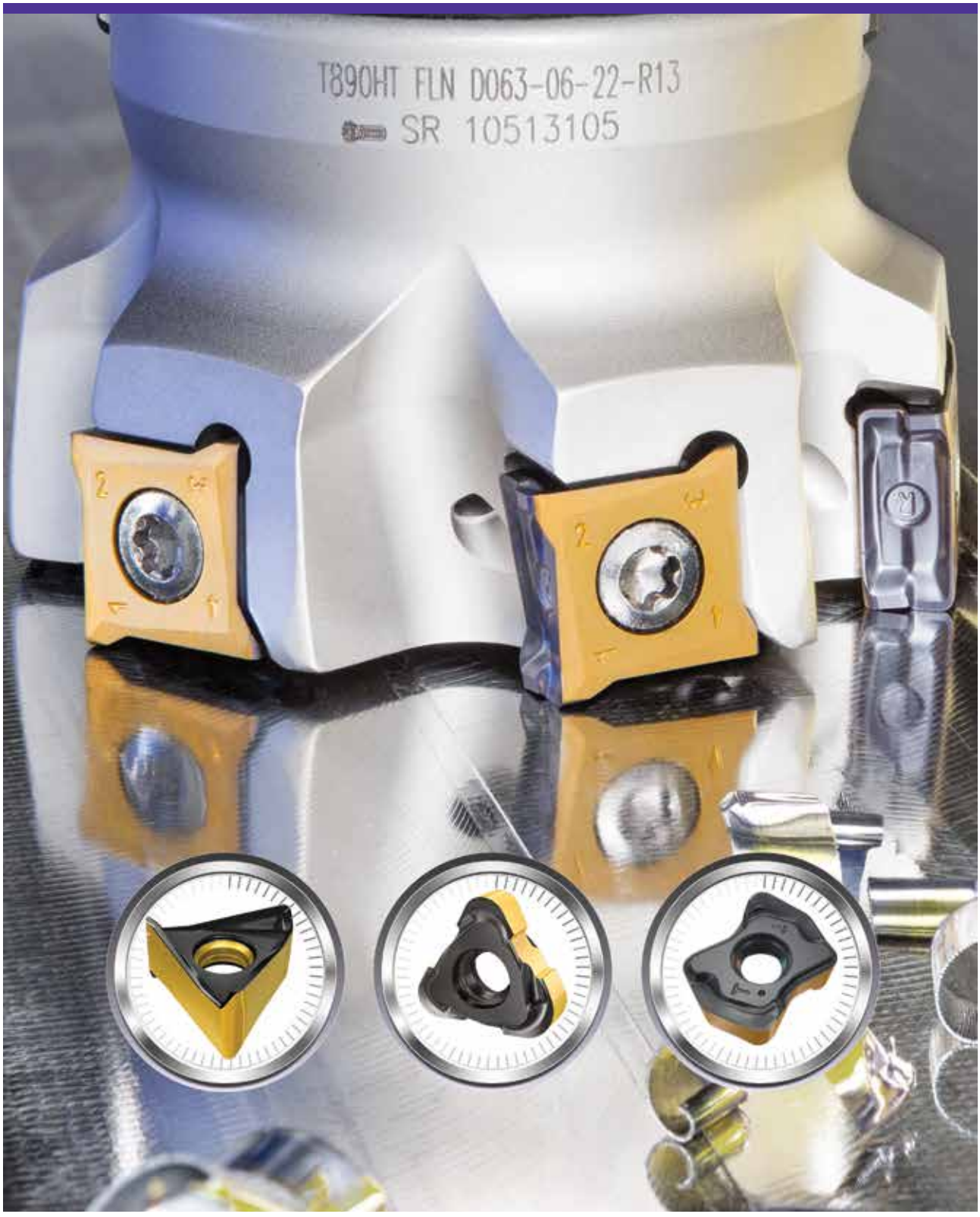
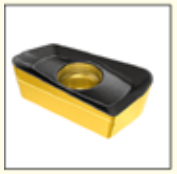
MILLING INSERTS

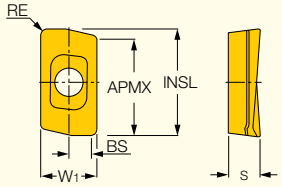


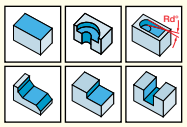
HELIPLUS

HP ANKT/ANCT 0702.. PN-R/PNTR

Inserts with a 7 mm Helical Edge and Various Corner Radii for General Use



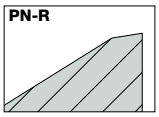


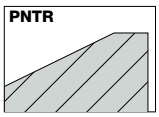


Designation	Dimensions W1	APMX	BS	RE	INSL	S	Tough ↔ Hard IC328	IC830	IC928	IC5400	IC950	IC808	IC908	IC30N	IC810	IC910	DT7150	Recommended Machining Data ap (mm)	fz (mm/t)
HP ANCT 070202 PN-R	4.50	7.50	1.50	0.20	8.70	2.60										●		2.00-7.50	0.05-0.10
HP ANCT 070204PN-R	4.50	7.50	1.40	0.40	8.70	2.60	●		●			●						2.00-7.50	0.05-0.10
HP ANKT 0702 PN-R	4.50	7.50	1.30	0.50	8.70	2.60	●	●	●	●		●	●		●	●		2.00-7.50	0.06-0.10
HP ANKT 070202PNTR	4.50	7.50	1.60	0.20	8.70	2.60	●		●									2.00-7.50	0.08-0.15
HP ANKT 0702PNTR	4.50	7.50	1.30	0.50	8.70	2.60	●		●		●		●	●		●	●	2.00-7.50	0.08-0.12
HP ANKT 070208PNTR	4.50	7.50	1.00	0.80	8.70	2.60		●	●			●	●					2.00-7.50	0.08-0.15
HP ANKT 070212PNTR	4.50	7.50	0.70	1.20	8.70	2.60			●				●					2.00-7.50	0.08-0.15
HP ANKT 070216PNTR	4.50	7.50	0.20	1.60	8.70	2.60			●				●					2.00-7.50	0.08-0.15

• For cutting speed recommendations, see pages 518-524

For tools, see pages: HP ANK-07 (230) • HP E90AN-07 (14) • HP E90AN-M-07 (14) • HP E90AN-MM-07 (15) • HP F90AN-07 (187)



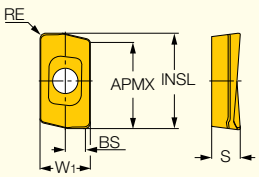


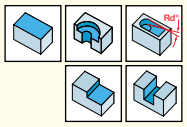
HELIPLUS

HP ANKW 070204PNTR

Insert with a 7 mm Helical Edge and Flat Rake for Rough Machining and Hardened Steel









Designation	Dimensions INSL	APMX	S	RE	BS	W1	Tough ↔ Hard IC928	IC910	Recommended Machining Data ap (mm)	fz (mm/t)
HP ANKW 070204PNTR	8.70	7.50	2.60	0.40	1.20	4.50	●	●	2.00-7.50	0.08-0.15

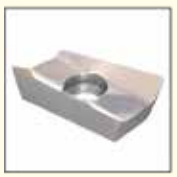
• Reinforced flat rake for machining cast iron. For cutting speed recommendations, see pages

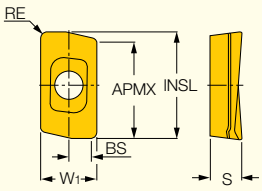
For tools, see pages: HP ANK-07 (230) • HP E90AN-07 (14) • HP E90AN-M-07 (14) • HP E90AN-MM-07 (15) • HP F90AN-07 (187)

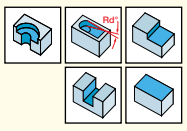
HELIPLUS

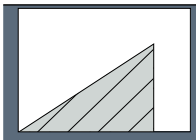
HP ANCR 0702PNFR

Peripherally Ground Inserts with a Super Positive Chipformer for Machining Aluminum, Titanium and Magnesium









Designation	Dimensions INSL	APMX	S	RE	BS	W1	Tough ↔ Hard IC28	IC328	IC928	IC908	Recommended Machining Data ap (mm)	fz (mm/t)
HP ANCR 070204PNFR	8.70	7.50	2.60	0.40	1.20	4.50		●	●	●	2.00-7.50	0.07-0.20
HP ANCR 070204PNFR-P (1)	8.70	7.50	2.60	0.40	1.20	4.50	●				2.00-7.50	0.07-0.20

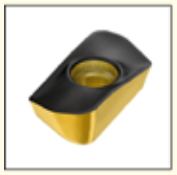
• For cutting speed recommendations, see pages 518-524

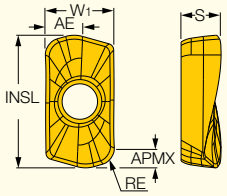
(1) Polished rake

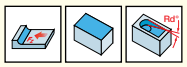
For tools, see pages: HP ANK-07 (230) • HP E90AN-07 (14) • HP E90AN-M-07 (14) • HP E90AN-MM-07 (15) • HP F90AN-07 (187)

HELIPLUS
FEEDMILL

HP ANKT 0702...-FF
Inserts for Fast Feed Milling



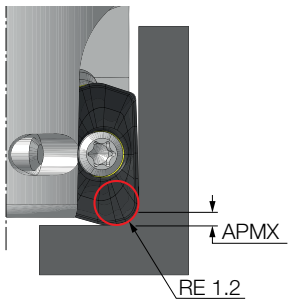




Designation	Dimensions W1	RE	S	INSL	APMX	AE	IC830	Recommended Machining Data fz (mm/t)
HP ANKT 0702R12T-FF	4.40	1.20	2.60	8.55	0.70	1.9	●	0.70-1.00

• Can be used on 12 mm and larger tools • For cutting speed recommendations, see pages 518-524

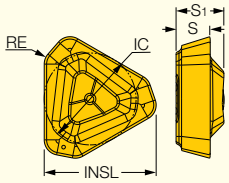
For tools, see pages: HP E90AN-07 (14) • HP E90AN-M-07 (14) • HP E90AN-MM-07 (15) • HP F90AN-07 (187)

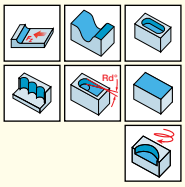


NAN3FEED
NANO FEED MILL

FFT3 TXMT 02
Triangular Miniature Inserts for Fast Feed Milling at Small Depth of Cut







Designation	Dimensions INSL	IC	RE	S	S1	IC830	Recommended Machining Data ap (mm)	fz (mm/t)
FFT3 TXMT 020105T	3.66	2.00	0.50	1.10	1.56	●	0.20-0.60	0.20-0.70

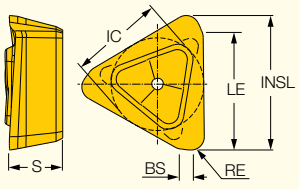
• For side plunging, the initial cutting feed is 0.06 mm/t • For cutting speed recommendations, see pages 518-524

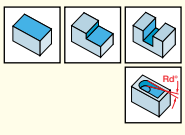
For tools, see pages: FFT3 EFM-02 (286) • FFT3 EFM-MM 02 (286)

NANMILL
NANO ENDMILL

HM390 TPKR 0401
Triangular Miniature Inserts with 3 Helical Cutting Edges for 90° Shoulders







Designation	Dimensions INSL	IC	S	LE	RE	BS	IC830	Recommended Machining Data ap (mm)	fz (mm/t)
HM390 TPKR 0401-PCTR	4.00	2.80	1.60	3.00	0.40	0.40	●	0.50-3.00	0.04-0.10

• For cutting speed recommendations, see pages 518-524

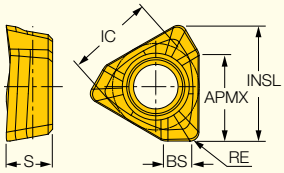
For tools, see pages: HM390 ETP-04 (10) • HM390 ETP-MM-04 (10)

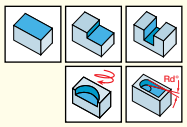
HELI3MILL HM390 LINE

HM390 TPKT/CT 0502

Triangular Inserts with 3 Helical Cutting Edges for 90° Shoulder Accuracy







Designation	Dimensions						Tough ↔ Hard			Recommended Machining Data	
	INSL	IC	S	LE	RE	BS	IC830	IC808	IC810	a_p (mm)	f_z (mm/t)
HM390 TPCT 0502PDR	5.26	3.94	2.10	3.50	0.40	1.00	●			0.50-3.50	0.05-0.10
HM390 TPKT 0502PDR	5.26	3.94	2.10	3.50	0.40	1.00	●	●	●	0.50-3.50	0.05-0.15

• For cutting speed recommendations, see pages 518-524

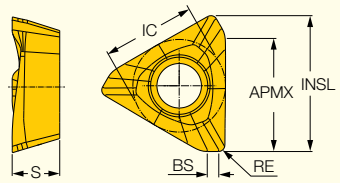
For tools, see pages: HM390 ETP-05 (11) • HM390 ETP-MM-05 (11)

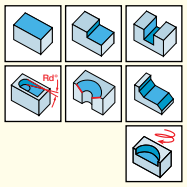
HELI3MILL HM390 LINE

HM390 TCKT/CT 0703

Triangular Inserts with 3 Helical Cutting Edges for 90° Shoulder Accuracy







Designation	Dimensions						Tough ↔ Hard							Recommended Machining Data	
	INSL	IC	S	APMX	RE	BS	IC330	IC845	IC830	IC5400	IC380	IC808	IC810	a_p (mm)	f_z (mm/t)
HM390 TCCT 0703PCR	7.80	5.80	3.15	5.00	0.50	0.80	●		●		●			1.00-5.00	0.08-0.15
HM390 TCKT 0703PCTR	7.80	5.80	3.15	5.00	0.50	0.80	●	●	●	●		●	●	1.00-5.00	0.08-0.15

• For cutting speed recommendations, see pages 518-524

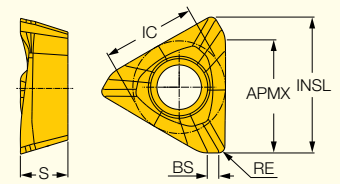
For tools, see pages: HM390 E10-80-07 (35) • HM390 ETC-07 (15) • HM390 ETC-MM (16) • HM390 FTC-07 (187)

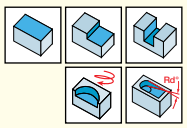
HELI3MILL HM390 LINE

HM390 TPKT/CT 1003

Triangular Inserts with 3 Helical Cutting Edges for 90° Shoulder Accuracy







Designation	Dimensions						Tough ↔ Hard										Recommended Machining Data	
	INSL	IC	S	APMX	RE	BS	IC28	IC882	IC330	IC845	IC830	IC5400	IC380	IC808	IC30N	IC810	a_p (mm)	f_z (mm/t)
HM390 TPCR1003PDFR-P	10.90	7.50	4.00	8.00	0.80	1.00	●										1.20-8.00	0.08-0.25
HM390 TPCT 1003PDR	10.90	7.50	4.00	8.00	0.80	1.10					●			●		●	1.20-8.00	0.08-0.12
HM390 TPKR 100304PDRHM (1)	10.90	7.50	4.00	8.00	0.40	1.50					●						1.20-8.00	0.08-0.15
HM390 TPKT 1003PDR	10.90	7.50	3.85	8.00	0.80	0.70		●	●	●	●	●	●	●		●	1.20-8.00	0.08-0.15
HM390 TPKT 1003PDR-FW (2)	10.90	7.50	4.00	8.00	0.80	1.50					●						1.20-8.00	0.08-0.15
HM390 TPKT 1003PDR-HS	10.90	7.50	4.00	8.00	0.80	1.00					●						1.20-8.00	0.08-0.12
HM390 TPKT 1003PDR-MP	10.90	7.50	4.10	8.00	0.80	1.20					●						1.20-8.00	0.08-0.12
HM390 TPKT 100304PDR	10.90	7.50	3.85	8.00	0.40	1.00			●		●			●			1.20-8.00	0.08-0.15
HM390 TPKT 100304R-GW (3)	10.90	7.50	3.85	8.00	0.40	1.25									●		1.20-8.00	0.08-0.15
HM390 TPKT 100310PDR	10.90	7.50	3.85	8.00	1.00	0.90			●		●			●			1.20-8.00	0.08-0.15
HM390 TPKT 100312PDR	10.90	7.50	3.85	8.00	1.20	0.70			●		●			●			1.20-8.00	0.08-0.15
HM390 TPKT 100316PDR	10.90	7.50	3.85	8.00	1.60	0.60			●		●			●			1.20-8.00	0.08-0.15
HM390 TPKT 100320PDR (4)	10.90	7.50	3.85	8.00	2.00	0.60			●		●			●			1.20-8.00	0.08-0.15

• For cutting speed recommendations, see pages 518-524

(1) Super positive insert for machining aluminum, stainless steel and high temperature alloys

(2) Insert with a serrated wavy cutting edge crushes chips into small segments

(3) A ground wiper

(4) Tool's pocket corners should be rounded to 1.5 mm radius

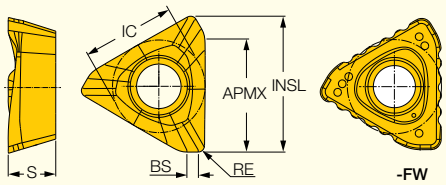
For tools, see pages: HM390 ETP-10 (20) • HM390 ETP-C#-10 (20) • HM390 ETP-M (20) • HM390 FTP-10 (192)

HELI3MILL HM390 LINE

HM390 TDKT/CT 1505

Triangular Inserts with 3 Helical Cutting Edges for 90° Shoulder Accuracy





Designation	Dimensions INSL	IC	S	APMX	RE	BS	Tough ↔ Hard IC28	IC882	IC330	IC845	IC830	IC5400	IC380	IC808	IC30N	IC810	IC4	Recommended Machining Data a_p (mm)	f_z (mm/t)
HM390 TDKT 1505PDR-MP [1]	15.97	11.40	6.45	13.00	0.80	2.90					●							1.50-13.00	0.08-0.15
HM390 TDKT 1505PDR	16.70	11.40	5.85	13.00	0.80	1.40		●	●	●	●	●	●	●		●		1.50-13.00	0.08-0.15
HM390 TDKT 1505PDR-HS [2]	16.70	11.40	6.24	13.00	0.80	1.35					●							1.50-13.00	0.08-0.15
HM390 TDKT 1505PDR-GW	16.50	11.40	5.80	13.00	0.80	1.70									●			1.50-13.00	0.08-0.15
HM390 TDKT 1505PDR-FW [3]	17.06	12.30	6.42	11.00	1.40	1.40					●							1.50-11.00	0.10-0.15
HM390 TDKT 150504PDR	16.34	11.40	5.77	13.00	0.40	1.40					●							1.50-13.00	0.08-0.15
HM390 TDKT 150512-PDR	16.20	11.40	5.85	12.70	1.20	1.00			●		●			●				1.50-13.00	0.08-0.15
HM390 TDKT 150516-PDR	16.40	11.40	5.85	12.50	1.60	1.00			●		●			●				1.50-12.50	0.08-0.15
HM390 TDKT 150520-PDR	16.20	11.50	5.85	12.50	2.00	0.70			●		●			●				1.50-12.50	0.08-0.15
HM390 TDKT 150524-PDR	15.90	11.40	5.85	12.00	2.40	0.60			●		●			●				1.50-12.00	0.08-0.15
HM390 TDKT 150532-PDR [4]	15.20	11.40	5.85	12.00	3.20	0.60			●		●			●				1.50-12.00	0.08-0.15
HM390 TDKT 150540-PDR [5]	14.25	11.40	5.75	11.00	4.00	0.60			●		●			●				1.50-11.00	0.08-0.15
HM390 TDKR 150508PDRHM [6]	16.70	11.40	5.85	13.00	0.80	1.70					●							1.50-13.00	0.08-0.15
HM390 TDCT 1505PDR [7]	16.80	11.40	6.08	12.00	0.80	1.70		●			●		●	●		●		1.50-12.00	0.08-0.15
HM390 TDCR 1505PDFR-P [8]	16.70	11.40	6.00	13.00	0.80	1.60	●										●	1.50-13.00	0.08-0.20
HM390 TDCR 150520PDFR-P [8]	16.00	11.40	6.00	13.00	2.00	1.00	●											1.50-13.00	0.08-0.15
HM390 TDCR 150532PDFR-P [8]	15.00	11.40	6.00	13.00	3.20	0.50	●											1.50-13.00	0.08-0.15
HM390 TDCR 150540PDFR-P [8]	14.00	11.40	6.00	11.00	4.00	0.70	●											1.50-13.00	0.08-0.15

• For cutting speed recommendations, see pages 518-524

[1] General-duty inserts with new medium positive cutting geometry

[2] Insert with a serrated chip splitting for roughing applications and for long overhang

[3] Chip splitting cutting edge, enlarges tool diameter by 1 mm

[4] Tools should be modified by rounding the insert pocket corners to 2.0 mm

[5] Tools should be modified by rounding the pocket corners to 4.0 mm

[6] Super positive inserts for machining aluminum, stainless steel and high temperature alloys

[7] Peripherally ground

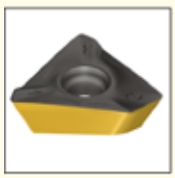
[8] Peripherally ground flank, super positive polished rake for milling aluminum, titanium and magnesium

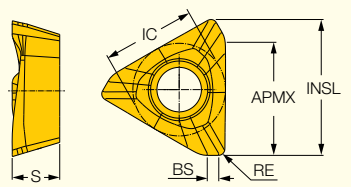
For tools, see pages: HM390 ETD-15 (27) • HM390 ETD-M (28) • HM390 FTD-15 (202)

HELI3MILL HM390 LINE

HM390 TDKT 1907

Triangular Inserts with 3 Helical Cutting Edges for 90° Shoulder Accuracy





Designation	Dimensions INSL	IC	S	APMX	RE	BS	Tough ↔ Hard IC330	IC845	IC830	IC5400	IC808	IC810	Recommended Machining Data a_p (mm)	f_z (mm/t)
HM390 TDKT 1907PDTR	21.00	14.00	7.00	16.00	0.80	2.50	●	●	●	●	●	●	2.00-16.00	0.10-0.20

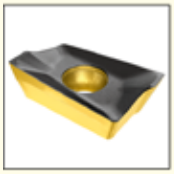
• For cutting speed recommendations, see pages 518-524

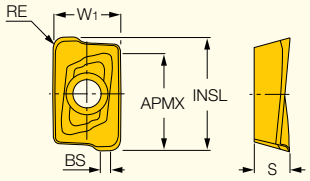
For tools, see pages: HM390 ETD-19 (29) • HM390 FTD-19 (205)

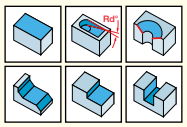
HELI2000

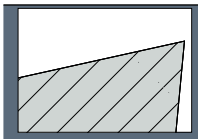
HM90 APCT 1003

Inserts with a Sharp Cutting Edge for Semi-Finishing and Finishing









Designation	Dimensions W1	RE	INSL	S	BS	APMX	Tough ↔ Hard IC28	IC328	IC928	IC380	IC808	Recommended Machining Data ap (mm)	fz (mm/t)
HM90 APCT 100302R-PDR	6.96	0.20	11.66	3.53	1.90	8.00	●	●	●		●	4.00-8.00	0.06-0.12
HM90 APCT 100308-HP (1)	6.80	0.80	11.46	3.53	1.40	8.00				●	●	4.00-8.00	0.06-0.12

• For cutting speed recommendations, see pages 518-524

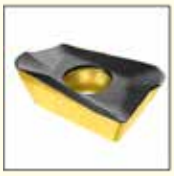
(1) Sharp cutting edges, high positive rake angle, excellent for milling PH high temperature alloys

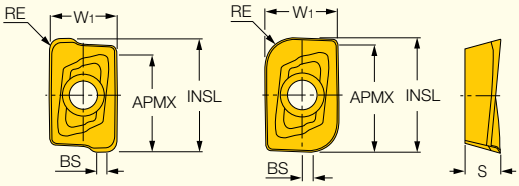
For tools, see pages: HM90 E90A-10 (22) • HM90 E90A-M-10 (24) • HM90 E90A-MM-10 (24) • HM90 F90AP-10 (193)

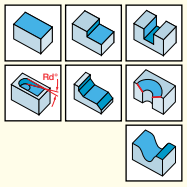
HELI2000

HM90 APKT 1003

General Use Inserts with 2 Helical Cutting Edges for High 90° Shoulder Accuracy





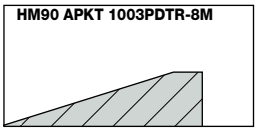


Designation	Dimensions W1	INSL	APMX	S	RE	BS	Tough ↔ Hard IC28	IC882	IC330	IC328	IC830	IC928	IC5400	IC950	IC380	IC808	IC908	IC810	IC910	Recommended Machining Data ap (mm)	fz (mm/t)
HM90 APKT 1003PDR	6.76	11.45	8.00	3.53	0.80	1.40		●	●	●	●	●	●	●	●	●	●	●	●	4.00-8.00	0.08-0.15
HM90 APKT 1003PDR-SC	6.80	11.60	8.00	4.00	0.40	1.80					●									4.00-8.00	0.08-0.15
HM90 APKT 1003PDR-MM	6.70	11.50	8.00	3.50	0.80	1.60					●									4.00-8.00	0.08-0.15
HM90 APKT 1003PDTR-8M	6.76	11.45	8.00	3.53	0.80	1.40						●							●	4.00-8.00	0.08-0.20
HM90 APKT 100304PDR	6.76	11.45	8.00	3.53	0.40	1.78	●			●		●					●			4.00-8.00	0.08-0.15
HM90 APKT 100308R	6.76	11.45	8.00	3.53	0.80	1.00					●									4.00-8.00	0.08-0.15
HM90 APKT 100312PDR	6.76	11.45	8.00	3.53	1.20	1.00				●		●					●			4.00-8.00	0.08-0.15
HM90 APKT 100316PDR	6.76	11.45	8.00	3.53	1.60	0.58				●		●					●			4.00-8.00	0.08-0.15
HM90 APKT 100325PDR	6.76	10.40	8.00	3.53	2.50	-				●		●					●			4.00-8.00	0.08-0.15
HM90 APKT 100330PDR	6.76	10.40	8.00	3.53	3.00	-				●		●					●			4.00-8.00	0.08-0.15

• For inserts with corner radii larger than 1.5 mm, the cutter body and seat should be modified • For cutting speed recommendations, see pages 518-524

For tools, see pages: BLPK (262) • HM90 E90A-10 (22) • HM90 E90A-M-10 (24) • HM90 E90A-MM-10 (24) • HM90 F90AP-10 (193)

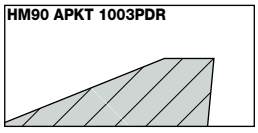
HM90 APKT 1003PDTR-8M



HM90 APKT 1003 - 8M

- Super reinforced helical cutting edge
- For interrupted cuts and heavy machining
- Use for long overhang and extended flute cutters with reduced chatter

HM90 APKT 1003PDR



HM90 APKT 1003

- Helical cutting edge with high 90° shoulder accuracy
- Reduced mismatch - improved surface quality
- For general use applications

HM90 APKT 1003PDR-MM



- Cutting edge geometry with low axial angle
- Reinforced cutting edge geometry, which provides better chipping resistance
- Wide frontal wiper that leaves excellent surface finish on the workpiece
- Used for unfavorable conditions and high feeds

HM90 APKT 1003PDR-SC



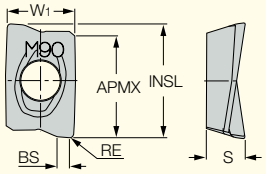
- Larger axial effective angle up to the middle of the insert length
- Reduced cutting forces, effective up to 5 mm – the middle of insert's cutting edge length
- Used for machining ductile high strength materials. Parts such as shafts, gears, crankshafts, connection rods, camshafts, etc.

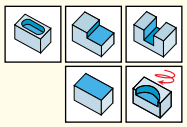
HELI2000

HM90 APCR 100304PDFR-P/DP

Inserts with Positive Helical Cutting Edges and Polished Rake for Machining Aluminum and High Temperature Alloys







Designation	Dimensions W1	INSL	APMX	S	RE	BS	Tough ↔ Hard IC28	IC928	IC08	IC908	Recommended Machining Data ap (mm)	fz (mm/t)
HM90 APCR 100304PDFR-P	6.52	11.25	8.00	3.85	0.40	1.52	●	●	●	●	4.00-8.00	0.07-0.25
HM90 APCR 100304PDFRDP	6.52	11.25	8.00	3.85	0.40	1.52	●				4.00-8.00	0.07-0.25

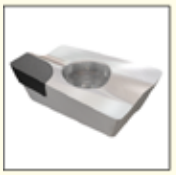
• Super positive peripherally ground chipformer • P - Polished rake DP- Polished rake and flank • Used for machining aluminum (fz 0.07-0.25), titanium (fz 0.05-0.08) and magnesium (fz 0.05-0.10) • Recommended for coarse pitch cutters • For cutting speed recommendations, see pages 518-524

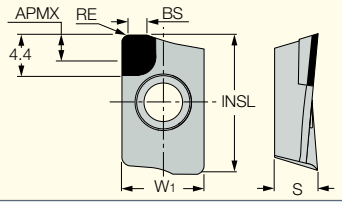
For tools, see pages: HM90 E90A-10 (22) • HM90 E90A-M-10 (24) • HM90 E90A-MM-10 (24) • HM90 F90AP-10 (193)

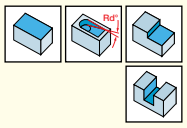
HELIMILL

APKW 100304 PDR (PCD)

Single R.H. PCD Tipped Insert for Milling Aluminum







Designation	Dimensions W1	INSL	APMX	S	RE	BS	ID5
APKW 100304 PDR (1)	6.76	11.47	2.00	3.50	0.40	1.52	●

• Use ID5 for aluminum alloys with <12% silicon, use ID8 for aluminum alloys with >12% silicon • The inserts are supplied with spare screws

(1) **Important:** use only on tools with diameters of 20 mm and larger

For tools, see pages: HM90 E90A-10 (22) • HM90 E90A-M-10 (24) • HM90 E90A-MM-10 (24) • HM90 F90AP-10 (193)

PCD
Recommended Machining Conditions

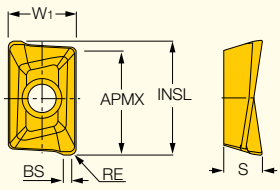
	Grade	D.O.C. (APMX) mm	Material	Vc m/min	Feed mm/tooth	Cutting
N	ID5	<2.0	Aluminum alloys <12% silicon	300-3000	0.05-0.25	Sharp
		<2.0	Chipboard Fiberboard Plastics	2000-3000	0.05-0.25	
		<2.0	Copper Brass alloys	500-1500	0.05-0.25	

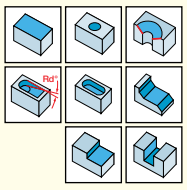
HELIMILL

APCT 1003PDR-HM

Inserts with 2 Helical Precision Ground Cutting Edges for Finishing and High Accuracy







Designation	Dimensions W1	RE	INSL	S	APMX	BS	Tough ↔ Hard IC28	IC328	IC250	Recommended Machining Data ap (mm)	fz (mm/t)
APCT 100302R-HM	6.70	0.25	10.95	3.51	8.00	1.20		●		4.00-8.00	0.06-0.12
APCT 100304R-HM	6.70	0.45	10.95	3.51	8.00	1.20		●		4.00-8.00	0.07-0.12
APCT 1003PDR-HM	6.70	0.50	10.95	3.51	8.00	1.20	●		●	4.00-8.00	0.07-0.15

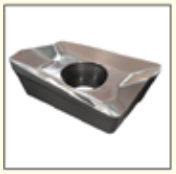
• Grooving depth (CDX) varies in conformance with blade's overhang (WFN-WFX and OHN-OHX) and depends on the bore diameter (D) • CGHN 26...-M can be modified from external double-sided CGHN blades • When TIP inserts are used the seat needs to be modified to ensure clearance • For user guide, see pages 518-524

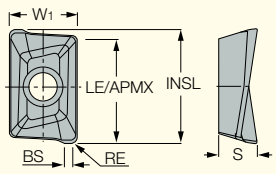
For tools, see pages: APK-FE (234) • HM90 E90A-10 (22) • HM90 E90A-M-10 (24) • HM90 E90A-MM-10 (24) • HM90 F90AP-10 (193)

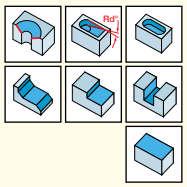
HELIMILL

APCR 1003PDFR-P

Super Positive Insert with a Polished Rake for Machining Aluminum







Designation	Dimensions W1	INSL	S	RE	BS	APMX	Tough ↔ Hard IC28	IC928	Recommended Machining Data ap (mm)	fz (mm/t)
APCR 1003PDFR-P	6.70	11.20	3.76	0.50	1.20	8.00	●	●	4.00-8.00	0.07-0.25

• Super positive rake sharp ground helical cutting edge, for finishing on aluminum, stainless steel and high temperature alloys
• For cutting speed recommendations, see pages 518-524

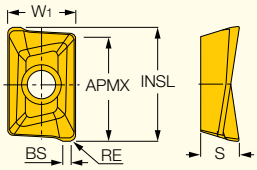
For tools, see pages: APK-FE (234) • HM90 E90A-10 (22) • HM90 E90A-M-10 (24) • HM90 E90A-MM-10 (24) • HM90 F90AP-10 (193)

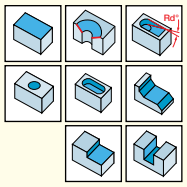
HELIMILL

APKR 1003PDR-HM

Super Positive Inserts for Aluminum, Stainless Steel and High Temperature Alloys







Designation	Dimensions W1	INSL	APMX	S	RE	BS	Tough ↔ Hard IC28	IC330	IC328	IC928	Recommended Machining Data ap (mm)	fz (mm/t)
APKR 1003PDR-HM	6.70	11.20	8.00	3.76	0.50	1.20	●	●	●	●	4.00-8.00	0.07-0.15

• Grooving depth (CDX) varies in conformance with blade's overhang (WFN-WFX and OHN-OHX) and depends on the bore diameter (D) • CGHN 26...-M can be modified from external double-sided CGHN blades • When TIP inserts are used the seat needs to be modified to ensure clearance • For user guide, see pages 518-524

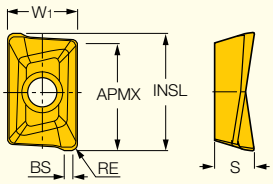
For tools, see pages: APK-FE (234) • HM90 E90A-10 (22) • HM90 E90A-M-10 (24) • HM90 E90A-MM-10 (24) • HM90 F90AP-10 (193)

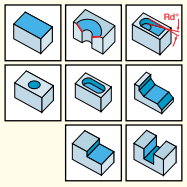
HELIMILL

APKT 1003PDR-HM

Inserts with 2 Helical Cutting Edges for General Use







Designation	Dimensions W1	INSL	S	APMX	RE	BS	Tough ↔ Hard IC28	IC330	IC328	IC830	IC928	IC950	IC30N	IC910	IC20	Recommended Machining Data ap (mm)	fz (mm/t)
APKT 1003PDR-HM	6.70	10.95	3.55	8.00	0.50	1.20	●	●	●	●	●	●	●	●	●	4.00-8.00	0.08-0.15

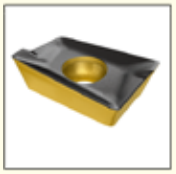
• Grooving depth (CDX) varies in conformance with blade's overhang (WFN-WFX and OHN-OHX) and depends on the bore diameter (D) • CGHN 26...-M can be modified from external double-sided CGHN blades • When TIP inserts are used the seat needs to be modified to ensure clearance • For user guide, see pages 518-524

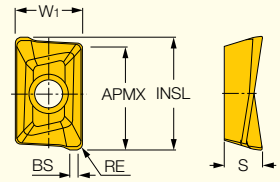
For tools, see pages: APK-FE (234) • E90AC (32) • HM90 E90A-10 (22) • HM90 E90A-M-10 (24) • HM90 E90A-MM-10 (24) • HM90 F90AP-10 (193)

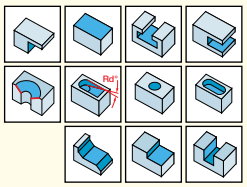
HELIMILL

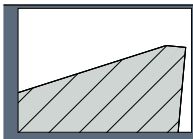
APKT 1003PDTR/L-RM

Insert with Reinforced Helical Cutting Edge for Interrupted Cut and Heavy Machining









Designation	Dimensions W1	INSL	APMX	S	RE	BS	Tough ↔ Hard IC28	IC328	IC928	IC250	IC950	IC910	IC4100	Recommended Machining Data ap (mm)	fz (mm/t)
APKT 1003PDTR/L-RM (1)	6.70	11.00	8.00	3.47	0.50	1.20	●	●	●	●	●	●	●	4.00-8.00	0.10-0.20

• APKT...L should be used only on left-hand tools. • For cutting speed recommendations, see pages 518-524

(1) PDTL-Left-hand inserts are used only for special tools.

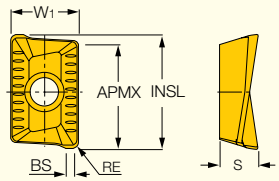
For tools, see pages: APK-FE (234) • ETS (330) • HM90 E90A-10 (22) • HM90 E90A-M-10 (24) • HM90 E90A-MM-10 (24) • HM90 F90AP-10 (193)

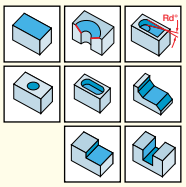
HELIMILL

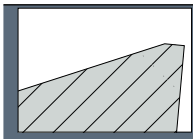
APKT 1003PDTR-76

Inserts with 2 Helical Cutting Edges with Ribs Along Edge for Interrupted Cut









Designation	Dimensions W1	INSL	APMX	S	RE	BS	Tough ↔ Hard IC330	IC328	IC830	IC928	IC950	IC910	Recommended Machining Data ap (mm)	fz (mm/t)
APKT 1003PDTR-76	6.70	11.00	8.00	3.47	0.50	1.20	●	●	●	●	●	●	4.00-8.00	0.08-0.15

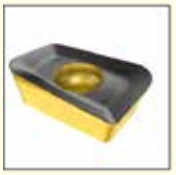
• Grooving depth (CDX) varies in conformance with blade's overhang (WFN-WFX and OHN-OHX) and depends on the bore diameter (D) • CGHN 26...-M can be modified from external double-sided CGHN blades • When TIP inserts are used the seat needs to be modified to ensure clearance • For user guide, see pages 518-524

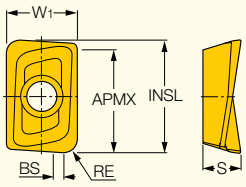
For tools, see pages: APK-FE (234) • E90AC (32) • HM90 E90A-10 (22) • HM90 E90A-M-10 (24) • HM90 E90A-MM-10 (24) • HM90 F90AP-10 (193)

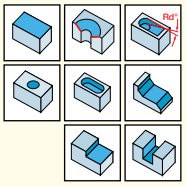
HELIMILL

APKT 1003..TR-RM

Inserts with Various Corner Radii and a Reinforced Cutting Edge for Interrupted Cut and Heavy Machining



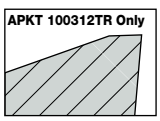


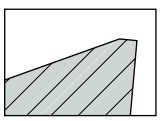


Designation	Dimensions RE	INSL	W1	APMX	S	BS	Tough ↔ Hard IC28	IC330	IC328	IC928	IC950	IC910	Recommended Machining Data ap (mm)	fz (mm/t)
APKT 100308PDTR-RM	0.80	11.00	6.70	8.00	3.47	0.90		●	●	●		●	4.00-8.00	0.08-0.15
APKT 100310PDR-RM	1.00	10.75	6.70	8.00	3.47	0.60	●		●				4.00-8.00	0.08-0.15
APKT 100312TR-RM	1.20	10.50	6.70	8.00	3.47	-	●		●	●		●	4.00-8.00	0.08-0.15
APKT 100316PDTR-RM	1.60	10.90	6.70	8.00	3.47	0.80			●	●			4.00-8.00	0.08-0.15
APKT 100320PDTR-RM	2.00	10.90	6.70	8.00	3.47	0.80			●	●	●		4.00-8.00	0.08-0.15
APKT 100332TR-RM	3.20	10.70	6.70	8.00	3.47	-			●	●			4.00-8.00	0.08-0.15
APKT 100340TR-RM	4.00	10.55	6.70	8.00	3.47	-			●				4.00-8.00	0.10-0.20

• Grooving depth (CDX) varies in conformance with blade's overhang (WFN-WFX and OHN-OHX) and depends on the bore diameter (D) • CGHN 26...-M can be modified from external double-sided CGHN blades • When TIP inserts are used the seat needs to be modified to ensure clearance • For user guide, see pages 518-524

For tools, see pages: APK-FE (234) • HM90 E90A-10 (22) • HM90 E90A-M-10 (24) • HM90 E90A-MM-10 (24) • HM90 F90AP-10 (193)



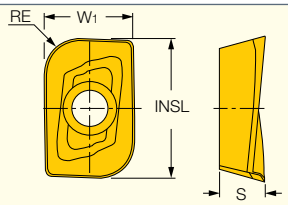


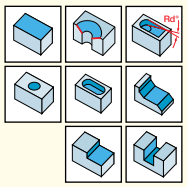
HELIMILL

APKT 1003..R

Inserts with Ground Large Corner Radii







Designation	Dimensions W1	INSL	S	RE	IC328	Recommended Machining Data ap (mm)	fz (mm/t)
APKT 100325R	6.70	10.10	3.50	2.50	●	4.00-8.00	0.08-0.15
APKT 100330R	6.70	10.10	3.50	3.00	●	4.00-8.00	0.08-0.15
APKT 100340R	6.75	10.65	3.40	4.00	●	4.00-8.00	0.08-0.15

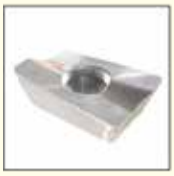
• Grooving depth (CDX) varies in conformance with blade's overhang (WFN-WFX and OHN-OHX) and depends on the bore diameter (D) • CGHN 26...-M can be modified from external double-sided CGHN blades • When TIP inserts are used the seat needs to be modified to ensure clearance • For user guide, see pages 518-524

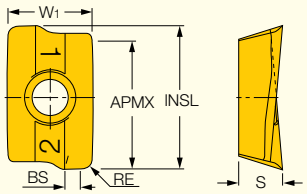
For tools, see pages: APK-FE (234) • HM90 E90A-10 (22) • HM90 E90A-M-10 (24) • HM90 E90A-MM-10 (24) • HM90 F90AP-10 (193)

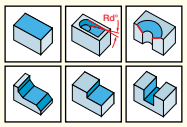
HELI2000

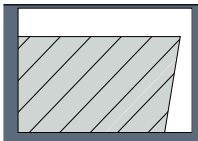
HM90 APKW 1003PDR

Inserts with Reinforced Edge and Flat Rake for Hardened Steel and Milling at Heavy Interrupted Cut









Designation	Dimensions W1	INSL	S	RE	BS	APMX	Tough ↔ Hard IC928	IC908	IC910	Recommended Machining Data ap (mm)	fz (mm/t)
HM90 APKW 1003PDR	6.76	11.47	3.50	0.80	1.40	8.00	●	●	●	4.00-8.00	0.08-0.15

• Reinforced cutting edge, resistant to edge breakage and chipping • Recommended for milling at unfavorable conditions and heavy interrupted cut • Different corner radii can be ground • For cutting speed recommendations, see pages 518-524

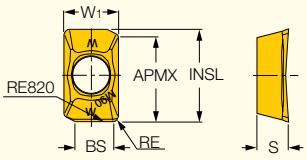
For tools, see pages: APK-FE (234) • HM90 E90A-10 (22) • HM90 E90A-M-10 (24) • HM90 E90A-MM-10 (24) • HM90 F90AP-10 (193)

HELI2000

HM90 APKT 1003PD-W

Wiper Insert







Designation	Dimensions W1	INSL	S	RE	BS	APMX	IC908	Recommended Machining Data ap (mm)	fz (mm/t)
HM90 APKT 1003PD-W	6.69	11.65	3.55	0.80	4.40	8.00	●	0.10-1.00	0.15-0.30

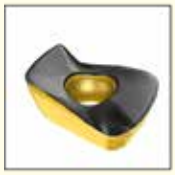
• Must be used together with HM90 APKT 1003PDR inserts • For cutting speed recommendations, see pages 518-524

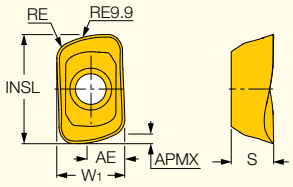
For tools, see pages: HM90 E90A-10 (22) • HM90 E90A-M-10 (24) • HM90 E90A-MM-10 (24) • HM90 F90AP-10 (193)

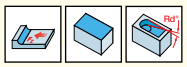
HELIMILL FEEDMILL

APKT 1003R8T-FF

Insert for Fast Feed Milling







Designation	Dimensions W1	INSL	APMX	AE	S	RE(1)	Tough ↔ Hard IC830	IC808	Recommended Machining Data ap (mm)	fz (mm/t)
APKT 1003R8T-FF	6.60	10.80	1.00	4.5	3.50	1.90	●	●	0.50-1.00	0.50-1.50

• The actual diameter of the tool is 0.1 mm larger than the nominal diameter when using this insert • Tool corner should be modified by rounding to 2.0 mm. • Should be used on tools of 12 mm diameter and up • At D.O.C. larger than ap max, regular insert feed should be applied • For cutting speed recommendations, see pages 518-524

