



nixkoTOOLS

CATALOGUE 2023

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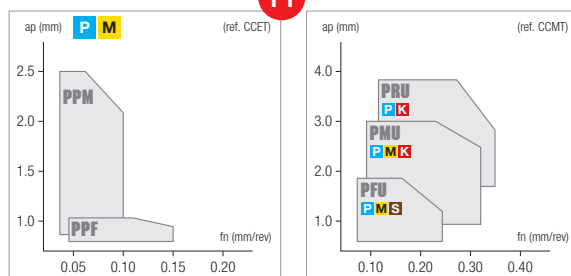
Spare parts .G1

TURNING indexable inserts · CARBIDE

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4		7		8		9		10	
CC		HC: Coated carbide HT: Cermet HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition		Stable machining, light cut General machining, medium cut Unstable machining, heavy cut		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)	
ISO - with hole		HC CVD HT CVD HF CVD HF CVD HF CVD HF CVD HT HF		JC7010 JC7020 JC8005 JC8015 JC8025 JC9010 JC9025 JP4020 JP5015 JP5120 JP5125 JP6010 JU4015 JU6015		P M K N S H		200 380 180 300 150 280 120 240 80 160 60 120 200 400 30 90 30 70 30 60 50 100	
The most popular insert shape due to high versatility Clearance angle 7°, less likely to have chip jamming when boring 80° corner can be used for both turning and facing operations		Dimensions		ISO		P M K N S H		200 380 180 300 150 280 120 240 80 160 60 120 200 400 30 90 30 70 30 60 50 100	
		2 edges		P M K N S H		200 380 180 300 150 280 120 240 80 160 60 120 200 400 30 90 30 70 30 60 50 100		200 380 180 300 150 280 120 240 80 160 60 120 200 400 30 90 30 70 30 60 50 100	
6		Designation		RE		IC		S	
5		PPF P M		0.2		6.35		2.38	
ground chipbreaker right-hand shown		CCET060202/-PPF		0.4		6.35		2.38	
CCET060204/-PPF		0.2		9.525		3.97		4.4	
CCET09T302/-PPF		0.4		9.525		3.97		4.4	
CCET09T304/-PPF		0.2		6.35		2.38		2.8	
CCMT060202-PPU		0.4		6.35		2.38		2.8	
CCMT060204-PPU		0.2		9.525		3.97		4.4	
CCMT09T302-PPU		0.4		9.525		3.97		4.4	
CCMT09T304-PPU		0.8		12.7		4.76		5.5	
CCMT09T308-PPU		1.2		12.7		4.76		5.5	
PPM P M		0.4		9.525		3.97		4.4	
CCET09T304/-PPM		0.2		6.35		2.38		2.8	
CCMT060202-PMU		0.4		6.35		2.38		2.8	
CCMT060204-PMU		0.8		6.35		2.38		2.8	
CCMT060208-PMU		0.2		9.525		3.97		4.4	
CCMT09T302-PMU		0.4		9.525		3.97		4.4	
CCMT09T304-PMU		0.8		9.525		3.97		4.4	
CCMT09T308-PMU		0.4		12.7		4.76		5.5	
CCMT120404-PMU		0.8		12.7		4.76		5.5	
CCMT120408-PMU		1.2		12.7		4.76		5.5	
CCMT120412-PMU									

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



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CUTTING CONDITIONS p. A78

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- 1 Chapter
- 2 Section
- 3 Sub-chapter
- 4 ISO shape
- 5 Application and main geometry features
- 6 Geometry designation and main material application
- 7 Insert composition according to ISO 513
- 8 Suggested applications based on the main features of each grade
- 9 Suggested cutting speed for different workpiece materials.
For ease of reading, values are shown only for the most common materials in each group.

P	▶ P1
M	▶ M1
K	▶ K1
N	▶ N1
S	▶ S1
H	▶ H1

More accurate indications are listed at the end of every sub-chapter.

- 10 Stock status. This value may be updated without prior notice.
- 11 General indication about the application range of each product.
More detailed suggestions can be found at the end of every sub-chapter.
- 12 Shortcut to the most import section of every chapter or to directly related products (insert ▶ holder)

1 TURNING Holders · 2 INTERNAL 3

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4 V SCLC

5 ISO - CC

- Internal turning (KAPR 95°)
- Vortex boring bar (high quality steel)
- Special chip evacuation path
- Maximum overhang: 5xDCON

6

9 VORTEX

with internal coolant

Right-hand shown

Designation	Stock L R	DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
NT-V08H-SCLC/06-10	● ●	10	8	5	100	-	-	95°	14°		CC0060200
NT-V10K-SCLC/06-12	● ●	12	10	6	125	-	-	95°	12°		CC0060200
NT-V12M-SCLC/06-14	● ●	14	12	7	150	-	-	95°	10°		CC0060200
NT-V12M-SCLC/09-14	● ●	14	12	7	150	-	-	95°	12°		CC009T300
NT-V16Q-SCLC/09-18	● ●	18	16	9	180	-	-	95°	10°		CC009T300
NT-V20R-SCLC/09-22	● ●	22	20	11	200	-	-	95°	8°		CC009T300
NT-V25S-SCLC/09-27	● ●	27	25	13.5	250	-	-	95°	6°		CC009T300
NT-V20R-SCLC/12-25	● ●	25	20	13	200	-	-	95°	7°		CC0120400
NT-V25S-SCLC/12-32	● ●	32	25	17	250	-	-	95°	5°		CC0120400

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-V08H-SCLC/06-10	NT-ST25060T07	NT-FT07
NT-V10K-SCLC/06-12	NT-ST25060T07	NT-FT07
NT-V12M-SCLC/06-14	NT-ST25060T07	NT-FT07
NT-V12M-SCLC/09-14	NT-ST35073T15	NT-FT15
NT-V16Q-SCLC/09-18	NT-ST35073T15	NT-FT15
NT-V20R-SCLC/09-22	NT-ST35089T15	NT-FT15
NT-V25S-SCLC/09-27	NT-ST35089T15	NT-FT15
NT-V20R-SCLC/12-25	NT-ST40115T15	NT-FT15
NT-V25S-SCLC/12-32	NT-ST40115T15	NT-FT15

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A - TURNING

B - THREADING

C - GROOVING

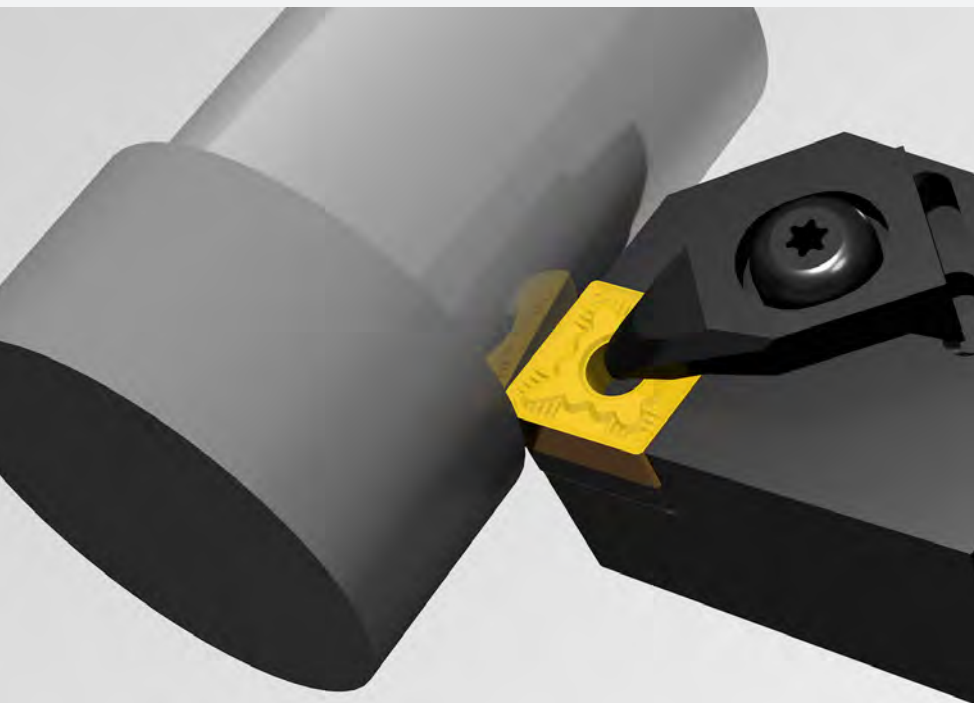
D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

- 1 Chapter
- 2 Section
- 3 Sub-chapter
- 4 ISO shape
- 5 Insert shape
- 6 Tool holder main features
- 7 Spare parts
- 8 Shortcut to directly related products (holder ► insert)
- 9 Boring bar material and special features



TURNING

Carbide .A3

PCBN .A85

Diamond .A133

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Holders .A201



TURNING Carbide

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	ISO 513	CARBIDE			CERMET	
		CVD COATED	PVD COATED	UNCOATED	PVD COATED	UNCOATED
A - TURNING	P					
	P01	JC8005				JU4015
	P10	JC8015	JP5120		JP4020	
	P20	JC8025	JP5125			
	P30	JC8035				
B - THREADING	Steel					
	P40					
C - GROOVING	M					
	M01		JP9015			
	M10	JC9010			JP4020	
	M20	JC9025	JP9030	JP5120		
	M30		JP5125			
D - MILLING	Stainless steel					
	M40					
E - DRILLING	K					
	K01					
	K10	JC7010	JP5120		JP4020	
	K20	JC7115	JP5125			
	K30	JC7020				
F - ACCESSORIES	Cast iron					
	N					
	N01		JP6010	JU6015		
	N10					
	N20					
G - SPARE PARTS	Non-ferrous material					
	N30					
	S		JP3015			
	S01					
	S10					
	HRSA					
	S20					
	S30					

HRSA: Heat resistant super alloy

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION	FEATURES
			TECHNOLOGY	COMPOSITION		
JC7010	carbide	1.830	CVD	TiCN+Al ₂ O ₃	K K05 K25	High wear resistance. First choice for grey cast iron general machining.
JC7020	carbide	1.830	CVD	TiCN+Al ₂ O ₃	K K15 K30	High fracture resistance. Heavy interrupted cut on all kind of cast iron.
JC7115	carbide	1.830	CVD	TiCN+Al ₂ O ₃	K K10 K20	Well-balanced between wear and chipping resistance. First choice for nodular cast iron general machining.
JC8005	carbide	1.740	CVD	TiCN+Al ₂ O ₃	P P01 P10	High wear resistance. Excellent performance in high-speed cutting machining.
JC8015	carbide	1.740	CVD	TiCN+Al ₂ O ₃ +TiN	P P10 P20	Good balance between wear and chipping resistance. High wear resistance, from medium to high speed cutting.
JC8025	carbide	1.700	CVD	TiCN+Al ₂ O ₃ +TiN	P P20 P30	All around grade suitable for a wide range of applications. Excellent reliability even on medium interruptions.
JC8035	carbide	1.620	CVD	TiCN+Al ₂ O ₃ +TiN	P P30 P40	Tough substrate and high chipping resistance coating. First choice for heavy machining.
JC9010	carbide	1.710	CVD	TiCN+Al ₂ O ₃ +TiN	M M05 M15	High performance thin Al ₂ O ₃ nano coating with superior adhesion. Shows great wear resistance at high-speed continuous cutting.
JC9025	carbide	1.540	CVD	TiCN+Al ₂ O ₃ +TiN	M M20 M30	Good balance between wear and chipping resistance. First choice for stainless steel machining.
JP3015	micrograin carbide	1.950	PVD	TiAlN	S S05 S25	Great stability at high temperature machining. Best choice for HRSA materials.
JP4020	cermet	1.680	PVD	TiAlN	P P10 P20	Universal grade for finishing on multiple materials under stable conditions and high cutting speed.
					M M10 M20	
					K K10 K20	
JP5120	micrograin carbide	1.830	PVD	TiAlN	P P10 P20	Special coating technology balances wear resistance and toughness. The post-coating surface treatment effectively prevent built-up edge.
					M M10 M20	
					K K10 K20	
JP5125	micrograin carbide	1.830	PVD	TiAlN	P P20 P30	High Co micrograin carbide substrate with high toughness and latest coating technology. Universal use with great reliability and long tool life.
					M M20 M30	
					K K20 K30	
JP6010	micrograin carbide	2.020	PVD	TiBCN	N N05 N15	Special coating technology suitable for a wide range of applications on non-ferrous materials. A smart alternative to PCD tools.
JP9015	micrograin carbide	2.020	PVD	TiAlN	M M10 M20	Micrograin carbide with high wear resistance. First choice for stainless steel finishing.
JP9030	micrograin carbide	1.830	PVD	TiAlN	M M25 M35	Micrograin carbide with superior oxidation resistance and high toughness. Great performance on interrupted cut machining of stainless steel.
JU4015	cermet	1.650	-	-	P P05 P15	High wear resistance in high-speed continuous cutting. First choice for finishing when low surface roughness is the main priority.
JU6015	micrograin carbide	1.950	-	-	N N10 N20	Uncoated carbide for universal use, from finishing to roughing, on non-ferrous materials.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

	ISO 513		nikkoTOOLS		ISCAR		KENNAMETAL		KYOCERA		MITSUBISHI		
			carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet	
A - TURNING	P	P01 - P10	JC8005	JU4015	IC8150	IC20N IC520N	KCP05B	KT315 KTP10	CA510 PR1705	TN610 PV710	MC6115 MS6015 UE6105		
		P10 - P20	JC8015 JP5120 JP5125	JP4020	IC8150 IC8250 IC807	IC30N IC530N	KCP10B KCU10		CA025P CA515 PR1705	TN620 PV720 CCX	MC6115 MS6015 UE6110 VP15TF	NX2525 VP25N AP25N	
		P20 - P30	JC8025 JP5125		IC8250 IC8350		KCP25B KCP30B KCU25		CA025P CA525 PR1725	TN620 PV720	MC6125 MS7025 UE6120 VP15TF	NX3035 MP3025	
		P30 - P40	JC8035		IC8350 IC830		KCP30B KCP40B		CA530 PR1535	PV730	MC6035 MS7025 UH6400		
B - THREADING	M	M01 - M10	JC9010 JP5120 JP9015	JP4020	IC6015 IC807	IC20N IC520N		KT315 KTP10	CA6515	TN610 PV710	MC7015		
		M10 - M20	JC9010 JP9015 JP5125	JP4020	IC6015 IC807	IC30N IC530N	KCM15B KCU10		CA6515 PR1425 PR1725	TN620 PV720	MC7015 US7020 VP15TF	NX2525 VP25N AP25N	
C - GROOVING		M20 - M30	JC9025 JP5125		IC6025 IC830		KCM25B KCU25		CA6525 PR1425 PR1725	PV730	MC7025 MS7025 MS9025		
		M30 - M40	JP9030		IC6025 IC830		KCM35B		PR1535		MP7035 US735		
D - MILLING	K	K01 - K10	JC7010	JP4020	IC5005		KCK05B	KT315 KTP10	CA310		MC5005 UC5105		
		K10 - K20	JC7010 JC7115	JP4020	IC5005 IC5010		KCK15B		CA315	PV710 CCX	MC5015 UC5115	NX2525 VP25N AP25N	
		K20 - K30	JC7020		IC5010 IC8150		KCK20B		CA320		MC5015 UC5115 VP15TF		
E - DRILLING	N	N01 - N10	JP6010	-		-	KC5410	-	KW10 PDL010	-	HTI10	-	
		N10 - N20	JP6010 JU6015	-	IC520 IC20	-	KC5410 K313	KT325	KW10	-	HTI10	-	
		N20 - N30	JU6015	-	IC20	-	K313	-	PDL025	-		-	
E - DRILLING	S	HRSA	S01 - S10	JP3015	-	IC804	-	KCS10B	-	PR005S	-	MP9005	-
			S10 - S20	JP3015	-	IC804 IC806	-	KCS10B	-	PR015S	-	MP9015	-
			S20 - S30		-	IC806	-		-	PR1535	-	MP9025	-
	TITANIUM	S01 - S10	JP6010	-	IC804	-	KCS10B	-	SW05	-	MT9005	-	
		S10 - S20	JU6015	-	IC804 IC806 IC20	-	K313	-		-	MT9015	-	
		S20 - S30		-	IC806	-		-		-		-	

BLACK: CVD, UNDERLINED: PVD, RED: uncoated

SANDVIK		SECO		SUMITOMO		TAEGUTEC		TUNGALOY		WALTER	
carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet
GC4305	CT5015 <u>GC1525</u>	TP0501		AC810P AC8015P	T1000A	TT4410 TT8105B	CT3000 <u>PV3010</u>	T9105 T9205	NS520	WPP05S	<u>WEP10C</u>
GC1125 GC4315 GC4415	CT5015 <u>GC1525</u>	TP1501	TP1020 <u>TP1030</u>	AC530U AC1030U AC8015P AC8020P	T1500A <u>T1500Z</u>	TT4410 TT8115B TT9020	CT7000 <u>PV3030</u>	SH725 T9115 T9215	AT9530 <u>GT9530</u> NS9530	WPP10G WPP10S	<u>WEP10C</u>
GC1125 GC4325 GC4425		TP2501 TP25		AC530U AC1030U AC8020P AC8025P	T2500A <u>T2500Z</u> <u>T3000Z</u>	TT4430 TT5100 TT8125B TT9020		AH725 T9125 T9225	AT9530 <u>GT9530</u> NS9530	WPP20G WPP20S WMP20S	
GC4335		TP3501 TP40		AC830P AC8035P		TT8135B		T9135 T9235		WKP30S WPP30G WPP30S	
<u>GC1115</u>		<u>TS2000</u>			T1000A	<u>TT5080</u>	CT3000 <u>PV3010</u>	T6215		<u>WSM01</u>	
GC1115 GC2015 GC2220	<u>GC1525</u> CT5015	TM1501 <u>TS2500</u>	TP1020 <u>TP1030</u>	AC610M AC6020M	T1500A	TT4410 <u>TT5080</u> TT9215	CT7000 <u>PV3030</u>	SH725 T6215	<u>GT9530</u> NS9530	WMP20S <u>WSM10S</u>	
GC1125 GC2025 GC2220		OP500 TM2501		AC630M AC6030M		TT4430 <u>TT9080</u> TT9225		AH630 AH725 GH330 T6120	<u>GT9530</u> NS9530	WMP20S <u>WSM20S</u>	
<u>GC2035</u>		TM3501 TP40		AC1030U AC530U AC6040M		TT8020 <u>TT8080</u> TT9235		AH645 T6130		<u>WSM30S</u>	
GC3210		TK0501		AC405K AC4010K	T1000A	TT7005		T505 T5105		WKK10S	
GC3210 GC3225		TK1501		AC415K AC4015K		TT7015	CT3000 <u>PV3010</u>	T515 T5115	<u>GT9530</u> NS9530	WKK20S	
GC3225		TK1501		AC420K		TT7025		T5125		WKP30S	
H10	-		-		-	K10	-	KS05F	-	<u>WNN10</u>	-
H10	-	KX	-		-	K10	-	TH10	-	<u>WNN10</u> WK1	-
	-	KX	-	H1	-		-		-		-
<u>GC1105</u> S05F	-	<u>TS2050</u>	-	AC5005S AC510U	-	TT3005 <u>TT5080</u>	-	AH8005	-	<u>WSM01</u> <u>WSM10S</u>	-
<u>GC1105</u> S05F S205	-	<u>TS2000</u>	-	AC5015S AC520U	-	TT3010 <u>TT9080</u>	-	AH8015	-	<u>WSM20S</u>	-
GC1115 S205	-	<u>TS2500</u>	-	AC5025S	-	TT3020 <u>TT9080</u>	-	AH8015	-	<u>WSM30S</u>	-
	-	883	-	EH510	-	K10 <u>TT4410</u>	-	TH10	-	WS10 <u>WSM10S</u>	-
H13A	-	883	-	EH520	-	K10	-	KS20	-	WS10 <u>WSM20S</u>	-
H13A	-		-		-		-		-		-

This table is our own estimation based on information available to the public and is not authorized by the company mentioned on it.

A - TURNING

B - THREADING

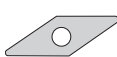
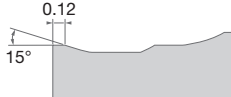
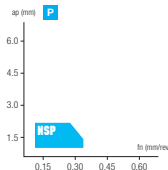
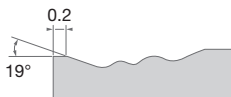
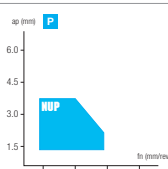
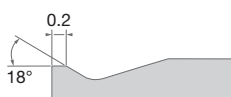
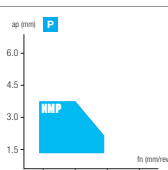
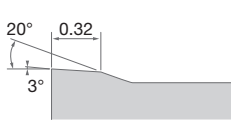
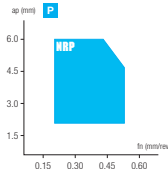
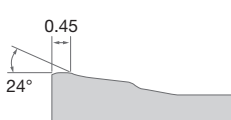
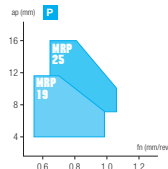
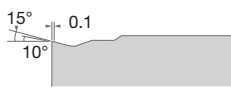
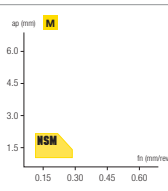
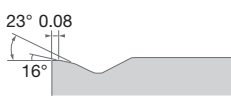
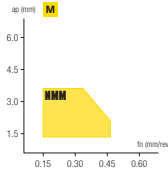
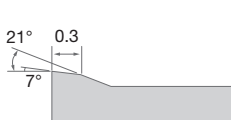
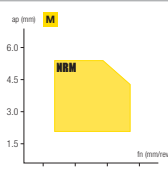
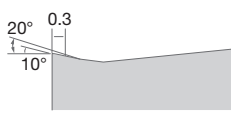
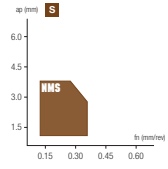
C - GROOVING

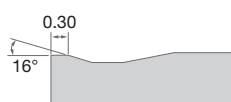
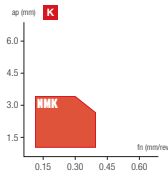
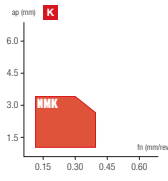
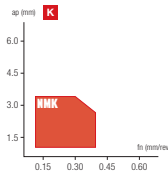
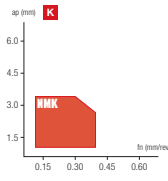
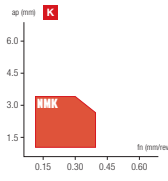
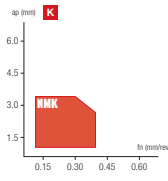
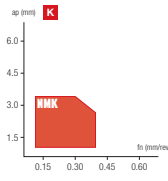
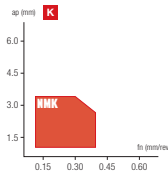
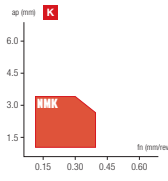
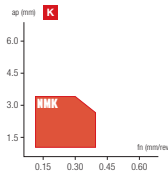
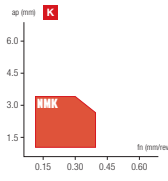
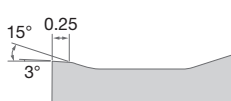
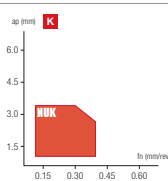
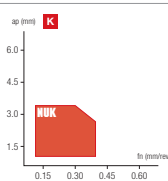
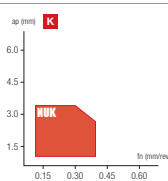
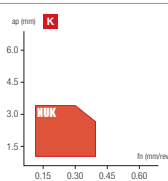
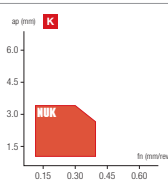
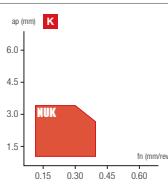
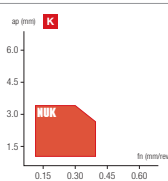
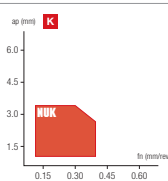
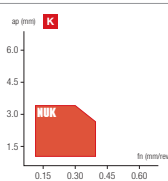
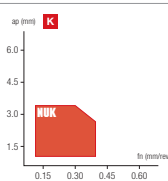
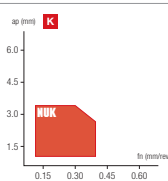
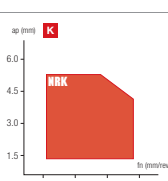
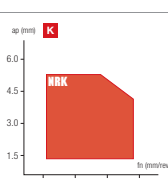
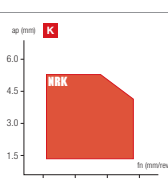
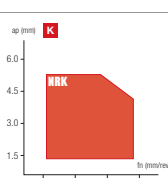
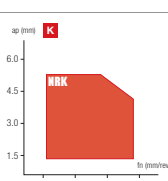
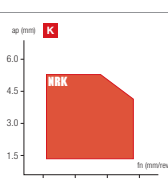
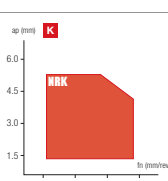
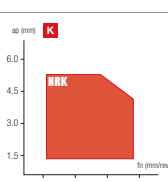
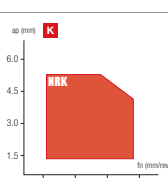
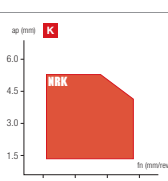
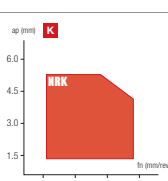
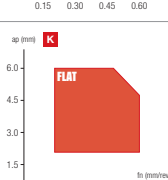
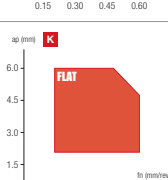
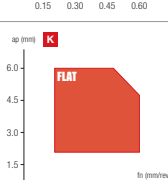
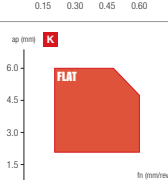
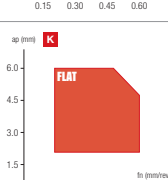
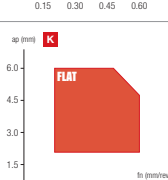
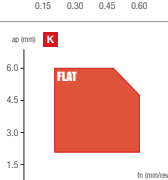
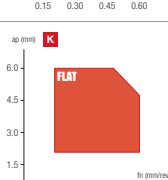
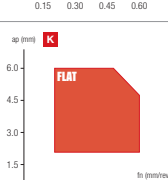
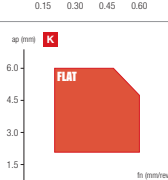
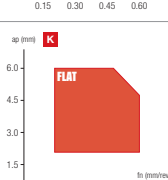
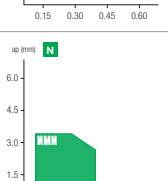
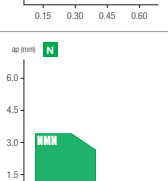
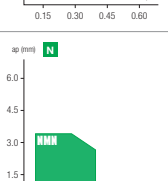
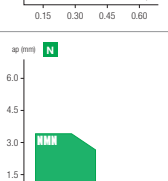
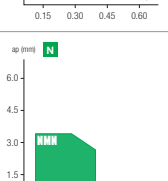
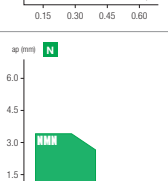
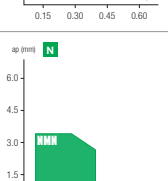
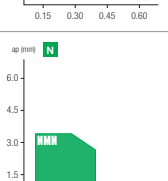
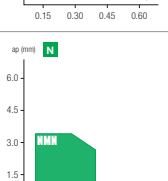
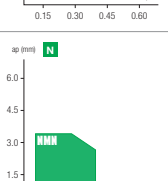
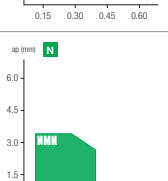
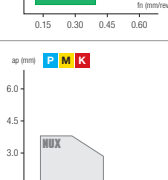
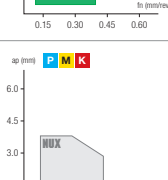
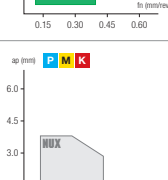
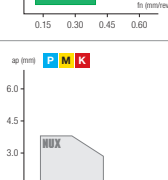
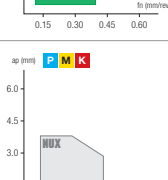
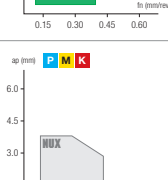
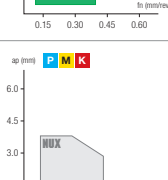
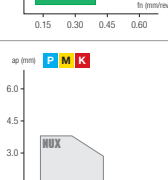
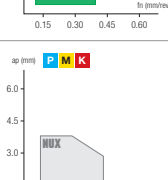
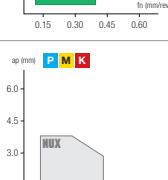
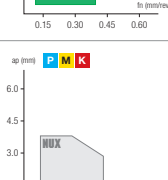
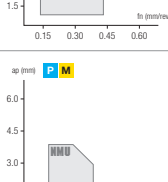
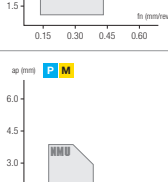
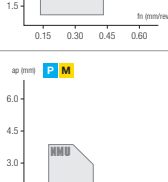
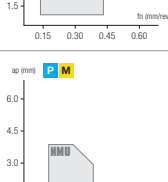
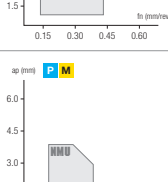
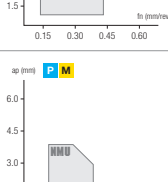
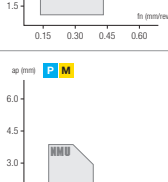
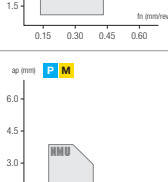
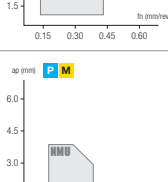
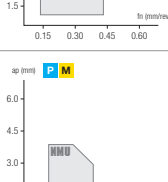
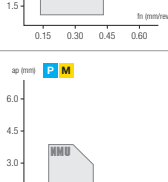
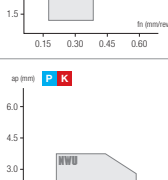
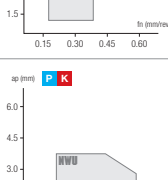
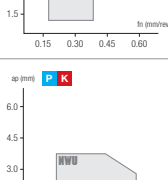
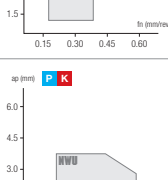
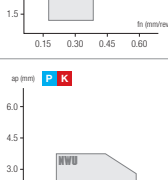
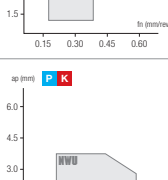
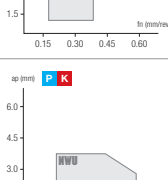
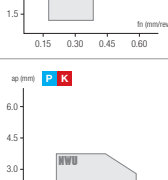
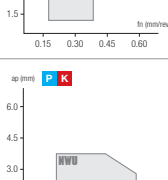
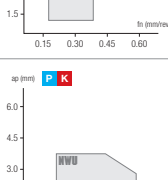
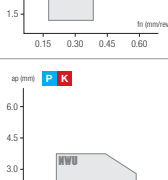
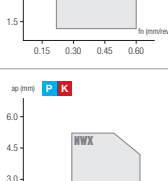
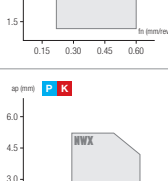
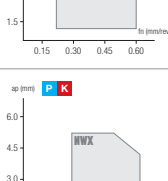
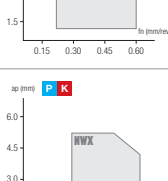
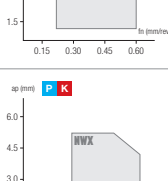
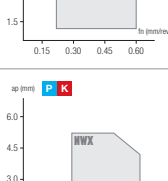
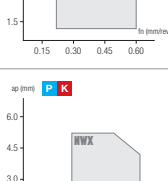
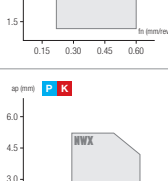
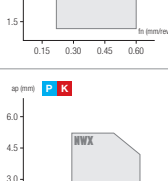
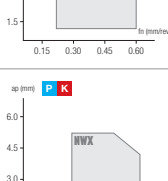
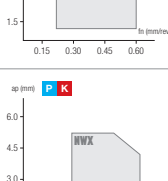
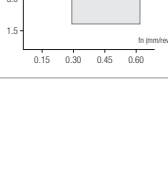
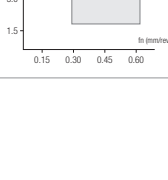
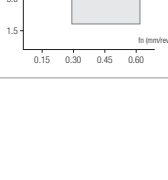
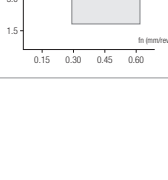
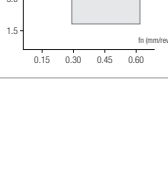
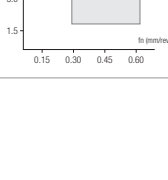
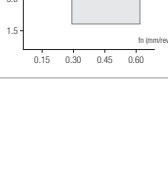
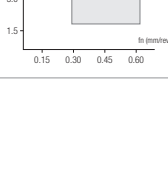
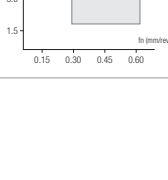
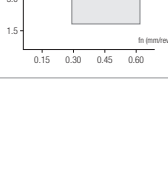
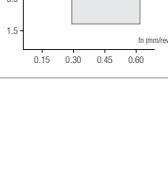
D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING	NEGATIVE type with hole				C	D	S	T	V	W
										
					80°	55°	90°	60°	35°	80°
B - THREADING	P	FINISHING	NSP  	 SIZE 09 12	 SIZE 11 15	 SIZE 12	 SIZE 16	 SIZE 16	 SIZE 06 08	
		MEDIUM	NUP  	 SIZE 09 12 16 19	 SIZE 11 15	 SIZE 12	 SIZE 16 22	 SIZE 16	 SIZE 06 08	
			NMP  	 SIZE 12 16 19	 SIZE 11 15	 SIZE 12	 SIZE 16 22	 SIZE 16	 SIZE 06 08	
		ROUGHING	NRP  	 SIZE 12 16 19 25	 SIZE 15	 SIZE 12 19 25	 SIZE 16 22		 SIZE 08	
			MRP  	 SIZE 19 25		 SIZE 19 25				
C - GROOVING	M	FINISHING	NSM  	 SIZE 12	 SIZE 15		 SIZE 16	 SIZE 16	 SIZE 08	
		MEDIUM	NMM  	 SIZE 09 12 16 19	 SIZE 11 15	 SIZE 12 19	 SIZE 16 22	 SIZE 16	 SIZE 06 08	
			NRM  	 SIZE 12 16 19	 SIZE 15	 SIZE 12 19	 SIZE 16		 SIZE 08	
D - MILLING	S	MEDIUM	NMS  	 SIZE 12	 SIZE 15				 SIZE 08	
			G - SPARE PARTS							

NEGATIVE type with hole			C	D	S	T	V	W
			80°	55°	90°	60°	35°	80°
K	LIGHT TO MEDIUM MACHINING	NMK	 ap (mm)  0.30 16°	 ap (mm)  0.30 16°	 ap (mm)  0.30 16°	 ap (mm)  0.30 16°	 ap (mm)  0.30 16°	 ap (mm)  0.30 16°
		NUK	 ap (mm)  0.25 15° 3°	 ap (mm)  0.25 15° 3°	 ap (mm)  0.25 15° 3°	 ap (mm)  0.25 15° 3°	 ap (mm)  0.25 15° 3°	 ap (mm)  0.25 15° 3°
	ROUGHING	NRK	 ap (mm)  0.35 24°	 ap (mm)  0.35 24°	 ap (mm)  0.35 24°	 ap (mm)  0.35 24°	 ap (mm)  0.35 24°	 ap (mm)  0.35 24°
		Flat	 ap (mm)  0°	 ap (mm)  0°	 ap (mm)  0°	 ap (mm)  0°	 ap (mm)  0°	 ap (mm)  0°
N	UNIVERSAL	NMN	 ap (mm)  10°	 ap (mm)  10°	 ap (mm)  10°	 ap (mm)  10°	 ap (mm)  10°	 ap (mm)  10°
		NUX	 ap (mm)  0.22 17° 6°	 ap (mm)  0.22 17° 6°	 ap (mm)  0.22 17° 6°	 ap (mm)  0.22 17° 6°	 ap (mm)  0.22 17° 6°	 ap (mm)  0.22 17° 6°
	MEDIUM	NMU	 ap (mm)  10°	 ap (mm)  10°	 ap (mm)  10°	 ap (mm)  10°	 ap (mm)  10°	 ap (mm)  10°
		NWU	 ap (mm)  0.25 18° 3°	 ap (mm)  0.25 18° 3°	 ap (mm)  0.25 18° 3°	 ap (mm)  0.25 18° 3°	 ap (mm)  0.25 18° 3°	 ap (mm)  0.25 18° 3°
UNI	WIPER	NWX	 ap (mm)  0.30 16°	 ap (mm)  0.30 16°	 ap (mm)  0.30 16°	 ap (mm)  0.30 16°	 ap (mm)  0.30 16°	 ap (mm)  0.30 16°
		NWU	 ap (mm)  0.25 18° 3°	 ap (mm)  0.25 18° 3°	 ap (mm)  0.25 18° 3°	 ap (mm)  0.25 18° 3°	 ap (mm)  0.25 18° 3°	 ap (mm)  0.25 18° 3°

A - TURNING

B - THREADING

C - GROOVING

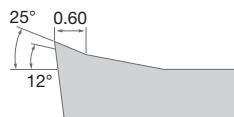
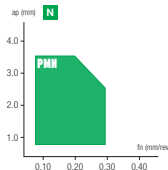
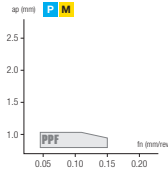
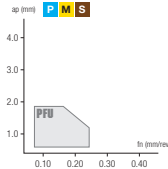
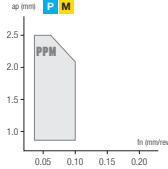
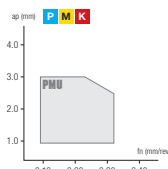
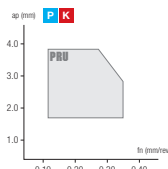
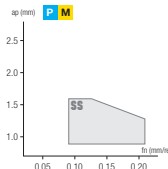
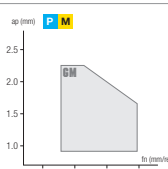
D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

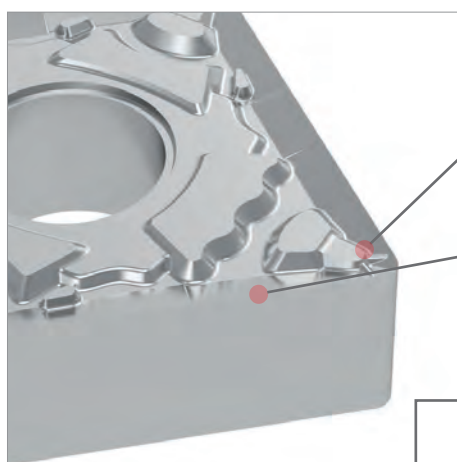
POSITIVE type with hole			C	D	S	T	V	W
			80°	55°	90°	60°	35°	80°
N	UNIVERSAL	PMN  	CC  A39  SIZE 06 09 12	DC  A46  SIZE 07 11	SC  A55  SIZE 09 12	TC  A60  SIZE 09 11 16	VC  A68  SIZE 11 16 22	
		PPF (ground chip breaker)  	CC  A38  SIZE 06 09	DC  A45  SIZE 07 11		TB, TP  A59, A66 TC  A60  SIZE 06 09 11	VB  A67  SIZE 11	WB  A71  SIZE 06
		PFU  	CC  A38  SIZE 06 09	DC  A45  SIZE 07 11	SC  A55  SIZE 09	TC  A60  SIZE 11 16	VB  A67  SIZE 11 16	
		PPM (ground chip breaker)  	CC  A38  SIZE 09	DC  A45  SIZE 07 11		TP  A66  SIZE 11	VB  A67  SIZE 11	
		PMU  	CC  A38  SIZE 06 09 12	DC  A45  SIZE 07 11 15	SC  A55  SIZE 09 12	TC  A60  SIZE 09 11 16 22	VB, VC  A67, A68  SIZE 11 16	WC  A72  SIZE 12
		PRU  	CC  A39  SIZE 09 12	DC  A46  SIZE 11	SC  A55  SIZE 09 12	TC  A61  SIZE 16	VB, VC  A67, A68  SIZE 16	
MICRONEGA	MEDIUM	SS  	MCN  A53  SIZE 06 09 12	MDN  A54  SIZE 07 11				
	MEDIUM	GM  	MCN  A53  SIZE 06 09 12	MDN  A54  SIZE 07 11				

NSP

Chipbreaker

- Chipbreaker for steel finishing and light cutting
- Butterfly geometry directs chip flow
- Variable rake angle and curved edge line for excellent chip control at small depths of cut
- High quality surface finishing

• Features of NSP chipbreaker

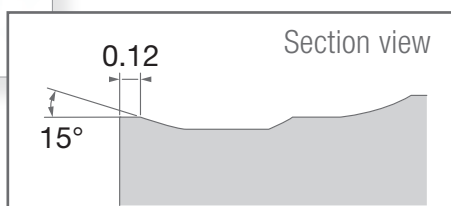


BUTTERFLY DOT

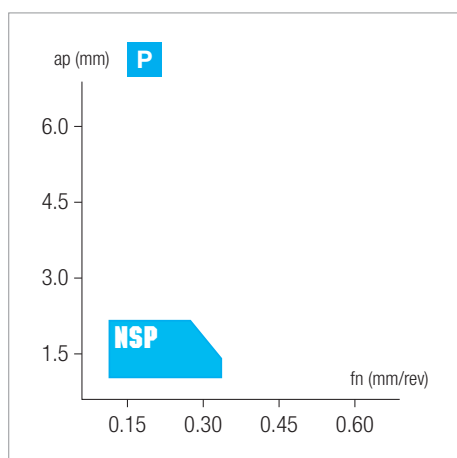
- High stability of chip flows at high feed
- Lower cutting force at low depth of cut and high feed

VARIABLE RAKE ANGLE AND CURVED EDGE LINE

- Less crater wears
- Excellent chip control at small depths of cut



• Application range



• Performance evaluation

Workpiece	Steel C45 (1.1191)
Cutting condition	Vc 350 m/min, fn 0.20 mm/rev, ap 1.0 mm, emulsion
Cutting Tool	CNMG120408-NSP JC8005
nikkoTOOLS	200 PCS.
Competitor A	180 PCS.
Competitor B	180 PCS.

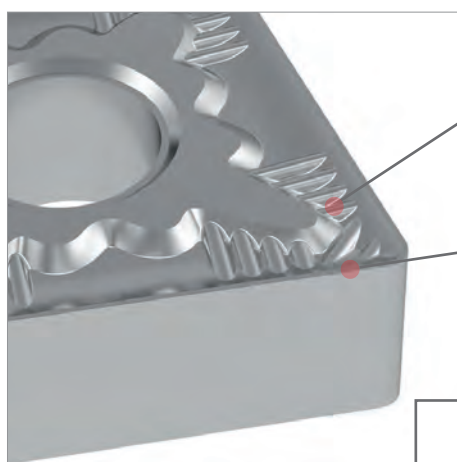


NUP

Chipbreaker

- Chipbreaker for steel semi-finishing and medium cutting
- Variable rake angle and edge width for good balance of toughness and sharpness
- Special groove design improves robustness and chip flow
- Universal application

• Features of NUP chipbreaker

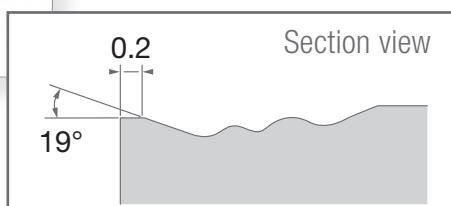


SPECIAL GROOVES

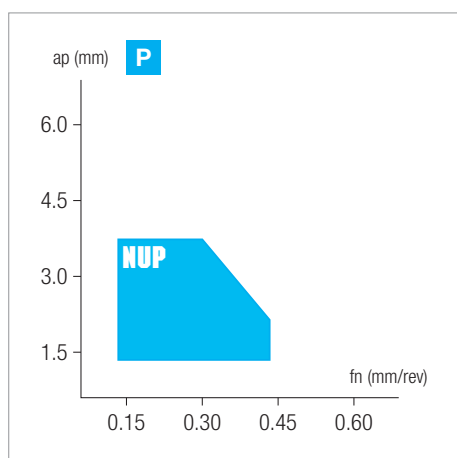
- Greater strenght
- Improves chip forming and chip control

VARIABLE RAKE ANGLE AND EDGE WIDTH

- Good balance of toughness and sharpness
- Reliable cutting process for universal application



• Application range



• Performance evaluation

Workpiece	Steel 41CrMoA17 (1.8709)
Cutting condition	Vc 156 m/min, fn 0.3 mm/min, ap 3.1 mm, emulsion
Cutting Tool	CNMG120412-NUP JC8025

nikkoTOOLS	7 PCS.
Competitor A	5 PCS.
Competitor B	4 PCS.

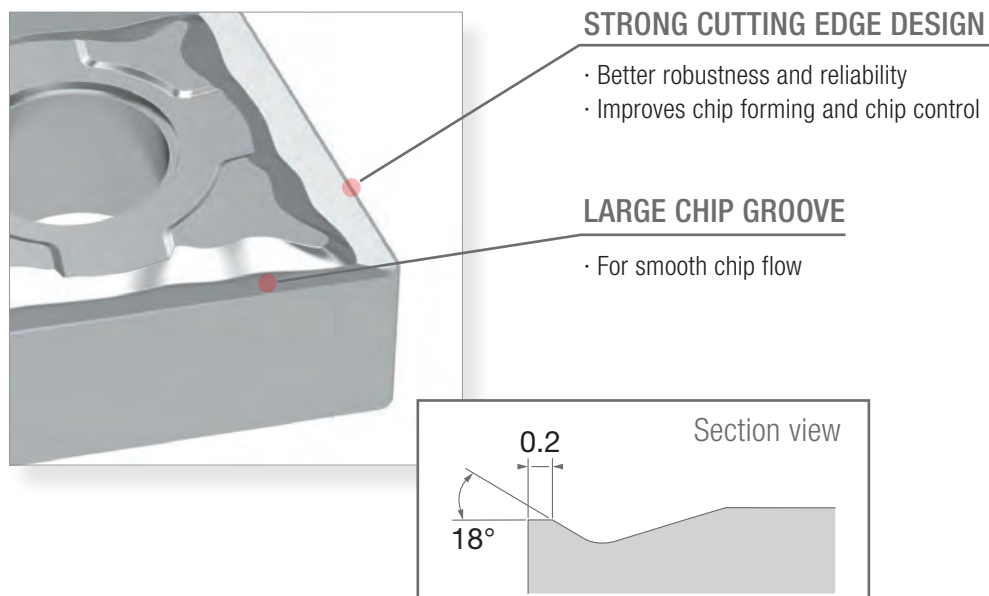


NMP

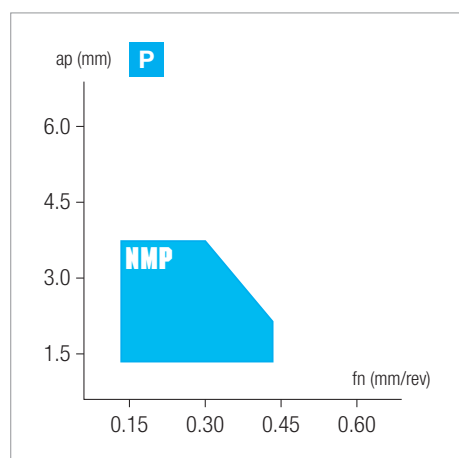
Chipbreaker

- Chipbreaker for steel semi-finishing and medium cutting
- Strong cutting edge for reliable cutting process
- Large chip groove for smooth chip flow
- Excellent performance in carbon steel and alloy steel

• Features of NMP chipbreaker



• Application range



• Performance evaluation

Workpiece Steel 31CrMoV9 (1.8519)
Cutting condition V_c 190 m/min, f_n 0.3 mm/min, a_p 3 mm, emulsion
Cutting Tool CNMG160608-NMP JC8015

Tool	Performance (PCS.)
nikkoTOOLS	24 PCS.
Competitor A	15 PCS.
Competitor B	14 PCS.

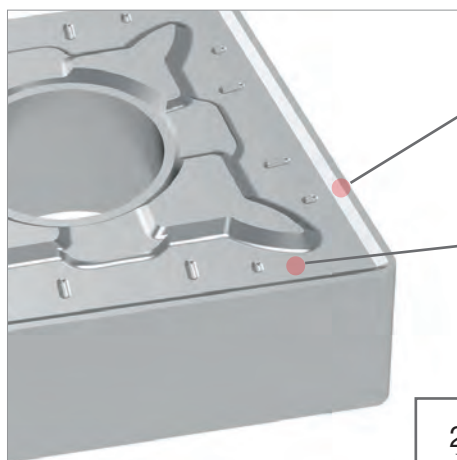


NRP

Chipbreaker

- Chipbreaker for steel roughing
- Strong cutting edge with variable rake angle
- Best choice for interrupted cut
- Excellent chip control at high feed rate

• Features of NRP chipbreaker

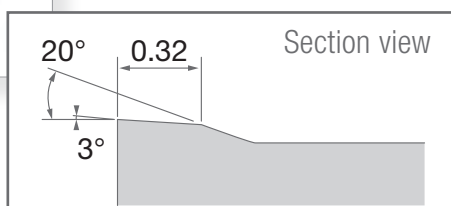


VARIABLE RAKE ANGLE AND EDGE WIDTH

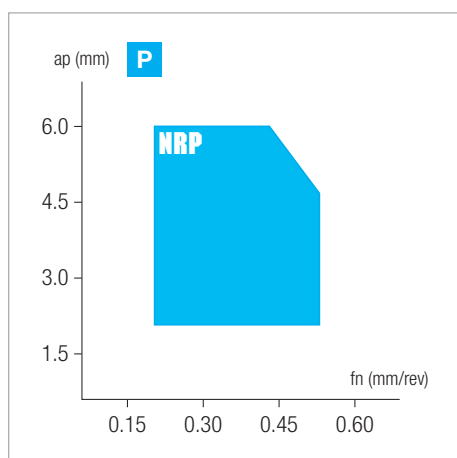
- Uniform chip control at different cutting depth
- Reduced cutting force with high toughness
- Suitable for interrupted cutting

LARGE CHIP GROOVE

- Excellent chip control at medium/high feed rate



• Application range



• Performance evaluation

Workpiece	Steel 100Cr6 (1.3505)
Cutting condition	Vc 280 m/min, fn 0.35 mm/rev, ap 2.5 mm, emulsion, interrupted cut
Cutting Tool	WNMG080412-NRP JC8015
nikkoTOOLS	45 PCS.
Competitor A	35 PCS.
Competitor B	20 PCS.

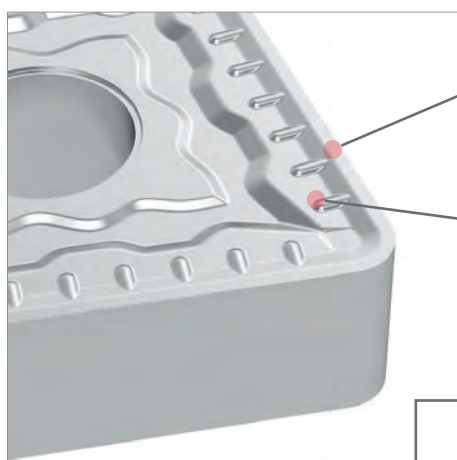


MRP

Chipbreaker

- Single side chipbreaker for steel heavy roughing
- Strong cutting edge with negative T land
- Reduced cutting force in heavy turning
- Suitable for high feed rate and high depth of cut operations

• Features of MRP chipbreaker

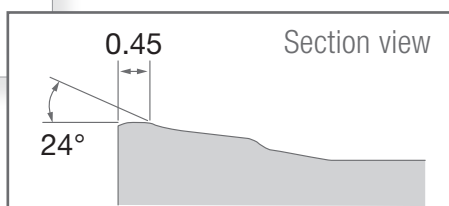


STRAIGHT EDGE WITH NEGATIVE T LAND

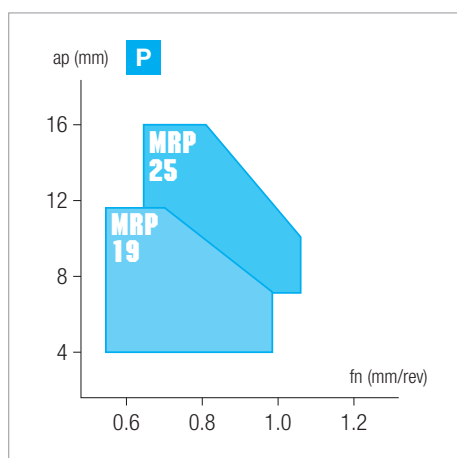
- Very tough cutting edge
- Reduced cutting force
- Suitable for high feed rate and high depth of cut

BIG GUIDING DOTS DESIGN

- Guide the chip flow to the right direction



• Application range



• Performance evaluation

Workpiece	Steel 20MnCr5 (1.7147)
Cutting condition	Vc 80 m/min, fn 0.80 mm/rev, ap 10.0 mm, emulsion
Cutting Tool	SNMM250924-MRP JC8035
nikkoTOOLS	10 PCS.
Competitor A	9 PCS.
Competitor B	7 PCS.

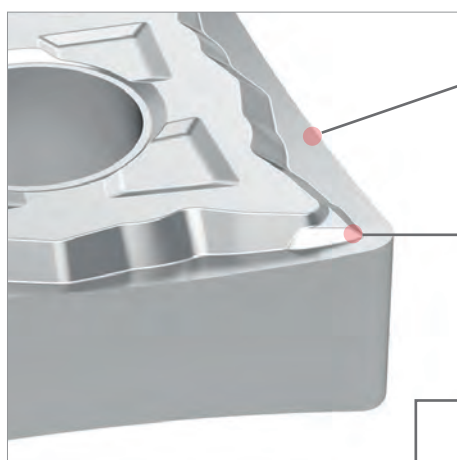


NSM

Chipbreaker

- Chipbreaker for stainless steel finishing and light cutting
- Curved edge design
- Strong but also sharp edge
- High quality of surface finishing

• Features of NSM chipbreaker

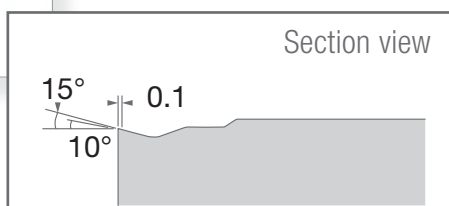


CURVED CUTTING EDGE

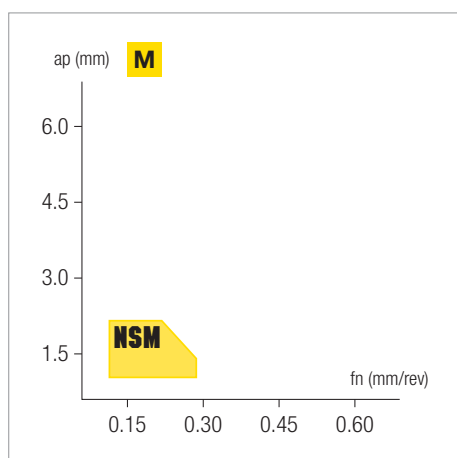
- Sharp cutting edge with high stability
- Wide chip evacuation area

SMALL NOSE DESIGN

- Excellent chip control at small depths of cut



• Application range



• Performance evaluation

Workpiece	Stainless steel AISI304 (1.4301)
Cutting condition	Vc 240 m/min, fn 0.13 mm/min, ap 0.6 mm, emulsion
Cutting Tool	TNMG160408-NSM JP9015

nikkoTOOLS	1200 PCS.
Competitor A	450 PCS.
Competitor B	420 PCS.

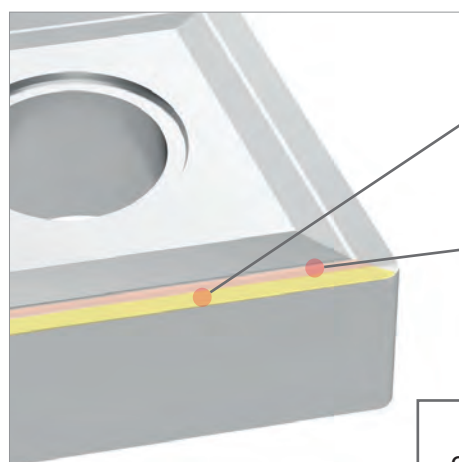


NMM

Chipbreaker

- Chipbreaker for stainless steel medium cutting
- Double rake angle design for good balance of toughness and sharpness
- Specific design for sticky material cutting
- Universal application on stainless

• Features of NMM chipbreaker

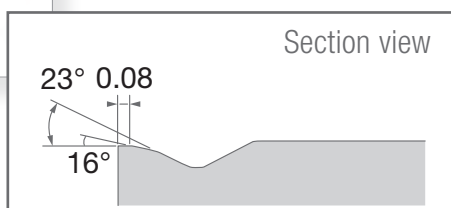


DOUBLE RAKE ANGLE DESIGN

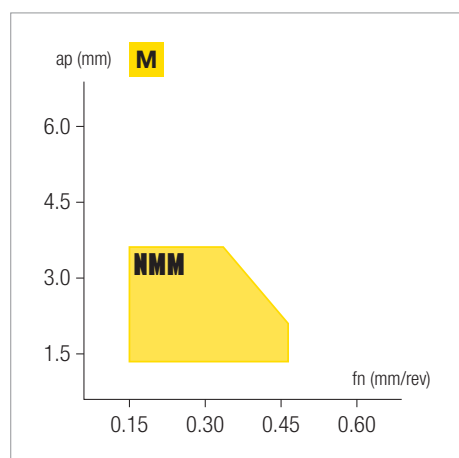
- Sharp but also tough edge
- Reliable cutting process for universal application
- Micro geometry suitable for sticky materials

DEEP CHIP GROOVE DESIGN

- Large chip evacuation area at medium depth of cut



• Application range



• Performance evaluation

Workpiece	Stainless steel AISI304 (1.4301)
Cutting condition	Vc 180 m/min, fn 0.27 mm/rev, ap 2.5 mm, emulsion
Cutting Tool	TNMG160408-NMM JC9025

nikkoTOOLS	330 PCS.
Competitor A	300 PCS.
Competitor B	280 PCS.

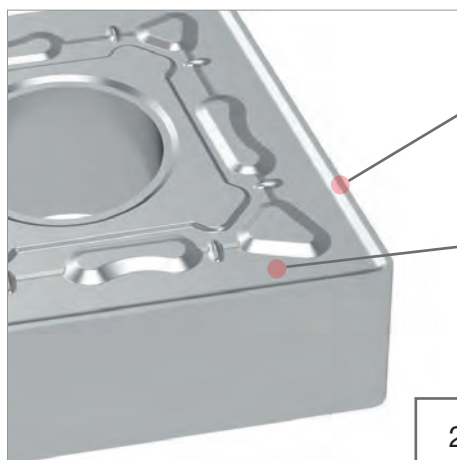


NRM

Chipbreaker

- Chipbreaker for stainless steel roughing
- Strong cutting edge with double rake angle
- Excellent chip control at high feed rate
- Adapted for irregular and oxidized surfaces

• Features of NRM chipbreaker

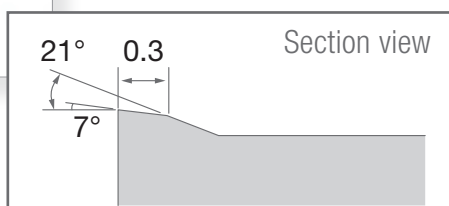


LARGE AND POSITIVE EDGE WIDTH DESIGN

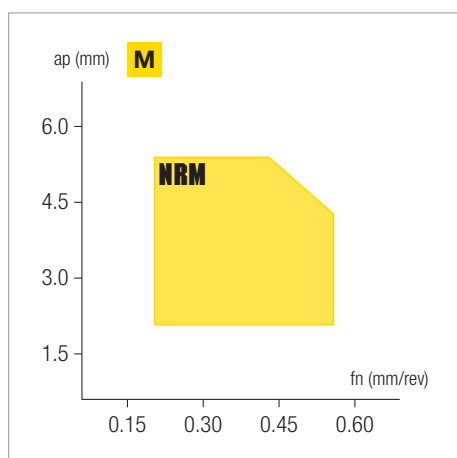
- Reduced cutting force with high toughness
- Suitable for removing irregular and oxidized surfaces

BIG SHALLOW CHIP GROOVE

- Efficiently guides and evacuates a big volume of chips



• Application range



• Performance evaluation

Workpiece	Stainless steel AISI303 (1.4305)
Cutting condition	Vc 120 m/min, fn 0.45 mm/rev, ap 4.0 mm, emulsion, light interrupted
Cutting Tool	CNMG160612-NRM JP9030
nixkoTOOLS	80 PCS.
Competitor A	70 PCS.
Competitor B	70 PCS.

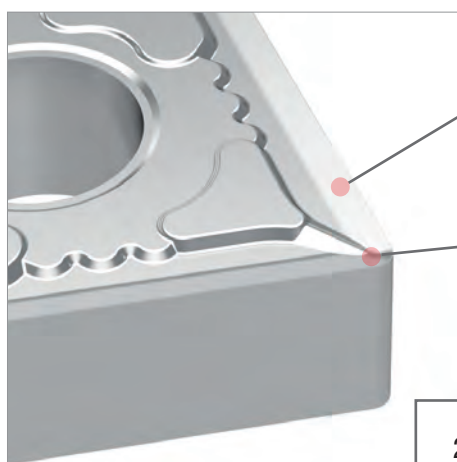


NMS

Chipbreaker

- Strong edge with sharp rake for stainless steel and super alloy
- Variable edge and rake angle angle for semi-finishing or roughing
- High reliability and stability

• Features of NMS chipbreaker

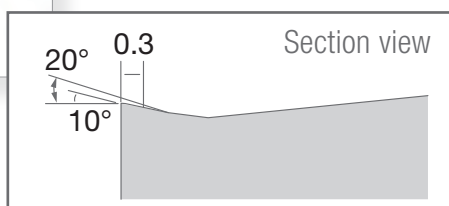


STRONG EDGE WITH SHARP RAKE DESIGN

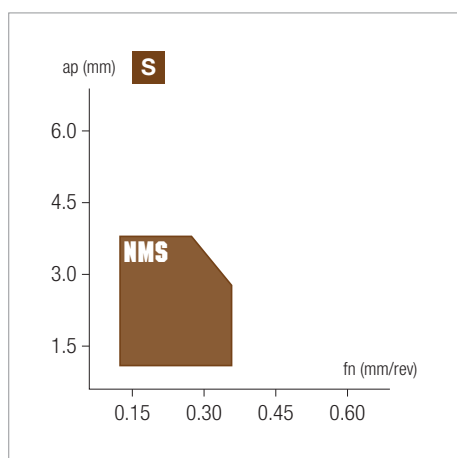
- Strengthened edge width provides good reliability
- Sharp rake reduces cutting resistance

SHARP NOSE WITH OPEN CHIP GROOVE

- Guides chip flow and improves chip control
- Excellent chip control at small depths of cut



• Application range



• Performance evaluation

Workpiece	Inconel 718 (2.4668)
Cutting condition	Vc 50 m/min, fn 0.20 mm/rev, ap 1.5 mm, emulsion
Cutting Tool	CNMG120408-NMS JP3015
nixkoTOOLS	3 PCS.
Competitor A	2 PCS.
Competitor B	1 PCS.

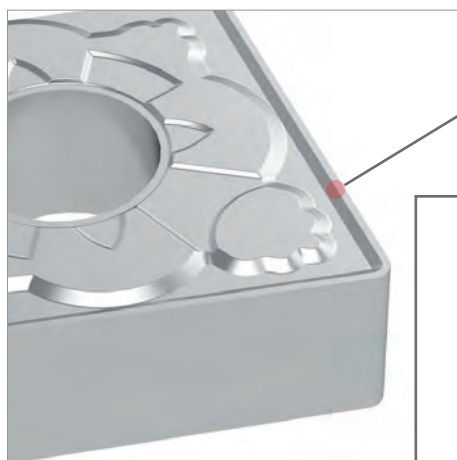


NUK

Chipbreaker

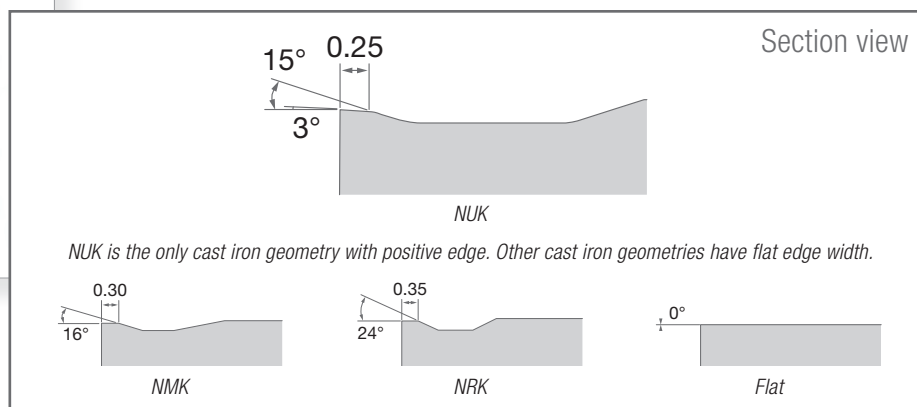
- Chipbreaker for cast iron light to medium cutting
- Effectively reduces burrs
- Specialize in nodular cast iron

• Features of NUK chipbreaker

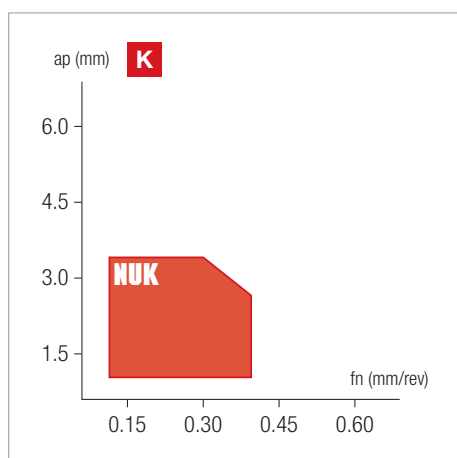


POSITIVE EDGE DESIGN

- Slightly sharper than conventional cast iron geometries
- Effectively reduces burrs
- Suitable for nodular cast iron



• Application range



• Performance evaluation

Workpiece	Grey cast iron GG25 (0.6025)
Cutting condition	Vc 170 m/min, fn 0.20 mm/rev, ap 0.5mm emulsion
Cutting Tool	DNMG150608-NUK JC7115

nikkoTOOLS	880 PCS.
Competitor A	400 PCS.
Competitor B	380 PCS.

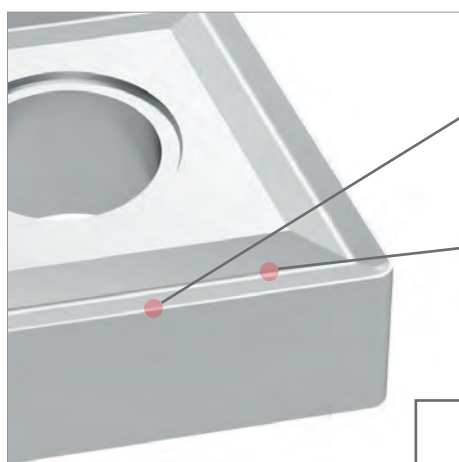


NMK

Chipbreaker

- Chipbreaker for cast iron general cutting
- Reinforced cutting edge
- Adapted for unstable operations
- Specialize in cast iron boring operation

• Features of NMK chipbreaker

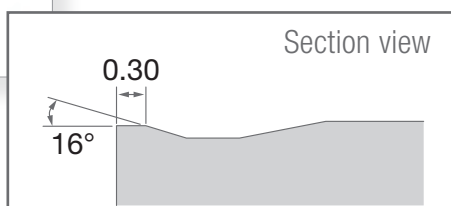


REINFORCED CUTTING EDGE

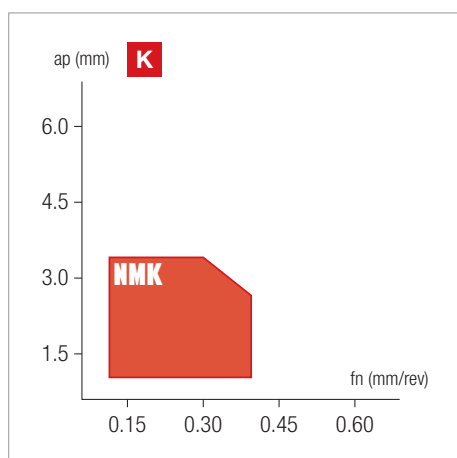
- Strong cutting edge but with reduced cutting force
- Adapted for unstable cutting conditions
- Problem solver for cast iron boring

OPEN CHIP GROOVE DESIGN

- Spacious chip evacuation area at medium depth of cut



• Application range



• Performance evaluation

Workpiece

Nodular cast iron GS500 (0.7050)

Cutting condition

- Roughing Vc 250 m/min, fn 0.35 mm/min, ap 3 mm, emulsion
- Finishing Vc 320 m/min, fn 0.50 mm/min, ap 0.7 mm, emulsion

Cutting Tool

nikkoTOOLS

1200 PCS.

Competitor A

450 PCS.

Competitor B

420 PCS.

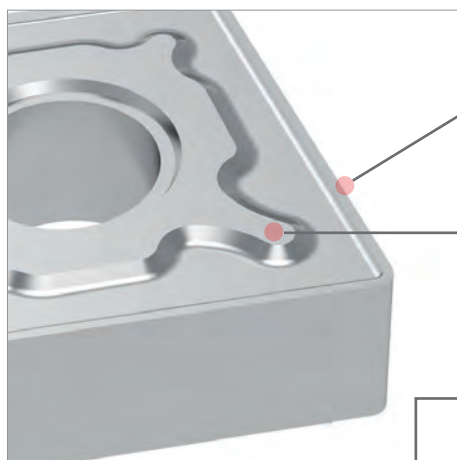


NRK

Chipbreaker

- Chipbreaker for cast iron roughing
- Replace traditional flat top inserts
- Expert in removing black casted surface
- Extremely broad cutting range

• Features of NRK chipbreaker

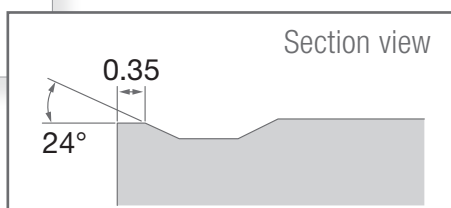


STRONG CUTTING EDGE DESIGN

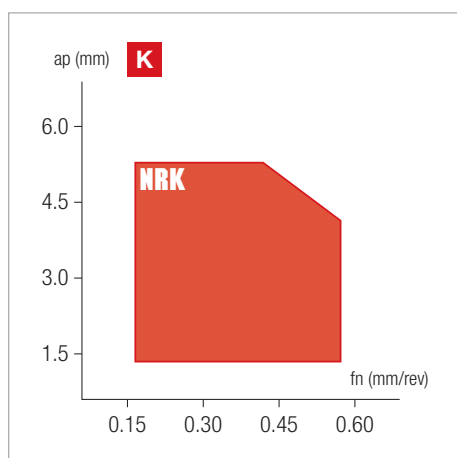
- Cutting edge robust and reliable
- Suitable for big cutting depth big feed rate operations
- Suitable for removing irregular and oxidized surfaces

PRECISION LAPPED SUPPORT SURFACE

- Improves the stability and reliability in unstable conditions



• Application range



• Performance evaluation

Workpiece	Nodular cast iron GS500 (0.7050)
Cutting condition	Vc 180 m/min, fn 0.35 mm/min, ap 4 mm, emulsion
Cutting Tool	CNMG160616-NRK JC7115

nikkoTOOLS	70 PCS.
Competitor A	30 PCS.
Competitor B	20 PCS.

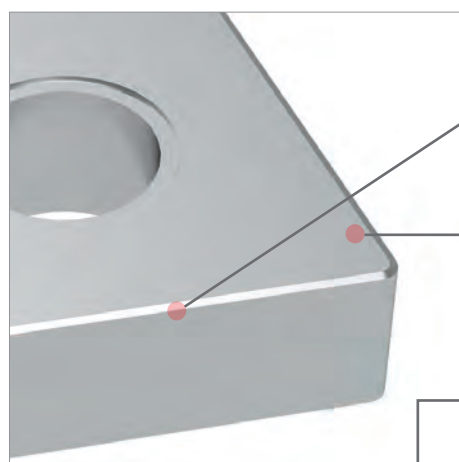


Flat

Chipbreaker

- Most classical solution for cast iron universal cutting
- Stable and reliable cutting process
- Mainly used for GG cast iron
- Extremely broad cutting range

Features of Flat chipbreaker

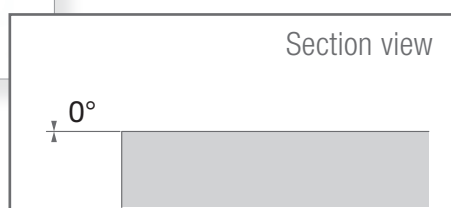


SPECIAL MICRO GEOMETRY

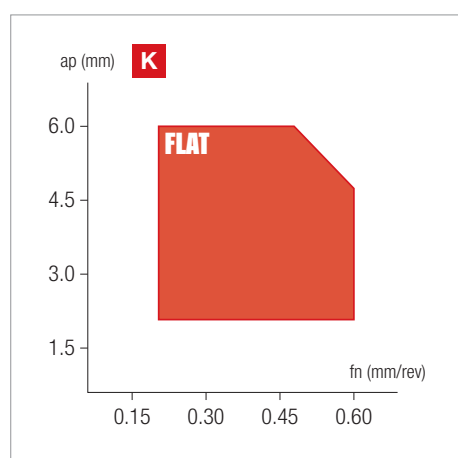
- Reduces cutting resistance
- Maintains stable and reliable cutting process

CLASSICAL FLAT CHIPBREAKER

- Available for different cutting parameters



Application range



Performance evaluation

Workpiece Grey cast iron GG25 (0.6025)
Cutting condition Vc 280 m/min, fn 0.40 mm/rev, ap 3.0 mm, emulsion, interrupted cut
Cutting Tool CNMA120416 JC7010

nikkoTOOLS	175 PCS.
Competitor A	150 PCS.
Competitor B	148 PCS.

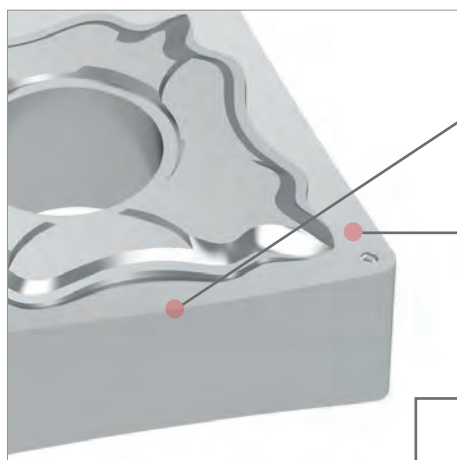


NMN

Chipbreaker

- Chipbreaker for non-ferrous materials
- High positive sharp geometry
- Ideal chip forming and chip evacuation
- Excellent surface finishing

• Features of NMN chipbreaker

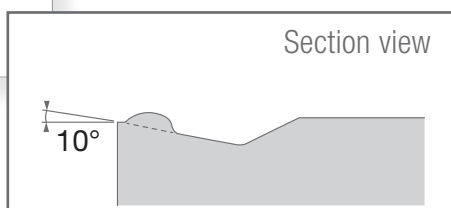


CURVED EDGE WITH SPECIAL MICRO GEOMETRY

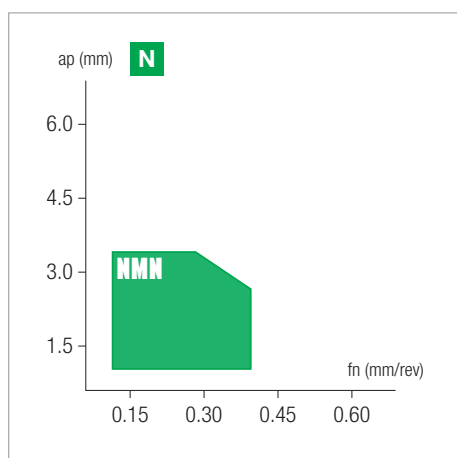
- Sharp but strong cutting edge
- Wide chip evacuation space
- Bends and guides the chips

WIDE CHIP GROOVE AND LONG EDGE

- Effective in evacuating the chips
- Suitable for a wide range of cutting operations



• Application range



• Performance evaluation

Workpiece Copper alloy C101 (2.0060)
Cutting condition Vc 250 m/min, fn 0.10 mm/min,
 ap 0.1 mm, emulsion
Cutting Tool DNGG150604-NMN JU6015

nikkoTOOLS 70 PCS.

Competitor A 30 PCS.

Competitor B 20 PCS.

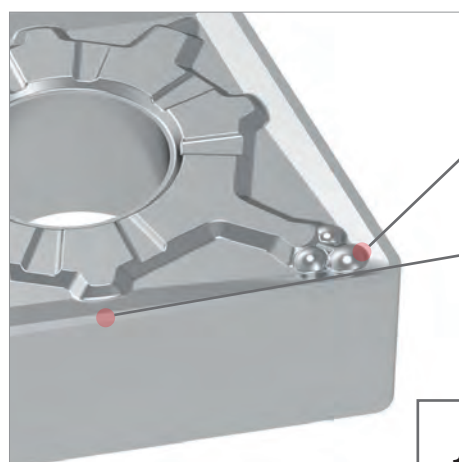


NUX

Chipbreaker

- Chipbreaker for universal application
- Double and variable rake angle and edge width for toughness and sharpness
- Good chip formation also with reduced feed rate and cutting depth
- Universal application

• Features of NUX chipbreaker

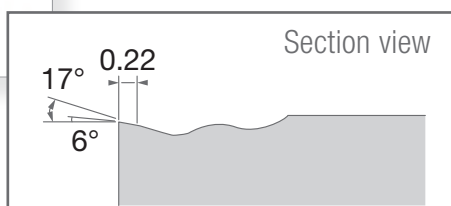


SPECIAL GROOVES

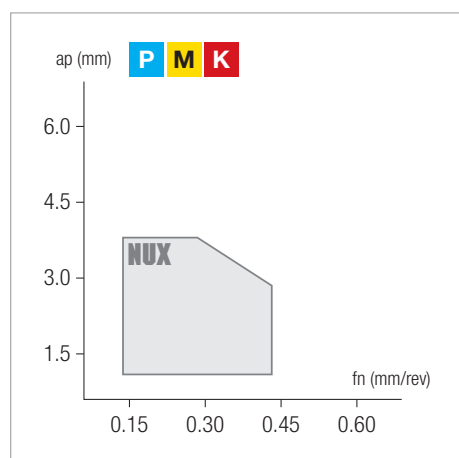
- Better robustness
- Improves chip forming and chip control

VARIABLE RAKE ANGLE AND EDGE WIDTH

- Good balance of toughness and sharpness
- Reliable cutting process for universal application



• Application range



• Performance evaluation

Workpiece	Sintered steel
Cutting condition	Vc 300 m/min, fn 0.12 mm/rev, ap 1.7 mm, emulsion
Cutting Tool	CNMG120404-NUX JC8015
nikkoTOOLS	40 PCS.
Competitor A	38 PCS.
Competitor B	30 PCS.

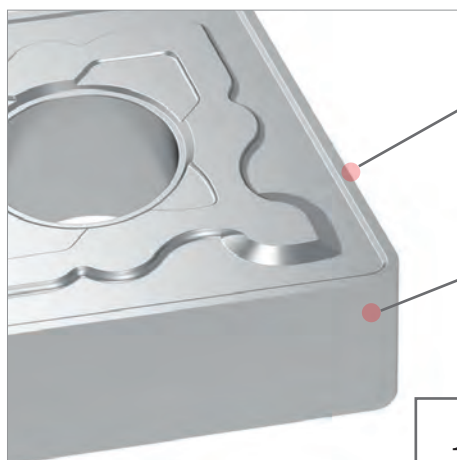


NWU

Chipbreaker

- Wiper chipbreaker for steel and cast iron
- Anti-vibration and smooth cutting process
- Reliable cutting edge with reduced cutting force
- Universal application

• Features of NWU chipbreaker

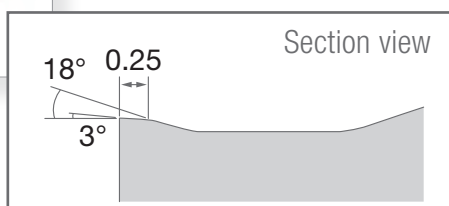


DOUBLE RAKE ANGLE EDGE

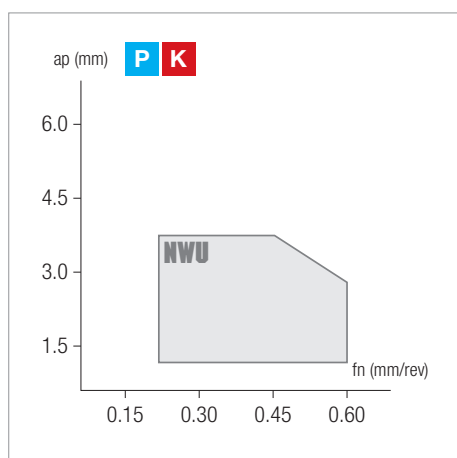
- Good balance of toughness and sharpness
- Improves chip forming and chip control
- Suitable for wider application range

MULTIPLE-CURVE WIPER LAND

- Effectively reduce vibration
- Excellent surface quality



• Application range



For more application details, please check page A84.

• Performance evaluation

Workpiece	Grey cast iron GG25 (0.6025)
Cutting condition	Vc 350 m/min, fn 0.45 mm/rev, ap 1.0 mm, emulsion
Cutting Tool	DNMX150608-NWU JC7010

nikkoTOOLS	150 PCS.
Competitor A	140 PCS.
Competitor B	140 PCS.

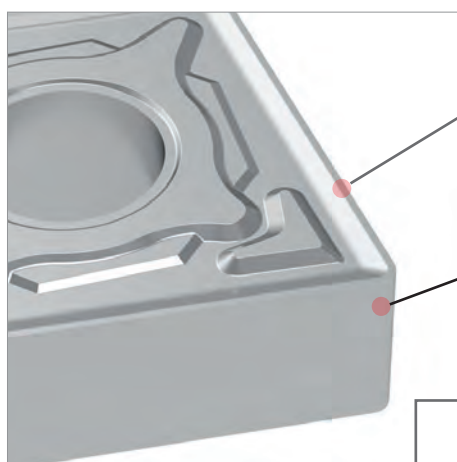


NWX

Chipbreaker

- Wiper chipbreaker for steel and cast iron
- Strong and reliable cutting edge
- Suitable for high feed rate and big depth of cut application
- Wide application range

• Features of NWX chipbreaker

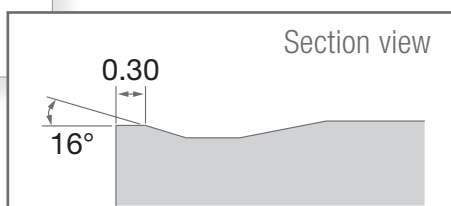


STRONG CUTTING EDGE

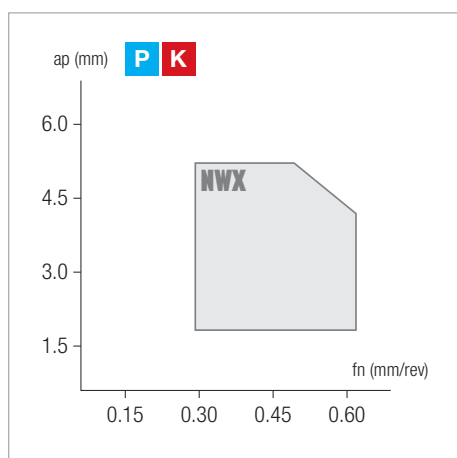
- Better robustness and reliability
- Adapted for big feed rate and big depth of cut application

MULTIPLE-CURVE WIPER LAND

- Effectively reduce vibration
- Excellent surface quality



• Application range



• Performance evaluation

Workpiece	Grey cast iron GG25 (0.6025)
Cutting condition	Vc 260 m/min, fn 0.40 mm/rev, ap 2.5 mm, emulsion, interrupted cut
Cutting Tool	CNMG120412-NWX JC7010

nikkoTOOLS	70 PCS.
Competitor A	55 PCS.
Competitor B	50 PCS.

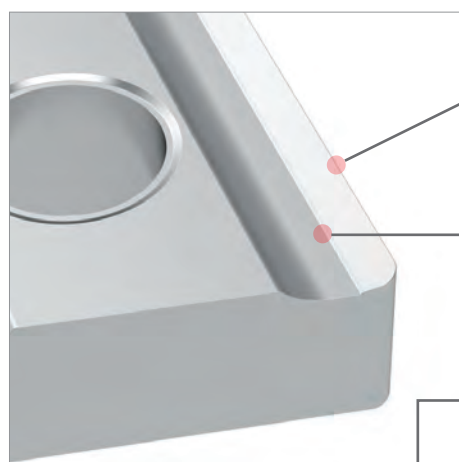


NMU^L/R

Chipbreaker

- Chipbreaker for universal use
- Highly positive geometry reduces workpiece deformation
- Excellent chip forming and guided chip evacuation
- Adapted for unstable cutting conditions

• Features of NMU^L/R chipbreaker

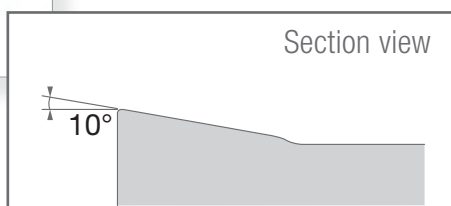


SHARP EDGE WITH SPECIAL MICRO GEOMETRY

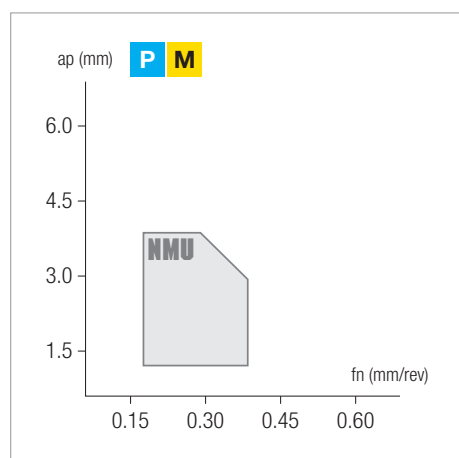
- Excellent chip forming and guided chip evacuation direction
- Minimum bending effect on the workpiece
- Suitable for unstable set-ups

WIDE CHIP GROOVE AND LONG EDGE

- Effective in evacuating the chips
- Suitable for a wide range of cutting operations



• Application range



• Performance evaluation

Workpiece	Steel C40 (1.0511)
Cutting condition	Vc 200 m/min, fn 0.30 mm/rev, ap 2.0 mm, emulsion
Cutting Tool	DNMG150608R-NMU JC8025

nikkoTOOLS	280 PCS.
Competitor A	250 PCS.
Competitor B	230 PCS.

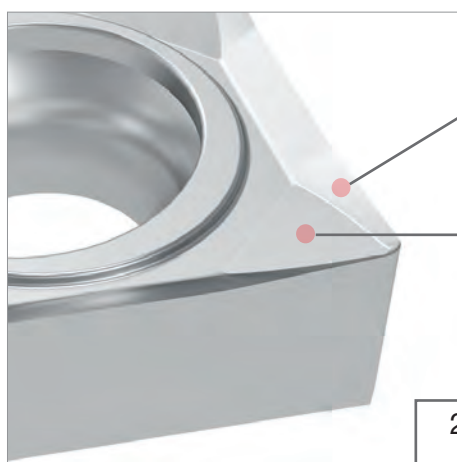


PMN

Chipbreaker

- Chipbreaker for nonferrous materials
- Highly positive fine polished geometry
- Smooth chip flow in guided direction
- Reduces vibration at higher feed rate

• Features of PMN chipbreaker

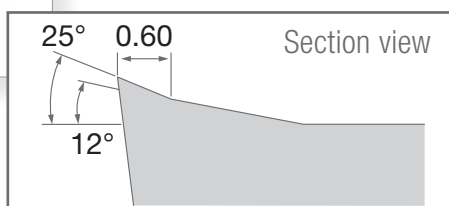


HIGHLY POSITIVE NARROW EDGE

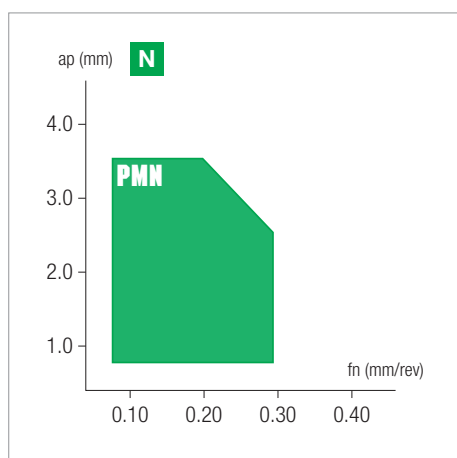
- Delightful smooth cutting process
- Improved reliability
- Fine surface finishing at higher feed rate

MIRROR-POLISHED SUPPORTING RAKE FACE

- Gives the sharp edge stronger support
- Guided smooth efficient chip flow



• Application range



• Performance evaluation

Workpiece Aluminium alloy ERGAL (3.4365)
Cutting condition Vc 350 m/min, fn 0.18 mm/min, ap 0.2 mm emulsion
Cutting Tool CCGX09T304-PMN JP6010

nikkoTOOLS 4000 PCS.

Competitor A 1500 PCS.

Competitor B 1200 PCS.

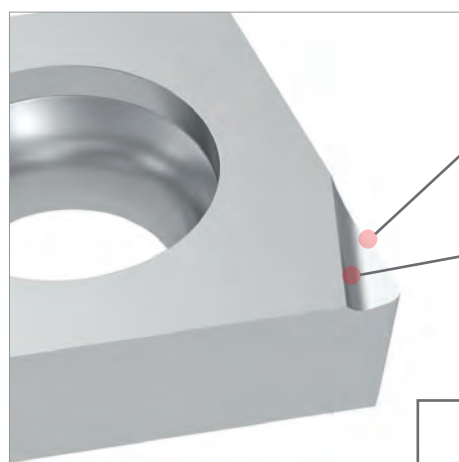


PPF

Chipbreaker

- Ground chipbreaker for small part finishing
- High precision and low cutting force
- Excellent chip forming and guided chip evacuation
- For steel and stainless-steel finishing

• Features of PPF chipbreaker

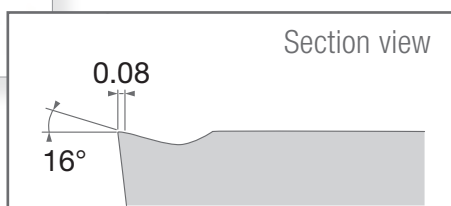


VARIABLE AND SHARP EDGE

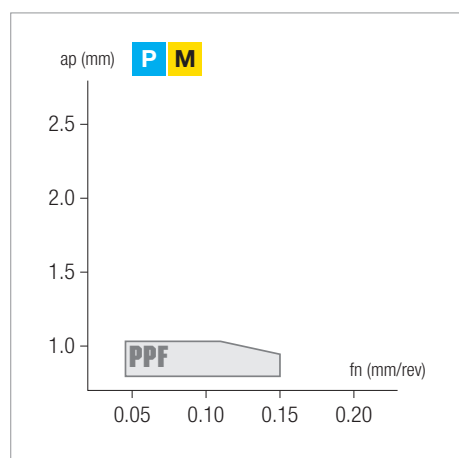
- Sharp but strong cutting edge
- Minimum bending effect on the workpiece
- Excellent surface finishing

NARROW AND SHALLOW CHIP GROOVE

- Effectively breaks the chips
- Guides chip flow and reduces cutting resistance



• Application range



• Performance evaluation

Workpiece	Steel St 37-3 (1.0116)
Cutting condition	Vc 200 m/min, fn 0.05 mm/rev, ap 0.5 mm, emulsion
Cutting Tool	TPEH110304L-PPF JU4015

nikkoTOOLS	1200 PCS.
Competitor A	1150 PCS.
Competitor B	1000 PCS.

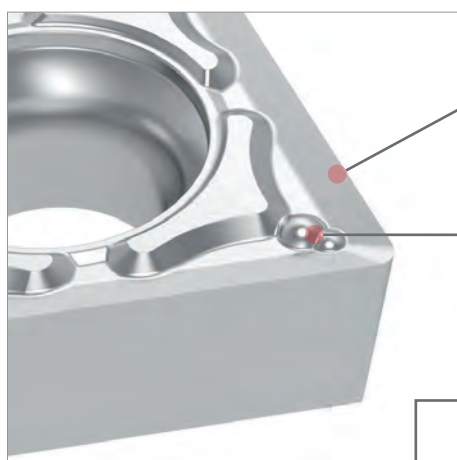


PFU

Chipbreaker

- Positive chipbreaker for P, M, S materials light cutting
- Sharp edge for excellent surface quality
- Good chip formation also with reduced feed rate and cutting depth
- Specifically designed for stainless steels and super alloys

• Features of PFU chipbreaker

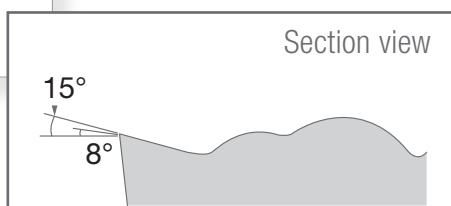


SHARP CUTTING EDGE

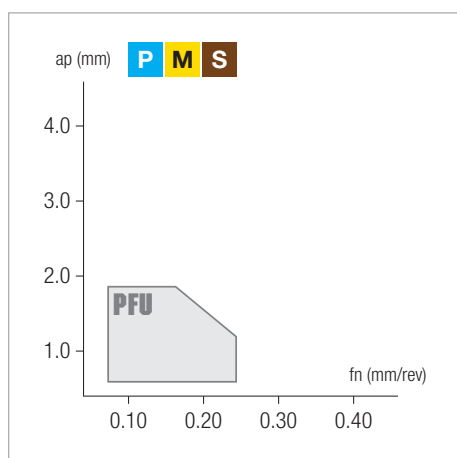
- Good surface finish
- Less vibration in boring process
- Specialize in cutting stainless and super alloys

BISPERICAL DESIGN

- Breaks and guides the chip at reduced feed rate and depth of cut



• Application range



• Performance evaluation

Workpiece Stainless steel AISI316 (1.4401)
Cutting condition Vc 80 m/min, fn 0.15 mm/rev, ap 1.0 mm, emulsion
Cutting Tool DCMT11T304-PFU JP5120

nikkoTOOLS	600 PCS.
Competitor A	500 PCS.
Competitor B	500 PCS.

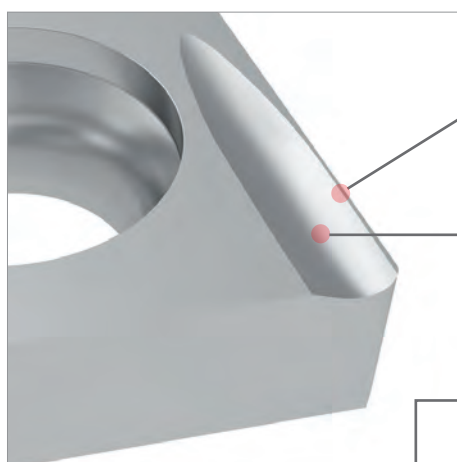


PPM

Chipbreaker

- Ground chipbreaker for small part universal machining
- Wide application range
- Reduced cutting force and stable reliable cutting
- For steel and stainless-steel general machining

• Features of PPM chipbreaker

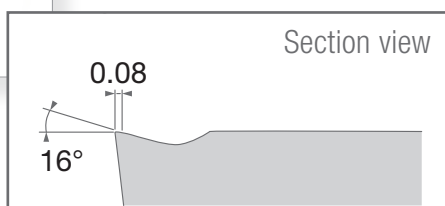


RELIABLE AND LONGER EDGE

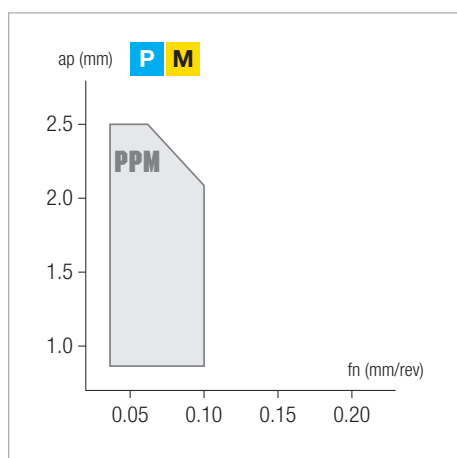
- For wide range of cutting conditions
- Minimum bending effect on the workpiece
- Reduced cutting force and stable reliable cutting

LONG AND CURVED CHIP GROOVE

- Suitable for wider range of cutting conditions
- Effectively break and evacuate chips



• Application range



• Performance evaluation

Workpiece	Stainless steel AISI303 (1.4305)
Cutting condition	Vc 100 m/min, fn 0.10 mm/rev, ap 1.5 mm, emulsion
Cutting Tool	DCET11T304R-PPM JP5125

nikkoTOOLS	800 PCS.
Competitor A	750 PCS.
Competitor B	600 PCS.

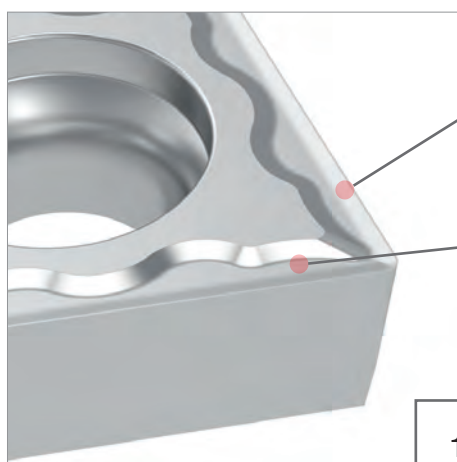


PMU

Chipbreaker

- High versatility chipbreaker for medium cutting
- Good balance of robustness and sharpness
- Applicable on steel, stainless steel and cast iron
- Universal application

• Features of PMU chipbreaker

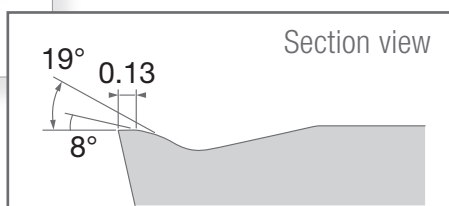


MODERATE BUT CURVED POSITIVE EDGE

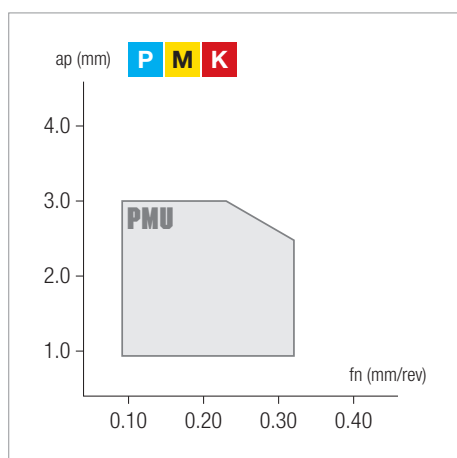
- Good balance of robustness and sharpness
- Reduced cutting force
- Improved chip forming and chip control

WIDE CHIP GROOVE

- Effective chip evacuation
- Reliable cutting process for universal application



• Application range



• Performance evaluation

Workpiece	Steel K100 (1.2008)
Cutting condition	Vc 80 m/min, fn 0.13 mm/rev, ap 4.0 mm, emulsion, heavy interrupted
Cutting Tool	DCMT150408-PMU JP5125 (special)

nikkoTOOLS	130 PCS.
Competitor A	110 PCS.
Competitor B	100 PCS.

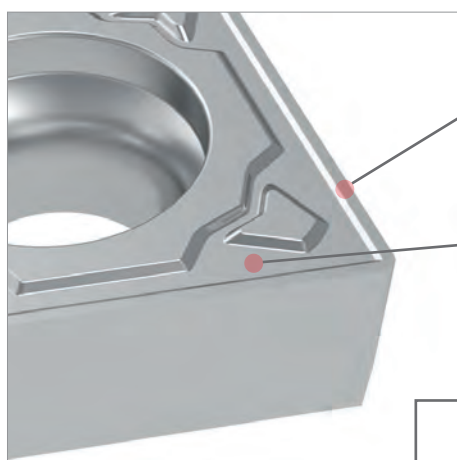


PRU

Chipbreaker

- Chipbreaker for roughing and interrupted cut
- Strong and reliable cutting edge
- Reduced cutting force and less vibration
- Adapted for higher feed rate

• Features of PRU chipbreaker

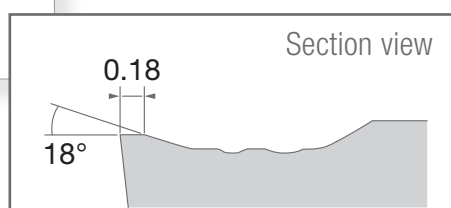


STRONG AND VARIABLE EDGE

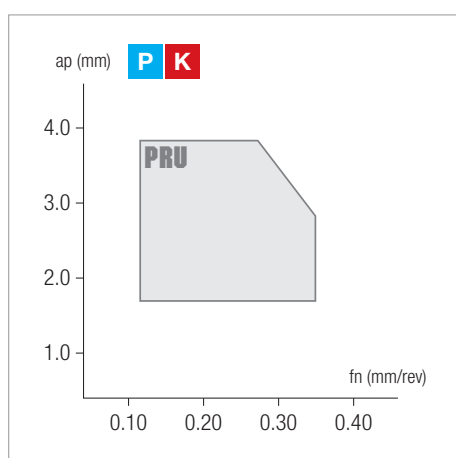
- Better robustness and reliability
- Adapted for higher feed rate
- Reduced cutting force and vibration

SHALLOW CHIP GROOVE

- Effectively breaks and guides the chips



• Application range



• Performance evaluation

Workpiece	Steel 41CrAlMo7 (1.8509)
Cutting condition	Vc 180 m/min, fn 0.25 mm/rev, ap 1.5 mm, emulsion, light interrupted
Cutting Tool	TCMT16T308-PRU JC8025
nixkoTOOLS	50 PCS.
Competitor A	48 PCS.
Competitor B	45 PCS.



