type S229



R = right hand version

Part number	D _{a min}	t _{max}	D _{a max}	t _{max}	b	b ₃	f ₂	f ₃	w	l _k
RAK220.6575.04	2.559	.394	2.953	.591						
RAK220.7595.04	2.953	.591	3.740	.984						
RAK220.9513.04	3.740	.984	5.118	.984						
RAK220.1318.04	5.118	.984	7.087	.984	.618		.567	f ₂ +w/2	.157	1.417
RAK220.1830.04	7.087	.984	11.811	.984						
RAK220.3000.04	11.811	.984	39.370	.984						
RAK220.6075.05	2.362	.394	2.953	.669						
RAK220.7595.05	2.953	.669	3.740	.984						
RAK220.9513.05	3.740	.984	5.118	.984						
RAK220.1318.05	5.118	.984	7.087	.984	.618		.547	f ₂ +w/2	.197	1.417
RAK220.1830.05	7.087	.984	11.811	.984						
RAK220.3000.05	11.811	.984	39.370	.984						
RAK220.6075.06	2.362	.394	2.953	.669						
RAK220.7595.06	2.953	.669	3.740	.984						
RAK220.9513.06	3.740	.984	5.118	.984						
RAK220.1318.06	5.118	.984	7.087	.984	.618		.528	f ₂ +w/2	.236	1.417
RAK220.1830.06	7.087	.984	11.811	.984						
RAK220.3000.06	11.811	.984	39.370	.984						

For basic toolholder R...K1 and L...K2

Further sizes upon request

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

Spare parts

Cassette	Screw	TORX PLUS® Wrench
RAK220....	6.23T25P	T25PQ

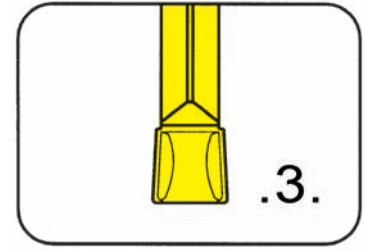
FACE GROOVING



INDEXABLE INSERT Type

S229

with chip former

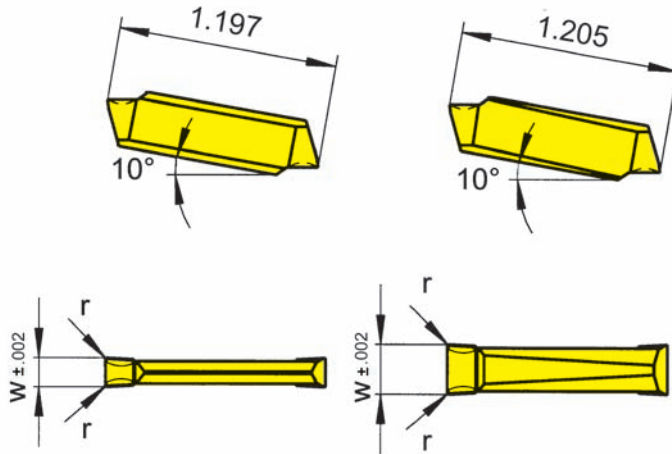


Depth of groove up to .984"
Width of groove .157 - .236"

precision sintered

for use with Cassette

Type L/RAK220
L/RIK220



Width = .157" - .197"

Width = .236"

Indexability length
± .002"

Part number	w	r	Size	Carbide grades										
				H54	TN32	TN35	TI22	TI25	TF42	TF45	TC92	AS62	AS66	
S229.0400.32	.157	.008	03 / 04	▲	▲	▲	▲	▲		▲	▲	▲	▲	▲
S229.0400.34		.016		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
S229.0500.34	.197	.016	04		▲	▲	▲	▲		▲	▲	▲	▲	▲
S229.0600.34	.236	.016	05		▲	▲	▲	▲		▲	▲	▲	▲	▲
S229.0600.38		.031								▲	▲	▲	▲	▲
S229.0600.36	.236	.024	06 / 16				▲							
▲ on stock Δ 4 weeks				P	•	•	•	•	•	•	•	•	•	•
● main recommendation				M	•	•	•	•	•	•	•	•	•	○
○ alternative recommendation				K	•	•	•	•	•	•	•	•	•	•
■ uncoated grades				S	•	•	•	•	•	•	•	•	•	○
■ coated grades				N	•	•	•	•	•	•	•	•	•	•
■ brazed/Cermet				H										

Dimensions in inch

Carbide grades

Indexable inserts can be used in right and left hand cassettes L/RAK220 and L/RIK220.



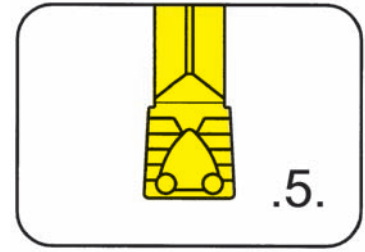
FACE GROOVING



INDEXABLE INSERT Type

S229

with chip forming

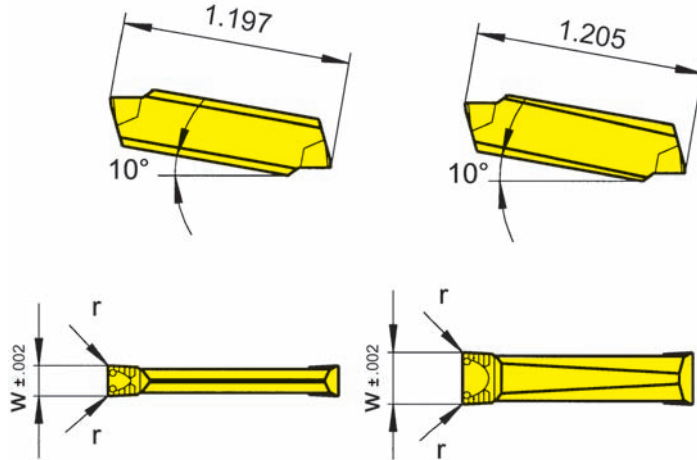


Depth of groove up to .984"
Width of groove .157 - .236"

precision sintered

for use with Cassette

Type L/RAK220
L/RIK220



Width = .157" - .197"

Width = .236"

Indexability length
± .002"

Part number	w	r	Size	TN32	TN35	T122	T125	TF45	TC92	AS62
				S229.0400.52	.157	.008	03 / 04	▲	▲	▲
S229.0400.54	▲	▲	▲	▲				▲	▲	▲
S229.0500.54	.197	.016	04	▲	▲	▲	▲	▲	▲	▲
S229.0600.54	.236	.016	05	▲	▲	▲	▲	▲	▲	▲
S229.0600.58				▲	▲	▲	▲	▲	▲	▲
▲ on stock Δ 4 weeks				P	•	•	•	•	•	•
● main recommendation				M	•	•	•	•	•	•
○ alternative recommendation				K	•	•	•	•	•	•
■ uncoated grades				S	•	•	•	•	•	•
■ coated grades				N	•	•	•	•	•	•
■ brazed/Cermet				H	•	•	•	•	•	•

Dimensions in inch

Carbide grades

Indexable inserts can be used in right and left hand cassettes L/RAK220 and L/RIK220.



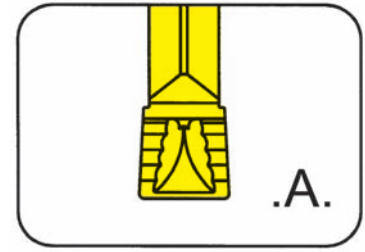
FACE GROOVING



INDEXABLE INSERT Type

S229

with chip forming

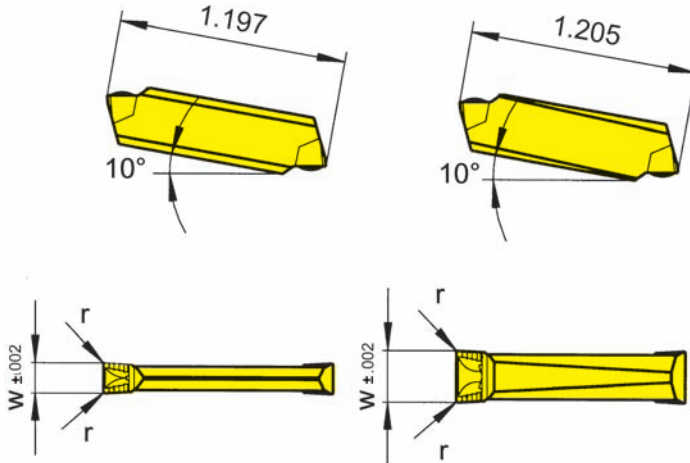


Depth of groove up to .984"
Width of groove .157 - .236"

precision sintered

for use with Cassette

Type L/RAK220
L/RIK220



Width = .157" - .197"

Width = .236"

Indexability length
± .002"

Part number	w	r	Size	Carbide grades							
				TN32	TN35	T122	T125	TF42	TF45	TC92	AS62
S229.0400.A2	.157	.008	03 / 04	▲	▲	▲	▲	▲	▲	▲	▲
S229.0400.A4		.016		▲	▲	▲	▲	▲	▲	▲	▲
S229.0500.A4	.197	.016	04	▲	▲	▲	▲	▲	▲	▲	▲
S229.0500.A6		.024		▲	▲	▲	▲	▲	▲	▲	▲
S229.0600.A4	.236	.016	05	▲	▲	▲	▲	▲	▲	▲	▲
S229.0600.A8		.031		▲	▲	▲	▲	▲	▲	▲	▲
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P	●	●	●	●	●	●	●
				M	●	●	●	●	●	●	●
				K	●	●	●	●	●	●	●
				S	●	●	●	●	●	●	●
				N	●	●	●	●	●	●	●
				H	●	●	●	●	●	●	●

Dimensions in inch

Carbide grades

Indexable inserts can be used in right and left hand cassettes L/RAK220 and L/RIK220.



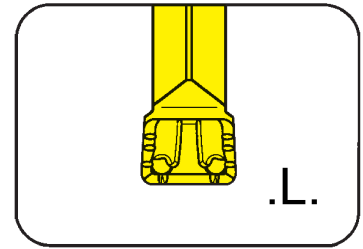
FACE GROOVING



INDEXABLE INSERT Type

S229

with chip forming

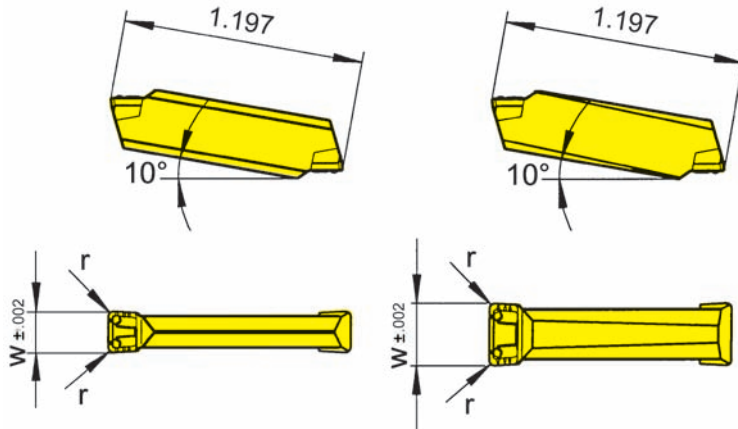


Depth of groove up to .984"
Width of groove .157 - .236"

precision sintered

for use with Cassette

Type L/RAK220
L/RIK220



Width = .157" - .197"

Width = .236"

Indexability length
± .002"

Part number	w	r	Size	Carbide grades			
				Ti22	TF42	AS62	AS66
S229.0400.L4	.157	.016	03 / 04	▲	▲	▲	
S229.0500.L4	.197	.016	04	▲	▲	▲	
S229.0500.L6		.024		▲	▲	▲	
S229.0600.L4	.236	.016	05	▲	▲	▲	
S229.0600.L6		.024		▲	▲	▲	▲
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P	●	●	●
				M	■	■	○
				K	■	■	●
				S	■	■	○
				N	■	■	●
				H	■	■	■

Dimensions in inch

Indexable inserts can be used in right and left hand cassettes L/RAK220 and L/RIK220.



HCG - HORN Catalogue Guide

PROFILING

Width of profile	Inserts S117...								
	.0010...	.0012...	.0014...	.0016...	.0018...	.0020...	.0026...	.0032...	.0045...
up to inch	.394	.472	.551	.630	.709	.787	1.024	1.260	1.772
up to mm	10	12	14	16	18	20	26	32	45

Depth of profile	Inserts S117... Angle 5°								
	.0010.00	.0012.00	.0014.00	.0016.00	.0018.00	.0020.00	.0026.00	.0032.00	.0045.00
up to .138" (3.5 mm)	•								
up to .177" (4.5 mm)		•							
up to .236" (6 mm)			•	•					
up to .256" (6.5 mm)								•	•
up to .354" (9 mm)					•	•			
up to .394" (10 mm)							•		

Depth of profile	Inserts S117... Angle 0°				
	.0010.02.00	.0012.02.00	.0016.02.00	.0020.02.00	.0026.02.00
up to .256" (6.5 mm)	•				
up to .295" (7.5 mm)		•			
up to .354" (9 mm)			•		
up to .472" (12 mm)				•	
up to .512" (13 mm)					•

Chapter

0

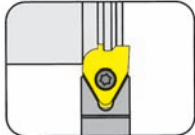
Profiling ○

Angle / Width

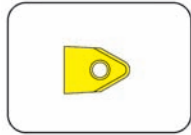
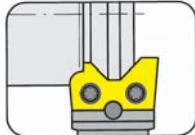
Toolholder

Inserts

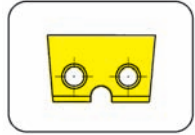
System H117
5° / 10 - 45 mm



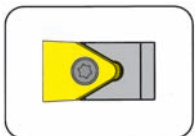
Page O2-O13



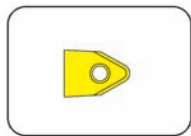
Page O16-O17



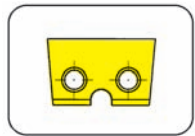
System H117 for PWP
5° / 10 - 45 mm



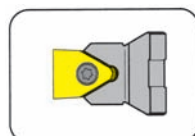
Page O14



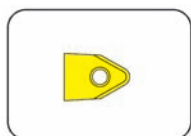
Page O16-O17



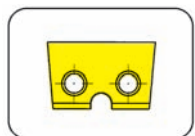
System H117 for AWN
5° / 10 - 45 mm



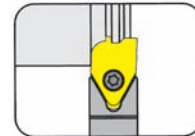
Page O15



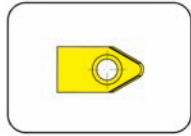
Page O16-O17



System H117
0° / 10 - 26 mm



Page O18-O22



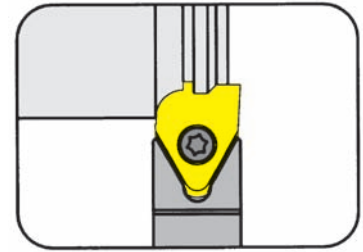
Page O23

For Technical Information please see chapter Q

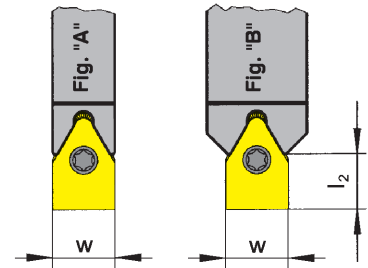
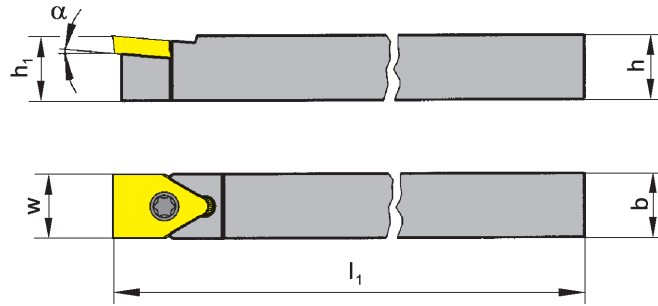
TOOLHOLDER Type

HU117

5° rake angle



Depth of profile up to .138"
Width of profile up to .394"



Part number	α	Figure	h	h_1	b	l_1	l_2	w	Semi finished insert
HU117.0375.10	5°	A	.375	.375	.375	4.000	-		
HU117.0500.10	5°	B	.500	.500	.500	5.000	.354	.394	S117.0010.00
HU117.0625.10	5°	B	.625	.625	.635	6.000	.354		

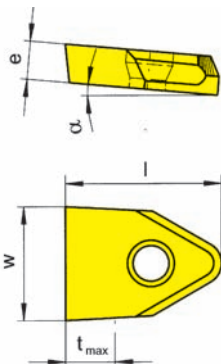
Dimensions in inch

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
HU117.0375.10 HU117...10	030.400P.0227 4.09T15P	T15PQ T15PQ

INSERT Type

S117.0010.00



Semi finished insert: Only contact areas and main cutting edge ground.

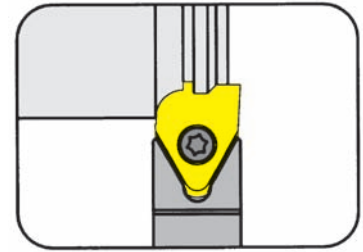
Dimensions in inch

Part number	α	w	e	l	t_{max}	Toolholder
S117.0010.00	5°	.394	.118	.630	.138	HU117...10

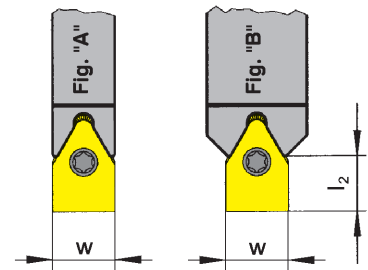
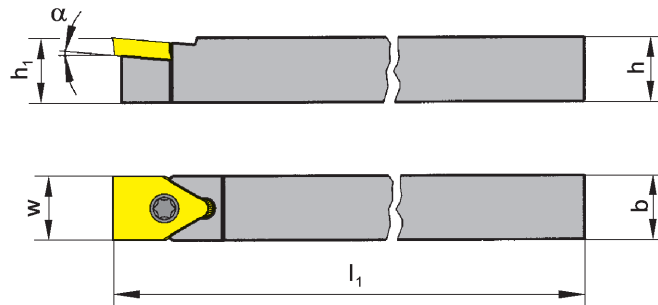
TOOLHOLDER Type

H117

5° rake angle



Depth of profile up to .138" (3.5 mm)
Width of profile up to .394" (10.0 mm)



Part number	α	Figure	h	h ₁	b	l ₁	l ₂	w	Semi finished insert
H117.1010.10	5°	A	10	10	10	100	-		
H117.1212.10	5°	B	12	12	12	125	9	10	S117.0010.00
H117.1616.10	5°	B	16	16	16	125	9		

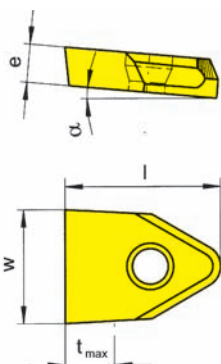
Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
H117.1010.10	030.400P.0227	T15PQ
H117...10	4.09T15P	T15PQ

INSERT Type

S117.0010.00



Semi finished insert: Only contact areas and main cutting edge ground.

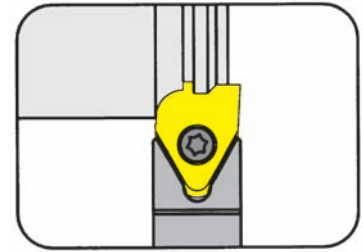
Dimensions in mm

Part number	α	w	e	l	t _{max}	Toolholder
S117.0010.00	5°	10	3	16	3,5	H117...10

TOOLHOLDER Type

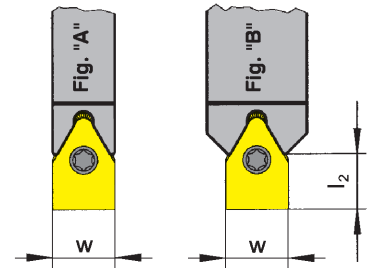
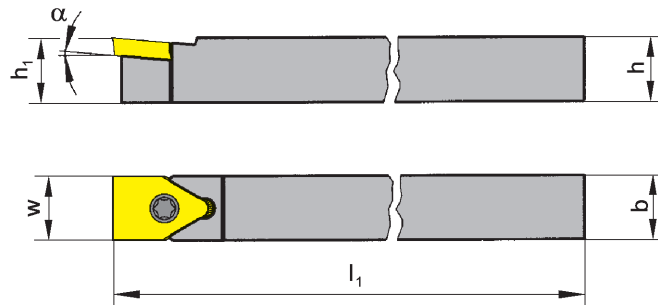
HU117

5° rake angle



Depth of profile up to
Width of profile up to

.177"
.472"



Part number	α	Figure	h	h_1	b	l_1	l_2	w	Semi finished insert
HU117.0500.12	5°	A	.500	.500	.500	5.000	-		
HU117.0625.12	5°	B	.625	.625	.625	5.000	.315	.472	S117.0012.00
HU117.0750.12	5°	B	.750	.750	.750	6.000	.315		

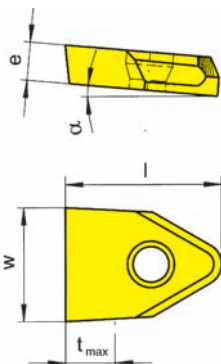
Dimensions in inch

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
HU117...12	4.09T15P	T15PQ

INSERT Type

S117.0012.00



Semi finished insert: Only contact areas and main cutting edge ground.

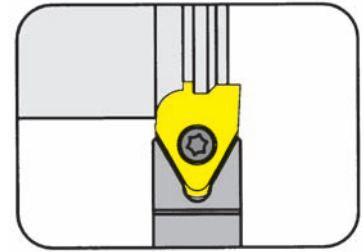
Dimensions in inch

Part number	α	w	e	l	t_{max}	Toolholder
S117.0012.02.00	5°	.472	.177	.669	.177	HU117...12

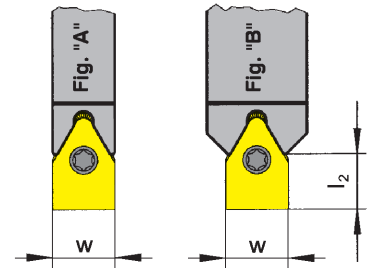
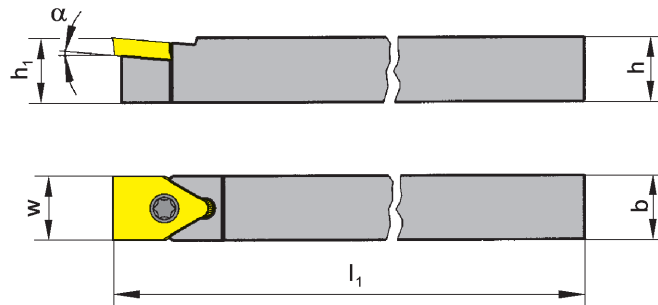
TOOLHOLDER Type

H117

5° rake angle



Depth of profile up to .177" (4.5 mm)
Width of profile up to .472" (12.0 mm)



Part number	α	Figure	h	h ₁	b	l ₁	l ₂	w	Semi finished insert
H117.1212.12	5°	A	12	12	12	125	-	12	S117.0012.00
H117.1414.12	5°	B	14	14	14	125	8		
H117.1612.12	5°	A	16	16	12	125	-		
H117.1616.12	5°	B	16	16	16	125	8		
H117.2020.12	5°	B	20	20	20	150	8		

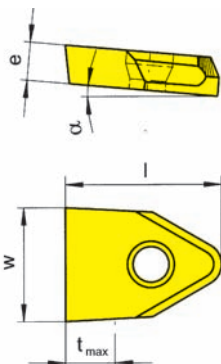
Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
H117...12	4.09T15P	T15PQ

INSERT Type

S117.0012.00



Semi finished insert: Only contact areas and main cutting edge ground.

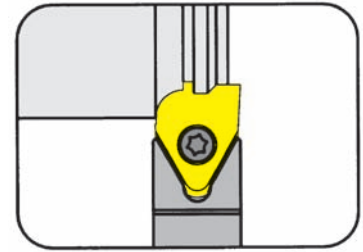
Dimensions in mm

Part number	α	w	e	l	t _{max}	Toolholder
S117.0012.00	5°	12	4,5	17	4,5	H117...12

TOOLHOLDER Type

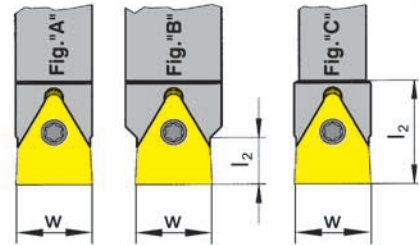
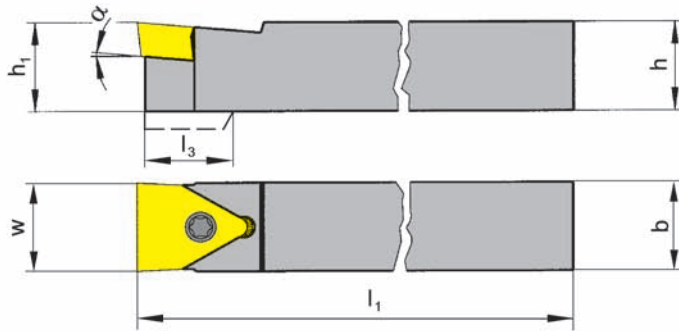
HU117

5° rake angle



Depth of profile up to
Width of profile up to

.236"
.630"



Part number	α	Figure	h	h_1	b	l_1	l_2	l_3	w	Semi finished insert
HU117.0500.16	5°	C	.500	.500	.500	5.000	.866	.709	.551 .630	S117.0014.00 S117.0016.00
HU117.0625.16	5°	B A	.625	.625	.625	5.000	.393 -	-	.551 .630	S117.0014.00 S117.0016.00
HU117.0750.16	5°	B	.750	.750	.750	6.000	.393 .433	-	.551 .630	S117.0014.00 S117.0016.00

Dimensions in inch

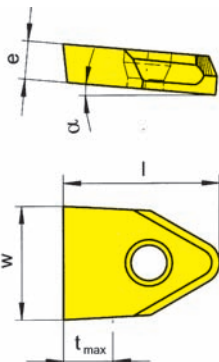
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
HU117...16	5.12T20P	T20PQ

INSERT Type

S117.0014.00

S117.0016.00



Semi finished insert: Only contact areas and main cutting edge ground.

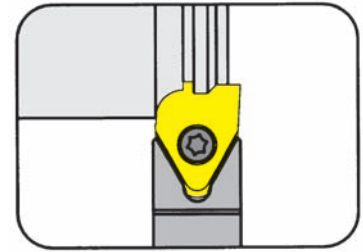
Dimensions in inch

Part number	α	w	e	l	t_{max}	Toolholder
S117.0014.00 S117.0016.00	5°	14 16	6	21	6	HU117...16

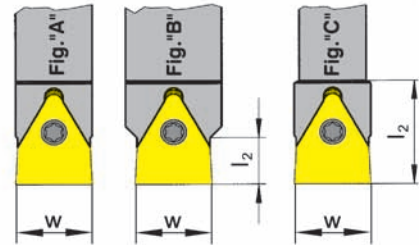
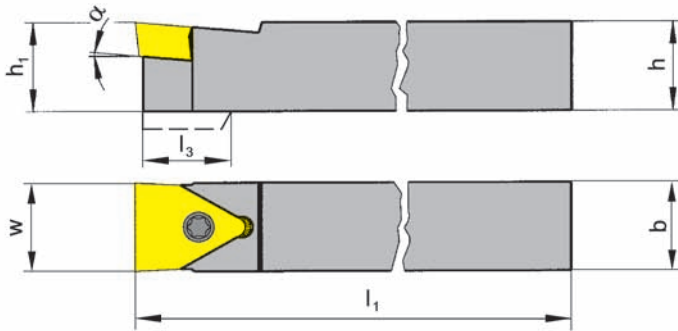
TOOLHOLDER Type

H117

5° rake angle



Depth of profile up to .236" (6 mm)
Width of profile up to 630" (16 mm)



Part number	α	Figure	h	h ₁	b	l ₁	l ₂	l ₃	w	Semi finished insert
H117.1414.16	5°	C	14	14	14	125	22	18	14 16	S117.0014.00 S117.0016.00
H117.1616.16	5°	B A	16	16	16	125	11 -	-	14 16	S117.0014.00 S117.0016.00
H117.2020.16	5°	B	20	20	20	150	11 11	-	14 16	S117.0014.00 S117.0016.00
H117.2525.16	5°	B	25	25	25	150	11	-	14 16	S117.0014.00 S117.0016.00

Spare parts

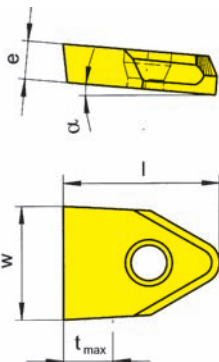
Dimensions in mm

Toolholder	Screw	TORX PLUS® Wrench
H117...16	5.12T20P	T20PQ

INSERT Type

S117.0014.00

S117.0016.00



Semi finished insert: Only contact areas and main cutting edge ground.

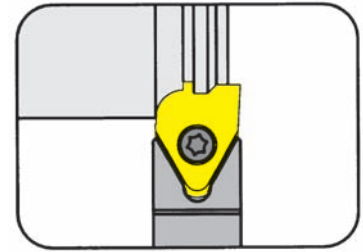
Dimensions in mm

Part number	α	w	e	l	t _{max}	Toolholder
S117.0014.00 S117.0016.00	5°	14 16	6	21	6	H117...16

TOOLHOLDER Type

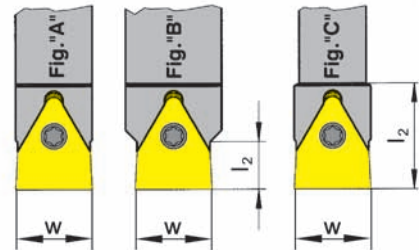
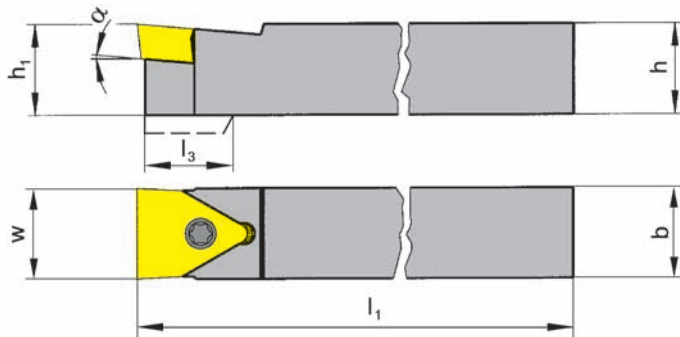
HU117

5° rake angle



Depth of profile up to
Width of profile up to

.354"
.787"



Part number	α	Figure	h	h_1	b	l_1	l_2	l_3	w	Semi finished insert
HU117.0625.20	5°	C	.625	.625	.625	5.000	1.181	.906	.708 .787	S117.0018.00 S117.0020.00
HU117.0750.20	5°	B A	.750	.750	.750	6.000	.591 -	- -	.708 .787	S117.0018.00 S117.0020.00
HU117.1000.20	5°	B	1.000	1.000	1.000	6.000	.591 .630	- -	.708 .787	S117.0018.00 S117.0020.00

Dimensions in inch

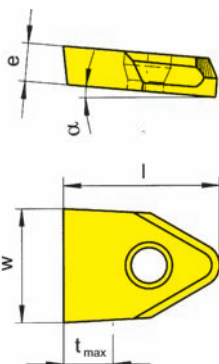
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
HU117...20	6.17T20P	T20PQ

INSERT Type

S117.0018.00

S117.0020.00



Semi finished insert: Only contact areas and main cutting edge ground.

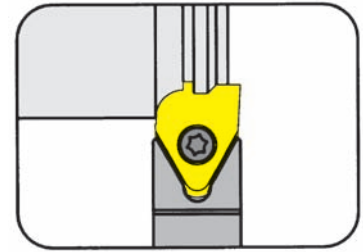
Dimensions in inch

Part number	α	w	e	l	t_{max}	Toolholder
S117.0018.00 S117.0020.00	5°	.708 .787	.276	1.142	.354	HU117...20

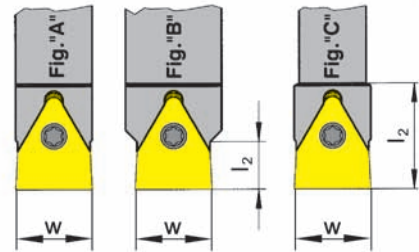
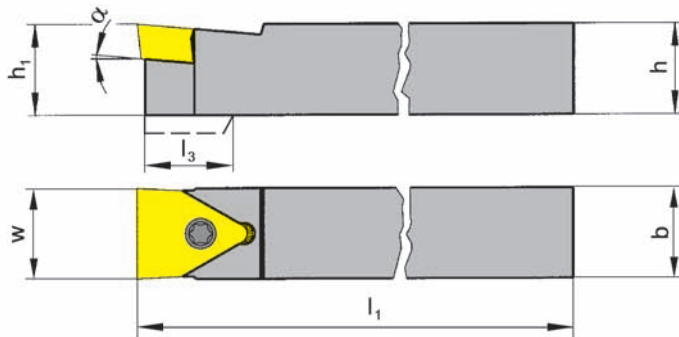
TOOLHOLDER Type

H117

5° rake angle



Depth of profile up to .354" (9 mm)
Width of profile up to .787" (20 mm)



Part number	α	Figure	h	h_1	b	l_1	l_2	l_3	w	Semi finished insert
H117.1616.20	5°	C	16	16	16	125	30	23	18 20	S117.0018.00 S117.0020.00
H117.2020.20	5°	B A	20	20	20	150	15 -	- -	18 20	S117.0018.00 S117.0020.00
H117.2525.20	5°	B	25	25	25	150	15 16	- -	18 20	S117.0018.00 S117.0020.00

Dimensions in mm

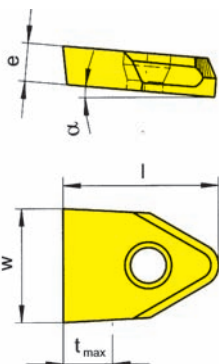
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
H117...20	6.17T20P	T20PQ

INSERT Type

S117.0018.00

S117.0020.00



Semi finished insert: Only contact areas and main cutting edge ground.

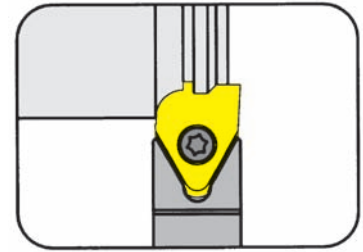
Dimensions in mm

Part number	α	w	e	l	t_{max}	Toolholder
S117.0018.00 S117.0020.00	5°	18 20	7	29	9	H117...20

TOOLHOLDER Type

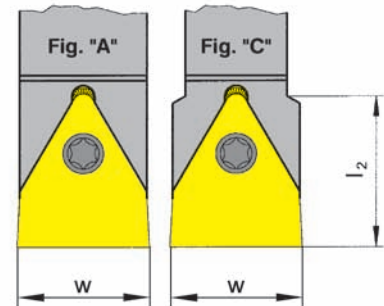
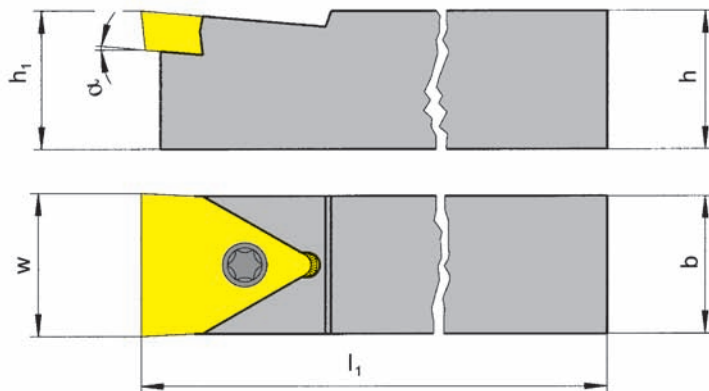
HU117

5° rake angle



Depth of profile up to
Width of profile up to

.394"
1.024"



Part number	α	Figure	h	h_1	b	l_1	l_2	w	Semi finished insert
HU117.0750.26	5°	C	.750	.750	.750	6.000	1.181	1.024	S117.0026.00
HU117.1000.26		A	1.000	1.000	1.000		-		

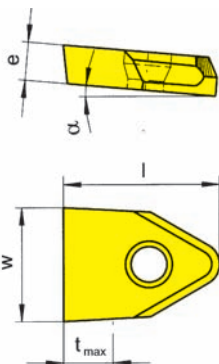
Dimensions in inch

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
H117...26	6.17T20P	T20PQ

INSERT Type

S117.0026.00



Semi finished insert: Only contact areas and main cutting edge ground.

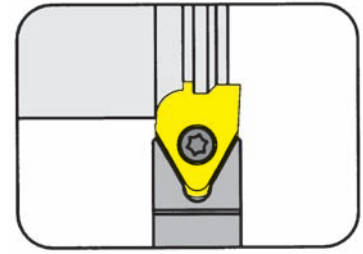
Dimensions in inch

Part number	α	w	e	l	t_{max}	Toolholder
S117.0026.00	5°	1.024	.278	1.260	.394	HU117...26

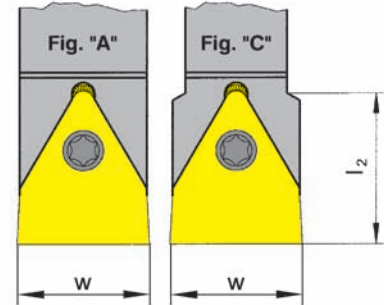
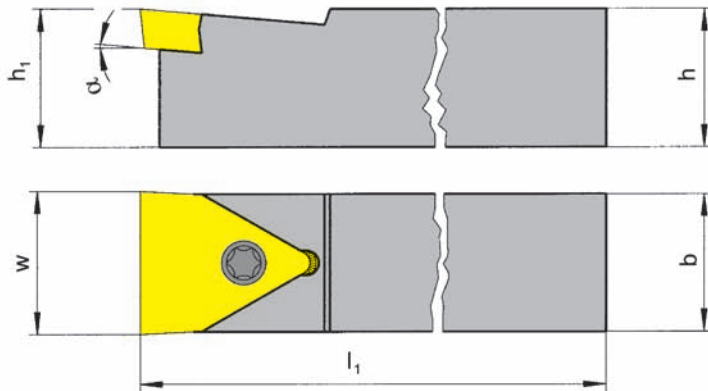
TOOLHOLDER Type

H117

5° rake angle



Depth of profile up to .394" (13 mm)
Width of profile up to 1.024" (26 mm)



Part number	α	Figure	h	h ₁	b	l ₁	l ₂	w	Semi finished insert
H117.2020.26	5°	C	20	20	20	150	30	26	S117.0026.00
H117.2525.26	5°	A	25	25	25	150	-	26	

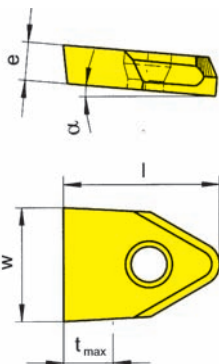
Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
H117...26	6.17T20P	T20PQ

INSERT Type

S117.0026.00



Semi finished insert: Only contact areas and main cutting edge ground.

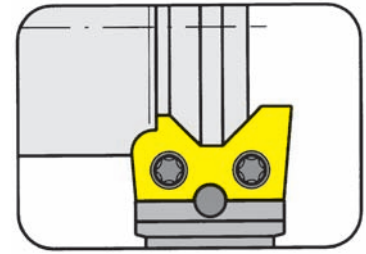
Dimensions in mm

Part number	α	w	e	l	t _{max}	Toolholder
S117.0026.00	5°	26	7	32	10	H117...26

TOOLHOLDER Type

HU117

5° rake angle

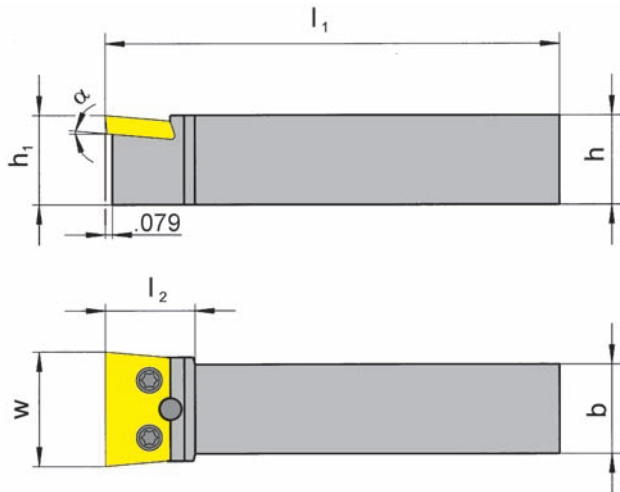


Depth of form up to
Width of form up to

.255"
1.772"

for use with Insert

Type S117



Part number	α	h	h ₁	b	l ₁	l ₂	w	Semi finished insert
HU117.0750.32	5°	.750	.750	.750	5.000	1.000	1.260	S117.0032.00
HU117.1000.32		1.000	1.000	1.000				
HU117.1000.45	5°	1.000	1.000	1.000	5.000	1.063	1.772	S117.0045.00
HU117.1250.45		1.250	1.250	1.250				

Further angles upon request

Dimensions in inch

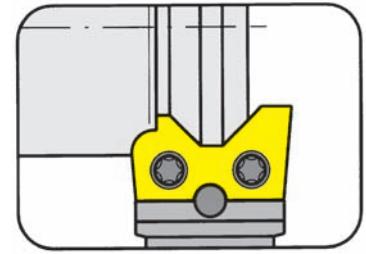
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
HU117....	5.12T20P	T20PQ

TOOLHOLDER Type

H117

5° rake angle

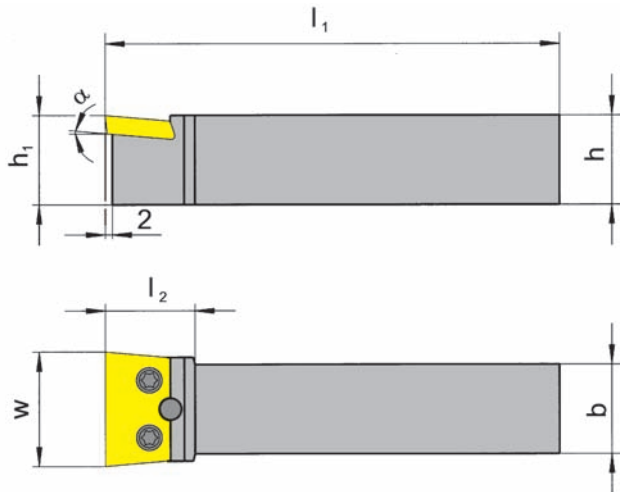


Depth of form up to
Width of form up to

.256" (6.5 mm)
1.772" (45.0 mm)

for use with Insert

Type S117



Part number	α	h	h_1	b	l_1	l_2	w	Semi finished insert
H117.2020.32	5°	20	20	20	150	25	32	S117.0032.00
H117.2525.32		25	25	25				
H117.2525.45	5°	25	25	25	150	27	45	S117.0045.00
H117.3232.45		32	32	32				

Further angles upon request

Dimensions in mm

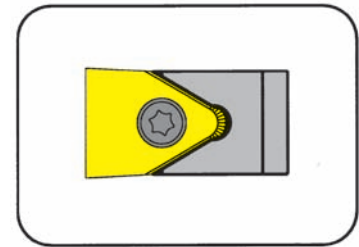
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
H117....	5.12T20P	T20PQ

TOOLHOLDER Type

H117

5° rake angle

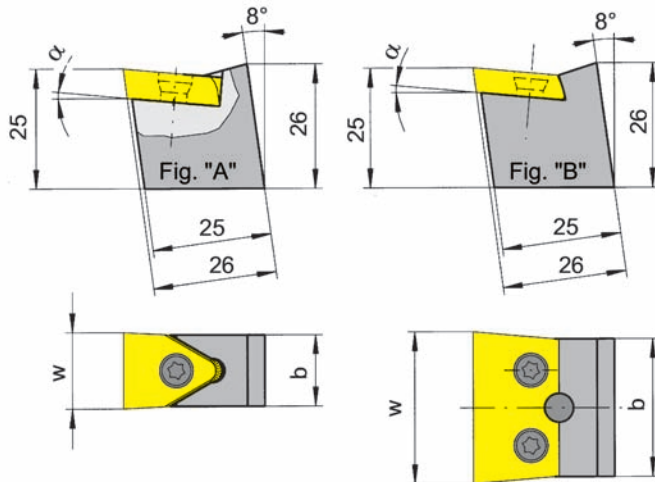


Depth of form up to
Width of form up to

.256" (6.5 mm)
1.772" (45.0 mm)

for use with Insert

Type S117



with PWP-System

Part number	α	Figure	b	w	Semi finished insert
H117.PWP.10	5°	A	10	10	S117.0010.00
H117.PWP.12	5°	A	12	12	S117.0012.00
H117.PWP.16	5°	A	16	16	S117.0014/16.00
H117.PWP.32	5°	B	28	32	S117.0032.00
H117.PWP.45	5°	B	42	45	S117.0045.00

Further angles upon request

Dimensions in mm

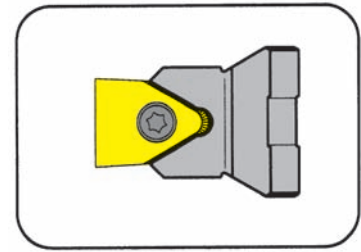
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
H117.PWP.10/12	4.09T15P	T15PQ
H117.PWP.16/32/45	5.12T20P	T20PQ

TOOLHOLDER Type

H117

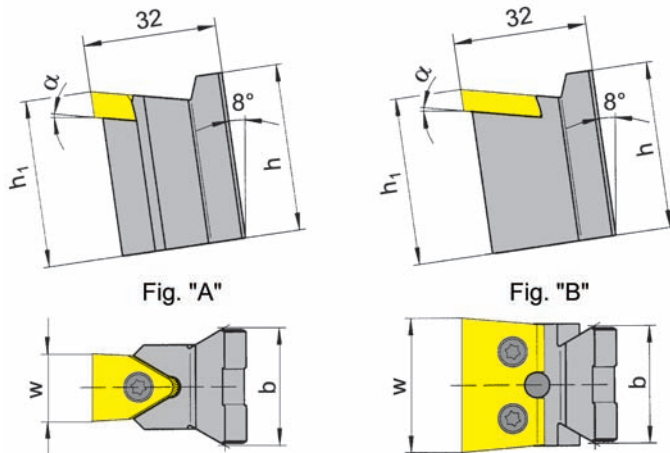
5° rake angle



Depth of form up to .394" (10.0 mm)
Width of form up to 1.772" (45.0 mm)

for use with Insert

Type S117



with AWN-System

Part number	α	Figure	h	h_1	b	w	t_{max}	Semi finished insert
H117.AW20.10 H117.AW28.10	5°	A	36	40	20 28	10	3.5	S117.0010.00
H117.AW20.12 H117.AW28.12	5°	A	36	40	20 28	12	4.5	S117.0012.00
H117.AW20.16 H117.AW28.16	5°	A	36	40	20 28	16	6.5	S117.0014/16.00
H117.AW28.20	5°	A	36	40	28	20	9.0	S117.0018/20.00
H117.AW28.26	5°	A	36	40	28	26	10.0	S117.0026.00
H117.AW28.32	5°	B	36	40	28	32	6.5	S117.0032.00
H117.AW40.45	5°	B	50	50	40	45	6.5	S117.0045.00

Further angles upon request

Dimensions in mm

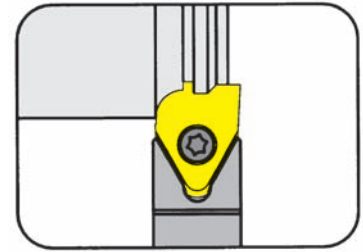
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
H117.AW2...10/12	4.09T15P	T15PQ
H117.AW...16/32/45	5.12T20P	T20PQ
H117.AW28.20/26	6.17T20P	T20PQ

INSERT Type

S117

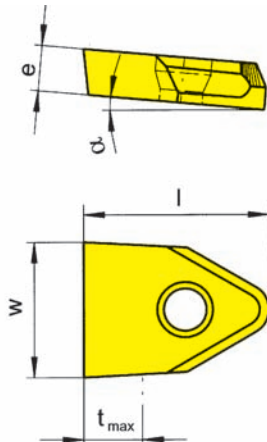
5° rake angle



Depth of form up to .394"
Width of form up to 1.024"

for use with Toolholder

Type H117
HU117



OVERVIEW
Semi finished insert

Part number	α	w	e	l	t _{max}	Toolholder	MG12	H54
S117.0010.00	5°	.394	.118	.630	.138	H117...10	▲	•
S117.0012.00	5°	.472	.177	.669	.177	H117...12	▲	▲
S117.0014.00	5°	.551	.236	.827	.236	H117...16	▲	
S117.0016.00	5°	.630	.236	.827	.236	H117...16	▲	
S117.0018.00	5°	.709	.276	1.142	.354	H117...20	▲	
S117.0020.00	5°	.787	.276	1.142	.354	H117...20	▲	
S117.0026.00	5°	1.024	.276	1.260	.394	H117...26	▲	

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

P	◦	•
M	•	•
K	•	•
S	•	•
N	•	•
H		

Further sizes upon request

Dimensions in inch



Profile inserts upon request

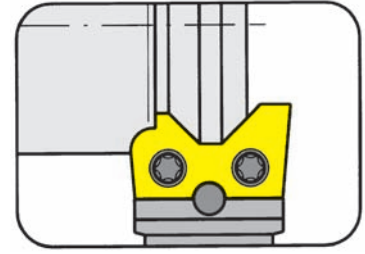
INSERT Type

S117

5° rake angle

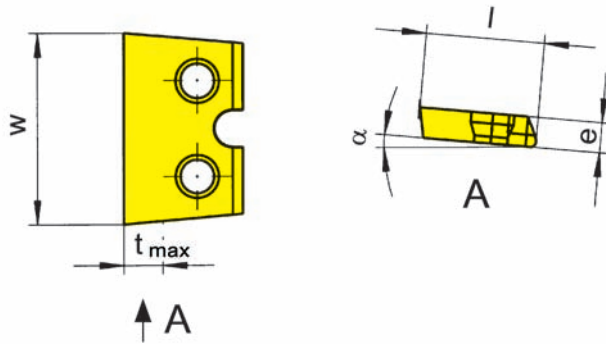
Depth of form up to
Width of form up to

.256"
1.772"



for use with Toolholder

Type H117
HU117



OVERVIEW Semi finished insert

Part number	α	w	e	l	t_{max}	Toolholder	MG12
S117.0032.00	5°	1.260	.197	.776	.256	H117...32	▲
S117.0045.00	5°	1.772	.197	.776	.256	H117...45	▲

▲ on stock Δ 4 weeks

● main recommendation

○ alternative recommendation

■ uncoated grades

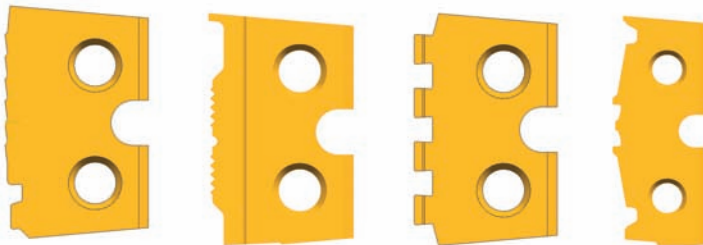
■ coated grades

■ brazed/Cermet

P	○
M	●
K	●
S	●
N	●
H	●

Further sizes upon request

Dimensions in inch

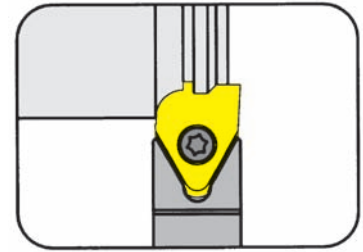


Profile inserts upon request

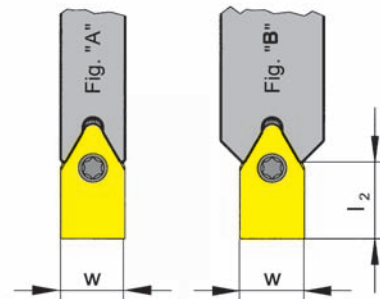
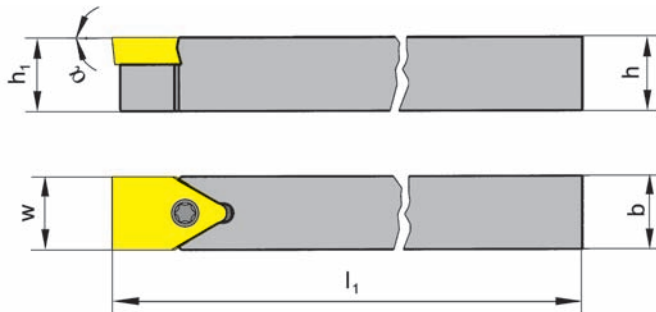
TOOLHOLDER Type

H117

0° rake angle



Depth of profile up to .256" (6.5 mm)
Width of profile up to .394" (10.0 mm)



Part number	α	Figure	h	h_1	b	l_1	l_2	w	Semi finished insert
H117.1010.02.10	0°	A	10	10	10	100	-		
H117.1212.02.10	0°	B	12	12	12	125	12	10	S117.0010.02.00
H117.1616.02.10	0°	B	16	16	16	125	12		

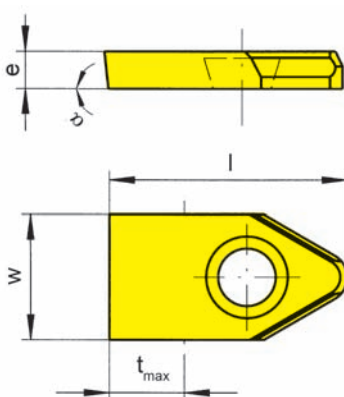
Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
H117...02.10	4.09T15P	T15PQ

INSERT Type

S117.0010.02.00



Semi finished insert: Only contact areas and main cutting edge ground.

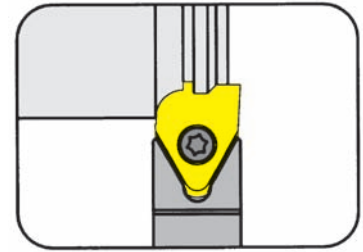
Dimensions in mm

Part number	α	w	e	l	t_{max}	Toolholder
S117.0010.02.00	0°	10	3	19	6,5	H117...02.10

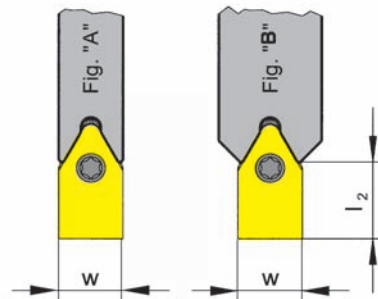
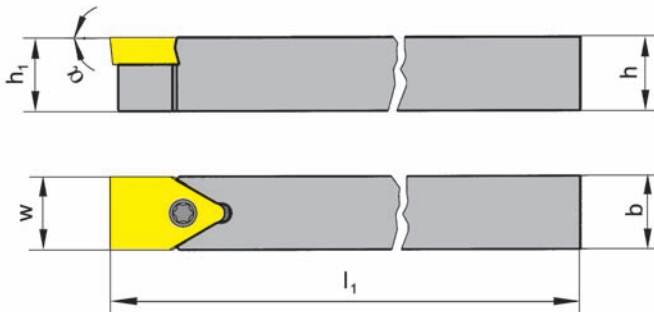
TOOLHOLDER Type

H117

0° rake angle



Depth of profile up to .295" (7.5 mm)
Width of profile up to .472" (12.0 mm)



Part number	α	Figure	h	h_1	b	l_1	l_2	w	Semi finished insert
H117.1212.02.12	0°	A	12	12	12	125	-		S117.0012.02.00
H117.1616.02.12	0°	B	16	16	16	125	11	12	
H117.2020.02.12	0°	B	20	20	20	150	11		

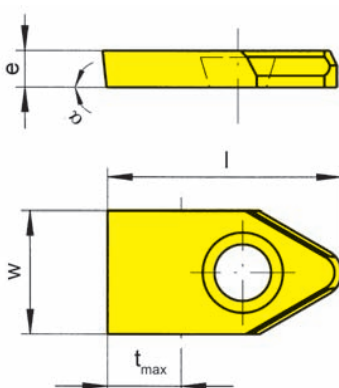
Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
H117...02.12	4.09T15P	T15PQ

INSERT Type

S117.0012.02.00



Semi finished insert: Only contact areas and main cutting edge ground.

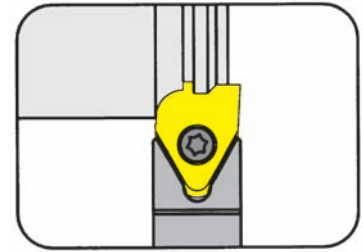
Dimensions in mm

Part number	α	w	e	l	t_{max}	Toolholder
S117.0012.02.00	0°	12	4,5	20	7,5	H117...02.12

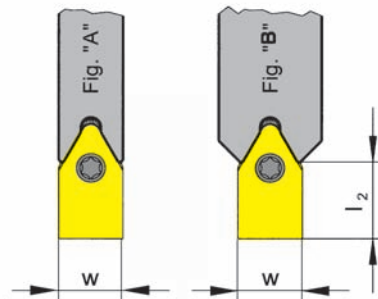
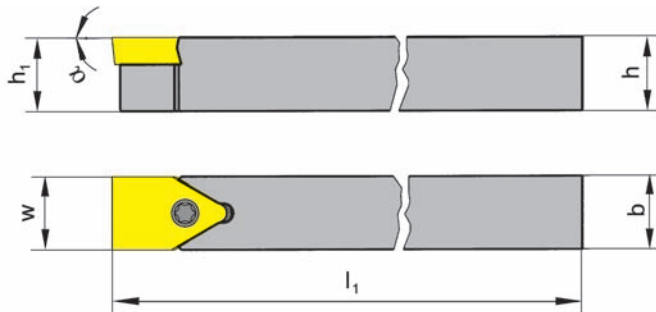
TOOLHOLDER Type

H117

0° rake angle



Depth of profile up to .354" (9 mm)
Width of profile up to .630" (16 mm)



Part number	α	Figure	h	h ₁	b	l ₁	l ₂	w	Semi finished insert
H117.1616.02.16	0°	A	16	16	16	125	-	16	S117.0016.02.00
H117.2020.02.16	0°	B	20	20	20	150	14	16	

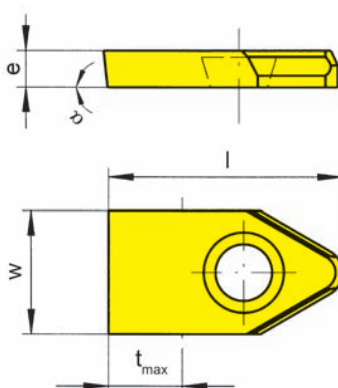
Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
H117...02.16	5.12T20P	T20PQ

INSERT Type

S117.0016.02.00



Semi finished insert: Only contact areas and main cutting edge ground.

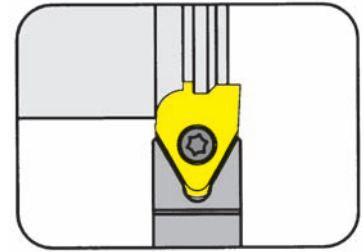
Dimensions in mm

Part number	α	w	e	l	t _{max}	Toolholder
S117.0016.02.00	0°	16	6	24	9	H117...02.16

TOOLHOLDER Type

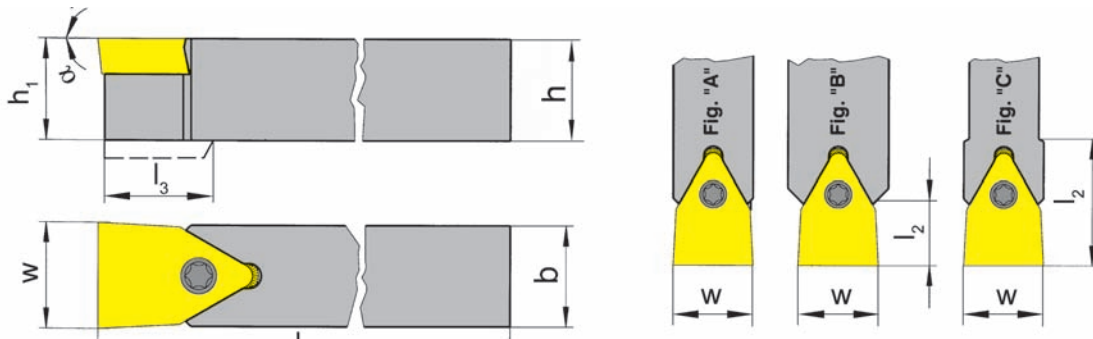
H117

0° rake angle



Depth of profile up to
Width of profile up to

.472" (12 mm)
.787" (20 mm)



Part number	α	Figure	h	h ₁	b	l ₁	l ₂	l ₃	w	Semi finished insert
H117.1616.02.20	0°	C	16	16	16	125	33	26		
H117.2020.02.20	0°	A	20	20	20	150	-	-	20	S117.0020.02.00
H117.2525.02.20	0°	B	25	25	25	150	19	-		

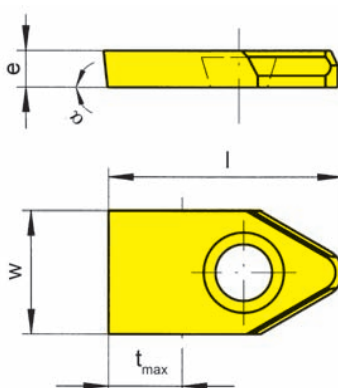
Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
H117...02.20	6.17T20P	T20PQ

INSERT Type

S117.0020.02.00



Semi finished insert: Only contact areas and main cutting edge ground.