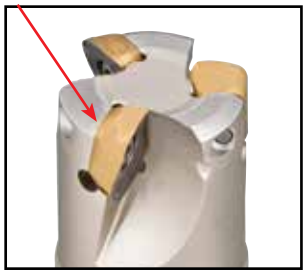
(1) Radius for CNC programming is considered as 1.8 mm

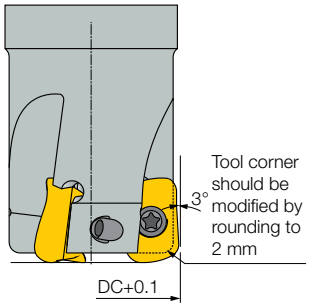
For tools, see pages: HM90 E90A-10 (22) • HM90 E90A-M-10 (24) • HM90 E90A-MM-10 (24) • HM90 F90AP-10 (193)

Standard Tool



Tool with a Modified Corner

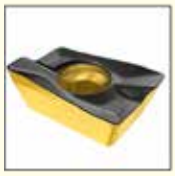


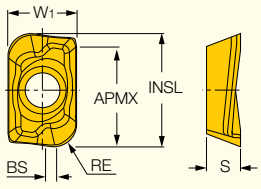


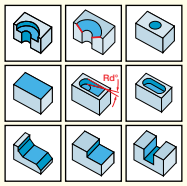
HELI2000

HM90 ADKT 1505

Inserts with 2 Helical Cutting Edges for General Use







Designation	Dimensions W1	INSL	APMX	S	RE	BS	Tough ↔ Hard IC882	IC330	IC328	IC830	IC928	IC5400	IC950	IC380	IC808	IC908	IC810	IC910	Recommended Machining Data ap (mm)	fz (mm/t)
HM90 ADKT 1505PDR	9.65	16.18	12.00	5.85	0.80	2.16	●	●	●	●	●	●	●	●	●	●	●	●	5.00-12.00	0.08-0.15
HM90 ADKT 1505PDR-MM	9.60	16.00	12.00	5.80	0.80	2.70				●									5.00-12.00	0.08-0.15
HM90 ADKT 150516-PDR	9.65	15.60	12.00	5.92	1.60	1.37										●			5.00-12.00	0.08-0.15
HM90 ADKT 150520-PDR	9.65	15.60	12.00	5.90	2.00	0.79										●			5.00-12.00	0.08-0.15
HM90 ADKT 150524-PDR	9.65	15.60	12.00	5.80	2.40	0.52										●			5.00-12.00	0.08-0.15
HM90 ADKT 150532-PDR	9.65	15.20	12.00	5.85	3.20	-										●			5.00-12.00	0.08-0.15
HM90 ADKT 150540-PDR	9.65	14.83	12.00	5.80	4.00	-										●			5.00-12.00	0.08-0.15
HM90 ADKT 150550-PDR	9.65	14.85	12.00	5.75	5.00	-										●			5.00-12.00	0.08-0.15
HM90 ADKT 150564-PDR	9.65	14.85	12.00	5.65	6.40	-										●			5.00-12.00	0.08-0.15

• Inserts with corner radii larger than 0.8 mm should be used on ADK & SM tools only on the face of the cutter • For cutting speed recommendations, see pages 518-524

For tools, see pages: F90AD-SFR (204) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203) • SM (244)

HM90 ADKT 1505PDR-MM

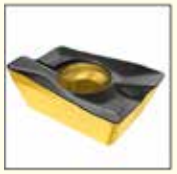


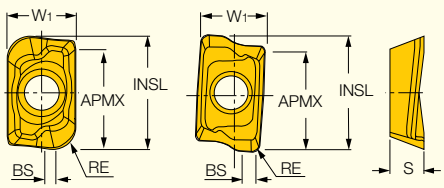
- Cutting edge geometry with low axial angle
- Reinforced cutting edge geometry, which provides better chipping resistance
- Wide frontal wiper that leaves excellent surface finish on the workpiece
- Used for unfavorable conditions and high feeds

HELI2000

HM90 ADCT 1505

General Use Inserts with 2 Helical Cutting Edges for High 90° Shoulder Accuracy



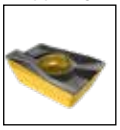


Designation	W1	INSL	APMX	S	RE	BS	IC882	IC330	IC830	IC380	IC808	ap (mm)	fz (mm/t)
	Dimensions						Tough ↔ Hard					Recommended Machining Data	
HM90 ADCT 1505PDR-PL	9.65	16.18	12.00	5.85	0.80	2.16			●		●	5.00-12.00	0.08-0.12
HM90 ADCT 150508R-T	9.65	16.18	12.00	5.85	0.80	2.16	●			●		5.00-12.00	0.08-0.10
HM90 ADCT 150516R-T	9.65	16.18	12.00	5.85	1.60	1.37				●		5.00-12.00	0.08-0.10
HM90 ADCT 150520R-T	9.65	16.18	12.00	5.85	2.00	0.79				●		5.00-12.00	0.08-0.10
HM90 ADCT 150524R-T	9.65	16.18	12.00	5.85	2.40	0.52				●		5.00-12.00	0.08-0.10
HM90 ADCT 150532R-T	9.65	16.18	12.00	5.85	3.20	-				●		5.00-12.00	0.08-0.10
HM90 ADCT 150540R-T	9.65	16.18	12.00	5.85	4.00	-				●		5.00-12.00	0.08-0.10
HM90 ADCT 150550R-T	9.65	16.18	12.00	5.85	5.00	-				●		5.00-12.00	0.08-0.10
HM90 ADCT 150508 PDTR	9.50	15.70	12.00	6.40	0.80	4.10		●	●			5.00-12.00	0.08-0.15

• Inserts with corner radii larger than 0.8 mm should be used on ADK & SM tools only on the face of the cutter • For a more economical insert refer to ADKT 1505PDR-HM in the ADKT 1505PDR family • For cutting speed recommendations, see pages 518-524

For tools, see pages: F90AD-SFR (204) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203) • SM (244)

HM90 ADCT 150508 PDTR



- Sharp ground cutting edge with a special edge preparation
- Ground all around, including clamping surfaces
- Low axial angle edge geometry
- Wide sharp-edged wiper for high surface finish
- High perpendicularity and mismatch accuracy when using tool diameters of up to 50 mm

HM90 ADCT 1505..R-T



- For machining titanium and super alloys
- Excellent surface finish
- Smoother cut
- Reduces edge burrs
- Reduces vibration and noise

HM90 ADCT 1505..PDR-PL



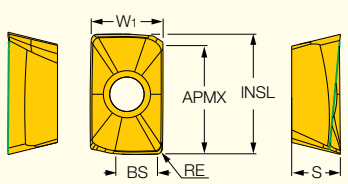
- Designed for optimal machining of stainless steel and high temperature alloys
- Sharp cutting edge and a positive rake geometry are optimized to avoid built-up edge
- Wiper bottom edge leaves an excellent surface finish
- Helical axial positive edge geometry

HELI2000

HM90 ADCT 1505PDR-CF

Inserts with 2 Different Cutting Edge Configurations Designed for Chatter Dampening





Designation	W1	INSL	APMX	S	RE	BS	IC830	IC380	ap (mm)	fz (mm/t)
	Dimensions						Tough ↔ Hard		Recommended Machining Data	
HM90 ADCT 1505PDR-CF	9.30	15.70	14.00	6.40	0.80	4.20	●	●	5.00-14.00	0.08-0.15

• For cutting speed recommendations, see pages 518-524

For tools, see pages: F90AD-SFR (204) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203) • SM (244)



Edge helix angle is identified by different colors. Each cutting edge has a different axial angle, which is identified by either a yellow or black colored flank surface.



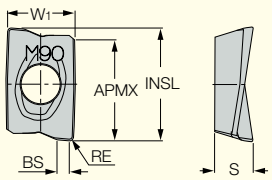
The inserts should be mounted in alternating edge configuration order (yellow followed by black) on the cutter.

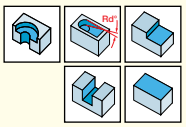
HELI2000

HM90 ADCR 1505PDFR-P

Peripherally Ground Insert with a Super Positive Polished Rake for Machining Aluminum and High Temperature Alloys







Designation	Dimensions W1	INSL	APMX	S	RE	BS	Tough ↔ Hard IC28	IC08	Recommended Machining Data ap (mm)	fz (mm/t)
HM90 ADCR 1505PDFR-P	9.55	16.50	12.00	6.90	0.80	4.00	●	●	5.00-12.00	0.15-0.25

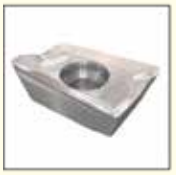
• Super positive chipformer peripherally ground (P - Polished rake) • Used for machining aluminum, titanium and magnesium
• For cutting speed recommendations, see pages 518-524

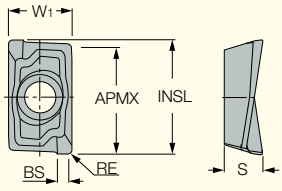
For tools, see pages: F90AD-SFR (204) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203)

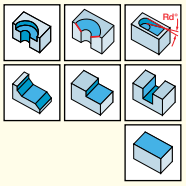
HELIMILL

ADCR 1505PDFR

Super Positive Precision Inserts for Aluminum, Stainless Steel and High Temperature Alloys







Designation	Dimensions W1	INSL	APMX	S	RE	BS	Tough ↔ Hard IC28	IC928	Recommended Machining Data ap (mm)	fz (mm/t)
ADCR 1505PDFR	9.50	15.95	12.00	5.64	0.80	1.60		●	5.00-12.00	0.15-0.25
ADCR 1505PDFR-P (1)	9.50	15.95	12.00	5.64	0.80	1.60	●		5.00-12.00	0.07-0.25

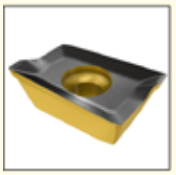
• Grooving depth (CDX) varies in conformance with blade's overhang (WFN-WFX and OHN-OHX) and depends on the bore diameter (D) • CGHN 26...-M can be modified from external double-sided CGHN blades • When TIP inserts are used the seat needs to be modified to ensure clearance • For user guide, see pages 518-524
(1) Minimum cutting width

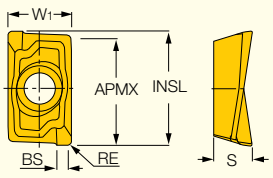
For tools, see pages: F90AD-SFR (204) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203) • SM (244)

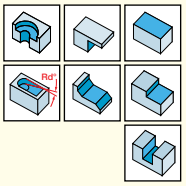
HELIMILL

ADKR 1505PDR/L-HM

Super Positive Inserts for Machining Aluminum, Stainless Steel and High Temperature Alloys







Designation	Dimensions W1	INSL	APMX	S	RE	BS	Tough ↔ Hard IC28	IC328	IC928	IC950	Recommended Machining Data ap (mm)	fz (mm/t)
ADKR 1505PDR/L-HM	9.60	15.95	12.00	6.00	0.80	1.60	●	●	●		5.00-12.00	0.07-0.15
ADKR 150504PDR-HM	9.92	16.30	12.00	5.63	0.40	1.60	●	●		●	5.00-12.00	0.07-0.15

• Grooving depth (CDX) varies in conformance with blade's overhang (WFN-WFX and OHN-OHX) and depends on the bore diameter (D) • CGHN 26...-M can be modified from external double-sided CGHN blades • When TIP inserts are used the seat needs to be modified to ensure clearance • For user guide, see pages 518-524

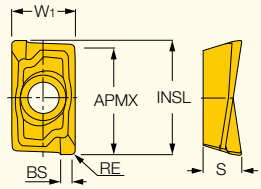
For tools, see pages: ETS (330) • F90AD-SFR (204) • FST (349) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203) • SM (244)

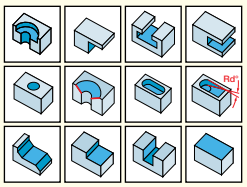
HELIMILL

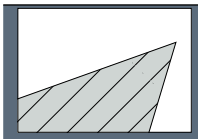
ADCT 1505PDFR-HM

Peripherally Ground Inserts for Finishing and General Use









Designation	Dimensions W1	INSL	APMX	S	RE	BS	Tough ↔ Hard IC28	IC328	IC928	Recommended Machining Data ap (mm)	fz (mm/t)
ADCT 1505PDFR-HM	9.57	15.65	12.00	5.64	0.80	1.60	●	●	●	5.00-12.00	0.06-0.12

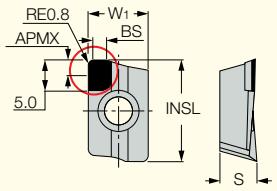
For tools, see pages: E90AC (32) • F90AD-SFR (204) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203) • SM (244)

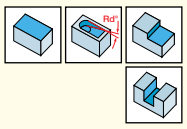
HELI2000

ADKW (CBN)

Single Corner R.H. Inserts with an IB85 PCBN Brazed Tip for Machining Hard Materials







Designation	Dimensions W1	INSL	S	BS	APMX	IB85	Recommended Machining Data ap (mm)	fz (mm/t)
ADKW 1505 PDER	9.60	16.18	5.83	1.45	2.00	●	0.10-2.00	0.10-0.25
ADKW 1505 PDTR	9.60	16.18	5.83	1.45	2.00	●	0.10-2.00	0.10-0.25

• Inserts are supplied with spare screws. • For cutting speed recommendations, see pages 518-524

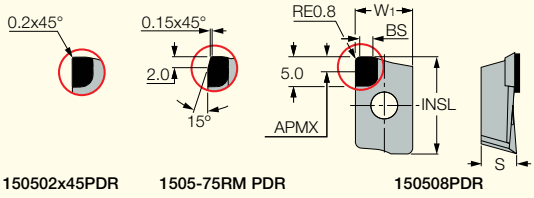
For tools, see pages: F90AD-SFR (204) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203)

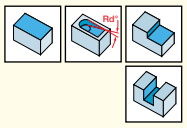
HELI2000

ADKW (PCD)

Single Corner R.H. PCD Tipped Inserts for Milling Aluminum







Designation	Dimensions W1	INSL	S	APMX	BS	ID5	Recommended Machining Data ap (mm)	fz (mm/t)
ADKW 1505-75RM PDR	9.60	16.18	5.83	2.00	2.00	●	0.10-2.00	0.10-0.25
ADKW 150502X45 PDR	9.60	16.18	5.83	2.00	2.00	●	0.10-2.00	0.10-0.25
ADKW 150508 PDR	9.60	16.18	5.83	2.00	1.52	●	0.10-2.00	0.10-0.25

• The inserts are supplied with spare screws. • For cutting speed recommendations, see pages 518-524

For tools, see pages: F90AD-SFR (204) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203)

PCD
Recommended Machining Conditions

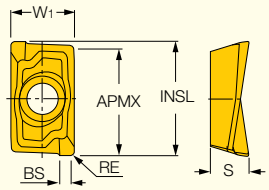
	Grade	DOC mm	Material	Vc m/min	Feed mm/tooth	Cutting Edge
N	ID5	<2.0	Aluminum alloys <12% silicon	300-3000	0.05-0.25	Sharp
		<2.0	Chipboard Fiberboard Plastics	2000-3000	0.05-0.25	
		<2.0	Copper Brass alloys	500-1500	0.05-0.25	

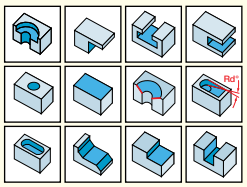
HELIMILL

ADKT 1505PDR/L-HM

Inserts with 2 Helical Cutting Edges, for General Use







Designation	Dimensions W1	INSL	APMX	S	RE	BS	Tough ↔ Hard IC28	IC328	IC928	IC250	IC950	IC908	IC30N	IC910	IC20	Recommended Machining Data ap (mm)	fz (mm/t)
ADKT 1505PDR/L-HM (1)	9.57	15.70	12.00	5.64	0.80	1.60	●	●	●	●	●	●	●	●	●	5.00-12.00	0.08-0.15

• Grooving depth (CDX) varies in conformance with blade's overhang (WFN-WFX and OHN-OHX) and depends on the bore diameter (D) • CGHN 26...-M can be modified from external double-sided CGHN blades • When TIP inserts are used the seat needs to be modified to ensure clearance • For user guide, see pages 518-524

(1) Minimum cutting width

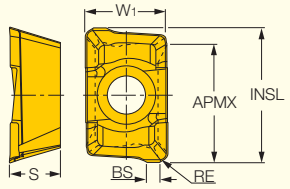
For tools, see pages: E90AC (32) • ETS (330) • F90AD-SFR (204) • FST (349) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203) • SM (244)

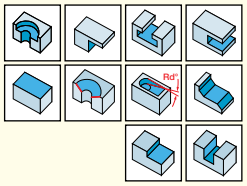
HELISHRED

ADMT 1505PDR-HS

Inserts with a Chip Splitting Serrated Cutting Edge for Roughing







Designation	Dimensions W1	INSL	APMX	S	RE	BS	Tough ↔ Hard IC328	IC928	IC250	IC950	Recommended Machining Data ap (mm)	fz (mm/t)
ADMT 1505PDR-HS	9.60	15.85	12.00	5.92	0.80	2.00	●	●	●	●	5.00-12.00	0.10-0.20

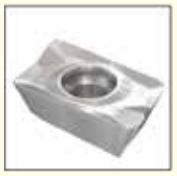
• Grooving depth (CDX) varies in conformance with blade's overhang (WFN-WFX and OHN-OHX) and depends on the bore diameter (D) • CGHN 26...-M can be modified from external double-sided CGHN blades • When TIP inserts are used the seat needs to be modified to ensure clearance • For user guide, see pages 518-524

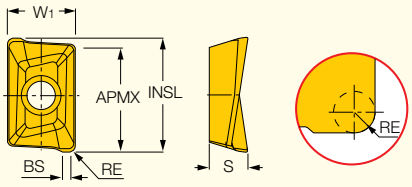
For tools, see pages: F90AD-SFR (204) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203) • SM (244)

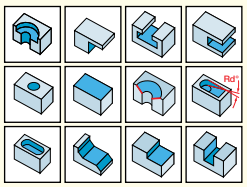
HELIMILL

ADKT 1505PDTR/L-RM

Insert with Reinforced Helical Cutting Edge, for Interrupted Cut and Heavy Machining







Designation	Dimensions W1	INSL	S	BS	RE	APMX	Tough ↔ Hard IC328	IC928	IC250	IC950	IC910	IC520M	DT7150	Recommended Machining Data ap (mm)	fz (mm/t)
ADKT 1505PDTR/L-RM	9.54	15.75	5.63	1.60	1.00	12.00	●	●	●	●	●	●	●	5.00-12.00	0.10-0.20

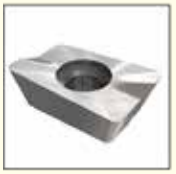
• For cutting speed recommendations, see pages 518-524

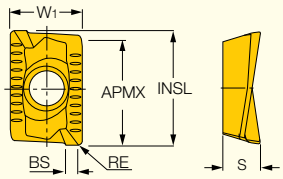
For tools, see pages: ETS (330) • F90AD-SFR (204) • FST (349) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203) • SM (244)

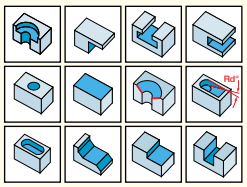
HELIMILL

ADKT 1505PDTR-76

Insert with 2 Helical Cutting Edges with Ribs Along Edge for Interrupted Cut







Designation	Dimensions W1	INSL	S	RE	BS	APMX	Tough ↔ Hard IC330	IC328	IC830	IC928	IC950	IC910	IC520M	Recommended Machining Data ap (mm)	fz (mm/t)
ADKT 1505PDTR-76	9.54	15.75	5.63	1.00	1.60	12.00	●	●	●	●	●	●	●	5.00-12.00	0.08-0.15

• Grooving depth (CDX) varies in conformance with blade's overhang (WFN-WFX and OHN-OHX) and depends on the bore diameter (D) • CGHN 26...-M can be modified from external double-sided CGHN blades • When TIP inserts are used the seat needs to be modified to ensure clearance • For user guide, see pages 518-524

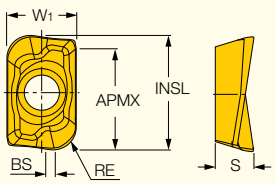
For tools, see pages: E90AC (32) • F90AD-SFR (204) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203) • SM (244)

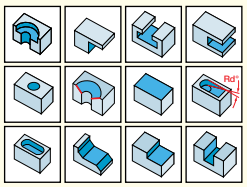
HELIMILL

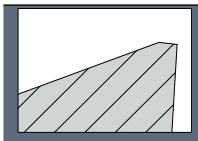
ADKT 1505..R/L-HM

Inserts with 2 Helical Cutting Edges and Various Corner Radii for General Use









Designation	Dimensions RE	W1	BS	INSL	APMX	S	Tough ↔ Hard IC28	IC328	IC830	IC928	IC950	IC908	IC30N	IC910	IC520M	IC20	Recommended Machining Data ap (mm)	fz (mm/t)
ADKT 150516R/L-HM	1.60	9.57	1.37	15.60	12.00	5.60	●	●	●	●	●	●		●	●		5.00-12.00	0.08-0.15
ADKT 150520R-HM	2.00	9.57	-	14.80	12.00	5.20		●									5.00-12.00	0.08-0.15
ADKT 150524R/L-HM	2.50	9.57	0.52	15.60	12.00	5.60		●	●	●				●			5.00-12.00	0.08-0.15
ADKT 150532R/L-HM	3.20	9.57	-	15.50	12.00	5.60	●	●	●	●	●	●	●	●	●	●	5.00-12.00	0.08-0.15
ADKT 150540R/L-HM (1)	4.00	9.57	-	15.40	12.00	5.60		●		●							5.00-12.00	0.08-0.15
ADKT 150550R/L-HM (1)	5.00	9.57	-	15.10	12.00	5.30		●		●	●				●		5.00-12.00	0.08-0.15
ADKT 150564R/L-HM (1)	6.20	9.57	-	14.80	12.00	5.30		●	●	●	●						5.00-12.00	0.08-0.15

• Grooving depth (CDX) varies in conformance with blade's overhang (WFN-WFX and OHN-OHX) and depends on the bore diameter (D) • CGHN 26...-M can be modified from external double-sided CGHN blades • When TIP inserts are used the seat needs to be modified to ensure clearance • For user guide, see pages 518-524

(1) Minimum cutting width

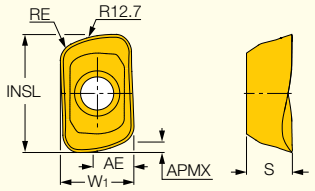
For tools, see pages: E90AC (32) • ETS (330) • F90AD-SFR (204) • FST (349) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203) • SM (244)

HELIMILL FEEDMILL

ADKT 1505-FF

Inserts for Fast Feed Milling







Designation	Dimensions W1	INSL	APMX	AE	S	RE	Rg(1)	Tough ↔ Hard IC330	IC928	IC808	Recommended Machining Data ap (mm)	fz (mm/t)
ADKT 1505R8T-FF	9.90	15.90	1.50	6.6	6.20	2.70	3.50	●	●	●	0.50-1.00	0.50-1.50

• The cutting diameter of the tool is 0.5 mm larger than the nominal diameter when using this insert. • Tool corner should be modified to 2.0 mm. • At D.O.C. larger than apmax, regular insert feed should be applied.

(1) Radius for programming

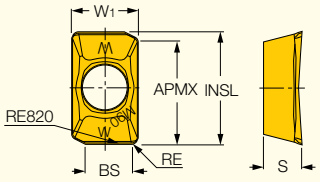
For tools, see pages: F90AD-SFR (204) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203)

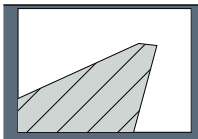
HELI2000

HM90 ADKT 1505PD-W

Wiper Insert for High Surface Finish







Designation	Dimensions W1	INSL	APMX	S	BS	RE	IC908	Recommended Machining Data ap (mm)	fz (mm/t)
HM90 ADKT 1505PD-W	9.52	16.75	15.00	5.83	5.92	0.80	●	0.10-1.00	0.15-0.30

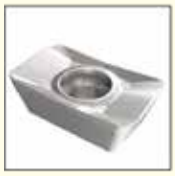
• Must be used together with HM90 ADKT 1505PDR inserts. • Use a single wiper insert per tool. • For cutting speed recommendations, see pages 518-524.

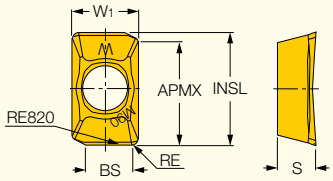
For tools, see pages: F90AD-SFR (204) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203)

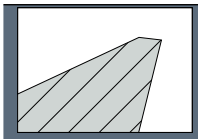
HELIMILL

ADKT 1505PD-W

Wiper Insert for High Surface Finish







Designation	Dimensions W1	INSL	APMX	S	BS	RE	Tough ↔ Hard IC328	IC928	Recommended Machining Data ap (mm)	fz (mm/t)
ADKT 1505PD-W	9.57	16.00	14.63	5.60	6.53	1.00	●	●	0.10-1.00	0.15-0.30

• Must be used together with ADKT 1505PDR inserts. • For cutting speed recommendations, see pages 518-524.

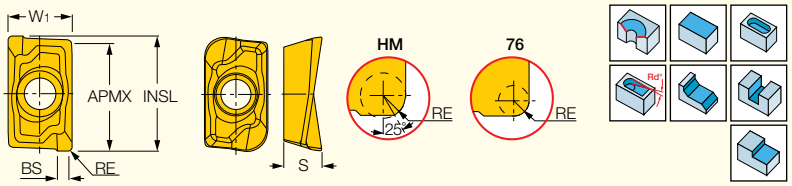
For tools, see pages: F90AD-SFR (204) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203)

HELIMILL

APKT 1604

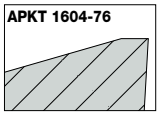
Milling Inserts with a 16 mm Cutting Edge Length and Positive Rake Angle for General Use

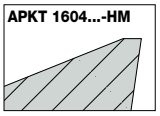




Designation	Dimensions RE	W1	INSL	S	BS	APMX	Tough ↔ Hard IC328	IC928	IC250	IC950	IC30N	IC910	IC520M	IC20	Recommended Machining Data ap (mm)	fz (mm/t)
APKT 1604PDR/L-HM	0.80	9.45	17.20	5.25	1.70	14.00	●		●		●	●		●	6.00-14.00	0.08-0.15
APKT 1604PDR-76	0.80	9.45	17.30	5.70	1.80	14.00	●	●		●					6.00-14.00	0.10-0.20
APKT 160416R-HM	1.60	9.45	16.70	5.30	0.00	14.00	●			●					8.00-14.00	0.08-0.15
APKT 160424R-HM	2.40	9.45	16.70	5.30	0.00	14.00							●		8.00-14.00	0.08-0.15
APKT 160432R/L-HM	3.10	9.45	16.60	5.30	0.00	14.00	●								8.00-14.00	0.08-0.15
APKT 160448R-HM	4.80	9.45	16.40	5.20	0.00	14.00			●						8.00-14.00	0.08-0.15

• For cutting speed recommendations, see pages 518-524



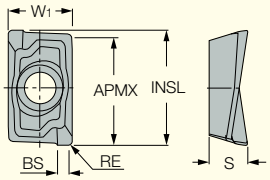


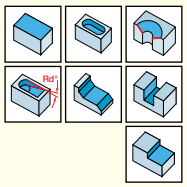
HELIMILL

APCR 1604

Super Positive and Polished Rake Insert for Machining Aluminum and High Temperature Alloys







Designation	Dimensions INSL	APMX	W1	RE	BS	S	IC28	Recommended Machining Data ap (mm)	fz (mm/t)
APCR 1604PDFR-P	17.92	14.00	9.45	0.80	1.80	5.70	•	6.00-14.00	0.15-0.25

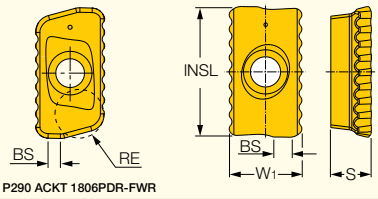
• For cutting speed recommendations, see pages 518-524

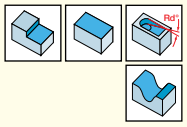
MILLSHRED P290 LINE

P290 ACKT

Single-Sided Rectangular Inserts with Two Serrated Cutting Edges







Designation	Dimensions W1	INSL	S	RE(5)	BS	Tough ↔ Hard IC28	IC882	IC330	IC840	IC830	IC380	IC808	IC810	Recommended Machining Data ap (mm)	fz (mm/t)
P290 ACKT 1204PDR-FW	8.20	12.80	4.40	0.90	1.50		•	•		•		•		7.00-12.00	0.06-0.10
P290 ACKT 1204PDR-FWP	8.20	12.80	4.40	0.90	1.50				•					7.00-12.00	0.06-0.10
P290 ACKT 1806PDR-FW	10.70	18.50	6.00	1.20	2.00		•	•		•		•	•	10.00-18.00	0.08-0.12
P290 ACKT 1806PDR-FWE (1)	10.70	18.50	6.00	1.20	2.00			•		•	•			10.00-18.00	0.08-0.12
P290 ACKT 1806PDR-FWE-P (2)	10.70	18.50	6.00	1.20	2.00	•								10.00-18.00	0.08-0.12
P290 ACKT 1806PDR-FWP (3)	10.70	18.50	6.00	1.20	2.00				•					10.00-18.00	0.08-0.12
P290 ACKT 1806PDR-FWR (4)	10.70	20.20	6.00	3.80	1.90		•			•				10.00-18.00	0.08-0.12

• For cutting speed recommendations, see pages 518-524

(1) A sharp edged insert, for long overhang applications or when machine power is limited

(2) Polished rake, used for rough milling of aluminum

(3) For titanium and austenitic stainless steel

(4) To be used only on the tool's first row for rough cutting when the required final corner radius should be up to 4 mm

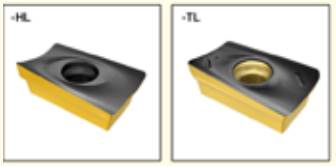
(5) Radius for programming

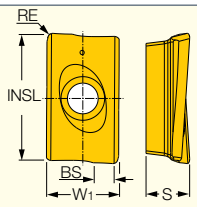
For tools, see pages: BLPK (262) • P290 ACK (236) • P290 ACK-C#-18 (236) • P290 ACK-M (235) • P290 EPW (30) • P290 EPW-M (31) • P290 FPW/FCT (208) • P290 SM (237)

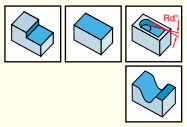
MILLSHRED P290 LINE

P290 ACCT/KT

Single-Sided Rectangular Inserts with Two 12 and 18 mm Straight Cutting Edges







Designation	Dimensions INSL	S	RE	BS	Tough ↔ Hard IC28	IC830	IC808	IC810	Recommended Machining Data ap (mm)	fz (mm/t)
P290 ACCT 1204PDR-TL	12.90	4.80	0.90	1.50		•			1.00-12.00	0.06-0.10
P290 ACCT 1204PDR-HL	13.00	4.80	0.40	2.20		•			0.50-12.00	0.06-0.10
P290 ACCT 1806PDR-HL	19.40	6.50	0.80	2.50		•	•	•	10.00-18.00	0.08-0.12
P290 ACCT 1806PDR-HL-P	19.40	6.50	0.80	2.50	•				10.00-18.00	0.08-0.12
P290 ACCT 1806PDR-TL	19.40	6.50	1.20	2.00		•	•		10.00-18.00	0.08-0.12
P290 ACKT 1806PDR-HL (1)	19.40	6.50	0.80	2.50		•			10.00-18.00	0.08-0.12

• HL - For finishing applications (ae max=1 mm) • HL-P - Polished rake, used for aluminum • TL- Reinforced straight cutting edges, designed for rough and semi-finishmilling • For cutting speed recommendations, see pages 518-524

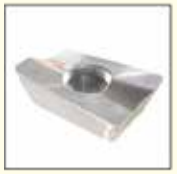
(1) Economic insert

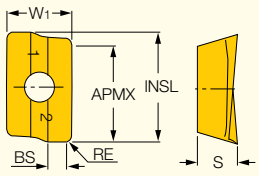
For tools, see pages: BLPK (262) • P290 ACK (236) • P290 ACK-C#-18 (236) • P290 ACK-M (235) • P290 EPW (30) • P290 EPW-M (31) • P290 FPW/FCT (208) • P290 SM (237)

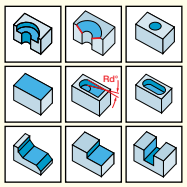
HELI2000

HM90 ADKW 1505PDR

Milling Inserts for Unfavorable Conditions and Heavy Interrupted Cut on Hardened Steel







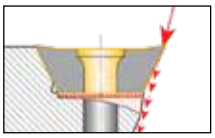


Designation	Dimensions W1	INSL	APMX	S	RE	BS	Tough ↔ Hard IC928	IC908	IC910	Recommended Machining Data ap (mm)	fz (mm/t)
HM90 ADKW 1505PDR	9.59	16.15	12.00	5.83	0.80	2.45	●	●	●	5.00-12.00	0.08-0.15

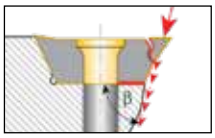
• Reinforced cutting edge, resistant to edge breakage and chipping • Recommended for milling at unfavorable conditions and heavy interrupted cut • Different corner radii can be ground • For cutting speed recommendations, see pages 518-524

For tools, see pages: F90AD-SFR (204) • HM90 E90AD-15 (28) • HM90 E90AD-M-15 (29) • HM90 F90A-15 (203) • SM (244)

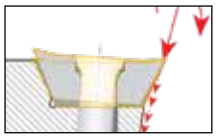
Conventional



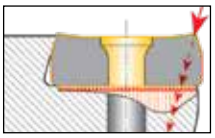
Conventional



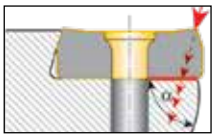
Conventional



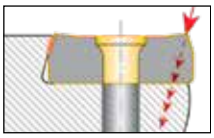
MILL2000



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Helical cutting edge for a smooth cut

Dovetail side shape gives better support, eliminates possible pullout from seat

Thick insert for improved strength and rigidity

Positive rake angle for low cutting forces

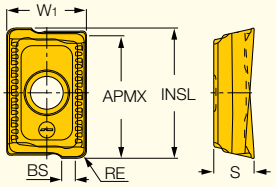
Ground wiper controls surface finish at high feeds

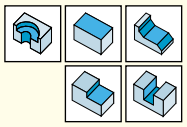
MILL2000

3M AXKT 1304

High Durability Inserts for Heavy Milling



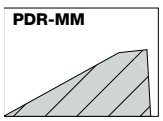




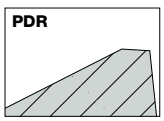
Designation	Dimensions W1	INSL	APMX	S	RE	BS	Tough ↔ Hard IC330	IC328	IC830	IC928	IC950	IC808	IC908	IC810	IC910	Recommended Machining Data ap (mm)	fz (mm/t)
3M AXKT 1304PDR	8.40	14.12	12.00	4.55	0.60	2.10	●	●	●		●	●	●	●		5.00-12.00	0.15-0.35
3M AXKT 1304PDR-MM	8.40	14.12	12.00	4.55	0.60	2.10		●		●	●		●		●	5.00-12.00	0.10-0.22

• For cutting speed recommendations, see pages 518-524

PDR-MM



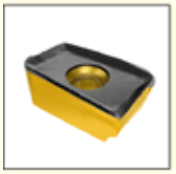
PDR

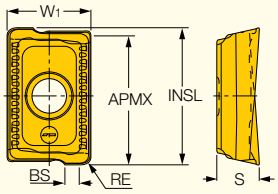


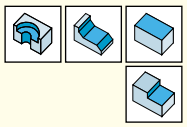
MILL2000

3M AXKT 1304..R-PDRMM

High Durability Inserts with a Variety of Corner Radii for Heavy Milling







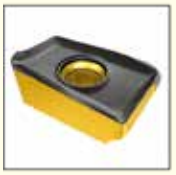
Designation	Dimensions W1	RE	INSL	APMX	S	BS	Tough ↔ Hard IC328	IC928	Recommended Machining Data ap (mm)	fz (mm/t)
3M AXKT 130408R-PDRMM	8.40	0.80	14.12	12.00	4.54	1.40	●	●	5.00-12.00	0.10-0.22
3M AXKT 130412R-PDRMM	8.40	1.20	13.50	12.00	4.42	1.20	●	●	5.00-12.00	0.15-0.30
3M AXKT 130416R-PDRMM	8.40	1.60	13.50	12.00	4.36	0.80	●	●	5.00-12.00	0.15-0.30
3M AXKT 130424R-PDRMM	8.40	2.40	13.50	12.00	4.18	-		●	5.00-12.00	0.15-0.30

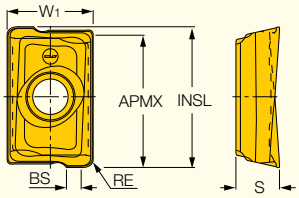
• Reduce feed by 50% during engagement and exit from the workpiece; this practice will substantially increase insert life • Inserts with corner radii larger than 0.8 mm should be used on 3M SM-13 and 3M AXK tools only on the face of the cutter • For cutting speed recommendations, see pages 518-524.

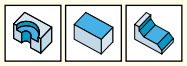
MILL2000

3M AXKT 2006..R-PDR

High Durability Inserts, with a Variety of Corner Radii for Heavy Milling







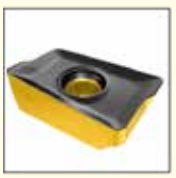
Designation	Dimensions W1	RE	INSL	APMX	S	BS	Tough ↔ Hard IC328	IC928	Recommended Machining Data ap (mm)	fz (mm/t)
3M AXKT 200612R-PDR	13.50	1.20	22.00	20.00	6.75	2.20	●	●	8.00-20.00	0.15-0.30
3M AXKT 200616R-PDR	13.50	1.60	21.80	20.00	6.62	2.00		●	8.00-20.00	0.15-0.30
3M AXKT 200624R-PDR	13.50	2.40	22.00	20.00	6.55	1.55		●	8.00-20.00	0.15-0.30
3M AXKT 200632R-PDR	13.50	3.20	22.00	20.00	6.46	0.90		●	8.00-20.00	0.15-0.30
3M AXKT 200640R-PDR	13.50	4.00	21.90	20.00	6.26	-	●	●	8.00-20.00	0.15-0.30

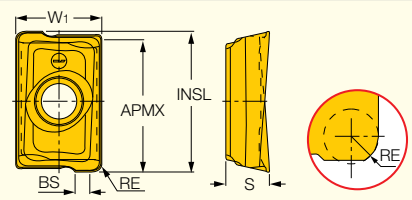
• Reduce feed by 50% during engagement and exit from the workpiece. This practice will substantially increase insert life. • Inserts with corner radii larger than 0.8 mm should be used on 3M SM-20 tools only on the face of the cutter. • For cutting speed recommendations, see pages 518-524

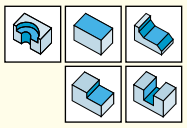
MILL2000

3M AXKT-2006

High Durability Inserts for Heavy Milling Applications

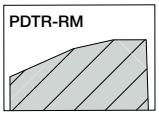


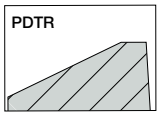




Designation	Dimensions W1	INSL	APMX	S	RE	BS	Tough ↔ Hard IC330	IC328	IC830	IC928	IC950	IC808	IC908	IC810	IC910	IC4100	Recommended Machining Data ap (mm)	fz (mm/t)
3M AXKT 2006PDTR-RM	13.50	22.40	20.00	6.80	1.00	3.34		●		●	●						8.00-20.00	0.20-0.40
3M AXKT 2006PDTR	13.50	22.50	20.00	6.80	1.00	3.05	●	●	●	●	●	●	●	●	●	●	8.00-20.00	0.15-0.30

• Reduce feed by 50% during engagement and exit from the workpiece; this practice will substantially increase insert life
• For cutting speed recommendations, see pages 518-524



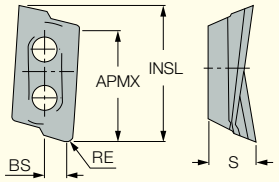


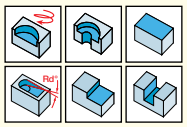
HELIPLUS

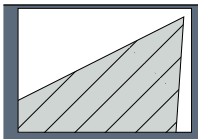
HP ADCR 1906

Milling Inserts with 19 mm Cutting Edge for Machining Aluminum









Designation	Dimensions RE	INSL	APMX	S	BS	IC28	Recommended Machining Data a_p (mm)	f_z (mm/t)
HP ADCR 190604PDFR-P	0.40	22.50	18.00	7.40	3.50	●	5.00-18.00	0.15-0.25

• Super positive rake angle, polished sharp cutting edge • For aluminum and high temperature alloys • For cutting speed recommendations, see pages 518-524

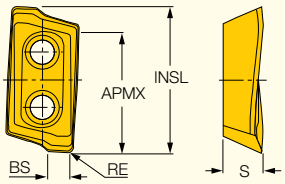
For tools, see pages: HP E90AT-19 (31) • HP F90AT-19 (209)

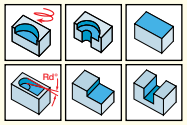
HELIPLUS

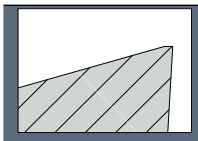
HP ADKT 1906

Milling Inserts with 19 mm Cutting Edge for General Use









Designation	Dimensions INSL	APMX	RE	S	BS	Tough ↔ Hard IC328	IC928	IC950	IC908	IC910	Recommended Machining Data a_p (mm)	f_z (mm/t)
HP ADKT 190608PDTR	22.40	18.00	0.80	6.85	2.90	●	●		●	●	5.00-18.00	0.08-0.15
HP ADKT 190610PDTR	22.40	18.00	1.00	6.85	2.70		●	●		●	5.00-18.00	0.08-0.18
HP ADKT 190612PDTR	22.40	18.00	1.20	6.85	2.40	●			●	●	5.00-18.00	0.08-0.15
HP ADKT 190616PDTR	22.30	18.00	1.60	6.85	2.00	●	●		●		5.00-18.00	0.08-0.15
HP ADKT 190624PDTR	22.20	18.00	2.40	6.85	1.30	●	●		●	●	5.00-18.00	0.08-0.15
HP ADKT 190631PDTR	21.80	18.00	3.10	6.85	0.50				●		5.00-18.00	0.08-0.18
HP ADKT 190640PDTR	20.40	18.00	4.00	6.85	0.50		●		●	●	5.00-18.00	0.08-0.18

• For cutting speed recommendations, see pages 518-524

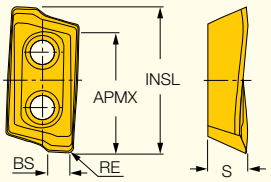
For tools, see pages: HP E90AT-19 (31) • HP F90AT-19 (209)

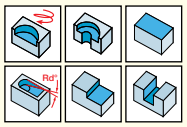
HELIPLUS

HP ADKT/ADCT 2207

Inserts with Two 22 mm Long Cutting Edges for General High Shoulder Milling



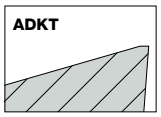




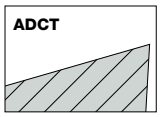
Designation	Dimensions INSL	APMX	S	RE	BS	Tough ↔ Hard IC328	IC928	IC950	IC908	IC910	Recommended Machining Data a_p (mm)	f_z (mm/t)
HP ADCT 2207PDR	25.73	22.00	7.50	1.00	3.43	●	●		●		5.00-22.00	0.07-0.15
HP ADKT 2207PDTR	25.73	22.00	7.50	0.80	3.43	●	●	●	●	●	5.00-22.00	0.10-0.20

• For cutting speed recommendations, see pages 518-524

For tools, see pages: HP F90AT-22 (209)



For general applications



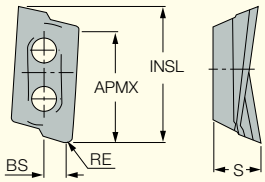
For general finishing and high temp. alloys

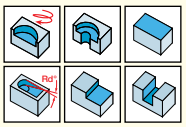
HELIPLUS

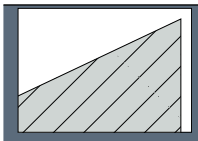
HP ADCR 2207

Milling Inserts with a Very Positive and Polished Rake for Machining Aluminum









Designation	Dimensions INSL	RE	APMX	S	BS	IC28	Recommended Machining Data a_p (mm)	f_z (mm/t)
HP ADCR 220704PDFR-P	27.70	0.40	22.00	9.60	4.88	●	5.00-22.00	0.08-0.25
HP ADCR 220704PDFR-P LM	26.14	0.40	22.00	7.52	3.81	●	5.00-22.00	0.08-0.25
HP ADCR 220720PDFR-P LM	25.90	2.00	22.00	7.40	2.50	●	5.00-22.00	0.08-0.25
HP ADCR 220732PDFR-P LM	25.70	3.20	22.00	7.49	1.20	●	5.00-22.00	0.08-0.25
HP ADCR 220750PDFR-P LM	24.30	5.00	22.00	7.49	0.47	●	5.00-22.00	0.08-0.15

• LM insert provides high 90° shoulder accuracy, especially when using the 32-50 mm cutters • For cutting speed recommendations, see pages 518-524

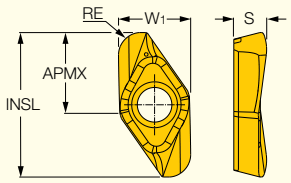
For tools, see pages: HP F90AT-22 (209)

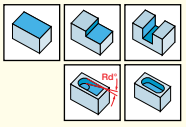
HELIALU

HSM90S APCR 1405

Super Positive Inserts with a Polished Rake for Machining Aluminum at High Rotation Speed







Designation	Dimensions W_1	RE(2)	APMX	INSL	S	IC28	Recommended Machining Data a_p (mm)	f_z (mm/t)
HSM90S APCR 140508R-P	12.50	0.80	10.00	25.00	6.05	●	1.20-10.00	0.10-0.30
HSM90S APCR 140516R-P	12.50	1.60	10.00	25.00	6.00	●	2.00-10.00	0.10-0.30
HSM90S APCR 140520R-P	12.50	2.00	10.00	25.00	5.95	●	2.50-10.00	0.10-0.30
HSM90S APCR 140530R-P	12.50	3.00	10.00	25.00	5.85	●	3.50-10.00	0.10-0.30
HSM90S APCR 140532R-P	12.50	3.20	10.00	25.00	5.80	●	3.50-10.00	0.10-0.30
HSM90S APCR 140540R-P	12.50	4.00	10.00	25.00	5.70	●	4.50-10.00	0.10-0.30
HSM90S APCR 140550R-P (1)	12.50	5.00	10.00	25.00	5.50	●	5.50-10.00	0.10-0.30

• When machining at very high cutting speed and replacing the insert, it is also recommended to replace the screw • For cutting speed recommendations, see pages 518-524

(1) Tool's pocket should be modified by rounding its corners to R=2.5 mm

(2) Measured on the cutter

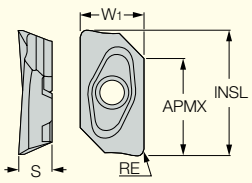
For tools, see pages: HSM90S EAL-14 (376) • HSM90S FAL-14 (376)

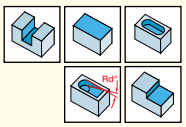
HELIALU

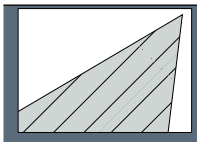
HM90 AXCR 1505

Super Positive Inserts with a Polished Rake for Machining Aluminum









Designation	Dimensions W_1	S	APMX	INSL	RE	IC28	Recommended Machining Data a_p (mm)	f_z (mm/t)
HM90 AXCR 150502R-P	10.00	5.00	14.00	19.20	0.20	●	6.00-14.00	0.10-0.20
HM90 AXCR 150504R-P	10.00	5.00	14.00	19.20	0.40	●	6.00-14.00	0.10-0.20
HM90 AXCR 150508R-P	10.00	5.00	14.00	19.20	0.80	●	6.00-14.00	0.10-0.20
HM90 AXCR 150520R-P	10.00	5.00	14.00	19.20	2.00	●	6.00-14.00	0.10-0.20
HM90 AXCR 150525R-P	10.00	5.00	14.00	19.20	2.50	●	6.00-14.00	0.10-0.20
HM90 AXCR 150530R-P	10.00	5.00	14.00	19.20	3.00	●	6.00-14.00	0.10-0.20
HM90 AXCR 150532R-P	10.00	5.00	14.00	19.20	3.20	●	6.00-14.00	0.10-0.20
HM90 AXCR 150540R-P	10.00	5.00	14.00	19.20	4.00	●	6.00-14.00	0.10-0.20

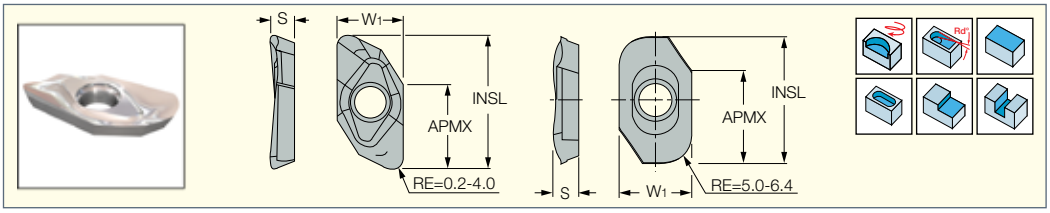
• Note: It is recommended to use the insert and screw set when machining at very high cutting speed. • For cutting speed recommendations, see pages 518-524

For tools, see pages: HM90 EAL-15 (378) • HM90 EAL-HSK63A-15 (379) • HM90 FAL-15 (379)

HELIALU

HM90 APCR 1605..R-P

Super Positive Inserts
with a Polished Rake for
Machining Aluminum



Designation	Dimensions W1	RE(2)	APMX	INSL	S	Tough ↔ Hard IC28	IC08	Recommended Machining Data ap (mm)	fz (mm/t)
HM90 APCR 160502R-P	12.80	0.20	15.70	25.50	4.80	•		8.00-14.00	0.15-0.25
HM90 APCR 160504R-P	12.80	0.40	16.70	25.50	4.80	•		8.00-14.00	0.15-0.25
HM90 APCR 160505R-P	12.80	0.50	16.70	25.50	4.80	•		8.00-14.00	0.15-0.25
HM90 APCR 160508R-P	12.80	0.80	15.70	25.50	4.80	•		8.00-14.00	0.15-0.25
HM90 APCR 160516R-P	12.80	1.60	15.70	25.50	4.80	•		8.00-14.00	0.15-0.25
HM90 APCR 160520R-P	12.80	2.00	15.70	25.40	4.80	•	•	8.00-14.00	0.15-0.25
HM90 APCR 160525R-P	12.80	2.50	15.70	25.40	4.80	•		8.00-14.00	0.15-0.25
HM90 APCR 160530R-P	12.80	3.00	15.40	24.40	4.80	•		8.00-14.00	0.15-0.25
HM90 APCR 160532R-P	12.80	3.20	15.40	24.40	4.80	•		8.00-14.00	0.15-0.25
HM90 APCR 160540R-P	12.80	4.00	14.50	23.40	4.80	•		8.00-14.00	0.15-0.25
HM90 APCR 160550R-P (1)	12.70	5.00	16.00	22.70	4.80	•		8.00-14.00	0.15-0.25
HM90 APCR 160560R-P (1)	12.70	6.00	16.00	22.70	4.80	•		8.00-14.00	0.15-0.25
HM90 APCR 160564R-P (1)	12.70	6.40	16.00	22.70	4.80	•		8.00-14.00	0.15-0.25

• It is recommended to use the insert and screw set when machining at very high cutting speeds. • For cutting speed recommendations, see pages 518-524

(1) Use with HM90 ....16BR tools only.