P		FINISHING		MEDIUM		ROUGHING	
		NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE
	wear resistance	-	JP4020 / PFU	JC8005 / NUP	JC8005 / PMU	JC8005 / NRP	-
	1 st CHOICE	JU4015 / NSP	JU4015 / PFU	JC8015 / NUP	JC8015 / PMU	JC8015 / NRP	JC8025 / PRU
	toughness	JC8005 / NSP	JC8005 / PFU	JC8025 / NUP	JC8025 / PMU	JC8025 / NRP	-
	wear resistance	JC8005 / NSP	JC8005 / PFU	JC8015 / NUP	JC8015 / PMU	JC8015 / NRP	-
	1 st CHOICE	JC8015 / NSP	JC8015 / PFU	JC8025 / NUP	JC8025 / PMU	JC8025 / NRP	JC8025 / PRU
	toughness	JC8025 / NSP	JC8025 / PFU	JC8035 / NUP	JP5125 / PMU	JC8035 / NRP	-
	wear resistance	JC8015 / NSP	JC8015 / PFU	JC8025 / NUP	JC8025 / PMU	JC8025 / NRP	-
	1 st CHOICE	JC8025 / NSP	JC8025 / PFU	JC8035 / NUP	JP5125 / PMU	JC8035 / NRP	JC8025 / PRU
	toughness	-	-	-	-	-	-

M		FINISHING		MEDIUM		ROUGHING	
		NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE
	wear resistance	-	JP4020 / PFU	-	-	-	-
	1 st CHOICE	JP9015 / NSM	JP5120 / PFU	JC9010 / NMM	JC9010 / PMU	JC9010 / NRM	-
	toughness	JP9030 / NSM	JP5125 / PFU	JC9025 / NNM	JP5120 / PMU	JC9025 / NRM	-
	wear resistance	-	JP5120 / PFU	JC9010 / NMM	JC9010 / PMU	JC9010 / NRM	-
	1 st CHOICE	JP9015 / NSM	JP5125 / PFU	JC9025 / NMM	JC9025 / PMU	JC9025 / NRM	-
	toughness	JP9030 / NSM	-	JP9030 / NMM	JP5125 / PMU	JP9030 / NRM	-
	wear resistance	JP9015 / NSM	JP5120 / PFU	JC9025 / NMM	JP5120 / PMU	JC9025 / NRM	-
	1 st CHOICE	JP9030 / NSM	JP5125 / PFU	JP9030 / NMM	JP5125 / PMU	JP9030 / NRM	-
	toughness	-	-	-	-	-	-

K		FINISHING		MEDIUM		ROUGHING	
		NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE
	wear resistance	-	JP4020 / PMU	-	-	-	-
	1 st CHOICE	JC7115 / NUK	JC7010 / PMU	JC7010 / NMK	JC7010 / PMU	JC7010 / NRK	JC7010 / PRU
	toughness	-	JC7020 / PMU	JC7020 / NMK	JC7020 / PMU	JC7020 / NRK	JC7020 / PRU
	wear resistance	-	-	-	-	-	-
	1 st CHOICE	JC7115 / NUK	JC7010 / PMU	JC7010 / NMK	JC7010 / PMU	JC7010 / NRK	JC7010 / PRU
	toughness	-	JC7020 / PMU	JC7020 / NMK	JC7020 / PMU	JC7020 / NRK	JC7020 / PRU
	wear resistance	-	-	JC7010 / NMK	JC7010 / PMU	JC7010 / NRK	JC7010 / PRU
	1 st CHOICE	JC7115 / NUK	JC7010 / PMU	JC7020 / NMK	JC7020 / PMU	JC7020 / NRK	JC7020 / PRU
	toughness	-	JC7020 / PMU	-	-	-	-

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING

N		FINISHING		MEDIUM		ROUGHING	
		NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE
	wear resistance	-	-	-	-	-	-
	1 st CHOICE	JU6015 / NMN	JP6010 / PMN	JU6015 / NMN	JP6010 / PMN	-	-
	toughness	-	JU6015 / PMN	-	JU6015 / PMN	-	-
	wear resistance	-	JP6010 / PMN	-	JP6010 / PMN	-	-
	1 st CHOICE	JU6015 / NMN	JU6015 / PMN	JU6015 / NMN	JU6015 / PMN	-	-
	toughness	-	-	-	-	-	-
	wear resistance	-	-	-	-	-	-
	1 st CHOICE	JU6015 / NMN	-	JU6015 / NMN	JU6015 / PMN	-	-
	toughness	-	-	-	-	-	-

C - GROOVING

S		FINISHING		MEDIUM		ROUGHING	
		NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE
	wear resistance	-	JP5015 / PFU	-	-	-	-
	1 st CHOICE	-	JP5120 / PFU	JP3015 / NMS	JP5120 / PMU	-	-
	toughness	-	JP5125 / PFU	-	JP5125 / PMU	-	-
	wear resistance	-	JP5120 / PFU	-	JP5120 / PMU	-	-
	1 st CHOICE	-	JP5125 / PFU	JP3015 / NMS	JP5125 / PMU	-	-
	toughness	-	-	-	-	-	-
	wear resistance	-	-	-	-	-	-
	1 st CHOICE	-	-	-	-	-	-
	toughness	-	-	-	-	-	-

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

C	N	M	G	12	04	08	R/L	-	N	U	M	JC	80	25
1	2	3	4	5	6	7	8		9	10	11	12	13	14

1	SHAPE
C	80° rhombic
D	55° rhombic
K	55° parallelogram
S	90° square
T	60° triangular
V	35° rhombic
W	80° trigon

2	RELIEF ANGLE
B	5°
C	7°
D	15°
E	20°
N	0°
P	11°

3	TOLERANCES		
Symbol	I.C.	Thickness	Corner height
E	±0.025	±0.025	±0.025
G	±0.025	±0.13	±0.025
M	±0.05 ~ ±0.15	±0.13	±0.08 ~ ±0.18
U	±0.08 ~ ±0.25	±0.13	±0.13 ~ ±0.38

4	HOLE/CHIPBREAKER		
Symbol	Hole	Hole countersink	Chipbreaker
A		✓	✗
G		✓	✗
M		✓	✗
N		✗	✗
T		✓	40°÷60°
W		✓	40°÷60°
X	NIKKO norm		

5	EDGE LENGHT						
I.C. (mm)	C shape	D shape	R shape	S shape	T shape	V shape	W shape
3.97	03	04		03	06		
4.76	04	05		04	08	08	
5.00			05				
5.56	05	06		05	09		03
6.00			06				
6.35	06	07		06	11	11	04
7.94	08	09		07	13		05
8.00			08				
9.53	09	11	09	09	16	16	06
10.00		12	10				
12.00							
12.70	12	15	12	12	22	22	08
15.88	16	19	15	15	27	24	10
16.00			16				
19.05	19	23	19	19	33	33	13
20.00			20				
22.23	22	27		22	38		
25.00			25				
25.40	25	31	25	25	44	44	17
31.75	32	38	31	31	54	54	21
32.00			32				

6	THICKNESS	
Symbol	(mm)	
01	1.59	
T1	1.98	
02	2.38	
T2	2.78	
03	3.18	
T3	3.97	
04	4.76	
05	5.56	
06	6.35	
07	7.94	
09	9.53	

7	RADIUS
Symbol	(mm)
005	0.05
01	0.10
02	0.20
04	0.40
08	0.80
12	1.20
16	1.60
20	2.00
24	2.40

8	DIRECTION
Symbol	Shape
L	
R	

9	CHIPBREAKER - design
N	negative double side
M	negative single side
P	positive

10	CHIPBREAKER - application
F or S	finishnig
M or U	medium
R or T	roughing

11	CHIPBREAKER - material
P, M, K, N, S, H	According to ISO 513
U, X	Universal

12	GRADE - coating
JC	CVD coating
JP	PVD coating
JU	uncoated

13	GRADE - material/application
10÷14	ISO H
20÷24	small parts
30÷34	ISO S
40÷44	CERMET
50÷54	UNIVERSAL
60÷64	ISO N
70÷74	ISO K
80÷84	ISO P
90÷94	ISO M

14	GRADE - features
xx	Classification according to ISO 513

CC

ISO - with hole

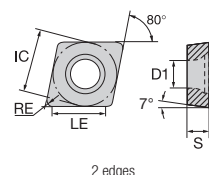
- The most popular insert shape due to high versatility
- Clearance angle 7°, less likely to have chip jamming when boring
- 80° corner can be used for both turning and facing operations

HC: Coated carbide
HT: Cermet
HF: Micrograin carbide
CVD: Chemical vapour deposition
PVD: Physical vapour deposition

Stable machining, light cut ● 1st choice ○ suitable
General machining, medium cut ● 1st choice ○ suitable
Unstable machining, heavy cut ▲ 1st choice ▲ suitable

Dimensions

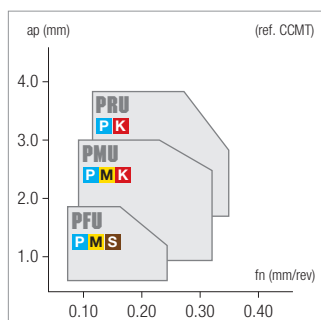
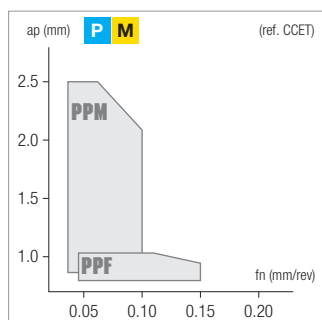
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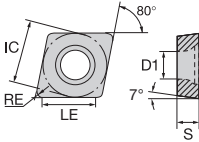
Vc(m/min) - suggested cutting speed range (bold: 1st choice)

	JC7010	JC7020	JC8005	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5120	JP5125	JP6010	JU4015	JU6015
P		200 380	170 360	140 330			180 400	100 220	90 200	70 180			200 380	
M					100 200	80 180	100 220	70 160	60 150	50 140				
K	130 380	110 300					150 320		90 190	60 180				
N												400 1400	200 1000	
S								20 70						
H														

		Designation					RE	IC	S	D1	LE	Stock													
FINISHING	PPF P M  ground chipbreaker right-hand shown	CCET060202/-h-PPF	0.2	6.35	2.38	2.8	6.2											●	○						
		CCET060204/-h-PPF	0.4	6.35	2.38	2.8	6											●	●						
		CCET09T302/-h-PPF	0.2	9.525	3.97	4.4	9.5											●	●						
		CCET09T304/-h-PPF	0.4	9.525	3.97	4.4	9.3											●	●						
FINISHING	PFU P M S  sharp edge low cutting force	CCMT060202-PFU	0.2	6.35	2.38	2.8	6.2			●	●		○	○	●	●	●	●							
		CCMT060204-PFU	0.4	6.35	2.38	2.8	6			○	●	●		●	●	●	●	●	●						
		CCMT09T302-PFU	0.2	9.525	3.97	4.4	9.5				●	●		●	○	●	●	○	●						
		CCMT09T304-PFU	0.4	9.525	3.97	4.4	9.3			●	●	●		●	●	●	●	●	●	●					
		CCMT09T308-PFU	0.8	9.525	3.97	4.4	8.9				●	●		●	○	●	●	●	○						
MEDIUM	PPM P M  ground chipbreaker right-hand shown	CCET09T304/-h-PPM	0.4	9.525	3.97	4.4	9.3											●	●						
MEDIUM	PMU P M K  1st choice universal application	CCMT060202-PMU	0.2	6.35	2.38	2.8	6.2				○	●		○	○				●						
		CCMT060204-PMU	0.4	6.35	2.38	2.8	6	●			●	●	●	●	●		●	●	●						
		CCMT060208-PMU	0.8	6.35	2.38	2.8	5.6	●			○	●		●					○						
		CCMT09T302-PMU	0.2	9.525	3.97	4.4	9.5				○	●		○	○				●						
		CCMT09T304-PMU	0.4	9.525	3.97	4.4	9.3	●			●	●	●	●	●		●	●	●						
		CCMT09T308-PMU	0.8	9.525	3.97	4.4	8.9	●	●		●	●	●	●	○		●	●	●						
		CCMT120404-PMU	0.4	12.7	4.76	5.5	12.5	●			●	●		●											
		CCMT120408-PMU	0.8	12.7	4.76	5.5	12.1	●	○		●	●		●											
		CCMT120412-PMU	1.2	12.7	4.76	5.5	11.7	●			○	○		○											

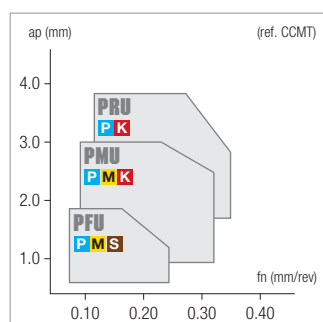
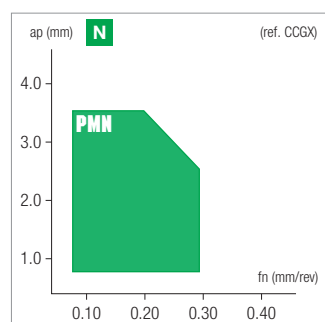
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



CC		HC: Coated carbide HT: Cermet HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition															
ISO - with hole		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HT PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	HF		
		JC7010	JC7020	JC8005	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5120	JP5125	JP6010	JU4015	JU6015		
• The most popular insert shape due to high versatility • Clearance angle 7°, less likely to have chip jamming when boring • 80° corner can be used for both turning and facing operations		Stable machining, light cut	● 1 st choice	○ suitable	●	○	●	○	●	○	●	○	●	○	●		
		General machining, medium cut	● 1 st choice	○ suitable	●	○	●	○	●	○	●	○	●	○	●	○	
		Unstable machining, heavy cut	⚙ 1 st choice	○ suitable	⚙	⚙		⚙		⚙			⚙			⚙	
Dimensions		ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)															
		P		200 380	170 360	140 330			180 400	100 220	90 200	70 180		200 380			
		M					100 200	80 180	100 220	70 160	60 150	50 140					
		K	130 380	110 300					150 320		90 190	60 180					
		N											400 1400	200 1000			
		S								20 70							
		H															

Designation		RE	IC	S	D1	LE	Stock										
MEDIUM	PMN N	0.2	6.35	2.38	2.8	6.2								○	●		
	 CCGX060204-PMN	0.4	6.35	2.38	2.8	6								●	●		
	CCGX060208-PMN	0.8	6.35	2.38	2.8	5.6								○	●		
	CCGX09T302-PMN	0.2	9.525	3.97	4.4	9.5								○	●		
	CCGX09T304-PMN	0.4	9.525	3.97	4.4	9.3								●	●		
	CCGX09T308-PMN	0.8	9.525	3.97	4.4	8.9								●	●		
	CCGX120402-PMN	0.2	12.7	4.76	5.5	12.7								○	○		
	CCGX120404-PMN	0.4	12.7	4.76	5.5	12.5								●	●		
	CCGX120408-PMN	0.8	12.7	4.76	5.5	12.1								●	●		
ROUGHING	PRU P K	0.4	9.525	3.97	4.4	9.3	●			●							
	 CCMT09T308-PRU	0.8	9.525	3.97	4.4	8.9	●			●							
	CCMT120408-PRU	0.8	12.7	4.76	5.5	12.1	●			●							
	CCMT120412-PRU	1.2	12.7	4.76	5.5	11.7	●			●							

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



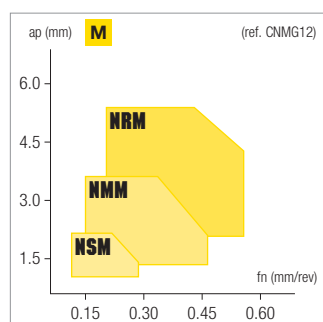
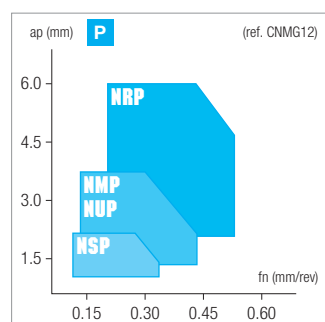
CN**ISO - with hole**

- The most popular insert shape due to high versatility
- 80° corner can be used for both turning and facing operations
- Opposite 100° corners can be used for general roughing applications (especially facing), providing maximum economy of 8 total cutting edges

HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF	
	JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC8215	JC8225	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015			
Stable machining, light cut	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	○ suitable	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice
General machining, medium cut	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	○ suitable	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice
Unstable machining, heavy cut	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	○ suitable	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice
Dimensions	ISO																		
	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																		
	P				200 380	170 360	140 330	100 200	170 360	140 330							200 380		
	M										100 200	80 180		70 160	50 130				
	K	130 380	110 300	130 380															
	N																200 1000		
	S												20 70						
	H																		

Designation		RE	IC	S	D1	LE	Stock												
FINISHING NSP P		CNMG090304-NSP	0.4	9.525	3.18	3.81	9.3					●	●					●	
		CNMG090308-NSP	0.8	9.525	3.18	3.81	8.9					●	●					●	
		CNMG120404-NSP	0.4	12.7	4.76	5.16	12.5					●	●	●				●	
		CNMG120408-NSP	0.8	12.7	4.76	5.16	12.1					●	●	●				●	
FINISHING NSM M		CNMG120404-NSM	0.4	12.7	4.76	5.16	12.5										●	●	
		CNMG120408-NSM	0.8	12.7	4.76	5.16	12.1										●	●	
MEDIUM NMP P		CNMG120404-NMP	0.4	12.7	4.76	5.16	12.5					●	●						
		CNMG120408-NMP	0.8	12.7	4.76	5.16	12.1					●	●					▽	
		CNMG120412-NMP	1.2	12.7	4.76	5.16	11.7					●	●						
		CNMG120416-NMP	1.6	12.7	4.76	5.16	11.3					●	○						
		CNMG160608-NMP	0.8	15.87	6.35	6.35	15.3					●	●						
		CNMG160612-NMP	1.2	15.87	6.35	6.35	14.9					●	●						
		CNMG160616-NMP	1.6	15.87	6.35	6.35	14.5					●	●						
		CNMG190612-NMP	1.2	19.05	6.35	7.94	18.1					●	○						
		CNMG190616-NMP	1.6	19.05	6.35	7.94	17.7					●	○						

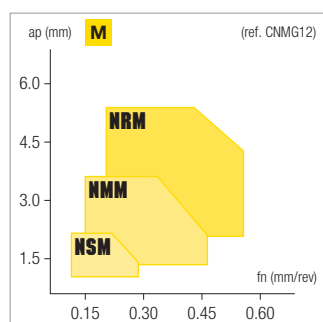
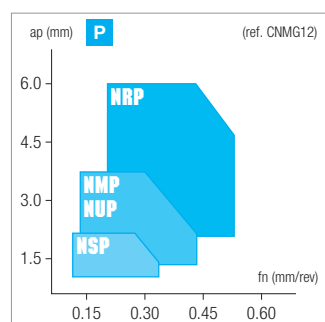
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



CN		HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF																				
ISO - with hole		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC8215	JC8225	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015																						
• The most popular insert shape due to high versatility • 80° corner can be used for both turning and facing operations • Opposite 100° corners can be used for general roughing applications (especially facing), providing maximum economy of 8 total cutting edges		Stable machining, light cut ● 1 st choice ○ suitable		●	○	●	●	●	○		●		●	○	●	●		●	●																				
		General machining, medium cut ● 1 st choice ○ suitable		●	○	●		●	●	○	●	●	○	●	●	●	●		●																				
		Unstable machining, heavy cut ⚙ 1 st choice ⚙ suitable		⚙	⚙	⚙			⚙	⚙		⚙	⚙				⚙		⚙																				
Dimensions		ISO																			Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																		
4 edges		P				200 380	170 360	140 330	100 200	170 360	140 330								200 380																				
		M											100 200	80 180		70 160	50 130																						
		K	130 380	110 300	130 380																																		
		N																		200 1000																			
		S														20 70																							
		H																																					

Designation		RE	IC	S	D1	LE	Stock																		
MEDIUM		CNMG090304-NUP	0.4	9.525	3.18	3.81	9.3					●	●							●					
		CNMG090308-NUP	0.8	9.525	3.18	3.81	8.9					●	○							●					
		CNMG120404-NUP	0.4	12.7	4.76	5.16	12.5					●	●	●			●			○					
		CNMG120408-NUP	0.8	12.7	4.76	5.16	12.1					●	●	●	●		●			○					
		CNMG120412-NUP	1.2	12.7	4.76	5.16	11.7					●	●	●	●		○								
		CNMG120416-NUP	1.6	12.7	4.76	5.16	11.3					●	○	○											
		CNMG160608-NUP	0.8	15.87	6.35	6.35	15.3					●	○	○											
		CNMG160612-NUP	1.2	15.87	6.35	6.35	14.9					●	○	●											
		CNMG190608-NUP	0.8	19.05	6.35	7.94	18.5						○	○											
		CNMG190612-NUP	1.2	19.05	6.35	7.94	18.1						○	○											
CNMG190616-NUP	1.6	19.05	6.35	7.94	17.7							○	○												
MEDIUM		CNMG090304-NMM	0.4	9.525	3.18	3.81	9.3								●			●							
		CNMG090308-NMM	0.8	9.525	3.18	3.81	8.9								●			●							
		CNMG120404-NMM	0.4	12.7	4.76	5.16	12.5								●	●			●	▽					
		CNMG120408-NMM	0.8	12.7	4.76	5.16	12.1								●	●			●	▽					
		CNMG120412-NMM	1.2	12.7	4.76	5.16	11.7								●	●		▽	●						
		CNMG120416-NMM	1.6	12.7	4.76	5.16	11.3									○			○						
		CNMG160608-NMM	0.8	15.87	6.35	6.35	15.3									○			○						
		CNMG160612-NMM	1.2	15.87	6.35	6.35	14.9									●		▽	○						
		CNMG160616-NMM	1.6	15.87	6.35	6.35	14.5									●		▽	●						
		CNMG190612-NMM	1.2	19.05	6.35	7.94	18.1									○			○						
		CNMG190616-NMM	1.6	19.05	6.35	7.94	17.7									●			○						

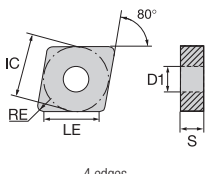
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



CN

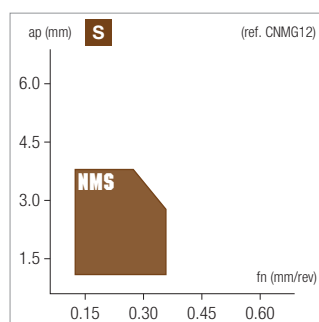
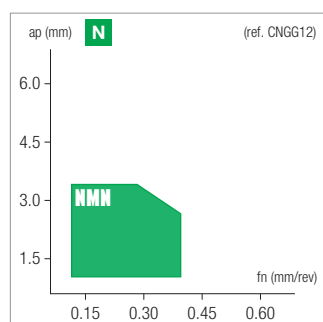
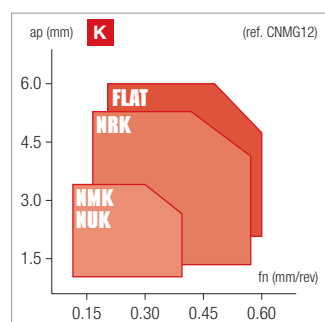
ISO - with hole

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- 80° corner can be used for both turning and facing operations
- Opposite 100° corners can be used for general roughing applications (especially facing), providing maximum economy of 8 total cutting edges

HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF
	JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC8215	JC8225	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015	
Stable machining, light cut	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	○ suitable		● 1 st choice		● 1 st choice	○ suitable	● 1 st choice	● 1 st choice		● 1 st choice	● 1 st choice	
General machining, medium cut	● 1 st choice	○ suitable	● 1 st choice		● 1 st choice	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice		● 1 st choice	
Unstable machining, heavy cut	⚙ 1 st choice	⚙ suitable	⚙ 1 st choice			⚙ suitable	⚙ 1 st choice		⚙ suitable		⚙ suitable			⚙ 1 st choice		⚙ suitable	
Dimensions 	ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																
	P			200 380	170 360	140 330	100 200	170 360	140 330						200 380		
	M									100 200	80 180		70 160	50 130			
	K	130 380	110 300	130 380													
	N														200 1000		
	S												20 70				
	H																

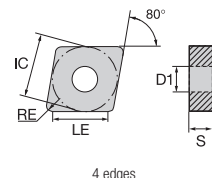
Designation		RE	IC	S	D1	LE	Stock									
MEDIUM		CNMG120404-NMK	0.4	12.7	4.76	5.16	12.5	●	○							
		CNMG120408-NMK	0.8	12.7	4.76	5.16	12.1	●	●							
		CNMG120412-NMK	1.2	12.7	4.76	5.16	11.7	●	○							
		CNMG120416-NMK	1.6	12.7	4.76	5.16	11.3	●	○							
		CNMG160608-NMK	0.8	15.87	6.35	6.35	15.3	●	○							
		CNMG160612-NMK	1.2	15.87	6.35	6.35	14.9	●	○							
		CNMG160616-NMK	1.6	15.87	6.35	6.35	14.5	○	○							
		CNMG190612-NMK	1.2	19.05	6.35	7.94	18.1	○	○							
		CNMG190616-NMK	1.6	19.05	6.35	7.94	17.7	○	○							
MEDIUM	 sharp edge reduces burrs	CNMG120404-NUK	0.4	12.7	4.76	5.16	12.5		●							
		CNMG120408-NUK	0.8	12.7	4.76	5.16	12.1	▽	●							
		CNMG120412-NUK	1.2	12.7	4.76	5.16	11.7	▽	●							
MEDIUM	 polished surface ground periphery	CNMG120404-NMN	0.4	12.7	4.76	5.16	12.5								●	
		CNMG120408-NMN	0.8	12.7	4.76	5.16	12.1								●	
MEDIUM		CNMG120408-NMS	0.8	12.7	4.76	5.16	12.1						●			
		CNMG120412-NMS	1.2	12.7	4.76	5.16	11.7						●			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



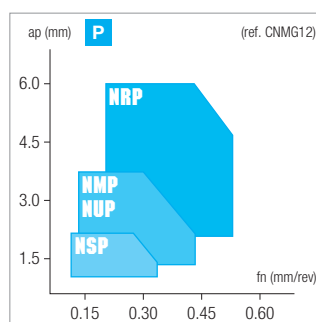
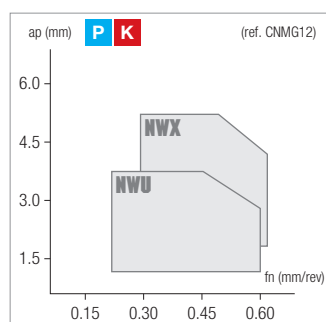
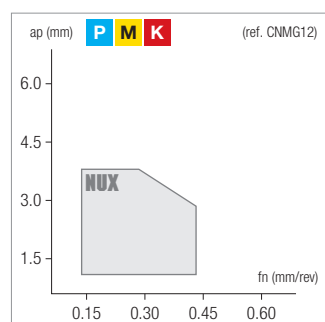
CN	ISO - with hole	HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HF	HF	HF	HT	HF	
			CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	PVD	PVD	PVD		
			JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC8215	JC8225	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015	
• The most popular insert shape due to high versatility • 80° corner can be used for both turning and facing operations • Opposite 100° corners can be used for general roughing applications (especially facing), providing maximum economy of 8 total cutting edges		Stable machining, light cut	● 1 st choice	○ suitable	●	●	●	○		●		●	○	●	●		●	●	
		General machining, medium cut	● 1 st choice	○ suitable	●		●	●	○	●	●	○	●	●	●	●		●	
		Unstable machining, heavy cut	⊕ 1 st choice	⊕ suitable	⊕	⊕			⊕	⊕		⊕					⊕	⊕	
		Dimensions	ISO																
			Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																
			P			200 380	170 360	140 330	100 200	170 360	140 330						200 380		
			M									100 200	80 180		70 160	50 130			
			K	130 380	110 300	130 380													
			N														200 1000		
			S											20 70					
			H																

4 edges



Designation		RE	IC	S	D1	LE	Stock											
MEDIUM	NUX P M K																	
	CNMG120404-NUX	0.4	12.7	4.76	5.16	12.5	●		●	●	●			●	●			
	CNMG120408-NUX	0.8	12.7	4.76	5.16	12.1	●		●	●	●	▲	▲	●	●			
	CNMG120412-NUX	1.2	12.7	4.76	5.16	11.7	●		●	●	●	▲	▲	●	●			
MEDIUM	NWU P K																	
	CNMG120408-NWU	0.8	12.7	4.76	5.16	12.1	●			●								
	CNMG120412-NWU	1.2	12.7	4.76	5.16	11.7	●			●								
MEDIUM	NWX P K																	
	CNMG120408-NWX	0.8	12.7	4.76	5.16	12.1	●			●							●	
	CNMG120412-NWX	1.2	12.7	4.76	5.16	11.7	●			●							●	
ROUGHING	NRP P																	
	CNMG120408-NRP	0.8	12.7	4.76	5.16	12.1			●	●	●	●						
	CNMG120412-NRP	1.2	12.7	4.76	5.16	11.7			●	●	●	●						
	CNMG120416-NRP	1.6	12.7	4.76	5.16	11.3			●	●	●	●						
	CNMG160612-NRP	1.2	15.87	6.35	6.35	14.9			●	●	●	●						
	CNMG160616-NRP	1.6	15.87	6.35	6.35	14.5			●	●	●	●						
	CNMG190612-NRP	1.2	19.05	6.35	7.94	18.1					○	○						
	CNMG190616-NRP	1.6	19.05	6.35	7.94	17.7				○	●	●						
	CNMG190624-NRP	2.4	19.05	6.35	7.94	16.9				●	●							
	CNMG250924-NRP	2.4	25.4	9.52	9.12	23.4					○							

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



CN

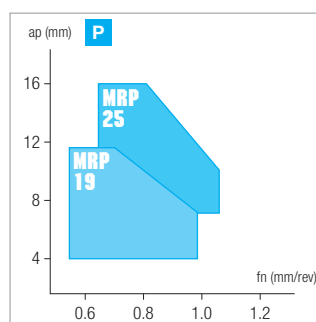
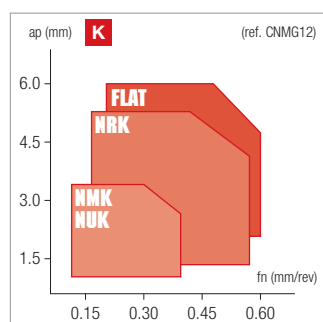
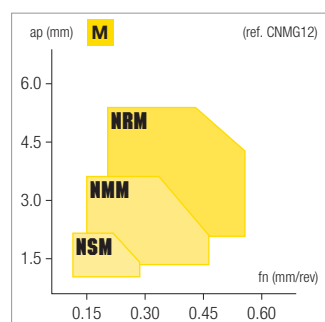
ISO - with hole

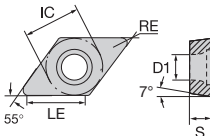
- The most popular insert shape due to high versatility
- 80° corner can be used for both turning and facing operations
- Opposite 100° corners can be used for general roughing applications (especially facing), providing maximum economy of 8 total cutting edges

HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF
	JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC8215	JC8225	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015	
Stable machining, light cut	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	○ suitable		● 1 st choice		● 1 st choice	○ suitable	● 1 st choice	● 1 st choice		● 1 st choice	● 1 st choice	
General machining, medium cut	● 1 st choice	○ suitable	● 1 st choice		● 1 st choice	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice		● 1 st choice	
Unstable machining, heavy cut	⚙ 1 st choice	⚙ suitable	⚙ 1 st choice			⚙ suitable	⚙ 1 st choice		⚙ suitable		⚙ suitable			⚙ 1 st choice		⚙ suitable	
Dimensions	ISO																
4 edges	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																
	P			200 380	170 360	140 330	100 200	170 360	140 330						200 380		
	M									100 200	80 180		70 160	50 130			
	K	130 380	110 300	130 380													
	N														200 1000		
	S												20 70				
H																	

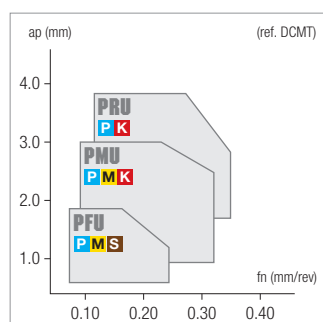
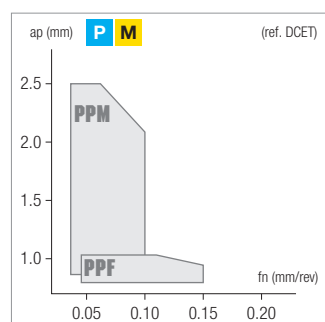
Designation		RE	IC	S	D1	LE	Stock									
ROUGHING	NRM M	CNMG120408-NRM	0.8	12.7	4.76	5.16	12.1							●	●	●
		CNMG120412-NRM	1.2	12.7	4.76	5.16	11.7							●	●	●
		CNMG160608-NRM	0.8	15.87	6.35	6.35	15.3							○		
		CNMG160612-NRM	1.2	15.87	6.35	6.35	14.9							○	●	●
		CNMG190612-NRM	1.2	19.05	6.35	7.94	18.1							○	●	●
		CNMG190616-NRM	1.6	19.05	6.35	7.94	17.7							○	●	●
ROUGHING	NRK K	CNMG120408-NRK	0.8	12.7	4.76	5.16	12.1	●	●	●						
		CNMG120412-NRK	1.2	12.7	4.76	5.16	11.7	●	●	●						
		CNMG120416-NRK	1.6	12.7	4.76	5.16	11.3	○	●	○						
		CNMG160612-NRK	1.2	15.87	6.35	6.35	14.9	●	●	●						
		CNMG160616-NRK	1.6	15.87	6.35	6.35	14.5	●	●	●						
		CNMG190612-NRK	1.2	19.05	6.35	7.94	18.1	○	○							
ROUGHING	flat K	CNMA120404	0.4	12.7	4.76	5.16	12.5	○	○							
		CNMA120408	0.8	12.7	4.76	5.16	12.1	●	○	○						
		CNMA120412	1.2	12.7	4.76	5.16	11.7	●	○	●						
		CNMA120416	1.6	12.7	4.76	5.16	11.3	○	○							
		CNMA160612	1.2	15.87	6.35	6.35	14.9	●	○	●						
		CNMA160616	1.6	15.87	6.35	6.35	14.5	●	○	●						
HEAVY ROUGHING	MRP P	CNMM190616-MRP	1.6	19.05	6.35	7.94	17.7				○	○				
		CNMM190624-MRP	2.4	19.05	6.35	7.94	16.9				●	●				
		CNMM250924-MRP	2.4	25.4	9.52	9.12	23.4				●	●				

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



DC		HC: Coated carbide HT: Cermet HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition																
ISO - with hole		HC CVD HC CVD HC CVD HC CVD HC CVD HC CVD HT PVD HF PVD HF PVD HF PVD HT HF																
- Generally the 1st choice for profile/copy turning applications - Able to "In-Copy" (plunge turn in small diameter) with 30° angle 7° clearance angle, less risk of chip jamming in boring - Somewhat weaker edge strength than a triangle insert		Stable machining, light cut ● 1 st choice ○ suitable		● ● ● ○ ● ○ ● ● ● ○ ● ● ●														
		General machining, medium cut ● 1 st choice ○ suitable		● ● ● ● ○ ● ○ ● ● ○ ● ○ ●														
		Unstable machining, heavy cut ▲ 1 st choice ▲ suitable		▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲														
		Dimensions		ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)														
 2 edges		P	200 380	170 360	140 330					180 400	100 220	90 200	70 180	200 380				
		M				100 200		80 180	100 220	70 160	60 150	50 140						
		K	130 380						150 320		90 190	60 180						
		N											400 1400	200 1000				
		S									20 70							
		H																
FINISHING  PPF P M ground chipbreaker right-hand shown	DCET070202/-n-PPF	0.2	6.35	2.38	2.8	7.6									●	●		
	DCET070204/-n-PPF	0.4	6.35	2.38	2.8	7.4									●	●		
	DCET11T302/-n-PPF	0.2	9.525	3.97	4.4	11.4									●	●		
	DCET11T304/-n-PPF	0.4	9.525	3.97	4.4	11.2									●	●		
FINISHING  PFU P M S sharp edge low cutting force	DCMT070202-PFU	0.2	6.35	2.38	2.8	7.6		●	●		○	○	○	●	●		●	
	DCMT070204-PFU	0.4	6.35	2.38	2.8	7.4		●	●		●	○	●	●	●		●	
	DCMT11T302-PFU	0.2	9.525	3.97	4.4	11.4		●	●		●	○	●	●	●		○	
	DCMT11T304-PFU	0.4	9.525	3.97	4.4	11.2		●	●	●		●	●	●	●	●	●	
	DCMT11T308-PFU	0.8	9.525	3.97	4.4	10.8		●	●	●		●	○	●	●	●	●	
MEDIUM  PPM P M ground chipbreaker right-hand shown	DCET070204/-n-PPM	0.4	6.35	2.38	2.8	7.4									●	●		
	DCET11T302/-n-PPM	0.2	9.525	3.97	4.4	11.4									●	●		
	DCET11T304/-n-PPM	0.4	9.525	3.97	4.4	11.2									●	●		
MEDIUM  PMU P M K 1st choice universal application	DCMT070202-PMU	0.2	6.35	2.38	2.8	7.6			○	●		○	○				●	
	DCMT070204-PMU	0.4	6.35	2.38	2.8	7.4	●		●	●		●	●		●	●	●	
	DCMT070208-PMU	0.8	6.35	2.38	2.8	7	●		○	●		○					●	
	DCMT11T302-PMU	0.2	9.525	3.97	4.4	11.4			●	●		●	○				●	
	DCMT11T304-PMU	0.4	9.525	3.97	4.4	11.2	●		●	●	●	●	●		●	●	●	
	DCMT11T308-PMU	0.8	9.525	3.97	4.4	10.8	●		●	●	●	●	○		●	●	●	
	DCMT11T312-PMU	1.2	9.525	3.97	4.4	10.4									●			
	DCMT150404-PMU	0.4	12.7	4.76	5.5	15.1	○			●								
	DCMT150408-PMU	0.8	12.7	4.76	5.5	14.7	○		○	●		●						
DCMT150412-PMU	1.2	12.7	4.76	5.5	14.3	○			○		○							

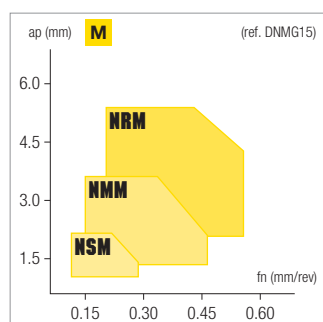
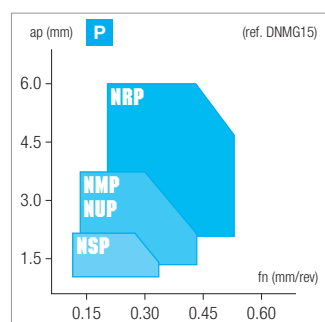
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



DN		HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition		HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HF	HF	HF	HT	HF	
				CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	PVD	PVD	PVD			
ISO - with hole		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC8215	JC8225	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015			
- Generally the 1st choice for profile/copy turning applications - Able to “In-Copy” (plunge turn into a smaller diameter) at an angle of 30° - Commonly used when machining close to the tailstock - Somewhat weaker edge strength than a triangle insert	Stable machining, light cut General machining, medium cut Unstable machining, heavy cut	● 1st choice ○ suitable	●	○	●	●	●	○		●		●	○	●	●		●	●		
		● 1st choice ○ suitable	●	○	●		●	●	○	●	●	○	●	●	●	●		●		
		⚙ 1st choice ⚙ suitable	⚙	⚙	⚙			⚙	⚙		⚙		⚙			⚙		⚙		
	Dimensions		ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																	
	4 edges	P				200 380	170 360	140 330	100 200	170 360	140 330							200 380		
		M											100 200	80 180		70 160	50 130			
		K	130 380	110 300	130 380															
		N																	200 1000	
		S													20 70					
	H																			

Designation		RE	IC	S	D1	LE	Stock													
FINISHING 	NSP P																			
	DNMG110404-NSP	0.4	9.525	4.76	3.81	11.2					○	●						●		
	DNMG110408-NSP	0.8	9.525	4.76	3.81	10.8					●	○						●		
	DNMG150604-NSP	0.4	12.7	6.35	5.16	15.1					●	●	●					●		
	DNMG150608-NSP	0.8	12.7	6.35	5.16	14.7					●	●	●					●		
FINISHING 	NSM M																			
	DNMG150604-NSM	0.4	12.7	6.35	5.16	15.1											●	●		
	DNMG150608-NSM	0.8	12.7	6.35	5.16	14.7											●	●		
MEDIUM 	NMP P																			
	DNMG110404-NMP	0.4	9.525	4.76	3.81	11.2					○	○								
	DNMG110408-NMP	0.8	9.525	4.76	3.81	10.8	●				○	●								
	DNMG150604-NMP	0.4	12.7	6.35	5.16	15.1					●	●								
	DNMG150608-NMP	0.8	12.7	6.35	5.16	14.7					●	●								
	DNMG150612-NMP	1.2	12.7	6.35	5.16	14.3					●	●								
	DNMG150616-NMP	1.6	12.7	6.35	5.16	13.9					●	●								
MEDIUM 	NUP P																			
	DNMG110404-NUP	0.4	9.525	4.76	3.81	11.2					○	●						●		
	DNMG110408-NUP	0.8	9.525	4.76	3.81	10.8					●	○						●		
	DNMG110412-NUP	1.2	9.525	4.76	3.81	10.4					○	○								
	DNMG150604-NUP	0.4	12.7	6.35	5.16	15.1					●	●	●		●			●		
	DNMG150608-NUP	0.8	12.7	6.35	5.16	14.7					●	●	●	○				○		
	DNMG150612-NUP	1.2	12.7	6.35	5.16	14.3					●	●	●	○						

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



DN

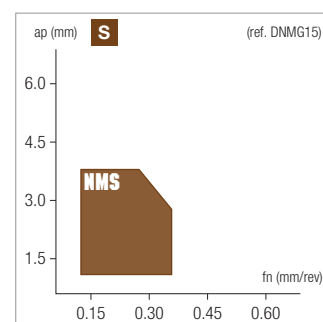
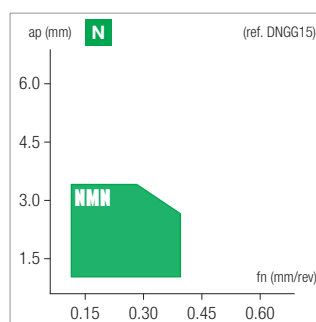
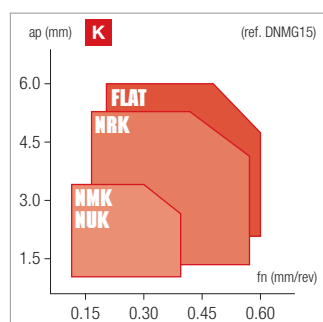
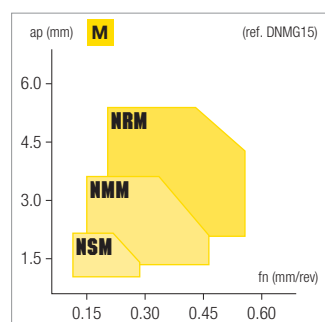
ISO - with hole

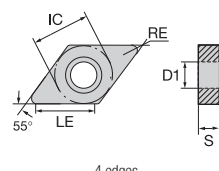
- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn into a smaller diameter) at an angle of 30°
- Commonly used when machining close to the tailstock
- Somewhat weaker edge strength than a triangle insert

HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF	
	JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC8215	JC8225	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015		
Stable machining, light cut	● 1 st choice	○ suitable	●	●	●	○		●		●	○	●	●		●	●		
General machining, medium cut	● 1 st choice	○ suitable	●	○	●	●	○	●	●	○	●	●	●	●		●		
Unstable machining, heavy cut	⚙ 1 st choice	⚙ suitable	⚙			⚙	⚙		⚙		⚙			⚙		⚙		
Dimensions		ISO																
 4 edges		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																
		P				200 380	170 360	140 330	100 200	170 360	140 330						200 380	
		M										100 200	80 180		70 160	50 130		
		K	130 380	110 300	130 380													
		N																200 1000
		S												20 70				
H																		

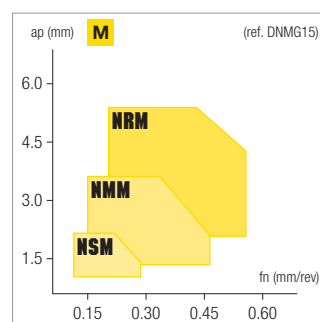
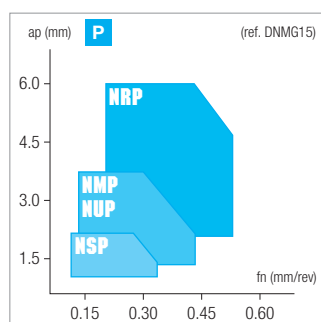
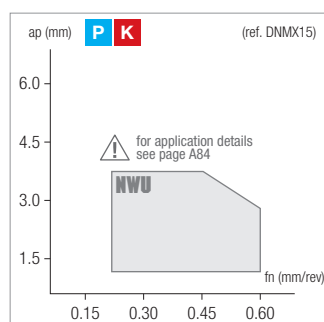
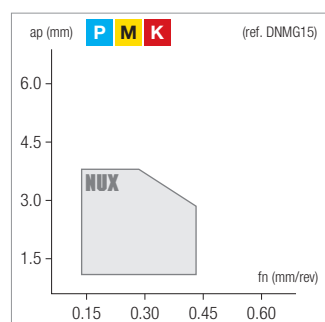
Designation		RE	IC	S	D1	LE	Stock									
MEDIUM	NMM M	DNMG110404-NMM	0.4	9.525	4.76	3.81	11.2							●		○
		DNMG110408-NMM	0.8	9.525	4.76	3.81	10.8							●		●
		DNMG150604-NMM	0.4	12.7	6.35	5.16	15.1							●		●
		DNMG150608-NMM	0.8	12.7	6.35	5.16	14.7						●	●		●
		DNMG150612-NMM	1.2	12.7	6.35	5.16	14.3							●		●
MEDIUM	NMK K	DNMG150604-NMK	0.4	12.7	6.35	5.16	15.1	●	○							
		DNMG150608-NMK	0.8	12.7	6.35	5.16	14.7	●	○	○						
		DNMG150612-NMK	1.2	12.7	6.35	5.16	14.3	○	○	●						
		DNMG150616-NMK	1.6	12.7	6.35	5.16	13.9			○						
MEDIUM	NUK K	DNMG150604-NUK	0.4	12.7	6.35	5.16	15.1			●						
		DNMG150608-NUK	0.8	12.7	6.35	5.16	14.7			●						
		DNMG150612-NUK	1.2	12.7	6.35	5.16	14.3			●						
MEDIUM	NMN N	DNGG150604-NMN	0.4	12.7	6.35	5.16	15.1									●
		DNGG150608-NMN	0.8	12.7	6.35	5.16	14.7									●
MEDIUM	NMS S	DNMG150608-NMS	0.8	12.7	6.35	5.16	14.7							●		
		DNMG150612-NMS	1.2	12.7	6.35	5.16	14.3							●		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



DN		HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF			
ISO - with hole				JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC8215	JC8225	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015			
- Generally the 1st choice for profile/copy turning applications - Able to “In-Copy” (plunge turn into a smaller diameter) at an angle of 30° - Commonly used when machining close to the tailstock - Somewhat weaker edge strength than a triangle insert		Stable machining, light cut		●	○	●	●	●	○		●		●	○	●	●		●	●			
		General machining, medium cut		●	○	●		●	●	○	●	●	○	●	●	●	●		●			
		Unstable machining, heavy cut		⚙	⚙	⚙			⚙	⚙		⚙		⚙				⚙		⚙		
		1 st choice		○	○	○																
		suitable		○	○	○																
Dimensions		ISO																				
 4 edges		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																				
		P				200 380	170 360	140 330	100 200	170 360	140 330								200 380			
		M												100 200	80 180		70 160	50 130				
		K	130 380	110 300	130 380																	
		N																		200 1000		
		S															20 70					
		H																				
Designation		RE	IC	S	D1	LE	Stock															
MEDIUM	 universal use wide range of grades	DNMG150604-NUX	0.4	12.7	6.35	5.16	15.1	●			●	●	●			●	●					
		DNMG150608-NUX	0.8	12.7	6.35	5.16	14.7	●			●	●	●		▲	▲	●	●				
		DNMG150612-NUX	1.2	12.7	6.35	5.16	14.3	●			●	●	●		▲	▲	●	●				
MEDIUM	 right-hand shown (parameters p.A81)	DNMG150604-1/4-NMU	0.4	12.7	6.35	5.16	15.1					●				●						
		DNMG150608-1/4-NMU	0.8	12.7	6.35	5.16	14.7					●				●						
MEDIUM	 wiper universal type	DNMX150608-NWU	0.8	12.7	6.35	5.16	14.7	●					○									
		DNMX150612-NWU	1.2	12.7	6.35	5.16	14.3	●						○								
ROUGHING		DNMG150608-NRP	0.8	12.7	6.35	5.16	14.7				●	●	●	●								
		DNMG150612-NRP	1.2	12.7	6.35	5.16	14.3				●	●	●	●								
		DNMG150616-NRP	1.6	12.7	6.35	5.16	13.9					●	●	●								
ROUGHING		DNMG150608-NRM	0.8	12.7	6.35	5.16	14.7							●				●				
		DNMG150612-NRM	1.2	12.7	6.35	5.16	14.3							●				●				

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



DN

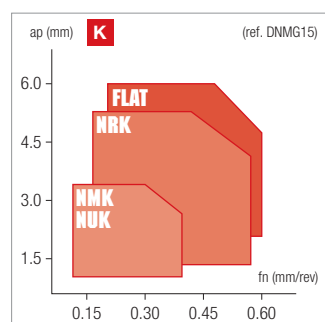
ISO - with hole

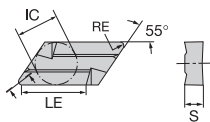
- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn into a smaller diameter) at an angle of 30°
- Commonly used when machining close to the tailstock
- Somewhat weaker edge strength than a triangle insert

HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF	
	JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC8215	JC8225	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015			
Stable machining, light cut	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice
General machining, medium cut	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice
Unstable machining, heavy cut	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice
Dimensions ISO Vc(m/min) - suggested cutting speed range (bold: 1st choice)																			
	P				200 380	170 360	140 330	100 200	170 360	140 330							200 380		
	M										100 200	80 180		70 160	50 130				
	K	130 380	110 300	130 380															
	N																200 1000		
	S												20 70						
	H																		

Designation		RE	IC	S	D1	LE	Stock												
ROUGHING	NRK K																		
ROUGHING	flat K																		

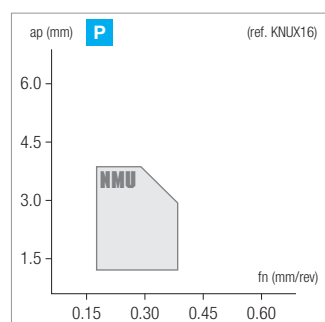
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



KN		HC: Coated carbide CVD: Chemical vapour deposition		HC CVD			
				JC8025			
ISO - without hole		Stable machining, light cut		● 1 st choice	○ suitable	○	
		General machining, medium cut		● 1 st choice	○ suitable	●	
		Unstable machining, heavy cut		⊞ 1 st choice	⊞ suitable	⊞	
		Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)	
		 2 edges		P	140 330		
				M			
				K			
N							
S							
		H					

Designation		RE	IC	S	D1	LE		Stock	
MEDIUM	NMU P								
	 right-hand shown	KNUX160405/r-NMU	0.5	9.525	4.76	-	16.1	●	
	KNUX160410/r-NMU	1	9.525	4.76	-	15.2	●		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



MCC

ISO - with hole

- 1st solution for micro-boring
- Precision ground insert with sharp geometry, tailored for microboring operation
- Micro boring bar with coolant both in steel (with Vortex technology) and in carbide
- Practical fun kits available (2 bars + 10 pcs inserts)

HF: Micrograin carbide
HT: Cermet
PVD: Physical vapour deposition

HF
PVD

HT

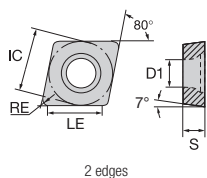
JP5125

JU4015

Stable machining,
light cut ● 1st choice ○ suitableGeneral machining,
medium cut ● 1st choice ○ suitableUnstable machining,
heavy cut ▲ 1st choice ▲ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P 70 180 200 380
M 50 140
K 60 180
N
S
H

Designation

RE

IC

S

D1

LE

Stock

FINISHING

PPF P M



ground chipbreaker
left-hand shown

MCC.R02L-PPF

0.2

3.5

1.4

1.9

3.8

●

●

MCC.R04L-PPF

0.4

3.5

1.4

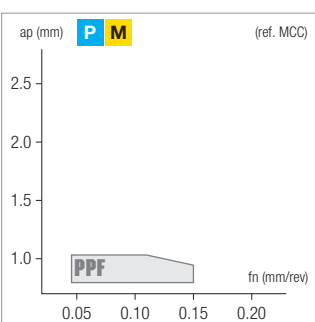
1.9

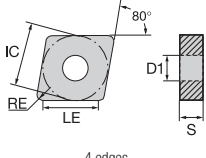
3.8

●

●

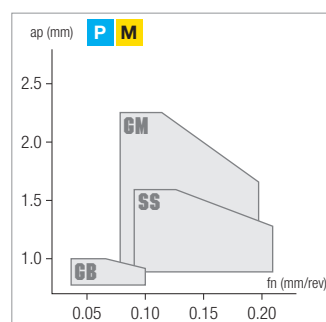
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



MCN		HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition						HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HT
MicroNega - with hole		JC8015	JP5015	JP5025	JP5120	JP9030	JU4015						
• MicroNega system it serves as an alternative to positive conventional solutions • Excellent economy for external small part machining or small boring application • Pressed chip breaker optimizes chip control and emphasizes the economic advantage • Precision ground chip breaker with stable seating in the pocket enables better surface finishing • Special holders tailored with big clearance angle, adapt itself for boring application, effectively reduces the risk of chip-jamming • Practical fun kits available		Stable machining, light cut		● 1 st choice ○ suitable		● ● ○ ● ● ●							
		General machining, medium cut		● 1 st choice ○ suitable		● ● ● ● ● ●							
		Unstable machining, heavy cut		⚙ 1 st choice ⚙ suitable		⚙ ⚙ ⚙ ⚙ ⚙ ⚙							
		Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)							
		P		170 360	100 220	60 180	90 200	200 380					
		M			70 160	60 120	60 150	50 130					
		K					90 190						
		N											
		S			20 70	30 60							
		H											

Designation		RE	IC	S	D1	LE	Stock							
FINISHING	GB P M  ground chipbreaker right-hand shown	MCN.R04G-GB ^{1/8}	0.4	7.5	3.18	3.6	7.2	▽						
MEDIUM	GM P M  1 st choice chip control oriented	MCN.R04M-GM	0.4	7.5	3.18	3.6	7.2	▽		●		●		
		MCN.R08M-GM	0.8	7.5	3.18	3.6	6.8		▽					
MEDIUM	SS P M  ground periphery polished surface	MCN.R02G-SS	0.2	7.5	3.18	3.6	7.4					▽		
		MCN.R04G-SS	0.4	7.5	3.18	3.6	7.2			●	▽	●		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



MDN

MicroNega - with hole

- MicroNega system it serves as an alternative to positive conventional solutions
- Excellent economy for external small part machining or small boring application
- Pressed chip breaker optimizes chip control and emphasizes the economic advantage
- Precision ground chip breaker with stable seating in the pocket enables better surface finishing
- Special holders tailored with big clearance angle, adapt itself for boring application, effectively reduces the risk of chip-jamming
- Practical fun kits available

HC: Coated carbide
HF: Micrograin carbide
HT: Cermet
CVD: Chemical vapour deposition
PVD: Physical vapour deposition

HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HT
JC8015	JP5015	JP5025	JP5120	JP9030	JU4015

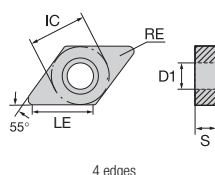
Stable machining,
light cut ● 1st choice ○ suitable

General machining,
medium cut ● 1st choice ○ suitable

Unstable machining,
heavy cut ▲ 1st choice ○ suitable

Dimensions

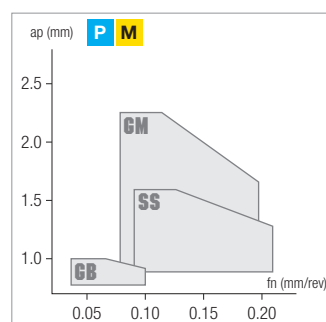
ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P	170 360	100 220	60 180	90 200	200 380
M		70 160	60 120	60 150	50 130
K				90 190	
N					
S		20 70	30 60		
H					

Designation		RE	IC	S	D1	LE	Stock					
FINISHING	GB P M ground chipbreaker right-hand shown	MDN.R04G-GB ^{1/8}	0.4	7	3.18	3.6	8.1	▽				
MEDIUM	GM P M 1 st choice chip control oriented	MDN.R04M-GM	0.4	7	3.18	3.6	8.1	▽	▽	●		●
		MDN.R08M-GM	0.8	7	3.18	3.6	7.7		▽			
MEDIUM	SS P M ground periphery polished surface	MDN.R02G-SS	0.2	7	3.18	3.6	8.3				▽	
		MDN.R04G-SS	0.4	7	3.18	3.6	8.1			●	▽	●

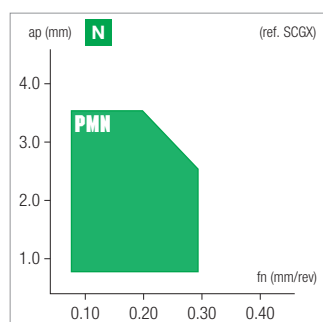
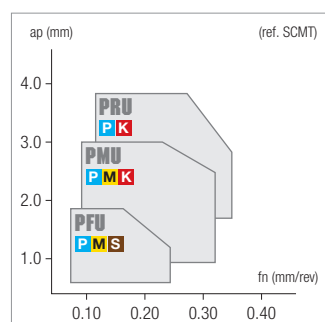
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



SC		HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition											
ISO - with hole		HC CVD HC CVD HC CVD HC CVD HC CVD HF PVD HF PVD HF PVD HT HF JC7010 JC8015 JC8025 JC9010 JC9025 JP5120 JP5125 JP6010 JU4015 JU6015											
• Very strong 90° corner with excellent economy (4 edges on positive inserts) • Mostly used for rough facing operations, especially on castings, forgings and rough-sawn blanks • Unable to turn or face up to a shoulder (must be used in a tool holder with min. 5° lead angle) • High radial forces push against the workpiece when used for turning • Should always be used in a stable set-up		Stable machining, light cut ● 1 st choice ○ suitable											
		General machining, medium cut ● 1 st choice ○ suitable											
		Unstable machining, heavy cut ⚙ 1 st choice ⚙ suitable											
		Dimensions											
		ISO											
4 edges		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)											
		P 170 360 140 330 90 200 70 180 200 380											
		M 100 200 80 180 60 150 50 140											
		K 130 380 90 190 60 180											
		N 400 1400 200 1000											
		S											
		H											

Designation		RE	IC	S	D1	LE	Stock																	
FINISHING	PFU P M S																							
	 sharp edge low cutting force	SCMT09T304-PFU	0.4	9.525	3.97	4.4	9.1																	
MEDIUM		SCMT09T308-PFU	0.8	9.525	3.97	4.4	8.7																	
	 1st choice universal application	SCMT09T304-PMU	0.4	9.525	3.97	4.4	9.1	○	●	●	○	●												
		SCMT09T308-PMU	0.8	9.525	3.97	4.4	8.7	●	○	●		●												
		SCMT120404-PMU	0.4	12.7	4.76	5.5	12.3		○	●														
MEDIUM		SCMT120408-PMU	0.8	12.7	4.76	5.5	11.9	●	●	●		●												
	 polished surface ground periphery	SCGX09T304-PMN	0.4	9.525	3.97	4.4	9.1																	
		SCGX09T308-PMN	0.8	9.525	3.97	4.4	8.7																	
		SCGX120404-PMN	0.4	12.7	4.76	5.5	12.3																	
SCGX120408-PMN		0.8	12.7	4.76	5.5	11.9																		
ROUGHING	PRU P K																							
	 strong edge interrupted cut	SCMT09T308-PRU	0.8	9.525	3.97	4.4	8.7	●		●														
SCMT120408-PRU		0.8	12.7	4.76	5.5	11.9	●		●															

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



SN

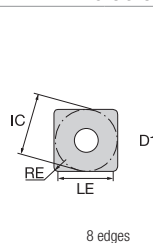
ISO - with hole

- Very strong 90° corner with excellent economy (8 edges on double-sided inserts)
- Mostly used for rough facing operations, especially on castings, forgings and rough-sawed blanks
- Unable to turn or face up to a shoulder (must be used in a tool holder with min. 5° lead angle)
- High radial forces push against the workpiece when used for turning
- Should always be used in a stable set-up

HC: Coated carbide
HF: Micrograin carbide
CVD: Chemical vapour deposition
PVD: Physical vapour deposition

Stable machining, light cut ● 1st choice ○ suitable
General machining, medium cut ● 1st choice ○ suitable
Unstable machining, heavy cut ▲ 1st choice ▲ suitable

Dimensions



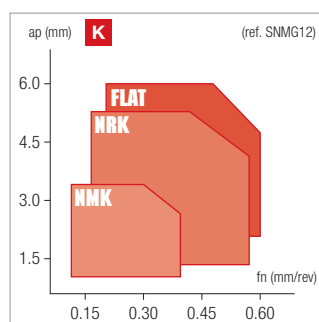
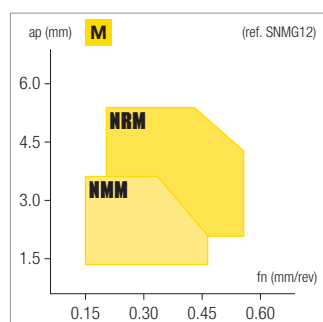
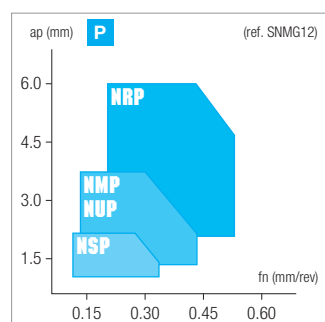
	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF
	JC7010	JC7020	JC7115	JC8015	JC8025	JC8035	JC9010	JC9025	JP9030	JU6015
Stable machining, light cut	●	○	●	●	○		●	○		●
General machining, medium cut	●	○	●	●	○	○	○	●	●	●
Unstable machining, heavy cut	▲	▲	▲		▲	▲	▲	▲	▲	▲

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

ISO	P	M	K	N	S	H
P						
M						
K						
N						
S						
H						

Designation		RE	IC	S	D1	LE	Stock									
FINISHING	NSP P															
	 SNMG120408-NSP	0.8	12.7	4.76	5.16	11.9										
MEDIUM	NMP P															
	 SNMG120404-NMP	0.4	12.7	4.76	5.16	12.3				○	●					
	SNMG120408-NMP	0.8	12.7	4.76	5.16	11.9				●	●					
	SNMG120412-NMP	1.2	12.7	4.76	5.16	11.5				●	○					
	SNMG120416-NMP	1.6	12.7	4.76	5.16	11.1				○	○					
MEDIUM	NUP P															
	 SNMG120404-NUP	0.4	12.7	4.76	5.16	12.3				○	○					
	SNMG120408-NUP	0.8	12.7	4.76	5.16	11.9				○	●	○				
	SNMG120412-NUP	1.2	12.7	4.76	5.16	11.5				○	●	○				
	SNMG120416-NUP	1.6	12.7	4.76	5.16	11.1				○	○					
MEDIUM	NMM M															
	 SNMG120404-NMM	0.4	12.7	4.76	5.16	12.3							●	○		
	SNMG120408-NMM	0.8	12.7	4.76	5.16	11.9							●	○		
	SNMG120412-NMM	1.2	12.7	4.76	5.16	11.5							○	○		
	SNMG120416-NMM	1.6	12.7	4.76	5.16	11.1							○	○		
	SNMG190612-NMM	1.2	19.05	6.35	7.94	17.9							○	○		
MEDIUM	NMK K															
	 SNMG120408-NMK	0.8	12.7	4.76	5.16	11.9	●	○								
	SNMG120412-NMK	1.2	12.7	4.76	5.16	11.5	○	○								

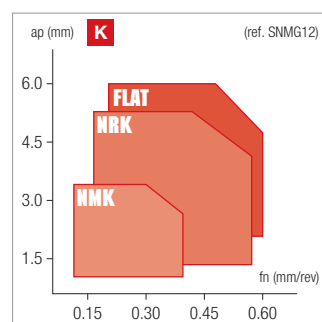
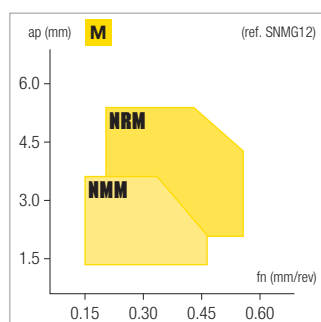
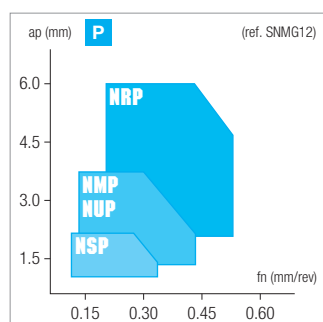
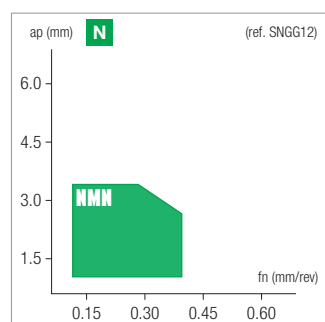
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



SN	ISO - with hole	HC: Coated carbide HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition	HC	HC	HC	HC	HC	HC	HC	HC	HF	HF	
			CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	PVD		
- Very strong 90° corner with excellent economy (8 edges on double-sided inserts) - Mostly used for rough facing operations, especially on castings, forgings and rough-sawn blanks - Unable to turn or face up to a shoulder (must be used in a tool holder with min. 5° lead angle) - High radial forces push against the workpiece when used for turning - Should always be used in a stable set-up		Stable machining, light cut ● 1 st choice ○ suitable General machining, medium cut ● 1 st choice ○ suitable Unstable machining, heavy cut ▲ 1 st choice ▲ suitable	JC7010	JC7020	JC7115	JC8015	JC8025	JC8035	JC9010	JC9025	JP9030	JU6015	
			●	○	●	●	○		●	○		●	
			●	○	●	●	○	○	○	○	●	●	
			▲	▲	▲		▲	▲		▲	▲	▲	
			Dimensions ISO Vc(m/min) - suggested cutting speed range (bold: 1st choice)										
			P			170 360	140 330	100 200					
			M						100 200	80 180	50 130		
			K	130 380	110 300	130 380							
			N									200 1000	
			S										
			H										

Designation		RE	IC	S	D1	LE	Stock											
MEDIUM	NMN N																	
	SNMG120404-NMN	0.4	12.7	4.76	5.16	12.3											○	
	SNMG120408-NMN	0.8	12.7	4.76	5.16	11.9											●	
	SNMG120412-NMN	1.2	12.7	4.76	5.16	11.5											▽	
ROUGHING	NRP P																	
	SNMG120408-NRP	0.8	12.7	4.76	5.16	11.9				●	○							
	SNMG120412-NRP	1.2	12.7	4.76	5.16	11.5				●	●							
	SNMG120416-NRP	1.6	12.7	4.76	5.16	11.1				●	●							
	SNMG190612-NRP	1.2	19.05	6.35	7.94	17.9				○	○							
	SNMG190616-NRP	1.6	19.05	6.35	7.94	17.5				○	●							
	SNMG190624-NRP	2.4	19.05	6.35	7.94	16.7				●	●							
	SNMG250924-NRP	2.4	25.4	9.52	8.8	23				○								
ROUGHING	NRM M																	
	SNMG120408-NRM	0.8	12.7	4.76	5.16	11.9					○		●					
	SNMG120412-NRM	1.2	12.7	4.76	5.16	11.5					○		●					
	SNMG190612-NRM	1.2	19.05	6.35	7.94	17.9					○		●					
ROUGHING	NRK K																	
	SNMG120408-NRK	0.8	12.7	4.76	5.16	11.9	●	○	○									
	SNMG120412-NRK	1.2	12.7	4.76	5.16	11.5	○	○	○									
	SNMG120416-NRK	1.6	12.7	4.76	5.16	11.1	○	●										
	SNMG190612-NRK	1.2	19.05	6.35	7.94	17.9	○	○										
	SNMG190616-NRK	1.6	19.05	6.35	7.94	17.5	○	○										

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



SN

ISO - with hole

- Very strong 90° corner with excellent economy (8 edges on double-sided inserts)
- Mostly used for rough facing operations, especially on castings, forgings and rough-sawed blanks
- Unable to turn or face up to a shoulder (must be used in a tool holder with min. 5° lead angle)
- High radial forces push against the workpiece when used for turning
- Should always be used in a stable set-up

HC: Coated carbide
HF: Micrograin carbide
CVD: Chemical vapour deposition
PVD: Physical vapour deposition

HC CVD HC CVD HC CVD HC CVD HC CVD HC CVD HC CVD HC CVD HF PVD HF

JC7010 JC7020 JC7115 JC8015 JC8025 JC8035 JC9010 JC9025 JP9030 JU6015

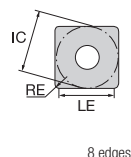
Stable machining, light cut ● 1st choice ○ suitable

General machining, medium cut ● 1st choice ○ suitable

Unstable machining, heavy cut ⚙ 1st choice ⚙ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

8 edges

P

M

K

N

S

H

170 140 100 360 330 200

100 80 50 200 180 130

130 110 130 380 300 380

200 1000

200 1000

Designation

RE

IC

S

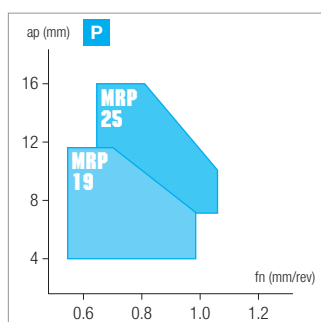
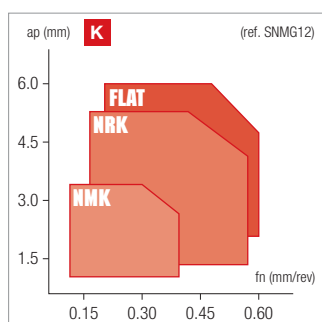
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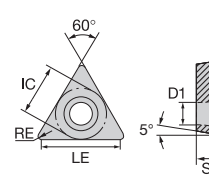
LE

Stock

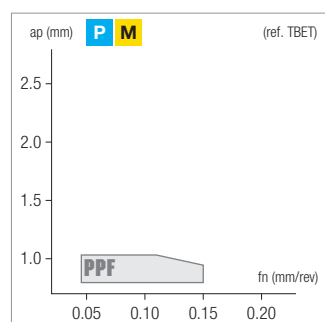
ROUGHING	flat K	Designation	RE	IC	S	D1	LE	Stock
		SNMA090308	0.8	9.525	3.18	3.81	8.7	○
		SNMA120408	0.8	12.7	4.76	5.16	11.9	● ○ ○
		SNMA120412	1.2	12.7	4.76	5.16	11.5	● ○ ○
		SNMA120416	1.6	12.7	4.76	5.16	11.1	● ○
HEAVY ROUGHING	MRP P	Designation	RE	IC	S	D1	LE	Stock
		SNMM190616-MRP	1.6	19.05	6.35	7.94	17.5	○ ○
		SNMM190624-MRP	2.4	19.05	6.35	7.94	16.7	● ●
	single side 4 edges	SNMM250924-MRP	2.4	25.4	9.52	8.8	23	● ●

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



TB		HF: Micrograin carbide HT: Cermet PVD: Physical vapour deposition		HF PVD	HT			
ISO - with hole				JP5125	JU4015			
• Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling • High surface quality due to very stable seating of the insert on the tool pocket • Extra side clearance between the insert and the workpiece reduces risk of chip jamming	Stable machining, light cut		● 1 st choice ○ suitable	○	●			
	General machining, medium cut		● 1 st choice ○ suitable	●	○			
	Unstable machining, heavy cut		● 1 st choice ○ suitable	●	○			
	Dimensions		ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)				
	 3 edges		P	70 180	200 380			
			M	50 140				
			K	60 180				
			N					
			S					
			H					
Designation		RE	IC	S	D1	LE	Stock	
FINISHING  PPF P M ground chipbreaker right-hand shown	TBET060102-PPF	0.2	3.97	1.59	2.3	6.7	●	●
	TBET060104-PPF	0.4	3.97	1.59	2.3	6.5	●	●

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



TC

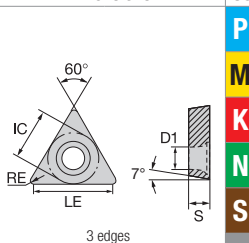
ISO - with hole

- Very versatile insert shape
- Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket
- Extra clearance between the insert and the workpiece bore, greatly reduce the risk of chip jamming
- Boring bars made of steel (Vortex technology) and carbide are available
- Edge is measurably weaker than 80° diamond shape inserts

HC: Coated carbide
HT: Cermet
HF: Micrograin carbide
CVD: Chemical vapour deposition
PVD: Physical vapour deposition

Stable machining, light cut ● 1st choice ○ suitable
General machining, medium cut ● 1st choice ○ suitable
Unstable machining, heavy cut ⚙ 1st choice ⚙ suitable

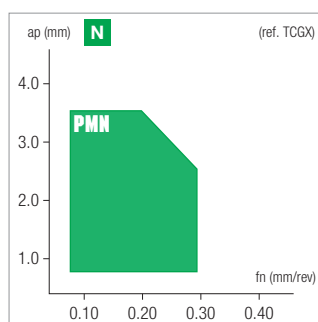
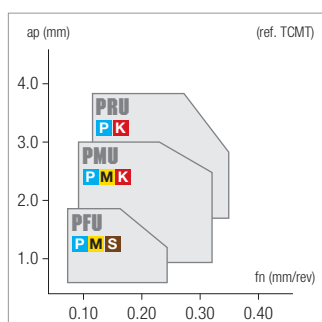
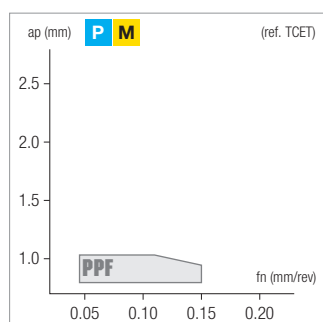
Dimensions ISO



	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HT PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	HF
	JC7010	JC7020	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5120	JP5125	JP6010	JU4015	JU6015
Stable machining, light cut	●	○	●	○	●	○	●	●	○	●	●	●	●
General machining, medium cut	●	○	●	○	●	○	●	●	○	●	○	●	●
Unstable machining, heavy cut	⚙	⚙	⚙	⚙	⚙	⚙	⚙	⚙	⚙	⚙	⚙	⚙	⚙
Vc(m/min) - suggested cutting speed range (bold: 1 st choice)													
P			170 360	140 330			180 400	100 220	90 200	70 180		200 380	
M					100 200	80 180	100 220	70 160	60 150	50 140			
K	130 380	110 300					150 320	90 190	60 180				
N											400 1400	200 1000	
S								20 70					
H													

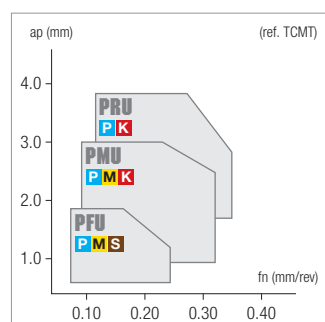
Designation		RE	IC	S	D1	LE	Stock												
FINISHING	PPF P M																		
	TCET110202/-h-PPF	0.2	6.35	2.38	2.8	10.5													
FINISHING	TCET110204/-h-PPF	0.4	6.35	2.38	2.8	10.3													
	TCET110208-PFU	0.8	6.35	2.38	2.8	9.9													
FINISHING	TCMT110202-PFU	0.2	6.35	2.38	2.8	10.5			●	●		●	○	●					
	TCMT110204-PFU	0.4	6.35	2.38	2.8	10.3			●	●		●	●	●					
FINISHING	TCMT110208-PFU	0.8	6.35	2.38	2.8	9.9							●						
	TCMT16T304-PFU	0.4	9.525	3.97	4.4	16.1							●	●					
FINISHING	TCMT16T308-PFU	0.8	9.525	3.97	4.4	15.7							●	●					
MEDIUM	TCMT090204-PMU	0.4	5.56	2.38	2.5	9	●		●	●		●					○		
	TCMT110202-PMU	0.2	6.35	2.38	2.8	10.5			○	●		●	○				●		
MEDIUM	TCMT110204-PMU	0.4	6.35	2.38	2.8	10.3	●		●	●	●	●	●				●		
	TCMT110208-PMU	0.8	6.35	2.38	2.8	9.9	●		●	●		●					●		
MEDIUM	TCMT16T304-PMU	0.4	9.525	3.97	4.4	16.1	●		●	●		●					●		
	TCMT16T308-PMU	0.8	9.525	3.97	4.4	15.7	●	○	●	●		●					●		
MEDIUM	TCMT16T312-PMU	1.2	9.525	3.97	4.4	15.3	●	●		○									
	TCMT220408-PMU	0.8	12.7	4.76	5.5	21.2	○		●										
MEDIUM	TCGX090204-PMN	0.4	5.56	2.38	2.5	9											●	●	
	TCGX110202-PMN	0.2	6.35	2.38	2.8	10.5											○	○	
MEDIUM	TCGX110204-PMN	0.4	6.35	2.38	2.8	10.3											●	●	
	TCGX110208-PMN	0.8	6.35	2.38	2.8	9.9											○	○	
MEDIUM	TCGX16T302-PMN	0.2	9.525	3.97	4.4	16.3											○	○	
	TCGX16T304-PMN	0.4	9.525	3.97	4.4	16.1											●	●	
MEDIUM	TCGX16T308-PMN	0.8	9.525	3.97	4.4	15.7											●	●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



TC		HC: Coated carbide HT: Cermet HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition													
ISO - with hole		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HT PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	HF	
		JC7010	JC7020	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5120	JP5125	JP6010	JU4015	JU6015	
- Very versatile insert shape - Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket - Extra clearance between the insert and the workpiece bore, greatly reduce the risk of chip jamming - Boring bars made of steel (Vortex technology) and carbide are available - Edge is measurably weaker than 80° diamond shape inserts	Stable machining, light cut	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	
	General machining, medium cut	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	
	Unstable machining, heavy cut	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	
	Dimensions	ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)													
		P		170 360	140 330			180 400	100 220	90 200	70 180		200 380		
		M				100 200	80 180	100 220	70 160	60 150	50 140				
		K	130 380	110 300				150 320		90 190	60 180				
		N										400 1400	200 1000		
		S							20 70						
		H													
Designation		RE	IC	S	D1	LE	Stock								
ROUGHING strong edge interrupted cut	TCMT16T304-PRU	0.4	9.525	3.97	4.4	16.1	○		●						
	TCMT16T308-PRU	0.8	9.525	3.97	4.4	15.7	●		●						

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



TN

ISO - with hole

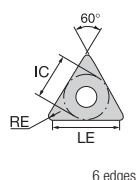
- Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading
- Good economy with up to 6 cutting edges

HC: Coated carbide
HF: Micrograin carbide
HT: Cermet
CVD: Chemical vapour deposition
PVD: Physical vapour deposition

Stable machining, light cut ● 1st choice ○ suitable
General machining, medium cut ● 1st choice ○ suitable
Unstable machining, heavy cut ▲ 1st choice ▲ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P

M

K

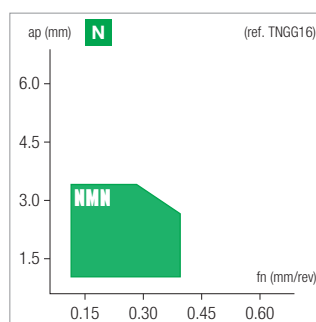
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G - SPARE PARTS

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



TN

ISO - with hole

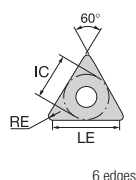
- Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading
- Good economy with up to 6 cutting edges

HC: Coated carbide
HF: Micrograin carbide
HT: Cermet
CVD: Chemical vapour deposition
PVD: Physical vapour deposition

Stable machining, light cut ● 1st choice ○ suitable
General machining, medium cut ● 1st choice ○ suitable
Unstable machining, heavy cut ⚙ 1st choice ⚙ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P

M

K

N

S

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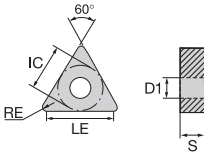
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100

170

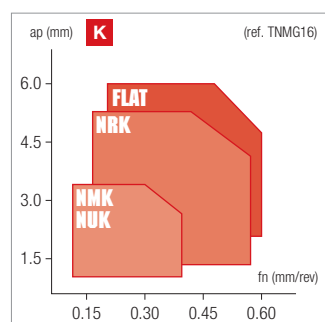
140

100

TN		HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition		HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HF	HF	HT	HF	
				CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	PVD	PVD			
ISO - with hole		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC8215	JC8225	JC9010	JC9025	JP9015	JP9030	JU4015	JU6015			
• Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading • Good economy with up to 6 cutting edges	Stable machining, light cut	● 1 st choice	○ suitable	●	●	●	○		●		●	○	●		●	●			
	General machining, medium cut	● 1 st choice	○ suitable	●		●	●	○	●	●	○	●	●	●		●			
	Unstable machining, heavy cut	⚡ 1 st choice	⚡ suitable	⚡				⚡	⚡		⚡			⚡		⚡			
	Dimensions	ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																	
	P				200 380	170 360	140 330	100 200	170 360	140 330						200 380			
	M											100 200	80 180	70 160	50 130				
	K	130 380	110 300	130 380															
	N																200 1000		
	S																		
	H																		

Designation		RE	IC	S	D1	LE	Stock												
ROUGHING	NRK K	TNMG160408-NRK	0.8	9.525	4.76	3.81	15.7	●	○	○									
		TNMG160412-NRK	1.2	9.525	4.76	3.81	15.3	●	○	○									
		TNMG220408-NRK	0.8	12.7	4.76	5.16	21.2	○	○										
		TNMG220412-NRK	1.2	12.7	4.76	5.16	20.8	○	○										
		TNMG220416-NRK	1.6	12.7	4.76	5.16	20.4	○	○										
ROUGHING	flat K	TNMA160404	0.8	9.525	4.76	3.81	15.7	○	○										
		TNMA160408	0.8	9.525	4.76	3.81	15.7	●	●	○									
		TNMA160412	1.2	9.525	4.76	3.81	15.3	●	○	○									
		TNMA160416	1.6	9.525	4.76	3.81	14.9	●	○										
		TNMA220408	0.8	12.7	4.76	5.16	21.2	●	○										
		TNMA220412	1.2	12.7	4.76	5.16	20.8	●	○										
		TNMA220416	1.6	12.7	4.76	5.16	20.4	○	○										

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion



TP

ISO - with hole

- Very versatile insert shape
- Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket
- Extra clearance between the insert and the workpiece bore, greatly reduce the risk of chip jamming

HF: Micrograin carbide
HT: Cermet
PVD: Physical vapour deposition

HF
PVD

HT

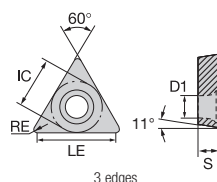
JP5125

JU4015

Stable machining,
light cut ● 1st choice ○ suitableGeneral machining,
medium cut ● 1st choice ○ suitableUnstable machining,
heavy cut ⚙ 1st choice ⚙ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P 70 180 200 380
M 50 140
K 60 180
N
S
H

Designation

RE

IC

S

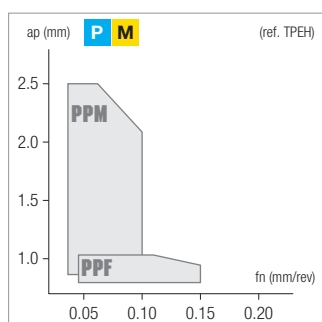
D1

LE

Stock

FINISHING	PPF P M		Designation	RE	IC	S	D1	LE			Stock
			TPEH090202/-r-PPF	0.2	5.56	2.38	3	9.7	●	●	
			TPEH090204/-r-PPF	0.4	5.56	2.38	3	9.5	●	●	
			TPEH110302/-r-PPF	0.2	6.35	3.18	3.3	10.8	●	●	
			TPEH110304/-r-PPF	0.4	6.35	3.18	3.3	10.6	●	●	
MEDIUM	PPM P M		TPEH110304/-r-PPM	0.4	6.35	3.18	3.3	10.6	●	●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



ISO - with hole

- 1st choice for intricate shape copy turning
- Can “In-Copy” (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock
- Positive style can be used for external and internal applications, in many cases improved performance outweighs the increased cost per edge (2 edges vs. 4 edges of a double sided VNMG)

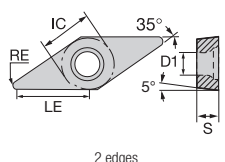
HC: Coated carbide
HT: Cermet
HF: Micrograin carbide
CVD: Chemical vapour deposition
PVD: Physical vapour deposition

Stable machining, light cut		1 st choice		suitable
General machining, medium cut		1 st choice		suitable
Unstable machining, heavy cut		1 st choice		suitable

Dimensions

ISO

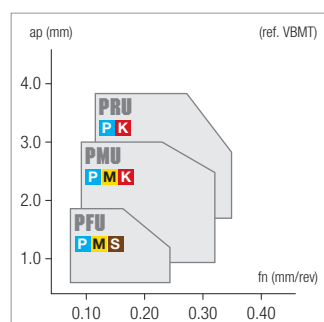
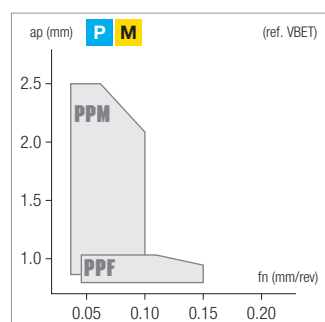
Vc(m/min) - suggested cutting speed range (bold: 1st choice)



2 edges

[illegible]

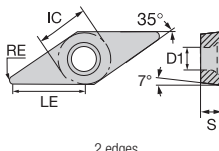
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



VC

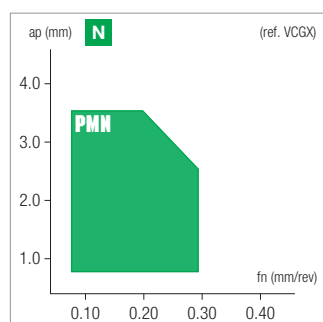
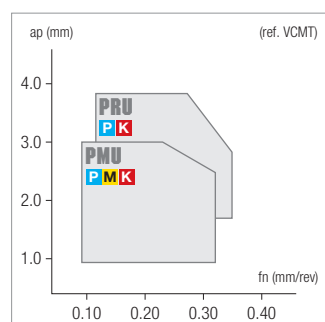
ISO - with hole

- 1st choice for intricate shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock
- Positive style can be used for external and internal applications, in many cases improved performance outweighs the increased cost per edge (2 edges vs. 4 edges of a double sided VNMG)

HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition		HC	HC	HC	HC	HF	HF	HT	HF	
		CVD	CVD	CVD	CVD	PVD	PVD			
		JC7010	JC8015	JC8025	JC9025	JP5125	JP6010	JU4015	JU6015	
Stable machining, light cut ● 1 st choice ○ suitable General machining, medium cut ● 1 st choice ○ suitable Unstable machining, heavy cut ▲ 1 st choice ▲ suitable		●	●	○	○	○	●	●	●	
		●	●	●	●	●	○	●	●	
		▲	▲	▲	▲	▲		▲	▲	
Dimensions  2 edges		ISO P 170 140 70 200 360 330 180 380 M 80 50 180 140 K 130 60 380 180 N 400 200 1400 1000 S H								
		Vc(m/min) - suggested cutting speed range (bold: 1st choice)								

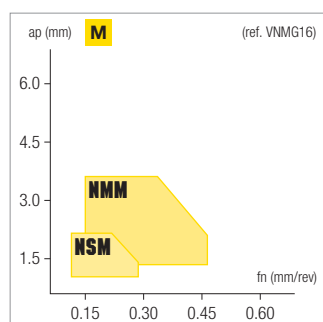
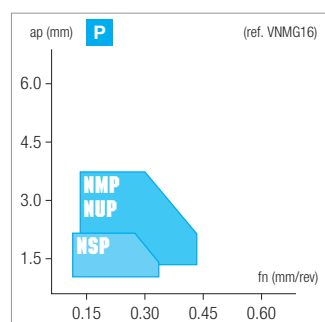
Designation		RE	IC	S	D1	LE	Stock									
MEDIUM  1st choice universal application	VCMT110304-PMU	0.4	6.35	3.18	2.8	10.7	●	●	●	●		●				
	VCMT110308-PMU	0.8	6.35	3.18	2.8	10.3				○						
	VCMT160404-PMU	0.4	9.525	4.76	4.4	16.2	●	●	●	●	●	○				
	VCMT160408-PMU	0.8	9.525	4.76	4.4	15.8	●	●	●	●	●	●				
MEDIUM  polished surface ground periphery	VCGX110302-PMN	0.2	6.35	3.18	2.8	10.9					○	●				
	VCGX110304-PMN	0.4	6.35	3.18	2.8	10.7					●	●				
	VCGX110308-PMN	0.8	6.35	3.18	2.8	10.3					○	●				
	VCGX160402-PMN	0.2	9.525	4.76	4.4	16.4					○	●				
	VCGX160404-PMN	0.4	9.525	4.76	4.4	16.2					●	●				
	VCGX160408-PMN	0.8	9.525	4.76	4.4	15.8					●	●				
	VCGX160412-PMN	1.2	9.525	4.76	4.4	15.4					○	○				
	VCGX220512-PMN	1.2	12.7	5.56	5.5	20.9					○	○				
	VCGX220516-PMN	1.6	12.7	5.56	5.5	20.5					○	○				
ROUGHING  strong edge interrupted cut	VCMT160404-PRU	0.4	9.525	4.76	4.4	16.2	●		●							
	VCMT160408-PRU	0.8	9.525	4.76	4.4	15.8	●		●							

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



VN		HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition										
ISO - with hole		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HT	HF
		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC9025	JP9015	JP9030	JU4015	JU6015
1st choice for intricate shape copy turning - Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49° - Can work extremely close to the tailstock - The weakest turning insert shape among all, ap and fn should be lighter - Double sided style should mainly be used for external applications		Stable machining, light cut	1 st choice	suitable	●	○	●	●	○	○	●	●
		General machining, medium cut	1 st choice	suitable	●	○	●	●	●	●	●	●
		Unstable machining, heavy cut	1 st choice	suitable	●	○	●	●	●	●	●	●
		Dimensions	ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)									
		P			200	170	140				200	
		M			380	360	330				380	
		K	130	110	130			80	70	50		
		N	380	300	380			180	160	130		
		S									200	
		H									1000	
Designation		RE	IC	S	D1	LE	Stock					
FINISHING	NSP P											
	VNMG160404-NSP	0.4	9.525	4.76	3.81	16.2			●	●	●	●
	VNMG160408-NSP	0.8	9.525	4.76	3.81	15.8			●	●	○	●
FINISHING	NSM M											
	VNMG160404-NSM	0.4	9.525	4.76	3.81	16.2				●	●	
	VNMG160408-NSM	0.8	9.525	4.76	3.81	15.8				●	●	
MEDIUM	NMP P											
	VNMG160404-NMP	0.4	9.525	4.76	3.81	16.2			●	●		▽
	VNMG160408-NMP	0.8	9.525	4.76	3.81	15.8			●	●		▽
	VNMG160412-NMP	1.2	9.525	4.76	3.81	15.4			○	●		
MEDIUM	NUP P											
	VNMG160404-NUP	0.4	9.525	4.76	3.81	16.2			○	○		●
	VNMG160408-NUP	0.8	9.525	4.76	3.81	15.8			○	○		●
	VNMG160412-NUP	1.2	9.525	4.76	3.81	15.4			○	○		
MEDIUM	NMM M											
	VNMG160404-NMM	0.4	9.525	4.76	3.81	16.2			●		○	▽
	VNMG160408-NMM	0.8	9.525	4.76	3.81	15.8			○		○	▽

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



VN

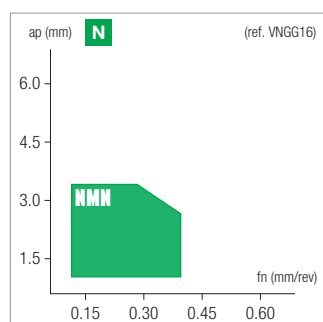
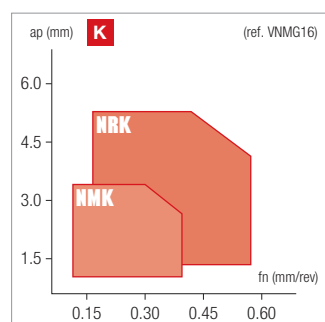
ISO - with hole

- 1st choice for intricate shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock
- The weakest turning insert shape among all, ap and fn should be lighter
- Double sided style should mainly be used for external applications

HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HT	HF	
	JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC9025	JP9015	JP9030	JU4015	JU6015	
Stable machining, light cut	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	○ suitable	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	
General machining, medium cut	● 1 st choice	○ suitable	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	● 1 st choice	
Unstable machining, heavy cut	▲ 1 st choice	▲ 1 st choice	▲ 1 st choice	▲ 1 st choice	▲ 1 st choice	▲ 1 st choice	▲ 1 st choice	▲ 1 st choice	▲ 1 st choice	▲ 1 st choice	▲ 1 st choice	
Dimensions	ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)											
	P			200 380	170 360	140 330				200 380		
	M						80 180	70 160	50 130			
	K	130 380	110 300	130 380								
	N									200 1000		
	S											
	H											

Designation		RE	IC	S	D1	LE	Stock											
MEDIUM	NMK K																	
	VNMG160404-NMK	0.4	9.525	4.76	3.81	16.2	○	○										
	VNMG160408-NMK	0.8	9.525	4.76	3.81	15.8	●	○										
	VNMG160412-NMK	1.2	9.525	4.76	3.81	15.4	○	○										
MEDIUM	NUK K																	
	VNMG160404-NUK	0.4	9.525	4.76	3.81	16.2			○									
	VNMG160408-NUK	0.8	9.525	4.76	3.81	15.8			○									
	VNMG160412-NUK	1.2	9.525	4.76	3.81	15.4			○									
MEDIUM	NMN N																	
	VNMG160404-NMN	0.4	9.525	4.76	3.81	16.2										○		
	VNMG160408-NMN	0.8	9.525	4.76	3.81	15.8										○		
ROUGHING	NRK K																	
	VNMG160408-NRK	0.8	9.525	4.76	3.81	15.8	○	○										
	VNMG160412-NRK	1.2	9.525	4.76	3.81	15.4	○	○										

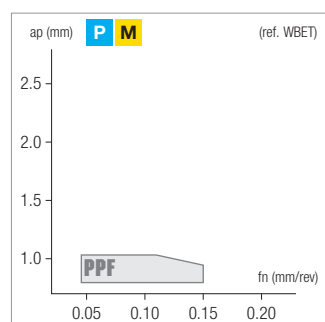
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



WB		HF: Micrograin carbide HT: Cermet PVD: Physical vapour deposition		HF PVD	HT		
ISO - with hole				JP5125	JU4015		
• 3-corner 80° diamond shape that can increase economy compared to C-shape inserts • Generally used on more moderate depths of cut and feedrates than C-shape inserts • Seating of insert in pocket is less stable as C-shape inserts • Cannot take as deep a depth of cut as similar sized C-shape insert	Stable machining, light cut		● 1 st choice ○ suitable	○ ●			
	General machining, medium cut		● 1 st choice ○ suitable	● ○			
	Unstable machining, heavy cut		▲ 1 st choice ▼ suitable	▲ ▼			
	Dimensions		ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)			
	3 edges		P	70 180	200 380		
M			50 140				
K			60 180				
N							
S							
H							

Designation		RE	IC	S	D1	LE			Stock	
FINISHING	PPF P M ground chipbreaker left-hand shown	WBET060102 ^h -PPF	0.2	3.97	1.59	2.3	2.3	● ●		
	WBET060104 ^h -PPF	0.4	3.97	1.59	2.3	2.1	● ●			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion



WC**ISO - with hole**

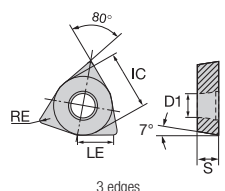
- 3-corner 80° diamond shape that can increase economy compared to C-shape inserts
- Generally used on more moderate depths of cut and feedrates than C-shape inserts
- Seating of insert in pocket is less stable as C-shape inserts
- Cannot take as deep a depth of cut as similar sized C-shape insert

HC: Coated carbide
HT: Cermet
CVD: Chemical vapour deposition

HC CVD
HC CVD
HC CVD
HC CVD
HT

JC7010
JC8015
JC8025
JC9025
JU4015

Stable machining, light cut ● 1st choice ○ suitable
General machining, medium cut ● 1st choice ○ suitable
Unstable machining, heavy cut ▲ 1st choice ▼ suitable

Dimensions**ISO****Vc(m/min) - suggested cutting speed range (bold: 1st choice)**

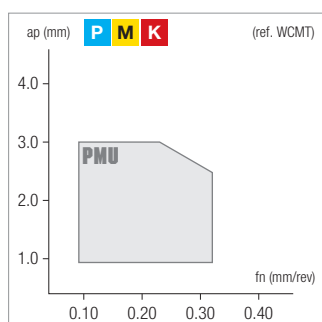
P
M
K
N
S
H

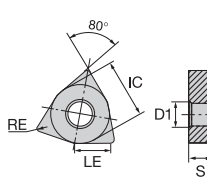
170
360
140
330
200
380
80
180
130
380

Designation**RE****IC****S****D1****LE****Stock**

MEDIUM	PMU P M K										
		WCMT12T304-PMU	0.4	9.525	3.97	4.4	6.1	●	●	●	●
	1st choice universal application	WCMT12T308-PMU	0.8	9.525	3.97	4.4	5.7	●	●	●	●

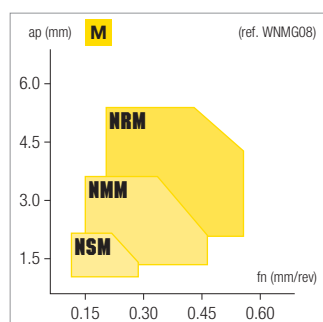
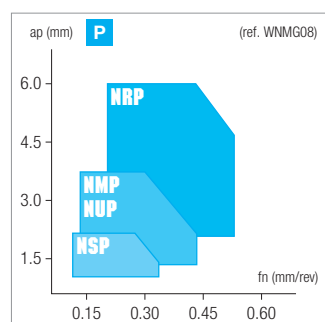
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion



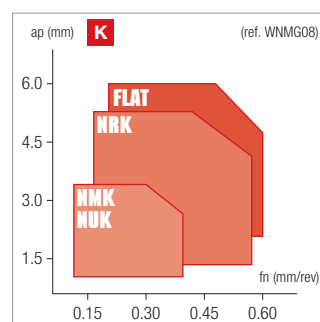
WN	ISO - with hole	HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HF	HF	HF	HT	HF
			CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	PVD	PVD	PVD	
			JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC8215	JC8225	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015	
• 6-corner 80° diamond shape that can increase economy compared to CNMG-style inserts • Generally used on more moderate depths of cut and feedrates than CNMG-style inserts • Seating of insert in pocket is less stable as CNMG-style inserts • Cannot take as deep a depth of cut as similar sized CNMG-style insert		Stable machining, light cut	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	
		General machining, medium cut	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	
		Unstable machining, heavy cut	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	
		Dimensions	ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																
			P				200 380	170 360	140 330	100 200	170 360	140 330						200 380	
			M											100 200	80 180		70 160	50 130	
			K	130 380	110 300	130 380													
			N																200 1000
			S													20 70			
			H																

Designation		RE	IC	S	D1	LE	Stock											
FINISHING	NSP P	WNMG060404-NSP	0.4	9.525	4.76	3.81	6.1					●	○					●
		WNMG060408-NSP	0.8	9.525	4.76	3.81	5.7					○	○					●
		WNMG080404-NSP	0.4	12.7	4.76	5.16	8.3					●	●	●				●
		WNMG080408-NSP	0.8	12.7	4.76	5.16	7.9					●	●	●				●
FINISHING	NSM M	WNMG080404-NSM	0.4	12.7	4.76	5.16	8.3									●	●	
		WNMG080408-NSM	0.8	12.7	4.76	5.16	7.9									●	●	
MEDIUM	NMP P	WNMG060404-NMP	0.4	9.525	4.76	3.81	6.1					○	●					
		WNMG060408-NMP	0.8	9.525	4.76	3.81	5.7					●	●					
		WNMG080404-NMP	0.4	12.7	4.76	5.16	8.3					○	●				▽	
		WNMG080408-NMP	0.8	12.7	4.76	5.16	7.9					●	●				▽	
		WNMG080412-NMP	1.2	12.7	4.76	5.16	7.5					●	●					
		WNMG080416-NMP	1.6	12.7	4.76	5.16	7.1					○	●					
MEDIUM	NUP P	WNMG060404-NUP	0.4	9.525	4.76	3.81	6.1					○	●				●	
		WNMG060408-NUP	0.8	9.525	4.76	3.81	5.7					○	●	●			●	
		WNMG080404-NUP	0.4	12.7	4.76	5.16	8.3					●	●	●			●	
		WNMG080408-NUP	0.8	12.7	4.76	5.16	7.9					●	●	●	○		○	
		WNMG080412-NUP	1.2	12.7	4.76	5.16	7.5					●	●	●	○			
		WNMG080416-NUP	1.6	12.7	4.76	5.16	7.1					●	●	●				
MEDIUM	NMM M	WNMG060404-NMM	0.4	9.525	4.76	3.81	6.1						○	●			○	
		WNMG060408-NMM	0.8	9.525	4.76	3.81	5.7						○	●			●	
		WNMG060412-NMM	1.2	9.525	4.76	3.81	5.3						●	●			●	
		WNMG080404-NMM	0.4	12.7	4.76	5.16	8.3						●	●			●	▽
		WNMG080408-NMM	0.8	12.7	4.76	5.16	7.9						●	●			●	▽
		WNMG080412-NMM	1.2	12.7	4.76	5.16	7.5						●	●			●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



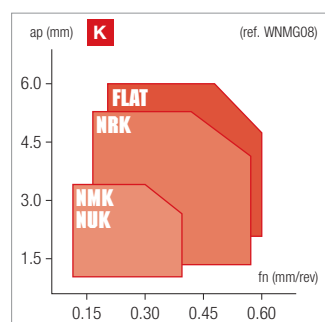
WN**ISO - with hole**

- 6-corner 80° diamond shape that can increase economy compared to CNMG-style inserts
- Generally used on more moderate depths of cut and feedrates than CNMG-style inserts
- Seating of insert in pocket is less stable as CNMG-style inserts
- Cannot take as deep a depth of cut as similar sized CNMG-style insert

HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF		
		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC8215	JC8225	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015			
Stable machining, light cut		● 1 st choice	○ suitable	●	●	●	○		●		●	○	●	●		●	●			
General machining, medium cut		● 1 st choice	○ suitable	●		●	●	○	●	●	○	●	●	●	●			●		
Unstable machining, heavy cut		⚙ 1 st choice	⚙ suitable	⚙	⚙		⚙	⚙		⚙		⚙			⚙		⚙			
Dimensions		ISO																		
 6 edges		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																		
		P				200 380	170 360	140 330	100 200	170 360	140 330							200 380		
		M											100 200	80 180		70 160	50 130			
		K	130 380	110 300	130 380															
		N																	200 1000	
		S													20 70					
H																				

Designation		RE	IC	S	D1	LE	Stock											
ROUGHING	flat K																	
	WNMA080408	0.8	12.7	4.76	5.16	7.9	●	○	○									
	WNMA080412	1.2	12.7	4.76	5.16	7.5	●	○	○									
	WNMA080416	1.6	12.7	4.76	5.16	7.1	○	○										

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

TURNING Parameters - cutting speed · CARBIDE

A - TURNING	ISO 513	MATERIAL	HARDNESS HB	JC8005			JC8015			JC8025		
				min	start	max	min	start	max	min	start	max
P1 - P2		Free cutting steel and low carbon (ex. 1.0715/9SMn28/AVP, 1.0503/C45)	≤ 200	● 200	290	380	● 180	270	360	○ 170	250	330
							● 170	245	320	● 160	225	290
										⊕ 140	195	250
P3 - P4		Medium and high alloy steel (ex. 1.7225/42CrMo4, 1.3505/100Cr6)	200 ÷ 300	● 180	260	340	● 160	240	320	○ 150	220	290
							● 150	225	300	● 140	205	270
										⊕ 130	190	250
P5 - P6		High tensile strength and tool steel (ex. 1.2344/X40CrMoV5-1/ORVAR, Hardox400®)	300 ÷ 400	● 160	240	320	● 140	220	300	○ 140	205	270
							● 130	205	280	● 130	190	250
										⊕ 120	170	220
B - THREADING	ISO 513	MATERIAL	HARDNESS HB	JC9010			JC9025			JP4020		
				min	start	max	min	start	max	min	start	max
P7		Ferritic and martensitic stainless steel (ex. 1.4021/X20Cr13/AISI420)	≤ 200	● 140	200	260	○ 120	180	240	● 140	210	280
				○ 120	180	240	● 110	165	220	○ 120	190	260
							⊕ 100	150	200			
P8		Precipitation hardening stainless steel (ex. 1.4548/X5CrNiCuNb17-4/17-4-PH)	≤ 450	● 100	130	160	○ 80	110	140	● 100	140	180
				○ 90	120	150	● 70	100	130	○ 90	125	160
							⊕ 60	90	120			
M1		Austenitic stainless steel (ex. 1.4305/X10CrNiS18-9/AISI303)	> 200	● 120	160	200	○ 100	90	180	● 120	170	220
				○ 100	140	180	● 90	130	170	○ 100	150	200
							⊕ 80	120	160			
M2 - M3		Austenitic and Duplex stainless steel (ex. 1.4401/X5CrNiMo17-12-2/AISI316)		● 100	140	180	○ 80	120	160	● 100	150	200
				○ 90	125	160	● 70	110	150	○ 90	135	180
							⊕ 60	100	140			
D - MILLING	ISO 513	MATERIAL	HARDNESS HB	JC7010			JC7115			JC7020		
				min	start	max	min	start	max	min	start	max
K1		Grey cast iron (ex. 0.6025/GG25/EN-GJL-250)	150 ÷ 250	● 180	280	380	● 180	280	380	○ 150	225	300
				● 150	225	300	● 150	225	300	○ 120	170	220
				⊕ 130	195	260	⊕ 130	195	260	⊕ 110	155	200
K2		Nodular cast iron (ex. 0.7050/GGG50/EN-GJS-500-7)	150 ÷ 350	● 150	200	250	● 150	200	250	○ 140	180	220
				● 130	175	220	● 130	175	220	○ 120	160	200
				⊕ 120	160	200	⊕ 120	160	200	⊕ 100	145	180
K3 - K4		Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	● 140	190	240	● 140	190	240	○ 120	165	210
				● 120	165	210	● 120	165	210	○ 110	145	180
				⊕ 110	155	200	⊕ 110	155	200	⊕ 100	125	150
E - DRILLING	ISO 513	MATERIAL	HARDNESS HB	JP6010			JU6015					
				min	start	max	min	start	max			
N1		Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGA1)		● 600	1000	1400	● 400	700	1000			
				○ 400	600	800	● 300	500	700			
							⊕ 200	400	600			
N2		Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		● 200	400	600	● 200	300	400			
				○ 200	300	400	● 200	250	300			
							⊕ 100	150	200			
F - ACCESSORIES	ISO 513	MATERIAL	HARDNESS HB	JP3015			JP5015					
				min	start	max	min	start	max			
S1 - S2 - S3		Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		● 30	50	70	● 30	50	70			
				● 20	40	60	● 20	40	60			
S4 - S5		Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		● 40	60	80	● 40	60	80			
				● 30	50	70	● 30	50	70			

Complete workpiece materials p. H1.

JC8035				JP4020				JP5015				JP5120				JP5125				JU4015			
min	start	max		min	start	max		min	start	max		min	start	max		min	start	max		min	start	max	
120	160	200	⌚	200	300	400	●	120	170	220	●	100	150	200	●	100	140	180	○	200	290	380	●
100	130	160	⚙	180	260	340	⌚	100	140	180	●	90	130	170	●	80	120	160	●				
																70	100	130	⚙				
100	140	180	⌚	190	275	360	●	100	140	180	●	90	130	170	●	80	120	160	○	180	260	340	●
90	125	160	⚙	180	260	340	⌚	90	125	160	●	80	110	140	●	70	100	120	●				
																60	80	100	⚙				
90	120	150	⌚					90	120	150	●	80	110	150	●	70	100	130	○				
80	110	140	⚙					80	110	140	●	70	100	130	●	60	90	120	●				
																60	80	100	⚙				
JP5015				JP5120				JP5125				JP9015				JC9030							
min	start	max		min	start	max		min	start	max		min	start	max		min	start	max					
120	170	220	●	100	150	200	●	100	140	180	○	120	170	220	●	80	120	160	●				
100	140	180	●	90	130	170	●	80	120	160	●	100	140	180	●	70	100	130	⚙				
								70	100	130	⚙												
80	100	120	●	70	90	110	●	60	80	100	○	80	100	120	●	50	70	90	●				
70	90	110	●	60	80	100	●	50	70	90	●	70	90	110	●	50	60	70	⚙				
								50	60	70	⚙												
80	120	160	●	70	110	150	●	60	100	140	○	80	120	160	●	50	90	130	●				
70	110	150	●	60	100	140	●	50	90	130	●	70	110	150	●	50	80	110	⚙				
								50	80	110	⚙												
70	110	150	●	70	100	130	●	60	90	120	○	70	110	150	●	60	80	100	●				
60	100	140	●	60	90	120	●	50	80	100	●	60	100	140	●	50	70	90	⚙				
								50	70	90	⚙												
JP4020				JP5120				JP5125															
min	start	max		min	start	max		min	start	max													
180	250	320	●	110	150	190	●	100	140	180	○												
150	215	280	⌚	90	130	170	●	80	115	150	●												
								60	90	120	⚙												
160	210	260	●	90	130	170	●	80	120	160	○												
145	180	215	⌚	80	110	140	●	70	95	120	●												
								60	80	100	⚙												
145	185	225	●	80	110	140	●	70	105	140	○												
130	165	200	⌚	70	100	130	●	60	90	120	●												
								50	75	100	⚙												

Complete workpiece materials p. H1.