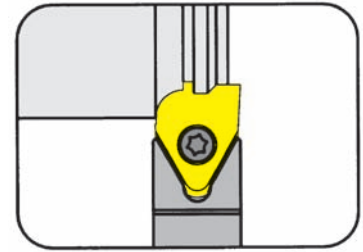
Dimensions in mm

Part number	α	w	e	l	t _{max}	Toolholder
S117.0020.02.00	0°	20	7	32	12	H117...02.20

TOOLHOLDER Type

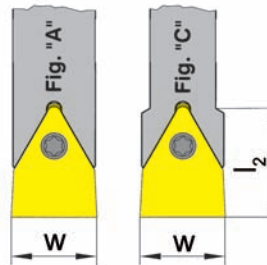
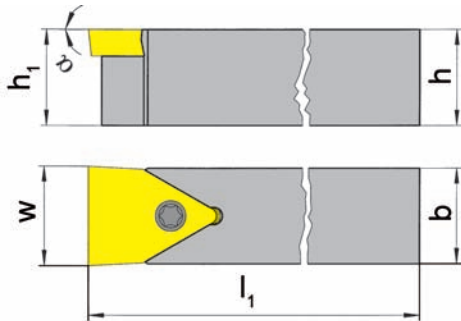
H117

0° rake angle



Depth of profile up to
Width of profile up to

.512" (13 mm)
1.024" (26 mm)



Part number	α	Figure	h	h ₁	b	l ₁	l ₂	w	Semi finished insert
H117.2020.02.26	0°	C	20	20	20	150	33	26	S117.0026.02.00
H117.2525.02.26	0°	A	25	25	25	150	-		

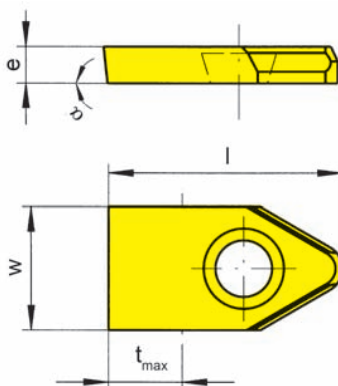
Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
H117...02.26	6.17T20P	T20PQ

INSERT Type

S117.0026.02.00



Semi finished insert: Only contact areas and main cutting edge ground.

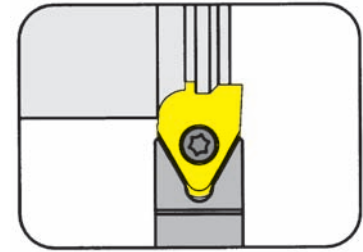
Dimensions in mm

Part number	α	w	e	l	t _{max}	Toolholder
S117.0026.02.00	0°	26	7	35	13	H117...02.26

INSERT Type

S117

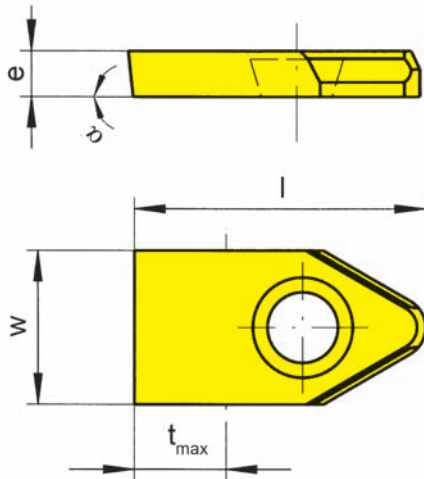
0° rake angle



Depth of form up to .512"
Width of form up to 1.024"

for use with Toolholder

Type H117...02...



OVERVIEW Semi finished insert

Part number	α	w	e	l	t _{max}	Toolholder	MG12
S117.0010.02.00	0°	.394	.118	.748	.256	H117...02.10	▲
S117.0012.02.00	0°	.472	.177	.787	.295	H117...02.12	▲
S117.0016.02.00	0°	.630	.236	.945	.354	H117...02.16	▲
S117.0020.02.00	0°	.787	.276	1.260	.472	H117...02.20	▲
S117.0026.02.00	0°	1.024	.276	1.378	.512	H117...02.26	▲

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

P	○
M	●
K	●
S	●
N	●
H	●

Further sizes upon request

Dimensions in inch



Profile inserts upon request

HCG - HORN Catalog Guide

PARTING OFF

Depth of groove up to	Product line									
	217	264	S274	S223	S224		S229/229	S312/312		S316
.157" (4 mm)	•	•	•	•	•		•	•		•
.236" (6 mm)		•	•	•	•		•	•		•
.315" (8 mm)		•		•	•		•	•		•
.394" (10 mm)		•		•	•		•			
.433" (11 mm)		•		•	•		•			
.551" (14 mm)		•		•	•		•			
.630" (16 mm)		•		•	•		•			
.709" (18 mm)				•	•		•			
.984" (25 mm)				•			•			
1.000" (25.4 mm)							•			
Operation Type										
Grooving	•	•	•	•	•		•	•		•
Side Turning		•	•	•	•		•	•		
Parting Off	•	•	•	•	•		•	•		•
Threading		•	•				•			
Profiling			•		•		•	•		•
Axial Grooving										
Width of groove inch	.022-.209	.059-.118	.020-.118	.049-.118	.079-.236		.098-.394	.020-.250		.059-.118
Width of groove mm	0.56-5.3	1.5-3.0	0.5-3.0	1.25-3.0	2.0-6.0		2.5-10.0	0.5-6.35		1.5-3.0
Chapter	A	B	C	D	E	F	G	H	J	K

PARTING OFF P

Insert type	S274	264	312 S312	S316	S123	S223	S224	229 S229	S100	HCC
Depth of groove										
up to mm	6 mm	16 mm	8 mm	8 mm	25 mm	11 mm	18 mm	25 mm	55 mm	> 50 mm
up to inch	.236"	.630"	.315"	.315"	.984"	.433"	.709"	.984"	2.165"	> 1.968"

Width of groove										
~.057" (~1.44 mm)	•		•							
.059" (1.5 mm)	•	•	•							
.079" (2.0 mm)	•	•	•	•	•	•	•		•	
.098" (2.5 mm)		•	•	•		•	•		•	
.118" (3.0 mm)		•	•	•	•	•	•	•	•	
.158" (4.0 mm)								•	•	
.197" (5.0 mm)								•	•	
.236" (6.0 mm)								•	•	
.315" (8.0 mm)									•	
.394" (10.0 mm)									•	
.472" (12.0 mm)									•	
Page	P2-P5	P8-P13	P16-P28	P30-P31	P34-P38	P34-P36 P39-P41	P44-P58	P60-P72	P74-P107	P108-P109

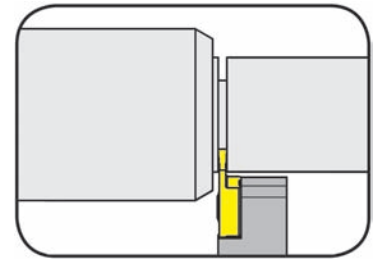
Toolholder type	H274	H264	360 368 391	H316	H223	H224	218 226	H100 NK100 220/300
DIN-Shank	•	•	•	•	•	•	•	•
Reinforced blade					•	•	•	•
Blade							•	•
Circular part-off tool								•
Page	P2-P3	P8-P11	P16-P20	P30	P34-P36	P44-P53	P60-P66	P74-P103

For Technical Information please see chapter Q

TOOLHOLDER Type

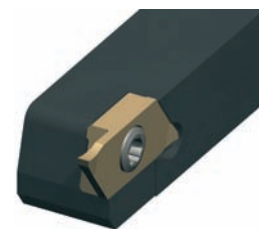
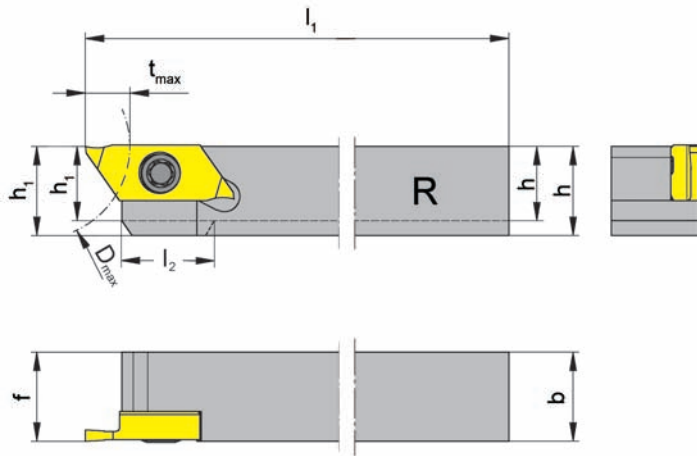
HU274

Depth of groove up to .236"
Width of groove up to .118"



for use with Indexable insert

Type S274



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	t _{max}	D _{max}	Size
R/LHU274.0312.04	.312	.312	3.996	.312	.312	.236	.984	04
R/LHU274.0375.04	.375	.375	3.996	.375	.375			
R/LHU274.0500.04	.500	.500	3.996	.500	.500			
R/LHU274.0625.04	.625	.625	5.118	.625	.625			
R/LHU274.0750.04	.750	.750	5.000	.750	.750			

State R or L version

Dimensions in inch

Further sizes upon request

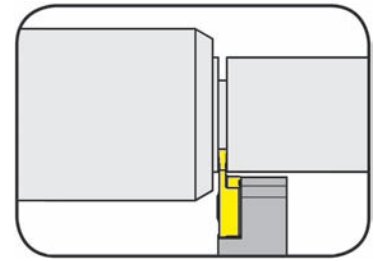
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LHU274.0...	030.3509.T15P	T15PQ

TOOLHOLDER Type

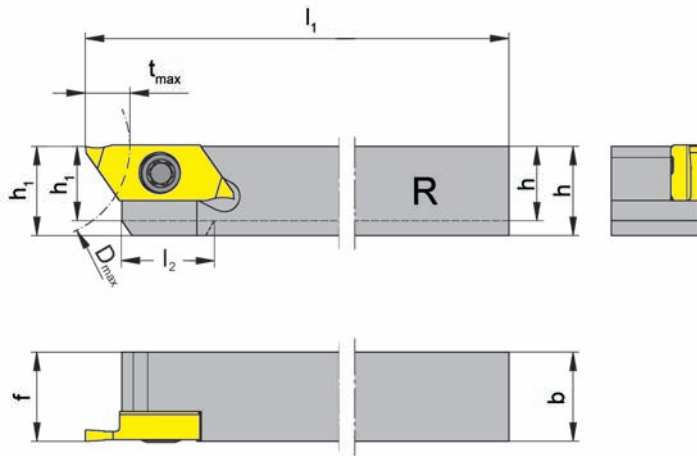
H274

Depth of groove up to .236" (6.0 mm)
 Width of groove up to .118" (3.0 mm)



for use with Indexable insert

Type S274



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	t _{max}	D _{max}	Size
R/LH274.0808.04	8	8	100	8	8	6	25	04
R/LH274.1010.04	10	10	100	10	10			
R/LH274.1212.04	12	12	100	12	12			
R/LH274.1414.04	14	14	100	14	14			
R/LH274.1616.04	16	16	125	16	16			
R/LH274.2020.04	20	20	125	20	20			

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

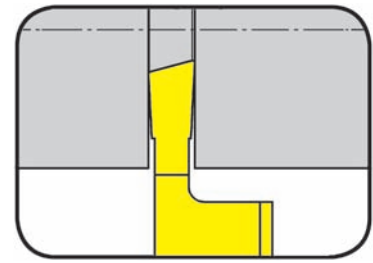
Toolholder	Screw	TORX PLUS® Wrench
R/LH274....	030.3509.T15P	T15PQ

INDEXABLE INSERT Type

S274

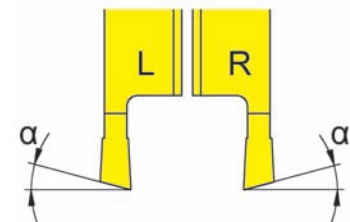
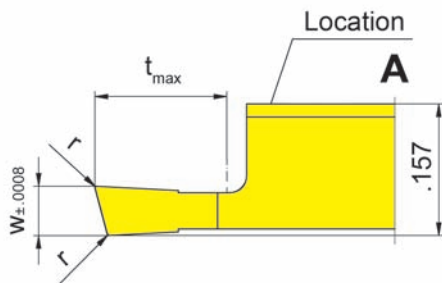
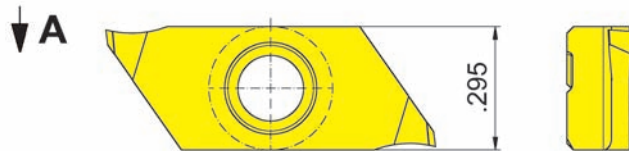
Depth of groove up to .236"
Width of groove .031 - .079"

precision ground



for use with Toolholder

Type H274
HU274



Indexability length
± .0006"

R = right hand version shown

L = left hand version

Part number	w	r	α	t _{max}	Size	Carbide grades						
						MG12	H54	TN35	TI25	TF46	TH35	
R/LS274.1508.03.10	.031			.118	04						▲/▲	
R/LS274.1510.03.10	.039	.002	15°	.118								▲/▲
R/LS274.1515.04.10	.059			.157								▲/▲
R/LS274.1520.06.10	.079			.236								▲/▲
<ul style="list-style-type: none"> ▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation □ uncoated grades ■ coated grades ■ brazed/Cermet 						P					●	
						M					●	
						K					●	
						S					●	
						N					●	
						H						

Dimensions in inch

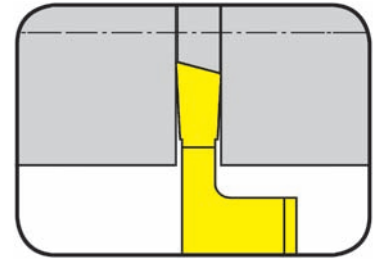
Carbide grades

State R or L version

t_{max} = .236" can be reached only with workpiece Ø ≤ .984"

INDEXABLE INSERT Type

S274

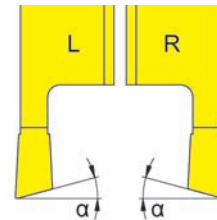
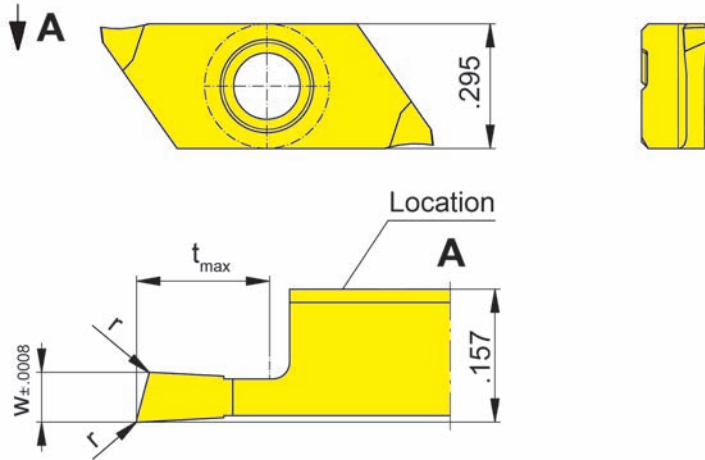


Depth of groove up to .236"
 Width of groove .031 - .079"

precision ground

for use with Toolholder

Type H274
 HU274



R = right hand version shown

L = left hand version

Indexability length
± .0006"

Part number	w	r	α	t _{max}	Size	Carbide grades		
						TN35	TI25	TH35
LS274.1508.03.10R	.031			.118	04			▲
LS274.1510.03.10R	.039			.118				▲
LS274.1515.04.10R	.059	.002	15°	.157				▲
LS274.1520.06.10R	.079			.236				▲
RS274.1508.03.10L	.031			.118	04			▲
RS274.1510.03.10L	.039			.118				▲
RS274.1515.04.10L	.059	.002	15°	.157				▲
RS274.1520.06.10L	.079			.236				▲
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet						P		●
						M		●
						K		●
						S		●
						N		●
						H		

Dimensions in inch

Carbide grades

State R or L version

Note:

t_{max} = .236" can be reached only with workpiece Ø ≤ .984"

HORN - THE LEADERS IN GROOVING TECHNOLOGY



High Performance Reaming

SYSTEM DR

URMA Licence

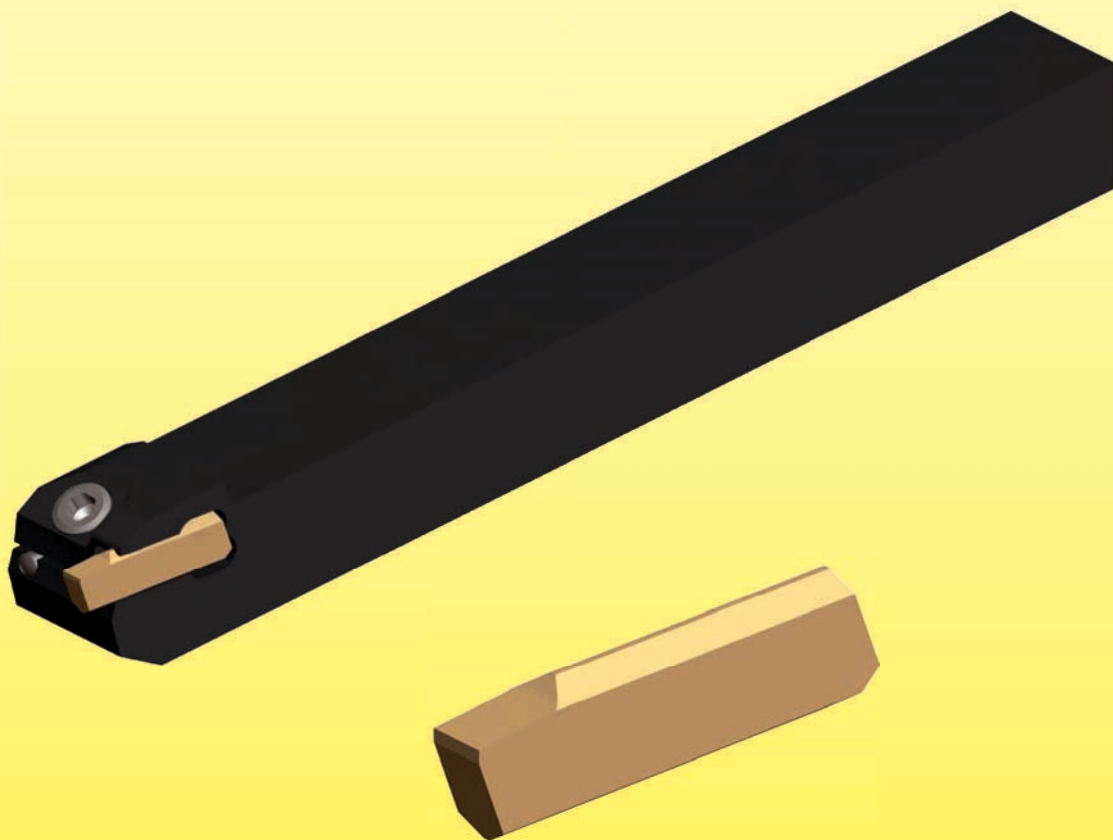
Large selection of base material, coatings and geometries.
High repeatability when replacing inserts
Diameters from 11.9 mm - 140.6 mm.

HORN - INTELLIGENT TOOL DESIGN AT WORK.



For further information, please contact HORN USA.

Grooving and Parting off with Toolholder type H264 and Indexable Inserts type 264

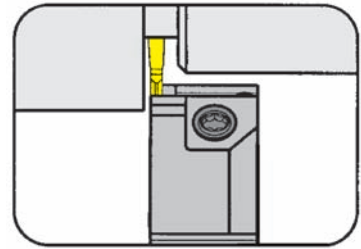


TOOLHOLDER Type

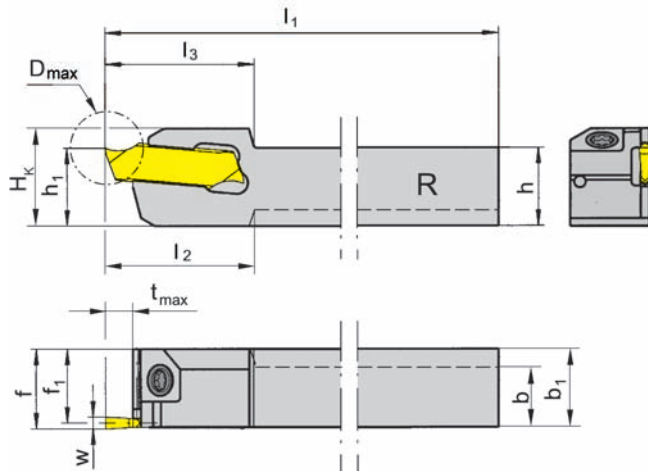
H264

with screwed clamping

Depth of groove up to .630" (16.0 mm)
Width of groove up to .079" (2.0 mm)



for use with Indexable insert

Type 264
S264

R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	b ₁	f ₁	f	l ₂	t _{max}	w	D _{max}	l ₃	H _k	Size
R/LH264.0808.01	8	8		8	10	9.25	10	17.5			22		12.5	
R/LH264.1010.01	10	10	120	10	-	9.25	10	-	4	1.5	22	17.5	12.5	01
R/LH264.1212.01	12	12		12	-	11.25	12	-			22		14.5	
R/LH264.1616.01	16	16		16	-	15.25	16	-			32		18.5	
R/LH264.1010.11	10	10		10	-	9.25	10				20		12.5	
R/LH264.1212.11	12	12	120	12	-	11.25	12	-	10	1.5	20	19.0	14.5	01
R/LH264.1616.11	16	16		16		15.25	16				32		18.5	
R/LH264.1212.21	12	12	120	12	-	11.25	12	-			26	22.0	15.5	01
R/LH264.1616.21	16	16		16	-	15.25	16		13	1.5	32		19.5	
R/LH264.1010.02	10	10		10		9.00	10						12.5	
R/LH264.1212.02	12	12	120	12	-	11.00	12	-	4	2.0	32	17.5	14.5	02
R/LH264.1616.02	16	16		16		15.00	16						18.5	
R/LH264.1010.12	10	10		10		9.00	10						12.5	
R/LH264.1212.12	12	12	120	12	-	11.00	12	-	10	2.0	32	19.0	14.5	02
R/LH264.1616.12	16	16		16		15.00	16						18.5	
R/LH264.1212.22	12	12	120	12	-	11.00	12	-					14.5	02
R/LH264.1616.22	16	16		16	-	15.00	16	-	16	2.0	32	25.0	19.5	

State R or L version

Further sizes upon request

Dimensions in mm

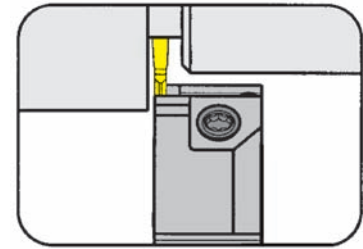
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH264....	3.5.12T10EP	T10PL

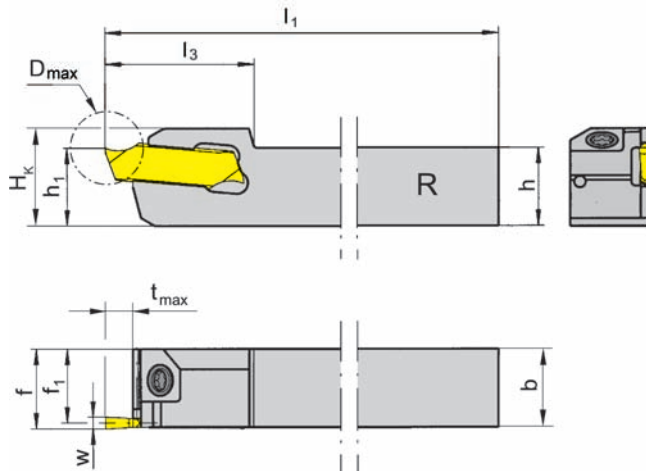
TOOLHOLDER Type

H264

with screwed clamping



Depth of groove up to .630" (16.0 mm)
Width of groove .098" (2.5 mm)



for use with Indexable insert

Type 264
S264



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	t _{max}	w	D _{max}	l ₃	H _k	Size
R/LH264.1212.03	12	12	120	12	10.75	12	4	2.5	32	17.5	14.5	03
R/LH264.1616.03	16	16	120	16	14.75	16	4	2.5	32	17.5	18.5	03
R/LH264.1212.13	12	12	120	12	10.75	12	10	2.5	32	19.0	14.5	03
R/LH264.1616.13	16	16	120	16	14.75	16	10	2.5	32	19.0	18.5	03
R/LH264.1212.23	12	12	120	12	10.75	12	16	2.5	32	25.0	14.5	03
R/LH264.1616.23	16	16	120	16	14.75	16	16	2.5	32	25.0	18.5	03

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

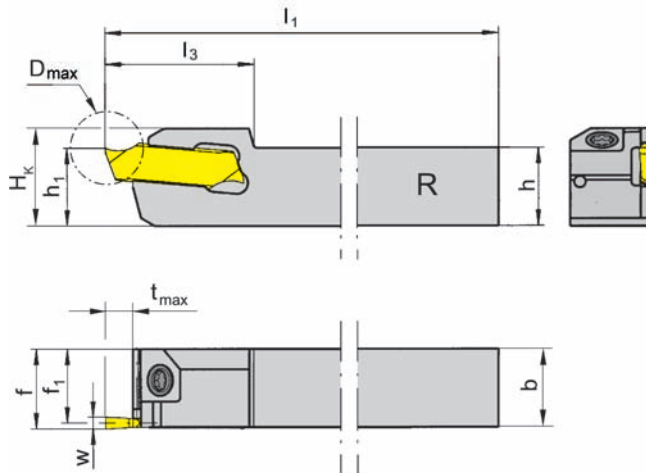
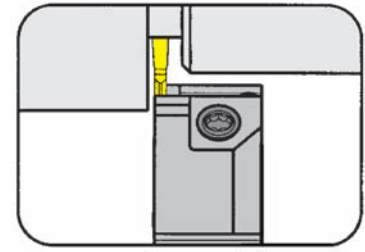
Toolholder	Screw	TORX PLUS® Wrench
R/LH264.1...	3.5.12T10EP	T10PL

TOOLHOLDER Type

H264

with screwed clamping

Depth of groove up to .630" (16.0 mm)
Width of groove .118" (3.0 mm)



for use with Indexable insert

Type 264
S264

R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	t _{max}	w	D _{max}	l ₃	H _k	Size
R/LH264.1212.04	12	12	120	12	10.5	12	5	3	32	17.5	15	04
R/LH264.1616.04	16	16	120	16	14.5	16	5	3	32	17.5	19	04
R/LH264.1212.14	12	12	120	12	10.5	12	10	3	32	19.0	15	04
R/LH264.1616.14	16	16	120	16	14.5	16	10	3	32	19.0	19	04
R/LH264.1212.24	12	12	120	12	10.5	12	16	3	32	25.0	15	04
R/LH264.1616.24	16	16	120	16	14.5	16	16	3	32	25.0	19	04

State R or L version

Dimensions in mm

Further sizes upon request

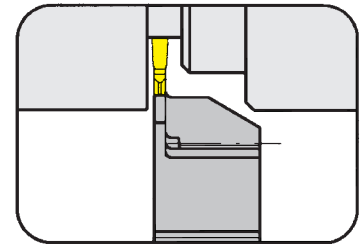
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH264.1...	3.5.12T10EP	T10PL

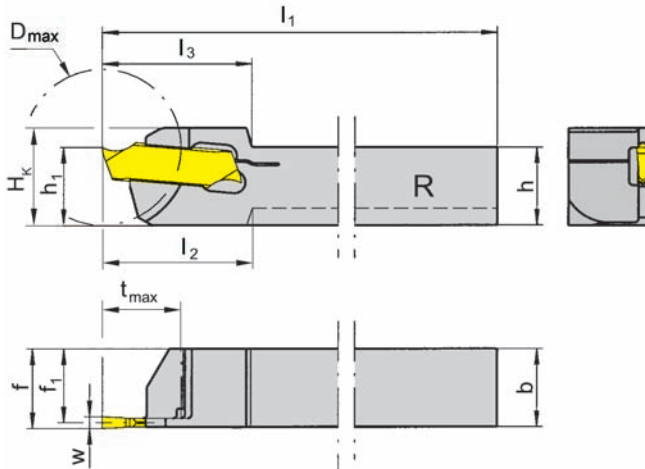
TOOLHOLDER Type

H264

with self clamping



Depth of groove up to .394" (10.0 mm)
Width of groove up to .118" (3.0 mm)



for use with Indexable insert

Type 264
S264



R = right hand version shown

L = left hand version

Part number	h	b	I ₁	h ₁	f ₁	f	I ₂	t _{max}	w	D _{max}	I ₃	H _k	Size
R/LH264.0808.51	8	8	120	10	7.25	8	18	7	1.5	20	18	12.5	01
R/LH264.1010.61	10	10	120	10	9.25	10	-	10	1.5	20	19	12.5	01
R/LH264.1010.62	10	10	120	10	9.00	10	-	10	2.0	20	19	12.5	02
R/LH264.1212.62	12	12	120	12	11.00	12	-	10	2.0	20	19	14.5	02
R/LH264.1212.63	12	12	120	12	10.75	12	-	10	2.5	32	19	14.5	03
R/LH264.1212.64	12	12	120	12	10.50	12	-	10	3.0	32	19	14.5	04

State R or L version

Dimensions in mm

Further sizes upon request

Spare parts

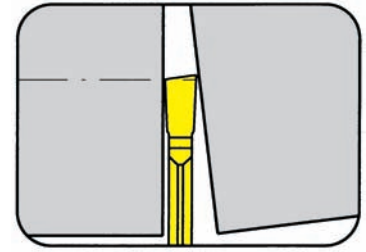
Toolholder	Wrench
R/LH264....	P39L

INDEXABLE INSERT Type

264

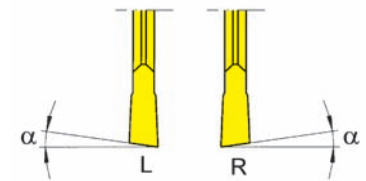
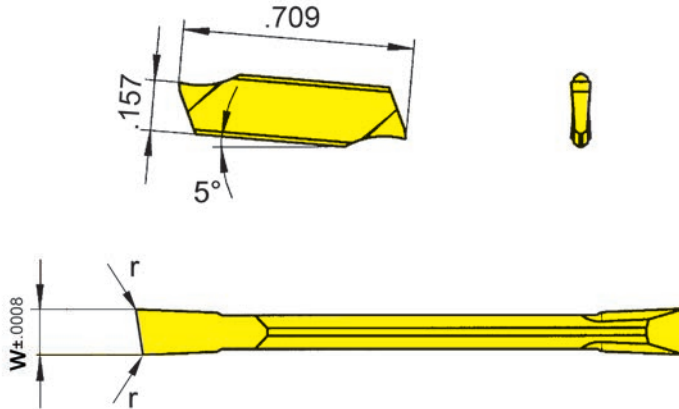
Depth of groove up to .630"
Width of groove .059 - .118"

precision ground



for use with Toolholder

Type H264



R = right hand version shown

L = left hand version

Indexability length
± .0006"

Part number	w	r	α	Size	Carbide grades			
					MG12	TN35	Ti25	TA45
R/L264.0815.10 R/L264.1515.10	.059	.002	15°	01	Δ/▲ ▲/▲	▲/▲ ▲/▲		
R/L264.0820.10 R/L264.1520.10	.079	.002	8° 15°	02	▲/▲ ▲/▲	▲/▲ ▲/▲		
R/L264.0825.10 R/L264.1525.10	.098	.004	8° 15°	03		▲/▲ ▲/▲		
R/L264.0830.10 R/L264.1530.10	.118	.004	8° 15°	04		▲/▲ ▲/▲		
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet					P	○	●	
					M	●	●	
					K	●	●	
					S	●	●	
					N	●	●	
					H			

Dimensions in inch

State R or L version

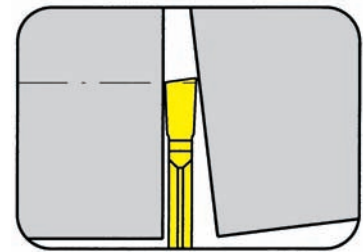
Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

264

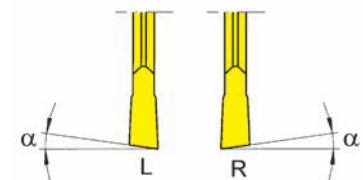
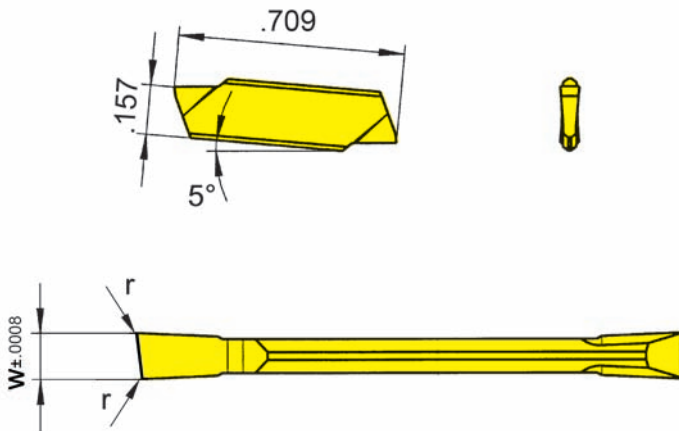
Depth of groove up to .630"
Width of groove .059 - .118"

precision ground



for use with Toolholder

Type H264



R = right hand version shown

L = left hand version

Indexability length
± .0006"

Part number	w	r	α	Size	Carbide grades			
					MG12	TN35	Ti25	TA45
R/L264.0815.M0 R/L264.1515.M0	.059	.002	8° 15°	01	▲/▲ ▲/▲	▲/▲ ▲/▲		
R/L264.0820.M0 R/L264.1520.M0	.079	.002	8° 15°	02	▲/▲ ▲/▲	▲/▲ ▲/▲		
R/L264.0825.M0 R/L264.1525.M0	.098	.004	8° 15°	03	/▲ ▲/▲	▲/▲ ▲/		
R/L264.0830.M0 R/L264.1530.M0	.118	.004	8° 15°	04	/▲ ▲/▲	▲/▲ ▲/▲		
					P	o	•	
					M	•	•	
					K	•	•	
					S	•	•	
					N	•	•	
					H			

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

Carbide grades

HORN - THE LEADERS IN GROOVING TECHNOLOGY



GROOVE MILLING BY CIRCULAR INTERPOLATION

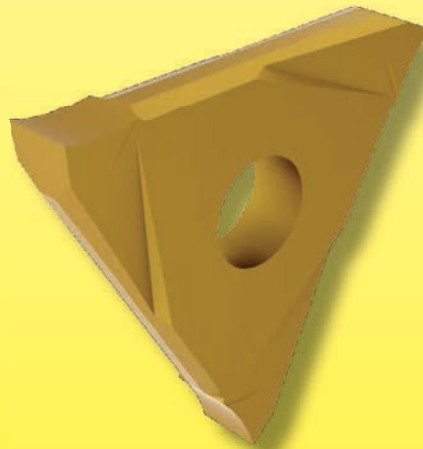
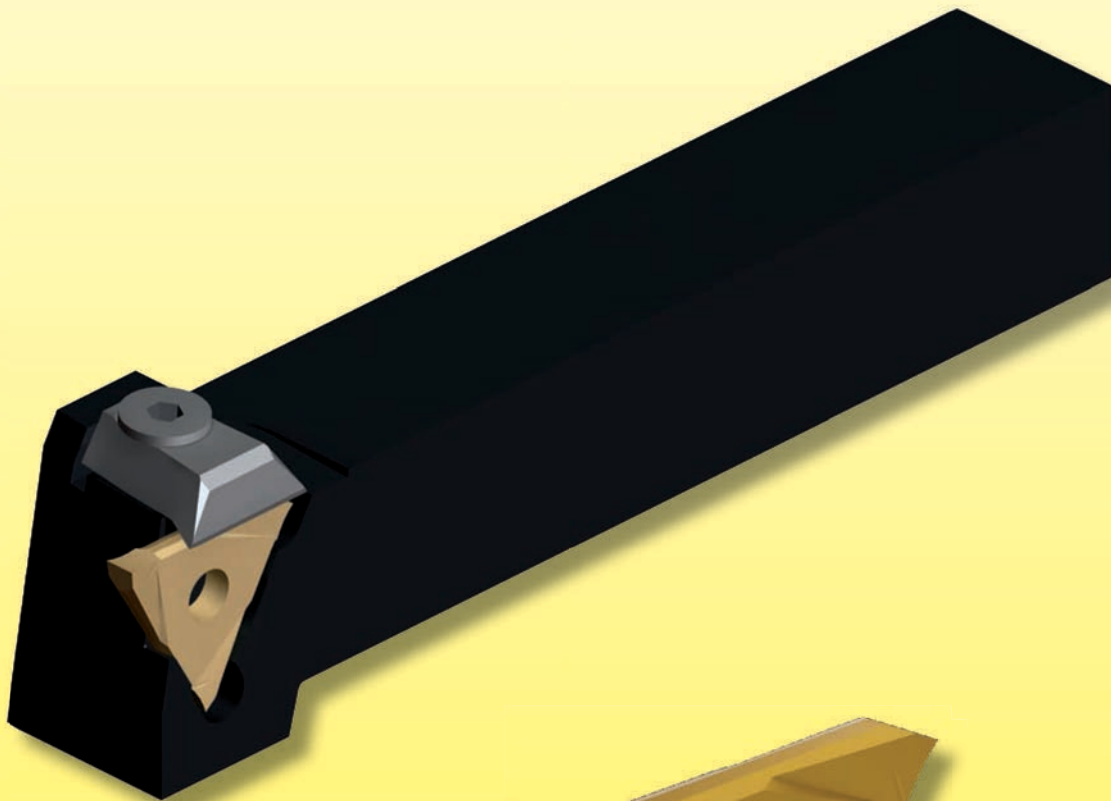
SYSTEM DC

- Thread Milling Partial Profile
- Thread Milling Full Profile
- Groove Milling
- Chamfer Milling

HORN - INTELLIGENT TOOL DESIGN AT WORK.

For further information, please contact HORN USA.

Grooving and Parting off with Indexable Inserts type 312

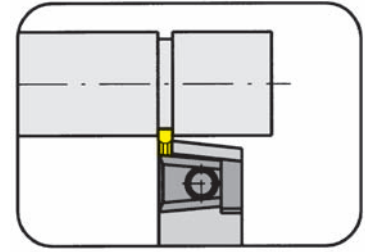


TOOLHOLDER Type

U360

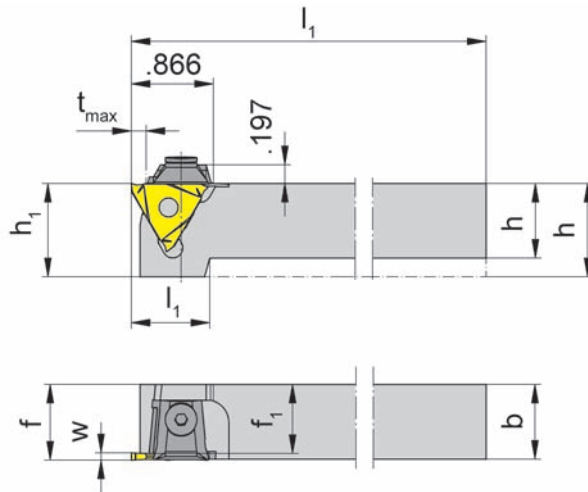
Depth of groove up to
Clamping range

.236"
.075 - .114"



for use with Indexable
insert

Type 312
U312
S312
US312



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f_1	f	l_2	t_{max}	Size	Clamping range
R/LU360.0500.02	.500	.500	4.000	1.000	.402		.944			
R/LU360.0625.02	.625	.625	5.000	1.000	.527		.866			
R/LU360.0750.02	.750	.750	5.000	1.000	.652	f_1+w-a_1	.826	.236	02	.075 - .114
R/LU360.1000.02	1.000	1.000	6.000	1.000	.902		-			
R/LU360.1250.02	1.250	1.250	6.625	1.250	1.152		-			

State R or L version

w, a_1 see indexable inserts

Dimensions in inch

Further sizes upon request

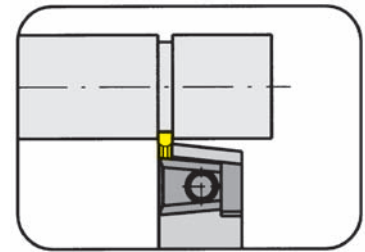
t_{max} can be reached only with workpiece $\varnothing \leq 1.575"$

Spare parts

Toolholder	Clamp	Screw	Wrench
R/LU360.0500...02	11.3	6.25	SW3DIN911
R/LU360.0625...02	11.3	6.25	SW3DIN911
R/LU360....02	16.4	6.25	SW3DIN911

TOOLHOLDER Type

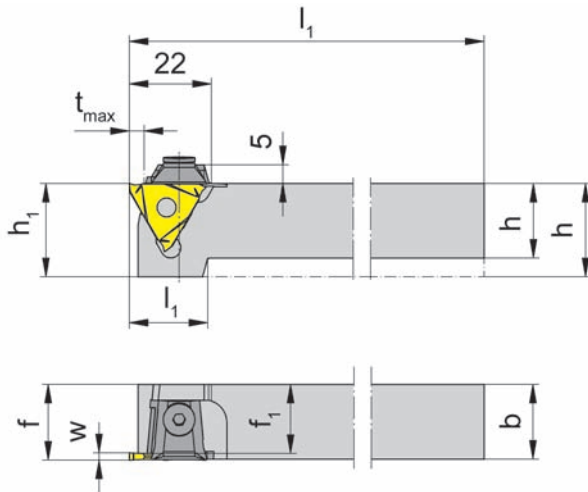
360



Depth of groove up to .236" (6.0 mm)
Clamping range .075 - .114" (1.9 - 2.9 mm)

for use with Indexable insert

Type 312
S312
U312
US312



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size	Clamping range
R/L360.1212.02	12	12	100	25	9.5		24			
R/L360.1616.02	16	16	125	25	13.5		22			
R/L360.2020.02	20	20	125	25	17.5	f ₁ +w-a ₁	21	6	02	1.9 - 2.9
R/L360.2525.02	25	25	150	25	22.5		-			
R/L360.3232.02	32	32	170	32	29.5		-			

State R or L version

w, a₁ see indexable inserts

Dimensions in mm

Further sizes upon request

t_{max} can be reached only with workpiece Ø ≤ 40 mm

Spare parts

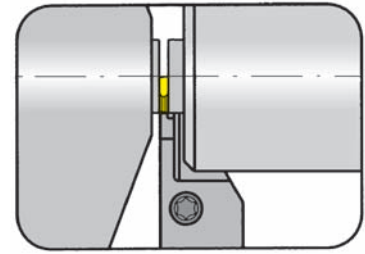
Toolholder	Clamp	Screw	Wrench
R/L360.1212.02	11.3	6.25	SW3DIN911
R/L360.1616.02	11.3	6.25	SW3DIN911
R/L360....02	16.4	6.25	SW3DIN911

TOOLHOLDER Type

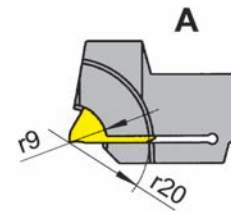
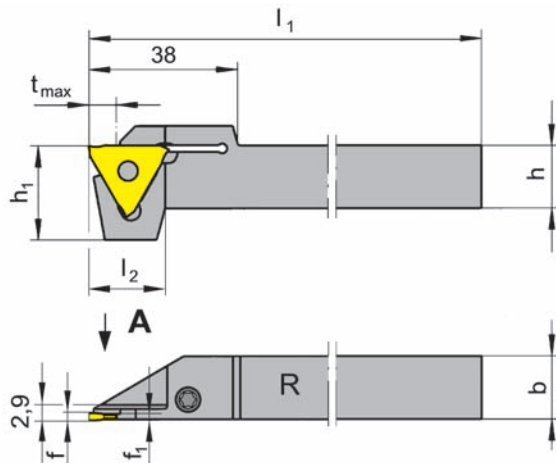
368

Depth of groove up to .315" (8.0 mm)
Clamping range .020 - .059" (0.5 - 1.5 mm)

for machines TRAUB (TNL12/7)



for use with Indexable insert

Type 312
U312

R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size	Clamping range
R/L368.1212.08	12	12			1.0					
R/L368.1212.11	12	12			1.3					
R/L368.1616.08	16	16	95	24	1.0	f ₁ +a ₁	19.5	8	01	0.5 - 1.9
R/L368.1616.11	16	16			1.3					

State R or L version

a₁ see indexable inserts

Dimensions in mm

Toolholder R/L368...08 for indexable inserts:R/L312.0805... / R/L312.0808... / R/L312.0510...
R/L312.0512... / R/L312.1210... / R/L312.0012...**Toolholder R/L368...11 for indexable inserts:**

R/L312.0515... / R/L312.0015...

Further sizes upon request

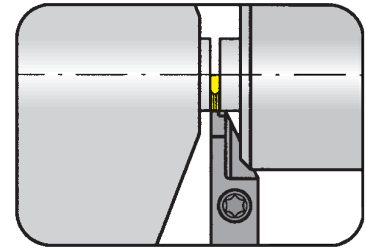
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/L368.1...	4.15T15P	T15PQ

TOOLHOLDER Type

368

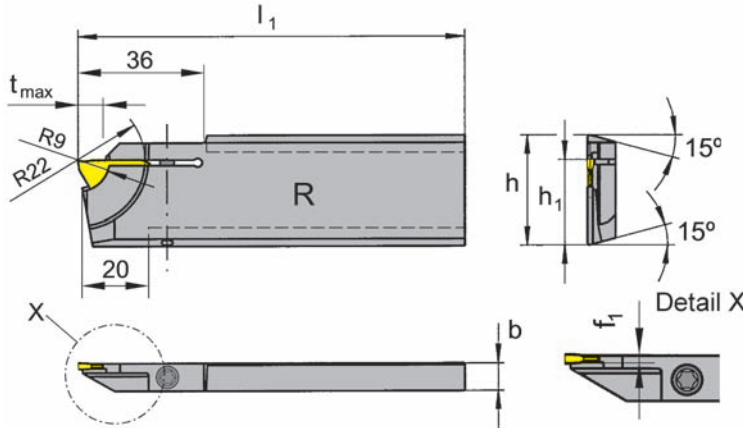
reinforced version



Depth of groove up to .315" (8.0 mm)
Clamping range .020 - .059" (0.5 - 1.5 mm)

for use with Indexable insert

Type 312
U312



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	t _{max}	Size	Clamping range
R/L368.2608.08	26			21.4	1.0			
R/L368.3208.08	32			24.8	1.0			
R/L368.2608.11	26	8	110	21.4	1.3	8	01	0.5 - 1.9
R/L368.3208.11	32			24.8	1.3			

State R or L version

Dimensions in mm

Toolholder R/L368...08 for indexable inserts:

R/L312.0805... / R/L312.0808... / R/L312.0510...
R/L312.0512... / R/L312.1210... / R/L312.0012...

Toolholder R/L368...11 for indexable inserts:

R/L312.0515... / R/L312.0015...

Further sizes upon request

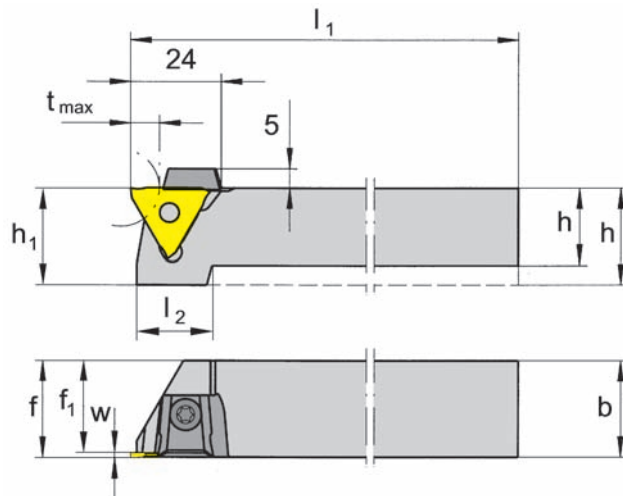
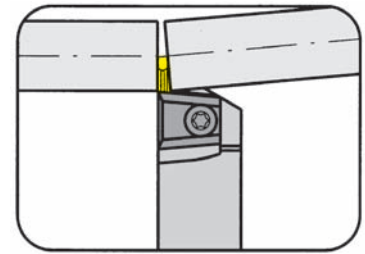
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/L368....	4.15T15P	T15PQ

TOOLHOLDER Type

391

Depth of groove up to .315" (8.0 mm)
Clamping range .020 - .075" (0.5 - 1.9 mm)



R = right hand version shown

L = left hand version

for use with Indexable insert

Type 312
N312
S312
U312
US312

Part number	h	b	l_1	h_1	f_1	f	l_2	t_{max}	Size	Clamping range
R/L391.1212.01	12	12	100	21	10.5		21			
R/L391.1616.01	16	16	125	21	14.5		21			
R/L391.2020.01	20	20	125	21	18.5	f_1+w-a_1	21	8	01	0.5-1.9
R/L391.2525.01	25	25	150	25	23.8		-			

State R or L version

w, a_1 see indexable inserts

Dimensions in mm

Further sizes upon request

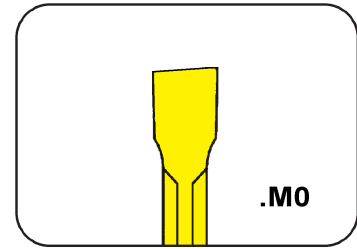
 t_{max} can be reached only with workpiece $\varnothing \leq 20$ mm**Spare parts**

Toolholder	Clamp	Screw	Wrench	TORX PLUS® Wrench
R/L391.1212.01	12.3	030.0422.T10P		T10PL
R/L391.1616.01	14.4	5.32.3T15P		T15PQ
R/L391.2...01	16.4	6.25	SW3DIN911	

INDEXABLE INSERT Type

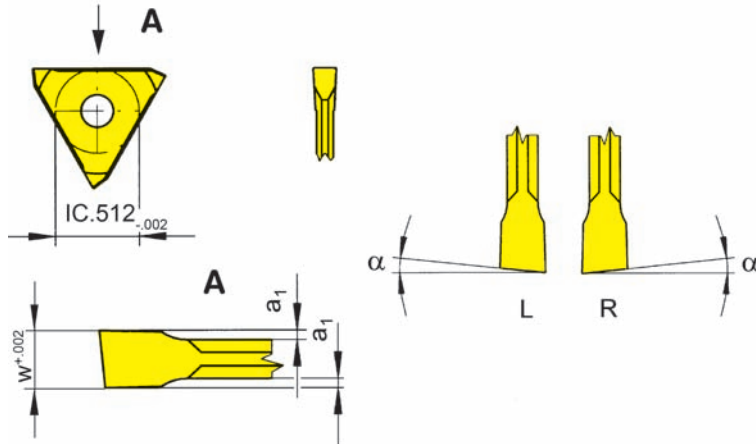
312

Depth of groove up to .315"
 Width of groove .047 - .059"



for use with Toolholder

Type 368 / U368



R = right hand version shown

L = left hand version

Part number	w	a ₁	α	Size	Carbide grades			
					K10	TN35	TF45	TC92
R/L312.0512.M0	.047	.008	5°	01	/Δ		▲/Δ	
R/L312.0515.M0	.059	.008	5°	01	▲/		▲/Δ	
					P	•	•	•
					M	○	•	•
					K	•	•	•
					S	○	•	•
					N	•	•	•
					H			

Dimensions in inch

State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

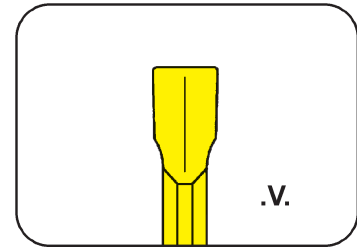
- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Carbide grades

INDEXABLE INSERT Type

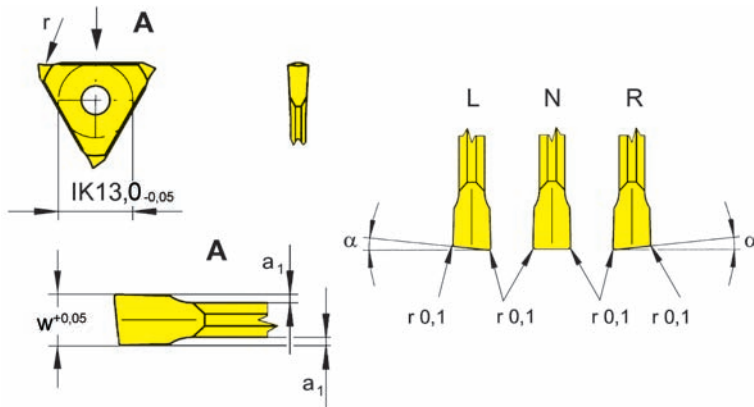
312

Depth of groove up to .315"
 Width of groove .047 - .079"



for use with Toolholder

Type 368



R = right hand version shown

L = left hand version

Part number	w	a ₁	α	Size	TN35	TI25	TF45	TH35
312.0012.V1 R/L312.0512.V1	.047	.008	0° 5°	01			▲ ▲/Δ	
312.0015.V1 R/L312.0515.V1	.059	.008	0° 5°	01			▲ ▲/▲	
R/L312.0520.V2	.079	.008	5°	01				▲/
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet					P		●	●
					M		●	●
					K		●	●
					S		●	●
					N		●	●
					H			

Dimensions in mm

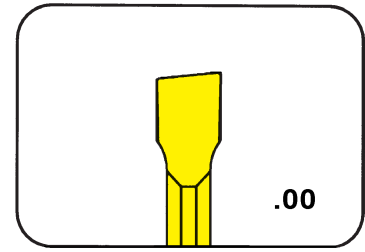
State R or L version

Carbide grades

INDEXABLE INSERT Type

312

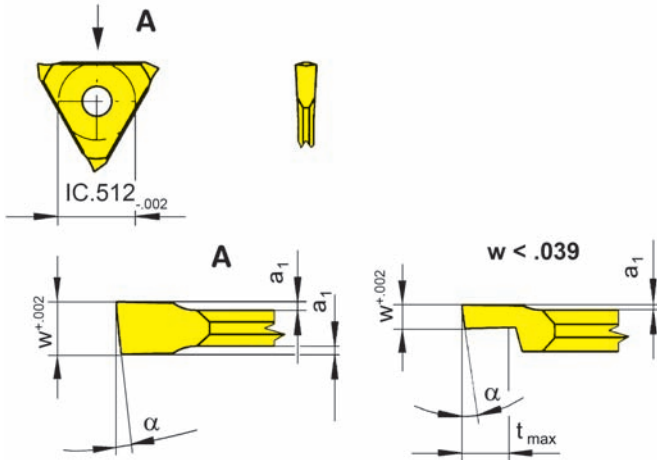
with round chip breaker



Depth of groove up to .315"
Width of groove .020 - .059"

for use with Toolholder

Type 368 / U368



R = right hand version shown

L = left hand version

Part number	w	t _{max}	a ₁	α	Size	Carbide grades			
						K10	TN35	TF45	TC92
R/L312.0805.00	.020	.039	.004	8°	01			▲/▲	
R/L312.0808.00	.031	.059	.004	8°				▲/▲	
R/L312.1210.00	.039	.315	.004	12°		▲/▲	▲/▲		
R/L312.0510.00	.039	.315	.004	5°		▲/▲	▲/▲		
R/L312.0512.00	.047	.315	.008	5°		▲/▲	▲/▲		
R/L312.0515.00	.059	.315	.008	5°		▲/▲	▲/▲		
<ul style="list-style-type: none"> ▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet 						P	●	●	
						M	●	●	
						K	●	●	
						S	●	●	
						N	●	●	
						H			

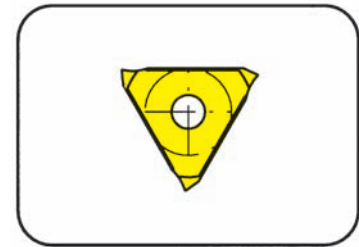
Dimensions in inch

State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

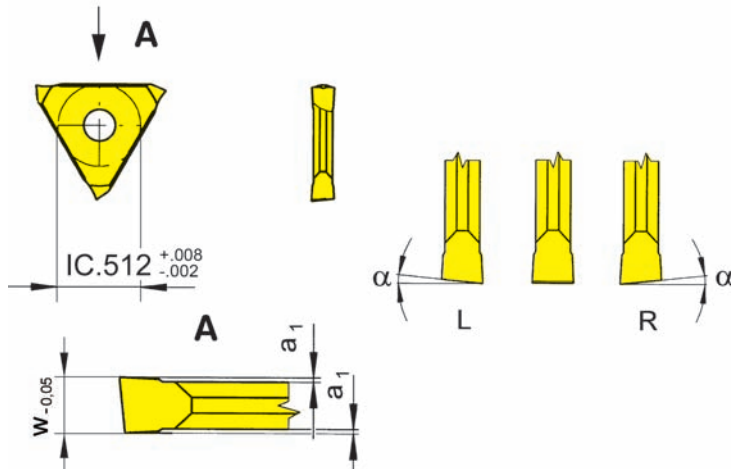
312



Depth of groove up to .197"
 Width of groove .042 - .057"

for use with Toolholder

Type 360 / U360



Part number	w	α	a ₁	Size	Carbide grades										
					K10	MG12	P20	H54	TN32	TN35	TI25	TF45	TF46	TC92	
312.0100.00	.042	0°	.004	01 / 02	▲		▲		▲	▲		▲	▲		
312.0130.00	.057	0°	.008	01 / 02	▲		▲		▲	▲		▲	▲		▲
R/L312.0614.00		6°					▲/▲	▲/▲	▲/▲	▲/▲	▲/▲				
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet					P	●		●	●	●	●	●	●	●	●
					M	○			●	●	●	●	●	○	
					K	●			●	●	●	●	●	●	●
					S	○				●	●	●	●	○	
					N	●				●	●	●	●	●	
					H										

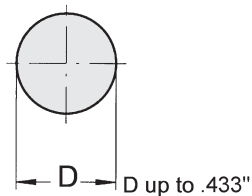
Dimensions in inch

State R or L version

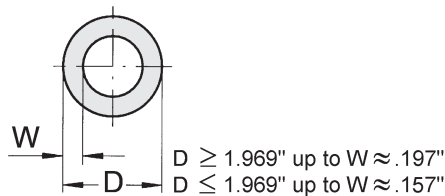
Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

Parting off solid bars



Parting off tubes

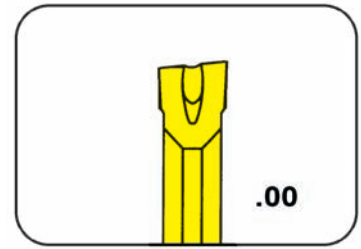


GROOVING and PARTING OFF



INDEXABLE INSERT Type

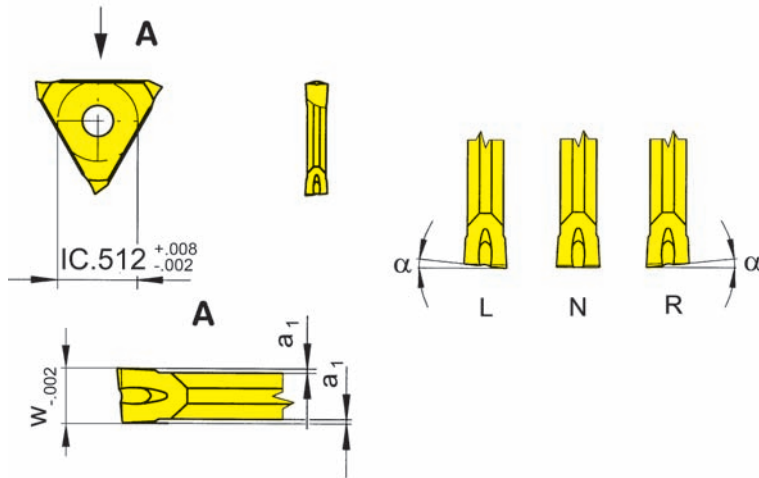
312



Depth of groove up to .197"
Width of groove .057 - .090"

for use with Toolholder

Type 360 / U360



R = right hand version shown

L = left hand version

Part number	w	a ₁	α	Size	Carbide grades								
					K10	P20	TN32	TN35	TI25	TF45	TF46	TC92	
N312.0014.00	.057	.008	0°	01 / 02									
N312.0018.00	.078		0°										
R/L312.0518.00	.078		5°			▲▲	▲▲	▲▲					
N312.0021.00	.090	.008	0°	02				▲					
R/L312.0521.00	.090		5°			▲▲	▲▲	▲▲					
					P	•	•	•		•			•
					M			•		•			
					K			•		•			
					S			•		•			
					N			•		•			
					H								

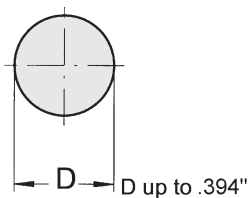
- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

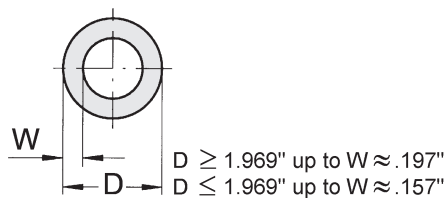
State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

Parting off solid bars



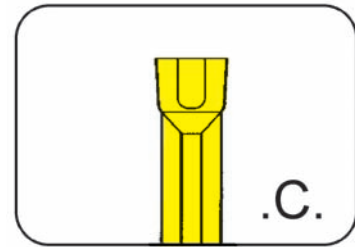
Parting off tubes



INDEXABLE INSERT Type

S312

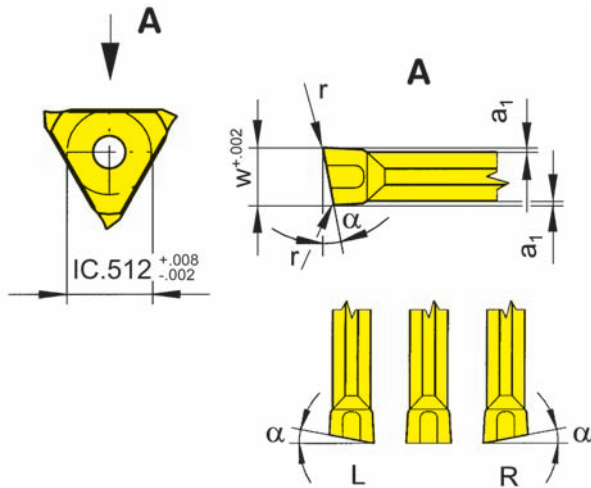
with sintered geometries



Depth of groove up to .197"
Width of groove .079 - .118"

for use with Toolholder

Type 360 / U360
361
369 / U369



R = right hand version shown

L = left hand version

Geometry .C

Part number	w	r	a ₁	α	Size	Carbide grades						
						K10	P20	TN32	TI25	TF45	TF46	TC92
S312.0200.C2 R/LS312.0520.C2	.079	.008	.010	0° 5°	02				▲		▲	
S312.0250.C2 R/LS312.0525.C2	.098	.008	.010	0° 5°	02				▲		▲	
S312.0300.C2 R/LS312.0530.C2	.118	.008	.010	0° 5°	03				▲		▲	
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet						P			●		●	
						M			●		○	
						K			●		●	
						S			●		○	
						N			●		●	
						H						

Dimensions in inch

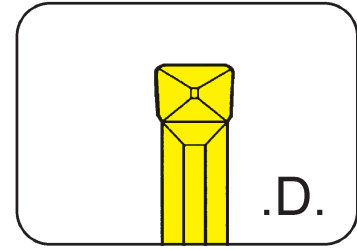
State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

S312

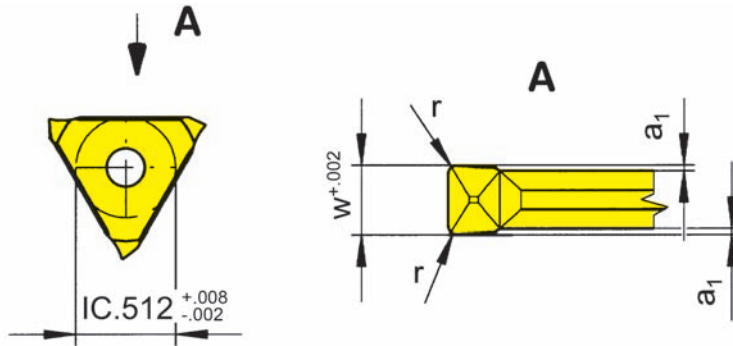
with sintered geometries



Depth of groove up to .197"
Width of groove .079 - .118"

for use with Toolholder

- Type 330 / U330
360 / U360
361
369 / U369
390 / U390



Geometry .D

Part number	w	r	a ₁	Size	TN32	T125	TF45	TF46	TC92	AS62	AS66
S312.0200.D2 S312.0200.D4	.079	.008 .016	.010	02	▲	▲	△	▲		▲	▲
S312.0250.D2 S312.0250.D4	.098	.008 .016	.010	02	▲	▲	▲	▲	▲	▲	▲
S312.0300.D2 S312.0300.D4	.118	.008 .016	.010	03	▲	▲	▲	▲		▲	▲
					P	•	•	•	•	•	•
					M		•	•	○		○
					K		•	•	•		•
					S		•	•	○		○
					N		•	•	•		•
					H						

▲ on stock △ 4 weeks
• main recommendation
○ alternative recommendation
■ uncoated grades
■ coated grades
■ brazed/Cermet

Carbide grades

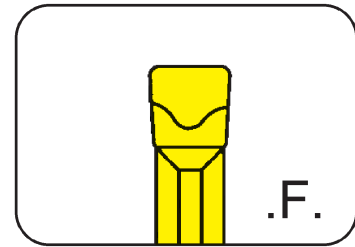
Dimensions in mm

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

S312

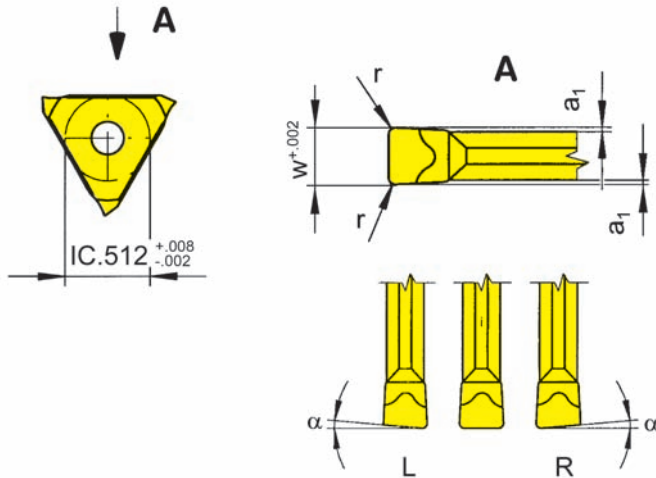
with sintered geometries



Depth of groove up to $.197''$
 Width of groove $.079 - .098''$

for use with Toolholder

- Type 330 / U330
 360 / U360
 361
 369 / U369
 390 / U390



R = right hand version

L = left hand version

Geometry .F.