(2) Measured on the cutter

For tools, see pages: HM90 EAL-16 (377) • HM90 EAL-HSK63A-16 (377) • HM90 FAL-16 (378) • HM90 FAL-16BR (378)

Insert and Screw Set (5+5) for High Speed Machining Applications

In order to maintain high machining reliability we strongly recommend that when replacing the worn out insert, the clamping screw be replaced as well.
Available are packages that contain 5 **HM90 APCR 1605..R-P IC28** or **HM90 AXCR 1505..R-P IC28** inserts and 5 matching screws.
These packages contain inserts with a weight tolerance of 0.02 gm.
This tight tolerance ensures maintenance of the dynamic balance of the tool after insert indexing.



HSM90 SET APCR-P

Set Designation	=	5 Included Inserts	+	5 Included Screws
HSM90 Set APCR 160502RP IC28		HM90 APCR 160502R-P IC28		SR 14-0180
HSM90 Set APCR 160504RP IC28		HM90 APCR 160504R-P IC28		SR 14-0180
HSM90 Set APCR 160505RP IC28		HM90 APCR 160505R-P IC28		SR 14-0180
HSM90 Set APCR 160508RP IC28		HM90 APCR 160508R-P IC28		SR 14-0180
HSM90 Set APCR 160516RP IC28		HM90 APCR 160516R-P IC28		SR 14-0180
HSM90 Set APCR 160520RP IC08		HM90 APCR 160520R-P IC08		SR 14-0180
HSM90 Set APCR 160520RP IC28		HM90 APCR 160520R-P IC28		SR 14-0180
HSM90 Set APCR 160525RP IC28		HM90 APCR 160525R-P IC28		SR 14-0180
HSM90 Set APCR 160530RP IC28		HM90 APCR 160530R-P IC28		SR 14-0180
HSM90 Set APCR 160532RP IC28		HM90 APCR 160532R-P IC28		SR 14-0180
HSM90 Set APCR 160540RP IC28		HM90 APCR 160540R-P IC28		SR 14-0180
HSM90 Set APCR 160550RP IC28		HM90 APCR 160550R-P IC28		SR 14-0180
HSM90 Set APCR 160560RP IC28		HM90 APCR 160560R-P IC28		SR 14-0180
HSM90 Set APCR 160564RP IC28		HM90 APCR 160564R-P IC28		SR 14-0180

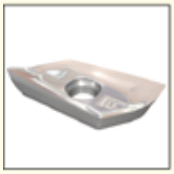
HSM90 SET AXCR-P

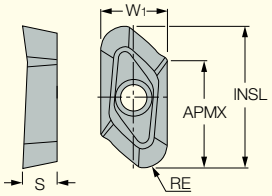
Set Designation	=	5 Included Inserts	+	5 Included Screws
HSM90 Set AXCR 150504RP IC28		HM90 AXCR 150504R-P IC28		SR 14-562
HSM90 Set AXCR 150508RP IC28		HM90 AXCR 150508R-P IC28		SR 14-562
HSM90 Set AXCR 150520RP IC28		HM90 AXCR 150520R-P IC28		SR 14-562
HSM90 Set AXCR 150530RP IC28		HM90 AXCR 150530R-P IC28		SR 14-562
HSM90 Set AXCR 150532RP IC28		HM90 AXCR 150532R-P IC28		SR 14-562

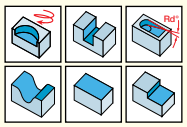
HELiALU

HM90 APCR 2206..R-P

Super Positive Inserts with a Polished Rake for Machining Aluminum







Designation	Dimensions W1	RE	APMX	INSL	S	IC28	Recommended Machining Data ap (mm)	fz (mm/t)
HM90 APCR 220605R-P	13.90	0.50	20.00	30.50	6.90	●	8.00-20.00	0.07-0.12
HM90 APCR 220608R-P	13.72	0.80	20.00	29.70	6.90	●	8.00-20.00	0.07-0.12
HM90 APCR 220616R-P	13.72	1.60	20.00	29.70	6.90	●	8.00-20.00	0.15-0.25
HM90 APCR 220623R-P	13.72	2.30	20.00	29.70	6.60	●	8.00-20.00	0.15-0.25
HM90 APCR 220632R-P	13.72	3.20	20.00	29.40	6.60	●	8.00-20.00	0.15-0.25
HM90 APCR 220640R-P	13.72	4.00	20.00	29.00	6.60	●	8.00-20.00	0.20-0.30
HM90 APCR 220650R-P	13.72	5.00	20.00	28.20	6.10	●	8.00-20.00	0.20-0.30
HM90 APCR 220664R-P	13.72	6.40	20.00	26.80	6.00	●	8.00-20.00	0.20-0.30

• For cutting speed recommendations, see pages 518-524

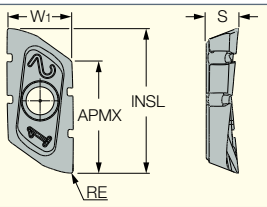
For tools, see pages: HM90 FAL-22 (379)

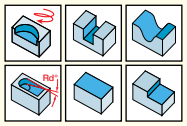
HELiALU

HM90 APCR 220605-CS

Chip Splitting Insert for Rough Milling of Aluminum







Designation	Dimensions W1	RE	APMX	INSL	S	IC28	Recommended Machining Data ap (mm)	fz (mm/t)
HM90 APCR 220605-CS	14.60	0.50	20.00	30.90	6.90	●	8.00-20.00	0.25-0.35

• To avoid incorrect mounting of the inserts, insert one pin into each tool pocket in an alternating order. As there is only one cavity at the insert bottom, this will prevent incorrect insert orientation. • To be used only on even number flute tools, when the "1" and "2" digits appear in an alternating order.

• For cutting speed recommendations, see pages 518-524

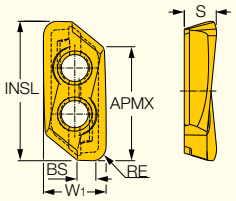
For tools, see pages: HM90 FAL-22 (379)

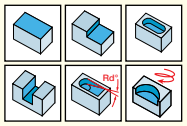
HELiALU

HSM90S APCR 2207

Super Positive Inserts with a Polished Rake for Machining Aluminum at High Rotation Speed







Designation	Dimensions W1	RE(1)	APMX	BS	INSL	S	IC08	Recommended Machining Data ap (mm)	fz (mm/t)
HSM90S APCR 220708R-P	13.10	0.80	20.00	5.00	29.20	6.90	●	5.00-20.00	0.15-0.30
HSM90S APCR 220716R-P	13.10	1.60	20.00	4.20	29.10	6.90	●	5.00-20.00	0.15-0.30
HSM90S APCR 220720R-P	13.10	2.00	20.00	3.90	29.10	6.80	●	5.00-20.00	0.15-0.30
HSM90S APCR 220730R-P	13.10	3.00	20.00	2.90	29.00	6.70	●	5.00-20.00	0.15-0.30
HSM90S APCR 220732R-P	13.10	3.20	20.00	2.70	29.00	6.70	●	5.00-20.00	0.15-0.30
HSM90S APCR 220740R-P	13.10	4.00	20.00	1.90	29.00	6.60	●	5.00-20.00	0.15-0.30
HSM90S APCR 220750R-P	13.10	5.00	20.00	0.90	28.90	6.50	●	5.00-20.00	0.15-0.30

• When machining at very high cutting speed and replacing the insert, it is also recommended to replace the screw • For cutting speed recommendations, see pages 518-524

(1) Measured on the cutter

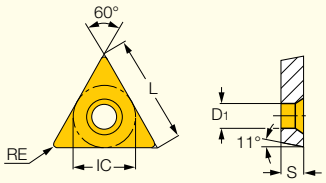
For tools, see pages: HSM90S FAL-22 (380) • HSM90SFD-HSK A63/80-22 (380)

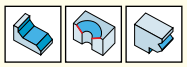
ISCARMILL

TPMT

Triangular 11° Positive Inserts with a Positive Chipformer







Designation	Dimensions L	IC	S	RE	D_1	Tough ↔ Hard IC830	IC635	IC50M	IC8350	IC8250	IC520M	IC20	IC806	IC807	IC907	Recommended Machining Data a_p (mm)	f_z (mm/t)
TPMT 160304	16.50	9.52	3.18	0.40	4.30	●			●	●		●		●	●	5.00-12.00	0.10-0.25
TPMT 160308	16.50	9.52	3.18	0.80	4.30	●	●	●		●	●	●	●	●	●	5.00-12.00	0.10-0.25

• For cutting speed recommendations, see pages 518-524

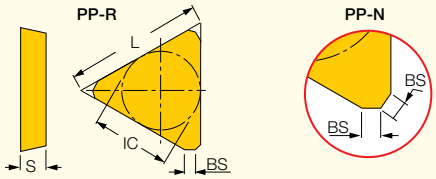
For tools, see pages: E30 / T230 (32) • E45 / T245 (34) • E60 / T260 (35)

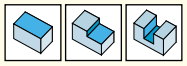
ISCARMILL

TPKN/TPKR

11° Positive Triangular Milling Inserts for General Use







Designation	Dimensions IC	L	S	BS	Tough ↔ Hard IC328	IC928	IC50M	IC250	IC950	IC910	IC520M	IC20	Recommended Machining Data a_p (mm)	f_z (mm/t)
TPKN 1603PP-R-42	9.52	16.50	3.18	1.40								●	3.00-10.00	0.10-0.15
TPKN 1603PPFR	9.52	16.50	3.18	1.40								●	3.00-10.00	0.10-0.15
TPKN 1603PPTR	9.52	16.50	3.18	1.40			●				●		3.00-10.00	0.10-0.15
TPKN 1603PPTR-42	9.52	16.50	3.18	1.47	●		●	●					3.00-10.00	0.10-0.15
TPKR 1603PPTR-HS	9.52	16.50	3.50	1.45	●	●	●						3.00-10.00	0.12-0.20
TPKN 2204PDFR	12.70	22.00	4.76	1.40								●	3.00-15.00	0.10-0.15
TPKN 2204PDTR	12.70	22.00	4.76	1.45			●				●		3.00-15.00	0.10-0.15
TPKN 2204PDTR-42	12.70	22.00	4.76	1.80	●		●	●	●	●	●		3.00-15.00	0.10-0.15
TPKR 2204PD-R-76	12.70	22.00	4.76	1.80	●				●				3.00-15.00	0.10-0.15
TPKR 2204PDTR-HS	12.70	22.00	4.76	1.88	●	●		●			●		3.00-15.00	0.12-0.20

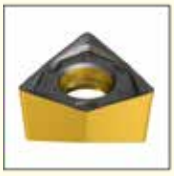
• For cutting speed recommendations, see pages 518-524

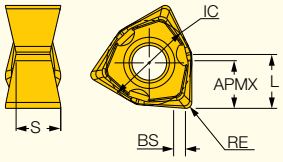
For tools, see pages: F90 (208)

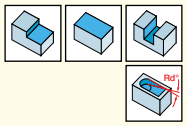
HELIDO TRIGON LINE

H690 WNHU/WNMU 0705

Trigonal Inserts with 6 Helical Cutting Edges for 90° Shoulders







Designation	Dimensions L	APMX	IC	S	RE	BS	Tough ↔ Hard IC330	IC845	IC830	IC5400	IC808	IC810	IC5100	Recommended Machining Data a_p (mm)	f_z (mm/t)
H690 WNHU 0705PNTR (1)	7.30	7.00	11.50	5.80	0.80	1.20					●		●	1.00-7.00	0.10-0.20
H690 WNMU 0705-PNTR (2)	7.30	7.00	11.50	5.90	0.80	1.20						●	●	1.00-7.00	0.10-0.35
H690 WNMU 070512PNTR	7.30	7.00	11.50	5.80	1.20	1.00		●						1.00-7.00	0.10-0.35
H690 WNMU 070516PNTR	7.30	7.00	11.50	5.80	1.60	0.60		●						1.00-7.00	0.10-0.35
H690 WNMU 070520PNTR	7.30	7.00	11.50	5.70	2.00	-		●						1.00-7.00	0.10-0.35
H690 WNMU 0705PNN-MM (3)	7.30	7.00	11.50	5.90	0.80	-	●		●	●				1.00-7.00	0.10-0.25
H690 WNMU070512PNN-MM (3)	7.30	7.00	11.50	5.80	1.20	-					●			1.00-7.00	0.10-0.25
H690 WNMU070516PNN-MM (3)	7.30	7.00	11.50	5.70	1.60	-					●			1.00-7.00	0.10-0.25
H690 WNMU070520PNN-MM (3)	7.30	7.00	11.50	5.70	2.00	-					●			1.00-7.00	0.10-0.25
H690 WNMU 0705PNR-MM (4)	7.30	7.00	11.50	5.90	0.80	1.20			●		●	●		1.00-7.00	0.10-0.25
H690 WNMU 0705PNR-RM (5)	7.30	7.00	11.50	5.80	0.80	1.20						●		1.00-7.00	0.15-0.40

• For cutting speed recommendations, see pages 518-524

(1) Peripherally ground

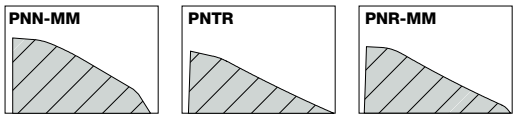
(2) General use insert with 6 right-hand cutting edges for milling a variety of cast iron and steel grades.

(3) 6 neutral cutting edges, for machining steel, can be used also for left-hand specially tailored milling tools.

(4) 6 right-hand cutting edges, used mainly for milling steel

(5) For heavy roughing applications

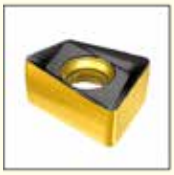
For tools, see pages: H690 EWN (13) • H690 FWN (188)

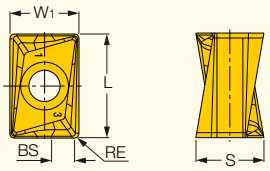


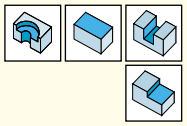
HELIDO 490 LINE

H490 ANKX/ANCX-09

Double-Sided Rectangular Inserts with 4 Helical Cutting Edges







Designation	Dimensions W_1	L	S	RE	BS	Tough ↔ Hard IC330	IC830	IC5400	IC380	IC808	IC810	IC5100	Recommended Machining Data a_p (mm)	f_z (mm/t)
H490 ANCX 090404PDR	6.50	8.52	5.20	0.40	4.80		●			●			3.00-8.00	0.08-0.15
H490 ANCX 090408PDR	6.50	8.52	5.20	0.80	4.40	●	●		●	●	●		3.00-8.00	0.08-0.15
H490 ANCX 090412PDR	6.50	8.52	4.80	1.20	4.20		●			●	●		3.00-8.00	0.08-0.15
H490 ANCX 090416PDR	6.50	8.52	4.70	1.60	3.60		●			●	●		3.00-8.00	0.08-0.15
H490 ANKX 090408PNTR	6.50	8.52	5.20	0.80	5.00	●	●	●		●	●	●	3.00-8.00	0.10-0.18

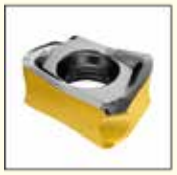
• ANKX-Utility inserts, ANCX-Precision inserts • For cutting speed recommendations, see pages 518-524

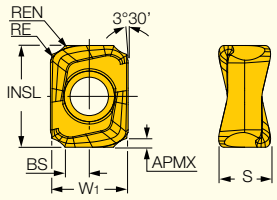
For tools, see pages: H490 ANK-09C (230) • H490 E90AX-09 (18) • H490 E90AX-M (18) • H490 E90AX-MM (18) • H490 F90AX-09 (190)

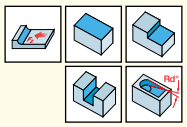
HELIDO FEEDMILL 490 LINE

H490 ANKX 0904-FF

Double-Sided Rectangular Inserts with 4 Helical Cutting Edges for Fast Feed Milling at Small Depths of Cut







Designation	Dimensions								Tough ↔ Hard		Recommended Machining Data	
	W_1	BS	APMX(1)	INSL	S	RE	Rg(2)	REN	IC830	IC808	a_p (mm)	f_z (mm/t)
H490 ANKX 0904R12T-FF	6.20	2.30	1.00	8.50	4.30	1.00	1.20	5.00	●	●	0.50-1.00	0.50-1.50

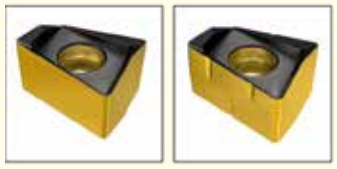
• The cutting diameter of the tool is 0.12 mm larger than the nominal diameter when using this insert • At D.O.C. larger than APMX, regular insert feed should be applied
• Enables ramping down at 1° maximum on 16 to 40 tool diameters
(1) For fast feed
(2) Radius for programming

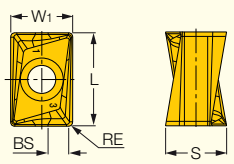
For tools, see pages: H490 E90AX-09 (18) • H490 E90AX-M (18) • H490 E90AX-MM (18) • H490 F90AX-09 (190)

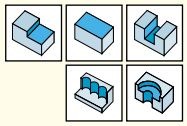
HELIDO 490 LINE

H490 ANKX/ANCX-12

Double-Sided Rectangular Inserts with 4 Helical Cutting Edges







Designation	Dimensions					Tough ↔ Hard						Recommended Machining Data	
	W_1	RE	S	L	BS	IC330	IC830	IC380	IC808	IC810	IC5100	a_p (mm)	f_z (mm/t)
H490 ANCX 120508PDR	10.00	0.80	9.45	13.67	3.50		●		●			4.00-11.00	0.08-0.15
H490 ANKX 120504PNTR	10.00	0.40	9.15	13.70	3.80		●					4.00-11.00	0.10-0.30
H490 ANKX 120508PNTR	10.00	0.80	9.15	13.67	3.50	●	●	●	●	●	●	4.00-11.00	0.10-0.30
H490 ANKX 120510PNTR	10.00	1.00	8.90	13.70	3.40		●					4.00-11.00	0.10-0.30
H490 ANKX 120512PNTR	10.00	1.20	8.90	13.70	3.20		●					4.00-11.00	0.10-0.30
H490 ANKX 120516PNTR	10.00	1.60	8.60	13.70	2.80		●					4.00-11.00	0.10-0.30
H490 ANKX 120520PNTR	10.00	2.00	8.70	13.70	2.80		●					4.00-11.00	0.10-0.30
H490 ANKX 120524PNTR	10.00	2.40	8.60	13.70	2.80		●					4.00-11.00	0.10-0.30
H490 ANKX 1205PNTR-CS (1)	10.00	0.80	9.15	13.70	3.50		●					8.00-11.00	0.15-0.20
H490 ANKX 1205PNTR-RM	10.00	0.80	9.15	13.70	3.50		●		●			4.00-11.00	0.20-0.30

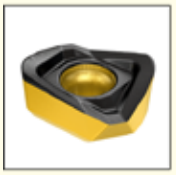
• ANKX-utility inserts, ANCX-precision inserts • For cutting speed recommendations, see pages 518-524
(1) The maximum feed per tooth for chip splitting effect is up to 0.20 mm/t.

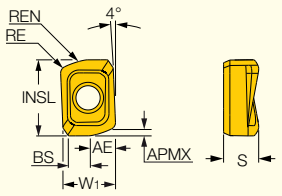
For tools, see pages: H490 E90AX-12 (26) • H490 F90AX-12 (199) • H490 SM-12 (237)

HELIDO FEEDMILL 490 LINE

H490 ANKX 1205-FF

Single-Sided Rectangular Inserts with 2 Helical Cutting Edges for Fast Feed Milling at Small Depths of Cut





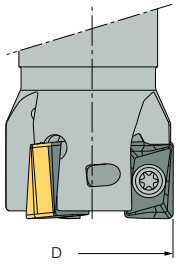
Designation	Dimensions INSL	S	W1	BS	RE	Rg(1)	REN	APMX	AE	IC830	Recommended Machining Data ap (mm)	fz (mm/t)
H490 ANKX 1205R15T-FF	13.50	6.40	10.20	3.50	1.50	2.50	6.00	2.00	5.1	●	0.50-2.00	1.00-2.00

• The cutting diameter of the tool is 0.5 mm larger than the nominal diameter when using this insert • Tool corner should be modified by rounding to R2.0 mm • At D.O.C. larger than APMX, regular insert feed should be applied. • For cutting speed recommendations, see pages 518-524

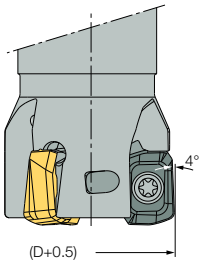
(1) Radius for programming

For tools, see pages: H490 E90AX-12 (26) • H490 F90AX-12 (199)

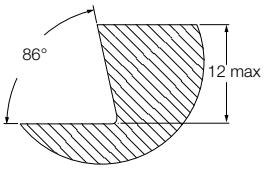
Insert Mounting in a Standard Tool



Tool with regular inserts



Tool with H490 ANKX 1205... FF inserts



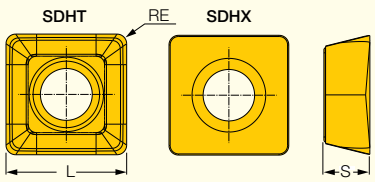
Shoulder angle when H490 ANKX 1205...-FF inserts are used

XQUAD EXTENDED FLUTE

SDHT/X 120508

Square Inserts for Machining Titanium, High Temperature Alloys and Stainless Steel





Designation	Dimensions L	S	RE	Tough ↔ Hard IC882	IC5820	Recommended Machining Data fz (mm/t)
SDHT 120508-PDEN (1)	12.70	4.90	0.80		●	0.05-0.15
SDHX 120508-PD-N (2)	12.70	4.94	0.80	●	●	0.05-0.15

• For cutting speed recommendations, see pages 518-524

(1) First choice for machining stainless steel

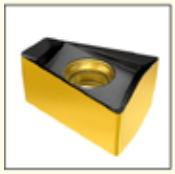
(2) First choice for machining titanium

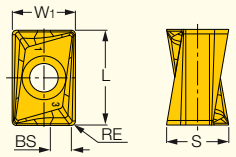
For tools, see pages: SDK-12-C/HP (244)

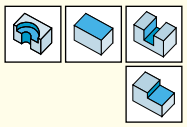
HELIDO 490 LINE

H490 ANKX/ANCX-17

Double-Sided Rectangular Inserts with 4 Helical Cutting Edges







Designation	Dimensions L	RE	S	W1	BS	Tough ↔ Hard IC330	IC845	IC830	IC5400	IC380	IC808	IC810	DT7150	IC5100	Recommended Machining Data ap (mm)	fz (mm/t)
H490 ANKX 170604PNTR	16.70	0.40	10.40	11.20	4.70			●							5.00-15.00	0.15-0.30
H490 ANCX 170608PDR	16.70	0.80	10.40	11.20	4.70	●		●		●	●	●			5.00-15.00	0.10-0.18
H490 ANKX 1706PNTR-CS (1)	16.70	0.80	10.40	11.20	4.70			●							5.00-15.00	0.15-0.22
H490 ANKX 1706PNTR-RM	16.70	0.80	10.40	11.20	4.70			●			●	●			5.00-15.00	0.20-0.40
H490 ANKX 170608PNTR	16.70	0.80	10.40	11.20	4.70	●	●	●	●		●	●	●	●	5.00-15.00	0.15-0.30
H490 ANKX 170612PNTR	16.90	1.20	10.50	11.00	3.50			●			●				5.00-15.00	0.15-0.30
H490 ANKX 170616PNTR	16.90	1.60	10.50	11.00	3.10			●			●				5.00-15.00	0.15-0.30
H490 ANKX 170620PNTR	16.90	2.00	10.50	11.00	2.70			●			●				5.00-15.00	0.15-0.30
H490 ANKX 170624PNTR	16.90	2.40	10.50	11.00	2.30			●			●				5.00-15.00	0.15-0.30

• ANKX-utility inserts. ANCX-precision inserts • For cutting speed recommendations, see pages 518-524

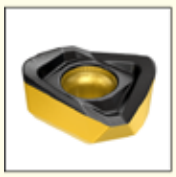
(1) The maximum feed per tooth for chip splitting effect is up to 0.22 mm/t.

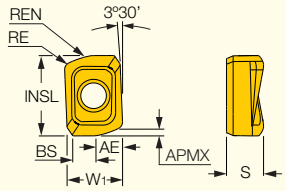
For tools, see pages: H490 E90AX-17 (30) • H490 F90AX-17 (206) • H490 SM-17 (243)

FEEDMILL HELIDO 490 LINE

H490 ANKX 1706-FF

Single-Sided Rectangular Inserts with 2 Helical Cutting Edges, for Fast Feed Milling at Small Depths of Cut







Designation	Dimensions INSL	S	W1	BS	RE	Rg(1)	REN	APMX	AE	IC830	Recommended Machining Data ap (mm)	fz (mm/t)
H490 ANKX 1706R15T-FF	16.80	7.80	11.70	4.60	1.60	2.85	15.00	2.00	6.1	●	0.50-2.00	1.00-2.00

• The cutting diameter of the tool is 1.5 mm larger than the nominal diameter when using this insert • No tool radius modifications is required • At D.O.C. larger than APMX, regular insert feed should be applied • For cutting speed recommendations, see pages 518-524

(1) Radius for programming

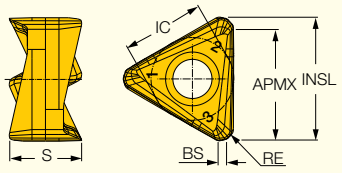
For tools, see pages: H490 E90AX-17 (30) • H490 F90AX-17 (206)

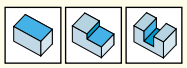
HELIDO 690 LINE

H690 TNKX/TNCX 1005

Triangular Inserts with 6 Helical Cutting Edges for 90° Shoulder Accuracy







Designation	Dimensions INSL	APMX	IC	S	RE	BS	Tough ↔ Hard IC330	IC830	IC5400	IC808	IC810	Recommended Machining Data ap (mm)	fz (mm/t)
H690 TNKX 100504PNTR	8.48	8.00	6.20	4.70	0.40	0.80	●	●	●	●	●	1.00-8.00	0.08-0.15
H690 TNCX 100504 PDR (1)	8.60	8.00	6.20	4.70	0.40	0.70		●		●	●	1.00-8.00	0.08-0.13
H690 TNKX 100508PNTR	8.60	8.00	6.20	4.70	0.80	0.40		●		●	●	1.00-8.00	0.08-0.15

• For cutting speed recommendations, see page 458

(1) Peripherally ground

For tools, see pages: H690 E90AX-10 (25) • H690 F90AX-10 (194)

Cutting Data

The attached tables provide cutting data recommendations for **H690 TNKX 100504PNTR** inserts.
For machining in unstable conditions, the recommended tooth load should be reduced by 20-30%.

Cutting Speed Recommendations for H690 TNKX 100504PNTR Inserts

ISO Class DIN/ ISO 513	Workpiece Material					Vc, m/min, for Grades				
		Typical Representative		Hardness, HB	ISCAR Mat. Group***	IC330	IC830	IC5400	IC808	IC810
	Description	AISI/SAE/ASTM	DIN W.-Nr.							
P	Non-alloy steel	1020	1.044	130-180	1	150-180	150-180	150-200	150-200	150-200
	Alloy steel	4340	1.6582	260-300	8	100-120	140-150	120-170	140-170	140-170
	Alloy steel	4340	1.6582	HRC 35-42**	9	80-100	80-100		120-150	
	High alloy steel	H13	1.2344	200-220	10	100-120	140-170		140-170	
	Martensitic s.s.	420	1.4021	200	12	150-180	150-150	120-200	150-200	
M	Austenitic s.s.	304L	1.4306	200	14	100-140	120-140		120-140	
	Austenitic s.s.	316L	1.4404	140	14	100-140	120-140		120-140	
K	Grey cast iron	Class 40	0.6025 (GG25)	250	16		150-200			250-300
	Nodular cast iron	Class 65-45-12	0.7050 (GGG50)	200	17		150-180			200-250
H	Hard steel	H11	1.2343	HRC 45-49	38.1				60-80	
	Cast iron	P20	1.2330	HRC 50-55	38.2				40-60	

** Quenched and tempered
*** ISCAR material group in accordance with VDI 3323 standard

Feed Recommendations for H690 TNKX 100504PNTR Inserts

ISO Class DIN/ ISO 513	Workpiece Material					Fz, mm/tooth, for Grades				
		Typical Representative		Hardness, HB	ISCAR Mat. Group**	IC808	IC5400	IC810	IC830	IC330
	Description	AISI/SAE/ASTM	DIN W.-Nr.							
P	Non-alloy steel	1020	1.044	130-180	1	0.08-0.15	0.08-0.15		0.08-0.15	0.08-0.15
	Alloy steel	4340	1.6582	260-300	8	0.08-0.15	0.08-0.15	0.08-0.15	0.08-0.15	0.08-0.15
	Alloy steel	4340	1.6582	HRC 35-42*	9	0.08-0.12	0.08-0.12		0.08-0.12	0.08-0.12
	High alloy steel	H13	1.2344	200-220	10	0.08-0.15	0.08-0.15		0.08-0.15	0.08-0.12
	Martensitic s.s.	420	1.4021	200	12	0.08-0.15			0.08-0.15	0.08-0.12
M	Austenitic s.s.	304L	1.4306	200	14	0.08-0.12			0.08-0.12	0.08-0.12
	Austenitic s.s.	316L	1.4404	140	14	0.08-0.12			0.08-0.12	0.08-0.12
K	Grey cast iron	Class 40	0.6025 (GG25)	250	16			0.08-0.12	0.08-0.12	
	Nodular cast iron	Class 65-45-12	0.7050 (GGG50)	200	17			0.08-0.12	0.08-0.12	
S	HTSA	Inconel 718	2.4668	HRC 36	34					
	Titanium alloys	AMS R56400	3.7165 (Ti6Al4V)	HRC 34	37					
H	Hard steel	H11	1.2343	HRC 45-49	38.1	0.06-0.1				
	Cast iron	P20	1.2330	HRC 50-55	38.2	0.05-0.08				

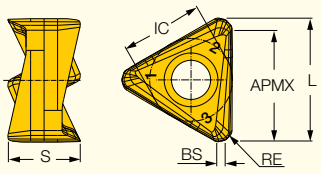
* Quenched and tempered
** ISCAR material group in accordance with VDI 3323 standard

HELIDO 690 LINE

H690 TNKX 1606

Triangular Inserts with 6 Helical Cutting Edges for 90° Shoulders





Designation	Dimensions L	APMX	IC	S	RE	BS	Tough ↔ Hard IC330	IC845	IC830	IC808	IC810	IC5100	Recommended Machining Data a_p (mm)	f_z (mm/t)
H690 TNKX 160610PNTR	17.50	13.50	12.00	10.00	1.00	0.70	●	●	●	●	●	●	1.20-13.50	0.15-0.30

• For cutting speed recommendations, see pages 518-524

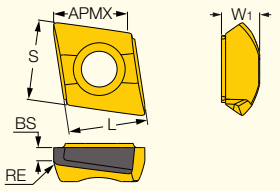
For tools, see pages: H690 F90AX-16 (207)

SUMOMILL 290 LINE

T290 LNMT/LNHT 0502

Tangential Inserts with 2 Cutting Edges





Designation	Dimensions W_1	L	APMX	S	BS	RE	Tough ↔ Hard IC330	IC830	IC5400	IC808	IC810	Recommended Machining Data a_p (mm)	f_z (mm/t)
T290 LNHT 050202TR	2.70	5.75	5.00	5.85	1.20	0.20		●		●		2.00-5.00	0.03-0.07
T290 LNHT 050204TR	2.70	5.75	5.00	5.85	1.00	0.40		●				2.00-5.00	0.03-0.07
T290 LNHT 050208TR	2.70	5.75	5.00	5.85	1.00	0.80		●				2.00-5.00	0.03-0.07
T290 LNHT 050210TR	2.70	5.75	5.00	5.85	1.00	1.00		●				2.00-5.00	0.03-0.07
T290 LNMT 050204TR	2.70	5.75	5.00	5.85	1.00	0.40	●	●	●	●	●	2.00-5.00	0.04-0.08

• LNMT-utility inserts. LNHT-precision inserts • For cutting speed recommendations, see pages 518-524

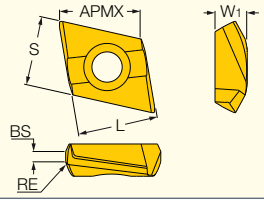
For tools, see pages: E30 / T230 (32) • E45 / T245 (34) • E60 / T260 (35) • T290 ELN-05 (12) • T290 ELN-MM-05 (12)

SUMOMILL 290 LINE

T290 LNMT/LNHT 1004

Tangential Insert with 2 Cutting Edges





Designation	Dimensions W_1	L	APMX	S	BS	RE	Tough ↔ Hard IC330	IC830	IC5400	IC808	IC810	IC5100	Recommended Machining Data a_p (mm)	f_z (mm/t)
T290 LNHT 100405TR	4.10	10.40	10.00	8.90	1.30	0.50		●					3.00-9.00	0.08-0.20
T290 LNMT 100405TR	4.10	10.40	10.00	8.90	1.30	0.50	●	●	●	●	●	●	3.00-9.00	0.08-0.20

• LNMT-utility inserts, LNHT-precision inserts • For cutting speed recommendations, see pages 518-524

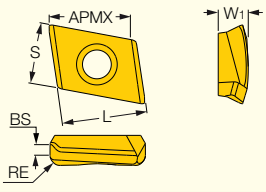
For tools, see pages: T290 ELN-10 (19) • T290 FLN-10 (191)

SUMOMILL 290 LINE

T290 LNMT 1506

Tangential Insert with 2 Cutting Edges





Designation	Dimensions W_1	L	APMX	S	BS	RE	Tough ↔ Hard IC830	IC808	IC810	Recommended Machining Data a_p (mm)	f_z (mm/t)
T290 LNMT 150608TR	5.60	15.90	15.00	11.50	2.00	0.80	●	●	●	5.00-15.00	0.10-0.22

• LNMT-utility inserts • For cutting speed recommendations, see pages 518-524

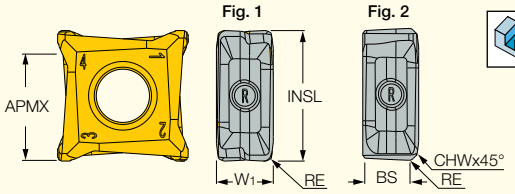
For tools, see pages: T290 FLN-15 (200) • T290 SM (230)

LOGIQ8TANG T890 MILLING LINE

T890 LNHT/LNAT 1306

Tangentially Clamped Inserts
with 4 or 8 Cutting Edges





Designation	Dimensions APMX	INSL	W1	BS	RE	CHW	CEDC	Fig.	Tough ↔ Hard IC845	IC830	IC5400	IC5500	IC808	IC810	IC5100	Recommended Machining Data ap (mm)	fz (mm/t)
T890 LNHT 1306PNTR	9.50	13.78	6.00	-	0.80	-	8	1	●	●	●	●	●	●	●	1.00-9.50	0.10-0.20
T890 LNAT 1306PN-W (1)	9.50	13.92	5.90	4.30	0.60	0.60	4	2						●		0.50-1.00	0.10-0.20

• For cutting speed recommendations, see pages 518-524

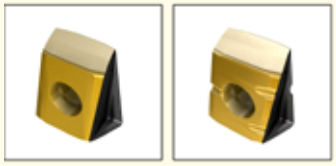
(1) A wiper insert for finishing only

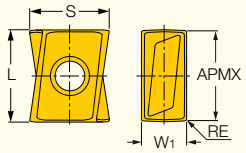
For tools, see pages: T890HT ELN-R13 (26) • T890HT FLN-R13 (195)

HELITANG T490 LINE

T490 LNMT/LNHT 0804

Tangentially Clamped Inserts
with 4 Helical Cutting Edges





Designation	Dimensions W1	L	APMX	RE(4)	S	Tough ↔ Hard IC330	IC830	IC5400	IC808	IC810	IC5100	Recommended Machining Data ap (mm)	fz (mm/t)
T490 LNMT 0804PNR	4.24	8.59	8.00	0.40	7.43	●	●	●	●	●	●	1.50-5.00	0.10-0.18
T490 LNHT 080404PNR	4.24	8.59	8.00	0.40	7.51	●	●		●	●		1.50-5.00	0.08-0.15
T490 LNMT 080408PNR	4.24	8.59	8.00	0.80	7.43		●		●	●		1.50-5.00	0.10-0.18
T490 LNHT 080408PNR	4.24	8.59	8.00	0.80	7.16	●	●		●	●		1.50-5.00	0.08-0.15
T490 LNHT 080412PNR	4.24	8.59	8.00	1.20	6.87	●	●		●	●		1.50-5.00	0.08-0.15
T490 LNMT 080412PNR	4.24	8.59	8.00	1.20	6.87		●					1.50-5.00	0.08-0.18
T490 LNHT 080416PNR	4.24	8.59	8.00	1.60	6.74	●	●		●	●		1.50-5.00	0.08-0.15
T490 LNMT 080416PNR	4.24	8.59	8.00	1.60	7.29				●			1.50-5.00	0.10-0.18
T490 LNMT 0804PNR-CS (1)	4.24	8.59	8.00	0.40	7.43		●		●			2.50-7.00	0.10-0.15
T490 LNHT 080404PNR-RD (2)	4.24	8.59	8.00	0.40	7.51		●					1.50-5.00	0.08-0.15
T490 LNHT080404PNR-PLS (3)	4.24	8.59	8.00	0.40	7.51		●					1.50-5.00	0.08-0.15

• LNMT-utility inserts, LNHT-precision inserts • For cutting speed recommendations, see pages 518-524

(1) Chip splitting cutting edge

(2) Used for ramping down applications on 16-20 mm diameter tools

(3) Positive rake angle for soft and gummy materials

(4) Radius obtained on workpiece

For tools, see pages: T490 ELN-08 (16) • T490 ELN-M (17) • T490 ELN-MM-08 (17) • T490 FLN-08 (189) • T490 FLN-C#-08 (189) • T490 LNM-08 (231) • T490 LNM-M-08 (231) • T490 SM-08 (238)

T490 LNHT 0804PNR-RD

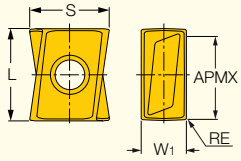
Tool Diameter	a - Rampdown
16	2°
18	1.85°
20	1.7°

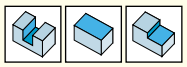
HELITANG T490 LINE

T490 LNMT/LNHT 1106

Tangentially Clamped Inserts
with 4 Helical Cutting Edges







Designation	Dimensions W1	L	APMX	RE(7)	S	Tough ↔ Hard IC845	IC840	IC830	IC5500	IC808	IC810	Recommended Machining Data ap (mm)	fz (mm/t)
T490 LNHT 1106PNTR	6.00	10.50	9.00	0.80	11.30			●	●		●	1.50-9.00	0.10-0.20
T490 LNMT 1106PNTR (1)	6.00	10.50	9.00	0.80	11.30			●		●	●	1.50-9.00	0.10-0.20
T490 LNMT 1106PNR-PLS (2)	6.00	10.50	9.00	0.80	11.30	●						1.50-9.00	0.10-0.20
T490 LNHT 1106PNR-PLS (3)	6.00	10.50	9.00	0.80	11.30	●	●				●	1.50-9.00	0.10-0.20
T490 LNMT 1106PNTR-FW (4)	6.00	10.50	9.00	0.80	11.30			●				1.50-9.00	0.10-0.20
T490 LNHT 1106PNTR-RD (5)	6.00	10.50	9.00	0.80	11.30			●				1.50-9.00	0.10-0.20
T490 LNMT 1106PNTR-CS (6)	6.00	10.50	9.00	0.80	11.30			●				1.50-9.00	0.10-0.20

• For cutting speed recommendations, see pages 518-524

(1) Mounting this insert increases tool diameter up to 0.2 mm

(2) Positive rake angle for soft and gummy materials, mounting this insert increases tool diameter up to 0.2 mm

(3) Positive rake angle for soft and gummy materials

(4) Chip splitting serrated cutting edges, to be used in over 4xD tool overhang applications and low power machines

(5) Used for ramping down applications with 25 mm and larger tools, see table below

(6) Chip splitting cutting edges, to be used in under 4xD tool overhang applications, may increase tool dia. up to 0.2 mm

(7) Radius obtained on workpiece

For tools, see pages: T490 ELN-11 (25) • T490 FLN-11 (194) • T490 LNK-11 (232) • T490 SM-11 (238)

T490 LNHT 1106PNTR-RD

Tool Diameter	a - Rampdown
25	1.7°
32	1.5°
40	1.4°
50	1.1°
63	0.7°

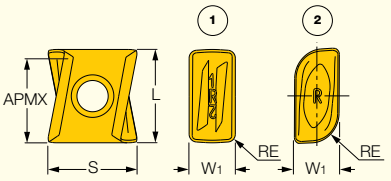


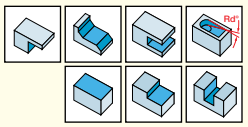
HELITANG T490 LINE

T490 LNMT/LNHT 1306

Tangentially Clamped Inserts
with 4 Helical Cutting Edges







Right-hand shown

Designation	Dimensions W1	L	APMX	RE(12)	S	Fig.	Tough ↔ Hard IC882	IC330	IC840	IC830	IC5400	IC5500	IC380	IC808	IC810	DT7150	IC5100	Recommended Machining Data ap (mm)	fz (mm/t)
T490 LNAT 1306 PN-W (1)	6.65	14.20	0.50	0.50	13.10	1.								●				0.50-0.50	0.12-0.18
T490 LNHT 1306PNTR/L (2)	6.65	13.81	12.50	0.80	13.05	1.		●	●	●				●	●	●	●	4.00-12.00	0.10-0.20
T490 LNMT 1306PNTR/L (2)	6.65	13.80	12.50	0.80	13.05	1.		●	●	●	●	●	●	●	●	●	●	4.00-12.00	0.10-0.20
T490 LNMT 1306PNTR-CS (3)	6.65	13.74	12.50	0.80	13.05	1.		●		●	●				●			4.00-12.00	0.10-0.20
T490 LNHT 1306PN-R-PL (4)	6.65	13.81	12.50	0.80	13.05	1.	●	●		●				●				4.00-12.00	0.10-0.20
T490 LNHT 1306PNR-PLS (5)	6.65	13.81	12.50	0.80	13.05	1.				●								4.00-12.00	0.10-0.20
T490 LNHT 1306PNTR-RD (6)	6.65	13.81	12.50	0.80	13.05	1.				●					●			4.00-12.00	0.10-0.20
T490 LNMT1306PNR-RD-CS (7)	6.65	13.74	12.50	0.80	13.05	1.				●								4.00-12.00	0.10-0.20
T490 LNMT1306PNR-RDPCS (8)	6.65	13.75	12.50	0.80	13.05	1.			●									4.00-12.00	0.10-0.20
T490 LNMT1306PNR-RDPL (9)	6.44	13.74	12.50	0.80	13.05	1			●									1.00-12.50	0.10-0.20
T490 LNHT 130612PNTR	6.65	13.81	12.50	1.20	13.00	1.									●			4.00-12.00	0.10-0.20
T490 LNHT 130616PNTR/L (2)	6.65	13.81	12.50	1.60	12.88	1.		●		●				●				4.00-12.00	0.10-0.20
T490 LNMT 130616PNTR	6.65	13.75	12.50	1.60	12.88	1.				●					●			4.00-12.00	0.10-0.25
T490 LNHT 130624PNTR/L (2)	6.65	13.80	12.50	2.40	12.50	1.		●		●				●	●			4.00-12.00	0.10-0.20
T490 LNMT 130624PNTR	6.65	13.74	12.50	2.40	12.66	1.				●					●			4.00-12.00	0.10-0.20
T490 LNHT 130631PNTR/L (2)	6.65	13.81	12.50	3.10	12.37	1.		●		●				●				4.00-12.00	0.10-0.20
T490 LNMT 130631PNTR	6.65	13.75	12.50	3.10	12.45	1.		●		●								4.00-12.00	0.10-0.25
T490 LNHT 130640PNTR (10)	6.65	13.63	12.50	4.00	12.60	2.		●		●				●				4.00-12.00	0.10-0.20
T490 LNMT 130640PNTR (10)	6.65	13.63	12.50	4.00	12.60	2.				●								4.00-12.00	0.10-0.20
T490 LNHT 130650PNTR (10)	6.65	13.63	12.50	5.00	12.45	2.		●		●					●			4.00-12.00	0.10-0.20
T490 LNMT 130650PNTR (10)	6.65	13.63	12.50	5.00	12.36	2.				●								4.00-12.00	0.10-0.20
T490 LNHT 130660PNTR (11)	6.65	13.63	12.50	6.00	12.30	2.				●				●				4.00-12.00	0.10-0.25
T490 LNHT 130664PNTR (11)	6.65	13.63	12.50	6.35	12.28	2.		●		●				●				4.00-12.00	0.10-0.20
T490 LNMT 130664PNTR (11)	6.65	13.63	12.50	6.40	12.28	2.				●								4.00-12.00	0.10-0.20

• LNMT-utility inserts, LNHT-precision inserts • For cutting speed recommendations, see pages 518-524

(1) A wiper insert with 2 cutting edges, for finishing only.