TURNING Parameters - depht of cut and feed rate · CARBIDE

A - TURNING	DESIGNATION	DEPTH OF CUT			FEED RATE		
		ap (mm)			fn (mm/rev)		
		min	start	max	min	start	max
B - THREADING	CCETO60202 $\frac{1}{8}$ -PPF	0.10	0.40	0.70	0.04	0.07	0.10
	CCETO60204 $\frac{1}{8}$ -PPF	0.10	0.40	0.70	0.04	0.08	0.12
	CCETO9T302 $\frac{1}{8}$ -PPF	0.10	0.50	0.90	0.04	0.08	0.12
	CCETO9T304 $\frac{1}{8}$ -PPF	0.10	0.50	0.90	0.04	0.09	0.14
	CCETO9T304 $\frac{1}{8}$ -PPM	0.50	1.50	2.50	0.04	0.07	0.10
	CCGX060202-PMN	0.30	1.50	2.70	0.05	0.10	0.15
	CCGX060204-PMN	0.30	1.50	2.70	0.06	0.13	0.20
	CCGX060208-PMN	0.30	1.50	2.70	0.08	0.16	0.24
	CCGX09T302-PMN	0.50	2.00	3.50	0.06	0.11	0.16
	CCGX09T304-PMN	0.50	2.00	3.50	0.08	0.16	0.24
C - GROOVING	CCGX09T308-PMN	0.50	2.00	3.50	0.10	0.20	0.30
	CCGX120402-PMN	0.50	3.00	5.50	0.08	0.14	0.20
	CCGX120404-PMN	0.50	3.00	5.50	0.10	0.20	0.30
	CCGX120408-PMN	0.50	3.00	5.50	0.15	0.25	0.35
	CCMTO60202-PFU	0.20	0.80	1.40	0.04	0.08	0.12
	CCMTO60202-PMU	0.50	1.50	2.50	0.05	0.10	0.15
	CCMTO60204-PFU	0.20	0.80	1.40	0.05	0.11	0.17
	CCMTO60204-PMU	0.50	1.50	2.50	0.06	0.13	0.20
	CCMTO60208-PMU	0.50	1.50	2.50	0.08	0.16	0.24
	CCMTO9T302-PFU	0.30	1.00	1.70	0.05	0.10	0.15
D - MILLING	CCMTO9T302-PMU	0.60	1.80	3.00	0.06	0.13	0.20
	CCMTO9T304-PFU	0.30	1.00	1.70	0.06	0.14	0.22
	CCMTO9T304-PMU	0.60	1.80	3.00	0.07	0.16	0.25
	CCMTO9T304-PRU	1.50	2.50	3.50	0.10	0.19	0.28
	CCMTO9T308-PFU	0.30	1.00	1.70	0.08	0.16	0.24
	CCMTO9T308-PMU	0.60	1.80	3.00	0.08	0.19	0.30
	CCMTO9T308-PRU	1.50	2.50	3.50	0.12	0.22	0.32
	CCMT120404-PMU	0.80	2.20	3.60	0.08	0.17	0.26
	CCMT120408-PMU	0.80	2.20	3.60	0.10	0.22	0.32
	CCMT120408-PRU	1.50	3.00	4.50	0.14	0.26	0.38
E - DRILLING	CCMT120412-PMU	0.80	2.20	3.60	0.12	0.24	0.36
	CCMT120412-PRU	1.50	3.00	4.50	0.16	0.28	0.40
	CNKG120404-NMN	0.50	2.00	3.50	0.10	0.20	0.30
	CNKG120408-NMN	0.50	2.00	3.50	0.15	0.25	0.35
	CNMA120404	2.00	4.00	6.00	0.15	0.25	0.35
	CNMA120408	2.00	4.00	6.00	0.25	0.35	0.45
	CNMA120412	2.00	4.00	6.00	0.35	0.45	0.55
	CNMA120416	2.00	4.00	6.00	0.45	0.55	0.65
	CNMA160612	4.00	7.00	10.00	0.45	0.60	0.75
	CNMA160616	4.00	7.00	10.00	0.50	0.65	0.80
F - ACCESSORIES	CNMA190612	6.00	9.00	12.00	0.50	0.65	0.80
	CNMA190616	6.00	9.00	12.00	0.55	0.70	0.85
	CNMG090304-NMM	0.70	1.50	2.30	0.13	0.20	0.27
	CNMG090304-NSP	0.30	0.70	1.10	0.06	0.12	0.18
	CNMG090304-NUP	0.70	1.50	2.30	0.08	0.15	0.22
	CNMG090308-NMM	0.70	1.50	2.30	0.18	0.25	0.32
	CNMG090308-NSP	0.30	0.70	1.10	0.08	0.16	0.24
	CNMG090308-NUP	0.70	1.50	2.30	0.12	0.20	0.28
	CNMG120404-NMK	0.50	2.00	3.50	0.10	0.20	0.30
	CNMG120404-NMM	1.00	2.50	4.00	0.15	0.25	0.35
G - SPARE PARTS	CNMG120404-NMP	1.50	2.50	3.50	0.12	0.20	0.28
	CNMG120404-NSM	0.40	1.20	2.00	0.08	0.14	0.20
	CNMG120404-NSP	0.40	1.20	2.00	0.08	0.15	0.22
	CNMG120404-NUK	0.50	2.00	3.50	0.10	0.20	0.30
	CNMG120404-NUP	1.00	2.50	4.00	0.10	0.20	0.30
	CNMG120404-NUX	1.00	2.50	4.00	0.10	0.20	0.30
	CNMG120408-NMK	0.50	2.00	3.50	0.15	0.25	0.35
	CNMG120408-NMM	1.00	2.50	4.00	0.20	0.30	0.40
	CNMG120408-NMP	1.50	2.50	3.50	0.20	0.30	0.40
	CNMG120408-NRM	2.00	3.50	5.00	0.20	0.35	0.50
	CNMG120408-NRM	2.00	3.50	5.00	0.20	0.35	0.50
	CNMG120408-NRP	2.00	4.00	6.00	0.25	0.35	0.45
	CNMG120408-NSM	0.40	1.20	2.00	0.10	0.18	0.26
	CNMG120408-NSP	0.40	1.20	2.00	0.10	0.22	0.34
	CNMG120408-NUK	0.50	2.00	3.50	0.15	0.25	0.35
	CNMG120408-NUP	1.00	2.50	4.00	0.15	0.25	0.35
	CNMG120408-NUX	1.00	2.50	4.00	0.15	0.25	0.35
	CNMG120408-NWU	0.50	1.50	2.50	0.20	0.40	0.60
	CNMG120408-NWX	1.00	2.50	4.00	0.20	0.40	0.60
	CNMG120412-NMK	0.50	2.00	3.50	0.20	0.30	0.40
	CNMG120412-NMM	1.00	2.50	4.00	0.25	0.35	0.45
	CNMG120412-NMP	1.50	2.50	3.50	0.20	0.30	0.40
	CNMG120412-NRK	1.50	4.00	6.50	0.25	0.35	0.45
	CNMG120412-NRM	2.00	3.50	5.00	0.25	0.40	0.55
	CNMG120412-NRP	2.00	4.00	6.00	0.30	0.40	0.50
	CNMG120412-NUK	0.50	2.00	3.50	0.20	0.30	0.40
	CNMG120412-NUP	1.00	2.50	4.00	0.18	0.30	0.42
	CNMG120412-NUX	1.00	2.50	4.00	0.18	0.30	0.42
	CNMG120412-NWU	0.50	1.50	2.50	0.25	0.45	0.65
	CNMG120412-NWX	1.00	2.50	4.00	0.25	0.45	0.65
	CNMG120416-NMK	0.50	2.00	3.50	0.25	0.35	0.45
	CNMG120416-NMM	1.00	2.50	4.00	0.30	0.40	0.50
	CNMG120416-NMP	1.50	2.50	3.50	0.25	0.35	0.45
	CNMG120416-NRK	1.50	4.00	6.50	0.30	0.40	0.50
	CNMG120416-NRP	2.00	4.00	6.00	0.35	0.45	0.55
	CNMG120416-NUP	1.00	2.50	4.00	0.20	0.35	0.50
	CNMG160608-NMK	2.00	4.00	6.00	0.25	0.35	0.45
	CNMG160608-NMM	2.00	4.50	7.00	0.25	0.35	0.45
	CNMG160608-NMP	3.00	4.50	6.00	0.20	0.30	0.40
	CNMG160608-NRM	3.00	5.50	8.00	0.25	0.40	0.55
	CNMG160608-NUP	2.00	4.50	7.00	0.18	0.30	0.42
	CNMG160612-NMK	2.00	4.00	6.00	0.30	0.40	0.50
	CNMG160612-NMM	2.00	4.50	7.00	0.30	0.40	0.50
	CNMG160612-NMP	3.00	4.50	6.00	0.25	0.35	0.45
	CNMG160612-NRK	3.00	6.00	9.00	0.40	0.55	0.70
	CNMG160612-NRM	3.00	5.50	8.00	0.30	0.45	0.60
	CNMG160612-NRP	4.00	6.00	8.00	0.35	0.50	0.65
	CNMG160612-NUP	2.00	4.50	7.00	0.22	0.35	0.48
	CNMG160616-NMK	2.00	4.00	6.00	0.35	0.45	0.55
	CNMG160616-NMM	2.00	4.50	7.00	0.35	0.45	0.55
	CNMG160616-NMP	3.00	4.50	6.00	0.30	0.40	0.50
	CNMG160616-NRK	3.00	6.00	9.00	0.45	0.60	0.75
	CNMG160616-NRP	4.00	6.00	8.00	0.40	0.55	0.70
	CNMG190608-NUP	3.00	6.00	9.00	0.22	0.35	0.48
	CNMG190612-NMK	3.00	5.00	7.00	0.35	0.45	0.55
	CNMG190612-NMM	3.00	6.00	9.00	0.35	0.45	0.55
	CNMG190612-NMP	4.00	6.00	8.00	0.30	0.40	0.50
	CNMG190612-NRK	5.00	8.00	11.00	0.45	0.60	0.75
	CNMG190612-NRM	5.00	7.50	10.00	0.40	0.55	0.70
	CNMG190612-NRP	6.00	8.00	10.00	0.40	0.55	0.70
	CNMG190612-NUP	3.00	6.00	9.00	0.25	0.40	0.55
	CNMG190616-NMK	3.00	5.00	7.00	0.40	0.50	0.60
	CNMG190616-NMM	3.00	6.00	9.00	0.40	0.50	0.60
	CNMG190616-NMP	4.00	6.00	8.00	0.32	0.45	0.58
	CNMG190616-NRK	5.00	8.00	11.00	0.50	0.65	0.80
	CNMG190616-NRM	5.00	7.50	10.00	0.45	0.60	0.75

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
CNMG190616-NRP	6.00	8.00	10.00	0.45	0.60	0.75
CNMG190616-NUP	3.00	6.00	9.00	0.30	0.45	0.60
CNMG190624-NRP	6.00	8.00	10.00	0.50	0.65	0.80
CNMG250924-NRP	6.00	10.00	14.00	0.50	0.70	0.90
CNMM190616-MRP	6.00	9.00	12.00	0.60	0.75	0.90
CNMM190624-MRP	6.00	9.00	12.00	0.65	0.80	0.95
CNMM250924-MRP	8.00	12.00	16.00	0.70	0.90	1.10
DCET070202- $\frac{1}{8}$ -PPF	0.10	0.40	0.70	0.04	0.07	0.10
DCET070204- $\frac{1}{8}$ -PPF	0.10	0.40	0.70	0.04	0.08	0.12
DCET070204- $\frac{1}{8}$ -PPM	0.40	1.00	1.60	0.03	0.06	0.09
DCET11T302- $\frac{1}{8}$ -PPF	0.10	0.50	0.90	0.04	0.08	0.12
DCET11T302- $\frac{1}{8}$ -PPM	0.50	1.50	2.50	0.04	0.06	0.08
DCET11T304-M-PPF	0.10	0.50	0.90	0.04	0.09	0.14
DCET11T304-M-PPM	0.50	1.50	2.50	0.04	0.07	0.10
DGCG070202-PMN	0.30	1.50	2.70	0.05	0.10	0.15
DGCG070204-PMN	0.30	1.50	2.70	0.06	0.13	0.20
DGCG070208-PMN	0.30	1.50	2.70	0.08	0.16	0.24
DGCG11T302-PMN	0.50	2.00	3.50	0.06	0.11	0.16
DGCG11T304-PMN	0.50	2.00	3.50	0.08	0.16	0.24
DGCG11T308-PMN	0.50	2.00	3.50	0.10	0.20	0.30
DCMT070202-PFU	0.20	0.80	1.40	0.04	0.08	0.12
DCMT070202-PMU	0.50	1.50	2.50	0.05	0.10	0.15
DCMT070204-PFU	0.20	0.80	1.40	0.05	0.11	0.17
DCMT070204-PMU	0.50	1.50	2.50	0.06	0.13	0.20
DCMT070208-PMU	0.50	1.50	2.50	0.08	0.16	0.24
DCMT11T302-PFU	0.30	1.00	1.70	0.05	0.10	0.15
DCMT11T302-PMU	0.60	1.80	3.00	0.06	0.13	0.20
DCMT11T304-PFU	0.30	1.00	1.70	0.06	0.14	0.22
DCMT11T304-PMU	0.60	1.80	3.00	0.07	0.16	0.25
DCMT11T304-PRU	1.50	2.50	3.50	0.10	0.19	0.28
DCMT11T308-PFU	0.30	1.00	1.70	0.08	0.16	0.24
DCMT11T308-PMU	0.60	1.80	3.00	0.08	0.19	0.30
DCMT11T308-PRU	1.50	2.50	3.50	0.12	0.22	0.32
DCMT11T312-PMU	0.60	1.80	3.00	0.10	0.22	0.34
DCMT150404-PMU	0.80	2.20	3.60	0.08	0.17	0.26
DCMT150408-PMU	0.80	2.20	3.60	0.10	0.22	0.32
DCMT150412-PMU	0.80	2.20	3.60	0.12	0.24	0.36
DNGG150604-NMN	0.50	2.00	3.50	0.10	0.20	0.30
DNGG150608-NMN	0.50	2.00	3.50	0.15	0.25	0.35
DNMA150608	2.00	4.00	6.00	0.15	0.25	0.35
DNMA150612	2.00	4.00	6.00	0.35	0.45	0.55
DNMG110404-NMM	0.70	1.50	2.30	0.13	0.20	0.27
DNMG110404-NMP	1.00	1.50	2.00	0.10	0.15	0.20
DNMG110404-NSP	0.30	0.70	1.10	0.06	0.12	0.18
DNMG110404-NUP	0.70	1.50	2.30	0.08	0.15	0.22
DNMG110408-NMM	0.70	1.50	2.30	0.18	0.25	0.32
DNMG110408-NMP	1.00	1.50	2.00	0.15	0.20	0.25
DNMG110408-NSP	0.30	0.70	1.10	0.08	0.16	0.24
DNMG110408-NUP	0.70	1.50	2.30	0.12	0.20	0.28
DNMG110412-NUP	0.70	1.50	2.30	0.15	0.25	0.35
DNMG150604- $\frac{1}{8}$ -NMU	1.00	2.50	4.00	0.15	0.25	0.35
DNMG150604-NMK	0.50	2.00	3.50	0.10	0.20	0.30
DNMG150604-NMM	1.00	2.50	4.00	0.15	0.25	0.35
DNMG150604-NMP	1.50	2.50	3.50	0.12	0.20	0.28
DNMG150604-NSM	0.40	1.20	2.00	0.08	0.14	0.20
DNMG150604-NSP	0.40	1.20	2.00	0.08	0.15	0.22
DNMG150604-NUK	0.50	2.00	3.50	0.10	0.20	0.30
DNMG150604-NUP	1.00	2.50	4.00	0.10	0.20	0.30

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
DNMG150604-NUX	1.00	2.50	4.00	0.10	0.20	0.30
DNMG150608- $\frac{1}{8}$ -NMU	1.00	2.50	4.00	0.20	0.30	0.40
DNMG150608-NMK	0.50	2.00	3.50	0.15	0.25	0.35
DNMG150608-NMM	1.00	2.50	4.00	0.20	0.30	0.40
DNMG150608-NMP	1.50	2.50	3.50	0.16	0.25	0.34
DNMG150608-NRK	1.50	4.00	6.50	0.20	0.30	0.40
DNMG150608-NRM	2.00	3.50	5.00	0.20	0.35	0.50
DNMG150608-NRP	2.00	4.00	6.00	0.25	0.35	0.45
DNMG150608-NSM	0.40	1.20	2.00	0.10	0.18	0.26
DNMG150608-NSP	0.40	1.20	2.00	0.10	0.22	0.34
DNMG150608-NUK	0.50	2.00	3.50	0.15	0.25	0.35
DNMG150608-NUP	1.00	2.50	4.00	0.15	0.25	0.35
DNMG150608-NUX	1.00	2.50	4.00	0.15	0.25	0.35
DNMG150612-NMK	0.50	2.00	3.50	0.20	0.30	0.40
DNMG150612-NMM	1.00	2.50	4.00	0.25	0.35	0.45
DNMG150612-NMP	1.50	2.50	3.50	0.20	0.30	0.40
DNMG150612-NRK	1.50	4.00	6.50	0.25	0.35	0.45
DNMG150612-NRM	2.00	3.50	5.00	0.25	0.40	0.55
DNMG150612-NRP	2.00	4.00	6.00	0.30	0.40	0.50
DNMG150612-NUK	0.50	2.00	3.50	0.20	0.30	0.40
DNMG150612-NUP	1.00	2.50	4.00	0.18	0.30	0.42
DNMG150612-NUX	1.00	2.50	4.00	0.18	0.30	0.42
DNMG150616-NMK	0.50	2.00	3.50	0.25	0.35	0.45
DNMG150616-NMP	1.50	2.50	3.50	0.25	0.35	0.45
DNMG150616-NRP	2.00	4.00	6.00	0.35	0.45	0.55
DNMG150608-NUW	0.50	1.50	2.50	0.20	0.40	0.60
DNMG150612-NUW	0.50	1.50	2.50	0.25	0.45	0.65
KNUX160405- $\frac{1}{8}$ -NMU	1.00	2.50	4.00	0.15	0.25	0.35
KNUX160410- $\frac{1}{8}$ -NMU	1.00	2.50	4.00	0.20	0.30	0.40
MCC.R02L-PPF	0.05	0.20	0.35	0.03	0.05	0.07
MCC.R04L-PPF	0.05	0.20	0.35	0.04	0.06	0.08
MCN.R02G-SS	0.60	1.20	1.80	0.08	0.14	0.20
MCN.R04-GB $\frac{1}{8}$	0.20	0.50	0.80	0.05	0.10	0.15
MCN.R04G-SS	0.60	1.20	1.80	0.10	0.17	0.24
MCN.R04M-GM	0.80	1.50	2.20	0.08	0.15	0.22
MCN.R08M-GM	0.80	1.50	2.20	0.10	0.17	0.24
MDN.R02G-SS	0.60	1.20	1.80	0.08	0.14	0.20
MDN.R04-GB $\frac{1}{8}$	0.20	0.50	0.80	0.05	0.10	0.15
MDN.R04G-SS	0.60	1.20	1.80	0.10	0.17	0.24
MDN.R04M-GM	0.80	1.50	2.20	0.08	0.15	0.22
MDN.R08M-GM	0.80	1.50	2.20	0.10	0.17	0.24
SCGX09T304-PMN	0.50	2.00	3.50	0.08	0.16	0.24
SCGX09T308-PMN	0.50	2.00	3.50	0.10	0.20	0.30
SCGX120404-PMN	0.50	3.00	5.50	0.10	0.20	0.30
SCGX120408-PMN	0.50	3.00	5.50	0.15	0.25	0.35
SCMT09T304-PFU	0.30	1.00	1.70	0.06	0.14	0.22
SCMT09T304-PMU	0.60	1.80	3.00	0.07	0.16	0.25
SCMT09T308-PFU	0.30	1.00	1.70	0.08	0.16	0.24
SCMT09T308-PMU	0.60	1.80	3.00	0.08	0.19	0.30
SCMT09T308-PRU	1.50	2.50	3.50	0.12	0.22	0.32
SCMT120404-PMU	0.80	2.20	3.60	0.08	0.17	0.26
SCMT120408-PMU	0.80	2.20	3.60	0.10	0.22	0.32
SCMT120408-PRU	1.50	3.00	4.50	0.14	0.26	0.38
SNGG120404-NMN	0.50	2.00	3.50	0.10	0.20	0.30
SNGG120408-NMN	0.50	2.00	3.50	0.15	0.25	0.35
SNGG120412-NMN	0.50	2.00	3.50	0.20	0.30	0.40
SNMA090308	1.00	2.00	3.00	0.22	0.30	0.38
SNMA120408	2.00	4.00	6.00	0.25	0.35	0.45

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

TURNING Parameters - depth of cut and feed rate · CARBIDE

A - TURNING	DESIGNATION	DEPTH OF CUT			FEED RATE		
		ap (mm)			fn (mm/rev)		
		min	start	max	min	start	max
	SNMA120412	2.00	4.00	6.00	0.35	0.45	0.55
	SNMA120416	2.00	4.00	6.00	0.45	0.55	0.65
	SNMG120404-NMM	1.00	2.50	4.00	0.15	0.25	0.35
	SNMG120404-NMP	1.50	2.50	3.50	0.12	0.20	0.28
	SNMG120404-NSP	0.40	1.20	2.00	0.08	0.15	0.22
	SNMG120404-NUP	1.00	2.50	4.00	0.10	0.20	0.30
	SNMG120408-NMK	0.50	2.00	3.50	0.15	0.25	0.35
	SNMG120408-NMM	1.00	2.50	4.00	0.20	0.30	0.40
	SNMG120408-NMP	1.50	2.50	3.50	0.16	0.25	0.34
	SNMG120408-NRK	1.50	4.00	6.50	0.20	0.30	0.40
	SNMG120408-NRM	2.00	3.50	5.00	0.20	0.35	0.50
	SNMG120408-NRP	2.00	4.00	6.00	0.25	0.35	0.45
	SNMG120408-NSP	0.40	1.20	2.00	0.10	0.22	0.34
	SNMG120408-NUP	1.00	2.50	4.00	0.15	0.25	0.35
	SNMG120412-NMK	0.50	2.00	3.50	0.20	0.30	0.40
	SNMG120412-NMM	1.00	2.50	4.00	0.25	0.35	0.45
	SNMG120412-NMP	1.50	2.50	3.50	0.20	0.30	0.40
	SNMG120412-NRK	1.50	4.00	6.50	0.25	0.35	0.45
	SNMG120412-NRM	2.00	3.50	5.00	0.25	0.40	0.55
	SNMG120412-NRP	2.00	4.00	6.00	0.30	0.40	0.50
	SNMG120412-NUP	1.00	2.50	4.00	0.18	0.30	0.42
	SNMG120416-NMM	1.00	2.50	4.00	0.30	0.40	0.50
	SNMG120416-NMP	1.50	2.50	3.50	0.25	0.35	0.45
	SNMG120416-NRK	1.50	4.00	6.50	0.30	0.40	0.50
	SNMG120416-NRP	2.00	4.00	6.00	0.35	0.45	0.55
	SNMG120416-NUP	1.00	2.50	4.00	0.20	0.35	0.50
	SNMG190612-NMM	3.00	6.00	9.00	0.35	0.45	0.55
	SNMG190612-NRK	5.00	8.00	11.00	0.45	0.60	0.75
	SNMG190612-NRM	5.00	7.50	10.00	0.40	0.55	0.70
	SNMG190612-NRP	6.00	8.00	10.00	0.40	0.55	0.70
	SNMG190616-NMM	3.00	6.00	9.00	0.40	0.50	0.60
	SNMG190616-NRK	5.00	8.00	11.00	0.50	0.65	0.80
	SNMG190616-NRM	5.00	7.50	10.00	0.45	0.60	0.75
	SNMG190616-NRP	6.00	8.00	10.00	0.45	0.60	0.75
	SNMG190624-NRP	6.00	8.00	10.00	0.50	0.65	0.80
	SNMG250924-NRP	6.00	10.00	14.00	0.50	0.70	0.90
	SNMM190616-MRP	6.00	9.00	12.00	0.60	0.75	0.90
	SNMM190624-MRP	6.00	9.00	12.00	0.65	0.80	0.95
	SNMM250924-MRP	8.00	12.00	16.00	0.70	0.90	1.10
	TBET060102 $\frac{1}{4}$ -PPF	0.10	0.30	0.50	0.03	0.06	0.09
	TBET060104 $\frac{1}{4}$ -PPF	0.10	0.30	0.50	0.04	0.07	0.10
	TCET110202 $\frac{1}{4}$ -PPF	0.10	0.40	0.70	0.04	0.07	0.10
	TCET110204 $\frac{1}{4}$ -PPF	0.10	0.40	0.70	0.04	0.08	0.12
	TCGX090204-PMN	0.30	1.00	1.70	0.05	0.11	0.17
	TCGX110202-PMN	0.30	1.50	2.70	0.05	0.10	0.15
	TCGX110204-PMN	0.30	1.50	2.70	0.06	0.13	0.20
	TCGX110208-PMN	0.30	1.50	2.70	0.08	0.16	0.24
	TCGX16T302-PMN	0.50	2.00	3.50	0.06	0.11	0.16
	TCGX16T304-PMN	0.50	2.00	3.50	0.08	0.16	0.24
	TCGX16T308-PMN	0.50	2.00	3.50	0.10	0.20	0.30
	TCMT090204-PMU	0.50	1.00	1.50	0.05	0.09	0.13
	TCMT110202-PFU	0.20	0.80	1.40	0.04	0.08	0.12
	TCMT110202-PMU	0.50	1.50	2.50	0.05	0.10	0.15
	TCMT110204-PFU	0.20	0.80	1.40	0.05	0.11	0.17
	TCMT110204-PMU	0.50	1.50	2.50	0.06	0.13	0.20
	TCMT110208-PFU	0.20	0.80	1.40	0.06	0.13	0.20
	TCMT110208-PMU	0.50	1.50	2.50	0.08	0.16	0.24
	TCMT16T304-PFU	0.30	1.00	1.70	0.06	0.14	0.22
	TCMT16T304-PMU	0.60	1.80	3.00	0.07	0.16	0.25

	DESIGNATION	DEPTH OF CUT			FEED RATE		
		ap (mm)			fn (mm/rev)		
		min	start	max	min	start	max
	TCMT16T304-PRU	1.50	2.50	3.50	0.10	0.19	0.28
	TCMT16T308-PFU	0.30	1.00	1.70	0.08	0.16	0.24
	TCMT16T308-PMU	0.60	1.80	3.00	0.08	0.19	0.30
	TCMT16T308-PRU	1.50	2.50	3.50	0.12	0.22	0.32
	TCMT16T312-PMU	0.60	1.80	3.00	0.10	0.22	0.34
	TCMT220408-PMU	0.80	2.20	3.60	0.10	0.22	0.32
	TNGG160404-NMN	0.50	2.00	3.50	0.10	0.20	0.30
	TNGG160408-NMN	0.50	2.00	3.50	0.15	0.25	0.35
	TNGG160412-NMN	0.50	2.00	3.50	0.20	0.30	0.40
	TNMA160404	2.00	4.00	6.00	0.15	0.25	0.35
	TNMA160408	2.00	4.00	6.00	0.25	0.35	0.45
	TNMA160412	2.00	4.00	6.00	0.35	0.45	0.55
	TNMA160416	2.00	4.00	6.00	0.45	0.55	0.65
	TNMA220408	4.00	7.00	10.00	0.35	0.50	0.65
	TNMA220412	4.00	7.00	10.00	0.45	0.60	0.75
	TNMA220416	4.00	7.00	10.00	0.50	0.65	0.80
	TNMG160404 $\frac{1}{4}$ -NMU	1.00	2.50	4.00	0.15	0.25	0.35
	TNMG160404-NMK	0.50	2.00	3.50	0.10	0.20	0.30
	TNMG160404-NMM	1.00	2.50	4.00	0.15	0.25	0.35
	TNMG160404-NMP	1.50	2.50	3.50	0.12	0.20	0.28
	TNMG160404-NSM	0.40	1.20	2.00	0.08	0.14	0.20
	TNMG160404-NSP	0.40	1.20	2.00	0.08	0.15	0.22
	TNMG160404-NUK	0.50	2.00	3.50	0.10	0.20	0.30
	TNMG160404-NUP	1.00	2.50	4.00	0.10	0.20	0.30
	TNMG160404-NUX	1.00	2.50	4.00	0.10	0.20	0.30
	TNMG160408 $\frac{1}{4}$ -NMU	1.00	2.50	4.00	0.20	0.30	0.40
	TNMG160408-NMK	0.50	2.00	3.50	0.15	0.25	0.35
	TNMG160408-NMM	1.00	2.50	4.00	0.20	0.30	0.40
	TNMG160408-NMP	1.50	2.50	3.50	0.16	0.25	0.34
	TNMG160408-NRK	1.50	4.00	6.50	0.20	0.30	0.40
	TNMG160408-NRM	2.00	3.50	5.00	0.20	0.35	0.50
	TNMG160408-NRP	2.00	4.00	6.00	0.25	0.35	0.45
	TNMG160408-NSM	0.40	1.20	2.00	0.10	0.18	0.26
	TNMG160408-NSP	0.40	1.20	2.00	0.10	0.22	0.34
	TNMG160408-NUK	0.50	2.00	3.50	0.15	0.25	0.35
	TNMG160408-NUP	1.00	2.50	4.00	0.15	0.25	0.35
	TNMG160408-NUX	1.00	2.50	4.00	0.15	0.25	0.35
	TNMG160412-NMK	0.50	2.00	3.50	0.20	0.30	0.40
	TNMG160412-NMM	1.00	2.50	4.00	0.25	0.35	0.45
	TNMG160412-NMP	1.50	2.50	3.50	0.20	0.30	0.40
	TNMG160412-NRK	1.50	4.00	6.50	0.25	0.35	0.45
	TNMG160412-NRM	2.00	3.50	5.00	0.25	0.40	0.55
	TNMG160412-NRP	2.00	4.00	6.00	0.30	0.40	0.50
	TNMG160412-NUK	0.50	2.00	3.50	0.20	0.30	0.40
	TNMG160412-NUP	1.00	2.50	4.00	0.18	0.30	0.42
	TNMG160412-NUX	1.00	2.50	4.00	0.18	0.30	0.42
	TNMG160416-NMK	0.50	2.00	3.50	0.25	0.35	0.45
	TNMG220408-NMK	2.00	4.00	6.00	0.25	0.35	0.45
	TNMG220408-NMM	2.00	4.50	7.00	0.25	0.35	0.45
	TNMG220408-NMP	3.00	4.50	6.00	0.20	0.30	0.40
	TNMG220408-NRK	3.00	6.00	9.00	0.35	0.50	0.65
	TNMG220408-NUP	2.00	4.50	7.00	0.18	0.30	0.42
	TNMG220412-NMK	2.00	4.00	6.00	0.30	0.40	0.50
	TNMG220412-NMM	2.00	4.50	7.00	0.30	0.40	0.50
	TNMG220412-NMP	3.00	4.50	6.00	0.25	0.35	0.45
	TNMG220412-NRK	3.00	6.00	9.00	0.40	0.55	0.70
	TNMG220412-NRP	4.00	6.00	8.00	0.35	0.50	0.65
	TNMG220412-NUP	2.00	4.50	7.00	0.22	0.35	0.48
	TNMG220416-NMK	2.00	4.00	6.00	0.35	0.45	0.55

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
TNMG220416-NMM	2.00	4.50	7.00	0.35	0.45	0.55
TNMG220416-NRK	3.00	6.00	9.00	0.45	0.60	0.75
TNMG220416-NRP	4.00	6.00	8.00	0.40	0.55	0.70
TNMG220416-NUP	2.00	4.50	7.00	0.24	0.40	0.56
TNMX160408-NWU	0.50	1.50	2.50	0.20	0.40	0.60
TNMX160412-NWU	0.50	1.50	2.50	0.25	0.45	0.65
TPEH090202 $\frac{1}{8}$ -PPF	0.10	0.30	0.50	0.03	0.06	0.09
TPEH090204 $\frac{1}{8}$ -PPF	0.10	0.30	0.50	0.04	0.07	0.10
TPEH110302 $\frac{1}{8}$ -PPF	0.10	0.40	0.70	0.04	0.07	0.10
TPEH110304 $\frac{1}{8}$ -PPF	0.10	0.40	0.70	0.04	0.08	0.12
TPEH110304 $\frac{1}{8}$ -PPM	0.40	1.00	1.60	0.03	0.06	0.09
VBET110302 $\frac{1}{8}$ -PPF	0.10	0.40	0.70	0.04	0.07	0.10
VBET110302 $\frac{1}{8}$ -PPM	0.40	1.00	1.60	0.03	0.05	0.07
VBET110304 $\frac{1}{8}$ -PPF	0.10	0.40	0.70	0.04	0.08	0.12
VBET110304 $\frac{1}{8}$ -PPM	0.40	1.00	1.60	0.03	0.06	0.09
VBMT110304-PFU	0.20	0.80	1.40	0.05	0.11	0.17
VBMT160402-PFU	0.30	1.00	1.70	0.05	0.10	0.15
VBMT160404-PFU	0.30	1.00	1.70	0.06	0.14	0.22
VBMT160404-PMU	0.60	1.80	3.00	0.07	0.16	0.25
VBMT160408-PFU	0.30	1.00	1.70	0.08	0.16	0.24
VBMT160408-PMU	0.60	1.80	3.00	0.08	0.19	0.30
VBMT160408-PRU	1.50	2.50	3.50	0.12	0.22	0.32
VCGX110302-PMN	0.30	1.50	2.70	0.05	0.10	0.15
VCGX110304-PMN	0.30	1.50	2.70	0.06	0.13	0.20
VCGX110308-PMN	0.30	1.50	2.70	0.08	0.16	0.24
VCGX160402-PMN	0.50	2.00	3.50	0.06	0.11	0.16
VCGX160404-PMN	0.50	2.00	3.50	0.08	0.16	0.24
VCGX160408-PMN	0.50	2.00	3.50	0.10	0.20	0.30
VCGX160412-PMN	0.50	2.00	3.50	0.12	0.24	0.36
VCGX220512-PMN	1.00	3.00	5.00	0.14	0.27	0.40
VCGX220516-PMN	1.00	3.00	5.00	0.14	0.30	0.46
VCGX220530-PMN	1.00	3.00	5.00	0.20	0.40	0.60
VCMT110304-PMU	0.50	1.50	2.50	0.06	0.13	0.20
VCMT110308-PMU	0.50	1.50	2.50	0.08	0.16	0.24
VCMT160404-PMU	0.60	1.80	3.00	0.07	0.16	0.25
VCMT160404-PRU	1.50	2.50	3.50	0.10	0.19	0.28
VCMT160408-PMU	0.60	1.80	3.00	0.08	0.19	0.30
VCMT160408-PRU	1.50	2.50	3.50	0.12	0.22	0.32
VNMG160404-NMN	0.50	2.00	3.50	0.10	0.20	0.30
VNMG160408-NMN	0.50	2.00	3.50	0.15	0.25	0.35
VNMG160404-NMK	0.50	2.00	3.50	0.10	0.20	0.30
VNMG160404-NMM	1.00	2.50	4.00	0.15	0.25	0.35
VNMG160404-NMP	1.50	2.50	3.50	0.12	0.20	0.28
VNMG160404-NSM	0.40	1.20	2.00	0.08	0.14	0.20
VNMG160404-NSP	0.40	1.20	2.00	0.08	0.15	0.22
VNMG160404-NUK	0.50	2.00	3.50	0.10	0.20	0.30
VNMG160404-NUP	1.00	2.50	4.00	0.10	0.20	0.30
VNMG160408-NMK	0.50	2.00	3.50	0.15	0.25	0.35
VNMG160408-NMM	1.00	2.50	4.00	0.20	0.30	0.40
VNMG160408-NMP	1.50	2.50	3.50	0.16	0.25	0.34
VNMG160408-NRK	1.50	4.00	6.50	0.20	0.30	0.40
VNMG160408-NSM	0.40	1.20	2.00	0.10	0.18	0.26
VNMG160408-NSP	0.40	1.20	2.00	0.10	0.22	0.34
VNMG160408-NUK	0.50	2.00	3.50	0.15	0.25	0.35
VNMG160408-NUP	1.00	2.50	4.00	0.15	0.25	0.35
VNMG160412-NMK	0.50	2.00	3.50	0.20	0.30	0.40
VNMG160412-NMP	1.50	2.50	3.50	0.20	0.30	0.40
VNMG160412-NRK	1.50	4.00	6.50	0.25	0.35	0.45
VNMG160412-NUK	0.50	2.00	3.50	0.20	0.30	0.40

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
VNMG160412-NUP	1.00	2.50	4.00	0.18	0.30	0.42
WBET060102 $\frac{1}{8}$ -PPF	0.10	0.30	0.50	0.03	0.06	0.09
WBET060104 $\frac{1}{8}$ -PPF	0.10	0.30	0.50	0.04	0.07	0.10
WCMT12T304-PMU	0.60	1.80	3.00	0.07	0.16	0.25
WCMT12T308-PMU	0.60	1.80	3.00	0.08	0.19	0.30
WNGG060404-NMN	0.30	1.00	1.70	0.08	0.15	0.22
WNGG060408-NMN	0.30	1.00	1.70	0.10	0.20	0.30
WNGG080404-NMN	0.50	2.00	3.50	0.10	0.20	0.30
WNGG080408-NMN	0.50	2.00	3.50	0.15	0.25	0.35
WNMA080408	2.00	4.00	6.00	0.25	0.35	0.45
WNMA080412	2.00	4.00	6.00	0.35	0.45	0.55
WNMA080416	2.00	4.00	6.00	0.45	0.55	0.65
WNMG060404-NMM	0.70	1.50	2.30	0.13	0.20	0.27
WNMG060404-NMP	1.00	1.50	2.00	0.10	0.15	0.20
WNMG060404-NSP	0.30	0.70	1.10	0.06	0.12	0.18
WNMG060404-NUP	0.70	1.50	2.30	0.08	0.15	0.22
WNMG060408-NMM	0.70	1.50	2.30	0.18	0.25	0.32
WNMG060408-NMP	1.00	1.50	2.00	0.15	0.20	0.25
WNMG060408-NRK	1.00	2.00	3.00	0.15	0.25	0.35
WNMG060408-NSP	0.30	0.70	1.10	0.08	0.16	0.24
WNMG060408-NUP	0.70	1.50	2.30	0.12	0.20	0.28
WNMG060412-NMM	0.70	1.50	2.30	0.20	0.28	0.36
WNMG080404-NMK	0.50	2.00	3.50	0.10	0.20	0.30
WNMG080404-NMM	1.00	2.50	4.00	0.15	0.25	0.35
WNMG080404-NMP	1.50	2.50	3.50	0.12	0.20	0.28
WNMG080404-NSM	0.40	1.20	2.00	0.08	0.14	0.20
WNMG080404-NSP	0.40	1.20	2.00	0.08	0.15	0.22
WNMG080404-NUK	0.50	2.00	3.50	0.10	0.20	0.30
WNMG080404-NUP	1.00	2.50	4.00	0.10	0.20	0.30
WNMG080404-NUX	1.00	2.50	4.00	0.10	0.20	0.30
WNMG080408-NMK	0.50	2.00	3.50	0.15	0.25	0.35
WNMG080408-NMM	1.00	2.50	4.00	0.20	0.30	0.40
WNMG080408-NMP	1.50	2.50	3.50	0.16	0.25	0.34
WNMG080408-NRK	1.50	4.00	6.50	0.20	0.30	0.40
WNMG080408-NRM	2.00	3.50	5.00	0.20	0.35	0.50
WNMG080408-NRP	2.00	4.00	6.00	0.25	0.35	0.45
WNMG080408-NSM	0.40	1.20	2.00	0.10	0.18	0.26
WNMG080408-NSP	0.40	1.20	2.00	0.10	0.22	0.34
WNMG080408-NUK	0.50	2.00	3.50	0.15	0.25	0.35
WNMG080408-NUP	1.00	2.50	4.00	0.15	0.25	0.35
WNMG080408-NUX	1.00	2.50	4.00	0.15	0.25	0.35
WNMG080408-NWU	0.50	1.50	2.50	0.20	0.40	0.60
WNMG080408-NWX	1.00	2.50	4.00	0.20	0.40	0.60
WNMG080412-NMK	0.50	2.00	3.50	0.20	0.30	0.40
WNMG080412-NMM	1.00	2.50	4.00	0.25	0.35	0.45
WNMG080412-NMP	1.50	2.50	3.50	0.20	0.30	0.40
WNMG080412-NRK	1.50	4.00	6.50	0.25	0.35	0.45
WNMG080412-NRM	2.00	3.50	5.00	0.25	0.40	0.55
WNMG080412-NRP	2.00	4.00	6.00	0.30	0.40	0.50
WNMG080412-NUK	0.50	2.00	3.50	0.20	0.30	0.40
WNMG080412-NUP	1.00	2.50	4.00	0.18	0.30	0.42
WNMG080412-NUX	1.00	2.50	4.00	0.18	0.30	0.42
WNMG080412-NWU	0.50	1.50	2.50	0.25	0.45	0.65
WNMG080416-NMP	1.50	2.50	3.50	0.25	0.35	0.45
WNMG080416-NRP	2.00	4.00	6.00	0.35	0.45	0.55
WNMG080416-NUP	1.00	2.50	4.00	0.20	0.35	0.50

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

TURNING Parameters - wiper application details· CARBIDE

I. X-axis, Z-axis offset

INSERT RADIUS	DNMX1506 ∞	
	X-AXIS	Z-AXIS
0,8	0,065	0
1,2	0,058	0
INSERT RADIUS	TNMX1604 ∞	
	X-AXIS	Z-AXIS
0,8	0,063	0
1,2	0,066	0

II. Ramping offset

INSERT RADIUS	DNMX1506 ∞ (KAPR 93°)						TNMX1604 ∞ - NO NEED TO ADJUST
	0°	5°	10°	15°	20°	25°	
0,8	0	0,021	0,037	0,049	0,056	0,058	
1,2	0	0,022	0,039	0,049	0,053	0,052	

INSERT RADIUS	DNMX1506 ∞ (KAPR 93°)									
	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°
0,8	0	0,019	0,034	0,046	0,054	0,057	0,057	0,052	0,044	0,031
1,2	0	0,017	0,03	0,041	0,047	0,05	0,05	0,046	0,038	0,028
INSERT RADIUS	50°	55°	60°	65°	70°	75°	80°	85°	90°	
0,8	0,015	-0,005	-0,029	-0,021	-0,008	0	0,004	0,004	0	
1,2	0,013	-0,004	-0,025	-0,015	-0,001	0,006	0,008	0,005	0	
INSERT RADIUS	DNMX1506 ∞ (KAPR 93°)									
	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°
0,8	0	0,017	0,03	0,041	0,048	0,053	0,053	0,051	0,045	0,035
1,2	0	0,018	0,033	0,044	0,052	0,056	0,057	0,054	0,048	0,038
INSERT RADIUS	50°	55°	60°	65°	70°	75°	80°	85°	90°	
0,8	0,023	0,007	-0,011	-0,032	-0,023	-0,009	-0,001	0,003	0	
1,2	0,025	0,008	-0,011	-0,034	-0,026	-0,012	-0,004	0	0	

III. For radius with relatively high precision request, it's not suggested to use wiper inserts, please use conventional radius turning inserts.



TURNING PCBN

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A - TURNING	ISO 513		PCBN	
			PVD COATED	UNCOATED
B - THREADING	K	K01	NBH450C	NBH450U
		K10	NBH500C	NBH500U
		K20		NBH600U
		K30		NBH900U
				NBH950U
C - GROOVING	S	S01	NBH450C	
		S10		
		S20		
		S30		
D - MILLING	H	H01	NBL050C	
		H10	NBL150C	
		H20	NBL200C	
		H30	NBL250C	
			NBL300C	
E - DRILLING	Hardened steel		NBL350C	
			NBH900U	
			NBH950U	
F - ACCESSORIES	Cast iron			
G - SPARE PARTS	HRSA			

HRSA: Heat resistant super alloy

GRADE	COMPOSITION	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
NBL050C	Low volume CBN 40%	2.700	PVD	AlTiN	H	H01 H10	Great performance on high speed machining under continuous cutting conditions.
NBL050CX	Low volume CBN 40%	2.700	PVD	AlTiN	H	H01 H10	Same substrate of NBL050C with a different coating that enhances the sharpness of cutting edge preparation.
NBL150C	Low volume CBN 50%	2.900	PVD	AlTiN	H	H05 H15	First choice for continuous cut machining. High reliability under various cutting conditions, from low to high cutting speed.
NBL200C	Low volume CBN 55%	3.000	PVD	AlTiN _{0.5} N _{1.5}	H	H10 H20	New universal grade mainly combined with full solid style and solid brazing. Coating layer with extreme hardness allows great wear resistance.
NBL250C	Low volume CBN 60%	3.200	PVD	AlTiN	H	H10 H25	First choice for general purpose machining even with light to medium interruptions.
NBL300C	Low volume CBN 70%	3.300	PVD	AlTiN	H	H10 H30	All-around grade with a perfect balance between toughness and wear resistance. Can be applied both on interrupted and continuous cut.
NBL350C	Low volume CBN 75%	3.400	PVD	AlTiN	H	H20 H35	Extreme toughness for heavy interrupted cut.
NBH450C	High volume CBN 95%	4.400	PVD	TiCN+TiN	K	K01 K20	First choice for gray cast iron finishing at very high cutting condition and with great wear resistance.
NBH450U	High volume CBN 95%	4.400	-	-	K	K01 K20	Same as NBH450C but uncoated. Generally suggested under interrupted conditions.
NBH500C	High volume CBN 90%	4.200	PVD	AlTiN	K	K10 K25	Main choice for gray cast iron machining with negative inserts, both for finishing and roughing. Mostly available for full solid geometries.
NBH500U	High volume CBN 90%	4.200	-	-	K	K10 K25	Same as NBH500C but uncoated. Generally suggested under most severe cutting conditions.
NBH600U	High volume CBN 90%	3.800	-	-	K	K20 K30	Tough grade for severe application on cast iron. Coarse CBN powder combined with a metallic binder for maximum reliability even on interrupted cut.
NBH900U	High volume CBN 80%	3.500	-	-	H	H25 H35	Universal grade for severe applications both on ISO K and ISO H materials. High reliability on roughing operations.
					K	K25 K35	
NBH950U	High volume CBN 90%	4.000	-	-	H	H30 H35	Extreme toughness mainly for cast iron machining but applicable, as alternative grade, even on hardened steel.
					K	K30 K35	

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

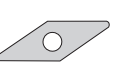
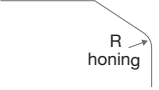
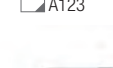
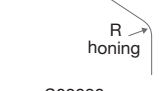
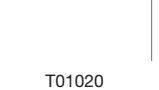
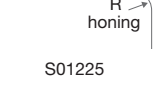
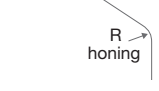
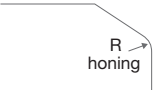
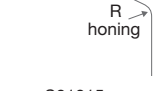
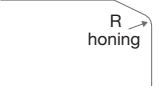
F - ACCESSORIES

G - SPARE PARTS

ISO 513	nikkoTOOLS	ISCAR	KENNAMETAL	KYOCERA	MITSUBISHI	SANDVIK	SECO	SUMITOMO	TAEGUTEC	TUNGALOY	WALTER	
K	K01 - K10	NBH450C	IB05S IB10K IB10S	KB1345 KB5630	KBN475	BC5110 MB710	CB7525	CBN200 CK2065	BNC500	TB7015	BX930	
	K10 - K20	NBH500C NBH600U	IB90 IB90A	KB1340 KB1345 KBK45	KBN60M	MB4120 MB730	CB7525	CBN200 CBN300 CBN300P CBN400C	BN500 BN7000 BNC8115	TB7015 TB7020	BX480	WBK20
	K20 - K30	NBH600U NBH900U NBH950U	IB20KD IB90A	KB1340 KBK45	KBN900	MBS140	CB7925	CBN500	BNS800 BNS8125	TB7020	BXC90	WBK30
H	H01 - H10	NBL050C NBL150C	IB05H IB10H IB10HC IB50	KBH10B	KBN05M KBN10M KBN510	BC8105 BC8110 MB8110	CB7015 CB7105 CB7115	CBN010 CBN150 CBN060K CH0550	BN1000 BNC100 BNC2010 BNC2115 BNX10	TB610	BX310 BXM10	WBH10 WBH10C
	H10 - H20	NBL200C NBL250C NBL300C	IB20H IB20HC IB25HA IB55	KBH20B	KBN25M KBN525	BC8120 BC8220 MB8120	CB7025 CB7125	CBN060K CH2540	BN2000 BNC160 BNC200 BNC2020 BNC2125 BNC8115 BNX20	TB650	BX330 BX360 BXA20 BXM20 BXC50	WBH20
	H20 - H30	NBL300C NBL350C NBH900U NBH950U	IB25HC IB90	KB5630	KBN35M	BC8130 MB8130	CB7135 CB7925	CH3515	BNC300 BNC8115 BNX25	TB670	BX380	

BLACK: CVD, UNDERLINED: PVD, RED: uncoated

This table is our own estimation based on information available to the public and is not authorized by the company mentioned on it.

NEGATIVE type with hole			C	D	S	T	V	W
								
			80°	55°	90°	60°	35°	80°
K	UNIVERSAL	UE  S01520 carbide backed	 A101 SIZE 12	 A107 SIZE 15		 A118 SIZE 16	 A123 SIZE 16	
		UE  S02020 full solid	 A103 SIZE 09 12	 A109 SIZE 15	 A116 SIZE 12	 A120 SIZE 16		 A127 SIZE 08
	SHARP	SE  T01020 carbide backed	 A103 SIZE 12					
	UNIVERSAL	UE  S01225 vertical brazing	 A103 SIZE MCN 12	 A109 SIZE MDN 15	 A116 SIZE 12	 A120 SIZE 16	 A126 SIZE 16	 A127 SIZE 08
		UE  S01225 solid brazing		 A109 SIZE 15				
		UE  S02020 full solid	 A103 SIZE 09 12					
H	SHARP	SE  S01015 vertical brazing	 A103 SIZE MCN 12	 A109 SIZE MDN 15		 A120 SIZE 16	 A126 SIZE 16	 A127 SIZE 08
		SE  S01015 solid brazing		 A110 SIZE 15				

carbide backed: the PCBN material is produced with a carbide layer that improves mechanical properties and simplify brazing process.

solid brazing: a thick PCBN tip extremely pure (not contaminated by carbide) guarantees much better performances. High reliable vacuum brazing is used.

vertical brazing: the PCBN layer is as thick as the carbide body for the best heat dissipation and brazing strenght. Vacuum brazing is necessary.

full solid: Full PCBN structure, maximizes performances and reduce the cost per edge. High cutting speed and depth of cut can be applied.

A - TURNING

B - THREADING

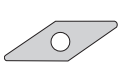
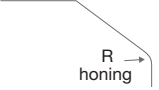
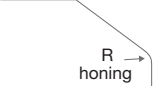
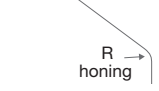
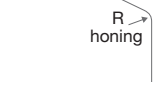
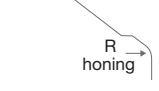
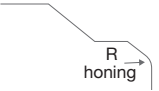
C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

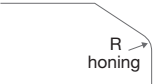
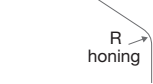
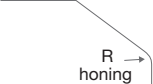
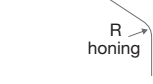
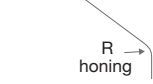
A - TURNING	NEGATIVE type with hole		C	D	S	T	V	W
								
			80°	55°	90°	60°	35°	80°
B - THREADING C - GROOVING D - MILLING E - DRILLING F - ACCESSORIES G - SPARE PARTS	H	REINFORCED	 S01535	 vertical brazing	 SIZE 12		 SIZE 16	 SIZE 08
			 S01535	 solid brazing		 SIZE 15		
			 S01535	 full solid	 SIZE 09			
	WIPER	CHIPBREAKER	 S01015	 vertical brazing	 SIZE 12			
			 S01035	 vertical brazing	 SIZE 12			
			 S01235	 vertical brazing	 SIZE 12			

carbide backed: the PCBN material is produced with a carbide layer that improves mechanical properties and simplify brazing process.

solid brazing: a thick PCBN tip extremely pure (not contaminated by carbide) guarantees much better performances. High reliable vacuum brazing is used.

vertical brazing: the PCBN layer is as thick as the carbide body for the best heat dissipation and brazing strenght. Vacuum brazing is necessary.

full solid: Full PCBN structure, maximizes performances and reduce the cost per edge. High cutting speed and depth of cut can be applied.

NEGATIVE type without hole			C	R	S	T		
								
			80°	-	90°	60°		
K	UNIVERSAL	UE  S02020	 full solid	 SIZE 09 12 	 SIZE 06 09 12 	 SIZE 09 12 	 SIZE 11 16 	
		UE  S02020	 full solid with dimple	 SIZE 12 		 SIZE 12 		
	SHARP	SE  T01020	 full solid		 SIZE 09 			
	REINFORCED	RE  S02525 (size 09) - S10020 (size 12)	 full solid		 SIZE 09 12 			
		RH  S04025	 full solid		 SIZE 09 			
H	UNIVERSAL	UE  S02020	 full solid	 SIZE 09 12 	 SIZE 09 12 	 SIZE 09 12 	 SIZE 11 16 	
	SHARP	SE  T01020	 full solid		 SIZE 09 			
	REINFORCED	RE  S02525 (size 09) - S10020 (size 12)	 full solid		 SIZE 09 12 			

carbide backed: the PCBN material is produced with a carbide layer that improves mechanical properties and simplify brazing process.

solid brazing: a thick PCBN tip extremely pure (not contaminated by carbide) guarantees much better performances. High reliable vacuum brazing is used.

vertical brazing: the PCBN layer is as thick as the carbide body for the best heat dissipation and brazing strenght. Vacuum brazing is necessary.

full solid: Full PCBN structure, maximizes performances and reduce the cost per edge. High cutting speed and depth of cut can be applied.

A - TURNING

B - THREADING

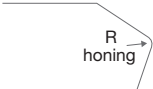
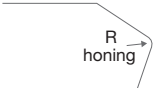
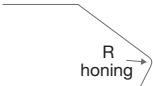
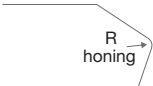
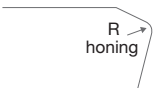
C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

		POSITIVE type with hole		C	D	R	T	V					
													
				80°	55°	-	60°	35°					
A - TURNING	B - THREADING	K	UNIVERSAL	 UE S01520 carbide backed	 CC  A101 SIZE 06 09	 DC  A107 SIZE 11		 TC  A118 SIZE 09 11 16	 VB  A123 SIZE 16				
				 UE S02020 full solid			 RC  A114 SIZE 09 12						
			SHARP	 SE T01020 carbide backed				 TC  A118 SIZE 11					
				 RE S01530 carbide backed				 TC  A119 SIZE 11 16	 VB  A124 SIZE 16				
			H	UNIVERSAL	 UE S01225 solid brazing	 CC  A101 SIZE 06 09 11	 DC  A107 SIZE 07 11		 TC, TP  A118, A122 SIZE 09 11 16	 VB, VC  A123, A125 SIZE 11 16			
					 SE S01015 solid brazing	 CC  A101 SIZE 06 09	 DC  A107 SIZE 07 11		 TC, TP  A118, A122 SIZE 11 16	 VB, VC  A123, A125 SIZE 11 16			
				SHARP	 SF T01015 solid brazing	 CC  A101 SIZE 06 09	 DC  A107 SIZE 07 11			 VB  A123 SIZE 11 16			
					 RE S01535 solid brazing	 CC  A102 SIZE 06 09	 DC  A108 SIZE 07 11		 TC, TP  A118, A122 SIZE 11 16	 VB  A124 SIZE 16			
				C - GROOVING	D - MILLING	H	WIPER	 WE S01015 solid brazing	 CC  A102 SIZE 06 09				

carbide backed: the PCBN material is produced with a carbide layer that improves mechanical properties and simplify brazing process.

solid brazing: a thick PCBN tip extremely pure (not contaminated by carbide) guarantees much better performances. High reliable vacuum brazing is used.

vertical brazing: the PCBN layer is as thick as the carbide body for the best heat dissipation and brazing strenght. Vacuum brazing is necessary.

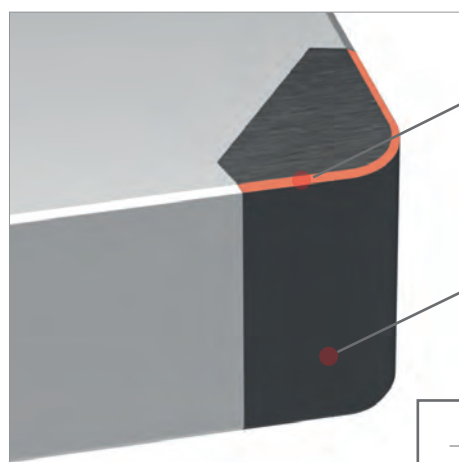
full solid: Full PCBN structure, maximizes performances and reduce the cost per edge. High cutting speed and depth of cut can be applied.

UE

Edge preparation

- First choice for general machining application under variable cutting conditions from continuous to interrupted cut
- Available in a broad range of grades both for cast iron and hardened steel machining
- UE universal edge can be supplied in different PCBN formats, carbide backed, solid brazing, vertical brazing and full solid
- Best compromise between sharpness and robustness of cutting edge

• Features of UE edge preparation

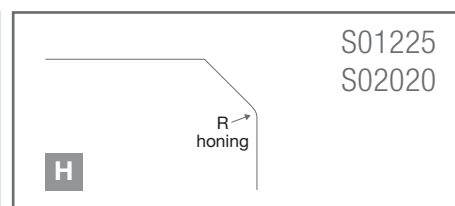
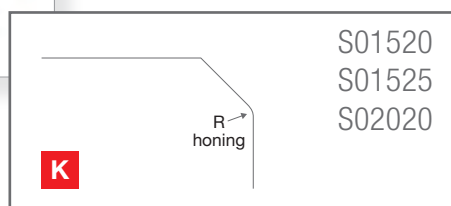


UNIVERSAL EDGE

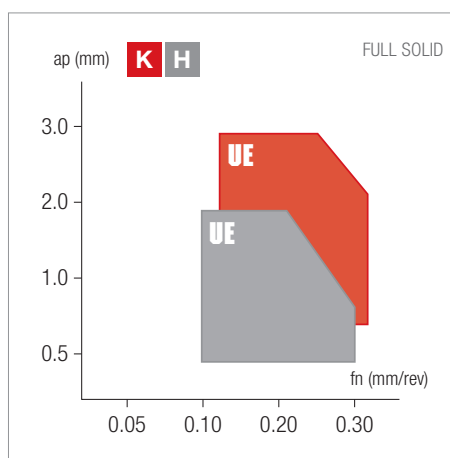
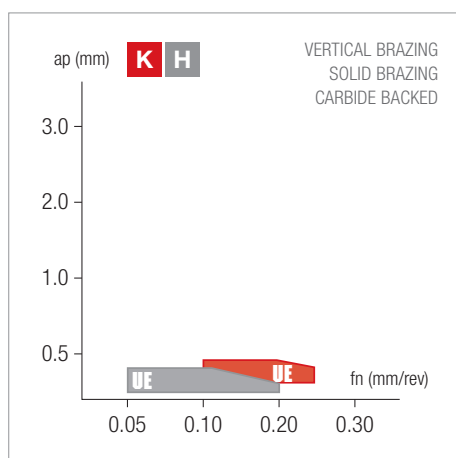
- The edge preparation has been optimized according to insert style and workpiece material
- Chamfer width from 0.12 mm to 0.20 mm with an angle of 20°- 25°

MULTIPLE SOLUTIONS

- All NIKKO PCBN format available: full solid, vertical brazing, solid brazing and carbide backed



• Application range



DIMPLED INSERTS AVAILABLE



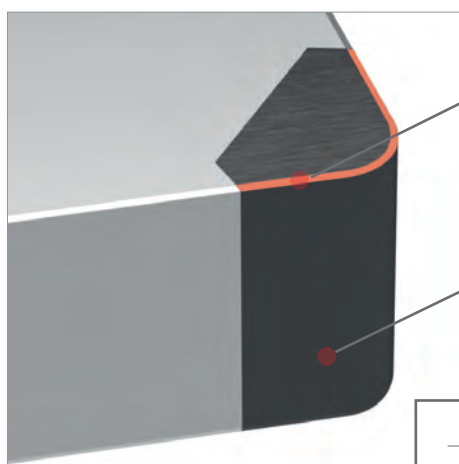
High performance alternative to conventional Si_3N_4 ceramic for cast iron roughing.

SE

Edge preparation

- Recommended for continuous cut application under stable conditions
- Cutting forces reduced by 10% in comparison with most common general purpose design
- Sharpe edge preparation with high wear-resistant CBN grade drastically reduces burr formation

• Features of SE edge preparation

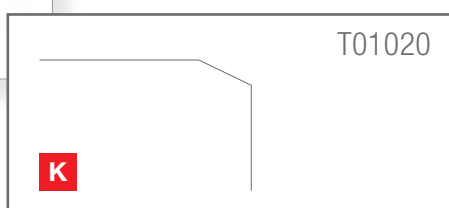


SHARP EDGE

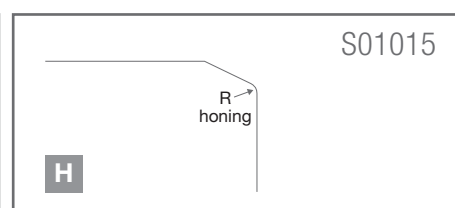
- The edge preparation has been optimized according to insert style and workpiece material
- The chamfer width is 0.10 mm with angle from 15° to 20°

MULTIPLE SOLUTIONS

- All NIKKO PCBN format available: full solid, vertical brazing, solid brazing and carbide backed

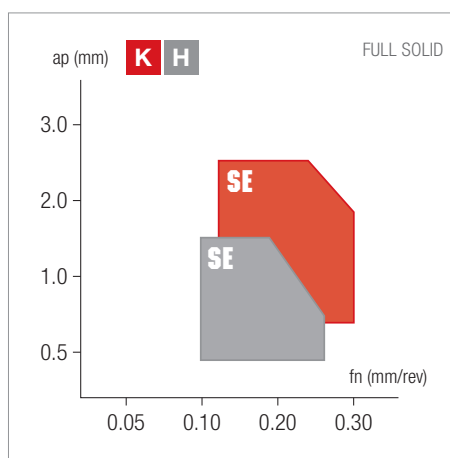
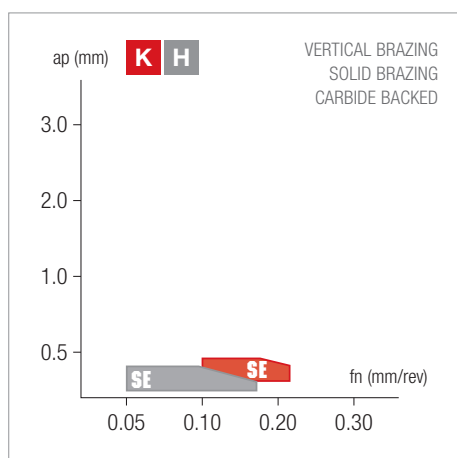


T01020



S01015

• Application range



T TYPE AVAILABLE FOR ISO K



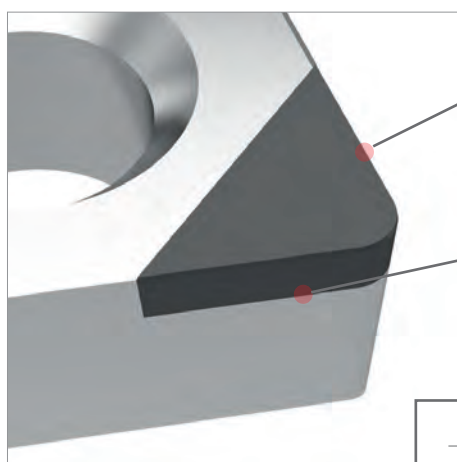
T land without honing prevent burrs formation on cast iron machining.

SF

Edge preparation

- Recommended for high precision machining of very small parts under continuous cutting conditions
- Low cutting forces allows machining of thin workpieces avoiding vibrations, obtaining strict dimensional tolerances
- SF for super fine finishing is combined with a special version of NBL050C named NBL050CX with a coating specifically studied to enhance the sharp action of this geometry.

• Features of SF edge preparation

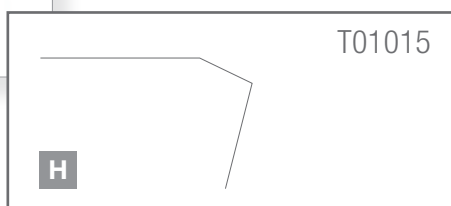


SUPER FINE

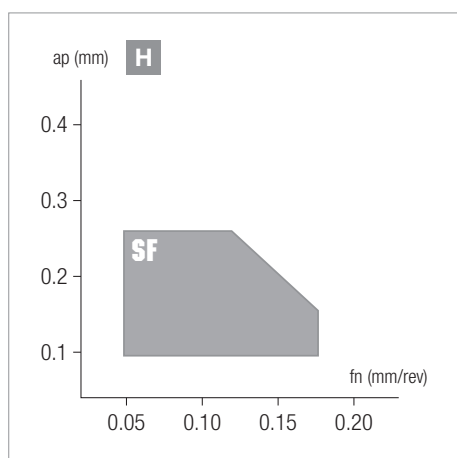
- The edge preparation has been optimized for small part machining and best dimensional tolerances
- The chamfer width is 0.10 mm with an angle of 15°, without honing

SOLID BRAZING

- Direct brazing between PCBN and carbide, with special vacuum technology, produce a pure and reliable cutting material



• Application range



SHARP AND PRECISE



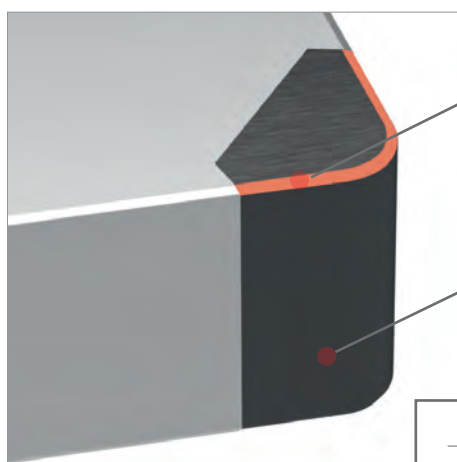
Only for positive inserts.
Perfect solution for very small radii.
0.1 radius can be produced as semi-standard product.

RE

Edge preparation

- Specifically designed to grant high reliability on heavy-interrupted cut
- In case of hardened steel machining a larger chamfer angle improves the cutting edge strength
- RE reinforced edge is always combined with high toughness grades
- RE geometry on solid type CBN round inserts is a great solution for roll machining in steel industry

• Features of RE edge preparation

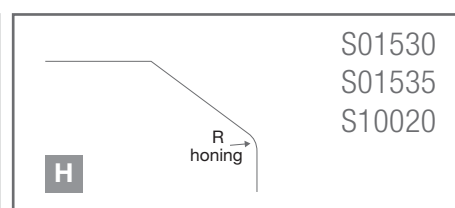
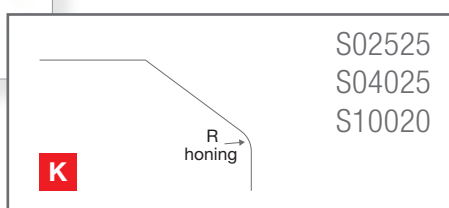


REINFORCED EDGE

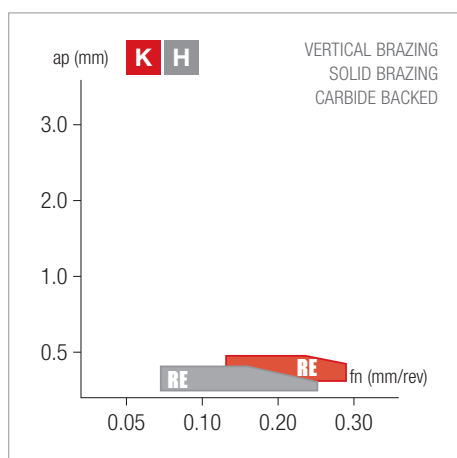
- Big chamfer and angle to keep the cutting edge strong
- The chamfer width starts from 0.15 mm for brazed type and reached 1 mm for solid

MULTIPLE SOLUTIONS

- All NIKKO PCBN format available: full solid, vertical brazing, solid brazing and carbide backed



• Application range



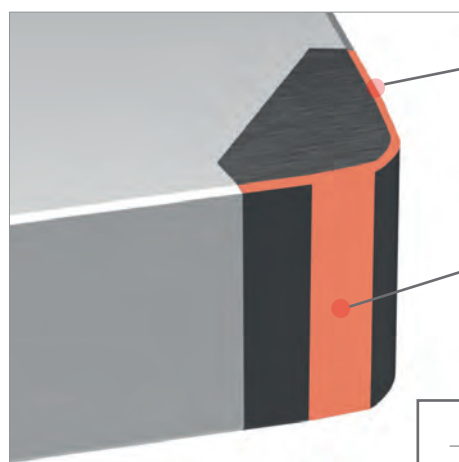
Cutting forces could be slightly higher compared to general purpose type, stable clamping and equipments are strongly recommended.

WE

Edge preparation

- Wiper geometry with special arc design for maximum performance and low cutting forces
- Improves productivity when used as high feed machining; reaches ground surface quality at conventional cutting conditions
- WE wiper edge is available in a broad range of grades for hardened steel

• Features of WE edge preparation

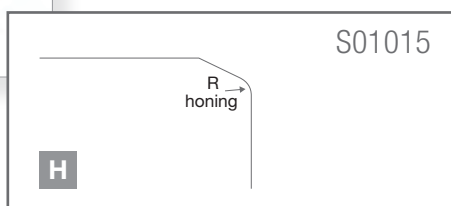


WIPER EDGE

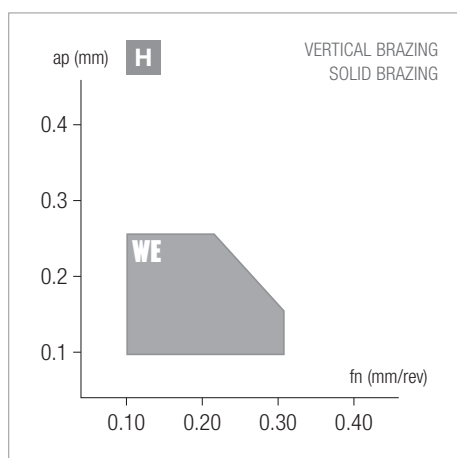
- Small chamfer and reduced angle for a very smooth cutting action
- The chamfer width is 0.1 mm with an inclination of 15°

ARC GEOMETRY

- Multiple arc wiper instead of conventional straight wiper land effectively reduces vibrations, creates better surface and adapts to wider feed range



• Application range



SPECIAL DESIGN UPON REQUEST



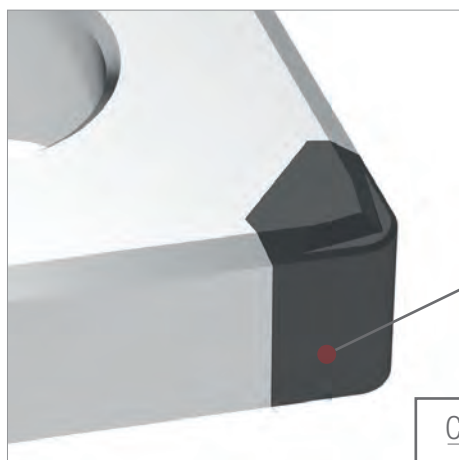
Wiper "concept" can be applied to any shape even if the most common are the one with 80° angle can be provided even in combination of full solid grades.

CF/CM

Edge preparation

- 3D chipbreaker offers optimized chip flow and chip control for the more demanding applications
- CM is focused on carburized layer removal while CF is mainly for hardened steel where chip evacuation is challenging (internal turning is a typical application)
- Tailor-made solutions can be realized both for negative and positive inserts

• Features of CF/CM edge preparation

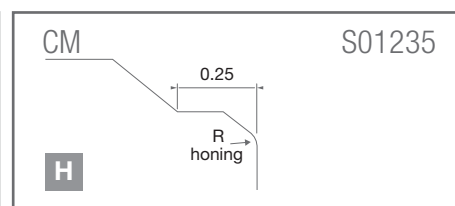
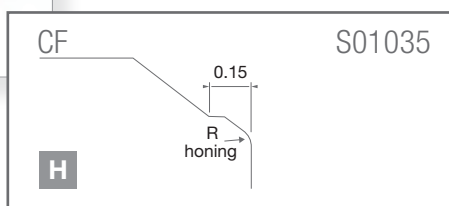


SMART DESIGN

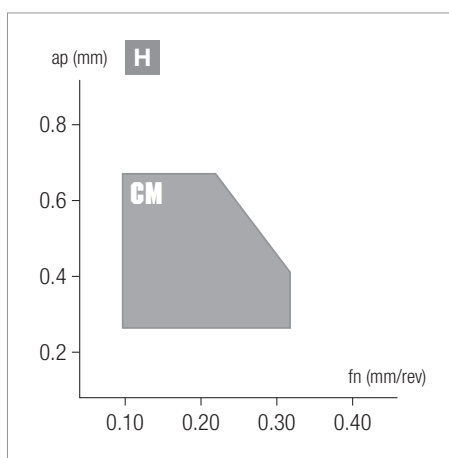
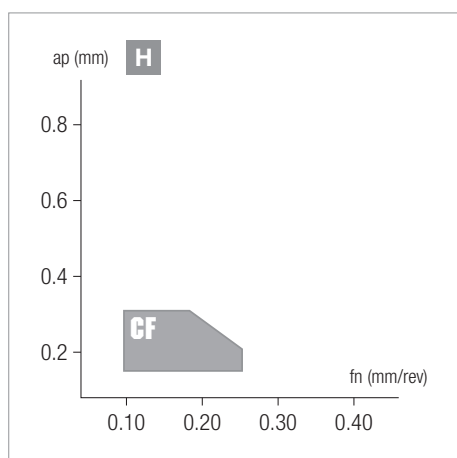
- Excellent performance thanks to the separation of chipbreaker and cutting edge
- Small chamfer to reduce cutting forces and 35° angle for a better robustness

GREAT RELIABILITY

- Available with stable and reliable vertical brazing technology



• Application range



CHIPBREAKER+WIPER AVAILABLE



The combined types CFW and CMW are also available. Perfect chip control and great surface finishing in one step.

K		BRAZED TIP		FULL SOLID			
		NEGATIVE	POSITIVE	NEGATIVE	POSITIVE		
	wear resistance	-	-	-	-		
	1 st CHOICE	NBH450C / UE	NBH450C / UE	NBH500C / UE	-		
	toughness	NBH500C / UE	-	NBH600U / UE	-		
	wear resistance	NBH450C / UE	-	-	-		
	1 st CHOICE	NBH500C / UE	NBH450C / UE	NBH500C / UE	-		
	toughness	NBH900U / UE	NBH450U / RE	NBH600U / UE	-		
	wear resistance	NBH500C / UE	-	NBH500C / UE	-		
	1 st CHOICE	NBH900U / RE	-	NBH600U / UE	-		
	toughness	-	-	NBH900U / UE	-		

H		BRAZED TIP		BRAZED TIP (WIPER)		FULL SOLID	
		NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE
	wear resistance	NBL050C / UE	NBL050C / SE	-	-	-	-
	1 st CHOICE	NBL150C / UE	NBL150C / SE	NBL050C / WE	NBL050C / WE	NBL200C / UE	-
	toughness	NBL250C / UE	NBL250C / UE	NBL150C / WE	NBL150C / WE	NBL250C / UE	-
	wear resistance	NBL150C / UE	NBL150C / UE	NBL050C / WE	NBL050C / WE	NBL200C / UE	-
	1 st CHOICE	NBL250C / UE	NBL250C / UE	NCL150C / WE	NCL150C / WE	NBL250C / UE	-
	toughness	NBL300C / UE	NBL300C / UE	NBL250C / WE	-	NBH900U / UE	-
	wear resistance	NBL300C / UE	NBL300C / UE	-	-	-	-
	1 st CHOICE	NBL350C / RE	NBL350C / RE	-	-	NBH900U / RE	-
	toughness	NBH900U / RE	-	-	-	NBH950U / RE	-

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

C	N	M	G	12	04	08	S	-	4	V	-	UE	NBL250	C	
1	2	3	4	5	6	7	8		9	10		11	12	13	14

1	SHAPE
C	80° rhombic
D	55° rhombic
K	55° parallelogram
S	90° square
T	60° triangular
V	35° rhombic
W	80° trigon

2	RELIEF ANGLE
B	5°
C	7°
D	15°
E	20°
N	0°
P	11°

3	TOLERANCES		
Symbol	I.C.	Thickness	Corner height
E	±0.025	±0.025	±0.025
G	±0.025	±0.13	±0.025
M	±0.05 ~ ±0.15	±0.13	±0.08 ~ ±0.18
U	±0.08 ~ ±0.25	±0.13	±0.13 ~ ±0.38

4	HOLE/CHIPBREAKER		
Symbol	Hole	Hole countersink	Chipbreaker
A		✓	✗
G		✓	✗
M		✓	✗
N		✗	✗
T		✓	40°÷60°
W		✓	40°÷60°
X	NIKKO norm		

5	EDGE LENGHT						
I.C. (mm)	C shape	D shape	R shape	S shape	T shape	V shape	W shape
3.97	03	04		03	06		
4.76	04	05		04	08	08	
5.00			05				
5.56	05	06		05	09		03
6.00			06				
6.35	06	07		06	11	11	04
7.94	08	09		07	13		05
8.00			08				
9.53	09	11	09	09	16	16	06
10.00		12	10				
12.00							
12.70	12	15	12	12	22	22	08
15.88	16	19	15	15	27	24	10
16.00			16				
19.05	19	23	19	19	33	33	13
20.00			20				
22.23	22	27		22	38		
25.00			25				
25.40	25	31	25	25	44	44	17
31.75	32	38	31	31	54	54	21
32.00			32				

6	THICKNESS	
Symbol	(mm)	
01	1.59	
T1	1.98	
02	2.38	
T2	2.78	
03	3.18	
T3	3.97	
04	4.76	
05	5.56	
06	6.35	
07	7.94	
09	9.53	

7	RADIUS
Symbol	(mm)
005	0.05
01	0.10
02	0.20
04	0.40
08	0.80
12	1.20
16	1.60
20	2.00
24	2.40

8	EDGE PREPARATION	
Symbol	Shape	
E	honing	
F	sharp edge	
S	honing + chamfering	
T	chamfering	

9	NUMBER OF EDGES
...	number of cutting edges (only for brazed type)

10	BRAZING TYPE
C	carbide backed
S	solid brazing
V	vertical brazing

11	EDGE PREPARATION
SE	sharp edge
UE	universal edge
RE	reinforced edge
WE	wiper edge
CBx	chipbreaker (CBF finishing, CBM medium)

12	GRADE - features
NBL	low content CBN
NBH	high content CBN

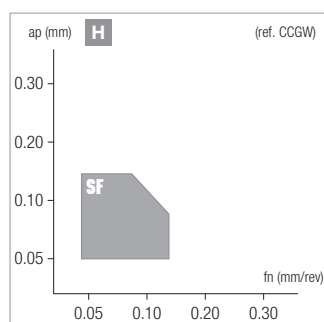
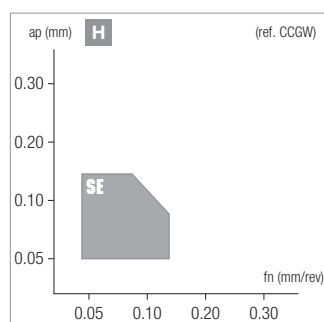
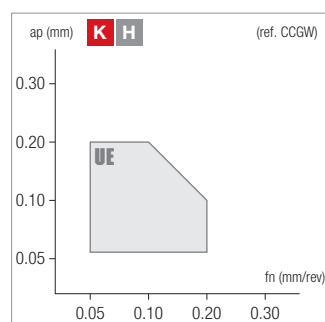
13	GRADE - material
000÷390	ISO H
400÷690	ISO K
700÷790	ISO S
800÷890	sintered materials
900÷990	universal

14	GRADE - coating
C	coated
U	uncoated
X	special

CC		BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition														
ISO - with hole																
• The most popular insert shape due to high versatility • Clearance angle 7°, effectively reduces the risk of chip jamming when boring • 80° corner can be used for both turning and facing operations • Solid brazing type provides better stability and reliability than conventional carbide backed brazing type		Stable machining, light cut ● 1 st choice ○ suitable							● ● ● ● ○ ○							
		General machining, medium cut ● 1 st choice ○ suitable							● ○ ● ● ○							
		Unstable machining, heavy cut ⚙ 1 st choice ⚙ suitable							⚙ ⚙							
		Dimensions			ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)									
		2 edges		P												
M																
K	340 1000															
N																
S																
H		120 280	120 280	90 220	90 180	60 180	60 150									

Designation		RE	IC	S	D1	LE	Stock									
UNIVERSAL	 solid brazing	UE H	CCGW060202S-UE-2S	0.2	6.35	2.38	2.8	2.8		○		○				
			CCGW060204S-UE-2S	0.4	6.35	2.38	2.8	2.8		●		●	●	●	○	
			CCGW060208S-UE-2S	0.8	6.35	2.38	2.8	2.7				○	○	○		
			CCGW09T302S-UE-2S	0.2	9.525	3.97	4.4	2.8		○		○				
			CCGW09T304S-UE-2S	0.4	9.525	3.97	4.4	2.8		●		●	●	●	○	
			CCGW09T308S-UE-2S	0.8	9.525	3.97	4.4	2.7				●	●	●	○	
			CCGW120404S-UE-2S	0.4	12.7	4.76	5.5	2.8					○			
			CCGW120408S-UE-2S	0.8	12.7	4.76	5.5	2.7					○			
UNIVERSAL	 carbide backed	UE K	CCGW060204S-UE-2C	0.4	6.35	2.38	2.8	2.8	●							
			CCGW060208S-UE-2C	0.8	6.35	2.38	2.8	2.7	○							
			CCGW09T304S-UE-2C	0.4	9.525	3.97	4.4	2.8	●							
			CCGW09T308S-UE-2C	0.8	9.525	3.97	4.4	2.7	●							
			CCGW120408S-UE-2C	0.8	12.7	4.76	5.5	2.7	○							
SHARP	 solid brazing	SE H	CCGW060202S-SE-2S	0.2	6.35	2.38	2.8	2.8		○		●				
			CCGW060204S-SE-2S	0.4	6.35	2.38	2.8	2.8		●		●				
			CCGW060208S-SE-2S	0.8	6.35	2.38	2.8	2.7					○			
			CCGW09T302S-SE-2S	0.2	9.525	3.97	4.4	2.8		○		●				
			CCGW09T304S-SE-2S	0.4	9.525	3.97	4.4	2.8		●		●				
			CCGW09T308S-SE-2S	0.8	9.525	3.97	4.4	2.7				●				
SHARP	 solid brazing without honing	SF H	CCGW060202T-SF-2S	0.2	6.35	2.38	2.8	2.8			●					
			CCGW060204T-SF-2S	0.4	6.35	2.38	2.8	2.8			●					
			CCGW09T304T-SF-2S	0.4	9.525	3.97	4.4	2.8			●					
			CCGW09T308T-SF-2S	0.8	9.525	3.97	4.4	2.7			○					

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion



CC

ISO - with hole

- The most popular insert shape due to high versatility
- Clearance angle 7°, effectively reduces the risk of chip jamming when boring
- 80° corner can be used for both turning and facing operations
- Solid brazing type provides better stability and reliability than conventional carbide backed brazing type

BH: High volume CBN
BL: Low volume CBN
PVD: Physical vapour deposition

BH PVD BL PVD BL PVD BL PVD BL PVD BL PVD BL PVD

NB450C NB450C NB450CX NBL150C NBL250C NBL300C NBL350C

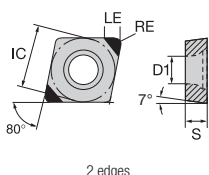
Stable machining, light cut ● 1st choice ○ suitable

General machining, medium cut ● 1st choice ○ suitable

Unstable machining, heavy cut ▲ 1st choice ▲ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P

M

K

N

S

H

340

1000

Designation

RE

IC

S

D1

LE

Stock

REINFORCED

RE H



CCGW060204S-RE-2S

0.4

6.35

2.38

2.8

2.8

WIPER

WE H



CCGW060204S-WE-2S

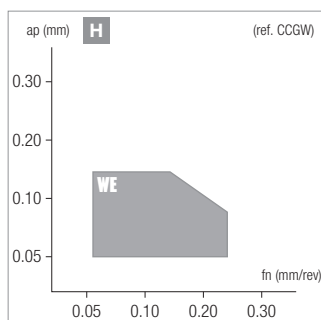
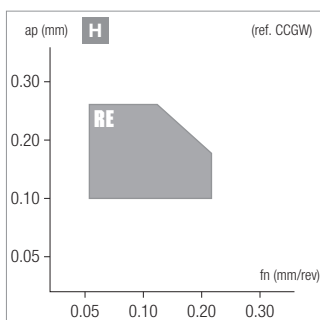
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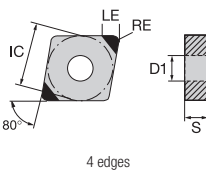
6.35

2.38

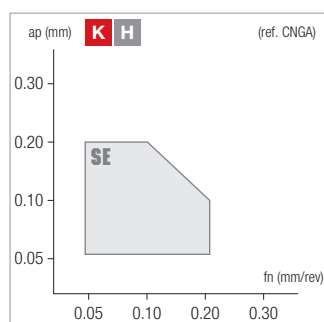
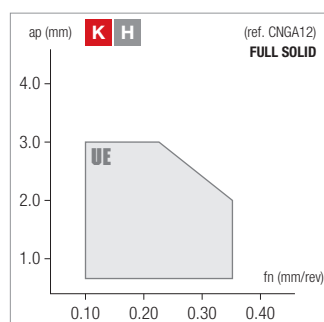
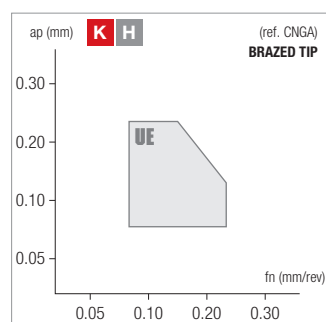
2.8

2.8



CN		BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition						BH PVD	BH	BH PVD	BH	BH	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD															
ISO - with hole								NBH450C	NBH450U	NBH500C	NBH600U	NBH900U	NBL050C	NBL150C	NBL200C	NBL250C	NBL300C	NBL350C															
• The most popular insert shape due to high versatility • 80° corner can be used for both turning and facing operations • Strong cutting edge with secure seating in the insert pocket creates good surface finishing • Vertical brazing type and solid type CBN show better performance in interrupted machining • The use of chip breaker on CBN brazed tips effectively improves chip flow control • Advanced wiper edge design improves surface quality in high efficiency machining		Stable machining, light cut ● 1 st choice ○ suitable						●	●	○		○	●	●	●	○	○																
		General machining, medium cut ● 1 st choice ○ suitable						●	●	●	○	●		○	●	●	●	○															
		Unstable machining, heavy cut ⚙ 1 st choice ○ suitable						⚙	⚙	⚙	⚙	⚙					⚙	⚙															
		Dimensions						ISO													Vc(m/min) - suggested cutting speed range (bold: 1 st choice)												
								P																									
M																																	
K													340 1000	340 1000	300 1500	300 1200	300 1100																
N																																	
S																																	
H																	40 160	120 280	90 220	90 200	90 180	60 180	60 150										
Designation		RE	IC	S	D1	LE	Stock																										
UNIVERSAL	 vertical brazing	CNGA120404S-UE-4V	0.4	12.7	4.76	5.16	2.6							▽	●	●		●	●	○													
		CNGA120408S-UE-4V	0.8	12.7	4.76	5.16	2.5			●					●	●		●	●	○													
		CNGA120412S-UE-4V	1.2	12.7	4.76	5.16	2.5			●		▽	●	●		●	●	○															
UNIVERSAL	 carbide backed	CNGA120408S-UE-4C	0.8	12.7	4.76	5.16	2.5	●																									
		CNGA120412S-UE-4C	1.2	12.7	4.76	5.16	2.5	●																									
UNIVERSAL	 full solid high depth of cut	CNGA090308S-UE	0.8	9.525	3.18	3.81	8.9			○																							
		CNGA120408S-UE	0.8	12.7	4.76	5.16	12.1			●	●					●	●																
		CNGA120412S-UE	1.2	12.7	4.76	5.16	11.7			●	●					●	●																
SHARP	 vertical brazing	CNGA120404S-SE-4V	0.4	12.7	4.76	5.16	2.6							○	○																		
		CNGA120408S-SE-4V	0.8	12.7	4.76	5.16	2.5								●	●																	
		CNGA120412S-SE-4V	1.2	12.7	4.76	5.16	2.5								○	○																	
SHARP	 vertical brazing without honing	CNGA120408T-SE-4V	0.8	12.7	4.76	5.16	2.5			●																							

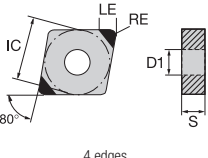
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



CN

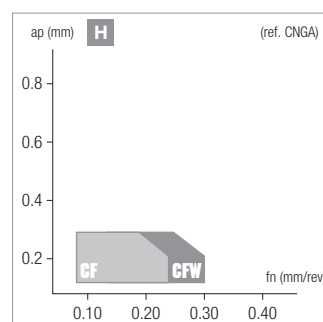
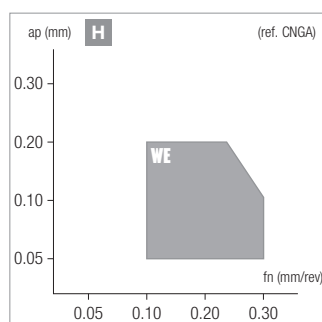
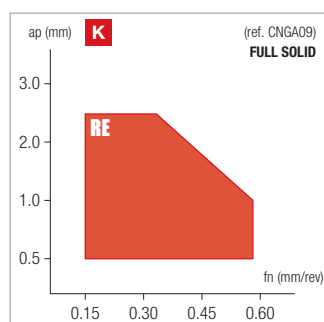
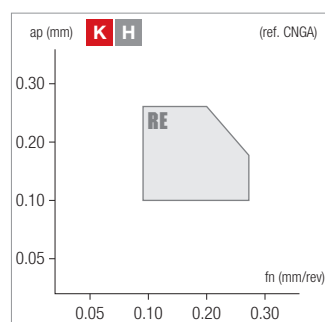
ISO - with hole

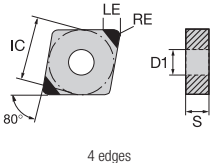
- The most popular insert shape due to high versatility
- 80° corner can be used for both turning and facing operations
- Strong cutting edge with secure seating in the insert pocket creates good surface finishing
- Vertical brazing type and solid type CBN show better performance in interrupted machining
- The use of chip breaker on CBN brazed tips effectively improves chip flow control
- Advanced wiper edge design improves surface quality in high efficiency machining

BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition		BH PVD	BH	BH PVD	BH	BH	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD
		NBH450C	NBH450U	NBH500C	NBH600U	NBH900U	NBL050C	NBL150C	NBL200C	NBL250C	NBL300C	NBL350C	
Stable machining, light cut	● 1 st choice ○ suitable	●	●	○	○	○	●	●	●	○	○	○	
General machining, medium cut	● 1 st choice ○ suitable	●	●	●	○	●	○	○	●	●	●	○	
Unstable machining, heavy cut	● 1 st choice ○ suitable	○	○	○	○	○	○	○	○	○	○	○	
Dimensions		ISO											
		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)											
		P											
		M											
		K	340 1000	340 1000	300 1500	300 1200	300 1100						
		N											
		S											
		H					40 160	120 280	90 220	90 200	90 180	60 180	60 150

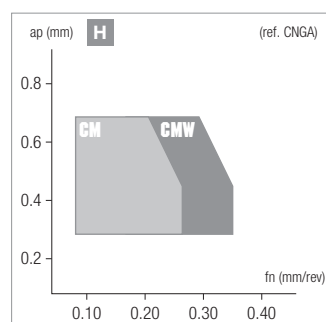
Designation		RE	IC	S	D1	LE	Stock											
SHARP	SE K																	
	CNGA120408T-SE-4C	0.8	12.7	4.76	5.16	2.5												
REINFORCED	RE K H																	
	CNGA120404S-RE-4V	0.4	12.7	4.76	5.16	2.6												
	CNGA120408S-RE-4V	0.8	12.7	4.76	5.16	2.5												
REINFORCED	RE K																	
	CNGA120412S-RE-4V	1.2	12.7	4.76	5.16	2.5												
	CNGA090308S-RE	0.8	9.525	3.18	3.81	8.9												
WIPER	WE H																	
	CNGA120404S-WE-4V	0.4	12.7	4.76	5.16	2.6												
	CNGA120408S-WE-4V	0.8	12.7	4.76	5.16	2.5												
CHIPBREAKER	CF H																	
	CNGA120404S-CF-4V	0.4	12.7	4.76	5.16	2.6												
	CNGA120408S-CF-4V	0.8	12.7	4.76	5.16	2.5												
CHIPBREAKER	CF H																	
	CNGA120412S-CF-4V	1.2	12.7	4.76	5.16	2.5												

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



CN		BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition														
ISO - with hole																
• The most popular insert shape due to high versatility • 80° corner can be used for both turning and facing operations • Strong cutting edge with secure seating in the insert pocket creates good surface finishing • Vertical brazing type and solid type CBN show better performance in interrupted machining • The use of chip breaker on CBN brazed tips effectively improves chip flow control • Advanced wiper edge design improves surface quality in high efficiency machining		Stable machining, light cut	● 1 st choice	○ suitable	●	●	○		○	●	●	●	○	○		
		General machining, medium cut	● 1 st choice	○ suitable	●	●	●	○	●		○	●	●	●	○	
		Unstable machining, heavy cut	⚙ 1 st choice	⚙ suitable	⚙	⚙	⚙	⚙	⚙					⚙	⚙	
		Dimensions		ISO												
				Vc(m/min) - suggested cutting speed range (bold: 1 st choice)												
		P														
		M														
		K	340 1000	340 1000	300 1500	300 1200	300 1100									
		N														
		S														
		H					40 160	120 280	90 220	90 200	90 180	60 180	60 150			
Designation		RE	IC	S	D1	LE	Stock									
CHIPBREAKER	CFW H															
	 vertical brazing finishing with WIPER	CNGA120408S-CFW-4V	0.8	12.7	4.76	5.16	2.5								●	
CHIPBREAKER	CM H															
	 vertical brazing medium	CNGA120408S-CM-4V	0.8	12.7	4.76	5.16	2.5								●	
CHIPBREAKER	CMW H															
	 vertical brazing medium with WIPER	CNGA120408S-CMW-4V	0.8	12.7	4.76	5.16	2.5								●	
CHIPBREAKER																
															●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



CN**ISO - without hole**

- The most popular insert shape due to high versatility
- 80° corner can be used for both turning and facing operations
- Strong cutting edge with secure seating in the insert pocket creates good surface finishing
- Solid style CBN has stronger performance in interrupted applications

 BH: High volume CBN
 PVD: Physical vapour deposition

 BH
 PVD
 BH

 MBH500C
 MBH900U
 MBH950U

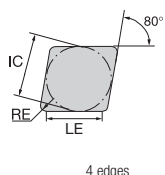
 Stable machining,
 light cut

 1st choice ○ suitable

 General machining,
 medium cut

 1st choice ○ suitable

 Unstable machining,
 heavy cut

 1st choice ○ suitable
Dimensions**ISO****Vc(m/min) - suggested cutting speed range (bold: 1st choice)****P****M****K****N****S****H**

300 300 300

1500 1100 800

40 40

160 160

Designation**RE****IC****S****D1****LE****Stock****UNIVERSAL****UE K H**
 full solid
 high depth of cut

CNGN090308S-UE

0.8

9.525

3.18

-

8.9

○

○

CNGN090312S-UE

1.2

9.525

3.18

-

8.5

●

▽

CNGN090316S-UE

1.6

9.525

3.18

-

8.1

○

○

CNGN120408S-UE

0.8

12.7

4.76

-

12.1

●

○

CNGN120412S-UE

1.2

12.7

4.76

-

11.7

○

▽

CNGN120416S-UE

1.6

12.7

4.76

-

11.3

○

○

UNIVERSAL**UE K**
 full solid
 dimpled type

CNGX120712S-UE

1.2

12.7

4.76

-

11.7

●

○

CNGX120716S-UE

1.6

12.7

4.76

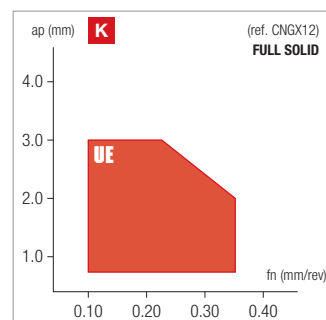
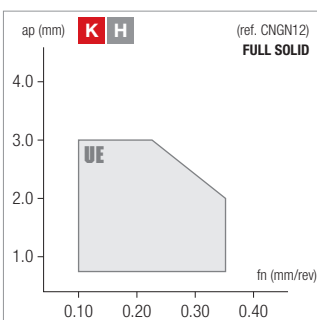
-

11.3

●

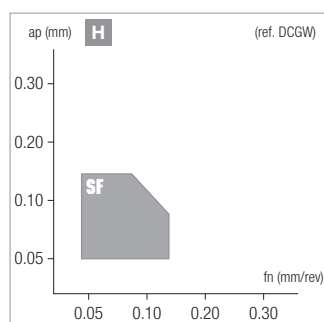
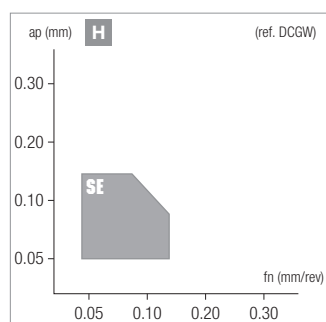
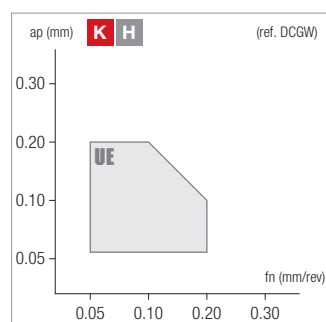
○

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



DC		BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition		BH PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	
ISO - with hole				NB450C	NB450C	NB450CX	NB450C	NB450C	NB450C	NB450C	
- Generally the 1st choice for profile/copy turning applications - Able to "In-Copy" (plunge turn in small diameter) with 30° angle 7° clearance angle, less risk of chip-jamming in boring - Somewhat weaker edge strength than a triangle insert - Solid brazing generally shows better stability and reliability comparing to conventional carbide backed brazing		Stable machining, light cut ● 1 st choice ○ suitable		●	●	●	●	○	○		
		General machining, medium cut ● 1 st choice ○ suitable		●			○	●	●	○	
		Unstable machining, heavy cut ⚙ 1 st choice ⚙ suitable		⚙				⚙	⚙	⚙	
		Dimensions	ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)							
			P								
			M								
			K	340 1000							
			N								
			S								
			H	120 280	120 280	90 220	90 180	60 180	60 150		
Designation		RE	IC	S	D1	LE	Stock				
UNIVERSAL	 solid brazing	DCGW070202S-UE-2S	0.2	6.35	2.38	2.8	2.5	○		●	
		DCGW070204S-UE-2S	0.4	6.35	2.38	2.8	2.4	●		●	○
		DCGW070208S-UE-2S	0.8	6.35	2.38	2.8	2		○	○	○
		DCGW11T302S-UE-2S	0.2	9.525	3.97	4.4	2.5	○		●	●
		DCGW11T304S-UE-2S	0.4	9.525	3.97	4.4	2.4	●		●	●
		DCGW11T308S-UE-2S	0.8	9.525	3.97	4.4	2			●	●
UNIVERSAL	 carbide backed	DCGW11T304S-UE-2C	0.4	9.525	3.97	4.4	2.4	●			
		DCGW11T308S-UE-2C	0.8	9.525	3.97	4.4	2	○			
SHARP	 solid brazing	DCGW070202S-SE-2S	0.2	6.35	2.38	2.8	2.5	●		●	
		DCGW070204S-SE-2S	0.4	6.35	2.38	2.8	2.4	▲		●	
		DCGW070208S-SE-2S	0.8	6.35	2.38	2.8	2		○		
		DCGW11T302S-SE-2S	0.2	9.525	3.97	4.4	2.5	●		●	
		DCGW11T304S-SE-2S	0.4	9.525	3.97	4.4	2.4	●		●	
		DCGW11T308S-SE-2S	0.8	9.525	3.97	4.4	2			●	●
SHARP	 solid brazing without honing	DCGW070202T-SF-2S	0.2	6.35	2.38	2.8	2.5		●		
		DCGW070204T-SF-2S	0.4	6.35	2.38	2.8	2.4		●		
		DCGW11T302T-SF-2S	0.2	9.525	3.97	4.4	2.5		●		
		DCGW11T304T-SF-2S	0.4	9.525	3.97	4.4	2.4		●		
		DCGW11T308T-SF-2S	0.8	9.525	3.97	4.4	2		●		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn in small diameter) with 30° angle
- 7° clearance angle, less risk of chip-jamming in boring
- Somewhat weaker edge strength than a triangle insert
- Solid brazing generally shows better stability and reliability comparing to conventional carbide backed brazing

BH: High volume CBN
BL: Low volume CBN
PVD: Physical vapour deposition

BH	BL	BL	BL	BL	BL	BL
PVD	PVD	PVD	PVD	PVD	PVD	PVD

NBH450C	NBL050C	NBL050CX	NBL150C	NBL250C	NBL300C	NBL350C

Stable machining, light cut ☒ 1st choice ☐ suitable

General machining, medium cut ● 1st choice ○ suitable

Unstable machining,
heavy cut  1st choice  suitable

Dimensions

ISO	

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P

M

A

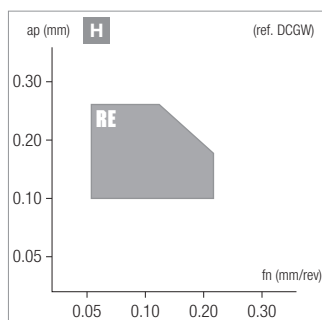
20	120	90	90	60	60
80	280	220	180	180	150

Diagram illustrating the geometry of a chamfered edge. The chamfer is defined by a 55° angle. Key dimensions include IC (Internal Chamfer), LE (Lead Edge), RE (Radius Edge), D1 (Diameter), and S (Thickness). The chamfer is shown on two edges.

2 edges

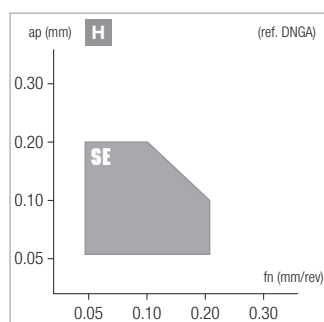
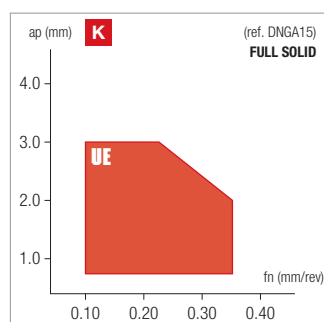
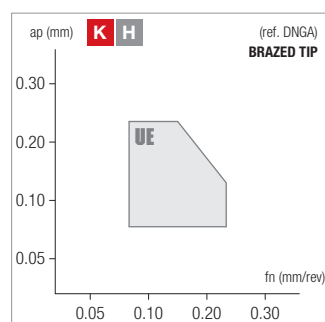
Designation		RE	IC	S	D1	LE									Stock
REINFORCED	 solid brazing interrupted cut	DCGW070204S-RE-2S	0.4	6.35	2.38	2.8	2.4							○	
		DCGW070208S-RE-2S	0.8	6.35	2.38	2.8	2							○	
		DCGW11T304S-RE-2S	0.4	9.525	3.97	4.4	2.4							●	
		DCGW11T308S-RE-2S	0.8	9.525	3.97	4.4	2							●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



DN		BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition						BH	BH	BH	BH	BL	BL	BL	BL	BL	BL		
ISO - with hole								NBH450C	NBH500C	NBH600U	NBH900U	NBL050C	NBL150C	NBL250C	NBL300C	NBL350C			
• Generally the 1st choice for profile/copy turning applications • Able to “In-Copy” (plunge turn into a smaller diameter) at an angle of 30° • Somewhat weaker edge strength than a triangle insert • Vertical brazing and solid type has impressive performance on interrupted applications • Solid brazing generally shows better stability and reliability comparing to conventional carbide backed brazing		Stable machining, light cut ● 1 st choice ○ suitable						●	○		○	●	●	○	○				
		General machining, medium cut ● 1 st choice ○ suitable						●	●	○	●		○	●	●	○			
		Unstable machining, heavy cut ⚙ 1 st choice ⚙ suitable						⚙	⚙	⚙	⚙				⚙	⚙			
		Dimensions ISO						Vc(m/min) - suggested cutting speed range (bold: 1 st choice)											
4 edges		P																	
		M																	
		K		340 1000	300 1500	300 1200	300 1100												
		N																	
		S																	
H								40 160	120 280	90 220	90 180	60 180	60 150						
Designation		RE	IC	S	D1	LE	Stock												
UNIVERSAL	 vertical brazing	UE K H	DNGA150404S-UE-4V	0.4	12.7	4.76	5.16	2.7						○	●				
			DNGA150408S-UE-4V	0.8	12.7	4.76	5.16	2.3						○	○				
			DNGA150604S-UE-4V	0.4	12.7	6.35	5.16	2.7				●							
			DNGA150608S-UE-4V	0.8	12.7	6.35	5.16	2.3		●		○							
			DNGA150612S-UE-4V	1.2	12.7	6.35	5.16	2				●							
UNIVERSAL	 solid brazing	UE H	DNGA150604S-UE-4S	0.4	12.7	6.35	5.16	2.4					○	●	●	●	○		
			DNGA150608S-UE-4S	0.8	12.7	6.35	5.16	2					○	●	●	●	○		
			DNGA150612S-UE-4S	1.2	12.7	6.35	5.16	2.1					○	○	○	○	○		
UNIVERSAL	 carbide backed	UE K	DNGA150608S-UE-4C	0.8	12.7	6.35	5.16	2	○										
UNIVERSAL	 full solid high depth of cut	UE K	DNGA150608S-UE	0.8	12.7	6.35	5.16	14.7		●	○								
			DNGA150612S-UE	0.8	12.7	6.35	5.16	14.3		●	○								
SHARP	 vertical brazing	SE H	DNGA150404S-SE-4V	0.4	12.7	4.76	5.16	2.7					○	○					
			DNGA150408S-SE-4V	0.8	12.7	4.76	5.16	2.3					○	○					

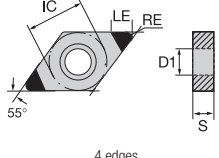
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion

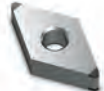


DN

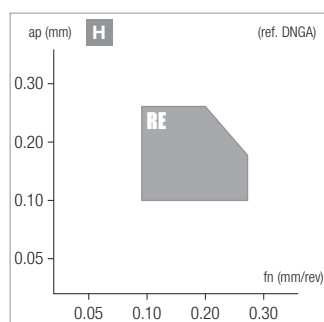
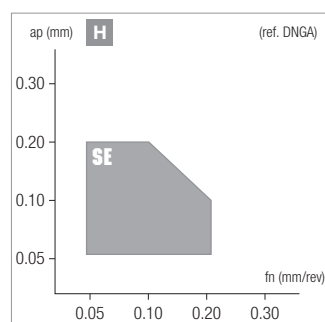
ISO - with hole

- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn into a smaller diameter) at an angle of 30°
- Somewhat weaker edge strength than a triangle insert
- Vertical brazing and solid type has impressive performance on interrupted applications
- Solid brazing generally shows better stability and reliability comparing to conventional carbide backed brazing

BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition		BH PVD	BH PVD	BH	BH	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	
		NBH450C	NBH500C	NBH600U	NBH900U	NBL050C	NBL150C	NBL250C	NBL300C	NBL350C	
Stable machining, light cut	● 1 st choice ○ suitable	●	○	○	○	●	●	○	○	○	
General machining, medium cut	● 1 st choice ○ suitable	●	●	○	●	○	○	●	●	○	
Unstable machining, heavy cut	⚡ 1 st choice ⚡ suitable	⚡	⚡	⚡	⚡				⚡	⚡	
Dimensions		ISO									
		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)									
		P									
		M									
		K	340 1000	300 1500	300 1200	300 1100					
		N									
		S									
		H				40 160	120 280	90 220	90 180	60 180	60 150

Designation		RE	IC	S	D1	LE	Stock									
SHARP	SE H															
																
	solid brazing															
REINFORCED	RE H															
																
	solid brazing interrupted cut															
	DNGA150604S-SE-4S	0.4	12.7	6.35	5.16	2.4					○	○				
	DNGA150608S-SE-4S	0.8	12.7	6.35	5.16	2					○	○				
	DNGA150604S-RE-4S	0.4	12.7	6.35	5.16	2.4								○		
	DNGA150608S-RE-4S	0.8	12.7	6.35	5.16	2								○		
	DNGA150612S-RE-4S	1.2	12.7	6.35	5.16	2.1								○		

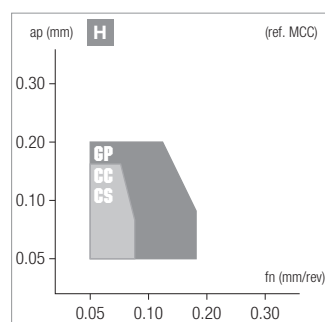
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



MCC	BL: Low volume CBN BH: High volume CBN PVD: Physical vapour deposition							
					BL	BL PVD	BL	BH
ISO - with hole					MB200	MB250	MB350	MB450U
1st solution for micro-boring - Precision brazed and ground insert tailored for micro boring operation, completing the MCC family with advanced materials - Micro boring bar with coolant both in steel (with Vortex technology) and in carbide	Stable machining, light cut ● 1 st choice ○ suitable				●	○		●
	General machining, medium cut ● 1 st choice ○ suitable				○	●	○	●
	Unstable machining, heavy cut ▲ 1 st choice ▲ suitable						▲	▲
Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)				
		P						
		M						
		K				400	1200	
		N						
		S						
		H	100 220	80 200	60 160			

Designation		RE	IC	S	D1	LE	Stock			
UNIVERSAL	GP K H carbide backed	MCC.R02T-GP-1C	0.2	3.5	1.4	1.9	1.5		▽	▽
		MCC.R04T-GP-1C	0.4	3.5	1.4	1.9	1.5			▽
SHARP	CC H carbide backed	MCC.R02T-CC-1C	0.2	3.5	1.4	1.9	1.5	▽		
SHARP	CS H carbide backed	MCC.R02S-CS-1C	0.2	3.5	1.4	1.9	1.5	▽		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



MCN

MicroNega - with hole

- MicroNega system it serves as an alternative to positive conventional solutions
- Excellent economy for external small part machining or small boring application
- Special holders tailored with big clearance angle, adapt itself for boring application, effectively reduces the risk of chip-jamming
- Vertical brazed type CBN provides the Micro-Nega family with advanced opportunity

BL: Low volume CBN
BH: High volume CBN
PVD: Physical vapour deposition

BL PVD BL PVD BL PVD BL PVD BH PVD

MBL150C MBL250C MBS150 MBS250 MBS450

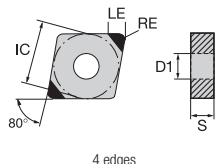
Stable machining, light cut ● 1st choice ○ suitable

General machining, medium cut ● 1st choice ○ suitable

Unstable machining, heavy cut ⚙ 1st choice ⚙ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P

M

K

N

S

H

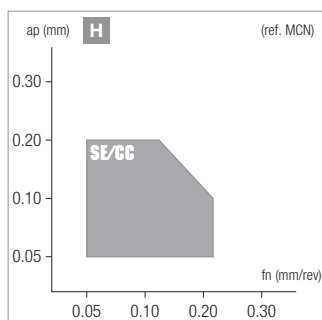
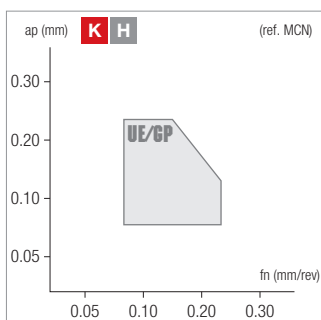
90
22090
18090
22080
200400
1200

Designation

Stock

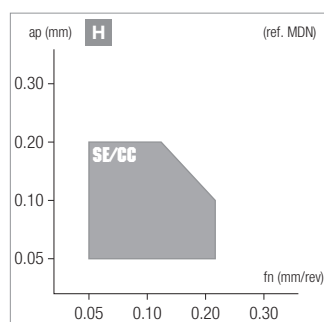
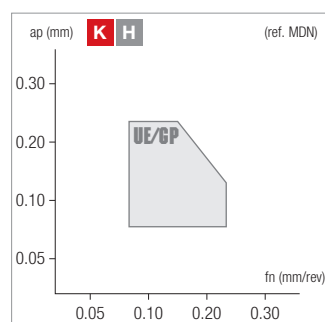
DESIGNATION	RE	IC	S	D1	LE	STOCK
UNIVERSAL UE H						
 vertical brazing						
MCN.R02S-UE-4V	0.2	7.5	3.18	3.6	2.2	▲
MCN.R04S-UE-4V	0.4	7.5	3.18	3.6	2.2	▲
MCN.R08S-UE-4V	0.8	7.5	3.18	3.6	2.1	▲
UNIVERSAL GP K H						
 vertical brazing						
MCN.R02S-GP-4V	0.2	7.5	3.18	3.6	2.2	● ▽
MCN.R04S-GP-4V	0.4	7.5	3.18	3.6	2.2	● ▽
MCN.R08S-GP-4V	0.8	7.5	3.18	3.6	2.1	● ▽
SHARP SE H						
 vertical brazing						
MCN.R02S-SE-4V	0.2	7.5	3.18	3.6	2.2	○
MCN.R04S-SE-4V	0.4	7.5	3.18	3.6	2.2	▲
MCN.R08S-SE-4V	0.8	7.5	3.18	3.6	2.1	▲
SHARP CC H						
 vertical brazing						
MCN.R04S-CC-4V	0.4	7.5	3.18	3.6	2.2	●
MCN.R08S-CC-4V	0.8	7.5	3.18	3.6	2.1	●

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



MDN		BL: Low volume CBN BH: High volume CBN PVD: Physical vapour deposition										
MicroNega - with hole								BL PVD	BL PVD	BL PVD	BL PVD	BH PVD
								MBL150C	MBL250C	MBS150	MBS250	MBS450
- MicroNega system it serves as an alternative to positive conventional solutions - Excellent economy for external small part machining or small boring application - Special holders tailored with big clearance angle, adapt itself for boring application, effectively reduces the risk of chip-jamming - Vertical brazed type CBN provides the Micro-Nega family with advanced opportunity		Stable machining, light cut	● 1 st choice	○ suitable	●	○	●	○	●	○	●	
		General machining, medium cut	● 1 st choice	○ suitable	○	●	○	●	○	●	○	
		Unstable machining, heavy cut	⚡ 1 st choice	⚡ suitable								
Dimensions		ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)										
		P										
		M										
		K								400	1200	
		N										
		S										
		H	90	90	90	80						
			220	180	220	200						
Designation		RE	IC	S	D1	LE	Stock					
UNIVERSAL	UE H											
	MDN.R02S-UE-4V	0.2	7	3.18	3.6	2.4		▲				
	MDN.R04S-UE-4V	0.4	7	3.18	3.6	2.2		▲				
UNIVERSAL	GP K H											
	MDN.R02S-GP-4V	0.2	7	3.18	3.6	2.4				●	▽	
	MDN.R04S-GP-4V	0.4	7	3.18	3.6	2.2				●	▽	
SHARP	SE H											
	MDN.R02S-SE-4V	0.2	7	3.18	3.6	2.4		▲				
	MDN.R04S-SE-4V	0.4	7	3.18	3.6	2.2		▲				
SHARP	CC H											
	MDN.R02S-CC-4V	0.2	7	3.18	3.6	2.4				●		
	MDN.R04S-CC-4V	0.4	7	3.18	3.6	2.2				●		
SHARP	MDN.R08S-CC-4V	0.8	7	3.18	3.6	1.8				●		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



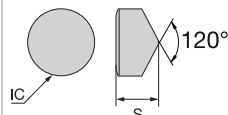
RC**ISO - without hole**

- Very strong and universal use insert shape
- With a high volume tough grade, able to cope with the challenges in heavy load applications
- Stable sitting on the holder pocket

BH: High volume CBN

BH

MBH6000

Stable machining, light cut ● 1st choice ○ suitableGeneral machining, medium cut ● 1st choice ○ suitableUnstable machining, heavy cut ▲ 1st choice ▲ suitable**Dimensions****ISO****Vc(m/min) - suggested cutting speed range (bold: 1st choice)**
P
M
K 300
 1200
N
S
H
Designation**RE****IC****S****D1****LE****Stock**

UNIVERSAL

UE **K**

RCGX090700S-UE

4.76

9.525

7.94

-

-

●

full solid

RCGX120700S-UE

6.35

12.7

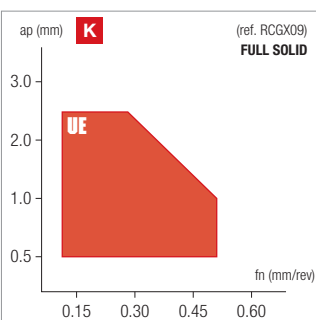
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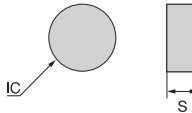
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-

●

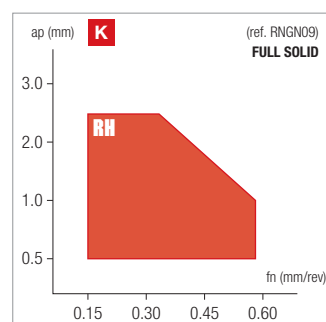
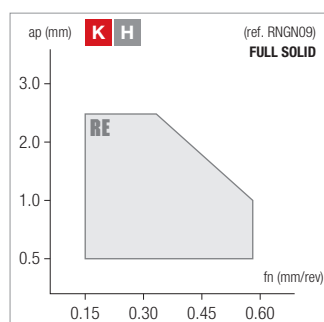
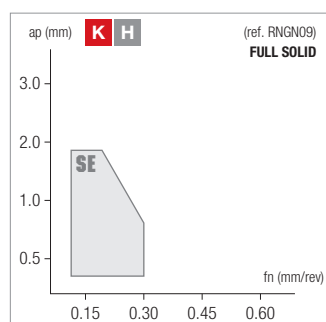
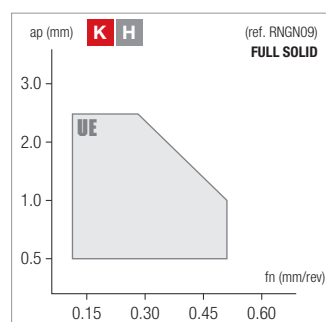
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



RN	BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition											
	BH PVD	BH	BH	BH	BL PVD	BL PVD						
ISO - without hole	MBH500C	MBH500U	MBH900U	MBH950U	MBL200C	MBL250C						
- Very strong and universal use insert shape - Could be used both in turning and profile milling - With a nice range of grade choices, able to cope with challenges in diverse applications	Stable machining, light cut ● 1 st choice ○ suitable											
	General machining, medium cut ● 1 st choice ○ suitable											
	Unstable machining, heavy cut ▲ 1 st choice ○ suitable											
Dimensions	ISO						Vc(m/min) - suggested cutting speed range (bold: 1 st choice)					
	P											
	M											
	K	300 1500	300 1500	300 1100	300 800							
	N											
	S											
	H			40 160	40 160	90 200	90 180					

Designation		RE	IC	S	D1	LE	Stock					
UNIVERSAL  full solid	UE K H	RNGN060300S-UE	3.18	6.35	3.18	-	●					
		RNGN090300S-UE	4.76	9.525	3.18	-	●	●	●	●	●	
		RNGN120300S-UE	6.35	12.7	3.18	-		○	●			
		RNGN120400S-UE	6.35	12.7	4.76	-	●	●	●	●	●	
SHARP  full solid without honing	SE K H	RNGN090300T-SE	4.76	9.525	3.18	-	●			●		
REINFORCED  full solid interrupted cut	RE K H	RNGN090300S-RE	4.76	9.525	3.18	-	●	●				
		RNGN120400S-RE	6.35	12.7	4.76	-		●	○			
REINFORCED  full solid	RH K	RNGN090300S-RH	4.76	9.525	3.18	-		●				

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



SN

ISO - with hole

- Very strong 90° corner with excellent economy (8 edges on double-sided inserts), especially with vertical brazing or solid type CBNs
- Mostly used for rough facing operations
- Unable to turn or face up to a shoulder (must be used in a tool holder with min. 5° lead angle)
- High radial forces push against the workpiece when used for turning
- Should always be used in a stable set-up

BH: High volume CBN
BL: Low volume CBN
PVD: Physical vapour deposition

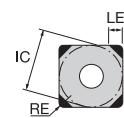
BH BH BH BL BL
PVD PVD PVD PVD PVD

MBH500C MBH600U MBH900U MBL150C MBL250C

Stable machining, light cut ● 1st choice ○ suitable
General machining, medium cut ● 1st choice ○ suitable
Unstable machining, heavy cut ⚙ 1st choice ⚙ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

8 edges

P
M
K
N
S
H

300 300 300
1500 1200 1100

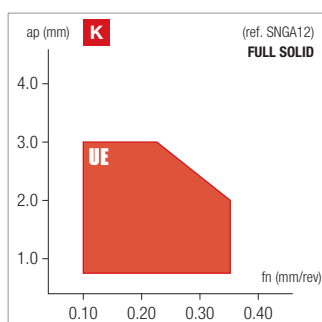
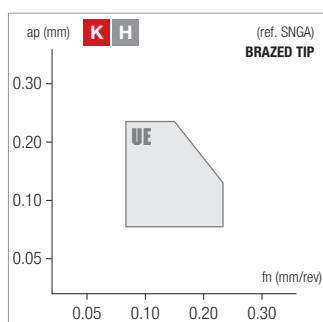
40 90 90
160 220 180