Part number	w	r	a ₁	α	Size	Carbide grades									
						K10	MG12	P20	TN32	TN35	TI25	TF45	TF46	TC92	AL96
R/LS312.0520.F2 S312.0200.F2	.079	.008	.010	5° 0°	02						▲/▲ ▲		▲/▲ ▲		
R/LS312.0525.F2 S312.0250.F2	.098	.008	.010	5° 0°	02						▲/▲ ▲		▲/▲ ▲		
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet						P					●		●		
						M					●		○		
						K					●		●		
						S					●		○		
						N					●		●		
						H									

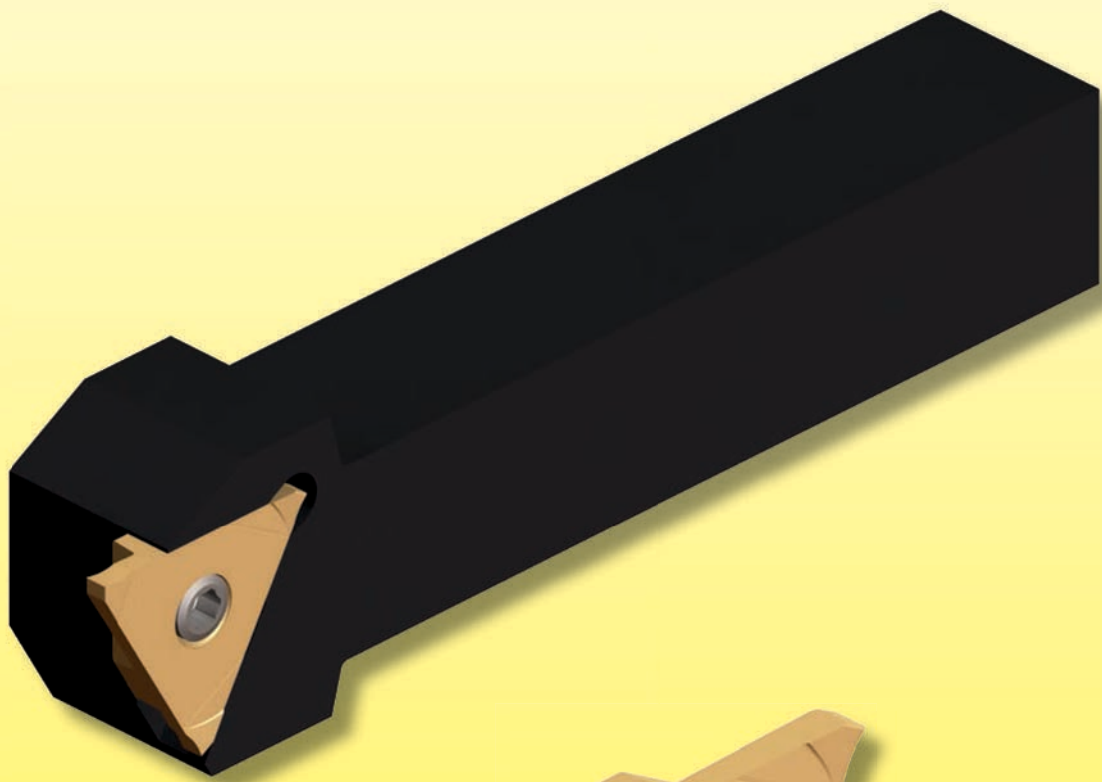
Dimensions in mm

Carbide grades

State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

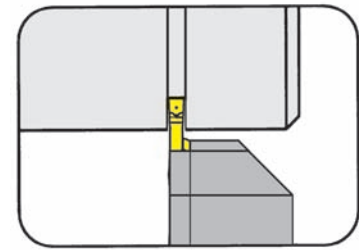
Grooving and Parting off with Indexable Inserts type 316



TOOLHOLDER Type

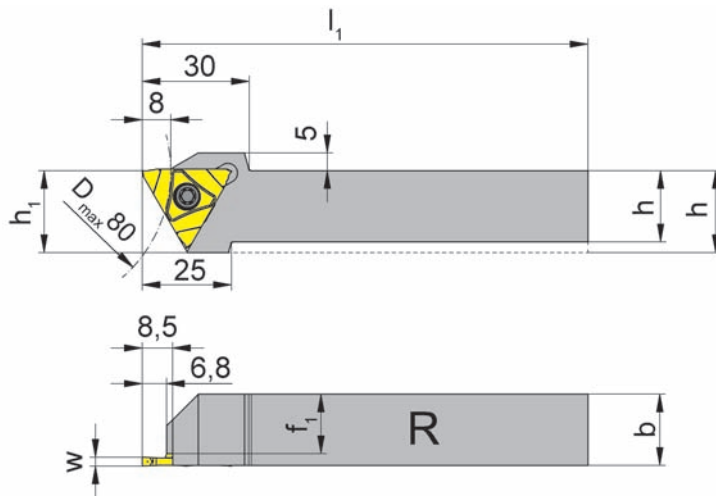
H316

Depth of groove up to .315" (8.0 mm)
 Width of groove up to .059 - .118" (1.5 - 3.0 mm)



for use with Indexable insert

Type S316



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	Size
R/LH316.1616.S3.03	16	16	125	23	12.7	03
R/LH316.2020.S3.03	20	20	125	23	16.7	
R/LH316.2525.S3.03	25	25	150	25	21.7	
R/LH316.3225.S3.03	32	25	150	32	21.7	

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

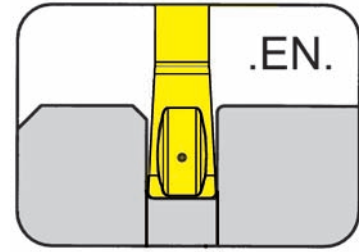
Toolholder	Screw	TORX PLUS® Wrench
R/LH316....	5.12T20P	T20PQ

GROOVING and PARTING OFF



INDEXABLE INSERT Type

S316

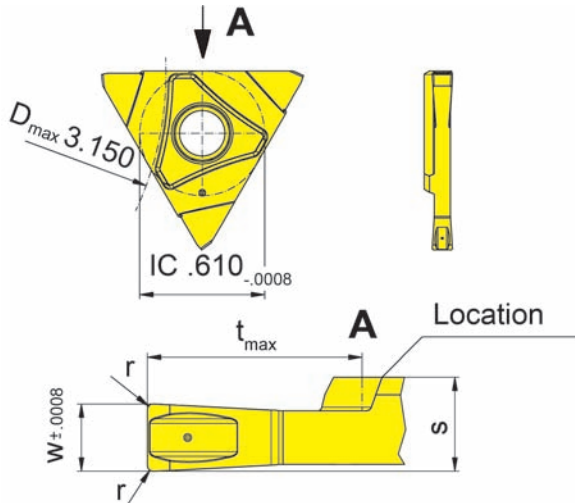


Depth of groove up to .315"
Width of groove .079 - .118"

precision sintered

for use with Toolholder

Type H316...S3.03



R = right hand version shown

L = left hand version

Indexability length
± .001"

Part number	w	r	s	t _{max}	Size		TN35	TI25	TF45	TF46	AS6G
R/LS316.0200.EN2	.079										▲/▲
R/LS316.0250.EN2	.098	.008	.138	.315	03						▲/▲
R/LS316.0300.EN2	.118										▲/▲
						P					•
						M					•
						K					•
						S					•
						N					•
						H					

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Carbide grades

Dimensions in inch

State R or L version

External machining:

Use right hand inserts in right hand toolholders and left hand inserts in left hand toolholders

HORN - THE LEADERS IN GROOVING TECHNOLOGY



Maximize your milling advantage

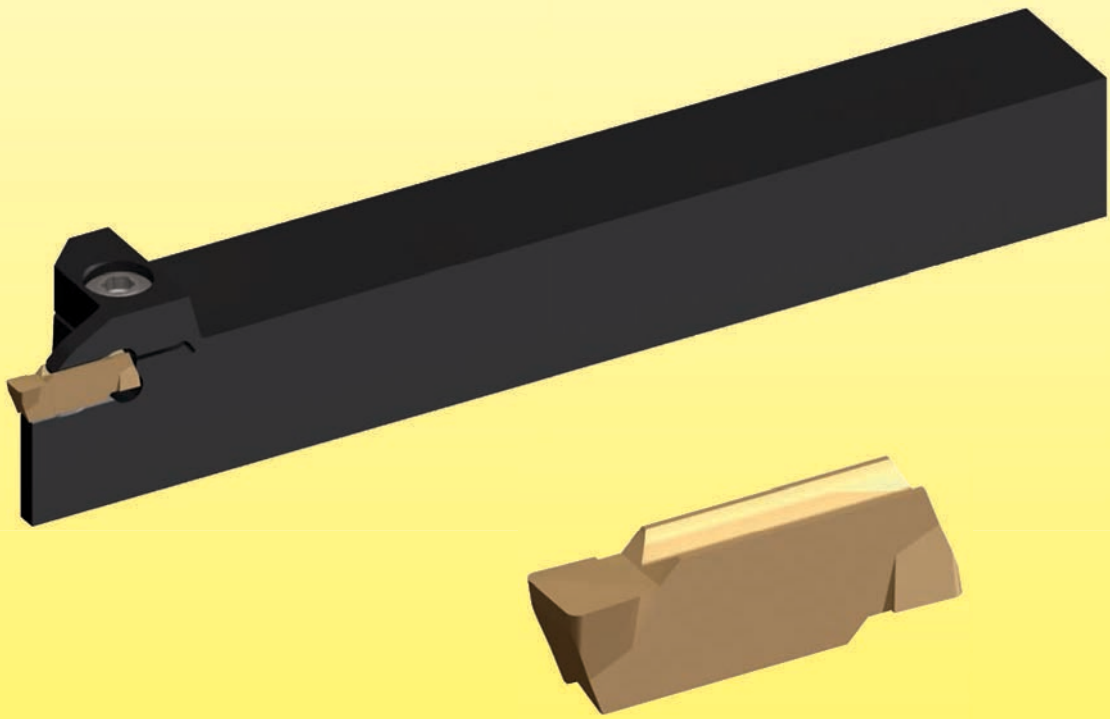
SYSTEM DA

HORN - INTELLIGENT TOOL DESIGN AT WORK.



For further information, please see HORN catalog "CARBIDE MILLING TOOLS".

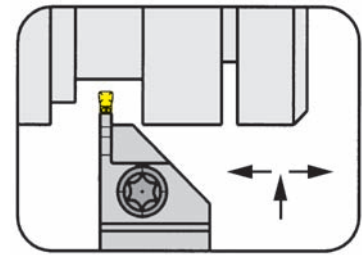
**Indexable Insert type S223 + S123
with chip forming
- precision sintered -**



Width of groove	.079 - .118"
Depth of groove up to	.984"

TOOLHOLDER Type

HU223

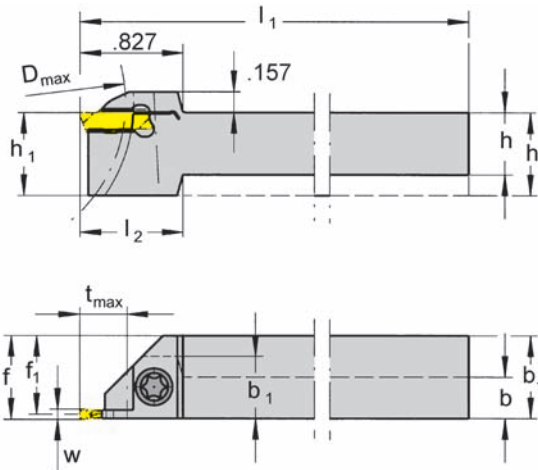


Depth of groove up to
Clamping range

.394"
.079 - .118"

for use with Insert

Type S123
S223



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	b ₁	t _{max}	D _{max}	Size	Clamping range
R/LHU223.0375.01	.375	.375	3.125	.500	f ₁ +w/2	.344	.750	.500	.315	.984	01	.079
R/LHU223.0500.01	.500	.500	4.000	.500		.469	-	-	.394	1.968		
R/LHU223.0625.01	.625	.625	5.000	.625		.594	-	-	.394	1.968		
R/LHU223.0750.01	.750	.750	5.000	.750		.719	-	-	.394	1.968		
R/LHU223.1000.01	1.000	1.000	6.000	1.000		.969	-	-	.394	1.968		
R/LHU223.0375.02	.375	.375	3.125	.500	f ₁ +w/2	.344	.750	.500	.315	.984	02	.098
R/LHU223.0500.02	.500	.500	4.000	.500		.469	-	-	.394	1.968		
R/LHU223.0625.02	.625	.625	5.000	.625		.594	-	-	.394	1.968		
R/LHU223.0750.02	.750	.750	5.000	.750		.719	-	-	.394	1.968		
R/LHU223.1000.02	1.000	1.000	6.000	1.000		.969	-	-	.394	1.968		
R/LHU223.0500.03	.500	.500	4.000	.500	f ₁ +w/2	.469	-	-	.394	1.968	03	.118
R/LHU223.0625.03	.625	.625	5.000	.625		.594						
R/LHU223.0750.03	.750	.750	5.000	.750		.719						
R/LHU223.1000.03	1.000	1.000	6.000	1.000		.969						

State R or L version

w see indexable inserts

Dimensions in inch

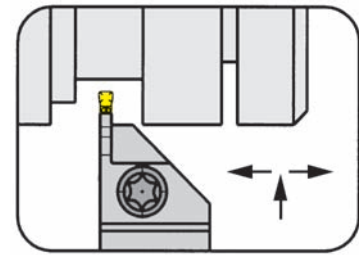
Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LHU223....	5.11T15P	T15PL

TOOLHOLDER Type

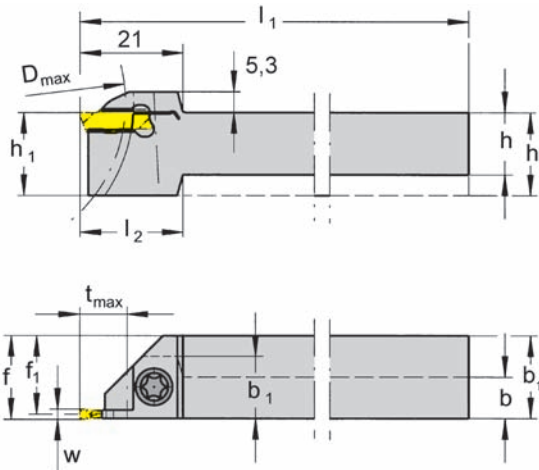
H223



Depth of groove up to .394" (10.0 mm)
Clamping range 2.0 - 3.0 mm

for use with Insert

Type S123
S223



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	b ₁	t _{max}	D _{max}	Size	Clamping range
R/LH223.1010.01	10	10	80	12	f ₁ +w/2	9.20	20	12	8	25	01	2.0
R/LH223.1212.01	12	12	100	16		11.20	21	-	10	50		
R/LH223.1616.01	16	16	125	16		15.20	-	-	10	50		
R/LH223.2020.01	20	20	125	20		19.20	-	-	10	50		
R/LH223.2525.01	25	25	150	25		24.20	-	-	10	50		
R/LH223.1010.02	10	10	80	12	f ₁ +w/2	9.05	20	12	8	25	02	2.5
R/LH223.1212.02	12	12	100	16		11.05	21	-	10	50		
R/LH223.1616.02	16	16	125	16		15.05	-	-	10	50		
R/LH223.2020.02	20	20	125	20		19.05	-	-	10	50		
R/LH223.2525.02	25	25	150	25		24.05	-	-	10	50		
R/LH223.1010.03	10	10	80	12	f ₁ +w/2	8.80	20	12	8	25	03	3.0
R/LH223.1212.03	12	12	100	16		10.80	21	-	10	50		
R/LH223.1616.03	16	16	125	16		14.80	-	-	10	50		
R/LH223.2020.03	20	20	125	20		18.80	-	-	10	50		
R/LH223.2525.03	25	25	150	25		23.80	-	-	10	50		

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

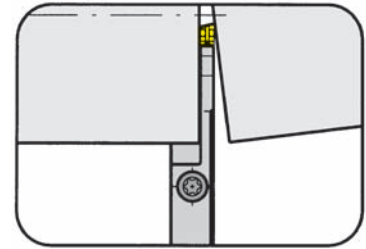
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH223....	5.11T15P	T15PL

TOOLHOLDER Type

H223

reinforced version

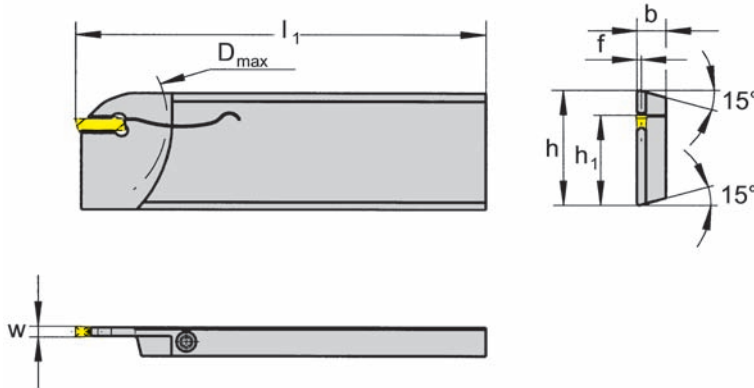


Depth of groove up to
Clamping range up to

.984" (25.0 mm)
.118" (3.0 mm)

for use with Insert

Type S123
S223



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	D _{max}	Size	Clamping range
R/LH223.2608.01 R/LH223.3208.01	26 32	7.9	110	21.4 24.8	0.80	50	01	2.0
R/LH223.2608.02 R/LH223.3208.02	26 32	7.9	110	21.4 24.8	0.95	50	02	2.5
R/LH223.2608.03 R/LH223.3208.03	26 32	7.9	110	21.4 24.8	1.20	50	03	3.0

State R or L version

w see indexable inserts

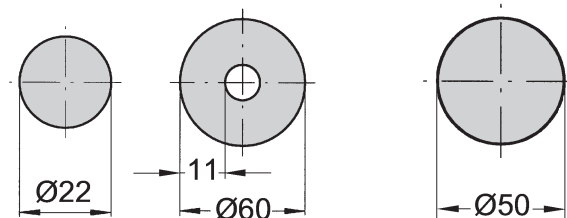
Dimensions in mm

Further sizes upon request

Parting off:

Solid bars or Tubes (S223)

Solid bars (S123)



Spare parts

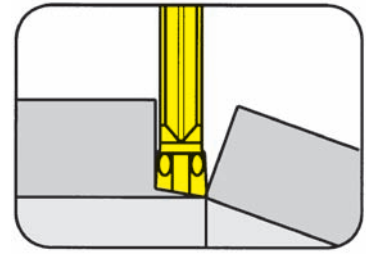
Toolholder	Screw	TORX PLUS® Wrench
R/LH223....	4.15T15P	T15PL

GROOVING and PARTING OFF



INSERT Type

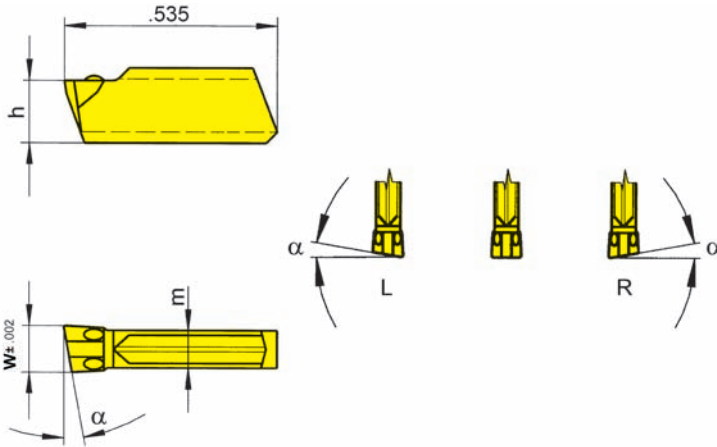
S123



Depth of groove up to .984"
Width of groove .079 - .118"

for use with Toolholder

Type H223
HU223



R = right hand version shown

L = left hand version

Part number	w	α	m	h	Size	Carbide grades			
						MG12	TN35	TI25	TF45
S123.0020.C0 R/LS123.1520.C0 R/LS123.0420.C0 R/LS123.0820.C0	.079	0° 15° 4° 8°	.063	.144	01		Δ Δ/Δ Δ/Δ	/Δ Δ/Δ Δ/Δ	Δ Δ/Δ Δ/Δ
S123.0030.C0 R/LS123.0430.C0	.118	0° 4°	.094	.156	03		Δ	Δ/Δ	
<ul style="list-style-type: none"> ▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation □ uncoated grades ■ coated grades ■ brazed/Cermet 						P	●	●	●
						M	●	●	●
						K	●	●	●
						S	●	●	●
						N	●	●	●
						H			

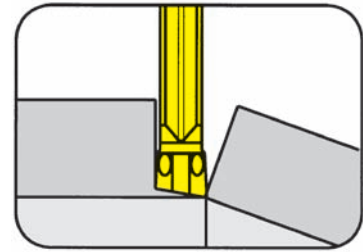
Dimensions in inch

State R or L version

Indexable inserts can be used in **right and left** hand toolholders.

INSERT Type

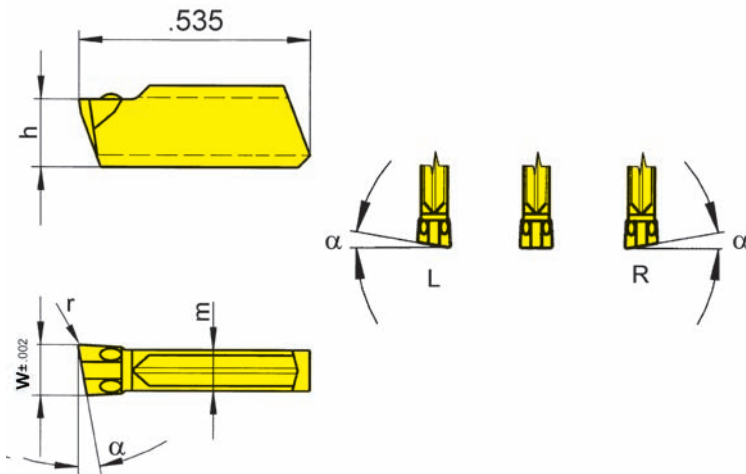
S123



Depth of groove up to .984"
 Width of groove .079 - .118"

for use with Toolholder

Type H223
 HU223



R = right hand version shown

L = left hand version

Part number	w	r	α	m	h	Size	Carbide grades			
							MG12	TN35	TI25	TF45
S123.0020.C1	.079	.006	0°	.063	.144	01		Δ	Δ	Δ
R/LS123.1520.C1			15°				Δ/	Δ/	Δ/	
R/LS123.0420.C1			4°				Δ/	Δ/Δ	Δ/	
R/LS123.0820.C1			8°				Δ/	Δ/		
S123.0030.C1	.118	.006	0°	.094	.156	03		Δ		
R/LS123.0830.C1			8°					Δ/		
							P	•	•	•
							M	•	•	•
							K	•	•	•
							S	•	•	•
							N	•	•	•
							H			

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R or L version

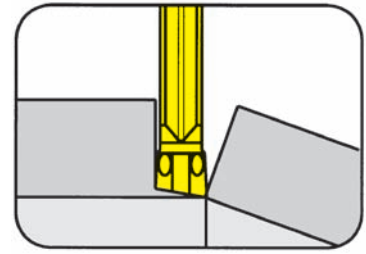
Indexable inserts can be used in **right and left** hand toolholders.

GROOVING and PARTING OFF



INDEXABLE INSERT Type

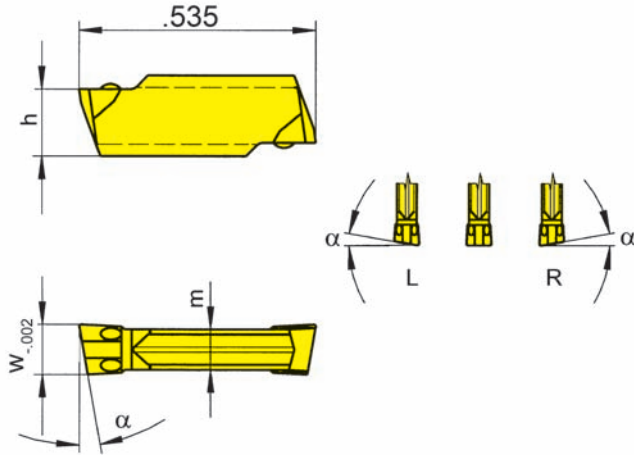
S223



Depth of groove up to .433"
 Width of groove .079 - .118"

for use with Toolholder

Type H223
 HU223



R = right hand version shown

L = left hand version

Part number	w	α	m	h	Size	Carbide grades			
						MG12	TN35	TI25	TF45
S223.0020.C0	.079	0°	.063	.144	01		▲	▲	▲
R/LS223.1520.C0		15°				▲/▲	▲/▲	▲/▲	
R/LS223.0420.C0		4°				▲/▲	▲/▲	▲/▲	
R/LS223.0820.C0		8°				▲/▲	▲/▲	▲/▲	
S223.0025.C0	.098	0°	.075	.148	02			▲	
R/LS223.0425.C0		4°				▲/▲	▲/		
R/LS223.0825.C0		8°				▲/▲	▲/	▲/▲	
S223.0030.C0	.118	0°	.094	.156	03			▲	▲
R/LS223.0430.C0		4°				▲/▲		▲/	
R/LS223.0830.C0		8°				▲/▲	▲/▲	▲/▲	
▲ on stock ▲ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet						P	●	●	●
						M	●	●	●
						K	●	●	●
						S	●	●	●
						N	●	●	●
						H			

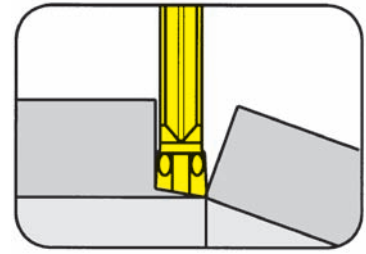
Dimensions in inch

State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

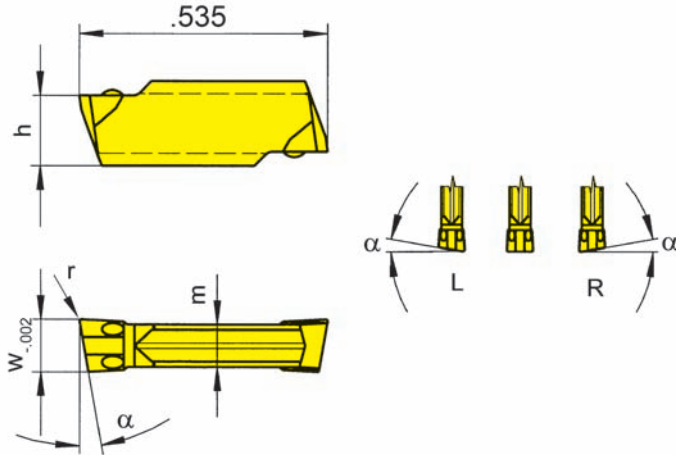
S223



Depth of groove up to .433"
 Width of groove .079 - .118"

for use with Toolholder

Type H223
 HU223



R = right hand version shown

L = left hand version

Part number	w	r	α	m	h	Size	Carbide grades			
							MG12	TN35	TI25	TF45
S223.0020.C1	.079	.006	0°	.063	.144	01		▲	▲	▲
R/LS223.1520.C1			15°				▲/▲	▲/▲	▲/▲	
R/LS223.0420.C1			4°				▲/▲	▲/	▲/	
R/LS223.0820.C1			8°				▲/▲	▲/	▲/▲	
S223.0025.C1	.098	.006	0°	.075	.148	02		▲	▲	▲
R/LS223.0425.C1			4°				/▲	▲/	▲/	
R/LS223.0825.C1			8°					▲/	▲/▲	
S223.0030.C1	.118	.006	0°	.094	.156	03		▲	▲	▲
R/LS223.0430.C1			4°				▲/▲	▲/	▲/	
R/LS223.0830.C1			8°				▲/	▲/	▲/	
▲ on stock ▲ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet							P	●	●	●
							M	●	●	●
							K	●	●	●
							S	●	●	●
							N	●	●	●
							H			

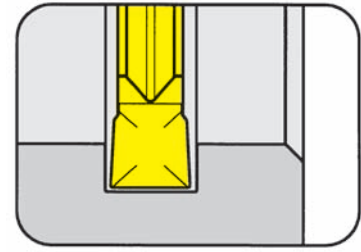
Dimensions in inch

State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

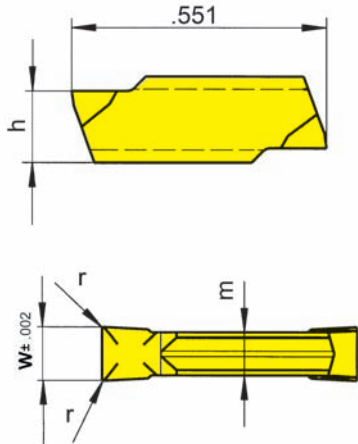
S223



Depth of groove up to .433"
Width of groove .079 - .118"

for use with Toolholder

Type H223
HU223



Part number	w	r	m	h	Size	Carbide grades				
						MG12	H54	TN35	Ti25	TF45
S223.0200.32	.079	.008	.063	.144	01	▲	▲	▲	▲	
S223.0250.32	.098	.008	.079	.148	02	▲	▲	▲	▲	
S223.0300.32	.118	.008	.094	.156	03	▲	▲	▲	▲	
						P	○	●	●	●
						M	●	●	●	●
						K	●	●	●	●
						S	●	●	●	●
						N	●	●	●	●
						H				

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

HORN - THE LEADERS IN GROOVING TECHNOLOGY



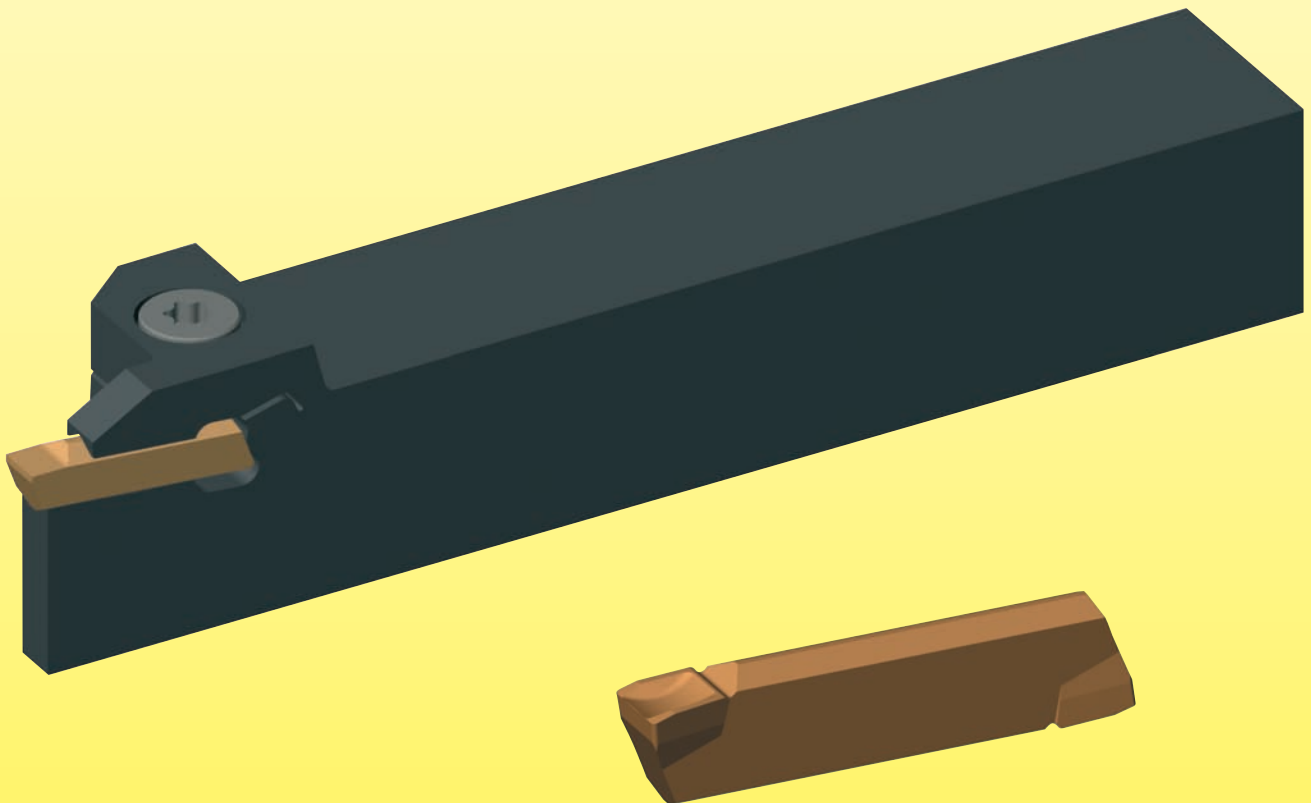
Thread whirling

HORN - INTELLIGENT TOOL DESIGN AT WORK.



For further information, please see HORN catalog "CARBIDE MILLING TOOLS".

**Indexable Insert Type S224
with chip forming
- precision sintered -**



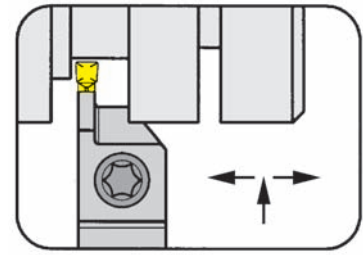
Width of groove .079 - .118"
Depth of groove up to .709"

TOOLHOLDER Type

HU224

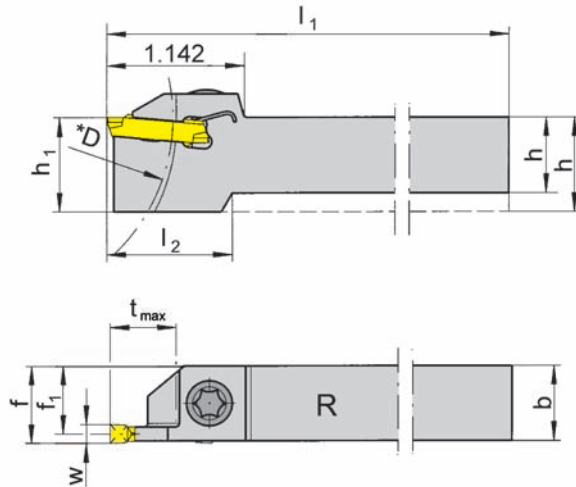
Depth of groove up to
Clamping range up to

.551"
.146"



for use with Indexable
insert

Type S224



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/LHU224.0625.01	.625	.625	5.000	.750		.595	1.000			
R/LHU224.0750.01	.750	.750	5.000	.750	f ₁ +w/2	.720	-	.551	01	.079 - .094
R/LHU224.1000.01	1.000	1.000	6.000	1.000		.970	-			
R/LHU224.0625.02	.625	.625	5.000	.750		.588	1.000			
R/LHU224.0750.02	.750	.750	5.000	.750	f ₁ +w/2	.713	-	.551	02	.094 - .110
R/LHU224.1000.02	1.000	1.000	6.000	1.000		.963	-			
R/LHU224.0625.03	.625	.625	5.000	.750		.580	1.000			
R/LHU224.0750.03	.750	.750	5.000	.750	f ₁ +w/2	.705	-	.551	03	.110 - .146
R/LHU224.1000.03	1.000	1.000	6.000	1.000		.955	-			

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

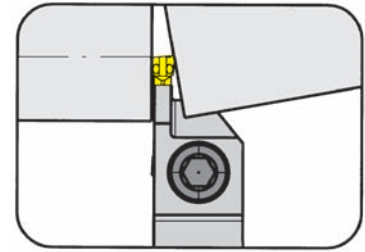
* t_{max} up to D = 3.150"

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LHU224....	6.23T25P	T25PQ

TOOLHOLDER Type

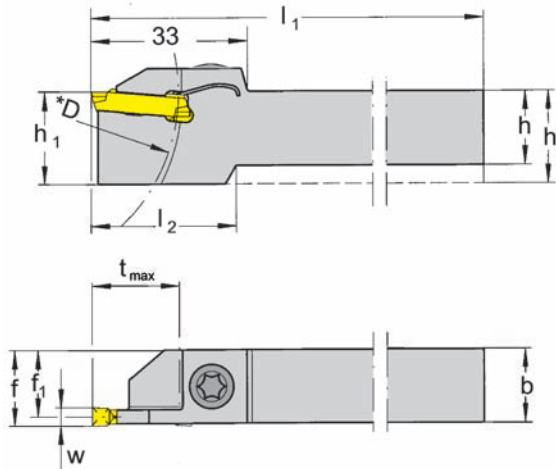
H224



Depth of groove up to .551" (14.0 mm)
Clamping range up to .146" (3.7 mm)

for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/LH224.1616.01	16	16	125	20		15.3	25			
R/LH224.2020.01	20	20	125	20	f ₁ +w/2	19.3	-	14	01	2.0 - 2.4
R/LH224.2525.01	25	25	150	25		24.3	-			
R/LH224.1616.02	16	16	125	20		15.1	25			
R/LH224.2020.02	20	20	125	20	f ₁ +w/2	19.1	-	14	02	2.4 - 2.8
R/LH224.2525.02	25	25	150	25		24.1	-			
R/LH224.1616.03	16	16	125	20		14.9	25			
R/LH224.2020.03	20	20	125	20	f ₁ +w/2	18.9	-	14	03	2.8 - 3.7
R/LH224.2525.03	25	25	150	25		23.9	-			

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

* t_{max} up to D = 80 mm

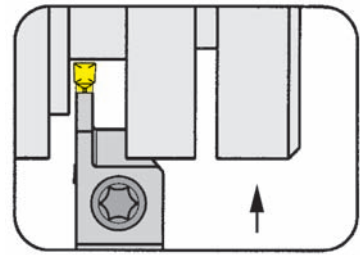
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH224....	6.23T25P	T25PQ

TOOLHOLDER Type

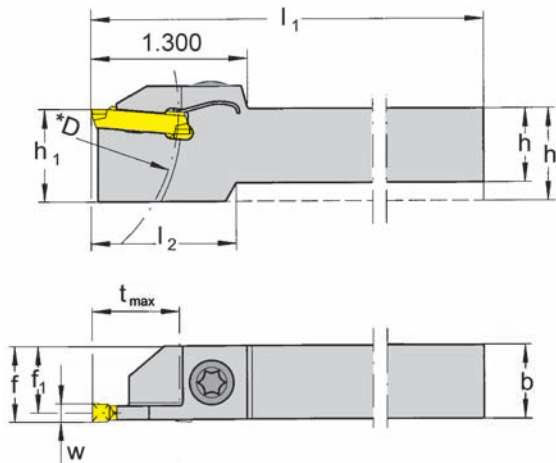
HU224

Depth of groove up to .709"
Clamping range up to .146"



for use with Indexable
insert

Type S224



R = right hand version shown

L = left hand version

Part number	h	b	f ₁	f	l ₂	t _{max}	Size	Clamping range
R/LHU224.0625.21	.625	.625	.595		1.125			
R/LHU224.0750.21	.750	.750	.720	f ₁ +w/2	-	.709	01	.079 - .094
R/LHU224.1000.21	1.000	1.000	.970		-			
R/LHU224.0625.22	.625	.625	.588		1.125			
R/LHU224.0750.22	.750	.750	.713	f ₁ +w/2	-	.709	02	.094 - .110
R/LHU224.1000.22	1.000	1.000	.963		-			
R/LHU224.0625.23	.625	.625	.580		1.125			
R/LHU224.0750.23	.750	.750	.705	f ₁ +w/2	-	.709	03	.110 - .146
R/LHU224.1000.23	1.000	1.000	.955		-			

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

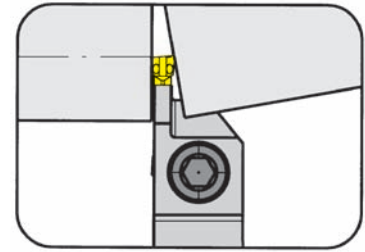
* t_{max} up to D = 3.150"

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LHU224....	6.23T25P	T25PQ

TOOLHOLDER Type

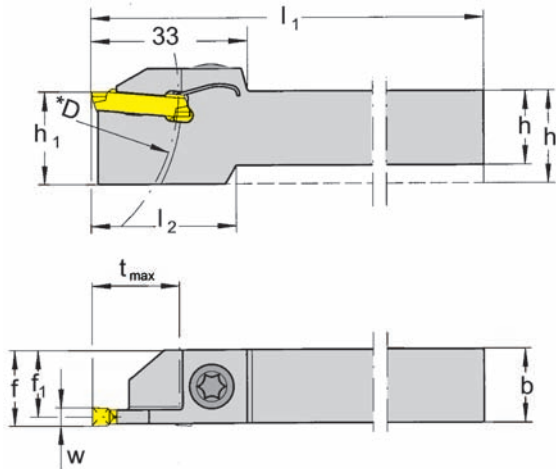
H224



Depth of groove up to .709" (18.0 mm)
Clamping range up to .146" (3.7 mm)

for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size	Clamping range
R/LH224.1616.21	16	16	125	20	15.3	f ₁ +w/2	30	18	01	2.0 - 2.4
R/LH224.2020.21	20	20	125	20	19.3		-			
R/LH224.2525.21	25	25	150	25	24.3		-			
R/LH224.1616.22	16	16	125	20	15.1	f ₁ +w/2	30	18	02	2.4 - 2.8
R/LH224.2020.22	20	20	125	20	19.1		-			
R/LH224.2525.22	25	25	150	25	24.1		-			
R/LH224.1608.23	16	8	100	20	6.9	f ₁ +w/2	-	18	03	2.8 - 3.7
R/LH224.1616.23	16	16	125	20	14.9		30			
R/LH224.2020.23	20	20	125	20	18.9		-			
R/LH224.2525.23	25	25	150	25	23.9		-			

State R or L version

w see indexable inserts

Dimensions in mm

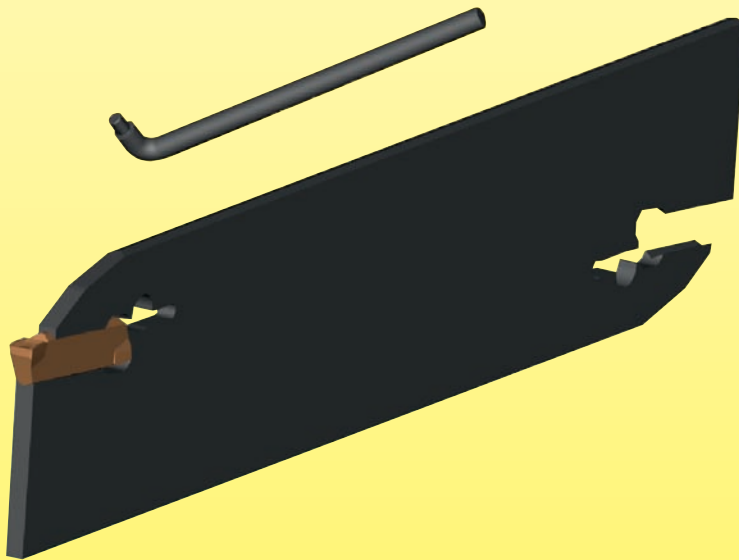
Further sizes upon request

* t_{max} up to D = 80 mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH224.1608.23	4.15T15P	T15PQ
R/LH224.....21/22/23	6.23T25P	T25PQ

CUTTER BODY Type H224 with self clamping, double seatings

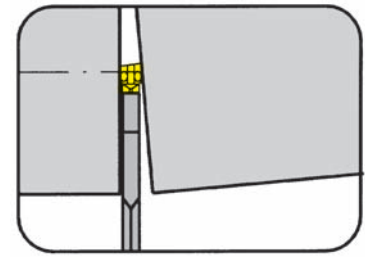


Width of groove	.118"
Depth of groove up to	.709"

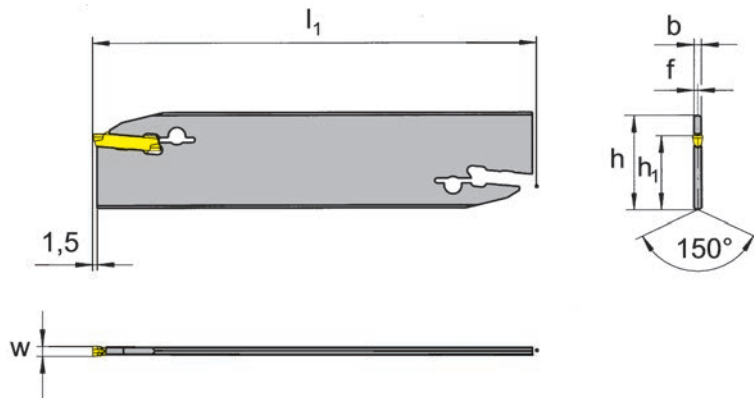
TOOLHOLDER Type

H224

with self clamping



Depth of groove up to .709" (18.0 mm)
Clamping range up to .146" (3.7 mm)



for use with Indexable insert

Type S224

Part number	h	b	l_1	h_1	f	t_{max}	Size	Clamping range
H224.2602.02	26	1.9	110	21.4	0.95	18	02	2.4 - 2.8
H224.2603.03	26	2.3	110	21.4	1.15	18	03	2.8 - 3.7
H224.3203.03	32	2.3	150	24.8	1.15	18	03	2.8 - 3.7

Further sizes upon request

w see indexable inserts

Dimensions in mm

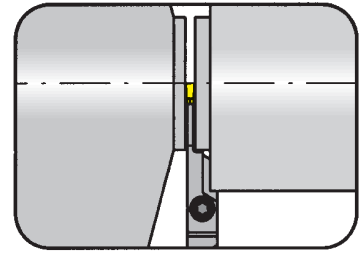
Spare parts

Toolholder	Wrench
H224....	P39L

TOOLHOLDER Type

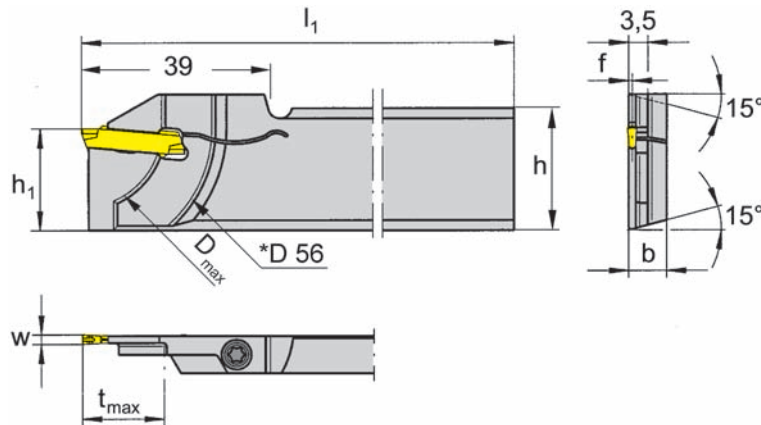
H224

reinforced version



Depth of groove up to .709" (18.0 mm)
Clamping range up to .146" (3.7 mm)

for machines TRAUB (TNK28/TNK36/TNL26)



for use with Indexable insert

Type S224

R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f	t_{max}	D_{max}	Size	Clamping range
R/LH224.2608.81	26	7.9	110	21.4	0.75	18	36	01	2.0 - 2.4
R/LH224.2608.82	26	7.9	110	21.4	0.95	18	36	02	2.4 - 2.8
R/LH224.2608.83	26	7.9	110	21.4	1.10	18	36	03	2.8 - 3.7

State R or L version

w see indexable inserts

Dimensions in mm

*D 56 = D_{max} of the subspindle

Further sizes upon request

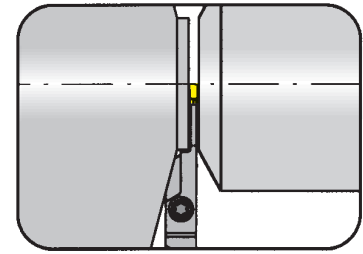
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH224.2608.8...	4.15T15P	T15PL

TOOLHOLDER Type

H224

reinforced version

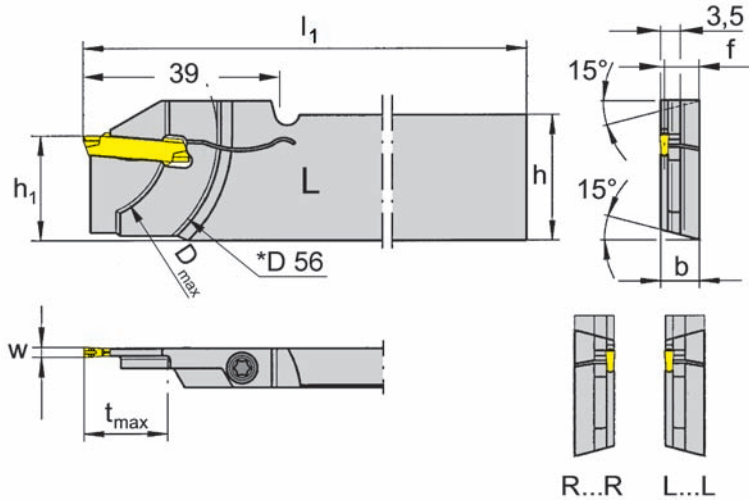


Depth of groove up to .827" (21.0 mm)
Clamping range up to .110" (2.8 mm)

for machines TRAUB (TNK28/TNK36/TNL26)

for use with Indexable insert

Type S224



L = left hand version shown

R = right hand version

Part number	h	b	l ₁	h ₁	f	t _{max}	D _{max}	Size	Clamping range
R/LH224.2608.81R/L	26	7.9	110	21.4	7.15	18	36	01	2.0 - 2.4
R/LH224.2608.82R/L	26	7.9	110	21.4	6.95	18	36	02	2.4 - 2.8
R/LH224.2608.83R/L	26	7.9	110	21.4	6.75	18	36	03	2.8 - 3.7
RH224.3208.83R	28	7.9	110	24.8	6.80	21	42		

State R or L version

w see indexable inserts

Dimensions in mm

*D 56 = D_{max} of the subspindle

* For specific clamping device on subspindle (e.g. HAINBUCH Axfixchuck)

Further sizes upon request

Spare parts

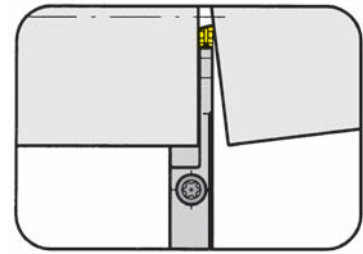
Toolholder	Screw	TORX PLUS® Wrench
R/LH224.2608.81R/L/82R/L/83R/L	4.15T15P	T15PL
RH224.3208.83R	5.13T20P	T20PQ

TOOLHOLDER Type

H224

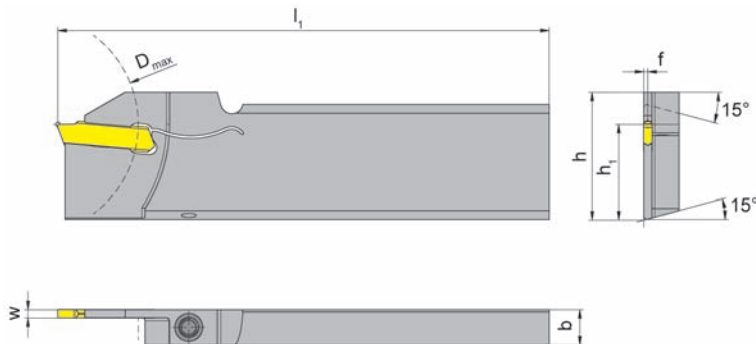
reinforced version

Depth of groove up to .709" (18.0 mm)
Clamping range up to .146" (3.7 mm)



for use with Indexable insert

Type S224



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	t _{max}	D _{max}	Size	Clamping range
R/LH224.2608.01 R/LH224.3208.01	26 32	7.9	110	21.4 24.8	0.7	18	50	01	2.0 - 2.4
R/LH224.2608.02 R/LH224.3208.02	26 32	7.9	110	21.4 24.8	0.9	18	50	02	2.4 - 2.8
R/LH224.2608.03 R/LH224.3208.03	26 32	7.9	110	21.4 24.8	1.1	18	50	03	2.8 - 3.7

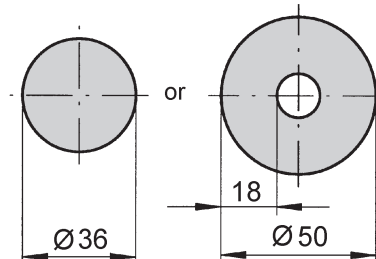
State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Parting off solid bars Parting off tubes



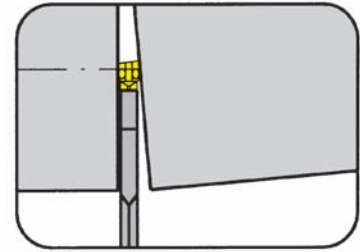
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH224....	4.20T15P	T15PL

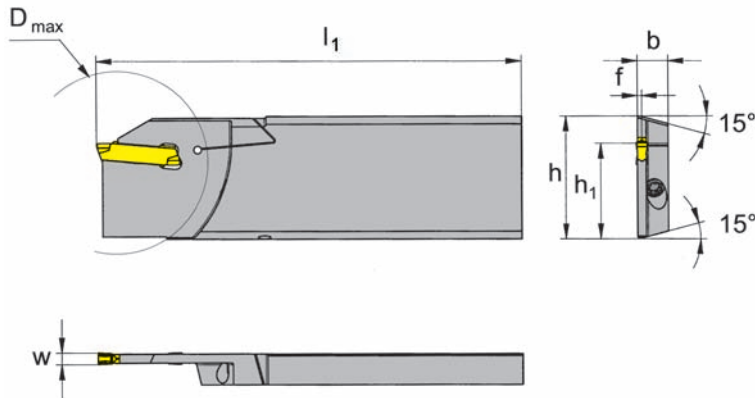
TOOLHOLDER Type

H224

with screwed clamping



Depth of groove up to .709" (18.0 mm)
Clamping range up to .146" (3.7 mm)



for use with Indexable insert

Type S224

R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f	t_{max}	D_{max}	Size	Clamping range
R/LH224.3208.93	32	8	112	24.8	1.15	18	50	03	2.8 - 3.7

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

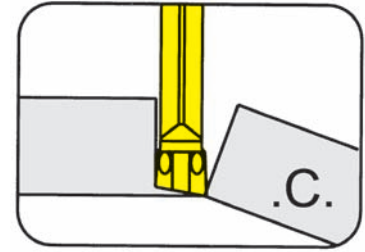
Spare parts

Toolholder	Screw	TORX PLUS® Wrench	Pin
R/LH224.3208.93	030.0413.T15P	T15PQ	020.0040.0999

INDEXABLE INSERT Type

S224

with chip forming

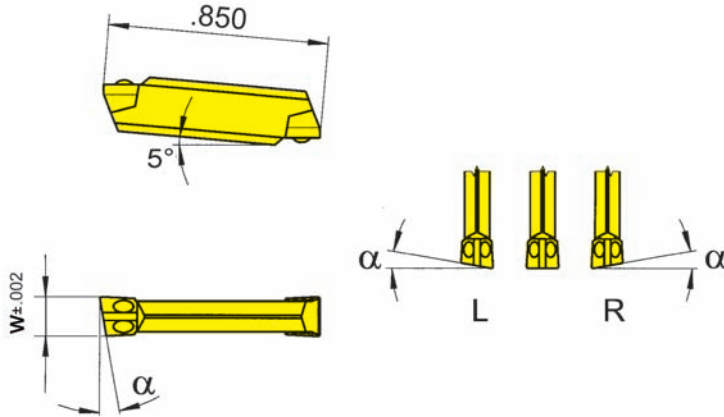


Depth of groove up to	.709"
Width of groove	.079 - .118"

precision sintered

for use with Toolholder

Type H224
HU224



R = right hand version shown

L = left hand version

Indexability length
± .002"

Part number	w	α	Size	TN35	TI25	TF45	TC92
S224.0020.C0	.079	0°	01	▲	▲	▲	
R/LS224.1520.C0		15°		▲/▲		▲/▲	Δ/Δ
R/LS224.0520.C0		5°		▲/▲		▲/▲	
R/LS224.0820.C0		8°		▲/▲		▲/▲	
S224.0025.C0	.098	0°	02	▲	▲	▲	
R/LS224.0525.C0		5°		▲/▲	▲/	▲/Δ	
R/LS224.0825.C0		8°		▲/▲		Δ/	
S224.0030.C0	.118	0°	03	▲	▲	▲	
R/LS224.0530.C0		5°		▲/▲		▲/▲	▲/Δ
R/LS224.0830.C0		8°		▲/▲		▲/▲	
▲ on stock Δ 4 weeks				P	•	•	•
• main recommendation				M	•	•	•
o alternative recommendation				K	•	•	•
■ uncoated grades				S	•	•	•
■ coated grades				N	•	•	•
■ brazed/Cermet				H	•	•	•

Carbide grades

Dimensions in inch

State R or L version

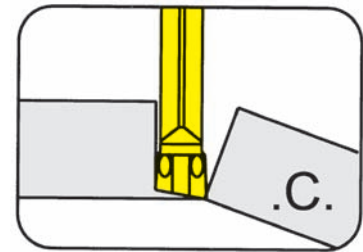
Further sizes upon request

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

S224

with chip forming

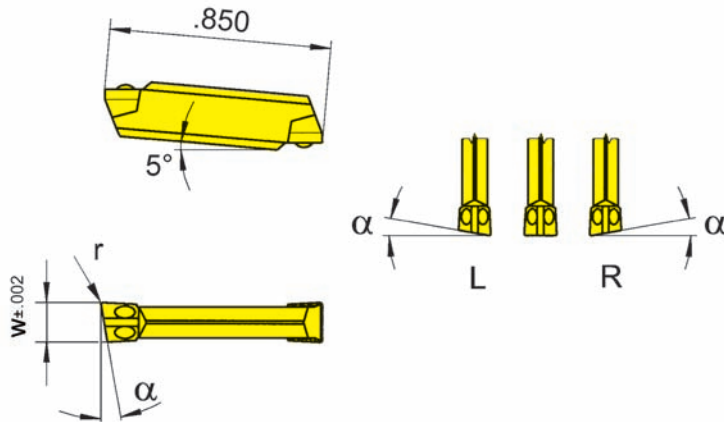


Depth of groove up to	.709"
Width of groove	.079 - .118"

precision sintered

for use with Toolholder

Type H224
HU224



R = right hand version shown

L = left hand version

Indexability length
± .002"