(2) Left-hand insert used on left-hand cartridges or on special left-hand cutters

(3) Chip splitting insert

(4) Positive rake face, for stainless steel and high temperature alloys.

(5) Positive rake angle for soft and gummy materials

(6) Used for ramping down applications with 32 mm and larger tools, see table below

(7) Used for ramping down and chip splitting applications with 40 mm and larger tools, see table below

(8) Positive rake face, for stainless steel and high temp. alloys; used for ramping down and chip splitting applications.

(9) Positive rake face, for stainless steel and high temperature alloys with limited ramp down capability

(10) With 2 cutting edges

(11) With 2 cutting edges • The corner of a tool body should be modified by chamfering to 2x45°

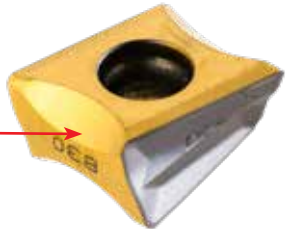
(12) Radius obtained on workpiece

For tools, see pages: FDN-CALN13 (339) • SDN-CALN13 (347) • T4..-SM Conical Shell Mills (242) • T490 CAP-13FT (240) • T490 ELN-13 (27) • T490 ELN-C#-13 (27) • T490 ELN-M (17) • T490 FLN-13 (200) • T490 LNK-13 (232) • T490 LNK-13-BT (233) • T490 LNK-13-C# (233) • T490 LNK-13-CF (233) • T490 LNK-13-INT (234) • T490 LNK-BT-FT (242) • T490 LNK-INT50-FT (241) • T490 LNK-M-13 (232) • T490 SM-13 (239) • T490 SM-13FT (239)

T490 LNHT 1306PNTR-RD

Tool Diameter	a - Rampdown
32	2.8°
40	2.0°
50	1.5°
63	1.1°
80	0.9°
100	0.7°
125	0.5°

Special chamfer for ramping down applications



T490 LNMT1306PNR-RD-CS
T490 LNMT1306PNR-RDPCS
T490 LNMT1306PNR-RDPL

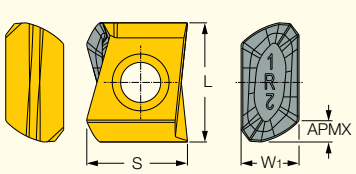
Tool Diameter	a - Rampdown
40	0.9°
50	0.7°
63	0.5°

HELITANG T490 LINE
FEEDMILL

T490 LNMT 1306PNR-FF

Tangentially Clamped
Inserts with 2 Cutting Edges
for Fast Feed Milling





Designation	Dimensions W1	L	APMX	Rg(1)	S	RMPX(2)	IC830	Recommended Machining Data ap (mm)	fz (mm/t)
T490 LNMT 1306PNR-FF	6.65	13.68	1.00	1.95	11.56	-	●	0.60-1.00	0.50-1.50

• You can machine also at up to 12 mm D.O.C. but in this case a regular corner radius insert feed recommendations should be applied.
• For cutting speed recommendations, see pages 518-524
(1) Corner radius for CNC programming
(2) For possible ramping angle vs. tool diameter, see table below.

For tools, see pages: T490 ELN-13 (27) • T490 ELN-C#-13 (27) • T490 ELN-M (17) • T490 FLN-13 (200)

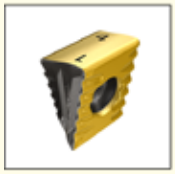
Ramp Down Application as Function of Cutter Diameter

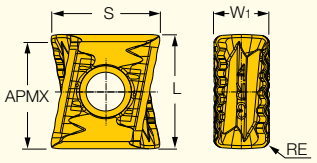
Tool Diameter mm	Tool Diameter inch	a° - Ramp down angle
25	1.00”	4.8°
32	1.25”	3.3°
40	1.50”	2.5°
50	2.00”	1.8°
63	2.50”	1.3°
80	3.00”	1.0°
100	4.00”	0.8°

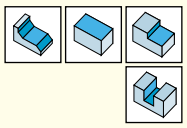
HELITANG T490 LINE

T490 LNMT 1306PNTR-FW

Tangentially Clamped
Inserts with 4 Serrated and
Helical Cutting Edges







Right-hand shown

Designation	Dimensions W1	L	APMX	RE(2)	S	Tough ↔ Hard IC840	IC830	Recommended Machining Data ap (mm)	fz (mm/t)
T490 LNMT 1306PNTR-FW	6.65	13.73	12.70	0.80	13.06		●	4.00-12.00	0.10-0.20
T490 LNMT1306PNR-RDPFW (1)	6.65	13.73	12.70	0.80	13.06	●		4.00-12.00	0.10-0.18

• T490 LNMT 1306PNTR-FW cannot be used for ramping down and on full slot cutters • T490 LNMT1306PNR-RDPFW can be used for ramping down • For cutting speed recommendations, see pages 518-524
(1) Positive rake face, to be used in long overhang applications and low power machines
(2) Radius obtained on workpiece

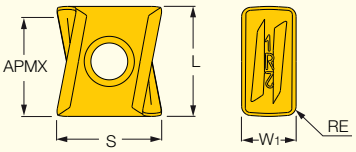
For tools, see pages: T4..-SM Conical Shell Mills (242) • T490 CAP-13FT (240) • T490 ELN-13 (27) • T490 ELN-C#-13 (27) • T490 ELN-M (17) • T490 FLN-13 (200) • T490 LNK-13 (232) • T490 LNK-13-BT (233) • T490 LNK-13-C# (233) • T490 LNK-13-CF (233) • T490 LNK-13-INT (234) • T490 LNK-BT-FT (242) • T490 LNK-INT50-FT (241) • T490 LNK-M-13 (232) • T490 SM-13 (239) • T490 SM-13FT (239)

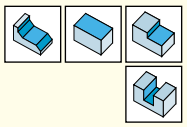
HELITANG T490 LINE

T490 LNAR

Tangentially Clamped Precision Ground Inserts with a Super Positive Rake for Machining Aluminum







Designation	Dimensions W1	L	APMX	RE	S	Tough ↔ Hard IC330	IC07	Recommended Machining Data ap (mm)	fz (mm/t)
T490 LNAR 0804PN-R-P	4.25	8.60	8.00	0.40	7.50		●	1.00-5.00	0.08-0.15
T490 LNAR 1306PN-R	6.65	13.81	12.77	0.80	13.00	●		4.00-12.00	0.08-0.20
T490 LNAR 1306PN-R-P	6.65	13.81	12.50	0.80	13.00		●	4.00-12.00	0.08-0.20
T490 LNAR 1306PNR-P-RD (1)	6.65	13.75	12.50	0.80	13.05		●	4.00-12.00	0.10-0.20
T490 LNAR 1607PN-R-P	7.05	17.05	16.00	0.80	15.90		●	5.00-14.00	0.15-0.25

• For T490 ELN-13 on diameter 25 mm at ap=5, fz=0.15 at ap=10, fz=0.1 • For cutting speed recommendations, see pages 518-524

(1) Used for ramping down applications on aluminum with 32 mm and larger tools, see table below

For tools, see pages: T4..-SM Conical Shell Mills (242) • T490 CAP-13FT (240) • T490 ELN-08 (16) • T490 ELN-13 (27) • T490 ELN-16 (29) • T490 ELN-C#-13 (27) • T490 ELN-M (17) • T490 ELN-MM-08 (17) • T490 FLN-08 (189) • T490 FLN-13 (200) • T490 FLN-16 (205) • T490 FLN-C#-08 (189) • T490 LNK-13 (232) • T490 LNK-13-BT (233) • T490 LNK-13-C# (233) • T490 LNK-13-CF (233) • T490 LNK-13-INT (234) • T490 LNK-BT-FT (242) • T490 LNK-INT50-FT (241) • T490 LNK-M-13 (232) • T490 LNM-08 (231) • T490 LNM-M-08 (231) • T490 SM-08 (238) • T490 SM-13 (239) • T490 SM-13FT (239) • T490 SM-16 (243)

T490 LNAR 1306PNR-P-RD

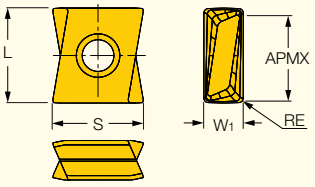
Tool Diameter	a - Rampdown
32	2.8°
40	2.0°
50	1.5°
63	1.1°
80	0.9°
100	0.7°

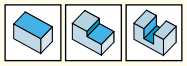
HELITANG T490 LINE

T490 LNMT/LNHT 1607

Tangentially Clamped Insert with 4 Helical Cutting Edges







Designation	Dimensions W1	L	APMX	RE	S	Tough ↔ Hard IC330	IC830	IC808	IC810	IC5100	Recommended Machining Data ap (mm)	fz (mm/t)
T490 LNHT 160708PNR	7.00	17.05	16.00	0.80	15.90		●	●	●		5.00-15.00	0.10-0.20
T490 LNHT 160712PNR	7.00	17.05	16.00	1.20	15.83				●		5.00-15.00	0.10-0.20
T490 LNHT 160716PNR	7.00	17.05	16.00	1.60	15.70		●	●	●		5.00-15.00	0.10-0.20
T490 LNHT 160724PNR	7.00	17.05	16.00	2.40	15.40		●	●	●		5.00-15.00	0.10-0.20
T490 LNHT 160732PNR	7.00	17.05	16.00	3.20	15.10		●	●	●		5.00-15.00	0.10-0.20
T490 LNMT 1607PN-R	7.00	17.05	16.00	0.80	15.83	●	●	●	●	●	5.00-15.00	0.15-0.25
T490 LNMT 1607PN-R-CS (1)	7.00	17.05	16.00	0.80	15.83		●				5.00-15.00	0.15-0.25

• LNMT-utility inserts, LNHT-precision inserts • For cutting speed recommendations, see pages 518-524

(1) Chip splitting insert

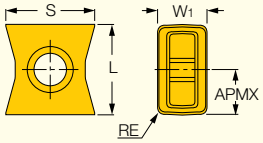
For tools, see pages: T490 ELN-16 (29) • T490 FLN-16 (205) • T490 SM-16 (243)

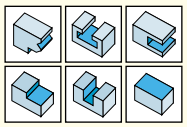
TANGMILL TANGENTIAL LINE

LNKX/LNMT 1106

Tangentially Clamped Inserts with a Very Positive Chipformer and Reinforced Cutting Edge





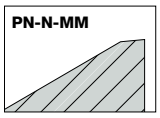


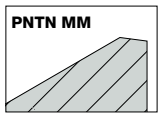
Designation	Dimensions W1	L	S	RE	APMX(1)	Tough ↔ Hard IC328	IC928	IC950	IC808	IC908	IC910	DT7150	IC4100	Recommended Machining Data ap (mm)	fz (mm/t)
LNKX 1106PN-N MM	6.00	11.16	11.00	0.80	5.00	●	●	●			●	●	●	1.50-5.00	0.15-0.20
LNKX 1106PNTN MM	6.00	11.16	11.00	0.80	5.00		●				●		●	1.50-5.00	0.17-0.25
LNMT 1106PN-N MM	6.00	11.16	11.00	0.80	5.00	●	●		●	●	●	●	●	1.50-5.00	0.17-0.25

• Molded chipformer to produce positive cutting • Reduced cutting forces enable higher feed capability • LNKX... is peripherally ground for accuracy and improved surface finish • LNMT... is an economical utility insert • LNKX1106PNTN MM insert has a reinforced chamfered land • 4 R.H. and 4 L.H. cutting edges when used on F90LN... cutters • For cutting speed recommendations, see pages 518-524

(1) DOC when the insert is on the cutter

For tools, see pages: F86LNX-11 (210) • F90LN-FR CA11 (381) • F90LN-N11 (196) • FDN-CALN11 (338) • SDN-CALN11 (346)



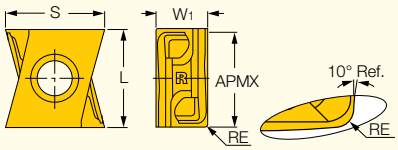


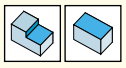
TANGMILL TANGENTIAL LINE

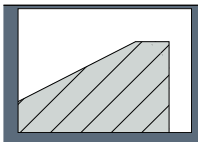
LNHT 1106 PN-R HT

Tangentially Clamped Inserts with 4 Straight Right-Hand Cutting Edges









Designation	Dimensions W1	L	S	RE	APMX(1)	Tough ↔ Hard IC928	IC908	IC910	Recommended Machining Data ap (mm)	fz (mm/t)
LNHT 1106PN-R HT	5.97	11.16	11.00	0.80	10.00	●	●	●	2.00-7.00	0.15-0.25

• Right-hand insert with 4 cutting edges • Can machine a 90° shoulder according to the table below • For cutting speed recommendations, see pages 518-524

(1) APMX=10 mm for cast iron applications (for each pass), APMX=8 mm for steel applications

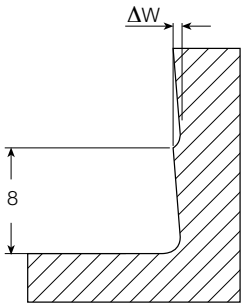
For tools, see pages: F90LN-FR CA11 (381) • F90LN-N11 (196) • FDN-CALN11 (338) • SDN-CALN11 (346)

Mismatch as a function of cutting diameter

LNHT 11..

Δh=8

Dtool	ΔW
40	0.12
50	0.06
63	0.03
80	0.04
100	0.01
125	0.02

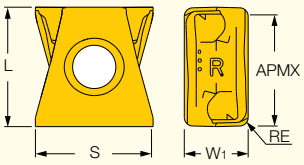


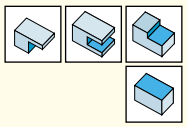
TANGMILL TANGENTIAL LINE

LNHT 1106 PN-N HT

Tangentially Clamped Inserts with Straight, Right- and Left-Hand Cutting Edges







Designation	Dimensions W1	L	S	RE	APMX(1)	Tough ↔ Hard IC928	IC808	Recommended Machining Data ap (mm)	fz (mm/t)
LNHT 1106PN-N HT	5.97	11.16	11.00	0.80	10.00	●	●	2.00-7.00	0.15-0.25

• 2 right- and 2 left-hand cutting edges • Can machine 90° shoulders, see table below • For cutting speed recommendations, see pages 518-524

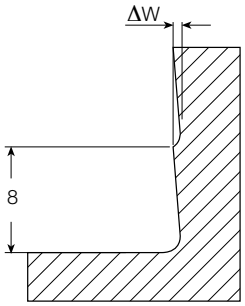
(1) APMX=10 mm for cast iron applications (for each pass), APMX=8 mm for steel applications

For tools, see pages: F90LN-FR CA11 (381) • F90LN-N11 (196) • FDN-CALN11 (338) • SDN-CALN11 (346)

Mismatch as a function of cutting diameter

LNHT 11..
Δh=8

Dtool	ΔW
40	0.12
50	0.06
63	0.03
80	0.04
100	0.01
125	0.02

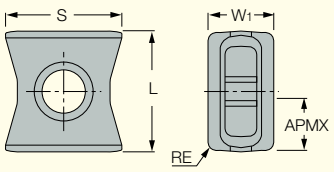


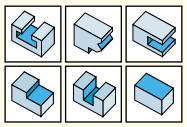
TANGMILL TANGENTIAL LINE

LNAR 1106

Tangentially Clamped Inserts with Positive Polished Rake







Designation	Dimensions W1	L	S	RE	APMX(1)	Tough ↔ Hard IC07	IC907	Recommended Machining Data ap (mm)	fz (mm/t)
LNAR 1106 PN-N	6.00	11.16	10.72	0.50	5.00		●	1.50-5.00	0.15-0.20
LNAR 1106 PN-N-P	6.00	11.16	10.72	0.50	5.00	●		1.50-5.00	0.15-0.20

• Polished rake and sharp cutting edge • Recommended for machining high silicon and cast aluminum, titanium and magnesium • 4 R.H. and 4 L.H. cutting edges

• For cutting speed recommendations, see pages 518-524

(1) D.O.C. when the insert is on the cutter

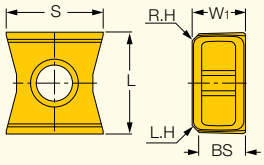
For tools, see pages: F90LN-FR CA11 (381) • F90LN-N11 (196) • FDN-CALN11 (338) • SDN-CALN11 (346)

TANGMILL TANGENTIAL LINE

LNAT 1106-W

Tangentially Clamped Wiper Inserts







Designation	Dimensions W1	L	S	BS	IC908	Recommended Machining Data ap (mm)	fz (mm/t)
LNAT 1106PN-W (1)	5.97	11.38	10.94	4.90	●	0.50-2.00	0.10-0.15

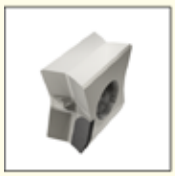
• When feed per revolution is less than 4 mm it is recommended to use only one wiper insert. When feed per revolution is greater than 4 mm, it is recommended to use two wiper inserts. • For cutting speed recommendations, see pages 518-524

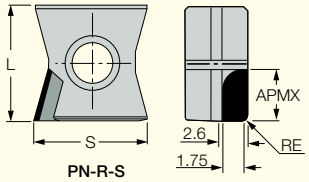
(1) Wiper insert with two right- and two left-hand cutting edges, for 90° lead angle in F90LN cutters.

TANGMILL TANGENTIAL LINE

LNAR 1106 (PCD)

Tangentially Clamped Milling Inserts with a Brazed PCD Tip for Machining Aluminum



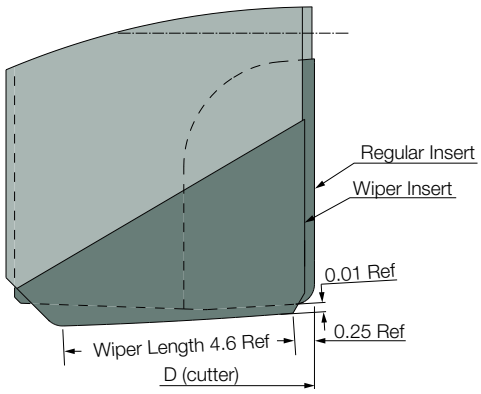


Single R.H. cutting edge PCD insert

Designation	Dimensions W1	L	S	RE	Ch	a°	APMX	ID5	Recommended Machining Data ap (mm)	fz (mm/t)
LNAR 110604PN-R-S	6.00	11.11	10.76	0.40	-	90	5.00	●	0.10-2.00	0.10-0.25
LNAR 110604X45PN-R-S	6.00	11.11	10.70	-	0.4	45	5.00	●	0.10-2.00	0.10-0.25
LNAR 110620X75PN-R-S	6.00	11.11	10.72	-	0.15	75	5.00	●	0.10-2.00	0.10-0.25

• The chamfered corner used for reduced chipping on the machined component edges • Use ID5 for aluminum alloys with <12% silicon • Use ID8 for aluminum alloys with >12% silicon. • The inserts are supplied with spare screws. • For D.O.C., cutting speed recommendations and grade data, see pages 518-524

For tools, see pages: F90LN-FR CA11 (381) • F90LN-N11 (196)

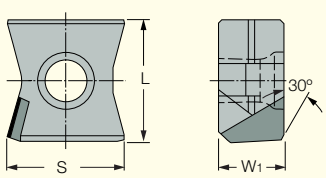


TANGMILL TANGENTIAL LINE

LNAR 1106PN-R-S-W (PCD)

Tangentially Clamped Wiper Milling Inserts with a Brazed PCD Tip for Machining Aluminum





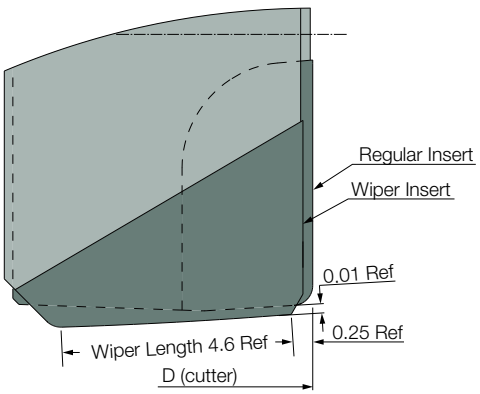
A single R.H. cutting edge PCD insert

Designation	Dimensions W1	L	S	ID5	Recommended Machining Data fz (mm/t)
LNAR 1106PN-R-S-W	5.98	11.26	10.75	●	0.10-0.25

• The chamfered corner is used for reduced chipping on the machined component edges. • The wiper insert should not be used with LNAR 110620x75PN-R-S inserts.

• For D.O.C., cutting speed recommendations and grade data, see pages 518-524

For tools, see pages: F90LN-FR CA11 (381) • F90LN-N11 (196)

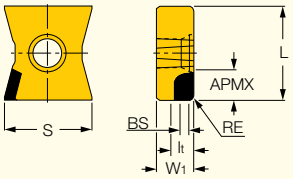


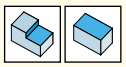
TANGMILL TANGENTIAL LINE

LNAW-11 (CBN)

Tangentially Clamped Inserts with a PCBN Brazed Tip for Machining Hard Materials







Single R.H. cutting edge insert

Designation	Dimensions W1	S	RE	L	APMX	BS	lt	IB85	Recommended Machining Data ap (mm)	fz (mm/t)
LNAW 1106PNTR-S	6.00	11.80	0.80	11.17	5.00	1.20	2.8	●	0.05-2.00	0.10-0.25
LNAW 1106PN-R-S	6.00	11.90	0.80	11.17	5.00	1.20	2.8	●	0.05-2.00	0.10-0.25

• LNAW PN-R.. is 0.03 mm edge-honed for finishing applications, while the LNAW PNTR... has a chamfered edge for rough milling applications.

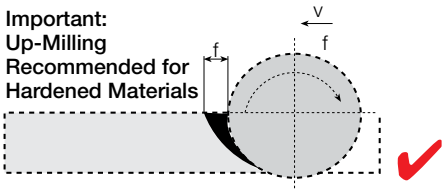
• For D.O.C. and machining recommendations see page 518-524 • The inserts are supplied with spare screws.

For tools, see pages: F90LN-FR CA11 (381) • F90LN-N11 (196)

CBN
Recommended Machining Conditions

	Grade		IB85		
	DOC mm	Material	Vc m/min	Feed mm/tooth	Cutting Edge
K	<0.5	Grey cast iron 200-280 HBN	500-1500	0.1-0.3	Chamfer Hone
	0.5-2.0		500-1100	0.1-0.25	Chamfer
	<0.5	CGI	400-600	0.1-0.2	Hone
S	0.5-2.0	Co based > 35 HRc Ni based > 35 HRc Fe based > 35 HRc Cr based > 35 HRc	150-200 120-150 60-120 50-75	0.05-0.15	Chamfer
H	<0.5	Hard steels > 45 HRc	80-180	0.1-0.25	Chamfer
	<2	Hard cast iron Ni hard	80-200	0.1-0.15	Chamfer
P	<2	Bearing steel	180-220	0.05-0.25	Chamfer
	<2	Ferrous powder metal	150-300	0.1-0.15	Chamfer

Important:
Up-Milling
Recommended for
Hardened Materials

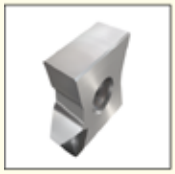


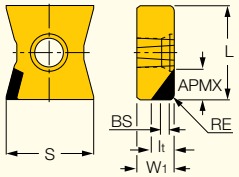


TANGMILL TANGENTIAL LINE

LNAW-15 (CBN)

Tangentially Clamped Inserts with a PCBN Brazed Tip for Machining Hard Materials



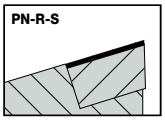


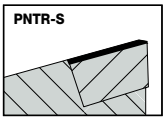
Single R.H. cutting edge insert

Designation	Dimensions W1	S	RE	L	APMX	BS	lt	Tough ↔ Hard IB85	IB55	Recommended Machining Data ap (mm)	fz (mm/t)
LNAW 1506PN-R-S	6.00	14.00	0.80	15.00	5.00	1.60	3.8	●		0.05-2.00	0.10-0.25
LNAW 1506PNTR-S	6.00	13.90	0.80	15.00	5.00	1.60	3.8	●	●	0.05-2.00	0.10-0.25

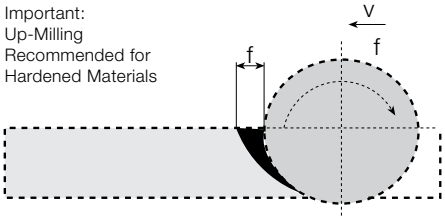
• LNAW PN-R.. is 0.03 mm edge-honed for finishing applications, while the LNAW PNTR... has a chamfered edge for rough milling applications. • For D.O.C. and machining recommendations see page 518-524 • The inserts are supplied with spare screws.

For tools, see pages: F90LN-N15 (201) • SSB-LN15-R/L (350)





Important:
Up-Milling
Recommended for
Hardened Materials





CBN
Recommended Machining Conditions

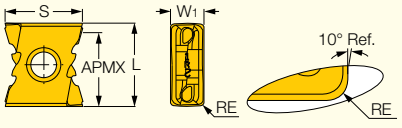
	Grade DOC mm	Material	IB85 Vc m/min	Feed mm/tooth	Cutting Edge	IB55 Vc m/min	Feed mm/tooth	Cutting Edge
K	<0.5	Grey cast iron 200-280 HBN	500-1500	0.1-0.3	Chamfer Hone			
	0.5-2.0		500-1100	0.1-0.25	Chamfer			
	<0.5	CGI	400-600	0.1-0.2	Hone			
S	0.5-2.0	Co based > 35 HRc Ni based > 35 HRc Fe based > 35 HRc Cr based > 35 HRc	150-200 120-150 60-120 50-75	0.05-0.15	Chamfer			
H	<0.5	Hard steels > 45 HRc	80-180	0.1-0.25	Chamfer	80-220	0.1-0.25	Chamfer
	<2	Hard cast iron Ni hard	80-200	0.1-0.15	Chamfer			
P	<2	Bearing steel	180-220	0.05-0.25	Chamfer	180-220	0.1-0.15	Chamfer
	<2	Ferrous powder metal	150-300	0.1-0.15	Chamfer	250-360	0.1-0.15	Chamfer

TANGMILL TANGENTIAL LINE

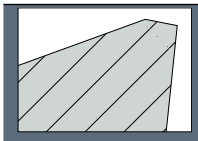
LNMT 1506PN-R-TS

Tangentially Clamped Inserts with a Serrated Cutting Edge for Chip Splitting





For R.H. tools



Designation	Dimensions W1	L	S	RE	APMX(1)	IC928	Recommended Machining Data ap (mm)	fz (mm/t)
LNMT 1506PN-R TS	6.00	15.00	13.90	0.80	12.00	●	4.00-9.00	0.10-0.20

• Self balanced forces on rake face • Used for long overhang and extended flute cutters, reduces chattering • For cutting speed recommendations, see pages 518-524

(1) apmax=8 mm for steel and 12 mm for cast iron

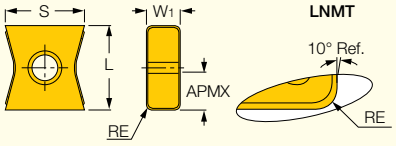
For tools, see pages: F90LN-N15 (201)

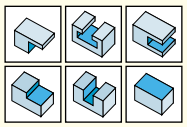
TANGMILL TANGENTIAL LINE

LNKX/LNMT 1506PNTN/ PN-N MM

Tangentially Clamped Inserts with a Reinforced Negative Land for Unfavorable Conditions





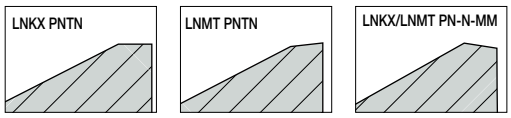


Designation	Dimensions W1	L	S	RE	APMX(1)	Tough ↔ Hard IC328	IC928	IC5400	IC908	IC810	IC910	DT7150	IC4100	Recommended Machining Data ap (mm)	fz (mm/t)
LNKX 1506PN-N MM	6.00	15.00	13.88	0.80	7.00	●	●	●	●					2.00-7.00	0.10-0.20
LNKX 1506PNTN	6.00	15.00	13.88	0.80	7.00					●	●		●	2.00-7.00	0.10-0.20
LNKX 150612-PNTN	6.00	15.00	13.88	1.20	7.00						●			2.00-7.00	0.10-0.20
LNMT 1506PN-N MM	6.00	15.00	13.95	0.80	7.00	●	●		●					2.00-7.00	0.10-0.20
LNMT 1506PNTN	6.00	15.00	13.95	0.80	7.00						●	●	●	2.00-7.00	0.10-0.20
LNMT 150616PN-N MM	6.00	15.00	13.95	1.60	7.00		●							2.00-7.00	0.10-0.20

• For cutting speed recommendations, see pages 518-524

(1) D.O.C. when the insert is on the cutter.

For tools, see pages: F90LN-N15 (201) • FDN-CALN15 (340) • SDN-CALN15 (349) • SSB-LN15-R/L (350)



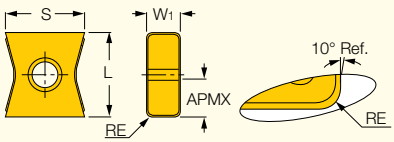
An economical class insert

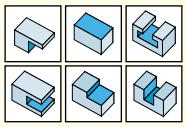
TANGMILL TANGENTIAL LINE

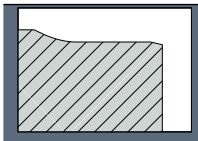
LNMW 1506 PNTN

Tangentially Clamped Insert for Machining Grey and Nodular Cast Iron









Designation	Dimensions W1	L	S	RE	APMX(1)	IC910	Recommended Machining Data ap (mm)	fz (mm/t)
LNMW 1506 PNTN	6.00	15.00	13.98	0.80	7.00	●	2.00-7.00	0.20-0.30

• Flat rake, used for grey cast iron e.g. GG25 170-240 HBR • For cutting speed recommendations, see pages 518-524

(1) DOC when the insert is on the cutter.

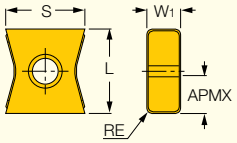
For tools, see pages: F90LN-N15 (201) • FDN-CALN15 (340) • SDN-CALN15 (349) • SSB-LN15-R/L (350)

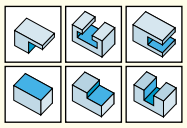
TANGMILL TANGENTIAL LINE

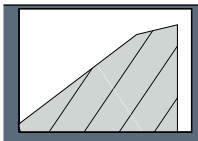
LNKX 1506PN-N PL

Tangentially Clamped Inserts with a Positive Land for Alloyed and Stainless Steel and Cast Iron









Designation	Dimensions W1	L	S	RE	APMX(1)	Tough ↔ Hard IC328	IC928	IC908	IC910	DT7150	Recommended Machining Data ap (mm)	fz (mm/t)
LNKX 1506PN-N PL	6.00	15.00	13.88	0.80	7.00	●	●	●	●	●	2.00-7.00	0.10-0.15

• Positive land (PL), leaves sharp edges without chipping on cast iron components • High shear rake for steel and stainless steel • For cutting speed recommendations, see pages 518-524

(1) D.O.C. when the insert is on the cutter.

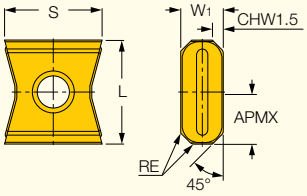
For tools, see pages: F90LN-N15 (201) • FDN-CALN15 (340) • SDN-CALN15 (349) • SSB-LN15-R/L (350)

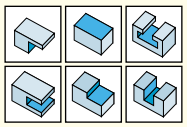
TANGMILL TANGENTIAL LINE

LNKX 1506 1.5X45 PN-N

Tangentially Clamped Chamfered Insert for 90° Cutters







Designation	W1	L	S	RE	APMX	IC328	IC928	IC908	IC910	Recommended Machining Data ap (mm)	Recommended Machining Data fz (mm/t)
	Dimensions					Tough ↔ Hard					
LNKX 1506 1.5X45PN-N	6.00	15.00	13.88	0.80	7.00	●	●	●	●	1.50-5.00	0.15-0.20

• A chamfered insert, used only on 90° cutters for smooth engagement • Chatter reduction and elimination of chipping on material edge during exit • 4 R.H. and 4 L.H. cutting edges when used on F90LN.. cutters • For cutting speed recommendations, see pages 518-524

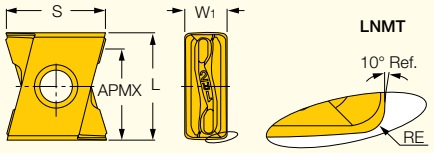
For tools, see pages: F90LN-N15 (201) • SSB-LN15-R/L (350)

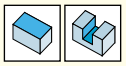
TANGMILL TANGENTIAL LINE

LNMT/LNHT 1506PN-R HT

Tangentially Clamped Inserts with 4 Straight Right-Hand Cutting Edges







The radius is not tangent to the cutting edge on the LNMT insert.

Designation	W1	L	S	RE	APMX(1)	IC928	IC908	IC910	DT7150	IC4100	Recommended Machining Data ap (mm)	Recommended Machining Data fz (mm/t)
	Dimensions					Tough ↔ Hard						
LNHT 1506PN-R HT	6.00	15.00	13.94	0.80	12.00	●	●	●			3.00-12.00	0.15-0.25
LNMT 1506PN-R HT	6.00	15.00	13.93	0.80	12.00	●		●	●	●	3.00-12.00	0.15-0.20

• A right-hand insert, with 4 cutting edges, for high 90° shoulders • LNMT-utility inserts, LNHT-precision inserts • For cutting speed recommendations, see pages 518-524

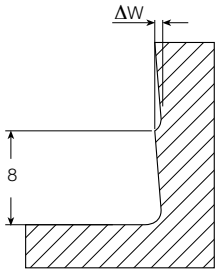
(1) APMX=9 mm for steel and 12 mm for cast iron

For tools, see pages: F90LN-N15 (201) • SSB-LN15-R/L (350)

Mismatch as a function of tool diameter

LNMT 15..
Δh=8

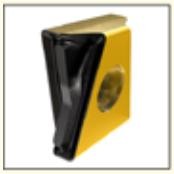
Cutting Dia.	ΔW
63	0.07
80	0.04
100	0.01
125	0.015

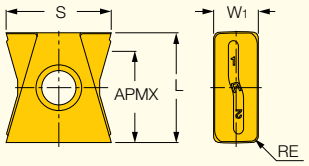


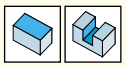
TANGMILL TANGENTIAL LINE

LNMT/LNHT 1506...-N HT

Tangentially Clamped Inserts with 4 Straight Cutting Edges: 2 L.H. and 2 R.H.







Designation	W1	L	S	RE	APMX(1)	IC928	IC910	ap (mm)	fz (mm/t)
	Dimensions					Tough ↔ Hard		Recommended Machining Data	
LNMT 1506PN-N HT	6.00	15.00	14.03	0.80	14.00	●		3.00-12.00	0.15-0.25
LNMT 1506PNTN-HT	6.00	15.00	14.03	0.80	14.00		●	3.00-12.00	0.15-0.25
LNHT 1506PNTN HT	6.00	15.00	14.03	0.80	14.00		●	3.00-12.00	0.15-0.25

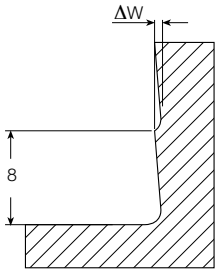
• A neutral insert, with 2 L.H. and 2 R.H. cutting edges • Can machine a 90° shoulder according to the table below
• For cutting speed recommendations, see pages 518-524
(1) APMX=9 mm for steel and 14 mm for cast iron

For tools, see pages: F90LN-N15 (201) • FDN-CALN15 (340) • SDN-CALN15 (349) • SSB-LN15-R/L (350)

Mismatch as a function of tool diameter

LNMT 15..
Δh=8

Cutting Dia.	ΔW
63	0.07
80	0.04
100	0.01
125	0.015

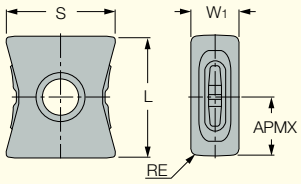


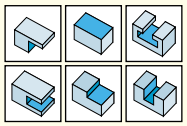
TANGMILL TANGENTIAL LINE

LNAR 1506

Tangentially Clamped Insert with a Positive Polished Land and Sharp Cutting Edge







Designation	W1	L	S	RE	APMX	IC07	ap (mm)	fz (mm/t)
	Dimensions						Recommended Machining Data	
LNAR 1506 PN-N-P	6.00	15.00	13.56	0.80	7.00	●	2.00-7.00	0.10-0.15

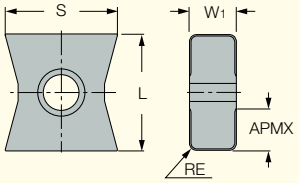
• Note: Do not use this insert on F86LNX tools • Recommended for machining high silicon aluminum, titanium and magnesium • 4 R.H. and 4 L.H. cutting edges when used on F90LN.. cutters • For cutting speed recommendations, see pages 518-524
For tools, see pages: F90LN-N15 (201)

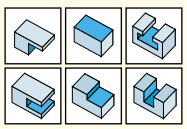
TANGMILL TANGENTIAL LINE

LNHW 1506 PNTN (ceramic)

Tangentially Clamped Ceramic Insert for High Speed Machining of Grey and Nodular Cast Iron







Designation	W1	L	S	RE	APMX(1)	IS8	ap (mm)	fz (mm/t)
	Dimensions						Recommended Machining Data	
LNHW 1506 PNTN	6.00	15.00	14.47	0.80	5.00	●	1.00-5.00	0.15-0.25

• Ceramic peripherally ground inserts for high speed machining of grey and nodular cast iron providing high surface finish • Feature 4 L.H. and 4 R.H. cutting edges when used on F90LN.. cutters • For cutting speed recommendations, see pages 518-524
(1) D.O.C. when the insert is on the cutter

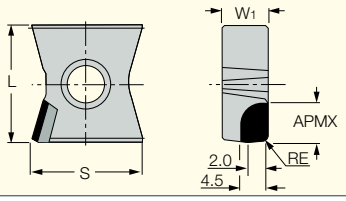
For tools, see pages: F90LN-N15 (201) • SSB-LN15-R/L (350)

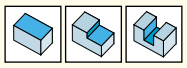
TANGMILL TANGENTIAL LINE

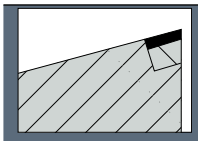
LNAR 1506 PN-R-S (PCD)

Tangentially Clamped Insert with a Brazed PCD Tip for Machining Aluminum









Designation	Dimensions W1	L	S	RE	APMX	ID5	Recommended Machining Data ap (mm)	fz (mm/t)
LNAR 150604PN-R-S	6.00	15.06	14.00	0.40	5.00	●	0.05-2.00	0.10-0.25

• The insert features a single R.H. cutting edge • Use ID5 for aluminum alloys with less than 12% silicon and ID8 for aluminum alloys with more than 12% silicon • The inserts are supplied with spare screws • For D.O.C., cutting speed recommendations and grade data, see pages 518-524

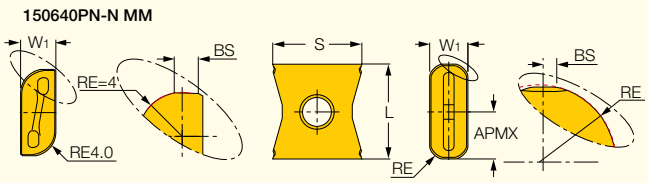
For tools, see pages: F90LN-N15 (201)

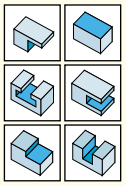
TANGMILL TANGENTIAL LINE

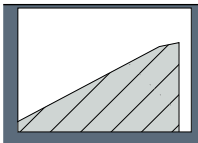
LNAT 1506..PN-N MM

Tangentially Clamped Precision Ground Inserts with Various Corner Radii for Corner Rounding









Designation	Dimensions W1	L	BS	S	RE	APMX	Tough ↔ Hard IC928	IC910	Recommended Machining Data ap (mm)	fz (mm/t)
LNAT 150616PN-N MM	6.00	15.00	1.39	13.88	1.60	7.00	●	●	4.00-8.00	0.08-0.15
LNAT 150625PN-N MM	6.00	15.00	0.60	13.88	2.50	7.00	●	●	4.00-8.00	0.08-0.15
LNAT 150632PN-N MM	6.00	15.00	0.53	13.88	3.20	7.00	●	●	4.00-8.00	0.08-0.15
LNAT 150640PN-N MM (1)	6.00	14.98	0.00	13.96	4.00	7.00	●		4.00-8.00	0.08-0.15

• Precision ground inserts • Various corner radii for square shoulder applications requiring larger corner radii • For cutting speed recommendations, see pages 518-524

(1) Insert has 2 R.H. and 2 L.H. cutting edges.