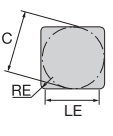
Designation

Stock

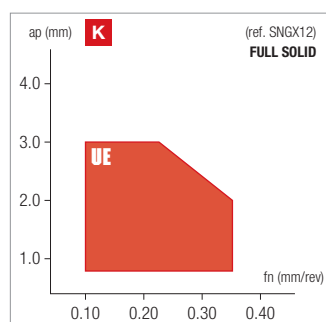
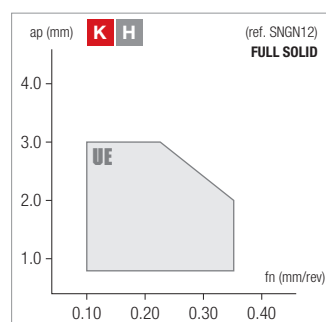
UNIVERSAL	UE K H		RE	IC	S	D1	LE							
	vertical brazing	SNGA120404S-UE-8V	0.4	12.7	4.76	5.16	2.2			●				
		SNGA120408S-UE-8V	0.8	12.7	4.76	5.16	2.2			●	○	○		
		SNGA120412S-UE-8V	1.2	12.7	4.76	5.16	2.2			●				
	full solid high depth of cut	SNGA120408S-UE	0.8	12.7	4.76	5.16	11.9	○	○					
		SNGA120412S-UE	1.2	12.7	4.76	5.16	11.5	●	○					

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



SN		BH: High volume CBN PVD: Physical vapour deposition							
ISO - without hole									
- Very strong 90° corner with excellent economy (8 edges on double-sided inserts), especially with solid type CBNs - Mostly used for rough facing operations - Unable to turn or face up to a shoulder (must be used in a tool holder with min. 5° lead angle) - High radial forces push against the workpiece when used for turning - Should always be used in a stable set-up		Stable machining, light cut	● 1 st choice ○ suitable	○		○			
		General machining, medium cut	● 1 st choice ○ suitable	●	○	●	○		
		Unstable machining, heavy cut	● 1 st choice ○ suitable	●	○	●	○		
		Dimensions	ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)					
 8 edges			P						
			M						
			K	300 1500	300 1200	300 1100	300 800		
			N						
			S						
			H			40 160	40 160		
Designation		RE	IC	S	D1	LE	Stock		
UNIVERSAL	UE K H	SNGN090308S-UE	0.8	9.525	3.18	-	8.7		○
	 full solid high depth of cut	SNGN090312S-UE	1.2	9.525	3.18	-	8.3	●	▽
		SNGN090316S-UE	1.6	9.525	3.18	-	7.9		○
		SNGN090412S-UE	1.2	9.525	4.76	-	8.3		▽
		SNGN120408S-UE	0.8	12.7	4.76	-	11.9		●
		SNGN120412S-UE	1.2	12.7	4.76	-	11.5		● ○
		SNGN120416S-UE	1.6	12.7	4.76	-	11.1		○
UNIVERSAL	UE K	SNGX120412S-UE	1.2	12.7	4.76	-	11.5	●	
	 full solid dimpled type	SNGX120712S-UE	1.2	12.7	7.94	-	11.5	●	
		SNGX120716S-UE	1.6	12.7	7.94	-	11.1	●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



TC

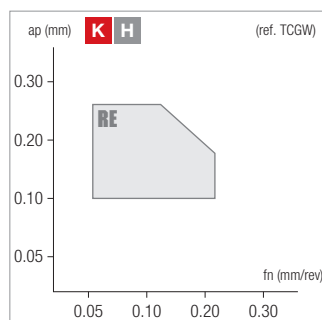
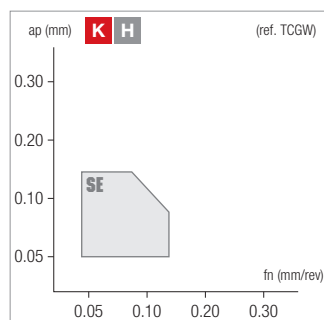
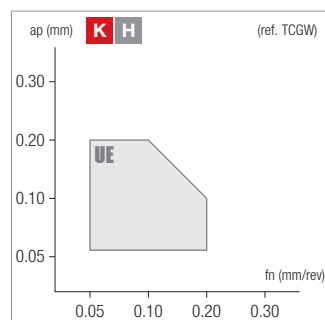
ISO - with hole

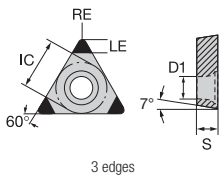
- Very versatile insert shape
- Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket
- Extra clearance between the insert and the workpiece bore, greatly reduce the risk of chip jamming
- Boring bars made of steel (Vortex technology) and carbide are available
- Edge is measurably weaker than 80° diamond shape inserts

		BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition	BH PVD	BH	BL PVD	BL PVD	BL PVD	BL PVD	
			MBH450C	MBH450U	MBL050C	MBL150C	MBL250C	MBL350C	
Stable machining, light cut ● 1 st choice ○ suitable General machining, medium cut ● 1 st choice ○ suitable Unstable machining, heavy cut ⚙ 1 st choice ⚙ suitable	Dimensions	ISO							
		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)							
		P							
		M							
		K	340 1000	340 1000					
		N							
		S							
		H			120 280	90 220	90 180	60 150	

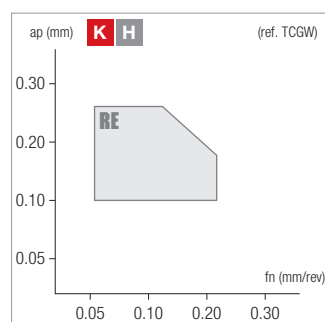
		Designation	RE	IC	S	D1	LE	Stock							
UNIVERSAL	 solid brazing	TCGW110204S-UE-3S	0.4	6.35	2.38	2.8	2.5			○	●	●			
		TCGW110208S-UE-3S	0.8	6.35	2.38	2.8	2.2				●	●			
		TCGW16T304S-UE-3S	0.4	9.525	3.97	4.4	2.5			○	○	●			
		TCGW16T308S-UE-3S	0.8	9.525	3.97	4.4	2.2				○	●			
UNIVERSAL	 carbide backed	TCGW090204S-UE-3C	0.4	5.56	2.38	2.5	2.5	○							
		TCGW110204S-UE-3C	0.4	6.35	2.38	2.8	2.5	●							
		TCGW110208S-UE-3C	0.8	6.35	2.38	2.8	2.2	●							
		TCGW16T304S-UE-3C	0.4	9.525	3.97	4.4	2.5	●							
		TCGW16T308S-UE-3C	0.8	9.525	3.97	4.4	2.2	●							
SHARP	 solid brazing	TCGW110204S-SE-3S	0.4	6.35	2.38	2.8	2.5			○	●				
		TCGW110208S-SE-3S	0.8	6.35	2.38	2.8	2.2				○				
		TCGW16T304S-SE-3S	0.4	9.525	3.97	4.4	2.5			○	○				
		TCGW16T308S-SE-3S	0.8	9.525	3.97	4.4	2.2				○				
SHARP	 carbide backed without honing	TCGW110204T-SE-3C	0.4	6.35	2.38	2.8	2.5	○							
REINFORCED	 solid brazing interrupted cut	TCGW110204S-RE-3S	0.4	6.35	2.38	2.8	2.5						○		
		TCGW110208S-RE-3S	0.8	6.35	2.38	2.8	2.2						○		
		TCGW16T304S-RE-3S	0.4	9.525	3.97	4.4	2.5						○		
		TCGW16T308S-RE-3S	0.8	9.525	3.97	4.4	2.2						○		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



TC		BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition											
ISO - with hole													
- Very versatile insert shape - Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket - Extra clearance between the insert and the workpiece bore, greatly reduce the risk of chip jamming - Boring bars made of steel (Vortex technology) and carbide are available - Edge is measurably weaker than 80° diamond shape inserts		Stable machining, light cut	● 1 st choice ○ suitable	●	●	●	●	○					
		General machining, medium cut	● 1 st choice ○ suitable	●	●			○	●	○			
		Unstable machining, heavy cut	● 1 st choice ○ suitable	●	●					●			
		Dimensions	ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)									
			P										
			M										
			K	340 1000	340 1000								
			N										
			S										
			H			120 280	90 220	90 180	60 150				
Designation		RE	IC	S	D1	LE	Stock						
RE K  carbide backed interrupted cut	TCGW110208S-RE-3C	0.8	6.35	2.38	2.8	2.2	●						
	TCGW16T308S-RE-3C	0.8	9.525	3.97	4.4	2.2	○						

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



- Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading
- Good economy with up to 6 cutting edges
- Be sure not to use “too large” a triangle insert. A T11 insert can manage the same depth of cut as C09 in most situations with nearly the same insert strength, but cost much lower than T16

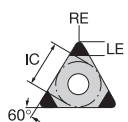
BH PVD	BH PVD	BH	BH	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD
NBH450C	NBH500C	NBH600U	NBH900U	NBL050C	NBL150C	NBL250C	NBL300C	NBL350C

Stable machining, light cut	 1 st choice	 suitable
General machining, medium cut	 1 st choice	 suitable
Unstable machining, heavy cut	 1 st choice	 suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)



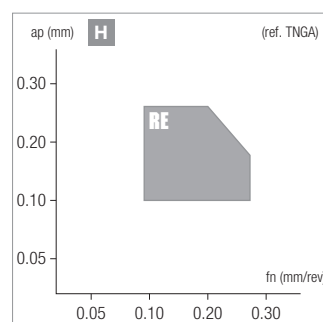
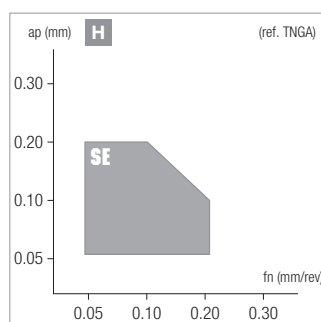
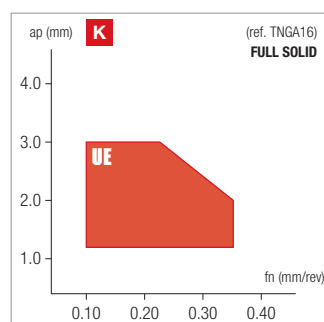
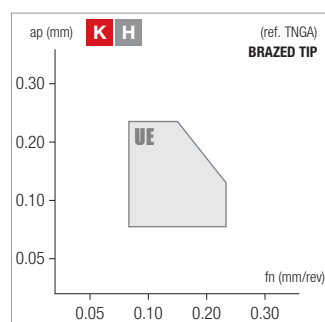
6 edges

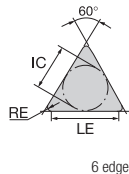
P
M
K
N
S
H

340	300	300	300						
1000	1500	1200	1100						
			40	120	90	90	60	60	
			160	280	220	180	180	150	

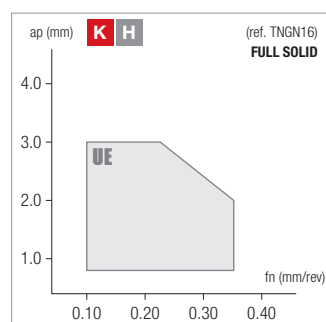
[illegible]

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



TN	BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition		BH	BL				
			NBH900U	NBL200C				
ISO - without hole								
• Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading • Good economy with up to 6 cutting edges • Be sure not to use "too large" a triangle insert. A T11 insert can manage the same depth of cut as C09 in most situations with nearly the same insert strength, but cost much lower than T16	Stable machining, light cut		● 1 st choice	○ suitable	○	●		
	General machining, medium cut		● 1 st choice	○ suitable	●	●		
	Unstable machining, heavy cut		⚡ 1 st choice	⚡ suitable	⚡			
	Dimensions		ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)				
			P					
M								
K			300 1100					
N								
S								
H			40 160	90 200				
Designation		RE	IC	S	D1	LE	Stock	
UNIVERSAL	UE K H							
	 full solid high depth of cut	TNGN160408S-UE	0.8	9.525	4.76	-	15.7	● ●

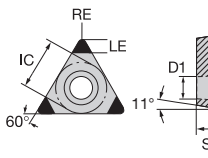
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

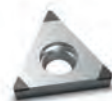


TP

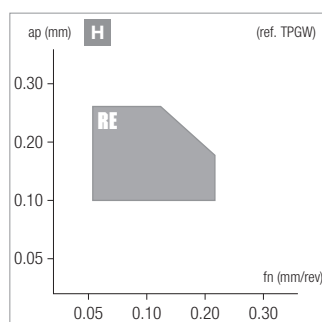
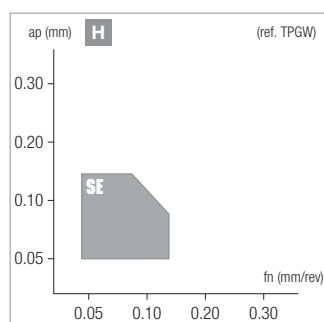
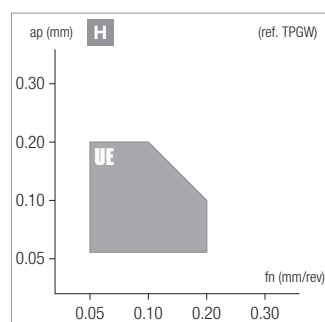
ISO - with hole

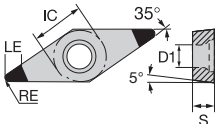
- Very versatile insert shape
- Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket
- Extra clearance between the insert and the workpiece bore, greatly reduce the risk of chip jamming
- Boring bars made of steel (Vortex technology) and carbide are available
- Edge is measurably weaker than 80° diamond shape inserts

BL: Low volume CBN PVD: Physical vapour deposition		BL PVD	BL PVD	BL PVD	
		NBL150C	NBL250C	NBL350C	
Stable machining, light cut	● 1 st choice ○ suitable	●	○		
General machining, medium cut	● 1 st choice ○ suitable	○	●	○	
Unstable machining, heavy cut	⚡ 1 st choice ⚡ suitable			⚡	
Dimensions		ISO			
		P			Vc(m/min) - suggested cutting speed range (bold: 1st choice)
		M			
		K			
		N			
		S			
		H	90 220	90 180	60 150

Designation		RE	IC	S	D1	LE	Stock		
UNIVERSAL  solid brazing	TPGW090204S-UE-3S	0.4	5.56	2.38	3	2.5	●		
	TPGW110302S-UE-3S	0.2	6.35	3.18	3.3	2.6	○		
	TPGW110304S-UE-3S	0.4	6.35	3.18	3.3	2.5	●	○	
	TPGW110308S-UE-3S	0.8	6.35	3.18	3.3	2.2	●		
SHARP  solid brazing	TPGW110304S-SE-3S	0.4	6.35	3.18	3.3	2.5	○		
	TPGW110308S-SE-3S	0.8	6.35	3.18	3.3	2.2	○		
REINFORCED  solid brazing interrupted cut	TPGW110304S-RE-3S	0.4	6.35	3.18	3.3	2.5		○	

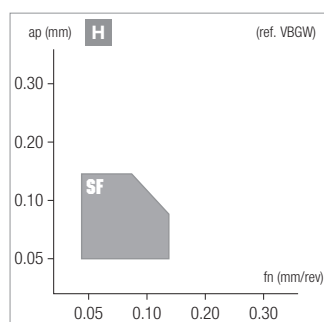
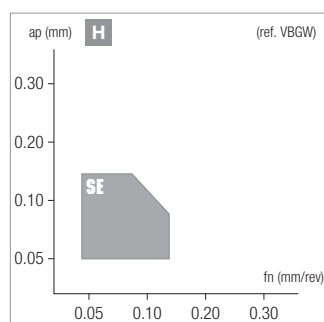
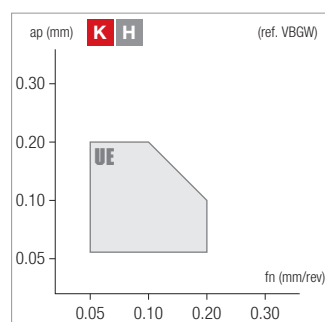
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



VB	BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition																
	BH PVD	BH	BL PVD	BL	BL PVD	BL	BL PVD	BL	BL PVD								
ISO - with hole	NBH450C	NBH450U	NBL050C	NBL050CX	NBL150C	NBL250C	NBL300C	NBL350C									
• 1st choice for intricate shape copy turning • Can “In-Copy” (plunge turn into a smaller diameter) at an angle up to 49° • Can work extremely close to the tailstock/ live center • Positive style can be used for external and internal applications, in many cases improved performance outweighs the increased cost per edge (2 edges vs. 4 edges of a double sided VNGA)	Stable machining, light cut		● 1 st choice	○ suitable	●	●	●	●	○	○							
	General machining, medium cut		● 1 st choice	○ suitable	●	●			○	●	●	○					
	Unstable machining, heavy cut		✖ 1 st choice	✖ suitable	✖	✖					✖	✖					
Dimensions			ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)												
 2 edges	P																
	M																
	K	340 1000	340 1000														
	N																
	S																
	H			120 280	120 280	90 220	90 180	60 180	60 150								

Designation		RE	IC	S	D1	LE	Stock									
UNIVERSAL solid brazing	VBGW110302S-UE-2S	0.2	6.35	3.18	2.8	3										
	VBGW110304S-UE-2S	0.4	6.35	3.18	2.8	2.5										
	VBGW160402S-UE-2S	0.2	9.525	4.76	4.4	3										
	VBGW160404S-UE-2S	0.4	9.525	4.76	4.4	2.5										
	VBGW160408S-UE-2S	0.8	9.525	4.76	4.4	2.2										
UNIVERSAL carbide backed	VBGW160404S-UE-2C	0.4	9.525	4.76	4.4	2.5										
	VBGW160408S-UE-2C	0.8	9.525	4.76	4.4	2.2										
SHARP solid brazing	VBGW110302S-SE-2S	0.2	6.35	3.18	2.8	3										
	VBGW110304S-SE-2S	0.4	6.35	3.18	2.8	2.5										
	VBGW160402S-SE-2S	0.2	9.525	4.76	4.4	3										
	VBGW160404S-SE-2S	0.4	9.525	4.76	4.4	2.5										
	VBGW160408S-SE-2S	0.8	9.525	4.76	4.4	2.2										
SHARP solid brazing without honing	VBGW110302T-SF-2S	0.2	6.35	3.18	2.8	3										
	VBGW110304T-SF-2S	0.4	6.35	3.18	2.8	2.5										
	VBGW160402T-SF-2S	0.2	9.525	4.76	4.4	3										
	VBGW160404T-SF-2S	0.4	9.525	4.76	4.4	2.5										
	VBGW160408T-SF-2S	0.8	9.525	4.76	4.4	2.2										

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion



VB

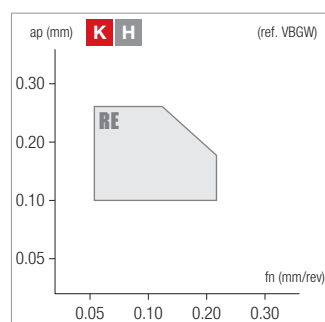
ISO - with hole

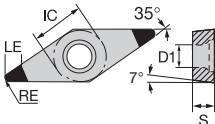
- 1st choice for intricate shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock/live center
- Positive style can be used for external and internal applications, in many cases improved performance outweighs the increased cost per edge (2 edges vs. 4 edges of a double sided VNGA)

BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition		BH PVD	BH	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	
		NBH450C	NBH450U	NBL050C	NBL050CX	NBL150C	NBL250C	NBL300C	NBL350C	
Stable machining, light cut	● 1 st choice ○ suitable	●	●	●	●	●	○	○		
General machining, medium cut	● 1 st choice ○ suitable	●	●			○	●	●	○	
Unstable machining, heavy cut	⚡ 1 st choice ⚡ suitable	⚡	⚡					⚡	⚡	
Dimensions		ISO								
		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)								
		P								
		M								
		K	340 1000	340 1000						
		N								
		S								
		H			120 280	120 280	90 220	90 180	60 180	60 150

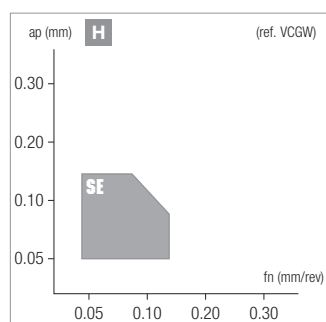
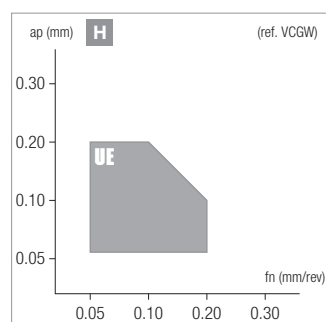
Designation		RE	IC	S	D1	LE	Stock									
RE H		VBGW160404S-RE-2S	0.4	9.525	4.76	4.4	2.5									○
	 solid brazing interrupted cut	VBGW160408S-RE-2S	0.8	9.525	4.76	4.4	2.2									○
RE K		VBGW160404S-RE-2C	0.4	9.525	4.76	4.4	2.5		○							
	 carbide backed interrupted cut	VBGW160408S-RE-2C	0.8	9.525	4.76	4.4	2.2		○							

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



VC		BL: Low volume CBN PVD: Physical vapour deposition		BL PVD	BL PVD					
		NBL150C	NBL250C							
ISO - with hole										
• 1st choice for intricate shape copy turning • Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49° • Can work extremely close to the tailstock/ live center • Positive style can be used for external and internal applications, in many cases improved performance outweighs the increased cost per edge (2 edges vs. 4 edges of a double sided VNGA)		Stable machining, light cut	● 1 st choice ○ suitable	●	○					
		General machining, medium cut	● 1 st choice ○ suitable	○	●					
		Unstable machining, heavy cut	⚙ 1 st choice ⚙ suitable							
		Dimensions		ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)					
		P								
		M								
		K								
		N								
		S								
		H	90 220	90 180						
Designation		RE	IC	S	D1	LE	Stock			
UNIVERSAL	 solid brazing	UE H						●		
		VCGW110304S-UE-2S	0.4	6.35	3.18	2.8	2.5		●	
		VCGW160404S-UE-2S	0.4	9.525	4.76	4.4	2.5		●	
	VCGW160408S-UE-2S	0.8	9.525	4.76	4.4	2.2		●		
SHARP	 solid brazing	SE H						●		
		VCGW110304S-SE-2S	0.4	6.35	3.18	2.8	2.5	●		
		VCGW160404S-SE-2S	0.4	9.525	4.76	4.4	2.5	●		
		VCGW160408S-SE-2S	0.8	9.525	4.76	4.4	2.2	○		

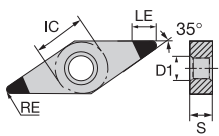
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

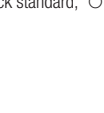


VN

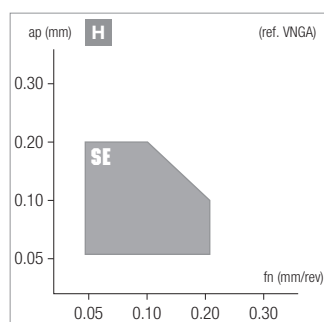
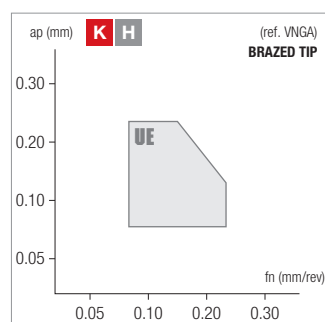
ISO - with hole

- 1st choice for intricate shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock/live center
- The weakest turning insert shape among all, ap and fn should be lighter
- Double sided style should mainly be used for external applications

BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition		BH PVD	BH PVD	BH PVD	BL PVD	BL PVD	
		NBH450C	NBH500C	NBH900U	NBL150C	NBL250C	
Stable machining, light cut ● 1 st choice ○ suitable		●	○	○	●	○	
General machining, medium cut ● 1 st choice ○ suitable		●	●	●	○	●	
Unstable machining, heavy cut ▲ 1 st choice ○ suitable		▲	▲	▲			
Dimensions		ISO					
		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)					
		P					
		M					
		K	340 1000	300 1500	300 1100		
		N					
		S					
		H		40 160	90 220	90 180	

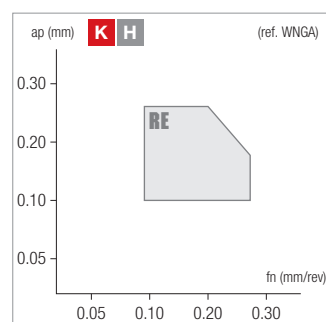
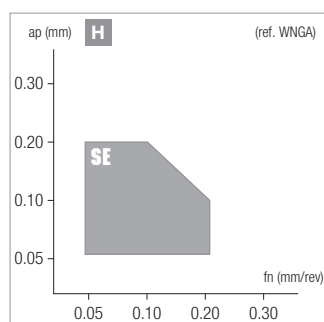
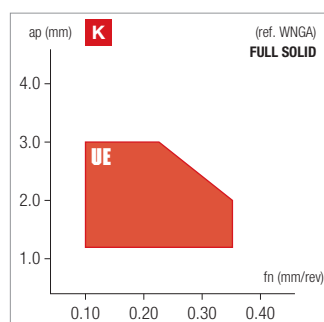
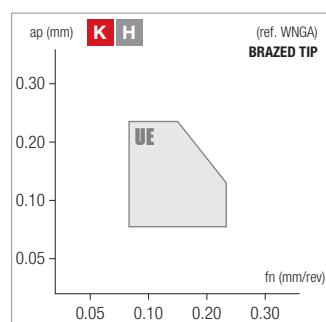
Designation		RE	IC	S	D1	LE	Stock				
UNIVERSAL  vertical brazing	UE K H										
	VNGA160404S-UE-4V	0.4	9.525	4.76	3.81	2.2	●	▽		○	
UNIVERSAL  carbide backed	UE K										
	VNGA160408S-UE-4V	0.8	9.525	4.76	3.81	2.3	●			○	
UNIVERSAL  carbide backed	UE K										
	VNGA160404S-UE-4C	0.4	9.525	4.76	3.81	2.5	○				
SHARP  carbide backed	UE K										
	VNGA160408S-UE-4C	0.8	9.525	4.76	3.81	2.2	○				
SHARP  vertical brazing	SE H										
	VNGA160404S-SE-4V	0.4	9.525	4.76	3.81	2.2			○		
SHARP  vertical brazing	SE H										
	VNGA160408S-SE-4V	0.8	9.525	4.76	3.81	2.3			○		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



WN		BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition										
ISO - with hole												
6-corner 80° diamond shape that can increase economy compared to CNGA-style inserts - Generally used on more moderate depths of cut and feedrates than CNGA-style inserts - Seating of insert in pocket is less stable as CNGA-style inserts - Cannot take as deep a depth of cut as similar sized CNGA-style insert		Stable machining, light cut	● 1 st choice ○ suitable	○	○	○	○	○	○	○	○	
		General machining, medium cut	● 1 st choice ○ suitable	●	○	○	○	○	○	○	○	
		Unstable machining, heavy cut	● 1 st choice ○ suitable	●	○	○	○	○	○	○	○	
		Dimensions	ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)									
		P										
		M										
		K	300 1500	300 1200	300 1100							
		N										
		S										
		H			40 160	90 220	90 180	60 180	60 150			
Designation		RE	IC	S	D1	LE	Stock					
UNIVERSAL	UE K H											
	WNGA080404S-UE-6V	0.4	12.7	4.76	5.16	2.6		●	○	○	○	
	WNGA080408S-UE-6V	0.8	12.7	4.76	5.16	2.6		○	●	●	○	
UNIVERSAL	UE K											
	WNGA080408S-UE	0.8	12.7	4.76	5.16	7.9	○	○				
	WNGA080412S-UE	1.2	12.7	4.76	5.16	7.5	○	○				
SHARP	SE H											
	WNGA080404S-SE-6V	0.4	12.7	4.76	5.16	2.6			○			
	WNGA080408S-SE-6V	0.8	12.7	4.76	5.16	2.6			○			
REINFORCED	RE K H											
	WNGA080404S-RE-6V	0.4	12.7	4.76	5.16	2.6		●			○	
	WNGA080408S-RE-6V	0.8	12.7	4.76	5.16	2.6		●			●	
REINFORCED	RE K H											
	WNGA080412S-RE-6V	1.2	12.7	4.76	5.16	2.5		●			○	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



ISO 513	MATERIAL	HARDNESS HB	NBH450C				NBH450U				NBH500C			
				min	start	max		min	start	max		min	start	max
K1	Grey cast iron (ex. 0.6025/GG25/EN-GJL-250)	150 ÷ 250	●	400	700	1000	●	400	700	1000	○	500	1000	1500
			●	380	650	920	●	380	650	920	●	400	900	1400
			⊕	340	600	860	⊕	340	600	860	⊕	300	800	1300
ISO 513	MATERIAL	HARDNESS HRC	NBLO50C / CX				NBL150C				NBL200C			
				min	start	max		min	start	max		min	start	max
H1	Case-hardened steel (ex. 1.7131/16MnCr5)	50 ÷ 56	●	120	200	280	●	100	160	220	○	100	150	200
							☺	90	150	210	●	90	135	180
H2	Bearing steel, quenched and tempered steel (ex. 1.3505/100Cr6)	54 ÷ 62	●	100	170	240	●	100	150	200	○	100	140	180
							☺	90	140	190	●	90	130	170
H3	Hardened tool steel (ex 1.2436/X210CrW12)	60 ÷ 65	●	100	140	180	●	80	130	180	○	80	120	160
							☺	70	120	170	●	70	110	150
H4	White cast iron (ex 0.9625/G-X260NiCr42)	54 ÷ 62												

Complete workpiece materials p. H1.

NBH500U				NBH600U				NBH900U				NBH950U																						
min	start	max		min	start	max		min	start	max		min	start	max																				
○	500	1000	1500	○	400	800	1200	●	400	700	1000	○	400	600	800																			
●	400	900	1400		●	300	600	900	●	300	600	900	○	300	500			700																
⚙	300	800	1300		⚙	300	600	900	⚙	300	600	900	⚙	300	500			700																
NBL250C				NBL300C				NBL350C				NBH500C				NBH900U				NBH950U														
min	start	max		min	start	max		min	start	max		min	start	max		min	start	max																
○	100	140	180	○	80	130	180	○	70	110	150																							
●	90	130	170	●	70	120	170		○	60	100								140															
○	80	130	180	○	80	120	160																											
	●	70	120	170	●	70	110												150	○	70	100	130	○	80	130	180							
	⚙	60	100	140	⚙	60	100												140	⚙	60	90	120	⚙	65	110	155							
○	70	110	150	○	70	100	130																											
●	60	100	140	●	60	90	120												○	60	80	100	○	70	110	150								
																			⚙	50	80	110	⚙	50	70	90	○	100	140	180	○	80	130	180
																			●	90	130	170	●	70	120	170	○	90	130	170	○	70	120	170
																			⚙	80	120	160	⚙	50	100	150	○	80	120	160	○	50	100	150
																			⚙	70	110	150	⚙	70	110	150	○	80	130	180	○	80	130	180
																			⚙	70	110	150	⚙	70	110	150	○	80	130	180	○	80	130	180
																			⚙	70	110	150	⚙	70	110	150	○	80	130	180	○	80	130	180
																			⚙	70	110	150	⚙	70	110	150	○	80	130	180	○	80	130	180

Complete workpiece materials p. H1.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING	DESIGNATION	DEPTH OF CUT			FEED RATE		
		ap (mm)			fn (mm/rev)		
		min	start	max	min	start	max
	CCGW060202S-SE-2S	0.05	0.10	0.15	0.04	0.06	0.08
	CCGW060202S-UE-2S	0.06	0.13	0.20	0.05	0.10	0.15
	CCGW060202T-SF-2S	0.05	0.10	0.15	0.04	0.06	0.08
	CCGW060204S-RE-2S	0.08	0.16	0.25	0.06	0.13	0.20
	CCGW060204S-SE-2S	0.05	0.10	0.15	0.04	0.08	0.12
	CCGW060204S-UE-2C	0.06	0.13	0.20	0.06	0.12	0.18
	CCGW060204S-UE-2S	0.06	0.13	0.20	0.06	0.12	0.18
	CCGW060204S-WE-2S	0.05	0.10	0.15	0.07	0.14	0.21
	CCGW060204T-SF-2S	0.05	0.10	0.15	0.04	0.08	0.12
	CCGW060208S-RE-2S	0.08	0.16	0.25	0.06	0.14	0.22
	CCGW060208S-SE-2S	0.05	0.10	0.15	0.05	0.10	0.15
	CCGW060208S-UE-2C	0.06	0.13	0.20	0.06	0.13	0.20
	CCGW060208S-UE-2S	0.06	0.13	0.20	0.06	0.13	0.20
	CCGW09T302S-SE-2S	0.05	0.10	0.15	0.04	0.06	0.08
	CCGW09T302S-UE-2S	0.06	0.13	0.20	0.05	0.10	0.15
	CCGW09T304S-RE-2S	0.08	0.16	0.25	0.06	0.13	0.20
	CCGW09T304S-SE-2S	0.05	0.10	0.15	0.04	0.08	0.12
	CCGW09T304S-UE-2C	0.06	0.13	0.20	0.06	0.12	0.18
	CCGW09T304S-UE-2S	0.06	0.13	0.20	0.06	0.12	0.18
	CCGW09T304S-WE-2S	0.05	0.10	0.15	0.07	0.14	0.21
	CCGW09T304T-SF-2S	0.05	0.10	0.15	0.04	0.08	0.12
	CCGW09T308S-RE-2S	0.08	0.16	0.25	0.06	0.14	0.22
	CCGW09T308S-SE-2S	0.05	0.10	0.15	0.05	0.10	0.15
	CCGW09T308S-UE-2C	0.06	0.13	0.20	0.06	0.13	0.20
	CCGW09T308S-UE-2S	0.06	0.13	0.20	0.06	0.13	0.20
	CCGW09T308S-WE-2S	0.05	0.10	0.15	0.07	0.15	0.23
	CCGW09T308T-SF-2S	0.05	0.10	0.15	0.05	0.10	0.15
	CCGW120404S-UE-2S	0.06	0.13	0.20	0.06	0.12	0.18
	CCGW120408S-UE-2C	0.06	0.13	0.20	0.06	0.13	0.20
	CCGW120408S-UE-2S	0.06	0.13	0.20	0.06	0.13	0.20
	CNGA090308S-RE	0.50	1.50	2.50	0.08	0.16	0.24
	CNGA090308S-UE	0.50	1.50	2.50	0.10	0.20	0.30
	CNGA120404S-CF-4V	0.08	0.17	0.26	0.08	0.14	0.20
	CNGA120404S-RE-4V	0.08	0.17	0.26	0.08	0.14	0.20
	CNGA120404S-SE-4V	0.06	0.13	0.20	0.06	0.12	0.18
	CNGA120404S-UE-4V	0.07	0.16	0.25	0.08	0.14	0.20
	CNGA120404S-WE-4V	0.06	0.13	0.20	0.10	0.17	0.24
	CNGA120408S-CF-4V	0.08	0.17	0.26	0.08	0.15	0.22
	CNGA120408S-CFW-4V	0.08	0.17	0.26	0.10	0.19	0.28
	CNGA120408S-CM-4V	0.30	0.50	0.70	0.08	0.16	0.24
	CNGA120408S-CMW-4V	0.30	0.50	0.70	0.10	0.20	0.30
	CNGA120408S-RE-4V	0.08	0.17	0.26	0.08	0.16	0.24
	CNGA120408S-SE-4V	0.06	0.13	0.20	0.06	0.13	0.20
	CNGA120408S-UE	1.00	2.00	3.00	0.10	0.20	0.30
	CNGA120408S-UE-4C	0.07	0.16	0.25	0.08	0.15	0.22
	CNGA120408S-UE-4V	0.07	0.16	0.25	0.08	0.15	0.22
	CNGA120408S-WE-4V	0.06	0.13	0.20	0.10	0.19	0.28
	CNGA120408T-SE-4C	0.06	0.13	0.20	0.06	0.13	0.20
	CNGA120408T-SE-4V	0.06	0.13	0.20	0.06	0.13	0.20
	CNGA120412S-CF-4V	0.08	0.17	0.26	0.08	0.16	0.24
	CNGA120412S-CFW-4V	0.08	0.17	0.26	0.10	0.20	0.30
	CNGA120412S-CM-4V	0.30	0.50	0.70	0.08	0.17	0.26
	CNGA120412S-CMW-4V	0.30	0.50	0.70	0.10	0.22	0.34
	CNGA120412S-RE-4V	0.08	0.17	0.26	0.08	0.17	0.26
	CNGA120412S-SE-4V	0.06	0.13	0.20	0.06	0.14	0.22
	CNGA120412S-UE	1.00	2.00	3.00	0.10	0.23	0.36

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
CNGA120412S-UE-4C	0.07	0.16	0.25	0.08	0.16	0.24
CNGA120412S-UE-4V	0.07	0.16	0.25	0.08	0.16	0.24
CNGA120412S-WE-4V	0.06	0.13	0.20	0.10	0.20	0.30
CNGN090308S-UE	0.50	1.50	2.50	0.10	0.20	0.30
CNGN090312S-UE	0.50	1.50	2.50	0.10	0.23	0.36
CNGN090316S-UE	0.50	1.50	2.50	0.10	0.25	0.40
CNGN120408S-UE	1.00	2.00	3.00	0.10	0.20	0.30
CNGN120412S-UE	1.00	2.00	3.00	0.10	0.23	0.36
CNGN120416S-UE	1.00	2.00	3.00	0.10	0.25	0.40
CNGX120712S-UE	1.00	2.00	3.00	0.10	0.23	0.36
CNGX120716S-UE	1.00	2.00	3.00	0.10	0.25	0.40
DCGW070202S-SE-2S	0.05	0.10	0.15	0.04	0.06	0.08
DCGW070202S-UE-2S	0.06	0.13	0.20	0.05	0.10	0.15
DCGW070202T-SF-2S	0.05	0.10	0.15	0.04	0.06	0.08
DCGW070204S-RE-2S	0.08	0.16	0.25	0.06	0.13	0.20
DCGW070204S-SE-2S	0.05	0.10	0.15	0.04	0.08	0.12
DCGW070204S-UE-2S	0.06	0.13	0.20	0.06	0.12	0.18
DCGW070204T-SF-2S	0.05	0.10	0.15	0.04	0.08	0.12
DCGW070208S-RE-2S	0.08	0.16	0.25	0.06	0.14	0.22
DCGW070208S-SE-2S	0.05	0.10	0.15	0.05	0.10	0.15
DCGW070208S-UE-2S	0.06	0.13	0.20	0.06	0.12	0.18
DCGW11T302S-SE-2S	0.05	0.10	0.15	0.04	0.06	0.08
DCGW11T302S-UE-2S	0.06	0.13	0.20	0.05	0.10	0.15
DCGW11T302T-SF-2S	0.05	0.10	0.15	0.04	0.06	0.08
DCGW11T304S-RE-2S	0.08	0.16	0.25	0.06	0.13	0.20
DCGW11T304S-SE-2S	0.05	0.10	0.15	0.04	0.08	0.12
DCGW11T304S-UE-2C	0.06	0.13	0.20	0.06	0.12	0.18
DCGW11T304S-UE-2S	0.06	0.13	0.20	0.06	0.12	0.18
DCGW11T304T-SF-2S	0.05	0.10	0.15	0.04	0.08	0.12
DCGW11T308S-RE-2S	0.08	0.16	0.25	0.06	0.14	0.22
DCGW11T308S-SE-2S	0.05	0.10	0.15	0.05	0.10	0.15
DCGW11T308S-UE-2C	0.06	0.13	0.20	0.06	0.13	0.20
DCGW11T308S-UE-2S	0.06	0.13	0.20	0.06	0.13	0.20
DCGW11T308T-SF-2S	0.05	0.10	0.15	0.05	0.10	0.15
DNGA150404S-SE-4V	0.06	0.13	0.20	0.06	0.12	0.18
DNGA150404S-UE-4V	0.07	0.16	0.25	0.08	0.14	0.20
DNGA150408S-SE-4V	0.06	0.13	0.20	0.06	0.13	0.20
DNGA150408S-UE-4V	0.07	0.16	0.25	0.08	0.15	0.22
DNGA150604S-RE-4S	0.08	0.17	0.26	0.08	0.14	0.20
DNGA150604S-SE-4S	0.06	0.13	0.20	0.06	0.12	0.18
DNGA150604S-UE-4S	0.07	0.16	0.25	0.08	0.14	0.20
DNGA150604S-UE-4V	0.07	0.16	0.25	0.08	0.14	0.20
DNGA150608S-RE-4S	0.08	0.17	0.26	0.08	0.16	0.24
DNGA150608S-SE-4S	0.06	0.13	0.20	0.06	0.13	0.20
DNGA150608S-UE	1.00	2.00	3.00	0.10	0.20	0.30
DNGA150608S-UE-4C	0.07	0.16	0.25	0.08	0.15	0.22
DNGA150608S-UE-4S	0.07	0.16	0.25	0.08	0.15	0.22
DNGA150608S-UE-4V	0.07	0.16	0.25	0.08	0.15	0.22
DNGA150612S-RE-4S	0.08	0.17	0.26	0.08	0.17	0.26
DNGA150612S-UE	1.00	2.00	3.00	0.10	0.23	0.36
DNGA150612S-UE-4S	0.07	0.16	0.25	0.08	0.16	0.24
DNGA150612S-UE-4V	0.07	0.16	0.25	0.08	0.16	0.24
MCC.R02S-CS-1C	0.05	0.10	0.15	0.04	0.06	0.08
MCC.R02T-CC-1C	0.05	0.10	0.15	0.04	0.06	0.08
MCC.R02T-GP-1C	0.06	0.13	0.20	0.05	0.10	0.15
MCC.R04T-GP-1C	0.06	0.13	0.20	0.06	0.12	0.18

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
MCN.R02S-GP-4V	0.07	0.16	0.25	0.06	0.12	0.18
MCN.R02S-SE-4V	0.06	0.13	0.20	0.05	0.10	0.15
MCN.R02S-UE-4V	0.07	0.16	0.25	0.06	0.12	0.18
MCN.R04S-CC-4V	0.06	0.13	0.20	0.06	0.12	0.18
MCN.R04S-GP-4V	0.07	0.16	0.25	0.08	0.14	0.20
MCN.R04S-SE-4V	0.06	0.13	0.20	0.06	0.12	0.18
MCN.R04S-UE-4V	0.07	0.16	0.25	0.08	0.14	0.20
MCN.R08S-CC-4V	0.06	0.13	0.20	0.06	0.13	0.20
MCN.R08S-GP-4V	0.07	0.16	0.25	0.08	0.15	0.22
MCN.R08S-SE-4V	0.06	0.13	0.20	0.06	0.13	0.20
MCN.R08S-UE-4V	0.07	0.16	0.25	0.08	0.15	0.22
MDN.R02S-CC-4V	0.06	0.13	0.20	0.05	0.10	0.15
MDN.R02S-GP-4V	0.07	0.16	0.25	0.06	0.12	0.18
MDN.R02S-SE-4V	0.06	0.13	0.20	0.05	0.10	0.15
MDN.R02S-UE-4V	0.07	0.16	0.25	0.06	0.12	0.18
MDN.R04S-CC-4V	0.06	0.13	0.20	0.06	0.12	0.18
MDN.R04S-GP-4V	0.07	0.16	0.25	0.08	0.14	0.20
MDN.R04S-SE-4V	0.06	0.13	0.20	0.06	0.12	0.18
MDN.R04S-UE-4V	0.07	0.16	0.25	0.08	0.14	0.20
MDN.R08S-CC-4V	0.06	0.13	0.20	0.06	0.13	0.20
MDN.R08S-GP-4V	0.07	0.16	0.25	0.08	0.15	0.22
MDN.R08S-SE-4V	0.06	0.13	0.20	0.06	0.13	0.20
MDN.R08S-UE-4V	0.07	0.16	0.25	0.08	0.15	0.22
RCGX090700S-UE	0.50	1.50	2.50	0.10	0.30	0.50
RCGX120700S-UE	0.50	2.00	3.50	0.10	0.35	0.60
RNGN060300S-UE	0.50	1.00	1.50	0.10	0.20	0.30
RNGN090300S-RE	0.50	1.50	2.50	0.15	0.35	0.55
RNGN090300S-RH	0.50	1.50	2.50	0.15	0.35	0.55
RNGN090300S-UE	0.50	1.50	2.50	0.10	0.30	0.50
RNGN090300T-SE	0.20	1.00	1.80	0.10	0.20	0.30
RNGN120300S-UE	0.50	2.00	3.50	0.10	0.35	0.60
RNGN120400S-RE	0.50	2.00	3.50	0.10	0.45	0.80
RNGN120400S-UE	0.50	2.00	3.50	0.10	0.35	0.60
SNGA120404S-UE-8V	0.07	0.16	0.25	0.08	0.14	0.20
SNGA120408S-UE	1.00	2.00	3.00	0.10	0.20	0.30
SNGA120408S-UE-8V	0.07	0.16	0.25	0.08	0.15	0.22
SNGA120412S-UE	1.00	2.00	3.00	0.10	0.23	0.36
SNGA120412S-UE-8V	0.07	0.16	0.25	0.08	0.16	0.24
SNGN090308S-UE	0.50	1.50	2.50	0.10	0.20	0.30
SNGN090312S-UE	0.50	1.50	2.50	0.10	0.23	0.36
SNGN090316S-UE	0.50	1.50	2.50	0.10	0.25	0.40
SNGN090412S-UE	0.50	1.50	2.50	0.10	0.23	0.36
SNGN120408S-UE	1.00	2.00	3.00	0.10	0.20	0.30
SNGN120412S-UE	1.00	2.00	3.00	0.10	0.23	0.36
SNGN120416S-UE	1.00	2.00	3.00	0.10	0.25	0.40
SNGX120412S-UE	1.00	2.00	3.00	0.10	0.23	0.36
SNGX120712S-UE	1.00	2.00	3.00	0.10	0.23	0.36
SNGX120716S-UE	1.00	2.00	3.00	0.10	0.25	0.40
TCGW090204S-UE-3C	0.06	0.13	0.20	0.06	0.12	0.18
TCGW110204S-RE-3S	0.08	0.16	0.25	0.06	0.13	0.20
TCGW110204S-SE-3S	0.05	0.10	0.15	0.04	0.08	0.12
TCGW110204S-UE-3C	0.06	0.13	0.20	0.06	0.12	0.18
TCGW110204S-UE-3S	0.06	0.13	0.20	0.06	0.12	0.18
TCGW110204T-SE-3C	0.05	0.10	0.15	0.04	0.08	0.12
TCGW110208S-RE-3C	0.08	0.16	0.25	0.06	0.14	0.22
TCGW110208S-RE-3S	0.08	0.16	0.25	0.06	0.14	0.22

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
TCGW110208S-SE-3S	0.05	0.10	0.15	0.05	0.10	0.15
TCGW110208S-UE-3C	0.06	0.13	0.20	0.06	0.13	0.20
TCGW110208S-UE-3S	0.06	0.13	0.20	0.06	0.13	0.20
TCGW16T304S-RE-3S	0.08	0.16	0.25	0.06	0.13	0.20
TCGW16T304S-SE-3S	0.05	0.10	0.15	0.04	0.08	0.12
TCGW16T304S-UE-3C	0.06	0.13	0.20	0.06	0.12	0.18
TCGW16T304S-UE-3S	0.06	0.13	0.20	0.06	0.12	0.18
TCGW16T308S-RE-3C	0.08	0.16	0.25	0.06	0.14	0.22
TCGW16T308S-RE-3S	0.08	0.16	0.25	0.06	0.14	0.22
TCGW16T308S-SE-3S	0.05	0.10	0.15	0.05	0.10	0.15
TCGW16T308S-UE-3C	0.06	0.13	0.20	0.06	0.13	0.20
TCGW16T308S-UE-3S	0.06	0.13	0.20	0.06	0.13	0.20
TNGA160404S-RE-6V	0.08	0.17	0.26	0.08	0.14	0.20
TNGA160404S-SE-6V	0.06	0.13	0.20	0.06	0.12	0.18
TNGA160404S-UE-6C	0.07	0.16	0.25	0.08	0.14	0.20
TNGA160404S-UE-6V	0.07	0.16	0.25	0.08	0.14	0.20
TNGA160408S-RE-6V	0.08	0.17	0.26	0.08	0.16	0.24
TNGA160408S-SE-6V	0.06	0.13	0.20	0.06	0.13	0.20
TNGA160408S-UE	1.00	2.00	3.00	0.10	0.20	0.30
TNGA160408S-UE-6C	0.07	0.16	0.25	0.08	0.15	0.22
TNGA160408S-UE-6V	0.07	0.16	0.25	0.08	0.15	0.22
TNGA160412S-RE-6V	0.08	0.17	0.26	0.08	0.17	0.26
TNGA160412S-SE-6V	0.06	0.13	0.20	0.06	0.14	0.22
TNGA160412S-UE	1.00	2.00	3.00	0.10	0.23	0.36
TNGA160412S-UE-6C	0.07	0.16	0.25	0.08	0.16	0.24
TNGA160412S-UE-6V	0.07	0.16	0.25	0.08	0.16	0.24
TNGN110308S-UE	0.50	1.50	2.50	0.10	0.20	0.30
TNGN160408S-UE	1.00	2.00	3.00	0.10	0.20	0.30
TPGW090204S-UE-3S	0.06	0.13	0.20	0.06	0.12	0.18
TPGW110302S-UE-3S	0.06	0.13	0.20	0.05	0.10	0.15
TPGW110304S-RE-3S	0.08	0.16	0.25	0.06	0.13	0.20
TPGW110304S-SE-3S	0.05	0.10	0.15	0.04	0.08	0.12
TPGW110304S-UE-3S	0.06	0.13	0.20	0.06	0.12	0.18
TPGW110308S-SE-3S	0.05	0.10	0.15	0.05	0.10	0.15
TPGW110308S-UE-3S	0.06	0.13	0.20	0.06	0.13	0.20
VBGW110302S-SE-2S	0.05	0.10	0.15	0.04	0.06	0.08
VBGW110302S-UE-2S	0.06	0.13	0.20	0.05	0.10	0.15
VBGW110302T-SF-2S	0.05	0.10	0.15	0.04	0.06	0.08
VBGW110304S-SE-2S	0.05	0.10	0.15	0.04	0.08	0.12
VBGW110304S-UE-2S	0.06	0.13	0.20	0.06	0.12	0.18
VBGW110304T-SF-2S	0.05	0.10	0.15	0.04	0.08	0.12
VBGW160402S-SE-2S	0.05	0.10	0.15	0.04	0.06	0.08
VBGW160402S-UE-2S	0.06	0.13	0.20	0.05	0.10	0.15
VBGW160402T-SF-2S	0.05	0.10	0.15	0.04	0.06	0.08
VBGW160404S-RE-2C	0.08	0.16	0.25	0.06	0.13	0.20
VBGW160404S-RE-2S	0.08	0.16	0.25	0.06	0.13	0.20
VBGW160404S-SE-2S	0.05	0.10	0.15	0.04	0.08	0.12
VBGW160404S-UE-2C	0.06	0.13	0.20	0.06	0.12	0.18
VBGW160404S-UE-2S	0.06	0.13	0.20	0.06	0.12	0.18
VBGW160404T-SF-2S	0.05	0.10	0.15	0.04	0.08	0.12
VBGW160408S-RE-2C	0.08	0.16	0.25	0.06	0.14	0.22
VBGW160408S-RE-2S	0.08	0.16	0.25	0.06	0.14	0.22
VBGW160408S-SE-2S	0.05	0.10	0.15	0.05	0.10	0.15
VBGW160408S-UE-2C	0.06	0.13	0.20	0.06	0.13	0.20
VBGW160408S-UE-2S	0.06	0.13	0.20	0.06	0.13	0.20
VBGW160408T-SF-2S	0.05	0.10	0.15	0.05	0.10	0.15

A - TURNING

B - THREADING

C - GROOVING

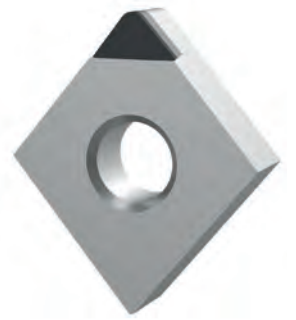
D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING	DESIGNATION	DEPTH OF CUT			FEED RATE		
		ap (mm)			fn (mm/rev)		
		min	start	max	min	start	max
B - THREADING	VCGW110304S-SE-2S	0.05	0.10	0.15	0.04	0.08	0.12
	VCGW110304S-UE-2S	0.06	0.13	0.20	0.06	0.12	0.18
	VCGW160404S-SE-2S	0.05	0.10	0.15	0.04	0.08	0.12
	VCGW160404S-UE-2S	0.06	0.13	0.20	0.06	0.12	0.18
	VCGW160408S-SE-2S	0.05	0.10	0.15	0.05	0.10	0.15
	VCGW160408S-UE-2S	0.06	0.13	0.20	0.06	0.13	0.20
	VNGA160404S-SE-4V	0.06	0.13	0.20	0.06	0.12	0.18
	VNGA160404S-UE-4C	0.07	0.16	0.25	0.08	0.14	0.20
	VNGA160404S-UE-4V	0.07	0.16	0.25	0.08	0.14	0.20
	VNGA160408S-SE-4V	0.06	0.13	0.20	0.06	0.13	0.20
	VNGA160408S-UE-4C	0.07	0.16	0.25	0.08	0.15	0.22
	VNGA160408S-UE-4V	0.07	0.16	0.25	0.08	0.15	0.22
C - GROOVING	WNGA080404S-RE-6V	0.08	0.17	0.26	0.08	0.14	0.20
	WNGA080404S-SE-6V	0.06	0.13	0.20	0.06	0.12	0.18
	WNGA080404S-UE-6V	0.07	0.16	0.25	0.08	0.14	0.20
	WNGA080408S-RE-6V	0.08	0.17	0.26	0.08	0.16	0.24
	WNGA080408S-SE-6V	0.06	0.13	0.20	0.06	0.13	0.20
	WNGA080408S-UE	1.00	2.00	3.00	0.10	0.20	0.30
	WNGA080408S-UE-6V	0.07	0.16	0.25	0.08	0.15	0.22
	WNGA080412S-RE-6V	0.08	0.17	0.26	0.08	0.17	0.26
	WNGA080412S-UE	1.00	2.00	3.00	0.10	0.23	0.36
	WNGA080412S-UE-6V	0.07	0.16	0.25	0.08	0.16	0.24
D - MILLING							
E - DRILLING							
F - ACCESSORIES							
G - SPARE PARTS							



TURNING Diamond

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A - TURNING	ISO 513		DIAMOND								
			PCD	CVD	MONO						
B - THREADING	Non-ferrous materials	N	N01	ND190	ND150	ND100	ND050		NDD *		NDM *
		N10									
		N20									
		N30									
C - GROOVING	HRSA	S	S01								
		S10		ND050							
		S20									
		S30									
D - MILLING	Hardened steel	H	H01	ND190							
		H10									
		H20									
		H30									
HRSA: Heat resistant super alloyw											
*NDD-CVD diamond and NDM-monocrystalline diamond are available upon request											
E - DRILLING											
F - ACCESSORIES											
G - SPARE PARTS											

HRSA: Heat resistant super alloyw
*NDD-CVD diamond and NDM-monocrystalline diamond are available upon request

GRADE	COMPOSITION	HARDNESS HV	GRAIN SIZE	BINDER	APPLICATION	FEATURES
ND050 new name: NDP001	diamond 85%	5.000	~ 1 µm	Wc + Co	N N20 N35	Excellent surface finishing and very good toughness. First choice for titanium alloys machining.
ND100 new name: NDP010	diamond 95%	6.000	10 µm	Wc + Co	N N10 N30	First choice for all-around application on non-ferrous materials.
ND150 new name: NDP302	diamond 95%	7.000	multi-modal 30 + 2 µm	Wc + Co	N N05 N25	Multi-modal grade for a perfect combination between toughness and wear resistance. Good solution for high silicon aluminium and bi-metal applications.
ND190 new name: NDP025	diamond 90%	7.000	25 µm	Wc + Co	N N01 N15	Excellent wear resistance. First choice for high silicon aluminium alloys (Si > 13%), tungsten carbide and ceramic.
NDD CVD diamond	-	8.000	-	binder free	N N01 N10	Better tool life compared to PCD grades. Best performance on abrasive materials like, AlSi, graphite, CFRP carbon fiber-reinforced plastic.
NDM Monocrystalline diamond	-	10.000	-	binder free	N N01 N05	Best surface finishing (roughness values are in the order of nanometres) unattainable with conventional polycrystalline tool materials.

NDD-CVD diamond and NDM-monocrystalline diamond are available upon request
 ND120: same features of ND100

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING

ISO 513		nixko TOOLS	ISCAR	KENAMETAL	KYOCERA	mitsubishi	SANDVIK	SECO	SUMITOMO	TAEGUTEC	TUNGALOY	WALTER
N	N01 - N10	ND150 ND190		KD1405		MD205 MD220		PCD30	DA90	TD810	DX140 DX160	
	N10 - N20	ND100 ND150	ID5	KD1425	KPD010	MD220 MD230	CD10	PCD20	DA150	KP300	DX120 DX140	WDN10
	N20 - N30	ND050 ND100	ID5	KD1400	KPD001 KPD010	MD230 MD2030	CD05 CD10	PCD20	DA1000 DA2200	TD830	DX110 DX120	WDN10

This table is our own estimation based on information available to the public and is not authorized by the company mentioned on it.

B - THREADING

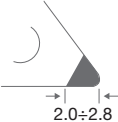
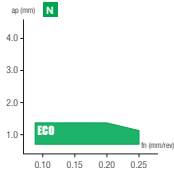
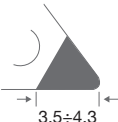
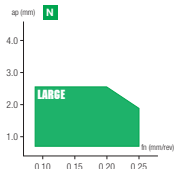
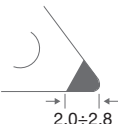
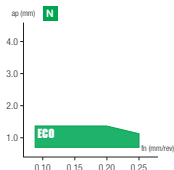
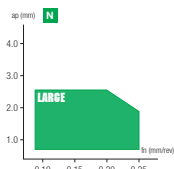
C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

NEGATIVE type with hole			C	D	T	W			
									
			80°	55°	60°	80°			
N	SLANT TIP	 ECO 2.0÷2.8		 A147 SIZE 12	 A150 SIZE 15	 A156 SIZE 16	 A162 SIZE 08		
		 LARGE 3.5÷4.3		 A147 SIZE 12	 A150 SIZE 15	 A156 SIZE 16	 A162 SIZE 08		
	FLAT TIP	 ECO 2.0÷2.8		 A147 SIZE 12	 A150 SIZE 15	 A156 SIZE 16	 A162 SIZE 08		
		 LARGE 3.5÷4.3		 A147 SIZE 12	 A150 SIZE 15	 A156 SIZE 16	 A162 SIZE 08		

A - TURNING

B - THREADING

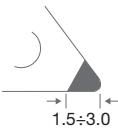
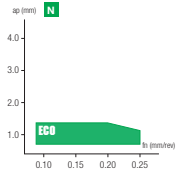
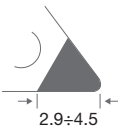
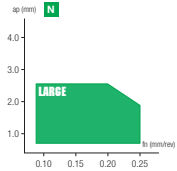
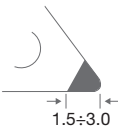
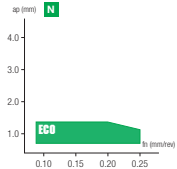
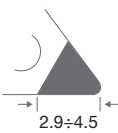
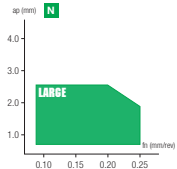
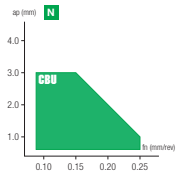
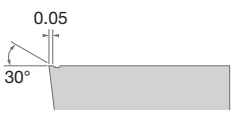
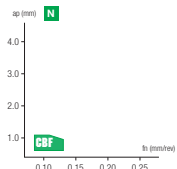
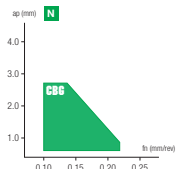
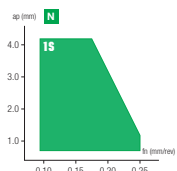
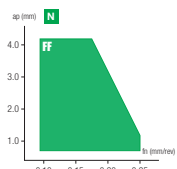
C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

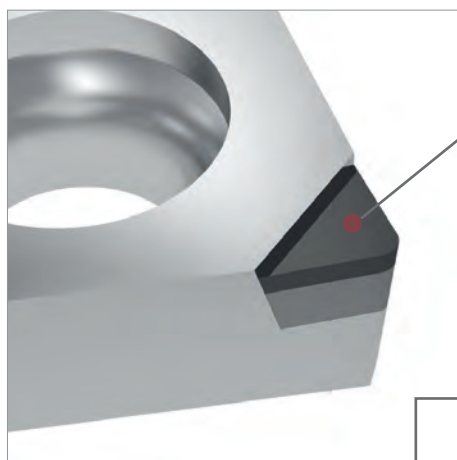
				POSITIVE type with hole							
				C	D	T	V				
				80°	55°	60°	35°				
A - TURNING	B - THREADING	C - GROOVING	D - MILLING	E - DRILLING	F - ACCESSORIES	G - SPARE PARTS	N	SLANT TIP	ECO   CC  A145  SIZE 06 09 12 DC  A148  SIZE 07 11 TC, TP  A154, A157  SIZE 08 09 11 16 VB, VC  A158, A160  SIZE 11 16		
								SLANT TIP	LARGE   CC  A145  SIZE 06 09 12 DC  A148  SIZE 07 11 TC  A154  SIZE 11 16 VB, VC  A158, A160  SIZE 16		
								FLAT TIP	ECO   CC  A145  SIZE 06 09 12 DC  A148  SIZE 07 11 TC, TP  A154, A157  SIZE 08 09 11 16 VB, VC  A158, A160  SIZE 11 16		
								FLAT TIP	LARGE   CC  A145  SIZE 06 09 12 DC  A148  SIZE 07 11 TC  A154  SIZE 11 16 VB, VC  A158, A160  SIZE 16		
								3D CHIPBREAKER	CBU   CC  A146  SIZE 06 09 DC  A149  SIZE 07 11 TC  A155  SIZE 11 16 VC  A161  SIZE 11 16		
								3D CHIPBREAKER	CBF   CC  A146  SIZE 06 DC  A149  SIZE 07 11 TC, TP  A155, A157  SIZE 09 11 16 VB, VC  A158, A160  SIZE 11 16		
								3D CHIPBREAKER	CBG   CC  A146  SIZE 09 DC  A149  SIZE 11 TC, TP  A155, A157  SIZE 09 11 16 VB, VC  A158, A160  SIZE 11 16		
								FULL EDGE	1S   CC  A146  SIZE 06 09 DC  A149  SIZE 07 11 TC  A155  SIZE 09 11 16 VC  A161  SIZE 11 16		
								FULL FACE	FF   CC  A146  SIZE 09 DC  A149  SIZE 07 11 TC  A155  SIZE 11 16 <td></td> <td></td>		

Slant tip

Cutting edge

- The diamond tip is brazed with an inclination of $7^{\circ} \div 10^{\circ}$. This solution is available both for eco and large tip dimensions
- Positive rake angle effectively reduces vibration and burr formation
- Creating smaller cutting force, the slant tip is especially helpful on long shaft and thin wall work piece machining
- Tailored combination of small radii with clearanced flank face

• Features of Slant tip cutting edge

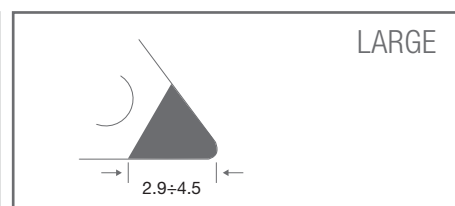
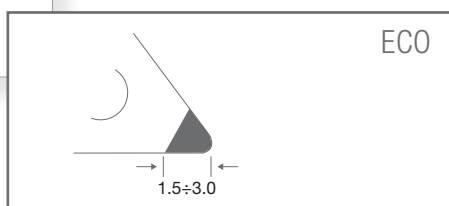


SOFT CUTTING ACTION

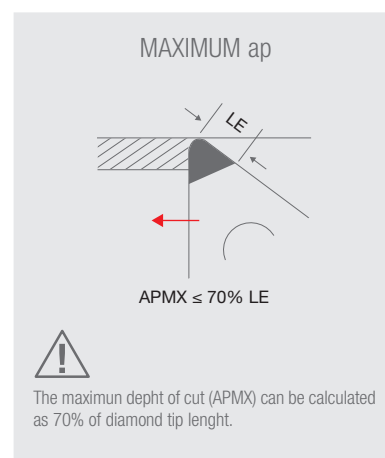
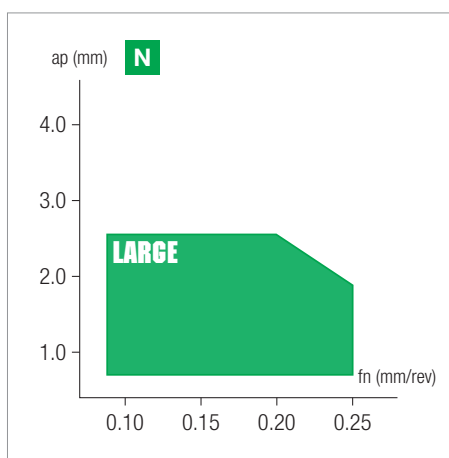
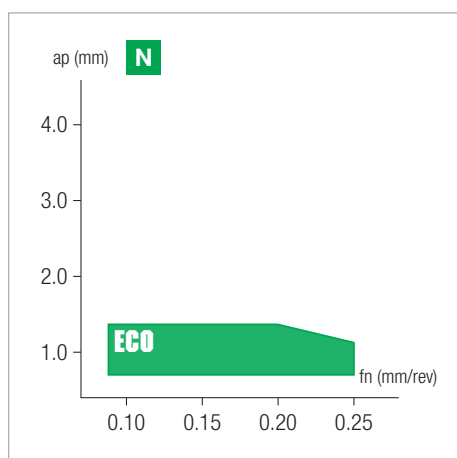
- The cutting edge is completely sharp (F type) as for all NIKKO diamond solutions
- The rake angle of all slant type is from 7° to 10°

BROAD RANGE

- The availability of different tip sizes allow to face both finishing and roughing applications



• Application range

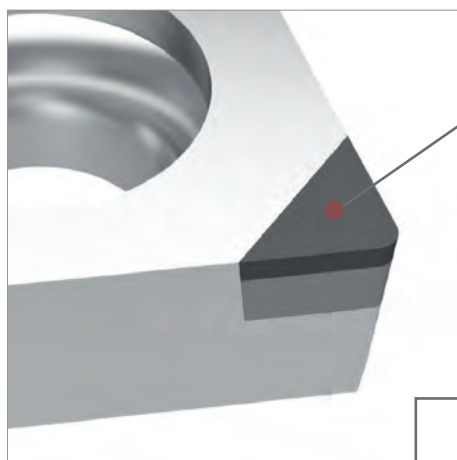


Cutting edge

Flat tip

- All-around solution for every kind of operation on non-ferrous materials. The diamond tip is completely flat and is available both with eco and large tip dimensions
- Reliable and strong cutting edge able to produce excellent surface finishing
- The flat cutting edge can be used on both continuous and interrupted cutting

• Features of Flat tip cutting edge

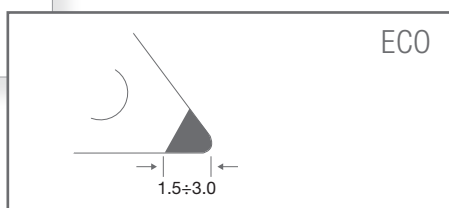


RELIABLE CUTTING EDGE

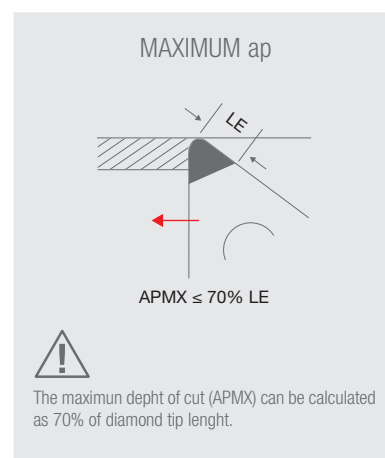
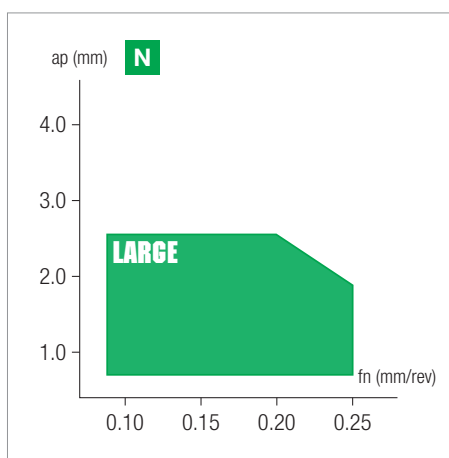
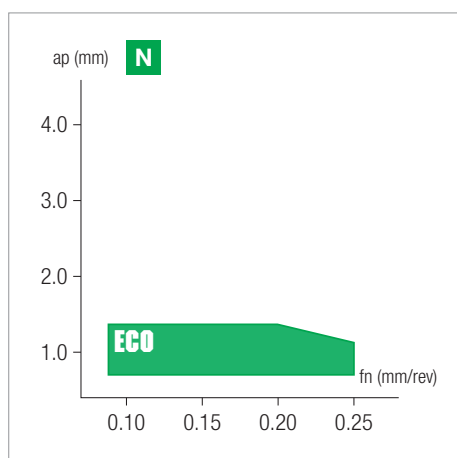
- Sharp edge combined with robust rake face well balances the edge strength
- First choice for universal use

BROAD RANGE

- Different tip sizes available covering various applications from finishing to roughing



• Application range

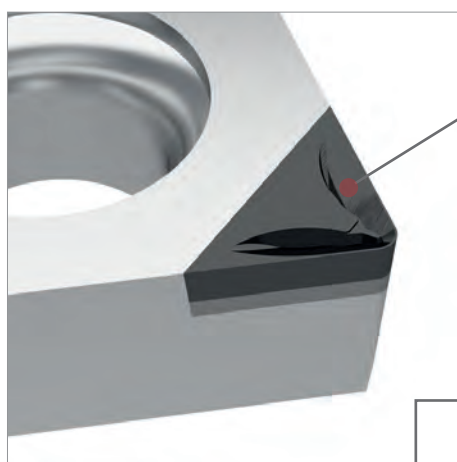


CBU - 3D chipbreaker

Cutting edge

- Programed geometry implemented by latest laser technology, offers excellent chip control
- Variable edge adapted the geometry from finishing to roughing
- Recommended for mass production especially automated manipulations of workpieces thanks to the better chip control
- Effectively avoids twisted chips scratching the already machined surface

• Features of CBU chipbreaker

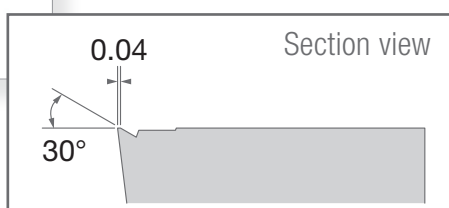


STATE OF THE ART GEOMETRY

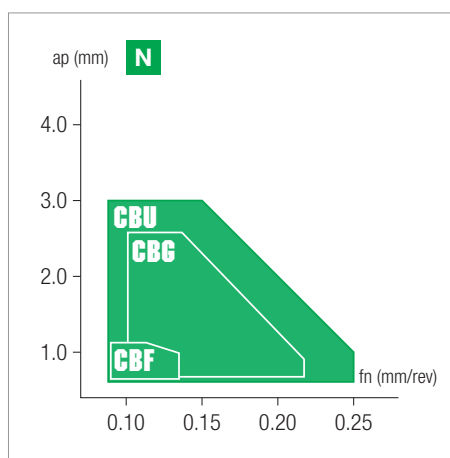
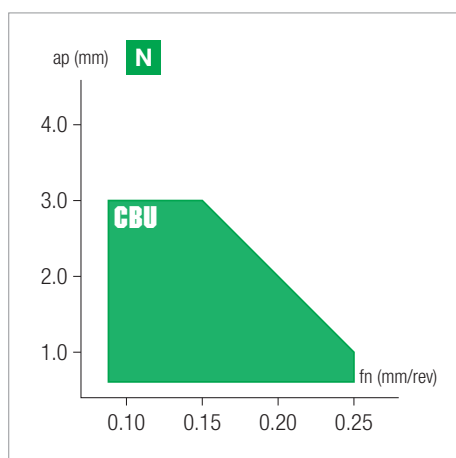
- Optimized rake face and tailored chip groove effectively improves the chip control performances
- Variable land to support broad range of application from finishing to roughing

BROAD RANGE

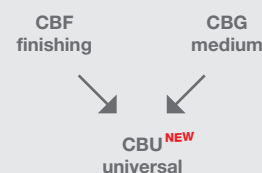
- Most common shapes and radii available as standard
- Tailor-made also possible upon request



• Application range



CBU VS. CONVENTIONAL STYLE



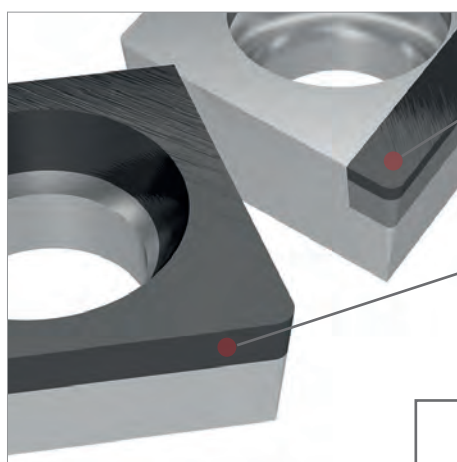
CBU cover the application range of our previous series (CBF, CBG) with improved performances.

Cutting edge

Full Face/Full Edge

- Extra large diamond in full edge or full face for the severe or special cutting conditions
- Big size cutting edge for most severe cutting conditions with full face or with full cutting edge
- Best solutions for high depth of cut of high feed rate, chamfering application and whenever a long diamond tip is necessary due to a specific workpiece shape
- For full edge type (1S) generally is necessary to define the cutting direction (R or L)

• Features of long cutting edge types

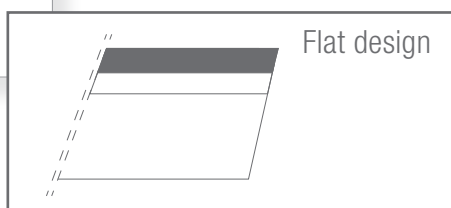


1S - FULL EDGE

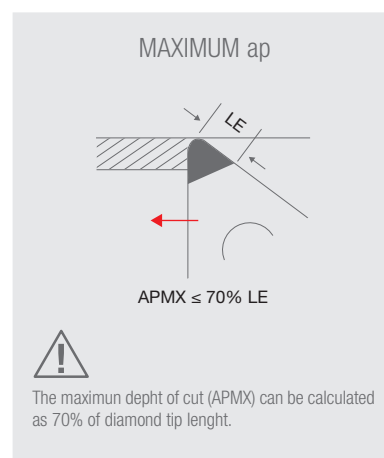
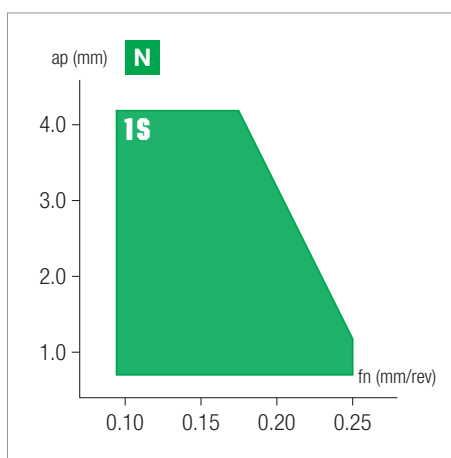
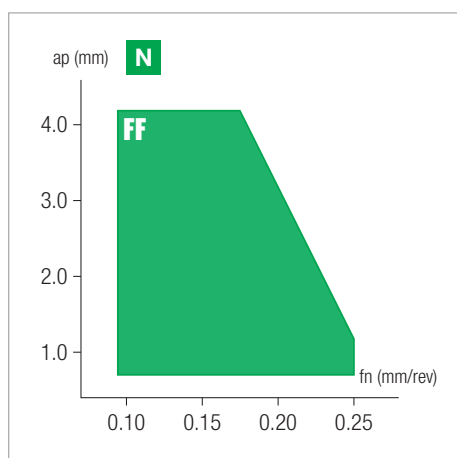
- Increased tip length allows higher depth of cut in comparison with conventional type
- Very common for long chamfering application

FF - FULL FACE

- Great cost effective solution due to multiple cutting edges available
- Maximum connection strength between PCD layer and carbide support



• Application range



N		STANDARD TIP		CHIPBREAKER			
		NEGATIVE	POSITIVE	NEGATIVE	POSITIVE		
	wear resistance	ND150	ND150	-	-		
	1 st CHOICE	ND100	ND100	-	NDP010 / CBU		
	toughness	ND050	ND050	-	-		
	wear resistance	ND150	ND150	-	-		
	1 st CHOICE	ND100	ND100	-	NDP010 / CBU		
	toughness	ND050	ND050	-	-		
	wear resistance	ND100	ND100	-	-		
	1 st CHOICE	ND050	ND050	-	-		
	toughness	-	-	-	-		

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

D	C	G	X	11	T3	04	-	CBU	-	NDP	010
1	2	3	4	5	6	7		8		9	10

1	SHAPE
C	80° rhombic
D	55° rhombic
K	55° parallelogram
S	90° square
T	60° triangular
V	35° rhombic
W	80° trigon

2	RELIEF ANGLE
B	5°
C	7°
D	15°
E	20°
N	0°
P	11°

3	TOLERANCES		
Symbol	I.C.	Thickness	Corner height
E	±0.025	±0.025	±0.025
G	±0.025	±0.13	±0.025
M	±0.05 ~ ±0.15	±0.13	±0.08 ~ ±0.18
U	±0.08 ~ ±0.25	±0.13	±0.13 ~ ±0.38

4	HOLE/CHIPBREAKER		
Symbol	Hole	Hole countersink	Chipbreaker
A		✓	✗
G		✓	✗
M		✓	✗
N		✗	✗
T		✓	40°÷60°
W		✓	40°÷60°
X	NIKKO norm		

5	EDGE LENGHT						
I.C. (mm)	C shape	D shape	R shape	S shape	T shape	V shape	W shape
3.97	03	04		03	06		
4.76	04	05		04	08	08	
5.00			05				
5.56	05	06		05	09		03
6.00			06				
6.35	06	07		06	11	11	04
7.94	08	09		07	13		05
8.00			08				
9.53	09	11	09	09	16	16	06
10.00		12	10				
12.00							
12.70	12	15	12	12	22	22	08
15.88	16	19	15	15	27	24	10
16.00			16				
19.05	19	23	19	19	33	33	13
20.00			20				
22.23	22	27		22	38		
25.00			25				
25.40	25	31	25	25	44	44	17
31.75	32	38	31	31	54	54	21
32.00			32				

6	THICKNESS	
Symbol	(mm)	
01	1.59	
T1	1.98	
02	2.38	
T2	2.78	
03	3.18	
T3	3.97	
04	4.76	
05	5.56	
06	6.35	
07	7.94	
09	9.53	

7	RADIUS	
Symbol	(mm)	
005	0.05	
01	0.10	
02	0.20	
04	0.40	
08	0.80	
12	1.20	
16	1.60	
20	2.00	
24	2.40	

8	EDGES GEOMETRY
1S	full edge
CBU	3D chipbreaker
FF	full face
LRG	large tip size
-	eco tip size

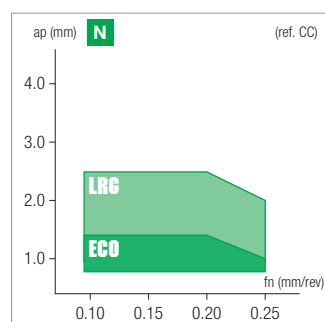
9	GRADE - features
NDD	CVD diamond
NDM	monocrystalline diamond
NDP	PCD polycrystalline diamond

10	GRADE - grit size
xxx	diamond grit (µm)

CC	ISO - with hole	DP: Polycrystalline diamond	DP	DP	DP	DP	DP	DP		
			ND050	ND100	ND120	ND150	ND190	NDP010		
• The most popular insert shape due to high versatility • Clearance angle 7°, effectively reduces the risk of chip jamming when boring • 80° corner can be used for both turning and facing operations • 3D Chip breaker type enables excellent chip flow and chip control • Full edge and full face types allow maximum ap and special applications		Stable machining, light cut	● 1 st choice ○ suitable	○	●	●	●	●	●	
		General machining, medium cut	● 1 st choice ○ suitable	●	●	●	○		●	
		Unstable machining, heavy cut	⊕ 1 st choice ⊕ suitable	⊕						
Dimensions		ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)							
1 edge		P								
		M								
		K								
		N	400 2000	450 2400	450 2400	350 800	400 1000	450 2400		
		S	40 100							
		H								

Designation		RE	IC	S	D1	LE	Stock									
SLANT TIP	eco N  tip angle 7°	CCGT060202	0.2	6.35	2.38	2.8	2.8		●							
		CCGT060204	0.4	6.35	2.38	2.8	2.8	○	●		○					
		CCGT060208	0.8	6.35	2.38	2.8	2.7		○							
		CCGT09T302	0.2	9.525	3.97	4.4	2.8		●							
		CCGT09T304	0.4	9.525	3.97	4.4	2.8	●	●		●	○				
		CCGT09T308	0.8	9.525	3.97	4.4	2.7	○	●		●	○				
		CCGT120404	0.4	12.7	4.76	5.5	2.8		●							
		CCGT120408	0.8	12.7	4.76	5.5	2.7		○							
SLANT TIP	LRG N  large tip tip angle 7°	CCGT060204-LRG	0.4	6.35	2.38	2.8	3.2		○							
		CCGT09T304-LRG	0.4	9.525	3.97	4.4	4.3		●							
		CCGT09T308-LRG	0.8	9.525	3.97	4.4	4.2		●							
		CCGT120404-LRG	0.4	12.7	4.76	5.5	4.3		○							
		CCGT120408-LRG	0.8	12.7	4.76	5.5	4.2		○							
FLAT TIP	eco N 	CCGW060202	0.2	6.35	2.38	2.8	2.8	○	●		○					
		CCGW060204	0.4	6.35	2.38	2.8	2.8	●	●		●					
		CCGW060208	0.8	6.35	2.38	2.8	2.7	○	○		○					
		CCGW09T302	0.2	9.525	3.97	4.4	2.8		●							
		CCGW09T304	0.4	9.525	3.97	4.4	2.8	●	●		●	●				
		CCGW09T308	0.8	9.525	3.97	4.4	2.7	●	●		○	●				
		CCGW120404	0.4	12.7	4.76	5.5	2.8	○	○		○					
		CCGW120408	0.8	12.7	4.76	5.5	2.7	○	○		○					
FLAT TIP	LRG N  large tip	CCGW060204-LRG	0.4	6.35	2.38	2.8	3.2		○							
		CCGW09T304-LRG	0.4	9.525	3.97	4.4	4.3		●							
		CCGW09T308-LRG	0.8	9.525	3.97	4.4	4.2		○							
		CCGW120404-LRG	0.4	12.7	4.76	5.5	4.3		●							
		CCGW120408-LRG	0.8	12.7	4.76	5.5	4.2		○							

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



CC

ISO - with hole

- The most popular insert shape due to high versatility
- Clearance angle 7°, effectively reduces the risk of chip jamming when boring
- 80° corner can be used for both turning and facing operations
- 3D Chip breaker type enables excellent chip flow and chip control
- Full edge and full face types allow maximum ap and special applications

DP: Polycrystalline diamond

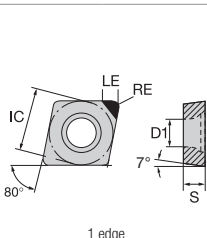
DP DP DP DP DP DP

ND050 ND100 ND120 ND150 ND190 NDP010

Stable machining, light cut ● 1st choice ○ suitableGeneral machining, medium cut ● 1st choice ○ suitableUnstable machining, heavy cut ▲ 1st choice ▲ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

1 edge

P M K N S H

Designation

RE

IC

S

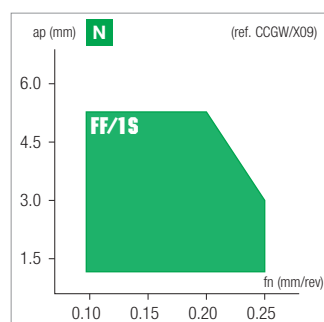
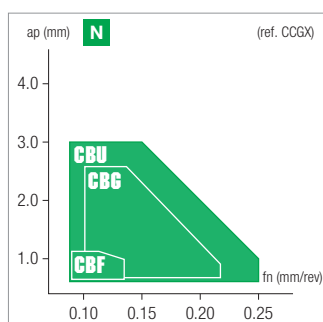
D1

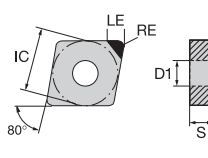
LE

Stock

3D CHIPBREAKER	CBU N		universal use	CCGX060202-CBU	0.2	6.35	2.38	2.8	3.3						●	
				CCGX060204-CBU	0.4	6.35	2.38	2.8	3.1						●	
3D CHIPBREAKER	CBF N		finishing	CCGX060202-CBF	0.2	6.35	2.38	2.8	3.3			▽				
				CCGX060204-CBF	0.4	6.35	2.38	2.8	3.3			▽				
3D CHIPBREAKER	CBG N		medium	CCGX09T308-CBG	0.8	9.525	3.97	4.4	4.2			▽				
FULL EDGE	1S N		high depth of cut right-hand shown	CCGX060204/1S	0.4	6.35	2.38	2.8	6		○					
				CCGX09T304/1S	0.4	9.525	3.97	4.4	9.3		○					
FULL FACE	FF N		high depth of cut	CCGW09T304-FF	0.4	9.525	3.97	4.4	9.3						●	

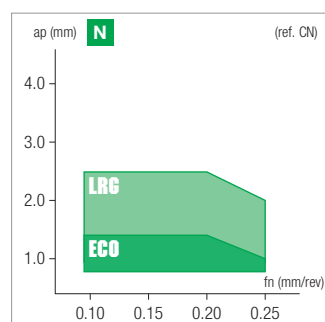
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



CN	DP: Polycrystalline diamond	DP	
		ND100	
ISO - with hole	Stable machining, light cut ● 1 st choice ○ suitable	●	
	General machining, medium cut ● 1 st choice ○ suitable	●	
- The most popular insert shape due to high versatility 80° corner can be used for both turning and facing operations - Strong cutting edge with secure seating in the insert pocket creates good surface finishing - Strong cutting edge with secure seating in the insert pocket creates good surface finishing - Flat tip offers economical solution - Large tip allows much bigger ap, available with both slant and flat style	Unstable machining, heavy cut ▲ 1 st choice ○ suitable	○	
	Dimensions 	ISO P M K N 450 2400 S H	Vc(m/min) - suggested cutting speed range (bold: 1st choice)

Designation		RE	IC	S	D1	LE	Stock	
SLANT TIP	eco N  tip angle 7°	CNGM120404	0.4	12.7	4.76	5.16	2.8	●
		CNGM120408	0.8	12.7	4.76	5.16	2.7	●
SLANT TIP	LRG N  large tip tip angle 7°	CNGM120404-LRG	0.4	12.7	4.76	5.16	4.3	○
		CNGM120408-LRG	0.8	12.7	4.76	5.16	4.2	○
FLAT TIP	eco N 	CNGA120404	0.4	12.7	4.76	5.16	2.8	○
		CNGA120408	0.8	12.7	4.76	5.16	2.7	●
FLAT TIP	LRG N  large tip	CNGA120404-LRG	0.4	12.7	4.76	5.16	4.3	○
		CNGA120408-LRG	0.8	12.7	4.76	5.16	4.2	○

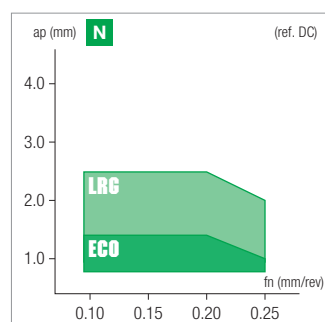
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

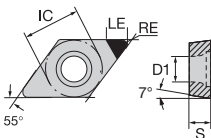


DP: Polycrystalline diamond		DP	DP	DP	DP	DP	DP	
		ND050	ND100	ND120	ND150	ND190	NDP010	
Stable machining, light cut	● 1 st choice ○ suitable	○	●	●	●	●	●	
General machining, medium cut	● 1 st choice ○ suitable	●	●	●	○		●	
Unstable machining, heavy cut	⊕ 1 st choice ⊕ suitable	⊕						
Dimensions	ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)						
	P							
	M							
	K							
	N	400 2000	450 2400	450 2400	350 800	400 1000	450 2400	
	S	40 100						
	H							

		Designation	RE	IC	S	D1	LE	Stock							
SLANT TIP	eco N  tip angle 7°	DCGT070202	0.2	6.35	2.38	2.8	2.5		●						
		DCGT070204	0.4	6.35	2.38	2.8	2.4		●						
		DCGT070208	0.8	6.35	2.38	2.8	2		●						
		DCGT11T302	0.2	9.525	3.97	4.4	2.5		●						
		DCGT11T304	0.4	9.525	3.97	4.4	2.4	●	●		●	○			
		DCGT11T308	0.8	9.525	3.97	4.4	2	●	●		○	○			
SLANT TIP	LRG N  large tip tip angle 7°	DCGT070204-LRG	0.4	6.35	2.38	2.8	2.9		○						
		DCGT11T304-LRG	0.4	9.525	3.97	4.4	3.9		●						
		DCGT11T308-LRG	0.8	9.525	3.97	4.4	3.5		●						
FLAT TIP	eco N  tip angle 7°	DCGW070202	0.2	6.35	2.38	2.8	2.5	●	●		○				
		DCGW070204	0.4	6.35	2.38	2.8	2.4	○	●		○				
		DCGW070208	0.8	6.35	2.38	2.8	2	○	○		○				
		DCGW11T302	0.2	9.525	3.97	4.4	2.5	○	●		○				
		DCGW11T304	0.4	9.525	3.97	4.4	2.4	●	●		●	○			
		DCGW11T308	0.8	9.525	3.97	4.4	2	●	●		●	●			
FLAT TIP	LRG N  large tip	DCGW070204-LRG	0.4	6.35	2.38	2.8	2.9		●						
		DCGW11T304-LRG	0.4	9.525	3.97	4.4	3.9		●						
		DCGW11T308-LRG	0.8	9.525	3.97	4.4	3.5		○						

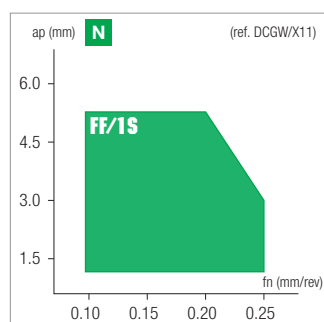
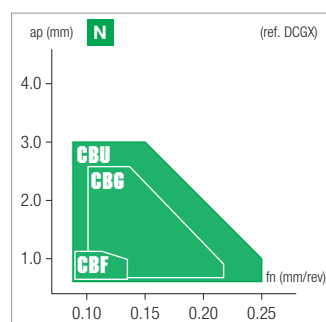
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



DC	ISO - with hole	DP: Polycrystalline diamond	DP	DP	DP	DP	DP	DP				
			ND050	ND100	ND120	ND150	ND190	NDP010				
• Generally the 1st choice for profile/copy turning applications • Able to "In-Copy" (plunge turn in small diameter) with 30° angle • 7° clearance angle, less risk of chip-jamming in boring • Chip breaker type enables excellent chip flow and chip control • Full edge and full face types allow maximum ap and special applications		Stable machining, light cut	● 1 st choice	○ suitable	○	●	●	●	●	●		
		General machining, medium cut	● 1 st choice	○ suitable	●	●	●	○		●		
		Unstable machining, heavy cut	● 1 st choice	○ suitable	○							
Dimensions		ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)									
 1 edge		P										
		M										
		K										
		N	400 2000	450 2400	450 2400	350 800	400 1000	450 2400				
		S	40 100									
		H										

Designation		RE	IC	S	D1	LE	Stock					
3D CHIPBREAKER	CBU N	DCGX070202-CBU	0.2	6.35	2.38	2.8	3.4					●
	universal use	DCGX070204-CBU	0.4	6.35	2.38	2.8	3.2					●
		DCGX11T302-CBU	0.2	9.525	3.97	4.4	4.2					●
		DCGX11T304-CBU	0.4	9.525	3.97	4.4	3.8					●
		DCGX11T308-CBU	0.8	9.525	3.97	4.4	3.6					●
3D CHIPBREAKER	CBF N	DCGX070202-CBF	0.2	6.35	2.38	2.8	3			▽		
	finishing	DCGX11T302-CBF	0.2	9.525	3.97	4.4	4			▽		
3D CHIPBREAKER	CBG N	DCGX11T308-CBG	0.8	9.525	3.97	4.4	3.5			▽		
FULL EDGE	1S N	DCGX070204/-1S	0.4	6.35	2.38	2.8	7.4	●				
	high depth of cut right-hand shown	DCGX11T304/-1S	0.4	9.525	3.97	4.4	11.2	○				
		DCGX11T308/-1S	0.8	9.525	3.97	4.4	10.8	○				
FULL FACE	FF N	DCGW070204-FF	0.4	6.35	2.38	2.8	7.4					●
	high depth of cut	DCGW11T304-FF	0.4	9.525	3.97	4.4	11.2					●
		DCGW11T308-FF	0.8	9.525	3.97	4.4	10.8					●

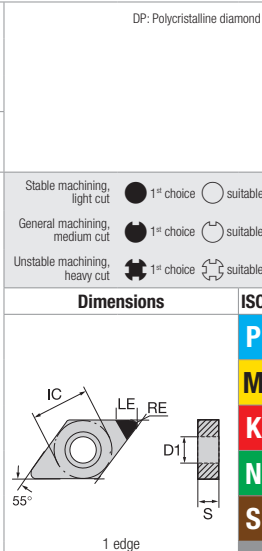
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



DN

ISO - with hole

- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn into a smaller diameter) at an angle of 30°
- 7° clearance angle, less risk of chip-jamming in boring
- Slant tip enables better chip flow and chip control
- Large tip allows much bigger ap, available with both slant and flat style

ISO Vc(m/min) - suggested cutting speed range (bold: 1st choice)P
M
K
N
S
H450
2400

Designation

RE

IC

S

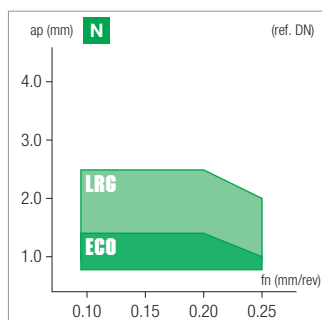
D1

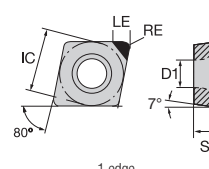
LE

Stock

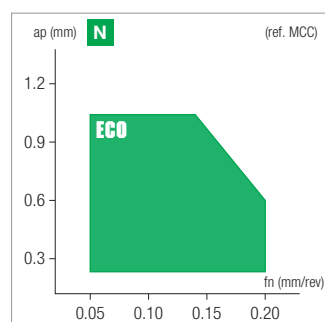
SLANT TIP	eco N	DNGM150604	0.4	12.7	6.35	5.16	2.4	○	
	tip angle 7°	DNGM150608	0.8	12.7	6.35	5.16	2	○	
SLANT TIP	LRG N	DNGM150604-LRG	0.4	12.7	6.35	5.16	3.9	○	
		DNGM150608-LRG	0.8	12.7	6.35	5.16	3.5	○	
FLAT TIP	eco N	DNGA150604	0.4	12.7	6.35	5.16	2.4	○	
		DNGA150608	0.8	12.7	6.35	5.16	2	●	
FLAT TIP	LRG N	DNGA150604-LRG	0.4	12.7	6.35	5.16	3.9	○	
		DNGA150608-LRG	0.8	12.7	6.35	5.16	3.5	○	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



MCC		DP: Polycrystalline diamond		DP	DP	DP			
ISO - with hole				ND050	ND120	ND190			
• 1st solution for micro-boring • Precision brazed and ground insert for microboring operation, completing the micro CC family • Micro boring bar with coolant both in steel (with Vortex technology) and in carbide		Stable machining, light cut	● 1 st choice ○ suitable	○	●	●			
		General machining, medium cut	● 1 st choice ○ suitable	●	●				
		Unstable machining, heavy cut	⚠ 1 st choice ⚠ suitable	⚠					
		Dimensions		ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)				
		P							
		M							
		K							
		N	400 2000	450 2400	400 1000				
		S	40 100						
		H							
Designation		RE	IC	S	D1	LE	Stock		
FLAT TIP	eco N								
									
	MCC.R02	0.2	3.5	1.4	1.9	1.5	●	○	○
	MCC.R04	0.4	3.5	1.4	1.9	1.5	○	○	●

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



MCN

MicroNega - with hole

- MicroNega system it serves as an alternative to positive conventional solutions
- Excellent economy for external small part machining or small boring application
- MicroNega family's PCD Solution, compatible with the entire holder range of MicroNega system
- Chip breaker type enables excellent chip flow and chip control, greatly improves the boring application
- Flat large tip offers economical solution allowing much bigger ap

DP: Polycrystalline diamond

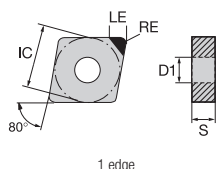
DP

ND120

Stable machining,
light cut ● 1st choice ○ suitableGeneral machining,
medium cut ● 1st choice ○ suitableUnstable machining,
heavy cut ▲ 1st choice ○ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)P
M
K
N
S
H

450

2400

Designation

RE

IC

S

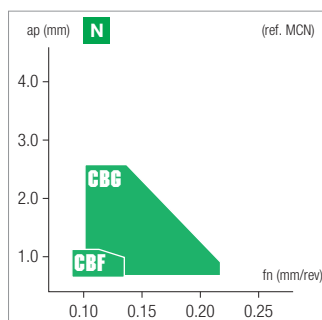
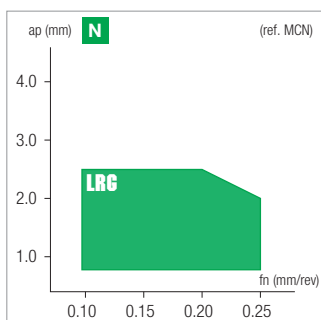
D1

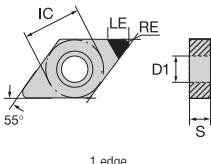
LE

Stock

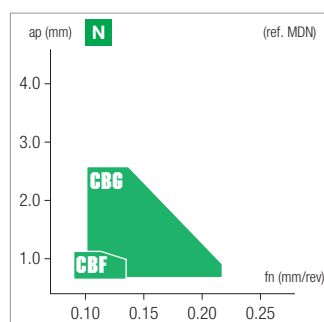
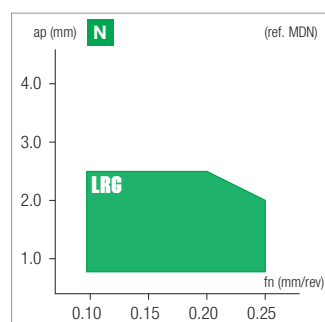
FLAT TIP	LRG N		RE	IC	S	D1	LE	
	MCN.R02G-LRG		0.2	7.5	3.18	3.6	3.3	●
	MCN.R04G-LRG		0.4	7.5	3.18	3.6	3.3	●
	MCN.R08G-LRG		0.8	7.5	3.18	3.6	3.2	●
3D CHIPBREAKER	CBF N		RE	IC	S	D1	LE	
	MCN.R02G-CBF		0.2	7.5	3.18	3.6	3.3	●
3D CHIPBREAKER	CBG N		RE	IC	S	D1	LE	
	MCN.R04G-CBG		0.4	7.5	3.18	3.6	3.3	●
	MCN.R08G-CBG		0.8	7.5	3.18	3.6	3.2	●

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



MDN		DP: Polycrystalline diamond	DP							
			ND120							
MicroNega - with hole										
• MicroNega system it serves as an alternative to positive conventional solutions • Excellent economy for external small part machining or small boring application • MicroNega family's PCD Solution, compatible with the entire holder range of MicroNega system • Chip breaker type enables excellent chip flow and chip control, greatly improves the boring application • Flat large tip offers economical solution allowing much bigger ap		Stable machining, light cut	● 1 st choice ○ suitable	●						
		General machining, medium cut	● 1 st choice ○ suitable	●						
		Unstable machining, heavy cut	⚠ 1 st choice ⚠ suitable							
		Dimensions	ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)						
			P							
			M							
K										
N	450 2400									
S										
H										
Designation		RE	IC	S	D1	LE	Stock			
FLAT TIP	LRG N		MDN.R02G-LRG	0.2	7	3.18	3.6	3.1	●	
	MDN.R04G-LRG		0.4	7	3.18	3.6	2.9	●		
	large tip		MDN.R08G-LRG	0.8	7	3.18	3.6	2.5	●	
3D CHIPBREAKER	CBF N		MDN.R02G-CBF	0.2	7	3.18	3.6	3.1	●	
	finishing		MDN.R04G-CBF	0.4	7	3.18	3.6	2.9	●	
3D CHIPBREAKER	CBG N		MDN.R04G-CBG	0.4	7	3.18	3.6	2.9	●	
	medium		MDN.R08G-CBG	0.8	7	3.18	3.6	2.5	●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



TC

ISO - with hole

- Very versatile insert shape
- Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket
- 3D Chip breaker type enables excellent chip flow and chip control
- Full edge and full face types allow maximum ap and special applications

DP: Polycrystalline diamond

DP DP DP DP DP

ND050 ND100 ND120 ND150 NDP010

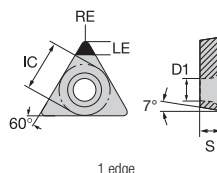
Stable machining, light cut ● 1st choice ○ suitable

General machining, medium cut ● 1st choice ○ suitable

Unstable machining, heavy cut ⚙ 1st choice ⚙ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

1 edge

P M K N S H

P					
M					
K					
N	400 2000	450 2400	450 2400	350 800	450 2400
S	40 100				
H					

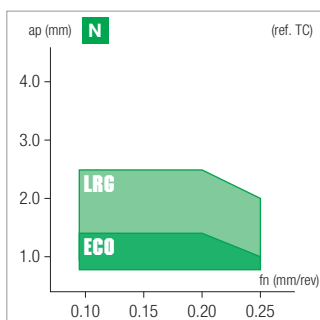
Designation

RE IC S D1 LE

Stock

SLANT TIP	eco N	TCGT090202	0.2	5.56	2.38	2.5	2.6						
			0.4	5.56	2.38	2.5	2.5						
SLANT TIP	tip angle 7°	TCGT110202	0.2	6.35	2.38	2.8	2.6						
		TCGT110204	0.4	6.35	2.38	2.8	2.5						
		TCGT110208	0.8	6.35	2.38	2.8	2.2						
		TCGT16T304	0.4	9.525	3.97	4.4	2.5						
		TCGT16T308	0.8	9.525	3.97	4.4	2.2						
SLANT TIP	LRG N	TCGT110204-LRG	0.4	6.35	2.38	2.8	4						
		TCGT110208-LRG	0.8	6.35	2.38	2.8	3.7						
		TCGT16T304-LRG	0.4	9.525	3.97	4.4	4						
		TCGT16T308-LRG	0.8	9.525	3.97	4.4	3.7						
FLAT TIP	eco N	TCGW090202	0.2	5.56	2.38	2.5	2.6						
		TCGW090204	0.4	5.56	2.38	2.5	2.5						
		TCGW110202	0.2	6.35	2.38	2.8	2.6						
		TCGW110204	0.4	6.35	2.38	2.8	2.5						
		TCGW110208	0.8	6.35	2.38	2.8	2.2						
		TCGW16T304	0.4	9.525	3.97	4.4	2.5						
		TCGW16T308	0.8	9.525	3.97	4.4	2.2						
FLAT TIP	LRG N	TCGW110204-LRG	0.4	6.35	2.38	2.8	4						
		TCGW110208-LRG	0.8	6.35	2.38	2.8	3.7						
		TCGW16T304-LRG	0.4	9.525	3.97	4.4	4						
		TCGW16T308-LRG	0.8	9.525	3.97	4.4	3.7						

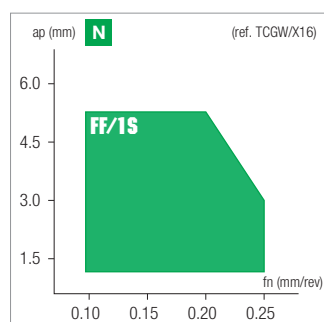
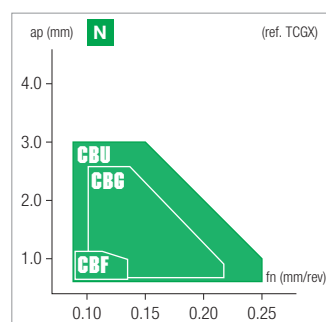
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



TC		DP: Polycrystalline diamond						DP	DP	DP	DP	DP						
ISO - with hole								ND050	ND100	ND120	ND150	NDP010						
• Very versatile insert shape • Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket • 3D Chip breaker type enables excellent chip flow and chip control • Full edge and full face types allow maximum ap and special applications	Stable machining, light cut 1st choice suitable General machining, medium cut 1st choice suitable Unstable machining, heavy cut 1st choice suitable																	
	Dimensions						ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)										
	1 edge						P											
							M											
							K											
N							400 2000	450 2400	450 2400	350 800	450 2400							
						S	40 100											
						H												

Designation		RE	IC	S	D1	LE	Stock					
3D CHIPBREAKER  universal use	TCGX110204-CBU	0.4	6.35	2.38	2.8	3.4					●	
	TCGX16T304-CBU	0.4	9.525	3.97	4.4	4.5					●	
	TCGX16T308-CBU	0.8	9.525	3.97	4.4	4.1					●	
3D CHIPBREAKER  finishing	TCGX090202-CBF	0.2	5.56	2.38	2.5	3.6			▽			
	TCGX110202-CBF	0.2	6.35	2.38	2.8	4.1			▽			
	TCGX110204-CBF	0.4	6.35	2.38	2.8	4			▽			
	TCGX16T304-CBF	0.4	9.525	3.97	4.4	4			▽			
3D CHIPBREAKER  medium	TCGX090204-CBG	0.4	5.56	2.38	2.5	3.5			▽			
	TCGX110204-CBG	0.4	6.35	2.38	2.8	4			▽			
	TCGX110208-CBG	0.8	6.35	2.38	2.8	3.7			▽			
	TCGX16T304-CBG	0.4	9.525	3.97	4.4	4			▽			
	TCGX16T308-CBG	0.8	9.525	3.97	4.4	3.7			▽			
FULL EDGE  high depth of cut	TCGX090204-1S	0.4	5.56	2.38	2.5	9		●				
	TCGX110204-1S	0.4	6.35	2.38	2.8	10.3		●				
	TCGX16T304-1S	0.4	9.525	3.97	4.4	16.1		●				
FULL FACE  high depth of cut	TCGW110204-FF	0.4	6.35	2.38	2.8	10.3					●	
	TCGW16T304-FF	0.4	9.525	3.97	4.4	16.1					●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



TN

ISO - with hole

- Very versatile insert shape
- Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket
- Slant tip enables better chip flow and chip control
- Large tip allows much bigger ap, available with both slant and flat style

DP: Polycrystalline diamond

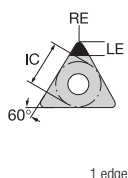
DP

ND100

Stable machining,
light cut ● 1st choice ○ suitableGeneral machining,
medium cut ● 1st choice ○ suitableUnstable machining,
heavy cut ▲ 1st choice ○ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P

M

K

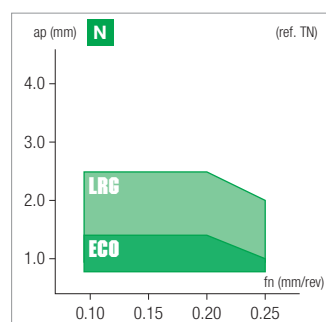
N 450
2400

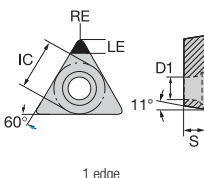
S

H

Designation		RE	IC	S	D1	LE	Stock	
SLANT TIP	eco N  tip angle 7°	TNMG160404	0.4	9.525	4.76	3.81	2.5	●
		TNMG160408	0.8	9.525	4.76	3.81	2	○
SLANT TIP	LRG N  large tip tip angle 7°	TNMG160404-LRG	0.4	9.525	4.76	3.81	4	○
		TNMG160408-LRG	0.8	9.525	4.76	3.81	3.7	○
FLAT TIP	eco N 	TNGA160404	0.4	9.525	4.76	3.81	2.5	○
		TNGA160408	0.8	9.525	4.76	3.81	2	○
FLAT TIP	LRG N  large tip	TNGA160404-LRG	0.4	9.525	4.76	3.81	4	○
		TNGA160408-LRG	0.8	9.525	4.76	3.81	3.7	○

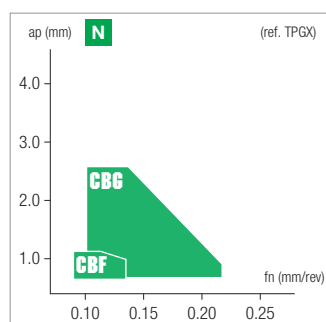
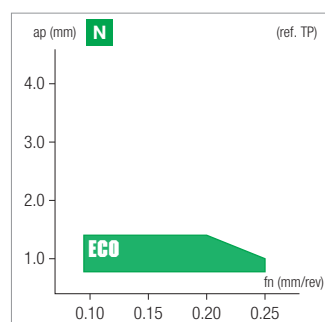
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



TP	DP: Polycrystalline diamond			DP	DP	DP	
				ND050	ND100	ND120	
ISO - with hole							
• Very versatile insert shape • Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket • Slant tip enables better chip flow and chip control • Large tip allows much bigger ap, available with both slant and flat style	Stable machining, light cut 1 st choice suitable						
	General machining, medium cut 1 st choice suitable						
	Unstable machining, heavy cut 1 st choice suitable						
	Dimensions			ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)		
				P			
			M				
			K				
			N	400 2000	450 2400	450 2400	
			S	40 100			
			H				

Designation		RE	IC	S	D1	LE	Stock			
SLANT TIP	eco N tip angle 7°	TPGT080202	0.2	4.76	2.38	2.3	2.6	○	○	
		TPGT080204	0.4	4.76	2.38	2.3	2.5		●	
		TPGT090202	0.2	4.76	2.38	2.3	2.6	○		
		TPGT090204	0.4	4.76	2.38	2.3	2.5	○		
		TPGT110302	0.2	4.76	2.38	2.3	2.6		●	
		TPGT110304	0.4	4.76	2.38	2.3	2.2		●	
FLAT TIP	eco N 	TPGW080202	0.2	4.76	2.38	2.3	2.6	○		
		TPGW080204	0.4	4.76	2.38	2.3	2.5	○		
		TPGW090202	0.2	5.56	2.38	3	2.6	○		
		TPGW090204	0.4	5.56	2.38	3	2.5		●	
		TPGW110302	0.2	6.35	3.18	3.3	2.6	○		
		TPGW110304	0.4	6.35	3.18	3.3	2.2	○		
3D CHIPBREAKER	CBF N finishing	TPGX090204-CBF	0.4	5.56	2.38	3	3.1			▽
		TPGX110302-CBF	0.2	6.35	3.18	3.3	4.1			▽
		TPGX110304-CBF	0.4	6.35	3.18	3.3	4			▽
3D CHIPBREAKER	CBG N medium	TPGX090204-CBG	0.4	5.56	2.38	3	3.1			▽
		TPGX110304-CBG	0.4	6.35	3.18	3.3	4			▽