Part number	w	r	α	Size	TN35	TI25	TF45	TC92	
S224.0020.C1	.079	.006	0°	01	▲	▲	▲	▲	
R/LS224.1520.C1			15°		▲/▲		▲/▲		
R/LS224.0520.C1			5°		▲/▲		▲/▲		
R/LS224.0820.C1			8°				▲/▲		
S224.0025.C1	.098	.006	0°	02	▲	▲	▲		
R/LS224.0525.C1			5°		▲/▲		▲/▲	Δ/	
R/LS224.0825.C1			8°				▲/▲		
S224.0030.C1	.118	.006	0°	03	▲	▲	▲	▲	
R/LS224.0530.C1			5°		▲/▲		▲/▲		
R/LS224.0830.C1			8°				▲/▲		
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet					P	●	●	●	●
					M	●	●	●	●
					K	●	●	●	●
					S	●	●	●	●
					N	●	●	●	●
					H				

Carbide grades

Dimensions in inch

State R or L version

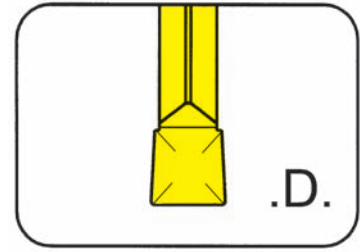
Further sizes upon request

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

S224

with chip forming

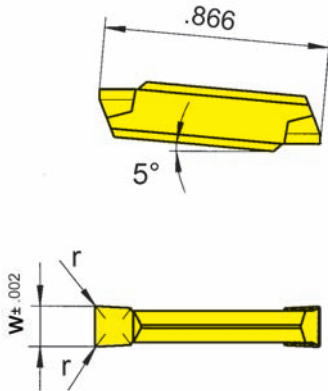


Depth of groove up to	.709"
Width of groove	.079 - .118"

D2 precision sintered / D2.G precision ground

for use with Toolholder

Type H224
HU224



Indexability length
± .002"

Part number	w	r	Size	K10	H54	TN32	TN35	TI22	TI25	TF45	TF46	TC92
S224.0200.D2.G S224.0200.D2	.079	.008	01		▲	▲	▲	▲	▲	▲	▲	
S224.0250.D2.G S224.0250.D2	.098	.008	02			▲	▲	▲	▲	▲	▲	
S224.0300.D2.G S224.0300.D2	.118	.008	03		▲	▲	▲	▲	▲	▲	▲	
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P	●	●	●	●	●	●	●	
				M	●		●	●	●	●	○	
				K			●	●	●	●	●	
				S			●	●	●	●	○	
				N			●	●	●	●	●	
				H								

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

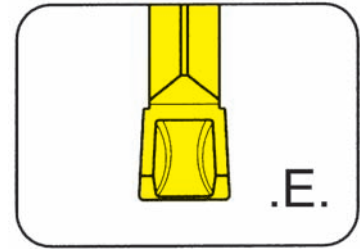
GROOVING and PARTING OFF



INDEXABLE INSERT Type

S224

with chip former

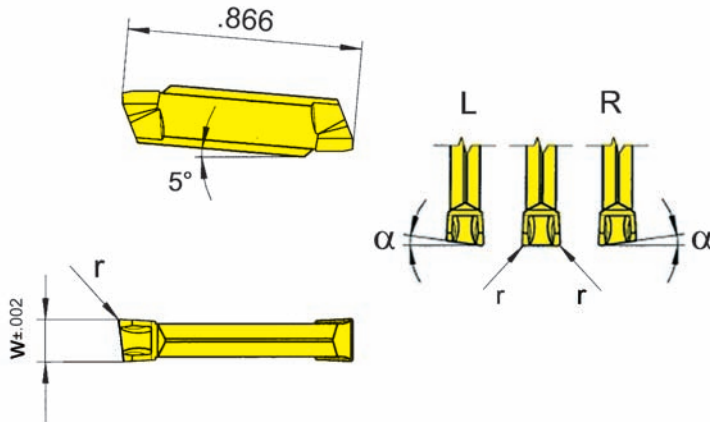


Depth of groove up to	.709"
Width of groove	.079 - .118"

precision sintered

for use with Toolholder

Type H224
HU224



R = right hand version shown

L = left hand version

Indexability length
± .002"

Part number	w	r	α	Size	Tl22	Tl25	TF43	TF45	TC92	TC93	AS62
S224.0200.E2 R/LS224.0520.E2	.079	.008	0° 5°	01			▲	▲	▲	▲	▲/▲
S224.0250.E2 R/LS224.0525.E2	.098	.008	0° 5°	02			▲	▲	▲		▲/▲
S224.0300.E2 S224.0300.E4 R/LS224.0530.E2	.118	.008 .016 .008	0° 0° 5°	03	▲	▲	▲	▲	▲	▲	▲

▲ on stock	Δ 4 weeks
● main recommendation	○ alternative recommendation
■ uncoated grades	■ coated grades
■ brazed/Cermet	

P	●	●	●	●	●	●
M		●		●		
K		●		●		
S		●		●		
N		●		●		
H						

Dimensions in inch

Carbide grades

State R or L version

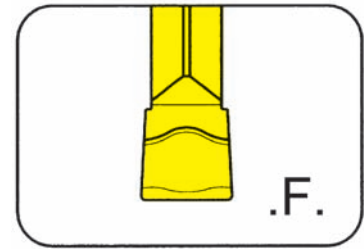
Further sizes upon request

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

S224

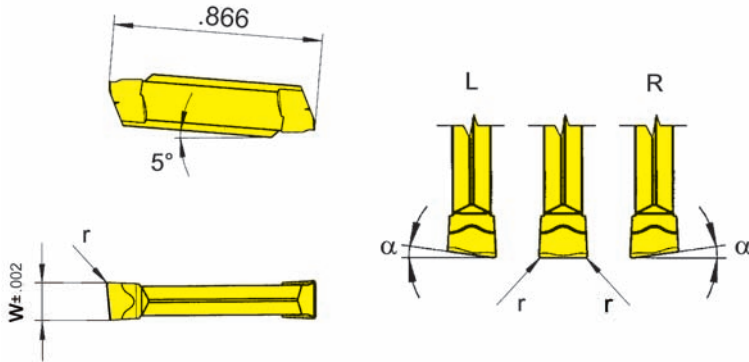
with chip forming



Depth of groove up to .709"
 Width of groove .079 - .118"

for use with Toolholder

Type H224
 HU224



R = right hand version shown

L = left hand version

Indexability length
 ± .002"

Part number	w	r	α	Size	T122	T125	TF42	TF43	TF45	TF46
S224.0200.F2 R/LS224.0520.F2	.079	.008	0° 5°	01	▲	▲		▲	▲	▲
S224.0250.F2 R/LS224.0525.F2	.098	.008	0° 5°	02	▲			▲	▲	▲
S224.0300.F2 R/LS224.0530.F2	.118	.008	0° 5°	03	▲/▲	▲		▲	▲	▲
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet					P	●	●	●	●	●
					M	●	●	●	○	○
					K	●	●	●	●	●
					S	●	●	●	○	○
					N	●	●	●	●	●
					H					

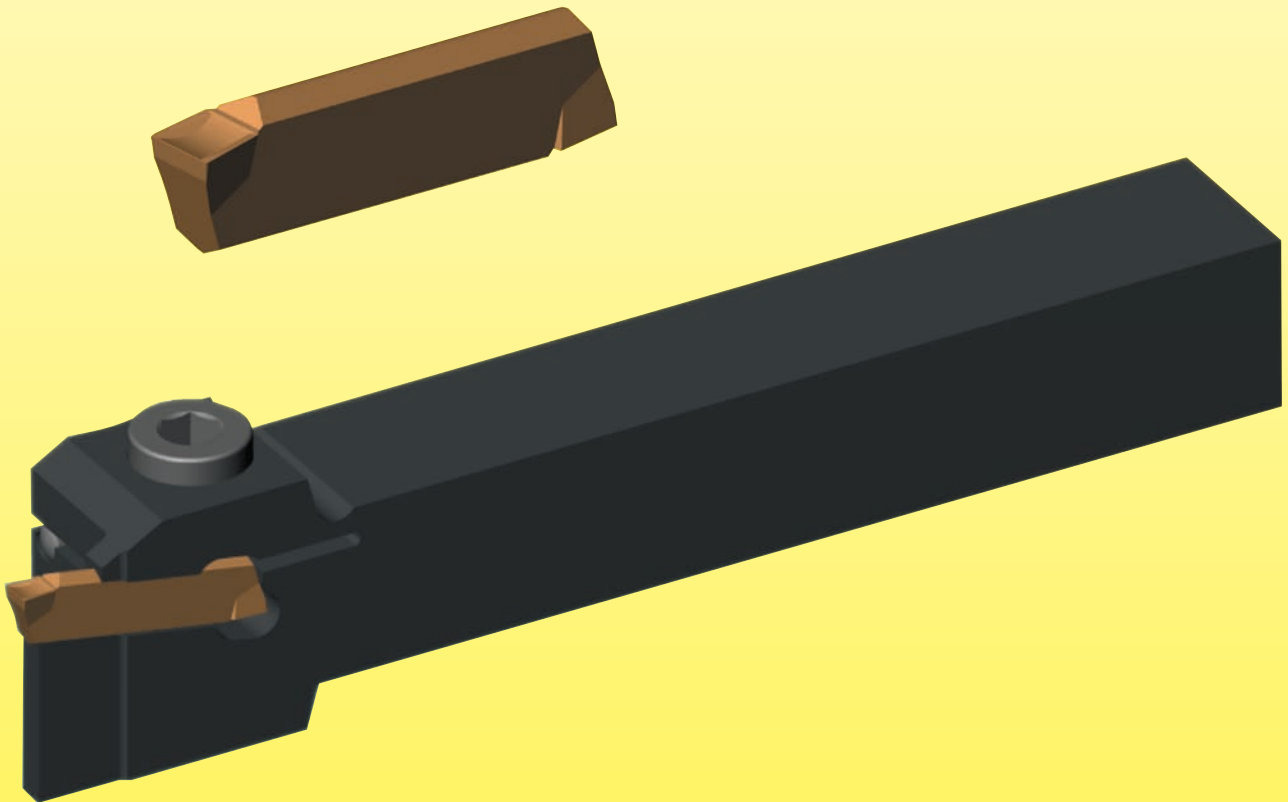
Dimensions in inch

State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

Carbide grades

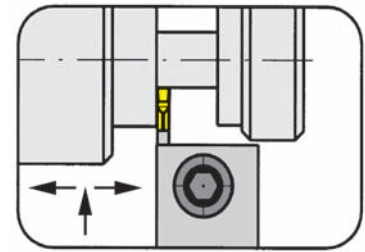
**Indexable Insert Type S229
with chip forming
- precision sintered -**



Width of groove .118 - .197"
Depth of groove up to .984"

TOOLHOLDER Type

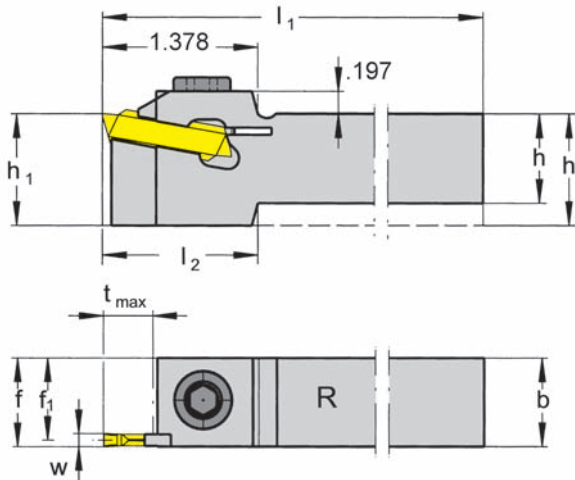
U210



Depth of groove up to **.433"**
Clamping range **.118 - .197"**

for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/LU210.0625.03	.625	.625	6.000	1.000	f ₁ +w/2	.568	1.750	.433	03	.118 - .157
R/LU210.0750.03	.750	.750	6.000	1.000		.693	1.375			
R/LU210.1000.03	1.000	1.000	6.000	1.000		.943	-			
R/LU210.1250.03	1.250	1.000	6.625	1.250	.943	-	-	-	-	-
R/LU210.0750.04	.750	.750	6.000	1.000	f ₁ +w/2	.659	1.375	.433	04	.157 - .197
R/LU210.1000.04	1.000	1.000	6.000	1.000		.909	-			
R/LU210.1250.04	1.250	1.000	6.625	1.250		.909	-			

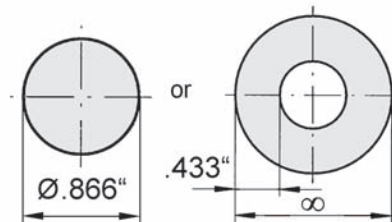
State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Parting off solid bars Parting off tubes

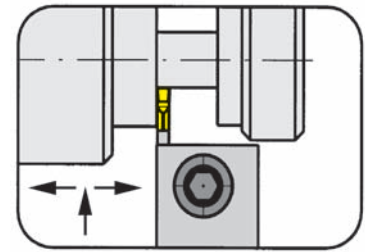


Spare parts

Toolholder	Screw	Wrench
R/LU210....	218.3	SW6DIN911

TOOLHOLDER Type

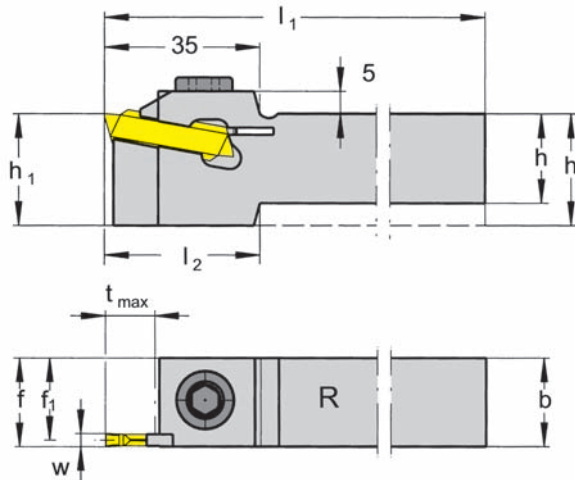
210



Depth of groove up to .433" (11.0 mm)
Clamping range .118 - .197" (3.0 - 5.0 mm)

for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f	f_1	l_2	t_{max}	Size	Clamping range
R/L210.1616.03	16	16	150	25	$f_1 + w/2$	14.55	45	11	03	3.0 - 4.0
R/L210.2020.03	20	20	150	25		18.55	35			
R/L210.2525.03	25	25	150	25		23.55	-			
R/L210.3225.03	32	25	170	32	23.55	-	-	-	-	-
R/L210.2020.04	20	20	150	25	$f_1 + w/2$	17.70	35	11	04	4.0 - 5.0
R/L210.2525.04	25	25	150	25		22.70	-			
R/L210.3225.04	32	25	170	32		22.70	-			

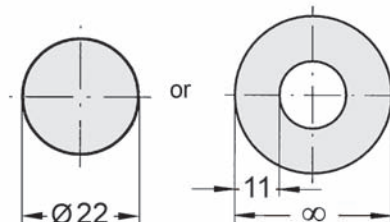
State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

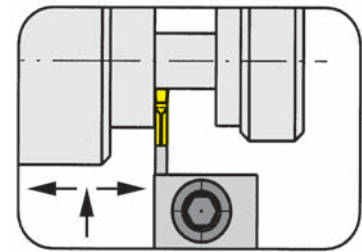
Parting off solid bars Parting off tubes



Spare parts

Toolholder	Screw	Wrench
R/L210....	218.3	SW6DIN911

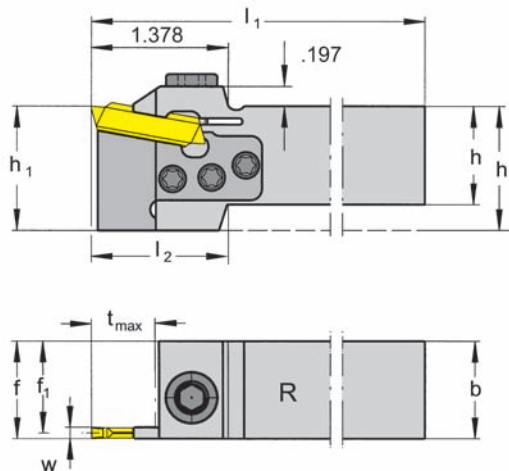
BASIC TOOLHOLDER Type **U218**



Depth of groove up to .709"
Width of groove .118 - .197"

for use with Indexable Insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/LU218.1000.K3	1.000	1.000	6.000	1.250	f ₁ +w/2	.943	2.000	.709	03	.118 - .157
R/LU218.1250.K3	1.250	1.000	6.625	1.250	f ₁ +w/2	.943	-	.709	03	.118 - .157
R/LU218.1000.K4	1.000	1.000	6.000	1.250	f ₁ +w/2	.909	2.000	.709	04	.157 - .197
R/LU218.1250.K4	1.250	1.000	6.625	1.250	f ₁ +w/2	.909	-	.709	04	.157 - .197

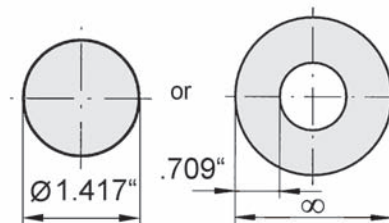
State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Parting off solid bars Parting off tubes



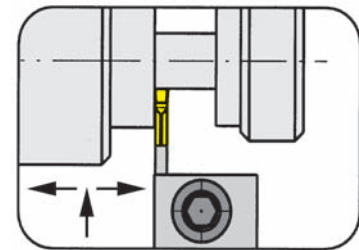
Spare parts

Basic toolholder	Cassette	Screw	Screw	Wrench	TORX PLUS® Wrench
R/LU218.1...K3	NK218.32.03	030.0518.T20P	218.3	SW6DIN911	T20PQ
R/LU218.1...K4	NK218.32.04	030.0518.T20P	218.3	SW6DIN911	T20PQ

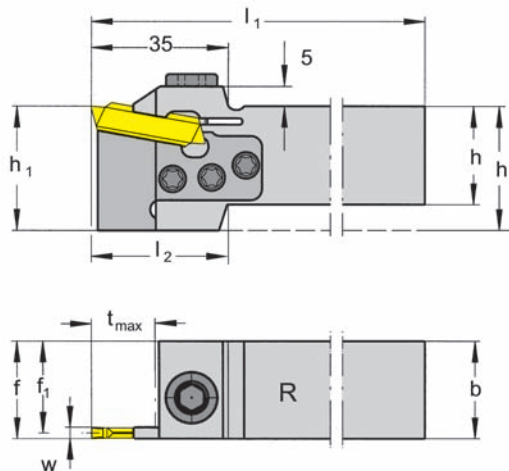
BASIC TOOLHOLDER Type

218

with changeable cassette



Depth of groove up to .709" (18.0 mm)
Width of groove .118 - .197" (3.0 - 5.0 mm)



for use with Indexable insert

Type 229
S229

R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/L218.2525.K3	25	25	150	32	f ₁ +w/2	23.55	35	18	03	3.0 - 4.0
R/L218.3225.K3	32	25	170	32	f ₁ +w/2	23.55	-	18	03	3.0 - 4.0
R/L218.2525.K4	25	25	150	32	f ₁ +w/2	22.70	35	18	04	4.0 - 5.0
R/L218.3225.K4	32	25	170	32	f ₁ +w/2	22.70	-	18	04	4.0 - 5.0

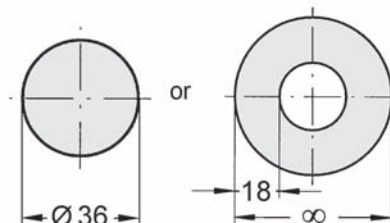
State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Parting off solid bars Parting off tubes

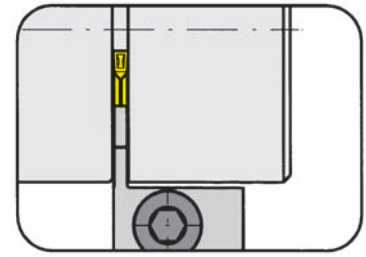


Spare parts

Basic toolholder	Cassette	Screw	Screw	Wrench	TORX PLUS® Wrench
R/L218....K3	NK218.32.03	030.0518.T20P	218.3	SW6DIN911	T20PQ
R/L218....K4	NK218.32.04	030.0518.T20P	218.3	SW6DIN911	T20PQ

TOOLHOLDER Type

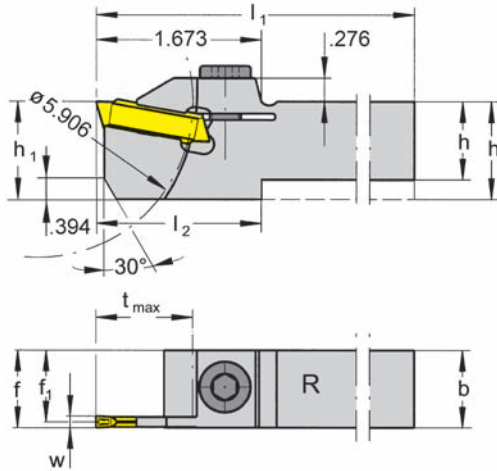
U226



Depth of groove up to 1.000"
Clamping range .118 - .197"

for use with Insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/LU226.0625.03	.625	.625	6.000			.568	2.000			
R/LU226.0750.03	.750	.750	6.000	1.250	f ₁ +w/2	.693	1.675	1.000	03	.118 - .157
R/LU226.1000.03	1.000	1.000	6.000			.943	1.675			
R/LU226.1250.03	1.250	1.000	6.625			.943	-			
R/LU226.0625.04	.625	.625	6.000			.534	2.000			
R/LU226.0750.04	.750	.750	6.000	1.250	f ₁ +w/2	.659	1.675	1.000	04	.157 - .197
R/LU226.1000.04	1.000	1.000	6.000			.909	1.675			
R/LU226.1250.04	1.250	1.000	6.625			.909	-			

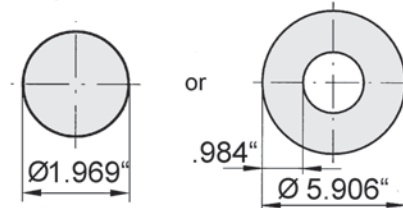
State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Parting off solid bars Parting off tubes

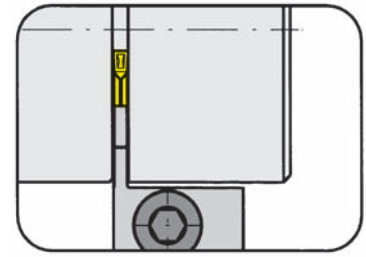


Spare parts

Toolholder	Screw	Wrench
R/LU226....	218.3	SW6DIN911

TOOLHOLDER Type

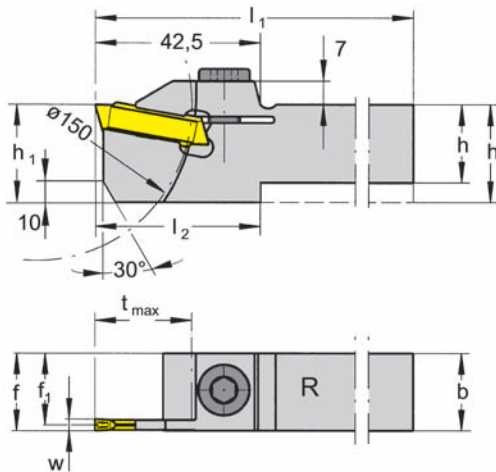
226



Depth of groove up to .984" (25.0 mm)
Clamping range .118 - .197" (3.0 - 5.0 mm)

for use with Indexable insert

Type 229
S229



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f	f ₁	l ₂	t _{max}	Size	Clamping range
R/L226.1616.03	16	16	150			18.55	52.5			
R/L226.2020.03	20	20	150	32	f ₁ +w/2	18.55	42.5	25	03	3.0 - 4.0
R/L226.2525.03	25	25	150			23.55	-			
R/L226.3225.03	32	25	170			23.55	-			
R/L226.1616.04	16	16	150			13.70	52.5			
R/L226.2020.04	20	20	150	32	f ₁ +w/2	17.70	42.5	25	04	4.0 - 5.0
R/L226.2525.04	25	25	150			22.70	-			
R/L226.3225.04	32	25	170			22.70	-			

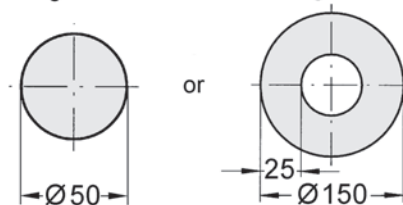
State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Parting off solid bars Parting off tubes



Spare parts

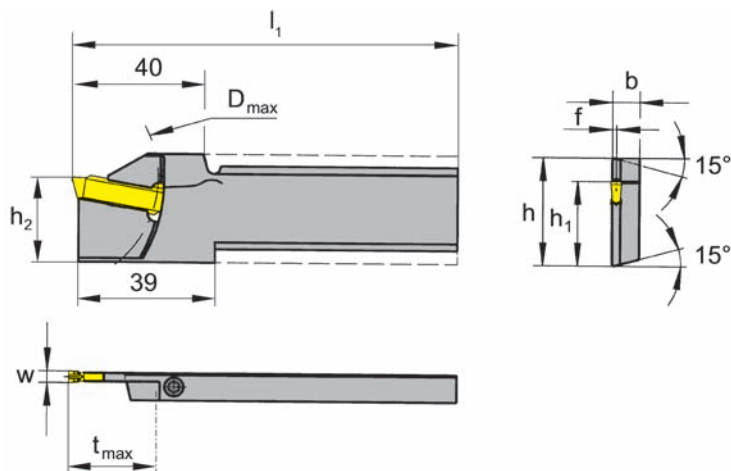
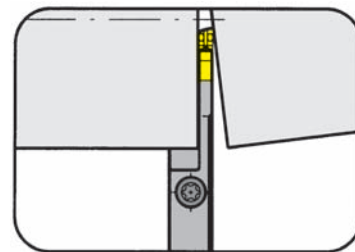
Toolholder	Screw	Wrench
R/L226....	218.3	SW6DIN911

TOOLHOLDER Type

226

reinforced version

Depth of groove up to .984" (25.0 mm)
Clamping range .118 - .157" (3.0 - 4.0 mm)



for use with Indexable insert

Type 229
S229

R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	h ₂	f	t _{max}	D _{max}	Size	Clamping range
R/L226.2608.03	26	8	110	21.4	24.8	1.2	25	150	03	3
R/L226.3208.03	32	8	110	24.8	24.8	1.2	25	150	03	3
R/L226.2608.04	26	8	110	21.4	24.8	1.7	25	150	04	4
R/L226.3208.04	32	8	110	24.8	24.8	1.7	25	150	04	4

State R or L version

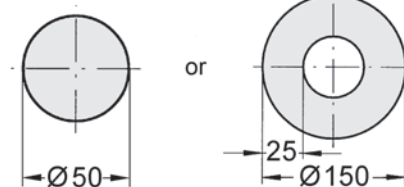
w see indexable inserts

Dimensions in mm

Further sizes upon request

Parting off solid bars

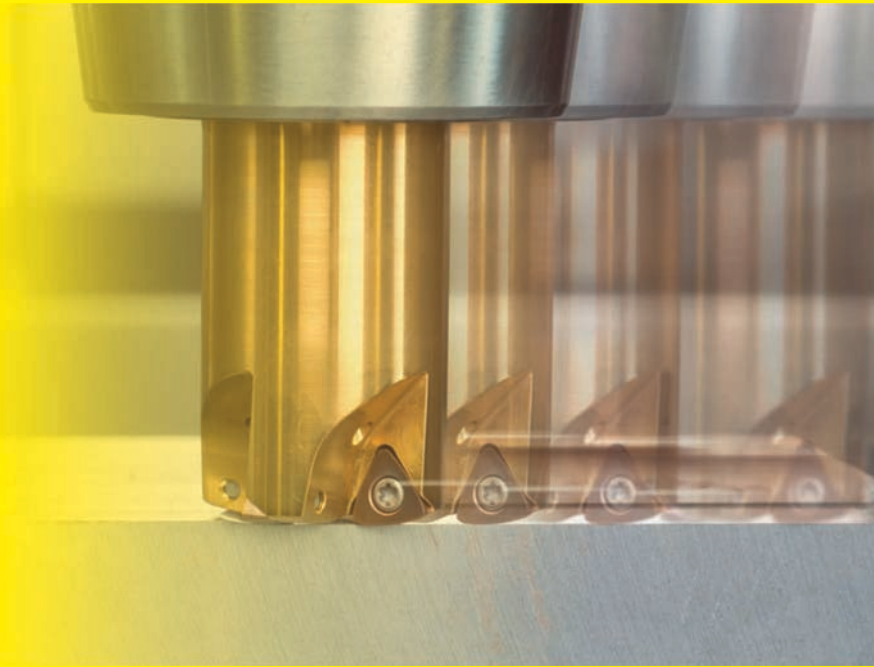
Parting off tubes



Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/L226....	4.15T15P	T15PQ

HORN - THE LEADERS IN GROOVING TECHNOLOGY



EXTREME FEED RATES

SYSTEM DAH

Remove material fast through high feed milling.
Not only for the stamping and mold industry.

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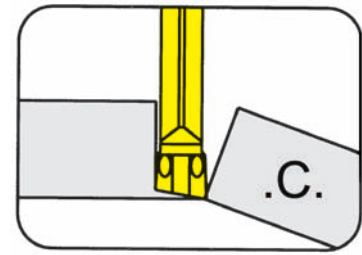


For further information, please see HORN catalog "CARBIDE MILLING TOOLS".

INDEXABLE INSERT Type

S229

with chip forming

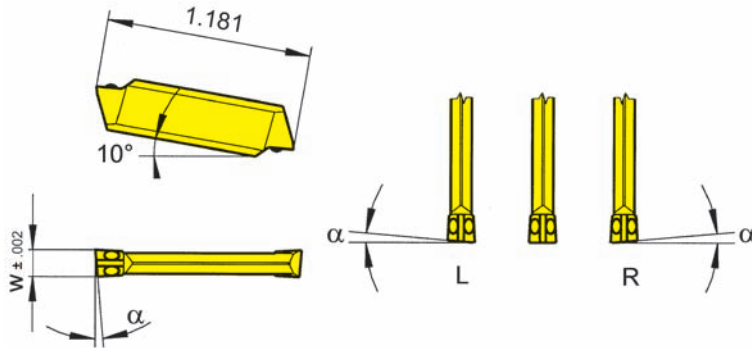


Depth of groove up to	1.000"
Width of groove	.118 - .157"

precision sintered

for use with Toolholder

- Type
- 210
 - 218
 - 226
 - U210
 - U218
 - U226



R = right hand version shown

L = left hand version

Indexability length
± .002"

Part number	w	α	Size	Carbide grades						
				TN32	TN35	T122	T125	TA45	TF45	TC92
R/LS229.0530.C0	.118	5°	03		▲/▲		▲/▲		▲/▲	
R/LS229.0830.C0		8°		▲/▲		▲/▲		▲/▲	▲/▲	
S229.0030.C0		0°		▲		▲		▲		
R/LS229.0540.C0	.157	5°	03 / 04		▲/▲		Δ/			
R/LS229.0840.C0		8°		▲/Δ		▲/			Δ/	
S229.0040.C0		0°		▲		▲				
				P	•		•		•	•
				M	•		•		•	•
				K	•		•		•	•
				S	•		•		•	•
				N	•		•		•	•
				H						

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

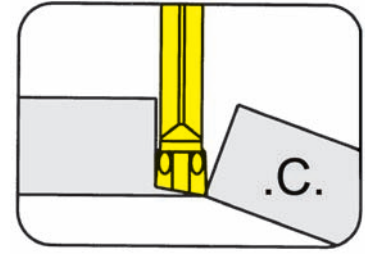
PARTING OFF



INDEXABLE INSERT Type

S229

with chip forming

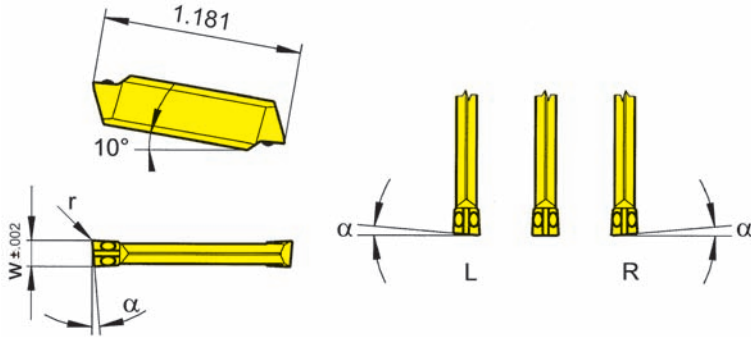


Depth of groove up to	1.000"
Width of groove	.118 - .157"

precision sintered

for use with Toolholder

- Type
- 210
 - 218
 - 226
 - U210
 - U218
 - U226



R = right hand version shown

L = left hand version

Indexability length
± .002"

Part number	w	r	α	Size	TN32	TN35	TI22	TI25	TF45	TC92
					R/LS229.0530.C1 R/LS229.0830.C1 S229.0030.C1	.118	.006	5° 8° 0°	03	
R/LS229.0540.C1 R/LS229.0840.C1 S229.0040.C1	.157	.006	5° 8° 0°	03 / 04		▲/▲ ▲/▲		▲/▲ ▲/▲	▲	▲/▲ ▲
▲ on stock Δ 4 weeks					P	•	•	•	•	•
• main recommendation					M	•	•	•	•	•
o alternative recommendation					K	•	•	•	•	•
■ uncoated grades					S	•	•	•	•	•
■ coated grades					N	•	•	•	•	•
■ brazed/Cermet					H	•	•	•	•	•

Dimensions in inch

Carbide grades

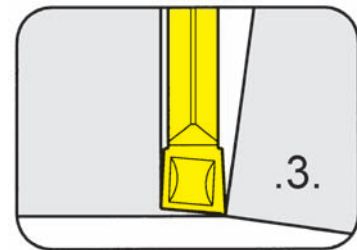
State R or L version

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

229/S229

with chip former

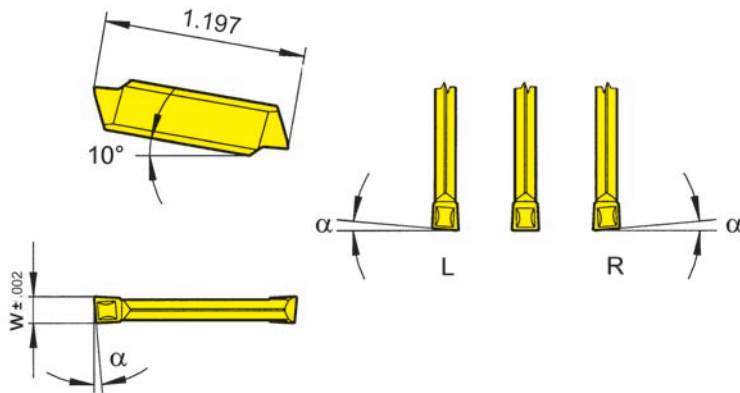


Depth of groove up to	1.000"
Width of groove	.118 - .157"

precision sintered

for use with Toolholder

- Type 210
218
226
U210
U218
U226



R = right hand version shown

L = left hand version

Indexability length
± .002"

Part number	w	α	Size	Carbide grades												
				MG12	P20	H54	TN32	TN35	T122	T125	TA45	TF45	TC92	AL96	AS62	
R/L229.5300.31	.118	5°	03	▲/▲			▲/▲	▲/▲		▲/▲			▲/▲	▲/▲	▲/▲	▲/▲
R/LS229.0530.32		5°		▲/▲				▲/▲	▲/▲		▲/▲		▲/▲	▲/▲	▲/▲	▲/▲
S229.0300.32		0°		▲		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
R/LS229.0540.32	.157	5°	03 / 04				▲/▲			▲/▲			▲/▲		▲/▲	▲/▲
S229.0400.32		0°				▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
				P	o	•	•	•	•	•	•	•	•	•	•	•
				M	•	•	•	•	•	•	•	•	•	•	•	•
				K	•	•	•	•	•	•	•	•	•	•	•	•
				S	•	•	•	•	•	•	•	•	•	•	•	•
				N	•	•	•	•	•	•	•	•	•	•	•	•
				H												

Dimensions in inch

Carbide grades

State R or L version

Note:

R/L229.5300.31 **precision ground**, length 1.181"

Indexable inserts can be used in **right and left hand** toolholders.

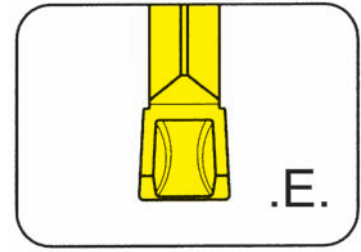
GROOVING and PARTING OFF



INDEXABLE INSERT Type

S229

with chip former

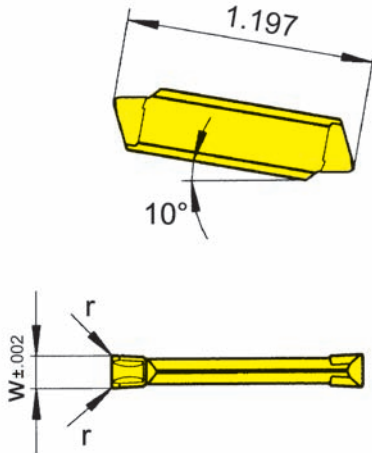


Depth of groove up to	1.000"
Width of groove	.118 - .157"

precision sintered

for use with Toolholder

- Type 210
218
226
U210
U218
U226



Indexability length
± .002"

Part number	w	r	Size	Carbide grades									
				MG12	P20	TN32	TN35	T122	T125	TF45	TF46	TC92	AS62
S229.0300.E2	.118	.008	03						▲	▲	▲	▲	▲
S229.0300.E4		.016								▲	▲	▲	▲
S229.0400.E2	.157	.008	03 / 04						▲	▲			▲
S229.0400.E4		.016								▲			
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P					●	●	●	●	●
				M					●	●	○		
				K					●	●	●		
				S					●	●	○		
				N					●	●	●		
				H									

Dimensions in inch

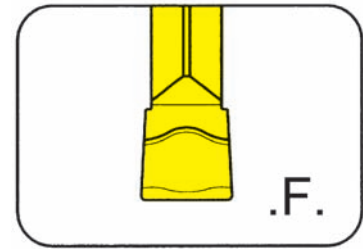
Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

INDEXABLE INSERT Type

S229

with chip forming

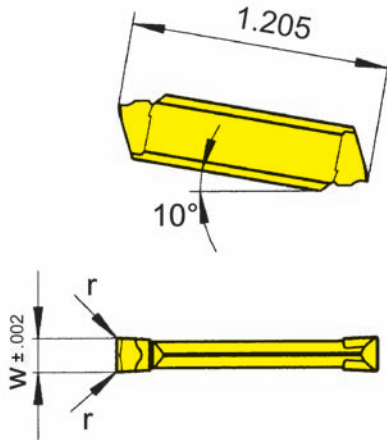


Depth of groove up to	1.000"
Width of groove	.118 - .157"

precision sintered

for use with Toolholder

- Type 210
218
226
U210
U218
U226



Indexability length
± .002"

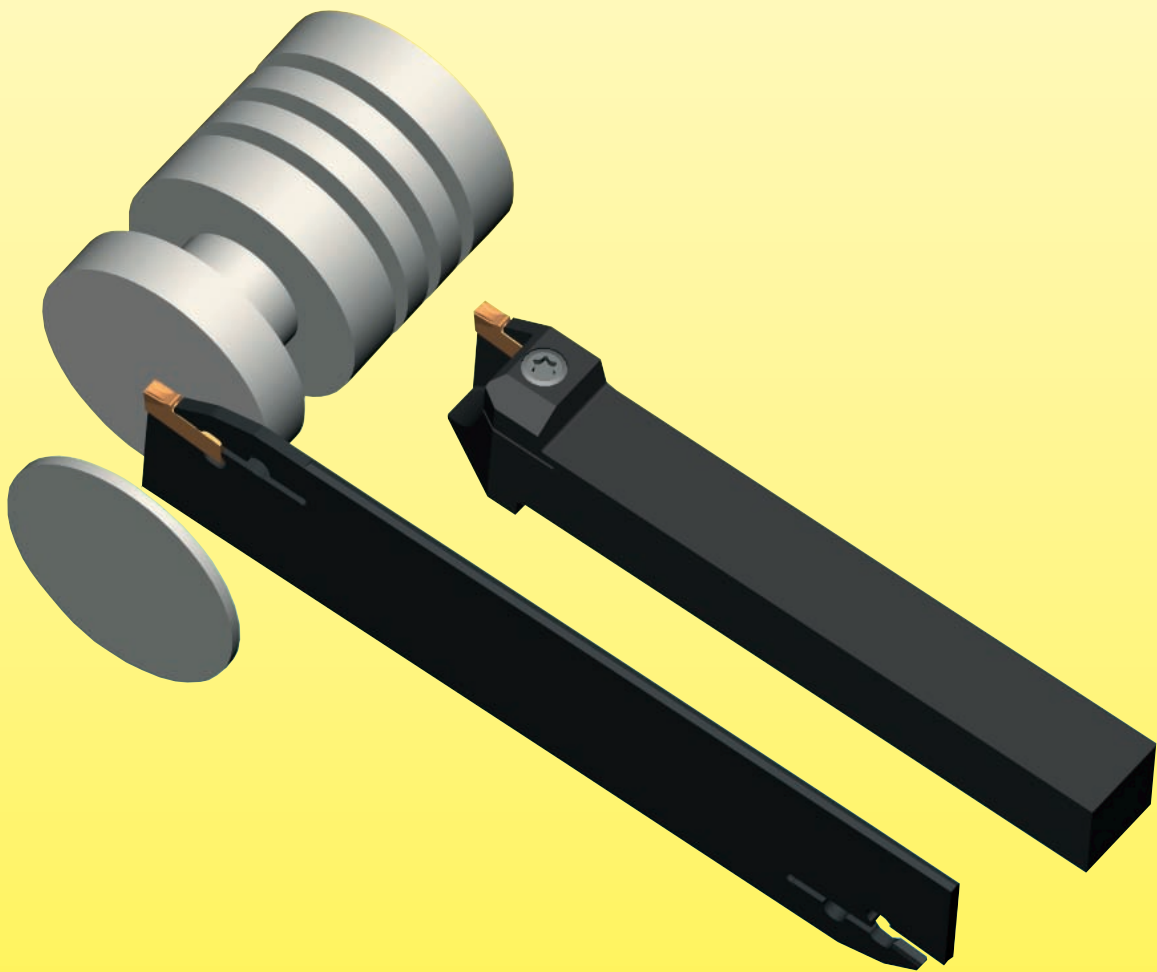
Part number	w	r	Size	K10	MG12	P20	T122	T125	TF43	TF45	TF46	AS62
S229.0300.F2	.118	.008	03				▲		▲	▲	▲	
S229.0300.F4		.016										
S229.0400.F2	.157	.008	03 / 04							▲	▲	
S229.0400.F4		.016										
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P			●		●	●	●	
				M						●	○	
				K						●	●	
				S						●	○	
				N						●	●	
				H								

Dimensions in inch

Carbide grades

Indexable inserts can be used in **right and left hand** toolholders.

CUTTER BODY Type H100 - with screwed or self clamping -



Width of groove .079 - .197"
Depth of groove up to 2.165"

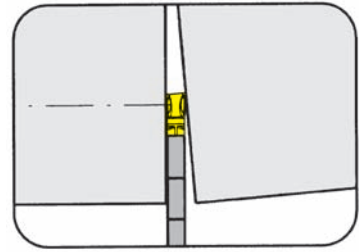
TOOLHOLDER Type

H100

with self clamping

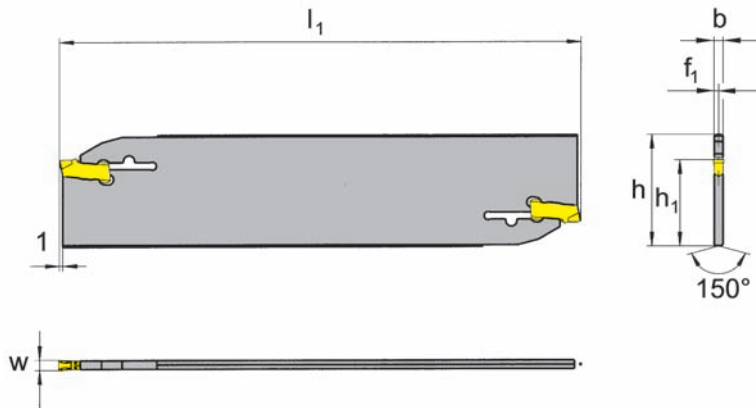
Depth of groove up to
Width of groove

2.165" (55.0 mm)
.079 - .197" (2.0 - 5.0 mm)



for use with Insert

Type S100



Part number	h	b	l_1	h_1	f_1	t_{max}	D_{max}	Size
H100.2601.01	26	1.5	110	21.4	0.75	25.0	50	01
H100.3201.01	32		150	24.8				
H100.2602.02	26	1.9	110	21.4	0.95	37.5	75	02
H100.3202.02	32		150	24.8				
H100.2603.03	26	2.3	110	21.4	1.15	37.5	75	03
H100.3203.03	32		150	24.8				
H100.2604.04	26	3.1	110	21.8	1.65	40.0	80	04
H100.3204.04	32		160	24.8				
H100.3205.05	32	3.9	160	24.8	2.00	55.0	110	05

Further sizes upon request

w see inserts

Dimensions in mm

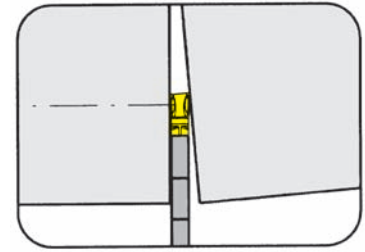
Spare parts

Toolholder	Wrench
H100....	P39L

TOOLHOLDER Type

H100

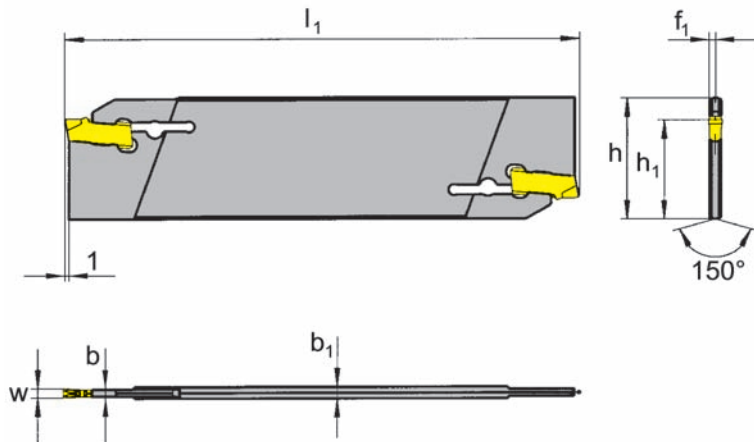
with self clamping



Depth of groove up to .984" (25.0 mm)
Width of groove .079 - .098" (2.0 - 2.5 mm)

for use with Insert

Type S100



Part number	h	b	l ₁	h ₁	b ₁	f ₁	t _{max}	D _{max}	Size
H100.2603.01	26	1.5	110	21.4	2.3	1.15	21	42	01
H100.3203.01	32		150	24.8			25	50	
H100.2603.02	26	1.9	110	21.4	2.3	1.15	21	42	02
H100.3203.02	32		150	24.8			25	50	

Further sizes upon request

w see inserts

Dimensions in mm

Spare parts

Toolholder	Wrench
H100....	P39L

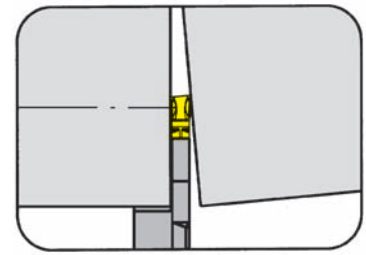
TOOLHOLDER Type

H100

with self clamping

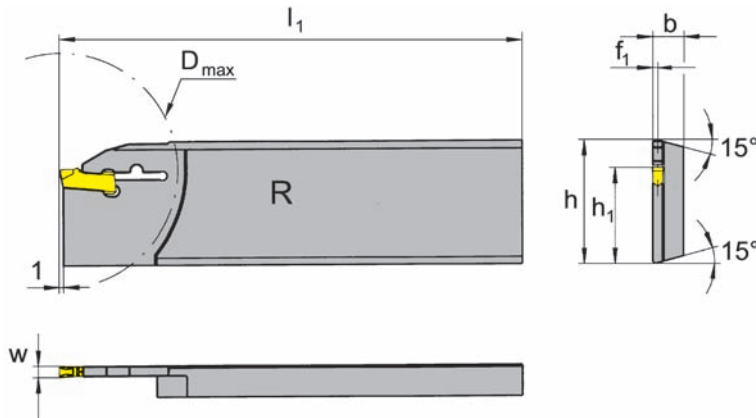
Depth of groove up to
Width of groove

1.280" (32.5 mm)
.079 - .157" (2.0 - 4.0 mm)



for use with Insert

Type S100



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f_1	t_{max}	D_{max}	Size
R/LH100.2608.31	26	7.9	110	21.4	0.75	21.0	42	01
R/LH100.3208.31	32		112	24.8		25.0	50	
R/LH100.2608.32	26	7.9	110	21.4	0.95	25.0	50	02
R/LH100.3208.32	32		112	24.8		32.5	65	
R/LH100.2608.33	26	7.9	110	21.4	1.15	25.0	50	03
R/LH100.3208.33	32		112	24.8		32.5	65	
R/LH100.2608.34	26	7.9	110	21.4	1.55	25.0	50	04
R/LH100.3208.34	32		112	24.8		32.5	65	

State R or L version

w see inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Wrench
R/LH100....	P39L

Recommended for Traub machines type:

R/L100.2608.31-34**R/LH100.3208.31-34**

TNC 30
TNM 28
TNS 26
TNS 30/42
TNA 300
TNK 28/36
TNL 26

TNC 42/65
TNM 42/65
TNS 65
TNS 60
TNA 400
TNA 300

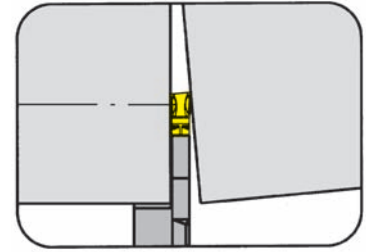
GROOVING and PARTING OFF



TOOLHOLDER Type

H100

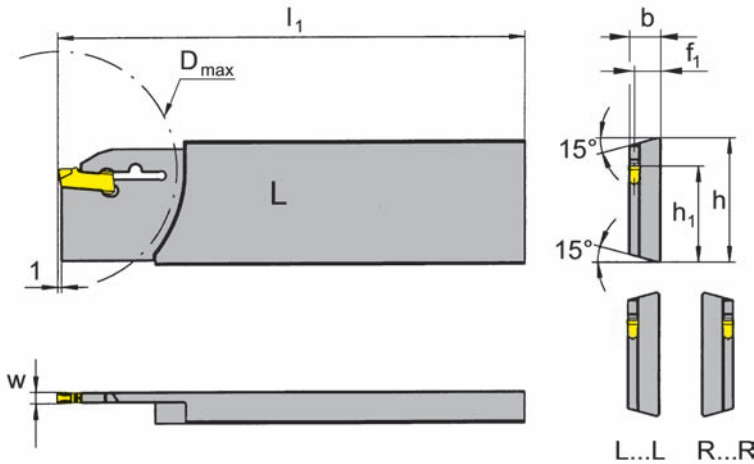
with self clamping



Depth of groove up to 1.280" (32.5 mm)
Width of groove .079 - .157" (2.0 - 4.0 mm)

for use with Insert

Type S100



L = left hand version shown

R = right hand version

Part number	h	b	l ₁	h ₁	f ₁	t _{max}	D _{max}	Size
R/LH100.2608.31R/L	26	7.9	110	21.4	7.15	21.0	42	01
R/LH100.3208.31R/L	32		112	24.8		25.0	50	
R/LH100.2608.32R/L	26	7.9	110	21.4	6.95	25.0	50	02
R/LH100.3208.32R/L	32		112	24.8		32.5	65	
R/LH100.2608.33R/L	26	7.9	110	21.4	6.75	25.0	50	03
R/LH100.3208.33R/L	32		112	24.8		32.5	65	
R/LH100.2608.34R/L	26	7.9	110	21.4	6.35	25.0	50	04
R/LH100.3208.34R/L	32		112	24.8		32.5	65	

State R or L version

w see inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Wrench
R/LH100....	P39L

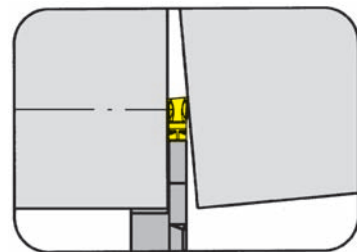
TOOLHOLDER Type

H100

with self clamping

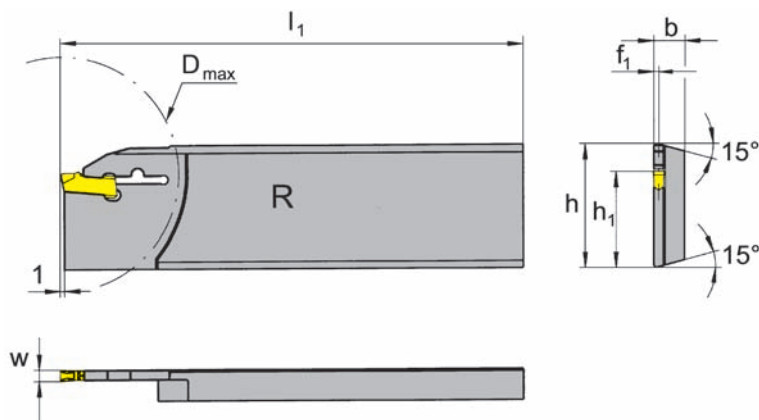
Depth of groove up to
Width of groove

1.614" (41.0 mm)
.157" (4.0 mm)



for use with Insert

Type S100



R = right hand version

Part number	h	b	l_1	h_1	f_1	t_{max}	D_{max}	Size
RH100.3208.2.44	32	7.9	160	24.8	1.55	41	80	04
RH100.3208.44			130					

Further sizes upon request

w see inserts

Dimensions in mm

Spare parts

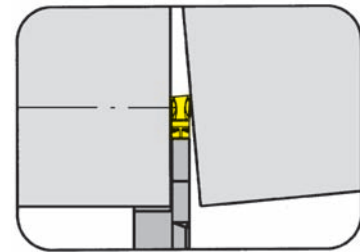
Toolholder	Wrench
RH100.3208....	P39L

P78

TOOLHOLDER Type

H100

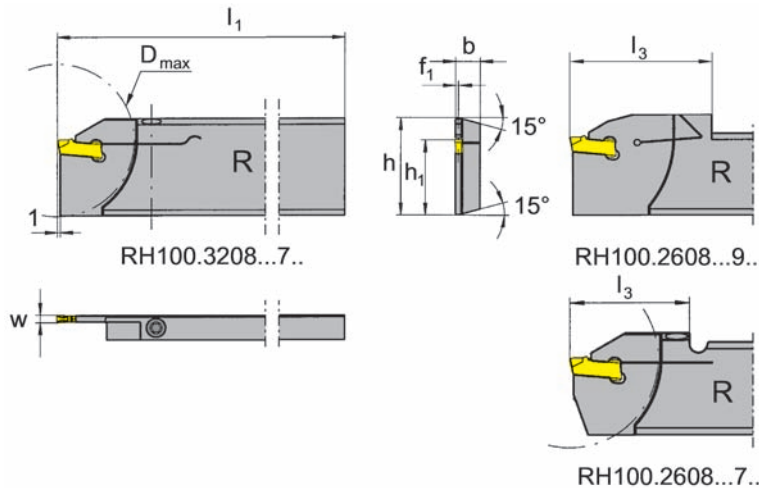
with screwed clamping



Depth of groove up to 1.280" (32.5 mm)
Width of groove .079 - .118" (2.0 - 3.0 mm)

for use with Insert

Type S100



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f_1	t_{max}	D_{max}	l_3	Size
R/LH100.2608.71	26	7.9	110	21.4	0.75	25.0	50	33.8	01
R/LH100.3208.71	32		112	24.8					
R/LH100.2608.72	26	7.9	110	21.4	0.95	25.0	50	33.8	02
R/LH100.3208.72	32		112	24.8					
R/LH100.2608.93	26	8.0	112	21.4	1.15	25.0	50	40.0	03
R/LH100.3208.93	32									112	24.8

State R or L version

w see inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS®-Wrench	Pin
R/LH100....71/72	4.15T15P	T15PQ	020.0040.0999
R/LH100....93	030.0413.T15P	T15PQ	

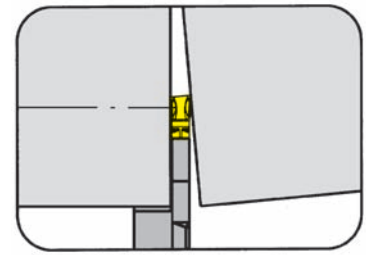
TOOLHOLDER Type

H100

with screwed clamping

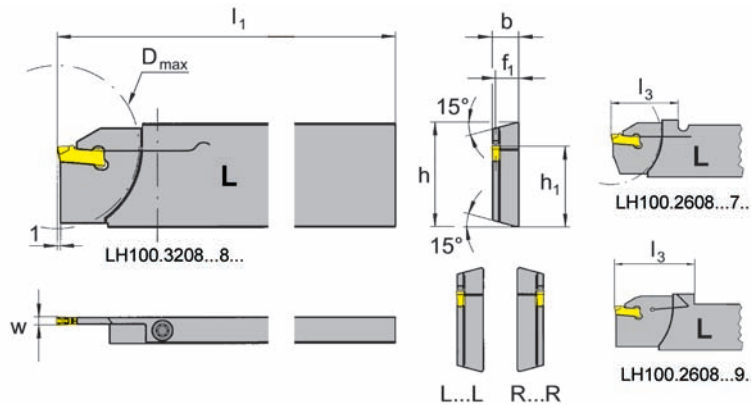
Depth of groove up to
Width of groove

1.280" (32.5 mm)
.079 - .118" (2.0 - 3.0 mm)



for use with Insert

Type S100



L = left hand version shown

R = right hand version

Part number	h	b	l ₁	h ₁	f ₁	t _{max}	D _{max}	l ₃	Size
R/LH100.2608.71R/L R/LH100.3208.71R/L	26 32	7.9	110 112	21.4 24.8	7.15	25.0	50	33.8	01
R/LH100.2608.72R/L R/LH100.3208.72R/L	26 32	7.9	110 112	21.4 24.8	6.95	25.0	50	33.8	02
R/LH100.2608.93R/L R/LH100.3208.93R/L	26 32	8.0	115	21.4 24.8	6.85	25.0 32.5	50 65	40.0 42.0	03

State R or L version

w see inserts

Dimensions in mm

Further sizes upon request

Spare parts

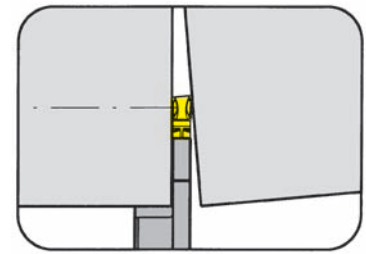
Toolholder	Screw	TORX PLUS®-Wrench	Pin
R/LH100....71R/L/72R/L R/LH100....93R/L	4.15T15P 030.0413.T15P	T15PQ T15PQ	020.0040.0999

TOOLHOLDER Type

H100

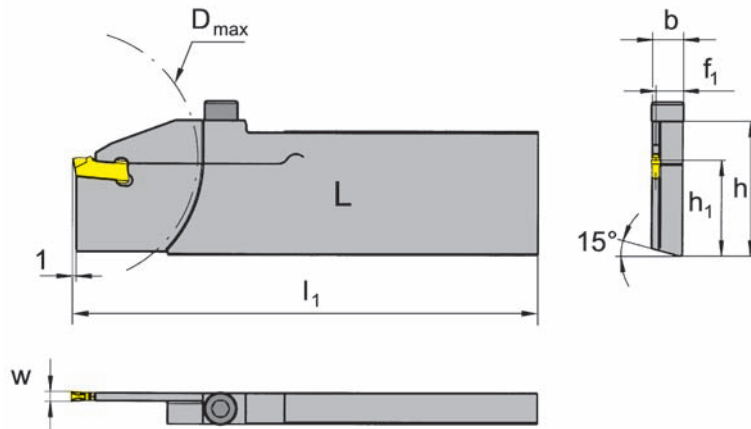
Depth of groove up to 1.280" (32.5 mm)
 Width of groove .118 - .157" (3.0 - 4.0 mm)

for machines TRAUB (TNX65)



for use with Insert

Type S100



L = left hand version shown

R = right hand version

Part number	h	b	l ₁	h ₁	f ₁	t _{max}	D _{max}	Size
R/LH100.3280.73R/L	32	7.9	130	24.8	6.75	32.5	65	03
R/LH100.3280.74R/L	32	7.9	130	24.8	6.35	32.5	65	04

State R or L version

w see inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	Wrench
R/LH100.3280.7...	DIN912-M5x20	SW4DIN911

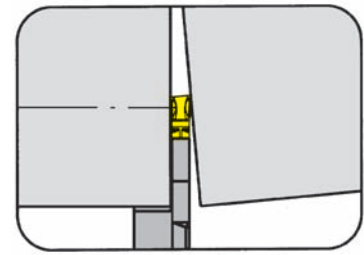
TOOLHOLDER Type

H100

with screwed clamping

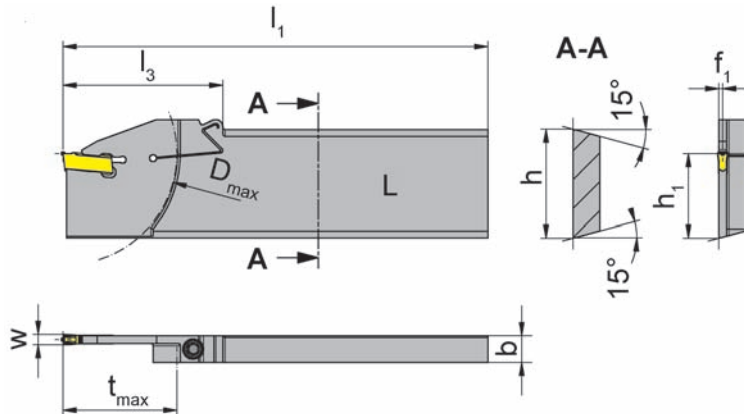
Depth of groove up to
Width of groove

1.319" (33.5 mm)
.118 - .157" (3.0 - 4.0 mm)



for use with Insert

Type S100



R = right hand version shown

L = left hand version

for machines TRAUB and
INDEX

Part number	h	b	l ₁	h ₁	f ₁	t _{max}	D _{max}	l ₃	Size	Type of machine
R/LH100.3208.83	32	8	125	24.8	1.15	33.5	65	47	03	TraubTNX65/42.IndexC65
R/LH100.3208.84	32	8	125	24.8	1.50	33.5	65	47	04	TraubTNX65/42.IndexC65