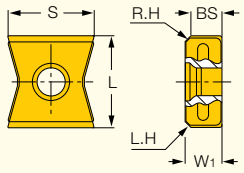
For tools, see pages: F90LN-N15 (201) • SSB-LN15-R/L (350)

TANGMILL TANGENTIAL LINE

LNAT 1506-W

Tangentially Clamped Wiper Inserts







Designation	Dimensions W1	L	S	BS	Tough ↔ Hard IC908	IC910	IC4100	Recommended Machining Data ap (mm)	fz (mm/t)
LNAT 1506PN-W	5.97	15.18	13.85	4.80	●	●	●	0.50-2.00	0.10-0.15

• Wiper insert with two right- and two left-hand wipers for 90° lead angle in F90LN cutters • When feed per revolution is less than 4 mm, it is recommended to use only one wiper insert. For feed per revolution greater than 4 mm, use two wiper inserts • For cutting speed recommendations, see pages 518-524

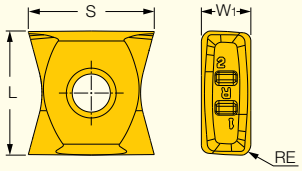
For tools, see pages: F90LN-N15 (201) • SSB-LN15-R/L (350)

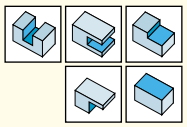
TANGMILL TANGENTIAL LINE

LNAT 1506-PM

Tangentially Clamped Inserts with 4 Cutting Edges for Slotting Cutters







Designation	Dimensions W1	L	S	RE	Tough ↔ Hard IC830	IC808	IC810	Recommended Machining Data fz (mm/t)
LNAT 150608-N-MM-PM	6.00	15.00	15.30	0.80	●			0.10-0.25
LNAT 150608-TN-PM	6.00	15.00	15.30	0.80	●	●		0.10-0.25
LNAT 150616-TN-PM	6.00	15.00	15.30	1.60	●		●	0.10-0.25
LNAT 150625-TN-PM	6.00	15.00	15.30	2.50	●		●	0.10-0.25
LNAT 150640-TN-PM	6.00	15.00	15.30	4.00	●			0.10-0.25

• For cutting speed recommendations, see pages 518-524

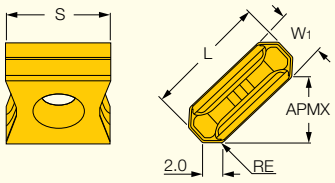
For tools, see pages: FDN-CAPM15 (339) • SDN-CAPM15 (347)

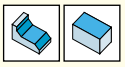
TANGMILL TANGENTIAL LINE

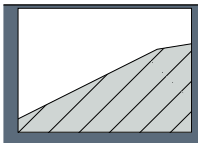
LNKX 150608AN-N PL

Tangentially Clamped Inserts with a Positive Rake Angle for Cast Iron









Designation	Dimensions W1	L	S	RE	APMX(1)	Tough ↔ Hard IC328	IC908	IC910	DT7150	Recommended Machining Data ap (mm)	fz (mm/t)
LNKX 150608AN-N PL	6.00	15.30	12.90	0.80	7.50	●	●	●	●	2.00-7.00	0.10-0.20

• Positive land (PL) leaves sharp edges without chipping on cast iron components • High shear rake for light machining of steel, stainless steel and cast iron • For cutting speed recommendations, see pages 518-524

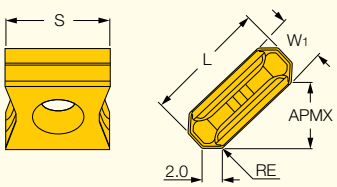
(1) D.O.C when the insert is on the cutter.

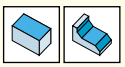
TANGMILL TANGENTIAL LINE

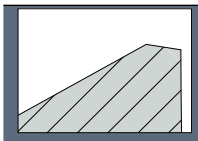
LNKX/LNMT 150608ANTN MM

Tangentially Clamped Inserts with a Negative Land and Reinforced Chipformer for Unfavorable Cutting Conditions









Designation	Dimensions W1	L	S	RE	APMX(1)	Tough ↔ Hard IC328	IC928	IC950	IC908	IC910	DT7150	IC4100	Recommended Machining Data ap (mm)	fz (mm/t)
LNKX 150608ANTN MM	6.00	15.30	12.90	0.80	7.50	●	●		●	●	●	●	2.00-7.00	0.30-0.40
LNMT 150608ANTN MM	6.00	15.30	12.90	0.80	7.50	●	●	●	●	●		●	2.00-7.00	0.30-0.40

• Molded chipformer with reinforced negative land for unfavorable cutting conditions • Enables higher feed rates • 4 R.H. and 4 L.H. cutting edges when used on F45LN... cutters • For cutting speed recommendations, see pages 518-524

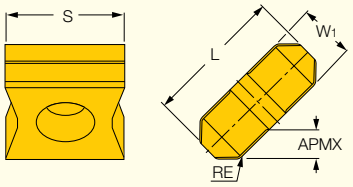
(1) D.O.C when the insert is on the cutter

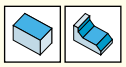
TANGMILL TANGENTIAL LINE

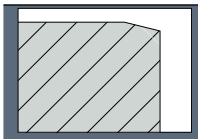
LNHW 1506 ANTN (ceramic)

Tangentially Clamped Ceramic Inserts for High Speed Machining of Cast Iron









Designation	Dimensions W1	L	S	RE	APMX	IS8	Recommended Machining Data ap (mm)	fz (mm/t)
LNHW 1506 ANTN	6.00	15.30	12.90	0.80	3.00	●	1.00-3.00	0.15-0.25

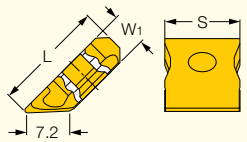
• Provides high surface finish • Feature 4 R.H. and 4 L.H. cutting edges when used on F45LN.. cutters • Important: Tightening torque 3.5-4 Nxm • For cutting speed recommendations, see pages 518-524

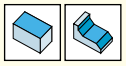
TANGMILL TANGENTIAL LINE

LNAT 1506AN-W

Tangentially Clamped Wiper Inserts for 45° Lead Angle on F45LN Cutters







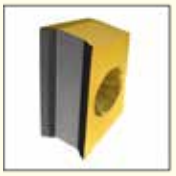
Designation	Dimensions L	S	W1	Tough ↔ Hard IC908	IC910	Recommended Machining Data ap (mm)	fz (mm/t)
LNAT 1506AN-W	19.33	12.90	5.98	●	●	0.50-2.00	0.10-0.15

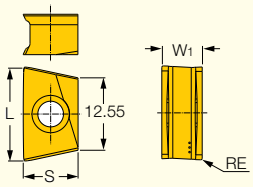
• The insert has one right- and one left-hand wiper • When feed per revolution is less than 7 mm, it is recommended to use only one wiper insert. When it is greater than 7 mm, use two wiper inserts. • For cutting speed recommendations, see pages 518-524

HELITANG

FIN LNAT 1607PN-R

Tangentially Clamped Peripherally Ground Inserts with 2 Positive Rake Cutting Edges for Finishing Applications







Designation	Dimensions W1	L	S	RE	Tough ↔ Hard IC830	IC808	Recommended Machining Data fz (mm/t)
FIN LNAT 1607 PN-R	7.00	16.10	9.50	0.30	●	●	0.08-0.15

• For cutting speed recommendations, see pages 518-524

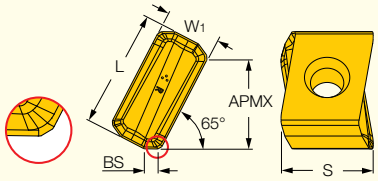
For tools, see pages: FIN LNK-BT (235) • FIN LNK-INT (235)

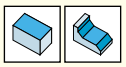
HELITANG T465 LINE

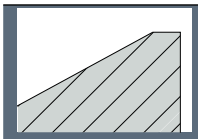
T465 LNHT/LNMT 2212

Tangentially Clamped Inserts with 4 Cutting Edges for 65° Cutters









Designation	Dimensions W1	L	S	APMX	BS	Tough ↔ Hard IC330	IC830	IC5400	IC810	IC5100	Recommended Machining Data ap (mm)	fz (mm/t)
T465 LNHT 2212-ZN-R (1)	12.00	25.39	19.80	19.00	2.50	●					5.00-15.00	0.12-0.35
T465 LNHT 2212-ZNTR	12.00	25.39	19.80	19.00	2.50		●	●	●	●	5.00-19.00	0.25-0.45
T465 LNMT 2212-ZNTR	12.00	25.39	19.80	19.00	2.50		●		●		5.00-19.00	0.25-0.45
T465 LNMT 2212ZNTR-CS (2)	12.00	25.39	19.80	19.00	2.50		●	●			5.00-19.00	0.25-0.35

• LNMT - utility inserts, LNHT-precision inserts • For cutting speed recommendations, see pages 518-524

(1) For stainless steel and high temperature alloys

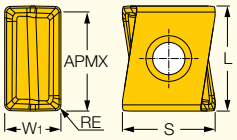
(2) Chip splitting insert

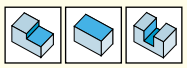
HELITANG T490 LINE

T490 LNMT/LNHT 2212

Tangentially Clamped Inserts with 4 Helical Cutting Edges







Designation	Dimensions W1	L	APMX	RE	S	Tough ↔ Hard IC330	IC830	IC5400	Recommended Machining Data ap (mm)	fz (mm/t)
T490 LNHT 2212-PNTR	12.00	22.40	21.00	1.20	19.80	●	●	●	3.00-21.00	0.15-0.35
T490 LNMT 2212-PNTR	12.00	22.40	21.00	1.20	19.80		●		3.00-21.00	0.15-0.35

• LNMT-utility inserts, LNHT-precision inserts • For cutting speed recommendations, see pages 518-524

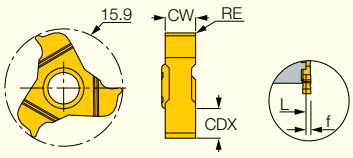
For tools, see pages: T490 FLN-22ST (209)

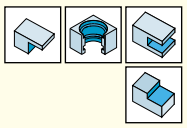
CHAMSLIT

TRI

Triple-Edged Groove Milling Inserts







Designation	Dimensions CW	RE	CDX(1)	f	IC908	Recommended Machining Data fz (mm/t)
TRI 16RK-1.2-0.05	1.20	0.05	4.60	0.50	●	0.02-0.08
TRI 16RK-1.4-0.1	1.40	0.10	4.80	0.50	●	0.02-0.10
TRI 16RK-1.5-0.1	1.50	0.10	4.80	0.50	●	0.03-0.12
TRI 16RK-1.7-0.1	1.70	0.10	4.80	0.50	●	0.03-0.12
TRI 16RK-1.95-0.15	1.95	0.15	4.80	0.50	●	0.04-0.15
TRI 16RK-2.0-0.2	2.00	0.20	4.80	0.50	●	0.04-0.15
TRI 16RK-2.25-0.15	2.25	0.15	4.80	0.75	●	0.04-0.15
TRI 16RK-2.75-0.15	2.75	0.15	4.80	1.39	●	0.04-0.20
TRI 16RK-3.0-0.2	3.00	0.20	4.80	1.39	●	0.04-0.20
TRI 16RK-3.25-0.15	3.25	0.15	4.80	1.39	●	0.04-0.20
TRI 16RK-4.0-0.2	4.00	0.20	4.80	2.43	●	0.05-0.25
TRI 16RK-4.25-0.15	4.25	0.15	4.80	0.95	●	0.05-0.25
TRI 16RK-5.0-0.2	5.00	0.20	4.80	2.15	●	0.05-0.30
TRI 16RK-5.25-0.15	5.25	0.15	4.80	2.15	●	0.05-0.30
TRI 16RK-6.0-0.2	6.00	0.20	4.80	3.15	●	0.05-0.30

• Inserts in width range of 6.0 to 6.5 mm can be supplied on request • For cutting speed recommendations, see pags 518-524

(1) Cutting depth maximum

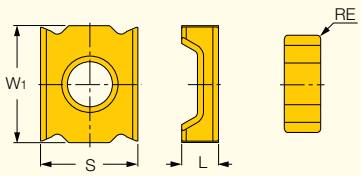
For tools, see pages: TRIB (321) • TRIB-SM (322)

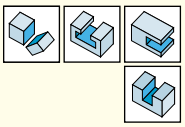
MINI-TANGSLOT

LNET 08

Tangentially Clamped Inserts with 4 Cutting Edges for Slotting and Grooving Cutters







Designation	Dimensions INSL	S	L	RE	Tough ↔ Hard IC928	IC910	Recommended Machining Data f_z (mm/t)
LNET 081804-TN-N	8.40	6.85	1.80	0.40	•	•	0.08-0.12
LNET 082604-TN-N	8.40	6.85	2.60	0.40	•	•	0.08-0.12
LNET 082804-TN-N	8.40	6.85	2.80	0.40	•		0.08-0.12
LNET 083004-TN-N	8.40	6.85	3.00	0.40	•	•	0.08-0.12
LNET 083204-TN-N	8.40	6.85	3.20	0.40	•		0.08-0.12
LNET 083504-TN-N	8.40	6.85	3.50	0.40	•	•	0.08-0.12
LNET 083704-TN-N	8.40	6.85	3.70	0.40	•		0.08-0.12
LNET 084004-TN-N	8.40	6.85	4.00	0.40	•		0.08-0.12
LNET 084204-TN-N	8.40	6.85	4.20	0.40	•		0.08-0.12
LNET 084504-TN-N	8.40	6.85	4.50	0.40	•	•	0.08-0.12

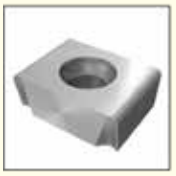
• The insert has 2 right- and 2 left-hand cutting edges • For cutting speed recommendations, see pages 518-524

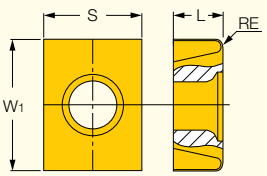
For tools, see pages: ETS-LN08 (326) • ETS-LN08-M (324) • ETS-LN08-MM (325) • FDN-LN08 (334) • SDN-LN08 (342)

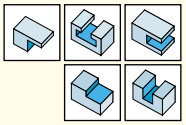
TANGSLOT

LNET 12-TN

Tangentially Clamped Inserts with 4 Cutting Edges for Slotting Cutters







Designation	Dimensions L	RE	S	W_1	Tough ↔ Hard IC328	IC928	IC910	Recommended Machining Data f_z (mm/t)
LNET 123504-TN	3.50	0.40	9.52	12.70	•	•	•	0.06-0.15
LNET 123508-TN	3.50	0.80	9.52	12.70		•	•	0.06-0.15
LNET 124004-TN	4.00	0.40	9.52	12.70		•	•	0.06-0.15
LNET 124008-TN	4.00	0.80	9.52	12.70		•	•	0.06-0.15
LNET 124504-TN	4.50	0.40	9.52	12.70	•	•	•	0.06-0.15
LNET 124508-TN	4.50	0.80	9.52	12.70	•	•	•	0.06-0.15
LNET 124804-TN	4.76	0.40	9.52	12.70	•	•	•	0.06-0.15
LNET 124808-TN	4.76	0.80	9.52	12.70		•		0.06-0.15
LNET 125004-TN	5.00	0.40	9.52	12.70		•	•	0.06-0.15
LNET 125008-TN	5.00	0.80	9.52	12.70		•	•	0.06-0.15
LNET 125504-TN	5.50	0.40	9.52	12.70		•	•	0.06-0.15
LNET 125508-TN	5.50	0.80	9.52	12.70		•	•	0.06-0.15
LNET 125516-TN	5.50	1.60	9.52	12.70	•		•	0.06-0.15
LNET 125708-TN	5.75	0.80	9.52	12.70		•	•	0.06-0.15
LNET 126504-TN	6.50	0.40	9.52	12.70			•	0.06-0.15
LNET 126508-TN	6.50	0.80	9.52	12.70			•	0.06-0.15
LNET 127704-TN	7.70	0.40	9.52	12.70			•	0.06-0.15
LNET 127708-TN	7.70	0.80	9.52	12.70			•	0.06-0.15

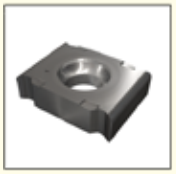
• For cutting speed recommendations, see pages 518-524

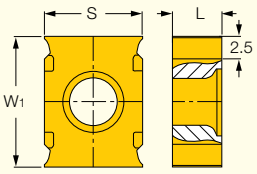
For tools, see pages: FDN-CALN12 (337) • FDN-LN12 (335) • SDN-CALN12 (344) • SDN-LN12 (343)

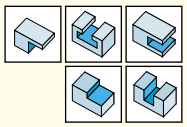
TANGSLOT

LNET 12-TN-MM

Tangentially Clamped Inserts with 4 Cutting Edges for Milling Deep and Long Steel Slots







Designation	Dimensions L	S	INSL	IC928	Recommended Machining Data f_z (mm/t)
LNET 123508-TN-MM	3.50	9.52	12.70	●	0.06-0.15
LNET 124008-TN-MM	4.00	9.52	12.70	●	0.06-0.15
LNET 124508-TN-MM	4.50	9.52	12.70	●	0.06-0.15
LNET 124808-TN-MM	4.77	9.52	12.70	●	0.06-0.15
LNET 125008-TN-MM	5.00	9.52	12.70	●	0.06-0.15
LNET 125508-TN-MM	5.50	9.52	12.70	●	0.06-0.15
LNET 126504-TN-MM	6.50	9.52	12.70	●	0.06-0.15
LNET 126508-TN-MM	6.50	9.52	12.70	●	0.06-0.15
LNET 127704-TN-MM	7.70	9.52	12.70	●	0.06-0.15
LNET 127708-TN-MM	7.70	9.52	12.70	●	0.06-0.15

• Excellent chip evacuation • For cutting speed recommendations, see pages 518-524

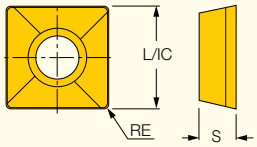
For tools, see pages: FDN-CALN12 (337) • FDN-LN12 (335) • SDN-CALN12 (344) • SDN-LN12 (343)

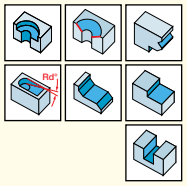
HELiQUAD

SOMT-HQ

Square Milling Inserts for General Use



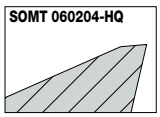


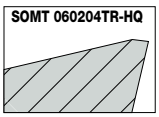


Designation	Dimensions L	S	RE	Tough ↔ Hard IC28	IC328	IC928	IC250	IC950	IC908	IC30N	IC910	Recommended Machining Data a_p (mm)	f_z (mm/t)
SOMT 060204-HQ	6.16	2.56	0.40	●	●	●	●	●	●			2.00-4.00	0.07-0.10
SOMT 060204TR-HQ	6.16	2.56	0.40							●	●	2.00-4.00	0.08-0.12

• For cutting speed recommendations, see pages 518-524

For tools, see pages: E45X (34) • E90X (13) • E90XC (32)



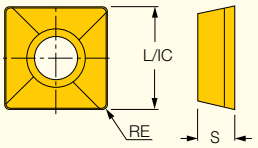


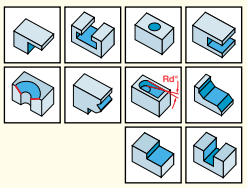
QUAD2000

QOMT-HQ

Insert with 4 Right- or Left-Hand Cutting Edges for General Use







Designation	Dimensions L	S	RE	Tough ↔ Hard IC328	IC928	IC950	IC910	Recommended Machining Data a_p (mm)	f_z (mm/t)
QOMT 060208TN-HQ	6.16	2.56	0.80	●	●	●	●	2.00-4.00	0.08-0.12

• For cutting speed recommendations, see pages 518-524

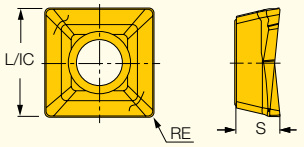
For tools, see pages: E45X (34) • E90X (13) • ETS (330) • FDN (331) • FDN-CF4 (336) • SDN (341)

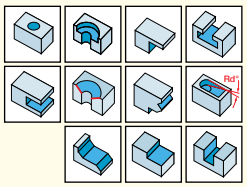
HELiQUAD

XOMT-HQ

Square Inserts for Milling, Drilling and Boring with 2 Right- and 2 Left-Hand Cutting Edges for General Use



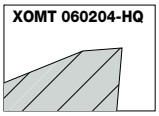


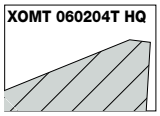


Designation	Dimensions L	S	RE	Tough ↔ Hard IC28	IC328	IC928	IC250	IC950	IC908	IC910	Recommended Machining Data a_p (mm)	f_z (mm/t)
XOMT 060204-HQ	6.16	2.56	0.40	●	●	●	●	●	●		2.00-4.00	0.07-0.10
XOMT 060204T-HQ	6.16	2.56	0.40							●	2.00-4.00	0.10-0.15

• For cutting speed recommendations, see pages 518-524

For tools, see pages: E45X (34) • E90X (13) • E90XC (32) • ETS (330) • FDN (331) • FDN-CF4 (336) • SDN (341)



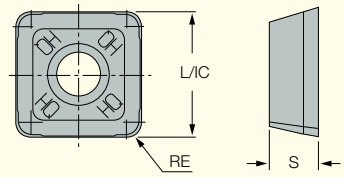


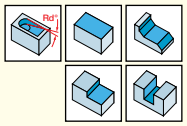
QUAD2000

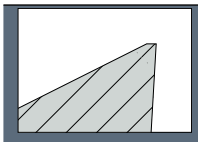
QPMR 1004-HQ-M

Super Positive Square Milling Inserts for Machining Aluminum, Stainless Steel and High Temperature Alloys









Designation	Dimensions L	S	RE	Tough ↔ Hard IC28	IC330	IC328	IC830	IC928	Recommended Machining Data a_p (mm)	f_z (mm/t)
QPMR 100404PDN-HQ-M	10.35	4.48	0.40	●	●	●	●	●	3.00-8.00	0.08-0.15

• For cutting speed recommendations, see pages 518-524

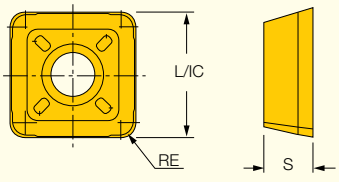
For tools, see pages: E90SP (19) • F90SP-10 (191)

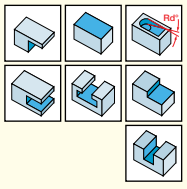
QUAD2000

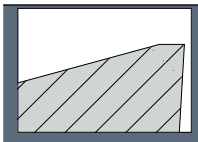
QPMT 100408PDTN

Square Inserts with 4 Right- or Left-Hand Cutting Edges for General Use









Designation	Dimensions L	S	RE	Tough ↔ Hard IC330	IC328	IC830	IC928	IC5400	IC950	IC810	IC910	Recommended Machining Data a_p (mm)	f_z (mm/t)
QPMT 100408PDTN-M	10.35	4.12	0.70	●	●	●	●	●	●	●	●	3.00-8.00	0.08-0.15

• For cutting speed recommendations, see pages 518-524

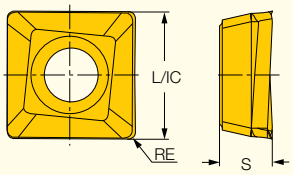
For tools, see pages: E90SP (19) • F90SP-10 (191) • FDN (331) • FST (349) • SDN (341) • SPK (235) • SSB (350)

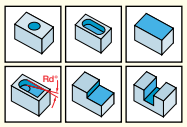
HELIQUAD

SPMT-HQ

Square Positive Inserts for Right-Hand Tools for General Use



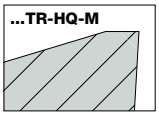


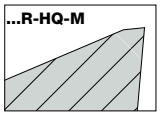


Designation	Dimensions L	S	RE	Tough ↔ Hard IC330	IC328	IC830	IC928	IC5400	IC950	IC808	IC810	IC910	DT7150	IC5100	Recommended Machining Data a_p (mm)	f_z (mm/t)
SPMT 100404R-HQ-M	10.20	4.23	0.40	●	●	●	●				●	●			4.00-8.00	0.08-0.15
SPMT 100408R-HQ-M	10.20	4.23	0.60	●	●	●	●		●		●	●			4.00-8.00	0.08-0.15
SPMT 100408TR-HQ-M	10.20	4.23	0.80	●		●		●	●	●	●		●	●	4.00-8.00	0.10-0.20
SPMT 100416R-HQ-M	10.20	4.23	1.60		●	●									4.00-8.00	0.10-0.20

• For cutting speed recommendations, see pages 518-524

For tools, see pages: E90SP (19) • F90SP-10 (191) • SPK (235) • SSB (350)



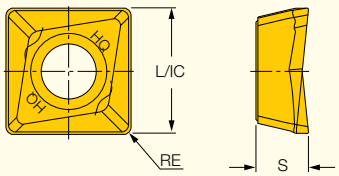


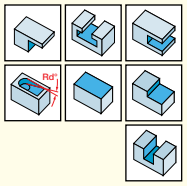
HELIQUAD

XPMT-HQ

Square Inserts with 2 Right- or Left-Hand Cutting Edges for General Use



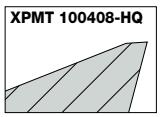


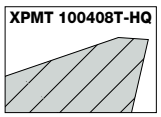


Designation	Dimensions L	S	RE	Tough ↔ Hard IC28	IC328	IC928	IC950	IC910	Recommended Machining Data a_p (mm)	f_z (mm/t)
XPMT 100408-HQ	10.20	4.12	0.60	●	●	●			4.00-8.00	0.07-0.12
XPMT 100408T-HQ	10.20	4.12	0.60				●	●	4.00-8.00	0.08-0.15

• For cutting speed recommendations, see pages 518-524

For tools, see pages: E90AC (32) • E90SP (19) • ETS (330) • F90SP-10 (191) • FDN (331) • FST (349) • SDN (341) • SPK (235) • SSB (350)



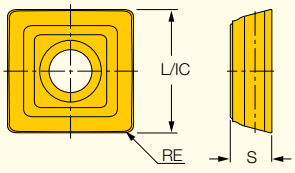


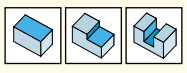
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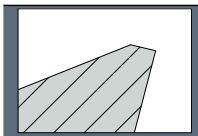
SDMT-PDN-RM

General Use Inserts with Four Helical Cutting Edges for 90° Shoulder Milling









Designation	Dimensions L	S	RE	Tough ↔ Hard IC328	IC830	IC928	IC810	IC910	Recommended Machining Data a_p (mm)	f_z (mm/t)
SDMT 1205PDN-RM-M	12.70	5.00	0.80	●	●	●	●	●	4.00-10.00	0.08-0.15

• For cutting speed recommendations, see pages 518-524

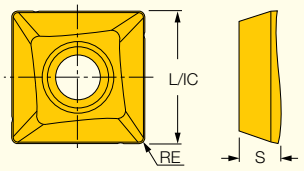
For tools, see pages: F90SD-12 (197)

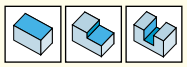
HELIQUAD

SDMR-HQ

Super Positive Square Insert for Aluminum, Stainless Steel and High Temperature Alloys







Designation	Dimensions L	S	RE	Tough ↔ Hard IC28	IC330	IC328	IC840	IC830	IC928	Recommended Machining Data a_p (mm)	f_z (mm/t)
SDMR 1205PDR-HQ-M	12.70	5.10	1.00	●	●	●	●	●	●	4.00-10.00	0.07-0.12

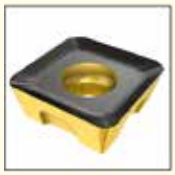
• For cutting speed recommendations, see pages 518-524

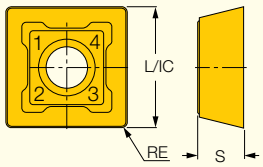
For tools, see pages: F90SD-12 (197)

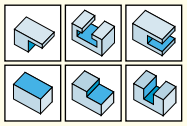
HELIQUAD

QDCT-PDN

Precision Ground Inserts with 4 Right- or Left-Hand Cutting Edges for General Use







Designation	Dimensions L	S	RE	Tough ↔ Hard IC330	IC328	Recommended Machining Data a_p (mm)	f_z (mm/t)
QDCT 120508-PDN	12.70	4.92	0.80	●		4.00-10.00	0.08-0.12
QDCT 120516-PDN	12.70	4.92	1.60		●	4.00-10.00	0.08-0.12
QDCT 120524-PDN	12.70	4.92	2.40		●	4.00-10.00	0.08-0.12
QDCT 120532-PDN	12.70	4.92	3.20		●	4.00-10.00	0.08-0.12
QDCT 120508-PDN-F	12.70	4.92	0.80		●	4.00-10.00	0.08-0.12
QDCT 120516-PDN-F	12.70	4.92	1.60	●		4.00-10.00	0.08-0.12
QDCT 120524-PDN-F	12.70	4.92	2.40	●		4.00-10.00	0.08-0.12
QDCT 120532-PDN-F	12.70	4.92	3.20	●		4.00-10.00	0.08-0.12

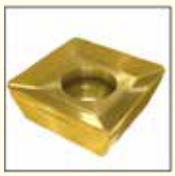
• Inserts with corner radii larger than 0.8 mm should be used only on the face of the SDK cutter • For cutting speed recommendations, see pages 518-524

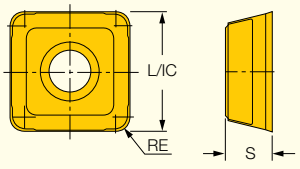
For tools, see pages: F90SD-12 (197) • FDN (331) • FST (349) • SDK-12-C/HP (244) • SDN (341) • SSB (350)

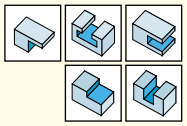
HELIQUAD

QDMT 1205PDN-RM

General Use Insert with 4 Right- or Left-Hand Cutting Edges







Designation	Dimensions L	S	RE	Tough ↔ Hard IC330	IC810	Recommended Machining Data f_z (mm/t)
QDMT 1205PDN-RM	12.70	5.00	0.80	●	●	0.10-0.18

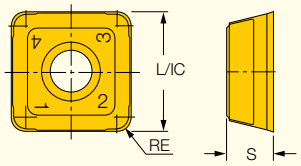
For tools, see pages: F90SD-12 (197) • FDN (331) • FST (349) • SDN (341) • SSB (350)

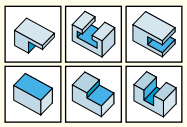
HELiQUAD

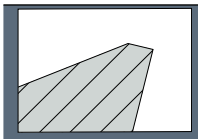
QDMT 1205..PDTN-M

Inserts with 4 Right- or Left-Hand Cutting Edges for General Use









Designation	Dimensions L	S	RE	Tough ↔ Hard IC330	IC328	IC830	IC928	IC950	IC808	IC908	IC810	IC910	Recommended Machining Data a_p (mm)	f_z (mm/t)
QDMT 1205PDTN-M	12.70	5.00	0.80	●	●	●	●		●	●	●	●	4.00-10.00	0.08-0.15
QDMT 120516PDTN-M	12.70	5.00	1.60	●	●	●	●	●		●		●	4.00-10.00	0.08-0.15
QDMT 120520PDTN-M	12.70	5.00	2.00	●	●	●	●	●	●	●	●	●	4.00-10.00	0.08-0.15
QDMT 120524PDTN-M	12.70	5.00	2.40	●	●	●	●	●		●		●	4.00-10.00	0.08-0.15
QDMT 120532PDTN-M	12.70	5.00	3.20	●	●	●	●			●	●	●	4.00-10.00	0.08-0.15

• Inserts with corner radii larger than 0.8 mm should be used only on the face of the SDK cutter • For cutting speed recommendations, see pages 518-524

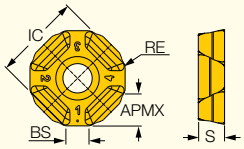
For tools, see pages: F90SD-12 (197) • FDN (331) • FST (349) • SDK-12-C/HP (244) • SDN (341) • SSB (350)

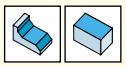
DOVEIQMILL 845 LINE

IQ845 SYHU-05

Square Inserts with 8 Cutting Edges







Designation	Dimensions APMX	BS	RE	IC	S	Tough ↔ Hard IC330	IC830	IC5400	IC808	IC810	IC5100	Recommended Machining Data a_p (mm)	f_z (mm/t)
IQ845 SYHU 0503ADN-ML (1)	2.60	2.00	0.50	8.30	3.00	●	●					0.10-2.60	0.08-0.25
IQ845 SYHU 0503ADN-MM (2)	2.60	2.00	0.50	8.30	3.00		●	●	●			0.10-2.60	0.08-0.25
IQ845 SYHU 0503ADTN (3)	2.60	2.00	0.50	8.30	3.00					●	●	0.10-2.60	0.08-0.25

• For cutting recommendations, see pages 518-524

(1) For soft non-alloy and low-alloy steel

(2) For general applications

(3) For cast iron

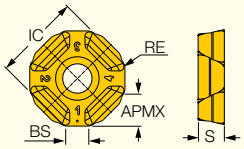
For tools, see pages: IQ845 ESY-R05 (214) • IQ845 FSY-R05 (214)

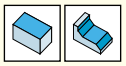
DOVEIQMILL 845 LINE

IQ845 SYHU-07

Square Inserts with 8 Cutting Edges







Designation	Dimensions APMX	BS	RE	IC	S	Tough ↔ Hard IC28	IC330	IC840	IC830	IC5400	IC5500	IC808	IC810	IC5100	Recommended Machining Data a_p (mm)	f_z (mm/t)
IQ845 SYHU 0704ADN (1)	4.60	3.40	0.80	13.80	4.20		●	●	●		●				1.00-4.00	0.10-0.20
IQ845 SYHU 070400ADN (1)	4.60	3.40	-	13.80	4.20				●						0.20-2.00	0.10-0.20
IQ845 SYHU 0704ADN-MM (2)	4.60	3.40	0.80	13.80	4.20				●	●		●			1.00-4.00	0.15-0.30
IQ845 SYHU 070400N-MM (2)	4.60	3.40	-	13.80	4.20				●						0.20-2.00	0.15-0.30
IQ845 SYHU 0704ADTN (3)	4.60	3.40	0.80	13.80	4.20								●	●	1.00-4.00	0.15-0.30
IQ845 SYHU 070400ADTN (3)	4.60	3.40	-	13.80	4.20								●	●	0.20-2.00	0.15-0.30
IQ845 SYHU 0704ADN-P (4)	4.60	3.40	0.80	13.80	4.20	●									1.00-4.00	0.10-0.25

• For cutting recommendations, see pages 518-524

(1) For stainless steel and high temperature alloys

(2) For general applications

(3) For cast iron

(4) For aluminum

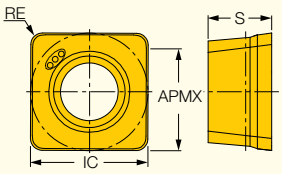
For tools, see pages: IQ845 FSY-C#-R07 (221) • IQ845 FSY-R07 (221)

HELI4MILL HM490 LINE

SOMT/CT 0402

Square Milling Inserts
for General Use





Designation	Dimensions APMX	RE	IC	S	Tough ↔ Hard IC830	IC808	IC810	Recommended Machining Data a_p (mm)	f_z (mm/t)
SOCT 040204 PNR	3.50	0.40	4.07	2.20	●	●		0.50-3.50	0.05-0.10
SOMT 040204 PNTR	3.50	0.40	4.07	2.20	●	●	●	0.50-3.50	0.05-0.10

• For cutting speed recommendations, see pages 518-524

For tools, see pages: E90SO-04 (9) • E90SO-MM-04 (9)

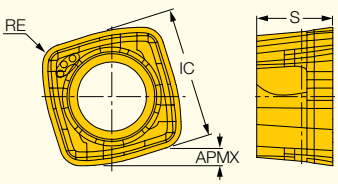
HELI4MILL HM490 LINE

FEEDMILL

SOMT 0402-FF

Square Milling Inserts
for Fast Feed Milling





Designation	Dimensions IC	APMX	RE	Rg(1)	S	IC830	Recommended Machining Data a_p (mm)	f_z (mm/t)
SOMT 040208 PNR-FF	4.08	0.50	0.80	1.10	2.20	●	0.20-0.50	0.10-0.50

• When mounting this insert in a HELI4MILL tool for fast feed milling, the tool pockets should be modified by a corner rounding of 2 mm radius • For cutting speed recommendations, see pages 518-524

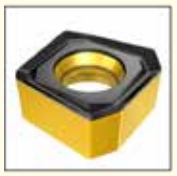
(1) Radius for programming

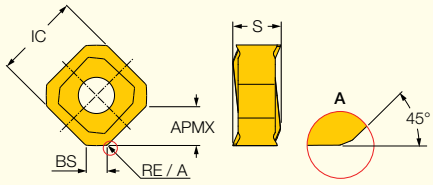
For tools, see pages: E90SO-04 (9) • E90SO-MM-04 (9)

HELIDO 800 LINE

S845 SNMU/SNHU-13

Square Double-Sided Inserts
with 8 Cutting Edges





Designation	Dimensions L	APMX	S	BS	RE	KCH	Tough ↔ Hard IC330	IC830	IC5400	IC5500	IC808	IC810	DT7150	IC5100	Recommended Machining Data a_p (mm)	f_z (mm/t)
S845 SNMU 1305ANTR (1)	13.00	6.00	6.20	3.00	0.80	-						●	●	●	2.00-6.00	0.20-0.40
S845 SNMU 1305ANR-MM	13.00	6.00	6.20	3.00	0.80	-	●	●	●		●				2.00-6.00	0.20-0.40
S845 SNMU 1305ANR-RM	13.00	6.00	6.12	3.00	1.20	-						●			2.00-6.00	0.20-0.40
S845 SNHU 1305ANTR (1)	13.00	6.00	6.20	3.00	0.80	-						●			2.00-6.00	0.15-0.30
S845 SNHU 1305ANR-MM	13.00	6.00	6.20	3.00	0.80	-	●	●		●	●				2.00-6.00	0.15-0.30
S845 SNHU 1305ANR-PL (2)	13.00	6.00	6.00	2.20	-	45.0 (3)	●	●							2.00-6.00	0.15-0.30

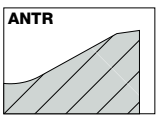
• S845 SNHU - Precision ground • S845 SNMU - Utility • For cutting speed recommendations, see pages 518-524

(1) For cast iron

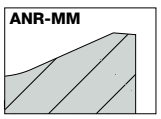
(2) For high temperature alloys and stainless steel

(3) See drawing A

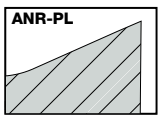
For tools, see pages: FF SOF (303) • SOE45 8/16 (34) • SOF45 (217)



For cast iron



For general applications

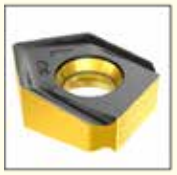


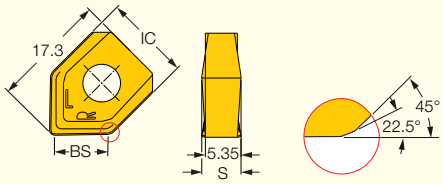
For stainless steel and
high temperature alloys

HELIDO 800 LINE

S845 SNHU 1305-W

Double-Sided Wiper Inserts with 4 Cutting Edges





Designation	Dimensions IC	S	BS	Tough ↔ Hard IC808	IC810	Recommended Machining Data a_p (mm)	f_z (mm/t)
S845 SNHU 1305AN-N-W	13.00	5.90	8.10	●	●	0.80-3.00	0.10-0.20

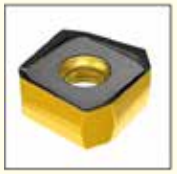
• Wiper insert with 4 cutting edges: 2 right- and 2 left-hand to be used with S845 SNMU/SNHU 13.. inserts • For cutting speed recommendations, see pages 518-524

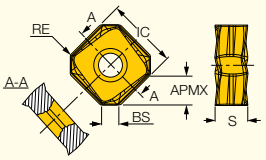
For tools, see pages: SOE45 8/16 (34) • SOF45 (217)

HELIDO 845 LINE

S845 SXMU/SXCU-16

Square Thick Inserts with 8 Helical Right-Hand Cutting Edges





Designation	Dimensions L	S	BS	RE	APMX	Tough ↔ Hard IC330	IC328	IC830	IC928	IC5400	IC808	IC908	IC810	IC910	DT7150	IC5100	IC4100	Recommended Machining Data a_p (mm)	f_z (mm/t)
S845 SXMU 1606ADTR-MM	16.35	7.45	2.84	0.80	7.15		●	●	●	●	●	●	●	●	●	●	●	3.00-7.00	0.30-0.50
S845 SXMU 1606ADTR-RM	16.35	7.45	2.84	0.80	7.15								●		●			3.00-7.00	0.30-0.50
S845 SXCU 160608AD-RMM	16.35	7.45	2.84	0.80	7.15	●		●			●							3.00-7.00	0.20-0.35

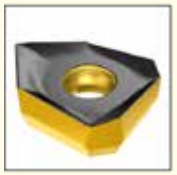
• When a wiper insert is being used, recommended ap=0.8-3.0 mm, fz=0.1-0.25 mm/t . • For cutting speed recommendations, see pages 518-524

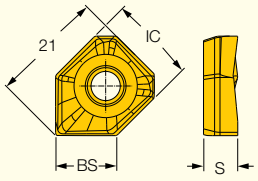
For tools, see pages: S845 F45SX-16 (222)

HELIDO 845 LINE

S845 SXHU 1606-W

HELIDO Wiper Insert with a Single Cutting Edge





Designation	Dimensions IC	S	BS	APMX	IC808	Recommended Machining Data a_p (mm)	f_z (mm/t)
S845 SXHU 1606AD-R-W	16.20	6.44	10.00	3.00	●	0.80-3.00	0.20-0.35

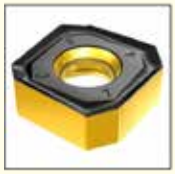
• When a wiper insert is being used, recommended ap=0.8-3.0 mm, fz=0.1-0.25 mm/t • For cutting speed recommendations, see pages 518-524

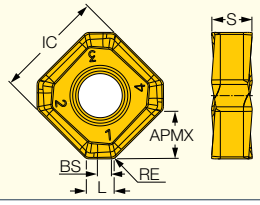
For tools, see pages: S845 F45SX-16 (222)

HELIDO 800 HD LINE

S845 SNMU/SNHU 1806

Square Inserts with 8 Helical Right-Hand Cutting Edges





Designation	Dimensions IC	BS	CW	RE	APMX	S	Tough ↔ Hard IC330	IC845	IC830	IC5400	IC808	IC810	IC5100	Recommended Machining Data a_p (mm)	f_z (mm/t)
S845 SNMU 1806ANR	18.80	2.40	3.50	1.00	8.00	7.00						●		1.50-8.00	0.15-0.30
S845 SNMU 1806ANR-MM	18.80	2.40	3.50	1.00	8.00	7.00	●	●	●	●	●			1.50-8.00	0.15-0.30
S845 SNMU 1806ANR-RM	18.80	2.30	3.50	1.60	8.00	7.00						●	●	1.50-8.00	0.20-0.40
S845 SNHU 1806ANR	18.80	2.40	3.50	1.00	8.00	7.00						●	●	1.50-8.00	0.15-0.30
S845 SNHU 1806ANR-MM	18.80	2.40	3.50	1.00	8.00	7.00			●					1.50-8.00	0.15-0.30

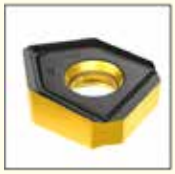
• For cutting speed recommendations, see pages 518-524

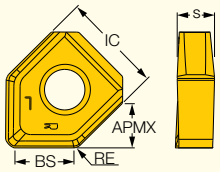
For tools, see pages: SOF45-R18 (224)

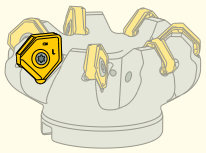
HELIDO 845 LINE

S845 SNHU 1806AN-N-W

Wiper Insert with 2 R.H. and 2 L.H. Cutting Edges







Designation	Dimensions IC	S	BS	APMX	IC810	Recommended Machining Data a_p (mm)	f_z (mm/t)
S845 SNHU 1806AN-N-W	18.80	7.00	10.00	8.00	●	0.50-2.00	0.10-0.25

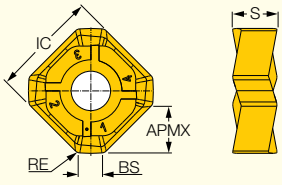
For tools, see pages: SOF45-R18 (224)

HELIDO 800 HD LINE

S845 SNMU 2608

Heavy Duty Square Thick Inserts with 8 Helical Right-Hand Cutting Edges





Designation	Dimensions IC	BS	RE	APMX	S	Tough ↔ Hard IC830	IC5400	IC808	IC810	Recommended Machining Data a_p (mm)	f_z (mm/t)
S845 SNMU 2608ANR-HL	26.30	2.60	1.60	11.00	10.90				●	2.00-11.00	0.25-0.40
S845 SNMU 2608ANR-RM	26.30	2.60	1.60	11.00	10.90	●	●	●		2.00-11.00	0.25-0.40

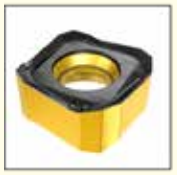
• For cutting speed recommendations, see pages 518-524

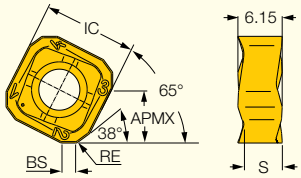
For tools, see pages: SOF45-26 (223) • SOF45WG-R26 (223)

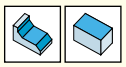
HELIDO 865 LINE

S865 SNMU 1305ZNTR

Square Double-Sided Inserts with 8 Cutting Edges



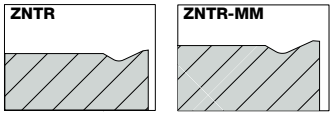




Designation	Dimensions L	S	APMX	BS	RE	Tough ↔ Hard IC330	IC830	IC5400	IC808	IC810	IC5100	Recommended Machining Data a_p (mm)	f_z (mm/t)
S865 SNMU 1305ZNTR	13.00	5.50	8.00	2.00	0.50					●	●	2.00-6.00	0.15-0.25
S865 SNMU 1305ZNTR-MM	13.00	5.50	8.00	2.00	0.50	●	●	●	●	●		2.00-6.00	0.15-0.25

• Recommended ap max on steel applications with coarse pitch cutters and on cast iron with fine pitch cutters may be increased up to 8 mm • For cutting speed recommendations, see pages 518-524

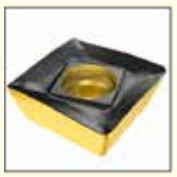
For tools, see pages: S865 FSN-13 (211)

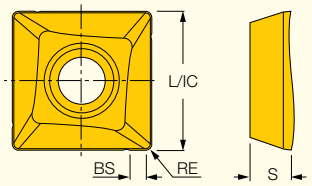


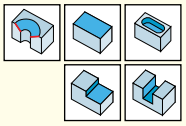
HELIQUAD

SDMT-PDR-HQ

General Use Inserts with Four Helical Cutting Edges for 90° Shoulder Milling









Designation	Dimensions L	S	RE	BS	Tough ↔ Hard IC28	IC330	IC328	IC845	IC830	IC928	IC5400	IC5500	IC808	IC908	IC810	IC910	IC5100	Recommended Machining Data ap (mm)	fz (mm/t)
SDMT 1205PDR-HQ-M	12.70	5.00	0.80	1.60	●	●	●	●	●	●	●	●	●	●	●	●	●	4.00-10.00	0.08-0.15

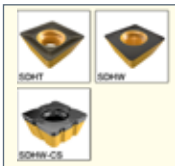
• For cutting speed recommendations, see pages 518-524

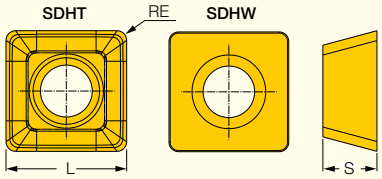
For tools, see pages: F90SD-12 (197)

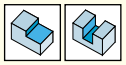
XQUAD EXTENDED FLUTE

SDHW/T 100408

Square Inserts for Machining Titanium, High Temperature Alloys and Stainless Steel







Designation	Dimensions L	S	RE	Tough ↔ Hard IC882	IC5820	IC380	Recommended Machining Data f_z (mm/t)
SDHT 100408-PDEN (1)	10.00	4.50	0.80	●	●		0.05-0.10
SDHW 100408-TN (2)	10.00	4.50	0.80	●	●	●	0.05-0.12
SDHW 100408-TN-CS (3)	10.00	4.50	0.80		●		0.05-0.12

• For cutting speed recommendations, see pages 518-524

(1) First choice for machining stainless steel

(2) First choice for machining titanium.