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



VB

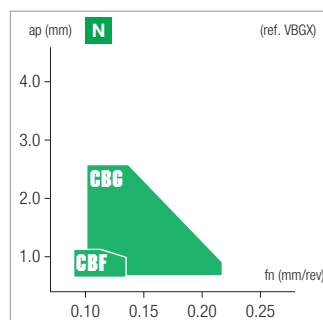
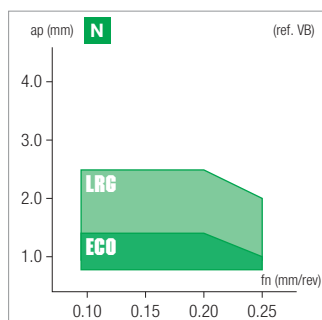
ISO - with hole

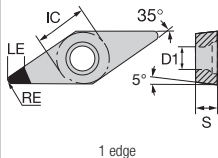
- 1st choice for intricate shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock/live center
- 3D Chip breaker type enables excellent chip flow and chip control
- Large tip allows much bigger ap, available with both slant and flat style

DP: Polycrystalline diamond		DP	DP	DP	DP	DP	
		ND050	ND100	ND120	ND150	ND190	
Stable machining, light cut ● 1 st choice ○ suitable		○	●	●	●	●	
General machining, medium cut ● 1 st choice ○ suitable		●	●	●	○		
Unstable machining, heavy cut ⚙ 1 st choice ⚙ suitable		⚙					
Dimensions		ISO					
		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)					
		P					
		M					
		K					
		N	400 2000	450 2400	450 2400	350 800	400 1000
		S	40 100				
		H					

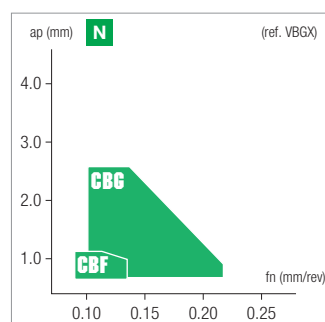
Designation		RE	IC	S	D1	LE	Stock			
SLANT TIP	eco N	VBGT110302	0.2	6.35	3.18	2.8	3	●	●	
		VBGT110304	0.4	6.35	3.18	2.8	2.5	●		
	tip angle 7°	VBGT160404	0.4	9.525	4.76	4.4	2.5	●	●	○ ○
		VBGT160408	0.8	9.525	4.76	4.4	2.2	●	●	● ○
SLANT TIP	LRG N	VBGT160404-LRG	0.4	9.525	4.76	4.4	4.5	●		
	large tip tip angle 7°	VBGT160408-LRG	0.8	9.525	4.76	4.4	3.7	●		
FLAT TIP	eco N	VBGW110302	0.2	6.35	3.18	2.8	3	●	●	○
		VBGW110304	0.4	6.35	3.18	2.8	2.5	○	●	○
		VBGW160404	0.4	9.525	4.76	4.4	2.5	○	●	○ ○
		VBGW160408	0.8	9.525	4.76	4.4	2.2	○ ○		○ ○
FLAT TIP	LRG N	VBGW160404-LRG	0.4	9.525	4.76	4.4	4.5	●		
	large tip	VBGW160408-LRG	0.8	9.525	4.76	4.4	3.7	●		
3D CHIPBREAKER	CBF N	VBGX110302-CBF	0.2	6.35	3.18	2.8	5		▽	
		VBGX110304-CBF	0.4	6.35	3.18	2.8	4.5		▽	
	finishing	VBGX160404-CBF	0.4	9.525	4.76	4.4	4.5		▽	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



VB	DP: Polycrystalline diamond						DP	DP	DP	DP	DP					
							ND050	ND100	ND120	ND150	ND190					
ISO - with hole																
• 1st choice for intricate shape copy turning • Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49° • Can work extremely close to the tailstock/ live center • 3D Chip breaker type enables excellent chip flow and chip control • Large tip allows much bigger ap, available with both slant and flat style	Stable machining, light cut ● 1 st choice ○ suitable						○	●	●	●	●					
	General machining, medium cut ● 1 st choice ○ suitable						●	●	●	○						
	Unstable machining, heavy cut ▲ 1 st choice ○ suitable						▲									
Dimensions						ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)									
						P										
						M										
						K										
						N	400 2000	450 2400	450 2400	350 800	400 1000					
						S	40 100									
						H										
1 edge																
3D CHIPBREAKER	Designation						RE	IC	S	D1	LE	Stock				
		VBGX110304-CBG					0.4	6.35	3.18	2.8	4.5			▽		
		VBGX160404-CBG					0.4	9.525	4.76	4.4	4.5			▽		
		VBGX160408-CBG					0.8	9.525	4.76	4.4	3.7			▽		
medium																

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



VC

ISO - with hole

- 1st choice for intricate shape copy turning
- Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49°
- Can work extremely close to the tailstock/live center
- 3D Chip breaker type enables excellent chip flow and chip control
- Full edge type allows max. ap and special applications

DP: Polycrystalline diamond

DP DP DP DP DP DP

ND050 ND100 ND120 ND150 ND190 NDP010

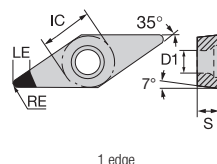
Stable machining, light cut ● 1st choice ○ suitable

General machining, medium cut ● 1st choice ○ suitable

Unstable machining, heavy cut ▲ 1st choice ▲ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P M K N S H

Designation

RE

IC

S

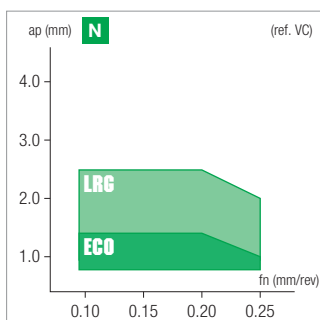
D1

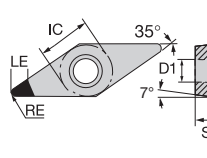
LE

Stock

SLANT TIP	eco N	VC												
			VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
SLANT TIP	eco N	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
			VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
			VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
			VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
			VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
SLANT TIP	LRG N	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
			VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
FLAT TIP	eco N	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
			VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
			VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
			VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
FLAT TIP	LRG N	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
			VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
			VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC
			VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC	VC

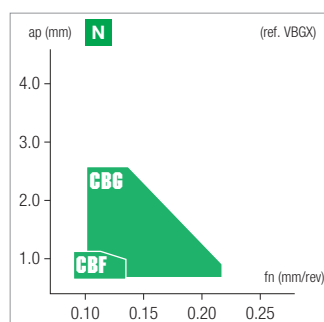
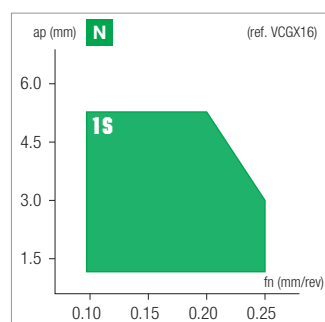
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



VC	DP: Polycrystalline diamond												
	DP	DP	DP	DP	DP	DP							
ISO - with hole	ND050	ND100	ND120	ND150	ND190	NDP010							
• 1st choice for intricate shape copy turning • Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49° • Can work extremely close to the tailstock/ live center • 3D Chip breaker type enables excellent chip flow and chip control • Full edge type allows max. ap and special applications	Stable machining, light cut 1 st choice suitable												
	General machining, medium cut 1 st choice suitable												
	Unstable machining, heavy cut 1 st choice suitable												
Dimensions							ISO						
 1 edge							Vc(m/min) - suggested cutting speed range (bold: 1st choice)						
							P						
							M						
							K						
							N						
							S						
H													

Designation		RE	IC	S	D1	LE	Stock					
3D CHIPBREAKER CBU N		VC6X110302-CBU	0.2	6.35	3.18	2.8	4.5					●
	universal use	VC6X110304-CBU	0.4	6.35	3.18	2.8	4					●
		VC6X160404-CBU	0.4	9.525	4.76	4.4	5					●
		VC6X160408-CBU	0.8	9.525	4.76	4.4	4.4					●
3D CHIPBREAKER CBF N		VC6X110302-CBF	0.2	6.35	3.18	2.8	5		▽			
	finishing	VC6X110304-CBF	0.4	6.35	3.18	2.8	4.5		▽			
3D CHIPBREAKER CBG N		VC6X110304-CBG	0.4	6.35	3.18	2.8	4.5		▽			
FULL EDGE 1S N		VC6X110304/-1S	0.4	6.35	3.18	2.8	10.7	●				
	high depth of cut right-hand shown	VC6X160404/-1S	0.4	9.525	4.76	4.4	16.2	●				

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



WN**ISO - with hole**

- Generally used on more moderate depths of cut and feedrates than 80° C shape inserts
- Slant tip enables better chip flow and chip control
- Large tip allows much bigger ap, available with both slant and flat style

DP: Polycrystalline diamond

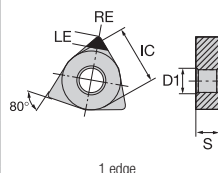
DP

ND100

Stable machining, light cut ● 1st choice ○ suitable ●

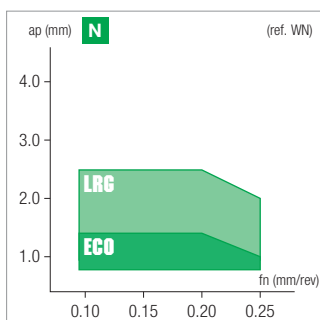
General machining, medium cut ● 1st choice ○ suitable ●

Unstable machining, heavy cut ▲ 1st choice ○ suitable

Dimensions**ISO****Vc(m/min) - suggested cutting speed range (bold: 1st choice)**
P
M
K
N 450
 2400
S
H
Designation**RE****IC****S****D1****LE****Stock**

SLANT TIP	eco N	WNGM080404	0.4	12.7	4.76	5.16	2.8	●	
	tip angle 7°	WNGM080408	0.8	12.7	4.76	5.16	2.7	●	
SLANT TIP	LRG N	WNGM080404-LRG	0.4	12.7	4.76	5.16	4.3	○	
		WNGM080408-LRG	0.8	12.7	4.76	5.16	4.2	○	
FLAT TIP	eco N	WNGA080404	0.4	12.7	4.76	5.16	2.8	●	
		WNGA080408	0.8	12.7	4.76	5.16	2.7	○	
FLAT TIP	LRG N	WNGA080404-LRG	0.4	12.7	4.76	5.16	4.3	○	
		WNGA080408-LRG	0.8	12.7	4.76	5.16	4.2	○	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



ISO 513	MATERIAL	ND050 (NDP001)			ND100 / ND120 (NDP010)			ND150 (NDP302)			ND190 (NDP025)		
		min	start	max	min	start	max	min	start	max	min	start	max
N1	Aluminium alloys Si ≤ 12% (ex. 3.4365/AlZn5.5MgCu/ERGA1)	○ 600	1300	2000	● 600	1500	2400						
		● 450	1100	1750	● 450	1300	2150						
		⊕ 400	1000	1600									
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)				● 300	500	700	● 400	600	800	● 400	700	1000
					● 250	400	550	⊕ 350	500	650			
N3	Copper alloy (ex. 2.0060/E-Cu57)	○ 400	800	1200	● 400	900	1400						
		● 350	700	1050	● 350	800	1250						
		⊕ 300	600	900									
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)	○ 50	75	100									
		● 45	60	75									
		⊕ 40	50	60									

Complete workpiece materials p. H1.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING	DESIGNATION	DEPTH OF CUT			FEED RATE		
		ap (mm)			fn (mm/rev)		
		min	start	max	min	start	max
	CCGT060202	0.40	1.00	1.60	0.05	0.10	0.15
	CCGT060204	0.40	1.00	1.60	0.10	0.15	0.20
	CCGT060204-LRG	0.40	1.20	2.00	0.10	0.15	0.20
	CCGT060208	0.40	1.00	1.60	0.15	0.20	0.25
	CCGT09T302	0.40	1.00	1.60	0.05	0.10	0.15
	CCGT09T304	0.40	1.00	1.60	0.10	0.15	0.20
	CCGT09T304-LRG	0.40	1.20	2.00	0.10	0.15	0.20
	CCGT09T308	0.40	1.00	1.60	0.15	0.20	0.25
	CCGT09T308-LRG	0.40	1.50	2.60	0.10	0.15	0.20
	CCGT120404	0.40	1.00	1.60	0.10	0.15	0.20
	CCGT120404-LRG	0.40	1.20	2.00	0.10	0.15	0.20
	CCGT120408	0.40	1.00	1.60	0.15	0.20	0.25
	CCGT120408-LRG	0.40	1.50	2.60	0.10	0.15	0.20
	CCGW060202	0.40	1.00	1.60	0.05	0.10	0.15
	CCGW060204	0.40	1.00	1.60	0.10	0.15	0.20
	CCGW060204-LRG	0.40	1.20	2.00	0.10	0.15	0.20
	CCGW060208	0.40	1.00	1.60	0.15	0.20	0.25
	CCGW09T302	0.40	1.00	1.60	0.05	0.10	0.15
	CCGW09T304	0.40	1.00	1.60	0.10	0.15	0.20
	CCGW09T304-LRG	0.40	1.20	2.00	0.10	0.15	0.20
	CCGW09T308	0.40	1.00	1.60	0.15	0.20	0.25
	CCGW09T308-LRG	0.40	1.50	2.60	0.10	0.15	0.20
	CCGW120404	0.40	1.00	1.60	0.10	0.15	0.20
	CCGW120404-LRG	0.40	1.20	2.00	0.10	0.15	0.20
	CCGW120408	0.40	1.00	1.60	0.15	0.20	0.25
	CCGW120408-LRG	0.40	1.50	2.60	0.10	0.15	0.20
	CCGX060202-CBF	0.20	0.60	1.00	0.04	0.08	0.12
	CCGX060202-CBU	0.20	1.50	2.80	0.04	0.08	0.12
	CCGX060204-CBF	0.20	0.60	1.00	0.05	0.10	0.15
	CCGX060204-CBG	0.40	1.20	2.00	0.10	0.15	0.20
	CCGX060204-CBU	0.20	1.50	2.80	0.04	0.12	0.20
	CCGX060204/-r-1S	0.50	2.00	3.50	0.10	0.15	0.20
	CCGX060208-CBU	0.20	1.50	2.80	0.08	0.18	0.26
	CCGX09T304-CBG	0.50	1.50	2.50	0.10	0.15	0.20
	CCGX09T304-CBU	0.20	1.50	2.80	0.04	0.12	0.20
	CCGX09T304/-r-1S	0.50	3.00	5.50	0.10	0.15	0.20
	CCGX09T308-CBG	0.50	1.50	2.50	0.15	0.20	0.25
	CCGX09T308-CBU	0.20	1.50	2.80	0.08	0.18	0.26
	CNGA120404	0.40	1.00	1.60	0.10	0.15	0.20
	CNGA120404-LRG	0.40	1.20	2.00	0.10	0.15	0.20
	CNGA120408	0.40	1.00	1.60	0.15	0.20	0.25
	CNGA120408-LRG	0.40	1.50	2.60	0.10	0.15	0.20
	CNGM120404	0.40	1.00	1.60	0.10	0.15	0.20
	CNGM120404-LRG	0.40	1.20	2.00	0.10	0.15	0.20
	CNGM120408	0.40	1.00	1.60	0.15	0.20	0.25
	CNGM120408-LRG	0.40	1.50	2.60	0.10	0.15	0.20
	DCGT070202	0.40	1.00	1.60	0.05	0.10	0.15
	DCGT070204	0.40	1.00	1.60	0.10	0.15	0.20
	DCGT070204-LRG	0.40	1.20	2.00	0.10	0.15	0.20
	DCGT070208	0.40	1.00	1.60	0.15	0.20	0.25
	DCGT11T302	0.40	1.00	1.60	0.05	0.10	0.15
	DCGT11T304	0.40	1.00	1.60	0.10	0.15	0.20
	DCGT11T304-LRG	0.40	1.20	2.00	0.10	0.15	0.20
	DCGT11T308	0.40	1.00	1.60	0.15	0.20	0.25

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
DCGT11T308-LRG	0.40	1.50	2.60	0.10	0.15	0.20
DCGW070202	0.40	1.00	1.60	0.05	0.10	0.15
DCGW070204	0.40	1.00	1.60	0.10	0.15	0.20
DCGW070204-FF	0.50	2.00	3.50	0.10	0.15	0.20
DCGW070204-LRG	0.40	1.20	2.00	0.10	0.15	0.20
DCGW070208	0.40	1.00	1.60	0.15	0.20	0.25
DCGW11T302	0.40	1.00	1.60	0.05	0.10	0.15
DCGW11T304	0.40	1.00	1.60	0.10	0.15	0.20
DCGW11T304-FF	0.50	3.00	5.50	0.10	0.15	0.20
DCGW11T304-LRG	0.40	1.20	2.00	0.10	0.15	0.20
DCGW11T308	0.40	1.00	1.60	0.15	0.20	0.25
DCGW11T308-FF	0.50	3.00	5.50	0.15	0.20	0.25
DCGW11T308-LRG	0.40	1.50	2.60	0.10	0.15	0.20
DCGX070202-CBF	0.20	0.60	1.00	0.04	0.08	0.12
DCGX070202-CBU	0.20	1.50	2.80	0.04	0.08	0.12
DCGX070204-CBU	0.20	1.50	2.80	0.04	0.12	0.20
DCGX070204/-r-1S	0.50	2.00	3.50	0.10	0.15	0.20
DCGX11T302-CBF	0.20	0.60	1.00	0.04	0.08	0.12
DCGX11T302-CBU	0.20	1.50	2.80	0.04	0.08	0.12
DCGX11T304-CBG	0.50	1.50	2.50	0.10	0.15	0.20
DCGX11T304-CBU	0.20	1.50	2.80	0.04	0.12	0.20
DCGX11T304/-r-1S	0.50	3.00	5.50	0.10	0.15	0.20
DCGX11T308-CBG	0.50	1.50	2.50	0.15	0.20	0.25
DCGX11T308-CBU	0.20	1.50	2.80	0.08	0.18	0.26
DCGX11T308/-r-1S	0.50	3.00	5.50	0.15	0.20	0.25
DNGA150604	0.40	1.00	1.60	0.10	0.15	0.20
DNGA150604-LRG	0.40	1.20	2.00	0.10	0.15	0.20
DNGA150608	0.40	1.00	1.60	0.15	0.20	0.25
DNGA150608-LRG	0.40	1.50	2.60	0.10	0.15	0.20
DNGM150604	0.40	1.00	1.60	0.10	0.15	0.20
DNGM150604-LRG	0.40	1.20	2.00	0.10	0.15	0.20
DNGM150608	0.40	1.00	1.60	0.15	0.20	0.25
DNGM150608-LRG	0.40	1.50	2.60	0.10	0.15	0.20
MCC.R02	0.20	0.60	1.00	0.05	0.10	0.15
MCC.R04	0.20	0.60	1.00	0.10	0.15	0.20
MCN.R02G-CBF	0.20	0.60	1.00	0.04	0.08	0.12
MCN.R02G-LRG	0.40	1.20	2.00	0.05	0.10	0.15
MCN.R04G-CBF	0.20	0.60	1.00	0.05	0.10	0.15
MCN.R04G-CBG	0.40	1.20	2.00	0.10	0.15	0.20
MCN.R04G-LRG	0.40	1.20	2.00	0.10	0.15	0.20
MCN.R08G-CBG	0.40	1.20	2.00	0.15	0.20	0.25
MCN.R08G-LRG	0.40	1.20	2.00	0.15	0.20	0.25
MDN.R02G-CBF	0.20	0.60	1.00	0.04	0.08	0.12
MDN.R02G-LRG	0.40	1.20	2.00	0.05	0.10	0.15
MDN.R04G-CBF	0.20	0.60	1.00	0.05	0.10	0.15
MDN.R04G-CBG	0.40	1.20	2.00	0.10	0.15	0.20
MDN.R04G-LRG	0.40	1.20	2.00	0.10	0.15	0.20
MDN.R08G-CBG	0.40	1.20	2.00	0.15	0.20	0.25
MDN.R08G-LRG	0.40	1.20	2.00	0.15	0.20	0.25
TCGT090202	0.40	1.00	1.60	0.05	0.10	0.15
TCGT090204	0.40	1.00	1.60	0.10	0.15	0.20
TCGT110202	0.40	1.00	1.60	0.05	0.10	0.15
TCGT110204	0.40	1.00	1.60	0.10	0.15	0.20
TCGT110204-LRG	0.40	1.20	2.00	0.10	0.15	0.20
TCGT110208	0.40	1.00	1.60	0.15	0.20	0.25
TCGT110208-LRG	0.40	1.50	2.60	0.10	0.15	0.20

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
TCGT16T304	0.40	1.00	1.60	0.10	0.15	0.20
TCGT16T304-LRG	0.40	1.20	2.00	0.10	0.15	0.20
TCGT16T308	0.40	1.00	1.60	0.15	0.20	0.25
TCGT16T308-LRG	0.40	1.50	2.60	0.10	0.15	0.20
TCGW090202	0.40	1.00	1.60	0.05	0.10	0.15
TCGW090204	0.40	1.00	1.60	0.10	0.15	0.20
TCGW110202	0.40	1.00	1.60	0.05	0.10	0.15
TCGW110204	0.40	1.00	1.60	0.10	0.15	0.20
TCGW110204-FF	0.50	2.00	3.50	0.10	0.15	0.20
TCGW110204-LRG	0.40	1.20	2.00	0.10	0.15	0.20
TCGW110208	0.40	1.00	1.60	0.15	0.20	0.25
TCGW110208-LRG	0.40	1.50	2.60	0.10	0.15	0.20
TCGW16T304	0.40	1.00	1.60	0.10	0.15	0.20
TCGW16T304-FF	0.50	3.00	5.50	0.10	0.15	0.20
TCGW16T304-LRG	0.40	1.20	2.00	0.10	0.15	0.20
TCGW16T308	0.40	1.00	1.60	0.15	0.20	0.25
TCGW16T308-LRG	0.40	1.50	2.60	0.10	0.15	0.20
TCGX090202-CBF	0.20	0.60	1.00	0.04	0.08	0.12
TCGX090204-1S	0.50	1.50	2.50	0.10	0.15	0.20
TCGX090204-CBG	0.40	1.20	2.00	0.10	0.15	0.20
TCGX110202-CBF	0.20	0.60	1.00	0.04	0.08	0.12
TCGX110204-1S	0.50	2.00	3.50	0.10	0.15	0.20
TCGX110204-CBF	0.20	0.60	1.00	0.05	0.10	0.15
TCGX110204-CBG	0.50	1.50	2.50	0.10	0.15	0.20
TCGX110204-CBU	0.20	1.50	2.80	0.04	0.12	0.20
TCGX110208-CBG	0.50	1.50	2.50	0.15	0.20	0.25
TCGX16T304-1S	0.50	3.00	5.50	0.10	0.15	0.20
TCGX16T304-CBF	0.20	0.60	1.00	0.05	0.10	0.15
TCGX16T304-CBG	0.50	1.50	2.50	0.10	0.15	0.20
TCGX16T304-CBU	0.20	1.50	2.80	0.04	0.12	0.20
TCGX16T308-CBG	0.50	1.50	2.50	0.15	0.20	0.25
TCGX16T308-CBU	0.20	1.50	2.80	0.08	0.18	0.26
TNGA160404	0.40	1.00	1.60	0.10	0.15	0.20
TNGA160404-LRG	0.40	1.20	2.00	0.10	0.15	0.20
TNGA160408	0.40	1.00	1.60	0.15	0.20	0.25
TNGA160408-LRG	0.40	1.50	2.60	0.10	0.15	0.20
TNGM160404	0.40	1.00	1.60	0.10	0.15	0.20
TNGM160404-LRG	0.40	1.20	2.00	0.10	0.15	0.20
TNGM160408	0.40	1.00	1.60	0.15	0.20	0.25
TNGM160408-LRG	0.40	1.50	2.60	0.10	0.15	0.20
TPGT080202	0.40	1.00	1.60	0.05	0.10	0.15
TPGT080204	0.40	1.00	1.60	0.10	0.15	0.20
TPGT090202	0.40	1.00	1.60	0.05	0.10	0.15
TPGT090204	0.40	1.00	1.60	0.10	0.15	0.20
TPGT110302	0.40	1.00	1.60	0.05	0.10	0.15
TPGT110304	0.40	1.00	1.60	0.10	0.15	0.20
TPGW080202	0.40	1.00	1.60	0.05	0.10	0.15
TPGW080204	0.40	1.00	1.60	0.10	0.15	0.20
TPGW090202	0.40	1.00	1.60	0.05	0.10	0.15
TPGW090204	0.40	1.00	1.60	0.10	0.15	0.20
TPGW110302	0.40	1.00	1.60	0.05	0.10	0.15
TPGW110304	0.40	1.00	1.60	0.10	0.15	0.20
TPGX090202-CBF	0.20	0.60	1.00	0.04	0.08	0.12
TPGX090204-CBF	0.20	0.60	1.00	0.05	0.10	0.15
TPGX090204-CBG	0.50	1.50	2.50	0.10	0.15	0.20
TPGX110302-CBF	0.20	0.60	1.00	0.04	0.08	0.12

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
TPGX110304-CBF	0.20	0.60	1.00	0.05	0.10	0.15
TPGX110304-CBG	0.50	1.50	2.50	0.10	0.15	0.20
TPGX110308-CBF	0.20	0.60	1.00	0.10	0.15	0.20
VBGT110302	0.40	1.00	1.60	0.05	0.10	0.15
VBGT110304	0.40	1.00	1.60	0.10	0.15	0.20
VBGT160404	0.40	1.00	1.60	0.10	0.15	0.20
VBGT160404-LRG	0.40	1.20	2.00	0.10	0.15	0.20
VBGT160408	0.40	1.00	1.60	0.15	0.20	0.25
VBGT160408-LRG	0.40	1.50	2.60	0.10	0.15	0.20
VBGW110302	0.40	1.00	1.60	0.05	0.10	0.15
VBGW110304	0.40	1.00	1.60	0.10	0.15	0.20
VBGW160404	0.40	1.00	1.60	0.10	0.15	0.20
VBGW160404-LRG	0.40	1.20	2.00	0.10	0.15	0.20
VBGW160408	0.40	1.00	1.60	0.15	0.20	0.25
VBGW160408-LRG	0.40	1.50	2.60	0.10	0.15	0.20
VBGX110302-CBF	0.20	0.60	1.00	0.04	0.08	0.12
VBGX110304-CBF	0.20	0.60	1.00	0.05	0.10	0.15
VBGX110304-CBG	0.50	1.50	2.50	0.10	0.15	0.20
VBGX160404-CBF	0.20	0.60	1.00	0.05	0.10	0.15
VBGX160404-CBG	0.50	1.50	2.50	0.10	0.15	0.20
VBGX160408-CBG	0.50	1.50	2.50	0.15	0.20	0.25
VCGT110302	0.40	1.00	1.60	0.05	0.10	0.15
VCGT110304	0.40	1.00	1.60	0.10	0.15	0.20
VCGT160402	0.40	1.00	1.60	0.05	0.10	0.15
VCGT160404	0.40	1.00	1.60	0.10	0.15	0.20
VCGT160404-LRG	0.40	1.20	2.00	0.10	0.15	0.20
VCGT160408	0.40	1.00	1.60	0.15	0.20	0.25
VCGT160408-LRG	0.40	1.50	2.60	0.10	0.15	0.20
VCGW110302	0.40	1.00	1.60	0.05	0.10	0.15
VCGW110304	0.40	1.00	1.60	0.10	0.15	0.20
VCGW110304-LRG	0.40	1.20	2.00	0.10	0.15	0.20
VCGW160404	0.40	1.00	1.60	0.10	0.15	0.20
VCGW160404-LRG	0.40	1.20	2.00	0.10	0.15	0.20
VCGW160408	0.40	1.00	1.60	0.15	0.20	0.25
VCGW160408-LRG	0.40	1.50	2.60	0.10	0.15	0.20
VCGW160412-LRG	0.40	1.50	2.60	0.20	0.25	0.30
VCGX110302-CBF	0.20	0.60	1.00	0.04	0.08	0.12
VCGX110302-CBU	0.20	1.50	2.80	0.04	0.08	0.12
VCGX110304-CBF	0.20	0.60	1.00	0.05	0.10	0.15
VCGX110304-CBG	0.50	1.50	2.50	0.10	0.15	0.20
VCGX110304-CBU	0.20	1.50	2.80	0.04	0.12	0.20
VCGX110304-1/8-1S	0.50	2.00	3.50	0.10	0.15	0.20
VCGX160404-CBF	0.20	0.60	1.00	0.05	0.10	0.15
VCGX160404-CBG	0.50	1.50	2.50	0.10	0.15	0.20
VCGX160404-CBU	0.20	1.50	2.80	0.04	0.12	0.20
VCGX160404-1/8-1S	0.50	3.00	5.50	0.10	0.15	0.20
VCGX160408-CBG	0.50	1.50	2.50	0.15	0.20	0.25
VCGX160408-CBU	0.20	1.50	2.80	0.08	0.18	0.26
WNGA080404	0.40	1.00	1.60	0.10	0.15	0.20
WNGA080404-LRG	0.40	1.20	2.00	0.10	0.15	0.20
WNGA080408	0.40	1.00	1.60	0.15	0.20	0.25
WNGA080408-LRG	0.40	1.50	2.60	0.10	0.15	0.20
WNGM080404	0.40	1.00	1.60	0.10	0.15	0.20
WNGM080404-LRG	0.40	1.20	2.00	0.10	0.15	0.20
WNGM080408	0.40	1.00	1.60	0.15	0.20	0.25
WNGM080408-LRG	0.40	1.50	2.60	0.10	0.15	0.20

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS



TURNING Ceramic

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A - TURNING	ISO 513		CERAMIC				
			Si ₃ N ₄	Al ₂ O ₃ MIXED	PVD COATED A ₂ O ₃ MIXED	SiAlON	WHISKER
B - THREADING	K	K01	HSN350 NSN400 NSN450	MAC200			
		K10					
		K20					
		K30					
C - GROOVING	S	S01				NWR700	NWR750
		S10			NSA6000		
		S20			NSA650		
		S30					
D - MILLING	H	H01		MAC200	MAC150		
		H10		MAC250			
		H20					
		H30					
E - DRILLING	Cast iron						
F - ACCESSORIES	HRSA						
G - SPARE PARTS	Hardened steel						

HRSA: Heat resistant super alloy

GRADE	COMPOSITION	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
NAC150	Al ₂ O ₃ +TiCN	2.200	PVD	TiN	H	H01 H15	Coated ceramic improves tool life yellow surface helps to identify wear development.
NAC200	Al ₂ O ₃ +TiCN	2.300	-	-	K	K01 K20	First choice for finishing of hardened steel and cast iron in stable conditions.
					H	H01 H20	
NAC250	Al ₂ O ₃ +TiC	2.100	-	-	H	H10 H25	Tough ceramic for general purpose applications with high reliability.
NSN350	Si ₃ N ₄	1.700	-	-	K	K05 K20	High wear resistance for continuous cut applications at very high cutting speed.
NSN400	Si ₃ N ₄	1.700	-	-	K	K05 K30	First choice for roughing of gray cast iron even with interrupted cut.
NSN450	Si ₃ N ₄	1.600	-	-	K	K20 K30	Toughest silicon nitride grade for very difficult applications.
NWR700	Al ₂ O ₃ +SiC	2.100	-	-	S	S01 S15	Reinforced alumina ceramic with excellent flank and notch wear, first choice for high speed stable machining of heat resistant super alloys.
NWR750	Al ₂ O ₃ +SiC	2.100	-	-	S	S05 S20	Reinforced alumina ceramic with improved toughness, applicable even on heavy interrupted cut.
NSA6000	SiAlON	1.800	-	-	S	S10 S30	First choice for heat resistance super alloys (HRSA) machining with variable cutting conditions. Toughness and wear resistant is well-balanced.
NSA650	SiAlON	1.700	-	-	S	S15 S35	Excellent thermal and shock resistance for severe applications on HRSA.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

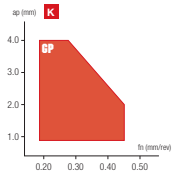
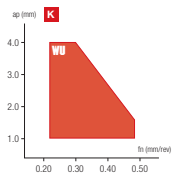
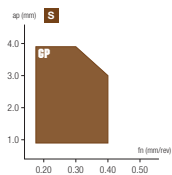
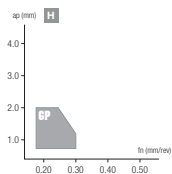
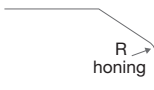
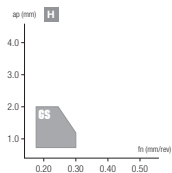
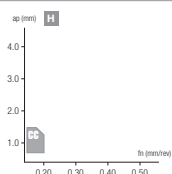
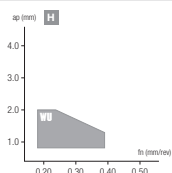
G - SPARE PARTS

A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

ISO 513		nikkoTOOLS	CERAMTEC	ISCAR	KENNAMETAL	KYOCERA	NTK	SANDVIK	TAEGUTEC	TUNGALOY	UNION	WALTER	
K	K01 - K10	NSN350 NSN400	SL654C SL658C	IS6 IS8	KYK10	KS6015	SX6	CC6190 GC1690	AS500	FX105	SN500 SN600	WCK10	
	K10 - K20	NSN400 NSN450	SL500 SL550C SL506 SL606	IS8 IS80	KY3500 KYK25	CS7050 KS6050	SX6	CC6190	AS500	CX710 FX105	NC400 SN300 SN400	WCK10	
	K20 - K30	NSN450	SL508 SL608		KY3500	KS6050	SP9 SX9		AS10	CX710	SN300		
S	HRSA	S01 - S10	NWR700 NWR750		IW7		CF1	WA1 WA5	CC670	TC430	SW400 SW800	WWS20	
		S10 - S20	NSA6000	LST320	IS25 IS9	KY4300 KYS25	KS6030 KS6040	SX7 SX3	CC6060 CC6160	TC3020	TS200	SN800	WIS10
		S20 - S30	NSA6000 NSA650	LST320	IS35	KY1540 KYS30	KS6040	SX3 SX9	CC6065 CC6160	TC3030	TS200 TS300	SN1000	
H	H01 - H10	NAC150 NAC200	SH2	IN22 IN420	KY1615 KY4400	A66N PT600M	HC7 ZC7	CC6050	AB20 AB2010	LX11	ST500 ST900 TC300 TM300		
	H10 - H20	NAC200 NAC250	SH2 SH4	IN23	KY1615	A65	HC2	CC650	AB30	LX11 LX21	ST100 ST300 TC100		
	H20 - H30												

BLACK: CVD, UNDERLINED: PVD, RED: uncoated

This table is our own estimation based on information available to the public and is not authorized by the company mentioned on it.

NEGATIVE type with hole				C	D	S	T	V	W	
										
				80°	55°	90°	60°	35°	80°	
K	UNIVERSAL	GP	 T02020		 SIZE 12 16	 SIZE 15	 SIZE 12	 SIZE 16	 SIZE 16	 SIZE 08
		WU	 T02020		 SIZE 12					
S	UNIVERSAL	GP	 T02020		 SIZE 12					
H	UNIVERSAL	GP	 T02020		 SIZE 12 16	 SIZE 15	 SIZE 12	 SIZE 16	 SIZE 16	 SIZE 08
		GS	 S01525 (NAC150) - S02020 (NAC200)		 SIZE 12	 SIZE 15		 SIZE 16	 SIZE 16	
	SHARP	CC	 T01020		 SIZE 12	 SIZE 15	 SIZE 12	 SIZE 16	 SIZE 16	 SIZE 08
		WIPER	WU	 T02020		 SIZE 12				

A - TURNING

B - THREADING

C - GROOVING

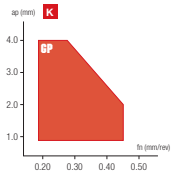
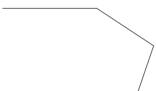
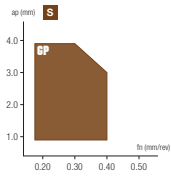
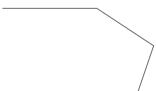
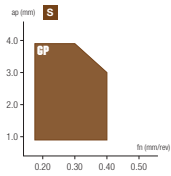
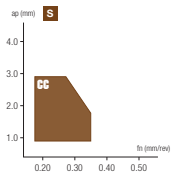
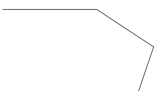
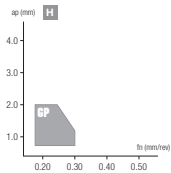
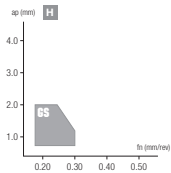
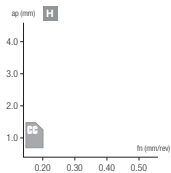
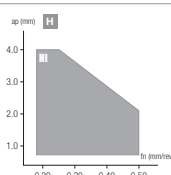
D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING	NEGATIVE type without hole			C	D	R	S	T	
				80°	55°	-	90°	60°	
B - THREADING	K	UNIVERSAL	GP T02020	 A178 SIZE 12		 A182 SIZE 12	 A189 SIZE 12	 A191 SIZE 16	
			GP T02020 WITH DIMPLE	 A182 SIZE 12			 A189 SIZE 12		
C - GROOVING	S	UNIVERSAL	GP T02020	 A182 SIZE 12		 A186 SIZE 12 19	 A189 SIZE 12		
			GP T02020 WITH DIMPLE	 A182 SIZE 12			 A189 SIZE 12		
D - MILLING	S	SHARP	CC T01020			 A186 SIZE 12	 A189 SIZE 12		
E - DRILLING	H	UNIVERSAL	GP T02020	 A182 SIZE 12	 A184 SIZE 15	 A186 SIZE 12	 A189 SIZE 12	 A191 SIZE 16	
			GP T02020 WITH DIMPLE	 A182 SIZE 12			 A189 SIZE 12		
F - ACCESSORIES			HI P15015	 A182 SIZE 12		 A185 SIZE 12	 A189 SIZE 12 19		
			HT K15015			 A185 SIZE 12			

POSITIVE type				C	R	S	T		
									
				80°	-	90°	60°		
K	UNIVERSAL	 T02020	 ap (mm) 4.0 3.0 2.0 1.0 0.20 0.30 0.40 0.50 fs (mm/min)	CC  A180  SIZE 09 12		SC  A187  SIZE 09 12	TP  A192  SIZE 11 16		
		 T02020	 ap (mm) 4.0 3.0 2.0 1.0 0.20 0.30 0.40 0.50 fs (mm/min)		RC  A185  SIZE 09 12				
S	UNIVERSAL	 T02020	 ap (mm) 4.0 3.0 2.0 1.0 0.20 0.30 0.40 0.50 fs (mm/min)		RC  A185  SIZE 09 12				
		 T01020	 ap (mm) 4.0 3.0 2.0 1.0 0.20 0.30 0.40 0.50 fs (mm/min)		RC  A185  SIZE 06 09 12				
H	UNIVERSAL	 T02020	 ap (mm) 4.0 3.0 2.0 1.0 0.20 0.30 0.40 0.50 fs (mm/min)		RC  A185  SIZE 06 09 12		TP  A192  SIZE 11 16		
		 S01525	 ap (mm) 4.0 3.0 2.0 1.0 0.20 0.30 0.40 0.50 fs (mm/min)				TP  A192  SIZE 11 16		
	SHARP	 T01020	 ap (mm) 4.0 3.0 2.0 1.0 0.20 0.30 0.40 0.50 fs (mm/min)				TP  A192  SIZE 11 16		
		 RCGX09/12: P15015 RCGX15/19: P20015	 ap (mm) 4.0 3.0 2.0 1.0 0.20 0.30 0.40 0.50 fs (mm/min)		RC  A185  SIZE 09 12 15 19				

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

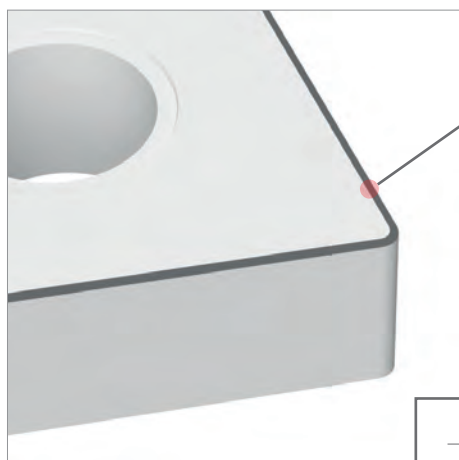
G - SPARE PARTS

CC

Edge preparation

- Recommended for stable continuous cutting conditions
- Sharp edge reduces cutting forces and burrs formation
- CC Continuous Cut edge preparation is generally combined with mixed ceramics for hardened steel and SiAlON (only round inserts) for HRSA machining

• Features of CC edge preparation

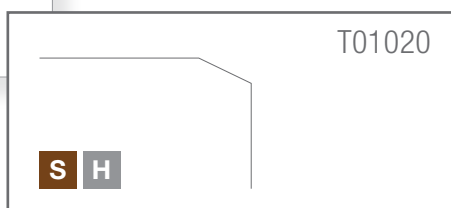


LOW CUTTING FORCE

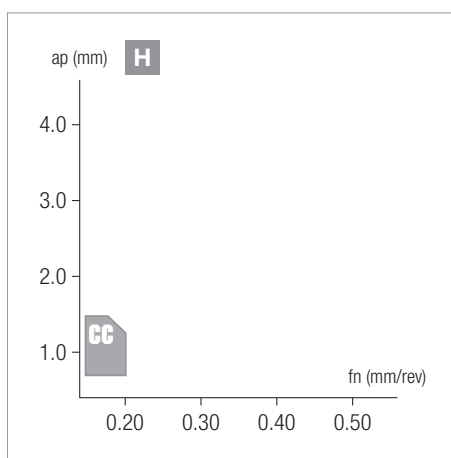
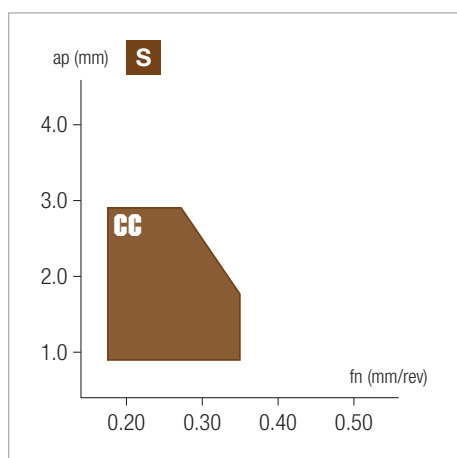
- The edge preparation has been optimized for low cutting forces action
- The chamfer width is 0.10 mm with an angle of 20° without round honing

BROAD RANGE

- Available in most common shapes and radii both positive and negative



• Application range



CC SiAlON



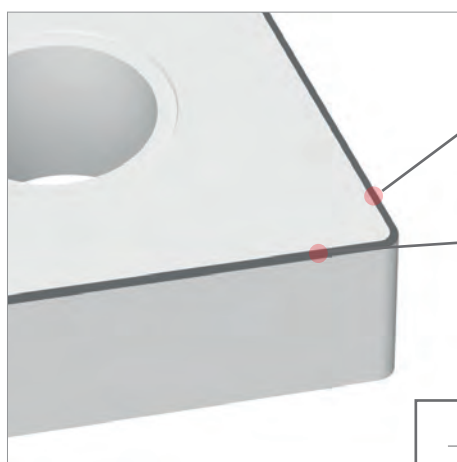
In combination with NSA grades must be considered as first choice for general purpose machining.

GP/GS

Edge preparation

- First choice for almost every kind of application on cast iron (NSN series) and hardened steel (NAC series)
- Well balanced between sharpnesses and robustness
- GP General Purpose is available in combination of 3 ceramic families: Silicon nitride, whisker reinforced and alumina mixed ceramic. GS (general purpose with honing) is only combined with NAC series

• Features of "G" edge preparation



GP - FIRST CHOICE

- Applicable from continuous to light interrupted cut. Guarantee reliable performances
- The chamfer width, in most of the cases, is 0.20 mm with an angle of 20°

GS - STRENGTHEN THE EDGE

- Same features of GP but with an additional reinforced honing

GP-T02020

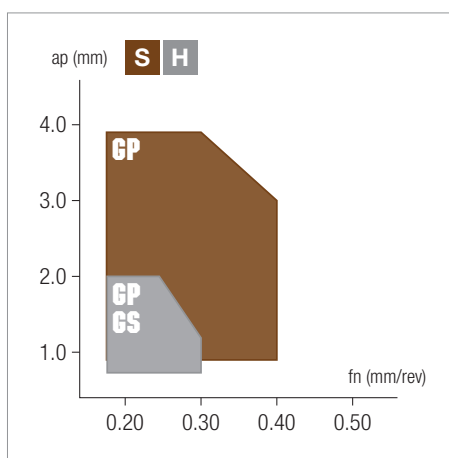
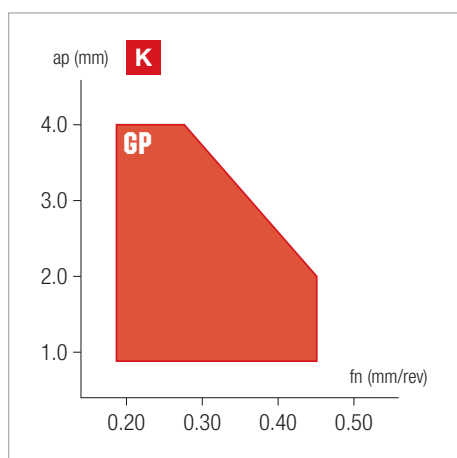
K S H

GS-S01525
GS-S02020

H

R
honing

• Application range



ISO H FIRST CHOICE



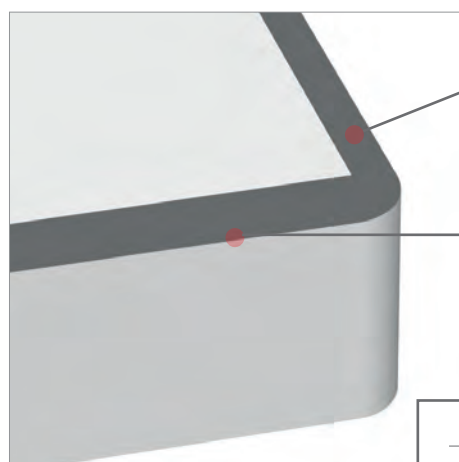
For best performance we suggest to combine the coated grade NAC150 to GS edge preparation and uncoated fine grain NAC200 to GP edge preparation.

HI

Edge preparation

- A standard chamfer edge connected to a wide chamfer rake, designed to endure heavy cutting conditions
- HI edge preparation is focused on hard material machining and is available mainly in combination with NAC series
- Commonly utilized in machining of steel rolls

• Features of HI edge preparation

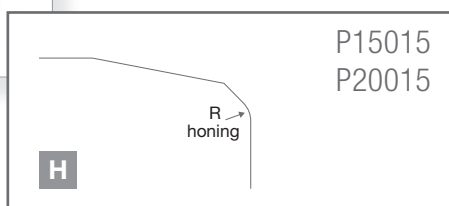


DOUBLE CHAMFER

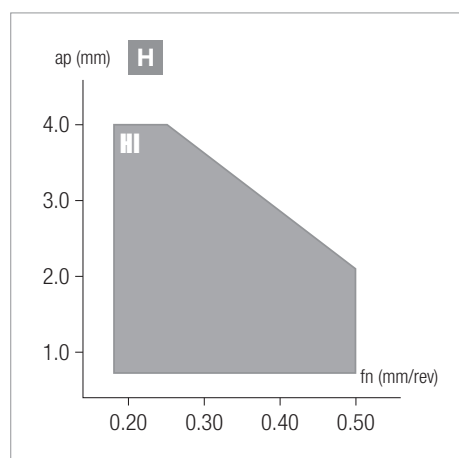
- Main chamfer size starts from 1,5 mm and can reach 2 mm for biggest inserts, with an angle of 15°
- Secondary chamfer width is 0.20 mm with an angle from 25° to 30°

REINFORCING HONING

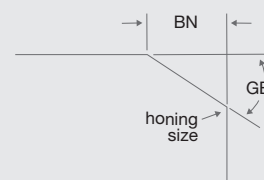
- As further reinforcement, the cutting edge honing has been increased compared to general purpose edge preparation



• Application range



SPECIAL CHAMFER UPON REQUEST



Big chamfer type is generally combined with round inserts for which we can provide even tailor-made solutions.

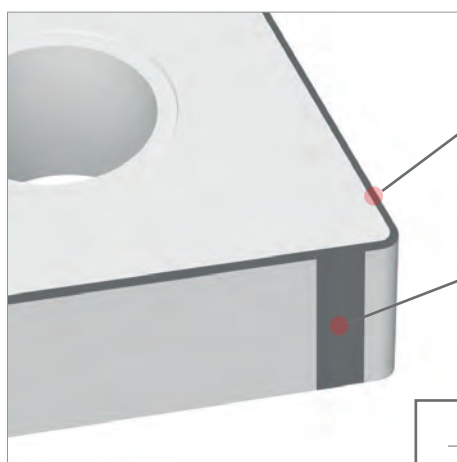
HT type, for example is a round insert with a double chamfered geometry without round honing.

WU

Edge preparation

- Could be used at higher feed rate to improve productivity or at standard feed rate to reach excellent surface quality
- WU wiper edge is available in combination with silicon nitride grade (NSN400) for gray cast iron and mixed alumina ceramic (NAC200) for hardened steel
- Combined with standard 80° shapes (CNGA)

• Features of WU edge preparation

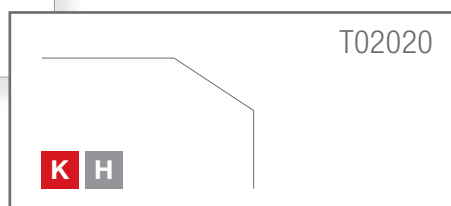


GENERAL PURPOSE

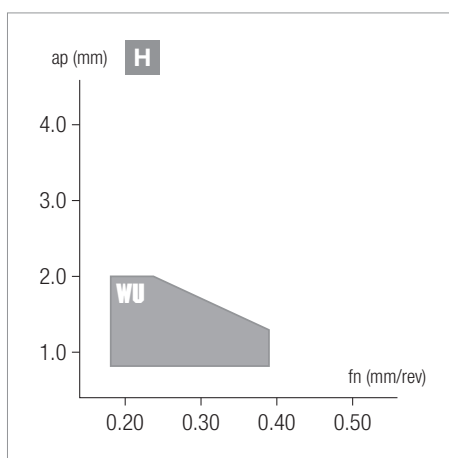
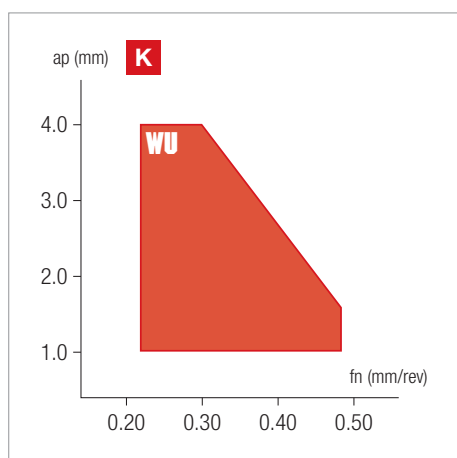
- Small T land chamfer without honing produces for low cutting forces and good accuracy
- The chamfer width is 0.2 mm with an inclination of 20°

ARC WIPER

- A big arc at optimized position as wiper geometry in stead of conventional straight wiper land, effectively reduces vibration and ensures better surface quality



• Application range



NOT ONLY FOR FINISHING



The wiper edge design when being used at medium or higher feed cutting conditions, can create better surface quality.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

K		SILICON NITRIDE AND MIXED CERAMICS					
		NEGATIVE	POSITIVE				
	wear resistance	NAC200 / CC	NAC200 / CC				
	1 st CHOICE	NSN400 / GP	NSN400 / GP				
	toughness	NSN450 / GP	-				
	wear resistance	NAC200 / GP	NAC200 / GP				
	1 st CHOICE	NSN400 / GP	NSN400 / GP				
	toughness	NSN450 / GP	-				
	wear resistance	-	-				
	1 st CHOICE	NSN400 / GP	NSN400 / GP				
	toughness	NSN450 / GP	-				

S		WHISKER CERAMICS AND SiAlON					
		NEGATIVE	POSITIVE				
	wear resistance	-	-				
	1 st CHOICE	NWR700 / GP	NWR700 / GP				
	toughness	NWR750 / GP	NWR750 / GP				
	wear resistance	NWR750 / GP	NWR750 / GP				
	1 st CHOICE	NSA6000 / CC	NSA6000 / CC				
	toughness	NSA650 / GP	NSA650 / GP				
	wear resistance	NWR750 / GP	NWR750 / GP				
	1 st CHOICE	NSA6000 / GP	NSA6000 / GP				
	toughness	NSA650 / GP	NSA650 / GP				

H		Al ₂ O ₃ MIXED CERAMICS					
		NEGATIVE	POSITIVE				
	wear resistance	NAC150 / CC	NAC150 / CC				
	1 st CHOICE	NAC200 / CC	NAC200 / CC				
	toughness	-	-				
	wear resistance	NAC150 / GS	NAC150 / GS				
	1 st CHOICE	NAC200 / GP	NAC200 / GP				
	toughness	NAC250 / GP	NAC250 / GP				
	wear resistance	NAC200 / HI	NAC200 / HI				
	1 st CHOICE	NAC250 / HI	NAC250 / HI				
	toughness	-	-				

C	N	G	A	12	04	08	-	GP	-	NAC	200
1	2	3	4	5	6	7		8		9	10

1	SHAPE
C	80° rhombic
D	55° rhombic
K	55° parallelogram
S	90° square
T	60° triangular
V	35° rhombic
W	80° trigon

2	RELIEF ANGLE
B	5°
C	7°
D	15°
E	20°
N	0°
P	11°

3	TOLERANCES		
Symbol	I.C.	Thickness	Corner height
E	±0.025	±0.025	±0.025
G	±0.025	±0.13	±0.025
M	±0.05 ~ ±0.15	±0.13	±0.08 ~ ±0.18
U	±0.08 ~ ±0.25	±0.13	±0.13 ~ ±0.38

4	HOLE/CHIPBREAKER		
Symbol	Hole	Hole countersink	Chipbreaker
A		✓	✗
G		✓	✗
M		✓	✗
N		✗	✗
T		✓	40°÷60°
W		✓	40°÷60°
X	NIKKO norm		

5	EDGE LENGHT						
I.C. (mm)	C shape	D shape	R shape	S shape	T shape	V shape	W shape
3.97	03	04		03	06		
4.76	04	05		04	08	08	
5.00			05				
5.56	05	06		05	09		03
6.00			06				
6.35	06	07		06	11	11	04
7.94	08	09		07	13		05
8.00			08				
9.53	09	11	09	09	16	16	06
10.00		12	10				
12.00							
12.70	12	15	12	12	22	22	08
15.88	16	19	15	15	27	24	10
16.00			16				
19.05	19	23	19	19	33	33	13
20.00			20				
22.23	22	27		22	38		
25.00			25				
25.40	25	31	25	25	44	44	17
31.75	32	38	31	31	54	54	21
32.00			32				

6	THICKNESS	
Symbol	(mm)	
01	1.59	
T1	1.98	
02	2.38	
T2	2.78	
03	3.18	
T3	3.97	
04	4.76	
05	5.56	
06	6.35	
07	7.94	
09	9.53	

7	RADIUS	
Symbol	(mm)	
005	0.05	
01	0.10	
02	0.20	
04	0.40	
08	0.80	
12	1.20	
16	1.60	
20	2.00	
24	2.40	

8	EDGE PREPARATION
CC	sharp edge
GP, GS	universal edge
HI	reinforced edge
WU	wiper edge

9	GRADE - features
NAC	Mixed Al ₂ O ₃ ceramic
NSA	SIAION
NSN	Silicon nitride
NWR	Whisker reinforced

10	GRADE - material
000÷290	ISO H
300÷590	ISO K
600÷790	ISO S

CC

ISO - with hole

- The most popular insert shape due to high versatility
- Clearance angle 7°, bigger than 5°, less likely to have chip jamming when boring
- 80° corner can be used for both turning and facing operations

CN: Silicon nitride ceramic Si3N4

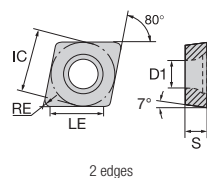
CN

MSN400

Stable machining,
light cut ● 1st choice ○ suitableGeneral machining,
medium cut ● 1st choice ○ suitableUnstable machining,
heavy cut ▲ 1st choice ○ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)P
M
K
N
S
H

Designation

RE

IC

S

D1

LE

Stock

UNIVERSAL

GP K



CCGW09T308-GP

0.8

9.525

3.97

4.4

8.9

○

CCGW09T312-GP

1.2

9.525

3.97

4.4

8.5

●

CCGW120408-GP

0.8

12.7

4.76

5.5

12.1

○

CCGW120412-GP

1.2

12.7

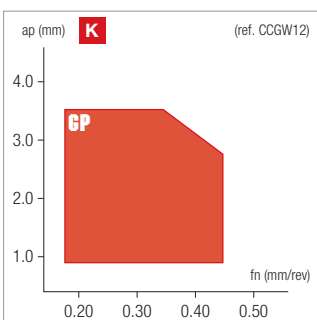
4.76

5.5

11.7

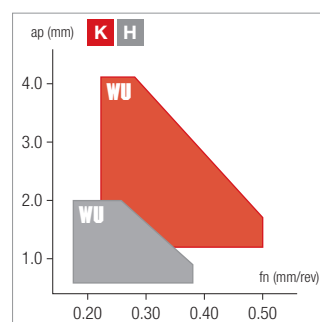
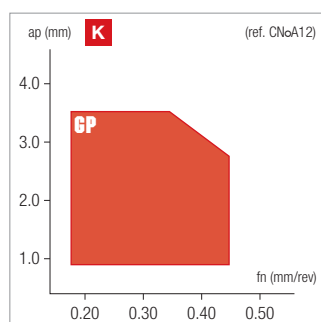
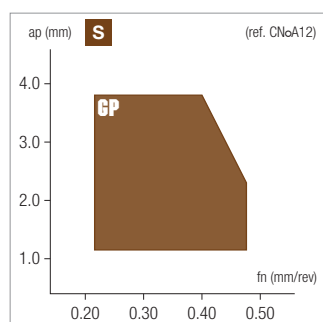
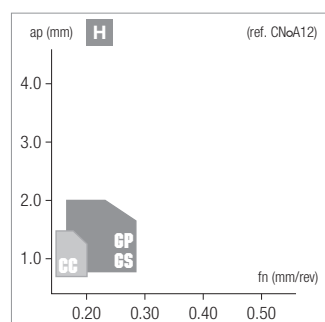
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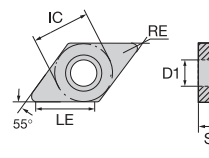
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



CN		CM: Mixed ceramic Al2O3 CN: Silicon nitride ceramic Si3N4 PVD: Physical vapour deposition						CM PVD	CM	CM	CN	CN	CN	CN	
ISO - with hole								NAC150	NAC200	NAC250	NSA6000	NSM350	NSM400	NSM450	
• The most popular insert shape due to high versatility • 80° corner can be used for both turning and facing operations • Opposite 100° corners can be used for general roughing applications (especially facing), providing maximum economy of 8 total cutting edges		Stable machining, light cut	● 1 st choice ○ suitable	●	●	○	○	●	●	○					
		General machining, medium cut	● 1 st choice ○ suitable	○	●	●	●	○	●	●					
		Unstable machining, heavy cut	⚡ 1 st choice ⚡ suitable				⚡								
Dimensions		ISO						Vc(m/min) - suggested cutting speed range (bold: 1 st choice)							
4 edges		P													
		M													
		K			400 600				500 1000	400 1000	400 800				
		N													
		S						150 400							
		H	100 200	70 180	60 150										
Designation		RE	IC	S	D1	LE	Stock								
UNIVERSAL		GP K S H	CNGA120404-GP	0.4	12.7	4.76	5.16	12.5	●						
		CNGA120408-GP	0.8	12.7	4.76	5.16	12.1	●	●	●					
		CNGA120412-GP	1.2	12.7	4.76	5.16	11.7	●	●	○					
		CNMA120408-GP	0.8	12.7	4.76	5.16	12.1				○	●	○		
		CNMA120412-GP	1.2	12.7	4.76	5.16	11.7				○	●	○		
		CNMA120416-GP	1.6	12.7	4.76	5.16	11.3				○	●	○		
		CNGA160612-GP	1.2	15.87	6.35	6.35	14.9	●							
		CNGA160616-GP	1.6	15.87	6.35	6.35	14.5	○							
		CNMA160612-GP	1.2	15.87	6.35	6.35	14.9					●			
		CNMA160616-GP	1.6	15.87	6.35	6.35	14.5					●			
UNIVERSAL		GS H	CNGA120404-GS	0.4	12.7	4.76	5.16	12.5	●						
		CNGA120408-GS	0.8	12.7	4.76	5.16	12.1	●	●						
		CNGA120412-GS	1.2	12.7	4.76	5.16	11.7	●	○						
SHARP		CC H	CNGA120404-CC	0.4	12.7	4.76	5.16	12.5	○	●					
		CNGA120408-CC	0.8	12.7	4.76	5.16	12.1	●	●						
		CNGA120412-CC	1.2	12.7	4.76	5.16	11.7	○	○						
WIPER		WU K H	CNGA120410-WU	1	12.7	4.76	5.16	11.9	○				●		

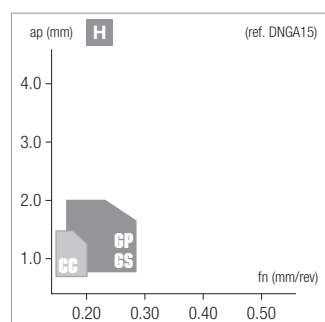
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



DN		CM: Mixed ceramic Al2O3 PVD: Physical vapour deposition		CM	CM	CM				
				NAC150	NAC200	NAC250				
ISO - with hole										
• Generally the 1st choice for profile/copy turning applications • Able to “In-Copy” (plunge turn into a smaller diameter) at an angle of 30° • 7° clearance angle, less risk of chip jamming in boring • Somewhat weaker edge strength than a triangle insert		Stable machining, light cut		● 1 st choice ○ suitable	●	●	○			
		General machining, medium cut		● 1 st choice ○ suitable	○	●	●			
		Unstable machining, heavy cut		⚙ 1 st choice ⚙ suitable						
		Dimensions		ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)					
				P						
M										
K				400 600						
N										
S										
		H	100 200	70 180	60 150					

Designation		RE	IC	S	D1	LE	Stock			
UNIVERSAL	GP K H	DNGA150604-GP	0.4	12.7	6.35	5.16	15.1	●		
		DNGA150608-GP	0.8	12.7	6.35	5.16	14.7	●	●	
		DNGA150612-GP	1.2	12.7	6.35	5.16	14.3	●	○	
		DNGA150616-GP	1.6	12.7	6.35	5.16	13.9	○		
UNIVERSAL	GS H	DNGA150604-GS	0.4	12.7	6.35	5.16	15.1	○	●	
		DNGA150608-GS	0.8	12.7	6.35	5.16	14.7	●	●	
		DNGA150612-GS	1.2	12.7	6.35	5.16	14.3		○	
SHARP	CC H	DNGA150604-CC	0.4	12.7	6.35	5.16	15.1	○	●	
		DNGA150608-CC	0.8	12.7	6.35	5.16	14.7	○		
		DNGA150612-CC	1.2	12.7	6.35	5.16	14.3	○	●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



DN

ISO - without hole

- Generally the 1st choice for profile/copy turning applications
- Able to "In-Copy" (plunge turn into a smaller diameter) at an angle of 30°
- 7° clearance angle, less risk of chip jamming in boring
- Somewhat weaker edge strength than a triangle insert

CM: Mixed ceramic Al203

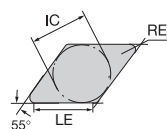
CM

MAC200

Stable machining,
light cut ● 1st choice ○ suitableGeneral machining,
medium cut ● 1st choice ○ suitableUnstable machining,
heavy cut ▲ 1st choice ○ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

4 edges

P

M

K

N

S

H

400

600

70

180

Designation

RE

IC

S

D1

LE

Stock

UNIVERSAL

GP H



DNGN150708-GP

0.8

12.7

7.94

-

14.7

○

DNGN150712-GP

1.2

12.7

7.94

-

14.3

○

DNGN150716-GP

1.6

12.7

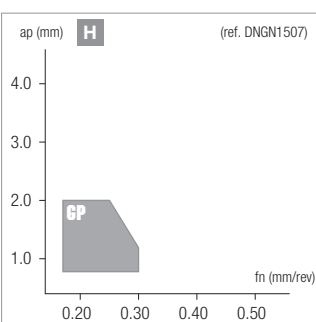
7.94

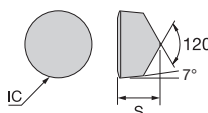
-

13.9

○

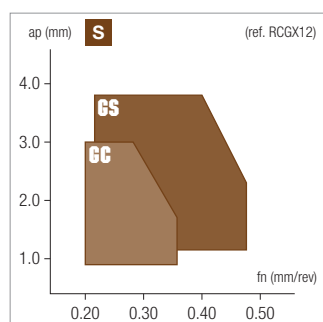
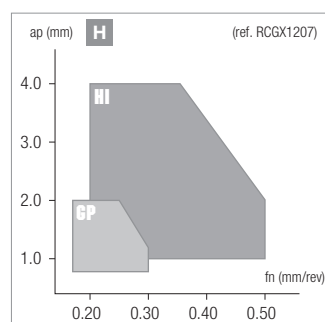
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



RC	CM: Mixed ceramic Al2O3 CN: Silicon nitride ceramic Si3N4 CR: Whisker reinforced ceramic PVD: Physical vapour deposition	CM	CM	CM	CN	CN	CN	CR	CR	
		MAC150	MAC200	MAC250	MSA600	MSA6000	MSA650	NWR700	NWR750	
ISO - without hole	Stable machining, light cut	● 1 st choice	○ suitable	●	●	○	○	○	○	
	General machining, medium cut	● 1 st choice	○ suitable	○	●	○	○	○	○	
	Unstable machining, heavy cut	⚡ 1 st choice	⚡ suitable			⚡				
	Dimensions	ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)								
	P									
	M									
	K		400 600							
	N									
	S				150 350	150 400	150 250	250 500	200 450	
	H	100 200	70 180	60 150						

Designation		RE	IC	S	D1	LE	Stock									
UNIVERSAL	GP S H															
	RCGX060700-GP	3.175	6.35	7.94	-	-	●									
	RCGX090700-GP	4.76	9.525	7.94	-	-	●	●	○				○	○		
	RCGX120700-GP	6.35	12.7	7.94	-	-	○	○	○	▽		▽	○	○		
UNIVERSAL	GS H															
	RCGX060600-GS	3.175	6.35	6.35	-	-		○								
SHARP	CC S															
	RCGX060600-CC	3.175	6.35	6.35	-	-				○						
	RCGX090700-CC	4.76	9.525	7.94	-	-				○						
	RCGX120700-CC	6.35	12.7	7.94	-	-				●						
REINFORCED	HI H															
	RCGX090700-HI	4.76	9.525	7.94	-	-	●	●	○							
	RCGX120700-HI	6.35	12.7	7.94	-	-	●	●	●							
	RCGX151000-HI	7.935	15.87	10	-	-		○	●							
	RCGX191000-HI	9.525	19.05	10	-	-		○	○							

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



RN

ISO - without hole

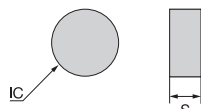
- Very strong and robust shape and style, able to confront diverse challenges during the machining process
- Different edge preparation with wide range of grades covering the majority of application area
- Other thicknesses available upon request

CM: Mixed ceramic Al2O3
 CN: Silicon nitride ceramic Si3N4
 CR: Whisker reinforced ceramic
 PVD: Physical vapour deposition

Stable machining, light cut ● 1st choice ○ suitable
 General machining, medium cut ● 1st choice ○ suitable
 Unstable machining, heavy cut ⚙ 1st choice ⚙ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P

M

K

N

S

H

P

M

K

N

S

H

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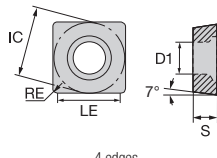
H

H

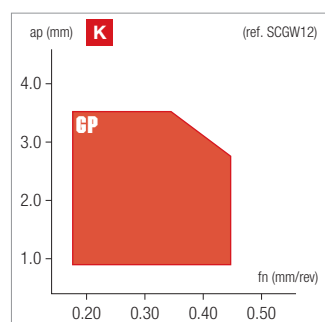
H

H

H

SC	CN: Silicon nitride ceramic Si3N4		CN	
			MSN400	
ISO - with hole • Very strong 90° corner with excellent economy (4 edges on positive inserts) • More used on roughing • Unable to turn or face up to a shoulder (must be used in a tool holder with min. 5° lead angle) • High radial forces push against the workpiece when used for turning • Should always be used in a stable set-up	Stable machining, light cut ● 1 st choice ○ suitable ●		●	
	General machining, medium cut ● 1 st choice ○ suitable ●		●	
	Unstable machining, heavy cut ● 1 st choice ○ suitable ●			
	Dimensions		ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)
	 4 edges		P	
			M	
			K	400 1000
			N	
			S	
			H	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



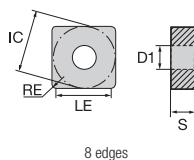
SN**ISO - with hole**

- Very strong 90° corner with excellent economy (4 edges on positive inserts)
- More used on roughing
- Unable to turn or face up to a shoulder (must be used in a tool holder with min. 5° lead angle)
- High radial forces push against the workpiece when used for turning
- Should always be used in a stable set-up

 CM: Mixed ceramic Al₂O₃
 CN: Silicon nitride ceramic Si₃N₄

CM

CN

MAC200
MSN400
Stable machining, light cut ● 1st choice ○ suitableGeneral machining, medium cut ● 1st choice ○ suitableUnstable machining, heavy cut ▲ 1st choice ▲ suitable**Dimensions****ISO****Vc(m/min) - suggested cutting speed range (bold: 1st choice)****P****M****K****N****S****H**

400

600

400

1000

70

180

Designation**RE****IC****S****D1****LE****Stock****UNIVERSAL****GP K H****SNGA120404-GP**

0.4

12.7

4.76

5.16

12.3

●

SNGA120408-GP

0.8

12.7

4.76

5.16

11.9

●

SNGA120412-GP

1.2

12.7

4.76

5.16

11.5

●

SNMA120408-GP

0.8

12.7

4.76

5.16

11.9

●

SNMA120412-GP

1.2

12.7

4.76

5.16

11.5

●

SNMA120416-GP

1.6

12.7

4.76

5.16

11.1

○

SHARP**CC H****SNGA120404-CC**

0.4

12.7

4.76

5.16

12.3

●

SNGA120408-CC

0.8

12.7

4.76

5.16

11.9

○

SNGA120412-CC

1.2

12.7

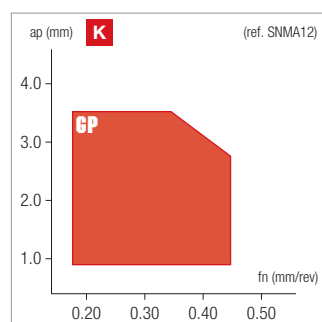
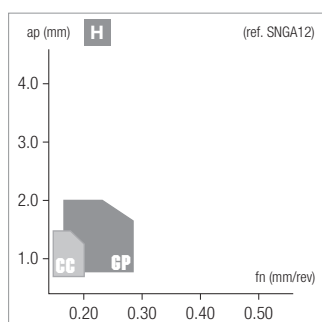
4.76

5.16

11.5

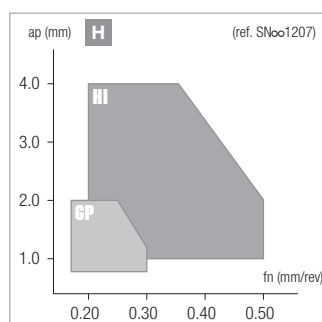
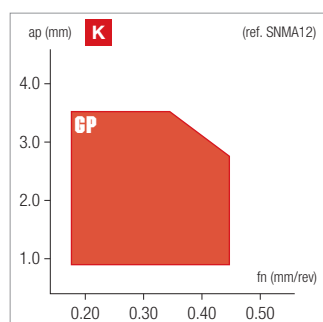
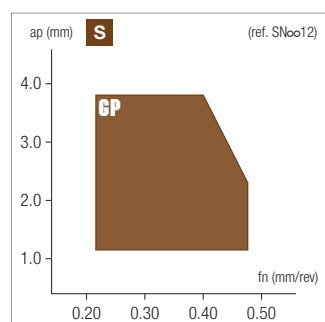
●

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



SN		CM: Mixed ceramic Al ₂ O ₃ CN: Silicon nitride ceramic Si ₃ N ₄ CR: Whisker reinforced ceramic PVD: Physical vapour deposition									
ISO - without hole											
- Very strong 90° corner with excellent economy (4 edges on positive inserts) - More used on roughing - Unable to turn or face up to a shoulder (must be used in a tool holder with min. 5° lead angle) - High radial forces push against the workpiece when used for turning - Should always be used in a stable set-up		Stable machining, light cut	● 1 st choice ○ suitable	●	●	○	○	○	●	○	○
		General machining, medium cut	● 1 st choice ○ suitable	○	●	●	○	●	●	●	●
		Unstable machining, heavy cut	● 1 st choice ○ suitable					○			
		Dimensions	ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)							
			P								
			M								
			K	400 600			400 1000	400 800			
			N								
			S			150 350	150 400		200 450		
			H	100 200	70 180	60 150					
UNIVERSAL	Designation	RE	IC	S	D1	LE	Stock				
UNIVERSAL	GP K S H										
	SNGN120408-GP	0.8	12.7	4.76	-	11.9				●	
	SNGN120412-GP	1.2	12.7	4.76	-	11.5			○	●	▽
	SNMN120416-GP	1.6	12.7	4.76	-	11.1				●	
	SNGN120708-GP	0.8	12.7	7.94	-	11.9	●	●			
	SNGN120712-GP	1.2	12.7	7.94	-	11.5		●			
UNIVERSAL	GP K S H										
	SNGX120708-GP	0.8	12.7	7.94	-	11.9	●				
	SNGX120712-GP	1.2	12.7	7.94	-	11.5	●				
	SNMX120712-GP	1.2	12.7	7.94	-	11.5			▲	●	
REINFORCED	HI H										
	SNGN120716-HI	1.6	12.7	7.94	-	11.1		○			
	SNGN120720-HI	2	12.7	7.94	-	10.7		○			
	SNGN120724-HI	2.4	12.7	7.94	-	10.3		○			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



TN

ISO - with hole

- Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading
- Good economy with up to 6 cutting edges
- Very stable seating of the insert in pocket of a holder, especially advantaged in boring operation
- Edge is measurably weaker than 80° diamond shape inserts

CM: Mixed ceramic Al₂O₃
 CN: Silicon nitride ceramic Si₃N₄
 PVD: Physical vapour deposition

CM
PVD

MAC150
MAC200
MAC250
MSN400

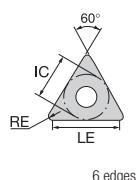
Stable machining,
light cut ● 1st choice ○ suitable

General machining,
medium cut ● 1st choice ○ suitable

Unstable machining,
heavy cut ▲ 1st choice ▲ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P
M
K
N
S
H

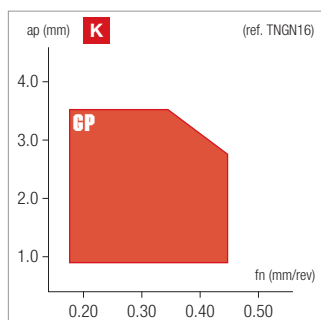
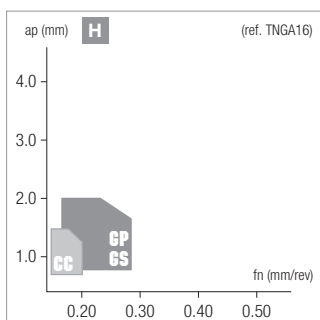
400
600
400
1000
100
200
70
180
60
150

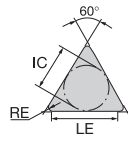
Designation

Stock

		RE	IC	S	D1	LE				
UNIVERSAL	GP K H	TNGA160404-GP	0.4	9.525	4.76	3.81	16.1	●		
		TNGA160408-GP	0.8	9.525	4.76	3.81	15.7	●	●	○
		TNGA160412-GP	1.2	9.525	4.76	3.81	15.3	●	●	●
UNIVERSAL	GS H	TNGA160404-GS	0.4	9.525	4.76	3.81	16.1	●	●	
		TNGA160408-GS	0.8	9.525	4.76	3.81	15.7	●	●	
		TNGA160412-GS	1.2	9.525	4.76	3.81	15.3	●	○	
SHARP	CC H	TNGA160404-CC	0.4	9.525	4.76	3.81	16.1	●	●	
		TNGA160408-CC	0.8	9.525	4.76	3.81	15.7	●	●	
		TNGA160412-CC	1.2	9.525	4.76	3.81	15.3	●		

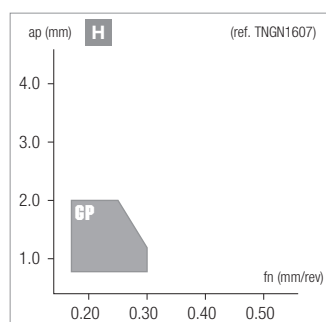
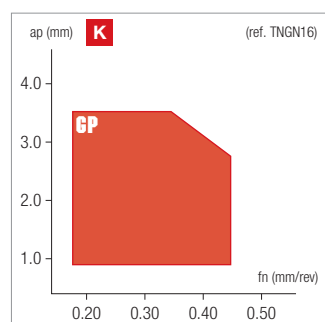
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



TN	CM: Mixed ceramic Al2O3 CN: Silicon nitride ceramic Si3N4	CM	CN	
		NAC200	NSN400	
ISO - without hole	• Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading • Good economy with up to 6 cutting edges • Very stable seating of the insert in pocket of a holder, especially advantaged in boring operation • Edge is measurably weaker than 80° diamond shape inserts	Stable machining, light cut	● 1 st choice ○ suitable	● ●
		General machining, medium cut	● 1 st choice ○ suitable	● ●
		Unstable machining, heavy cut	⚙ 1 st choice ⚙ suitable	
	Dimensions	ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)	
		P		
		M		
		K	400 600	400 1000
		N		
		S		
	H	70 180		

UNIVERSAL	Designation		RE	IC	S	D1	LE	Stock	
		GP K H							●
		TNGN160408-GP	0.8	9.525	4.76	-	15.7		○ ○
		TNGN160708-GP	0.8	9.525	7.94	-	15.7		○ ○
		TNGN160712-GP	1.2	9.525	7.94	-	15.3		○ ○

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



TP

ISO - without hole

- Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading
- Good economy with up to 3 cutting edges
- Very stable seating of the insert in pocket of a holder, especially advantaged in boring operation
- Edge is measurably weaker than 80° diamond shape inserts

CM: Mixed ceramic Al₂O₃
 CN: Silicon nitride ceramic Si₃N₄
 PVD: Physical vapour deposition

CM
PVD

CM

CN

MAC150

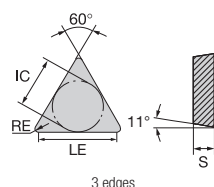
MAC200

KSN400

Stable machining, light cut ● 1st choice ○ suitableGeneral machining, medium cut ● 1st choice ○ suitableUnstable machining, heavy cut ⚠ 1st choice ⚠ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P

M

K

N

S

H

400

600

400

1000

Designation

RE

IC

S

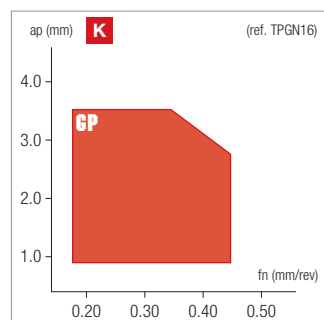
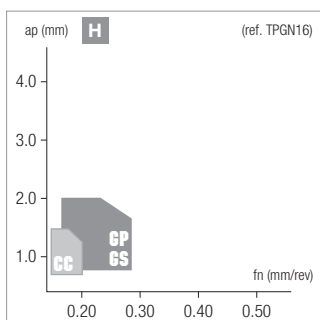
D1

LE

Stock

UNIVERSAL	GP K H	TPGN110302-GP	0.2	6.35	3.18	-	10.8	●	○
			0.4	6.35	3.18	-	10.6	●	○
UNIVERSAL	GS H	TPGN110304-GP	0.8	6.35	3.18	-	10.2	●	●
			0.4	9.525	3.18	-	16.1	●	○
UNIVERSAL	TPGN160308-GP	0.8	9.525	3.18	-	15.7	●	●	
UNIVERSAL	TPGN160312-GP	1.2	9.525	3.18	-	15.3		●	
SHARP	CC H	TPGN110302-GS	0.2	6.35	3.18	-	10.8	○	
			0.4	6.35	3.18	-	10.6	●	
SHARP	TPGN110308-GS	0.8	6.35	3.18	-	10.2	○		
SHARP	TPGN160304-GS	0.4	9.525	3.18	-	16.1	●		
SHARP	TPGN160308-GS	0.8	9.525	3.18	-	15.7	●		
SHARP	TPGN160312-GS	1.2	9.525	3.18	-	15.3	●		

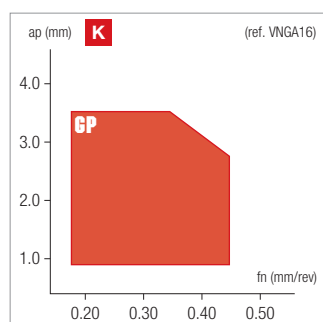
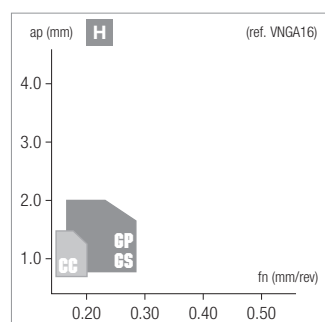
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



VN		CM: Mixed ceramic Al ₂ O ₃ CN: Silicon nitride ceramic Si ₃ N ₄ PVD: Physical vapour deposition									
ISO - with hole								CM PVD	CM	CM	CN
								MAC150	MAC200	MAC250	MSN400
1st choice for intricate shape copy turning - Can "In-Copy" (plunge turn into a smaller diameter) at an angle up to 49° - Can work extremely close to the tailstock/live center - The weakest turning insert shape among all, ap and fn should be lighter - Double sided style should mainly be used for external applications		Stable machining, light cut		● 1 st choice	○ suitable	●	●	○	●		
		General machining, medium cut		● 1 st choice	○ suitable	○	●	●	●	●	
		Unstable machining, heavy cut		● 1 st choice	○ suitable						
Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)							
		P									
		M									
		K		400 600		400 1000					
		N									
		S									
		H	100 200	70 180	60 150						

Designation		RE	IC	S	D1	LE	Stock			
UNIVERSAL	GP K H	VNGA160404-GP	0.4	9.525	4.76	3.81	16.2	●	○	
		VNGA160408-GP	0.8	9.525	4.76	3.81	15.8	●	○	●
		VNGA160412-GP	1.2	9.525	4.76	3.81	15.4	○	○	○
UNIVERSAL	GS H	VNGA160404-GS	0.4	9.525	4.76	3.81	16.2	●	●	
		VNGA160408-GS	0.8	9.525	4.76	3.81	15.8	●	●	
		VNGA160412-GS	1.2	9.525	4.76	3.81	15.4	○	○	
SHARP	CC H	VNGA160404-CC	0.4	9.525	4.76	3.81	16.2	●		
		VNGA160408-CC	0.8	9.525	4.76	3.81	15.8	●	●	
		VNGA160412-CC	1.2	9.525	4.76	3.81	15.4	○	○	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



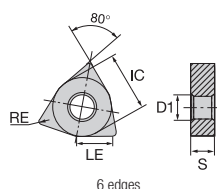
WN**ISO - with hole**

- 6-corner 80° diamond shape that can increase economy compared to CNMG-style inserts
- Generally used on more moderate depths of cut and feedrates than CNMG-style inserts
- Seating of insert in pocket is less stable as CNMG-style inserts
- Cannot take as deep a depth of cut as similar sized CNMG-style insert

 CM: Mixed ceramic Al₂O₃
 CN: Silicon nitride ceramic Si₃N₄

CM

CN

MAC200
MSN400
Stable machining, light cut ● 1st choice ○ suitableGeneral machining, medium cut ● 1st choice ○ suitableUnstable machining, heavy cut ▲ 1st choice ▼ suitable**Dimensions****ISO****Vc(m/min) - suggested cutting speed range (bold: 1st choice)****P****M****K****N****S****H**

400

600

400

180

400

1000

Designation**RE****IC****S****D1****LE****Stock****UNIVERSAL****GP K H****WNGA080404-GP**

0.4

12.7

4.76

5.16

8.3

●

WNGA080408-GP

0.8

12.7

4.76

5.16

7.9

●

○

WNGA080412-GP

1.2

12.7

4.76

5.16

7.5

●

●

SHARP**CC H****WNGA080404-CC**

0.4

12.7

4.76

5.16

8.3

●

WNGA080408-CC

0.8

12.7

4.76

5.16

7.9

●

WNGA080412-CC

1.2

12.7

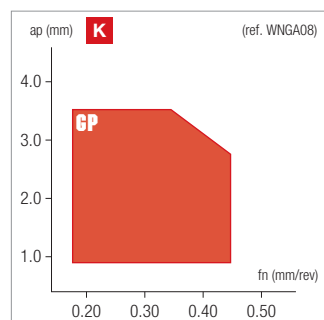
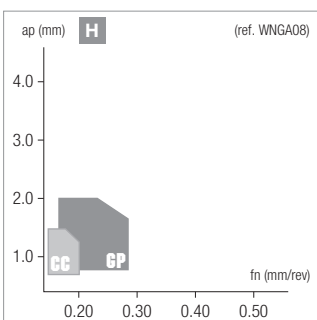
4.76

5.16

7.5

○

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion



A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

A - TURNING

ISO 513	MATERIAL	HARDNESS HB	NAC200				NSN350				NSN400			
				min	start	max		min	start	max		min	start	max
K1	Grey cast iron (ex. 0.6025/GG25/EN-GJL-250)	150 ÷ 250		400	500	600		600	800	1000		500	750	1000
								500	700	900		400	650	900
K2	Nodular cast iron (ex. 0.7050/GGG50/EN-GJS-500-7)	150 ÷ 350		300	400	500						450	600	750
												400	500	600
ISO 513	MATERIAL	HARDNESS HRC	NAC150				NAC200				NAC250			
				min	start	max		min	start	max		min	start	max
H1	Case-hardened steel (ex. 1.7131/16MnCr5)	50 ÷ 56		100	150	200		80	130	180		70	110	150
								70	110	150		60	100	140
H2	Bearing steel, quenched and tempered steel (ex. 1.3505/100Cr6)	54 ÷ 62		80	130	180		70	100	130		60	90	120
								60	80	100		50	60	70
ISO 513	MATERIAL	HARDNESS HRC	NSA6000				NSA650				NWR700			
				min	start	max		min	start	max		min	start	max
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)	50 ÷ 56		200	300	400						300	400	500
				180	250	320		150	200	250		250	300	350
				150	200	250								

Complete workpiece materials p. H1.

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

NSN450								
	min	start	max					
	400	600	800					
	400	500	600					
NWR750								
	min	start	max					
	250	350	450					
	200	250	300					

Complete workpiece materials p. H1.

A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

A - TURNING	DESIGNATION	DEPTH OF CUT			FEED RATE		
		ap (mm)			fn (mm/rev)		
		min	start	max	min	start	max
	CCGW09T308-GP K	1.00	2.00	3.00	0.12	0.23	0.34
	CCGW09T312-GP K	1.00	2.00	3.00	0.13	0.26	0.36
	CCGW120408-GP K	1.00	2.50	4.00	0.14	0.27	0.40
	CCGW120412-GP K	1.00	2.50	4.00	0.16	0.31	0.46
	CNGA120404-CC H	0.20	0.70	1.20	0.04	0.08	0.12
	CNGA120404-GP H	0.40	1.20	2.00	0.06	0.14	0.22
	CNGA120404-GS H	0.40	1.20	2.00	0.06	0.14	0.22
	CNGA120408-CC H	0.20	0.70	1.20	0.05	0.10	0.15
	CNGA120408-GP H	0.40	1.20	2.00	0.10	0.20	0.30
	CNGA120408-GP S	1.00	2.50	4.00	0.14	0.27	0.40
	CNGA120408-GS H	0.40	1.20	2.00	0.10	0.20	0.30
	CNGA120410-WU H	0.40	1.20	2.00	0.12	0.26	0.40
	CNGA120410-WU K	1.00	2.50	4.00	0.20	0.35	0.50
	CNGA120412-CC H	0.20	0.70	1.20	0.06	0.13	0.20
	CNGA120412-GP H	0.40	1.20	2.00	0.12	0.23	0.34
	CNGA120412-GP S	1.00	2.50	4.00	0.16	0.31	0.46
	CNGA120412-GS H	0.40	1.20	2.00	0.12	0.23	0.34
	CNGA160612-GP H	1.00	2.50	4.00	0.14	0.27	0.40
	CNGA160616-GP H	1.00	2.50	4.00	0.15	0.30	0.45
	CNGN120708-GP H	0.40	1.20	2.00	0.10	0.20	0.30
	CNGN120708-GP K	1.00	2.50	4.00	0.14	0.27	0.40
	CNGN120708-GP S	1.00	2.50	4.00	0.14	0.27	0.40
	CNGN120712-GP H	0.40	1.20	2.00	0.12	0.23	0.34
	CNGN120712-GP K	1.00	2.50	4.00	0.16	0.31	0.46
	CNGN120712-GP S	1.00	2.50	4.00	0.16	0.31	0.46
	CNGN120712-HI H	1.00	2.50	4.00	0.16	0.28	0.40
	CNGN120716-GP H	0.40	1.20	2.00	0.14	0.26	0.38
	CNGN120716-GP K	1.00	2.50	4.00	0.18	0.33	0.48
	CNGN120716-GP S	1.00	2.50	4.00	0.18	0.33	0.48
	CNGN120716-HI H	1.00	2.50	4.00	0.20	0.32	0.44
	CNGX120708-GP H	0.40	1.20	2.00	0.10	0.20	0.30
	CNGX120712-GP H	0.40	1.20	2.00	0.12	0.23	0.34
	CNMA120408-GP K	1.00	2.50	4.00	0.14	0.27	0.40
	CNMA120412-GP K	1.00	2.50	4.00	0.16	0.31	0.46
	CNMA120416-GP K	1.00	2.50	4.00	0.18	0.33	0.48
	CNMA160612-GP K	2.00	4.00	6.00	0.20	0.35	0.50
	CNMA160616-GP K	2.00	4.00	6.00	0.22	0.38	0.54
	CNMN120412-GP K	1.00	2.50	4.00	0.16	0.31	0.46
	CNMN120416-GP K	1.00	2.50	4.00	0.18	0.33	0.48
	CNMX120712-GP K	1.00	2.50	4.00	0.16	0.31	0.46
	CNMX120716-GP K	1.00	2.50	4.00	0.18	0.33	0.48
	DNGA150604-CC H	0.20	0.70	1.20	0.04	0.08	0.12
	DNGA150604-GP H	0.40	1.20	2.00	0.06	0.14	0.22
	DNGA150604-GS H	0.40	1.20	2.00	0.06	0.14	0.22
	DNGA150608-CC H	0.20	0.70	1.20	0.05	0.10	0.15
	DNGA150608-GP H	0.40	1.20	2.00	0.10	0.20	0.30
	DNGA150608-GS H	0.40	1.20	2.00	0.10	0.20	0.30
	DNGA150612-CC H	0.20	0.70	1.20	0.06	0.13	0.20
	DNGA150612-GP H	0.40	1.20	2.00	0.12	0.23	0.34
	DNGA150612-GS H	0.40	1.20	2.00	0.12	0.23	0.34
	DNGA150616-GP H	0.40	1.20	2.00	0.14	0.26	0.38
	DNGN150708-GP H	0.40	1.20	2.00	0.10	0.20	0.30
	DNGN150712-GP H	0.40	1.20	2.00	0.12	0.23	0.34
	DNGN150716-GP H	0.40	1.20	2.00	0.14	0.26	0.38
	RCGX060600-CC S	1.00	1.50	2.00	0.18	0.28	0.38
	RCGX060600-GS H	0.40	1.20	2.00	0.10	0.24	0.38

	DESIGNATION	DEPTH OF CUT			FEED RATE		
		ap (mm)			fn (mm/rev)		
		min	start	max	min	start	max
	RCGX060700-GP H	0.40	1.20	2.00	0.10	0.24	0.38
	RCGX060700-GP S	1.00	2.00	3.00	0.18	0.32	0.46
	RCGX090700-CC S	1.00	2.00	3.00	0.22	0.32	0.42
	RCGX090700-GP H	0.60	1.80	3.00	0.12	0.26	0.40
	RCGX090700-GP S	1.00	2.50	4.00	0.22	0.38	0.54
	RCGX090700-HI H	0.60	1.80	3.00	0.15	0.30	0.45
	RCGX120700-CC S	1.00	2.00	3.00	0.22	0.32	0.42
	RCGX120700-GP H	0.60	1.80	3.00	0.12	0.26	0.40
	RCGX120700-GP S	1.00	2.50	4.00	0.22	0.38	0.54
	RCGX120700-HI H	0.60	1.80	3.00	0.15	0.30	0.45
	RCGX151000-HI H	1.00	2.50	4.00	0.20	0.40	0.60
	RCGX191000-HI H	1.00	2.50	4.00	0.25	0.45	0.65
	RNGN120400-CC S	1.00	2.00	3.00	0.22	0.32	0.42
	RNGN120400-GP H	0.60	1.80	3.00	0.12	0.26	0.40
	RNGN120400-GP S	1.00	2.50	4.00	0.22	0.38	0.54
	RNGN120700-CC S	1.00	2.00	3.00	0.22	0.36	0.50
	RNGN120700-GP H	0.60	1.80	3.00	0.12	0.26	0.40
	RNGN120700-GP S	1.00	2.50	4.00	0.22	0.32	0.42
	RNGN120700-HI H	0.60	1.80	3.00	0.15	0.30	0.45
	RNGN120700-HT H	0.60	1.80	3.00	0.15	0.30	0.45
	SCGW09T308-GP K	1.00	2.00	3.00	0.12	0.23	0.34
	SCGW120408-GP K	1.00	2.50	4.00	0.14	0.27	0.40
	SNGA120404-CC H	0.20	0.70	1.20	0.04	0.08	0.12
	SNGA120404-GP H	0.40	1.20	2.00	0.06	0.14	0.22
	SNGA120408-CC H	0.20	0.70	1.20	0.05	0.10	0.15
	SNGA120408-GP H	0.40	1.20	2.00	0.10	0.20	0.30
	SNGA120412-CC H	0.20	0.70	1.20	0.06	0.13	0.20
	SNGA120412-GP H	0.40	1.20	2.00	0.12	0.23	0.34
	SNGN120408-GP H	0.40	1.20	2.00	0.10	0.20	0.30
	SNGN120412-GP H	0.40	1.20	2.00	0.12	0.23	0.34
	SNGN120708-GP H	0.40	1.20	2.00	0.10	0.20	0.30
	SNGN120712-GP H	0.40	1.20	2.00	0.12	0.23	0.34
	SNGN120716-GP H	0.40	1.20	2.00	0.14	0.26	0.38
	SNGN120716-HI H	1.00	2.50	4.00	0.20	0.32	0.44
	SNGN120720-HI H	1.00	2.50	4.00	0.22	0.35	0.48
	SNGN120724-HI H	1.00	2.50	4.00	0.24	0.37	0.50
	SNGX120708-GP H	0.40	1.20	2.00	0.10	0.20	0.30
	SNGX120712-GP H	0.40	1.20	2.00	0.12	0.23	0.34
	SNMA120408-GP K	1.00	2.50	4.00	0.14	0.27	0.40
	SNMA120412-GP K	1.00	2.50	4.00	0.16	0.31	0.46
	SNMA120416-GP K	1.00	2.50	4.00	0.18	0.33	0.48
	SNMN120416-GP K	1.00	2.50	4.00	0.18	0.33	0.48
	SNMX120712-GP K	1.00	2.50	4.00	0.16	0.31	0.46
	SNMX120716-GP K	1.00	2.50	4.00	0.18	0.33	0.48
	TNGA160404-CC H	0.20	0.70	1.20	0.04	0.08	0.12
	TNGA160404-GP H	0.40	1.20	2.00	0.06	0.14	0.22
	TNGA160404-GS H	0.40	1.20	2.00	0.06	0.14	0.22
	TNGA160408-CC H	0.20	0.70	1.20	0.05	0.10	0.15
	TNGA160408-GP H	0.40	1.20	2.00	0.10	0.20	0.30
	TNGA160408-GP K	1.00	2.50	4.00	0.14	0.27	0.40
	TNGA160408-GS H	0.40	1.20	2.00	0.10	0.20	0.30
	TNGA160412-CC H	0.20	0.70	1.20	0.06	0.13	0.20
	TNGA160412-GP H	0.40	1.20	2.00	0.12	0.23	0.34
	TNGA160412-GP K	1.00	2.50	4.00	0.16	0.31	0.46
	TNGA160412-GS H	0.40	1.20	2.00	0.12	0.23	0.34
	TNGN160408-GP K	1.00	2.50	4.00	0.14	0.27	0.40

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
TNGN160708-GP H	0.40	1.20	2.00	0.10	0.20	0.30
TNGN160708-GP K	1.00	2.50	4.00	0.14	0.27	0.40
TNGN160712-GP H	0.40	1.20	2.00	0.12	0.23	0.34
TNGN160712-GP K	1.00	2.50	4.00	0.16	0.31	0.46
TPGN110302-CC H	0.20	0.60	1.00	0.04	0.06	0.08
TPGN110302-GP H	0.40	0.80	1.20	0.05	0.10	0.15
TPGN110302-GS H	0.40	0.80	1.20	0.05	0.10	0.15
TPGN110304-CC H	0.20	0.60	1.00	0.04	0.07	0.10
TPGN110304-GP H	0.40	0.80	1.20	0.04	0.11	0.18
TPGN110304-GP K	1.00	2.00	3.00	0.10	0.20	0.30
TPGN110304-GS H	0.40	0.80	1.20	0.04	0.11	0.18
TPGN110308-CC H	0.20	0.60	1.00	0.05	0.09	0.13
TPGN110308-GP H	0.40	0.80	1.20	0.06	0.15	0.24
TPGN110308-GP K	1.00	2.00	3.00	0.12	0.23	0.34
TPGN110308-GS H	0.40	0.80	1.20	0.06	0.15	0.24
TPGN160304-CC H	0.20	0.70	1.20	0.04	0.08	0.12
TPGN160304-GP H	0.40	1.20	2.00	0.06	0.14	0.22
TPGN160304-GP K	1.00	2.50	4.00	0.12	0.23	0.34
TPGN160304-GS H	0.40	1.20	2.00	0.06	0.14	0.22
TPGN160308-CC H	0.20	0.70	1.20	0.05	0.10	0.15
TPGN160308-GP H	0.40	1.20	2.00	0.10	0.20	0.30
TPGN160308-GP K	1.00	2.50	4.00	0.14	0.27	0.40
TPGN160308-GS H	0.40	1.20	2.00	0.10	0.20	0.30
TPGN160312-CC H	0.20	0.70	1.20	0.06	0.13	0.20
TPGN160312-GP K	1.00	2.50	4.00	0.16	0.31	0.46
VNGA160404-CC H	0.20	0.70	1.20	0.04	0.08	0.12
VNGA160404-GP H	0.40	1.20	2.00	0.06	0.14	0.22
VNGA160404-GP K	1.00	2.50	4.00	0.12	0.23	0.34
VNGA160404-GS H	0.40	1.20	2.00	0.06	0.14	0.22
VNGA160408-CC H	0.20	0.70	1.20	0.05	0.10	0.15
VNGA160408-GP H	0.40	1.20	2.00	0.10	0.20	0.30
VNGA160408-GP K	1.00	2.50	4.00	0.14	0.27	0.40
VNGA160408-GS H	0.40	1.20	2.00	0.10	0.20	0.30
VNGA160412-CC H	0.20	0.70	1.20	0.06	0.13	0.20
VNGA160412-GP H	0.40	1.20	2.00	0.12	0.23	0.34
VNGA160412-GP K	1.00	2.50	4.00	0.16	0.31	0.46
VNGA160412-GS H	0.40	1.20	2.00	0.12	0.23	0.34
WNGA080404-CC H	0.20	0.70	1.20	0.04	0.08	0.12
WNGA080404-GP H	0.40	1.20	2.00	0.06	0.14	0.22
WNGA080408-CC H	0.20	0.70	1.20	0.05	0.10	0.15
WNGA080408-GP H	0.40	1.20	2.00	0.10	0.20	0.30
WNGA080408-GP K	1.00	2.50	4.00	0.14	0.27	0.40
WNGA080412-CC H	0.20	0.70	1.20	0.06	0.13	0.20
WNGA080412-GP H	0.40	1.20	2.00	0.12	0.23	0.34
WNGA080412-GP K	1.00	2.50	4.00	0.16	0.31	0.46

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS



TURNING Holders

Designation system, A202

Range overview, A204

Clamping system details, A207

Boring bar features, 210

Range, 213

NT	-	D	C	L	N	R	20	20	K	-	12	X
		1	2	3	4	5	6	7	8		9	10

1	CLAMPING SYSTEM
C	top clamp
D	double clamp
M	multi-lock
P	lever-lock
S	screw clamp

2	INSERT SHAPE
C	80° rhombic
D	55° rhombic
R	round
S	90° square
T	60° triangular
V	35° rhombic
W	80° trigon

3	CUTTING ANGLE (KAPR)
A	90° without offset
B	75°
C	90°
D	45° neutral
E	60°
F	90°
G	90° without offset
H	107.5°
J	93°
K	75°
L	95°
N	63°
P	117.5°
Q	45°
R	75°
S	45°
T	60°
U	93°
V	72.5°
W	60°
Y	85°

4	INSERT RELIEF ANGLE
B	5°
C	7°
D	15°
E	20°
N	0°
P	11°

5	DIRECTION
Symbol	Shape
L	
N	
R	

6	SHANK HEIGHT (H)
∞	

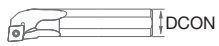
7	SHANK WIDTH (B)
∞	

8	HOLDER LENGTH (LF)
Symbol	
F	80 mm
G	90 mm
H	100 mm
J	110 mm
K	125 mm
L	140 mm
M	150 mm
N	160 mm
P	170 mm
Q	180 mm
R	200 mm
X	NIKKO norm

9	INSERT SIZE
10	ACCORDING TO NIKKO NORM (OPTIONAL)

NT	-	V	12	M	-	S	C	L	C	R/L	06	-	14
		1	2	3		4	5	6	7	8	9		10

1	HOLDER STYLE
A	steel boring bar with coolant hole
C	carbide boring bar without coolant hole
E	carbide boring bar with coolant hole
S	steel boring bar without coolant hole
V	High quality steel boring bar with Vortex design and coolant hole

2	BORING BAR DIAMETER (DCON)
	

3	HOLDER LENGTH (LF)
Symbol	
F	80 mm
G	90 mm
H	100 mm
J	110 mm
K	125 mm
L	140 mm
M	150 mm
N	160 mm
P	170 mm
Q	180 mm
R	200 mm
S	250 mm
T	300 mm
U	350 mm
V	400 mm
W	450 mm
Y	500 mm
X	NIKKO norm

4	CLAMPING SYSTEM
C	top clamp
D	double clamp
M	multi-lock
P	lever-lock
S	screw clamp

5	INSERT SHAPE
C	80° rhombic
D	55° rhombic
R	round
S	90° square
T	60° triangular
V	35° rhombic
W	80° trigon

6	CUTTING ANGLE (KAPR)	
A	90° without offset	
B	75°	
C	90°	
D	45° neutral	
E	60°	
F	90°	
G	90° without offset	
H	107.5°	
J	93°	
K	75°	
L	95°	
N	63°	
P	117.5°	
Q	45°	
R	75°	
S	45°	
T	60°	
U	93°	
V	72.5°	
W	60°	
Y	85°	

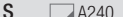
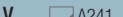
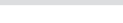
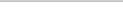
7	INSERT RELIEF ANGLE
B	5°
C	7°
D	15°
E	20°
N	0°
P	11°

8	DIRECTION
Symbol	Shape
L	
R	

9	INSERT SIZE

10	MINIMUM BORE DIAMETER (DMIN)

A - TURNING	CC _∞	SCAC A214	SCLC A215	SCLC N A216	SCMC A217	
	CN _∞	DCLN A224	MCKN A225	MCLN A226	MCRN A227	PCLN A228
B - THREADING	DC _∞	SDAC A232	SDJC A233	SDJC N A234	SDNC A235	
	DN _∞	DDJN A244	MDJN A245	PDJN A246		
C - GROOVING	SC _∞	SSDC A255				
	SN _∞	MSBN A257	MSDN A258	MSKN A259	MSSN A260	
D - MILLING	TC _∞	STAC A264	STFC A265	STGC A266		
	TN _∞	DTGN A271	DTJN A272	MTJN A273		
E - DRILLING	VB _∞	SVHB A278	SVJB A279	SVJB N A280	SVB A281	
	VC _∞	SVJC A283	SVJC N A284	SVPC A285	SVVC A286	
F - ACCESSORIES	VN _∞	DVJN A291	DVJN A292	MVJN A293	MVVN A294	
	WN _∞	DWLN A299	MWLN A300	PWLN A301		
G - SPARE PARTS	MicroNega	MCN A251	MDN A253			

CC _∞	 SCLC DMIN: 8 mm	A 	 SCZC DMIN: 12 mm	 S 	
		E 			
		S 			
		V 			
CN _∞	 DCLN DMIN: 32 mm	A 	 MCLN DMIN: 25 mm	 S 	 PCLN DMIN: 32 mm
DC _∞	 SDQC DMIN: 13 mm		 SDUC DMIN: 13 mm	 A   E   S   V 	 SDZC DMIN: 14 mm
DN _∞	 DDUN DMIN: 32 mm	 A 	 MDUN DMIN: 40 mm	 S 	
MCC	 MICRO-CC DMIN: 5 mm	 E   V 			
SC _∞	 SSKC DMIN: 16 mm	 S 			
SN _∞	 MSKN DMIN: 25 mm	 S 			
TB _∞	 STLB DMIN: 7 mm	 V 	 STUB DMIN: 10 mm	 S 	
TC _∞	 STFC DMIN: 12 mm	 A   E   S 	 STLC DMIN: 14 mm	 V 	
TN _∞	 DTFN DMIN: 32 mm	 A 	 MTUN DMIN: 25 mm	 S 	
TP _∞	 CTUP DMIN: 16 mm	 S 	 STUP DMIN: 12 mm	 S 	
VB _∞	 SVJB DMIN: 25 mm	 V 			
VC _∞	 SVJC DMIN: 14 mm	 S 	 SVQC DMIN: 22 mm	 S 	 SVUC DMIN: 22 mm
					 SVZC DMIN: 30 mm
					 S 

A Steel with coolant
E Carbide with coolant
S Steel without coolant
V Vortex with coolant

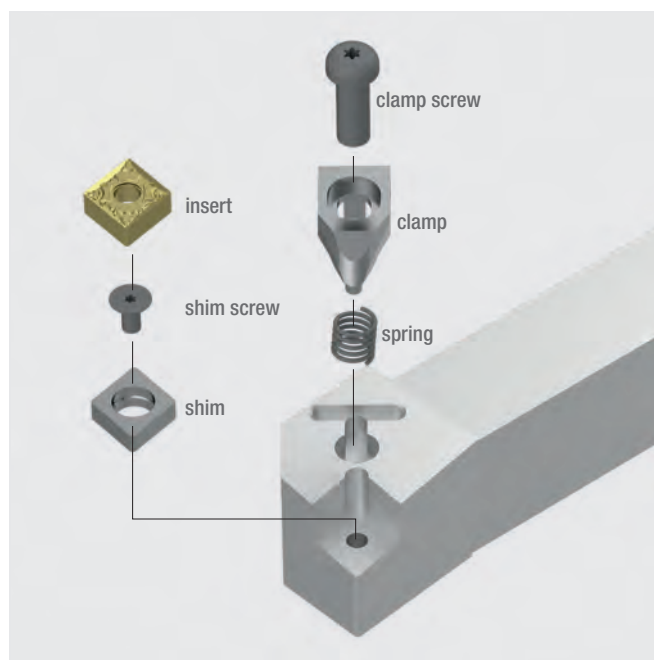
A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

VN _∞	MVQN DMIN: 33 mm S A295	MVUN DMIN: 37 mm S A296		
WB _∞	SWUB DMIN: 6 mm V A297			
WC _∞	SWUC DMIN: 14 mm V A298			
WN _∞	DWLN DMIN: 32 mm A A302	MWLN DMIN: 22 mm S A303	PWLN DMIN: 30 mm A A304	
MicroNega	MCN DMIN: 10 mm V A252	MDN DMIN: 15 mm V A254		

A	Steel with coolant
E	Carbide with coolant
S	Steel without coolant
V	Vortex with coolant

D CLAMPING

- Fast and reliable double clamping system
- With a single action, the insert is pushed down and against the holder's seat.
- Excellent repeatability and accuracy thanks to the strong clamping forces that assures a perfect contact between shim and insert.
- Optimized design to avoid chip interferences.



EXTERNAL

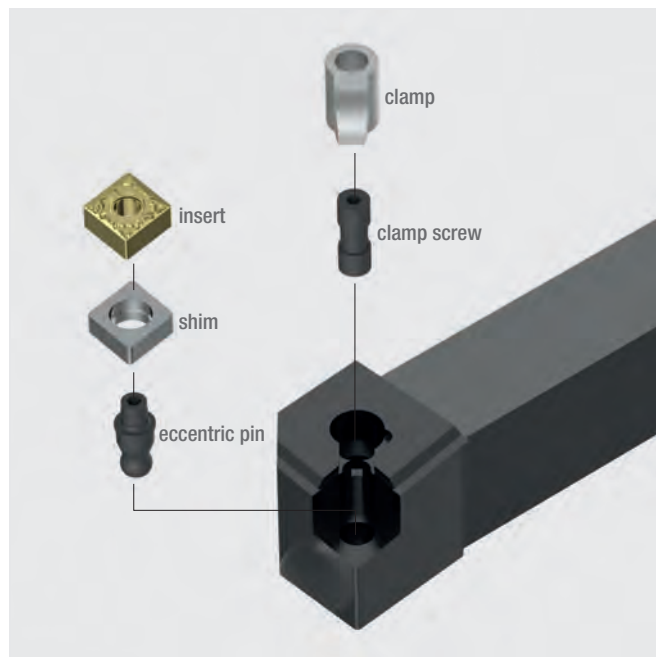
DCLN (CN ∞)DDJN (DN ∞)DTGN (TN ∞)DTJN (TN ∞)DVJN (VN ∞)DWLN (WN ∞)

INTERNAL

A DCLN (CN ∞)A DDUN (DN ∞)A DTFN (TN ∞)A DWLN (WN ∞)

M CLAMPING

- Combination of top clamping and eccentric pin-lock.
- Rigid clamping, perfect for ceramic and solid PCBN inserts.
- Good solution for heavy machining, double clamping ensure the strenght to support strong stress.
- If necessary, only for light-cut, can be used without top clamp.