State R or L version

w see inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LH100.3208.8...	030.505P.0718	T15PQ

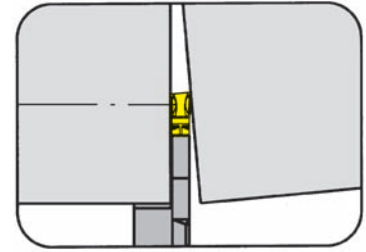
GROOVING and PARTING OFF



TOOLHOLDER Type

H100

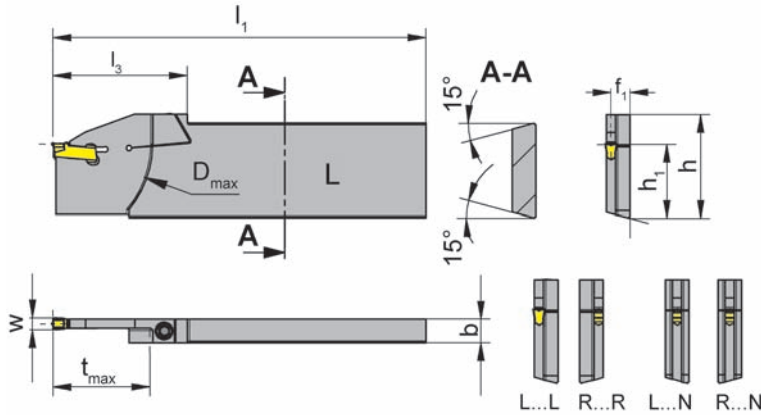
with screwed clamping



Depth of groove up to 1.614" (41.0 mm)
Width of groove .118 - .157" (3.0 - 4.0 mm)

for use with Insert

Type S100



L = left hand version shown

R = right hand version

for machines TRAUB and INDEX

Part number	h	b	l ₁	h ₁	f ₁	t _{max}	D _{max}	l ₃	Size	Type of machine
R/LH100.3208.83R/L	32	8	125	24.8	6.75	33.5	65	47.0	03	TraubTNX65/42.IndexC65
R/LH100.3208.84R/L	32	8	125	24.8	6.35	33.5	65	47.0	04	TraubTNX65/42.IndexC65
R/LH100.3208.84N	32	8	134	24.8	4.00	41.0	80	54.5	04	TraubTNX80/65

State R or L version

w see inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS®-Wrench
R/LH100.3208.8...	030.505P.0660	T15PQ

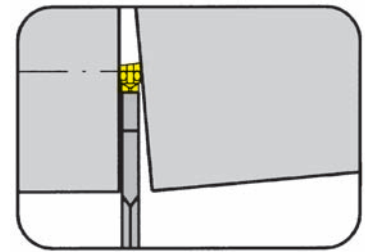
TOOLHOLDER Type

H100

with self clamping

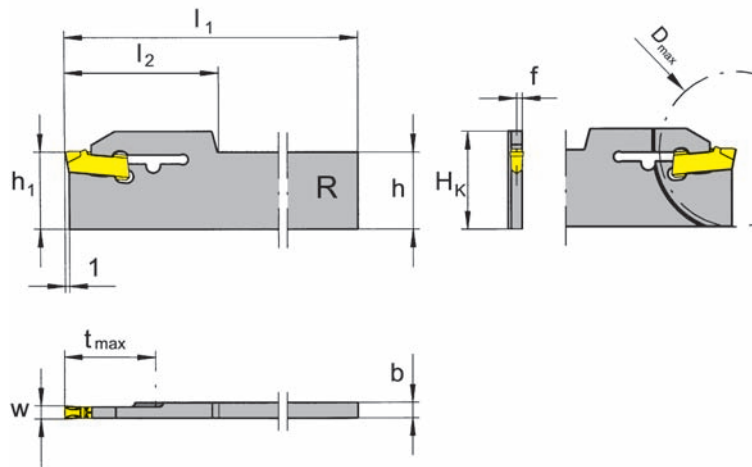
Depth of groove up to
Width of groove

1.496" (38.0 mm)
.079 - .118" (2.0 - 3.0 mm)



for use with Insert

Type S100



R = right hand version

Part number	h	b	l ₁	h ₁	f	l ₂	t _{max}	D _{max}	H _k	Size
RH100.1703.21	17.4	3.2	110	17.4	0.75	32.0	17.5	35	22.1	01
RH100.2203.21	22.1		150	22.2			38.0	50	26.9	
RH100.1703.33	17.4	3.2	110	17.4	1.15	34.5	30.0	60	22.1	03
RH100.2203.33	22.1		150	22.2			38.0	76	26.9	

Further sizes upon request

w see inserts

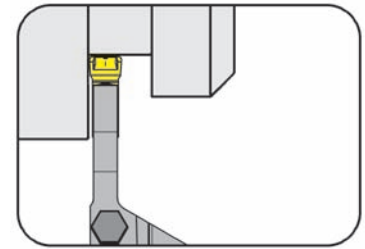
Dimensions in mm

Spare parts

Toolholder	Wrench
RH100....	P39L

TOOLHOLDER Type

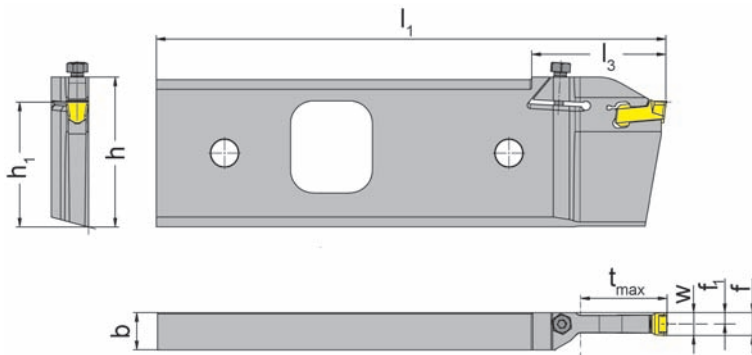
H100



Depth of groove up to 2.559" (65.0 mm)
 Width of groove .315 - .472" (8.0 - 12.0 mm)

for use with Insert

Type S100



L = left hand version shown

Part number	h	b	l ₁	h ₁	f ₁	f	t _{max}	l ₃	Size
LH100.5517.38.8.08 LH100.5517.54.8.08	65	16.4	224	55	4	f ₁ +w/2	38 54	59 75	08
LH100.5517.38.8.10 LH100.5517.54.8.10	65	16.4	224	55	5	f ₁ +w/2	38 54	59 75	10
LH100.5517.44.8.12 LH100.5517.65.8.12	65	16.4	224	55	6	f ₁ +w/2	44 65	65 86	12

Further sizes upon request

w see inserts

Dimensions in mm

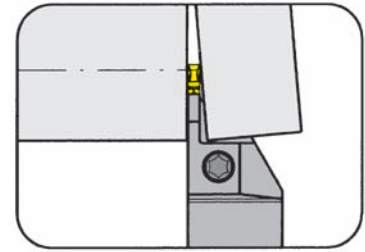
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
LH100.5517....	030.6075.T20P	T20PQ

TOOLHOLDER Type

HU100

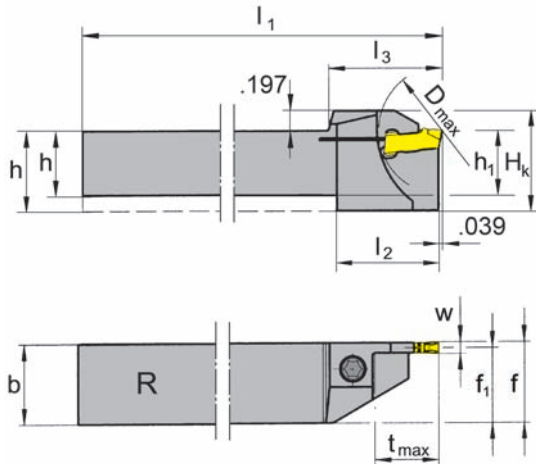
with screwed clamping



Depth of groove up to .827"
Width of groove .079"

for use with Insert

Type S100



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	D _{max}	l ₃	H _k	Size
R/LHU100.0500.01	.500	.500	5.125	.500	.470	f ₁ +w/2	.827	.512	1.024	.906	.822	01
R/LHU100.0500.11	.500	.500	5.125	.500	.470	f ₁ +w/2	.827	.630	1.654	1.024	.822	01
R/LHU100.0625.11	.625	.625	5.125	.625	.595	f ₁ +w/2	.945	.630	1.654	1.024	.947	01
R/LHU100.0625.21	.625	.625	5.125	.625	.595	f ₁ +w/2	1.181	.827	1.654	1.319	.947	01
R/LHU100.0750.11	.750	.750	5.125	.750	.720	f ₁ +w/2	-	.630	1.654	1.024	.947	01
R/LHU100.0750.21	.750	.750	5.125	.750	.720	f ₁ +w/2	-	.827	1.654	1.319	.947	01

State R or L version

w see inserts

Dimensions in inch

Further sizes upon request

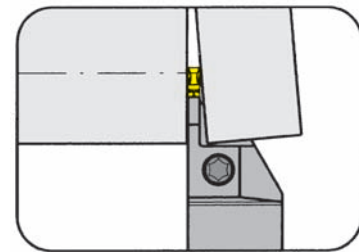
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
R/LHU100.0...	4.15T15P	T15PQ

TOOLHOLDER Type

H100

with screwed clamping

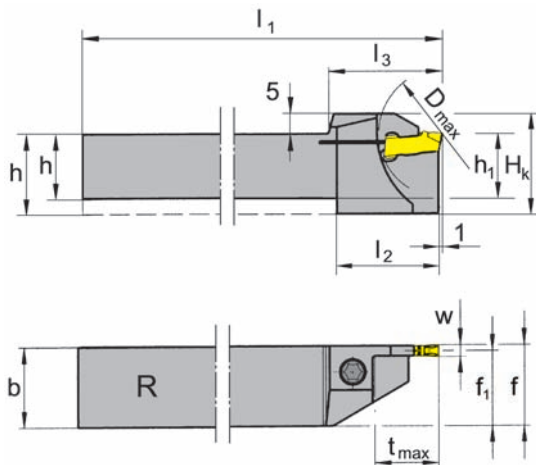


Depth of groove up to
Width of groove

.827" (21.0 mm)
.079" (2.0 mm)

for use with Insert

Type S100



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f_1	f	l_2	t_{max}	D_{max}	l_3	H_k	Size
R/LH100.1010.01 R/LH100.1010.11	10	10	125	10	9.25	$f_1+w/2$	19 21	10.5 13.0	21 42	21.0 23.0	18 21	01
R/LH100.1212.01 R/LH100.1212.11	12	12	125	12	11.25	$f_1+w/2$	21	13.0 16.0	26 42	23.0 26.0	21	01
R/LH100.1616.11 R/LH100.1616.21	16	16	125	16	15.25	$f_1+w/2$	24 30	16.0 21.0	42	26.0 33.5	25	01
R/LH100.2020.11 R/LH100.2020.21	20	20	125	20	19.25	$f_1+w/2$	-	16.0 21.0	42	33.5	25	01
R/LH100.2525.21	25	25	150	25	24.30	$f_1+w/2$	-	21.0	42	33.5	30	01

State R or L version

w see inserts

Dimensions in mm

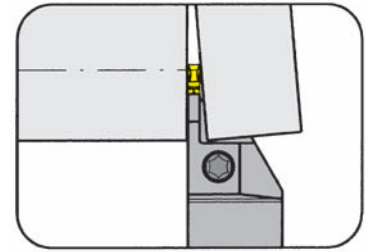
Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS®-Wrench
R/LH100....	4.15T15P	T15PQ

TOOLHOLDER Type

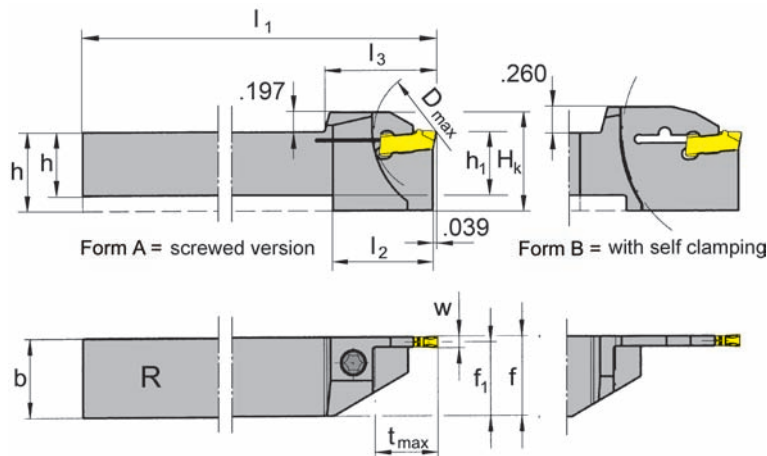
HU100



Depth of groove up to 1.280"
Width of groove .098"

for use with Insert

Type S100



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	D _{max}	l ₃	H _k	Size	Form
R/LHU100.0625.02	.625	.625	5.125	.625	.588	f ₁ +w/2	.748	.413	1.654	.827	.947	02	A
R/LHU100.0500.02	.500	.500		.500	.463	f ₁ +w/2	.827	.512	.984	.906	.823		
R/LHU100.0500.12	.500	.500	5.125	.500	.463	f ₁ +w/2	.945	.630	1.654	1.024	.947	02	A
R/LHU100.0625.12	.625	.625		.625	.588	f ₁ +w/2	.945						
R/LHU100.0750.12	.750	.750	5.125	.750	.713	f ₁ +w/2	-	.827	1.654	1.319	.947	02	A
R/LHU100.0625.22	.625	.625		.625	.588	f ₁ +w/2	1.181						
R/LHU100.0750.22	.750	.750	.750	.713	f ₁ +w/2	-	1.378	1.280	2.559	1.516	1.260	02	B
R/LHU100.0750.32	.750	.750	.750	.713	f ₁ +w/2								

State R or L version

w see inserts

Dimensions in inch

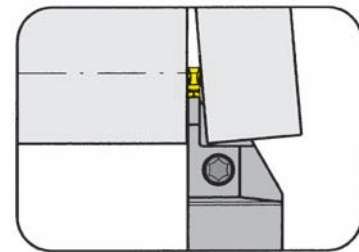
Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench	Wrench
R/LHU100.0...02/12/22 R/LHU100.0750.32	4.15T15P	T15PQ	P39L

TOOLHOLDER Type

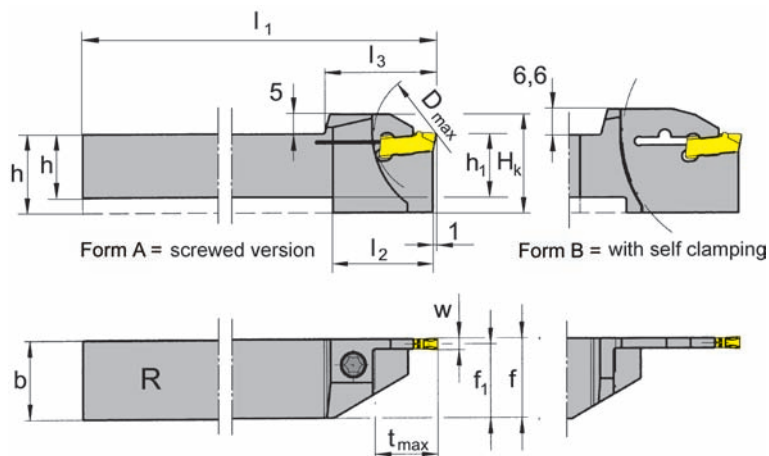
H100



Depth of groove up to 1.280" (32.5 mm)
Width of groove .098" (2.5 mm)

for use with Insert

Type S100



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f_1	f	l_2	t_{max}	D_{max}	l_3	H_k	Size	Form
R/LH100.1212.02	12	12	125	16	11.05	$f_1+w/2$	21	13.0	25	23.0	21.0	02	A
R/LH100.1616.02	16	16		20	15.05	$f_1+w/2$	19	10.5	42	21.0	25.0		
R/LH100.1212.12	12	12	125	16	11.05	$f_1+w/2$	24	-	42	26.0	25.0	02	A
R/LH100.1616.12	16	16		20	15.05	$f_1+w/2$	24							16.0
R/LH100.2020.12	20	20	125	20	19.05	$f_1+w/2$	-	21.0	42	33.5	25.0	02	A
R/LH100.1616.22	16	16		20	15.05	$f_1+w/2$	30							-	25.0
R/LH100.2020.22	20	20	20	19.05	$f_1+w/2$	-	-	21.0	42	33.5	25.0	02	A
R/LH100.2525.22	25	25	150	25	24.05	$f_1+w/2$	-	-	-	-	30.0	-	-
R/LH100.2020.32	20	20	125	25	19.05	$f_1+w/2$	35	32.5	65	38.5	31.6	02	B

State R or L version

w see inserts

Dimensions in mm

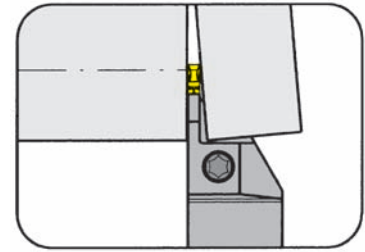
Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS®-Wrench	Wrench
R/LH100....02/12/22 R/LH100.2020.32	4.15T15P	T15PQ	P39L

TOOLHOLDER Type

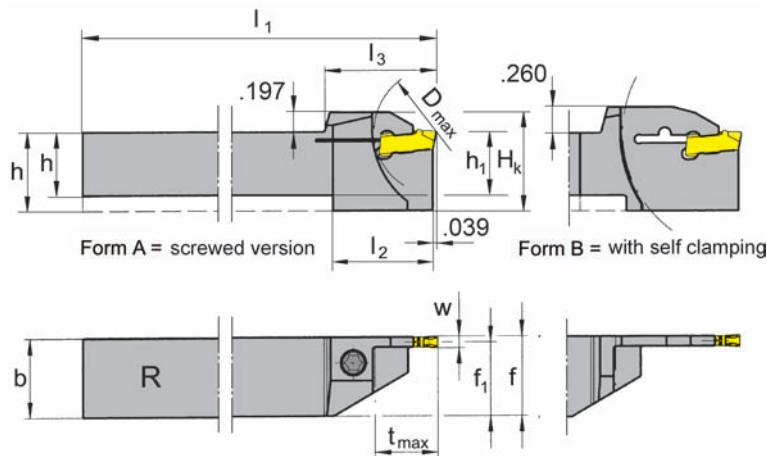
HU100



Depth of groove up to 1.280"
Width of groove .118"

for use with Insert

Type S100



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f_1	f	l_2	t_{max}	D_{max}	l_3	H_k	Size	Form
RHU100.0500.03	.500	.500	5.125	.500	.455	$f_1+w/2$	.827	.512	1.024	.906	.822	03	A
RHU100.0625.03	.625	.625	5.125	.625	.580	$f_1+w/2$	.768	.413	1.654	.906	.947	03	A
RHU100.0625.13	.625	.625	5.125	.625	.580	$f_1+w/2$	.984	-	-	1.122	.947	03	A
RHU100.0750.13	.750	.750	5.125	.750	.705	$f_1+w/2$	-	.630	1.654	1.122	.947	03	A
RHU100.1000.13	1.000	1.000	6.000	1.000	.955	$f_1+w/2$	-	-	-	1.197	1.197	03	A
RHU100.0625.23	.625	.625	5.125	.625	.580	$f_1+w/2$	1.181	-	-	1.319	.947	03	A
RHU100.0750.23	.750	.750	5.125	.750	.705	$f_1+w/2$	-	.827	1.654	1.319	.947	03	A
RHU100.0750.33	.750	.750	5.125	.750	.705	$f_1+w/2$	1.378	-	-	1.516	1.260	03	B
RHU100.1000.33	1.000	1.000	6.000	1.000	.955	$f_1+w/2$	-	1.280	2.559	1.516	1.260	03	B

State R or L version

w see inserts

Dimensions in inch

Further sizes upon request

Spare parts

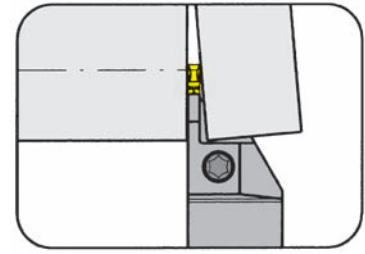
Toolholder	Screw	TORX PLUS® Wrench	Wrench
RHU100....03/13/23 RHU100....33	5.17T20P	T20PQ	P39L

GROOVING and PARTING OFF



TOOLHOLDER Type

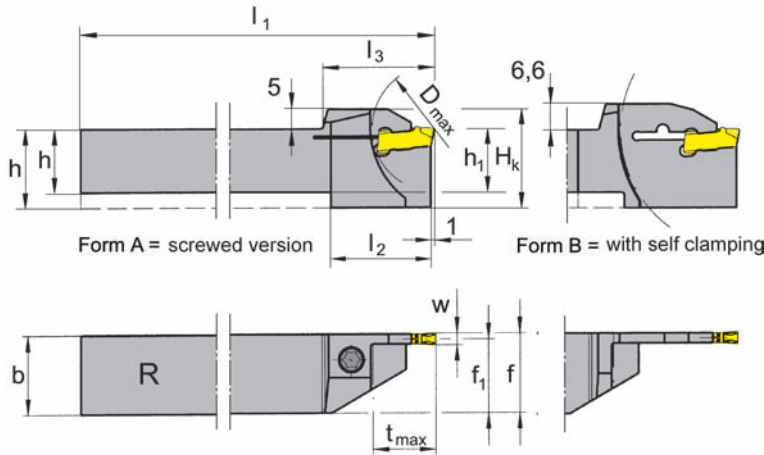
H100



Depth of groove up to 1.280" (32.5 mm)
Width of groove .118" (3.0 mm)

for use with Insert

Type S100



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	D _{max}	l ₃	H _k	Size	Form
R/LH100.1616.03	16	16	125	20	14.85	f ₁ +w/2	19.5	10.5	42	23.0	25.0	03	A
R/LH100.1212.03	12	12	125	16	10.85	f ₁ +w/2	21.0	13.0	26	23.0	25.0	03	A
R/LH100.1616.13	16	16	125	20	14.85	f ₁ +w/2	25.0	-	42	28.5	25.0	03	A
R/LH100.2020.13	20	20	125	20	18.85	f ₁ +w/2	-	16.0	42	28.5	25.0	03	A
R/LH100.2525.13	25	25	150	25	23.85	f ₁ +w/2	-	-	42	30.0	30.0	03	A
R/LH100.1616.23	16	16	125	20	14.85	f ₁ +w/2	30.0	21.0	42	33.5	25.0	03	A
R/LH100.2020.23	20	20	125	20	18.85	f ₁ +w/2	-	21.0	42	33.5	25.0	03	A
R/LH100.2020.33	20	20	125	25	18.85	f ₁ +w/2	35.0	32.5	65	38.5	31.6	03	B
R/LH100.2525.33	25	25	150	25	23.85	f ₁ +w/2	-	32.5	65	38.5	31.6	03	B

State R or L version

w see inserts

Dimensions in mm

Further sizes upon request

Spare parts

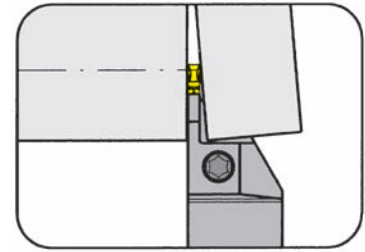
Toolholder	Screw	TORX PLUS®-Wrench	Wrench
R/LH100....03/13/23 R/LH100.2...33	5.17T20P	T20PQ	P39L

TOOLHOLDER Type

HU100

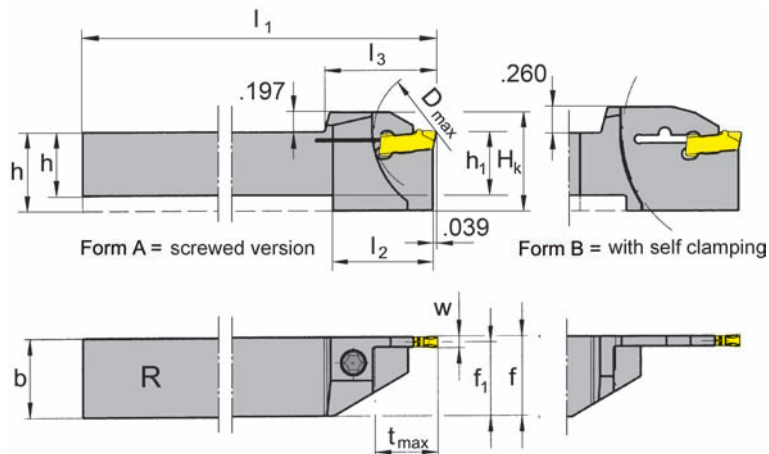
Depth of groove up to
Width of groove

1.594"
.157"



for use with Insert

Type S100



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f_1	f	l_2	t_{max}	D_{max}	l_3	H_k	Size	Form
R/LHU100.0625.04	.625	.625	5.125	.625	.564	$f_1+w/2$	.768	.413	1.654	.906	.947	04	A
R/LHU100.0750.14	.750	.750	5.125	.750	.685	$f_1+w/2$	-	.630	1.654	1.122	.947	04	A
R/LHU100.1000.14	1.000	1.000	6.000	1.000	.939	$f_1+w/2$	-	.630	1.654	1.122	1.197	04	A
R/LHU100.0625.24	.625	.625	5.125	.625	.564	$f_1+w/2$	1.181	.827	1.654	1.319	.947	04	A
R/LHU100.0750.34	.750	.750	5.125	.750	.689	$f_1+w/2$	1.378	1.280	2.559	1.516	1.260	04	B
R/LHU100.1000.34	1.000	1.000	6.000	1.000	.939	$f_1+w/2$	1.575	1.594	3.189	1.831	1.510	04	B

State R or L version

w see inserts

Dimensions in inch

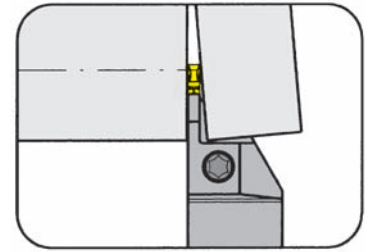
Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench	Wrench
R/LHU100....04/14/24 R/LHU100....34	5.17T20P	T20PQ	P39L

TOOLHOLDER Type

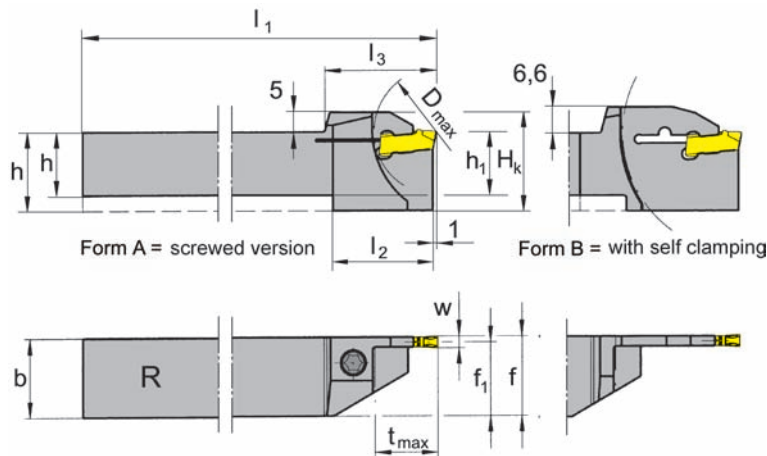
H100



Depth of groove up to 1.594" (40.5 mm)
Width of groove .157" (4.0 mm)

for use with Insert

Type S100



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	D _{max}	l ₃	H _k	Size	Form
R/LH100.1616.04	16	16	125	20	14.45	f ₁ +w/2	19.5	10.5	42	23.0	25.0	04	A
R/LH100.1616.14	16	16	125	20	14.45	f ₁ +w/2	25.0	-	-	-	25.0	-	-
R/LH100.2020.14	20	20	125	20	18.45	f ₁ +w/2	-	16.0	42	28.5	25.0	04	A
R/LH100.2525.14	25	25	150	25	23.45	f ₁ +w/2	-	-	-	-	30.0	-	-
R/LH100.1616.24	16	16	125	20	14.45	f ₁ +w/2	30.0	21.0	42	33.5	25.0	04	A
R/LH100.2020.34	20	20	125	25	18.45	f ₁ +w/2	35.0	32.5	65	38.5	-	-	-
R/LH100.2525.34	25	25	150	32	23.45	f ₁ +w/2	40.0	40.5	81	46.5	31.6	04	B

State R or L version

w see inserts

Dimensions in mm

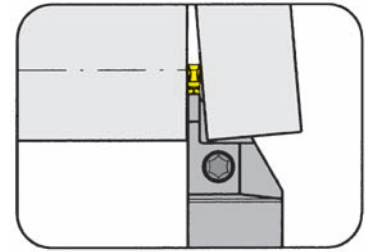
Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS®-Wrench	Wrench
R/LH100....04/14/24 R/LH100.2...34	5.17T20P	T20PQ	P39L

TOOLHOLDER Type

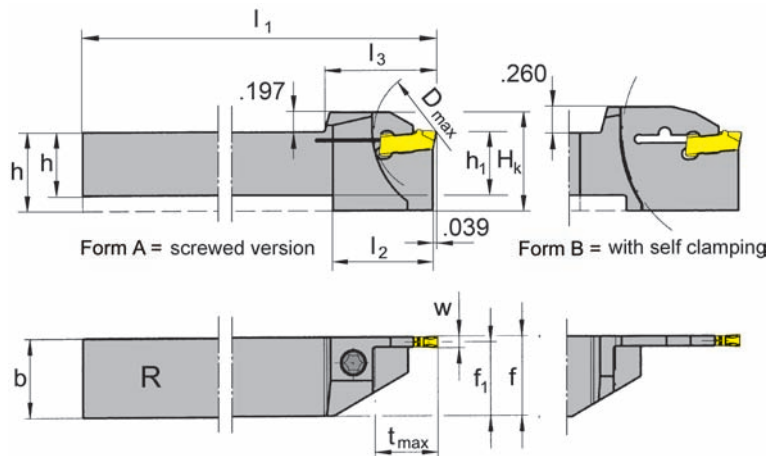
HU100



Depth of groove up to 1.594"
Width of groove .197"

for use with Insert

Type S100



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f_1	f	l_2	t_{max}	D_{max}	l_3	H_k	Size	Form
R/LHU100.0750.15	.750	.750	5.125	.750	.673	$f_1+w/2$	-	.630	1.654	1.122	.947	05	A
R/LHU100.1000.15	1.000	1.000	6.000	1.000	.923	$f_1+w/2$	-	.630	1.654	1.122	1.197	05	A
R/LHU100.0750.35	.750	.750	5.125	.750	.673	$f_1+w/2$	1.378	1.280	2.559	1.516	1.260	05	B
R/LHU100.1000.35	1.000	1.000	6.000	1.000	.923	$f_1+w/2$	1.575	1.594	3.189	1.831	1.510	05	B

State R or L version

w see inserts

Dimensions in inch

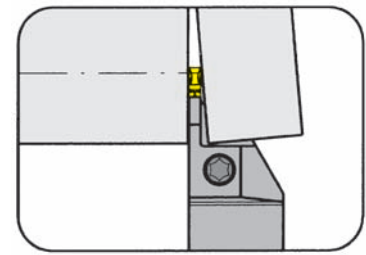
Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench	Wrench
R/LHU100....15 R/LHU100....35	5.17T20P	T20PQ	P39L

TOOLHOLDER Type

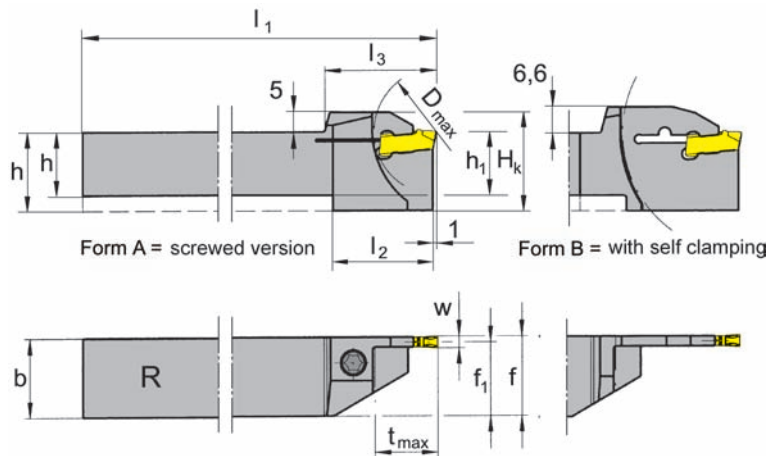
H100



Depth of groove up to 1.594" (40.5 mm)
Width of groove .197" (5.0 mm)

for use with Insert

Type S100



R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f_1	f	l_2	t_{max}	D_{max}	l_3	H_k	Size	Form
R/LH100.2020.15	20	20	125	20	18.05	$f_1+w/2$	-	16.0	42	28.5	25.0	05	A
R/LH100.2525.15	25	25	150	25	23.05	$f_1+w/2$	-	16.0	42	28.5	30.0	05	A
R/LH100.2020.35	20	20	125	25	18.05	$f_1+w/2$	35	32.5	65	38.5	31.6	05	B
R/LH100.2525.35	25	25	150	32	23.05	$f_1+w/2$	40	40.5	81	46.5	38.6	05	B

State R or L version

w see inserts

Dimensions in mm

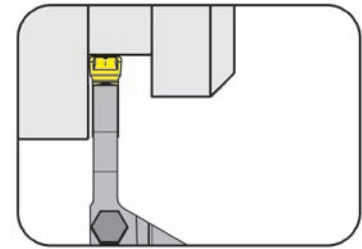
Further sizes upon request

Spare parts

Toolholder	Screw	TORX PLUS®-Wrench	Wrench
R/LH100.2...15 R/LH100.2...35	5.17T20P	T20PQ	P39L

TOOLHOLDER Type

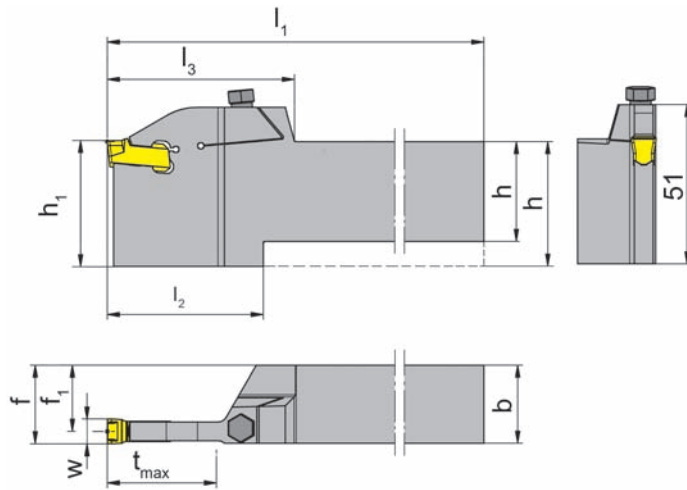
H100



Depth of groove up to 1.575" (40.0 mm)
Width of groove .236 - .472" (6.0 - 12.0 mm)

for use with Insert

Type S100



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	l ₃	Size
R/LH100.2525.36	25	25	150	40	22.2	f ₁ +w/2	50	33	60	06
R/LH100.3225.36	32									
R/LH100.3225.38	32	25	170	40	21.2	f ₁ +w/2	50	35	60	08
R/LH100.3225.4.10	32	25	170	40	20.3	f ₁ +w/2	55	41	65	10
R/LH100.3225.4.12	32	25	170	40	19.3	f ₁ +w/2	55	41	65	12

State R or L version

w see inserts

Dimensions in mm

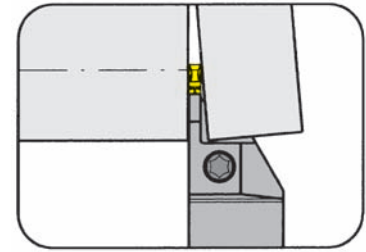
Further sizes upon request

Spare parts

Toolholder	Screw
R/LH100....	030.6075.T20P

TOOLHOLDER Type

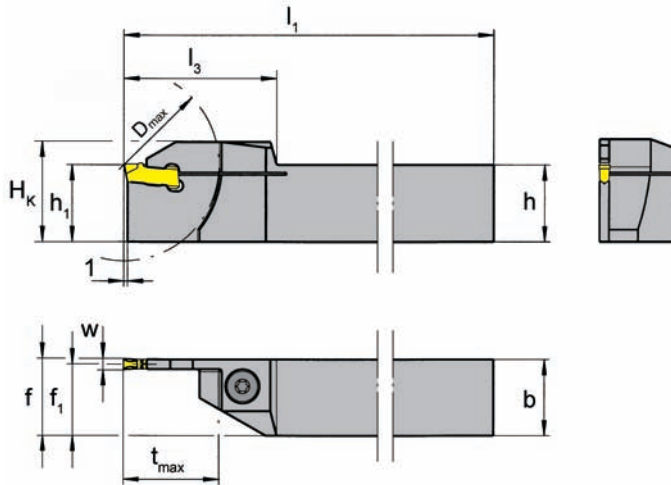
H100



Depth of groove up to .984" (25.0 mm)
Width of groove .118 - .157" (3.0 - 4.0 mm)

for use with Insert

Type S100



L = left hand version shown

R = right hand version

Part number	h	b	l_1	h_1	f_1	f	t_{max}	D_{max}	l_3	H_k	Size
R/LH100.2020.73	20	20	125	20	18.85	$f_1+w/2$	25	50	40	26	03
R/LH100.2525.73	25	25	150	25	23.85	$f_1+w/2$	25	50	40	31	03
R/LH100.2020.74	20	20	125	20	18.85	$f_1+w/2$	25	50	40	26	04

State R or L version

w see inserts

Dimensions in mm

Further sizes upon request

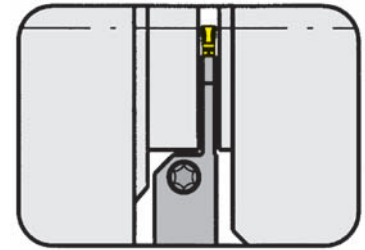
Spare parts

Toolholder	Screw	TORX PLUS®-Wrench
R/LH100.2...	6.23T25P	T25PQ

BASIC TOOLHOLDER Type

220

without cassette

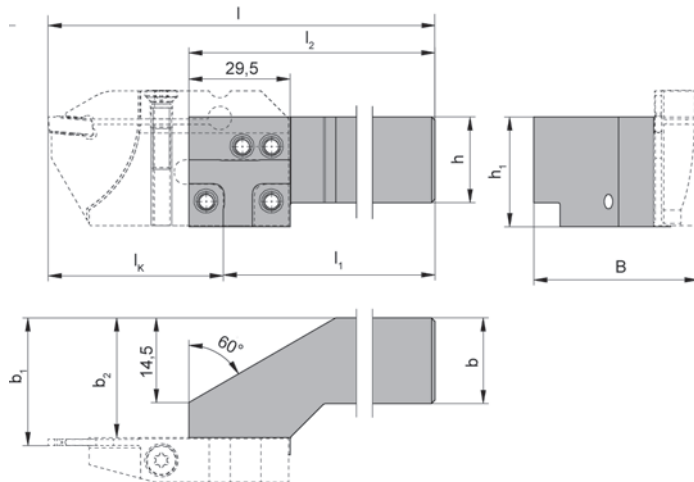


Basic adapter for cassettes type RNK100

Shank parallel to the axis of workpiece

for use with Cassette

Type RNK100



R = right hand version

Multi spindle system
MS52

Part number	h	l_1	h_1	b	b_1	b_2	l_2	l	B
R220.2529.60.K1	25	l_2-10	32	25	b_2+f_3	29.5	160	l_1+l_K	b_2+b_3
R220.2535.60.K1						34.9			

Further sizes upon request

 l_K , b_3 and f_3 see cassettes

Dimensions in mm

Spare parts

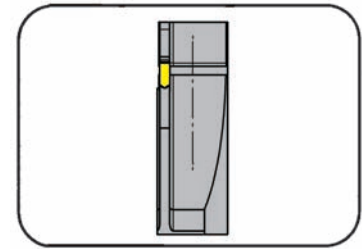
Basic toolholder	Screw	TORX PLUS®-Wrench
R220.25...	5.12T20P	T20PQ

GROOVING and PARTING OFF (external)



CASSETTE Type

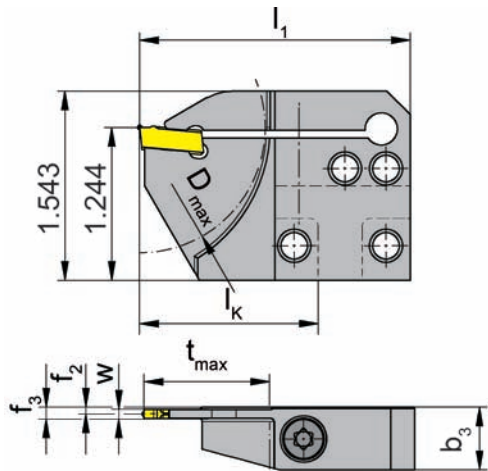
NK100



Depth of groove up to 1.024"
Width of groove .098 - .118"

for use with Insert

Type S100



R = right hand version shown

Part number	l_1	t_{max}	D_{max}	b_3	f_2	f_3	l_k
RNK100.5625.02L RNK100.5625.03L	2.205	1.024	2.047	.512	.055 .065	$f_2+w/2$	1.457
RNK100.7025.02L RNK100.7025.03L	2.756	1.024	2.047	.512	.055 .065	$f_2+w/2$	2.008

For basic toolholder R...K1 and L...K2

w see inserts

Dimensions in inch

Ordering note:

The fastening screw is combined with the basic toolholder - no separate order required.

Further sizes upon request

Spare parts

Cassette	Screw	TORX PLUS® Wrench
RNK100....	5.13T20P	T20PQ

Machine examples - Multispindle machines

- ▶ INDEX
- ▶ Gildemeister
- ▶ Wickmann
- ▶ Schütte
- ▶ Tornos



Further types upon request.

Machine examples - high production lathes

- ▶ INDEX
- ▶ Gildemeister
- ▶ Tornos
- ▶ Traub
- ▶ Miyano
- ▶ MORI SEIKI

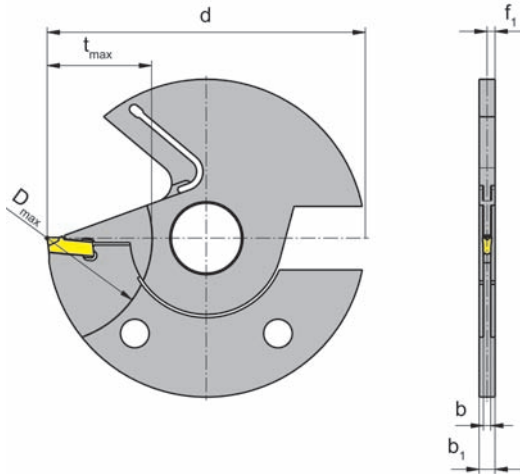


Further types upon request.

CIRCULAR PART-OFF TOOL Type 300.2...

with through coolant supply

Depth of groove	.512 / .709" (13 / 18 mm)
Width of groove	.079 - .197" (2.0 - 5.0 mm)



for use with Insert

Type S100

Part number	b	b ₁	f ₁	t _{max}	w	D _{max}	d	Size
300.20.20.00 300.21.20.00	5	1.5	2.5	13 18	2.0/2.2	26 36	50 63	01
300.20.25.00 300.21.25.00	5	1.9	2.5	13 18	2.5	26 36	50 63	02
300.20.30.00 300.21.30.00	5	2.3	2.5	13 18	3.0	26 36	50 63	03
300.20.40.00 300.21.40.00	5	3.1	2.5	13 18	4.0	26 36	50 63	04
300.20.50.00 300.21.50.00	5	3.9	2.5	13 18	5.0	26 36	50 63	05

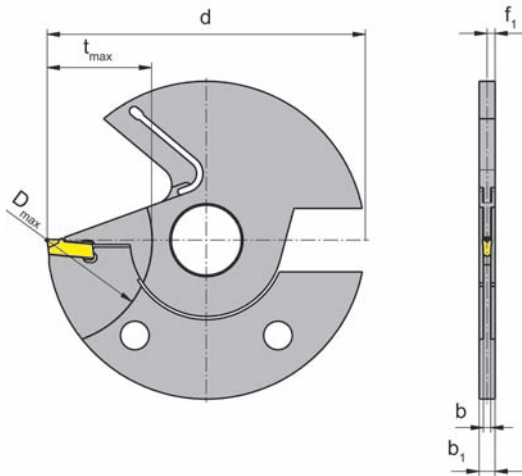
Further sizes upon request

Dimensions in mm

CIRCULAR PART-OFF TOOL Type **300.2...**

with through coolant supply

Depth of groove 1.102 / 1.299" (28 / 33 mm)
 Width of groove .079 - .197" (2.0 - 5.0 mm)



for use with Insert

Type S100

Part number	b	b ₁	f ₁	t _{max}	w	D _{max}	d	Size
300.22.20.00 300.23.20.00	5	1.5	2.5	28 33	2.0/2.2	56 66	80 100	01
300.22.25.00 300.23.25.00	5	1.9	2.5	28 33	2.5	56 66	80 100	02
300.22.30.00 300.23.30.00	5	2.3	2.5	28 33	3.0	56 66	80 100	03
300.22.40.00 300.23.40.00	5	3.1	2.5	28 33	4.0	56 66	80 100	04
300.22.50.00 300.23.50.00	5	3.9	2.5	28 33	5.0	56 66	80 100	05

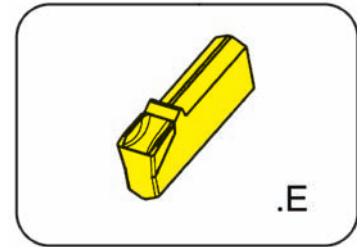
Further sizes upon request

Dimensions in mm

INSERT Type

S100

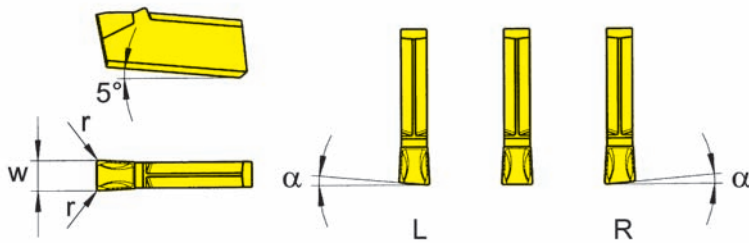
with chip former



Width of groove .079 - .157"

for use with Toolholder

Type 300.2...
H100
HU100
NK100



R = right hand version

L = left hand version

Part number	w	r	α	Size	Ti22	TF42	TF43	TF45	TF46	TC92	ALX2	ALX3	AS6G
S100.0200.E2 R/LS100.0520.E2	.079	.008	0° 5°	01	▲ ▲/▲		▲ ▲/▲	▲ ▲/▲	▲ ▲/▲	▲			
S100.0250.E2 R/LS100.0525.E2	.098	.008	0° 5°	02	▲ /Δ		▲ ▲/▲	▲ ▲/▲	▲ ▲/▲				
S100.0300.E2 R/LS100.0530.E2	.118	.008	0° 5°	03	▲ ▲/▲	▲ ▲/▲	▲ ▲/▲	▲ ▲/▲	▲ ▲/▲	▲	▲	▲	
R/LS100.0540.E2	.157	.008	5°	04	▲/Δ		▲/▲	▲/▲	▲/▲				
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet					P	●	●	●	●	●	●	●	●
					M			●	○				
					K			●	●				
					S			●	○				
					N			●	●				
					H								

Dimensions in mm

State R or L version

Carbide grades

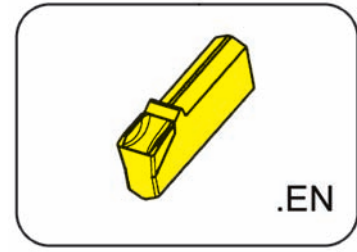
GROOVING and PARTING OFF



INSERT Type

S100

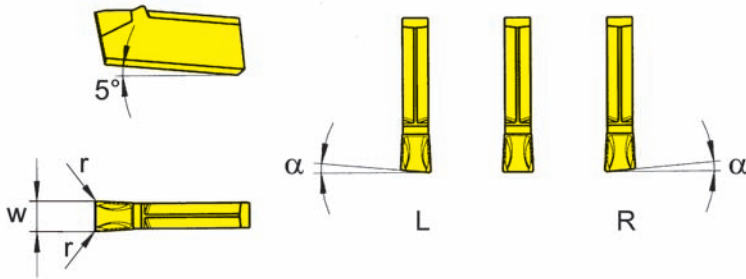
with chip former



Width of groove .079 - .472"

for use with Toolholder

Type 300.2...
H100
HU100
NK100



R = right hand version

L = left hand version

Part number	w	r	α	Size	Carbide grades					
					T122	TA45	ALX3	AS6G	AS62	AS66
S100.0200.EN2	.079	.008	0°	01			▲	▲		
S100.0220.EN2	.087	.008	0°	01			▲	▲		
S100.0250.EN2	.098	.008	0°	02			▲	▲		
S100.0300.EN2	.118	.008	0°	03			▲	▲		Δ
RS100.0530.EN2	.118	.008	5°	03					Δ	Δ
S100.0400.EN3	.157	.012	0°	04			▲	▲		
R/LS100.0540.EN2	.157	.008	5°	04			▲/▲			
S100.0500.EN3	.197	.012	0°	05			▲			
S100.0600.EN6	.236	.031	0°	06				▲		
S100.0800.EN8	.315	.031	0°	08				▲		
S100.1000.EN8	.394	.031	0°	10				▲		
S100.1200.EN8	.472	.031	0°	12				▲		
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet					P		●	●		●
					M			●		○
					K			●		●
					S			●		○
					N			●		●
					H					

Dimensions in mm

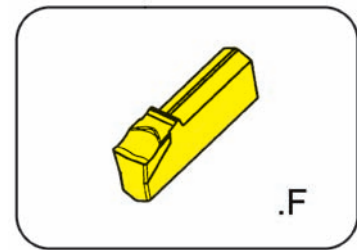
Carbide grades

State R or L version

INSERT Type

S100

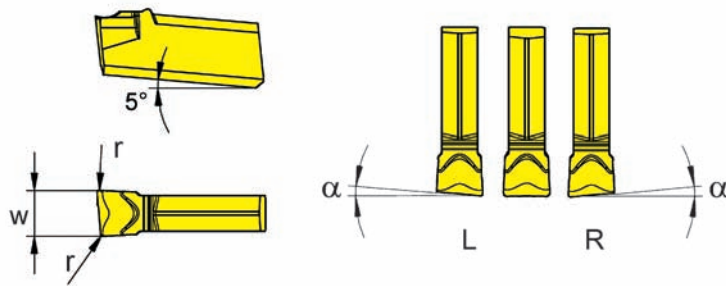
with chip forming



Width of groove	.079 - .197"
-----------------	--------------

for use with Toolholder

Type 300.2...
H100
HU100
NK100



R = right hand version shown

L = left hand version

Part number	w	r	α	Size	Tl22	TF42	TF43	TF45	TF46	TC92	AS6G
S100.0200.F2 R/LS100.0520.F2	.079	.008	0° 5°	01	▲		▲	▲	▲	▲	
S100.0250.F2 R/LS100.0525.F2	.098	.008	0° 5°	02	▲		▲	▲	▲	▲	
S100.0300.F2 R/LS100.0530.F2	.118	.008	0° 5°	03	▲ ▲▲	▲	▲	▲	▲	▲	
S100.0400.F3 R/LS100.0540.F2	.157	.012 .008	0° 5°	04	▲		▲	▲	▲		
S100.0500.F3	.197	.012	0°	05	▲		▲	▲	▲		

▲ on stock Δ 4 weeks											
● main recommendation											
○ alternative recommendation											
■ uncoated grades											
■ coated grades											
■ brazed/Cermet											

Dimensions in mm

State R or L version

P	●	●	●	●	●	●					
M				●	○						
K				●	●						
S				●	○						
N				●	●						
H											

Carbide grades

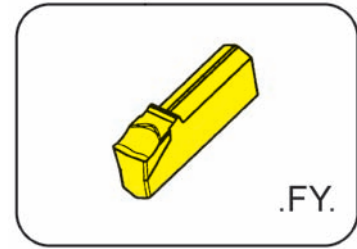
GROOVING and PARTING OFF



INSERT Type

S100

with chip forming

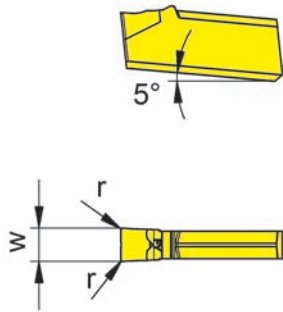


Width of groove .079 - .157" (2.0 - 4.0 mm)

precision sintered

for use with Toolholder

Type 300.2...
H100
HU100
NK100



Part number	w	r	Size	Carbide grades			
				Tl25	TF45	TF46	AS45
S100.0200.FY2	2.0	0.2	01	▲			
S100.0220.FY2	2.2			▲			
S100.0250.FY2	2.5	0.2	02	▲			
S100.0300.FY2	3.0	0.2	03	▲			
S100.0400.FY3	4.0	0.3	04	▲			
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet				P	●	●	●
				M	●	●	●
				K	●	●	●
				S	●	●	●
				N	●	●	●
				H	●	●	●

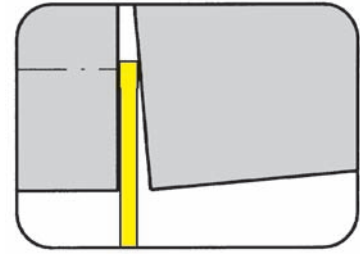
Dimensions in mm

Carbide grades

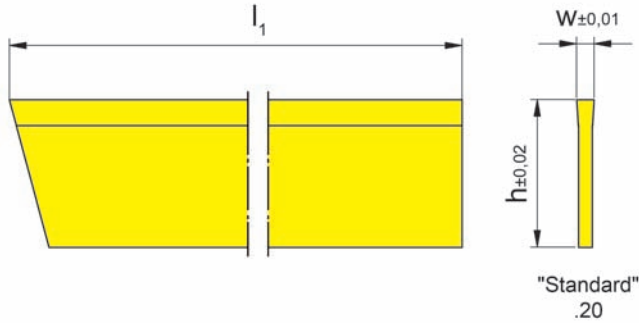
Indexable inserts can be used in **right and left** hand toolholders.

BLADE Type

HCC...20



Width of groove .020 - .197" (0.5 - 5.0 mm)
 Length of blade 2.756 - 6.496" (70 - 165 mm)



for use with all attachments

Part number	w	h	l ₁	MG12	TN35	TH35
HCC.0050.05.01.20	0.5	5.00	70	▲	▲	▲
HCC.0100.12.05.20	1.0	12.09	90	▲	▲	▲
HCC.0100.17.12.20	1.0	17.17	125	▲	▲	▲
HCC.0130.17.12.20	1.3	17.17	125	▲	▲	▲
HCC.0150.17.12.20	1.5	17.17	125	▲	▲	▲
HCC.0160.12.10.20	1.6	12.09	115	▲	▲	▲
HCC.0160.17.12.20	1.6	17.17	125	▲	▲	▲
HCC.0200.12.10.20	2.0	12.09	115	▲	▲	▲
HCC.0200.17.12.20	2.0	17.17	125	▲	▲	▲
HCC.0250.12.10.20	2.5	12.09	115	▲	▲	▲
HCC.0250.17.12.20	2.5	17.17	125	▲	▲	▲
HCC.0300.12.10.20	3.0	12.09	115	▲	▲	▲
HCC.0300.17.12.20	3.0	17.17	125	▲	▲	▲
HCC.0320.22.17.20	3.2	22.00	150	▲	▲	▲
HCC.0320.28.20.20	3.2	28.00	165	▲	▲	▲
HCC.0400.17.12.20	4.0	17.17	125	▲	▲	▲
HCC.0400.22.17.20	4.0	22.00	150	▲	▲	▲
HCC.0400.28.20.20	4.0	28.00	165	▲	▲	▲
HCC.0480.22.17.20	4.8	22.00	150	▲	▲	▲
HCC.0500.17.12.20	5.0	17.17	125	▲	▲	▲
HCC.0500.28.20.20	5.0	28.00	165	▲	▲	▲

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

P	○	●	●
M	●	●	●
K	●	●	●
S	●	●	●
N	●	●	●
H			

Carbide grades

All blades are manufactured in a neutral version

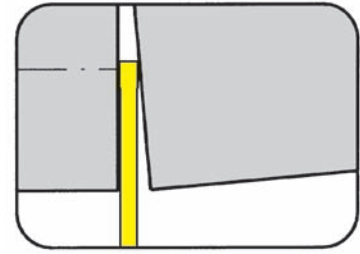
Further sizes upon request

GROOVING and PARTING OFF

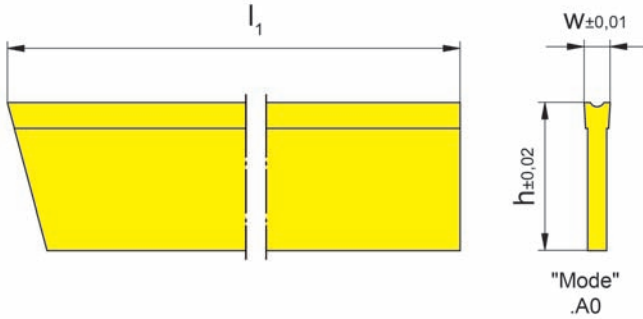


BLADE Type

HCC...A0



Width of groove	.059 - .197" (1.5 - 5.0 mm)
Length of blade	4.528 - 4.921" (115 - 125 mm)



for use with all attachments

Part number	w	h	l ₁	MG12	TN35	TH35
HCC.0150.17.12.A0	1.5	17.17	125	▲	▲	▲
HCC.0160.12.10.A0	1.6	12.09	115	▲	▲	▲
HCC.0160.17.12.A0	1.6	17.17	125	▲	▲	▲
HCC.0200.12.10.A0	2.0	12.09	115	▲	▲	▲
HCC.0200.17.12.A0	2.0	17.17	125	▲	▲	▲
HCC.0250.12.10.A0	2.5	12.09	115	▲	▲	▲
HCC.0250.17.12.A0	2.5	17.17	125	▲	▲	▲
HCC.0300.12.10.A0	3.0	12.09	115	▲	▲	▲
HCC.0300.17.12.A0	3.0	17.17	125	▲	▲	▲
HCC.0400.17.12.A0	4.0	17.17	125	▲	▲	▲
HCC.0500.17.12.A0	5.0	17.17	125	▲	▲	▲

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

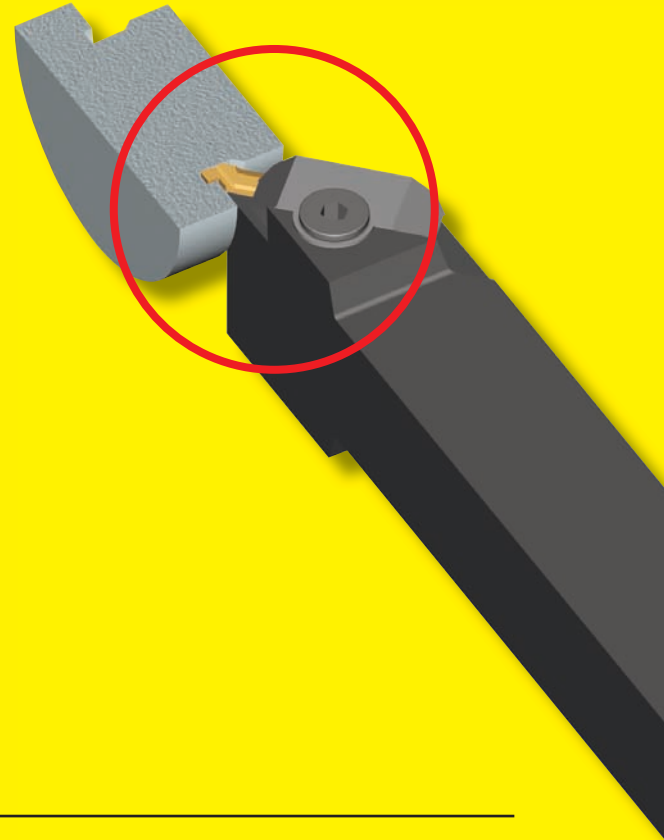
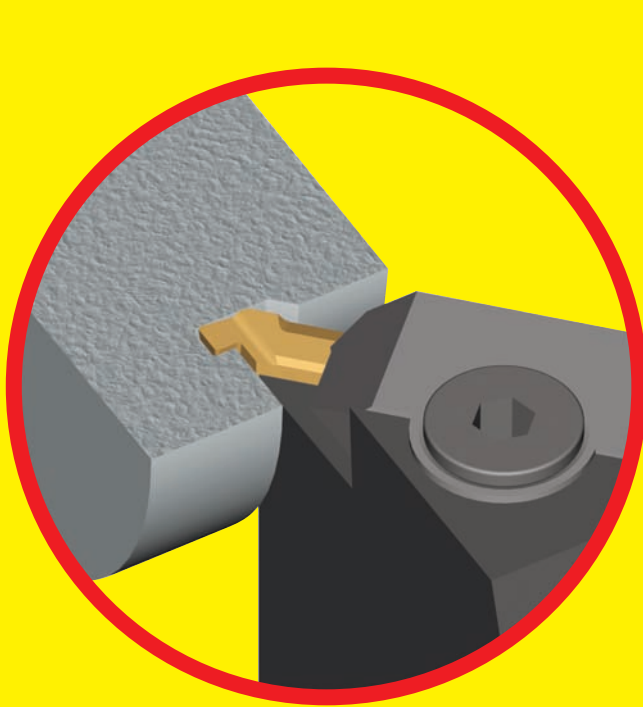
P	○	●	●
M	●	●	●
K	●	●	●
S	●	●	●
N	●	●	●
H			

Carbide grades

All blades are manufactured in a neutral version

Further sizes upon request

HORN - THE LEADERS IN GROOVING TECHNOLOGY



FACE GROOVING

INDEXABLE INSERTS TYPE 312

The economic way to produce axial o-ring grooves

HORN - INTELLIGENT TOOL DESIGN AT WORK.



For further information, please contact HORN USA.