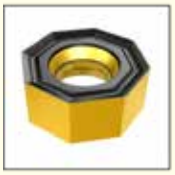
(3) Chip splitting cutting edge

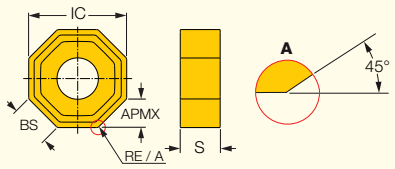
For tools, see pages: SDK-10-C/HP (243)

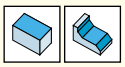
HELIDO 800 LINE

ONHU/ONMU-05

Octagonal Double-Sided Inserts with 16 Cutting Edges







Designation	Dimensions BS	IC	APMX	S	RE	Tough ↔ Hard IC330	IC830	IC5400	IC808	IC810	DT7150	IC5100	Recommended Machining Data a_p (mm)	f_z (mm/t)
ONHU 050500-PL (1)	4.50	13.00	3.50	5.08	-	•	•						1.50-3.00	0.15-0.20
ONHU 050500-R-HP	4.50	13.00	3.50	5.08	-		•						1.50-3.00	0.20-0.25
ONHU 050505-TN (2)	5.00	13.00	3.50	5.08	0.50	•	•		•	•			1.50-3.00	0.15-0.30
ONHU 050505-TN-MM (3)	5.00	13.00	3.50	5.08	0.50	•	•		•				1.50-3.00	0.20-0.30
ONMU 050505-TN (2)	5.00	13.00	3.50	5.08	0.50					•	•	•	1.50-3.00	0.20-0.30
ONMU 050505-TN-MM (3)	5.00	13.00	3.50	5.08	0.50	•	•	•	•				1.50-3.00	0.20-0.30

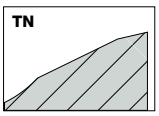
• ONHU - Precision ground • ONMU - Utility • For cutting speed recommendations, see pages 518-524

(1) For stainless steel and high temperature alloys

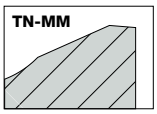
(2) For cast iron

(3) For general applications

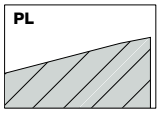
For tools, see pages: FF SOF (303) • SOE45 8/16 (34) • SOF45 (217)



For cast iron



For general applications



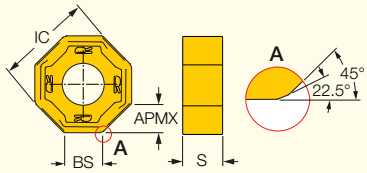
For stainless steel and high temperature alloys

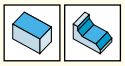
HELIDO 800 LINE

ONHU 0505-W

Octagonal Double-Sided Wiper Insert with 4 or 8 Cutting Edges







Designation	Dimensions IC	S	BS	Tough ↔ Hard IC808	IC810	Recommended Machining Data a_p (mm)	f_z (mm/t)
ONHU 0505AN-N-W (1)	13.00	4.90	4.70		•	0.50-2.00	0.15-0.30
ONHU 0505AN-R-W (2)	13.00	4.90	4.50	•	•	0.50-2.00	0.15-0.30

• To be used with ONMU/ONHU 05 inserts • For cutting speed recommendations, see pages 518-524

(1) Wiper insert with 4 right- and 4 left-hand cutting edges

(2) Wiper insert with 8 right-hand cutting edges

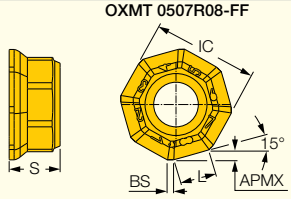
For tools, see pages: SOE45 8/16 (34) • SOF45 (217)

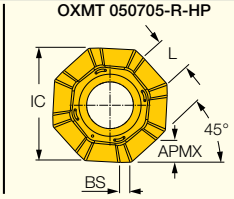
HELIDO FEEDMILL 800 LINE

OXMT 0507

Octagonal High Feed and 45° Inserts







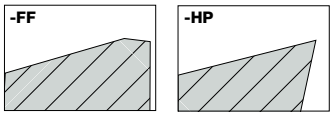
Designation	Dimensions APMX	IC	BS	S	L	Tough ↔ Hard IC830	IC808	Recommended Machining Data a_p (mm)	f_z (mm/t)
OXMT 0507R08-FF (1)	1.20	14.50	0.80	7.00	5.00		●	0.50-1.20	0.50-1.80
OXMT 050705-R-HP (2)	2.70	15.10	1.24	7.00	4.30	●		0.50-2.50	0.12-0.30

• To be used without a seat • For cutting speed recommendations, see pages 518-524

(1) For high feed milling

(2) 45° edges for austenitic stainless steel and high temperature alloys

For tools, see pages: FF SOF (303) • SOE45 8/16 (34) • SOF45 (217)

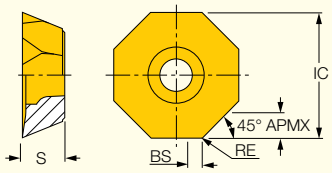


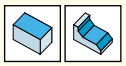
HELIOCTO

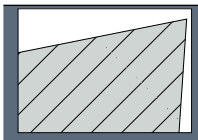
OECR

Octagonal Milling Inserts with Positive Rake and Sharp Cutting Edges









Designation	Dimensions OAL	APMX	BS	RE	S	Tough ↔ Hard IC28	IC830	IC928	IC808	Recommended Machining Data a_p (mm)	f_z (mm/t)
OECR 060405AER	14.45	3.70	1.60	0.50	4.90				●	1.00-3.70	0.12-0.20
OECR 060405AER-P (1)	14.45	3.70	1.60	0.50	4.90	●	●	●		1.00-3.70	0.08-0.20

• For cutting speed recommendations, see pages 518-524

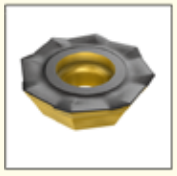
(1) Polished rake used for aluminum and titanium

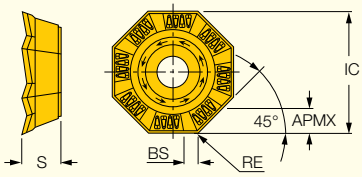
For tools, see pages: HOE-R06 (212) • HOF-R06 (213)

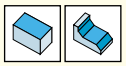
HELIOCTO

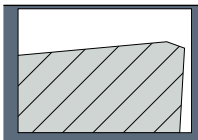
OEMT 060405

Octagonal Milling Inserts for General Use









Designation	Dimensions OAL	APMX	BS	RE	S	Tough ↔ Hard IC28	IC330	IC830	IC5400	IC808	IC810	IC5100	Recommended Machining Data a_p (mm)	f_z (mm/t)
OEMT 060405AER-76	14.27	2.50	1.60	0.50	4.74	●	●	●	●	●	●	●	1.00-2.45	0.15-0.25

• For cutting speed recommendations, see pages 518-524

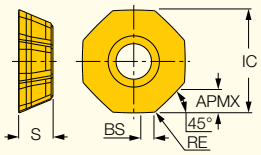
For tools, see pages: HOE-R06 (212) • HOF-R06 (213)

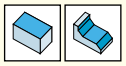
HELIOCTO

OEMW-AETN

Octagonal Flat Rake Inserts for Cast Iron







Designation	Dimensions OAL	APMX	BS	RE	S	Tough ↔ Hard IC928	IC808	Recommended Machining Data a_p (mm)	f_z (mm/t)
OEMW 060405-AETN	14.27	2.45	1.05	0.50	4.74	●	●	1.00-2.45	0.15-0.30

• For cutting speed recommendations, see pages 518-524

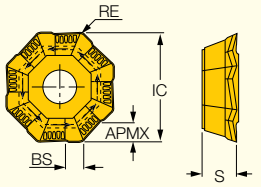
For tools, see pages: HOE-R06 (212) • HOF-R06 (213)

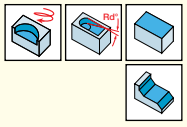
HELIOCTO

OFMT 07

Octagonal Milling Inserts for General Use







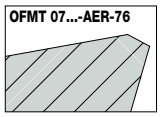
ECONOMICAL SOLUTION

Designation	Dimensions OAL	APMX	BS	RE	S	Tough ↔ Hard IC28	IC330	IC328	IC830	IC928	IC910	Recommended Machining Data a_p (mm)	f_z (mm/t)
OFMT 07T3-AER-76	17.80	3.40	1.75	0.60	4.55	●	●		●			1.00-3.00	0.15-0.25
OFMT 07T3-AEN	18.07	3.90	1.60	0.60	4.54			●		●		1.00-3.00	0.15-0.25
OFMT 07T3-AETN (1)	18.07	3.90	1.75	1.00	4.54					●	●	1.00-3.00	0.20-0.35

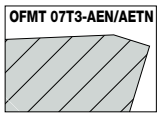
• For cutting speed recommendations, see pages 518-524

(1) Reinforced cutting edge

For tools, see pages: HOF-R07 (213)



For general use



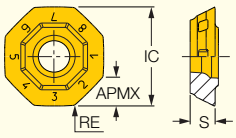
For general use
Reinforced cutting edge

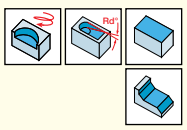
HELIOCTO

OFMW-AETN

Octagonal Milling Inserts for Heavy Duty Applications







ECONOMICAL SOLUTION

Designation	Dimensions OAL	APMX	RE	S	IC908	Recommended Machining Data a_p (mm)	f_z (mm/t)
OFMW 07T3-AETN	18.07	4.00	1.00	4.54	●	1.00-3.00	0.20-0.35

• For cutting speed recommendations, see pages 518-524

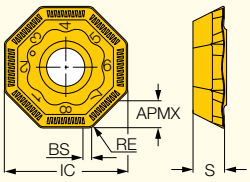
For tools, see pages: HOF-R07 (213)

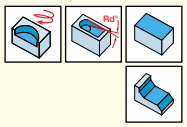
HELIOCTO

OFCR/OFCT-AEN/AETN

Octagonal Milling Inserts with Positive Rake and Sharp Cutting Edges







ECONOMICAL SOLUTION

Designation	Dimensions OAL	APMX	BS	RE	S	Tough ↔ Hard IC28	IC928	IC380	IC908	Recommended Machining Data a_p (mm)	f_z (mm/t)
OFCR 07T3-AEN (1)	17.80	4.60	1.60	0.60	4.35		●	●	●	1.00-3.00	0.10-0.20
OFCR 07T3-AEN-P (2)	17.80	4.60	1.60	0.60	4.35	●				1.00-3.00	0.10-0.20
OFCT 07T3 AETN-16 (3)	18.00	4.60	1.60	1.00	4.50				●	1.00-3.00	0.15-0.25

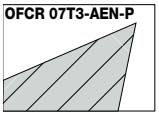
• For cutting speed recommendations, see pages 518-524

(1) For aluminum, titanium and stainless steel

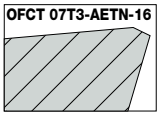
(2) For aluminum, titanium and stainless steel, polished rake.

(3) For hardened and molded steel.

For tools, see pages: HOF-R07 (213)



Aluminum, titanium and stainless steel



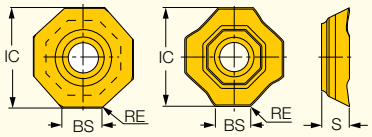
Hardened and molded steel

HELIOCTO

OFCR/OFCT-RW/AER (wiper)

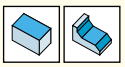
Octagonal Milling Inserts with Four Wiper Cutting Edges





OFCT 07T3-RW-16
OFCR 07T3-RW-P

OFCT 07T3-AER

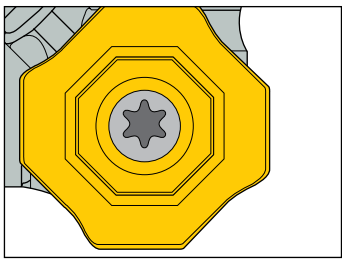


Designation	Dimensions OAL	BS	S	RE	Tough ↔ Hard IC28	IC328	IC908	IC910	Recommended Machining Data a_p (mm)	f_z (mm/t)
OFCT 07T3-RW-16	18.35	7.00	4.50	0.80			●		0.50-1.00	0.10-0.15
OFCR 07T3-RW-P	18.45	6.80	4.58	0.60	●				0.50-1.00	0.10-0.15
OFCT 07T3-AER	18.90	7.20	5.30	1.60		●		●	0.50-1.00	0.10-0.15

• For cutting speed recommendations, see pages 518-524

For tools, see pages: HOF-R07 (213)

A single wiper insert mounted on the HOF D..R07 cutter does the required job. The wiper insert protrudes less than 0.1 mm axially. Wiper inserts have only 4 cutting edges. There are 4 marks engraved on the wiper inserts. Pay attention when mounting the insert in the pocket that the marked cutting edges are parallel to the bottom of the cutter (see sketch).



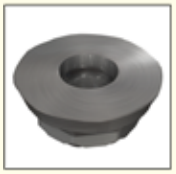
Maximum depth of cut when using the wiper insert is 2.5 mm. It is recommended to use wiper inserts in ap=0.5-1.0 mm to achieve the best results. The criterion for indexing the wiper insert should be the decreased quallity of the surface finish.

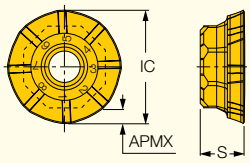
Recommended machining conditions for finishing operations:
Vc (finishing)= Vc (roughing) x 1.25 m/min fz=0.10-0.15 mm/t

HELIOCTO FEEDMILL

OFMW-FF

Inserts with 8 FEEDMILL Large Radii Segmented Cutting Edges for Fast Feed on HELIOCTO Cutters

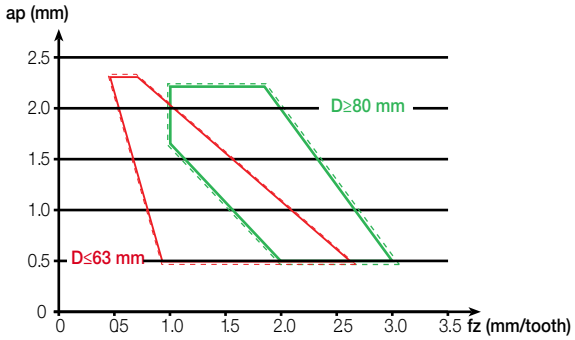




Designation	Dimensions APMX	OAL	S	Tough ↔ Hard IC928	IC908	IC910	Recommended Machining Data a_p (mm)	f_z (mm/t)
OFMW 0706R10-FF	2.20	20.40	8.00	●	●	●	1.00-2.20	0.40-1.50

• To be used without a seat • For cutting speed recommendations, see pages 518-524

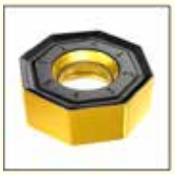
For tools, see pages: HOF-R07 (213)

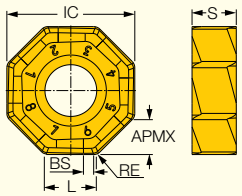


HELIDO 800 LINE

ONMU/ONHU 0706

Octagonal Double-Sided Inserts with 16 Cutting Edges





Designation	Dimensions IC	BS	L	APMX	S	RE	Tough ↔ Hard IC330	IC845	IC830	IC5400	IC808	IC810	IC5100	Recommended Machining Data a_p (mm)	f_z (mm/t)
ONHU 070600-PL-R	18.80	1.30	7.00	5.00	6.50	0.00			●					1.50-5.00	0.15-0.30
ONHU 070610-TL (1)	18.80	1.50	7.00	5.00	6.50	1.00						●		1.50-5.00	0.15-0.30
ONHU 070610-TR (2)	18.80	1.50	7.00	5.00	6.50	1.00						●	●	1.50-5.00	0.15-0.30
ONHU 070610-TR-MM	18.80	1.50	7.00	5.00	6.50	1.00			●					1.50-5.00	0.15-0.30
ONMU 070610 AR-HP	18.80	1.00	7.00	5.00	6.80	1.00	●		●					1.50-5.00	0.15-0.30
ONMU 070610-TR (2)	18.80	1.50	7.00	5.00	6.50	1.00						●	●	1.50-5.00	0.15-0.30
ONMU 070610-TR-MM	18.80	1.50	7.00	5.00	6.50	1.00	●	●	●	●	●			1.50-5.00	0.15-0.30
ONMU 070616-RM (3)	18.80	1.20	7.00	5.00	6.50	1.60						●	●	1.50-5.00	0.15-0.40

• For cutting speed recommendations, see pages 518-524

(1) For cast iron (left-hand)

(2) For cast iron

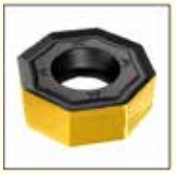
(3) Reinforced land for heavy machining

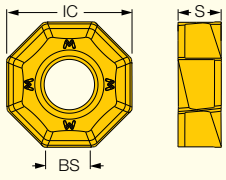
For tools, see pages: SOF45-R18 (224)

HELIDO 845 LINE

ONHU 0706AN-R-W

Octagonal Double-Sided Wiper Inserts with 8 Right-Hand Cutting Edges





Designation	Dimensions IC	S	BS	APMX	IC810	Recommended Machining Data a_p (mm)	f_z (mm/t)
ONHU 0706AN-R-W	18.80	6.50	6.80	5.00	●	0.50-2.00	0.10-0.20

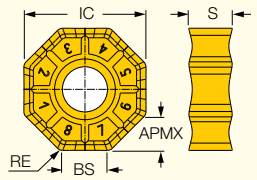
For tools, see pages: SOF45-R18 (224)

HELIDO 800 HD LINE

ONMU 1008

Heavy Duty Octagonal Double-Sided Inserts with 16 Cutting Edges





Designation	Dimensions IC	BS	APMX	S	RE	Tough ↔ Hard IC830	IC5400	IC808	IC810	IC5100	Recommended Machining Data a_p (mm)	f_z (mm/t)
ONMU 100816-N-HL	26.30	9.60	7.00	9.30	1.60				●	●	2.00-7.00	0.25-0.40
ONMU 100816-N-RM	26.30	9.60	7.00	9.30	1.60	●	●	●			2.00-7.00	0.25-0.40

• For cutting speed recommendations, see pages 518-524

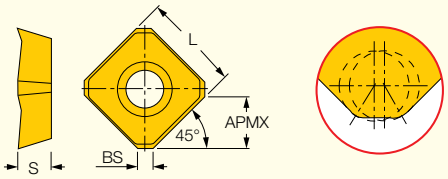
For tools, see pages: SOF45-26 (223) • SOF45WG-R26 (223)

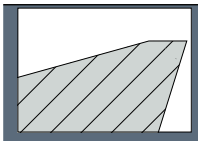
ISCARMILL

SEKT-AF-R

Super Positive Square Milling Inserts for 45° Finishing and Medium Machining of Soft Materials







Designation	Dimensions S	BS	APMX	L	Tough ↔ Hard IC28	IC328	IC928	IC250	IC950	IC30N	IC520M	Recommended Machining Data a_p (mm)	f_z (mm/t)
SEKT 1204AFR-HM	5.16	2.16	6.40	12.90	●	●	●	●	●	●	●	2.00-6.00	0.10-0.15

• For cutting speed recommendations, see pages 518-524

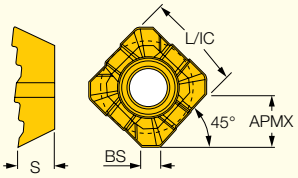
For tools, see pages: F45ST (220)

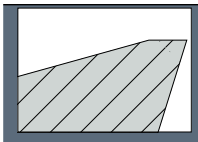
ISOSHRED

SEMT 1204AF-R-HS

Square Milling Inserts with Chip Splitting Serrated Cutting Edge for 45° Roughing







Designation	Dimensions L	S	BS	APMX	Tough ↔ Hard IC328	IC928	Recommended Machining Data a_p (mm)	f_z (mm/t)
SEMT 1204AF-R-HS	12.65	4.76	2.26	6.00	●	●	2.00-6.00	0.20-0.30

• For cutting speed recommendations, see pages 518-524

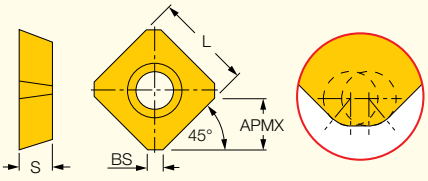
For tools, see pages: F45ST (220)

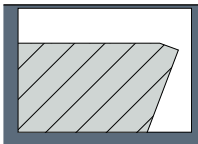
ISCARMILL

SEHW-AFTN

Precision Ground Sharp Cutting Edge Milling Inserts for General Use







Designation	Dimensions L	S	BS	APMX	Tough ↔ Hard IC328	IC520M	Recommended Machining Data a_p (mm)	f_z (mm/t)
SEHW 1204AFTN	12.70	4.76	2.20	6.50	●	●	2.00-6.00	0.12-0.20

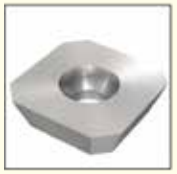
• For cutting speed recommendations, see pages 518-524

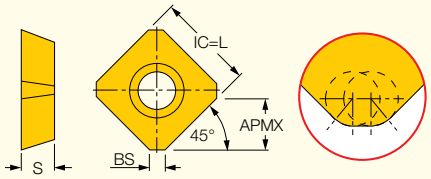
For tools, see pages: F45ST (220)

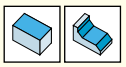
ISCARMILL

SEKT-AFTN

Square Screw-Clamped Inserts for Medium Machining







Designation	Dimensions L	S	BS	APMX	IC328	Recommended Machining Data a_p (mm)	f_z (mm/t)
SEKT 12T3AFTN	13.15	3.70	2.18	6.50	●	2.00-6.00	0.12-0.20

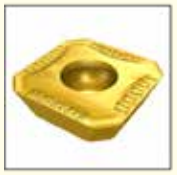
• For cutting speed recommendations, see pages 518-524

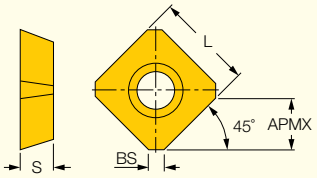
For tools, see pages: F45ST (220)

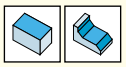
ISCARMILL

SEMT 12..AFTN-76

Milling Inserts with Ribs Along Edges for Heavy Machining







Designation	Dimensions L	S	BS	APMX	Tough ↔ Hard IC328	IC950	IC908	IC910	Recommended Machining Data a_p (mm)	f_z (mm/t)
SEMT 1204AFTN-76	12.70	4.76	2.20	6.50	●	●			2.00-6.00	0.12-0.20
SEMT 12T3AFTN-76	13.15	3.70	2.20	6.50	●		●	●	2.00-6.00	0.12-0.20

• Use optional TSE 12T3-N seat on F45ST cutters • For cutting speed recommendations, see pages 518-524

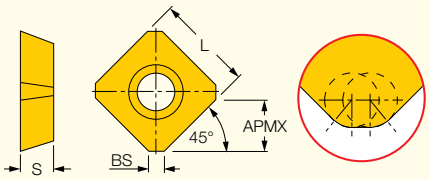
For tools, see pages: F45ST (220)

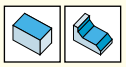
ISCARMILL

SEHT-AFN

Precision Ground Sharp Cutting Edged General Use Milling Inserts for 45° Milling Cutters







Designation	Dimensions L	S	BS	APMX	Tough ↔ Hard IC28	IC328	IC928	IC20	Recommended Machining Data a_p (mm)	f_z (mm/t)
SEHT 1204AFN	12.70	4.76	1.90	6.50	●	●	●		2.00-6.00	0.12-0.20
SEHT 1204AFN-P	12.70	4.76	1.90	6.50				●	2.00-6.00	0.12-0.20

• For cutting speed recommendations, see pages 518-524

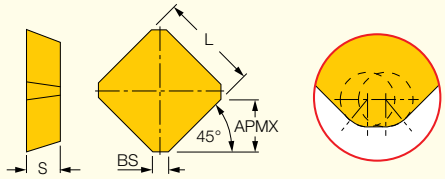
For tools, see pages: F45ST (220)

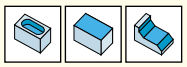
ISCARMILL

SEKN-AF..

Flat Rake Face Milling Inserts for General Use







Designation	Dimensions L	S	BS	APMX	Tough ↔ Hard IC28	IC328	IC928	IC50M	IC250	IC950	IC30N	IC910	IC520M	IC20	Recommended Machining Data a_p (mm)	f_z (mm/t)
SEKN 1203AF-N	12.70	3.18	1.80	6.50		•									2.00-6.00	0.12-0.20
SEKN 1203AFFN	12.70	3.18	1.80	6.50	•									•	2.00-6.00	0.12-0.20
SEKN 1203AFTN	12.70	3.18	1.80	6.50		•	•	•	•	•	•	•	•		2.00-6.00	0.12-0.20
SEKN 1203AFTN-42	12.70	3.18	1.80	6.50		•				•		•			2.00-6.00	0.12-0.20
SEKN 1504AFTN	15.88	4.76	1.80	6.50		•									2.00-6.00	0.12-0.20

• For cutting speed recommendations, see pages 518-524

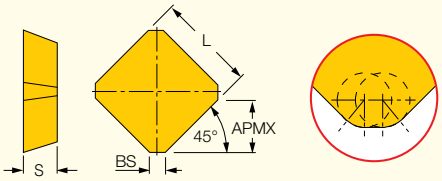
For tools, see pages: F45E (220)

ISCARMILL

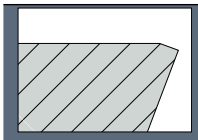
SEKR-AF-N-42

Super Positive Square Milling Inserts for 45° Finishing and Medium Machining on Soft Materials









Designation	Dimensions L	S	BS	APMX	IC328	Recommended Machining Data a_p (mm)	f_z (mm/t)
SEKR 1203AF-N-42	12.70	3.18	1.80	6.50	•	2.00-6.00	0.10-0.15

• For cutting speed recommendations, see pages 518-524

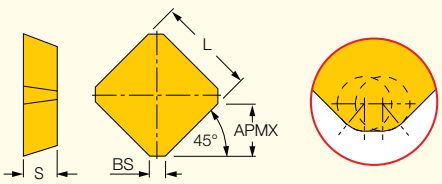
For tools, see pages: F45E (220)

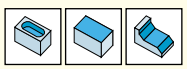
ISCARMILL

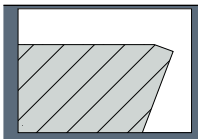
SEKR-AF..-76

Square Milling Inserts with Ribs Along Edges for 45° Roughing Applications









Designation	Dimensions L	S	BS	APMX	Tough ↔ Hard IC328	IC928	IC950	Recommended Machining Data a_p (mm)	f_z (mm/t)
SEKR 1203AFN-76	12.70	3.18	1.80	6.50	•	•	•	2.00-6.00	0.12-0.20
SEKR 1204AFN-76	12.70	4.76	1.80	6.22	•			2.00-6.00	0.08-0.15
SEKR 1504AFTN-76	15.88	4.76	1.80	8.43	•			2.00-6.00	0.12-0.17

• For cutting speed recommendations, see pages 518-524

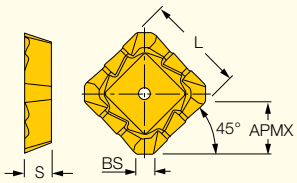
For tools, see pages: F45E (220)

ISCARMILL

SEKR-AFTR-HS

Square Milling Inserts with Chip Splitting Serrated Cutting Edge for 45° Roughing Applications





Designation	Dimensions L	S	BS	APMX	Tough ↔ Hard IC328	IC250	IC520M	Recommended Machining Data a_p (mm)	f_z (mm/t)
SEKR 1203AFTR-HS	12.70	3.18	1.80	6.50	●	●	●	2.00-6.00	0.15-0.25
SEKR 1204AFTR-HS	12.63	4.76	1.80	6.27	●			2.00-6.00	0.15-0.25
SEKR 1504AFTR-HS	15.88	4.76	1.80	8.30	●			2.00-6.00	0.15-0.25

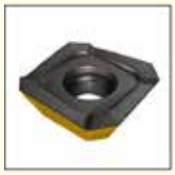
• For cutting speed recommendations, see pages 518-524

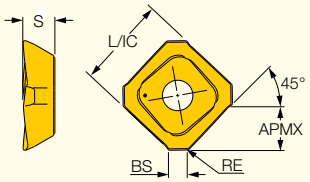
For tools, see pages: F45E (220)

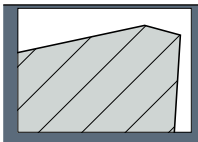
HELIOCTO

SECT/SEMT 1404

Positive Square Insert for General Soft and Clean Cutting







Designation	Dimensions L	S	BS	APMX	RE	Tough ↔ Hard IC330	IC840	IC830	IC5400	IC808	IC810	Recommended Machining Data a_p (mm)	f_z (mm/t)
SECT 140420AR	14.04	4.50	3.70	5.50	2.00		●	●				2.00-5.50	0.12-0.20
SEMT 140405ATR	14.20	4.95	2.75	5.50	0.50	●		●	●	●	●	2.00-5.50	0.12-0.20

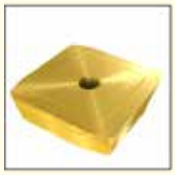
• SECT - Precision ground insert • SEMT - Utility insert • For cutting speed recommendations, see pages 518-524

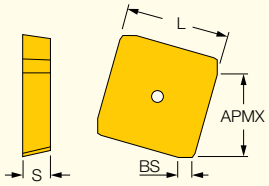
For tools, see pages: HOE-R06 (212) • HOF-R06 (213)

ISCARMILL

SPKN ED..

Flat Rake Milling Inserts for General Use





Designation	Dimensions L	S	BS	APMX	Tough ↔ Hard IC328	IC50M	IC250	IC950	IC910	IC520M	IC20	Recommended Machining Data a_p (mm)	f_z (mm/t)
SPKN 1203EDFR	12.70	3.18	1.40	9.50							●	3.00-8.00	0.08-0.15
SPKN 1203EDTR	12.70	3.18	1.40	9.50		●			●	●		3.00-8.00	0.08-0.15
SPKN 1504EDTR	15.88	4.76	1.40	11.50		●				●		3.00-8.00	0.08-0.15
SPKN 1203EDR-42	12.70	3.18	1.40	9.50							●	3.00-8.00	0.08-0.15
SPKN 1203EDTR/L-42	12.70	3.18	1.40	9.50	●	●	●	●				3.00-8.00	0.08-0.15
SPKN 1504EDTR-42	15.88	4.76	1.40	11.50	●	●						3.00-8.00	0.08-0.15

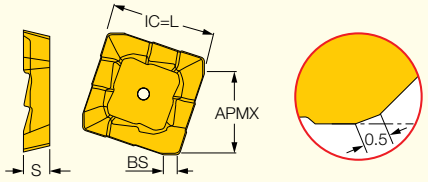
• For cutting speed recommendations, see pages 518-524

ISOSHRED

SPKR EDTR-HS

Square Positive Inserts with Chip Splitting Serrated Cutting Edges





Designation	Dimensions L	S	BS	APMX	Tough ↔ Hard IC328	IC928	IC520M	Recommended Machining Data a_p (mm)	f_z (mm/t)
SPKR 1203EDTR-HS	12.70	3.18	1.60	9.50	●	●	●	3.00-9.00	0.10-0.20
SPKR 1504EDTR-HS	15.82	4.80	2.00	12.24	●	●		3.00-9.00	0.10-0.20

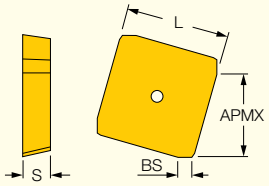
• For cutting speed recommendations, see pages 518-524

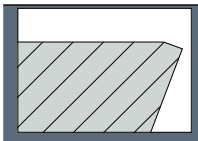
ISCARMILL

SPKR ED..-76

Square Milling Inserts with Ribs Along Edges for 45° Roughing







Designation	Dimensions L	S	BS	APMX	Tough ↔ Hard IC328	IC950	Recommended Machining Data a_p (mm)	f_z (mm/t)
SPKR 1203EDR/L-76	12.70	3.18	1.80	9.50	●	●	3.00-9.00	0.08-0.15
SPKR 1504EDTR-76	15.88	4.76	1.73	12.65	●	●	3.00-9.00	0.08-0.15

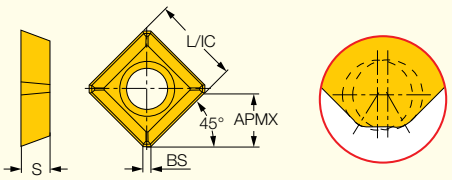
• For cutting speed recommendations, see pages 518-524

ISCARMILL

SDMT-AD-N

Inserts for General Use on 45° Endmills





Designation	Dimensions L	S	APMX	BS	Tough ↔ Hard IC50M	IC520M	IC20	Recommended Machining Data a_p (mm)	f_z (mm/t)
SDMT 0903AD-N	9.52	3.18	5.60	0.90	●	●	●	2.00-4.00	0.12-0.15

• For cutting speed recommendations, see pages 518-524

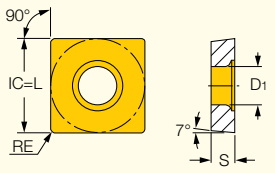
For tools, see pages: E45 / T245 (34)

ISOTURN

SCMT-19

Square Inserts with a 7° Positive Flank for Semi-Roughing at Medium to High Feeds





Designation	Dimensions L	S	RE	D_1	Tough ↔ Hard IC830	IC20	IC5005	IC807	IC907	Recommended Machining Data a_p (mm)	f_z (mm/rev)
SCMT 120408-19	12.70	4.76	0.80	5.50	●	●	●	●	●	3.00-8.00	0.08-0.15
SCMT 120412-19	12.70	4.76	1.20	5.50		●				3.00-8.00	0.08-0.15

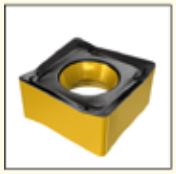
• For cutting speed recommendations, see pages 518-524

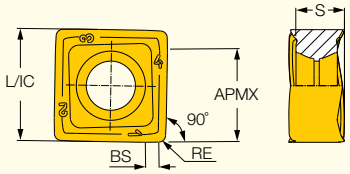
For tools, see pages: E45 / T245 (34) • IHPR (849)

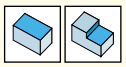
HELIDO 890 LINE

S890 SNMU 1305PN...

Square Double-Sided Inserts
with 8 Cutting Edges







Designation	Dimensions L	S	APMX	BS	RE[5]	Tough ↔ Hard IC330	IC830	IC5400	IC808	IC810	IC5100	Recommended Machining Data a_p (mm)	f_z (mm/t)
S890 SNMU 1305PNTR [1]	13.00	5.60	9.00	1.80	0.80	●	●	●	●	●	●	2.00-9.00	0.10-0.20
S890 SNMU 1305PNTN [2]	13.00	5.70	9.00	1.80	0.80				●	●		2.00-9.00	0.10-0.20
S890 SNMU 1305PNR-MM [3]	13.00	5.60	9.00	1.80	0.80		●		●		●	2.00-9.00	0.18-0.30
S890 SNHU 1305PN-R-W [4]	13.00	5.15	5.00	10.40	0.80					●		0.50-2.00	0.10-0.20

• For cutting speed recommendations, see pages 518-524

[1] General use, 8 right-hand cutting edges, for milling a variety of cast iron and steel workpiece materials.

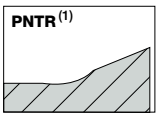
[2] 8 neutral cutting edges, used for machining cast iron. Can be used for left-hand specially tailored milling cutters.

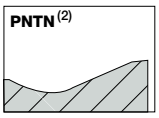
[3] 8 right-hand cutting edges, used mainly for milling steel (R.H. helix).

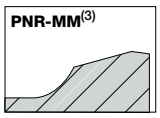
[4] Wiper insert with 4 right-hand cutting edges that provides substantially improved surface finish

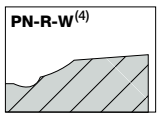
[5] 1.2 & 2.0 corner radii - on request.