EXTERNAL

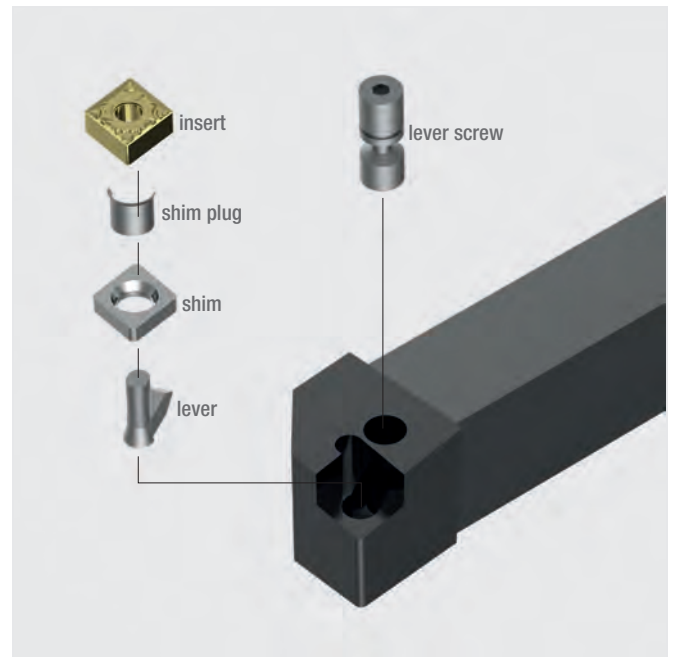
MCKN (CN₀₀)MCLN (CN₀₀)MCRN (CN₀₀)MDJN (DN₀₀)MSBN (SN₀₀)MSDNN (SN₀₀)MSKN (SN₀₀)MSSN (SN₀₀)MTJN (TN₀₀)MVJN (VN₀₀)MVVNN (VN₀₀)MWLN (WN₀₀)

INTERNAL

S MCLN (CN₀₀)S MDUN (DN₀₀)S MSKN (SN₀₀)S MTUN (TN₀₀)S MVQN (VN₀₀)S MVUN (VN₀₀)S MWLN (WN₀₀)
A208

P CLAMPING

- Economical and easy to use solution.
- Recommended for light and medium cut applications.
- No clamp on the top guarantees a smooth chip flow.
- Quick insert replacement.



EXTERNAL

PCLN (CN ∞)PDJN (DN ∞)PWLN (WN ∞)

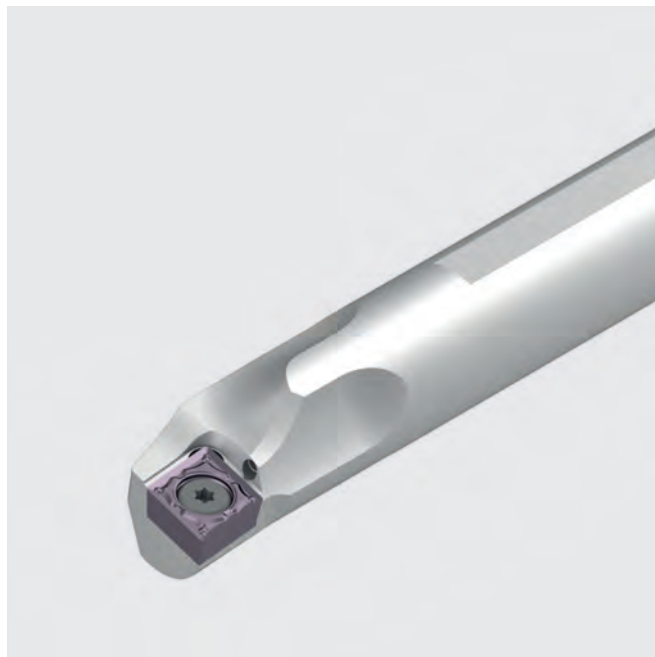
INTERNAL

A PCLN (CN ∞)A PWLN (WN ∞)

VORTEXBAR

Technology for internal machining

- Special edge design for excellent chip evacuation, preventing clogging even with long chips.
- High quality tool steel reduces vibrations even with significant overhang (max 5xD)
- Broad range of dimensions and geometries, for turning, back turning, profiling and threading.
- Internal coolant channels on the full line-up.

V SCLC (CC ∞)V SDQC (DC ∞)V SDUC (DC ∞)V SDZC (DC ∞)V STLC (TC ∞)V SVJB (VB ∞)V SWUC (WC ∞)V SIR
ThreadingNDB I
Grooving

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

CARBIDE BAR

Technology for internal machining

- High quality carbide boring bar for precision machining, prevents vibrations even with long overhang (max 7xD).
- Excellent strength thanks to a very stable “V” shape brazing.
- Suggested for precision machining when the highest standards of quality are required (improve roughness, tolerances and tool life).
- Internal coolant channels on the full line-up.



E SCLC (CC ∞)



E SDUC (DC ∞)



E STFC (TC ∞)

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

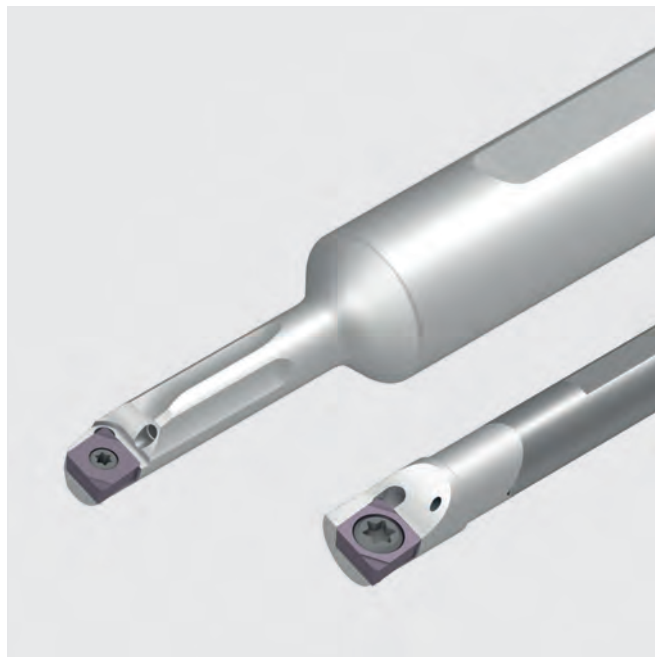
E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

MICROBORING

- Complete line-up of small tools for internal machining, starting from 5 mm hole diameter, with precise indexable inserts (carbide and advanced materials).
- MicroVortex types combine high quality tool steel and advanced head design, reducing vibrations and reaching perfect chip evacuation.
- Micro CC holder is available also in high quality carbide for most demanding applications (higher overhang, hard materials machining).
- Internal coolant channels on the full line-up.



VORTEX



V MCC

V STL (TB ∞)V SWUB (WB ∞)V SIR
Threading

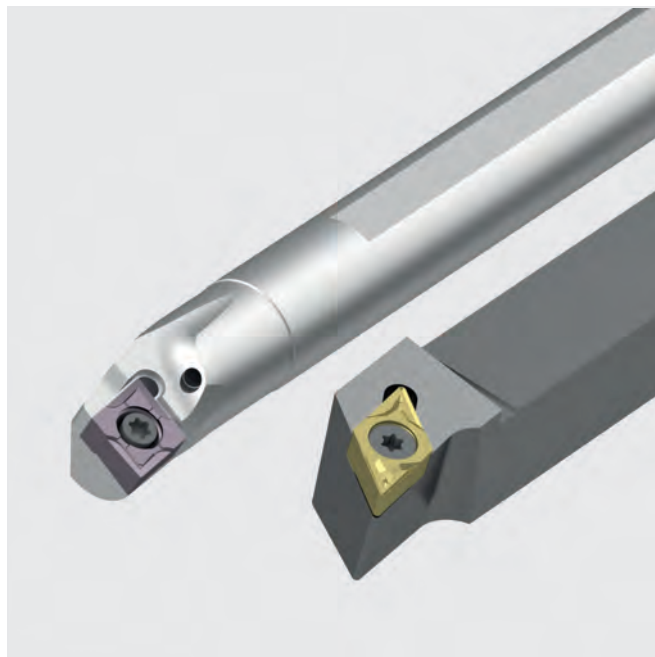
CARBIDE



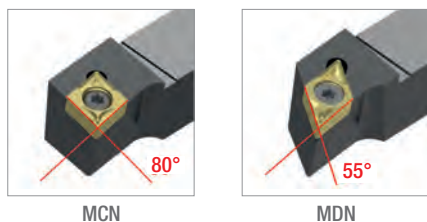
E MCC

MICRONEGA

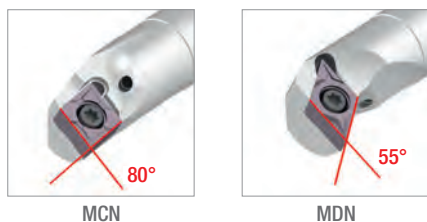
- Small negative inserts providing an alternative to positive inserts for external and internal turning operations.
- From semi-finishing to medium machining, available both with economical sintered chipbreaker (GM) and precision ground type (SS) for higher accuracy and lower cutting force.
- External small dimension tool holders, for small parts machining, without head offset.
- Internal boring bar with VORTEX technology that improves chip ejection thanks to the innovative head design.



EXTERNAL



INTERNAL

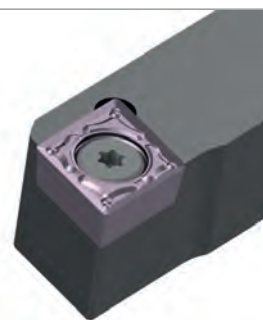
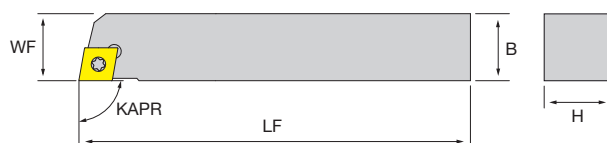


SCAC

ISO - CC

- External turning (KAPR 90°)
- Holds CC-style inserts, tightened by screw
- Available on lathes without offset
- Convenient to change inserts

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SCAC ⁺ /H0808K06	○	○	8	8	8	125	-	-	90°			CC00060200
NT-SCAC ⁺ /H1010K06	●	●	10	10	10	125	-	-	90°			CC00060200
NT-SCAC ⁺ /H1212K06	●	●	12	12	12	125	-	-	90°			CC00060200
NT-SCAC ⁺ /H1212K09	●	●	12	12	12	125	-	-	90°			CC0009T300
NT-SCAC ⁺ /H1616K09	●	●	16	16	16	125	-	-	90°			CC0009T300

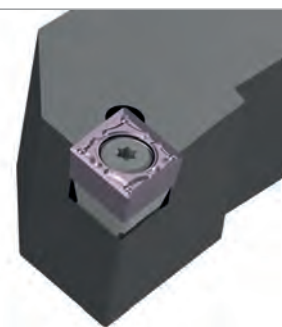
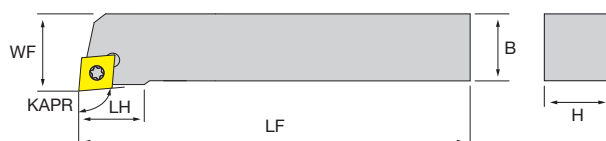
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-SCAC ⁺ /R0000006	NT-ST25060T07	NT-FT07
NT-SCAC ⁺ /R0000009	NT-ST35089T15	NT-FT15

SCLC**ISO - CC**

- External turning (KAPR 95°)
- Holds CC-style inserts, tightened by screw
- Convenient to change inserts

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SCLC ¹ /r2020K09S	●	●	20	20	25	125	22	-	95°			CC009T300
NT-SCLC ¹ /r2525M09S	●	●	25	25	32	150	25	-	95°			CC009T300
NT-SCLC ¹ /r2020K12S	●	●	20	20	25	125	22	-	95°			CC00120400
NT-SCLC ¹ /r2525M12S	●	●	25	25	32	150	25	-	95°			CC00120400

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

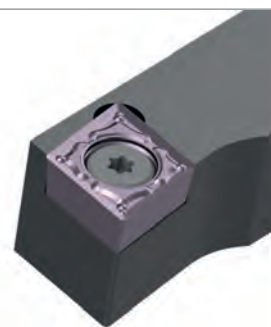
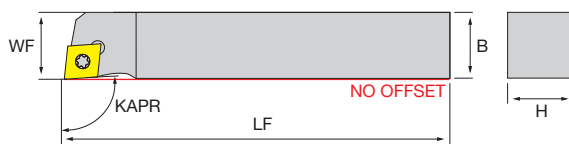
Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SCLC ¹ /r0000009S	NT-SH011	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15
NT-SCLC ¹ /r0000012S	NT-SH001	NT-SR001	NT-WR040	NT-ST40140T15	NT-FT15

SCLC N

ISO - CC

- External turning (KAPR 95°)
- Holds CC-style inserts, tightened by screw
- Available on lathes without offset
- Convenient to change inserts

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SCLC ¹ /r0808K06N	○	○	8	8	8	100	-	-	95°			CCoo0602oo
NT-SCLC ¹ /r1010K06N	●	●	10	10	10	125	-	-	95°			CCoo0602oo
NT-SCLC ¹ /r1212K09N	●	●	12	12	12	125	-	-	95°			CCoo09T3oo
NT-SCLC ¹ /r1616K09N	●	●	16	16	16	125	-	-	95°			CCoo09T3oo

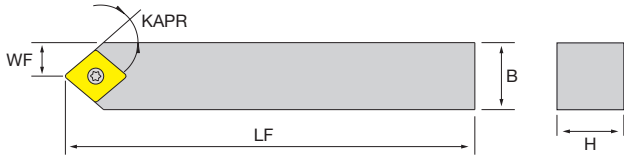
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

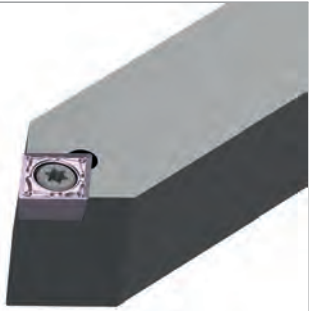
Spare parts	Insert screws	Flag wrenches
NT-SCLC ¹ /r0000006N	NT-ST25060T07	NT-FT07
NT-SCLC ¹ /r0000009N	NT-ST35089T15	NT-FT15

SCMC

ISO - CC

- External turning (KAPR 80°), Neutral position
- Holds CC-style inserts, tightened by screw
- Convenient to change inserts





Designation	Stock	H	B	WF	LF	LH	LPR	KAPR			MIID
NT-SCMCN2020K09	○	20	20	10	125	-	-	40°			CCoo09T3oo
NT-SCMCN2525M09	○	25	25	12.5	150	-	-	40°			CCoo09T3oo

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
		
SCMCNoooo09	NT-ST35089T15	NT-FT15

A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

A SCLC

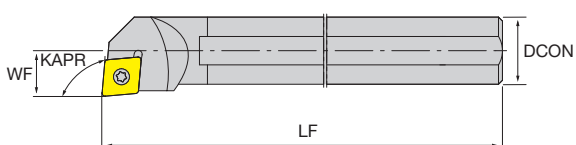
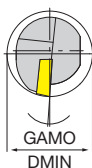
ISO - CC

- Internal turning (KAPR 95°)
- Steel boring bar with internal coolant through
- Holds CC-style inserts, tightened by screws

STEEL

with internal coolant

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-A08H-SCLC ¹ /r06	●	●	10	8	5	100	-	-	95°	13°		CC00060200
NT-A10K-SCLC ¹ /r06	●	●	12	10	6	125	-	-	95°	12°		CC00060200
NT-A12M-SCLC ¹ /r06	●	●	14	12	7	150	-	-	95°	9°		CC00060200
NT-A16Q-SCLC ¹ /r06	●	●	18	16	9	180	-	-	95°	7°		CC00060200
NT-A12M-SCLC ¹ /r09	●	●	14	12	7	150	-	-	95°	13°		CC0009T300
NT-A16Q-SCLC ¹ /r09	●	●	18	16	9	180	-	-	95°	9°		CC0009T300
NT-A20R-SCLC ¹ /r09	●	●	22	20	11	200	-	-	95°	5°		CC0009T300

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-A08H-SCLC ¹ /r06	NT-ST25050T07	NT-FT07
NT-A10K-SCLC ¹ /r06	NT-ST25060T07	NT-FT07
NT-A12M-SCLC ¹ /r06	NT-ST25060T07	NT-FT07
NT-A16Q-SCLC ¹ /r06	NT-ST25060T07	NT-FT07
NT-A12M-SCLC ¹ /r09	NT-ST35073T15	NT-FT15
NT-A16Q-SCLC ¹ /r09	NT-ST35073T15	NT-FT15
NT-A20R-SCLC ¹ /r09	NT-ST35089T15	NT-FT15

A16K SCLC

ISO - CC

- Internal turning (KAPR 95°)
- Small diameter steel boring bar with internal coolant and reduced neck
- Holds CC-style inserts, tightened by screws

STEEL

with internal coolant

WF
KAPR
LH
LF
DCON
GAMO
DMIN

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-A16K-07-SCLC*/#06-L20	●	●	8	16	4	125	20	-	95°	15°		CC∞0602∞
NT-A16K-08-SCLC*/#06-L20	●	●	9	16	4.5	125	20	-	95°	12°		CC∞0602∞
NT-A16K-09-SCLC*/#06-L25	●	●	10	16	5	125	25	-	95°	11°		CC∞0602∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-A16K-∞-SCLC*/#06-L∞	NT-ST25060T07	NT-FT07

A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

E SCLC

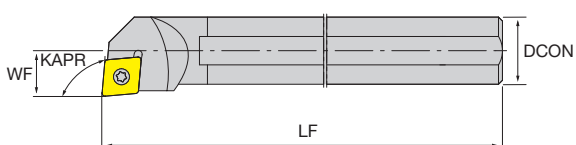
ISO - CC

- Internal turning (KAPR 95°)
- Carbide boring bar with internal coolant through. Maximum overhang: 7xDCON
- Holds CC-style inserts, tightened by screws

CARBIDE

with internal coolant

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-E08K-SCLC ¹ /R06	●	●	10	8	5	125	-	-	95°	9°		CC00060200
NT-E10K-SCLC ¹ /R06	●	●	12	10	6	125	-	-	95°	7°		CC00060200
NT-E12M-SCLC ¹ /R06	●	●	14	12	7	150	-	-	95°	6°		CC00060200
NT-E12M-SCLC ¹ /R09	●	●	14	12	7	150	-	-	95°	6°		CC0009T300
NT-E16R-SCLC ¹ /R09	●	●	18	16	9	200	-	-	95°	7°		CC0009T300
NT-E20R-SCLC ¹ /R09	●	●	22	20	11	200	-	-	95°	5°		CC0009T300

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
		
NT-E08K-SCLC ¹ /R06	NT-ST25050T07	NT-FT07
NT-E10K-SCLC ¹ /R06	NT-ST25060T07	NT-FT07
NT-E12M-SCLC ¹ /R06	NT-ST25060T07	NT-FT07
NT-E12M-SCLC ¹ /R09	NT-ST35073T15	NT-FT15
NT-E16R-SCLC ¹ /R09	NT-ST35073T15	NT-FT15
NT-E20R-SCLC ¹ /R09	NT-ST35089T15	NT-FT15

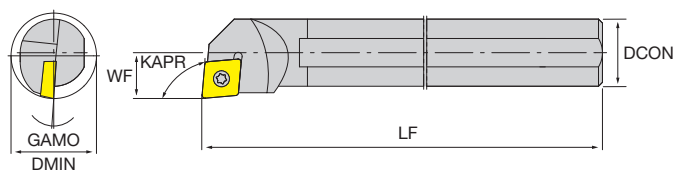
S SCLC

ISO - CC

- Internal turning (KAPR 95°)
- Steel boring bar without internal coolant
- Holds CC-style inserts, tightened by screws

STEEL

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-S08H-SCLC ¹ /ø06	●	●	10	8	5	100	-	-	95°	13°		CCoo0602oo
NT-S10K-SCLC ¹ /ø06	●	●	12	10	6	125	-	-	95°	12°		CCoo0602oo
NT-S12M-SCLC ¹ /ø06	●	●	14	12	7	150	-	-	95°	9°		CCoo0602oo
NT-S16Q-SCLC ¹ /ø06	●	●	18	16	9	180	-	-	95°	7°		CCoo0602oo
NT-S12M-SCLC ¹ /ø09	●	●	14	12	7	150	-	-	95°	13°		CCoo09T3oo
NT-S16Q-SCLC ¹ /ø09	●	●	18	16	9	180	-	-	95°	9°		CCoo09T3oo
NT-S20R-SCLC ¹ /ø09	●	●	22	20	11	200	-	-	95°	5°		CCoo09T3oo
NT-S20R-SCLC ¹ /ø12	●	●	25	20	13	200	-	-	95°	8°		CCoo1204oo
NT-S25R-SCLC ¹ /ø12	●	●	32	25	17	200	-	-	95°	8°		CCoo1204oo
WITH SHIM												
NT-S32S-SCLC ¹ /ø12S	●	●	40	32	22	250	-	-	95°	6°		CCoo1204oo
NT-S40T-SCLC ¹ /ø12S	●	●	50	40	27	300	-	-	95°	4°		CCoo1204oo

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-S08H-SCLC ¹ /ø06	-	-	-	NT-ST25050T07	NT-FT07
NT-S10K-SCLC ¹ /ø06	-	-	-	NT-ST25060T07	NT-FT07
NT-S12M-SCLC ¹ /ø06	-	-	-	NT-ST25060T07	NT-FT07
NT-S16Q-SCLC ¹ /ø06	-	-	-	NT-ST25060T07	NT-FT07
NT-S12M-SCLC ¹ /ø09	-	-	-	NT-ST35073T15	NT-FT15
NT-S16Q-SCLC ¹ /ø09	-	-	-	NT-ST35073T15	NT-FT15
NT-S20R-SCLC ¹ /ø09	-	-	-	NT-ST35089T15	NT-FT15
NT-S20R-SCLC ¹ /ø12	-	-	-	NT-ST40115T15	NT-FT15
NT-S25R-SCLC ¹ /ø12	-	-	-	NT-ST40115T15	NT-FT15
NT-S32S-SCLC ¹ /ø12S	NT-SH001	NT-SR001	NT-WR040	NT-ST40140T15	NT-FT15
NT-S40T-SCLC ¹ /ø12S	NT-SH001	NT-SR001	NT-WR040	NT-ST40140T15	NT-FT15

V SCLC

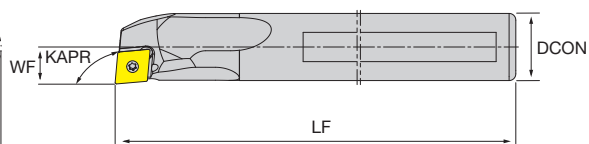
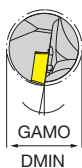
ISO - CC

- Internal turning (KAPR 95°)
- Vortex boring bar (high quality steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds CC-style inserts, tightened by screws
- Special chip evacuation path

VORTEX

with internal coolant

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-V08H-SCLC/ø06-10	●	●	10	8	5	100	-	-	95°	14°		CC00060200
NT-V10K-SCLC/ø06-12	●	●	12	10	6	125	-	-	95°	12°		CC00060200
NT-V12M-SCLC/ø06-14	●	●	14	12	7	150	-	-	95°	10°		CC00060200
NT-V12M-SCLC/ø09-14	●	●	14	12	7	150	-	-	95°	12°		CC0009T300
NT-V16Q-SCLC/ø09-18	●	●	18	16	9	180	-	-	95°	10°		CC0009T300
NT-V20R-SCLC/ø09-22	●	●	22	20	11	200	-	-	95°	8°		CC0009T300
NT-V25S-SCLC/ø09-27	●	●	27	25	13.5	250	-	-	95°	6°		CC0009T300
NT-V20R-SCLC/ø12-25	●	●	25	20	13	200	-	-	95°	7°		CC00120400
NT-V25S-SCLC/ø12-32	●	●	32	25	17	250	-	-	95°	5°		CC00120400

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-V08H-SCLC/ø06-10	NT-ST25050T07	NT-FT07
NT-V10K-SCLC/ø06-12	NT-ST25060T07	NT-FT07
NT-V12M-SCLC/ø06-14	NT-ST25060T07	NT-FT07
NT-V12M-SCLC/ø09-14	NT-ST35073T15	NT-FT15
NT-V16Q-SCLC/ø09-18	NT-ST35073T15	NT-FT15
NT-V20R-SCLC/ø09-22	NT-ST35089T15	NT-FT15
NT-V25S-SCLC/ø09-27	NT-ST35089T15	NT-FT15
NT-V20R-SCLC/ø12-25	NT-ST40115T15	NT-FT15
NT-V25S-SCLC/ø12-32	NT-ST40115T15	NT-FT15

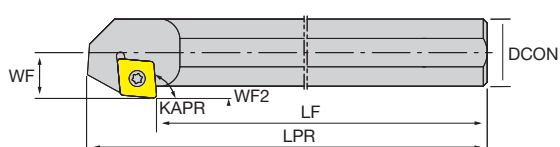
S SCZC

ISO - CC

- Internal back turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds CC-style inserts, tightened by screws

STEEL

Right-hand shown



Designation	Stock		DMIN	DCON	WF	WF2	LF	LH	LPR	KAPR	GAMO	MIID
	L	R										
NT-S08H-SCZC ¹ /r06	●	●	12	8	6.5	2.5	100	-	110	93°	13°	CC∞0602∞
NT-S10K-SCZC ¹ /r06	●	●	14	10	7.5	2.5	125	-	135	93°	12°	CC∞0602∞
NT-S12M-SCZC ¹ /r06	●	●	16	12	8.5	2.5	150	-	160	93°	10°	CC∞0602∞
NT-S16Q-SCZC ¹ /r09	●	●	21	16	11.5	3.5	180	-	196	93°	10°	CC∞09T3∞
NT-S20R-SCZC ¹ /r09	●	●	25	20	13.5	3.5	200	-	218	93°	8°	CC∞09T3∞
NT-S25R-SCZC ¹ /r09	●	●	32	25	16	3.5	200	-	218	93°	8°	CC∞09T3∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

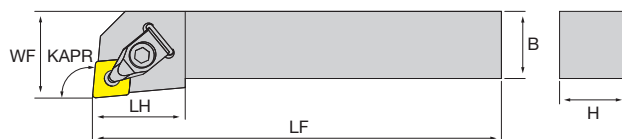
Spare parts	Insert screws	Flag wrenches
NT-S08H-SCZC ¹ /r06	NT-ST25050T07	NT-FT07
NT-S10K-SCZC ¹ /r06	NT-ST25060T07	NT-FT07
NT-S12M-SCZC ¹ /r06	NT-ST25060T07	NT-FT07
NT-S16Q-SCZC ¹ /r09	NT-ST35089T15	NT-FT15
NT-S20R-SCZC ¹ /r09	NT-ST35089T15	NT-FT15
NT-S25R-SCZC ¹ /r09	NT-ST35089T15	NT-FT15

DCLN

ISO - CN

- External turning (KAPR 95°)
- Holds CN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-DCLN ^h /r1616H09X	●	●	16	16	20	100	33	-	95°			CN∞0903∞
NT-DCLN ^h /r2020K09X	●	●	20	20	25	125	30	-	95°			CN∞0903∞
NT-DCLN ^h /r2525M09X	●	●	25	25	32	150	30	-	95°			CN∞0903∞
NT-DCLN ^h /r2020K12X	●	●	20	20	25	125	40	-	95°			CN∞1204∞
NT-DCLN ^h /r2525M12X	●	●	25	25	32	150	36	-	95°			CN∞1204∞
NT-DCLN ^h /r3225P12X	●	●	32	25	32	170	36	-	95°			CN∞1204∞

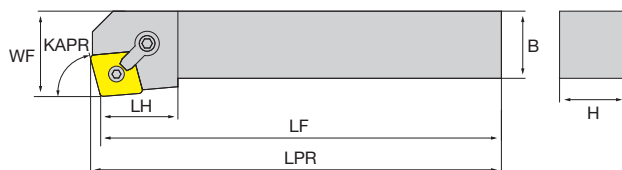
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Shim screws	L wrench	Clamp	Springs	Clamp screws	L wrench
NT-DCLN ^h /r∞∞∞∞09X	NT-SH012	NT-ST031	NT-WR020	NT-CS250	NT-SG250	NT-SC250	NT-TX15
NT-DCLN ^h /r∞∞∞∞12X	NT-SH030	NT-ST200	NT-WR025	NT-CS200	NT-SG200	NT-SC200	NT-TX20

MCKN**ISO - CN**

- External turning (KAPR 75°)
- Holds CN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force
- Mostly used for roughing

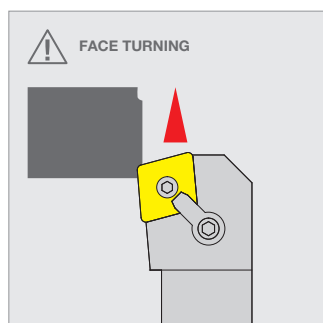
Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-MCKN/r2020K12	●	●	20	20	25	122	37	125	75°			CN∞1204∞
NT-MCKN/r2525M12	●	●	25	25	32	147	34	150	75°			CN∞1204∞
NT-MCKN/r3232P12	●	●	32	32	40	167	40	170	75°			CN∞1204∞
NT-MCKN/r3232P16	○	○	32	32	40	167	40	170	75°			CN∞1606∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Eccentric pins	Clamp	Clamp screws	L wrench
NT-MCKN/r∞∞∞∞12	NT-SH030	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MCKN/r∞∞∞∞16	NT-SH055	NT-SP040	NT-CS010	NT-SC010	NT-WR030

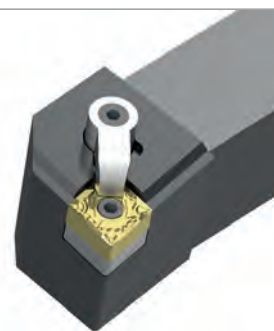
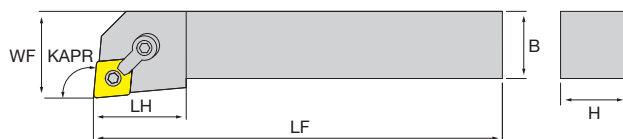


MCLN

ISO - CN

Right-hand shown

- External turning (KAPR 95°)
- Holds CN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force
- Mostly used for roughing



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-MCLN/r2020K12	●	●	20	20	25	125	33	-	95°			CN∞1204∞
NT-MCLN/r2525M12	●	●	25	25	32	150	33	-	95°			CN∞1204∞
NT-MCLN/r3232P12	●	●	32	32	40	170	33	-	95°			CN∞1204∞
NT-MCLN/r2525M16	●	●	25	25	32	150	33	-	95°			CN∞1606∞
NT-MCLN/r3232P16	●	●	32	32	40	170	33	-	95°			CN∞1606∞
NT-MCLN/r3232P19	○	○	32	32	40	170	38	-	95°			CN∞1906∞
NT-MCLN/r4040S19	○	○	40	40	50	250	38	-	95°			CN∞1906∞

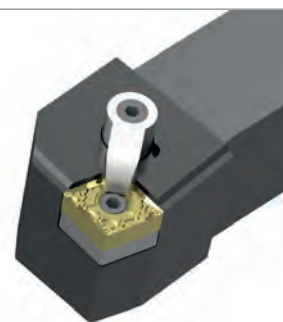
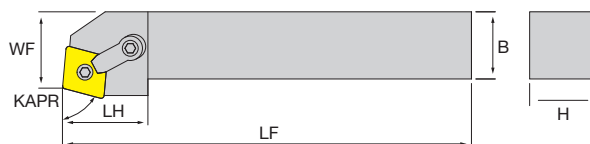
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Eccentric pins	Clamp	Clamp screws	L wrench
NT-MCLN/r∞∞∞∞12	NT-SH030	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MCLN/r∞∞∞∞16	NT-SH055	NT-SP040	NT-CS010	NT-SC010	NT-WR030
NT-MCLN/r∞∞∞∞19	NT-SH080	NT-SP050	NT-CS015	NT-SC070	NT-WR040

MCRN**ISO - CN**

- External turning (KAPR 75°)
- Holds CN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force
- Mostly used for roughing, especially facing

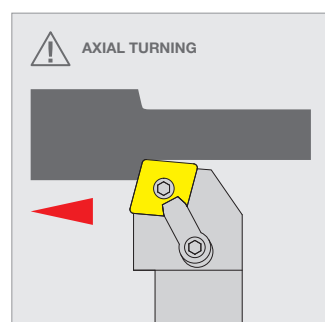
Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-MCRN [▲] /r2020K12	●	●	20	20	22	125	37	-	75°			CN∞1204∞
NT-MCRN [▲] /r2525M12	●	●	25	25	27	150	34	-	75°			CN∞1204∞
NT-MCRN [▲] /r3232P12	●	●	32	32	35	170	40	-	75°			CN∞1204∞
NT-MCRN [▲] /r3232P16	○	○	32	32	35	170	40	-	75°			CN∞1606∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Eccentric pins	Clamp	Clamp screws	L wrench
NT-MCRN [▲] /r0000012	NT-SH030	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MCRN [▲] /r0000016	NT-SH055	NT-SP040	NT-CS010	NT-SC010	NT-WR030

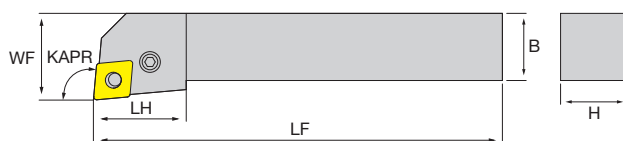


PCLN

ISO - CN

- External turning (KAPR 95°)
- Holds CN-style inserts
- Easy to use Levers-lock clamping
- Suitable for long-chip materials

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-PCLN ^h /r1616H09	●	●	16	16	20	100	20	-	95°			CN∞0903∞
NT-PCLN ^h /r2020K09	●	●	20	20	25	125	20	-	95°			CN∞0903∞
NT-PCLN ^h /r2525M09	●	●	25	25	32	150	23	-	95°			CN∞0903∞
NT-PCLN ^h /r2020K12	●	●	20	20	25	125	26	-	95°			CN∞1204∞
NT-PCLN ^h /r2525M12	●	●	25	25	32	150	26	-	95°			CN∞1204∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Shim plugs	Levers	Levers screws	L wrench
NT-PCLN ^h /r∞∞∞∞09	NT-SH012	NT-SR012	NT-LL012	NT-SC015	NT-WR025
NT-PCLN ^h /r∞∞∞∞12	NT-SH035	NT-SR020	NT-LL020	NT-SC025	NT-WR030

A DCLN

ISO - CN

- Internal turning (KAPR 95°)
- Steel boring bar with internal coolant through
- Holds CN-style inserts
- Double pushing and pulling action with a single movement. Quick and safe tightening

STEEL
with internal coolant

Right-hand shown

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-A25R-DCLN [▲] /h12	●	●	32	25	17	200	-	-	95°	14°		CN∞1204∞
NT-A32S-DCLN [▲] /h12	●	●	40	32	22	250	-	-	95°	14°		CN∞1204∞
NT-A40T-DCLN [▲] /h12	●	●	50	40	27	300	-	-	95°	12°		CN∞1204∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Shim screws	L wrench	Clamp	Springs	L wrench
NT-A∞∞-DCLN [▲] /h12	NT-SH035	NT-ST200	NT-WR025	NT-CS200	NT-SG200	NT-TX20

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

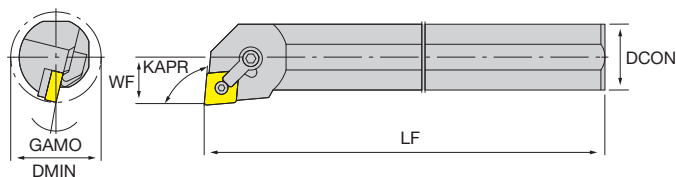
S MCLN

ISO - CN

- Internal turning (KAPR 95°)
- Steel boring bar without internal coolant
- Holds CN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force

STEEL

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-S20R-MCLN [°] /R12	●	●	25	20	13	200	-	-	95°	17°		CN∞1204∞
NT-S25R-MCLN [°] /R12	●	●	32	25	17	200	-	-	95°	14°		CN∞1204∞
NT-S32S-MCLN [°] /R12	●	●	40	32	22	250	-	-	95°	14°		CN∞1204∞
NT-S40T-MCLN [°] /R12	●	●	50	40	27	300	-	-	95°	12°		CN∞1204∞
NT-S50U-MCLN [°] /R12	●	●	63	50	35	350	-	-	95°	12°		CN∞1204∞
NT-S40T-MCLN [°] /R16	●	●	50	40	27	300	-	-	95°	11°		CN∞1606∞
NT-S50U-MCLN [°] /R16	●	●	63	50	35	350	-	-	95°	12°		CN∞1606∞
NT-S50U-MCLN [°] /R19	●	●	63	50	35	350	-	-	95°	12°		CN∞1906∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Eccentric pins	L wrench	Clamp	Clamp screws	L wrench
NT-S20R-MCLN [°] /R12	-	NT-SP035	NT-WR025	NT-CS030	NT-SC030	NT-WR025
NT-S25R-MCLN [°] /R12	-	NT-SP035	NT-WR025	NT-CS010	NT-SC008	NT-WR030
NT-S32S-MCLN [°] /R12	NT-SH030	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S40T-MCLN [°] /R12	NT-SH030	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S50U-MCLN [°] /R12	NT-SH030	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S40T-MCLN [°] /R16	NT-SH055	NT-SP040	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S50U-MCLN [°] /R16	NT-SH055	NT-SP040	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S50U-MCLN [°] /R19	NT-SH080	NT-SP050	NT-WR030	NT-CS015	NT-SC070	NT-WR040

A PCLN

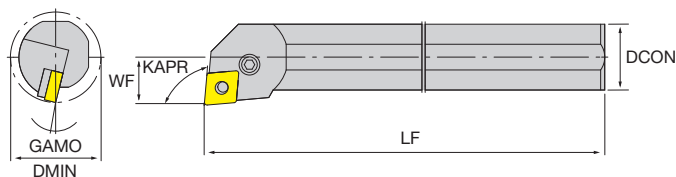
ISO - CN

- Internal turning (KAPR 95°)
- Steel boring bar with internal coolant through
- Holds CN-style inserts
- Easy to use Levers-lock clamping. Suitable for long-chip materials

STEEL

with internal coolant

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-A25R-PCLN [▲] /r12	●	●	32	25	17	200	-	-	95°	11°		CN∞1204∞
NT-A32S-PCLN [▲] /r12	●	●	40	32	22	250	-	-	95°	11°		CN∞1204∞
NT-A40T-PCLN [▲] /r12	●	●	50	40	27	300	-	-	95°	10°		CN∞1204∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

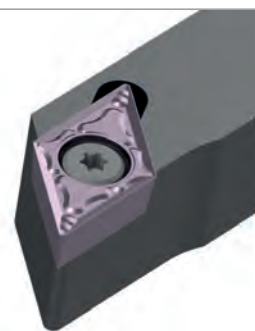
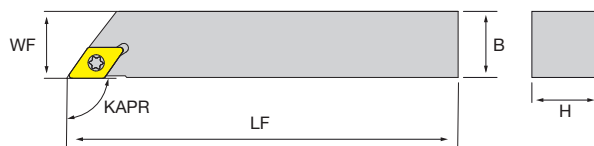
Spare parts	Shim	Shim plugs	Levers	Levers screws	L wrench
NT-A25R-PCLN [▲] /r12	-	NT-SR015	NT-LL015	NT-SC015	NT-WR025
NT-A32S-PCLN [▲] /r12	NT-SH035	NT-SR020	NT-LL020	NT-SC025	NT-WR030
NT-A40T-PCLN [▲] /r12	NT-SH035	NT-SR020	NT-LL020	NT-SC025	NT-WR030

SDAC

ISO - DC

- External turning (KAPR 90°)
- Holds DC-style inserts, tightened by screw
- Convenient to change inserts
- Available on lathes without offset

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SDAC ⁺ /R0808K07	○	○	8	8	8	125	-	-	90°			DC00070200
NT-SDAC ⁺ /R1010K07	●	●	10	10	10	125	-	-	90°			DC00070200
NT-SDAC ⁺ /R1212K07	●	●	12	12	12	125	-	-	90°			DC00070200
NT-SDAC ⁺ /R1212K11	●	●	12	12	12	125	-	-	90°			DC0011T300
NT-SDAC ⁺ /R1616K11	●	●	16	16	16	125	-	-	90°			DC0011T300

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

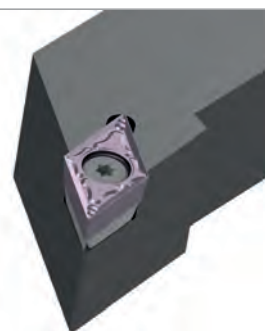
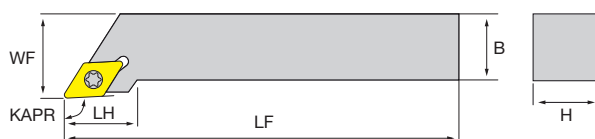
Spare parts	Insert screws	Flag wrenches
		
NT-SDAC ⁺ /R0000007	NT-ST25060T07	NT-FT07
NT-SDAC ⁺ /R0000011	NT-ST35089T15B	NT-FT15

SDJC

ISO - DC

- External turning (KAPR 93°)
- Holds DC-style inserts, tightened by screw
- Convenient to change inserts
- Available with and without shim

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
WITHOUT SHIM												
NT-SDJC/1616H11	●	●	16	16	20	100	18	-	93°			DC0011T300
NT-SDJC/2020K11	●	●	20	20	25	125	23	-	93°			DC0011T300
NT-SDJC/2525M11	●	●	25	25	32	150	27	-	93°			DC0011T300
WITH SHIM												
NT-SDJC/2020K11S	●	●	20	20	25	125	22	-	93°			DC0011T300
NT-SDJC/2525M11S	●	●	25	25	32	150	25	-	93°			DC0011T300

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

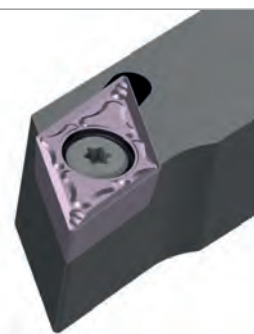
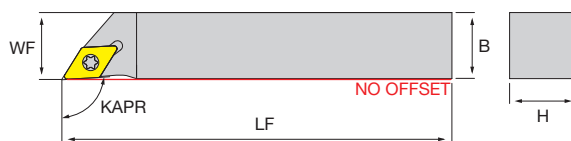
Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SDJC/1616H11	-	-	-	NT-ST35089T15B	NT-FT15
NT-SDJC/2020K11S	NT-SH007	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15

SDJC N

ISO - DC

- External turning (KAPR 93°)
- Holds DC-style inserts, tightened by screw
- Convenient to change inserts
- Available on lathes without offset

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SDJC ¹ /r0808K07N	○	○	8	8	8	125	-	-	93°			DC∞0702∞
NT-SDJC ¹ /r1010K07N	●	●	10	10	10	125	-	-	93°			DC∞0702∞
NT-SDJC ¹ /r1212K07N	○	○	12	12	12	125	-	-	93°			DC∞0702∞
NT-SDJC ¹ /r1212K11N	●	●	12	12	12	125	-	-	93°			DC∞11T3∞
NT-SDJC ¹ /r1616K11N	●	●	16	16	16	125	-	-	93°			DC∞11T3∞

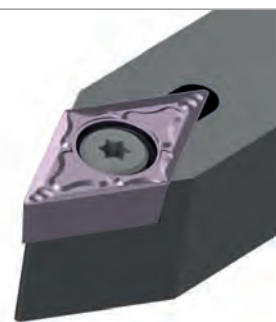
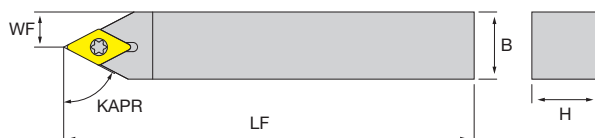
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
		
NT-SDJC ¹ /r∞∞∞∞07N	NT-ST25060T07	NT-FT07
NT-SDJC ¹ /r∞∞∞∞11N	NT-ST35089T15B	NT-FT15

SDNC

ISO - DC

- External turning (KAPR 62.5°), Neutral position
- Holds DC-style inserts, tightened by screw
- Convenient to change inserts
- Available with and without shim



Designation	Stock	H	B	WF	LF	LH	LPR	KAPR			MIID
WITHOUT SHIM											
NT-SDNCN0808H07	○	8	8	4	100	-	-	62.5°			DC00070200
NT-SDNCN1010H07	○	10	10	5	100	-	-	62.5°			DC00070200
NT-SDNCN1212H11	●	12	12	6	100	-	-	62.5°			DC0011T300
NT-SDNCN1616H11	●	16	16	8	100	-	-	62.5°			DC0011T300
NT-SDNCN2020K11	●	20	20	10	125	-	-	62.5°			DC0011T300
NT-SDNCN2525M11	●	25	25	12.5	150	-	-	62.5°			DC0011T300
WITH SHIM											
NT-SDNCN2020K11S	○	20	20	10	125	-	-	62.5°			DC0011T300
NT-SDNCN2525M11S	○	25	25	12.5	150	-	-	62.5°			DC0011T300

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

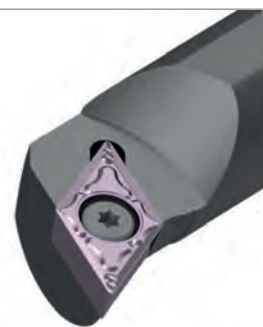
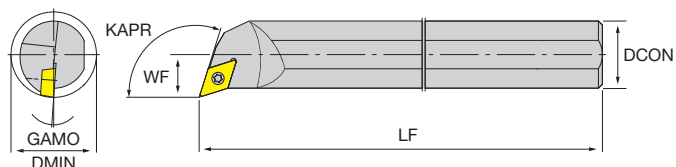
Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SDNCN000007	-	-	-	NT-ST25060T07	NT-FT07
NT-SDNCN000011	-	-	-	NT-ST35089T15B	NT-FT15
NT-SDNCN000011S	NT-SH007	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15

S SDQC**ISO - DC**

- Internal turning (KAPR 107.5°)
- Steel boring bar without internal coolant
- Holds DC-style inserts, tightened by screws

STEEL

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-S10M-SDQC/ø07	●	●	13	10	7	150	-	-	107.5°	10°		DC∞0702∞
NT-S12M-SDQC/ø07	●	●	16	12	9	150	-	-	107.5°	8°		DC∞0702∞
NT-S16Q-SDQC/ø07	●	●	20	16	11	180	-	-	107.5°	6°		DC∞0702∞
NT-S20R-SDQC/ø07	●	●	25	20	13	200	-	-	107.5°	6°		DC∞0702∞
NT-S16Q-SDQC/ø11	●	●	20	16	11	180	-	-	107.5°	6°		DC∞11T3∞
NT-S20R-SDQC/ø11	●	●	25	20	13	200	-	-	107.5°	8°		DC∞11T3∞
NT-S25R-SDQC/ø11	●	●	32	25	17	200	-	-	107.5°	4°		DC∞11T3∞
NT-S32S-SDQC/ø11	●	●	40	32	22	250	-	-	107.5°	4°		DC∞11T3∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-S∞-SDQC/ø07	NT-ST25060T07	NT-FT07
NT-S∞-SDQC/ø11	NT-ST35089T15B	NT-FT15

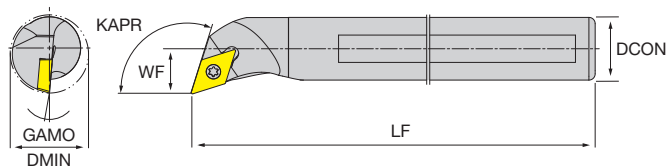
V SDQC**ISO - DC**

- Internal turning (KAPR 107.5°)
- Vortex boring bar (high quality steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds DC-style inserts, tightened by screws
- Special chip evacuation path

VORTEX

with internal coolant

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-V10K-SDQC/ø07-13	●	●	13	10	7.7	125	-	-	107.5°	10°		DC∞0702∞
NT-V12M-SDQC/ø07-16	●	●	16	12	9.7	150	-	-	107.5°	8°		DC∞0702∞
NT-V16Q-SDQC/ø07-20	●	●	20	16	11.7	180	-	-	107.5°	6°		DC∞0702∞
NT-V20R-SDQC/ø07-25	●	●	25	20	13.7	200	-	-	107.5°	5°		DC∞0702∞
NT-V16Q-SDQC/ø11-20	●	●	20	16	11.5	180	-	-	107.5°	6°		DC∞11T3∞
NT-V20R-SDQC/ø11-25	●	●	25	20	14.4	200	-	-	107.5°	5°		DC∞11T3∞
NT-V25S-SDQC/ø11-30	●	●	30	25	16.9	250	-	-	107.5°	4°		DC∞11T3∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-V∞-SDQC/ø07-∞	NT-ST25060T07	NT-FT07
NT-V∞-SDQC/ø11-∞	NT-ST35089T15B	NT-FT15



A SDUC

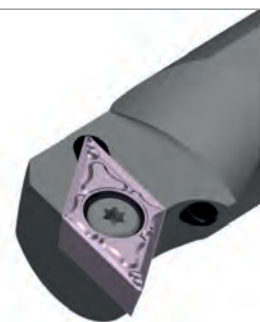
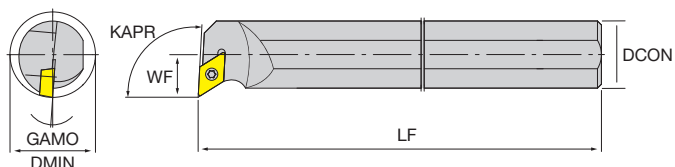
ISO - DC

- Internal turning (KAPR 93°)
- Steel boring bar with internal coolant through
- Holds DC-style inserts, tightened by screws

STEEL

with internal coolant

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-A10M-SDUC ¹ /H07	●	●	13	10	7	150	-	-	93°	10°		DC ⁰⁰ 0702 ⁰⁰
NT-A12M-SDUC ¹ /H07	●	●	16	12	9	150	-	-	93°	8°		DC ⁰⁰ 0702 ⁰⁰
NT-A16Q-SDUC ¹ /H07	●	●	20	16	1	180	-	-	93°	6°		DC ⁰⁰ 0702 ⁰⁰
NT-A20R-SDUC ¹ /H07	●	●	25	20	13	200	-	-	93°	5°		DC ⁰⁰ 0702 ⁰⁰
NT-A16Q-SDUC ¹ /H11	●	●	20	16	1	180	-	-	93°	7°		DC ⁰⁰ 11T3 ⁰⁰
NT-A20R-SDUC ¹ /H11	●	●	25	20	13	200	-	-	93°	8°		DC ⁰⁰ 11T3 ⁰⁰

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-A ⁰⁰⁰ -SDUC ¹ /H07	NT-ST25060T07	NT-FT07
NT-A ⁰⁰⁰ -SDUC ¹ /H11	NT-ST35089T15B	NT-FT15

E SDUC

ISO - DC

- Internal turning (KAPR 93°)
- Carbide boring bar with internal coolant through. Maximum overhang: 7xDCON
- Holds DC-style inserts, tightened by screws

CARBIDE

with internal coolant

Right-hand shown

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-E10K-SDUC ^{1/8} 07	●	●	13	10	7	125	-	-	93°	10°		DC ⁰⁰ 0702 ⁰⁰
NT-E12M-SDUC ^{1/8} 07	●	●	16	12	9	150	-	-	93°	8°		DC ⁰⁰ 0702 ⁰⁰
NT-E16R-SDUC ^{1/8} 11	●	●	20	16	11	200	-	-	93°	7°		DC ⁰⁰ 11T3 ⁰⁰
NT-E20R-SDUC ^{1/8} 11	●	●	25	20	13	200	-	-	93°	8°		DC ⁰⁰ 11T3 ⁰⁰

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-E ⁰⁰⁰ -SDUC ^{1/8} 07	NT-ST25060T07	NT-FT07
NT-E ⁰⁰⁰ -SDUC ^{1/8} 11	NT-ST35089T15B	NT-FT15

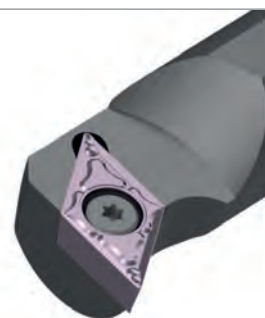
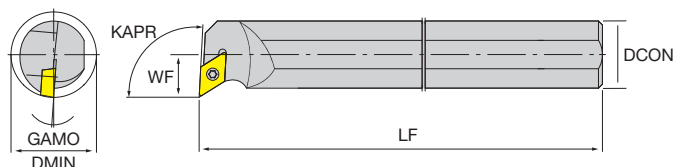
A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

S SDUC**ISO - DC**

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds DC-style inserts, tightened by screws

STEEL

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-S10M-SDUC ¹ / _{ø07}	●	●	13	10	7	150	-	-	93°	10°		DC ⁰⁰ 0702 ⁰⁰
NT-S12M-SDUC ¹ / _{ø07}	●	●	16	12	9	150	-	-	93°	8°		DC ⁰⁰ 0702 ⁰⁰
NT-S16Q-SDUC ¹ / _{ø07}	●	●	20	16	11	180	-	-	93°	6°		DC ⁰⁰ 0702 ⁰⁰
NT-S20R-SDUC ¹ / _{ø07}	●	●	25	20	13	200	-	-	93°	5°		DC ⁰⁰ 0702 ⁰⁰
NT-S16Q-SDUC ¹ / _{ø11}	●	●	20	16	11	180	-	-	93°	7°		DC ⁰⁰ 11T3 ⁰⁰
NT-S20R-SDUC ¹ / _{ø11}	●	●	25	20	13	200	-	-	93°	8°		DC ⁰⁰ 11T3 ⁰⁰
NT-S25R-SDUC ¹ / _{ø11}	●	●	32	25	17	200	-	-	93°	4°		DC ⁰⁰ 11T3 ⁰⁰
NT-S32S-SDUC ¹ / _{ø11}	●	●	40	32	22	250	-	-	93°	4°		DC ⁰⁰ 11T3 ⁰⁰
NT-S40T-SDUC ¹ / _{ø11}	○	○	50	40	24	300	-	-	93°	2°		DC ⁰⁰ 11T3 ⁰⁰

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-S ⁰⁰⁰ -SDUC ¹ / _{ø07}	NT-ST25060T07	NT-FT07
NT-S ⁰⁰⁰ -SDUC ¹ / _{ø11}	NT-ST35089T15B	NT-FT15

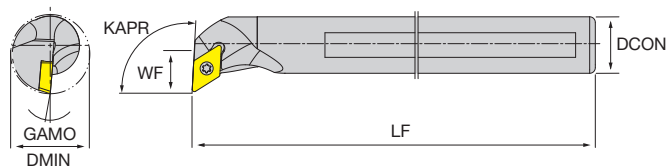
V SDUC**ISO - DC**

- Internal turning (KAPR 93°)
- Vortex boring bar (high quality steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds DC-style inserts, tightened by screws
- Special chip evacuation path

VORTEX

with internal coolant

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-V10K-SDUC ^{1/8} -07-14	●	●	14	10	8.7	125	-	-	93°	5°		DC00070200
NT-V12M-SDUC ^{1/8} -07-16	●	●	16	12	9.7	150	-	-	93°	5°		DC00070200
NT-V16Q-SDUC ^{1/8} -07-20	●	●	20	16	11.7	180	-	-	93°	5°		DC00070200
NT-V20R-SDUC ^{1/8} -07-25	●	●	25	20	13.7	200	-	-	93°	5°		DC00070200
NT-V16Q-SDUC ^{1/8} -11-23	●	●	23	16	14.5	180	-	-	93°	5°		DC0011T300
NT-V20R-SDUC ^{1/8} -11-27	●	●	27	20	16.5	200	-	-	93°	5°		DC0011T300
NT-V25S-SDUC ^{1/8} -11-32	●	●	32	25	19	250	-	-	93°	5°		DC0011T300

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
		
NT-V000-SDUC ^{1/8} -07-00	NT-ST25060T07	NT-FT07
NT-V000-SDUC ^{1/8} -11-00	NT-ST35089T15B	NT-FT15

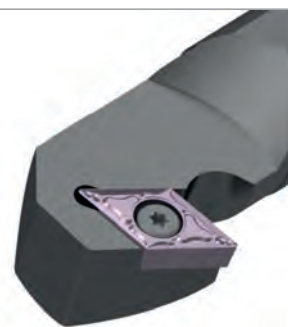
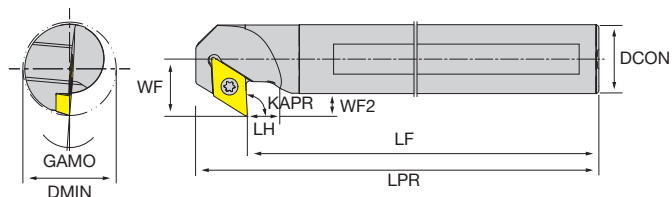


S SDZC**ISO - DC**

- Internal back turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds DC-style inserts, tightened by screws

STEEL

Right-hand shown



Designation	Stock		DMIN	DCON	WF	WF2	LF	LH	LPR	KAPR	GAMO	MIID
	L	R										
NT-S10M-SDZC ¹ /H07	○	○	14	10	8.5	3.5	139	11	150	93°	10°	DC00070200
NT-S12M-SDZC ¹ /H07	●	●	17	12	10.5	4.5	139	11	150	93°	9°	DC00070200
NT-S16Q-SDZC ¹ /H07	●	●	21	16	12.5	4.5	169	11	180	93°	8°	DC00070200
NT-S20R-SDZC ¹ /H11	●	●	26	20	15.5	5.5	184	16	200	93°	8°	DC0011T300
NT-S25R-SDZC ¹ /H11	○	○	33	25	18	5.5	180	20	200	93°	6°	DC0011T300
NT-S32S-SDZC ¹ /H11	○	○	38	32	21.5	5.5	230	20	250	93°	4°	DC0011T300

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
		
NT-S000-SDZC ¹ /H07	NT-ST25060T07	NT-FT07
NT-S000-SDZC ¹ /H11	NT-ST35089T15B	NT-FT15

V SDZC**ISO - DC**

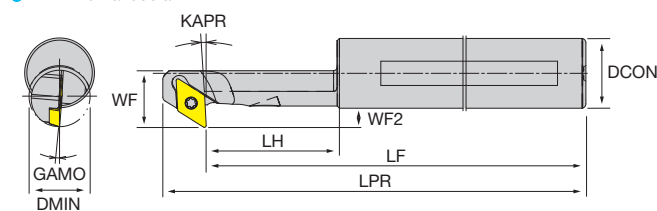
- Internal back turning (KAPR 93°)
- Vortex boring bar (high quality steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds DC-style inserts, tightened by screws
- Special chip evacuation path

Reduced neck

VORTEX

with internal coolant

Right-hand shown

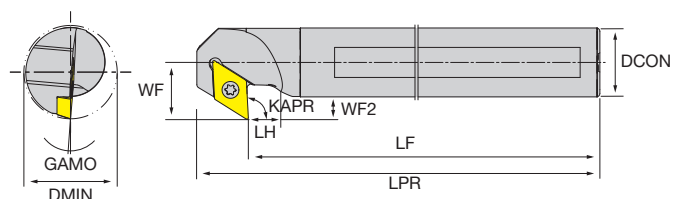


Standard design

VORTEX

with internal coolant

Right-hand shown



Designation	Stock		DMIN	DCON	WF	WF2	LF	LH	LPR	KAPR	GAMO	MIID
	L	R										
REDUCED NECK												
NT-V16Q-SDZC ¹ / ₁₆ 07-14	●	●	14	16	12.4	4.4	170	30	180	93°	5°	DC∞0702∞
NT-V20R-SDZC ¹ / ₁₆ 11-20	●	●	20	20	16.1	6.1	185	40	200	93°	5°	DC∞11T3∞
STANDARD DESIGN												
NT-V10L-SDZC ¹ / ₁₆ 07-14	●	●	14	10	8.7	3.7	130.5	14	140	93°	5°	DC∞0702∞
NT-V12M-SDZC ¹ / ₁₆ 07-16	●	●	16	12	9.7	3.7	139.5	10.5	150	93°	5°	DC∞0702∞
NT-V16Q-SDZC ¹ / ₁₆ 07-20	●	●	20	16	11.7	3.7	169.5	17.5	180	93°	5°	DC∞0702∞
NT-V16Q-SDZC ¹ / ₁₆ 11-23	●	●	23	16	14.5	6.5	165	15	180	93°	5°	DC∞11T3∞
NT-V20R-SDZC ¹ / ₁₆ 11-27	●	●	27	20	16.5	6.5	185	15	200	93°	5°	DC∞11T3∞
NT-V25S-SDZC ¹ / ₁₆ 11-32	●	●	32	25	19	6.5	235	15	250	93°	5°	DC∞11T3∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

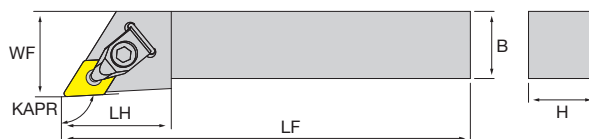
Spare parts	Insert screws	Flag wrenches
NT-V∞-SDZC ¹ / ₁₆ 07-∞	NT-ST25060T07	NT-FT07
NT-V∞-SDZC ¹ / ₁₆ 11-∞	NT-ST35089T15B	NT-FT15

DDJN

ISO - DN

- External turning (KAPR 93°)
- Holds DN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening

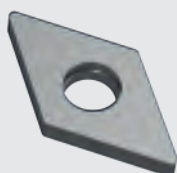
Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-DDJN ^h /1616H11X	●	●	16	16	20	100	36	-	93°			DN ^{oo} 1104 ^{oo}
NT-DDJN ^h /2020K11X	●	●	20	20	25	125	36	-	93°			DN ^{oo} 1104 ^{oo}
NT-DDJN ^h /2525M11X	●	●	25	25	32	150	36	-	93°			DN ^{oo} 1104 ^{oo}
NT-DDJN ^h /2020K1506X	●	●	20	20	25	125	43	-	93°			DN ^{oo} 1506 ^{oo}
NT-DDJN ^h /2525M1506X	●	●	25	25	32	150	43	-	93°			DN ^{oo} 1506 ^{oo}
NT-DDJN ^h /3225P1506X	●	●	32	25	32	170	43	-	93°			DN ^{oo} 1506 ^{oo}

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Shim screws	L wrench	Clamp	Springs	Clamp screws	L wrench
NT-DDJN ^h /R ^{oooo} 11X	NT-SH007	NT-ST250	NT-WR020	NT-CS250	NT-SG250	NT-SC250	NT-TX15
NT-DDJN ^h /R ^{oooo} 1506X	NT-SH045	NT-ST200	NT-WR025	NT-CS200	NT-SG200	NT-SC200	NT-TX20

DN^{oo}1504^{oo}

NT-SH025

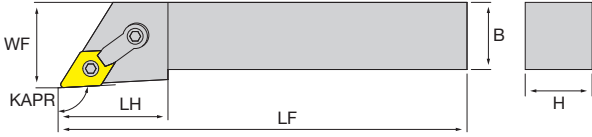
For 04 thickness, please order separately the correct shim

MDJN

ISO - DN

- External turning (KAPR 93°)
- Holds DN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force

Right-hand shown



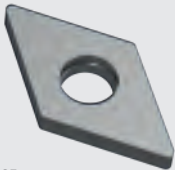


Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-MDJN/r2020K1506	●	●	20	20	25	125	36	-	93°			DN∞1506∞
NT-MDJN/r2525M1506	●	●	25	25	32	150	36	-	93°			DN∞1506∞
NT-MDJN/r3232P1506	●	●	32	32	40	170	43	-	93°			DN∞1506∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Eccentric pins	Clamp	Clamp screws	L wrench
					
NT-MDJN/r∞∞∞∞1506	NT-SH045	NT-SP025	NT-CS025	NT-SC010	NT-WR030

DN∞1504∞



NT-SH025

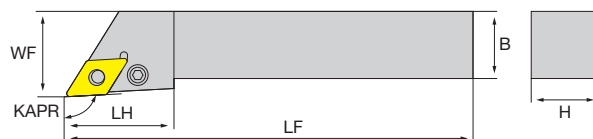
For 04 thickness, please order separately the correct shim

PDJN

ISO - DN

- External turning (KAPR 93°)
- Holds DN-style inserts
- Easy to use Levers-lock clamping
- Suitable for long-chip materials

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-PDJN ^h /r2525M1506	●	●	25	25	32	150	36	-	93°			DN ^{oo} 1506 ^{oo}

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Shim plugs	Levers	Levers screws	L wrench
NT-PDJN ^h /r ^{oo} oo ^{oo} 1506	NT-SH020	NT-SR020	NT-LL020	NT-SC020	NT-WR020

A DDUN

ISO - DN

- Internal turning (KAPR 93°)
- Steel boring bar with internal coolant through
- Holds DN-style inserts
- Double pushing and pulling action with a single movement. Quick and safe tightening

STEEL
with internal coolant

Right-hand shown

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-A25R-DDUN [▲] /r1506	●	●	32	25	17	200	-	-	93°	16°		DN∞1506∞
NT-A32S-DDUN [▲] /r1506	●	●	40	32	22	250	-	-	93°	12°		DN∞1506∞
NT-A40T-DDUN [▲] /r1506	●	●	50	40	27	300	-	-	93°	10°		DN∞1506∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Shim screws	L wrench	Clamp	Springs	Clamp screws	L wrench
NT-A∞∞-DDUN [▲] /r1506	NT-SH020	NT-ST200	NT-WR025	NT-CS200	NT-SG200	NT-SC200	NT-TX20

DN∞1504∞

NT-SH045
For 04 thickness, please order separately the correct shim

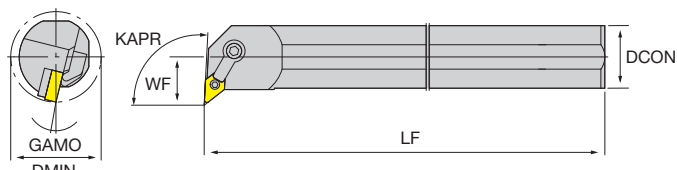
S MDUN

ISO - DN

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds DN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force

STEEL

Right-hand shown

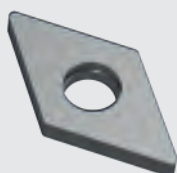


Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-S32S-MDUN ^h /r1506	●	●	40	32	22	250	-	-	93°	17°		DN∞1506∞
NT-S40T-MDUN ^h /r1506	●	●	50	40	27	300	-	-	93°	15°		DN∞1506∞
NT-S50U-MDUN ^h /r1506	●	●	63	50	35	350	-	-	93°	12°		DN∞1506∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Eccentric pins	Clamp	Clamp screws	L wrench
NT-S32S-MDUN ^h /r1506	NT-SH045	NT-SP025	NT-CS025	NT-SC008	NT-WR030
NT-S40T-MDUN ^h /r1506	NT-SH045	NT-SP025	NT-CS025	NT-SC010	NT-WR030
NT-S50U-MDUN ^h /r1506	NT-SH045	NT-SP025	NT-CS025	NT-SC010	NT-WR030

! DN∞1504∞



NT-SH025
For 04 thickness, please order separately the correct shim

E MICRO-CC

ISO - MCC

- Internal turning (KAPR 95°)
- Carbide boring bar with internal coolant through. Maximum overhang: 7xDCON
- Holds MCC-style inserts, tightened by screws

CARBIDE

with internal coolant

Right-hand shown

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
WITHOUT INTERNAL COOLANT												
NT-C05H-MICRO-CC- ^L / _R H		●	6	5	3	100	-	-	95°	13°		MCC.Roo
WITH INTERNAL COOLANT												
NT-E04G-MICRO-CC- ^L / _R H		●	5	4	2.5	90	-	-	95°	15°		MCC.Roo
NT-E05H-MICRO-CC- ^L / _R H		▲	6	5	3	100	-	-	95°	13°		MCC.Roo

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-C ^{ooo} -MICRO-CC-RH	NT-ST16031T06	NT-FT06
NT-E ^{ooo} -MICRO-CC-RH	NT-ST16031T06	NT-FT06

SLEEVE AVAILABLE

Please find all the available sleeves at chapter F-ACCESSORIES

A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

A - TURNING

V MICRO-CC

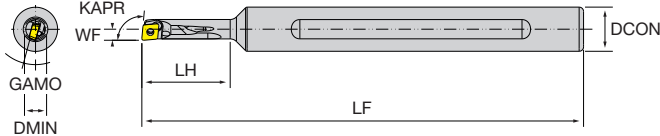
ISO - MCC

- Internal turning (KAPR 95°)
- Vortex boring bar (high quality steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds MCC-style inserts, tightened by screws
- Special chip evacuation path

VORTEX

with internal coolant

Right-hand shown





Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-V10H-MICRO-CC-1/8H-05		●	5	10	2.5	100	20	-	95°	15°		MCC.R00
NT-V10H-MICRO-CC-1/8H-06		●	6	10	3	100	25	-	95°	13°		MCC.R00

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

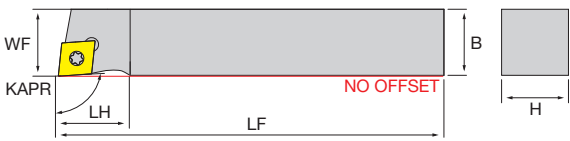
Spare parts	Insert screws	Flag wrenches
NT-V10H-MICRO-CC-RH-∞	 NT-ST16031T06	 NT-FT06

EX MICRO-CN

MicroNega - MCN

- External turning (KAPR 95°)
- Holds MCN-style inserts, tightened by screw
- Available on lathes without offset
- Convenient to change inserts

Right-hand shown



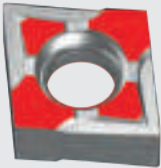
Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-EX10H-MICRO-CN-1/8H	●	●	10	10	10	100	15	-	95°			MCN-Roo
NT-EX12H-MICRO-CN-1/8H	●	●	12	12	12	100	15	-	95°			MCN-Roo
NT-EX16K-MICRO-CN-1/8H	●	●	16	16	16	125	15	-	95°			MCN-Roo
NT-EX20K-MICRO-CN-1/8H	▽	▽	20	20	20	120	15	-	95°			MCN-Roo
NT-EX25M-MICRO-CN-1/8H	▽	▽	25	25	25	150	15	-	95°			MCN-Roo

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
		
NT-EX ∞ -MICRO-CN-1/8H	NT-ST30070T10	NT-FT10



EXCELLENT STABILITY



The design of MCN inserts was done with great attention to the connection surfaces, to achieve a great stability and reliability

V MICRO-CN

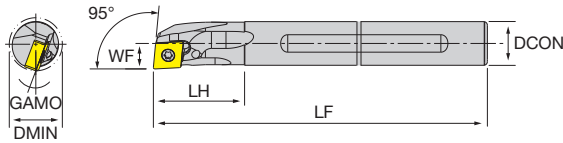
MicroNeg - MCN

- Internal turning (KAPR 95°)
- Vortex boring bar (high quality steel) with internal coolant through
- Holds MCN-style inserts, tightened by screws
- Special chip evacuation path

VORTEX

with internal coolant

Right-hand shown



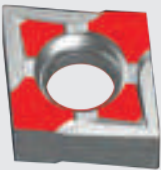
Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-V08H-MICRO-CN-1/8H-10	●	●	10	8	5.5	100	20	-	95°	24°		MCN-Roo
NT-V10K-MICRO-CN-1/8H-12	●	●	12	10	6	125	21	-	95°	21°		MCN-Roo
NT-V12M-MICRO-CN-1/8H-14	●	●	14	12	7	150	25	-	95°	20°		MCN-Roo
NT-V16Q-MICRO-CN-1/8H-18	●	●	18	16	9	180	31	-	95°	17°		MCN-Roo
NT-V20R-MICRO-CN-1/8H-22	●	●	22	20	11	200	37	-	95°	17°		MCN-Roo

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
		
NT-V000-MICRO-CN-1/8H-00	NT-ST30070T10	NT-FT10



EXCELLENT STABILITY



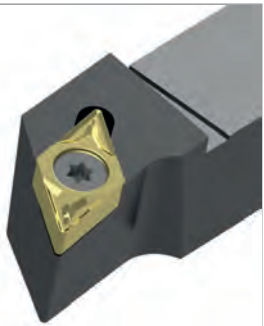
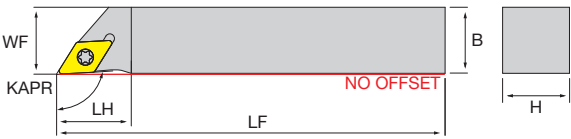
The design of MCN inserts was done with great attention to the connection surfaces, to achieve a great stability and reliability

EX MICRO-DN

MicroNega - MDN

- External turning (KAPR 95°)
- Holds MDN-style inserts, tightened by screw
- Available on lathes without offset
- Convenient to change inserts

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-EX10H-MICRO-DN-1/8H	●	●	10	10	10	100	18	-	95°			MDN-Roo
NT-EX12H-MICRO-DN-1/8H	●	●	12	12	12	100	18	-	95°			MDN-Roo
NT-EX16K-MICRO-DN-1/8H	●	●	16	16	16	125	18	-	95°			MDN-Roo
NT-EX20K-MICRO-DN-1/8H	▽	▽	20	20	20	120	15	-	95°			MDN-Roo
NT-EX25M-MICRO-DN-1/8H	▽	▽	25	25	25	150	15	-	95°			MDN-Roo

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
		
NT-EX∞-MICRO-DN-1/8H	NT-ST30070T10	NT-FT10



EXCELLENT STABILITY



The design of MDN inserts was done with great attention to the connection surfaces, to achieve a great stability and reliability

V MICRO-DN

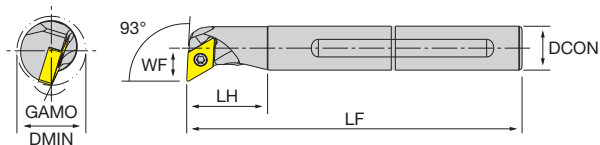
MicroNeg - MDN

- Internal turning (KAPR 93°)
- Vortex boring bar (high quality steel) with internal coolant through
- Holds MDN-style inserts, tightened by screws
- Special chip evacuation path

VORTEX

with internal coolant

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-V10K-MICRO-DN-1/8H-15	●	●	15	10	9.8	125	19	-	93°	19°		MDN-Roo
NT-V12M-MICRO-DN-1/8H-16	●	●	16	12	9	150	22	-	93°	17°		MDN-Roo
NT-V16Q-MICRO-DN-1/8H-20	●	●	20	16	11	180	22	-	93°	15°		MDN-Roo
NT-V20R-MICRO-DN-1/8H-25	●	●	25	20	13	200	23	-	93°	13°		MDN-Roo

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
		
NT-V [∞] -MICRO-DN-1/8H- [∞]	NT-ST30070T10	NT-FT10



EXCELLENT STABILITY

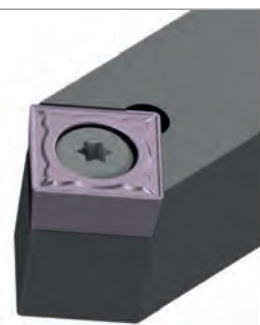
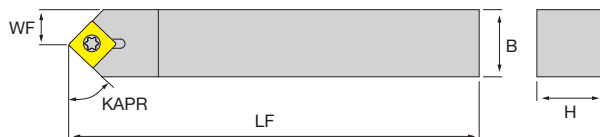


The design of MDN inserts was done with great attention to the connection surfaces, to achieve a great stability and reliability

SSDC

ISO - SC

- External turning (KAPR 45°), Neutral position
- Holds SC-style inserts, tightened by screw
- Convenient to change inserts



Designation	Stock	H	B	WF	LF	LH	LPR	KAPR			MIID
NT-SSDCN2020K09	●	20	20	10	125	-	-	45°			SC0009T300
NT-SSDCN2525M09	●	25	25	12.5	150	-	-	45°			SC0009T300
NT-SSDCN2020K12	●	20	20	10	125	-	-	45°			SC00120400
NT-SSDCN2525M12	●	25	25	12.5	150	-	-	45°			SC00120400

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

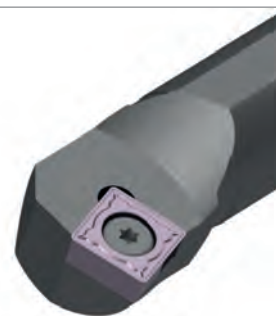
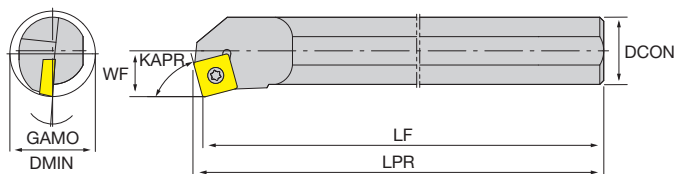
Spare parts	Insert screws	Flag wrenches
NT-SSDCN0000009	NT-ST40090T15	NT-FT15
NT-SSDCN0000012	NT-ST40115T15	NT-FT15

S SSKC**ISO - SC**

- Internal turning (KAPR 75°)
- Steel boring bar without internal coolant
- Holds SC-style inserts, tightened by screws

STEEL

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-S12M-SSKC ¹ / ₈ 09	●	●	16	12	8.5	147	-	150	75°	12°		SC0009T300
NT-S16Q-SSKC ¹ / ₈ 09	●	●	20	16	11	177	-	180	75°	11°		SC0009T300
NT-S20R-SSKC ¹ / ₈ 09	●	●	25	20	13	196	-	200	75°	6°		SC0009T300
NT-S25R-SSKC ¹ / ₈ 09	●	●	31	25	15	198	-	200	75°	6°		SC0009T300
NT-S25R-SSKC ¹ / ₈ 12	●	●	32	25	17	196	-	200	75°	7°		SC00120400
NT-S32S-SSKC ¹ / ₈ 12	●	●	40	32	22	246	-	250	75°	7°		SC00120400

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

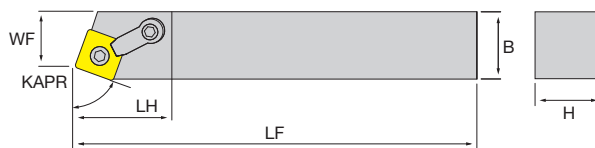
Spare parts	Insert screws	Flag wrenches
NT-S000-SSKC ¹ / ₈ 09	NT-ST40090T15	NT-FT15
NT-S000-SSKC ¹ / ₈ 12	NT-ST40115T15	NT-FT15

MSBN

ISO - SN

- External turning (KAPR 75°)
- Holds SN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force

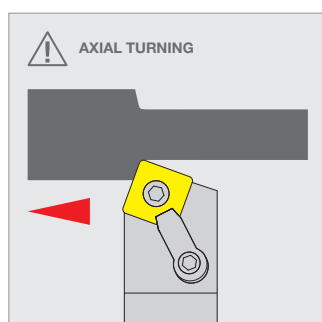
Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-MSBN/r2020K12	●	●	20	20	17	125	37	-	75°			SN∞1204∞
NT-MSBN/r2525M12	●	●	25	25	22	150	37	-	75°			SN∞1204∞
NT-MSBN/r3232P12	○	○	32	32	27	170	42	-	75°			SN∞1204∞
NT-MSBN/r3232P19	○	○	32	32	27	170	42	-	75°			SN∞1906∞
NT-MSBN/r4040S19	○	○	40	40	35	250	42	-	75°			SN∞1906∞

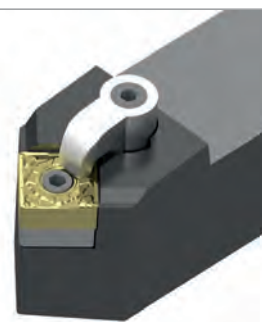
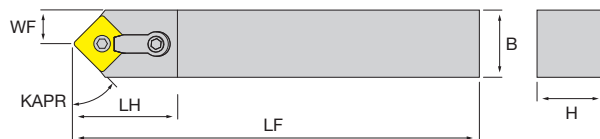
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Eccentric pins	Clamp	Clamp screws	L wrench
NT-MSBN/r∞∞∞∞12	NT-SH070	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MSBN/r∞∞∞∞19	NT-SH090	NT-SP050	NT-CS015	NT-SC070	NT-WR040



MSDN**ISO - SN**

- External turning (KAPR 45°), Neutral position
- Holds SN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force



Designation	Stock	H	B	WF	LF	LH	LPR	KAPR			MIID
NT-MSDNN2020K12	●	20	20	10	125	35	-	45°			SN∞1204∞
NT-MSDNN2525M12	●	25	25	12.5	150	37	-	45°			SN∞1204∞
NT-MSDNN3232P12	○	32	32	16	170	43	-	45°			SN∞1204∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Eccentric pins	Clamp	Clamp screws	L wrench
NT-MSDNN∞∞∞∞12	NT-SH070	NT-SP010	NT-CS010	NT-SC010	NT-WR030

MSKN

ISO - SN

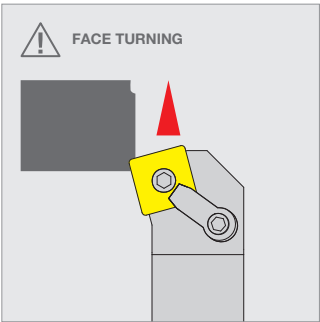
- External turning (KAPR 75°)
- Holds SN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force

Right-hand shown

Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-MSKN/r2020K12	●	●	20	20	25	122	37	125	75°			SN∞1204∞
NT-MSKN/r2525M12	●	●	25	25	32	147	37	150	75°			SN∞1204∞
NT-MSKN/r3232P12	○	○	32	32	40	167	42	170	75°			SN∞1204∞
NT-MSKN/r4040S19	○	○	40	40	50	247	42	250	75°			SN∞1906∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Eccentric pins	Clamp	Clamp screws	L wrench
NT-MSKN/r∞∞∞∞12	NT-SH070	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MSKN/r∞∞∞∞19	NT-SH090	NT-SP050	NT-CS015	NT-SC070	NT-WR040

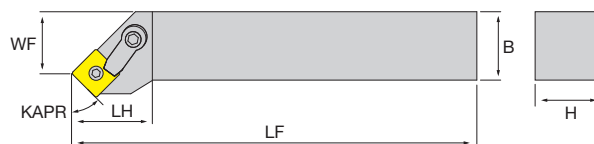


MSSN

ISO - SN

Right-hand shown

- External turning (KAPR 45°)
- Holds SN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-MSSN/r2020K12	●	●	20	20	25	125	35	-	45°			SN∞1204∞
NT-MSSN/r2525M12	●	●	25	25	32	150	35	-	45°			SN∞1204∞
NT-MSSN/r3232P12	○	○	32	32	40	170	42	-	45°			SN∞1204∞
NT-MSSN/r3232P19	○	○	32	32	40	170	42	-	45°			SN∞1906∞
NT-MSSN/r4040S19	○	○	40	40	40	250	42	-	45°			SN∞1906∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

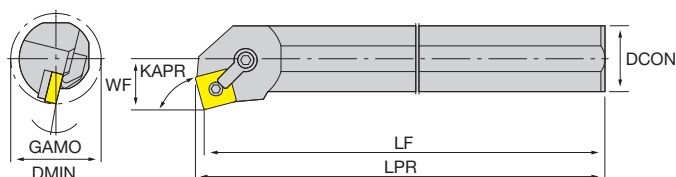
Spare parts	Shim	Eccentric pins	Clamp	Clamp screws	L wrench
NT-MSSN/r∞∞∞∞12	NT-SH070	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MSSN/r∞∞∞∞19	NT-SH090	NT-SP050	NT-CS015	NT-SC070	NT-WR040

S MSKN**ISO - SN**

- Internal turning (KAPR 75°)
- Steel boring bar without internal coolant
- Holds SN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force

STEEL

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-S20R-MSKN [®] /r12	●	●	25	20	13	200	-		75°	17°		SN∞1204∞
NT-S25R-MSKN [®] /r12	●	●	32	25	17	200	-		75°	14°		SN∞1204∞
NT-S32S-MSKN [®] /r12	●	●	40	32	22	250	-		75°	14°		SN∞1204∞
NT-S40T-MSKN [®] /r12	●	●	50	40	27	300	-		75°	15°		SN∞1204∞
NT-S50U-MSKN [®] /r12	●	●	63	50	35	350	-		75°	12°		SN∞1204∞
NT-S50U-MSKN [®] /r19	○	○	63	50	35	350	-		75°	8°		SN∞1906∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Eccentric pins	L wrench	Clamp	Clamp screws	L wrench
NT-S20R-MSKN [®] /r12	-	NT-SP035	NT-WR025	NT-CS030	NT-SC030	NT-WR025
NT-S25R-MSKN [®] /r12	-	NT-SP035	NT-WR025	NT-CS010	NT-SC008	NT-WR030
NT-S32S-MSKN [®] /r12	NT-SH070	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S40T-MSKN [®] /r12	NT-SH070	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S50U-MSKN [®] /r12	NT-SH070	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S50U-MSKN [®] /r19	NT-SH090	NT-SP050	NT-WR030	NT-CS015	NT-SC070	NT-WR040

V STL B

ISO - TB

- Internal turning (KAPR 95°)
- Vortex boring bar (high quality steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds TB style inserts, tightened by screws
- Special chip evacuation path

VORTEX

with internal coolant

Right-hand shown

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-V10H-STLB ¹ /H06-07		●	7	10	3.5	100	30	-	95°	12°		TB∞0601∞
NT-V10H-STLB ¹ /H06-08		●	8	10	4	100	35	-	95°	12°		TB∞0601∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-V10H-STLB ¹ /H06-∞	 NT-ST20038T06	 NT-FT06

S STUB

ISO - TB

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds TB style inserts, tightened by screws

STEEL

Right-hand shown

3D rendering of the S STUB holder with a TB style insert.

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-S08H-STUB ¹ / ₈ 06	●	●	10	8	4	100	-	-	93°	12°		TB∞0601∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-S08H-STUB ¹ / ₈ 06	 NT-ST20038T06	 NT-FT06

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

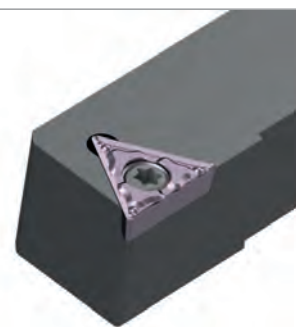
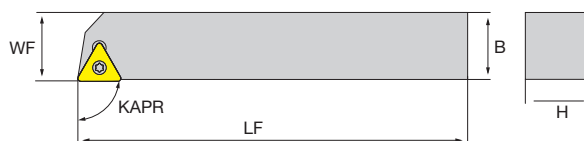
G - SPARE PARTS

STAC

ISO - TC

- External turning (KAPR 90°)
- Holds TC-style inserts, tightened by screw
- Convenient to change inserts

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-STAC/r0808H09	○	○	8	8	8.5	100	-	-	90°			TCoo0902oo
NT-STAC/r1010H09	○	○	10	10	10.5	100	-	-	90°			TCoo0902oo
NT-STAC/r1212H11	●	●	12	12	12.5	100	-	-	90°			TCoo1102oo
NT-STAC/r1616H11	●	●	16	16	16.5	100	-	-	90°			TCoo1102oo

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

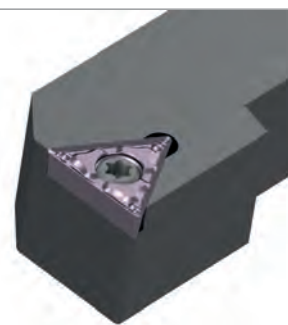
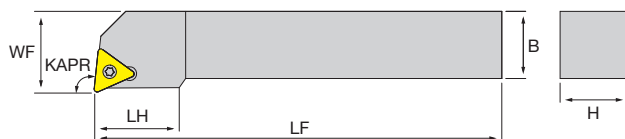
Spare parts	Insert screws	Flag wrenches
NT-STAC/r0808H09	NT-ST22049T07	NT-FT07
NT-STAC/r1010H09	NT-ST25060T07	NT-FT07

STFC

ISO - TC

- External turning (KAPR 91°)
- Holds TC-style inserts, tightened by screw
- Convenient to change inserts

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-STFC $\frac{1}{8}$ 0808H09	○	○	8	8	10	100	12	-	91°			TC ∞ 0902 ∞
NT-STFC $\frac{1}{8}$ 1010H09	○	○	10	10	12	100	12	-	91°			TC ∞ 0902 ∞
NT-STFC $\frac{1}{8}$ 1212H11	●	●	12	12	16	100	17	-	91°			TC ∞ 1102 ∞
NT-STFC $\frac{1}{8}$ 1616H11	○	○	16	16	20	100	18	-	91°			TC ∞ 1102 ∞
NT-STFC $\frac{1}{8}$ 2020K16	●	●	20	20	25	125	22	-	91°			TC ∞ 16T3 ∞
NT-STFC $\frac{1}{8}$ 2525M16	●	●	25	25	32	150	25	-	91°			TC ∞ 16T3 ∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
		
NT-STFC $\frac{1}{8}$ R0000009	NT-ST22049T07	NT-FT07
NT-STFC $\frac{1}{8}$ R0000011	NT-ST25060T07	NT-FT07
NT-STFC $\frac{1}{8}$ R0000016	NT-ST40090T15	NT-FT15

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

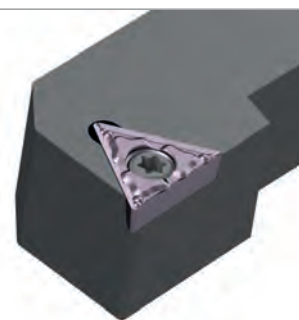
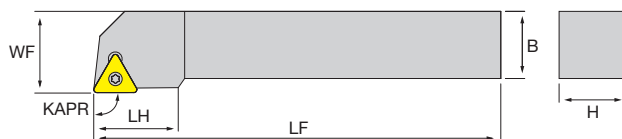
G - SPARE PARTS

STGC

ISO - TC

- External turning (KAPR 91°)
- Holds TC-style inserts, tightened by screw
- Convenient to change inserts

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-STGC ¹ /R1212H11	○	○	12	12	16	100	17	-	91°			TC ⁰⁰ 1102 ⁰⁰
NT-STGC ¹ /R1616H11	○	○	16	16	20	100	18	-	91°			TC ⁰⁰ 1102 ⁰⁰
NT-STGC ¹ /R2020K16	●	●	20	20	25	125	22	-	91°			TC ⁰⁰ 16T3 ⁰⁰
NT-STGC ¹ /R2525M16	●	●	25	25	32	150	25	-	91°			TC ⁰⁰ 16T3 ⁰⁰

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-STGC ¹ /R ⁰⁰⁰⁰⁰ 11	NT-ST25060T07	NT-FT07
NT-STGC ¹ /R ⁰⁰⁰⁰⁰ 16	NT-ST40090T15	NT-FT15

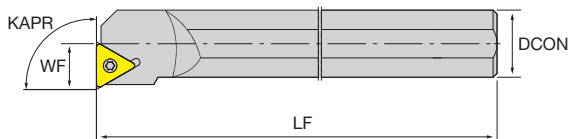
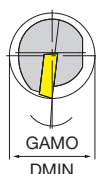
A STFC**ISO - TC**

- Internal turning (KAPR 91°)
- Steel boring bar with internal coolant through
- Holds TC-style inserts, tightened by screws

STEEL

with internal coolant

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-A10K-STFC ¹ /R11	●	●	14	10	7	125	-	-	91°	12°		TC _{oo} 1102 _{oo}
NT-A12M-STFC ¹ /R11	●	●	14	12	7	150	-	-	91°	10°		TC _{oo} 1102 _{oo}
NT-A16Q-STFC ¹ /R11	●	●	18	16	9	180	-	-	91°	8°		TC _{oo} 1102 _{oo}
NT-A20R-STFC ¹ /R11	●	●	25	20	13	200	-	-	91°	3°		TC _{oo} 1102 _{oo}

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-A _{ooo} -STFC ¹ /R11	 NT-ST25060T07	 NT-FT07

E STFC

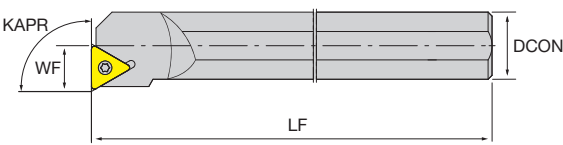
ISO - TC

- Internal turning (KAPR 91°)
- Carbide boring bar with internal coolant through. Maximum overhang: 7xDCON
- Holds TC-style inserts, tightened by screws

CARBIDE

with internal coolant

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-E10K-STFC ¹ /R11	●	●	12	10	6	125	-	-	91°	12°		TC ^{oo} 1102 ^{oo}
NT-E12M-STFC ¹ /R11	●	●	14	12	7	150	-	-	91°	10°		TC ^{oo} 1102 ^{oo}
NT-E16R-STFC ¹ /R11	●	●	18	16	9	200	-	-	91°	8°		TC ^{oo} 1102 ^{oo}
NT-E20R-STFC ¹ /R11	●	●	25	20	11	200	-	-	91°	6°		TC ^{oo} 1102 ^{oo}

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

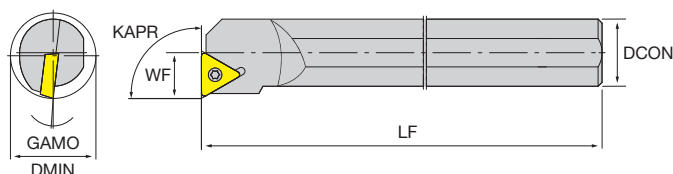
Spare parts	Insert screws	Flag wrenches
		
NT-E ^{ooo} -STFC ¹ /R11	NT-ST25060T07	NT-FT07

S STFC**ISO - TC**

- Internal turning (KAPR 91°)
- Steel boring bar without internal coolant
- Holds TC-style inserts, tightened by screws

STEEL

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-S08H-STFC/ø09	○	○	12	8	6	100	-	-	91°	15°		TCoo0902oo
NT-S10K-STFC/ø09	○	○	14	10	7	125	-	-	91°	15°		TCoo0902oo
NT-S12M-STFC/ø09	○	○	16	12	9	150	-	-	91°	10°		TCoo0902oo
NT-S10K-STFC/ø11	●	●	14	10	7	125	-	-	91°	12°		TCoo1102oo
NT-S12M-STFC/ø11	●	●	14	12	7	150	-	-	91°	10°		TCoo1102oo
NT-S16Q-STFC/ø11	●	●	18	16	9	180	-	-	91°	8°		TCoo1102oo
NT-S20R-STFC/ø11	○	○	25	20	13	200	-	-	91°	3°		TCoo1102oo
NT-S20R-STFC/ø16	●	●	25	20	13	200	-	-	91°	8°		TCoo16T3oo
NT-S25R-STFC/ø16	●	●	32	25	17	200	-	-	91°	6°		TCoo16T3oo
NT-S32S-STFC/ø16	○	○	39	32	22	250	-	-	91°	4°		TCoo16T3oo

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-Sooo-STFC/ø09	NT-ST22049T07	NT-FT07
NT-Sooo-STFC/ø11	NT-ST25060T07	NT-FT07
NT-Sooo-STFC/ø16	NT-ST35089T15	NT-FT15

V STLC

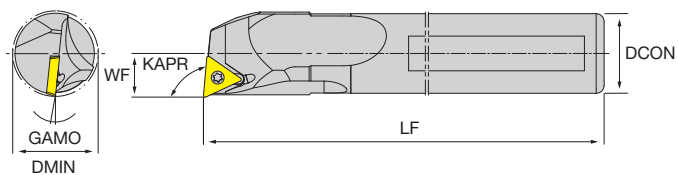
ISO - TC

- Internal turning (KAPR 95°)
- Vortex boring bar (high quality steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds TC-style inserts, tightened by screws
- Special chip evacuation path

VORTEX

with internal coolant

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-V08H-STLC/ø09-10	○	○	10	8	5	100	-	-	95°	14°		TCoo0902oo
NT-V10K-STLC/ø09-12	●	●	12	10	6	125	-	-	95°	12°		TCoo0902oo
NT-V12M-STLC/ø09-14	●	●	14	12	7	150	-	-	95°	10°		TCoo0902oo
NT-V10K-STLC/ø11-12	●	●	12	10	6	125	-	-	95°	12°		TCoo1102oo
NT-V12M-STLC/ø11-14	●	●	14	12	7	150	-	-	95°	10°		TCoo1102oo
NT-V16Q-STLC/ø11-18	●	●	18	16	9	180	-	-	95°	8°		TCoo1102oo
NT-V20R-STLC/ø11-22	●	●	22	20	11	200	-	-	95°	6°		TCoo1102oo
NT-V20R-STLC/ø16-25	●	●	25	20	12.5	200	-	-	95°	8°		TCoo16T3oo
NT-V25S-STLC/ø16-32	●	●	32	25	16	250	-	-	95°	6°		TCoo16T3oo

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-Vooo-STLC/ø09-oo	NT-ST22049T07	NT-FT07
NT-Vooo-STLC/ø11-oo	NT-ST25060T07	NT-FT07
NT-Vooo-STLC/ø16-oo	NT-ST35089T15	NT-FT15

DTGN

ISO - TN

- External turning (KAPR 91°)
- Holds TN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening

Right-hand shown





Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-DTGN [●] /R2020K16X	●	●	20	20	25	125	33	-	91°			TN∞1604∞
NT-DTGN [●] /R2525M16X	●	●	25	25	32	150	33	-	91°			TN∞1604∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Shim screws	Clamp	Springs	Clamp screws	L wrench
						
NT-DTGN [●] /R∞∞∞∞16X	NT-SH006	NT-ST250	NT-CS250	NT-SG250	NT-SC250	NT-TX15

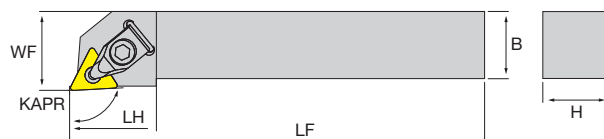
A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

DTJN

ISO - TN

- External turning (KAPR 93°)
- Holds TN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-DTJN [◐] /r2020K16X	●	●	20	20	25	125	33	-	93°			TN∞1604∞
NT-DTJN [◐] /r2525M16X	●	●	25	25	32	150	33	-	93°			TN∞1604∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

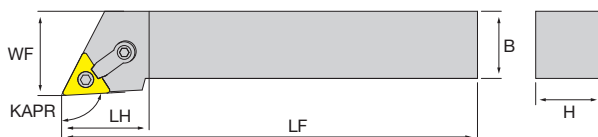
Spare parts	Shim	Shim screws	Clamp	Springs	Clamp screws	L wrench
NT-DTJN [◐] /R∞∞∞16X	 NT-SH006	 NT-ST250	 NT-CS250	 NT-SG250	 NT-SC250	 NT-TX15

MTJN

ISO - TN

- External turning (KAPR 93°)
- Holds TN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-MTJN ⁺ /K2020K16	●	●	20	20	25	125	33	-	93°			TN [∞] 1604 [∞]
NT-MTJN ⁺ /K2525M16	●	●	25	25	32	150	35	-	93°			TN [∞] 1604 [∞]
NT-MTJN ⁺ /K3232P16	●	●	32	32	40	170	43	-	93°			TN [∞] 1604 [∞]
NT-MTJN ⁺ /K2525M22	●	●	25	25	32	150	43	-	93°			TN [∞] 2204 [∞]
NT-MTJN ⁺ /K3225P22	●	●	32	25	32	170	43	-	93°			TN [∞] 2204 [∞]

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Eccentric pins	L wrench	Clamp	Clamp screws	L wrench
NT-MTJN ⁺ /K2020K16	NT-SH005	NT-SP020	NT-WR020	NT-CS010	NT-SC008	NT-WR030
NT-MTJN ⁺ /K2525M16	NT-SH005	NT-SP020	NT-WR020	NT-CS010	NT-SC010	NT-WR030
NT-MTJN ⁺ /K3232P16	NT-SH005	NT-SP020	NT-WR020	NT-CS010	NT-SC010	NT-WR030
NT-MTJN ⁺ /K2525M22	NT-SH008	NT-SP010	NT-WR030	NT-CS070	NT-SC070	NT-WR040
NT-MTJN ⁺ /K3225P22	NT-SH008	NT-SP010	NT-WR030	NT-CS070	NT-SC070	NT-WR040

A DTFN

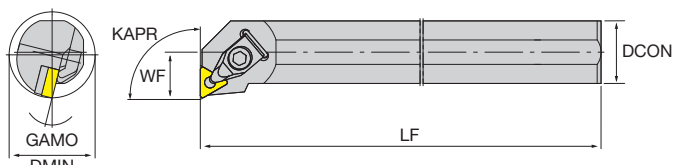
ISO - TN

- Internal turning (KAPR 91°)
- Steel boring bar with internal coolant through
- Holds TN-style inserts
- Double pushing and pulling action with a single movement. Quick and safe tightening

STEEL

with internal coolant

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-A25R-DTFN $\frac{1}{8}$ 16	●	●	32	25	17	200	-	-	91°	13°		TN ∞ 1604 ∞
NT-A32S-DTFN $\frac{1}{8}$ 16	●	●	40	32	22	250	-	-	91°	13°		TN ∞ 1604 ∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

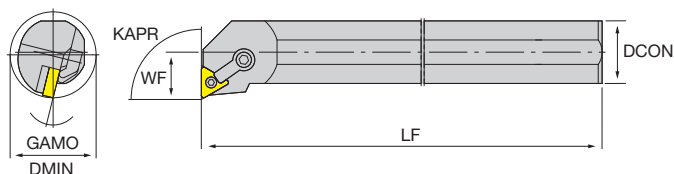
Spare parts	Shim	Shim screws	Clamp	Springs	Clamp screws	L wrench
NT-A ∞ -DTFN $\frac{1}{8}$ 16	NT-SH006	NT-ST250	NT-CS250	NT-SG250	NT-SC250	NT-TX15

S MTUN**ISO - TN**

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds TN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force

STEEL

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-S20R-MTUN ^h /r16	●	●	25	20	13	200	-	-	93°	17°		TN ^{oo} 1604 ^{oo}
NT-S25R-MTUN ^h /r16	●	●	32	25	17	200	-	-	93°	12°		TN ^{oo} 1604 ^{oo}
NT-S32S-MTUN ^h /r16	●	●	40	32	22	250	-	-	93°	10°		TN ^{oo} 1604 ^{oo}
NT-S40T-MTUN ^h /r16	●	●	50	40	27	300	-	-	93°	10°		TN ^{oo} 1604 ^{oo}
NT-S50U-MTUN ^h /r16	●	●	63	50	35	350	-	-	93°	8°		TN ^{oo} 1604 ^{oo}
NT-S40T-MTUN ^h /r22	○	○	50	40	27	300	-	-	93°	15°		TN ^{oo} 2204 ^{oo}
NT-S50U-MTUN ^h /r22	○	○	63	50	35	350	-	-	93°	12°		TN ^{oo} 2204 ^{oo}

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Eccentric pins	L wrench	Clamp	Clamp screws	L wrench
NT-S20R-MTUN ^h /r16	-	NT-SP030	NT-WR020	NT-CS030	NT-SC030	NT-WR025
NT-S25R-MTUN ^h /r16	-	NT-SP030	NT-WR020	NT-CS010	NT-SC008	NT-WR030
NT-S32S-MTUN ^h /r16	NT-SH005	NT-SP020	NT-WR020	NT-CS010	NT-SC010	NT-WR030
NT-S40T-MTUN ^h /r16	NT-SH005	NT-SP020	NT-WR020	NT-CS010	NT-SC010	NT-WR030
NT-S50U-MTUN ^h /r16	NT-SH005	NT-SP020	NT-WR020	NT-CS010	NT-SC010	NT-WR030
NT-S40T-MTUN ^h /r22	NT-SH008	NT-SP010	NT-WR030	NT-CS070	NT-SC070	NT-WR040
NT-S50U-MTUN ^h /r22	NT-SH008	NT-SP010	NT-WR030	NT-CS070	NT-SC070	NT-WR040

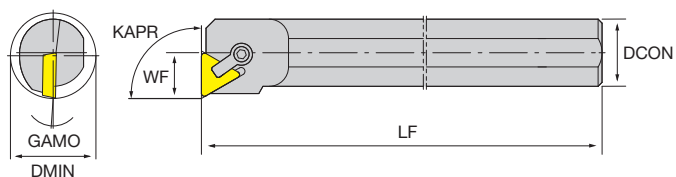
S CTUP

ISO - TP

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds TP style inserts, tightened by screws

STEEL

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-S12M-CTUP ^L /R11	●	●	16	12	9	150	-	-	93°	6°		TP ^{oo} 1103 ^{oo}
NT-S16Q-CTUP ^L /R11	●	●	20	16	11	180	-	-	93°	3°		TP ^{oo} 1103 ^{oo}
NT-S20R-CTUP ^L /R11	●	●	25	20	13	200	-	-	93°	3°		TP ^{oo} 1103 ^{oo}
NT-S25R-CTUP ^L /R16	●	●	32	25	17	200	-	-	93°	3°		TP ^{oo} 1603 ^{oo}
NT-S32S-CTUP ^L /R16	●	●	40	32	22	250	-	-	93°	3°		TP ^{oo} 1603 ^{oo}

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

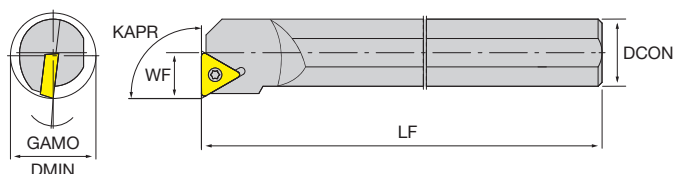
Spare parts	Shim	Shim screws	Flag wrenches	Clamping set	Clamp	Clamp screws	L wrench
NT-S12M-CTUP ^L /R11	-	-	-	NT-CS003	-	-	NT-WR025
NT-S16Q-CTUP ^L /R11	-	-	-	-	NT-CS005	NT-SC005	NT-WR025
NT-S20R-CTUP ^L /R11	-	-	-	-	NT-CS005	NT-SC005	NT-WR025
NT-S25R-CTUP ^L /R16	NT-SH002	NT-ST022	NT-FT06	-	NT-CS010	NT-SC008	NT-WR030
NT-S32S-CTUP ^L /R16	NT-SH002	NT-ST022	NT-FT06	-	NT-CS010	NT-SC008	NT-WR030

S STUP**ISO - TP**

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds TP style inserts, tightened by screws

STEEL

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-S10K-STUP [▲] /H09	●	●	12	10	6	125	-	-	93°	8°		TP00090200
NT-S12M-STUP [▲] /H09	●	●	14	12	7	150	-	-	93°	5°		TP00090200
NT-S10K-STUP [▲] /H11	●	●	12	10	6	125	-	-	93°	8°		TP00110300
NT-S12M-STUP [▲] /H11	●	●	14	12	7	150	-	-	93°	7°		TP00110300
NT-S16Q-STUP [▲] /H11	●	●	18	16	9	180	-	-	93°	4°		TP00110300
NT-S20R-STUP [▲] /H11		○	22	20	11	200	-	-	93°	2°		TP00110300

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

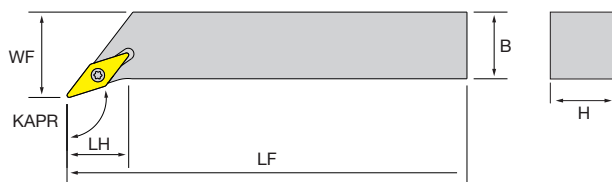
Spare parts	Insert screws	Flag wrenches
		
NT-S10K-STUP [▲] /H09	NT-ST25065T08	NT-FT08
NT-S12M-STUP [▲] /H09	NT-ST25065T08	NT-FT08
NT-S10K-STUP [▲] /H11	NT-ST30058T10	NT-FT10
NT-S12M-STUP [▲] /H11	NT-ST30058T10	NT-FT10
NT-S16Q-STUP [▲] /H11	NT-ST30068T10	NT-FT10
NT-S20R-STUP [▲] /H11	NT-ST30068T10	NT-FT10

SVHB

ISO - VB

- External turning (KAPR 107.5°)
- Holds VB-style inserts, tightened by screw
- Convenient to change inserts, with shim

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SVHB ¹ /r2525M16	○	○	25	25	32	150	23	-	107.5°			VB00160400

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

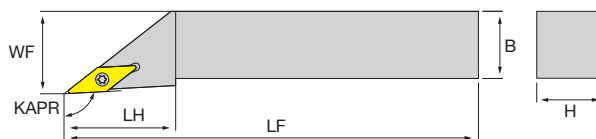
Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SVHB ¹ /r2525M16	 NT-SH050	 NT-SR010	 NT-WR035	 NT-ST35115T15	 NT-FT15

SVJB

ISO - VB

- External turning (KAPR 93°)
- Holds VB-style inserts, tightened by screw
- Convenient to change inserts, with shim

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SVJB ⁴ /r2020K11	●	●	20	20	25	125	22	-	93°			VB00110300
NT-SVJB ⁴ /r2020K16	●	●	20	20	25	125	33	-	93°			VB00160400
NT-SVJB ⁴ /r2525M16	●	●	25	25	32	150	38	-	93°			VB00160400

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

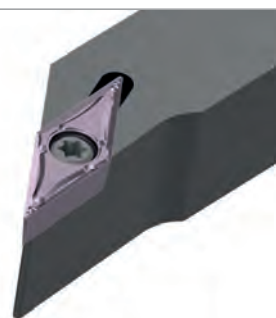
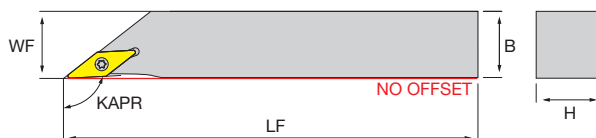
Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SVJB ⁴ /r0000011	-	-	-	NT-ST25060T07	NT-FT07
NT-SVJB ⁴ /r0000016	NT-SH050	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15

SVJB N

ISO - VB

- External turning (KAPR 93°)
- Holds VB-style inserts, tightened by screw
- Available on lathes without offset
- Convenient to change inserts, with shim

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SVJB $\frac{1}{2}$ 1212K11N	●	●	12	12	12	125	-	-	93°			VB00110300
NT-SVJB $\frac{1}{2}$ 1616K11N	●	●	16	16	16	125	-	-	93°			VB00110300
NT-SVJB $\frac{1}{2}$ 1616H16N	●	●	16	16	16	100	-	-	93°			VB00160400

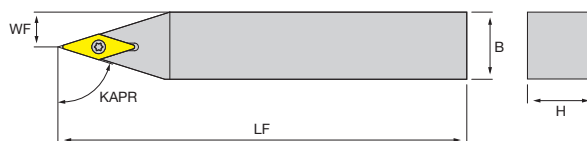
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SVJB $\frac{1}{2}$ 1212K11N	-	-	-	NT-ST25060T07	NT-FT07
NT-SVJB $\frac{1}{2}$ 1616K11N	NT-SH050	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15

SVVB

ISO - VB

- External turning (KAPR 72.5°), Neutral position
- Holds VB-style inserts, tightened by screw
- Convenient to change inserts, with shim



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SVVB2020K11			20	20	10	125	-	-	72.5°			VB00110300
NT-SVVB2525M11			25	25	12.5	150	-	-	72.5°			VB00110300
NT-SVVB2020K16			20	20	10	125	-	-	72.5°			VB00160400
NT-SVVB2525M16			25	25	12.5	150	-	-	72.5°			VB00160400

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
					
NT-SVVB0000011	-	-	-	NT-ST25060T07	NT-FT07
NT-SVVB0000016	NT-SH050	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15

V SVJB

ISO - VB

- Internal turning (KAPR 93°)
- Vortex boring bar (high quality steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds VB-style inserts, tightened by screws
- Special chip evacuation path

VORTEX
with internal coolant

Right-hand shown

Designation	Stock		DMIN	DCON	WF	LF	LH	LU	KAPR	GAMO		MIID
	L	R										
NT-V20R-SVJB ^{1/8} 11-25	●	●	25	20	2	200	48	37.5	93°	5°		VB ⁰⁰ 1103 ⁰⁰
NT-V25S-SVJB ^{1/8} 11-30	●	●	30	25	3.5	250	58	46	93°	5°		VB ⁰⁰ 1103 ⁰⁰

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

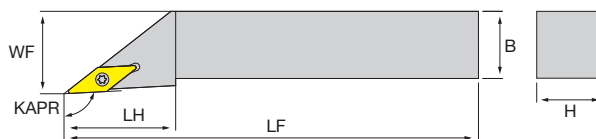
Spare parts	Insert screws	Flag wrenches
NT-V ⁰⁰⁰ -SVJB ^{1/8} 11- ⁰⁰	NT-ST25060T07	NT-FT07

SVJC

ISO - VC

- External turning (KAPR 93°)
- Holds VC-style inserts, tightened by screw
- Convenient to change inserts, with shim

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SVJC/r2020K11	●	●	20	20	25	125	22	-	93°			VC∞1103∞
NT-SVJC/r2020K16	●	●	20	20	25	125	33	-	93°			VC∞1604∞
NT-SVJC/r2525M16	●	●	25	25	32	150	38	-	93°			VC∞1604∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