TECHNICAL INSTRUCTIONS **Q**

Technical Information

Page

- Grooving / Side turning Q2 - Q5
- Face grooving Q6
- Profiling Q7
- Threading Q8 - Q9
- Parting off Q10 - Q11

Geometries and feed rates

- Inserts type
 - 217 Q12
 - 264 / S264 Q13
 - 274 Q14
 - S119 / S223 Q15
 - S224 Q16
 - 229 / S229 Q17
 - 231 Q18
 - 312 / S312 Q19
 - 315 Q20
 - S316 Q21
- Parting off Q22

Cutting data

- Grooving and parting off Q23
- Face grooving Q23
- Profiling Q25

Carbide grades for grooving and parting off

Q26 - Q27

Description carbide grades

Q28 - Q29

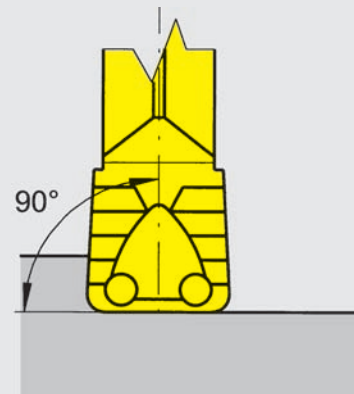
SIDE TURNING

HORN-Grooving Tools will give you absolute accuracy of profile and angles, even when profiling with one-sided cutting forces.

A flexible cutting edge would be desirable for turning, but not useful for precision grooving.

Please note when setting tool:

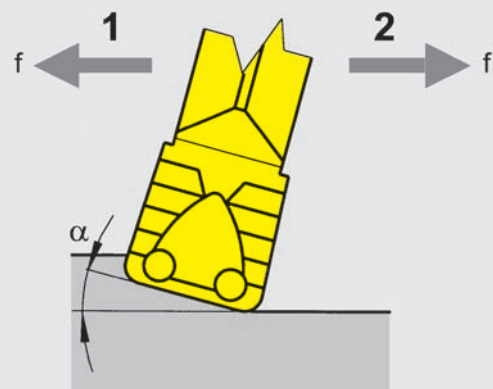
Always ensure that the tool is perpendicular to the axis of the workpiece.



Improper setting:

Feed direction **1** will create vibrations. The tendency to vibrate will increase on rigid workpieces.

Feed direction **2** is suitable for turning and will have no negative effects to the operation.

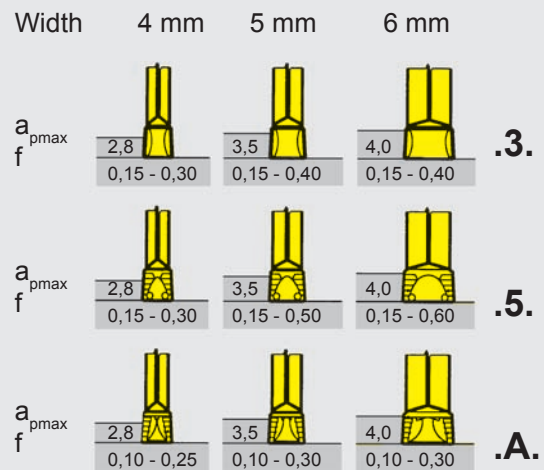


SIDE TURNING

The grooving tool should not be seen as a replacement for a turning tool with ISO-inserts. On certain operations, for instance grooving and turning can reduce the number of tool changes and offer reduced cycle time.

Width of insert:

The width 4, 5 and 6 mm are recommended for side turning. The profile and rigidity of the workpiece determines the width of insert. Always choose the largest possible edge radius.



Cutting depth a_p :

When side turning the cutting depth is dependent upon the width of insert as well as on the material and the rigidity of the workpiece. The max. depth would be limited by the length of the cutting edge.

Rute of thumb for calculation:

$$a_{p\max} = w \times 0,7 \text{ or max. } 3,0 \text{ mm}$$

$$a_{p\min} = \text{corner radius (r)}$$

The smallest cutting depth $a_{p\min}$ is governed by the edge radius of the insert. Cutting depth below the corner radius will create poor cutting conditions.

Max. feed rate f_{\max} :

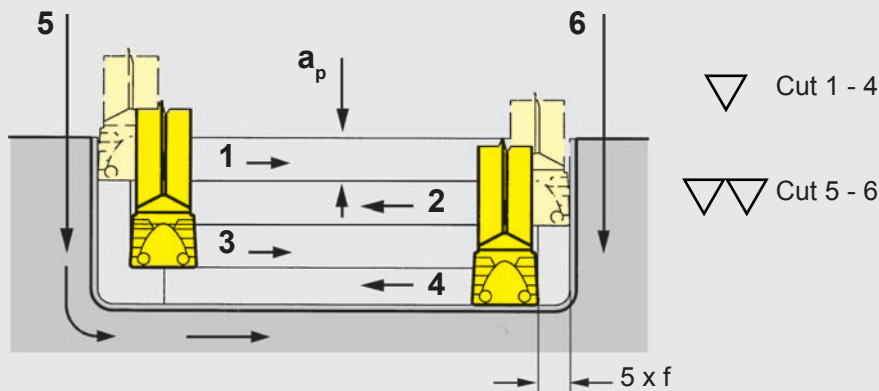
Rute of thumb for calculation:

$$f_{\max} = w \times 0,1$$

Q

SIDE TURNING

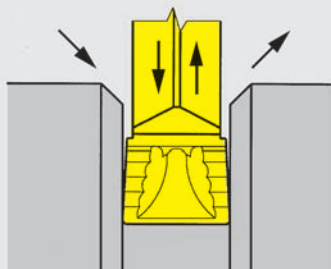
Side turning between shoulders



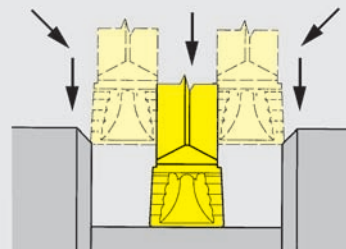
When side turning, do not work from shoulder to shoulder. Turning in this manner negatively influences the run off of chips and risks breaking the insert.

Grooving and turning with suggested a_p and f is recommended. Leave $5 \times f$ to the shoulder for cut 2 and subsequent cuts. This will help prevent swarf from being trapped under the advancing cutting edge.

CHAMFERING with standard inserts



Width of groove and insert are equal



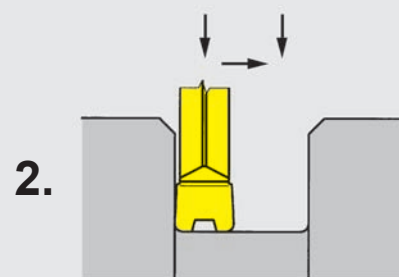
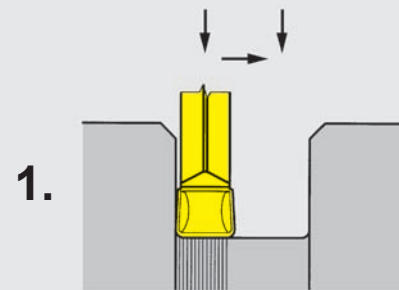
Groove wider than insert

FINISHING OF GROOVES

(Sealing grooves)

This process requires both turning and grooving where very high quality surface finishes are required.

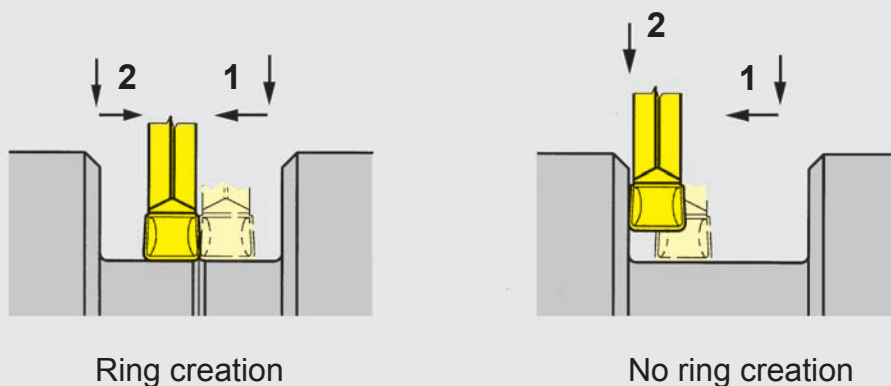
Diagram 2 shows the modified insert type S224... NC...D2.



SWARF RING CREATION

Swarf ring creation can be avoided by turning across the smaller diameter in one continuous pass.

Well defined cutting edges and small corner radii will reduce the tendency to create rings.



Ring creation

No ring creation

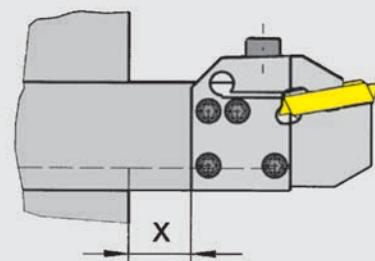
FACE GROOVING

Cassette Selection

Select the cassette to suit the major diameter of the face groove to be cut.

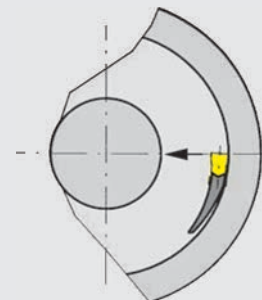
Stable Setup

The tool should be set to give the minimum overhang to achieve maximum stability.



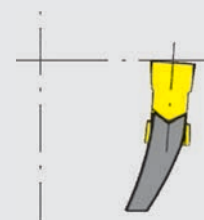
Working Practice

When turning to open up the face groove the cut should be taken from the major \varnothing towards the minor \varnothing .

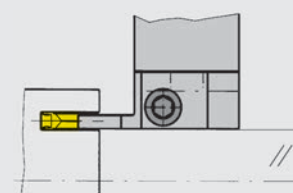


Tool Setup

The tool should be set to center height to ensure correct cutting and support clearance.



The tool must be parallel to the rotation axis of the workpiece.



PROFILED INSERTS

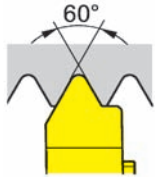
Examples of profiles

Profiled inserts are manufactured according to customer special requirements. It is also possible to supply inserts with different relief angles. If the customer wants to regrind or resharpen the insert, we recommend to use small relief angles around the cutting edge profile. How many times the customer can regrind the insert, depends on the condition of each individual insert.

PCD- or CBN-tipped inserts upon request.

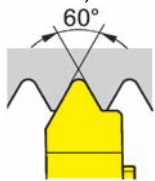
Q

Metric ISO standard thread (external)



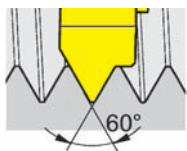
Thread	Partial profile	Page	Full profile	Page
M6 (M7)	R/L315.0610.01	J15	R/L315.0610.02	J16
M8 (M9)	R/L315.0712.01	J15	R/L315.0712.02	J16
M10 (M11)	R/L315.0915.01	J15	R/L315.0915.02	J16
M12	R/L315.1017.01	J15	R/L315.1017.02	J16
M14; M16	R/L315.1220.01	J15	R/L315.1220.02	J16
M18; M20; M22	R/L315.1525.01	J15	R/L315.1525.02	J16
M24; M27	R/L315.1830.01	J15	R/L315.1525.02	J16
M30; M33	R/L315.2135.01	J15	R/L315.2135.02	J16
M36	-	-	R/L315.2440.02	J16
M24 - M68	R/L315.3060.01	J15	-	-
M48; M52	-	-	R/L315.3050.02	J16
M64; M68	-	-	R/L315.3660.02	J16

Metric ISO fine thread (external)



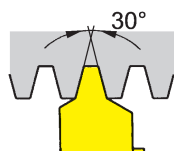
Thread	Partial profile	Page	Full profile	Page
M7,5x1	R/L315.0610.01	J15	R/L315.0610.02	J16
M10x1,25	R/L315.0712.01	J15	R/L315.0712.02	J16
M12x1,5	R/L315.0915.01	J15	R/L315.0915.02	J16
M17x2	R/L315.1220.01	J15	R/L315.1220.02	J16
M24x2,5	R/L315.1525.01	J15	R/L315.1525.02	J16
M30x3	R/L315.1830.01	J15	R/L315.1525.02	J16

Metric ISO fine thread (internal)



Thread	Partial profile	Page	Full profile	Page
M45x1	R/L315.0510.01	J17	R/L315.0510.02	J18
M45x1,5	R/L315.0815.01	J17	R/L315.0815.02	J18
M48x2	R/L315.1020.01	J17	R/L315.1020.02	J18
M48x2,5	R/L315.1325.01	J17	R/L315.1325.02	J18
M48x3	R/L315.1630.01	J17	R/L315.1630.02	J18
M48x3,5	R/L315.1835.01	J17	R/L315.1835.02	J18

Metric ISO trapezoidal thread DIN103 (external)

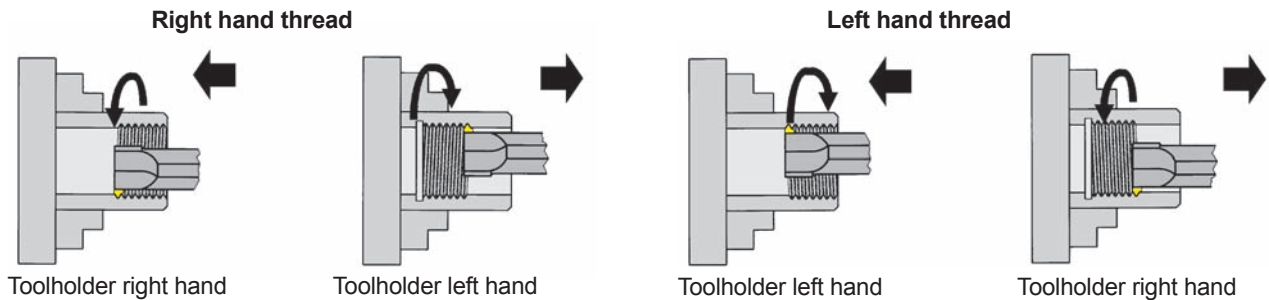


Thread	Full profile	Page
Tr8x1,5	R/L315.1015.02	J19
Tr9-10x2	R/L315.1320.02	J19
Tr12-14x3	R/L315.1730.02	J19
Tr16-20x4	R/L315.2240.02	J19
Tr22-28x5	R/L315.2750.02	J19
Tr30-36x6	R/L315.3560.02	J19

RECOMMENDED NUMBER OF PASSES

Carbide grade TN35 Nmm ² lb/in ²	Steel (Tensile strength)					stainl. steel	Cast iron	Aluminium	
	400-500 58-72	500-700 72-101	700-850 101-123	850-1150 123-167	> 1150 >167				
V _{max} m/min V _{max} feet/min	160 525	140 460	120 390	90 300	70 230	90 300	100 330	300 980	
Pitch		Number of passes							
mm	tpi								
0,8	32	8	8	9	9	10	10	9	8
1,0	24	10	10	12	12	12	12	12	10
1,25	20-19	12	12	14	14	15	15	14	12
1,5	16	15	15	17	17	18	18	17	15
1,75	14	17	17	19	19	21	21	18	17
2,0	12-11	19	20	22	22	25	25	20	18
2,5	10	22	24	26	26	31	31	22	20
3,0-3,5	8	28	30	32	32	38	38	24	22

FEED RATE internal threading



IN-FEED

RADIAL IN-FEED

Metal removed on both sides of the insert simultaneously. The most commonly used method for thread production.



MODIFIED FLANK IN-FEED

Less wear of the trailing edge and better surface finish on corresponding flank.



ALTERNATING FLANK IN-FEED

Both edges are being fully utilised which means longer insert life.



FLANK IN-FEED

More easily formed chip and better heat dissipation.



PARTING OFF

Indexable inserts with square cutting edge

The best selection for applications are inserts with a square cutting edge, wherever possible to use them.

Advantages: - increased tool life
- better swarf control and a high surface quality will be obtained
- possibility to choose the maximum cutting data

Feed rates

The feed rate when cutting with front cutting angle will need to be reduced up to 40 %. This may also be influenced by the tensile strength of the material to be cut.

Swarf control

Best swarf control and highest surface finish will be obtained by choosing the right speed and feed rate.

Avoiding nibs

By using right or left handed inserts and the correct center height, occurrences of part off nibs and burrs can be reduced.

Parting off with a sub spindle or part catcher

The cutting edge will be protected by having a second spindle or fixture to pick up the workpiece. Parting off without a support requires the feed rate to be reduced as the tool approaches center.

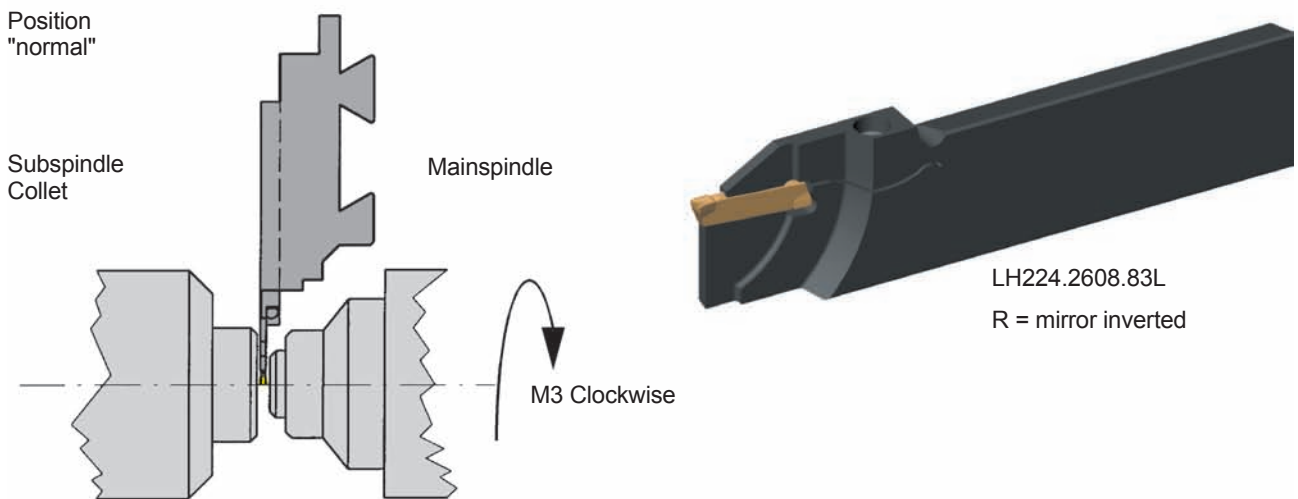
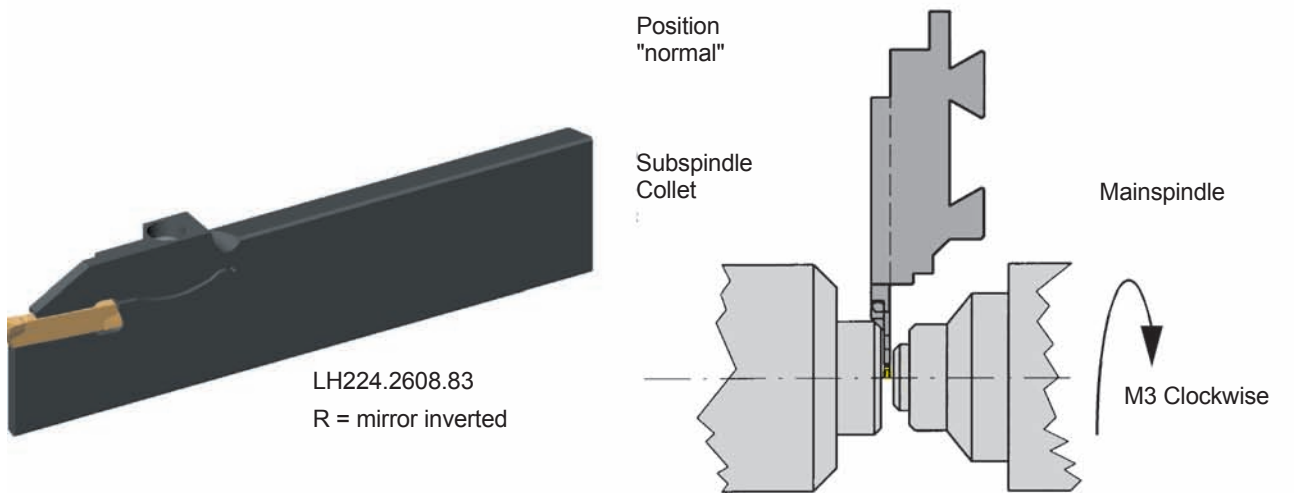
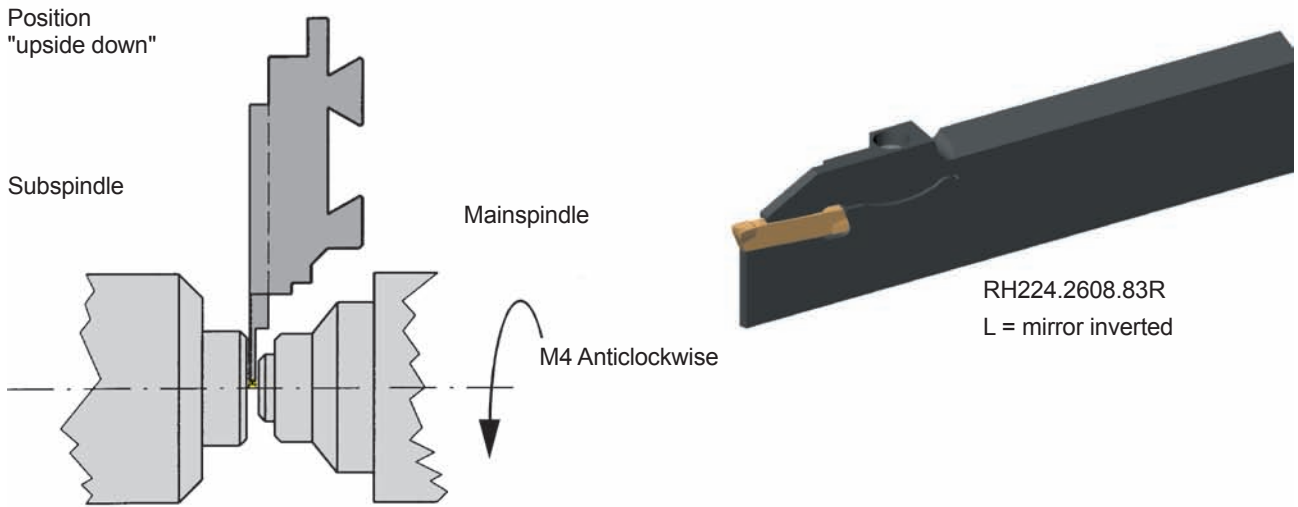
Convex or concave surfaces

Convex or concave surfaces will be avoided when using right or left hand inserts by reducing the feed rate.

Coolant



A copious well aimed coolant supply will give long tool life.

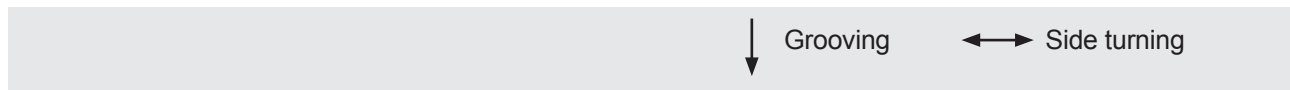
Reinforced Blades - Positioning








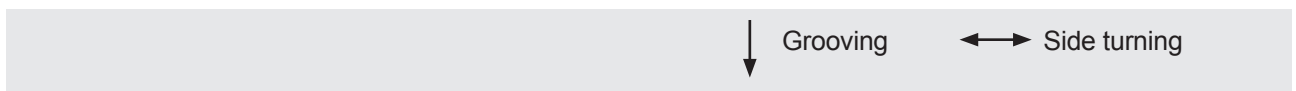
These special reinforced form can be produced on all blades.

Q

Geometry	Applications	Feed rate	
		mm/rev	in/rev
.00 	grooving, finishing of grooves, for long chipping materials, low feed rates	↓	0.02 - 0.12 .0008 - .005
Chipbreaker for special inserts 	grooving, finishing of grooves, geometry for inserts with profile, for short chipping materials and high tensile strength	↓	0.02 - 0.12 .0008 - .005

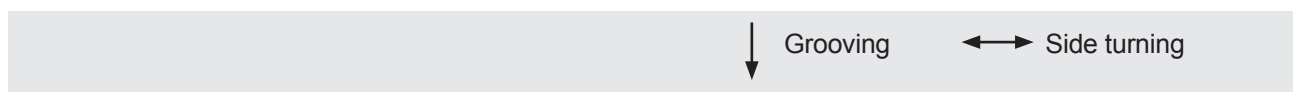


Geometry	Applications	Feed rate	
		mm/rev	in/rev
.10 	Grooving and parting off	↓	0.02 - 0.08 .0008 - .003
.20 	Grooving and parting off for materials high tensile strength	↓	0.02 - 0.08 .0008 - .003
.D1 	Grooving and turning	↓ ↔	0.02 - 0.08 .0008 - .003 0.02 - 0.04 .0008 - .002 $a_{pmax} = 1.5 \times w$
.M0 	Grooving, turning and parting off for Brass (Ms58)	↓ ↔	0.02 - 0.10 .0008 - .004 0.02 - 0.15 .0008 - .006
.P0 	Grooving and parting off	↓ ↔	0.02 - 0.08 .0008 - .003 0.02 - 0.04 .0008 - .002 $a_{pmax} = 1.5 \times w$



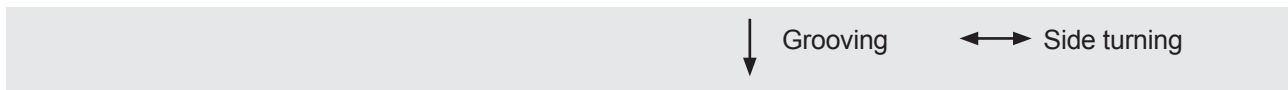
Q

Geometry	Applications	Feed rate		
		mm/rev	in/rev	
<p>.10</p>	<p>grooving, finishing of grooves, for long chipping materials, low feed rates</p>	↓	0.02 - 0.12	.0008 - .005
<p>.M.</p>	<p>grooving, finishing of grooves, geometry for inserts with profile, for short chipping materials and high tensile strength</p>	↓	0.02 - 0.12	.0008 - .005
<p>.P.</p>	<p>Grooving and turning (in one direction)</p>	<p>↓</p> <p>↔</p>	0.02 - 0.10	.0008 - .004





Geometry	Applications	Feed rate		
		mm/rev	in/rev	
.3. 	grooving, finishing of grooves, geometry for inserts with profile, for short chipping materials and high tensile strength	 	0.05 - 0.15 0.05 - 0.20 $a_{pmax} = 1.5 \times w$	.002 - .006 .002 - .008
.C. 	parting off, for long chipping materials		0.02 - 0.12	.0008 - .005
.5. 	grooving, side turning, profiling of grooves, excellent reduction of chip width in materials with medium tensile strength	 	0.08 - 0.20 0.05 - 0.20 $a_{pmax} = 1.5 \times w$	.003 - .008 .002 - .008



Q

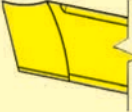
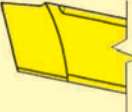
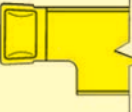
Geometry	Applications	Feed rate	
		mm/rev	in/rev
.3.	grooving, side turning, profiling of grooves, suitable for materials with high tensile strength	↓ ↔	0.15 - 0.25 0.15 - 0.40* .006 - .010 .008 - .016*
.5.	grooving, side turning, profiling of grooves, excellent reduction of chip width in materials with medium tensile strength	↓ ↔	0.10 - 0.45 0.15 - 0.60* .004 - .018 .006 - .024*
.A.	grooving, side turning, finishing or profiling of grooves, excellent chip breaking in materials with medium tensile strength	↓ ↔	0.05 - 0.30 0.10 - 0.30* .002 - .012 .004 - .012*
.C.	parting off, for long chipping materials	↓	0.02 - 0.10 .0008 - .004
.D.	grooving, finishing of grooves, for long chipping materials, low feed rates	↓ ↔	0.05 - 0.15 0.05 - 0.20 .002 - .006 .002 - .008
.E. .EN.	grooving, side turning, profiling of grooves, suitable for materials with high tensile strength	↓	0.08 - 0.30 .003 - .012
.F. .FY.	grooving, finishing of grooves, for long chipping materials, low feed rates	↓	0.03 - 0.15 .001 - .006
.H.	grooving in "pecking process", profiling in partial cut, for long chipping	↓ ↔	0.15 - 0.25 0.10 - 0.25 .006 - .010 .004 - .010
.K. .KF.	grooving, side turning, finishing or profiling of grooves	↓ ↔	0.05 - 0.25 0.05 - 0.25 .002 - .010 .002 - .010
.L.	grooving in full and partial cut with excellent chip control	↓ ↔	0.10 - 0.22 0.05 - 0.20 .004 - .009 .002 - .008
.ZG.	grooving, side turning, profiling of grooves	↓ ↔	0.10 - 0.22 0.05 - 0.20 .004 - .009 .002 - .008

* dependent upon insert width, edge radii and material
 ↓ Grooving ↔ Side turning

Geometry	Applications	Feed rate	
		mm/rev	in/rev
.10	grooving, finishing of grooves, for long chipping materials, low feed rates	↓	0.05 - 0.15 .002 - .006
.20	grooving, finishing of grooves, geometry for inserts with profile, for short chipping materials and high tensile strength	↓	0.07 - 0.25 .003 - .010
.3.	grooving, side turning, profiling of grooves, suitable for materials with high tensile strength	↓ ↔	0.15 - 0.25 .006 - .010 0.15 - 0.40* .006 - .016*
.5.	grooving, side turning, profiling of grooves, excellent reduction of chip width in materials with medium tensile strength	↓ ↔	0.10 - 0.45 .004 - .018 0.15 - 0.60* .006 - .024*
.A.	grooving, side turning, finishing or profiling of grooves, excellent chip breaking in materials with medium tensile strength	↓ ↔	0.05 - 0.30 .002 - .012 0.10 - 0.30* .004 - .012*
.C.	parting off, for long chipping materials	↓	0.02 - 0.10 .008 - .004
.E. .EN.	grooving, side turning, profiling of grooves, suitable for materials with high tensile strength	↓	0.08 - 0.30 .003 - .012
.F. .FY.	grooving, finishing of grooves, for long chipping materials, low feed rates	↓	0.03 - 0.15 .001 - .006
.H.	grooving in "pecking process", profiling in partial cut, for long chipping	↓ ↔	0.15 - 0.25 .006 - .010 0.10 - 0.25 .004 - .010
.HR.	grooving in full and partial cut with excellent chip control	↓	0.20 - 0.30 .008 - .012
.L.	grooving in full and partial cut with excellent chip control	↓ ↔	0.10 - 0.22 .004 - .009 0.05 - 0.20 .002 - .008
.K. .KF.	grooving, side turning, finishing or profiling of grooves	↓ ↔	0.05 - 0.25 .002 - .010 0.05 - 0.25 .002 - .010

* dependent upon insert width, edge radii and material ↓ Grooving ↔ Side turning

Q

Geometry	Applications	Feed rate	
		mm/rev	in/rev
.10 	grooving, finishing of grooves, for long chipping materials, low feed rates	↓	0.02 - 0.12 .0008 - .005
.20 	grooving, finishing of grooves, geometry for inserts with profile, for short chipping materials and high tensile strength	↓	0.02 - 0.12 .0008 - .005
.30 	grooving, side turning, profiling and finishing of grooves, for long chipping materials with high tensile strength	↓ ↔	0.15 - 0.25 .006 - .010 0.15 - 0.40* .006 - .016*

* dependent upon insert width, edge radii and material ↓ Grooving ↔ Side turning



Geometry	Applications	Feed rate		
		mm/rev	in/rev	
<p>.00</p> <p>312</p>	grooving, finishing of grooves, for long chipping materials, low feed rates	↓	0.02 - 0.12	.0008 - .005
<p>Chipbreaker for special inserts</p> <p>312</p>	grooving, finishing of grooves, geometry for inserts with profile, for short chipping materials and high tensile strength	↓	0.02 - 0.12	.0008 - .005
<p>.V.</p> <p>312</p>	grooving, with excellent chip control	↓	0.04 - 0.15	.002 - .006
<p>.F.</p> <p>S312</p>	grooving, profiling of grooves, easy cut	↓	0.03 - 0.15	.001 - .006
<p>.5.</p> <p>S312</p>	grooving, side turning, profiling of grooves, excellent reduction of chip width in materials with medium tensile strength	↓ ↔	0.08 - 0.25 0.15 - 0.30*	.003 - .010 .006 - .012*
<p>.D.</p> <p>S312</p>	grooving, profiling of grooves, suitable for materials with high tensile strength	↓	0.03 - 0.15	.001 - .006
<p>.C.</p> <p>S312</p>	parting off, grooving	↓	0.02 - 0.10	.0008 - .004

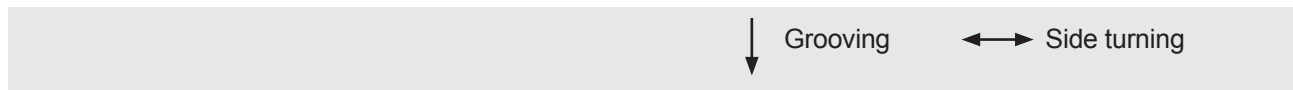
* dependent upon insert width, edge radii and material

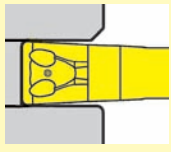
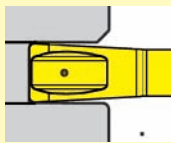
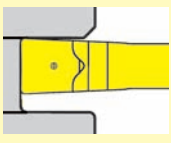
↓ Grooving

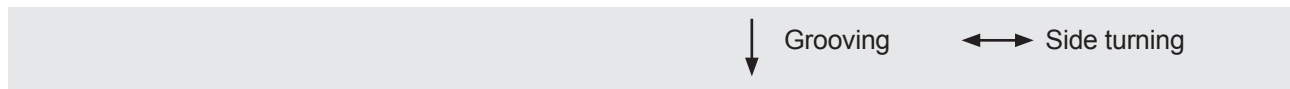
↔ Side turning

Q





Geometry	Applications	Feed rate	
		mm/rev	in/rev
<p>.00</p> 	grooving, finishing of grooves, for long chipping materials, low feed rates	↓	0.02 - 0.12 .0008 - .005
<p>Chipbreaker for special inserts</p> 	grooving, finishing of grooves, geometry for inserts with profile, for short chipping materials and high tensile strength	↓	0.02 - 0.12 .0008 - .005



Geometry	Applications	Feed rate		
		mm/rev	in/rev	
<p>.5.</p> 	<p>grooving, side turning, profiling of grooves, excellent reduction of chip width in materials with medium tensile strength</p>	↓	0.06 - 0.25	.002 - .010
<p>.EN.</p> 	<p>grooving, side turning, profiling of grooves, suitable for materials with high tensile strength</p>	↓	0.08 - 0.20	.003 - .008
<p>.FY.</p> 	<p>grooving, finishing of grooves, for long chipping materials, "low feed rates" with excellent chip control</p>	↓	0.03 - 0.15	.001 - .006



Q

Geometry	Applications	Feed rate		Available geometries and lead angle									
		mm/rev	in/rev	S100	S123/S223	S274	S264	S224	229/S229	312/S312	S316		
 .00	Parting off	0.02 - 0.10	.0008 - .004								0°		
		0.02 - 0.08	.0008 - .003								5°		
	Tubes with small thickness	0.02 - 0.06	.0008 - .002					8°				8°	
		0.02 - 0.05	.0008 - .002				15°	15°				12°	
 .00	Parting off with chip former	0.02 - 0.15	.0008 - .006								0°		
		0.02 - 0.15	.0008 - .006								5°		
 .M.	Parting off brittle materials (MS58)	0.02 - 0.15	.0008 - .006								0°		
		0.02 - 0.15	.0008 - .006								5°		
		0.02 - 0.12	.0008 - .004					8°					
		0.02 - 0.10	.0008 - .005					15°					
 .V.	Parting off with chip forming	0.02 - 0.12	.0008 - .005								0°		
		0.02 - 0.08	.0008 - .003								5°		
 .C.	Parting off	0.02 - 0.10	.0008 - .004		0°				0°	0°	0°		
		0.02 - 0.08	.0008 - .003		4°				5°	5°	5°		
		0.02 - 0.06	.0008 - .002		8°				8°	8°	8°		
		0.02 - 0.05	.0008 - .002		15°				15°				
 .E.	Parting off	0.02 - 0.12	.0008 - .005	0°					0°	0°			
		0.05 - 0.12	.002 - .005	5°					5°				
 .EN	Parting off	0.10 - 0.25	.004 - .010	0°					0°	0°		0°	
		0.10 - 0.20	.004 - .008	5°									
 .D. * (.32)	Parting off	0.02 - 0.10	.0008 - .004		0°				0°		0°		
 .F.	Parting off	0.02 - 0.12	.0008 - .005	0°					0°	0°			
		0.02 - 0.10	.0008 - .004	5°					5°				
 .3.	Parting off	0.10 - 0.15	.004 - .006						0°	0°			
		0.08 - 0.12	.003 - .005							5°			

Material			Hardness Brinell (HB)	Cutting speed v_c (m/min)										
				K10	MG12	P20	TI22 TN32	TI25 TN35	TF45 TA45 TH35	TF46 TA46	AS62	AL96 AS66	H20	H54
P	Carbon steel	0.2% C	140			180-120	200-160	180-130	200-160	280-180	250-180	300-180	230-170	200-140
		0.4% C	180			160-110	180-150	170-120	180-150	250-140	230-170	270-150	220-160	180-120
		0.6% C	200			140-90	180-140	150-100		230-120	220-160	250-120	210-150	160-100
	Alloyed steel (<5%)	annealed	180			140-100	180-140	160-110	180-140	230-100	200-150	250-100	210-150	180-120
		quenched	280			110-90	160-110	130-90		190-90	160-110	220-90	170-120	160-100
		quenched	350			80	140-90	100-70		170-80	130-100	200-80	140-80	120-80
	high alloyed steel (>5%)	annealed	200			120-80	120-90			200-140	180-120	220-140	120-100	100-90
		hardened	-											
	Cast steel	unalloyed	180				130-100				200-150	200-150	180-120	
		alloyed	220				110-80				160-100	150-90	140-90	
M	Stainless steel	martensitic, ferritic	200		90-70		130-100	120-60		180-120	170-120	190-140	190-120	
		austenitic	180		90-60			100-70		140-110		140-110	170-120	
K	Cast iron	low tensile strength	180	90-60	80-60				130-90	180-120	180-120	200-120		
		high tensile strength	250	90-60	80-60				90-70	140-100	140-100	160-120		
	Spheroidal graphite cast iron	ferritic	160				90-70	90-70	120-80	170-90	170-90	180-130		
		perlitic	250				70-60	70-60	110-80	180-80	150-80	160-120		
	Malleable cast iron	ferritic	125		100-80		140-120	100-70		120-100	190-140	220-120		
		perlitic	225		70-50		100-80	80-60		90-80	140-100	190-100		
N	Al-alloy	not heat treatable	30-80	1000-600	800-400			1000-600						
		heat treatable	80-120	400-220	300-200			400-220						
	Al-cast-alloy	not heat treatable	80	1000-600	800-400			1000-600						
		heat treatable	100	600-300	400-250			600-300						
	Copper-alloy	not heat treatable	90	200-120			200-150	210-130		200-150				
		heat treatable	100	150-90			150-60	160-90		150-110				
S	Heat resistant alloy (FE)	annealed	200		50-30			50-30						
		hardened	275		40-20			40-20						
	Heat resistant alloy (Ni, Co)	annealed	250		30-20			30-20						
		hardened	350		20-10			20-10						

Q

Material	Hardness Brinell (HB)	Cutting speed v_c (ft/min)												
		K10	MG12	P20	TI22 TN32	TI25 TN35	TF45 TA45 TH35	TF46 TA46	AS62	AL96 AS66	H20	H54		
P Carbon steel	0.2% C	140			590-395	650-525	590-430	650-525	920-590	820-590	985-590	755-560	650-460	
	0.4% C	180			525-360	590-495	560-395	590-495	820-460	755-560	885-495	720-525	590-395	
	0.6% C	200			460-295	590-460	495-330		755-395	720-525	820-395	690-495	525-330	
	Alloyed steel (<5%)	annealed	180			460-330	590-460	525-360	590-460	755-330	650-495	820-330	690-495	590-395
		quenched	280			360-295	525-360	430-295		625-295	525-360	720-295	560-395	525-330
		quenched	350			265	460-295	330-230		560-265	430-330	650-265	460-265	395-265
	high alloyed steel (>5%)	annealed	200			395-265	395-295			650-460	590-395	720-460	395-330	330-295
		hardened	-											
	Cast steel	unalloyed	180				430-330				650-495	650-495	590-395	
		alloyed	220				360-265				525-330	495-295	460-295	
M Stainless steel	martensitic, ferritic	200		295-230		430-330	395-200		590-395	560-395	625-460	625-395		
	austenitic	180		295-200			330-230		460-360		460-360	560-395		
K Cast iron	low tensile strength	180	295-200	265-200				430-295	590-395	590-395	650-395			
		250	295-200	265-200				295-230	460-330	460-330	525-395			
	Spheroidal graphite cast iron	ferritic	160				295-230	295-230	395-265	560-295	560-295	590-430		
		perlitic	250				230-200	230-200	360-265	590-265	495-265	525-395		
	Malleable cast iron	ferritic	125		330-265		460-395	330-230		395-330	625-460	720-395		
		perlitic	225		230-165		330-265	265-200		295-265	460-330	625-330		
N Al-alloy	not heat treatable	30-80	3280-1970	2625-1315			3280-1970							
		80-120	1315-720	985-650			1315-720							
	Al-cast-alloy	not heat treatable	80	3280-1970	2625-1315			3280-1970						
		heat treatable	100	1970-985	1315-820			1970-985						
	Copper-alloy	not heat treatable	90	650-395			650-495	690-430		650-495				
		heat treatable	100	495-295			650-495	690-430		650-495				
S Heat resistant alloy (FE)	annealed	200		165-100			165-100							
		275		130-65			130-65							
	Heat resistant alloy (Ni. Co)	annealed	250		100-65			100-65						
		hardened	350		65-35			65-35						

Cutting data Face grooving



Q

Material	Hardness Brinell (HB)	Cutting speed v_c (m/min)											
		K10	MG12	P20	TI22 TN32	TI25 TN35	TF45 TA45 TH35	TF46 TA45	AS62	AS66	H20	H54	
P	Carbon steel	0.2% C			140-100	160-130	140-110	160-130	220-140	200-140	240-140	190-140	200-140
		0.4% C			130-90	140-120	130-100	140-120	200-120	190-130	220-120	180-130	180-120
		0.6% C			120-80	140-120	120-180		190-100	180-130	200-100	170-120	160-100
	Alloyed steel (<5%)	annealed	180		120-80	140-120	140-100	140-120	190-80	160-120	200-80	170-120	180-120
		quenched	280		90-70	140-90	110-80		170-80	140-90	180-80	140-100	160-100
		quenched	350		60	120-70	80-60		140-60	110-80	160-70	120-60	120-80
	high alloyed steel (>5%)	annealed	200		100-60	100-70			160-120	150-100	180-120	110-80	100-90
		hardened	-										
	Cast steel	unalloyed	180			110-80				160-120	160-120	140-100	
		alloyed	220			90-60				140-80	120-80	120-80	
M	Stainless steel	martensitic, ferritic	200	80-60		110-80	110-50		160-100	130-110	150-120	150-100	
		austenitic	180	60-40			80-60		120-100		110-80	140-100	
K	Cast iron	low tensile strength	180	70-50	70-50			110-70	140-100	140-100	160-100		
		high tensile strength	250	70-50	70-50			80-60	120-80	120-80	140-100		
	Spheroidal graphite cast iron	ferritic	160			90-60	80-60	100-60	140-80	150-70	150-110		
		perlitic	250			80-60	60-50	90-60	130-70	120-60	140-100		
	Malleable cast iron	ferritic	125	80-60		120-100	80-60		100-80	160-110	180-100		
		perlitic	225	60-40		80-60	60-50		80-60	120-80	150-120		
N	Al-alloy	not heat treatable	30-80	1000-600	800-400		1000-600						
		heat treatable	80-120	400-220	300-200		400-220						
	Al-cast-alloy	not heat treatable	80	1000-600	800-400		1000-600						
		heat treatable	100	600-300	400-250		600-300						
	Copper-alloy	not heat treatable	90	160-100		160-130	190-110						
		heat treatable	100	130-80		130-60	140-80						
S	Heat resistant alloy (FE)	annealed	200	40-30			40-30						
		hardened	275	35-20			35-20						
	Heat resistant alloy (Ni, Co)	annealed	250	25-20			20-10						
		hardened	350	20-10			20-10						

Cutting data Face grooving



Q

Material	Hardness Brinell (HB)	Cutting speed v_c (ft/min)												
		K10	MG12	P20	TI22 TN32	TI25 TN35	TF45 TA45 TH35	TF46 TA45	AS62	AS66	H20	H54		
P Carbon steel	0.2% C	140			460-330	525-430	460-360	525-430	720-460	650-460	790-460	625-460	650-460	
	0.4% C	180			430-300	460-395	430-330	460-395	650-395	625-430	720-395	590-430	590-395	
	0.6% C	200			395-265	460-395	395-590		625-330	590-430	650-330	560-395	525-330	
	Alloyed steel (<5%)	annealed	180			395-265	460-395	460-330	460-395	625-265	525-395	650-265	560-395	590-395
		quenched	280			300-230	460-300	360-265		560-265	460-300	590-265	460-330	525-330
		quenched	350			200	395-230	265-200		460-200	360-265	525-230	395-200	395-265
	high alloyed steel (>5%)	annealed	200			330-200	330-230			525-395	495-330	590-395	360-265	330-300
		hardened	-											
	Cast steel	unalloyed	180				360-265				525-395	525-395	460-330	
		alloyed	220				300-200				460-265	395-265	395-265	
M Stainless steel	martensitic, ferritic	200		265-200		360-265	360-165		525-330	430-360	495-395	495-330		
	austenitic	180		200-130			265-200		395-330		360-265	460-330		
K Cast iron	low tensile strength	180	230-165	230-165				360-230	460-330	460-330	525-330			
		250	230-165	230-165				265-200	395-265	395-265	460-330			
	Spheroidal graphite cast iron	ferritic	160				300-200	265-200	330-200	460-265	495-230	495-360		
		perlitic	250				265-200	200-165	300-200	430-230	395-200	460-330		
	Malleable cast iron	ferritic	125		265-200		395-330	265-200		330-265	525-360	590-330		
		perlitic	225		200-130		265-200	200-165		265-200	395-265	495-395		
N Al-alloy	not heat treatable	30-80	3280-1970	2625-1315			3280-1970							
		80-120	1315-720	985-650			1315-720							
	Al-cast-alloy	not heat treatable	80	3280-1970	2625-1315			3280-1970						
		heat treatable	100	1970-985	1315-820			1970-985						
	Copper-alloy	not heat treatable	90	525-330			525-430	625-360						
		heat treatable	100	430-265			430-200	460-265						
S Heat resistant alloy (FE)	annealed	200		130-100			130-100							
	hardened	275		115-65			115-65							
	Heat resistant alloy (Ni. Co)	annealed	250		85-65			65-35						
		hardened	350		65-35			65-35						



Nominal cutting speeds with HORN grades

Material		Hardness Brinell (HB)	* Cutting speed v_c (m/min)				
			MG12	TN35	TI25	TF45 / TA45 / TH35	
P	Carbon steel. unalloyed	C < 0.4%	125	14-110	14-180	14-180	14-180
		C > 0.4% < 0.6%	150	14-110	14-180	14-180	14-180
		C > 0.6% < 0.8%	200	14-110	14-180	14-180	14-180
	low alloyed steel	annealed	180	16-90	16-150	16-150	
		quenched	275	16-90	16-150	16-150	
		quenched	160	16-90	16-150	16-150	
	high alloyed steel	annealed	200		19-90	19-90	
		quenched	325		19-90	19-90	
	Cast steel	unalloyed	180	19-110	19-180	19-180	
		low alloyed	200	19-110	19-180	19-180	
		high alloyed	225	19-110	19-180	19-180	
	M	Stainless steel	martensitic. ferritic. annealed	200		19-90	19-90
austenitic Ni>8%/Cr 18-20%			180		16-80		
N	Al-alloy		14-220	16-600	16-600		
	Copper and brass alloys		14-220	14-700	14-700		
S	Heat resistant alloy	NiFe			18-75	18-75	
		NiCo			18-40	18-40	

* v_c is depending on the bore diameter and therefore of the maximum numbers of revolutions of the machine.

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Nominal cutting speeds with HORN grades

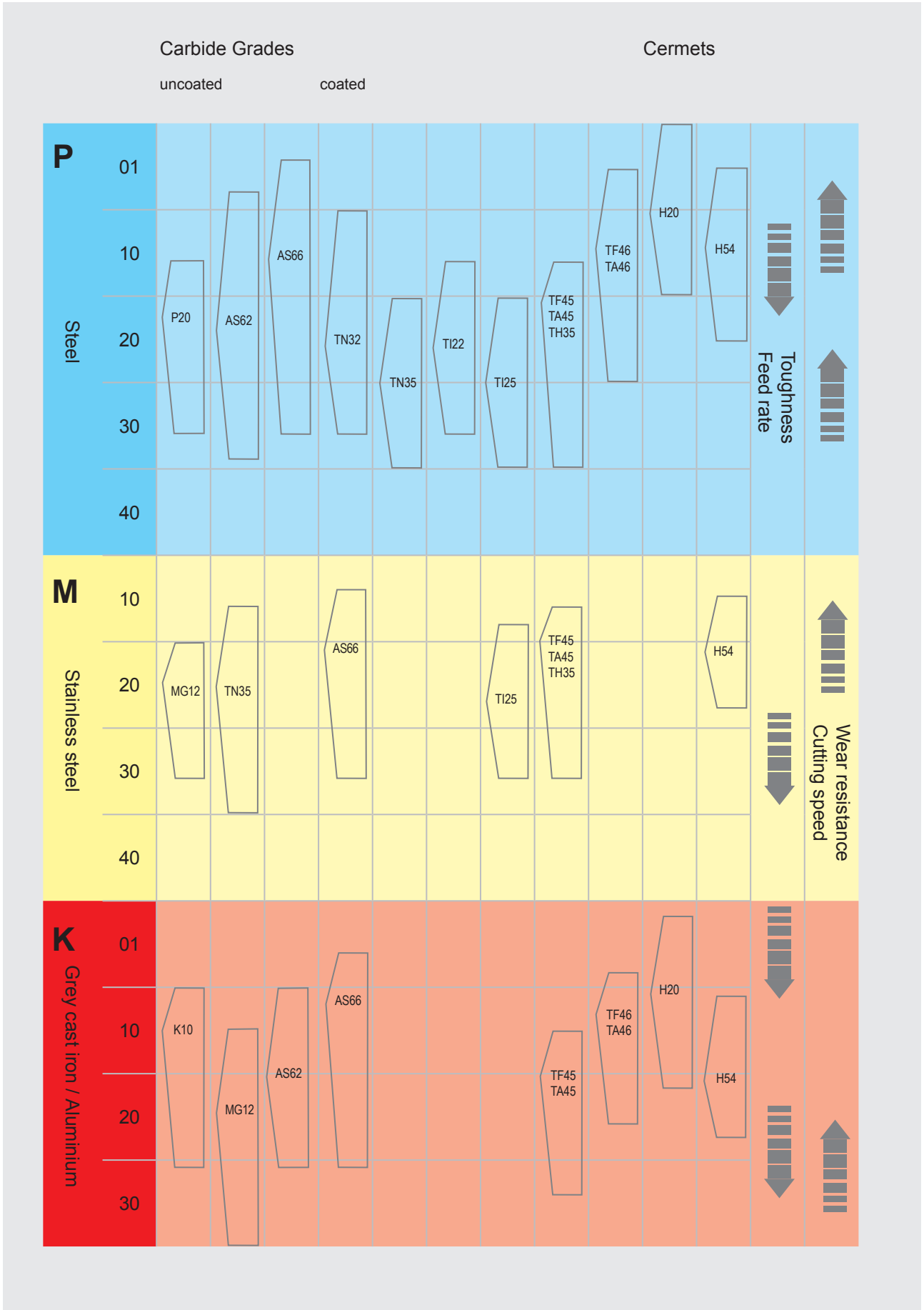
Material		Hardness Brinell (HB)	* Cutting speed v_c (ft/min)				
			MG12	TN35	TI25	TF45 / TA45 / TH35	
P	Carbon steel. unalloyed	C < 0.4%	125	45-360	45-590	45-590	45-590
		C > 0.4% < 0.6%	150	45-360	45-590	45-590	45-590
		C > 0.6% < 0.8%	200	45-360	45-590	45-590	45-590
	low alloyed steel	annealed	180	50-295	50-490	50-490	
		quenched	275	50-295	50-490	50-490	
		quenched	160	50-295	50-490	50-490	
	high alloyed steel	annealed	200		60-295	60-295	
		quenched	325		60-295	60-295	
	Cast steel	unalloyed	180	60-360	60-590	60-590	
		low alloyed	200	60-360	60-590	60-590	
		high alloyed	225	60-360	60-590	60-590	
	M	Stainless steel	martensitic, ferritic. annealed	200		60-295	60-295
austenitic Ni>8%/Cr 18-20%			180		50-260		
N	Al-alloy		45-720	50-1970	50-1970		
	Copper and brass alloys		45-720	45-2295	45-2295		
S	Heat resistant alloy	NiFe			60-245	60-245	
		NiCo			60-130	60-130	

* v_c is depending on the bore diameter and therefore of the maximum numbers of revolutions of the machine.

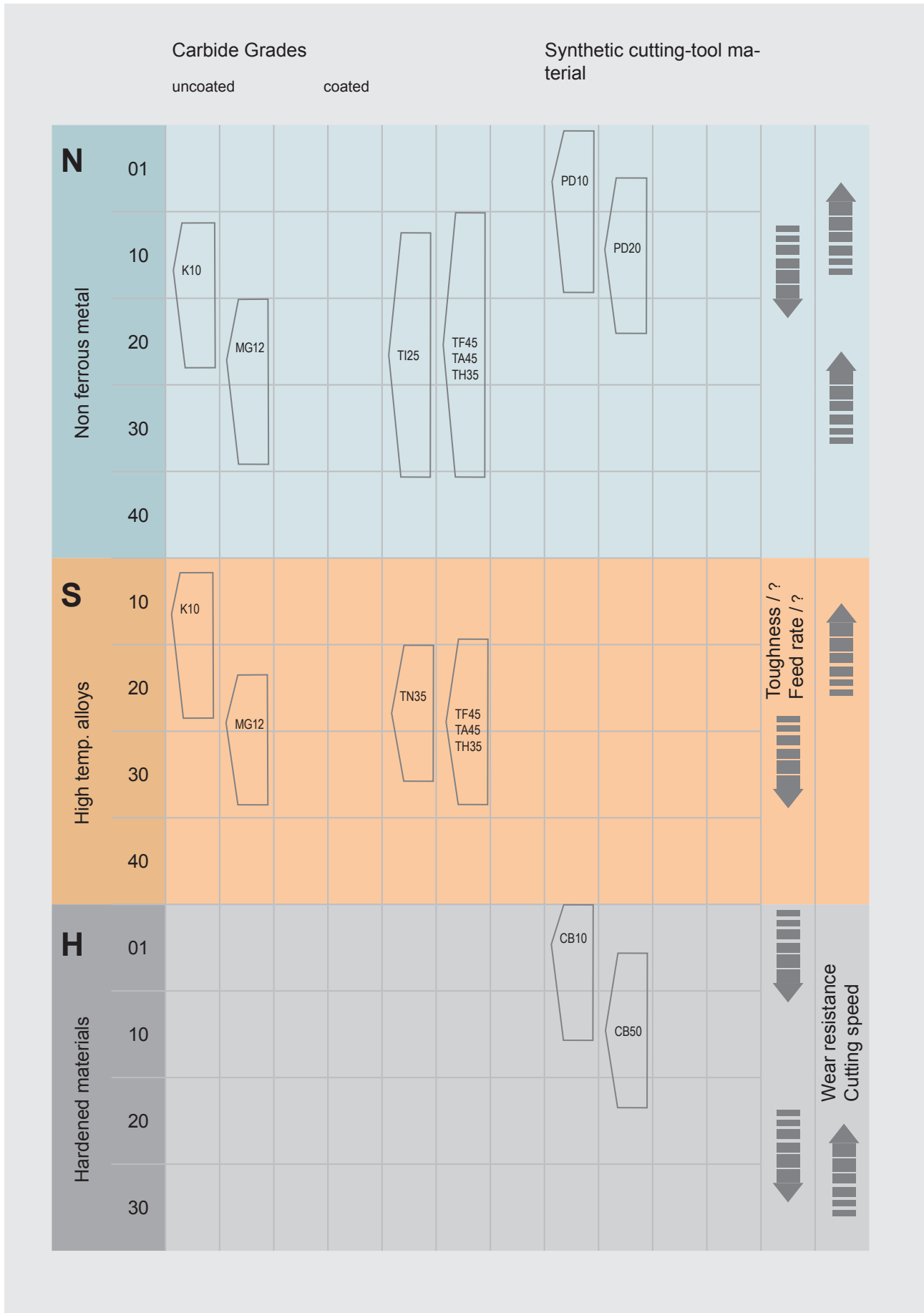
Carbide grades for grooving and parting off



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Description carbide grades



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HORN-Grades	ISO513	Properties	Workpiece material	Recommended applications
H20	HT	Cermet	carbon steels, low alloyed steels, cast steel, stainless steel, exotic alloys	for grooving and finishing, for best surface qualities, no tendency to built up edge, resistant to wear
H54	HT	Cermet	carbon steels, low alloyed steels, cast steel, stainless steel, exotic alloys	for grooving and finishing, for best surface qualities, no tendency to built up edge, resistant to wear
P20	HW	uncoated grades	steel, cast steel, malleable cast iron	for grooving and finishing at moderate cutting speed
AS62	HC	TiALN-Coating	steel, cast steel, malleable cast iron,	for grooving and finishing at high cutting speed
AS66	HC	TiALN-Coating	steel, cast steel, malleable cast iron, martensitic stainless steel	for grooving and finishing, at high cutting speed, heat resistant, suitable for dry cutting
AL96	HC	multilayer coating(Al ₂ O ₃)	steel, cast steel, malleable cast iron, martensitic stainless steel	for grooving and finishing, at very high cutting speed, heat resistant, suitable for dry cutting
TN32	HC	TiN-Coating	steel, cast steel, malleable cast iron	for grooving and finishing, at high cutting speed
TN35	HC	TiN-Coating	steel, cast steel, malleable cast iron, martensitic stainless steel	for grooving and finishing, at low cutting speed, thread cutting, unfavourable conditions
TI22	HC	TiCN-Coating	steel, cast steel, malleable cast iron	for grooving and finishing at high cutting speed
TI25	HC	TiCN-Coating	steel, cast steel, malleable cast iron, martensitic stainless steel	for grooving and finishing, at low cutting speed, thread cutting, unfavourable conditions
TH35 AS6G	HC	TiALN-Coating	steel, cast steel, malleable cast iron, martensitic stainless steel	for grooving and finishing, at high cutting speed, heat resistant, suitable for dry cutting
TA45 TF45	HC	TiALN-Coating	steel, cast steel, malleable cast iron, martensitic stainless steel	for grooving and finishing at low cutting speed, cooling with oil
TA46 TF46	HC	TiALN-Coating	steel, cast steel, malleable cast iron, martensitic stainless steel	for grooving and finishing, at high cutting speed, heat resistant, suitable for dry cutting
K10	HW	uncoated grades	grey cast iron, malleable cast iron, Si-aluminium and copper alloys, heat resistant alloys	for grooving and finishing
MG12	HW	uncoated grades (micro grain)	grey cast iron, malleable cast iron, aluminium and copper alloys, heat resistant alloys	for grooving and finishing, at low cutting speed, unfavourable conditions

PCD- or CBN-tipped inserts upon request. .

Carbide grades on stock are shown in the catalogue or in the price- and stocklist..
Not mentioned grades can be supplied only against firm order..

Description carbide grades



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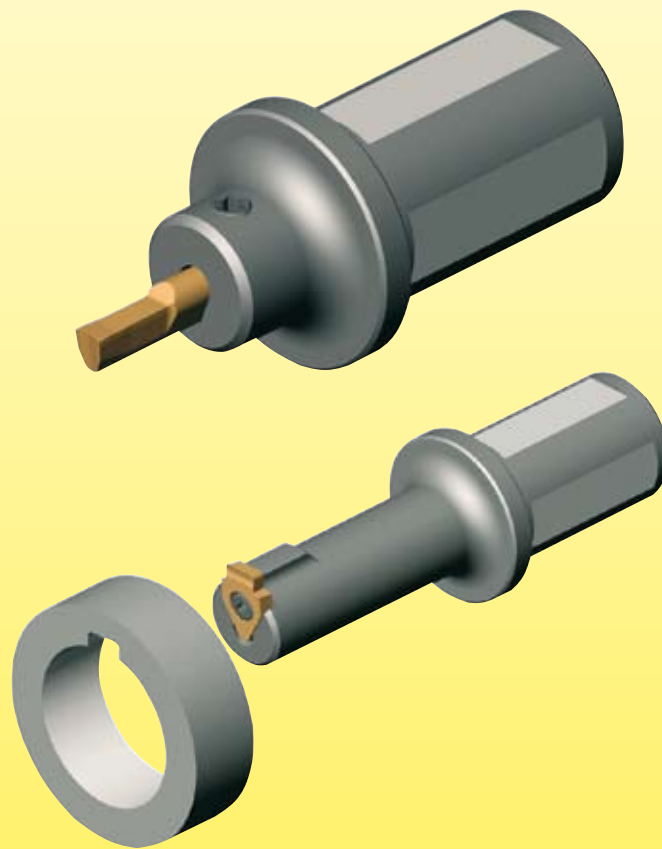
HORN-Grades	ISO513	Workpiece material	Recommended applications
CB07	BN	hardened Steel > 56 HRC non interrupted cut	Grooving $v_c \approx 490 \text{ ft./min.}$ $f = .0012 - .0016''$ $v_c \approx 150 \text{ m/min.}$ $f = 0.03 - 0.04 \text{ mm}$
			Finishing with $a_p .004 - .008'' / 0.1 - 0.2 \text{ mm}$ $v_c \approx 525 \text{ ft./min.}$ $f = .0016 - .0031''$ $v_c \approx 160 \text{ m/min.}$ $f = 0.04 - 0.08 \text{ mm}$
CB10	BN	hardened Steel > 56 HRC non interrupted cut	Grooving $v_c \approx 460 \text{ ft./min.}$ $f = .0012 - .0016''$ $v_c \approx 140 \text{ m/min.}$ $f = 0.03 - 0.04 \text{ mm}$
			Finishing with $a_p .004 - .008'' / 0.1 - 0.2 \text{ mm}$ $v_c \approx 490 \text{ ft./min.}$ $f = .0016 - .0031''$ $v_c \approx 150 \text{ m/min.}$ $f = 0.04 - 0.08 \text{ mm}$
CB50	BN	hardened Steel > 45 HRC interrupted cut	Grooving $v_c \approx 460 \text{ ft./min.}$ $f = .0012 - .0016''$ $v_c \approx 140 \text{ m/min.}$ $f = 0.03 - 0.04 \text{ mm}$
		Cast iron, perlitic	Grooving $v_c \approx 3900 \text{ ft./min.}$ $f = .004 - .010''$ $v_c \approx 1200 \text{ m/min.}$ $f = 0.1 - 0.25 \text{ mm}$
		Spheroidal graphite cast iron	Grooving $v_c \approx 2950 \text{ ft./min.}$ $f = .0028 - .008''$ $v_c \approx 900 \text{ m/min.}$ $f = 0.07 - 0.2 \text{ mm}$
			Partial cut with $a_p .012 - .039'' / 0.3 - 1.0 \text{ mm}$ $v_c \approx 4250 \text{ ft./min.}$ $f = .008 - .016''$ $v_c \approx 1300 \text{ m/min.}$ $f = 0.2 - 0.4 \text{ mm}$
			Partial cut with $a_p .004 - .028'' / 0.1 - 0.7 \text{ mm}$ $v_c \approx 3280 \text{ ft./min.}$ $f = .004 - .012''$ $v_c \approx 1000 \text{ m/min.}$ $f = 0.1 - 0.3 \text{ mm}$

PCD- or CBN-tipped inserts upon request. .