For tools, see pages: S890 FSN-13 (198) • S890 SSB-13 (350)





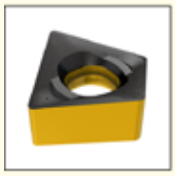


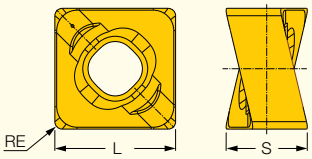


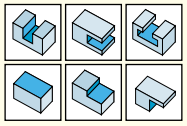
HELISLOT

XNMU 13

Square Inserts with 4 Right- and
4 Left-Hand Cutting Edges







Designation	Dimensions L	S	RE	Tough ↔ Hard IC330	IC845	IC830	IC5400	IC380	IC808	IC810	IC5100	Recommended Machining Data f_z (mm/t)
XNMU 130608PNN-MM	13.00	8.50	0.80	●		●	●	●	●			0.08-0.20
XNMU 130608PNN-PL	13.00	8.80	0.80		●							0.08-0.20
XNMU 130608PNTN	13.00	8.80	0.80							●	●	0.08-0.20

• For cutting speed recommendations, see pages 518-524

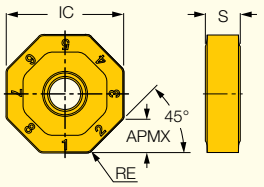
For tools, see pages: ETS-XN13 (330) • FDN-XN13 (338) • SDN-XN13 (346) • SM-XN13 (241) • XNK-XN13 (234)

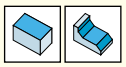
16MILL

ONHU/ONMU-08-TN/HL

Octagonal Double-Sided Face Milling Inserts for Cast Iron and Rough Applications





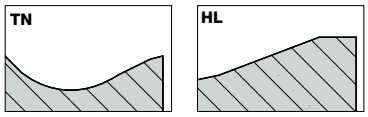


Designation	Dimensions IC	RE	S	APMX	Tough ↔ Hard IC908	IC810	IC910	DT7150	IC5100	IC4100	Recommended Machining Data a_p (mm)	f_z (mm/t)(1)
ONHU 080608-TN	20.20	0.80	6.00	5.50			●	●		●	2.00-5.50	0.20-0.30
ONMU 080608-TN	20.20	0.80	6.00	5.50		●	●	●	●	●	2.00-5.50	0.20-0.30
ONMU 080612-HL	20.20	1.20	6.00	5.50	●		●				2.00-5.50	0.25-0.40

• TN - For cast iron • HL - For rough applications and inhomogeneous surfaces • For cutting speed recommendations, see pages 518-524

(1) For FEEDMILL tools, see the feed conditions for the FF NM tools

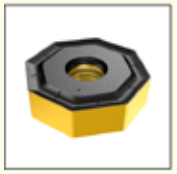
For tools, see pages: F45NM (216) • F45WG (215) • FF NM (262)

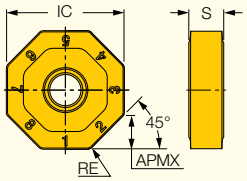


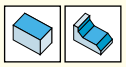
16MILL

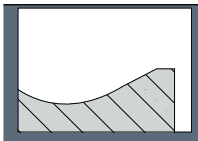
ONHU/ONMU-08-TN-MM

Octagonal Double-Sided Face Milling Inserts for General Steel Machining









Designation	Dimensions IC	RE	S	APMX	Tough ↔ Hard IC330	IC328	IC830	IC928	IC5400	IC808	IC908	IC910	Recommended Machining Data a_p (mm)	f_z (mm/t)(1)
ONHU 080608-TN-MM	20.20	0.80	6.00	5.50		●		●			●	●	2.00-5.50	0.20-0.30
ONMU 080608-TN-MM	20.20	0.80	6.00	5.50	●	●	●	●	●	●	●		2.00-5.50	0.20-0.30

• For cutting speed recommendations, see pages 518-524

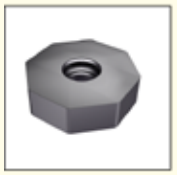
(1) For FEEDMILL tools, see the feed conditions for the FF NM tools

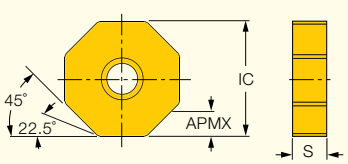
For tools, see pages: F45NM (216) • F45WG (215) • FF NM (262)

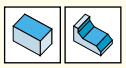
16MILL

ONHQ-TN

16MILL Octagonal Double-Sided Ceramic Face Milling Inserts







Designation	Dimensions IC	S	APMX	IS8	Recommended Machining Data a_p (mm)
ONHQ 0806-TN	20.20	6.00	5.50	●	2.00-5.50

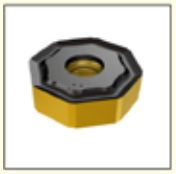
• For cutting speed recommendations, see pages 518-524

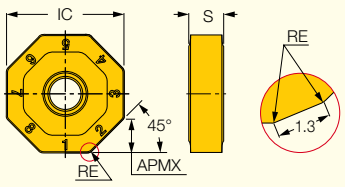
For tools, see pages: F45NM (216) • F45WG (215)

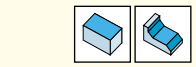
16MILL

ONHU 0806-N-PL

Octagonal Inserts with Sharp Edge and Positive Land for Cast Iron







Designation	Dimensions IC	RE	S	APMX	IC910	Recommended Machining Data a_p (mm)	f_z (mm/t)
ONHU 080600-N-PL	20.20	0.40	6.00	5.50	●	2.00-5.50	0.25-0.40

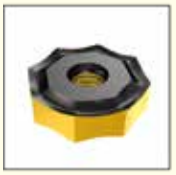
• For cutting speed recommendations, see pages 518-524

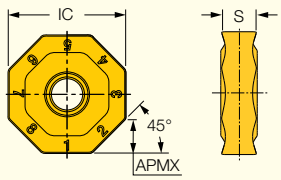
For tools, see pages: F45NM (216) • F45WG (215)

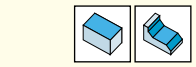
16MILL

ONHU/ONMU 080608 AN-N-HP

16MILL Octagonal Double-Sided Face Milling Inserts for High Temperature Alloys, Stainless Steel and Steels







Designation	Dimensions IC	RE	S	APMX	IC928	Recommended Machining Data a_p (mm)	f_z (mm/t)
ONMU 080608 AN-N-HP	20.20	0.80	6.00	5.50	●	2.00-5.50	0.25-0.40

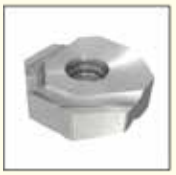
• For cutting speed recommendations, see pages 518-524

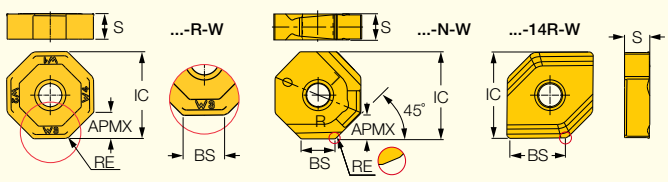
For tools, see pages: F45NM (216) • F45WG (215)

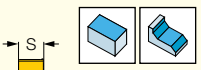
16MILL

ONHU 0806AN-W

Octagonal Double-Sided Wiper Inserts







Designation	Dimensions IC	RE	S	APMX	BS	Tough ↔ Hard IC910	IC4100	Recommended Machining Data a_p (mm)	f_z (mm/t)
ONHU 0806AN-N-W (1)	20.30	0.50	6.00	3.50	7.40	●	●	1.50-3.50	0.08-0.25
ONHU 0806AN-14R-W (2)	20.35	0.50	5.50	3.50	13.20	●		1.50-3.50	0.08-0.25
ONHU 0806AN-R-W (3)	20.40	0.40	6.00	3.50	7.20	●		1.50-3.50	0.08-0.25

• For cutting speed recommendations, see pages 518-524

(1) Wiper insert with 4 cutting edges, 2 right- and 2 left-hand

(2) Wiper insert with 4 cutting edges, recommended for fine pitch cutters; cutter diameters >160 mm

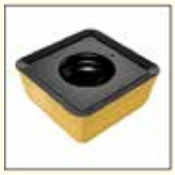
(3) Wiper insert with 4 cutting edges, recommended for fine pitch cutters; cutter diameters <125 mm

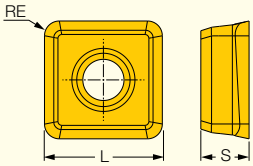
For tools, see pages: F45NM (216) • F45WG (215)

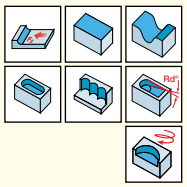
MILL4FEED

FFQ4 SOMT 0904

Square Single-Sided Inserts with 4 Cutting Edges for Fast Feed Milling







Designation	Dimensions L	S	RE	Tough ↔ Hard IC882	IC830	IC5820	IC808	IC810	Recommended Machining Data a_p (mm)	f_z (mm/t)
FFQ4 SOMT 090412T	8.60	3.90	1.20		●		●	●	0.50-1.20	0.40-1.50
FFQ4 SOMT 0904RM-T	8.60	3.80	1.20				●		0.50-1.20	0.40-1.50
FFQ4 SOMT 090412HP	8.60	3.80	1.20	●	●	●	●		0.50-1.20	0.40-1.40

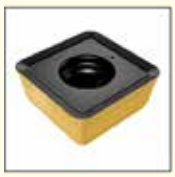
• For side plunging, the initial cutting feed is 0.1 mm/t • T - type for steel, ferritic and martensitic stainless steel, cast iron and hardened steel • RM-T type for interrupted cut and machining near straight shoulders on steel, ferritic and martensitic stainless steel, cast iron and hardened steel • HP- type for austenitic stainless steel and high temperature alloys • For cutting speed recommendations, see pages 518-524

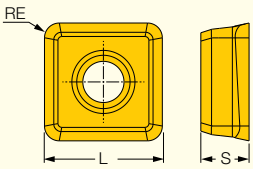
For tools, see pages: FFQ4 D-09 (293) • FFQ4 D-M-09 (293) • FFQ4 D-W-09 (293)

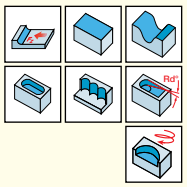
MILL4FEED

FFQ4 SOMT 1205

Square Single-Sided Inserts with 4 Cutting Edges for Fast Feed Milling







Designation	Dimensions L	S	RE	Tough ↔ Hard IC882	IC830	IC5820	IC808	IC810	Recommended Machining Data a_p (mm)	f_z (mm/t)
FFQ4 SOMT 1205RM-HP	12.70	5.20	1.60		●				0.50-1.50	0.40-1.80
FFQ4 SOMT 1205RM-T	12.70	5.20	1.60				●		0.50-1.50	0.40-2.00
FFQ4 SOMT 120516HP	12.70	5.20	1.60	●	●	●	●		0.50-1.50	0.40-1.80
FFQ4 SOMT 120516T	12.70	5.20	1.60		●		●		0.50-1.50	0.40-2.00
FFQ4 SOMT 120516T20	12.70	5.20	1.60					●	0.50-1.50	0.40-2.00

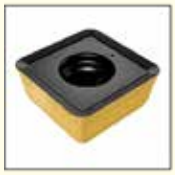
• RM-HP- for interrupted cut and machining next to shoulders of austenitic stainless steel and high temperature alloys • RM-T- for interrupted cut and machining next to shoulders of steel, ferritic and martensitic stainless steel, cast iron and hardened steel • HP- for austenitic stainless steel and high temperature alloys • T- for steel, ferritic and martensitic stainless steel, cast iron and hardened steel • T20- for grey and nodular cast iron

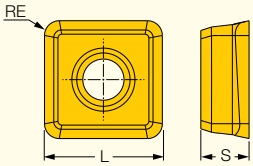
For tools, see pages: FFQ4 D-12 (301)

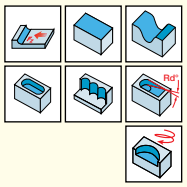
MILL4FEED

FFQ4 SOMT 1706

Square Single-Sided Inserts with 4 Cutting Edges for Fast Feed Milling







Designation	Dimensions L	S	RE	Tough ↔ Hard IC882	IC830	IC808	IC810	Recommended Machining Data a_p (mm)	f_z (mm/t)
FFQ4 SOMT 1706RM-T (1)	17.50	6.00	2.50			●		1.20-3.00	0.40-2.00
FFQ4 SOMT 170625HP (2)	17.50	6.00	2.50	●	●	●		1.20-3.00	0.40-1.50
FFQ4 SOMT 170625T (3)	17.50	6.00	2.50		●	●	●	1.20-3.00	0.40-2.00

• For side plunging, the initial cutting feed is 0.1 mm/t • For cutting speed recommendations, see pages 518-524

(1) For interrupted cut and machining next to shoulders on steel, stainless steel, cast iron and hardened steel

(2) For austenitic stainless steel and high temperature alloys

(3) For steel, ferritic and martensitic stainless steel, cast iron and hardened steel

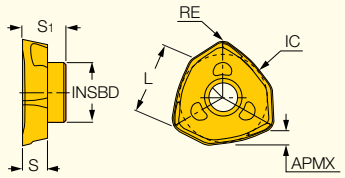
For tools, see pages: FFQ4 D-17 (302)

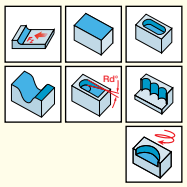
FEEDMILL

FF WOMT/WOCT

Positive Rake Inserts for Fast Feed Machining at Small Depths of Cut





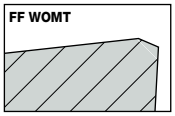


Designation	Dimensions IC	L	S	S_1	INSBD	RE	Rg(1)	APMX	Tough ↔ Hard IC882	IC328	IC928	IC908	IC910	Recommended Machining Data a_p (mm)	f_z (mm/t)
FF WOCT 060212T	9.86	7.00	2.70	4.20	5.60	2.00	3.00	1.00		●	●	●		0.30-1.00	0.30-1.00
FF WOMT 060212T-M	9.86	7.00	2.70	4.20	5.60	2.00	3.00	1.00			●	●		0.30-1.00	0.70-1.50
FF WOCT 09T320T	14.50	10.60	3.95	6.50	9.30	2.00	4.00	1.50	●	●	●			0.70-1.50	0.30-1.00
FF WOMT 09T320T	14.50	10.60	3.95	6.50	9.30	2.00	4.00	1.50			●	●	●	0.70-1.50	0.70-2.00

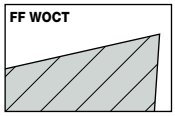
• For cutting speed recommendations, see pages 518-524

(1) Radius for programming

For tools, see pages: FF EW (294) • FF EW-CF (295) • FF EW-M (295) • FF FW (299)



For general applications

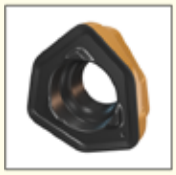


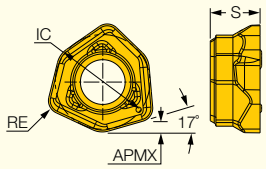
For high temperature alloys and stainless steel

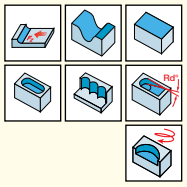
MICRO3FEED MF 300 ENDMILL

FFT3 WXMT 03

Single-Sided Small Trigon Inserts for Fast Feed Milling







Designation	Dimensions IC	S	RE	APMX	Tough ↔ Hard IC830	IC808	Recommended Machining Data a_p (mm)	f_z (mm/t)
FFT3 WXMT 030206T	4.20	2.20	0.60	0.60	●	●	0.20-0.60	0.20-0.80

• For side plunging, the initial cutting feed is 0.08 mm/t • For cutting speed recommendations, see pages 518-524

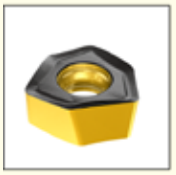
For tools, see pages: FFT3 EFM-03 (287) • FFT3 EFM-MM 03 (287)

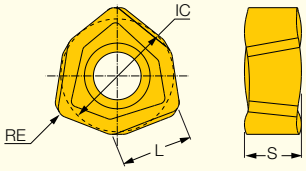
HELI6FEED UPFEED LINE

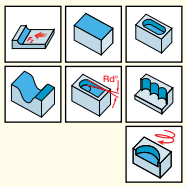
FEEDMILL

H600 WXCU

Double-Sided Inserts with 6 Cutting Edges for Fast Feed Machining







Designation	Dimensions IC	L	S	RE[4]	Tough ↔ Hard IC882	IC330	IC830	IC5820	IC380	IC808	IC810
H600 WXCU 040310HP [1]	6.25	4.13	3.10	0.96		●	●				
H600 WXCU 040310T [2]	6.25	4.13	3.10	0.96			●			●	
H600 WXCU 05T312HP [1]	8.33	5.50	4.20	1.20	●	●	●	●			
H600 WXCU 05T312T [2]	8.33	5.50	4.20	1.20			●			●	●
H600 WXCU 070515HP [1]	11.14	7.16	5.90	1.50	●	●	●	●	●		
H600 WXCU 070515T [2]	11.14	7.16	5.90	1.50			●			●	●
H600 WXCU 080612HP [1]	13.65	8.80	6.80	1.20	●	●	●		●	●	
H600 WXCU 080612T [2]	13.65	8.80	6.80	1.20			●			●	●
H600 WXCU 080616RM [3]	13.65	8.80	6.80	1.60			●			●	

• For cutting speed recommendations, see pages 518-524

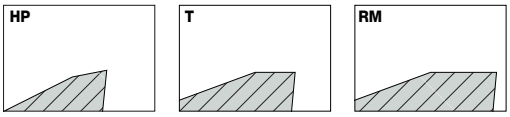
[1] For stainless steel and high temperature alloys

[2] For alloy steel and cast iron, "I" mark on top rake face for identification

[3] For interrupted cut and hard materials

[4] For insert radius for programming see table below

For tools, see pages: FF EWX (290) • FF EWX-M (291) • FF EWX-MM (291) • FF FWX (296) • MF EWX (292) • MF EWX-M (292) • MF FWX (297)





Inserts	Cutting Recommendations for FF Tools ap (mm)	fz (mm/t)	Radius for Programming on FF Tools	Cutting Recommendations for MF Tools ap (mm)	fz (mm/t)	Radius for Programming on MF Tools
H600 WXCU 040310HP	0.5-0.8	0.34-0.68	1.9	0.5-1.5	0.2-0.4	2.6
H600 WXCU 040310T	0.5-0.8	0.68-1.03	1.9	0.5-1.5	0.4-0.6	2.6
H600 WXCU 05T312HP	0.7-1.0	0.34-0.68	2.3	0.8-2.0	0.2-0.4	3.3
H600 WXCU 05T312T	0.7-1.0	0.68-1.03	2.3	0.8-2.0	0.4-0.6	3.3
H600 WXCU 070515HP	1.0-1.5	0.34-0.86	3.1	1-2.7	0.2-0.5	4.1
H600 WXCU 070515T	1.0-1.5	0.68-1.37	3.1	1-2.7	0.4-0.8	4.1
H600 WXCU 080612HP	1.5-2.0	0.34-0.86	3.3	1.8-3.5	0.2-0.5	4.8
H600 WXCU 080612T	1.5-2.0	0.68-1.37	3.3	1.8-3.5	0.4-0.8	4.8
H600 WXCU 080616RM	1.5-2.0	0.68-1.37	3.7	1.8-3.5	0.4-0.8	5.2



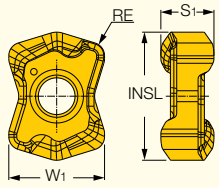
Inserts	Cutting Recommendations for FF Tools in plunging ae (mm)	fz (mm/t)	Radius for Programming on FF Tools	Cutting Recommendations for MF Tools in plunging ae (mm)	fz (mm/t)	Radius for Programming on MF Tools
H600 WXCU 040310HP	3.7	0.04-0.08	1.9	3.5	0.04-0.08	2.6
H600 WXCU 040310T	3.7	0.04-0.10	1.9	3.5	0.04-0.10	2.6
H600 WXCU 05T312HP	5	0.04-0.08	2.3	4.75	0.04-0.08	3.3
H600 WXCU 05T312T	5	0.04-0.10	2.3	4.75	0.04-0.10	3.3
H600 WXCU 070515HP	6.5	0.04-0.10	3.1	6.15	0.04-0.10	4.1
H600 WXCU 070515T	6.5	0.04-0.12	3.1	6.15	0.04-0.12	4.1
H600 WXCU 080612HP	8	0.04-0.10	3.3	7.65	0.04-0.10	4.8
H600 WXCU 080612T	8	0.04-0.12	3.3	7.65	0.04-0.12	4.8
H600 WXCU 080616RM	8	0.04-0.12	3.7	7.65	0.04-0.12	5.2

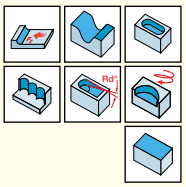
LOGIQ4FEED
HIGH FEED MILLING

FFX4 XNMU

Small "Bone Shape" Inserts with 4 Cutting Edges for Fast Feed Milling







Designation	Dimensions INSL	S1	RE	W1	Tough ↔ Hard IC882	IC840	IC830	IC5820	IC808	IC810	Recommended Machining Data ap (mm)	fz (mm/t)
FFX4 XNMU 040310HP (1)	9.58	3.97	1.00	7.16	●	●	●	●			0.20-0.80	0.20-0.90
FFX4 XNMU 040310T (2)	9.58	3.95	1.00	7.16			●		●	●	0.20-0.80	0.20-1.20

• For side plunging, the initial cutting feed is 0.1 mm/t • HP- for austenitic stainless steel and high temperature alloys • T- for steel, ferritic and martensitic stainless steel, cast iron and hardened steel • For cutting speed recommendations, see pages 518-524

(1) HP- for austenitic stainless steel and high temperature alloys

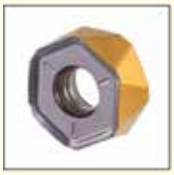
(2) T- for steel, ferritic and martensitic stainless steel, cast iron and hardened steel

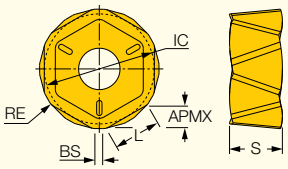
For tools, see pages: FFX4 ED (288) • FFX4 ED-M (288) • FFX4 ED-MM (289) • FFX4 FD (289)

HELI12FEED
UPFEED LINE

H1200 HXCU 0606

Double-Sided Hexagonal Inserts with 12 Cutting Edges



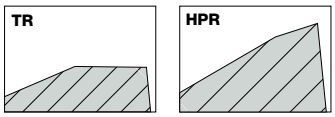




Designation	Dimensions APMX	L	BS	RE	IC	S	Tough ↔ Hard IC845	IC840	IC830	IC5500	IC808	IC810	Recommended Machining Data ap (mm)	fz (mm/t)
H1200 HXCU 0606-HPR	3.00	6.43	1.06	1.60	14.88	7.15		●	●				0.20-3.00	0.08-0.40
H1200 HXCU 0606-TR	3.00	6.43	1.06	1.60	14.88	7.15	●		●	●	●	●	0.20-3.00	0.25-0.65

• For cutting speed recommendations, see pages 518-524

For tools, see pages: MF FHX-R06 (298)

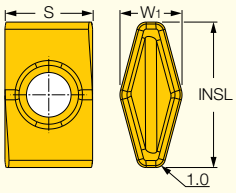


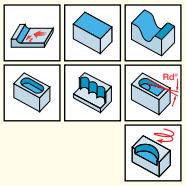
TANG4FEED
HI-FEED MILLING

FF VNMT 0706

Tangentially Clamped Inserts with 4 Cutting Edges for Fast Feed Milling







Designation	Dimensions W1	INSL	RE	S	Tough ↔ Hard IC882	IC845	IC840	IC830	IC5820	IC5400	IC5500	IC808	IC810	Recommended Machining Data ap (mm)	fz (mm/t)
FF VNMT 0706ZN-ER (1)	6.40	15.00	1.00	9.05	●	●	●	●	●	●		●	●	0.50-1.50	0.40-1.80
FF VNMT 0706ZN-ETR (2)	6.40	15.00	1.00	9.05				●			●	●	●	0.50-1.50	0.40-1.80

• For side plunging, the initial cutting feed is 0.1 mm/t • For cutting speed recommendations, see pages 518-524

(1) For general applications

(2) Reinforced cutting edges for interrupted cut and unfavorable conditions

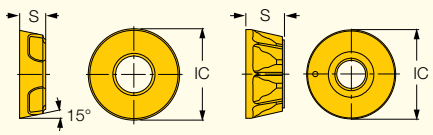
For tools, see pages: FFV-D-R-VN07 (298)

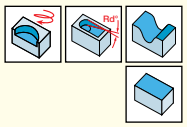
ISCARMILL

RXCW

Precision Ground Flat Rake Round Milling Inserts



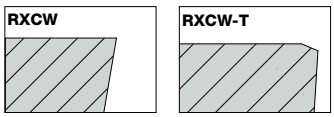




Designation	Dimensions IC	S	Tough ↔ Hard IC328	IC928	IC908	Recommended Machining Data a_p (mm)	f_z (mm/t)
RXCW 0702	7.00	2.40	•	•	•	1.00-2.50	0.05-0.20
RXCW 0702-T	7.00	2.40			•	1.00-2.50	0.05-0.20
RXCW 0802	8.00	2.40	•	•	•	1.00-2.50	0.05-0.20
RXCW 0802-T	8.00	2.40			•	1.00-2.50	0.05-0.20
RXCW 10T3	10.00	3.97	•	•	•	1.00-5.00	0.10-0.25
RXCW 10T3-T	10.00	3.97			•	1.00-5.00	0.10-0.25

• For cutting speed recommendations, see pages 518-524

For tools, see pages: ER (273) • ER-M (273)

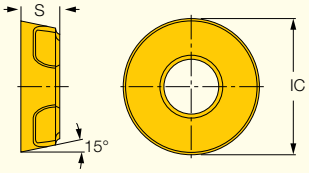


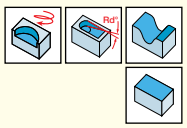
ISCARMILL

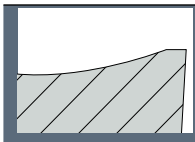
RXCR

Precision Ground Positive Rake Round Milling Inserts









Designation	Dimensions IC	S	Tough ↔ Hard IC328	IC928	IC908	Recommended Machining Data a_p (mm)	f_z (mm/t)
RXCR 05T1	5.00	1.50	•		•	1.00-2.00	0.05-0.10
RXCR 0702	7.00	2.40	•			1.00-2.00	0.05-0.10
RXCR 0802	8.00	2.40	•			1.00-2.00	0.05-0.10
RXCR 10T3	10.00	3.97		•		1.00-5.00	0.10-0.25

• For cutting speed recommendations, see pages 518-524

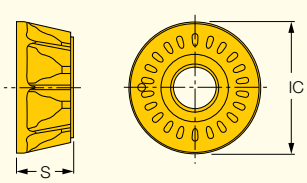
For tools, see pages: ER (273) • ER-M (273)

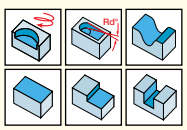
ISCARMILL

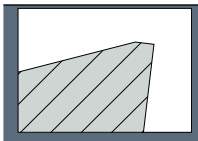
RXMT 10

Positive Rake Round Milling Inserts for Rough Operations









Designation	Dimensions IC	S	Tough ↔ Hard IC328	IC950	Recommended Machining Data a_p (mm)	fz (mm/t)
RXMT 10T3-RM	10.00	3.97	•	•	1.00-5.00	0.10-0.25

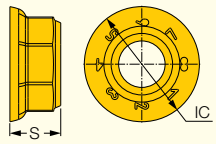
• Star-shaped bottom for indexing and to prevent insert rotation • For cutting speed recommendations, see pages 518-524

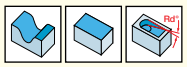
For tools, see pages: ER (273) • ER-M (273)

HELIDO ROUNDMILL 800 LINE

RXMT 1607
Round Milling Inserts

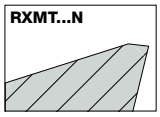


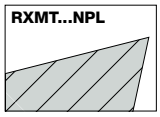




Designation	Dimensions IC	S	IC830	Recommended Machining Data a_p (mm)	f_z (mm/t)
RXMT 1607N	16.00	7.00	●	0.50-8.00	0.08-0.30
RXMT 1607NPL	16.00	7.00	●	0.50-8.00	0.08-0.30

• For cutting speed recommendations, see pages 518-524
For tools, see pages: SOE45 8/16 (34) • SOF45 (217)

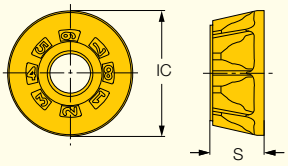


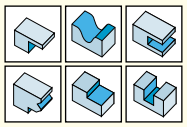


CHAMMILL

R90CW
Round Flat Rake Inserts
for Profile Milling









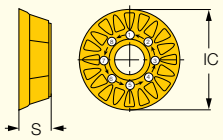
Designation	Dimensions IC	S	IC908	Recommended Machining Data a_p (mm)	f_z (mm/t)
R90CW 1205-T	12.00	5.00	●	2.00-6.00	0.12-0.20
R90CW 43-T	12.70	5.40	●	2.00-6.00	0.12-0.20

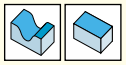
• For cutting speed recommendations, see pages 518-524
For tools, see pages: ER-M (273)

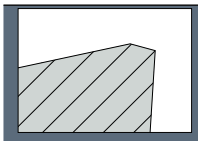
HELIOCTO

REMT-76
Round Milling Inserts with
Ribs on the Rake Face









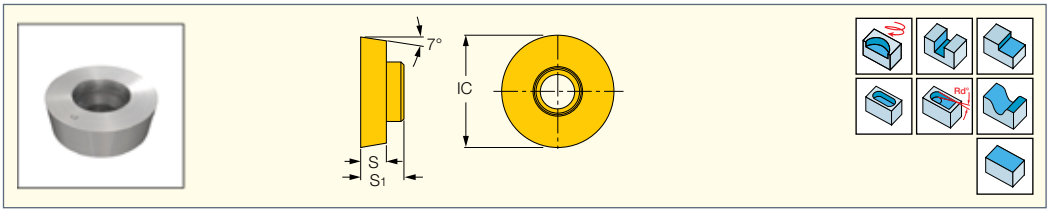
Designation	Dimensions IC	S	Tough ↔ Hard IC330	IC830	Recommended Machining Data a_p (mm)	fz (mm/t)
REMT 1505-LM-76	15.87	5.24	●	●	3.00-7.00	0.12-0.20

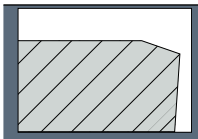
• For cutting speed recommendations, see pages 518-524
For tools, see pages: HOE-R06 (212) • HOF-R06 (213)

MILLSHRED ROUND LINE

RCMW/RCCW-MO

Round Flat Rake Milling Inserts





Designation	Dimensions IC	S	S1	Tough ↔ Hard IC928	IC908	Recommended Machining Data ap (mm)	fz (mm/t)
RCCW 1206MO	12.00	4.00	6.40		●	2.50-5.00	0.15-0.40
RCMW 1607MO	16.00	5.00	7.90		●	3.00-6.00	0.20-0.75
RCMW 2009MO	20.00	6.00	9.40	●		4.00-8.00	0.20-0.75

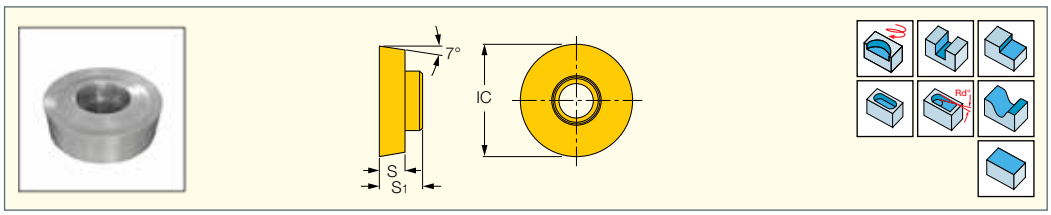
• For cutting speed recommendations, see pages 518-524

For tools, see pages: ERW (274) • ERW-M (275) • FRW (276)

MILLSHRED ROUND LINE

RCMT/RCCT-MO

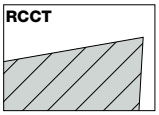
Round Positive Rake Milling Inserts

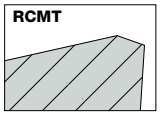


Designation	Dimensions IC	S	S1	Tough ↔ Hard IC882	IC328	IC928	IC908	Recommended Machining Data ap (mm)	fz (mm/t)
RCCT 1206MO	12.00	4.00	6.40	●	●	●	●	2.50-5.00	0.15-0.40
RCCT 1206MO-T	12.00	4.00	6.40	●		●		2.50-5.00	0.15-0.40
RCMT 1607MO	16.00	5.00	7.90			●	●	3.00-6.00	0.15-0.40
RCMT 2009MO	20.00	6.00	9.40			●	●	4.00-8.00	0.15-0.40

• RCMT - Positive rake and reinforced cutting edge • RCCT - Positive rake and sharp cutting edge • Both used mainly on stainless steel • For cutting speed recommendations, see pages 518-524

For tools, see pages: ERW (274) • ERW-M (275) • FRW (276)



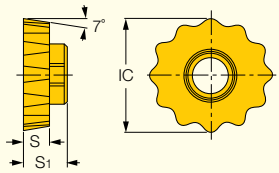


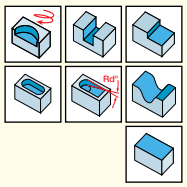
MILLSHRED ROUND LINE

RCMT/RCMW-FW

Fully Effective Serrated Inserts with Four Indexing Orientation Options







Designation	Dimensions IC	S	S1	Tough ↔ Hard IC830	IC928	IC808	IC908	IC910	Recommended Machining Data ap (mm)	fz (mm/t)
RCMT 1004-FW (1)	10.00	3.20	4.80	•					2.00-4.00	0.15-0.30
RCMT 1004-FW-F20 (2)	10.00	3.20	4.80	•					2.00-4.00	0.15-0.30
RCMT 1206-FW (1)	12.00	4.00	6.40		•				2.50-5.00	0.20-0.35
RCMT 1206-FW-F20 (2)	12.00	4.00	6.40		•		•		2.50-5.00	0.20-0.35
RCMT 1206-FW-T20 (3)	12.00	4.00	6.40		•				2.50-5.00	0.20-0.35
RCMT 1607-FW (1)	16.00	5.00	7.90	•	•	•	•		3.00-6.00	0.20-0.35
RCMT 1607-FW-F20 (2)	16.00	5.00	7.90		•		•		3.00-6.00	0.20-0.35
RCMT 1607-FW-T20 (3)	16.00	5.00	7.90		•		•		3.00-6.00	0.20-0.35
RCMW 1607-T-FPW (4)	16.00	5.00	7.90				•		3.00-6.00	0.20-0.35
RCMW 1607-T-FW (5)	16.00	5.00	7.90		•		•	•	3.00-6.00	0.20-0.35
RCMT 2009-FW (1)	20.00	6.00	9.40		•		•		4.00-8.00	0.20-0.35
RCMT 2009-FW-F20 (2)	20.00	6.00	9.40		•				4.00-8.00	0.20-0.35
RCMT 2009-FW-T20 (3)	20.00	6.00	9.40		•				4.00-8.00	0.20-0.35
RCMW 2009-T-FW (5)	20.00	6.00	9.40		•				4.00-8.00	0.20-0.35

• For cutting speed recommendations, see pages 518-524

(1) For alloyed and stainless steel and exotic materials.

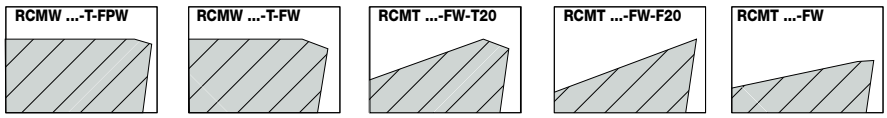
(2) For austenitic stainless steel, exotic materials and aluminum.

(3) For martensitic stainless steel

(4) For hardened steel

(5) For tool and die steel and for cast iron

For tools, see pages: ERW (274) • ERW-M (275) • FRW (276)

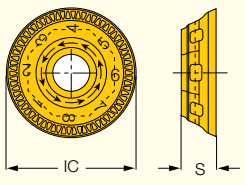


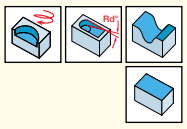
HELIOCTO

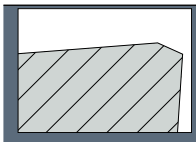
RFMT 1905-76

Round Milling Inserts









Designation	Dimensions IC	S	Tough ↔ Hard IC328	IC928	Recommended Machining Data ap (mm)	fz (mm/t)
RFMT 1905-LM-76	19.74	5.48	•	•	3.00-8.00	0.15-0.25

• For cutting speed recommendations, see pages 518-524

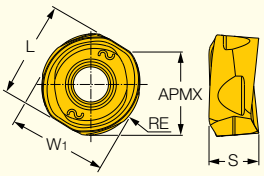
For tools, see pages: HOF-R07 (213)

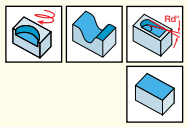
HELIDO ROUND H400 LINE

H400 RNHU

Double-Sided Inserts with Four 5, 6 and 8 mm Radii Cutting Edges for Profile Milling







Designation	Dimensions RE	L	W1	APMX	S	Tough ↔ Hard IC330	IC830	IC808	Recommended Machining Data ap (mm)	fz (mm/t)
H400 RNHU 1004-AX (1)	5.00	9.20	9.30	7.50	4.70		●	●	1.00-5.00	0.10-0.30
H400 RNHU 1004-HP (2)	5.00	9.20	9.30	7.50	4.05		●		1.00-5.00	0.10-0.30
H400 RNHU 1004-ML (3)	5.00	9.20	9.30	7.50	4.05		●	●	1.00-5.00	0.10-0.30
H400 RNHU 1205-AX (1)	6.00	11.00	11.20	8.70	5.20		●	●	2.00-6.00	0.15-0.30
H400 RNHU 1205-HP (2)	6.00	11.00	11.20	8.70	4.75	●	●		2.00-6.00	0.15-0.30
H400 RNHU 1205-ML (3)	6.00	11.00	11.20	8.70	4.75		●	●	2.00-6.00	0.15-0.30
H400 RNHU 1606-AX (1)	8.00	14.70	13.90	12.00	7.80	●	●	●	3.00-8.00	0.15-0.40
H400 RNHU 1606-HP (2)	8.00	14.70	13.90	12.00	7.80		●		3.00-8.00	0.15-0.40
H400 RNHU 1606-ML (3)	8.00	14.70	13.90	12.00	7.80		●	●	3.00-8.00	0.15-0.40

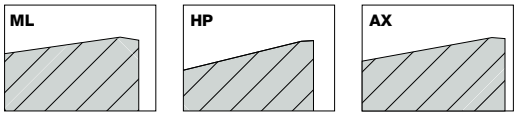
• For cutting speed recommendations, see pages 518-524

(1) First priority for austenitic stainless steel, second priority for steel, ferritic and martensitic stainless

(2) First priority for titanium and high temperature alloys, second priority for austenitic stainless steel

(3) First priority for steel, ferritic and martensitic stainless steel, second priority for austenitic stainless steel

For tools, see pages: H400 ER-10 (277) • H400 ER-12 (277) • H400 ER-M (278) • H400 FR-10 (278) • H400 FR-12 (279) • H400 FR-16 (280)

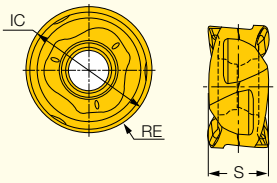


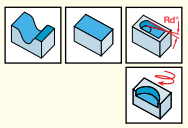
HELIDO ROUND H606 LINE

H606 RXCU 1206

Double-Sided Inserts with Six 6 mm Radius Cutting Edges for Profile Milling







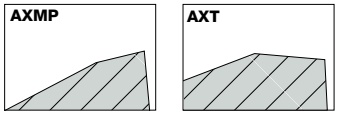
Designation	Dimensions IC	RE	S	Tough ↔ Hard IC330	IC830	IC808	Recommended Machining Data ap (mm)	fz (mm/t)
H606 RXCU 1206-AXMP (1)	12.20	6.00	5.90	●	●	●	2.00-6.00	0.10-0.40
H606 RXCU 1206-AXT (2)	12.20	6.00	5.90		●	●	2.00-6.00	0.10-0.40

• For cutting speed recommendations, see pages 518-524

(1) For stainless steel and high temperature alloys

(2) For steel and cast iron applications

For tools, see pages: H606 ER-M (280) • H606 FR-12 (281)

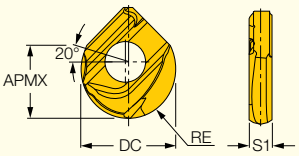


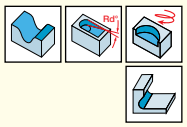
BALLPLUS

HBR-QF

220° Spherical Profile Inserts for Roughing and Semi-Finishing, Up and Down Ramping and Undercutting







Designation	Dimensions DC	APMX	RE	S	Tough ↔ Hard IC328	IC928	IC908	Recommended Machining Data a_p (mm)	f_z (mm/t)
HBR D100-QF	10.00	6.70	5.00	2.30			●	1.50-5.00	0.08-0.15
HBR D120-QF	12.00	8.00	6.00	2.60	●		●	2.00-6.00	0.08-0.15
HBR D160-QF	16.00	10.30	8.00	3.37	●	●	●	2.50-8.00	0.08-0.15
HBR D200-QF	20.00	13.40	10.00	4.65	●		●	3.00-10.00	0.08-0.15
HBR D250-QF	25.00	16.70	12.50	5.40			●	4.00-12.50	0.08-0.15

• For cutting speed recommendations, see pages 518-524

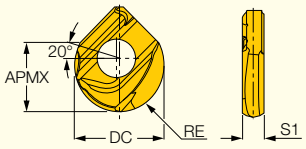
For tools, see pages: HCM D10 (257) • HCM D12 (257) • HCM D16 (258) • HCM D20 (258) • HCM D25 (259) • HCM-M (259) • HCM-MM (260)

BALLPLUS

HBF-QF

220° Spherical Profile Inserts for Accurate Finishing, Up and Down Ramping and Undercutting







Designation	Dimensions DC	APMX	RE	S	Tough ↔ Hard IC928	IC908	Recommended Machining Data a_p (mm)	f_z (mm/t)
HBF D120-QF	12.00	8.00	6.00	2.60	●	●	2.00-6.00	0.03-0.15
HBF D160-QF	16.00	10.30	8.00	3.37		●	2.50-8.00	0.03-0.15
HBF D200-QF	20.00	13.40	10.00	4.65	●	●	3.00-10.00	0.03-0.15
HBF D250-QF	25.00	17.00	12.50	5.40	●	●	4.00-12.50	0.03-0.15

• For cutting speed recommendations, see pages 518-524

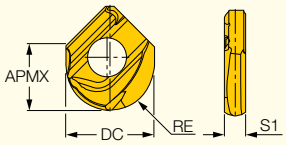
For tools, see pages: HCM D12 (257) • HCM D16 (258) • HCM D20 (258) • HCM D25 (259) • HCM-M (259) • HCM-MM (260)

BALLPLUS

HCR

Ball Nose Inserts with 2 Straight Tangent Cutting Edges (Fully Effective) for Cavity Profiling and Shouldering







Designation	Dimensions DC	APMX	RE	S	Tough ↔ Hard IC328	IC928	IC908	Recommended Machining Data a_p (mm)	f_z (mm/t)
HCR D100-QF	10.00	7.00	5.00	2.30			●	1.50-5.00	0.08-0.15
HCR D120-QF	12.00	9.00	6.00	2.60			●	2.00-8.50	0.08-0.15
HCR D120-QP	12.00	9.80	6.00	2.60	●	●		2.00-8.50	0.08-0.15
HCR D160-QF	16.00	11.30	8.00	3.37	●		●	2.50-11.00	0.08-0.15
HCR D200-QF	20.00	14.70	10.00	4.65			●	3.00-14.00	0.08-0.15
HCR D250-QF	25.00	18.40	12.50	5.40			●	4.00-17.50	0.08-0.15

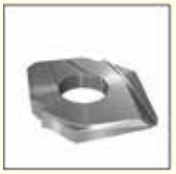
• QF - For general use applications • QP - Positive chipformer for low cutting forces. Recommended for machining aluminum, titanium and other exotic materials • For cutting speed recommendations, see pages 518-524

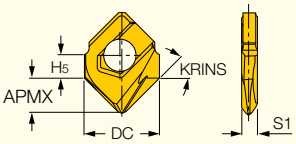
For tools, see pages: HCM D10 (257) • HCM D12 (257) • HCM D16 (258) • HCM D20 (258) • HCM D25 (259) • HCM-M (259) • HCM-MM (260)

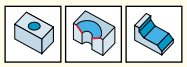
BALLPLUS

HCD-QF

90° V-Shaped Inserts with 2 Cutting Edges for Chamfering, Countersinking and Spot Drilling







Designation	Dimensions DC	APMX	KRINS	S	H_5	IC908	Recommended Machining Data a_p (mm)	f_z (mm/t)
HCD D120-090-QF	12.00	5.00	45	2.60	4.00	●	1.50-4.00	0.08-0.15
HCD D124-090-QF	12.40	5.10	45	2.60	4.00	●	1.50-4.00	0.08-0.15
HCD D160-090-QF	16.00	7.50	45	3.37	4.50	●	2.00-6.00	0.08-0.15
HCD D205-090-QF	20.50	9.50	45	4.65	6.00	●	2.50-7.00	0.08-0.15
HCD D250-090-QF	25.00	12.00	45	5.40	7.00	●	3.00-9.00	0.08-0.15

• For cutting speed recommendations, see pages 518-524

For tools, see pages: HCM D12 (257) • HCM D16 (258) • HCM D20 (258) • HCM D25 (259) • HCM-M (259) • HCM-MM (260)



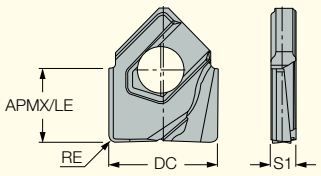


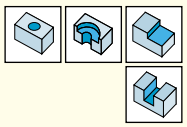
BALLPLUS

HCC-QF

Inserts with 2 Cutting Edges (Fully Effective) for Shouldering, Slotting, Drilling and Countersinking







Designation	Dimensions DC	APMX	RE	S	IC908	Recommended Machining Data a_p (mm)	f_z (mm/t)
HCC D120-R0.5-QF	12.00	8.10	0.50	2.60	●	3.50-7.50	0.08-0.15
HCC D120-R1.0-QF	12.00	8.10	1.00	2.60	●	3.50-7.50	0.08-0.15
HCC D120-R2.0-QF	12.00	8.10	2.00	2.60	●	3.50-7.50	0.08-0.15
HCC D160-R0.5-QF	16.00	10.30	0.50	3.37	●	5.00-10.00	0.08-0.15
HCC D160-R1.0-QF	16.00	10.30	1.00	3.37	●	5.00-10.00	0.08-0.15
HCC D160-R2.0-QF	16.00	10.30	2.00	3.37	●	5.00-10.00	0.08-0.15
HCC D200-R0.5-QF	20.00	12.80	0.50	4.65	●	6.00-12.00	0.08-0.15
HCC D200-R1.0-QF	20.00	12.80	1.00	4.65	●	6.00-12.00	0.08-0.15
HCC D200-R2.0-QF	20.00	12.80	2.00	4.65	●	6.00-12.00	0.08-0.15
HCC D200-R3.0-QF	20.00	12.80	3.00	4.65	●	6.00-12.00	0.08-0.15
HCC D250-R1.0-QF	25.00	14.70	1.00	5.40	●	7.50-15.50	0.08-0.15
HCC D250-R2.0-QF	25.00	14.70	2.00	5.40	●	7.50-15.50	0.08-0.15
HCC D250-R3.0-QF	25.00	14.70	3.00	5.40	●	7.50-15.50	0.08-0.15
HCC D250-R4.0-QF	25.00	14.70	4.00	5.40	●	7.50-15.50	0.08-0.15

• For cutting speed recommendations, see pages 518-524

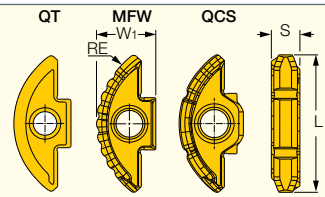
For tools, see pages: HCE (21) • HCE-MM (21)

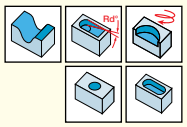
DROPMILL
3 FLUTE BALL NOSE

BLR

Round Segment Double-Sided Inserts for Ball Nose Milling Cutters







Designation	Dimensions RE(1)	L	W1	S	Tough ↔ Hard IC882	IC330	IC830	IC808	Recommended Machining Data fz (mm/t)
BLR D160-MFW	8.00	13.10	6.10	2.55			●		0.08-0.15
BLR D160-QCS	8.00	13.10	6.10	2.55		●		●	0.08-0.15
BLR D160-QT	8.00	13.10	6.10	2.55	●				0.08-0.15
BLR D200-MFW	10.00	16.40	7.60	3.40			●		0.08-0.15
BLR D200-QCS	10.00	16.40	7.60	3.40		●		●	0.08-0.15
BLR D200-QT	10.00	16.40	7.60	3.40	●				0.08-0.15
BLR D250-MFW	12.50	20.50	8.90	3.80			●		0.08-0.15
BLR D250-QCS	12.50	20.50	8.90	3.80		●		●	0.08-0.15
BLR D250-QT	12.50	20.50	8.90	3.80	●				0.08-0.15
BLR D300-QCS	15.00	24.50	10.75	4.60			●	●	0.08-0.15
BLR D300-QT	15.00	24.50	10.75	4.60	●				0.08-0.15
BLR D320-MFW	16.00	26.30	11.00	4.60			●		0.08-0.25
BLR D320-QCS	16.00	26.30	11.00	4.60			●	●	0.08-0.25
BLR D320-QT	16.00	26.30	11.00	4.60	●				0.08-0.25
BLR D400-MFW	20.00	32.70	14.20	5.50			●		0.08-0.25
BLR D400-QCS	20.00	32.70	14.20	5.50		●		●	0.08-0.25
BLR D500-MFW	25.00	40.90	17.80	7.40		●			0.08-0.25
BLR D500-QCS	25.00	40.90	17.80	7.40		●			0.08-0.25