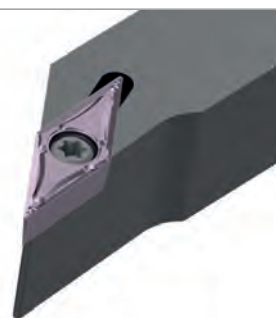
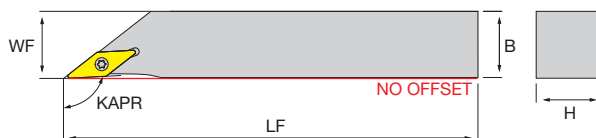
Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
					
NT-SVJC/r0000011	-	-	-	NT-ST25060T07	NT-FT07
NT-SVJC/r0000016	NT-SH050	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15

SVJC N

ISO - VC

- External turning (KAPR 93°)
- Holds VC-style inserts, tightened by screw
- Available on lathes without offset
- Convenient to change inserts, with shim

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SVJC/1010K11N	○	○	10	10	10	125	-	-	93°			VC∞1103∞
NT-SVJC/1212K11N	●	●	12	12	12	125	-	-	93°			VC∞1103∞
NT-SVJC/1616K11N	●	●	16	16	16	125	-	-	93°			VC∞1103∞
NT-SVJC/1616H16N	●	●	16	16	16	100	-	-	93°			VC∞1604∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

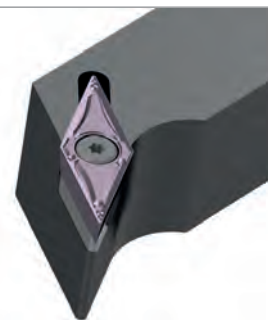
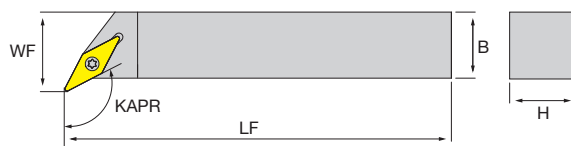
Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SVJC/1010K11N	-	-	-	NT-ST25060T07	NT-FT07
NT-SVJC/1616K11N	NT-SH050	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15

SVPC

ISO - VC

- External turning (KAPR 117.5°)
- Holds VC-style inserts, tightened by screw
- Convenient to change inserts, with shim

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SVPC/r1010H11	○	○	10	10	14.5	100	-	-	117.5°			VC∞1103∞
NT-SVPC/r1212H11	●	●	12	12	16.5	100	-	-	117.5°			VC∞1103∞
NT-SVPC/r1616H11	●	●	16	16	20.5	100	-	-	117.5°			VC∞1103∞
NT-SVPC/r2020K16	●	●	20	20	25	125	-	-	117.5°			VC∞1604∞
NT-SVPC/r2525M16	●	●	25	25	32	150	-	-	117.5°			VC∞1604∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SVPC/r0000011	-	-	-	NT-ST25060T07	NT-FT07
NT-SVPC/r0000016	NT-SH050	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

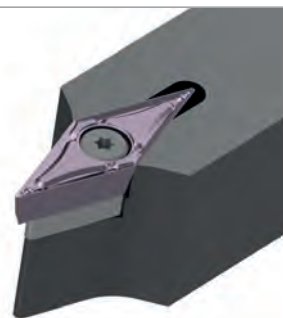
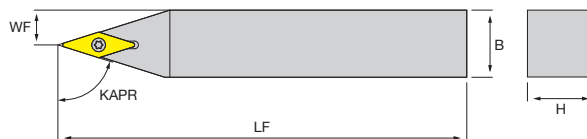
F - ACCESSORIES

G - SPARE PARTS

SVVC

ISO - VC

- External turning (KAPR 72.5°), Neutral position
- Holds VC-style inserts, tightened by screw
- Convenient to change inserts, with shim



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SVVCN1010H11			10	10	5	100	-	-	72.5°			VC ∞ 1103 ∞
NT-SVVCN1212H11			12	12	6	100	-	-	72.5°			VC ∞ 1103 ∞
NT-SVVCN1616H11			16	16	8	100	-	-	72.5°			VC ∞ 1103 ∞
NT-SVVCN2020K16			20	20	10	125	-	-	72.5°			VC ∞ 1604 ∞
NT-SVVCN2525M16			25	25	12.5	150	-	-	72.5°			VC ∞ 1604 ∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

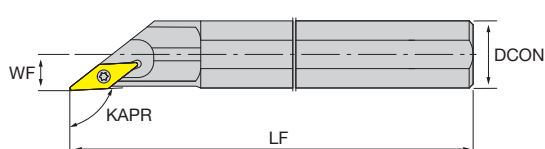
Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SVVCN $\infty\infty\infty\infty$ 11	-	-	-	NT-ST25060T07	NT-FT07
NT-SVVCN $\infty\infty\infty\infty$ 16	NT-SH050	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15

S SVJC**ISO - VC**

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds VC style inserts, tightened by screws

STEEL

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-S12M-SVJC ¹ /R11	○	○	14	12	7	150	-	-	93°	7°		VC ⁰⁰ 1103 ⁰⁰
NT-S16Q-SVJC ¹ /R11	●	●	18	16	9	180	-	-	93°	7°		VC ⁰⁰ 1103 ⁰⁰
NT-S16Q-SVJC ¹ /R16	●	●	18	16	9	180	-	-	93°	7°		VC ⁰⁰ 1604 ⁰⁰
NT-S20R-SVJC ¹ /R16	●	●	21	20	10.5	200	-	-	93°	6°		VC ⁰⁰ 1604 ⁰⁰
NT-S25R-SVJC ¹ /R16	○	○	27	25	13.5	200	-	-	93°	6°		VC ⁰⁰ 1604 ⁰⁰
NT-S32S-SVJC ¹ /R16	●	●	34	32	17	250	-	-	93°	4°		VC ⁰⁰ 1604 ⁰⁰
NT-S40T-SVJC ¹ /R16	○	○	44	40	22	300	-	-	93°	4°		VC ⁰⁰ 1604 ⁰⁰

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

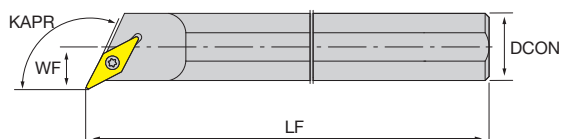
Spare parts	Insert screws	Flag wrenches
		
NT-S ⁰⁰⁰ -SVJC ¹ /R11	NT-ST25060T07	NT-FT07
NT-S ⁰⁰⁰ -SVJC ¹ /R16	NT-ST35089T15	NT-FT15

S SVQC**ISO - VC**

- Internal turning (KAPR 107.5°)
- Steel boring bar without internal coolant
- Holds VC style inserts, tightened by screws

STEEL

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-S16Q-SVQC ¹ / _R 11	●	●	22	16	13	180	-	-	107.5°	7°		VC ⁰⁰ 1103 ⁰⁰
NT-S20R-SVQC ¹ / _R 11	○	○	27	20	15	200	-	-	107.5°	6°		VC ⁰⁰ 1103 ⁰⁰
NT-S20R-SVQC ¹ / _R 16	○	○	30	20	19	200	-	-	107.5°	8°		VC ⁰⁰ 1604 ⁰⁰
NT-S25R-SVQC ¹ / _R 16	●	●	34	25	20.5	200	-	-	107.5°	4°		VC ⁰⁰ 1604 ⁰⁰
NT-S32S-SVQC ¹ / _R 16	●	●	41	32	22.5	250	-	-	107.5°	8°		VC ⁰⁰ 1604 ⁰⁰
NT-S40T-SVQC ¹ / _R 16	○	○	50	40	27	300	-	-	107.5°	6°		VC ⁰⁰ 1604 ⁰⁰

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
		
NT-S ⁰⁰⁰ -SVQC ¹ / _R 11	NT-ST25060T07	NT-FT07
NT-S ⁰⁰⁰ -SVQC ¹ / _R 16	NT-ST35089T15	NT-FT15

S SVUC	STEEL	Right-hand shown	
ISO - VC			
• Internal turning (KAPR 93°) • Steel boring bar without internal coolant • Holds VC style inserts, tightened by screws			

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-S16Q-SVUC ¹ / _R 11	●	●	22	16	13	180	-	-	93°	7°		VC ⁰⁰ 1103 ⁰⁰
NT-S20R-SVUC ¹ / _R 11	●	●	27	20	15	200	-	-	93°	6°		VC ⁰⁰ 1103 ⁰⁰
NT-S20R-SVUC ¹ / _R 16	●	●	31	20	19	200	-	-	93°	8°		VC ⁰⁰ 1604 ⁰⁰
NT-S25R-SVUC ¹ / _R 16	○	○	33	25	20.5	200	-	-	93°	7°		VC ⁰⁰ 1604 ⁰⁰
NT-S32S-SVUC ¹ / _R 16	●	●	42	32	22.5	250	-	-	93°	5°		VC ⁰⁰ 1604 ⁰⁰
NT-S40T-SVUC ¹ / _R 16	○	○	51	40	27	300	-	-	93°	4°		VC ⁰⁰ 1604 ⁰⁰

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

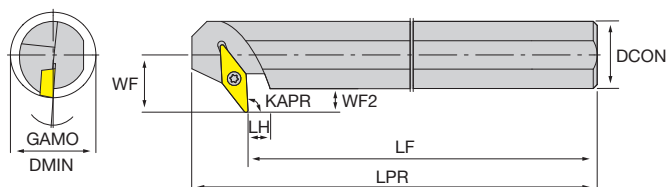
Spare parts	Insert screws	Flag wrenches
NT-S ⁰⁰⁰ -SVUC ¹ / _R 11	NT-ST25060T07	NT-FT07
NT-S ⁰⁰⁰ -SVUC ¹ / _R 16	NT-ST35089T15	NT-FT15

S SVZC**ISO - VC**

- Internal back turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds VC style inserts, tightened by screws

STEEL

Right-hand shown



Designation	Stock		DMIN	DCON	WF	WF2	LF	LH	LPR	KAPR	GAMO	MIID
	L	R										
NT-S20R-SVZC $\frac{1}{8}$ 16	●	●	30	20	17	7			217	93°	7.5°	VC ∞ 1604 ∞
NT-S25R-SVZC $\frac{1}{8}$ 16	●	●	35	25	19.5	7			220	93°	7.5°	VC ∞ 1604 ∞
NT-S32S-SVZC $\frac{1}{8}$ 16	○	○	40	32	23	7			270	93°	7.5°	VC ∞ 1604 ∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-S ∞ -SVZC $\frac{1}{8}$ 16	NT-ST35089T15	NT-FT15

DVJN**ISO - VN**

- External turning (KAPR 93°)
- Holds VN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-DVJN [●] /R2020K16X	●	●	20	20	25	125	50	-	93°			VN∞1604∞
NT-DVJN [●] /R2525M16X	●	●	25	25	32	150	46	-	93°			VN∞1604∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Shim screws	L wrench	Clamp	Springs	Clamp screws	L wrench
NT-DVJN [●] /R∞∞∞∞16X	NT-SH075	NT-ST250	NT-TX15	NT-CS210	NT-SG200	NT-SC200	NT-TX20

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

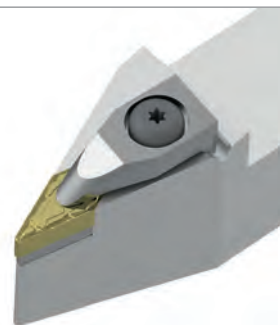
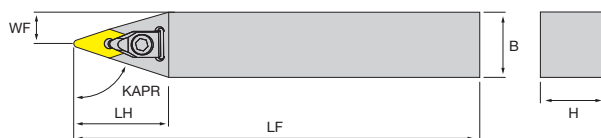
F - ACCESSORIES

G - SPARE PARTS

DVVN

ISO - VN

- External turning (KAPR 72.5°), Neutral position
- Holds VN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening



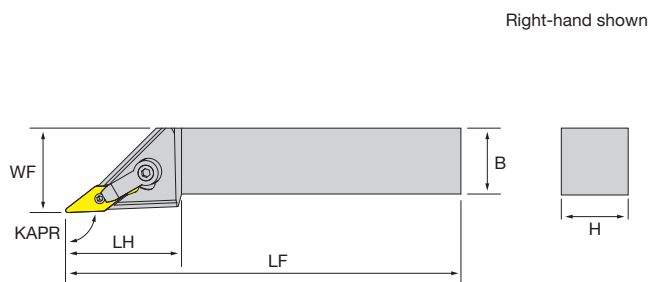
Designation	Stock	H	B	WF	LF	LH	LPR	KAPR			MIID
NT-DVVNN2020K16X	●	20	20	10	125	47	-	72.5			VN∞1604∞
NT-DVVNN2525M16X	●	25	25	12.5	150	47	-	72.5			VN∞1604∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Shim screws	L wrench	Clamp	Springs	Clamp screws	L wrench
NT-DVVNN∞∞∞∞16X	NT-SH075	NT-ST250	NT-TX15	NT-CS210	NT-SG200	NT-SC200	NT-TX20

MVJN**ISO - VN**

- External turning (KAPR 93°)
- Holds VN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-MVJN ¹ /2020K16	●	●	20	20	25	125	39	-	93°			VN∞1604∞
NT-MVJN ¹ /2525M16	●	●	25	25	32	150	44	-	93°			VN∞1604∞
NT-MVJN ¹ /3232P16	○	○	32	32	40	170	45	-	93°			VN∞1604∞

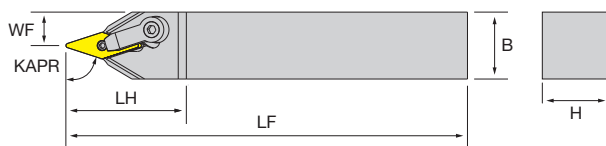
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Eccentric pins	L wrench	Clamp	Clamp screws	L wrench
NT-MVJN ¹ /R∞∞∞∞16	NT-SH075	NT-SP020	NT-WR020	NT-CS075	NT-SC010	NT-WR030

MVVN

ISO - VN

- External turning (KAPR 72.5°), Neutral position
- Holds VN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force



Designation	Stock	H	B	WF	LF	LH	LPR	KAPR			MIID
NT-MVVNN2020K16	●	20	20	10	125	45	-	72.5			VN∞1604∞
NT-MVVNN2525M16	●	25	25	12.5	150	45	-	72.5			VN∞1604∞
NT-MVVNN3232P16	○	32	32	16	170	45	-	72.5			VN∞1604∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

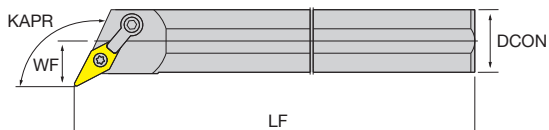
Spare parts	Shim	Eccentric pins	L wrench	Clamp	Clamp screws	L wrench
NT-MVVNN∞∞∞∞16	NT-SH075	NT-SP020	NT-WR020	NT-CS075	NT-SC010	NT-WR030

S MVQN**ISO - VN**

- Internal turning (KAPR 107.5°)
- Steel boring bar without internal coolant
- Holds VN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force

STEEL

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-S25R-MVQN [▲] /h16	●	●	33	25	20	200	-	-	107.5°	12°		VN [∞] 1604 [∞]
NT-S32S-MVQN [○] /h16	○	○	40	32	23	250	-	-	107.5°	17°		VN [∞] 1604 [∞]
NT-S40T-MVQN [○] /h16	○	○	50	40	27	300	-	-	107.5°	15°		VN [∞] 1604 [∞]
NT-S50U-MVQN [●] /h16	●	●	63	50	33	350	-	-	107.5°	12°		VN [∞] 1604 [∞]

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Eccentric pins	L wrench	Clamp	Clamp screws	L wrench
NT-S25R-MVQN [▲] /h16						
NT-S32S-MVQN [○] /h16	NT-SH075	NT-SP020	NT-WR020	NT-CS010	NT-SC008	NT-WR030
NT-S40T-MVQN [○] /h16	NT-SH075	NT-SP020	NT-WR020	NT-CS010	NT-SC010	NT-WR030
NT-S50U-MVQN [●] /h16	NT-SH075	NT-SP020	NT-WR020	NT-CS010	NT-SC010	NT-WR030

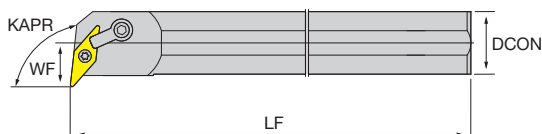
S MVUN

ISO - VN

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds VN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force

STEEL

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-S25R-MVUN ^h /r16	●	●	37	25	20	200	-	-	93°	12°		VN∞1604∞
NT-S32S-MVUN ^h /r16	●	●	40	32	22	250	-	-	93°	12°		VN∞1604∞
NT-S40T-MVUN ^h /r16	●	●	50	40	27	300	-	-	93°	15°		VN∞1604∞
NT-S50U-MVUN ^h /r16	○	○	63	50	32	350	-	-	93°	12°		VN∞1604∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Eccentric pins	L wrench	Clamp	Clamp screws	L wrench
NT-S25R-MVUN ^h /r16						
NT-S32S-MVUN ^h /r16	NT-SH075	NT-SP020	NT-WR020	NT-CS010	NT-SC008	NT-WR030
NT-S40T-MVUN ^h /r16	NT-SH075	NT-SP020	NT-WR020	NT-CS010	NT-SC010	NT-WR030
NT-S50U-MVUN ^h /r16	NT-SH075	NT-SP020	NT-WR020	NT-CS010	NT-SC010	NT-WR030

V SWUB

ISO - WB

- Internal turning (KAPR 93°)
- Vortex boring bar (high quality steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds WB-style inserts, tightened by screws
- Special chip evacuation path

VORTEX

with internal coolant

Right-hand shown

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-V10H-SWUB ¹ /R06-06		●	6	10	3	100	25	-	93°	15°		WB00060100
NT-V10H-SWUB ¹ /R06-07		●	7	10	3.5	100	30	-	93°	13°		WB00060100

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-V10H-SWUB ¹ /R06-00	NT-ST20038T06	NT-FT06

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

V SWUC

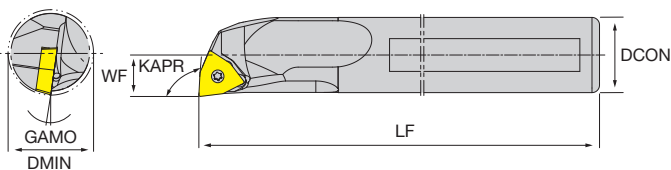
ISO - WC

- Internal turning (KAPR 93°)
- Vortex boring bar (high quality steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds WC-style inserts, tightened by screws
- Special chip evacuation path

VORTEX

 with internal coolant

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-V12M-SWUC'/r12-14	●	●	14	12	7	150	-	-	93°	13°		WCoo12T3oo
NT-V16Q-SWUC'/r12-18	●	●	18	16	9	180	-	-	93°	10°		WCoo12T3oo
NT-V20R-SWUC'/r12-22	●	●	22	20	11	200	-	-	93°	8°		WCoo12T3oo
NT-V25S-SWUC'/r12-27	●	●	27	25	13.5	250	-	-	93°	8°		WCoo12T3oo

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

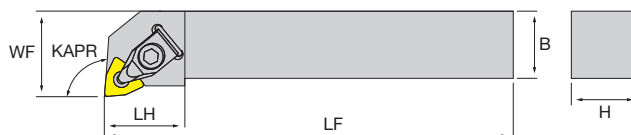
Spare parts	Insert screws	Flag wrenches
		
NT-Vooo-SWUC'/r12-oo	NT-ST40090T15	NT-FT15

DWLN

ISO - WN

- External turning (KAPR 95°)
- Holds WN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-DWLN ⁺ /r1616H06X	●	●	16	16	20	100	33	-	95°			WN00060400
NT-DWLN ⁺ /r2020K06X	●	●	20	20	25	125	33	-	95°			WN00060400
NT-DWLN ⁺ /r2525M06X	●	●	25	25	32	150	33	-	95°			WN00060400
NT-DWLN ⁺ /r2020K08X	●	●	20	20	25	125	40	-	95°			WN00080400
NT-DWLN ⁺ /r2525M08X	●	●	25	25	32	150	40	-	95°			WN00080400
NT-DWLN ⁺ /r3225P08X	●	●	32	25	32	170	40	-	95°			WN00080400

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Shim screws	L wrench	Clamp	Springs	Clamp screws	L wrench
							
NT-DWLN ⁺ /r0000006X	NT-SH003	NT-ST250	NT-TX15	NT-CS250	NT-SG250	NT-SC250	NT-TX15
NT-DWLN ⁺ /r0000008X	NT-SH010	NT-ST200	NT-WR025	NT-CS200	NT-SG200	NT-SC200	NT-TX20

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

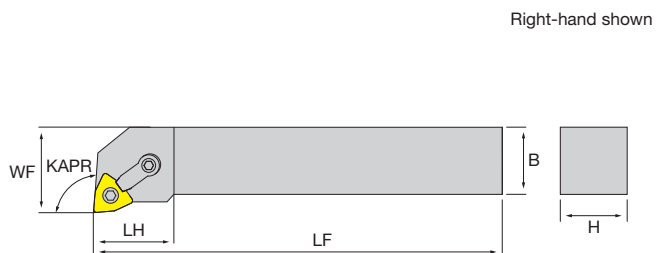
F - ACCESSORIES

G - SPARE PARTS

MWLN

ISO - WN

- External turning (KAPR 95°)
- Holds WN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-MWLN ⁺ /r2020K06	○	○	20	20	25	125	33	-	95°			WNoo0604oo
NT-MWLN ⁺ /r2525M06	○	○	25	25	32	150	26	-	95°			WNoo0604oo
NT-MWLN ⁺ /r2020K08	●	●	20	20	25	125	33	-	95°			WNoo0804oo
NT-MWLN ⁺ /r2525M08	●	●	25	25	32	150	26	-	95°			WNoo0804oo
NT-MWLN ⁺ /r3232P08	●	●	32	32	40	170	26	-	95°			WNoo0804oo

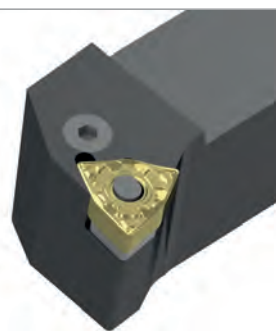
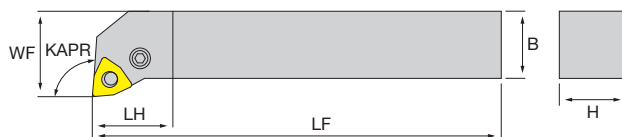
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Eccentric pins	L wrench	Clamp	Clamp screws	L wrench
						
NT-MWLN ⁺ /r0000006	NT-SH003	NT-SP020	NT-WR020	NT-CS009	NT-SC030	NT-WR025
NT-MWLN ⁺ /r0000008	NT-SH010	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030

PWLN**ISO - WN**

- External turning (KAPR 95°)
- Holds WN-style inserts
- Easy to use Levers-lock clamping
- Suitable for long-chip materials

Right-hand shown



Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-PWLN ^h /r2020K08	●	●	20	20	25	125	20	-	95°			WN00080400
NT-PWLN ^h /r2525M08	●	●	25	25	32	150	26	-	95°			WN00080400

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Shim plugs	Levers	Levers screws	L wrench
NT-PWLN ^h /r00000008	NT-SH015	NT-SR020	NT-LL020	NT-SC025	NT-WR030

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A DWLN

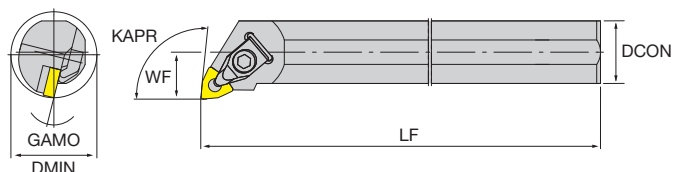
ISO - WN

- Internal turning (KAPR 95°)
- Steel boring bar with internal coolant through
- Holds WN-style inserts
- Double pushing and pulling action with a single movement. Quick and safe tightening

STEEL

with internal coolant

Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-A25R-DWLN ¹ /r08	●	●	32	25	17	200	-	-	95°	14°		WN00080400
NT-A32S-DWLN ¹ /r08	●	●	40	32	22	250	-	-	95°	14°		WN00080400
NT-A40T-DWLN ¹ /r08	●	●	50	40	27	300	-	-	95°	12°		WN00080400

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

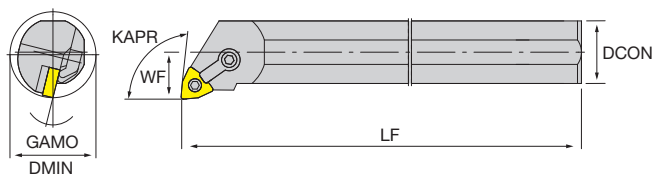
Spare parts	Shim	Shim screws	L wrench	Clamp	Springs	Clamp screws	L wrench
NT-A000-DWLN ¹ /r08							
	NT-SH015	NT-ST200	NT-WR025	NT-CS200	NT-SG200	NT-SC200	NT-TX20

S MWLN**ISO - WN**

- Internal turning (KAPR 95°)
- Steel boring bar without internal coolant
- Holds WN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force

STEEL

Right-hand shown



Designation	Stock L R		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
NT-S16Q-MWLN/ø06	○	○	22	16	11	180	-	-	95°	18°		WNø0604oo
NT-S20R-MWLN/ø08	●	●	25	20	13	200	-	-	95°	17°		WNø0804oo
NT-S25R-MWLN/ø08	●	●	32	25	17	200	-	-	95°	14°		WNø0804oo
NT-S32S-MWLN/ø08	●	●	40	32	22	250	-	-	95°	14°		WNø0804oo
NT-S40T-MWLN/ø08	●	●	50	40	27	300	-	-	95°	12°		WNø0804oo
NT-S50U-MWLN/ø08	●	●	63	50	35	350	-	-	95°	12°		WNø0804oo

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Eccentric pins	L wrench	Clamp	Clamp screws	L wrench
NT-S16Q-MWLN/ø06	-	NT-SP030	NT-WR020	NT-CS030	NT-SC030	NT-WR025
NT-S20R-MWLN/ø08	-	NT-SP035	NT-WR025	NT-CS030	NT-SC030	NT-WR025
NT-S25R-MWLN/ø08	-	NT-SP035	NT-WR025	NT-CS010	NT-SC008	NT-WR030
NT-S32S-MWLN/ø08	NT-SH010	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S40T-MWLN/ø08	NT-SH010	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S50U-MWLN/ø08	NT-SH010	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030

A PWLN

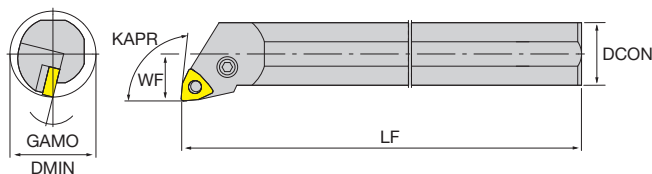
ISO - WN

- Internal turning (KAPR 95°)
- Steel boring bar with internal coolant through
- Holds WN-style inserts
- Easy to use Levers-lock clamping. Suitable for long-chip materials

STEEL

with internal coolant

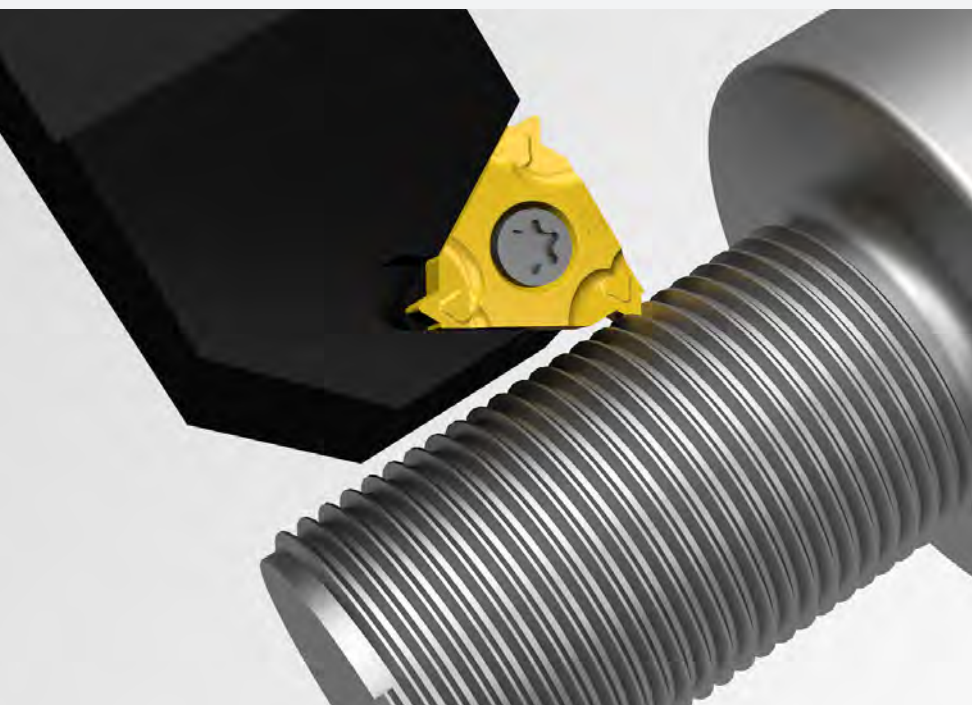
Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-A25R-PWLN ^h /ø8	●	●	30	25	17	200	-	-	95°	12°		WNøø0804∞
NT-A32S-PWLN ^h /ø8	●	●	40	32	22	250	-	-	95°	10°		WNøø0804∞
NT-A40T-PWLN ^h /ø8	●	●	48	40	27	300	-	-	95°	8°		WNøø0804∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Shim plugs	Levers	Levers screws	L wrench
NT-A25R-PWLN ^h /ø8	-	NT-SR015	NT-LL015	NT-SC015	NT-WR025
NT-A32S-PWLN ^h /ø8	NT-SH015	NT-SR020	NT-LL020	NT-SC025	NT-WR030
NT-A40T-PWLN ^h /ø8	NT-SH015	NT-SR020	NT-LL020	NT-SC025	NT-WR030



THREADING

Grade table	.B2
Grade details	.B3
Quick guide	.B4
External threads	.B7
Internal threads	.B15
Parameters	.B27

	ISO 513		CARBIDE	PCBN	DIAMOND
			PVD COATED	PVD COATED	PCD
A - TURNING	P	P01			
		P10	JPS120		
		P20		JPS125	
		P30			
B - THREADING	Steel	P40			
		M01			
		M10	JPS120		
		M20		JPS125	
C - GROOVING	Stainless steel	M30			
		M40			
		K01			
		K10	JPS120		
D - MILLING	Cast iron	K20		JPS125	
		K30			
		N01			
		N10			
E - DRILLING	Non-ferrous materials	N20			ND050
		N30			
		H01			
		H10			
F - ACCESSORIES	Hardened steel	H20		NBL350C	
		H30			

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION	FEATURES
			TECHNOLOGY	COMPOSITION		
JP5120	micrograin carbide	1.830	PVD	TiAlN	P P10 P20	Special coating technology balances wear resistance and toughness. The post-coating surface treatment effectively prevents built-up edge.
					M M10 M20	
					K K10 K20	
JP5125	micrograin carbide	1.830	PVD	TiAlN	P P20 P30	High Co micrograin carbide substrate with high toughness and latest coating technology. Universal use with great reliability and long tool life.
					M M20 M30	
					K K20 K30	
NBL350C	Low volume CBN 75%	3.400	PVD	AlTiN	H H20 H35	Hardened steel machining with a perfect combination of toughness and wear resistance.
ND050 new name: NDP001	diamond 85%	5.000	-	-	N N10 N35	High productivity threading of non-ferrous materials. Excellent surface finishing and very good toughness.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

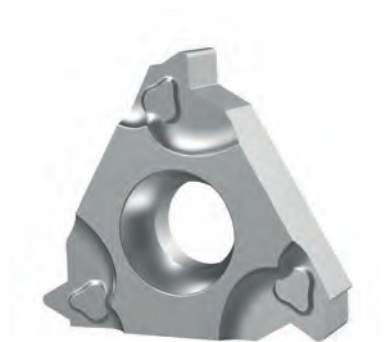
F - ACCESSORIES

G - SPARE PARTS

A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

	EXTERNAL	INTERNAL
	B7	B15
	 SQUARE SHANK	 BORING BAR
Pressed type inserts	✓	✓
Ground type inserts*	✓	✓
Advanced material inserts	✓	✓
Available sizes	16 - 22	07 - 11 - 16 - 22
Right and left thread	✓	✓
Workpiece material	P M K N S H	P M K N S H
Full profile	M - UN - W - NPT - BSPT	M - UN - W - NPT - BSPT
Partial profile	55° - 60°	55° - 60°
M ISO Metric 	0.50 - 0.70 - 0.75 - 0.80 - 1.00 - 1.25 - 1.50 - 1.75 - 2.00 - 2.50 - 3.00 - 3.50 - 4.00 - 4.50 - 5.00 (mm)	0.50 - 0.75 - 1.00 - 1.25 - 1.50 - 1.75 - 2.00 - 2.50 - 3.00 - 3.50 - 4.00 - 4.50 - 5.00 (mm)
W Whitworth 	19 - 14 - 11 (TPI)	19 - 14 - 11 (TPI)
UN American unified 	24 - 20 - 18 - 16 - 14 - 12 - 08 (TPI)	24 - 20 - 18 - 16 - 14 - 12 - 08 (TPI)
NPT American tapered pipe 	18 - 11.5 - 14 (TPI)	18 - 11.5 - 14 (TPI)
BSPT British tapered pipe 	28 - 19 - 14 - 11 (TPI)	28 - 19 - 14 - 11 (TPI)
60° partial profile 	A 0.50 ÷ 1.50 (mm) / 48 ÷ 16 (TPI) G 1.75 ÷ 3.00 (mm) / 14 ÷ 8 (TPI) AG 0.50 ÷ 3.00 (mm) / 48 ÷ 8 (TPI) N 3.50 ÷ 5.00 (mm) / 7 ÷ 5 (TPI)	A 0.50 ÷ 1.50 (mm) / 48 ÷ 16 (TPI) G 1.75 ÷ 3.00 (mm) / 14 ÷ 8 (TPI) AG 0.50 ÷ 3.00 (mm) / 48 ÷ 8 (TPI) N 3.50 ÷ 5.00 (mm) / 7 ÷ 5 (TPI)
55° partial profile 	A 48 ÷ 16 (TPI) G 14 ÷ 8 (TPI) AG 48 ÷ 8 (TPI) N 7 ÷ 5 (TPI)	A 48 ÷ 16 (TPI) G 14 ÷ 8 (TPI) AG 48 ÷ 8 (TPI) N 7 ÷ 5 (TPI)
Holder sizes	square: 12 - 16 - 20 - 25 mm	cylindrical: 10 - 12 - 16 - 20 - 25 - 32 mm
Minimum entering hole	-	8 mm
Special features	holders without off-set for swiss type machining	boring bar with VORTEX technology and internal coolant

*Ground inserts can be tailored to cover virtually any thread type and pitch.



THREADING External threads

Inserts .B8

Holders .B12

Table "Number of passes" .B13

External

ISO 16-22

- **M**: metric threads
- **W**: parallel pipe threads (whitworth)
- **UN**: unified inch threads
- **NPT**: American national tapered pipe threads
- **BSPT**: tapered pipe threads
- Partial profile with **55°** or **60°** angle, for metric, unified and parallel pipe threads

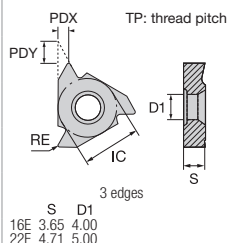
HF: Micrograin carbide
BL: Low volume CBN
DP: Polycrystalline diamond
PVD: Physical vapour deposition

HF PVD
HF PVD
BL PVD
DP

JP5120
JP5125
NBL350C
ND050

- Stable machining, light cut ● 1st choice ○ suitable
- General machining, medium cut ● 1st choice ○ suitable
- Unstable machining, heavy cut ⚡ 1st choice ⚡ suitable

Dimensions



ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P	90 200	70 180		
M	60 150	50 140		
K	90 190	60 180		
N			400 1600	
S			50 100	
H		60 140		

Designation		RE	TP	PDX	PDY	IC	Stock			
FULL PROFILE TPM pressed type chip control oriented	16ER100ISO-TPM	0.14	1	0.7	0.8	9.525	●	●		
	16ER125ISO-TPM	0.18	1.25	0.9	0.8	9.525	●	●		
	16ER150ISO-TPM	0.22	1.5	1	0.8	9.525	●	●		
	16ER175ISO-TPM	0.25	1.75	1.2	1.2	9.525	●	●		
	16ER200ISO-TPM	0.29	2	1.3	1.2	9.525	●	●		
	16ER250ISO-TPM	0.36	2.5	1.5	1.2	9.525	●	●		
	16ER300ISO-TPM	0.43	3	1.5	1.2	9.525	●	●		
	22ER350ISO-TPM	0.45	3.5	2.3	1.6	12.7		●		
	22ER400ISO-TPM	0.52	4	2.3	1.6	12.7		●		
	22ER450ISO-TPM	0.58	4.5	2.4	1.7	12.7		●		
	22ER500ISO-TPM	0.63	5	2.5	1.7	12.7		●		
	16ER050ISO	0.07	0.5	0.6	0.6	9.525		●		
FULL PROFILE precision ground sharpness oriented	16ER070ISO	0.1	0.7	0.6	0.6	9.525		●		
	16ER075ISO	0.11	0.75	0.6	0.6	9.525		●		
	16ER080ISO	0.12	0.8	0.6	0.6	9.525		●		
	16ER100ISO	0.15	1	0.7	0.7	9.525		●		
	16ER125ISO	0.18	1.25	0.9	0.8	9.525		●		
	16ER150ISO	0.22	1.5	1	0.8	9.525		●		
	16ER175ISO	0.25	1.75	1.2	0.9	9.525		●		
	16ER200ISO	0.29	2	1.3	1	9.525		●		
	16ER250ISO	0.36	2.5	1.5	1	9.525		●		
	16ER300ISO	0.43	3	1.6	1.2	9.525		●		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

FULL PROFILE



- Full profile insert will form a complete thread profile including the crest.
- The distance between root and crest is controlled.
- The insert can produce only one pitch.
- Higher tool pressure compared to partial profile.

PRESSED VS GROUND

TPM pressed

- Improves the chip control
- Strongly recommended in internal application especially for difficult materials
- Best cost-performance ratio

Precision ground

- Achieves the higher precision
- A sharper cutting edge can guarantee very smooth cutting action
- Every kind of thread's standard can be easily produced using the same blank

External		HF: Micrograin carbide BL: Low volume CBN DP: Polycrystalline diamond PVD: Physical vapour deposition	HF PVD	HF PVD	BL PVD	DP		
	ISO 16-22		JPS120	JPS125	NBL350C	ND050		
• M: metric threads • W: parallel pipe threads (whitworth) • UN: unified inch threads • NPT: American national tapered pipe threads • BSPT: tapered pipe threads • Partial profile with 55° or 60° angle, for metric, unified and parallel pipe threads		Stable machining, light cut ● 1 st choice ○ suitable	●	○	●	●		
		General machining, medium cut ● 1 st choice ○ suitable	●	●				
		Unstable machining, heavy cut ⚙ 1 st choice ⚙ suitable		⚙				
		Dimensions	ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)				
		S D1 16E 3.65 4.00 22E 4.71 5.00	P	90 200	70 180			
			M	60 150	50 140			
			K	90 190	60 180			
	N					400 1600		
		S				50 100		
		H			60 140			

Designation		RE	TP	PDX	PDY	IC	Stock			
FULL PROFILE precision ground left-hand	16EL050ISO	0.07	0.5	0.6	0.6	9.525	●			
	16EL075ISO	0.11	0.75	0.6	0.6	9.525	●			
	16EL100ISO	0.15	1	0.7	0.7	9.525	●			
	16EL125ISO	0.18	1.25	0.9	0.8	9.525	●			
	16EL150ISO	0.22	1.5	1	0.8	9.525	●			
	16EL175ISO	0.25	1.75	1.2	0.9	9.525	●			
	16EL200ISO	0.29	2	1.3	1	9.525	●			
	16EL250ISO	0.36	2.5	1.5	1	9.525	●			
	16EL300ISO	0.43	3	1.6	1.2	9.525	●			
FULL PROFILE PCD carbide backed single edge	16ER100ISO-1C	0.15	1	0.7		9.525			●	
	16ER125ISO-1C	0.16	1.25	0.9		9.525			●	
	16ER150ISO-1C	0.22	1.5	1		9.525			●	
	16ER175ISO-1C	0.26	1.75	1.2		9.525			●	
	16ER200ISO-1C	0.29	2	1.3		9.525			●	
	16ER250ISO-1C	0.37	2.5	1.5		9.525			●	
	16ER300ISO-1C	0.43	3	1.5		9.525			●	
FULL PROFILE PCBN solid brazing single edge	16ER100ISO-1S	0.15	1	0.7		9.525		●		
	16ER125ISO-1S	0.16	1.25	0.9		9.525		●		
	16ER150ISO-1S	0.22	1.5	1		9.525		●		
	16ER175ISO-1S	0.26	1.75	1.2		9.525		●		
	16ER200ISO-1S	0.29	2	1.3		9.525		●		
	16ER250ISO-1S	0.37	2.5	1.5		9.525		●		
	16ER300ISO-1S	0.43	3	1.5		9.525		●		
FULL PROFILE TPM pressed type chip control oriented	16ER11W-TPM	0.3	11	1.5	1.2	9.525	●	●		
	16ER14W-TPM	0.24	14	1.5	1.2	9.525	●	●		
	16ER19W-TPM	0.17	19	1	0.8	9.525		●		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

FULL PROFILE



- Full profile insert will form a complete thread profile including the crest.
- The distance between root and crest is controlled.
- The insert can produce only one pitch.
- Higher tool pressure compared to partial profile.

PRESSED VS GROUND

TPM pressed

- Improves the chip control
- Strongly recommended in internal application especially for difficult materials
- Best cost-performance ratio

Precision ground

- Achieves the higher precision
- A sharper cutting edge can guarantee very smooth cutting action
- Every kind of thread's standard can be easily produced using the same blank

ADVANCED THREADING



PCBN for ISO H

Please increase the number of passes when machining hardened steel with PCBN inserts. Keep the maximum infeed value lower than 0.10 mm

External

ISO 16-22

- **M**: metric threads
- **W**: parallel pipe threads (whitworth)
- **UN**: unified inch threads
- **NPT**: American national tapered pipe threads
- **BSPT**: tapered pipe threads
- Partial profile with **55°** or **60°** angle, for metric, unified and parallel pipe threads

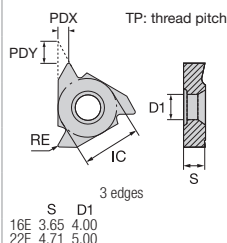
HF: Micrograin carbide
BL: Low volume CBN
DP: Polycrystalline diamond
PVD: Physical vapour deposition

HF PVD
HF PVD
BL PVD
DP

Stable machining, light cut
General machining, medium cut
Unstable machining, heavy cut

1st choice
suitable
1st choice
suitable
1st choice
suitable

Dimensions



ISO Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P	90 200	70 180		
M	60 150	50 140		
K	90 190	60 180		
N			400 1600	
S			50 100	
H		60 140		

Designation		RE	TP	PDX	PDY	IC	Stock			
FULL PROFILE	UN P M K  TPM pressed type chip control oriented	16ER08UN-TPM	0.46	8	1.7	1.3	9.525	●		
		16ER12UN-TPM	0.31	12	1.5	1.2	9.525	●		
		16ER14UN-TPM	0.26	14	1.5	1.2	9.525	●		
		16ER16UN-TPM	0.23	16	1.1	0.9	9.525	●		
		16ER18UN-TPM	0.2	18	1	0.8	9.525	●		
		16ER20UN-TPM	0.18	20	0.9	0.8	9.525	●		
		16ER24UN-TPM	0.15	24	0.8	0.8	9.525	●		
FULL PROFILE	NPT P M K  TPM pressed type chip control oriented	16ER11.5NPT-TPM	0.25	11.5	1.5	1.2	9.525	●		
		16ER14NPT-TPM	0.22	14	1.5	1.2	9.525	●		
		16ER18NPT-TPM	0.2	18	1	0.8	9.525	●		
FULL PROFILE	NPT P M K  precision ground sharpness oriented	16ER11.5NPT	0.07	11.5	1.5	1.1	9.525	●		
		16ER14NPT	0.06	14	1	0.8	9.525	●		
FULL PROFILE	BSPT P M K  TPM pressed type chip control oriented	16ER11BSPT-TPM	0.3	11	1.5	1.2	9.525	●		
		16ER14BSPT-TPM	0.24	14	1.5	1.2	9.525	●		
		16ER19BSPT-TPM	0.17	19	1	0.8	9.525	●		
		16ER28BSPT-TPM	0.11	28	0.8	0.7	9.525	●		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

FULL PROFILE



- Full profile insert will form a complete thread profile including the crest.
- The distance between root and crest is controlled.
- The insert can produce only one pitch.
- Higher tool pressure compared to partial profile.

PRESSED VS GROUND

TPM pressed

- Improves the chip control
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- A sharper cutting edge can guarantee very smooth cutting action
- Every kind of thread's standard can be easily produced using the same blank

External		HF: Micrograin carbide BL: Low volume CBN DP: Polycrystalline diamond PVD: Physical vapour deposition									
ISO 16-22								HF PVD	HF PVD	BL PVD	DP
• M : metric threads • W : parallel pipe threads (whitworth) • UN : unified inch threads • NPT : American national tapered pipe threads • BSPT : tapered pipe threads • Partial profile with 55° or 60° angle, for metric, unified and parallel pipe threads		Stable machining, light cut ● 1 st choice ○ suitable General machining, medium cut ● 1 st choice ○ suitable Unstable machining, heavy cut ▲ 1 st choice ▼ suitable						JP5120	JP5125	NBL350C	ND050
Dimensions 		ISO						Vc(m/min) - suggested cutting speed range (bold: 1 st choice)			
		P	90 200	70 180							
		M	60 150	50 140							
		K	90 190	60 180							
		N						400 1600			
		S						50 100			
		H						60 140			
Designation 		RE	TP	PDX	PDY	IC	Stock				
PARTIAL PROFILE 60° P M K TPM pressed type chip control oriented	16ERA60-TPM	0.08	-	0.9	0.8	9.525	●				
	16ERAG60-TPM	0.08	-	1.5	1.1	9.525	●				
	16ERG60-TPM	0.25	-	1.7	1.2	9.525	●				
	22ERN60-TPM	0.51	-	2.5	1.7	12.7	●				
PARTIAL PROFILE 55° P M K TPM pressed type chip control oriented	16ERA55-TPM	0.08	-	0.9	0.8	9.525	●				
	16ERAG55-TPM	0.08	-	1.5	1.1	9.525	●				
	16ERG55-TPM	0.21	-	1.7	1.2	9.525	●				
	22ERN55-TPM	0.44	-	2.5	1.7	12.7	●				

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion

PARTIAL PROFILE



- Partial profile insert works without cuts the outer diameter of the thread.
- The same insert can be used for a broad range of different thread pitches.
- Can produce burr that must be taken away.

PARTIAL PROFILE 60° PITCH RANGES

	M	UN
A60	0.50÷1.50	48÷16
AG60	0.50÷3.00	48÷8
G60	1.75÷3.00	14÷8
N60	3.50÷5.00	7÷5

PARTIAL PROFILE 55° PITCH RANGES

	BSW-BSF-BSP
A55	48÷16
AG55	48÷8
G55	14÷8
N55	7÷5

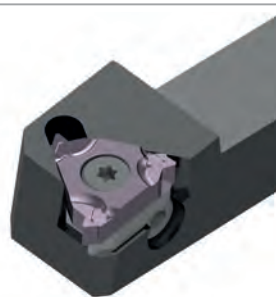
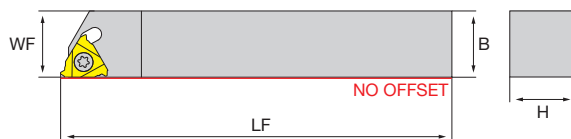
SE

ISO 16-22

- External threading holder
- Tightened by screws
- Available with shim, convenient to change inserts
- Holds both pressed type and ground type threading inserts

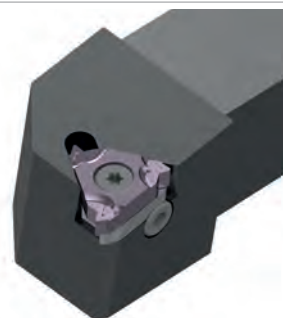
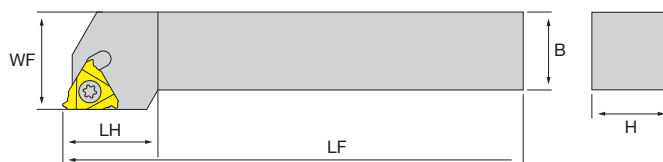
Without offset

Right-hand shown



Standard design

Right-hand shown

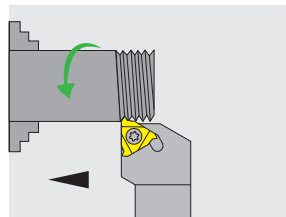


Designation	Stock		H	B	WF	LF	LH					MIID
	L	R										
WITHOUT OFFSET												
NT-SE/161212H16N	○	○	12	12	12	100	-					16EL/R000
NT-SE/161616H16N	○	○	16	16	16	100	-					16EL/R000
STANDARD DESIGN												
NT-SE/161616H16	●	●	16	16	20	100	22					16EL/R000
NT-SE/162020K16	●	●	20	20	25	125	25					16EL/R000
NT-SE/162525M16	●	●	25	25	32	150	25					16EL/R000
NT-SE/162525M22		●	25	25	32	150	29					22ER000
NT-SE/163232M22		●	32	32	40	170	32					22ER000

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

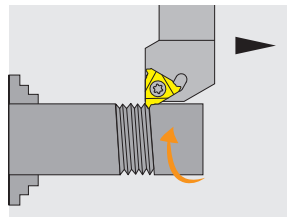
Spare parts	Shim	Shim	Locking screws	L wrench	Insert screws	Flag wrenches
NT-SEL00000160	NT-SH065	-	NT-SC003	NT-WR025	NT-ST35115T15	NT-FT15
NT-SER00000160	-	NT-SH060	NT-SC003	NT-WR025	NT-ST35115T15	NT-FT15
NT-SER00000220	-	NT-SH066	NT-SC004	NT-WR030	NT-ST40140T15	NT-FT15

EXTERNAL THREAD right-hand



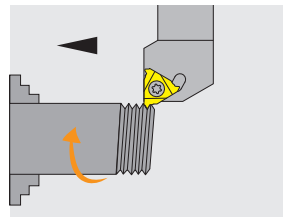
Insert: ER
Holder: R
Rotation: counterclockwise
Direction: towards chuck

EXTERNAL THREAD right-hand



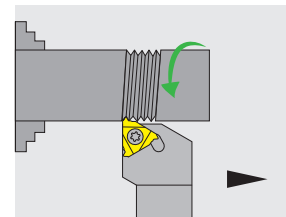
Insert: EL
Holder: L
Rotation: clockwise
Direction: from chuck

EXTERNAL THREAD left-hand



Insert: EL
Holder: L
Rotation: clockwise
Direction: towards chuck

EXTERNAL THREAD left-hand



Insert: ER
Holder: R
Rotation: counterclockwise
Direction: from chuck

M - External ISO-metric threads

TP	6.00	5.50	5.00	4.50	4.00	3.50	3.00	2.50	2.00	1.75	1.50	1.25	1.00	0.80	0.75	0.70	0.50	
NO. OF INFEEDES	RADIAL INFEEDE PER PASS																	
1	0.46	0.43	0.41	0.37	0.34	0.34	0.28	0.27	0.24	0.22	0.22	0.21	0.18	0.17	0.16	0.14	0.11	
2	0.43	0.40	0.39	0.34	0.32	0.31	0.26	0.24	0.22	0.20	0.20	0.17	0.16	0.15	0.14	0.12	0.09	
3	0.35	0.32	0.32	0.28	0.25	0.25	0.21	0.20	0.18	0.17	0.17	0.14	0.12	0.12	0.11	0.10	0.07	
4	0.30	0.28	0.27	0.24	0.22	0.21	0.18	0.17	0.16	0.14	0.14	0.11	0.11	0.08	0.07	0.07	0.06	
5	0.29	0.26	0.24	0.22	0.20	0.18	0.16	0.15	0.14	0.12	0.12	0.10	0.08	-	-	-	-	
6	0.26	0.24	0.24	0.22	0.18	0.18	0.15	0.15	0.12	0.10	0.08	0.08	-	-	-	-	-	
7	0.24	0.21	0.22	0.20	0.17	0.16	0.14	0.12	0.11	0.10	-	-	-	-	-	-	-	
8	0.23	0.20	0.20	0.18	0.15	0.15	0.13	0.11	0.08	0.08	-	-	-	-	-	-	-	
9	0.22	0.19	0.19	0.17	0.14	0.14	0.12	0.11	-	-	-	-	-	-	-	-	-	
10	0.19	0.18	0.18	0.16	0.13	0.12	0.11	0.08	-	-	-	-	-	-	-	-	-	
11	0.18	0.17	0.16	0.14	0.12	0.11	0.10	-	-	-	-	-	-	-	-	-	-	
12	0.16	0.15	0.15	0.13	0.12	0.08	0.08	-	-	-	-	-	-	-	-	-	-	
13	0.15	0.14	0.12	0.12	0.11	-	-	-	-	-	-	-	-	-	-	-	-	
14	0.13	0.13	0.10	0.10	0.08	-	-	-	-	-	-	-	-	-	-	-	-	
15	0.13	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TOTAL INFEEDE	3.82	3.52	3.19	2.87	2.53	2.23	1.92	1.60	1.25	1.13	0.93	0.81	0.65	0.52	0.48	0.43	0.33	

green background are standard items all other sizes can make specials

W - External Whitworth threads

TP	4	4.5	5	6	7	8	9	10	11	12	14	16	18	19	20	26	28	
NO. OF INFEEDES	RADIAL INFEEDE PER PASS																	
1	0.49	0.46	0.45	0.38	0.37	0.32	0.30	0.29	0.28	0.28	0.24	0.24	0.23	0.22	0.21	0.19	0.18	
2	0.46	0.43	0.43	0.36	0.35	0.30	0.28	0.27	0.26	0.26	0.22	0.22	0.22	0.22	0.21	0.18	0.17	
3	0.38	0.38	0.38	0.30	0.29	0.24	0.23	0.22	0.22	0.22	0.18	0.19	0.19	0.18	0.17	0.15	0.14	
4	0.36	0.33	0.32	0.26	0.25	0.21	0.20	0.19	0.19	0.18	0.15	0.16	0.16	0.14	0.14	0.12	0.12	
5	0.34	0.29	0.28	0.22	0.22	0.19	0.18	0.17	0.16	0.16	0.13	0.13	0.13	0.12	0.11	0.08	0.08	
6	0.31	0.25	0.25	0.21	0.19	0.17	0.15	0.15	0.14	0.14	0.11	0.11	0.08	0.08	0.08	-	-	
7	0.29	0.24	0.22	0.19	0.18	0.15	0.14	0.14	0.13	0.13	0.09	0.08	-	-	-	-	-	
8	0.27	0.22	0.20	0.17	0.16	0.14	0.13	0.13	0.12	0.08	0.08	-	-	-	-	-	-	
9	0.24	0.20	0.19	0.16	0.15	0.13	0.12	0.12	0.08	-	-	-	-	-	-	-	-	
10	0.22	0.18	0.18	0.15	0.14	0.12	0.12	0.08	-	-	-	-	-	-	-	-	-	
11	0.20	0.17	0.17	0.14	0.12	0.12	0.08	-	-	-	-	-	-	-	-	-	-	
12	0.19	0.16	0.15	0.14	0.08	0.08	-	-	-	-	-	-	-	-	-	-	-	
13	0.17	0.15	0.12	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	0.15	0.14	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	0.12	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TOTAL INFEEDE	4.29	3.82	3.44	2.90	2.50	2.17	1.93	1.76	1.58	1.45	1.20	1.13	1.01	0.96	0.92	0.72	0.69	

green background are standard items all other sizes can make specials

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

UN - External UN threads

TP	4	4.5	5	6	7	8	9	10	11	12	13	14	16	18	20	24	28	32
NO. OF INFEEDES	RADIAL INFEEDE PER PASS																	
1	0.47	0.45	0.43	0.36	0.35	0.30	0.28	0.27	0.27	0.27	0.25	0.23	0.22	0.23	0.20	0.19	0.17	0.17
2	0.44	0.41	0.40	0.34	0.33	0.28	0.26	0.26	0.25	0.26	0.24	0.22	0.21	0.21	0.19	0.17	0.15	0.15
3	0.40	0.39	0.36	0.27	0.26	0.25	0.21	0.20	0.20	0.20	0.18	0.17	0.16	0.16	0.15	0.14	0.11	0.13
4	0.36	0.31	0.31	0.23	0.22	0.21	0.20	0.17	0.19	0.18	0.17	0.15	0.14	0.14	0.12	0.12	0.09	0.08
5	0.32	0.26	0.26	0.22	0.21	0.18	0.17	0.16	0.16	0.15	0.14	0.13	0.13	0.12	0.10	0.08	0.08	-
6	0.27	0.23	0.23	0.20	0.19	0.16	0.15	0.15	0.14	0.13	0.12	0.11	0.11	0.08	0.08	-	-	-
7	0.25	0.21	0.20	0.18	0.17	0.14	0.14	0.14	0.12	0.12	0.11	0.10	0.08	-	-	-	-	-
8	0.23	0.20	0.19	0.16	0.15	0.13	0.12	0.12	0.11	0.08	0.08	0.08	-	-	-	-	-	-
9	0.22	0.18	0.19	0.15	0.14	0.12	0.12	0.11	0.08	-	-	-	-	-	-	-	-	-
10	0.21	0.17	0.18	0.14	0.12	0.12	0.11	0.08	-	-	-	-	-	-	-	-	-	-
11	0.19	0.16	0.17	0.13	0.11	0.11	0.08	-	-	-	-	-	-	-	-	-	-	-
12	0.18	0.15	0.15	0.12	0.08	0.08	-	-	-	-	-	-	-	-	-	-	-	-
13	0.16	0.14	0.12	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	0.15	0.14	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	0.12	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL INFEEDE	4.07	3.62	3.29	2.71	2.33	2.08	1.84	1.66	1.52	1.39	1.29	1.19	1.05	0.94	0.84	0.70	0.60	0.53

green background are standard items all other sizes can make specials

NPT - External NPT threads

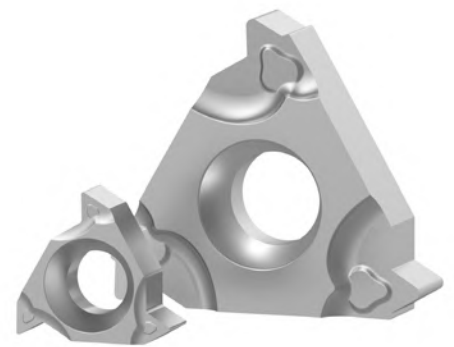
TP	8	11.5	14	18	27											
NO. OF INFEEDES	RADIAL INFEEED PER PASS															
1	0.28	0.25	0.24	0.22	0.19											
2	0.25	0.22	0.22	0.18	0.15											
3	0.22	0.18	0.17	0.15	0.13											
4	0.19	0.16	0.15	0.14	0.11											
5	0.18	0.16	0.14	0.13	0.09											
6	0.18	0.14	0.13	0.12	0.08											
7	0.17	0.14	0.12	0.10	-											
8	0.17	0.12	0.10	0.08	-											
9	0.16	0.12	0.10	-	-											
10	0.16	0.10	0.08	-	-											
11	0.14	0.09	-	-	-											
12	0.13	0.08	-	-	-											
13	0.12	-	-	-	-											
14	0.11	-	-	-	-											
15	0.08	-	-	-	-											
TOTAL INFEEED	2.54	1.76	1.45	1.12	0.75											

green background are standard items all other sizes can make specials

BSPT - British tapered pipe threads

TP	11	14	19	28																
NO. OF INFEEDES	RADIAL INFEEDE PER PASS																			
1	0.25	0.24	0.22	0.17																
2	0.23	0.20	0.19	0.14																
3	0.21	0.17	0.15	0.11																
4	0.18	0.14	0.12	0.10																
5	0.16	0.12	0.12	0.06																
6	0.14	0.12	0.06	-																
7	0.13	0.11	-	-																
8	0.12	0.06	-	-																
9	0.06	-	-	-																
TOTAL INFEEDE	1.58	1.20	0.86	0.58																

green background are standard items all other sizes can make specials



THREADING Internal threads

Inserts Micro .B14

Holders Micro .B15

Inserts ISO 11 - 16 - 22 .B16

Holders ISO 11 - 16 - 22 .B21

Table "Number of passes" .B23

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

Internal	HF: Micrograin carbide PVD: Physical vapour deposition	HF PVD						
		JP5125						
Micro 07								
● M: metric threads ● W: parallel pipe threads (whitwoth) ● UN: unified inch threads ● NPT: American national tapered pipe threads ● BSPT: tapered pipe threads ● Partial profile with 55° or 60° angle, for metric, unified and parallel pipe threads	Stable machining, light cut	● 1 st choice ○ suitable	○					
	General machining, medium cut	● 1 st choice ○ suitable	●					
	Unstable machining, heavy cut	⚙ 1 st choice ⚙ suitable	⚙					
	Dimensions		ISO					
	TP: thread pitch RE PDY PDX IC 3 edges	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)						
		P	70 180					
		M	50 140					
		K	60 180					
		N						
		S						
H								
Designation		RE	TP	PDX	PDY	IC	Stock	
PARTIAL PROFILE	60° P M K							
	 TPM pressed type chip control oriented 07IRA60-TPM 0.08 - 0.7 0.6 4.762 ●							
PARTIAL PROFILE	55° P M K							
	 TPG pressed type ground profile 07IRA55-TPG 0.08 - 0.7 0.6 4.762 ●							

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

PARTIAL PROFILE



- Partial profile insert works without cuts the outer diameter of the thread.
- The same insert can be used for a broad range of different thread pitches.
- Can produce burr that must be taken away.

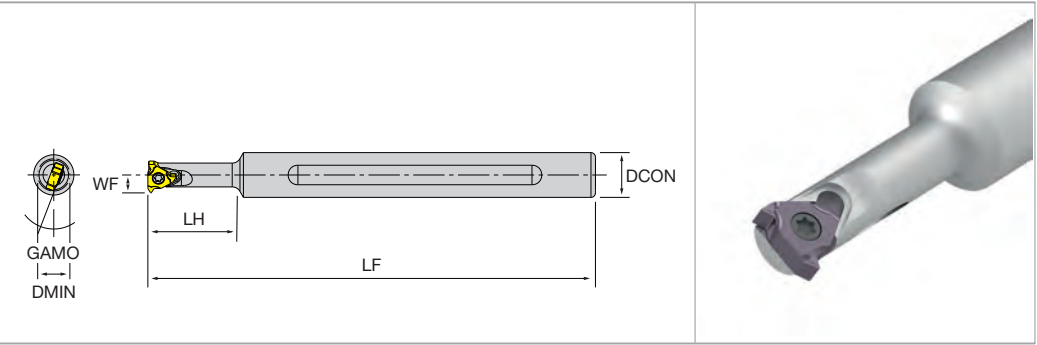
PARTIAL PROFILE 07IR PITCH RANGES

	M	UN
A60	0.50÷1.50	48÷16
BSW-BSF-BSP		
A55	48÷16	

V SI

Micro 07

- Internal threading holder
- Vortex boring bar (High standard steel)
- Special chip evacuation path
- With coolant through

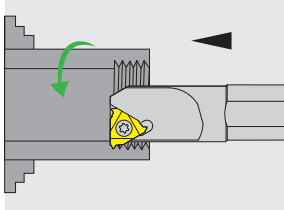


Designation	Stock		DMIN	DCON	WF	LF	LH	GAMO				MIID
	L	R										
NT-V10H-SI-07-08		●	8	10	4	100	20	21°				07IR000

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

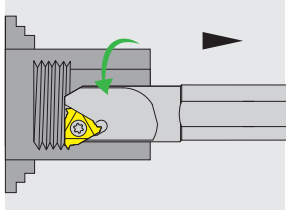
Spare parts	Insert screws	Flag wrenches
		
NT-V10H-SI07-08	NT-ST22049T07	NT-FT07

INTERNAL THREAD right-hand



Insert: IR
Holder: R
Rotation: counterclockwise
Direction: towards chuck

INTERNAL THREAD left-hand



Insert: IR
Holder: R
Rotation: counterclockwise
Direction: from chuck

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

Internal

ISO 11-16-22

- **M**: metric threads
- **W**: parallel pipe threads (whitworth)
- **UN**: unified inch threads
- **NPT**: American national tapered pipe threads
- **BSPT**: tapered pipe threads
- Partial profile with **55°** or **60°** angle, for metric, unified and parallel pipe threads

HF: Micrograin carbide BL: Low volume CBN DP: Polycrystalline diamond PVD: Physical vapour deposition		HF PVD	HF PVD	BL PVD	DP	
		JP5120	JP5125	NBL350C	ND050	
Stable machining, light cut	● 1 st choice ○ suitable	●	○	●	●	
General machining, medium cut	● 1 st choice ○ suitable	●	●			
Unstable machining, heavy cut	● 1 st choice ○ suitable	●	●			
Dimensions		ISO				
TP: thread pitch RE TP D1 PDX PDY IC S 3 edges 11 3.18 3.20 16 3.65 4.00 22 4.71 5.00		P	90 200	70 180		
		M	60 150	50 140		
		K	90 190	60 180		
		N			400 1600	
		S			50 100	
		H		60 140		
		Vc(m/min) - suggested cutting speed range (bold: 1st choice)				

Designation		RE	TP	PDX	PDY	IC	Stock			
FULL PROFILE TPM pressed type chip control oriented	11IR100ISO-TPM	0.07	1	0.7	0.8	6.35	●			
	11IR125ISO-TPM	0.09	1.25	0.9	0.8	6.35	●			
	11IR150ISO-TPM	0.11	1.5	1	0.8	6.35	●			
	11IR175ISO-TPM	0.13	1.75	1.1	0.9	6.35	●			
	11IR200ISO-TPM	0.15	2	1.1	0.9	6.35	●			
	16IR100ISO-TPM	0.07	1	0.7	0.8	9.525	●	●		
	16IR125ISO-TPM	0.09	1.25	0.9	0.8	9.525	●	●		
	16IR150ISO-TPM	0.11	1.5	1	0.8	9.525	●	●		
	16IR175ISO-TPM	0.13	1.75	1.2	1.2	9.525	●	●		
	16IR200ISO-TPM	0.15	2	1.3	1.2	9.525	●	●		
	16IR250ISO-TPM	0.18	2.5	1.5	1.2	9.525	●	●		
	16IR300ISO-TPM	0.22	3	1.5	1.2	9.525	●	●		
	22IR350ISO-TPM	0.22	3.5	2.3	1.6	12.7	●			
	22IR400ISO-TPM	0.25	4	2.3	1.6	12.7	●			
	22IR450ISO-TPM	0.28	4.5	2.4	1.6	12.7	●			
	22IR500ISO-TPM	0.32	5	2.3	1.6	12.7	●			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

FULL PROFILE



- Full profile insert will form a complete thread profile including the crest.
- The distance between root and crest is controlled.
- The insert can produce only one pitch.
- Higher tool pressure compared to partial profile.

PRESSED VS GROUND

TPM pressed

- Improves the chip control
- Strongly recommended in internal application especially for difficult materials
- Best cost-performance ratio

Precision ground

- Achieves the higher precision
- A sharper cutting edge can guarantee very smooth cutting action
- Every kind of thread's standard can be easily produced using the same blank

Internal		HF: Micrograin carbide BL: Low volume CBN DP: Polycrystalline diamond PVD: Physical vapour deposition		HF PVD	HF PVD	BL PVD	DP			
ISO 11-16-22				JP5120	JP5125	NBL350C	ND050			
• M: metric threads • W: parallel pipe threads (whitwoth) • UN: unified inch threads • NPT: American national tapered pipe threads • BSPT: tapered pipe threads • Partial profile with 55° or 60° angle, for metric, unified and parallel pipe threads		Stable machining, light cut ● 1 st choice ○ suitable General machining, medium cut ● 1 st choice ○ suitable Unstable machining, heavy cut ⚙ 1 st choice ⚙ suitable		●	○	●	●			
		Dimensions		ISO					Vc(m/min) - suggested cutting speed range (bold: 1 st choice)	
TP: thread pitch RE PDY PDX S D1 3 edges 11: 3.18 3.20 16: 3.65 4.00 22: 4.71 5.00		P		90	70					
		M		60	50					
		K		90	60					
		N					400			
		S					1600			
		H				50				
						60				
						140				
Designation		RE	TP	PDX	PDY	IC	Stock			
FULL PROFILE precision ground sharpness oriented	M P M K	11IR050ISO	0.036	0.5	0.6	6.35	●			
		11IR075ISO	0.05	0.75	0.6	6.35	●			
		11IR100ISO	0.072	1	0.7	6.35	●			
		11IR125ISO	0.09	1.25	0.9	6.35	●			
		11IR150ISO	0.11	1.5	1	6.35	●			
		11IR175ISO	0.13	1.75	1.1	6.35	●			
		11IR200ISO	0.15	2	1.3	1	6.35	●		
		16IR100ISO	0.072	1	0.7	0.6	9.525	●		
		16IR125ISO	0.09	1.25	0.9	0.8	9.525	●		
		16IR150ISO	0.11	1.5	1	0.8	9.525	●		
		16IR175ISO	0.13	1.75	1.2	0.9	9.525	●		
		16IR200ISO	0.14	2	1.3	1	9.525	●		
		16IR250ISO	0.18	2.5	1.5	1.1	9.525	●		
		16IR300ISO	0.22	3	1.5	1.1	9.525	●		
FULL PROFILE precision ground left-hand	M P M K	11IL050ISO	0.036	0.5	0.6	6.35	●			
		11IL075ISO	0.05	0.75	0.6	0.6	6.35	●		
		11IL100ISO	0.072	1	0.7	0.6	6.35	●		
		11IL125ISO	0.09	1.25	0.9	0.8	6.35	●		
		11IL150ISO	0.11	1.5	1	0.8	6.35	●		
		11IL175ISO	0.13	1.75	1.1	0.9	6.35	●		
		11IL200ISO	0.14	2	1.3	1	6.35	●		
		16IL100ISO	0.072	1	0.7	0.6	9.525	●		
		16IL125ISO	0.09	1.25	0.9	0.8	9.525	●		
		16IL150ISO	0.11	1.5	1	0.8	9.525	●		
		16IL175ISO	0.13	1.75	1.2	0.9	9.525	●		
		16IL200ISO	0.14	2	1.3	1	9.525	●		
		16IL250ISO	0.18	2.5	1.5	1.1	9.525	●		
		16IL300ISO	0.22	3	1.5	1.1	9.525	●		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

FULL PROFILE



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- The distance between root and crest is controlled.
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- Higher tool pressure compared to partial profile.

PRESSED VS GROUND

TPM pressed

- Improves the chip control
- Strongly recommended in internal application especially for difficult materials
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Precision ground

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- Every kind of thread's standard can be easily produced using the same blank

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

Internal

ISO 11-16-22

- **M**: metric threads
- **W**: parallel pipe threads (whitworth)
- **UN**: unified inch threads
- **NPT**: American national tapered pipe threads
- **BSPT**: tapered pipe threads
- Partial profile with **55°** or **60°** angle, for metric, unified and parallel pipe threads

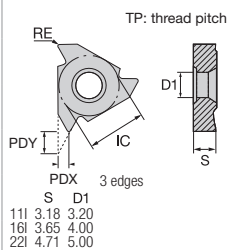
HF: Micrograin carbide
BL: Low volume CBN
DP: Polycrystalline diamond
PVD: Physical vapour deposition

HF PVD
HF PVD
BL PVD
DP

JP5120
JP5125
NBL350C
ND050

Stable machining, light cut ● 1st choice ○ suitable
General machining, medium cut ● 1st choice ○ suitable
Unstable machining, heavy cut ⚙ 1st choice ⚙ suitable

Dimensions



ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P	90 200	70 180		
M	60 150	50 140		
K	90 190	60 180		
N			400 1600	
S			50 100	
H		60 140		

Designation		RE	TP	PDX	PDY	IC	Stock			
FULL PROFILE  PCD carbide backed single edge	M N 16IR100ISO-1C	0.08	1	0.7	0.8	9.525			●	
	16IR125ISO-1C	0.09	1.25	0.9		9.525			●	
	16IR150ISO-1C	0.11	1.5	1		9.525			●	
	16IR175ISO-1C	0.13	1.75	1.2		9.525			●	
	16IR200ISO-1C	0.15	2	1.3		9.525			●	
	16IR250ISO-1C	0.18	2.5	1.5		9.525			●	
	16IR300ISO-1C	0.22	3	1.5		9.525			●	
FULL PROFILE  PCBN solid brazing single edge	M H 16IR100ISO-1S	0.08	1	0.7	0.8	9.525			●	
	16IR125ISO-1S	0.09	1.25	0.9		9.525			●	
	16IR150ISO-1S	0.11	1.5	1		9.525			●	
	16IR175ISO-1S	0.13	1.75	1.2		9.525			●	
	16IR200ISO-1S	0.15	2	1.3		9.525			●	
	16IR250ISO-1S	0.18	2.5	1.5		9.525			●	
	16IR300ISO-1S	0.22	3	1.5		9.525			●	
FULL PROFILE  TPM pressed type chip control oriented	W P M K 11IR14W-TPM	0.24	14	1.1	0.9	6.35	●			
	16IR11W-TPM	0.3	11	1.5	1.2	9.525	●	●		
	16IR14W-TPM	0.24	14	1.5	1.2	9.525	●	●		
	16IR19W-TPM	0.17	19	1	0.8	9.525		●		
FULL PROFILE  TPM pressed type chip control oriented	UN P M K 16IR08UN-TPM	0.23	8	1.7	1.3	9.525	●			
	16IR12UN-TPM	0.16	12	1.5	1.2	9.525	●			
	16IR14UN-TPM	0.13	14	1.5	1.2	9.525	●			
	16IR16UN-TPM	0.12	16	1.1	0.9	9.525	●			
	16IR18UN-TPM	0.1	18	1	0.8	9.525	●			
	16IR20UN-TPM	0.09	20	0.9	0.8	9.525	●			
	16IR24UN-TPM	0.08	24	0.8	0.8	9.525	●			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

FULL PROFILE



- Full profile insert will form a complete thread profile including the crest.
- The distance between root and crest is controlled.
- The insert can produce only one pitch.
- Higher tool pressure compared to partial profile.

ADVANCED THREADING



PCBN for ISO H

Please increase the number of passes when machining hardened steel with PCBN inserts. Keep the maximum infeed value lower than 0.10 mm

PRESSED VS GROUND

TPM pressed

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Precision ground

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- Every kind of thread's standard can be easily produced using the same blank

Internal	HF: Micrograin carbide BL: Low volume CBN DP: Polycrystalline diamond PVD: Physical vapour deposition				HF	HF	BL	DP				
					PVD	PVD	PVD					
ISO 11-16-22					JPS120	JPS125	NBL350C	ND050				
• M: metric threads • W: parallel pipe threads (whitwoth) • UN: unified inch threads • NPT: American national tapered pipe threads • BSPT: tapered pipe threads • Partial profile with 55° or 60° angle, for metric, unified and parallel pipe threads	Stable machining, light cut ● 1 st choice ○ suitable				●	○	●	●				
	General machining, medium cut ● 1 st choice ○ suitable				●	●						
	Unstable machining, heavy cut ⚙ 1 st choice ⚙ suitable					⚙						
	Dimensions				ISO				Vc(m/min) - suggested cutting speed range (bold: 1st choice)			
	RE TP: thread pitch PDY PDX S D1 IC 3 edges 111 3.18 3.20 161 3.65 4.00 221 4.71 5.00				P	90 200	70 180					
				M	60 150	50 140						
				K	90 190	60 180						
				N				400 1600				
				S				50 100				
				H		60 140						

Designation		RE	TP	PDX	PDY	IC	Stock			
FULL PROFILE	NPT P M K									
	16IR11.5NPT-TPM	0.25	11.5	1.5	1.2	9.525	●			
	16IR14NPT-TPM	0.22	14	1.5	1.2	9.525	●			
FULL PROFILE	TPM pressed type chip control oriented									
	16IR18NPT-TPM	0.2	18	1	0.8	9.525	●			
	16IR11.5NPT	0.07	11.5	1.5	1.1	9.525	●			
FULL PROFILE	precision ground sharpness oriented									
	16IR14NPT	0.06	14	1	0.8	9.525	●			
	BSPT P M K									
FULL PROFILE	16IR11BSPT-TPM	0.3	11	1.5	1.2	9.525	●			
	16IR14BSPT-TPM	0.24	14	1.5	1.2	9.525	●			
	16IR19BSPT-TPM	0.17	19	1	0.8	9.525	●			
PARTIAL PROFILE	TPM pressed type chip control oriented									
	16IR28BSPT-TPM	0.11	28	0.8	0.7	9.525	●			
	60° P M K									
PARTIAL PROFILE	11IRA60-TPM	0.08	-	0.9	0.8	6.35	●			
	16IRA60-TPM	0.08	-	0.9	0.8	9.525	●			
	16IRAG60-TPM	0.08	-	1.5	1.1	9.525	●			
PARTIAL PROFILE	TPM pressed type chip control oriented									
	16IRG60-TPM	0.13	-	1.7	1.2	9.525	●			
	22IRN60-TPM	0.25	-	2.5	1.7	12.7	●			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

FULL PROFILE

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- Higher tool pressure compared to partial profile.

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Precision ground

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PARTIAL PROFILE

- Partial profile insert works without cuts the outer diameter of the thread.
- The same insert can be used for a broad range of different thread pitches.
- Can produce burr that must be taken away.

PARTIAL PROFILE 60° PITCH RANGES

	M	UN
A60	0.50÷1.50	48÷16
AG60	0.50÷3.00	48÷8
G60	1.75÷3.00	14÷8
N60	3.50÷5.00	7÷5

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

Internal		HF: Micrograin carbide BL: Low volume CBN DP: Polycrystalline diamond PVD: Physical vapour deposition		HF PVD	HF PVD	BL PVD	DP		
		JP5120	JP5125	NBL350C	ND050				
ISO 11-16-22		Stable machining, light cut ● 1 st choice ○ suitable		●	○	●	●		
● M: metric threads ● W: parallel pipe threads (whitwoth) ● UN: unified inch threads ● NPT: American national tapered pipe threads ● BSPT: tapered pipe threads ● Partial profile with 55° or 60° angle, for metric, unified and parallel pipe threads		General machining, medium cut ● 1 st choice ○ suitable		●	●				
		Unstable machining, heavy cut ⚙ 1 st choice ⚙ suitable			⚙				
		Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)			
						P	90 200	70 180	
				M	60 150	50 140			
				K	90 190	60 180			
				N			400 1600		
				S			50 100		
				H		60 140			

Designation		RE	TP	PDX	PDY	IC	Stock			
PARTIAL PROFILE 55° P M K TPM pressed type chip control oriented	11IRA55-TPM	0.08	-	0.9	0.8	6.35	●			
	16IRA55-TPM	0.08	-	0.9	0.8	9.525	●			
	16IRAG55-TPM	0.08	-	1.5	1.1	9.525	●			
	16IRG55-TPM	0.21	-	1.7	1.2	9.525	●			
	22IRN55-TPM	0.44	-	2.5	1.7	12.7	●			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

PARTIAL PROFILE



- Partial profile insert works without cuts the outer diameter of the thread.
- The same insert can be used for a broad range of different thread pitches.
- Can produce burr that must be taken away.

PARTIAL PROFILE 55° PITCH RANGES

BSW-BSF-BSP	
A55	48÷16
AG55	48÷8
G55	14÷8
N55	7÷5

V SI

ISO 11-16-22

- Internal threading holder
- Vortex boring bar (High standard steel)
- Special chip evacuation path
- With coolant through

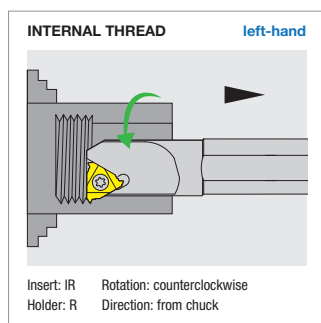
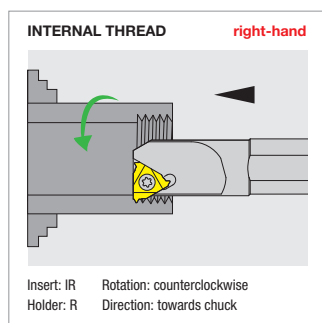
Reduced neck Right-hand shown

Standard design Right-hand shown

Designation	Stock L R	DMIN	DCON	WF	LF	LH	GAMO				MIID
REDUCED NECK											
NT-V16M-SI $\frac{1}{2}$ /R11-12	●	12	16	6.3	150	25	18°				11IR ∞
NT-V16M-SI $\frac{1}{2}$ /R11-15	●	15	16	7.5	150	25	18°				11IR ∞
STANDARD DESIGN											
NT-V10M-SI $\frac{1}{2}$ /R11-10	●	10	10	5.2	150	25	21°				11IR ∞
NT-V16M-SI $\frac{1}{2}$ /R16-20	●	20	16	10	150	35	15°				16IR ∞
NT-V20Q-SI $\frac{1}{2}$ /R16-24	●	24	20	12	180	35	15°				16IR ∞
NT-V25R-SI $\frac{1}{2}$ /R16-30	●	30	25	15	200	35	15°				16IR ∞
NT-V32S-SI $\frac{1}{2}$ /R16-37	●	37	32	18.5	250	35	15°				16IR ∞

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Locking screws	L wrench	Insert screws	Flag wrenches
NT-V ∞ M-SIR11- ∞	-	-	-	NT-ST25059T08	NT-FT08
NT-V16M-SIR16-20	-	-	-	NT-ST35089T15	NT-FT15
NT-V20Q-SIR16-24	NT-SH065	NT-SC003	NT-WR025	NT-ST35120T15	NT-FT15
NT-V25R-SIR16-30	NT-SH065	NT-SC003	NT-WR025	NT-ST35120T15	NT-FT15
NT-V32S-SIR16-37	NT-SH065	NT-SC003	NT-WR025	NT-ST35120T15	NT-FT15



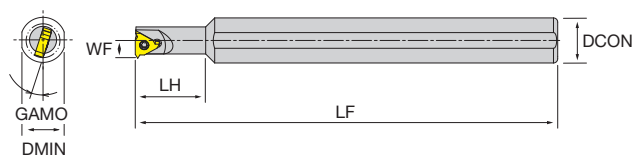
SI

ISO 11-16-22

- Internal threading holder
- Steel boring bar
- Without coolant through
- Small diameters with reduced neck

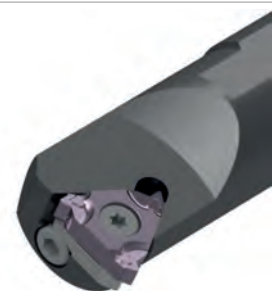
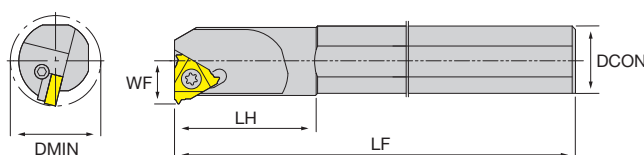
Reduced neck

Right-hand shown



Standard design

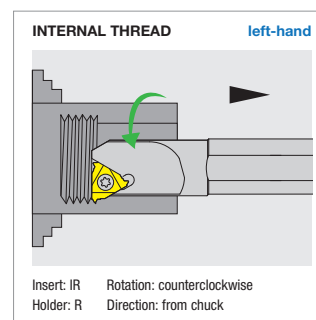
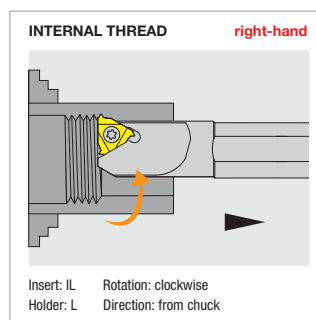
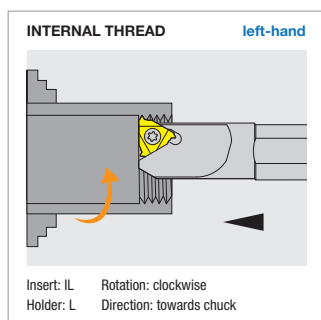
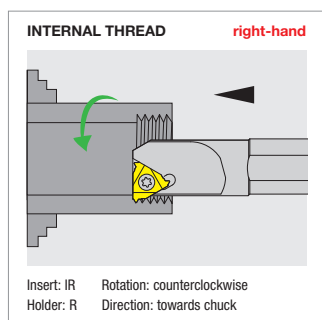
Right-hand shown



Designation	Stock L R	DMIN	DCON	WF	LF	LH	GAMO				MIID
REDUCED NECK											
NT-SI ^{1/2} /R1012-11	●	10	12	5.2	150	25	21°				11IR ⁰⁰⁰
NT-SI ^{1/2} /R1216-11	●	12	16	6.3	150	25	18°				11IR ⁰⁰⁰
NT-SI ^{1/2} /R1516-11	●	15	16	7.5	150	25	15°				11IR ⁰⁰⁰
STANDARD DESIGN											
NT-SI ^{1/2} /R2016-16	● ●	20	16	10	150	35	15°				16IL/R ⁰⁰⁰
NT-SI ^{1/2} /R2420S-16	● ●	24	20	12	180	35	15°				16IL/R ⁰⁰⁰
NT-SI ^{1/2} /R3025S-16	● ●	30	25	15	200	35	15°				16IL/R ⁰⁰⁰
NT-SI ^{1/2} /R3732S-16	● ●	37	32	18.5	250	35	15°				16IL/R ⁰⁰⁰
NT-SI ^{1/2} /R3025S-22	●	30	25	16	200	35	15°				22IR ⁰⁰⁰
NT-SI ^{1/2} /R3732S-22	●	37	32	19.5	250	35	15°				22IR ⁰⁰⁰
NT-SI ^{1/2} /R4440S-22	●	44	40	24.5	300	35	15°				22IR ⁰⁰⁰

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Shim	Shim	Locking screws	L wrench	Insert screws	Flag wrenches
NT-SI ^{1/2} /R ⁰⁰⁰⁰ -11	-	-	-	-	NT-ST25059T08	NT-FT08
NT-SI ^{1/2} /R ⁰⁰⁰⁰ -16	-	-	-	-	NT-ST35089T15	NT-FT15
NT-SIL ⁰⁰⁰⁰ S-16	NT-SH060	-	NT-SC003	NT-WR025	NT-ST35115T15	NT-FT15
NT-SIR ⁰⁰⁰⁰ S-16	-	NT-SH065	NT-SC003	NT-WR025	NT-ST35115T15	NT-FT15
NT-SIR ⁰⁰⁰⁰ S-22	-	NT-SH067	NT-SC004	NT-WR030	NT-ST40140T15	NT-FT15



M - Internal ISO-metric threads

TP	6.00	5.50	5.00	4.50	4.00	3.50	3.00	2.50	2.00	1.75	1.50	1.25	1.00	0.80	0.75	0.70	0.50	
NO. OF INFEEDES	RADIAL INFEEDE PER PASS																	
1	0.46	0.43	0.42	0.37	0.34	0.32	0.28	0.26	0.23	0.22	0.20	0.17	0.17	0.17	0.16	0.13	0.10	
2	0.43	0.40	0.40	0.34	0.31	0.30	0.26	0.25	0.21	0.20	0.18	0.17	0.15	0.14	0.13	0.12	0.08	
3	0.35	0.33	0.32	0.28	0.24	0.24	0.21	0.18	0.17	0.15	0.15	0.14	0.11	0.11	0.10	0.10	0.07	
4	0.30	0.26	0.26	0.23	0.21	0.19	0.16	0.15	0.15	0.13	0.13	0.10	0.09	0.07	0.07	0.07	0.06	
5	0.26	0.22	0.22	0.21	0.18	0.17	0.14	0.13	0.12	0.10	0.11	0.09	0.08	-	-	-	-	
6	0.22	0.20	0.20	0.19	0.15	0.15	0.13	0.12	0.11	0.09	0.08	0.08	-	-	-	-	-	
7	0.20	0.18	0.17	0.16	0.14	0.14	0.12	0.11	0.10	0.08	-	-	-	-	-	-	-	
8	0.19	0.17	0.16	0.15	0.13	0.13	0.11	0.10	0.08	0.08	-	-	-	-	-	-	-	
9	0.18	0.16	0.16	0.14	0.12	0.12	0.10	0.10	-	-	-	-	-	-	-	-	-	
10	0.16	0.15	0.15	0.13	0.12	0.11	0.10	0.08	-	-	-	-	-	-	-	-	-	
11	0.15	0.14	0.14	0.12	0.11	0.10	0.09	-	-	-	-	-	-	-	-	-	-	
12	0.15	0.14	0.14	0.12	0.10	0.08	0.08	-	-	-	-	-	-	-	-	-	-	
13	0.14	0.13	0.12	0.11	0.10	-	-	-	-	-	-	-	-	-	-	-	-	
14	0.13	0.12	0.10	0.10	0.08	-	-	-	-	-	-	-	-	-	-	-	-	
15	0.12	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TOTAL INFEEDE	3.54	3.25	2.96	2.65	2.33	2.05	1.78	1.48	1.17	1.05	0.85	0.75	0.60	0.49	0.46	0.42	0.31	

green background are standard items all other sizes can make specials

W - Internal Whitworth threads

TP	4	4.5	5	6	7	8	9	10	11	12	14	16	18	19	20	26	28	
NO. OF INFEEDES	RADIAL INFEEDE PER PASS																	
1	0.49	0.46	0.45	0.38	0.37	0.32	0.30	0.29	0.28	0.28	0.24	0.24	0.23	0.22	0.21	0.19	0.18	
2	0.46	0.43	0.43	0.36	0.35	0.30	0.28	0.27	0.26	0.26	0.22	0.22	0.22	0.22	0.21	0.18	0.17	
3	0.38	0.38	0.38	0.30	0.29	0.24	0.23	0.22	0.22	0.22	0.18	0.19	0.19	0.18	0.17	0.15	0.14	
4	0.36	0.33	0.32	0.26	0.25	0.21	0.20	0.19	0.19	0.18	0.15	0.16	0.16	0.14	0.14	0.12	0.12	
5	0.34	0.29	0.28	0.22	0.22	0.19	0.18	0.17	0.16	0.16	0.13	0.13	0.13	0.12	0.11	0.08	0.08	
6	0.31	0.25	0.25	0.21	0.19	0.17	0.15	0.15	0.14	0.14	0.11	0.11	0.08	0.08	0.08	-	-	
7	0.29	0.24	0.22	0.19	0.18	0.15	0.14	0.14	0.13	0.13	0.09	0.08	-	-	-	-	-	
8	0.27	0.22	0.20	0.17	0.16	0.14	0.13	0.13	0.12	0.08	0.08	-	-	-	-	-	-	
9	0.24	0.20	0.19	0.16	0.15	0.13	0.12	0.12	0.08	-	-	-	-	-	-	-	-	
10	0.22	0.18	0.18	0.15	0.14	0.12	0.12	0.08	-	-	-	-	-	-	-	-	-	
11	0.20	0.17	0.17	0.14	0.12	0.12	0.08	-	-	-	-	-	-	-	-	-	-	
12	0.19	0.16	0.15	0.14	0.08	0.08	-	-	-	-	-	-	-	-	-	-	-	
13	0.17	0.15	0.12	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	0.15	0.14	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	0.12	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TOTAL INFEEDE	4.29	3.82	3.44	2.90	2.50	2.17	1.93	1.76	1.58	1.45	1.20	1.13	1.01	0.96	0.92	0.72	0.69	

green background are standard items all other sizes can make specials

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

UN - Internal UN threads

TP	4	4.5	5	6	7	8	9	10	11	12	13	14	16	18	20	24	28	32
NO. OF INFEEDES	RADIAL INFEEDE PER PASS																	
1	0.44	0.41	0.42	0.35	0.34	0.30	0.28	0.27	0.27	0.27	0.25	0.23	0.22	0.23	0.20	0.18	0.17	0.17
2	0.41	0.38	0.38	0.33	0.32	0.28	0.26	0.25	0.23	0.23	0.20	0.18	0.18	0.17	0.16	0.15	0.14	0.14
3	0.39	0.34	0.33	0.25	0.24	0.22	0.19	0.18	0.18	0.18	0.15	0.14	0.14	0.14	0.13	0.13	0.09	0.10
4	0.33	0.28	0.27	0.21	0.21	0.18	0.16	0.15	0.15	0.15	0.13	0.13	0.12	0.12	0.10	0.10	0.08	0.08
5	0.28	0.23	0.23	0.18	0.17	0.15	0.14	0.13	0.13	0.13	0.12	0.11	0.10	0.10	0.09	0.08	0.08	-
6	0.24	0.20	0.20	0.16	0.15	0.13	0.13	0.12	0.11	0.11	0.11	0.10	0.09	0.08	0.08	-	-	-
7	0.22	0.19	0.18	0.15	0.14	0.12	0.12	0.11	0.11	0.10	0.10	0.09	0.08	-	-	-	-	-
8	0.21	0.18	0.17	0.14	0.13	0.11	0.11	0.10	0.10	0.08	0.08	0.08	-	-	-	-	-	-
9	0.20	0.17	0.16	0.13	0.12	0.11	0.10	0.10	0.08	-	-	-	-	-	-	-	-	-
10	0.18	0.16	0.15	0.12	0.12	0.10	0.09	0.08	-	-	-	-	-	-	-	-	-	-
11	0.17	0.15	0.14	0.12	0.11	0.10	0.08	-	-	-	-	-	-	-	-	-	-	-
12	0.16	0.14	0.14	0.11	0.08	0.08	-	-	-	-	-	-	-	-	-	-	-	-
13	0.15	0.14	0.12	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	0.14	0.13	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	0.12	0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL INFEEDE	3.74	3.32	2.99	2.46	2.13	1.88	1.66	1.49	1.36	1.25	1.14	1.06	0.93	0.84	0.76	0.64	0.56	0.49

green background are standard items all other sizes can make specials

NPT - Internal NPT threads

TP	8	11.5	14	18	27.0										
NO. OF INFEEDES	RADIAL INFEEED PER PASS														
1	0.28	0.28	0.28	0.28	0.28										
2	0.25	0.25	0.25	0.25	0.25										
3	0.22	0.22	0.22	0.22	0.22										
4	0.19	0.19	0.19	0.19	0.19										
5	0.18	0.18	0.18	0.18	0.18										
6	0.18	0.18	0.18	0.18	0.18										
7	0.17	0.17	0.17	0.17	0.17										
8	0.17	0.17	0.17	0.17	0.17										
9	0.16	0.16	0.16	0.16	0.16										
10	0.16	0.16	0.16	0.16	0.16										
11	0.14	0.14	0.14	0.14	0.14										
12	0.13	0.13	0.13	0.13	0.13										
13	0.12	0.12	0.12	0.12	0.12										
14	0.11	0.11	0.11	0.11	0.11										
15	0.08	0.08	0.08	0.08	0.08										
TOTAL INFEEED	2.54	1.76	1.45	1.12	0.75										

green background are standard items all other sizes can make specials

BSPT - British tapered pipe threads

TP	11	14	19	28																
NO. OF INFEEDES	RADIAL INFEEDE PER PASS																			
1	0.25	0.24	0.22	0.17																
2	0.23	0.20	0.19	0.14																
3	0.21	0.17	0.15	0.11																
4	0.18	0.14	0.12	0.10																
5	0.16	0.12	0.12	0.06																
6	0.14	0.12	0.06	-																
7	0.13	0.11	-	-																
8	0.12	0.06	-	-																
9	0.06	-	-	-																
TOTAL INFEEDE	1.58	1.20	0.86	0.58																

green background are standard items all other sizes can make specials

ISO 513	MATERIAL	HARDNESS HB	JP5120			JP5125			
			min	start	max	min	start	max	
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	● 100 ● 90	150 130	200 170	○ 100 ● 80 ⚙ 70	140 120 100	180 160 130	
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	● 90 ● 80	130 110	170 140	○ 80 ● 70 ⚙ 60	120 100 80	160 120 100	
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	● 80 ● 70	110 100	150 130	○ 70 ● 60 ⚙ 60	100 90 80	130 120 100	
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	● 100 ● 90	150 130	200 170	○ 100 ● 80 ⚙ 70	140 120 100	180 160 130	
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	● 70 ● 60	90 80	110 100	○ 60 ● 50 ⚙ 50	80 70 60	100 90 70	
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	● 70 ● 60	110 100	150 140	○ 60 ● 50 ⚙ 50	100 90 80	140 130 110	
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		● 70 ● 60	100 90	130 120	○ 60 ● 60 ⚙ 50	90 80 70	120 100 90	
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	● 110 ● 90	150 135	190 160	○ 100 ● 80 ⚙ 60	140 115 90	180 150 120	
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	● 90 ● 80	130 105	170 130	○ 80 ● 70 ⚙ 60	120 95 80	160 120 100	
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	● 80 ● 70	115 100	150 130	○ 70 ● 60 ⚙ 50	105 90 75	140 120 100	
ISO 513	MATERIAL	HARDNESS HB	ND050 (NDP001)						
			min	start	max				
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGA1)		● 400	1000	1600				
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		● 250	400	550				
N3	Copper alloy (ex. 2.0060/E-Cu57)		● 300	600	900				
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		● 50	75	100				

Complete workpiece materials p. H1.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING	ISO 513	MATERIAL	HARDNESS HB	NBL350C min start max				
	H1	Case-hardened steel (ex. 1.7131/16 MnCr 5)	50 ÷ 56	● 60	100	140		
	H2	Bearing steel, quenched and tempered steel (ex. 1.3505/100 Cr 6)	54 ÷ 62	● 60	90	120		
B - THREADING	H3	Hardened tool steel (ex. 1.2436/X 210 CrW 12/2312)	60 ÷ 65	● 50	70	90		

Complete workpiece materials p. H1.

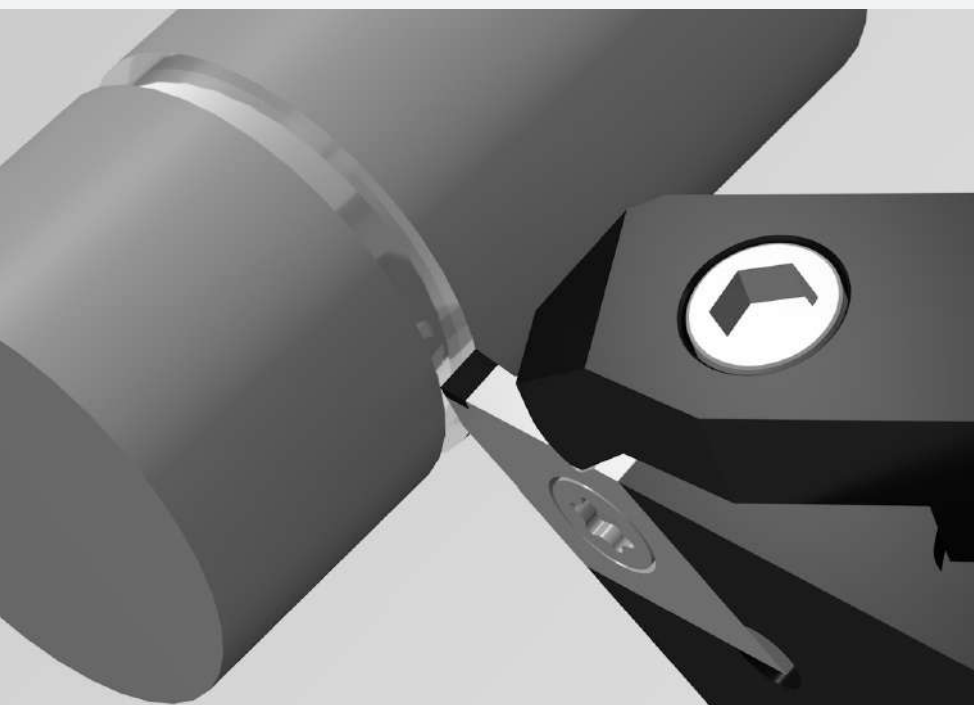
C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS



GROOVING

- Grade table .C2
- Grade details .C3
- Quick guide .C4
 - NDB .C5
 - NCG .C13
 - BGF .C15

	ISO 513		CARBIDE			PCBN	DIAMOND		
			CVD COATED	PVD COATED	UNCOATED	UNCOATED	PCD		
A - TURNING	P	P01	JC8025	JP5120	JP5125	JP5130			
		P10							
		P20							
		P30							
		P40							
B - THREADING	Steel								
C - GROOVING	M	M01							
		M10		JP5120					
		M20		JP5125					
		M30		JP5130					
		M40							
D - MILLING	Stainless steel								
E - DRILLING	K	K01							
		K10		JP5120		NBH450U			
		K20	JC7010						
		K30		JP5125					
F - ACCESSORIES	Cast iron								
G - SPARE PARTS	Non-ferrous materials	N01							
		N10							
		N20			JUG015		ND120		
		N30							
	H	H01							
		H10							
		H20				NBH450U			
		H30				NB350			

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION	FEATURES
			TECHNOLOGY	COMPOSITION		
JC7010	carbide	1.830	CVD	TiCN+Al ₂ O ₃	K K05 K25	High wear resistance. First choice for grey cast iron general machining.
JC8025	carbide	1.700	CVD	TiCN+Al ₂ O ₃ +TiN	P P20 P30	All around grade suitable for a wide range of applications. Excellent reliability even on medium interrupted cut.
JP5120	micrograin carbide	1.830	PVD	TiAlN	P P10 P20	Special coating technology balances wear resistance and toughness. The post-coating surface treatment effectively prevents built-up edge.
					M M10 M20	
					K K10 K20	
JP5125	micrograin carbide	1.830	PVD	TiAlN	P P20 P30	High Co micrograin carbide substrate with high toughness and latest coating technology. Universal use with great reliability and long tool life.
					M M20 M30	
					K K20 K30	
JP5130	micrograin carbide	1.830	PVD	TiAlN	P P20 P35	High toughness substrate combined with super-smooth coating designed for precision applications.
					M M20 M35	
JU6015	micrograin carbide	1.950	-	-	N N10 N20	Uncoated carbide for universal use, from finishing to roughing, on non-ferrous materials.
NB350	Low volume CBN 75%	3.400	-	-	H H20 H35	Hardened steel machining with a perfect combination between toughness and wear resistance. Available only for BGF system.
NBH450U	High volume CBN 95%	4.400	-	-	K K01 K20	Gray cast iron machining at very high cutting condition and with great wear resistance. Available only for BGF system.
ND120	diamond 95%	6.000	-	-	N N10 N30	High productivity grooving of non-ferrous materials. Available only for BGF system.

A - TURNING

B - THREADING

C - GROOVING

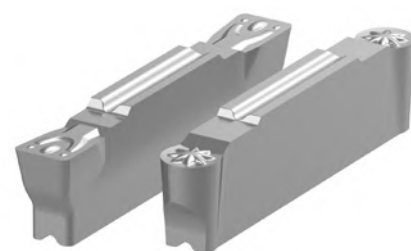
D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

	NDB	NCG	BGF
	C5	C13	C15
A - TURNING	 EXTERNAL  INTERNAL	 EXTERNAL  INTERNAL	 EXTERNAL
B - THREADING			
C - GROOVING			
D - MILLING	Pressed type inserts	✓	✗
	Ground type inserts	✓	✓
	Available sizes (CW)	2.00 / 3.00 / 4.00 / 5.00 / 6.00 / 8.00 mm	1.10 ÷ 2.15 mm
	Maximum depth (CDX)	14 / 20 / 25 / 25 / 30 / 30 mm	1.30 ÷ 1.85 mm
	Coolant holes	✓	✗
	Workpiece material	P M K N	K N H
	No. of cutting edges	2	3
	No. of geometries	6	1
	Special features	All-around system	Can be installed on threading tool holders
E - DRILLING	Grooving 	✓	✓
	Turning 	✓	✗
	Profiling 	✓	✗
	Cut-off 	✓	✗
F - ACCESSORIES	Versatility	■ ■ ■ ■ ■	■ ■ ■ ■ ■
	Strength	■ ■ ■ ■ □	■ ■ ■ □ □
	Precision	■ ■ ■ □ □	■ ■ ■ ■ □
	Finishing	■ ■ ■ ■ □	■ ■ ■ ■ □
	Range	■ ■ ■ ■ □	■ ■ ■ □ □
G - SPARE PARTS			



GROOVING NDB

Inserts .C6

Holders .C8

Parameters .C10

NDBD

NDB system

- Double sided grooving insert
- Available for PMKN materials
- Max. grooving depth depends on INSL value and holder specifications
- Improved holding system, automatically positioned, reliable and efficient

HC: Coated carbide
HF: Micrograin carbide
CVD: Chemical vapour deposition
PVD: Physical vapour deposition

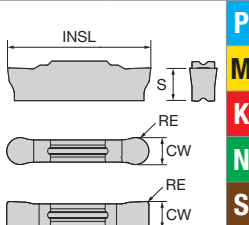
HC CVD	HC CVD	HF PVD	HF PVD	HF
JC7010	JC8025	JP5120	JP5125	JU6015

Stable machining,
light cut ● 1st choice ○ suitable

General machining,
medium cut ● 1st choice ○ suitable

Unstable machining,
heavy cut ⚠ 1st choice ⚠ suitable

Dimensions

ISO Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P	M	K	N	S	H
140 330	90 200	70 180	60 150	50 140	
130 380	90 190	60 180	200 1000		

Designation

CW

CWTOL

RE

INSL

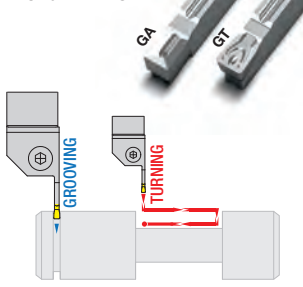
S

Stock

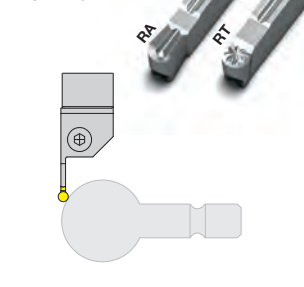
GT	P	M	K	NDBD20R02M-GT	2	±0.050	0.2	16	3.5	●	●	●	●	●
				NDBD30R04M-GT	3	±0.050	0.4	21	4.8	●	●	●	●	●
				NDBD40R04M-GT	4	±0.050	0.4	21	4.8	●	●	●	●	●
				NDBD50R04M-GT	5	±0.050	0.4	26	5.8	●	●	●	●	●
				NDBD60R08M-GT	6	±0.050	0.8	26	5.8	●	●	●	●	●
				NDBD80R08M-GT	8	±0.050	0.8	31	6.5	●	●	●	●	●
GA	N			NDBD20R02G-GA	2	±0.025	0.2	16	3.5				●	
				NDBD30R04G-GA	3	±0.025	0.4	21	4.8				●	
				NDBD40R04G-GA	4	±0.025	0.4	21	4.8				●	
RT	P	M	K	NDBD20R10M-RT	2	±0.050	1	16	3.5				●	
				NDBD30R15M-RT	3	±0.050	1.5	21	4.8				●	
				NDBD40R20M-RT	4	±0.050	2	21	4.8	●			●	
				NDBD50R25M-RT	5	±0.050	2.5	26	5.8	●			●	
				NDBD60R30M-RT	6	±0.050	3	26	5.8	●			●	
				NDBD80R40M-RT	8	±0.050	4	31	6.5				●	
RA	N			NDBD20R10G-RA	2	±0.025	1	16	3.5				●	
				NDBD30R15G-RA	3	±0.025	1.5	21	4.8				●	
				NDBD40R20G-RA	4	±0.025	2	21	4.8				●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

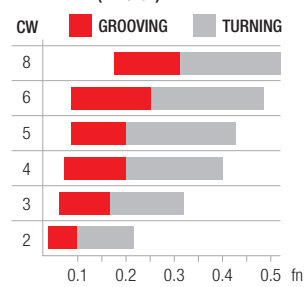
PLUNGE AND TURN



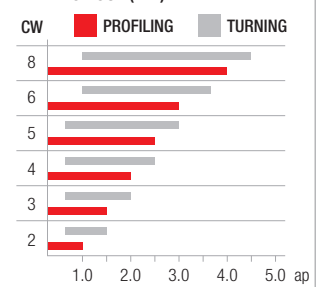
PROFILING



FEED RATE (mm/rev)



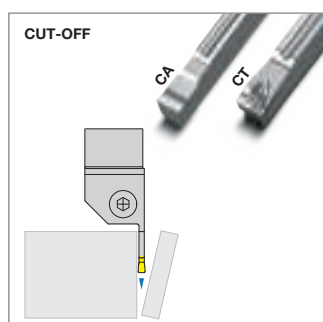
DEPTH OF CUT (mm)



NDBD		HC: Coated carbide HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition		HC CVD	HC CVD	HF PVD	HF PVD	HF				
NDB system				JC7010	JC8025	JP5120	JP5125	JU6015				
• Double sided grooving insert • Available for PMKN materials • Max. grooving depth depends on INSL value and holder specifications • Improved holding system, automatically positioned, reliable and efficient	Stable machining, light cut		● 1 st choice ○ suitable	●	○	●	○	●				
	General machining, medium cut		● 1 st choice ○ suitable	●	●	●	●	●				
	Unstable machining, heavy cut		⚡ 1 st choice ⚡ suitable	⚡	⚡		⚡	⚡				
	Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)							
			P		140 330	90 200	70 180					
		M			60 150	50 140						
		K	130 380		90 190	60 180						
		N					200 1000					
		S										
		H										

Designation		CW	CWTOL	RE	INSL	S	Stock					
CUT-OFF	CT P M concave edge medium feed rate	NDBD20R02M-CT	2	±0.050	0.2	16	3.5			●	●	
	NDBD30R02M-CT	3	±0.050	0.2	21	4.8			●	●		
CUT-OFF	CA N concave edge ground and polished	NDBD20R02M-CA	2	±0.025	0.2	16	3.5				●	
	NDBD30R02G-CA	3	±0.025	0.2	21	4.8				●		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



FEED RATE (mm/rev)			
CW	P Steel	M Stainless Steel	N Aluminium
3	CA	0.06 ÷ 0.10	
	CT	0.08 ÷ 0.12	
	CT	0.10 ÷ 0.18	
2	CA	0.04 ÷ 0.08	
	CT	0.06 ÷ 0.10	
	CT	0.08 ÷ 0.14	
0.05 0.10 0.15 0.20 fn			

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

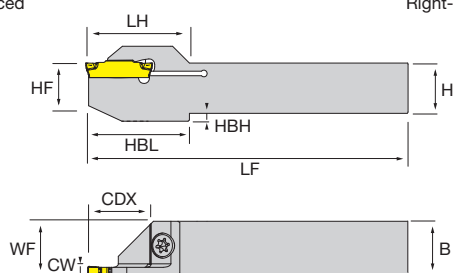
G - SPARE PARTS

NDB E

NDB system

- External holders for NDB double sided grooving insert
- Different grooving depth (CDX) available for different groove width
- Clamp fastened and loosened by screw
- Improved holding system, automatically positioned, reliable and efficient

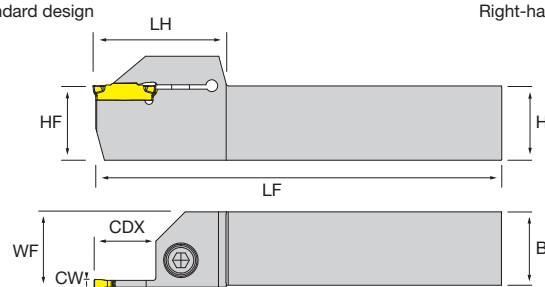
Radial reinforced



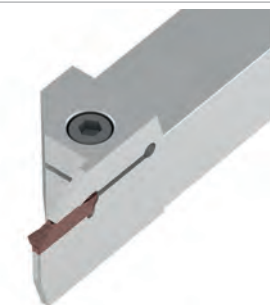
Right-hand shown



Standard design



Right-hand shown



Designation	Stock		CW	CDX	H	B	WF	LF	LH	HF	HBL	HBH
	L	R										
WITH RADIAL REINFORCEMENT												
NDB E/1212-2-CDX14	●	●	2	14	12	12	12.2	120	25	12	24	2
NDB E/1616-2-CDX14	●	●	2	14	16	16	16.2	120	25	16	24	2
NDB E/1616-3-CDX20	●	●	3	20	16	16	16.3	120	31	16	30	2
STANDARD DESIGN												
NDB E/2020-2-CDX14	●	●	2	14	20	20	21	125	38	20	-	-
NDB E/1616-3-CDX10	●	●	3	10	16	16	16.2	120	35	16	-	-
NDB E/2020-3-CDX10	●	●	3	10	20	20	21	125	38	20	-	-
NDB E/2020-3-CDX20	●	●	3	20	20	20	21	125	40	20	-	-
NDB E/2525-3-CDX10	●	●	3	10	25	25	26	150	40	25	-	-
NDB E/2525-3-CDX20	●	●	3	20	25	25	26	150	45	25	-	-
NDB E/2020-4-CDX10	●	●	4	10	20	20	21	125	35	20	-	-
NDB E/2020-4-CDX25	●	●	4	25	20	20	21	125	50	20	-	-
NDB E/2525-4-CDX10	●	●	4	10	25	25	26	150	40	25	-	-
NDB E/2525-4-CDX25	●	●	4	25	25	25	26	150	50	25	-	-
NDB E/2525-5-CDX10	●	●	5	10	25	25	26	150	40	25	-	-
NDB E/2525-5-CDX25	●	●	5	25	25	25	26	150	50	25	-	-
NDB E/2525-6-CDX15	●	●	6	15	25	25	26	150	45	25	-	-
NDB E/2525-6-CDX30	●	●	6	30	25	25	26	150	56	25	-	-
NDB E/2525-8-CDX15	●	●	8	15	25	25	26.5	150	43	25	-	-
NDB E/2525-8-CDX30	●	●	8	30	25	25	27	150	55	25	-	-

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Locking screws	Flag wrenches	Locking screws	L wrench
NDB E/1212-2-CDX14	NT-ST076	NT-FT15	-	-
NDB E/1616-2-CDX14	NT-ST077	NT-FT15	-	-
NDB E/1616-3-CDX10	-	-	NT-SC001	NT-WR040
NDB E/1616-3-CDX20	NT-ST077	NT-FT15	-	-
NDB E/2020-○-CDX○	-	-	NT-SC001	NT-WR040
NDB E/2525-○-CDX○	-	-	NT-SC002	NT-WR040

NDB I

NDB system

- Internal holders for NDB double-headed grooving insert
- Vortex boring bar (high quality steel) with coolant through
- Special chip evacuation path
- Clamp tightened by screw

Right-hand shown

Designation	Stock		CW	CDX	DMIN	DCON	WF	LF	OHN	GAMO		
	L	R										
NDB I _r /R1620V-2-CDX04	●	●	2	4	20	16	11.5	150	25	15°		
NDB I _r /R2025V-2-CDX06	●	●	2	6	25	20	14.5	180	30	15°		
NDB I _r /R2025V-3-CDX06	●	●	3	6	25	20	14.5	180	30	15°		
NDB I _r /R2532V-3-CDX08	●	●	3	8	32	25	19	200	40	15°		
NDB I _r /R3240V-3-CDX10	●	●	3	10	40	32	23.5	200	50	15°		
NDB I _r /R2532V-4-CDX08	●	●	4	8	32	25	19	220	40	15°		
NDB I _r /R3240V-4-CDX10	●	●	4	10	40	32	23.5	220	50	15°		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	L wrench
NDB I _r /R1620V-2-CDX04	NT-ST40115T15	NT-TX15
NDB I _r /R0000V-0-CDX00	NT-ST051	NT-TX20

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING	ISO 513	MATERIAL	HARDNESS HB	JC8025			JP5120			JP5125		
				min	start	max	min	start	max	min	start	max
	P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	○ 170 ● 160 ⊕ 140	250 225 195	330 290 250	● 100 ● 90 ⊕ 70	150 130 100	200 170 130	○ 100 ● 80 ⊕ 70	140 120 100	180 160 130
	P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	○ 150 ● 140 ⊕ 130	220 205 190	290 270 250	● 90 ● 80 ⊕ 60	130 110 80	170 140 100	○ 80 ● 70 ⊕ 60	120 100 80	160 120 100
B - THREADING	P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	○ 140 ● 130 ⊕ 120	205 190 170	270 250 220	● 80 ● 70 ⊕ 60	115 100 80	150 130 100	○ 70 ● 60 ⊕ 60	100 90 80	130 120 100
	ISO 513	MATERIAL	HARDNESS HB	JP5120			JP5125					
				min	start	max	min	start	max			
	P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	● 100 ● 90 ⊕ 70	150 130 100	200 170 130	○ 100 ● 80 ⊕ 70	140 120 100	180 160 130			
C - GROOVING	P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	● 70 ● 60 ⊕ 50	90 80 60	110 100 70	○ 60 ● 50 ⊕ 50	80 70 60	100 90 70			
	M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	● 70 ● 60 ⊕ 50	110 100 80	150 140 110	○ 60 ● 50 ⊕ 50	100 90 80	140 130 110			
	M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		● 70 ● 60 ⊕ 50	100 90 70	130 120 90	○ 60 ● 60 ⊕ 50	90 80 70	120 100 90			
D - MILLING	ISO 513	MATERIAL	HARDNESS HB	JC7010			JP5120			JP5125		
				min	start	max	min	start	max	min	start	max
	K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	● 180 ● 150 ⊕ 130	280 225 195	380 300 260	● 110 ● 90 ⊕ 60	150 130 100	190 170 130	○ 100 ● 80 ⊕ 60	140 115 90	180 150 120
	K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	● 150 ● 130 ⊕ 120	200 175 160	250 220 200	● 90 ● 80 ⊕ 60	130 110 80	170 140 100	○ 80 ● 70 ⊕ 60	120 95 80	160 120 100
E - DRILLING	K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	● 140 ● 120 ⊕ 110	190 165 155	240 210 200	● 80 ● 70 ⊕ 50	110 100 75	140 130 100	○ 70 ● 60 ⊕ 50	105 90 75	140 120 100
	ISO 513	MATERIAL	HARDNESS HB	JU6015								
				min	start	max						
	N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGA)		● 400 ● 300 ⊕ 200	700 500 400	1000 700 600						
F - ACCESSORIES	N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		● 200 ● 200 ⊕ 100	300 250 150	400 300 200						
G - SPARE PARTS												

Complete workpiece materials p. H1.