Carbide grades on stock are shown in the catalog or in the price- and stocklist.
 Not mentioned grades can be supplied only against firm order..

BROACHING on CNC machines

BROACHING TOOLS TYPE SB105, SB110 and SH117



For direct mounting in lathes and mills as well as mounting in a live broaching attachment from the companies:

- BENZ
- EWS
- Schwarz r

HCG - HORN Catalog Guide

KEYWAY BROACHING

R

Keyway Width Inch	Bore Ø from									
	.236"	.354"	.551"	.625"	.669"	.866"	1.181"	1.496"	1.496"	
1/16	NU105									
3/32	NU105									
1/8	NU105		SU117	SU117						
5/32	NU105	NU110	SU117	SU117						
3/16		NU110	SU117		SU117					
1/4					SU117					
9/32						SU117				
5/16						SU117				
3/8							SU117			
7/16								SU117		
1/2								SU117		
> 1/2									SU117	

Keyway Width MM	Bore Ø from									
	6 mm	6.5 mm	9 mm	14 mm	17 mm	22 mm	27 mm	30 mm	38 mm	65 mm
2.0	N105									
3.0		N105		S117						
4.0		N105	N110	S117						
5.0			N110	S117	S117					
6.0					S117					
7.0							S117			
8.0						S117				
10.0								S117		
12.0									S117	
> 12.0										S117

HEXAGON BROACHING

TORX BROACHING

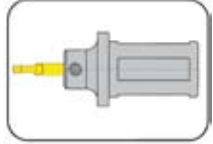
Hexagon SW MM	Pilot Ø equals		
	SW	SW+0.1	SW+0.2
2.5 - 2.9	N105		
2.9 - 3.5	N105		
3.5 - 4.0	N105		
4.0 - 4.5	N105		
4.5 - 5.0	N105		
5.0 - 6.0		N105	
8.0 - 10.0		N105	
10.0 - 14.0		N110	
14.0 - 16.5		N110	
16.5 - 18.0			N110

Torx MM	Pilot Ø equals			
	2.41	2.85	3.24	4.03
T15	N105			
T20		N105		
T25			N105	
T30				N105

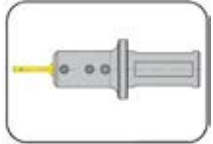
Special tools upon request

BROACHING 105 / 110 / 117 **R**

**Toolholder
Type 105 / 110**

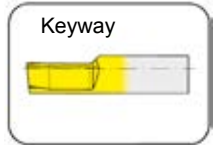


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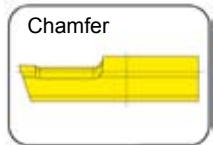


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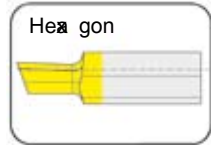
**Insert
Type 105 / 110**



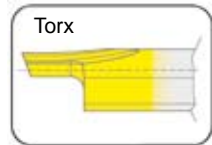
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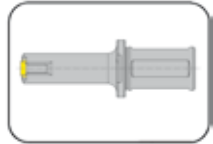


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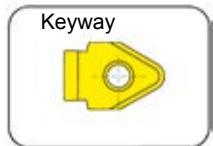
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**Toolholder
Type 117**

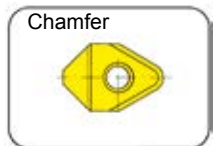


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**Insert
Type 117**



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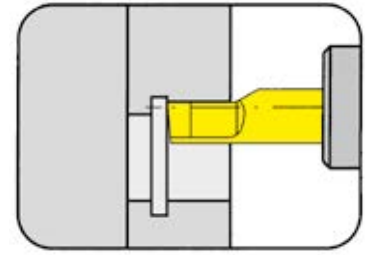
**Technical
Instructions**

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R

TOOLHOLDER Type

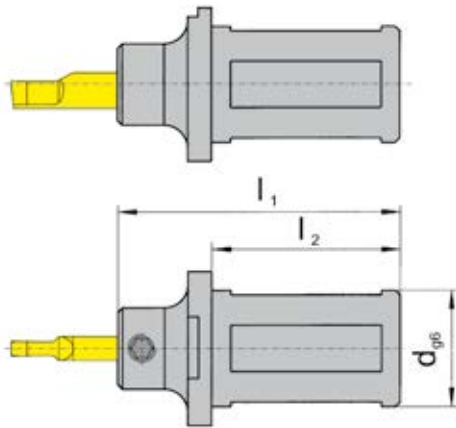
SBU105



Bore Ø from .236"

for use with Insert

Type N105
NU105



Part number	d	l ₁	l ₂	D _{min}
SBU105.0750.1.01	.750	2.375	1.575	.236
SBU105.1000.1.01	1.000	2.375	1.575	.236

Further sizes upon request

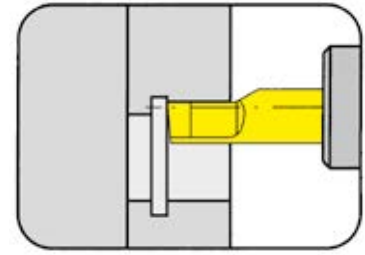
Dimensions in inch

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
SBU105....	6.075T15P	T15PQ

TOOLHOLDER Type

SB105

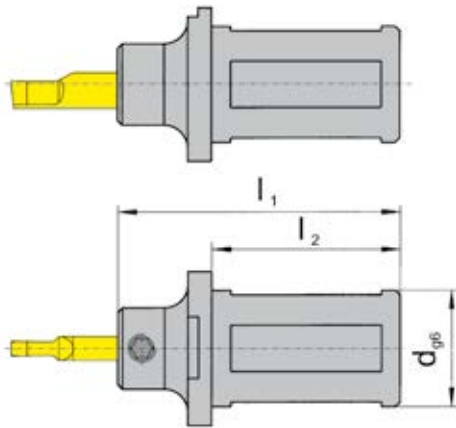


R

Bore Ø from .236" (6.0 mm)

for use with Insert

Type N105
NU105



Part number	d	l ₁	l ₂	D _{min}
SB105.0020.1.01	20	60	40	6
SB105.0022.1.01	22	60	40	6
SB105.0025.1.01	25	60	40	6

Further sizes upon request

Dimensions in mm

Spare parts

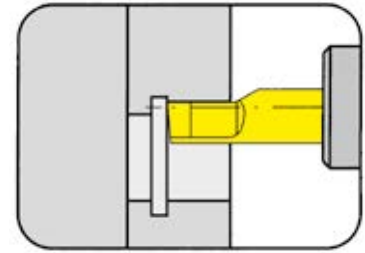
Toolholder	Screw	TORX PLUS® Wrench
SB105.002...	6.075T15P	T15PQ

TOOLHOLDER Type

SB105

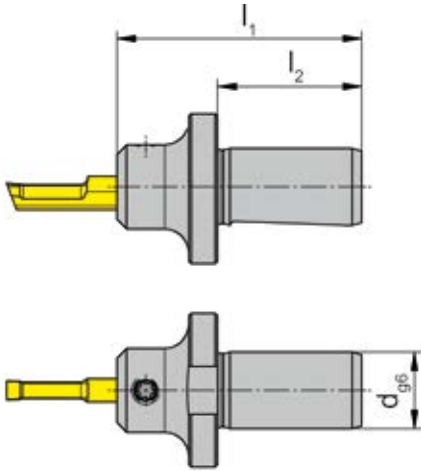
Bore Ø from .236" (6.0 mm)

only usable for broaching devices EWS-Slot and BENZ LinA



for use with Insert

Type N105
NU105



Part number	d	l ₁	l ₂	D _{min}
SB105.0016.E1.01	16	51	30	6

Further sizes for other device interfaces upon request

Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
SB105.0016.E1.01	6.075T15P	T15PQ

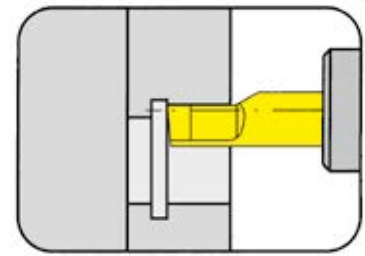
R6

TOOLHOLDER Type

B105

Bore Ø from .236" (6.0 mm)

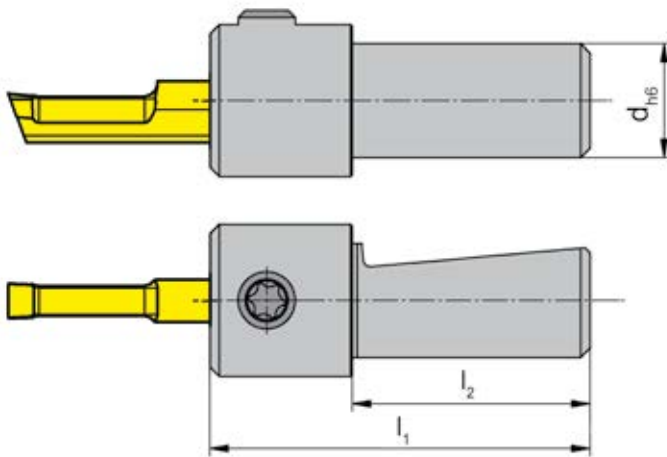
for broaching device Schwarzer



R

for use with Insert

Type N105
NU105



Part number	d	l ₁	l ₂	D _{min}
B105.0012.0220	12	40	25	6

Further sizes for other device interfaces upon request

Dimensions in mm

Spare parts

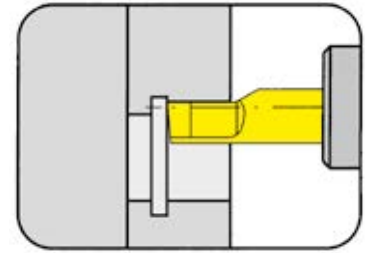
Toolholder	Screw	TORX PLUS® Wrench
B105.0012.0220	6.075T15P	T15PQ

TOOLHOLDER Type

SB105

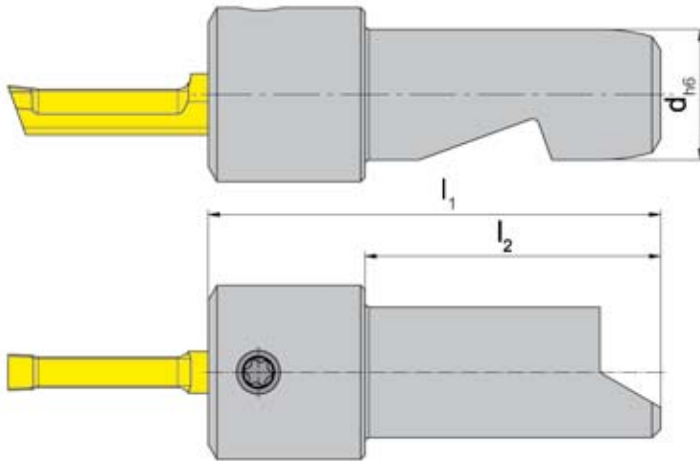
Bore Ø from .236" (6.0 mm)

for broaching device Schwarzer "2in1"



for use with Insert

Type N105
NU105



Part number	d	l ₁	l ₂	D _{min}
SB105.0015.S1.01	15	52	34	6

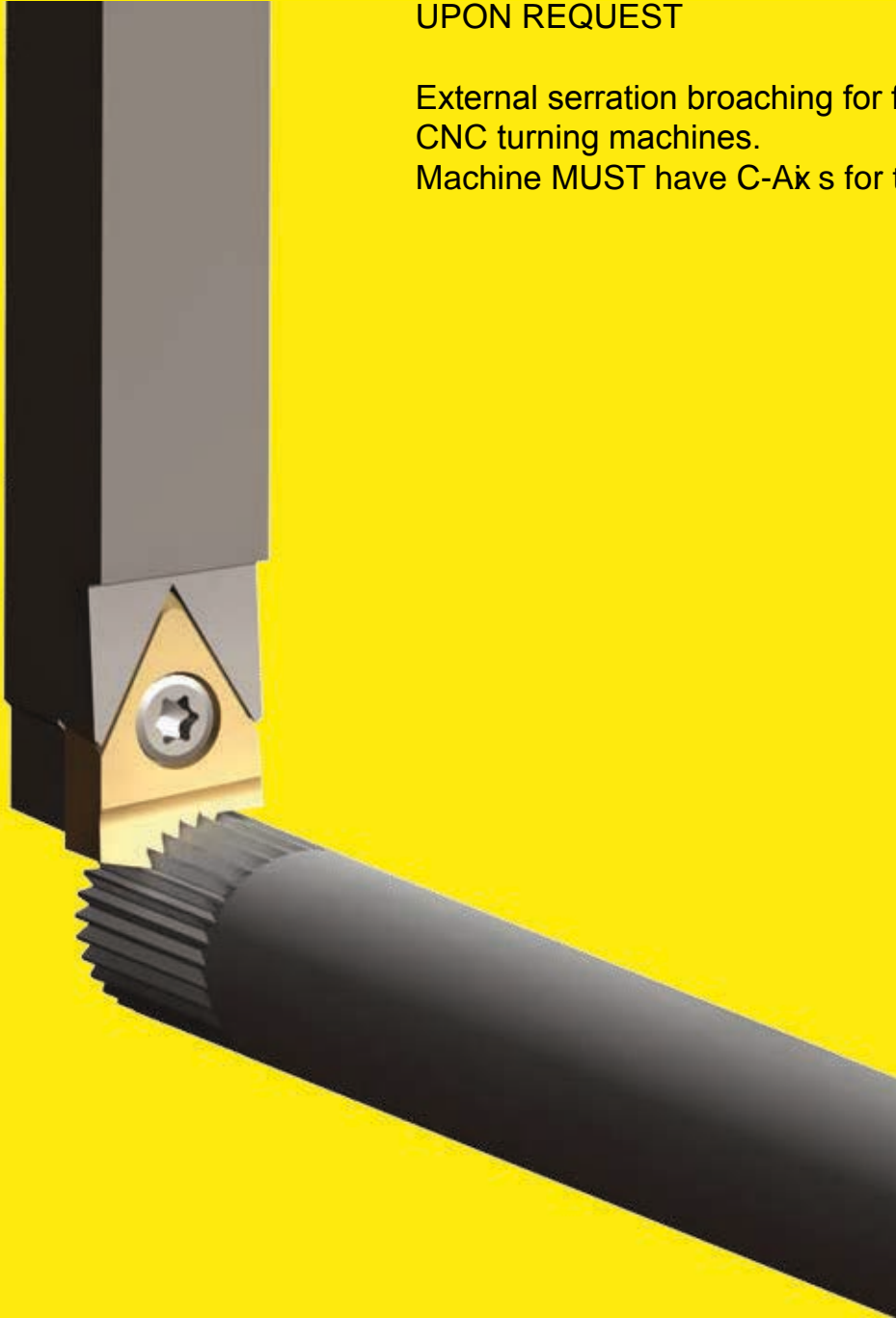
Further sizes for other device interfaces upon request

Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
SB105.0015.S1.01	6.075T15P	T15PQ

R8



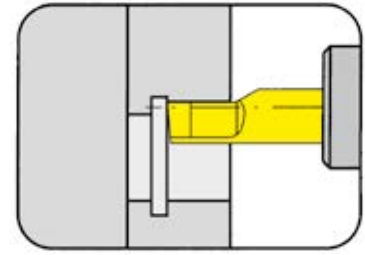
UPON REQUEST

External serration broaching for finish machining on CNC turning machines.
Machine **MUST** have C-Axis for this application!

TOOLHOLDER Type

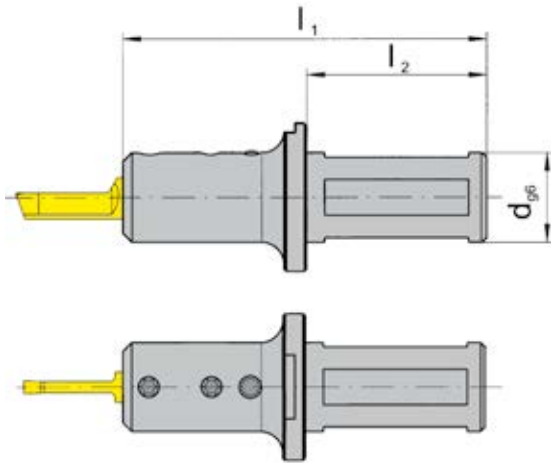
SBU110

Bore Ø from .354"



for use with Insert

Type N110
NU110



Part number	d	l ₁	l ₂	D _{min}
SBU110.0750.1.02	.750	3.200	1.575	.354
SBU110.1000.1.02	1.000	3.200	1.575	.354
SBU110.1250.1.02	1.250	3.200	1.575	.354

Further sizes upon request

Dimensions in inch

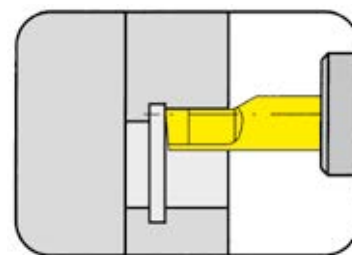
Spare parts

Toolholder	Screw	TORX PLUS® Wrench
SBU110....	6.075T15P	T15PQ

TOOLHOLDER Type

SB110

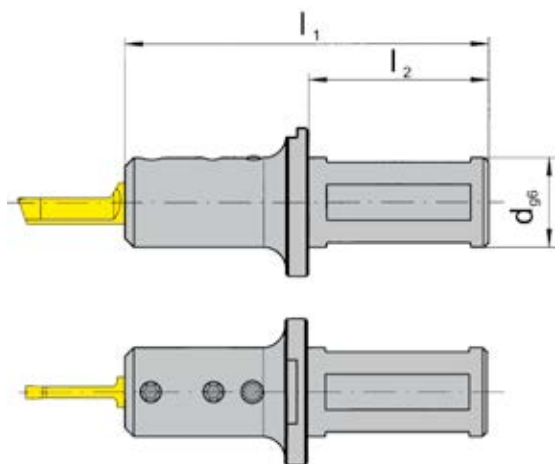
Bore Ø from .354" (9.0 mm)



R

for use with Insert

Type N110
NU110



Part number	d	l ₁	l ₂	D _{min}
SB110.0020.1.02	20	81	40	9
SB110.0025.1.02	25	81	40	9
SB110.0032.1.02	32	81	40	9

Further sizes upon request

Dimensions in mm

Spare parts

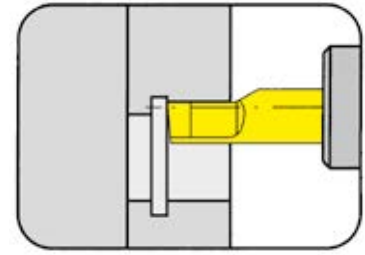
Toolholder	Screw	TORX PLUS® Wrench
SB110.00...	6.075T15P	T15PQ

TOOLHOLDER Type

SB110

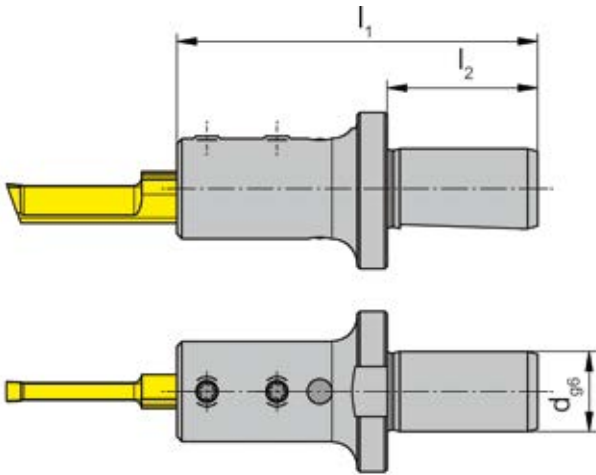
Bore Ø from .354" (9.0 mm)

only usable for broaching devices EWS-Slot and BENZ LinA



for use with Insert

Type N110
NU110



Part number	d	l ₁	l ₂	D _{min}
SB110.0016.E1.02	16	72	30	9

Further sizes for other device interfaces upon request

Dimensions in mm

Spare parts

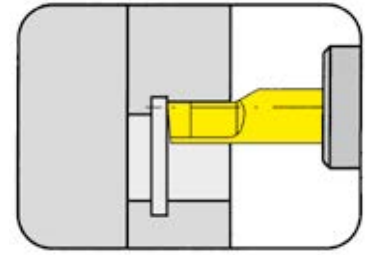
Toolholder	Screw	TORX PLUS® Wrench
SB110.0016.E1.02	6.075T15P	T15PQ

TOOLHOLDER Type

SB110

Bore Ø from .354" (9.0 mm)

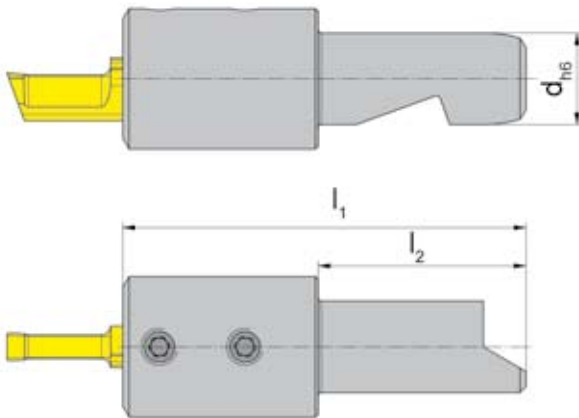
for broaching device Schwarzer "2in1"



R

for use with Insert

Type N110
NU110



Part number	d	l ₁	l ₂	D _{min}
SB110.0015.S1.02	15	66	34	9

Further sizes for other device interfaces upon request

Dimensions in mm

Spare parts

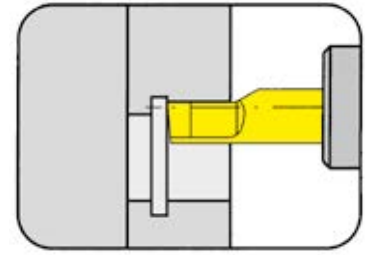
Toolholder	Screw	TORX PLUS® Wrench
SB110.0015.S1.02	6.075T15P	T15PQ

BROACHING

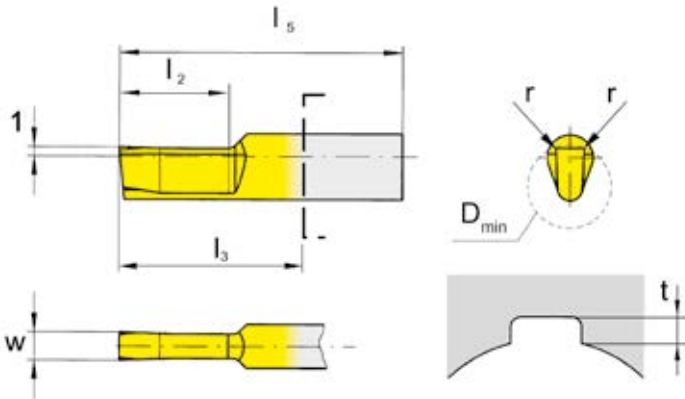


INSERT type

NU105/NU110



Bore Ø from .236" (6.0 mm)



for use with Toolholder

type SB105
SB110
SBU105
SBU110

Keyways according to Inch Standards

Part number	Fractional size	w	r	l ₅	l ₂	l ₃	D _{min}	Toolholder	Carbide Grades		
									MG12	TA45	TI25
NU105.0625.04.01	1/16"	.0635	.004	1.181	.472	.709	.236	SB105 SBU105		▲	
NU105.0937.04.01	3/32"	.0948		1.181	.472	.709	.256			▲	
NU105.1250.04.01	1/8"	.1260		1.378	.591	.906	.256			▲	
NU105.1562.04.01	5/32"	.1572		1.378	.591	.906	.256			▲	
NU110.1562.08.04	5/32"	.1572	.008	2.362	.984	1.339	.354	SB110 SBU110		▲	
NU110.1562.08.07	5/32"	.1572		2.953	1.575	2.126				▲	
NU110.1875.08.04	3/16"	.1885		2.362	.984	1.339				▲	
NU110.1875.08.07	3/16"	.1885		2.953	1.575	2.126				▲	
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet									P	●	
									M	●	
									K	●	
									S		
									N	●	
									H		

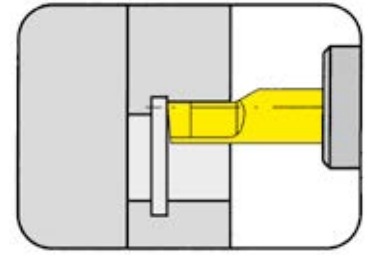
Dimensions in mm

Carbide Grades

INSERT type

N105/N110

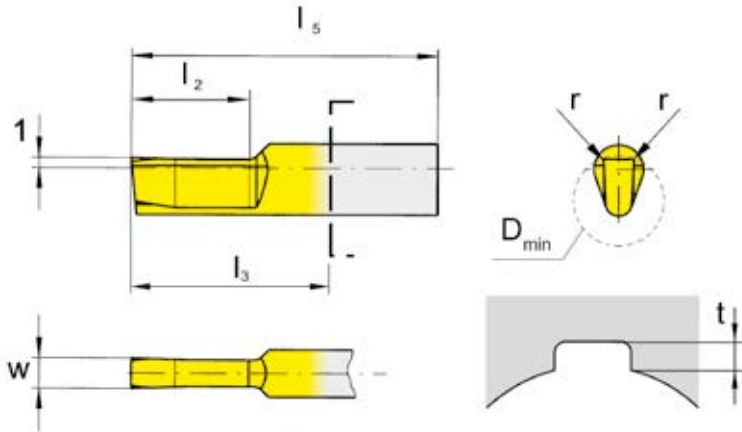
Tolerance grade P9



R

Bore Ø from .236" (6.0 mm)

for use with Toolholder



type SB105
SB110
SBU105
SBU110

Keyways according to DIN138

Part number	Dimensions of groove DIN			w	r	l ₅	l ₂	l ₃	usable from Ø	Toolholder		MG12	TA45	TI25		
	Width P9	D _{min}	t													
N105.0198.01.01	2	6	1.1	1.98		30	12	18	6.0	SB105/ SBU105			▲			
N105.0298.01.01	3	8	1.5	2.98	0.1	30	12	18	6.5				▲			
N105.0397.01.01	4	10	1.9	3.98		35	15	23	6.5				▲			
N110.0397.02.04	4	10	1.9	3.98		60	25	34	9.0	SB110/ SBU110			▲			
N110.0397.02.07	4	10	1.9	3.98	0.2	75	40	49						▲		
N110.0497.02.04	5	12	2.4	4.98		60	25	34						▲		
N110.0497.02.07	5	12	2.4	4.98		75	40	49						▲		

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in mm

Carbide Grades	P	M	K	S	N	H
	●	●	●		●	

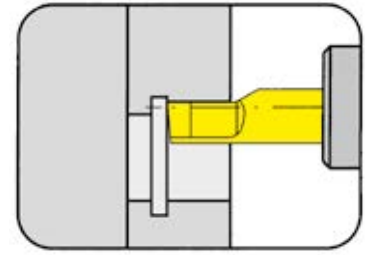
Carbide Grades

INSERT type

N105/N110

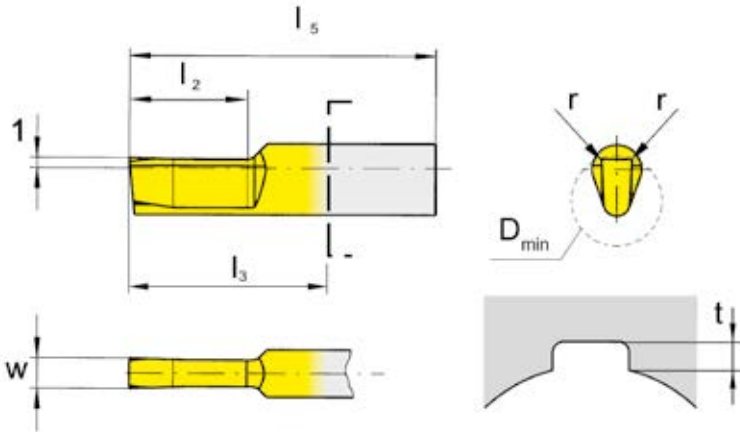
Tolerance grade JS 9

Bore Ø from .236" (6.0 mm)



for use with Toolholder

type SB105
SB110
SBU105
SBU110



Keyways according to DIN138

Part number	Dimensions of groove DIN			w	r	l ₅	l ₂	l ₃	usable from Ø	Toolholder		MG12	TA45	TI25		
	Width JS9	D _{min}	t													
N105.0200.01.01	2	6	1.1	2	0.1	30	12	18	6.0	SB105 / SBU105			▲			
N105.0300.01.01	3	8	1.5	3	0.1	30	12	18	6.5				▲			
N105.0400.01.01	4	10	1.9	4	0.1	35	15	23	6.5				▲			
N105.0400.02.01	4	10	1.9	4	0.2	35	15	23	6.5				▲			
N110.0400.02.04	4	10	1.9	4	0.2	60	25	34	9.0	SB110 / SBU110			▲			
N110.0400.02.07	4	10	1.9	4		75	40	49							▲	
N110.0500.02.04	5	12	2.4	5		60	25	34							▲	
N110.0500.02.07	5	12	2.4	5		75	40	49							▲	
																▲

▲ on stock Δ 4 weeks
● main recommendation
○ alternative recommendation
□ uncoated grades
■ coated grades
■ brazed/Cermet

P	●	
M	●	
K	●	
S		
N	●	
H		

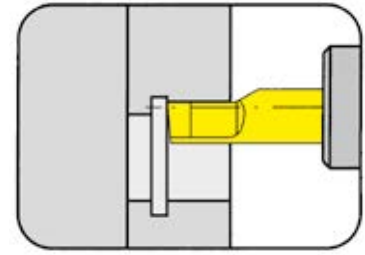
Dimensions in mm

Carbide Grades

INSERT type

N105/N110

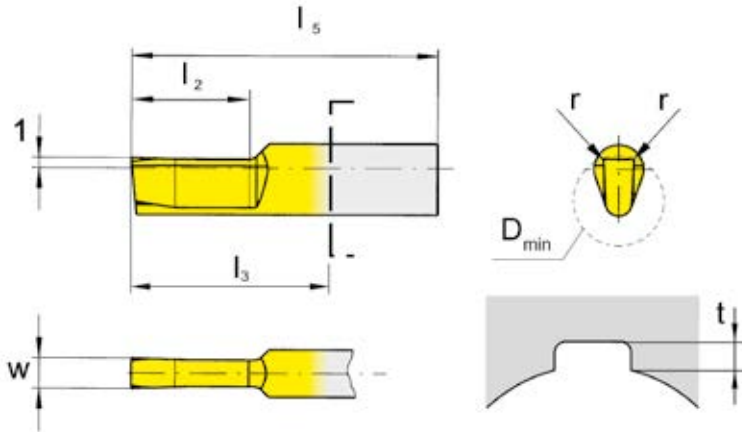
Tolerance grade C11



R

Bore Ø from .236" (6.0 mm)

for use with Toolholder



type SB105
SB110
SBU105
SBU110

Keyways according to DIN138

Part number	Dimensions of groove DIN			w	r	l ₅	l ₂	l ₃	usable from Ø	Toolholder		MG12	TA45	Ti25			
	Width C11	D _{min}	t														
N105.0210.2.08	2	8.0	1.0	2.11	0.35			18	6.0	SB105 / SBU105			▲				
N105.0310.2.10	3	10.0	1.8	3.11	0.35	30	12	18	6.5				▲				
N105.0310.2.13	3	13.0	1.8	3.11	0.50			18	6.5				▲				
N105.0410.2.16	4	16.0	2.0	4.13	0.50			23	6.5				▲				
N110.0410.05.04	4	9.0	2.0	4.13	0.50	60	25	34	9.0	SB110 / SBU110			▲				
N110.0410.05.07	4	9.0	2.0	4.13		75	40	49							▲		
N110.0510.05.04	5	9.0	-	5.13		60	25	34							▲		
N110.0510.05.07	5	9.0	-	5.13		75	40	49							▲		

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

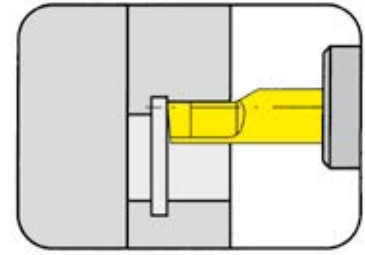
P	●	●	
M	●		
K	●		
S			
N	●		
H			

Dimensions in mm

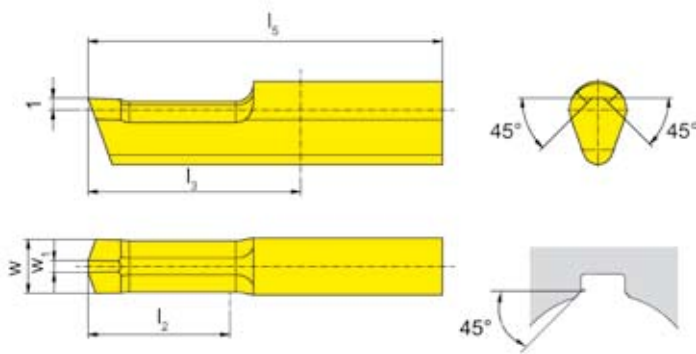
Carbide Grades

INSERT type

N105/N110



Bore Ø from .236" (6.0 mm)



for use with Toolholder

type SB105
SB110
SBU105
SBU110

Chamfering

Part number	Chamfer	w	w ₁	l ₅	l ₂	l ₃	usable from Ø	Toolholder	Carbide Grades		
									MG12	TA45	TI25
N105.4545.2.6	45°	4.5	1	30	12	18	6	SB105 / SBU105		▲	
N105.4545.3.6				35	20	23				▲	
N110.4545.4.9	45°	6.3	2	60	25	34	9	SB110 SBU110		▲	
N110.4545.7.9				75	40	49				▲	
									P	•	
									M	•	
									K	•	
									S		
									N	•	
									H		

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoatet grades
- coatet grades
- brazed/Cermet

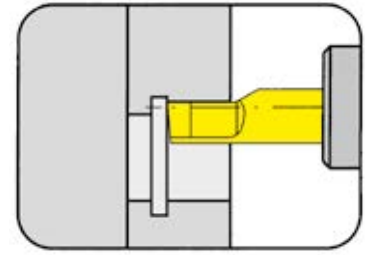
Dimensions in mm

BROACHING - HEXAGON SOCKET



INSERT Type

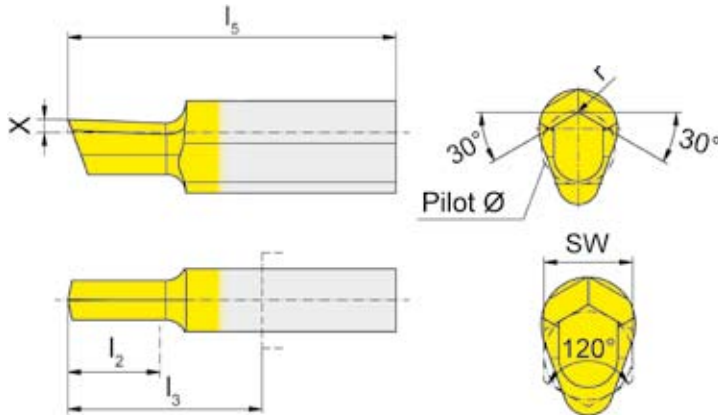
N105/N110



R

Hexagon socket from SW 2.5

for use with Toolholder



Type SB105
SB110
SBU105
SBU110

Hexagon socket

Part number	SW	r	l ₂	l ₃	l ₅	Pilot Ø	X	Toolholder	Carbide grades		
									MG12	TA45	TI25
N105.SW25.25.01	2.5-2.9	0.05	4.0	13	25	SW				▲	
N105.SW30.30.01	2.9-3.5	0.05	4.5	13	25	SW				▲	
N105.SW35.35.01	3.5-4.0	0.05	5.5	13	25	SW				▲	
N105.SW40.40.01	4.0-4.5	0.10	6.0	13	25	SW	1.0	SB105		▲	
N105.SW45.45.01	4.5-5.0	0.10	7.0	13	25	SW				▲	
N105.SW56.56.01	5.0-8.0	0.10	9.0	13	25	SW+0.1				▲	
N105.SW80.80.01	8.0-10.0	0.10	12.0	18	30	SW+0.1				▲	
N110.SW14.14.03	10.0-14.0	0.20	20.0	29	55	SW+0.1	1.5	SB110		Δ	
N110.SW16.16.04	14.0-16.5/ 16.5-18.0	0.20	25.0	29	55	SW+0.1/ SW+0.2	2.0	SB110		Δ	

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in mm

Carbide grades	MG12	TA45	TI25
P		●	
M		●	
K		●	
S		●	
N		●	
H			

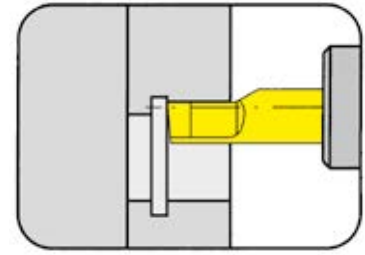
Carbide grades

INSERT Type

N105

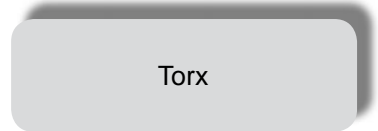
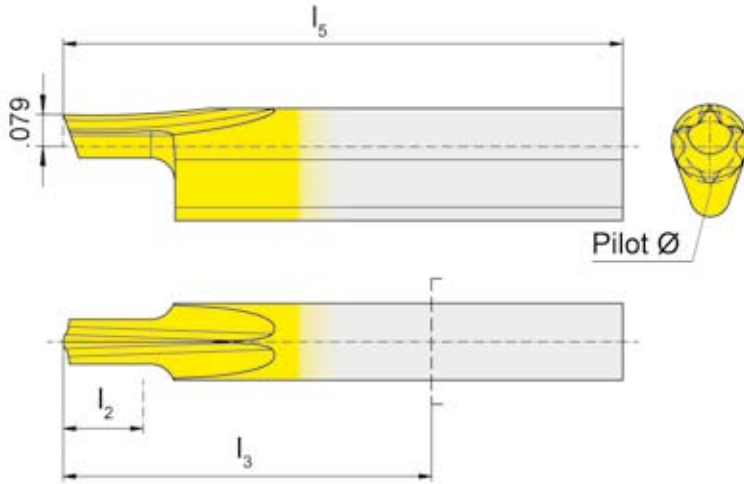
Torx from

T15



for use with Toolholder

Type SB105
SBU105



Part number	Torx	l ₂	l ₃	l ₅	Pilot Ø	Toolholder	Carbide grades		
							MG12	TA45	TI25
N105.TX15.24.03	T15	4			2.41	SB105		Δ	
N105.TX20.28.03	T20	4			2.85			Δ	
N105.TX25.32.03	T25	5	23	35	3.24			Δ	
N105.TX30.40.03	T30	5			4.03			Δ	
							P	•	
							M	•	
							K	•	
							S	•	
							N	•	
							H		


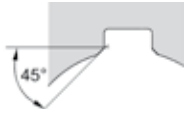
- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in mm

Carbide grades

Type SB105/SB110 -

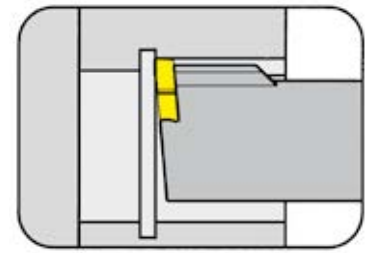
Holder can be located directly in the turret and m/c spindle

Dimensions DIN				Broaching 			Chamfering 		
Width	Tolerance grade	D _{min}	t	Inserts	l ₂	Toolholder	Inserts	Toolholder	
				2	C11	8	1,0	N105.0210.2.08	12
3	C11	10	1,8	N105.0310.2.10	12	SB105.0020.1.01	N105.4545.2.6	SB105.0020.1.01 SB105.0025.1.01	
3	C11	13	1,8	N105.0310.2.13	12	SB105.0025.1.01			
4	C11	16	2,0	N105.0410.2.16	12				
4	C11	16	2,0	N110.0410.05.04	25	SB110.0025.1.02	N110.4545.4.9	SB110.0025.1.02	
4	C11	16	2,0	N110.0410.05.07	40	SB110.0032.1.02	N110.4545.7.9	SB110.0032.1.02	
5	C11	-	-	N110.0510.05.04	25	SB110.0025.1.02	N110.4545.4.9	SB110.0025.1.02	
5	C11	-	-	N110.0510.05.07	40	SB110.0032.1.02	N110.4545.7.9	SB110.0032.1.02	
2	P9	6	1,1	N105.0198.01.01	12		N105.4545.2.6	SB105.0020.1.01	
3	P9	8	1,5	N105.0298.01.01	12	SB105.0020.1.01			
4	P9	10	1,9	N105.0397.01.01	15	SB105.0025.1.01	N105.4545.3.6	SB105.0025.1.01	
4	P9	10	1,9	N110.0397.02.04	25		N110.4545.4.9		
4	P9	10	1,9	N110.0397.02.07	40	SB110.0025.1.02	N110.4545.7.9	SB110.0025.1.02	
5	P9	12	2,4	N110.0497.02.04	25	SB110.0032.1.02	N110.4545.4.9	SB110.0032.1.02	
5	P9	12	2,4	N110.0497.02.07	40		N110.4545.7.9		
2	JS9	6	1,1	N105.0200.01.01	12		N105.4545.2.6	SB105.0020.1.01 SB105.0025.1.01	
3	JS9	8	1,5	N105.0300.01.01	12	SB105.0020.1.01			
4	JS9	10	1,9	N105.0400.01.01	12	SB105.0025.1.01			
4	JS9	10	1,9	N105.0400.02.01	15		N105.4545.3.6		
4	JS9	10	1,9	N110.0400.02.04	25		N110.4545.4.9		
4	JS9	10	1,9	N110.0400.02.07	40	SB110.0025.1.02	N110.4545.7.9	SB110.0025.1.02	
5	JS9	12	2,4	N110.0500.02.04	25	SB110.0032.1.02	N110.4545.4.9	SB110.0032.1.02	
5	JS9	12	2,4	N110.0500.02.07	40		N110.4545.7.9		

R

TOOLHOLDER Type

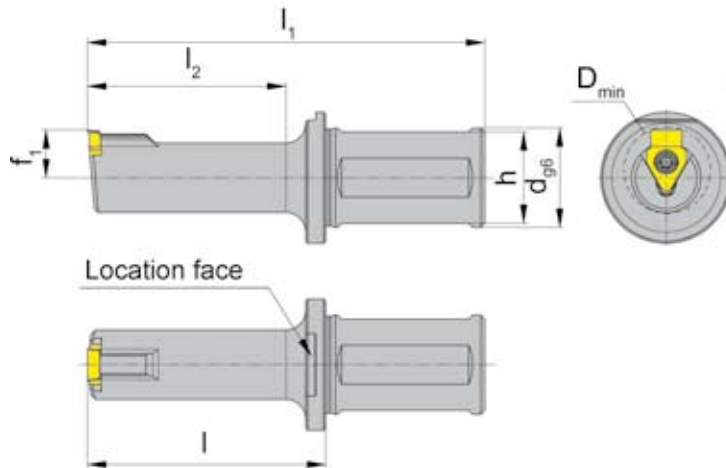
SHU117



Bore Ø from .551"

for use with Insert

Type S117
SU117



Part number	d	h	l	l ₁	l ₂	D _{min}	f ₁	Form
SHU117.1410.1.3.08	1.000	.921	1.260	2.835	.787	.551	.378	G
SHU117.1410.1.08			1.654	3.228	1.181			
SHU117.1410.2.08	1.000	.921	2.047	3.622	1.575	.551	.378	F
SHU117.0610.1.10	1.000	.921	1.898	3.472	1.575	.625	.425	A1
SHU117.0100.1.10			1.976	3.551	1.575	.669	.374	
SHU117.0100.2.10			2.567	4.142	2.165	.669	.374	
SHU117.0910.1.10	1.000	.921	2.433	4.008	1.969	.866	.472	A
SHU117.0910.2.10			3.220	4.795	2.756	.866	.472	
SHU117.1000.1.10			2.433	4.008	1.969			
SHU117.1000.2.10	1.000	.921	3.220	4.795	2.756	.866	.472	B
SHU117.0125.1.16			2.433	4.008	1.969			
SHU117.0125.2.16	1.250	1.171	3.374	4.949	2.953	1.181	.659	C
SHU117.0125.3.16			4.358	6.720	3.937			
SHU117.1250.1.16			2.433	4.008	1.969			
SHU117.1250.2.16	1.250	1.171	3.374	4.949	2.953	1.496	.866	D
SHU117.1250.3.16			4.358	6.720	3.937			

Further sizes upon request

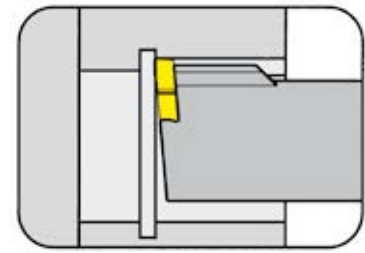
Dimensions in inch

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
SHU117....10	4.09T15P	T15PQ
SHU117....16	5.12T20P	T20PQ
SHU117.1410....08	030.3509.T15P	T15PQ

TOOLHOLDER Type

SH117

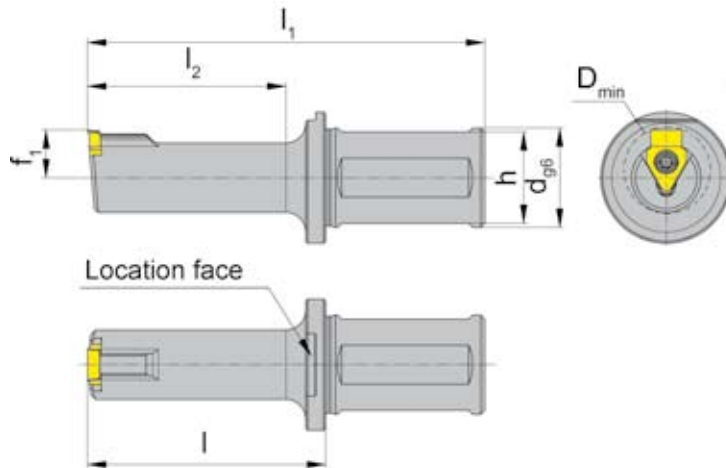


R

Bore Ø from .551" (14.0 mm)

for use with Insert

Type S117
SU117



Part number	d	h	l	l ₁	l ₂	D _{min}	f ₁	Form
SH117.1425.1.3.08	25	23	32	72	20	14	9.6	G
SH117.1425.1.08	25	23	42	82	30	14	9.6	F
SH117.1425.2.08			52	92	40			
SH117.1725.1.10	25	23	50	90	40	17	9.5	A
SH117.1725.2.10			65	105	55			
SH117.0025.1.10	25	23	60	100	50	22	12.0	B
SH117.0025.2.10			80	120	70			
SH117.3032.1.16	32	30	60	100	50	30	16.5	C
SH117.3032.2.16			85	125	75			
SH117.3032.3.16			110	170	100			
SH117.0032.1.16	32	30	60	100	50	38	22.0	D
SH117.0032.2.16			85	125	75			
SH117.0032.3.16			110	170	100			
SH117.4032.1.16	32	30	62	122	50	40	21.5	E
SH117.4032.2.16			87	147	75			
SH117.4032.3.16			112	172	100			

Further sizes upon request

Dimensions in mm

Spare parts

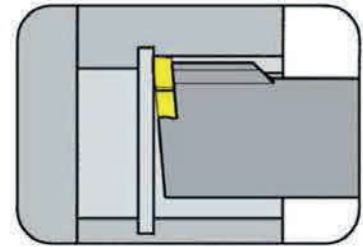
Toolholder	Screw	TORX PLUS® Wrench
SH117....10	4.09T15P	T15PQ
SH117....16	5.12T20P	T20PQ
SH117.1425....08	030.3509.T15P	T15PQ

BROACHING



TOOLHOLDER Type

SHM117

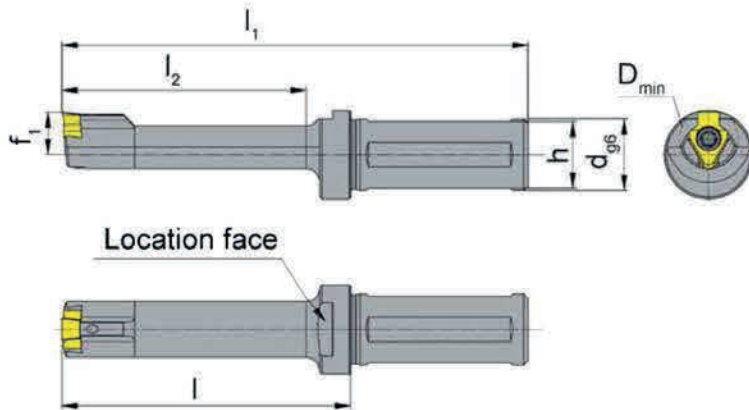


Bore Ø from .551" (14.0 mm)

Material of shank: Carbide - Giving a good vibration resistance

for use with Insert

Type S117
SU117



with through coolant supply

Part number	d	h	l	l ₁	l ₂	D _{min}	f ₁	Form
SHM117.1416.3.08	16	15	65	105	55	14	9.6	F
SHMU117.1462.3.08	.625	.586	2.559	4.134	2.165	.551	.378	F

Further sizes upon request

Dimensions in mm / inch

Toolholders with damaged seating can be repaired by HORN.

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
SHM117.1425.3.08	030.3509.T15P	T15PQ

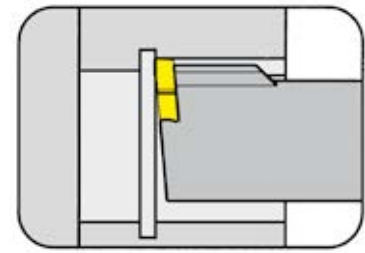
R24

TOOLHOLDER Type

SH117

Bore Ø from .551" (14.0 mm)

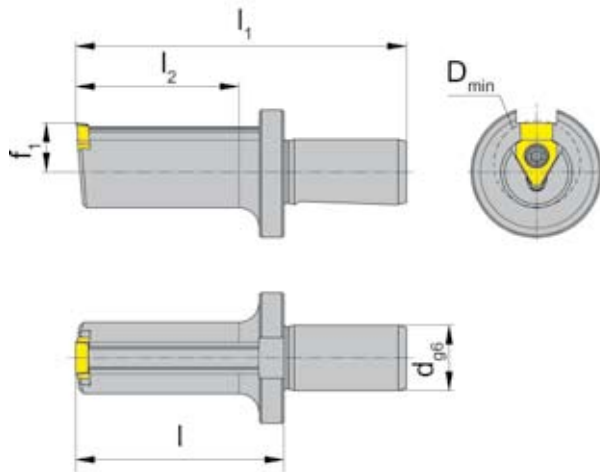
only usable for broaching devices EWS-Slot and BENZ LinA



R

for use with Insert

Type S117
SU117



Part number	d	l	l ₁	l ₂	D _{min}	f ₁	Form
SH117.1416.E1.08	16	41	71	30	14	9.6	F
SH117.1716.E1.10	16	41	71	30	17	9.5	A
SH117.1716.E2.10		51	81	40			
SH117.0016.E1.10	16	41	71	30	22	12.0	B
SH117.0016.E2.10		51	81	40			

Further sizes for other device interfaces upon request

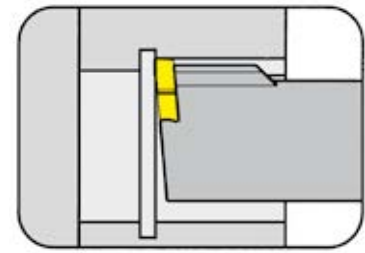
Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
SH117....10	4.09T15P	T15PQ
SH117.1416.E1.08	030.3509.T15P	T15PQ

TOOLHOLDER Type

H117

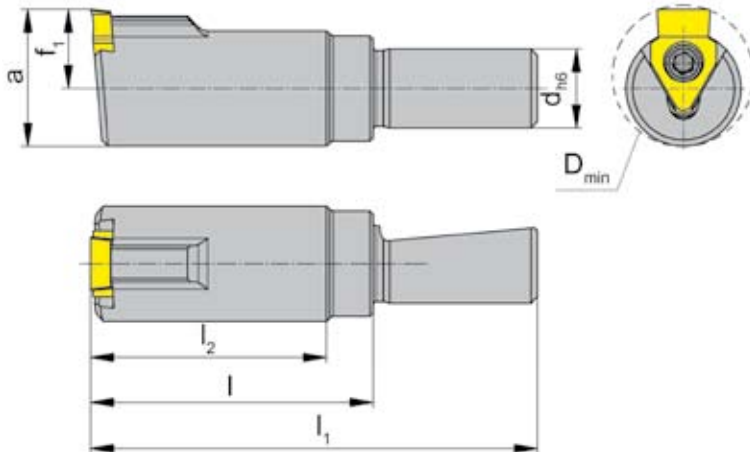


Bore Ø from .669" (17.0 mm)

for broaching device Schwarzer

for use with Insert

Type S117
SU117



Part number	d	l	l ₁	l ₂	D _{min}	f ₁	a	Form
H117.1712.1439 H117.1712.1407	12	33 43	58 68	25 35	17	9.5	16.00	A
H117.2212.1441 H117.2212.1442	12	33 43	58 68	25 35	22	12.0	20.75	B
H117.3012.1440 H117.3012.1419	12	33 43	58 68	25 35	30	16.5	28.50	C

Further sizes for other device interfaces upon request

Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
H117....1407/1439/1441/1442 H117.3012.1419/1440	4.09T15P 5.12T20P	T15PQ T20PQ

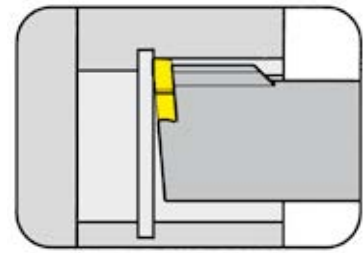
BROACHING



TOOLHOLDER Type

SH117

with through coolant supply



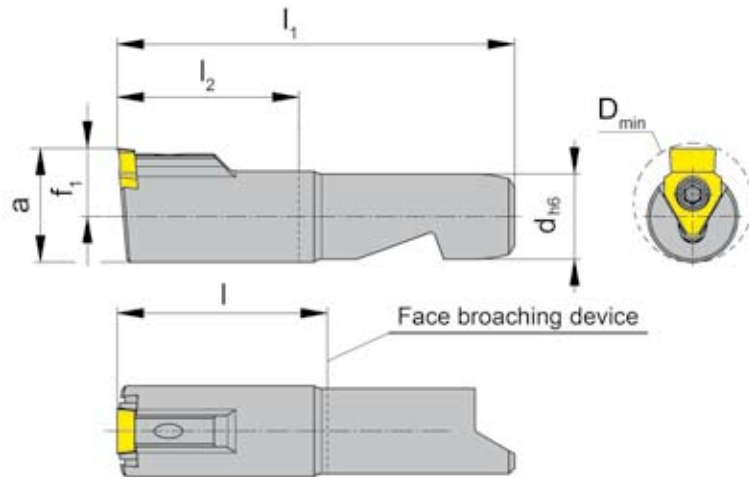
R

Bore Ø from .551" (14.0 mm)

for broaching device Schwarzer "2in1"

for use with Insert

Type S117
SU117



Part number	d	l	l ₁	l ₂	D _{min}	f ₁	a	Form
SH117.0932.S.08	15	37	70	32	14	9.6	12.8	F
SH117.1412.S1.08	12	33	58	25				
SH117.1412.S2.08	12	43	68	35				
SH117.0932.S.10	15	37	70	32	17	9.5	16.0	A
SH117.1532.S.10	15	37	70	32	22	12.0	20.0	B
SH117.1538.S.16	15	43	76	38	30	15.0	24.0	C
SH117.1544.S.16		49	82	44				

Further sizes for other device interfaces upon request

Dimensions in mm

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
SH117....08	030.3509.T15P	T15PQ
SH117....10	4.09T15P	T15PQ
SH117.15...16	5.12T20P	T20PQ

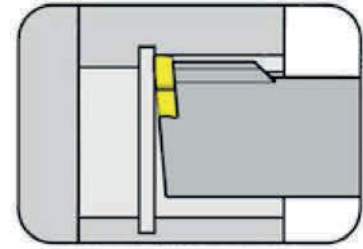
R27

BROACHING



INSERT Type

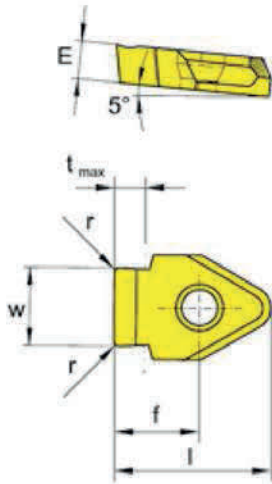
SU117



Bore Ø from .551"
Depth of groove up to .335"

for use with Toolholder

Type SH117
SHM117
SHU117



Keyways according to Inch Standards

Part number	Fractional size	w	r	E	l	t _{max}	f	Form	TA45	TN35
SU117.1250.04.08	1/8"	.1260	.004	.157	.512	.071	.236	G	▲	
SU117.1562.04.08	5/32"	.1572	.004	.157	.512	.087	.236	F	▲	
SU117.1875.08.08	3/16"	.1885	.008	.157	.512	.106	.236	F	▲	
SU117.1250.04.10	1/8"	.1260	.004	.118	.551	.071	.236	A1	▲	
SU117.1562.04.10	5/32"	.1572	.004	.118	.551	.087	.236	A1	▲	
SU117.1875.08.10	3/16"	.1885	.008	.118	.571	.106	.256	A	▲	
SU117.2500.08.10	1/4"	.2510	.008	.118	.571	.134	.256	A	▲	
SU117.2812.08.10	9/32"	.2828	.008	.118	.630	.161	.315	B	▲	
SU117.3125.08.10	5/16"	.3140	.008	.118	.630	.161	.315	B	▲	
SU117.3750.12.14	3/8"	.3765	.012	.236	.815	.197	.441	C	▲	
SU117.4375.12.14	7/16"	.4390	.012	.236	.815	.224	.441	D	▲	
SU117.5000.12.14	1/2"	.5015	.012	.236	.815	.260	.441	D	▲	
SU117.5000.20.14	>1/2"	.5015	.020	.236	.815	.335	.441	D	▲	

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

P	●
M	●
K	●
S	●
N	●
H	●

Carbide grades

Dimensions in inch

Note:

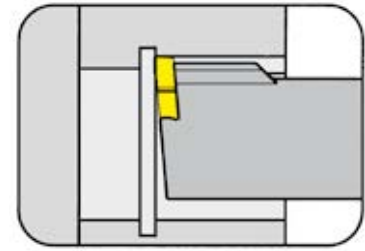
The insert form must correspond to the holder form.
E.g.: Form A Toolholder = Form A Insert

R28

INSERT Type

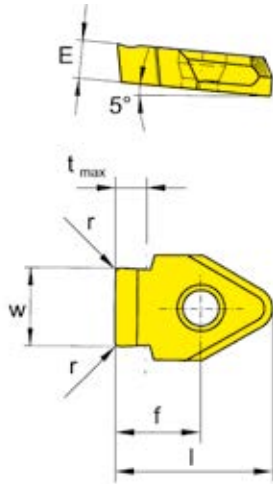
S117

Tolerance grade C11



R

Bore Ø from .551" (14.0 mm)
Depth of groove up to .335" (8.5 mm)



for use with Toolholder

Type SH117
SHM117
SHU117

Keyways according to DIN138

Part number	Nw	w	r	E	l	t _{max}	f	Form	Carbide grades			
									MG12	TA45	TN35	TI25
S117.0410.05.08	4	4.12	0.50	4	13	2.1	6.0	F		▲		
S117.0610.22	6	6.12	0.85			2.6				▲		▲
S117.0710.27	7	7.13	0.85	3	16	3.3	8.0	B		▲		Δ
S117.0810.32	8	8.13	1.05			3.4				▲		▲
S117.1014.40	10	10.13	1.05			4.2				▲		Δ
S117.1214.50	12	12.15	1.35			5.1				▲		Δ
S117.1614.70	16	12.15	1.75	6	21	6.6	11.2	D		Δ		
S117.2414.100	24	12.15	2.25			8.5				Δ		
									P	•	•	•
									M	•	•	•
									K	•	•	•
									S	•	•	•
									N	•	•	•
									H			

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in mm

Note:

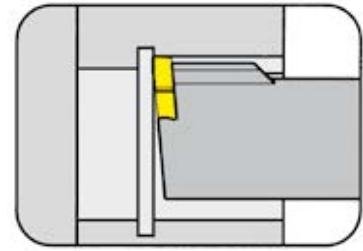
The insert form must correspond to the holder form.
E.g.: Form A Toolholder = Form A Insert