• MFW - Serrated cutting edge for roughing operations • QCS - Chip splitting cutting edge for semi-finish and finish applications • QT - Round edge for finishing applications
• For cutting speed recommendations, see pages 518-524
(1) Radius generated on workpiece

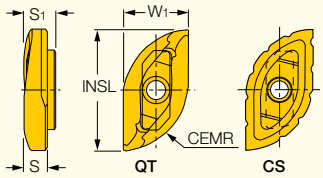
For tools, see pages: BLP Endmills (260) • BLP Shell Mill (261) • BLP-M (261) • BLPK (262)

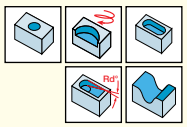
DROPMILL

BCR

Ball Nose Inserts with a Straight Cutting Edge Tangent to a Round Corner







Designation	Dimensions CEMR(2)	INSL	W1	S1	S	Tough ↔ Hard IC328	IC928	IC908	Recommended Machining Data ap (mm)	fz (mm/t)
BCR D120-QT	6.00	10.60	5.80	2.80	2.10	●		●	1.20-4.20	0.20-0.25
BCR D160-QT	8.00	12.70	7.70	4.40	3.30		●	●	1.60-5.60	0.20-0.25
BCR D200-QT	10.00	17.00	9.60	4.70	3.60			●	2.00-7.00	0.20-0.25
BCR D250-QT	12.50	20.00	11.80	5.70	4.20	●	●	●	2.50-8.75	0.20-0.25
BCR D300-QT	15.00	27.30	14.70	7.00	5.30	●	●		3.00-10.50	0.20-0.25
BCR D320-CS (1)	16.00	28.00	15.00	7.00	5.30			●	3.20-11.20	0.20-0.25
BCR D320-QT	16.00	28.00	15.10	7.00	5.30	●	●	●	3.20-11.20	0.20-0.25
BCR D400-CS (1)	20.00	35.40	18.80	9.40	6.30			●	4.00-14.00	0.20-0.25
BCR D400-QT	20.00	35.40	18.80	9.74	7.00	●			4.00-14.00	0.20-0.25
BCR D500-CS (1)	25.00	44.00	24.00	11.70	9.00			●	5.00-17.50	0.20-0.25

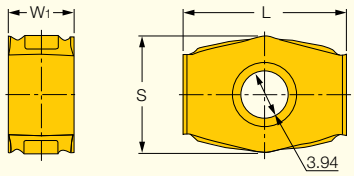
• For cutting speed recommendations, see pages 518-524
(1) Not recommended for stainless steel and high temperature alloys
(2) Radius generated on workpiece

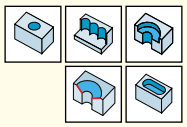
For tools, see pages: BCM (263) • BCM-M (264) • BCM-MM (264)

ISCARPLUNGER

PLHT
Tangentially Clamped Inserts with 4 Cutting Edges for Plungers







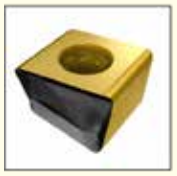
Designation	Dimensions W1	L	S	Tough ↔ Hard IC328	IC908	Recommended Machining Data fz (mm/t)
PLHT 1305-PDX	5.45	13.70	9.95	●	●	0.12-0.12

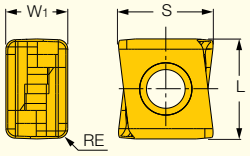
• For cutting speed recommendations, see pages 518-524

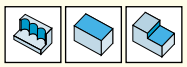
For tools, see pages: PH (305)

TANGPLUNGE
PLUNGING LINE

HTP LN.. 0604
Tangentially Clamped Inserts with 4 Cutting Edges for Plungers





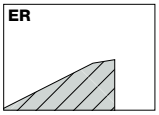


Designation	Dimensions W1	L	S	RE	Tough ↔ Hard IC330	IC830	IC808	IC810	IC07	Recommended Machining Data fz (mm/t)
HTP LNAR 0604 FR-P	4.06	6.50	6.77	0.80					●	0.05-0.15
HTP LNHT 0604 ER	4.06	6.50	6.77	0.80	●	●	●	●		0.08-0.12
HTP LNHT 0604 ETR	4.06	6.50	6.77	0.80	●	●	●			0.08-0.12
HTP LNMT 0604 ER (1)	4.06	6.50	6.84	0.60		●	●			0.08-0.15

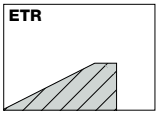
• For cutting speed recommendations, see pages 518-524

(1) Mounting this insert increases tool diameter by 0.2 mm

For tools, see pages: HTP-LN06 (304) • HTP-M-LN06 (304)



ER- For general applications

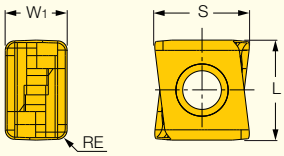


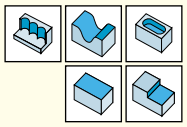
ETR- First priority for hardened steel

TANGPLUNGE
PLUNGING LINE

HTP LN.. 1006
Tangentially Clamped Inserts with 4 Cutting Edges for Plungers





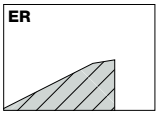


Designation	Dimensions W1	L	S	RE	Tough ↔ Hard IC330	IC830	IC808	IC810	IC07	Recommended Machining Data fz (mm/t)
HTP LNAR 1006 FR-P	6.50	10.50	10.13	1.00					●	0.05-0.15
HTP LNHT 1006 ER	6.50	10.50	9.93	1.00	●	●	●	●		0.10-0.15
HTP LNHT 1006 ETR	6.50	10.50	9.93	1.00	●	●	●			0.12-0.20
HTP LNMT 1006 ER (1)	6.50	10.50	9.96	1.00	●	●	●			0.08-0.15

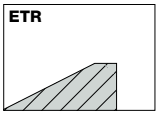
• For cutting speed recommendations, see pages 518-524

(1) Mounting this insert increases tool diameter by 0.1 mm

For tools, see pages: HTF-R-LN10 (190) • HTP-LN10 (305) • HTP-M-LN10 (305) • HTP-R-LN10 (306)



ER- For general applications

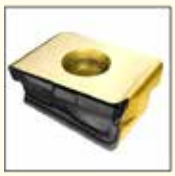


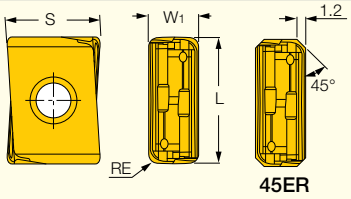
ETR- First priority for hardened steel

TANGPLUNGE
PLUNGING LINE

HTP LN.. 1606

Tangentially Clamped Inserts with 4 Cutting Edges for Plungers



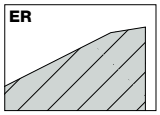


45ER

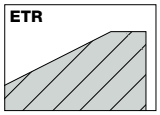
Designation	Dimensions W1	L	S	RE	Tough ↔ Hard IC328	IC928	IC908	IC810	IC910	IC07	Recommended Machining Data fz (mm/t)
HTP LNAR 1606 FR-P	6.50	16.50	12.28	1.20						●	0.05-0.15
HTP LNHT 1606 ER	6.50	16.50	12.07	1.20	●	●	●		●		0.10-0.20
HTP LNHT 1606 ETR	6.50	16.50	12.03	1.20		●	●				0.10-0.20
HTP LNHT 16061.2X45ER	6.50	16.50	12.04	-		●					0.10-0.20
HTP LNMT 1606 ETR	6.50	16.50	12.04	1.20				●			0.08-0.15

• For cutting speed recommendations, see pages 518-524

For tools, see pages: HTP-R-LN16 (306)



ER- For general applications



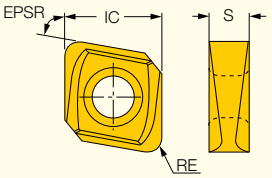
ETR- First priority for hardened steel

TORMILL

CNHT/MT 07

Toroidal Bull Nose Peripherally Ground Inserts with 4 Cutting Edges





Designation	Dimensions IC	RE	S	EPSR	Tough ↔ Hard IC808	IC908	Recommended Machining Data ap (mm)	fz (mm/t)
CNMT 070308-MM (1)	7.00	0.80	4.00	80	●		0.80-4.00	0.12-0.30
CNHT 070305	7.00	0.50	3.60	80		●	0.10-1.50	0.10-0.25
CNHT 070310	7.00	1.00	3.60	80		●	0.10-1.50	0.10-0.25
CNHT 070315	7.00	1.50	3.60	80		●	0.10-1.50	0.10-0.25

• For cutting speed recommendations, see pages 518-524

(1) Do not use on E93CN tools

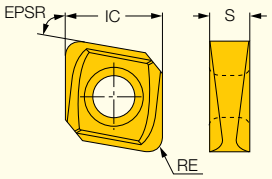
For tools, see pages: E90CN (13) • E90CN-M (12) • E93CN (265) • E93CN-M (265) • E93CN-MM (266)

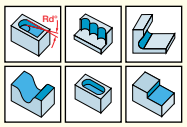
TORMILL

ENHT

Toroidal Bull Nose
Peripherally Ground Inserts
with 4 Cutting Edges







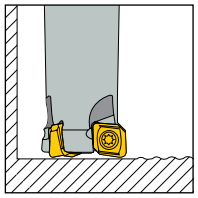
Designation	Dimensions IC	RE	S	EPSR	IC908	Recommended Machining Data a_p (mm)	f_z (mm/t)
ENHT 100408	10.50	0.80	4.20	75	●	0.10-1.50	0.10-0.25
ENHT 100410	10.50	1.00	4.20	75	●	0.10-1.50	0.10-0.25
ENHT 100415	10.50	1.50	4.20	75	●	0.10-1.50	0.10-0.25
ENHT 100420	10.50	2.00	4.20	75	●	0.10-1.50	0.10-0.25
ENHT 100425	10.50	2.50	4.20	75	●	0.10-1.50	0.10-0.25
ENHT 100430	10.50	3.00	4.20	75	●	0.10-1.50	0.10-0.25

• For cutting speed recommendations, see pages 518-524

For tools, see pages: E93CN (265) • E93CN-M (265) • F93CN (266)

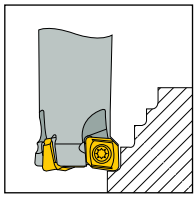
Machining Recommendations

Finishing



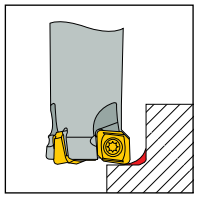
	Light	Medium	Heavy
a_p	0.1	0.5	1-1.5
f mm/t	0.25	0.15	0.1

Plunging



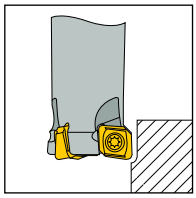
		Light	Medium	Heavy
ae	**CNHT**	1	3	4.5
	ENHT	1	4	8.5
f mm/t		0.12	0.1	0.08

Machining Small Corner Radii



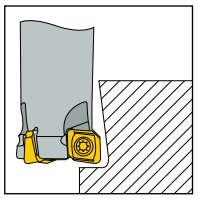
	Light	Medium	Heavy
a_p	0.1	0.5	1-2
ae	0.1	0.5	1-2
f mm/t	0.25	0.15	0.1

Machining Long Unsupported Parts



	Light	Medium	Heavy
a_p	0.1	0.5	2
ae	0.1	0.5	0.5
f mm/t	0.25	0.15	0.1

Undercut



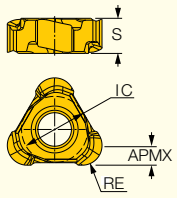
	Light	Medium	Heavy
a_p	2	4	6
ae	0.1	0.2	0.3
f mm/t	0.25	0.15	0.1

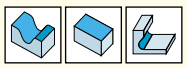
TOR6MILL PROFILING

TR6 TNCU/MU

Double Sided Inserts with Six
Round Cutting Edges, Available
in 0.5 Up to 3 mm Corner Radii







Designation	Dimensions RE	APMX	IC	S	Tough ↔ Hard IC882	IC830	IC808	IC908	Recommended Machining Data a_p (mm)	f_z (mm/t)
TR6 TNCU 070205	0.50	0.50	5.30	2.80		●	●		0.20-0.50	0.10-0.30
TR6 TNCU 070210	1.00	1.00	5.30	2.80		●	●		0.20-1.00	0.10-0.30
TR6 TNMU 070215	1.50	1.50	5.30	2.80		●	●		0.20-1.50	0.10-0.30
TR6 TNCU 100405	0.50	0.50	7.30	4.20	●	●	●		0.20-0.50	0.10-0.30
TR6 TNCU 100410	1.00	1.00	7.30	4.20	●	●	●		0.20-1.00	0.10-0.30
TR6 TNCU 100415	1.50	1.50	7.30	4.20	●	●	●		0.20-1.50	0.10-0.30
TR6 TNMU 100415	1.50	1.50	7.30	4.20	●	●			0.20-1.50	0.10-0.30
TR6 TNCU 100420	2.00	2.00	7.30	4.20	●	●	●		0.20-2.00	0.10-0.30
TR6 TNCU 100425	2.50	2.50	7.30	4.20	●	●	●	●	0.20-2.50	0.10-0.30
TR6 TNCU 100430	3.00	3.00	7.30	4.20	●	●	●		0.20-3.00	0.10-0.30

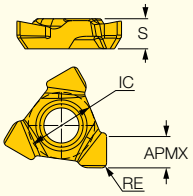
For tools, see pages: TR6 ER (267) • TR6 ER-M (269) • TR6 FR (271)

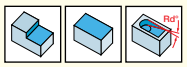
TOR6MILL PROFILING

TR90 TXMT

Single Sided Insert with Three Cutting Edges for 90° Shoulder and Face Milling







Designation	Dimensions APMX	RE	IC	S	Tough ↔ Hard IC830	IC808	Recommended Machining Data a_p (mm)	f_z (mm/t)
TR90 TXMT 070204	2.50	0.40	5.30	2.40	●	●	0.50-2.50	0.10-0.20
TR90 TXMT 100408	4.00	0.80	7.30	3.90	●	●	0.90-4.00	0.10-0.20

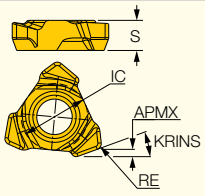
For tools, see pages: TR6 ER (267) • TR6 ER-M (269) • TR6 FR (271)

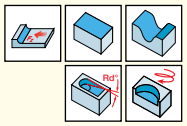
TOR6MILL PROFILING

TRFF TXMT

Single Sided Insert with Three Cutting Edges for High Feed Machining







Designation	Dimensions APMX	RE	Rg(1)	IC	S	KRINS(2)	Tough ↔ Hard IC830	IC808	Recommended Machining Data a_p (mm)	f_z (mm/t)
TRFF TXMT 0702	0.60	0.50	1.00	5.30	2.40	18.0	●	●	0.20-0.60	0.50-0.80
TRFF TXMT 1004	0.80	0.70	1.40	7.30	3.90	17.0	●	●	0.20-0.80	0.70-1.20

(1) Radius for programming

(2) Edge angle related to the wiper

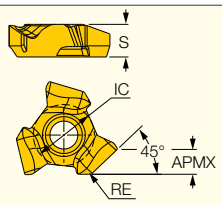
For tools, see pages: TR6 ER (267) • TR6 ER-M (269) • TR6 FR (271)

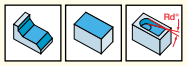
TOR6MILL PROFILING

TR45 TXMT

Single Sided Inserts with Three Cutting Edges for 45° Chamfering and Face Milling







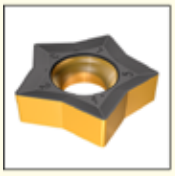
Designation	Dimensions APMX	RE	IC	S	Tough ↔ Hard IC830	IC808	Recommended Machining Data a_p (mm)	f_z (mm/t)
TR45 TXMT 1004	3.00	0.40	7.30	3.90	●	●	1.00-3.00	0.20-0.40

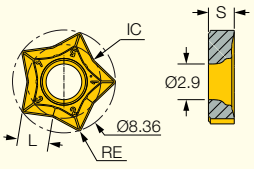
For tools, see pages: TR6 ER (267) • TR6 ER-M (269) • TR6 FR (271)

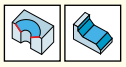
CHAMFMILL CHAMFERING LINE

PNMT 0602-TN

Pentagonal Inserts for Upper and Bottom Chamfering







Designation	Dimensions L	RE	IC	S	IC830	Recommended Machining Data f_z (mm/t)
PNMT 0602-TN	2.30	0.20	6.00	2.10	●	0.07-0.12

• For cutting speed recommendations, see pages 518-524

For tools, see pages: CH45-MM-PN06 (33) • CH45-PN06 (33)

Accessories

Adjustable Torque Handles

Adjustable Torque Handles for Screw Drivers



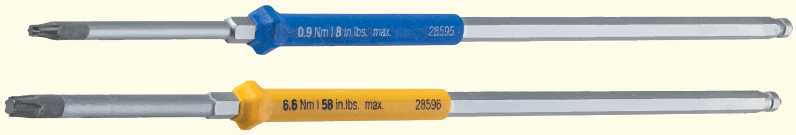
Designation	Range[1]	SSC[2]	Fig.
HSA 4 0.8-2	0.8-2	4.0	1.
HSA 4 1-5	1-5	4.0	1.
TSA 6 5-14	5-14	6.0	2.

(1) Torque range N*m
(2) Blade's hexagonal driving size

Accessories

Torx Blades

Torx Blades for Adjustable Torque Handles



Designation	TQ[1]	SSC[2]	Key[3]
BLD 4 T06	0.6	4.0	T06
BLD 4 T06IP	0.8	4.0	IP06
BLD 6 T20	10.0	6.0	T20
BLD 6 T20IP	13.0	6.0	IP20
BLD 6 T25	15.0	6.0	T25
BLD 6 T25IP	15.0	6.0	IP25

(1) Maximum tightening torque
(2) Blade's hexagonal driving size
(3) IP-TORX PLUS Tip

Accessories

HSD Fixed Torque Handles

Fixed Torque Handles for Screw Drivers



Designation	TQ[1]	Color
HSD 4-0.65NM	0.6	Orange
HSD 4-0.9NM	0.9	Black
HSD 4-1.2NM	1.2	Green
HSD 4-2.0NM	2.0	Blue
HSD 4-3.2NM	3.2	Yellow
HSD 4-4.8NM	4.8	Grey

• For tightening torque of insert clamping screws, refer to a table on page 524
(1) Torque N*m

Accessories

Key Blades

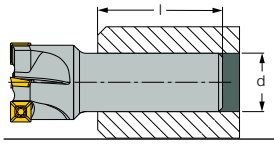
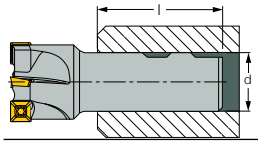
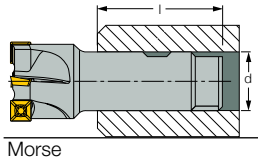
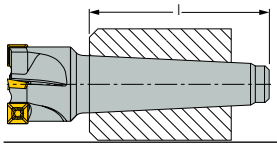
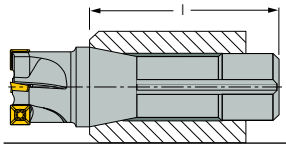
Key Blades for Fixed Torque Handles



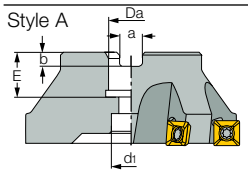
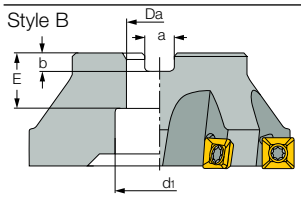
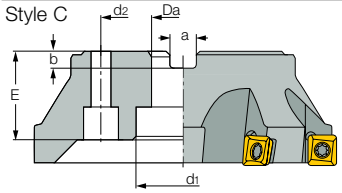
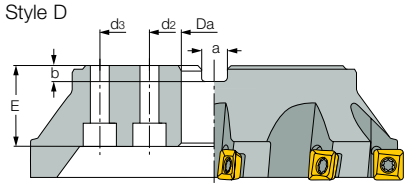
Designation	TQ[1]	Color
BLD 4 T06-0.65NM	0.7	Orange
BLD 4 IP06-0.65NM	0.7	Orange
BLD 4 IP07-0.9NM	0.9	Black
BLD 4 T07-0.9NM	0.9	Black
BLD 4 IP07-1.2NM	1.2	Green
BLD 4 IP08-1.2NM	1.2	Green
BLD 4 T08-1.2NM	1.2	Green
BLD 4 IP09-2.0NM	2.0	Blue
BLD 4 T09-2.0NM	2.0	Blue
BLD 4 IP10-3.2NM	3.2	Yellow
BLD 4 T10-3.2NM	3.2	Yellow
BLD 4 IP15-4.8NM	4.8	Grey
BLD 4 T15-4.8NM	4.8	Grey

• For tightening torque of insert clamping screws, refer to a table on page 524
(1) Maximum tightening torque

Endmill Shank Styles

	Shank Diameter (d) [DCONMS]	l min. Recommended
Cylindrical 	10 16 20 25 32 40	1.5xd 1.5xd 1.5xd 1.5xd 1.5xd 1.5xd
Weldon 	12 16 20 25 32 40 50	45 48 50 56 60 70 80
Combined Shank (Clarkson) 	16 20 25 32 40	39 – 53 54 75
Morse 	CM 2 CM 3 CM 4	64.0 81.0 102.5
Bridgeport 		101.6

Face Mill Arbor Hole Styles

	Da [DCONMS]	E	d_1	d_2	d_3	a	b
Style A 	16 22 27	19 20 23	13.5 18 38	–	–	8.4 10.4 12.4	5.6 6.5 7.0
Style B 	22 27 32 40	20 25 25 33	31 38 46 56	–	–	10.9 12.4 14.4 16.4	6.5 7.0 8.0 9.0
Style C 	40 60	33 38	65 –	66.7 101.6	– –	16.4 25.7	9.0 14.0
Style D 	60	38	–	101.6	177.8	25.7	14.0

Cutting Speed Recommendations for Indexable Milling Cutters

ISO	Material		Condition	Tensile Strength [N/mm^2]	Hardness HB	Material No.
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	1
		>= 0.25 %C	Annealed	650	190	2
		< 0.55 %C	Quenched and tempered	850	250	3
		>= 0.55 %C	Annealed	750	220	4
			Quenched and tempered	1000	300	5
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	6
			Quenched and tempered	930	275	7
				1000	300	8
				1200	350	9
	High alloyed steel, cast steel, and tool steel		Annealed	680	200	10
			Quenched and tempered	1100	325	11
	Stainless steel and cast steel		Ferritic/martensitic.	680	200	12
			Martensitic	820	240	13
M	Stainless steel		Austenitic	600	180	14
K	Grey cast iron (GG)		Ferritic/pearlitic		180	15
			Pearlitic		260	16
	Cast iron nodular (GGG)		Ferritic		160	17
			Pearlitic		250	18
	Malleable cast iron		Ferritic		130	19
			Pearlitic		230	20
N	Aluminum-wrought alloy		Not cureable		60	21
			Cured		100	22
	Aluminum-cast, alloyed	<=12% Si	Not cureable		75	23
			Cured		90	24
		>12% Si	High temperature		130	25
	Copper alloys	>1% Pb	Free cutting		110	26
			Brass		90	27
			Electrolitic copper		100	28
	Non metallic		Duroplastics, fiber plastics			29
			Hard rubber			30
S	High temp. alloys	Fe based	Annealed		200	31
			Cured		280	32
		Ni or Co based	Annealed		250	33
			Cured		350	34
			Cast		320	35
	Titanium Ti alloys			RM 400		36
			Alpha+beta alloys cured	RM 1050		37
H	Hardened steel		Hardened		55 HRC	38
			Hardened		60 HRC	39
	Chilled cast iron		Cast		400	40
	Cast iron		Hardened		55 HRC	41

	UNCOATED		COATED						
No.	IC28	IC08	IC328/ 330	IC4050	IC300	IC928/ 830	IC5400	IC950	IC908/ 808
1	80 110		140 - 180	170 - 280	210 - 220	180 - 230	225 - 285	210 - 350	210 - 270
2	70 - 90		125 - 150	120 - 200	160 - 180	160 - 190	200 - 235	150 - 250	185 - 225
3	60 - 70		100 - 120	100 - 160	130 - 180	130 - 160	160 - 200	120 - 200	150 - 180
4	50 - 70		90 - 110	80 - 120	130 - 180	120 - 140	150 - 175	100 - 150	135 - 165
5	50 - 60		80 - 100	140 - 320	110 - 140	100 - 130	125 - 160	170 - 400	120 - 150
6	70 - 100		120 - 160	120 - 240	130 - 180	160 - 210	200 - 260	150 - 300	180 - 240
7	50 - 80		90 - 140	100 - 200	100 - 140	120 - 180	150 - 225	125 - 250	135 - 210
8	50 - 70		80 - 120	80 - 160	100 - 140	100 - 160	125 - 200	100 - 200	120 - 180
9	40 - 70		70 - 110	70 - 140	110 - 140	90 - 140	110 - 175	90 - 175	105 - 165
10	40 - 50		60 - 80	60 - 120	100 - 140	80 - 100	100 - 125	75 - 150	90 - 120
11	30 - 70		55 - 120	60 - 100	60 - 100	70 - 160	85 - 200	75 - 130	80 - 180
12	60 - 110	60 - 110	100 - 180	100 - 180	60 - 130	120 - 220			120 - 200
13	60 - 80	40 - 100	100 - 140	100 - 140	50 - 120	120 - 170			110 - 190
14	50 - 70	40 - 80	80 - 120	80 - 120	50 - 100	100 - 150			100 - 160
15			70 - 140	90 - 220		90 - 170		70 - 180	
16			60 - 120	90 - 180		70 - 150		70 - 140	
17			130 - 240	150 - 240		160 - 300		120 - 190	
18			110 - 200	100 - 250		140 - 250		80 - 200	
19			180 - 330	160 - 300		220 - 410		130 - 240	
20			160 - 290	150 - 260		200 - 360		120 - 210	
21	480 - 640	800 - 900							1180 - 1220
22	400 - 560	700 - 800							1070 - 1210
23	50 - 640	800 - 900							1180 - 1220
24	400 - 560	750 - 850							1070 - 1210
25	240 - 320	400 - 450							470 - 490
26	240 - 320	500 - 550							580 - 620
27	240 - 320	500 - 550							580 - 620
28	160 - 240	350 - 380							400 - 440
29									
30									
31	20 - 30	10 - 20	30 - 40			30 - 50			35 - 50
32	20 - 20	10 - 20	25 - 35			30 - 40			30 - 45
33	10 - 20	20 - 50	20 - 30			20 - 30			25 - 35
34	10 - 20	20 - 50	20 - 25			20 - 30			25 - 30
35	30 - 40	20 - 50	40 - 60			50 - 70			50 - 75
36	20 - 40	20 - 30	30 - 60			30 - 70			35 - 75
37	20 - 40	20 - 30	30 - 60			30 - 70			35 - 75
38									55 - 65
39									45 - 55
40									90 - 105
41									55 - 65

Cutting Speed Recommendations for Indexable Milling Cutters

ISO	Material		Condition	Tensile Strength [N/mm²]	Hardness HB	Material No.
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	1
		>= 0.25 %C	Annealed	650	190	2
		< 0.55 %C	Quenched and tempered	850	250	3
		>= 0.55 %C	Annealed	750	220	4
			Quenched and tempered	1000	300	5
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	6
			Quenched and tempered	930	275	7
				1000	300	8
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	High alloyed steel, cast steel, and tool steel		Annealed	680	200	10
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			Pearlitic		260	16
	Cast iron nodular (GGG)		Ferritic		160	17
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			Cured		100	22
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			Cured		90	24
		>12% Si	High temperature		130	25
	Copper alloys	>1% Pb	Free cutting		110	26
			Brass		90	27
			Electrolitic copper		100	28
	Non metallic		Duroplastics, fiber plastics			29
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S	High temp. alloys	Fe based	Annealed		200	31
			Cured		280	32
		Ni or Co based	Annealed		250	33
			Cured		350	34
			Cast		320	35
	Titanium Ti alloys			RM 400		36
			Alpha+beta alloys cured	RM 1050		37
H	Hardened steel		Hardened		55 HRC	38
			Hardened		60 HRC	39
	Chilled cast iron		Cast		400	40
	Cast iron		Hardened		55 HRC	41

COATED				CERAMIC
IC830	IC910/ 810	IC4100/ 5100 a-TEC	DT7150 DO-TEC	IS8
180 - 240	210 - 350			
150 - 200	150 - 250			
120 - 160	120 - 200			
110 - 150	100 - 150			
100 - 135	170 - 250			
160 - 220	150 - 220			
140 - 190	125 - 250			
120 - 160	100 - 200			
110 - 150	90 - 175			
80 - 110	75 - 150			
120 - 160	75 - 130			
120 - 180				
100 - 170				
90 - 140				
	200 - 320	200 - 350	140 - 270	350 - 800
	130 - 330	180 - 330	125 - 230	250 - 600
	125 - 300	150 - 250	200 - 330	400 - 900
	120 - 240	130 - 220	160 - 330	250 - 600
	220 - 400	200 - 350	180 - 350	360 - 540
	200 - 350	180 - 330	160 - 330	300 - 440
30 - 45				
25 - 40				
20 - 30				
20 - 25				
40 - 65				
30 - 65				
30 - 65				
45 - 55				
40 - 50				
75 - 90				
45 - 55				

PCD
Recommended Machining Conditions

	Grade	D.O.C. mm	Material	Vc m/min	Feed mm/tooth	Cutting Edge
N	ID5	<2.0	Aluminum alloys <12% silicon	300-3000	0.05-0.25	Sharp
		<2.0	Chipboard Fiberboard Plastics	2000-3000	0.05-0.25	
		<2.0	Copper Brass alloys	500-1500	0.05-0.25	

CBN
Recommended Machining Conditions

	D.O.C. mm	Material	Grade					
			IB85			IB55		
			Vc m/min	Feed mm/tooth	Cutting Edge	Vc m/min	Feed mm/tooth	Cutting Edge
K	<0.5	Grey cast iron HB 200-280	500-1500	0.1-0.3	Chamfer Hone			
	0.5-2.0		500-1100	0.1-0.25	Chamfer			
	<0.5	Compacted graphite iron GCI	400-600	0.1-0.2	Hone			
S	0.5-2.0	Co based > 35 HRc Ni based > 35 HRc Fe based > 35 HRc Cr based > 35 HRc	150-200 120-150 60-120 50-75	0.05-0.15	Chamfer			
H	<0.5	Hardened steels > 45 HRc	80-180	0.1-0.25	Chamfer	80-220	0.1-0.25	Chamfer
	<2	Hardened cast iron	80-200	0.1-0.15	Chamfer			
P	<2	Bearing steel	180-220	0.05-0.25	Chamfer	180-220	0.1-0.15	Chamfer
	<2	Ferrous powder metal	150-300	0.1-0.15	Chamfer	250-360	0.1-0.15	Chamfer

Recommended Cutting Conditions for ADKT 1505R8T-FF Inserts

Workpiece Material						Carbide grade	D.O.C. Ap [mm]	Cutting speed Vc, [m/min]	Feed per tooth fz, [mm/tooth]	Coolant
ISO class DIN/ISO 513	Description	ISCAR Mat. Group*	Typical AISI/SAE/ASTM	Representative DIN W.-Nr.	Hardness, HB					
P	Non-alloy steel	1	1020	1.0402	130-180	IC928	1-1.5	100-150	0.8-1.5	Air
						IC808	1.5-2	100-170	0.7-1.3	
	Low alloy steel	8	4340	1.6582	260-300	IC928	1-1.5	100-150	0.8-1.5	Air
						IC808	1.5-2		0.5-1	
		9	3135	1.571	HRC 35-42**	IC928	0.5-1.1	80-120	0.4-1	Air
						IC808	0.5-0.7		0.2-0.7	
	High alloy steel	10	H13	1.2344	200-220	IC928	0.7-1.5	100-150	0.6-1.1	Air
						IC808				
	Martensitic stainless steel	12	420	1.4021	200	IC928	0.5-1.5	80-120	0.4-0.8	Air
						IC330				
M	Austenitic stainless steel	14	304L	1.4306	200	IC928	0.5-1	80-100	0.3-0.7	Air
						IC330				
			316L	1.4404	140	IC928	0.5-1	80-100	0.3-0.6	
						IC330				
K	Grey cast iron	16	Class 40	0.6025 (GG25)	250	IC928	1-1.5	150-220	1-1.5	Air
	Nodular cast iron	17	Class 65-45-12	0.7050 (GGG50)	200	IC928	1-1.5	100-160	1-1.5	
S	High temperature alloys	34	Inconel 718	2.4668	340	IC928	0.5-1	20-30	0.1-0.2	Wet (emilsion)
		37	AMS R56400	3.7165 (Ti6Al4V)	HRC 40-45	IC928	0.5-1	22-45	0.4-0.6	

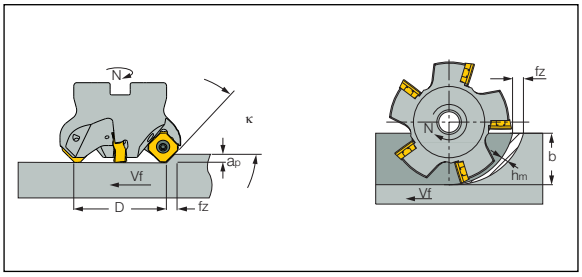
* ISCAR material grpoup in accordance with VDI 3323 standard
** Quenched and tempered
The data refer to W.O.C. no more than 0.7×D and a cutter overhang to 2×D, where D - the cutter diameter

GRADES for APPLICATIONS and MATERIALS

Material groups		ISO P		ISO M	ISO K	ISO N	ISO S	ISO H
		1 - 11	12 - 13	14	15 - 20	21 - 28	31 - 37	38 - 41
		Steel	Stainless Steel Ferritic & Martensitic	Stainless Steel Austenitic & Duplex (Ferritic-Austenitic)	Cast Iron	Nonferrous	High Temp. Alloys	Hard Steel & Hardened Cast Iron
MILLING Indexable	Harder	IC5400	IC808 (908)	IC808 (908)	IS8	ID5	IC808 (908)	IB55
		IC30N					IC840	IB85
		IC808 (908)	IC5500	IC840	IC5100 (4100)		IC380	IC30N
		IC810 (910)*		IC830 (928)	DT7150	IC04	IC5820**	IC808 (908)
		IC830 (928)	IC830 (928)	IC330 (328)	IC810 (910)	IC08	IC882	DT7150
		IC845	IC330 (328)	IC882		IC28	IC330 (328)	
Coolant	Tougher	N	N	Y	N	Y	Y	N

First choice
* for steel castings
** for milling with high pressure coolant (HPC) supply

Milling Calculations



Calculations

Cutting speed	$Vc = \frac{\pi * D * N}{1000} [m/min]$
Spindle speed	$N = \frac{Vc * 1000}{\pi * D} [rev/min]$
Feed speed	$Vf = fz * Z * N$ [mm/min]
Feed per tooth	$fz = \frac{Vn}{N * Z} [mm/tooth]$
Feed per revolution	$fN = fz * Z$ [mm/rev]
Metal removal rate	$Q = \frac{ap * b * Vf}{1000} [cm^3/min]$
Machining time	$Th = \frac{L_w}{Vf} [min]$
Specific cutting force	$Kc = Kc1 * hm^{-mc} [N/mm^2]$
Average chip thickness in shoulder milling for b/D≤0.1	$hm \approx fz * \sqrt{\frac{b}{D}} [mm]$
Average chip thickness in shoulder milling for b/D>0.1	$hm = \frac{(sink * 180 * b * fz)}{\pi * D * \arcsin(b/D)} [mm]$
Machining power	$P = \frac{(ap * b * Vf * kc)}{6 * 10^7 * h} [kW]$

Vc	[m/min]	Cutting speed
D	[mm]	Tool diameter
N	[rev/min]	Spindle speed
Vf	[mm/min]	Feed speed
fz	[mm/tooth]	Feed per tooth
Z		Number of teeth
fN	[mm/rev]	Feed per revolution
Q	[cm³/ min]	Metal removal rate
ap	[mm]	Depth of cut
b	[mm]	Width of cut
Th	[min]	Machining time
Lw	[mm]	Machining length
Kc	[N/mm²]	Specific cutting force
Kc1(1)	[N/mm²]	Specific cutting force for 1 mm² chip section
hm	[mm]	Average chip thickness
mc(1)		Chip thickness factor
k	[degrees]	Cutting edge angle
P	[kW]	Machining power
h		Machine efficiency
P=	Pc + PM	
P	-	Total Machining Power
Pc	-	Net Power=Cutting Power
PM	-	Motor Power (while not cutting)

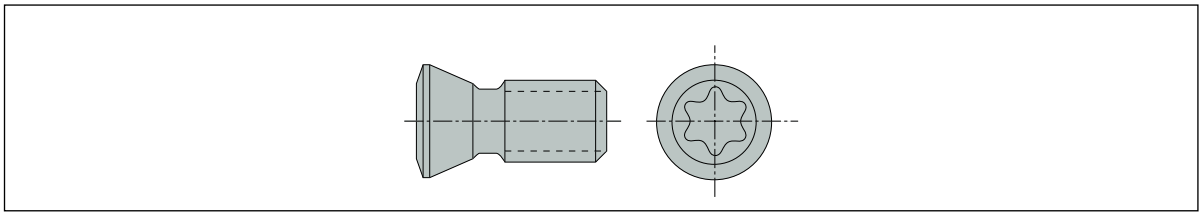
(1) See page 1112

Values for Motor Power Pm

Max. Machine Power [kW]	Motor Power Pm [kW]
5.5	0.4
7.5	0.4-0.6
11.0	1.0
15.0	1.5
18.0	2.2
22.0	2.5

Motor Power Pm has a value of approximately 7 to 12% of Maximum Machine Power

Tightening Torque by Screw



Screw	Thread	Overall Length [mm]	TORX Recess	Tightening Torque	
				[Nxm]	[lbfxin]
TS 18041I/HG	M1.8	4.1	IP 6	0.5	4.4
SR M2X0.4-2.9 T6-HG	M2	2.9	T 6	0.5	4.4
SR M2X0.4-3 T6	M2	2.9	T 6	0.5	4.4
SR M2X0.4-3.5 T6	M2	3.55	T 6	0.5	4.4
SR 34-533/L	M2	4.8	T 6	0.6	5.3
SR 34-533/L/HG	M2	4.8	T 6	0.6	5.3
SR 34-508	M2.2	4.6	T 7	0.9	8
SR 34-508/S-HG	M2.2	3.8	T 7	0.9	8
SR 34-508/L	M2.2	5.2	T 7	0.9	8
SR 14-548	M2.2	5.3	T 7	0.9	8
SR 14-505	M2.2	6.5	T 7	0.9	8
SR 114-018-L2.50	M2.5	2.5	T 6	0.6	5.3
SR 114-018-L3.40	M2.5	3.4	T 6	0.6	5.3
SR 114-018-L4.40	M2.5	4.4	T 6	0.6	5.3
SR 114-018-L5.30	M2.5	5.3	T 6	0.6	5.3
SR 10503833	M2.5	4.6	T 7	0.9	8
SR M2.5X5-T7-60	M2.5	5	T 7	0.9	8
SR 10503457	M2.5	5.2	T 6	0.9	8
SR 34-514	M2.5	5.2	T 7	0.9	8
SR 34-513	M2.5	5.5	T 8	1.2	10.6
SR M2.5-T8-MT	M2.5	5.5	T 8	1.2	10.6
SR 34-505	M2.5	5.5	T 8	1.2	10.6
SR 34-505/HG	M2.5	5.5	T 8	1.2	10.6
SR 34-505/L	M2.5	7.5	T 8	1.2	10.6
SR 34-505/LHG	M2.5	7.5	T 8	1.2	10.6
SR M2.5x6-T7-60	M2.5	6	T 7	0.9	8
SR M2.5X0.45-L6 IP7	M2.5	6	IP 7	0.9	8
SR 14-560	M2.5	6.4	T 8	1.2	10.6
SR 14-560-HG	M2.5	6.4	T 8	1.2	10.6
SR 14-560/S	M2.5	5.3	T 8	1.2	10.6
SR M2.6-L6.7-S11	M2.6x0.45	6.7	T 8	1.2	10.6
SR 10508082-HG	M3	6.8	T 8	1.2	10.6
SR 34-506	M3	6.5	T 9	2	17.7
SR 34-506/M	M3	7.4	T 9	2	17.7
SR 34-506/L	M3	8	T 9	2	17.7
SR M3x0.5-L7.4 IP9	M3	7.4	IP 9	2	17.7
SR 14-513	M3	8	T 9	2	17.7
SR 10508600	M3	8.1	T 9	2	17.7
SR 14-551	M3	8.2	T 9	2	17.7
SR 10504970	M3.5	8.1	IP15	3.2	28.3
SR 14-562	M3.5	8.7	T10	3.2	28.3
SR M3.5X0.6-L8.5 IP10	M3.5	8.5	IP15	3.2	28.36
SR 14-562/S	M3.5	6.5	T10	3.2	28.3
SR 14-562XL	M3.5	10.7	T10	3.2	28.3
SR 14-571	M3.5	8.7	T10	3.2	28.3
SR 14-571/L	M3.5	10	T10	3.2	28.3
SR 14-601	M3.5	11	T15	3.2	28.3
SR 34-550	M3.5	11.5	T10	3.2	28.3
SR 14-541	M4	7.9	T15	4.8	42.5
SR 14-506	M4	8.2	T15	4.8	42.5
SR M4X0.7-L9.5 IP15	M4	9.5	IP15	4.8	42.5
SR M4X0.7-L9.6 IP15	M4	9.65	IP15	4.8	42.5
SR M4X0.7-L11.5 IP15	M4	11.5	IP15	4.8	42.5
SR 16-236	M4	9.7	T15	5.3	47
SR 16-236/P	M4	11.3	T15	5.3	47

***** For T490…-11 cutters only

Screw	Thread	Overall Length [mm]	TORX Recess	Tightening Torque	
				[Nxm]	[lbfxin]
SR M4x0.7IP15	M4	10.5	IP15	4.8	42.5
SR 34-535	M4	11.5	T15	4.8	42,5
SR 34-535-SN	M4	11.5	T15	4.8 (3.2*)	42.5 (28.3*)
SR 34-535/L9.5-SN	M4	9.5	T15	4.8 (3.2*)	42.5 (28.3*)
SR 14-500 -L	M4x0.5	-	T15	4.8	42.5
SR 14-536	M4	12	T20	6	53
SR 14-536/S	M4	10.5	T20	6	53
SR M4-IP15-MT	M4	10.5	IP15	4.8	42.5
SR 14-536/M	M4	14.1	T20	6	53
SR 14-544	M4	12	T15	4.8	42.5
SR 14-544/S	M4	9.3	T15	4.8	42.5
SR 34-501	M4	7.4	T15	4.8	42.5
SR 11800745	M4	12.5	IP15	4.8	42.5
SR 34-510	M4	14.4	T15	4.8	42.5
SR 34-510/L…	M4	10...11.7	T15	4.8	42.5
SR M4-L15-D4.5	M4	15	IP15	4.8	42.5
SR 14-592M	M5	8.7	T20	9	80
SR 14-592SM	M5	9	T20	9	80
SR 14-592XLM	M5	10.4	T20	9	80
SR 34-523	M5	9.5	T20	9	80
SR 14-0180	M5	10.4	T20	6	53
SR M5x0.8IP20-1	M5	10.8	IP20	6	53
SR 14-590	M5	11.2	T20	9	80
SR 10505427	M5	12	IP20	9	80
SR 10513105	M5	13	IP20	8	70.8
SR 10513105-L10.5	M5	10.5	IP20	8	70.8
SR 14-591	M5	13.5	T20	9	80
SR 14-591/H	M5	13.5	T20	9	80
SR 14-591/L	M5	16.2	T20	9	80
SR 34-511	M5	14	T20	9	80
SR M5X0.8 16 IP20	M5	16	IP20	9	80
SR M5-IP25-MT	M5	16.5	IP25	9	80
SR 14-519	M5	17	T20	9	80
SR 14-542	M5	18.3	T20	9	80
SR 16-212	M5	12.5	T20	9	80
SR 10503750	M6	18	T25	12	106
SR 10507547	M6	22.5	IP25	9	80
SR 34-516	M7x1	15.5	T25	12	106
SR 34-515	M8x1	17.2	T25	12	106
SR 10502813-HG-M	4-48 UNF	8.2	IP7	1.2	10.6
SR 10502813-HGSM	4-48 UNF	7	IP7	1.2	10.6
SR 11800866	12-28 UNF-RH/LH	18	IP15	6	53
SR 118-069	NF 1/4-28 NF	13.3	IP20	9	80
SR 1/4-28xIP25	1/4-48 UNF	18.7	IP25	9	80