Carbide grades

INSERT Type

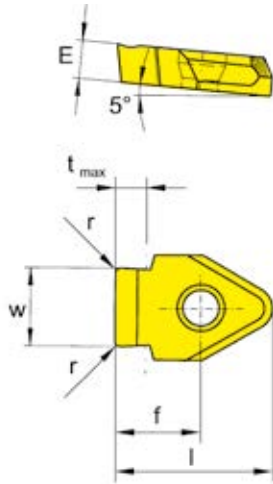
S117

Tolerance grade P9



for use with Toolholder

Type SH117
SHM117
SHU117



Keyways according to
DIN138

Part number	Nw	w	r	E	l	t _{max}	f	Form	Carbide grades			
									MG12	TA45	TN35	TI25
S117.0298.01.08	3	2.99	0.12	4	13.0	2.0	6.0	G		▲		
S117.0397.01.08	4	3.98	0.12	4	13.0	2.1	6.0	F		▲		
S117.0497.02.08	5	4.98	0.20	4	13.0	2.7	6.0	F		▲		
S117.0497.02.10	5	4.98	0.20	3	14.5	2.7	6.5	A		▲		
S117.0597.02.10	6	5.98	0.20	3	14.5	3.4	6.5	A		▲		
S117.0796.02.10	8	7.98	0.20	3	16.0	4.1	8.0	B		▲		
S117.0996.03.14	10	9.98	0.30	6	21.0	4.2	11.2	C		▲		
S117.1196.03.14	12	11.97	0.30	6	21.0	5.7	11.2	D		▲		
S117.1396.03.16	14	13.97	0.30	6	21.0	6.8	11.2	E		▲		
									P	•		
									M	•		
									K	•		
									S	•		
									N	•		
									H			

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in mm

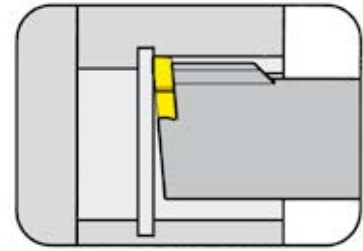
Note:

The insert form must correspond to the holder form.
E.g.: Form A Toolholder = Form A Insert

INSERT Type

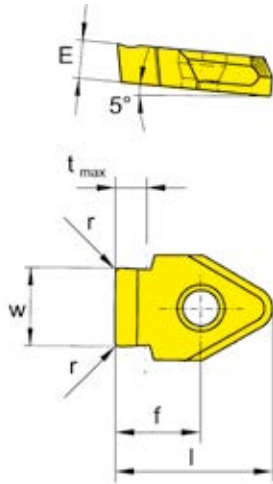
S117

Tolerance grade $\$ 9$



R

Bore \varnothing from .551" (14.0 mm)
Depth of groove up to .335" (8.5 mm)



for use with Toolholder

Type SH117
SHM117
SHU117

Keyways according to
DIN138

Part number	Nw	w	r	E	l	t _{max}	f	Form	Carbide grades			
									MG12	TA45	TN35	TI25
S117.0300.01.08	3	3.01	0.12	4	13.0	2.0	6.0	G		▲		
S117.0400.01.08	4	4.01	0.12	4	13.0	2.1	6.0	F		▲		
S117.0500.02.08	5	5.01	0.20	4	13.0	2.7	6.0	F		▲		
S117.0500.02.10	5	5.01	0.20	3	14.5	2.7	6.5	A		▲		
S117.0600.02.10	6	6.01	0.20	3	14.5	3.4	6.5	A		▲		
S117.0800.02.10	8	8.01	0.20	3	16.0	4.1	8.0	B		▲		
S117.1000.03.14	10	10.01	0.30	6	21.0	4.2	11.2	C		▲		
S117.1200.03.14	12	12.01	0.30	6	21.0	5.7	11.2	D		▲		
S117.1200.05.14	12	12.00	0.50	6	21.0	8.5	11.2	D		▲		
S117.1400.03.16	14	14.01	0.30	6	21.0	6.8	11.2	E		▲		
									P	•	•	•
									M	•	•	•
									K	•	•	•
									S	•	•	•
									N	•	•	•
									H	•	•	•

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in mm

Note:

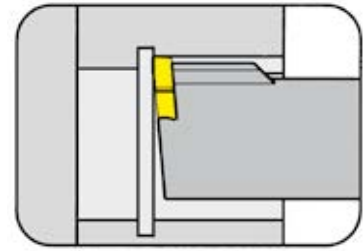
The insert form must correspond to the holder form.
E.g.: Form A Toolholder = Form A Insert

Carbide grades

INSERT Type

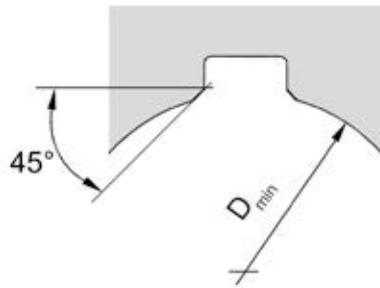
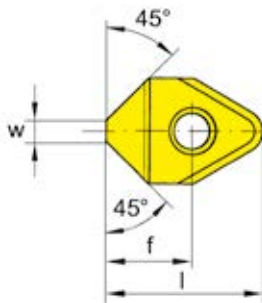
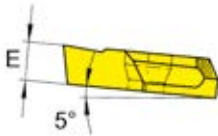
S117

Bore Ø from .551"



for use with Toolholder

Type SH117
SHM117
SHU117



Chamfering

Part number	Nw	w	l	f	Form	Carbide grades			
						MG12	TA45	TN35	TI25
S117.2445.08	.094	.094	.512	.236	F		▲		
S117.1545.10	.079	.059	.630	.315	A		▲		
S117.3045.10	.118	.118	.630	.315	B		▲		
S117.6045.14	.236	.236	.827	.441	C/D		▲		
						P	•		
						M	•		
						K	•		
						S	•		
						N	•		
						H			

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in mm

Note:

The insert form must correspond to the holder form.
E.g.: Form A Toolholder = Form A Insert

Type SH117 - Holder can be located directly in the turret and m/c spindle

Dimensions DIN		Broaching				Chamfering											
		Width	Tolerance grade	D _{min}	t	Inserts	w	Toolholder	Tool length l ₂								
						Inserts		Toolholder	.1.	.2.	.3.	Inserts	Toolholder	.1.	.2.	.3.	
6	C11	22	2,6	S117.0610.22	6,12	SH117.0025...10	50	70	S117.3045.10	SH117.0025...10	50	70	S117.3045.10	SH117.0025...10	50	70	100
7	C11	27	3,3	S117.0710.27	7,13	SH117.0025...10	50	70	S117.3045.10	SH117.0025...10	50	70	S117.3045.10	SH117.0025...10	50	70	100
8	C11	32	3,4	S117.0810.32	8,13	SH117.0025...10	50	70	S117.3045.10	SH117.0025...10	50	70	S117.3045.10	SH117.0025...10	50	70	100
10	C11	40	4,2	S117.1014.40	10,13	SH117.0032...16	50	75	100	S117.6045.14	SH117.0032...16	50	75	100	75	100	100
12	C11	50	5,1	S117.1214.50	12,15	SH117.0032...16	50	75	100	S117.6045.14	SH117.0032...16	50	75	100	75	100	100
16	C11	70	6,6	S117.1614.70	12,15	SH117.0032...16	50	75	100	S117.6045.14	SH117.0032...16	50	75	100	75	100	100
24	C11	100	8,5	S117.2414.100	12,15	SH117.0032...16	50	75	100	S117.6045.14	SH117.0032...16	50	75	100	75	100	100
5	P9	17	2,7	S117.0497.02.10	4,98	SH117.1725...10	40	55	S117.1545.10	SH117.1725...10	40	55	S117.1545.10	SH117.1725...10	40	55	100
6	P9	17	3,4	S117.0597.02.10	5,98	SH117.1725...10	40	55	S117.1545.10	SH117.1725...10	40	55	S117.1545.10	SH117.1725...10	40	55	100
8	P9	22	4,1	S117.0796.02.10	7,98	SH117.0025...10	50	70	S117.3045.10	SH117.0025...10	50	70	S117.3045.10	SH117.0025...10	50	70	100
10	P9	30	4,2	S117.0996.03.14	9,98	SH117.3032...16	50	75	100	S117.6045.14	SH117.3032...16	50	75	100	75	100	100
12	P9	38	5,7	S117.1196.03.14	11,97	SH117.0032...16	50	75	100	S117.6045.14	SH117.0032...16	50	75	100	75	100	100
14	P9	40	6,8	S117.1396.03.16	13,97	SH117.4032...16	50	75	100	S117.6045.14	SH117.4032...16	50	75	100	75	100	100
5	JS9	17	2,7	S117.0500.02.10	5,01	SH117.1725...10	40	55	S117.1545.10	SH117.1725...10	40	55	S117.1545.10	SH117.1725...10	40	55	100
6	JS9	17	3,4	S117.0600.02.10	6,01	SH117.1725...10	40	55	S117.1545.10	SH117.1725...10	40	55	S117.1545.10	SH117.1725...10	40	55	100
8	JS9	22	4,1	S117.0800.02.10	8,01	SH117.0025...10	50	70	S117.3045.10	SH117.0025...10	50	70	S117.3045.10	SH117.0025...10	50	70	100
10	JS9	30	4,2	S117.1000.03.14	10,01	SH117.3032...16	50	75	100	S117.6045.14	SH117.3032...16	50	75	100	75	100	100
12	JS9	38	5,7	S117.1200.03.14	12,01	SH117.0032...16	50	75	100	S117.6045.14	SH117.0032...16	50	75	100	75	100	100
12	JS9	38	8,5	S117.1200.05.14	12,00	SH117.0032...16	50	75	100	S117.6045.14	SH117.0032...16	50	75	100	75	100	100
14	JS9	40	6,8	S117.1400.03.16	14,01	SH117.4032...16	50	75	100	S117.6045.14	SH117.4032...16	50	75	100	75	100	100



Chamfering



Broaching



Application Tips:

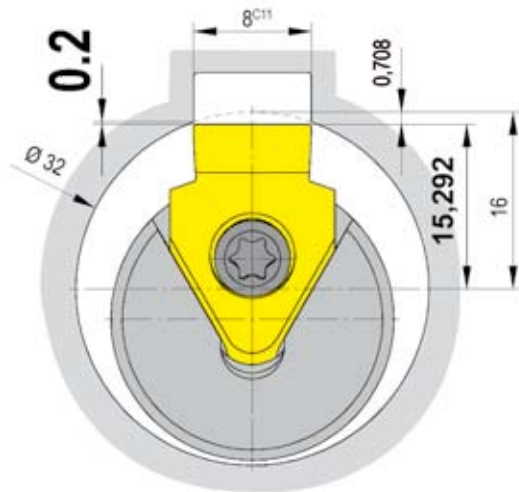
- It is important to use a machine with mechanical spindle lock.
- The use of proper coolant is key to a good surface finish, long tool life as well as chip evacuation.
- A relief groove or the possibility for a "ramp down" exit out of the cut is necessary at the end of the broached groove.
- Setting of the tool is very important. Double check the component diameter before taking the first pass.
- The tool should be set at the 12 o'clock position to ensure that chips fall away from the groove.
- Take an accurate measurement of the insert and program the dimension into the machine tool parameter.
- Position the tool at the start position of the first stroke and program a stop to perform a visual check to assure a collision free first pass of the tool.

R

Machining example:

Bore diameter 32 mm, groove width 8 mm:

At a radius of 16 mm and with a clearance of 0,2 mm for safety at the r 0,2 mm corner radii, the tool has to be set at 15,292 mm in X-axis to avoid any collision at the beginning of the process.



Calculation of the start position b_1 :

$$c^2 = a^2 + b^2$$

$$b^2 = c^2 - a^2$$

$$b = \sqrt{c^2 - a^2}$$

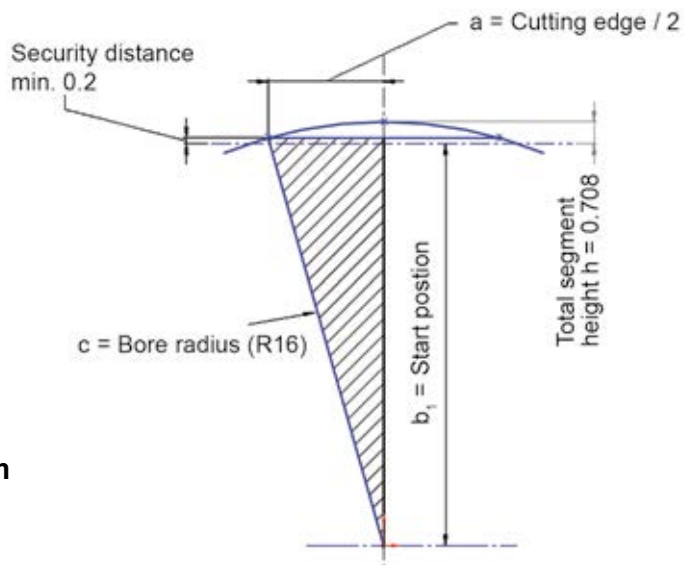
$$b = \sqrt{16^2 - 4^2}$$

$$b = 15,491933$$

$$b_1 = b - \text{Clearance distance}$$

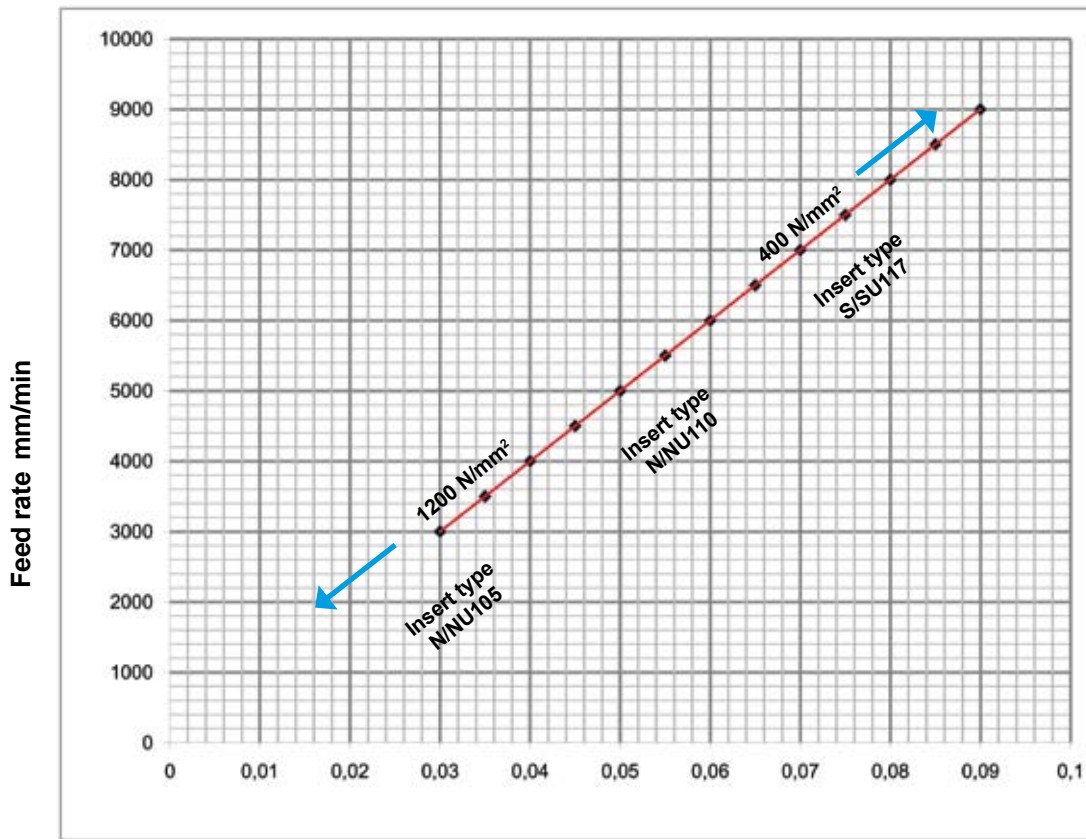
$$b_1 = 15,492 - 0,2 = 15,292 \text{ mm}$$

→ equals as a start position at Ø 30.584 mm

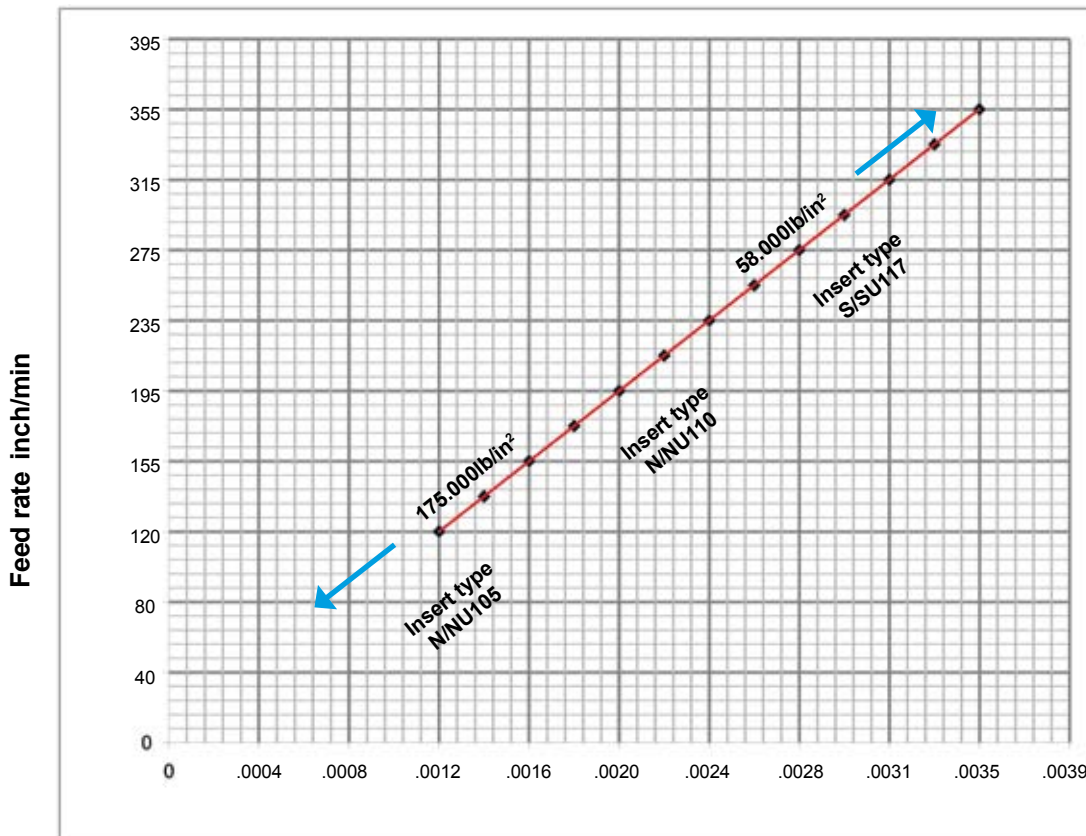


Dimensions in mm

R34



In-feed per stroke in mm



In-feed per stroke in inch

Example for broaching on a TRAUB TNA 400 with C-Axis

NC - Program

N.....(BROACHING)	Sequence Number and Application
G97 T..... M5	constant RPM, Tool callout, Spindle Stop
M17	C - axis ON
G94	Feed Rate in mm/min
L1 = 30.584	choose Parameter for start Ø
M8 M19	Coolant ON, Spindle Break ON
N100	Sequence Number for repetition START
G0 XL1 Z5	Start position in X and Z in front of part
G1 Z-25 F8000	Linear move in Z at feed rate of 8000 mm/min
G0 X30.584	Rapid move in X to start Ø i.e. drop down position
G0 Z5	Rapid move in Z to start position.
L1 = L1+0.16	As Ø programming is in effect the depth of cut must be doubled (Depth of Cut is 0.08 mm)
N200	Sequence Number of repetition END.
G22 P100 Q200 H45	Repetition Cycle with Sequence Number from START to END and Number of repetitions

Example:

- Groove according to table in bore **Ø 32 mm**
- Groove width **8^{c11}**
- Depth of Cut per Stroke 0.08 mm
- The **Number of Strokes** resulted out of complete cutting depth from start position to the bottom of the groove divided by depth of cut per stroke
- This Value must then be multiplied by 2 (because Ø Programming) and Value is programmed as the Number of Strokes in the NC-Programme.

Calculation:

- Starting Position = Security Distance + Distance from Ø 32 mm to Cutting Edge (see Example on Page R34) equals a segment height of **0.508 mm** + Security Distance of **0.20 mm** to a total of **0.708 mm**.
- Starting Position = **30.584 mm** (32 - [0.708 x 2] = 30.584 mm.
- The groove depth of **2.90 mm** added to the **0.708 mm** = **3.608 mm**.
- This is the dimension from the starting position to the bottom of the groove and in order to program this on the Ø, the **3.608 mm** dimension must be **multiplied by 2** which will equal the sum of **7.216 mm**.
- When the **7.216 mm** is divided by (**2 x 0.08 mm**) = **0.16 mm** depth per stroke the Result will be **45.1 Strokes** and therefore **45 total Strokes** are programmed.

The remainder of 0.1 Strokes to achieve the finish dimension must be programmed using the fine correction.

Attention: The true depth of cut for the insert will be 0.08 mm.

Example for broaching on SIEMENS Control Machines with lockable Spindle

NC - Program

N.....(BROACHING)	Sequence Number and Application
T..... M5 LF	Tool callout, Spindle Stop
M..... LF	Brake ON
G94 LF	Feed Rate in mm/min
R1 = 30.584 LF	choose Parameter for start Ø
M8 LF	Coolant ON
N100 LF	Sequence Number for repetition START
G0 XR1 Z5 LF	Start position in X and Z in front of part
G1 Z-25 F8000 LF	Linear move in Z at feed rate of 8000 mm/min
G0 X30.584	Rapid move in X to start Ø i.e. drop down position
G0 Z5	Rapid move in Z to start position.
R1 = R1+0.16	As Ø programming is in effect the depth of cut must be doubled (Depth of Cut is 0.08 mm)
N200	Sequence Number of repetition END.
.....LF	Repetition Cycle with Sequence Number from START to END and Number of repetitions.

Example:

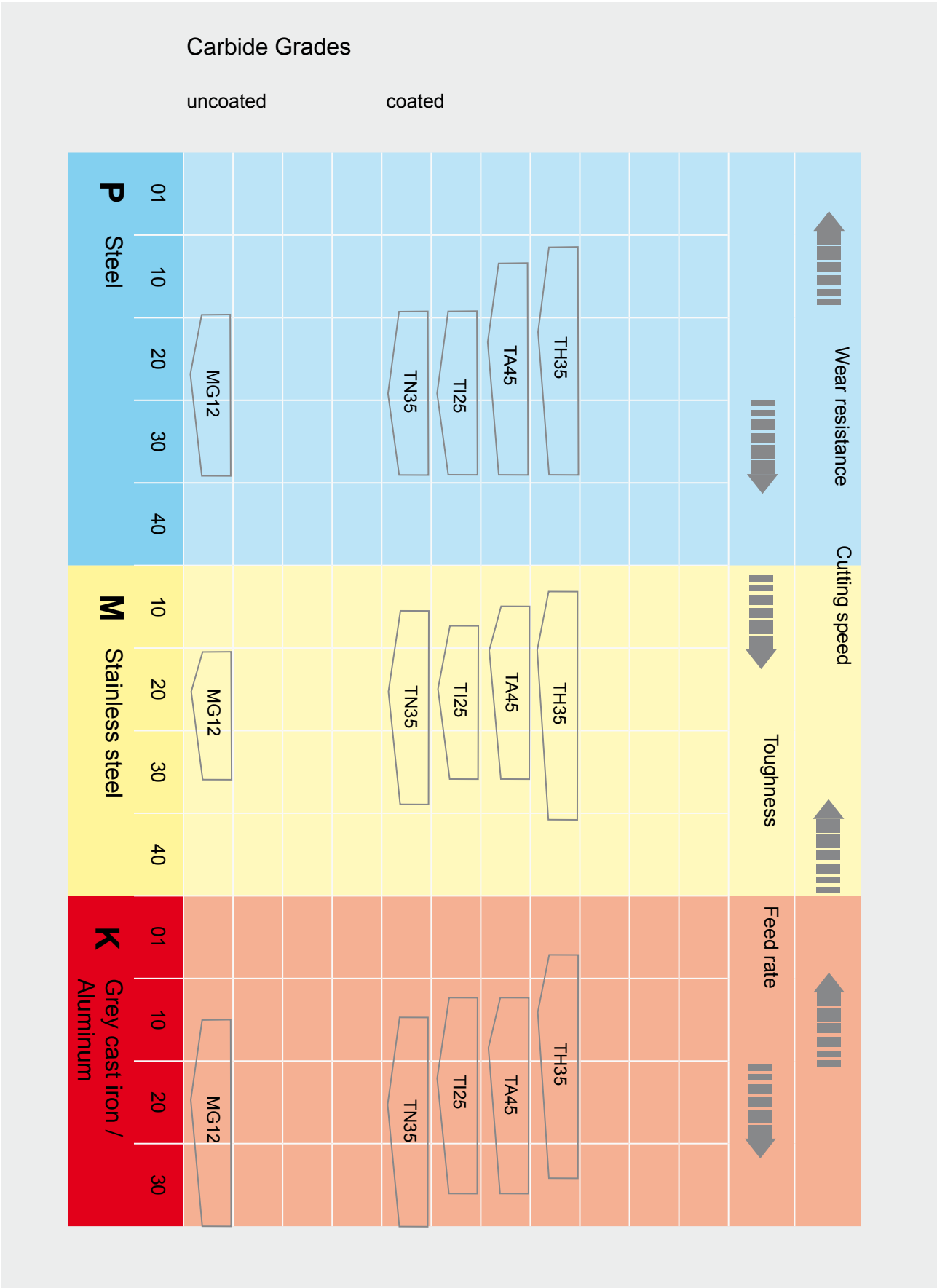
- Groove according to table in bore **Ø 32 mm**
- Groove width **8^{c11}**
- Depth of Cut per Stroke 0.08 mm
- The **Number of Strokes** resulted out of complete cutting depth from start position to the bottom of the groove divided by depth of cut per stroke
- This Value must then be multiplied by 2 (because Ø Programming) and Value is programmed as the Number of Strokes in the NC-Programme.

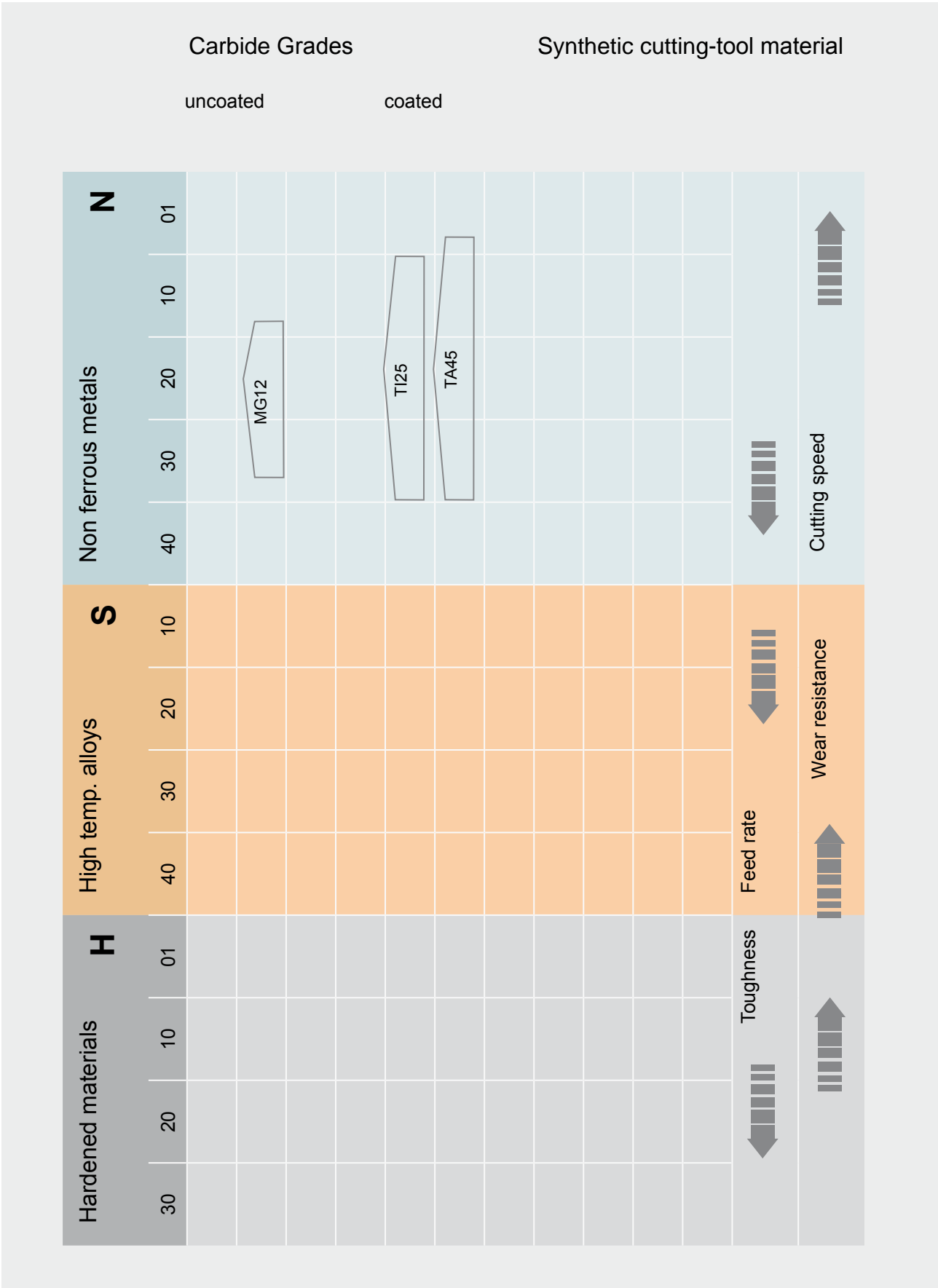
Calculation:

- Starting Position = Security Distance + Distance from Ø 32 mm to Cutting Edge (see Example on Page R34) equals a segment height of **0.508 mm** + Security Distance of **0.20 mm** to a total of **0.708 mm**.
- Starting Position = **30.584 mm** (32 - [0.708 x 2] = 30.584 mm).
- The groove depth of **2.90 mm** added to the **0.708 mm** = **3.608 mm**.
- This is the dimension from the starting position to the bottom of the groove and in order to program this on the Ø, the **3.608 mm** dimension must be **multiplied by 2** which will equal the sum of **7.216 mm**.
- When the **7.216 mm** is divided by (**2 x 0.08 mm**) = **0.16 mm** depth per stroke the Result will be **45.1 Strokes** and therefore **45 total Strokes** are programmed.

The remainder of 0.1 Strokes to achieve the finish dimension must be programmed using the fine correction.

R





UNCOATED GRADES

MG12 - a universal grade with good wear resistance. Used at low or medium cutting speeds for machining steel, cast iron and non ferrous materials

COATED GRADES

TN35 - a very popular grade TiN coated used to low or medium cutting speeds. Also recommended for machining stainless steel or exotic alloyed materials

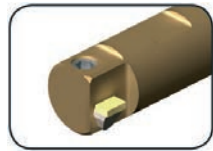
TI25 - a TiCN coated grade with high abrasion resistance. Recommended for machining steel and non ferrous materials at medium cutting speeds

TA45 - a TiAlN coated grade. This coating has a very high temperature stability and high hardness.

TH35 - new standard grade - excellent oxidation resistance with high hardness and very good coefficient of friction.

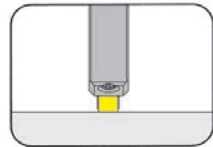
HIGH POLISH MACHINING **S**

**Toolholder
type
B105**



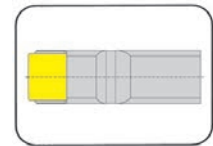
Page S2

**Toolholder
type
NH105**



Page S3

**Inserts
type
105**



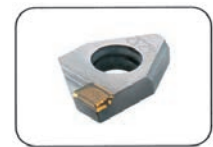
Page S4-S5

**Toolholder
type
H117**



Page S6

**Inserts
type
S117**



Page S7

**Inserts
type
VCGW**



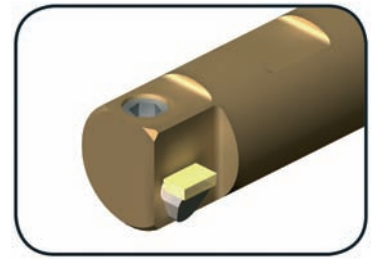
Page S8

**Cutting data
Page 9**

S

TOOLHOLDER Type

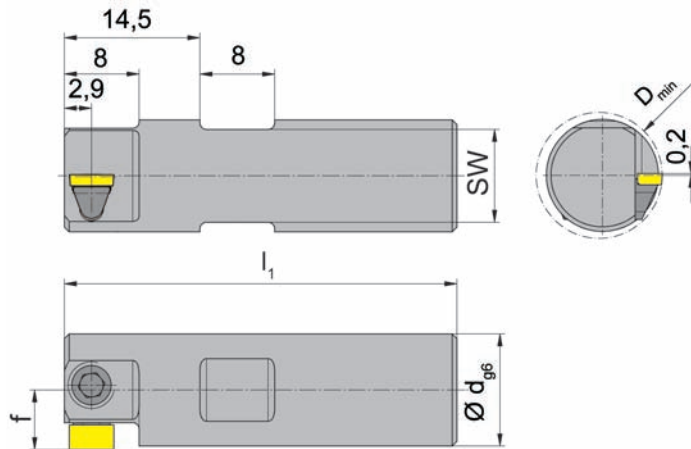
B105



Bore Ø from

.531" (13.5 mm)

S



for use with Insert

Type 105.MD...

R = right hand version shown

L = left hand version

Part number	d	l ₁	f	D _{min}	SW	Size
R/LB105.MD12.2.13	12	42	6.4	13.5	10	MD
R/LB105.MD12.4.13		72				
R/LB105.MD12.6.13		90				
R/LB105.MD12.8.13		125				

State R or L version

Dimensions in mm

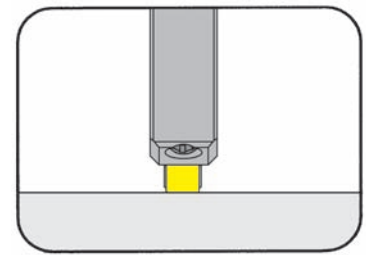
Further sizes and versions upon request

Inserts type 105.MD available upon request.

CASSETTE Type

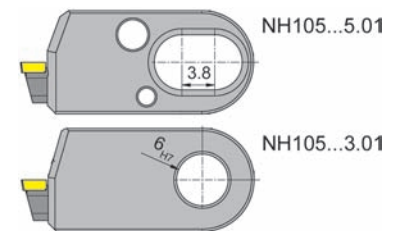
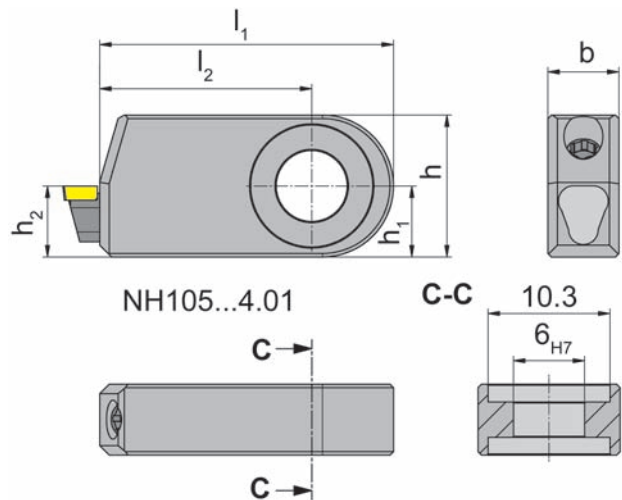
NH105

High polish turning / High polish milling



for use with Insert

Type 105...F.06
105...D.06



Part number	l_1	l_2	h	h_1	h_2	b
NH105.MD.06.3.01	23.9	17.9	12	6	6	6
NH105.MD.06.4.01	24.9	17.9	12	6	6	6
NH105.MD.06.5.01	23.9	19.4	12	6	6	6

Further sizes upon request

Dimensions in mm

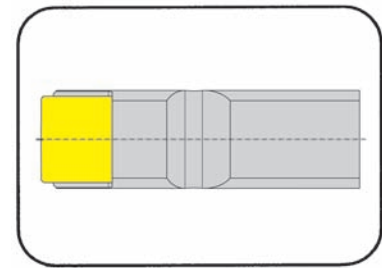
Spare parts

Cassette	Wrench	Threaded pin
NH105.MD.06....	SW2DIN911	DIN913-M4x5



INSERT type

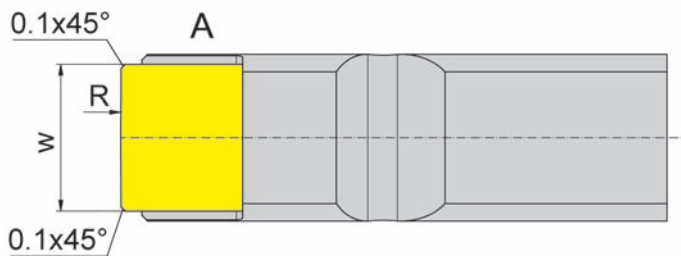
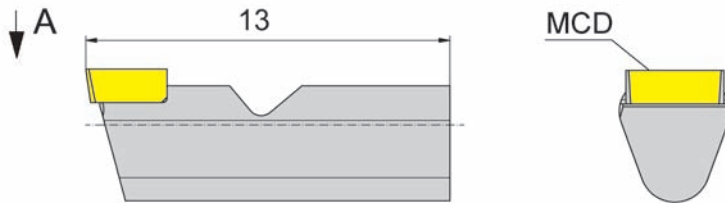
105



High polish milling

for use with Cassette

type NH105



Part number	w	R	Carbide Grades	Geometries for		
				MD10	Aluminium	Brass	Synthetics (PMMA)
105.300.AF.06	3.5	300	▲	x		
105.300.KF.06	3.5	300	▲			x
105.300.MF.06	3.5	300	▲		x	
			P			
			M			
			K			
			S			
			N		•	
			H			

Dimensions in mm

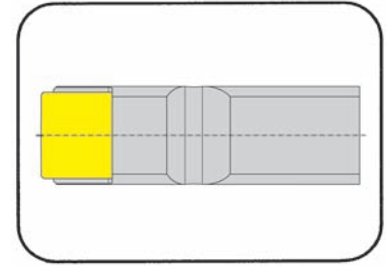
Centre height must be measured and adjusted to the correct position.
Cutting edges must be measured optically!

Further sizes upon request

S

INSERT type

105

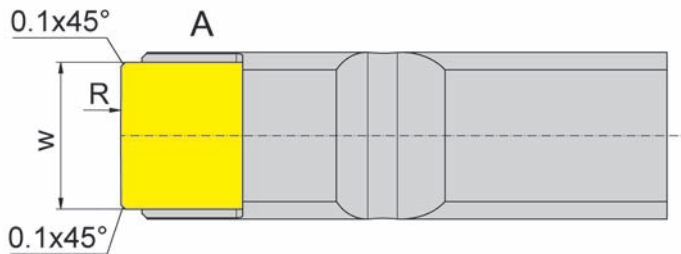
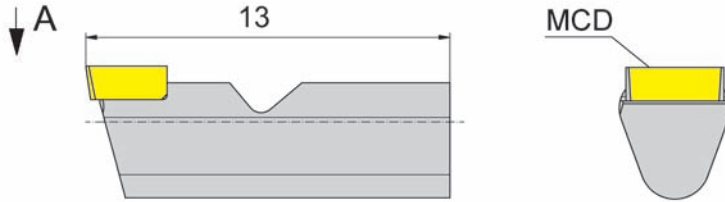


High polish turning

for use with Cassette

type NH105

S



Part number	w	R	Geometries for			
			Carbide Grades MD10	Aluminium	Brass	Synthetics (PMMA)
105.300.AD.06	3.5	300	▲	x		
105.300.KD.06	3.5	300	▲			x
105.300.MD.06	3.5	300	▲		x	
			P			
			M			
			K			
			S			
			N	•		
			H			

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoatet grades
- coatet grades
- brazed MCD

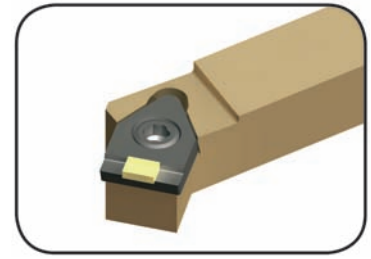
Dimensions in mm

Centre height must be measured and adjusted to the correct position.
Cutting edges must be measured optically!

Further sizes upon request

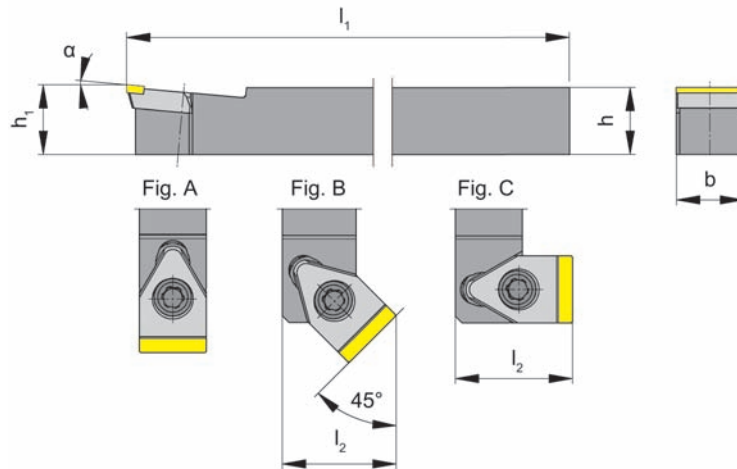
TOOLHOLDER Type

H117



for use with Insert

Type S117



R = right hand version shown

L = left hand version

Part number	α	Figure	h	h_1	b	l_1	l_2
H117.MD10.00.5.10	5°	A	10	10.4	10	100	-
R/LH117.MD10.45.5.10	5°	B	10	10.4	11	100	17.0
R/LH117.MD10.90.5.10	5°	C	10	10.4	10	100	17.5

State R or L version

Dimensions in mm

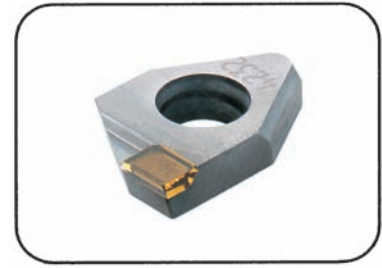
Further sizes and versions upon request

Spare parts

Toolholder	Screw	TORX PLUS® Wrench
...	030.400P.0227	T15PQ

INSERT type

S117

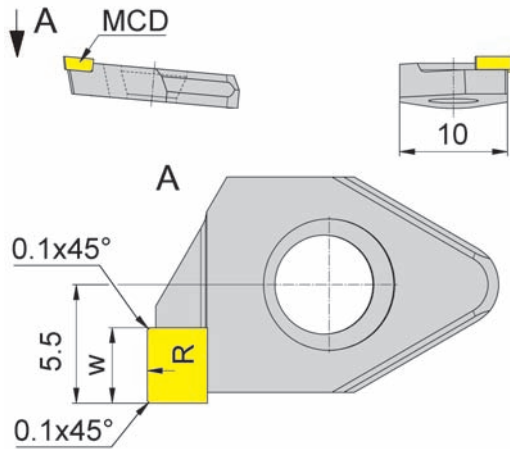


Side turning / Profiling

for use with Toolholder

type H117...10

S



R = right hand version shown

L = left hand version

Part number	w	R	Carbide Grades MD10	Geometries for		
				Aluminium	Brass	Synthetics (PMMA)
RS117.300.00.A0.10 LS117.300.00.A0.10	3,5	300	▲ △	x x		
RS117.300.00.K0.10 LS117.300.00.K0.10	3,5	300	▲ △			x x
RS117.300.00.M0.10 LS117.300.00.M0.10	3,5	300	▲ △		x x	
▲ on stock △ 4 weeks			P			
● main recommendation			M			
○ alternative recommendation			K			
■ uncoated grades			S			
■ coated grades			N	•		
■ brazed MCD			H			

Dimensions in mm

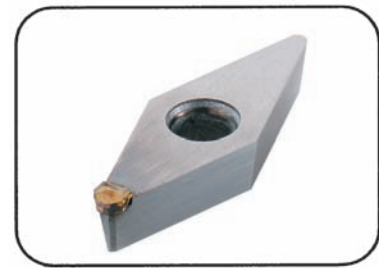
State R or L version

Centre height must be measured and adjusted to the correct position.
Cutting edges must be measured optically!

Further sizes upon request

INSERT type

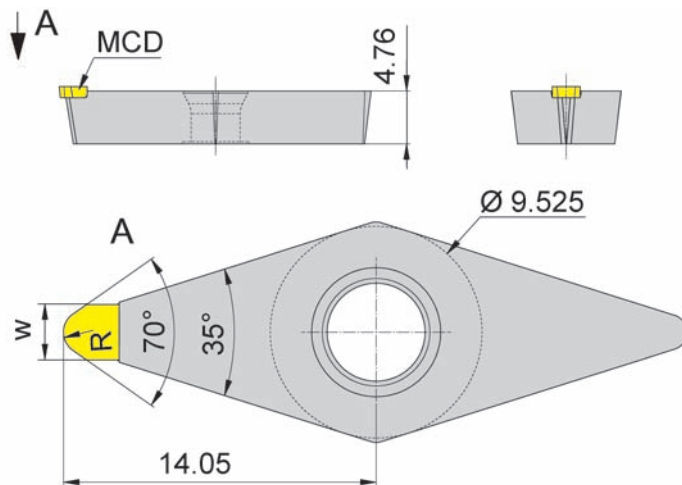
VCGW



Side turning / Profiling

for use with ISO-Toolholder

Size .16



Part number	w	R	Geometries for			
			Carbide Grades MD10	Aluminium	Brass	Synthetics (PMMA)
VCGW160410.00.A0	2.5	1	▲	x		
VCGW160410.00.K0	2.5	1	▲			x
VCGW160410.00.M0	2.5	1	▲		x	
			P			
			M			
			K			
			S			
			N	•		
			H			

- ▲ on stock Δ 4 weeks
- main recommendation
- alternative recommendation
- uncoated grades
- coated grades
- brazed MCD

Dimensions in mm

Centre height must be measured and adjusted to the correct position.
Cutting edges must be measured optically!

Further sizes upon request

Machining of high polished surfaces in Nano quality

Material	v_c (m/min)	f (mm/U)	a_p (mm)	cooling	
Non ferrous metals	Ag	200 - 250	0.05 - 0.06	0.02 - 0.05	•
	Al	200 - 400	0.02 - 0.10	0.02 - 0.05	•
	Au	200 - 250	0.05 - 0.06	0.02 - 0.05	•
	CuSn	150 - 250	0.05 - 0.10	0.02 - 0.05	•
	Cu	150 - 300	0.02 - 0.10	0.02 - 0.05	• / -
	CuZn	150 - 250	0.05 - 0.10	0.02 - 0.05	• / -
	Pt	150 - 125	0.02 - 0.04	0.01 - 0.03	•
Synthetics	PMMA	100 - 150	0.05 - 0.10	0.02 - 0.05	• / -
	PC	80 - 150	0.05 - 0.10	0.02 - 0.05	• / -
	PVC	150 - 250	0.05 - 0.10	0.02 - 0.05	• / -
	PE	150 - 300	0.05 - 0.10	0.02 - 0.05	• / -

S



Further sizes and versions upon request.



Carbide milling cutter shanks offer excellent antivibration properties, resulting in greater rigidity, ideally suited for holding PCD tipped inserts.



PCD tipped inserts of the 306, 308, 311, 313 and 328 range are manufactured according to customers requirements. Intermediate widths as well as complicated forms are all part of our product range.



Cutting data calculated from our HCT program guarantees both optimum and economical performance of the HORN groove milling tools.



For further information, please contact HORN USA.



D 041 VL

Model 0.4-1 Nm

Torque screw driver with scale
 - variable torque setting
 - adjusted torque is shown on display

The Torque can be adjusted with a special torque setter (id.)
 Ergonomical form gives perfect handling abilities. Acoustic signal when setted torque is reached.
 (Standard: EN ISO 6798, BS EN 26789, ASME B 107.14.M.)
 (Precision: $\pm 6 \%$)



D 15 VL

Model 1-5 Nm



D 28 VL

Model 2-8 Nm



ED 28 VL

Torque setter

Device for setting the required torque.

Handle: Celluloseacetat with micro structured surface

Blade: Octogonal (8 flats) blade, hardened galvanized

T



Universal Bitholder with T-handle
For S.DM08, S.DM10 and S.DM12
also for all C6,3 and E6,3 (1/4") Bits

Blade: High quality Chrome-Vanadium steel, through hardened, chrome plated.
 Collar: Stainless steel
 Utilization: For controlled opening

14ZQK

T



Blade for TORX-Plus® screws

Blade: High quality Chrome-Vanadium steel, through hardened, chrome plated.
 Wiha Chrome Blade guarantees maximum precision.
 Colored code green

Utilization: For controlled screw setting with definite torque in combination with Wiha torque screw driver handle.

DT8PK
DT10PK
DT15PK
DT20PK
DT25PK



Universal Bitholder
For S.DM08, S.DM10 and S.DM12 also
for all C6,3 and E6,3 (1/4") Bits

Blade: High quality Chrome-Vanadium steel, through hardened, chrome plated.

Collar: Stainless steel

Utilization: For controlled screw setting with definite torque in combination with torque screw driver handle.

D14ZBK



Torque screw driver with scale
 - variable torque setting
 - adjusted torque is shown on display

The Torque can be adjusted with a special torque setter (id.)
 Ergonomical form gives perfect handling abilities. Acoustic signal when setted torque is reached.
 (Standard: EN ISO 6798, BS EN 26789, ASME B 107.14.M.)
 (Precision: $\pm 6\%$)

D515QL

Model 5-15 Nm



Torque setter

Device for setting the required torque.

Handle: Celluloseacetat with micro structured surface
 Blade: Octogonal (8 flats) blade, hardened galvanized

ED515QL



Universal Bitholder

For S.DM08, S.DM10 and S.DM12 also
 for all C6,3 and E6,3 (1/4") Bits

Blade: High quality Chrome-Vanadium steel, through hardened, chrome plated.

Collar: Stainless steel

Utilization: For controlled screw setting with definite torque in combination with torque screw driver handle.

D14ZBQ

T



DT15PQ
DT20PQ
DT25PQ
DT27PQ
DT30PQ

Blade for TORX-Plus® screws

Blade: High quality Chrome-Vanadium steel, through hardened, chrome plated.
Wiha Chrome Blade guarantees maximum precision.

Colored code green

Utilization: For controlled screw setting with definite torque in combination with Wiha torque screw driver handle.

T

Machining of Ni-resist ring on "Diesel Piston"

CBN-tipped insert of type 229 is used to do the grooving application in the Ni-resist ring.

The process is pregrooving followed by profiling the flanks of the groove. To avoid a high cutting pressure which forces the possibility to damage the seating of the ring, the cutting edge of the insert has a special preparation.

Material: Ni-resist (austenitic cast iron similar to DIN1694)

Cutting data:

$v_c = 220 \text{ m/min (722 SFM)}$

$v_f = 0.06 \text{ mm (.0024")}$



Multigrooving "Petrol Piston"

The grooves are machined with PCD-tipped inserts type 312 which are clamped in a multi-grooving toolholder of type 340.

Process:

- Pregrooving
- Finishing with a second set of inserts

Material: GD-AISI12

Cutting data

Pregrooving:

$v_c = 350 \text{ m/min}$

$v_f = 0.07 \text{ mm}$

Finishing:

$v_c = 350 \text{ m/min}$

$v_f = 0.03 \text{ mm}$



T

Face grooving on Gear wheel

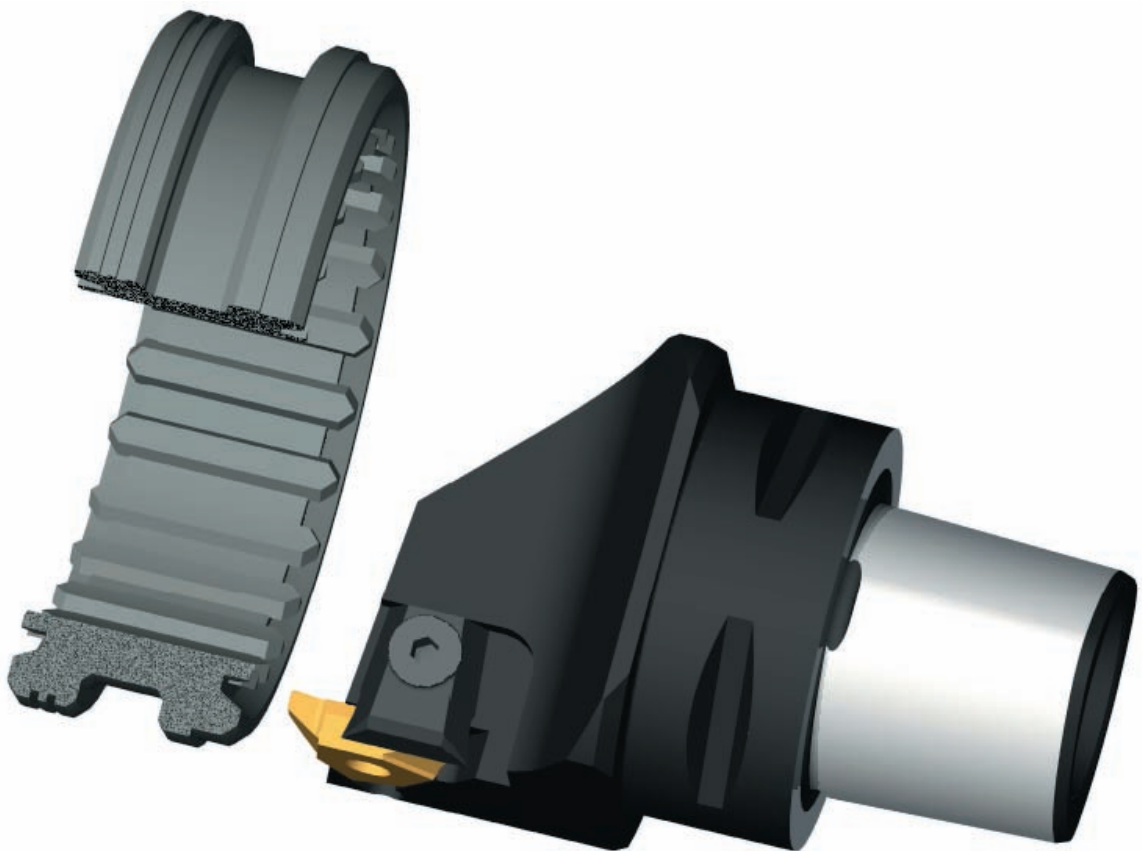
with HORN-Capto toolholder type 360 and special indexable insert typ 312.
The size of the burrs along the teeth defines the toollife and creates a high technical demand on the tool itself.

Material: 20MnCr5

Cutting data:

$$v_c = 200 \text{ m/min}$$

$$v_f = 0.06 \text{ mm}$$



T

Hardturning on Gear wheel

Special **CBN-tipped** insert type S117 is used to finish the width of the roove. The stock removal is approximately 0.15 - 0.2 mm (.006" - .008"). The insert is ground to find width of the groove.

Both flanks are machined at the same time ($Rz=2,3\mu m$). To obtain high surface finish, the insert has a wiper flat on both side cutting edges. Stable machining conditions are imperative. **No coolant.**

Material: 20MnCr5 - case hardened 58-62 HRC

Cutting data:

$$v_c = 140 \text{ m/min}$$

$$v_f = 0.08 \text{ mm}$$



T

Machining on camshafts

Because of its design, turning the camshafts seats usually require left and right hand tools. Due to the toolchanges this results in high nonproductive time periods.

With the inserts of type 229, the cams and seats can be machines without a toolchange. Stock removal is up to 2.5 mm (.098"). No coolant.

The amount of taper and cylindricity at the bearing seat we achieved is $\leq 0,02$ mm.

Material: 16MnCr5 - forged

Cutting data

Cam:

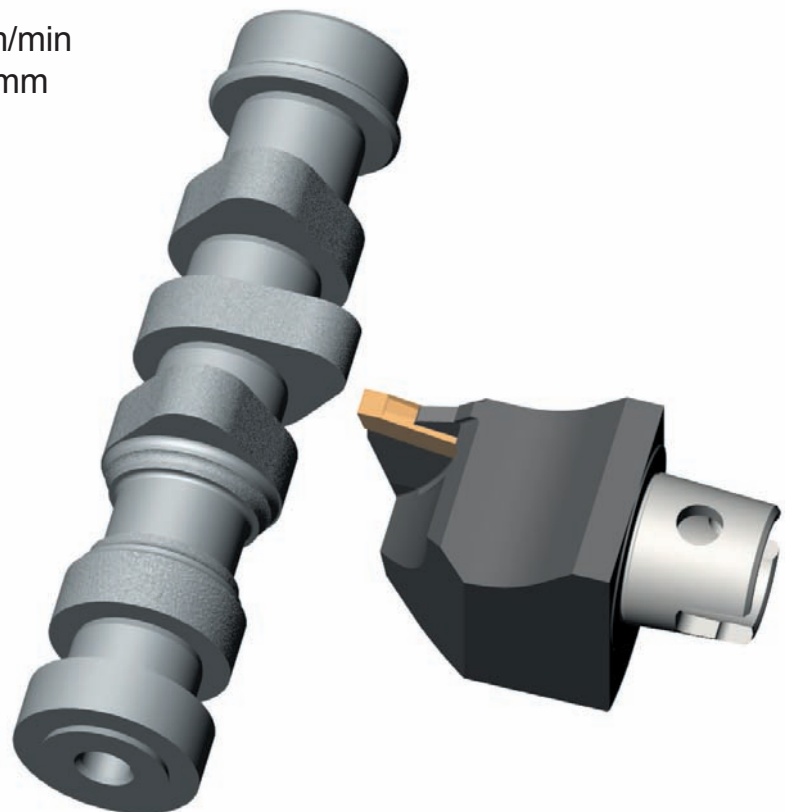
$$v_c = 160 \text{ m/min}$$

$$v_f = 0.25 \text{ mm}$$

Seat:

$$v_c = 160 \text{ m/min}$$

$$v_f = 0.25 \text{ mm}$$



T

Face grooving - Multitool

based on the insert system S224, the tool is used to do a front and back face grooving operation.

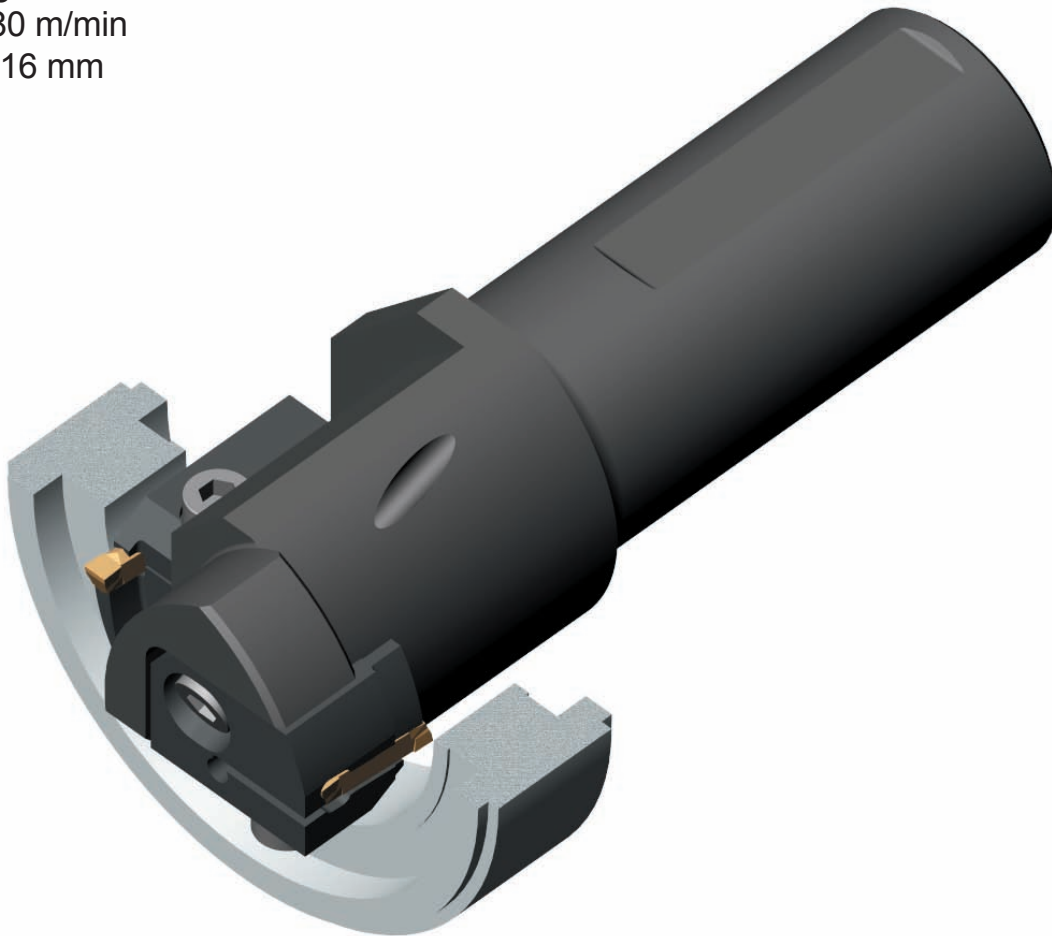
The toolholder is equipped with exchangeable and adjustable cartridges.

Material: 20MnCr5

Cutting data:

$$v_c = 180 \text{ m/min}$$

$$v_f = 0.16 \text{ mm}$$



T

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001KM	M18
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Cutting Material Group per DIN ISO 513

Main Group	Symbol	Subgroups
Carbide	HW	uncoated carbides based upon WC
	HT	uncoated carbides based upon TIC/TIN (cermets)
	HC	coated carbides
Ceramic cutting material	CA	Oxide ceramics based upon Al_2O_3
	CM	Mixed ceramics Al_2O_3 + metal carbide
	CN	Nitride ceramics based upon Si_3N_4 -Basis
	CC	coated ceramics
Boron nitride	BN	Polycrystalline cubic boron nitride (CBN)
Diamond	DP	Polycrystalline diamond (PCD)

DIN ISO 513 does not replace the manufacturers grade discription or designation.
DIN ISO 513 gives a comparison for grades from various manufacturers.

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