DESIGNATION		Grooving			Turning and Profiling						Cut-off		
		FEED RATE			DEPTH OF CUT			FEED RATE			FEED RATE		
		fn (mm/rev)			ap (mm)			fn (mm/rev)			fn (mm/rev)		
		min	start	max	min	start	max	min	start	max	min	start	max
STRAIGHT EDGE	NDBD20R020-Go	0.06	0.08	0.10	0.30	0.90	1.50	0.10	0.13	0.16	-	-	-
	NDBD30R040-Go	0.07	0.10	0.13	0.40	1.20	2.00	0.16	0.18	0.20	-	-	-
	NDBD40R040-Go	0.10	0.12	0.14	0.50	1.50	2.50	0.18	0.21	0.24	-	-	-
	NDBD50R040-Go	0.11	0.15	0.19	0.60	1.80	3.00	0.20	0.25	0.30	-	-	-
	NDBD60R080-Go	0.13	0.19	0.25	0.70	2.10	3.50	0.24	0.33	0.42	-	-	-
	NDBD80R080-Go	0.18	0.26	0.34	0.80	2.65	4.50	0.32	0.44	0.56	-	-	-
FULL RADIUS	NDBD20R100-Ro	0.06	0.09	0.12	0.00	0.50	1.00	0.14	0.18	0.22	-	-	-
	NDBD30R150-Ro	0.08	0.11	0.14	0.00	0.75	1.50	0.18	0.23	0.28	-	-	-
	NDBD40R200-Ro	0.10	0.13	0.16	0.00	1.00	2.00	0.20	0.27	0.34	-	-	-
	NDBD50R250-Ro	0.12	0.16	0.20	0.00	1.25	2.50	0.24	0.33	0.42	-	-	-
	NDBD60R300-Ro	0.13	0.19	0.25	0.00	1.50	3.00	0.24	0.37	0.50	-	-	-
	NDBD80R400-Ro	0.18	0.26	0.34	0.00	2.00	4.00	0.32	0.49	0.66	-	-	-
CONCAVE EDGE	NDBD20R02M-CA	-	-	-	-	-	-	-	-	-	0.04	0.06	0.08
	NDBD30R04M-CA	-	-	-	-	-	-	-	-	-	0.06	0.08	0.10
	NDBD20R02M-CT	-	-	-	-	-	-	-	-	-	0.06	0.10	0.14
	NDBD30R04M-CT	-	-	-	-	-	-	-	-	-	0.08	0.13	0.18

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS



GROOVING NCG

Inserts .C14

NCG

Circlip Grooving

- Triple head top mounted grooving insert
- Available for P/M materials
- According to DIN 471/472
- Can share holders with 16IR/ER threading inserts

HF: Micrograin carbide
PVD: Physical vapour deposition

HF
PVD

JP5130

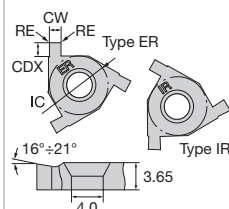
Stable machining,
light cut ● 1st choice ○ suitable

General machining,
medium cut ● 1st choice ○ suitable

Unstable machining,
heavy cut ▲ 1st choice ▼ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P

60

180

M

50

110

K

N

S

H

Designation		CW	CWTOL	CDX	RE	IC	Stock	
EXTERNAL		NCG16ER 110-010	1.1	0/+0.02	1.3	0.1	9.525	●
		NCG16ER 130-010	1.3	0/+0.02	1.6	0.1	9.525	●
		NCG16ER 160-010	1.6	0/+0.02	1.85	0.1	9.525	●
		NCG16ER 185-010	1.85	0/+0.02	1.85	0.1	9.525	●
		NCG16ER 215-010	2.15	0/+0.02	1.85	0.1	9.525	●
INTERNAL		NCG16IR 110-010	1.1	0/+0.02	1.3	0.1	9.525	●
		NCG16IR 130-010	1.3	0/+0.02	1.6	0.1	9.525	●
		NCG16IR 160-010	1.6	0/+0.02	1.85	0.1	9.525	●
		NCG16IR 185-010	1.85	0/+0.02	1.85	0.1	9.525	●
		NCG16IR 215-010	2.15	0/+0.02	1.85	0.1	9.525	●

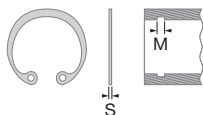
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion

CIRCLIP RINGS

DIN 471 EXTERNAL



DIN 472 INTERNAL



GROOVE TOLERANCES

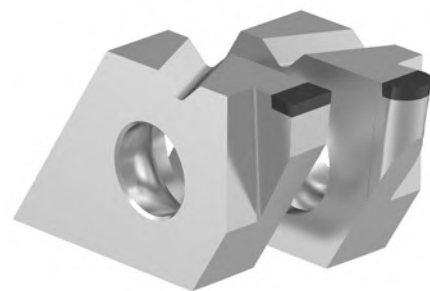
RING (S)	GROOVE (M)	TOLL.	INSERT
1.00	1.10	H13	NCG 16 ^{ER/IR} 110-010
1.20	1.30	H13	NCG 16 ^{ER/IR} 130-010
1.50	1.60	H13	NCG 16 ^{ER/IR} 160-010
1.75	1.85	H13	NCG 16 ^{ER/IR} 185-010
2.00	2.15	H13	NCG 16 ^{ER/IR} 215-010

NCG cutting speed (m/min)

P1-P2	Low carbon and soft steel	60÷180
P3-P4	Medium and high alloy steel	60÷160
P5-P6	High tensile strength steel	60÷140
P7	Ferritic stainless steel	60÷120
P8	PH stainless steel	40÷70
M1	Austenitic stainless steel	50÷110
M2-M3	Difficult stainless steel	40÷80

NCG feed rate (mm/rev)

	ER	IR
NCG 16 ^{ER/IR} 110-010	0.03÷0.07	0.01÷0.05
NCG 16 ^{ER/IR} 130-010	0.04÷0.08	0.02÷0.06
NCG 16 ^{ER/IR} 160-010	0.04÷0.08	0.02÷0.06
NCG 16 ^{ER/IR} 185-010	0.04÷0.10	0.03÷0.07
NCG 16 ^{ER/IR} 215-010	0.04÷0.10	0.03÷0.07



GROOVING BGF

Inserts .C16
Holders .C17

BGF

Advanced Grooving

- Tangentially mounted brazed-tip advance material grooving inserts
- Available with PCD and CBN type for K / H or N materials
- Reliable and quick change clamping system

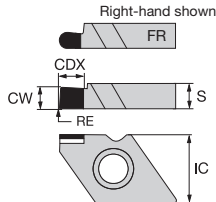
BL: Low volume CBN
BH: High volume CBN
DP: Polycrystalline diamond

BL BH DP

NB350
NBH4500
ND120Stable machining,
light cut● 1st choice ○ suitableGeneral machining,
medium cut● 1st choice ○ suitableUnstable machining,
heavy cut● 1st choice ○ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P

M

K

N

S

H

340

1000

450

2400

60

150

Designation

CW

CWTOL

CDX

RE

IC

Stock

LEFT-HAND	N H	Designation	CW	CWTOL	CDX	RE	IC	Stock		
	straight edge carbide backed	BGFL 100-010	1	±0.050	1.8	0.1	12.7	○		
		BGFL 150-010	1.5	±0.050	2.6	0.1	12.7	○		
		BGFL 200-020	2	±0.050	3	0.2	12.7	○		
		BGFL 250-020	2.5	±0.050	3.5	0.2	12.7	▽	○	
		BGFL 300-020	3	±0.050	4.5	0.2	12.7	○		
		BGFL 350-020	3.5	±0.050	4.5	0.2	12.7	▽	○	
		BGFL 400-020	4	±0.050	4.5	0.2	12.7	○		
	full radius edge carbide backed	BGFL 100-050FR	1	±0.050	1.8	0.5	12.7	○		
		BGFL 150-075FR	1.5	±0.050	2.6	0.75	12.7	○		
		BGFL 200-100FR	2	±0.050	3	1	12.7	○		
		BGFL 250-125FR	2.5	±0.050	3.5	1.25	12.7	○		
		BGFL 300-150FR	3	±0.050	4.5	1.5	12.7	○		
		BGFL 350-175FR	3.5	±0.050	4.5	1.75	12.7	○		
		BGFL 400-200FR	4	±0.050	4.5	2	12.7	○		
	straight edge carbide backed	BGFR 100-010	1	±0.050	1.8	0.1	12.7	▽	○	○
		BGFR 150-010	1.5	±0.050	2.6	0.1	12.7	○	○	
		BGFR 200-020	2	±0.050	3	0.2	12.7	○	○	
		BGFR 250-020	2.5	±0.050	3.5	0.2	12.7	▽	○	○
		BGFR 300-020	3	±0.050	4.5	0.2	12.7	○	○	
		BGFR 350-020	3.5	±0.050	4.5	0.2	12.7	○	○	
		BGFR 400-020	4	±0.050	4.5	0.2	12.7	○	○	○
	full radius edge carbide backed	BGFR 100-050FR	1	±0.050	1.8	0.5	12.7	○	○	
		BGFR 150-075FR	1.5	±0.050	2.6	0.75	12.7	○	○	
		BGFR 200-100FR	2	±0.050	3	1	12.7	○	○	
		BGFR 250-125FR	2.5	±0.050	3.5	1.25	12.7	○	○	
		BGFR 300-150FR	3	±0.050	4.5	1.5	12.7	▽	○	○
		BGFR 350-175FR	3.5	±0.050	4.5	1.75	12.7	○	○	
		BGFR 400-200FR	4	±0.050	4.5	2	12.7	○	○	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

BGF cutting speed (m/min)

N1	Aluminium alloy Si ≤ 12%	450÷2400
N2	Aluminium alloy Si > 12%	250÷700
N3	Copper alloy	350÷1400
H1	Case-hardened steel	60÷150
H2	Bearing steel	60÷130
H3	Hardened tool steel	50÷100

BGF feed rate (mm/rev)

	N	K H
BGF ^{FR} / _R 100	0.04÷0.12	0.04÷0.06
BGF ^{FR} / _R 150	0.04÷0.12	0.04÷0.06
BGF ^{FR} / _R 200	0.06÷0.14	0.04÷0.08
BGF ^{FR} / _R 250	0.06÷0.14	0.04÷0.08
BGF ^{FR} / _R 300	0.06÷0.14	0.04÷0.08
BGF ^{FR} / _R 350	0.08÷0.16	0.06÷0.10
BGF ^{FR} / _R 400	0.08÷0.16	0.06÷0.10

BGF-HLD

Advanced Grooving

- External holders for tangential mounted advanced grooving insert
- Clamp tightened by screw

Right-hand shown

Designation	Stock		H	B	WF	LF	LH					
	L	R										
BGF-HLD 1616 ⁺ /R		▽	16	16	30	150	45					
BGF-HLD 2020 ⁺ /R	●	●	20	20	30	150	45					
BGF-HLD 2525 ⁺ /R	●	●	25	25	30	150	45					

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches	Clamp	Clamp screws	L wrench
BGF-HLD ○○○○R	NT-ST50110T20	NT-FT15	NT-CS300R	NT-SC300	NT-WR040
BGF-HLD ○○○○L	NT-ST50110T20	NT-FT15	NT-CS300L	NT-SC300	NT-WR040

RELIABLE CLAMPING

1. Install the insert and screw lightly

2. Firmly fix the clamp

3. Screw tight the insert

HOLDER AND INSERT COUPLING

Holder R → Insert R

Holder L → Insert L

A - TURNING

B - THREADING

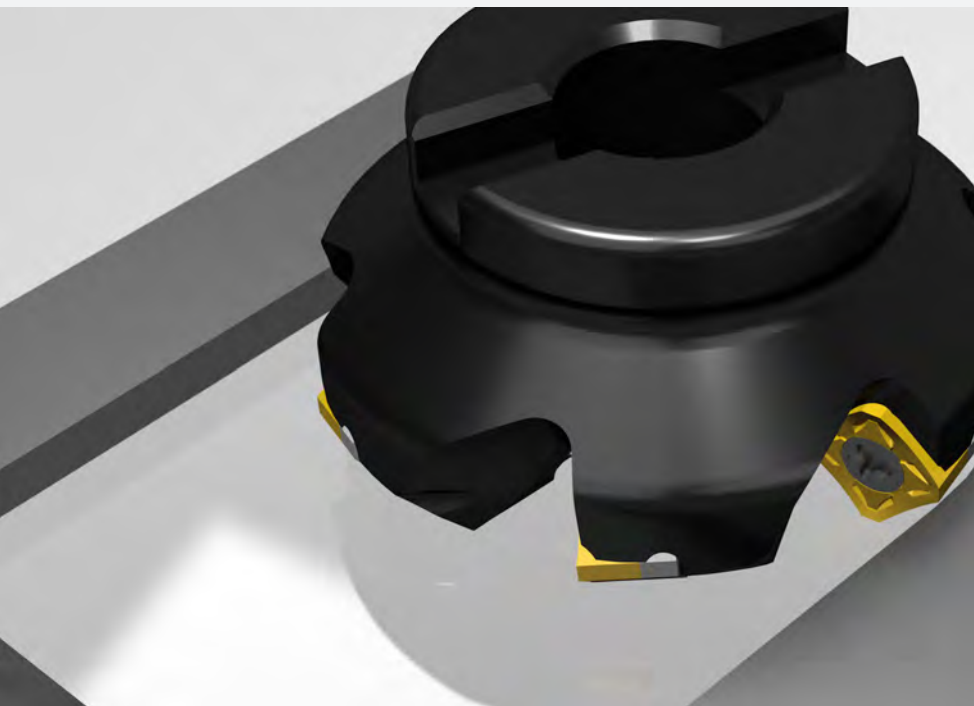
C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS



MILLING

- Grade table .D3
- Grade details .D4
- Grade cross reference .D6
- Application overview .D8
- Shouldering .D11
- Facing .D45
- High feed .D75
- Profiling .D85
- Chamfering .D99
- Advanced .D105

ISO 513		CARBIDE			CERMET	PCBN	DIAMOND	CERAMIC	
		CVD COATED	PVD COATED	UNCOATED	UNCOATED	UNCOATED	PCD	Si ₃ N ₄	Al ₂ O ₃ mixed
P	P01								
	P10	JC8520			JU4525				
	P20								
	P30	JC8530	JP5530						
	P40		JP5540						
Steel									
M	M01								
	M10								
	M20								
	M30	JC9540	JP5530						
	M40		JP5540						
Stainless steel									
K	K01					NBH450U		NSN350	NAC200
	K10	JC7515	JP7615			NBH550U		NSN400	
	K20	JC8520	JP7525			NBH900U			
	K30	JC7530				NBH950U			
Cast iron									
N	N01								
	N10		JP6525				ND150		
	N20			JU6520			ND120		
	N30								
Non-ferrous material									
S	S01								
	S10								
	S20	JC9540	JP5540						
	S30		JP9535-JP9635						
			JP9545						
Heat resistance alloy									
H	H01					NBH450U			
	H10					NBH900U			
	H20					NBH950U			
	H30								
Hardened steel									

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING	GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION		FEATURES
				TECHNOLOGY	COMPOSITION			
B - THREADING	JC7515	carbide	1.950	CVD	TiCN+Al ₂ O ₃	K	K05 K20	MTCVD special coating with extreme wear resistance. Recommended for grey cast iron machining at high cutting speed.
	JC8520	carbide	1.640	CVD	TiCN+Al ₂ O ₃	P	P10 P20	High wear resistance on steel machining at high cutting speed, very good performance also in cast iron machining as a complementary solution.
						K	K15 K25	
	JC9540	carbide	1.560	CVD	TiCN+Al ₂ O ₃	M	M25 M40	Tough substrate with high stability at high temperature. High wear resistance on stainless steel and HRSA machining.
S						S20 S30		
C - GROOVING	JP5530	micrograin carbide	1.840	PVD	TiAlN	P	P20 P40	Universal grade mainly for steel application but also available for ISO M and ISO K machining.
						M	M25 M30	
						K	K25 K30	
D - MILLING	JP5540	carbide	1.560	PVD	TiAlSiN	P	P35 P45	All-around solution with high reliability thanks to a special tough substrate with high stability at high temperature.
						M	M30 M40	
						S	S20 S30	
E - DRILLING	JP6525	micrograin carbide	1700	PVD	TiBCN	N	N05 N25	High performance coated grade for non-ferrous materials. Very low friction coefficient reduces adhesions and improves surface finishing.
	JP7525	carbide	1.840	PVD	TiAlN	K	K15 K35	First choice for ISO K machining with a predictable long tool life. Perfect performance both on gray and nodular cast iron.
	JP7615	carbide	1.840	PVD	TiAlN	K	K10 K20	A hard multilayered PVD coating for succesful milling of cast iron under stable conditions. Available only for RekPlus series, until stock exhaustion.
F - ACCESSORIES	JP8625	micrograin carbide	1.600	PVD	TiAlN	P	P15 P25	Micrograin PVD grade for general machining of steel under various cutting conditions. Available only for RekPlus series, until stock exhaustion.
	JP8725	micrograin carbide	1.840	PVD	AlCrN	P	P15 P30	First choiche for steel application. The new substrate contributes to a great performance increase compared to conventional products.
	JP9535	micrograin carbide	1.640	PVD	TiAlN	M	M20 M35	First choice for stainless steel machining under general cutting conditions. Also applicable on titanium thanks to a great stability at high temperature.
S						S15 S25		
G - SPARE PARTS	JP9635	micrograin carbide	1.640	PVD	TiAlN	M	M20 M35	Micrograin PVD grade for general machining of stainless steel under various cutting conditions. Available only for RekPlus series, until stock exhaustion.
						S	S15 S25	
	JP9545	carbide	1.560	PVD	TiAlSiN	M	M35 M45	Ultra tough substrate with high stability at high temperature. Perfect choice for difficult to cut materials under sever cutting conditions.
S						S25 S35		
JU4525	cermet	1.560	-	-	P	P05 P15	Uncoated cermet for high speed machining of steel. Optimum solution for finishing application under stable conditions.	
JU6520	micrograin carbide	1.560	-	-	N	N10 N30	Uncoated grade for non-ferrous materials. The micrograin substrate toughness allows the production of very sharp ground cutting edges.	
NAC200	Al ₂ O ₃ +TiCN	2.300	-	-	K	K01 K20	Applicable for finishing application of cast iron and hardened steel in case of very stable cutting conditions.	
					H	H01 H20		

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION	FEATURES
			TECHNOLOGY	COMPOSITION		
NBH450U	High volume CBN 95%	4.400	-	-	K K01 K20	First choice for gray cast iron finishing at very high cutting condition and with great wear resistance.
NBH550U	High volume CBN 80%	3.500	-	-	K K20 K30	First choice for gray cast iron roughing at very high cutting condition (until 2000 m/min). Productivity unattainable with conventional products.
NBH900U	High volume CBN 80%	3.500	-	-	H H25 H35	Universal grade for severe applications both on ISO K and ISO H materials. High reliability on roughing operations.
					K K25 K35	
NBH950U	High volume CBN 90%	4.000	-	-	H H30 H35	Extreme toughness mainly for cast iron machining but applicable, as alternative grade, even on hardened steel.
					K K30 K35	
ND120	diamond 95%	6.000	-	-	N N10 N30	First choice for all-around application on non-ferrous materials.
ND150 new name: NBP302	diamond 95%	7.000	-	-	N N05 N25	Multi-modal grade for a perfect balance between toughness and wear resistance. Good solution for high silicon aluminium and bi-metal applications.
NSA6000	SiAlON	1.800	-	-	S S10 S30	First choice for heat resistant super alloys (HRSA) machining with variable cutting conditions. Perfect balance between toughness and wear resistance.
NSN350	Si ₃ N ₄	1.700	-	-	K K05 K20	High wear resistance for stable applications.
NSN400	Si ₃ N ₄	1.700	-	-	K K05 K30	First choice for roughing machining of gray cast iron even with interrupted cut.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

	ISO 513		nikkoTOOLS		ISCAR		KENNAMETAL		KYOCERA		MITSUBISHI	
			carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet
A - TURNING	P	P01 - P10	JC8520	JU4525	IC5400	IC30N		KTPK20		TN100M		
		P10 - P20	JC8520 JP5530 JP8725	JU4525	IC5400 IC5500 IC808	IC30N		KTPK20	PR1225 PR1525	TN100M PV60M	MC7020 MP6120 VP15TF	NX2525
		P20 - P30	JP5530 JP8725		IC5500 IC808 IC830		KCPK30 KC522M KC725M KCPM40		PR1225 PR1525		MP6130 VP20RT	NX4545
		P30 - P40	JP5540		IC330 IC830 IC845		KC725M KCPK30 KCPM40		PR1230 PR1535		MP6130 VP30RT	
B - THREADING	M	M01 - M10				IC30N		KTPK20		TN100M PV60M		NX2525
		M10 - M20	JP9535		IC808	IC30N	KC522M		PR1525		VP15TF	NX4545
		M20 - M30	JC9540 JP9535		IC5820 IC380 IC830		KC522M KCPM40		CA6535 PR1525 PR1535		MC7020 MP7130 VP20RT	
		M30 - M40	JC9540 JP5540 JP9535 JP9545		IC5820 IC830 IC840 IC882		KC725M KCPM40 KCSM40		CA6535 PR1535		MP7140 VP30RT	
C - GROOVING	K	K01 - K10	JC7515 JC8520		IC5100	IC30N	KCK15	KTPK20	PR1210 PR1510	TN100M PV60M	MC5020	NX2525
		K10 - K20	JC7515 JC8520 JP7525 JP7615		IC5100 IC810		KCK15 KCK20		CA420M PR1210 PR1510		MC5020 MP8010	
		K20 - K30	JP7525		IC810		KCK20 KCPK30		CA420M PR1210 PR1510		VP15TF	
D - MILLING	N	N01 - N10	JP6525	-		-	KC410M	-	KW10	-		-
		N10 - N20	JP6525 JU6525	-	IC28	-	KC410M K313	-	KW10 GW25	-	HTI10 LC15TF	-
		N20 - N30	JU6525	-	IC28	-	KC422M	-	GW25	-	TF15	-
E - DRILLING	S	HRSA	S01 - S10	JC9540 JP5540	-	IC808	-					-
			S10 - S20	JP9535 JP9635	-	IC830	-	KC522M KCSM30	-	CA6535 PR1535	MP9120	-
			S20 - S30	JC9540 JP5540	-	IC380 IC840	-	KC725M KCSM40	-	CA6535 PR1535	MP9130 VP15TF	-
		TITANIUM	S01 - S10		-		-		-			-
			S10 - S20	JP6525 JP9535 JU6520	-	IC28 IC808	-	KCSM30	-	GW25 PR1535	MP9120	-
			S20 - S30	JP9535	-	IC28 IC808	-	KCSM30 KCSM40	-	PR1535	MP9130 VP15TF	-

BLACK: CVD, UNDERLINED: PVD, RED: uncoated

SANDVIK		SECO		SUMITOMO		TAEGUTEC		TUNGALOY		WALTER	
carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet
GC1010	CT530	MP1501	MP1020	ACP100	T2500A	TT2510	CT7000	AH110 AH710	NS740		
GC1130 GC4220	CT530	MP1501	MP1020	ACP100 ACP200	T2500A	TT7080	CT7000	AH725 T3225	NS740	WKP25S	
GC1130 GC4330		MP2501 MP3000 F40M		ACP200 ACP300 ACU2500		TT7080 TT8080		AH130 AH725 T3130 T3225		WKP25S WKP35G	
GC4340		F40M MM4500 T350M		ACP300		TT8080 TT8020 TT8525B		AH140 AH3135 T3130		WKP35G WSP45S	
	CT530		MP1020		T2500A		CT7000		NS740		
		MS2050		ACM200 ACU2500		TT9030 TT9080		AH725			
GC2030		F40M MP2050 MS2050		ACM200 ACP300		TT9080 TT8080		AH130 AH725 T3130 T3225		WSM35S	
GC1040 GC2040		F40M MP2050 MM4500 T350M		ACM300 ACP300		TT8080 TT8020		AH140 AH3135		WSM45X WSM35S WSP45S	
GC3220	CT530	MK1500	MP1020	ACK200	T2500A	TT2510	CT7000	T1115 T1215	NS740	WAK15	
GC1020 GC3220 GC3330		MK1500 MK2050 MP1501		ACK2000 ACK3000		TT6080 TT7515		AH120 T1115 T1215		WKP25S WKK25S	
GC1020 GC3040		MK2050		ACK3000		TT6080		AH120		WKP35S WKK25S	
H10	-	H15	-		-	K10	-	KS05F TH10	-	WK10	-
H10	-	H15	-	H20	-	K10	-	KS05F TH10	-	WK10 WXN15	-
	-	H25	-	H20	-		-		-		-
	-		-		-		-	AH120	-		-
GC1130 S30T	-	MS2500	-	ACM200	-	TT9540	-	AH725	-	WSM35S	-
S40T	-	MS2050 F40M	-	ACM300	-	TT9540	-		-	WSM45X	-
	-		-		-		-	AH120	-	WK10	-
GC1130 S30T	-	MS2500	-	ACM200	-	K10	-	AH725	-	WK10 WSM35S	-
S40T	-	MS2050 F40M	-	ACM300	-	TT3540	-		-	WSM45X	-

This table is our own estimation based on information available to the public and is not authorized by the company mentioned on it.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

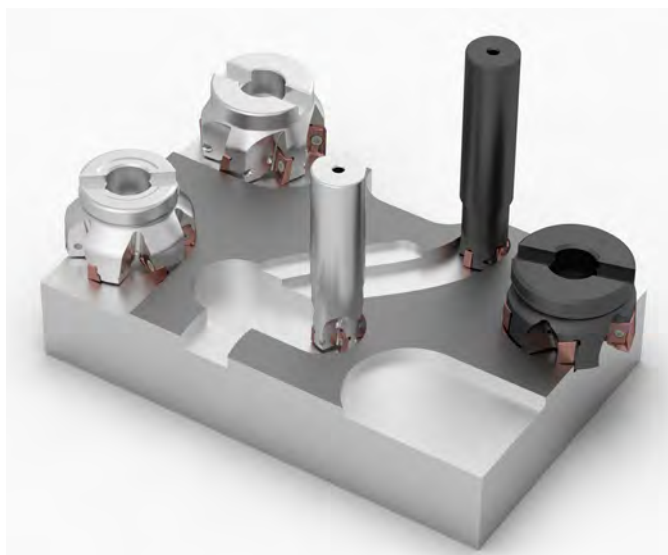
F - ACCESSORIES

G - SPARE PARTS

SHOULDERING

quick guide

D12

REKPLUS **P M K N S** D14DOUBLEREK **P M K** D23DOUBLE3GON **P M K N S** D29ISO APKT **P M N** D42ALUREK **N** D37

FACING

quick guide

D46

4FACEPLUS **P M K N S** D48OKTOPLUS **P M K N S** D55DOUBLE4FACE **P M K N S** D62ISO SEHX **P K N** D72DOUBLEHEX **K** D67

HIGH FEED PROFILING

quick guide



quick guide



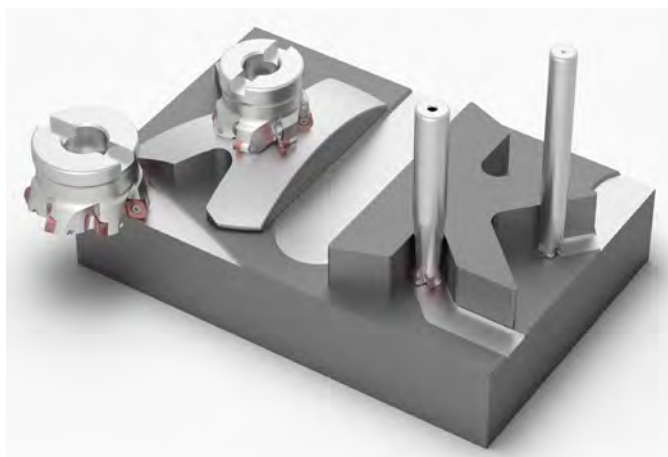
HF4PLUS

P M K S



ROUNDPLUS

P M K S



CHAMFERING

quick guide



CHAMFERSQUARE

P M K N



ADVANCED

quick guide



TANGENTIAL

K



SQUARE SERIES

K



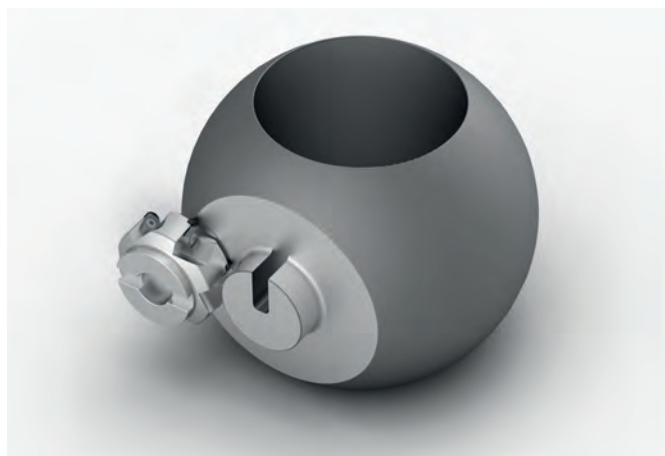
XP SERIES

K N



ROUND SERIES

S H



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS



MILLING Shouldering

Quick guide .D12

REKPLUS .D14

DOUBLEREK .D23

DOUBLE3CON .D29

ALUREK .D37

ISO APKT .D42

D12

	ALUREK	ISO APKT
	D37	D42
	 SCREW-IN  CYLINDRICAL  ARBOR	 Only insert is available.
KAPR	90°	90°
Insert sizes	19	10 / 16
APMX	19	9 / 15
Tool diameter	Ø25 - Ø50	-
Coolant holes	✓	-
Workpiece material	N	P M N
No. of cutting edges	2	2
No. of geometries	1	2
Special features	PVD coated grade for non-ferrous materials	-
Side Milling 	✓	✓
Slotting 	✓	✓
Face Milling 	✓	✓
Ramping 	✓	✓
Helical Interpolation 	✓	✗
Machine load		
Strenght		
Precision		
Finishing		
Range		

A - TURNING

B - THREADING

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G - SPARE PARTS

REKPLUS

Versatile shoulder milling cutters capable of ramping for diverse application

APPLICATION

- Shoulder milling
- Long overhang milling
- Profiling and Pocketing
- Linear and helical ramping

ISO APPLICATION FIELDS

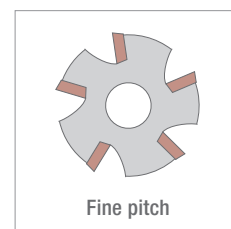
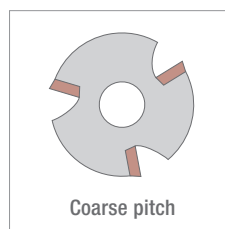
P M K N S

ADVANTAGES AND CHARACTERISTICS

- Inserts of helical geometry type can produce high precision 90°.
- The straight geometries are suitable for roughing without special finishing needs and ensure excellent competitiveness.
- Extremely complete range of cutter bodies with cylindrical shank (Weldon also available), both with standard and 10xD lengths, with threaded connection plus 10xD extensive sleeves, all with internal cooling.

• Cutter bodies

- Arbor type
- Cylindrical type (up to 10xD)
- Screw-in type
- Extension sleeves (steel/carbide 10xD)
- From D16 to D100



• Inserts

- 2 cutting edges
- Edge length 11 and 16
- Cemented carbide grades with CVD and PVD coatings
- Geometries: HSC, HGP, GP, TE, AL.



Helical geometries are available with a wide range of radii.

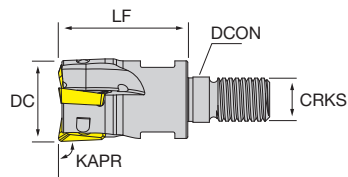


NT-RKP

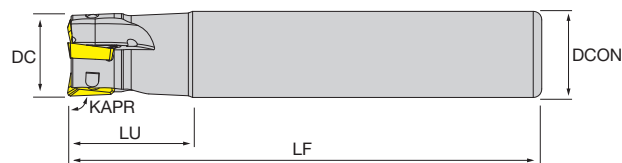
RekPlus

- Positive type precision shoulder milling system, with coolant through
- Tolerance of tool diameter (with Nikko inserts installed) 0/-0.2
- 10xD cylindrical body and screw-in type for applications that need long-overhang
- High-Quality Swiss screws available to guarantee your machining process

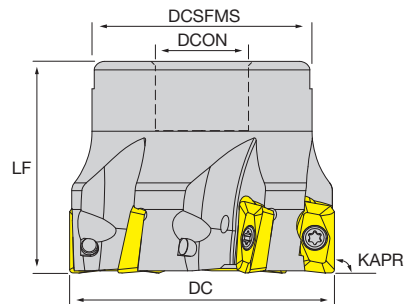
Screw-in



Cylindrical



Arbor



Designation	Stock	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	KAPR	WT	MIID
SCREW-IN											
NT-RKP11 D016-M08-Z02	●	16	2	8.5	25	-	-	M8	90°	0.03 Kg	NT-RKP11
NT-RKP11 D020-M10-Z03	●	20	3	10.5	38	-	-	M10	90°	0.07 Kg	NT-RKP11
NT-RKP11 D025-M12-Z03	●	25	3	12.5	38	-	-	M12	90°	0.12 Kg	NT-RKP11
NT-RKP11 D025-M12-Z04	●	25	4	12.5	38	-	-	M12	90°	0.11 Kg	NT-RKP11
NT-RKP11 D032-M16-Z04	●	32	4	17	43	-	-	M16	90°	0.23 Kg	NT-RKP11
NT-RKP11 D032-M16-Z05	●	32	5	17	43	-	-	M16	90°	0.22 Kg	NT-RKP11
NT-RKP16 D025-M12-Z02	●	25	2	12.5	38	-	-	M12	90°	0.11 Kg	NT-RKP16
NT-RKP16 D032-M16-Z03	●	32	3	17	43	-	-	M16	90°	0.19 Kg	NT-RKP16
NT-RKP16 D040-M16-Z04	●	40	4	17	43	-	-	M16	90°	0.24 Kg	NT-RKP16
CYLINDRICAL											
NT-RKP11 D016-S16-Z02	●	16	2	16	100	25	-	-	90°	0.13 Kg	NT-RKP11
NT-RKP11 D020-S20-Z03	●	20	3	20	110	30	-	-	90°	0.23 Kg	NT-RKP11
NT-RKP11 D025-S25-Z03	●	25	3	25	120	35	-	-	90°	0.41 Kg	NT-RKP11
NT-RKP11 D025-S25-Z04	●	25	4	25	120	35	-	-	90°	0.40 Kg	NT-RKP11
NT-RKP11 D032-S32-Z04	●	32	4	32	130	35	-	-	90°	0.74 Kg	NT-RKP11
NT-RKP11 D032-S32-Z05	●	32	5	32	130	35	-	-	90°	0.73 Kg	NT-RKP11
NT-RKP16 D025-S25-Z02	●	25	2	25	120	35	-	-	90°	0.40 Kg	NT-RKP16
NT-RKP16 D032-S32-Z03	●	32	3	32	130	45	-	-	90°	0.71 Kg	NT-RKP16
CYLINDRICAL - LONG TYPE (10XD)											
NT-RKP11 D016-S15-Z02-L	●	16	2	15	160	25	-	-	90°	0.19 Kg	NT-RKP11
NT-RKP11 D016-S16-Z02-L	●	16	2	16	160	25	-	-	90°	0.21 Kg	NT-RKP11
NT-RKP11 D017-S16-Z02-L	●	17	2	16	170	25	-	-	90°	0.23 Kg	NT-RKP11
NT-RKP11 D020-S19-Z03-L	●	20	3	19	200	30	-	-	90°	0.39 Kg	NT-RKP11
NT-RKP11 D020-S20-Z03-L	●	20	3	20	200	30	-	-	90°	0.43 Kg	NT-RKP11
NT-RKP11 D021-S20-Z03-L	●	21	3	20	210	30	-	-	90°	0.46 Kg	NT-RKP11

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

Designation	Stock	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	KAPR	WT	MIID
NT-RKP11 D025-S24-Z03-L	●	25	3	25	250	35	-	-	90°	0.82 Kg	NT-RKP11
NT-RKP11 D025-S25-Z03-L	●	25	3	25	250	35	-	-	90°	0.89 Kg	NT-RKP11
NT-RKP11 D026-S25-Z03-L	●	26	3	25	260	35	-	-	90°	0.94 Kg	NT-RKP11
CYLINDRICAL - REDUCED SHANK											
NT-RKP11 D020-S16-Z03	●	20	3	16	110	30	-	-	90°	0.15 Kg	NT-RKP11
NT-RKP11 D025-S20-Z03	●	25	3	20	120	35	-	-	90°	0.28 Kg	NT-RKP11
NT-RKP11 D028-S25-Z04	○	28	4	25	120	35	-	-	90°	-	NT-RKP11
NT-RKP11 D030-S25-Z04	○	30	4	25	130	35	-	-	90°	-	NT-RKP11
NT-RKP11 D032-S25-Z04	●	32	4	25	130	35	-	-	90°	0.49 Kg	NT-RKP11
NT-RKP16 D040-S32-Z04	●	40	4	32	150	45	-	-	90°	0.89 Kg	NT-RKP16
CYLINDRICAL - WELDON CONNECTION											
NT-RKP11 D016-W16-Z02	●	16	2	16	80	25	-	-	90°	0.10 Kg	NT-RKP11
NT-RKP11 D020-W20-Z03	●	20	3	20	90	30	-	-	90°	0.18 Kg	NT-RKP11
NT-RKP11 D025-W25-Z04	●	25	4	25	100	35	-	-	90°	0.32 Kg	NT-RKP11
ARBOR											
NT-RKP11 D032-F16-Z04	●	32	4	16	40	-	28	-	90°	0.11 Kg	NT-RKP11
NT-RKP11 D040-F16-Z05	●	40	5	16	40	-	35	-	90°	0.22 Kg	NT-RKP11
NT-RKP11 D040-F16-Z06	●	40	6	16	40	-	35	-	90°	0.20 Kg	NT-RKP11
NT-RKP11 D050-F22-Z05	●	50	5	22	40	-	40	-	90°	0.33 Kg	NT-RKP11
NT-RKP11 D050-F22-Z07	●	50	7	22	40	-	46	-	90°	0.37 Kg	NT-RKP11
NT-RKP11 D063-F22-Z06	●	63	6	22	40	-	50	-	90°	0.59 Kg	NT-RKP11
NT-RKP11 D063-F22-Z08	●	63	8	22	40	-	50	-	90°	0.57 Kg	NT-RKP11
NT-RKP11 D080-F27-Z07	●	80	7	27	50	-	60	-	90°	1.21 Kg	NT-RKP11
NT-RKP11 D080-F27-Z10	●	80	10	27	50	-	60	-	90°	1.07 Kg	NT-RKP11
NT-RKP16 D040-F16-Z04	●	40	4	16	40	-	35	-	90°	0.19 Kg	NT-RKP16
NT-RKP16 D040-F16-Z05	●	40	5	16	40	-	35	-	90°	0.18 Kg	NT-RKP16
NT-RKP16 D050-F22-Z04	●	50	4	22	40	-	40	-	90°	0.29 Kg	NT-RKP16
NT-RKP16 D050-F22-Z05	●	50	5	22	40	-	40	-	90°	0.27 Kg	NT-RKP16
NT-RKP16 D063-F22-Z05	●	63	5	22	40	-	50	-	90°	0.53 Kg	NT-RKP16
NT-RKP16 D063-F22-Z06	●	63	6	22	40	-	50	-	90°	0.51 Kg	NT-RKP16
NT-RKP16 D080-F27-Z06	●	80	6	27	50	-	60	-	90°	1.09 Kg	NT-RKP16
NT-RKP16 D080-F27-Z08	●	80	8	27	50	-	60	-	90°	1.06 Kg	NT-RKP16
NT-RKP16 D100-F32-Z07	●	100	7	32	50	-	80	-	90°	1.90 Kg	NT-RKP16
NT-RKP16 D100-F32-Z09	●	100	9	32	50	-	80	-	90°	1.85 Kg	NT-RKP16

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-RKP11 D000-000-Z00	NT-ST25056T08HQ	NT-FTB08
NT-RKP16 D000-000-Z00	NT-ST40095T15HQ	NT-FTB15

RekPlus

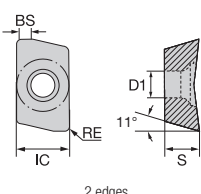
- HC: Coated carbide
HF: Micrograin carbide
HT: Cermet
CVD: Chemical vapour deposition
PVD: Physical vapour deposition

Stable machining, light cut		1 st choice		suitable
General machining, medium cut		1 st choice		suitable
Unstable machining, heavy cut		1 st choice		suitable

Dimensions

ISO

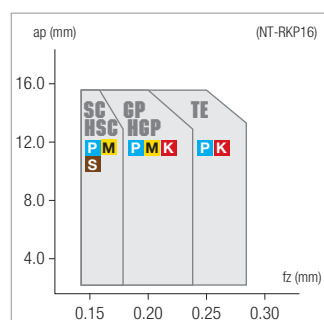
Vc(m/min) - suggested cutting speed range (hold: 1st choice)



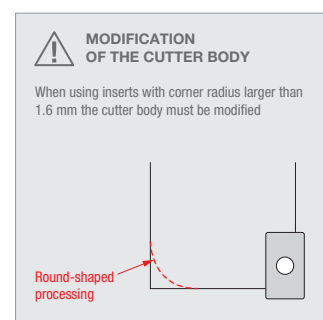
2 edges

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● stock standard. ○ non-standard stock. ▲ upcoming introduction. ▽ stock exhaustion



 UPCOMING GRADES UPDATE (only for helical type)	
OLD	NEW
JP8625	▶ JP8725
JP9635	▶ JP9535 JP5540
JP7615	▶ JP7525



NT-RKP

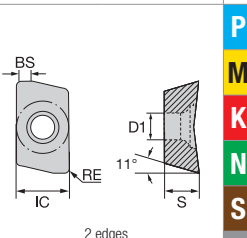
RekPlus

- HGP and HSC are high precision helical type geometries, better guarantee your shouldering precision
- GP, TE and SC are economical straight type geometries
- Available in different radii besides R0.8, such as R0.4, 1.2, 1.6, 2.0, 3.1
- Available with cermet and diverse carbide grades covering PMKNS applications
- Aluminum type available with different radius. For more possibilities for non ferrous materials, please go to AluRek series
- For H materials please go to advanced milling chapter

HC: Coated carbide
HF: Micrograin carbide
HT: Cermet
CVD: Chemical vapour deposition
PVD: Physical vapour deposition

Stable machining, light cut ● 1st choice ○ suitable
General machining, medium cut ● 1st choice ○ suitable
Unstable machining, heavy cut ⚡ 1st choice ⚡ suitable

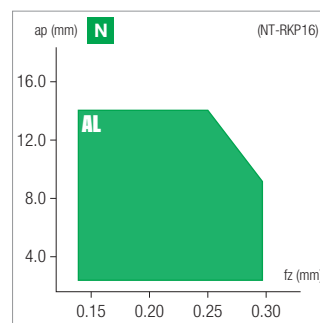
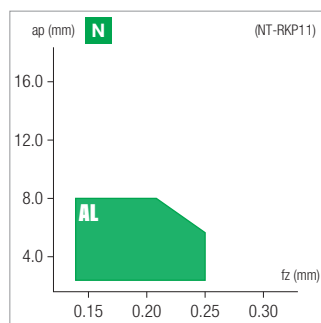
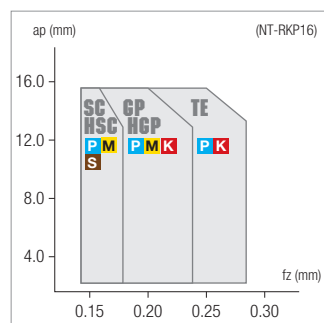
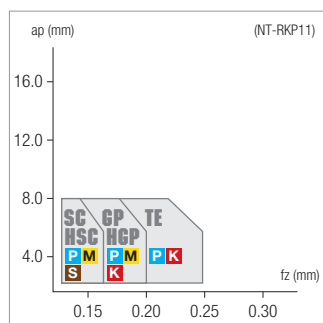
Dimensions



	HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	HF
	JC7515	JP5520	JP5530	JP5540	JP7525	JP7615	JP8625	JP8725	JP9535	JP9635	JU4525	JU6520
Stable machining, light cut	●	○				○	○	○			●	●
General machining, medium cut	●	●	●	○	●	●	●	●	●	●		●
Unstable machining, heavy cut			⚡	⚡	⚡			⚡	⚡			
ISO	P	M	K	N	S	H						
Vc(m/min) - suggested cutting speed range (bold: 1 st choice)	100 260	100 260	80 220				100 260	100 280			130 300	
		60 180	60 180	60 180				80 200	80 180			
		180 360			140 300	140 300						
											300 1100	
					20 50			20 60	20 50			

Designation		RE	IC	S	D1	BS	Stock											
REINFORCED	TE P K																	
	NT-RKP11R08M-TE	0.8	6.35	3.5	2.8	1.9			●		○			●				
	NT-RKP16R08M-TE	0.8	9.525	4.76	4.5	2.2			○		○			●				
ALUMINIUM	AL N																	
	NT-RKP11R04G-AL	0.4	6.35	3.5	2.8	1.9											●	
	NT-RKP11R08G-AL	0.8	6.35	3.5	2.8	1.9											●	
	NT-RKP16R08G-AL	0.8	9.525	4.76	4.5	2.2											●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5530			JP5540			JP8625		
					min	start	max	min	start	max	min	start	max
A - TURNING	P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	100	140	180	80	120	160	100	140	180
				30%	160	200	240	120	160	200	160	200	240
				10%	220	240	260	180	200	220	220	240	260
	P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	80	120	160	60	100	140	80	120	160
				30%	120	160	200	100	140	180	120	160	200
				10%	180	200	220	160	180	200	180	200	220
B - THREADING	P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	60	90	120				60	90	120
				30%	100	130	160				100	130	160
				10%	140	170	200				140	170	200
	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5530			JP5540			JP9535		
					min	start	max	min	start	max	min	start	max
	P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	60	100	140	60	100	140	80	120	160
				30%	80	130	180	80	130	180	100	150	200
				10%	100	160	220	100	160	220	120	180	240
C - GROOVING	P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%				50	80	110	60	90	120
				30%				60	90	120	70	100	130
				10%				70	100	130	80	110	140
	M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	60	90	120	60	90	120	80	110	140
				30%	80	120	160	80	120	160	100	140	180
				10%	100	140	180	100	140	180	120	160	200
D - MILLING	M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%				60	90	120	70	100	130
				30%				70	100	130	80	110	140
								80	110	140	90	120	150
	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP7525			JP7615					
					min	start	max	min	start	max			
	K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	140	180	220	140	180	220			
				30%	160	210	260	160	210	260			
				10%	180	240	300	180	240	300			
	K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	100	140	180	100	140	180			
				30%	120	170	220	120	170	220			
				10%	140	200	260	140	200	260			
E - DRILLING	K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	100%	90	120	150	90	120	150			
				30%	120	150	180	120	150	180			
				10%	150	180	210	150	180	210			
	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JU6520								
					min	start	max						
	N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		100%	300	400	500						
				30%	400	600	800						
				10%	500	800	1100						
	N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	250	300						
				30%	300	350	400						
				10%	400	450	500						
	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5540			JP9535			JP9635		
					min	start	max	min	start	max	min	start	max
	S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	20	25	30	20	30	40	20	25	30
				30%	30	35	40	30	40	50	30	35	40
				10%	40	45	50	40	50	60	40	45	50
G - SPARE PARTS	S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%	30	40	50	40	50	60	30	40	50
				30%	40	50	60	50	60	70	40	50	60
				10%	50	60	70	60	70	80	50	60	70

ae: radial depth of cut; DC: milling cutter diameter
Complete workpiece materials p. H1.

G - SPARE PARTS	F - ACCESSORIES	E - DRILLING	D - MILLING	C - GROOVING	B - THREADING	A - TURNING

D21

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

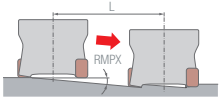
F - ACCESSORIES

G - SPARE PARTS

DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
NT-RKP11R00M-HGP	100%	1.00	2.50	4.00	0.06	0.09	0.12
	30%	1.00	4.50	8.00	0.08	0.11	0.14
	10%	1.00	4.50	8.00	0.10	0.15	0.20
NT-RKP16R00M-HGP	100%	1.00	4.00	7.00	0.10	0.13	0.16
	30%	1.00	8.00	15.00	0.12	0.16	0.20
	10%	1.00	8.00	15.00	0.16	0.20	0.24
NT-RKP11R00M-HSC	100%	1.00	2.50	4.00	0.04	0.07	0.10
	30%	1.00	4.50	8.00	0.06	0.09	0.12
	10%	1.00	4.50	8.00	0.08	0.12	0.16
NT-RKP16R00M-HSC	100%	1.00	4.00	7.00	0.06	0.10	0.14
	30%	1.00	8.00	15.00	0.10	0.13	0.16
	10%	1.00	8.00	15.00	0.12	0.15	0.18

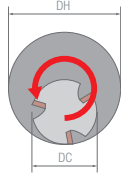
DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
NT-RKP11R08M-GP	100%	1.00	2.50	4.00	0.06	0.09	0.12
	30%	1.00	4.50	8.00	0.08	0.11	0.14
	10%	1.00	4.50	8.00	0.10	0.15	0.20
NT-RKP16R08M-GP	100%	1.00	4.00	7.00	0.10	0.13	0.16
	30%	1.00	8.00	15.00	0.12	0.16	0.20
	10%	1.00	8.00	15.00	0.16	0.20	0.24
NT-RKP11R08M-SC	100%	1.00	2.50	4.00	0.04	0.07	0.10
	30%	1.00	4.50	8.00	0.06	0.09	0.12
	10%	1.00	4.50	8.00	0.08	0.12	0.16
NT-RKP16R08M-SC	100%	1.00	4.00	7.00	0.06	0.10	0.14
	30%	1.00	8.00	15.00	0.10	0.13	0.16
	10%	1.00	8.00	15.00	0.12	0.15	0.18
NT-RKP11R08M-TE	100%	1.00	2.50	4.00	0.08	0.11	0.14
	30%	1.00	4.50	8.00	0.10	0.14	0.18
	10%	1.00	4.50	8.00	0.12	0.17	0.22
NT-RKP16R08M-TE	100%	1.00	4.00	7.00	0.12	0.15	0.18
	30%	1.00	8.00	15.00	0.14	0.18	0.22
	10%	1.00	8.00	15.00	0.18	0.23	0.28
NT-RKP11R00G-AL	100%	1.00	2.50	4.00	0.08	0.14	0.20
	30%	1.00	4.50	8.00	0.10	0.17	0.24
	10%	1.00	4.50	8.00	0.12	0.20	0.28
NT-RKP16R00G-AL	100%	1.00	4.00	7.00	0.11	0.18	0.25
	30%	1.00	8.00	15.00	0.14	0.22	0.30
	10%	1.00	8.00	15.00	0.16	0.25	0.34

Parameters for ramping

	NT-RKP11			NT-RKP16				
	DC	RMPX	L	DC	RMPX	L		
	16	4.2°	10.8	25	5.0°	9.0		
	17	3.9°	11.5	32	1.7°	24.3		
	20	2.9°	15.4	40	1.1°	36.5		
	21	2.7°	16.6					
	25	2.0°	21.5					
	26	1.9°	22.4					
	32	1.4°	29.5					
	40	1.0°	39.3					

RMPX: max. ramping angle; L: max. ramping path

Parameters for helical milling

	NT-RKP11 R0.4			NT-RKP11 R0.8/1.2/1.6						
	DC	DH min.	DH max.	DC	DH min.	DH max.				
	16	20	32	16	21	31				
	17	22	34	17	23	33				
	20	28	40	20	29	39				
	21	30	42	21	31	41				
	25	38	50	25	39	49				
	26	40	52	26	41	51				
	32	52	64	32	53	63				
	40	68	80	40	69	79				
	NT-RKP16 R0.8			NT-RKP16 R1.2/1.6/2.0			NT-RKP16 R3.1			
DC	DH min.	DH max.	DC	DH min.	DH max.	DC	DH min.	DH max.		
25	32	49	25	33	49	25	35	47		
32	46	63	32	47	63	32	49	61		
40	62	79	40	63	79	40	65	77		

DH min.: min. cutting dia.; DH max.: max. cutting dia.

DOUBLEREK

High productivity high precision double sided shoulder milling system

APPLICATION

- Shoulder milling
- Shoulders with repeated passes
- Long overhang shoulder milling

ISO APPLICATION FIELDS

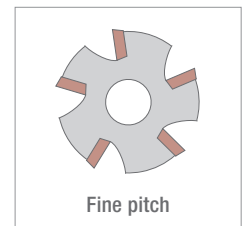
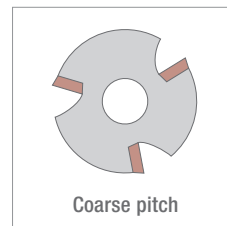
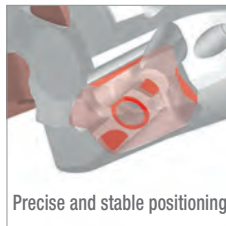
P M K

ADVANTAGES AND CHARACTERISTICS

- Available in big and small dimensions allow axial removals up to 15 mm.
- Super positive rake with helical geometry, extremely smooth cutting action.
- Fully ground inserts for precision machining and excellent finishes.
- Thickness greater than conventional inserts of the same size ensures better heat dissipation and excellent mechanical strength
- Secure and reliable installation guarantees better precision especially at tough conditions

• Cutter bodies

- Arbor type
- Cylindrical type
- Screw-in type
- Extension sleeves (steel/carbide 10xD)
- From D16 to D125



• Inserts

- 4 cutting edges
- Edge length 10 and 17
- Cemented carbide grades with CVD and PVD coatings
- Geometries: GP, TE



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

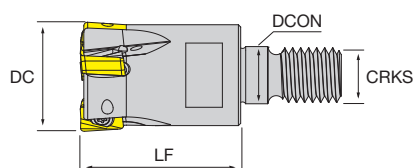
G - SPARE PARTS

NT-DRK

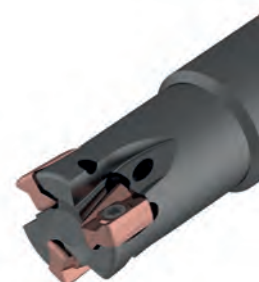
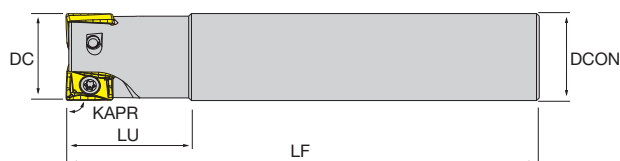
DoubleRek

- Double-sided precision shoulder milling system, with coolant through
- Low resistance robust helical shoulder milling system, provides precision, good surface and reliability
- Tolerance of tool diameter (with Nikko inserts installed) 0/-0.2
- Steel and carbide arbors available for screw-in type holders

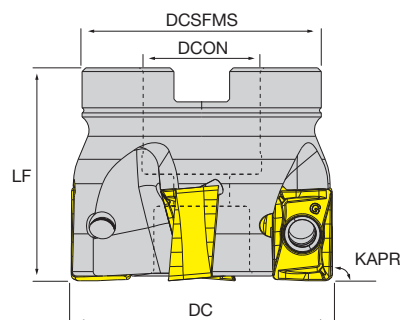
Screw-in



Cylindrical



Arbor



Designation	Stock	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	KAPR	WT	MIID
SCREW-IN											
NT-DRK10 D016-M08-Z02	●	16	2	8.5	25	-	-	M8	90°	0.03 Kg	NT-DRK10
NT-DRK10 D020-M12-Z03	●	20	3	10.5	30	-	-	M10	90°	0.05 Kg	NT-DRK10
NT-DRK10 D025-M16-Z03	●	25	3	12.5	35	-	-	M12	90°	0.10 Kg	NT-DRK10
NT-DRK10 D032-M16-Z04	●	32	4	17	43	-	-	M16	90°	0.22 Kg	NT-DRK10
CYLINDRICAL											
NT-DRK10 D016-S16-Z02	●	16	2	16	100	25	-	-	90°	0.13 Kg	NT-DRK10
NT-DRK10 D020-S20-Z03	●	20	3	20	110	30	-	-	90°	0.23 Kg	NT-DRK10
NT-DRK10 D025-S25-Z03	●	25	3	25	120	35	-	-	90°	0.41 Kg	NT-DRK10
NT-DRK10 D032-S32-Z04	●	32	4	32	130	45	-	-	90°	0.74 Kg	NT-DRK10
NT-DRK17 D032-S32-Z02	●	32	2	32	130	45	-	-	90°	0.69 Kg	NT-DRK17
NT-DRK17 D040-S32-Z03	●	40	3	32	150	40	-	-	90°	0.89 Kg	NT-DRK17
ARBOR											
NT-DRK10 D032-F16-Z04	●	32	4	16	35	-	30	-	90°	0.10 Kg	NT-DRK10
NT-DRK10 D040-F16-Z05	●	40	5	16	40	-	30	-	90°	0.18 Kg	NT-DRK10
NT-DRK10 D050-F22-Z05	●	50	5	22	40	-	40	-	90°	0.31 Kg	NT-DRK10
NT-DRK10 D050-F22-Z07	●	50	7	22	40	-	40	-	90°	0.30 Kg	NT-DRK10
NT-DRK10 D063-F22-Z06	●	63	6	22	40	-	55	-	90°	0.62 Kg	NT-DRK10
NT-DRK10 D063-F22-Z08	●	63	8	22	40	-	55	-	90°	0.62 Kg	NT-DRK10
NT-DRK10 D080-F27-Z07	●	80	7	27	50	-	63	-	90°	1.26 Kg	NT-DRK10
NT-DRK10 D080-F27-Z10	●	80	10	27	50	-	63	-	90°	1.24 Kg	NT-DRK10
NT-DRK17 D050-F22-Z04	●	50	4	22	40	-	45	-	90°	0.29 Kg	NT-DRK17
NT-DRK17 D063-F22-Z05	●	63	5	22	40	-	56	-	90°	0.54 Kg	NT-DRK17
NT-DRK17 D063-F22-Z06	●	63	6	22	40	-	56	-	90°	0.51 Kg	NT-DRK17
NT-DRK17 D080-F27-Z06	●	80	6	27	50	-	63	-	90°	1.13 Kg	NT-DRK17
NT-DRK17 D080-F27-Z07	●	80	7	27	50	-	63	-	90°	1.10 Kg	NT-DRK17

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Designation	Stock	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	KAPR	WT	MIID
NT-DRK17 D100-F32-Z07	●	100	7	32	50	-	78	-	90°	1.71 Kg	NT-DRK17
NT-DRK17 D100-F32-Z09	●	100	9	32	50	-	78	-	90°	1.71 Kg	NT-DRK17
NT-DRK17 D125-F40-Z08	●	125	8	40	63	-	80	-	90°	3.20 Kg	NT-DRK17
NT-DRK17 D125-F40-Z10	●	125	10	40	63	-	80	-	90°	3.15 Kg	NT-DRK17

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
		
NT-DRK10 D000-000-Z00	NT-ST25078P08	NT-FTP08
NT-DRK17 D000-000-Z00	NT-ST45111T15	NT-FTB15

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

NT-DRK

DoubleRek

- GP and TE are both helical geometries with reduced cutting resistance
- Precise and enhanced positioning guarantees more reliability in machining
- Available in diverse grades covering wide application range

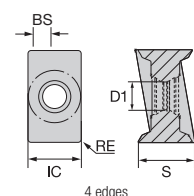
HC: Coated carbide
HF: Micrograin carbide
CVD: Chemical vapour deposition
PVD: Physical vapour deposition

HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD
JC7515	JC8520	JC9540	JP5530	JP7525	JP8725	JP9535	JP9545

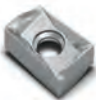
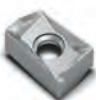
Stable machining, light cut ● 1st choice ○ suitable
General machining, medium cut ● 1st choice ○ suitable
Unstable machining, heavy cut ▲ 1st choice ▲ suitable

Dimensions

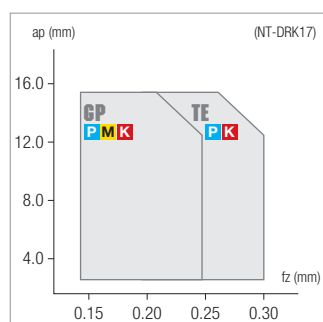
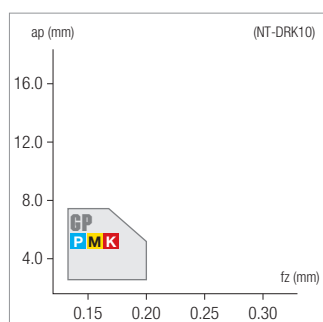
ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P	M	K	N	S	H
130 300	90 210	180 360	160 320	30 70	
100 260	60 180	140 300		20 60	20 50

Designation		RE	IC	S	D1	BS	Stock							
GENERAL	GP P M K													
	 NT-DRK10R08K-GP	0.8	5.82	5.45	2.9	0.9	●	●	●	●	●	●	●	
REINFORCED	GP P M K													
	 NT-DRK17R08K-GP	0.8	11.2	10.94	5.2	3.2	●	●	●	●	●	●	●	
REINFORCED	TE P K													
	 NT-DRK17R12K-TE	1.2	11.2	10.94	5.2	3.2	●	●	●	●	●	●	●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC8520			JP5530			JP8725		
				min	start	max	min	start	max	min	start	max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	130	180	230	100	140	180	100	150	200
			30%	200	240	280	160	200	240	160	210	260
			10%	260	280	300	220	240	260	220	250	280
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	100	140	180	80	120	160	90	130	170
			30%	160	200	240	120	160	200	130	170	210
			10%	220	240	260	180	200	220	190	210	230
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	70	100	130	60	90	120	80	110	140
			30%	120	160	200	100	130	160	120	150	180
			10%	200	220	240	140	170	200	160	190	220
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540			JP9535			JP9545		
				min	start	max	min	start	max	min	start	max
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	90	130	170	80	120	160	60	100	140
			30%	110	160	210	100	150	200	80	130	180
			10%	130	190	250	120	180	240	100	160	220
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%	70	100	130	60	90	120	50	80	110
			30%	80	110	140	70	100	130	60	90	120
			10%	90	120	150	80	110	140	70	100	130
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	90	120	150	80	110	140	60	90	120
			30%	110	150	190	100	140	180	80	120	160
			10%	130	170	210	120	160	200	100	140	180
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%	80	110	140	70	100	130	60	90	120
			30%	90	120	150	80	110	140	70	100	130
			10%	100	130	160	90	120	150	80	110	140
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC7515			JC8520			JP7525		
				min	start	max	min	start	max	min	start	max
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	180	230	280	160	200	240	140	180	220
			30%	200	260	320	180	230	280	160	210	260
			10%	220	290	360	200	260	320	180	240	300
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	120	180	240	120	160	200	100	140	180
			30%	160	220	280	140	190	240	120	170	220
			10%	200	260	320	160	220	280	140	200	260
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	100%	100	140	180	100	130	160	90	120	150
			30%	140	180	220	120	160	200	120	150	180
			10%	180	220	260	140	190	240	150	180	210
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540			JP9535			JP9545		
				min	start	max	min	start	max	min	start	max
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	30	40	50	20	30	40	20	25	30
			30%	40	50	60	30	40	50	30	35	40
			10%	50	60	70	40	50	60	40	45	50
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%				40	50	60	30	40	50
			30%				50	60	70	40	50	60
			10%				60	70	80	50	60	70

ae: radial depth of cut; DC: milling cutter diameter
Complete workpiece materials p. H1.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

DESIGNATION	ae/Dc	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
NT-DRK10R08K-GP	100%	1.00	2.50	4.00	0.08	0.10	0.12
	30%	1.00	4.00	7.00	0.10	0.13	0.16
	10%	1.00	4.00	7.00	0.12	0.16	0.20
NT-DRK17R08K-GP	100%	1.00	4.00	7.00	0.11	0.18	0.21
	30%	1.00	8.00	15.00	0.14	0.20	0.26
	10%	1.00	8.00	15.00	0.16	0.23	0.30
NT-DRK17R12K-TE	100%	1.00	4.00	7.00	0.13	0.19	0.25
	30%	1.00	8.00	15.00	0.16	0.23	0.30
	10%	1.00	8.00	15.00	0.20	0.27	0.34

DOUBLE3GON

High economical trigonal shoulder milling system for universal processes

APPLICATION

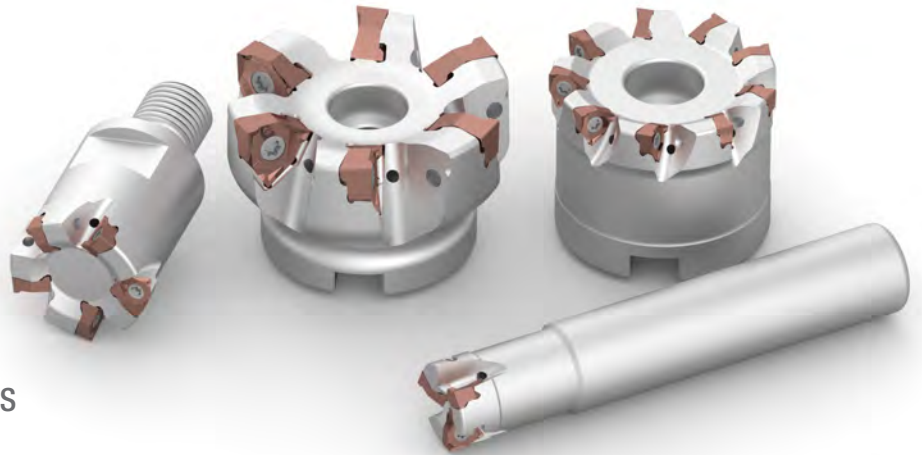
- Shoulder milling
- Shoulders with repeated passes
- Long overhang shoulder milling

ISO APPLICATION FIELDS

P M K N S

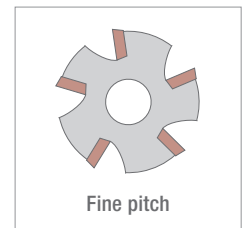
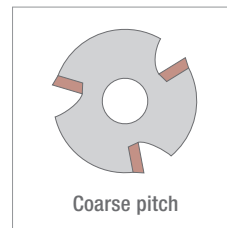
ADVANTAGES AND CHARACTERISTICS

- High precision in making 90° side milling
- Reduced cost per edge than conventional shoulder milling systems.
- Very robust system because of the negative trigonal and reliable installation.
- Full range of carbide geometries, radii and grades.
- «Ultra-precise» cutter bodies with special surface treatment to ensure longer life.



• Cutter bodies

- Arbor type
- Cylindrical type
- Screw-in type
- Extension sleeves (steel/carbide 10xD)
- From D20 to D160



• Inserts

- 6 cutting edges
- Edge length 04 and 08
- Cemented carbide grades with CVD and PVD coatings
- Geometries: SC, GP, TE, AL



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

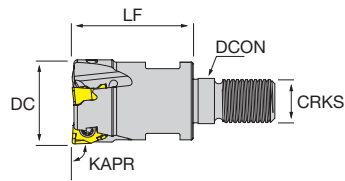
G - SPARE PARTS

NT-WX

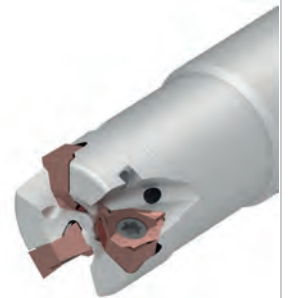
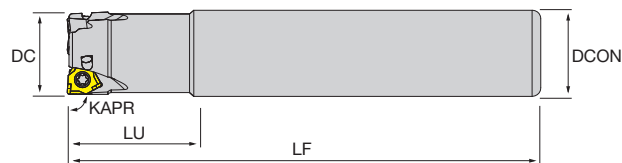
Double3Gon

- Double sided trigonal type shoulder milling system, with coolant through
- Tolerance of tool diameter (with Nikko inserts installed) 0/-0.2
- Steel and carbide arbors available for screw-in type holders
- High-Quality Swiss screws guarantee more reliability in your machining

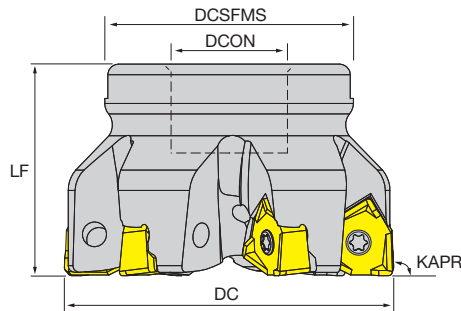
Screw-in



Cylindrical



Arbor



Designation	Stock	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	KAPR	WT	MIID
SCREW-IN											
NT-WX04H D020-M10-Z03	●	20	3	10.5	28	-	-	M10	90°	0.05 Kg	WNEX0403
NT-WX04H D025-M12-Z03	○	25	3	12.5	30	-	-	M12	90°	-	WNEX0403
NT-WX04H D025-M12-Z04	●	25	4	12.5	30	-	-	M12	90°	0.09 Kg	WNEX0403
NT-WX04H D032-M16-Z04	○	32	4	17	40	-	-	M16	90°	-	WNEX0403
NT-WX04H D032-M16-Z05	●	32	5	17	40	-	-	M16	90°	0.20 Kg	WNEX0403
CYLINDRICAL											
NT-WX04H D020-S16-Z03	●	20	3	16	110	20	-	-	90°	0.16 Kg	WNEX0403
NT-WX04H D020-S20-Z03	●	20	3	20	110	28	-	-	90°	0.23 Kg	WNEX0403
NT-WX04H D025-S20-Z04	●	25	4	20	120	22	-	-	90°	0.27 Kg	WNEX0403
NT-WX04H D025-S25-Z04	●	25	4	25	120	30	-	-	90°	0.40 Kg	WNEX0403
NT-WX04H D032-S25-Z05	●	32	5	25	130	25	-	-	90°	0.47 Kg	WNEX0403
NT-WX04H D032-S32-Z05	●	32	5	32	130	40	-	-	90°	0.72 Kg	WNEX0403
ARBOR											
NT-WX04H D040-F16-Z05	○	40	5	16	40	-	35	-	90°	-	WNEX0403
NT-WX04H D040-F16-Z07	●	40	7	16	40	-	35	-	90°	0.22 Kg	WNEX0403
NT-WX04H D050-F22-Z06	○	50	6	22	40	-	47	-	90°	-	WNEX0403
NT-WX04H D050-F22-Z09	●	50	9	22	40	-	47	-	90°	0.38 Kg	WNEX0403
NT-WX04H D063-F22-Z08	○	63	8	22	40	-	47	-	90°	-	WNEX0403
NT-WX04H D063-F22-Z10	○	63	10	22	40	-	47	-	90°	-	WNEX0403
NT-WX08H D050-F22-Z04	●	50	4	22	40	-	47	-	90°	0.31 Kg	WNEX0806
NT-WX08H D050-F22-Z05	●	50	5	22	40	-	47	-	90°	0.33 Kg	WNEX0806
NT-WX08H D063-F22-Z06	●	63	6	22	40	-	47	-	90°	0.43 Kg	WNEX0806
NT-WX08H D063-F22-Z07	●	63	7	22	40	-	47	-	90°	0.42 Kg	WNEX0806
NT-WX08H D063-F27-Z06	●	63	6	27	40	-	47	-	90°	0.63 Kg	WNEX0806
NT-WX08H D080-F27-Z07	●	80	7	27	50	-	62.1	-	90°	0.99 Kg	WNEX0806

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Designation	Stock	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	KAPR	WT	MIID
NT-WX08H D080-F27-Z09	●	80	9	27	50	-	62.1	-	90°	0.96 Kg	WNEX0806
NT-WX08H D100-F32-Z08	●	100	8	32	50	-	77.1	-	90°	-	WNEX0806
NT-WX08H D100-F32-Z11	●	100	11	32	50	-	77.1	-	90°	1.45 Kg	WNEX0806
NT-WX08H D125-F40-Z11	●	125	11	40	63	-	80	-	90°	2.38 Kg	WNEX0806
NT-WX08H D160-F40-Z12	●	160	12	40	63	-	85	-	90°	3.86 Kg	WNEX0806

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws 	Flag wrenches 
NT-WX04H D ~~000-000~~ -Z ~~00~~	NT-ST25056T08HQ	NT-FTB08
NT-WX08H D ~~000-000~~ -Z ~~00~~	NT-ST40110T15HQ	NT-FTB15

A - TURNING

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F - ACCESSORIES

G - SPARE PARTS

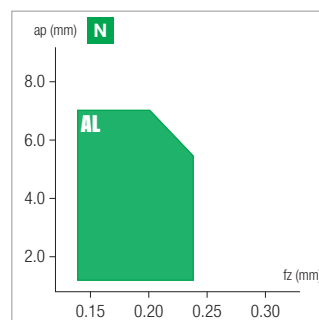
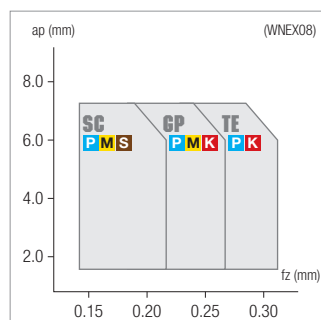
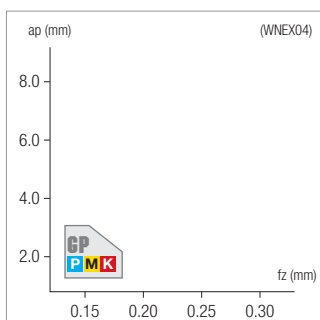
WNEX**Double3Gon**

- Double-sided trigonal inserts offering 6 edges!
- Stable sitting in the pocket guarantees more reliability in machining
- Available in diverse grades covering wide application range

HC: Coated carbide HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD
	JG7515	JG7530	JG8520	JG9540	JP5530	JP5540	JP7525	JP8525	JP8725	JP9525	JU6520	
Stable machining, light cut	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	
General machining, medium cut	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	
Unstable machining, heavy cut	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	
Dimensions	ISO											
	Vc(m/min) - suggested cutting speed range (bold: 1st choice)											
	P		130 300		100 260	80 220		100 260	100 280			
	M			90 210	60 180	60 180			80 200			
	K	180 360	160 320	160 320			140 300					
	N										300 1100	
	S				30 70	20 50						
	H											

Designation		RE	IC	S	D1	BS	Stock											
GENERAL 	WNEX040304R-GP	0.4	6.7	3.3	3.1	0.9						●	●	▽		▽		
	WNEX040308R-GP	0.8	6.7	3.3	3.1	0.9							●					
	WNEX080608R-GP	0.8	12.5	6.5	4.6	1.5	●		●	●	●	●	●	●				
LOW FORCE 	WNEX080604R-SC	0.4	12.5	6.5	4.6	1.8						●		▽				
	WNEX080608R-SC	0.8	12.5	6.5	4.6	1.5						●						
REINFORCED 	WNEX080608R-TE	0.8	12.5	6.5	4.6	1.5	●	▽			●	●	●		●	▽		
	WNEX080612R-TE	1.2	12.5	6.5	4.6	1.1						●		▽				
ALUMINIUM polished surface periphery ground	WNEX080608R-AL	0.8	12.5	6.5	4.6	1.4										●		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

A - TURNING	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC8520			JP5530			JP5540		
					min	start	max	min	start	max	min	start	max
	P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100% 30% 10%	130 200 260	180 240 280	230 280 300	100 160 220	140 200 240	180 240 260	80 120 180	120 160 200	160 200 220
	P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100% 30% 10%	100 160 220	140 200 240	180 240 260	80 120 180	120 160 200	160 200 220	60 100 160	100 140 180	140 180 200
B - THREADING	P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100% 30% 10%	70 120 200	100 160 220	130 200 240	60 100 140	90 130 170	120 160 200			
	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540			JP5530			JP5540		
					min	start	max	min	start	max	min	start	max
	P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100% 30% 10%	90 110 130	130 160 190	170 210 250	60 80 100	100 130 160	140 180 220	60 80 100	100 130 160	140 180 220
C - GROOVING	P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100% 30% 10%	70 80 90	100 110 120	130 140 150				50 60 70	80 90 100	110 120 130
	M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100% 30% 10%	90 110 130	120 150 170	150 190 210	60 80 100	90 120 140	120 160 180	60 80 100	90 120 140	120 160 180
	M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100% 30% 10%	80 90 100	110 120 130	140 150 160				60 70 80	90 100 110	120 130 140
	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC7515			JC8520			JP7525		
D - MILLING					min	start	max	min	start	max	min	start	max
	K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100% 30% 10%	180 200 220	230 260 290	280 320 360	160 180 200	200 230 260	240 280 320	140 160 180	180 210 240	220 260 300
	K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100% 30% 10%	120 160 200	180 220 260	240 280 320	120 140 160	160 190 220	200 240 280	100 120 140	140 170 200	180 220 260
	K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	100% 30% 10%	100 140 180	140 180 220	180 220 260	100 120 140	130 160 190	160 200 240	90 120 150	120 150 180	150 180 210
E - DRILLING	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JU6520								
					min	start	max						
	N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGA)		100% 30% 10%	300 400 500	400 600 800	500 800 1100						
	N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100% 30% 10%	200 300 400	250 350 450	300 400 500						
F - ACCESSORIES	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540			JP5540					
					min	start	max	min	start	max			
	S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100% 30% 10%	30 40 50	40 50 60	50 60 70	20 30 40	25 35 45	30 40 50			
	S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100% 30% 10%				30 40 50	40 50 60	50 60 70			
G - SPARE PARTS													

ae: radial depth of cut; DC: milling cutter diameter
Complete workpiece materials p. H1.

G - SPARE PARTS	F - ACCESSORIES	E - DRILLING	D - MILLING	C - GROOVING	B - THREADING	A - TURNING

D35

D36

ALUREK

Multi-functional shoulder milling cutters specially for non-ferrous materials

APPLICATION

- Shoulder milling
- Long overhang milling
- Profiling and Pocketing
- Linear and helical ramping

ISO APPLICATION FIELDS

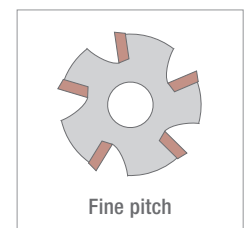
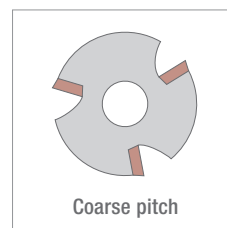
N

ADVANTAGES AND CHARACTERISTICS

- Inserts of helical geometry type can produce high precision 90°.
- PVD coated carbide inserts, an optimal cost-effective solution comparing with PCD milling.
- Different radii of inserts available.
- Smart-Lock at the back of the insert and on the cutter seats, guarantees a more reliable machining process and better surface finishing.
- Popular sizes of cutter bodies available with cylindrical shank, screw-in and arbor type connection, all with internal coolant.
- 10xD extensive sleeves available in both steel and carbide.

• Cutter bodies

- Arbor type
- Cylindrical type (up to 10xD)
- Screw-in type
- Extension sleeves (steel/carbide 10xD)
- From D25 to D50



• Inserts

- 2 cutting edges
- Edge length 19
- PVD coated carbide grade specially for N materials
- Geometries: AL
- With Smart-Lock



*Available upon request

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

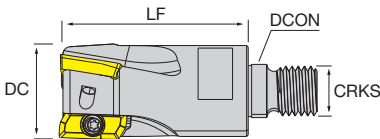
G - SPARE PARTS

NT-ALU90

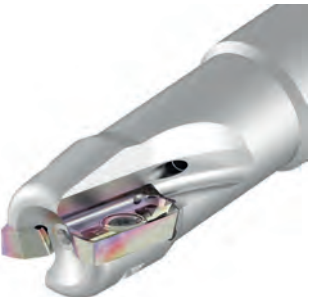
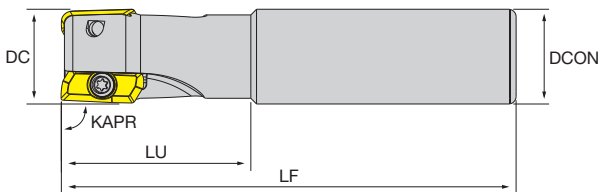
AluRek

- Highly positive and fine polished precision shoulder milling system tailored for aluminum and non-ferrous materials
- All with coolant through
- With Nikko smart-lock at the back of the insert and on the seat, offering better reliability and surface finishing
- Tolerance of tool diameter (with Nikko inserts installed) 0/-0.2

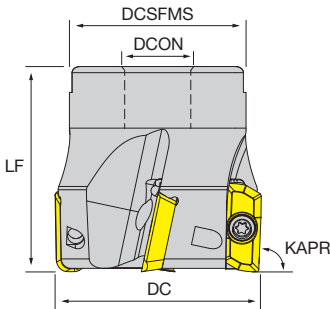
Screw-in



Cylindrical



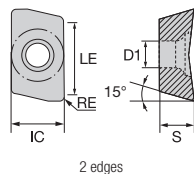
Arbor



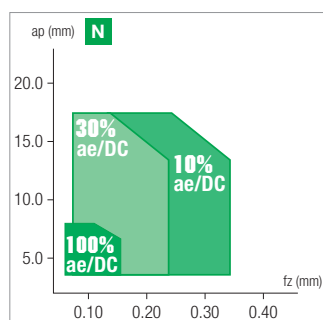
Designation	Stock	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	KAPR		MIID
SCREW-IN											
NT-ALU9019 D025-M12-Z02	●	25	2	12.5	50	-	-	M12	90°		NT-ALU9019
NT-ALU9019 D032-M16-Z03	●	32	3	17	60	-	-	M16	90°		NT-ALU9019
CYLINDRICAL											
NT-ALU9019 D025-S25-Z02	●	25	2	25	120	50	-	-	90°		NT-ALU9019
NT-ALU9019 D032-S32-Z03	●	32	3	32	130	60	-	-	90°		NT-ALU9019
ARBOR											
NT-ALU9019 D040-F16-Z03	●	40	3	16	50	-	33	-	90°		NT-ALU9019
NT-ALU9019 D050-F22-Z03	●	50	3	22	50	-	43	-	90°		NT-ALU9019
NT-ALU9019 D050-F22-Z04	●	50	4	22	50	-	43	-	90°		NT-ALU9019

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-ALU9019 D000-000-Z00	NT-ST40090T15	NT-FTB15

NT-ALU90		HF: Micrograin carbide PVD: Physical vapour deposition		HF PVD				
AluRek				JP6525				
• PVD coated micro-grain grade, optimal cost effective solution between uncoated carbide inserts and PCD • With Nikko smart lock at the back, provides better surface finishing • Sharp but reliable geometry, polished surface, precision periphery ground high performance solution • Multiple radii available, R0.2 / 0.8 / 3.2		Stable machining, light cut	● 1 st choice ○ suitable	●				
		General machining, medium cut	● 1 st choice ○ suitable	●				
		Unstable machining, heavy cut	● 1 st choice ○ suitable					
Dimensions		ISO Vc(m/min) - suggested cutting speed range (bold: 1st choice)						
 2 edges		P						
		M						
		K						
		N	400 1400					
		S						
		H						
Designation		RE	IC	S	D1	LE	Stock	
 polished surface periphery ground	NT-ALU9019R02H-AL	0.2	9.5	4.76	4.6	19	●	
	NT-ALU9019R08H-AL	0.8	9.5	4.76	4.6	19	●	
	NT-ALU9019R32H-AL	3.2	9.5	4.76	4.6	19	●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



A - TURNING	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP6525				
					min	start	max		
	N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAŁ)		100%	400	500	600		
				30%	600	800	1000		
				10%	800	1100	1400		
	N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	350	500		
				30%	300	450	600		
				10%	400	550	700		

ae: radial depth of cut; DC: milling cutter diameter
Complete workpiece materials p. H1.

B - THREADING

C - GROOVING

D - MILLING

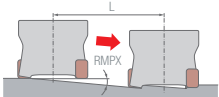
E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

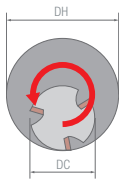
DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
		ap (mm)			fn (mm/rev)		
		min	start	max	min	start	max
NT-ALU9019Rough-AL	100%	1.00	4.00	7.00	0.06	0.10	0.14
	30%	1.00	9.00	17.00	0.08	0.15	0.22
	10%	1.00	9.00	17.00	0.10	0.20	0.30

Parameters for ramping

	ALU9019					
	DC	RMPX	L			
	25	3.4°	3.0			
	32	2.5°	2.9			
	40	1.4°	2.1			
	50	0.7°	1.4			

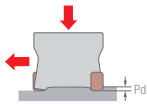
RMPX: max. ramping angle; L: max. ramping path

Parameters for helical milling

	ALU9019 R0.2			ALU9019 R0.8			ALU9019 R3.2			
	DC	DH min.	DH max.	DC	DH min.	DH max.	DC	DH min.	DH max.	
	25	32	49	25	33	48	25	37	47	
	32	46	63	32	47	62	32	51	61	
	40	62	79	40	63	78	40	67	77	
	50	82	99	50	83	98	50	87	97	

DH min.: min. cutting dia.; DH max.: max. cutting dia.

Peck milling

	Pd maximum pecking depth			
	Pd = 1 mm			

APKT

ISO

- Positive shoulder milling insert for general purpose use
- 3 geometries available, GP for universal use, TE for difficult conditions, AL for aluminum and non-ferrous materials
- AL geometry is highly sharp, periphery ground and fine polished

HC: Coated carbide
HF: Micrograin carbide
CVD: Chemical vapour deposition
PVD: Physical vapour deposition

HC	HF	HF	HF
CVD	PVD	PVD	PVD
JC7530	JP5540	JP8725	JU6520

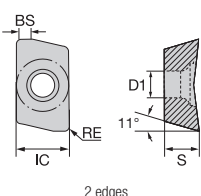
Stable machining, light cut ● 1st choice ○ suitable

General machining, medium cut ● 1st choice ○ suitable

Unstable machining, heavy cut ⚡ 1st choice ⚡ suitable

Dimensions

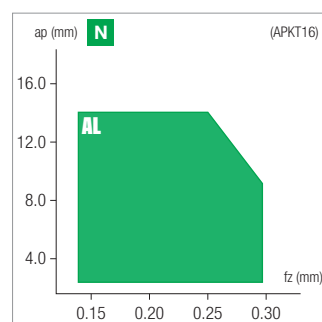
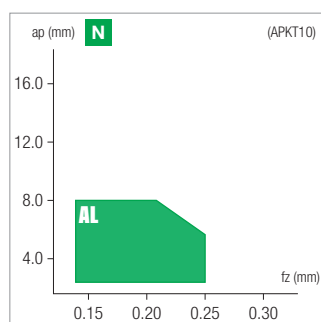
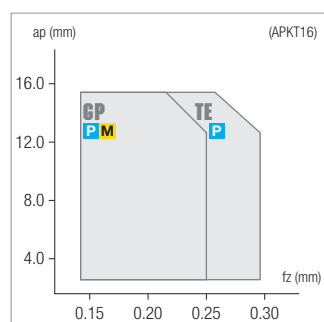
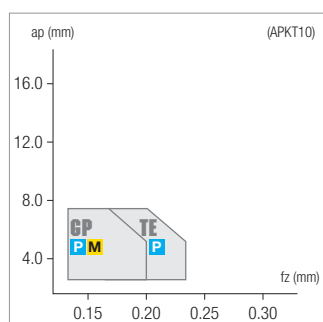
ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P	M	K	N	S	H
80 220	60 180	160 320	300 1100	20 50	

Designation		RE	IC	S	D1	BS	Stock			
GENERAL	GP P M									
	APKT1003PDSR-GP	0.5	6.7	3.18	3.15	0.9	●	●		
REINFORCED	TE P									
	APKT1003PDSR-TE	0.5	6.7	3.18	3.15	0.9	●	●		
ALUMINIUM	AL N									
	APKT1003PDFR-AL	0.5	6.7	3.18	3.15	1.6			●	
	polished surface periphery ground									
	APKT1604PDFR-AL	1	9.525	4.76	4.4	1.9			●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5540			JP8725			
				min	start	max	min	start	max	
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	80	120	160	100	150	200	
			30%	120	160	200	160	210	260	
			10%	180	200	220	220	250	280	
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	60	100	140	90	130	170	
			30%	100	140	180	130	170	210	
			10%	160	180	200	190	210	230	
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%				80	110	140	
			30%				120	150	180	
			10%				160	190	220	
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5540						
				min	start	max				
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	60	100	140				
			30%	80	130	180				
			10%	100	160	220				
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%	50	80	110				
			30%	60	90	120				
			10%	70	100	130				
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	60	90	120				
			30%	80	120	160				
			10%	100	140	180				
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%	60	90	120				
			30%	70	100	130				
			80	110	140					
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JU6520						
				min	start	max				
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGA)		100%	300	400	500				
			30%	400	600	800				
			10%	500	800	1100				
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	250	300				
			30%	300	350	400				
			10%	400	450	500				

ae: radial depth of cut; DC: milling cutter diameter
Complete workpiece materials p. H1.

A - TURNING

B - THREADING

C - GROOVING

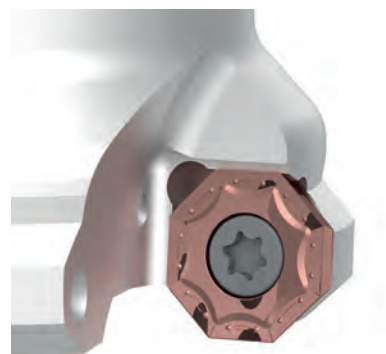
D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING	DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
			ap (mm)			fz (mm)		
			min	start	max	min	start	max
B - THREADING	APKT1003PDSR-GP	100%	1.00	2.50	4.00	0.06	0.11	0.16
		30%	1.00	4.00	7.00	0.08	0.14	0.20
		10%	1.00	4.00	7.00	0.10	0.16	0.22
	APKT1604PDSR-GP	100%	1.00	4.00	7.00	0.08	0.14	0.19
		30%	1.00	7.00	13.00	0.10	0.17	0.24
		10%	1.00	7.00	13.00	0.12	0.20	0.28
	APKT1003PDSR-TE	100%	1.00	2.50	4.00	0.08	0.13	0.18
		30%	1.00	4.00	7.00	0.10	0.16	0.22
		10%	1.00	4.00	7.00	0.12	0.19	0.26
C - GROOVING	APKT1604PDSR-TE	100%	1.00	4.00	7.00	0.10	0.16	0.22
		30%	1.00	7.00	13.00	0.12	0.20	0.28
		10%	1.00	7.00	13.00	0.14	0.24	0.34
	APKT1003PDFR-AL	100%	1.00	2.50	4.00	0.08	0.14	0.20
		30%	1.00	4.00	7.00	0.10	0.17	0.24
		10%	1.00	4.00	7.00	0.12	0.20	0.28
	APKT1604PDFR-AL	100%	1.00	4.00	7.00	0.08	0.16	0.24
		30%	1.00	7.00	13.00	0.10	0.20	0.30
		10%	1.00	7.00	13.00	0.12	0.24	0.36
D - MILLING								
E - DRILLING								
F - ACCESSORIES								
G - SPARE PARTS								



MILLING Facing

Quick guide .D46

4FACEPLUS .D48

OKTOPLUS .D55

DOUBLE4FACE .D62

DOUBLEHEX .D67

ISO SEHX .D72

A - TURNING

B - THREADING

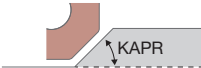
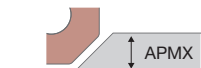
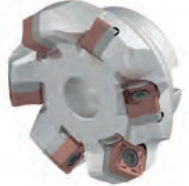
C - GROOVING

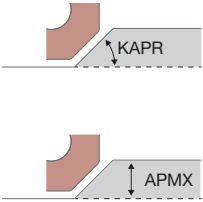
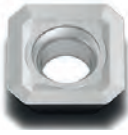
D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

	4FACEPLUS	OKTOPLUS	DOUBLE4FACE
	 D48	 D55	 D62
 KAPR  APMX	 ARBOR	 ARBOR	 ARBOR
KAPR	45°	43°	45°
Insert sizes	13	05 / 06	12
APMX	6	3 / 4	3
Tool diameter	Ø40 - Ø200	Ø50 - Ø160	Ø50 - Ø160
Coolant holes	✗	✓	✓
Workpiece material	P M K N S	P M K N S	P M K N S
No. of cutting edges	4	8	8
No. of geometries	8	5	5
Special features	single edge Wiper type	double edge Wiper type	double edge Wiper type
Face Milling 	✓	✓	✓
Intermittent Milling 	✓	✓	✓
Machine load			
Strenght			
Precision			
Finishing			
Range			

	DOUBLEHEX	ISO SENX
	 D67	 D72
	  ARBOR	 Only insert is available.
KAPR	60° (45° on request)	45°
Insert sizes	09	12
APMX	6	5
Tool diameter	Ø80 - Ø160	-
Coolant holes	✗	-
Workpiece material	K	P M K N
No. of cutting edges	12	4
No. of geometries	4	4
Special features	solid PCBN and ceramic available	-
Face Milling 	✓	✓
Intermittent Milling 	✓	✓
Machine load		
Strenght		
Precision		
Finishing		
Range		

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

4FACEPLUS

Face milling system for multiple use general purpose operations

APPLICATION

- Finishing / semi-finishing / rough face milling
- Removal of the crusted surfaces
- General milling of interrupted surfaces
- Machining of linear and helical ramping

ISO APPLICATION FIELDS

P M K N S

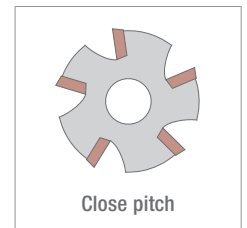
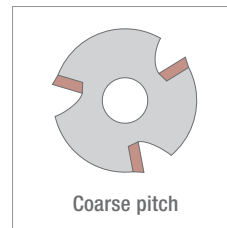
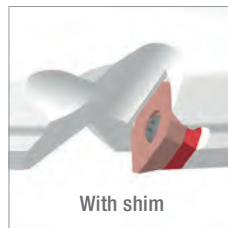
ADVANTAGES AND CHARACTERISTICS

- High productivity and easy to use
- Light cutting action with low power consumption
- Available in E tol. (ground type) and M tol. (pressed type)
- Available with wiper geometry for good surface finish



• Cutter bodies

- Arbor type with shim
- From D50 to D200



• Inserts

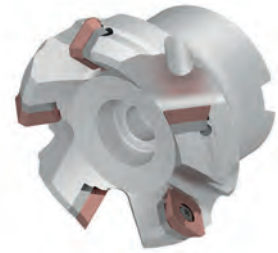
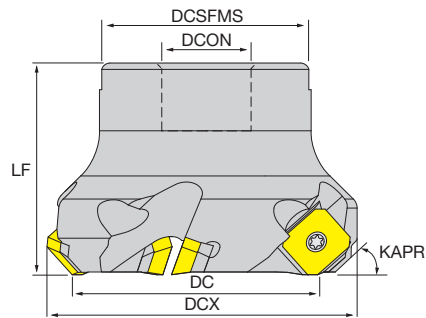
- 4 cutting edges
- Edge length 13 with APMX = 6mm
- Cemented carbide grades with CVD and PVD coatings
- Geometries: SC, GP, TE, AL, GG, GH, Flat, WU



NT-SE

4FacePlus

- Positive general face milling cutters
- With shims to protect the insert seats
- Kapr 45°, without coolant through



Designation	Stock	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	DCX	WT	MIID
NT-SE13 D040-F16-Z03	○	40	3	16	40	-	35	-	53	-	SE0013T3
NT-SE13 D050-F22-Z04	●	50	4	22	40	-	40	-	63	0.41 Kg	SE0013T3
NT-SE13 D050-F22-Z05	●	50	5	22	50	-	40	-	63	0.39 Kg	SE0013T3
NT-SE13 D063-F22-Z05	●	63	5	22	50	-	50	-	76	0.71 Kg	SE0013T3
NT-SE13 D063-F22-Z06	●	63	6	22	50	-	50	-	76	0.70 Kg	SE0013T3
NT-SE13 D080-F27-Z06	●	80	6	27	50	-	60	-	93	1.06 Kg	SE0013T3
NT-SE13 D080-F27-Z08	●	80	8	27	50	-	60	-	93	1.02 Kg	SE0013T3
NT-SE13 D100-F32-Z07	●	100	7	32	50	-	80	-	113	1.56 Kg	SE0013T3
NT-SE13 D100-F32-Z10	●	100	10	32	50	-	80	-	113	1.54 Kg	SE0013T3
NT-SE13 D125-F40-Z08	●	125	8	40	63	-	100	-	138	2.92 Kg	SE0013T3
NT-SE13 D125-F40-Z12	●	125	12	40	63	-	100	-	138	3.04 Kg	SE0013T3
NT-SE13 D160-F40-Z10	●	160	10	40	63	-	100	-	173	4.06 Kg	SE0013T3
NT-SE13 D200-F60-Z12	●	200	12	60	63	-	130	-	213	6.34 Kg	SE0013T3

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches	Shim	Shim screws	L wrench
NT-SE13 D000-F00-Z00					
	NT-ST35120T15	NT-FTB15	NT-SH004	NT-SR002	NT-WR035

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

SE

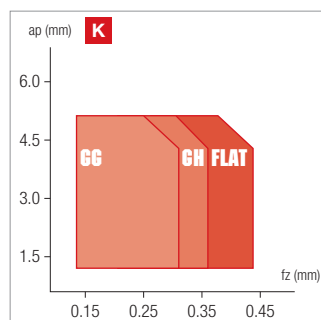
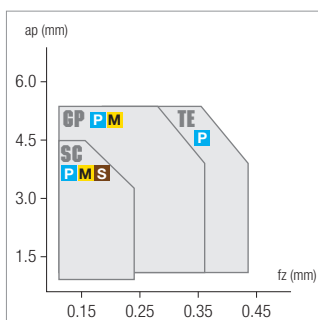
4FacePlus

- Positive general face milling inserts
- Diverse carbide grades with PVD and CVD coatings and also cermet grades available, covering a wide range of applications
- Sharp/universal/robust/cast iron featured/wiper geometries available

HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	HF	
	JC7530	JC8520	JC9540	JP5530	JP7525	JP8725	JP9535	JU4525	JU6520	
Stable machining, light cut	● 1 st choice	○ suitable				○		●	●	
General machining, medium cut	● 1 st choice	○ suitable	●	●	●	●	●		●	
Unstable machining, heavy cut	⚡ 1 st choice	⚡ suitable	⚡	⚡	⚡		⚡			
Dimensions		ISO								
		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)								
		P	130 300		100 260		100 280	130 300		
		M		90 210	60 180		80 200			
		K	160 320	160 320		140 300				
		N						300 1100		
		S		30 70			20 60			
		H								

Designation		BS	IC	S	D1	LE	Stock									
GENERAL	GP P M															
		SEET13T3AGEN-GP	1.2	13.4	3.97	4.4	8.8				●		●	●	●	
		SEMT13T3AGEN-GP	1.2	13.4	3.97	4.4	8.8		●	●	●		●	●		
GENERAL	GG K															
		SEET13T3AGSN-GG	1.3	13.4	3.97	4.4	8.8				●					
		SEMT13T3AGSN-GG	1.3	13.4	3.97	4.4	8.8				▲					
LOW FORCE	SC P M S															
		SEET13T3AGEN-SC	1.7	13.4	3.97	4.4	8.8			●	●		●	●		
REINFORCED	TE P															
		SEET13T3AGSN-TE	1.2	13.4	3.97	4.4	8.8				●					
		SEMT13T3AGSN-TE	1.2	13.4	3.97	4.4	8.8		●		●		●			
REINFORCED	GH K															
		SEET13T3AGSN-GH	1.3	13.4	3.97	4.4	8.8				●					
		SEMT13T3AGSN-GH	1.3	13.4	3.97	4.4	8.8				▲					

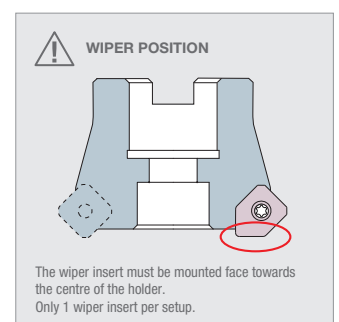
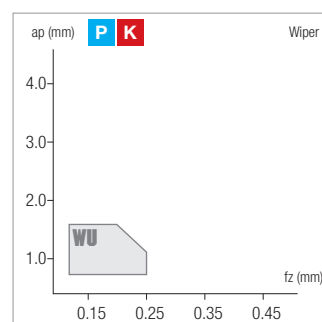
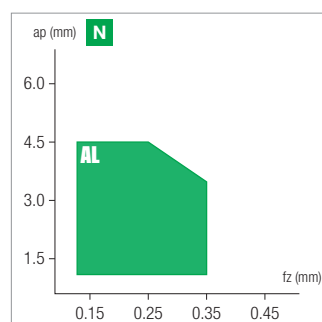
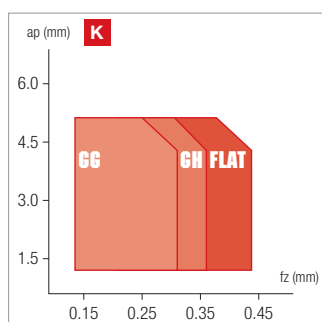
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



SE	HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition											
	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	HF			
4FacePlus	JC7530	JC8520	JC9540	JP5530	JP7525	JP8725	JP9535	JU4525	JU6520			
• Positive general face milling inserts • Diverse carbide grades with PVD and CVD coatings and also cermet grades available, covering a wide range of applications • Sharp/universal/robust/cast iron featured/wiper geometries available	Stable machining, light cut	● 1 st choice ○ suitable	●			○		●	●			
	General machining, medium cut	● 1 st choice ○ suitable	●	○	●	●	●	●		●		
	Unstable machining, heavy cut	⚡ 1 st choice ⚡ suitable	⚡		⚡	⚡		⚡				
Dimensions		ISO										
4 edges	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)											
	P		130 300		100 260		100 280		130 300			
	M			90 210	60 180			80 200				
	K	160 320	160 320			140 300						
	N								300 1100			
	S			30 70				20 60				
	H											

Designation		BS	IC	S	D1	LE	Stock									
REINFORCED	Flat K															
	 flat type SEEW13T3AGSN	7.5	13.4	3.97	4.4	8.8	▽									
ALUMINIUM	AL N															
	 polished surface periphery ground SEET13T3AGFN-AL	2.2	13.4	3.97	4.4	8.8								●		
WIPER	WU P K															
	 1 edge SEET13T3-WU	7.5	13.4	3.97	4.4	8.8				●	●					

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC8520			JP5530			JP8725		
					min	start	max	min	start	max	min	start	max
A - TURNING	P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	130	180	230	100	140	180	100	150	200
				30%	200	240	280	160	200	240	160	210	260
				10%	260	280	300	220	240	260	220	250	280
B - THREADING	P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	100	140	180	80	120	160	90	130	170
				30%	160	200	240	120	160	200	130	170	210
				10%	220	240	260	180	200	220	190	210	230
C - GROOVING	P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	70	100	130	60	90	120	80	110	140
				30%	120	160	200	100	130	160	120	150	180
				10%	200	220	240	140	170	200	160	190	220
	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540			JP5530			JP9535		
					min	start	max	min	start	max	min	start	max
D - MILLING	P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	90	130	170	60	100	140	80	120	160
				30%	110	160	210	80	130	180	100	150	200
				10%	130	190	250	100	160	220	120	180	240
E - DRILLING	P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%	70	100	130				60	90	120
				30%	80	110	140				70	100	130
				10%	90	120	150				80	110	140
F - ACCESSORIES	M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	90	120	150	60	90	120	80	110	140
				30%	110	150	190	80	120	160	100	140	180
				10%	130	170	210	100	140	180	120	160	200
G - SPARE PARTS	M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%	80	110	140				70	100	130
				30%	90	120	150				80	110	140
				100%	100	130	160				90	120	150
	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC8520			JP7525					
					min	start	max	min	start	max			
H - TURNING	K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	160	200	240	140	180	220			
				30%	180	230	280	160	210	260			
				10%	200	260	320	180	240	300			
I - DRILLING	K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	120	160	200	100	140	180			
				30%	140	190	240	120	170	220			
				10%	160	220	280	140	200	260			
J - TURNING	K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	100%	100	130	160	90	120	150			
				30%	120	160	200	120	150	180			
				10%	140	190	240	150	180	210			
	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JU6520								
					min	start	max						
K - TURNING	N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGA)		100%	300	400	500						
				30%	400	600	800						
				10%	500	800	1100						
L - TURNING	N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	250	300						
				30%	300	350	400						
				10%	400	450	500						
	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540			JP9535					
					min	start	max	min	start	max			
M - TURNING	S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	30	40	50	20	30	40			
				30%	40	50	60	30	40	50			
				10%	50	60	70	40	50	60			
N - TURNING	S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%				40	50	60			
				30%				50	60	70			
				10%				60	70	80			

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. H1.

G - SPARE PARTS	F - ACCESSORIES	E - DRILLING	D - MILLING	C - GROOVING	B - THREADING	A - TURNING

D53

A - TURNING	DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
			ap (mm)			fz (mm)		
			min	start	max	min	start	max
	SEoT13T3AGEN-GP	100%	1.00	3.00	5.00	0.08	0.15	0.22
		30%	1.00	3.00	5.00	0.10	0.19	0.28
		10%	1.00	3.00	5.00	0.12	0.22	0.32
	SEET13T3AGEN-SC	100%	0.50	2.50	4.50	0.06	0.11	0.16
		30%	0.50	2.50	4.50	0.08	0.14	0.20
		10%	0.50	2.50	4.50	0.09	0.16	0.23
B - THREADING	SEoT13T3AGSN-TE	100%	1.00	3.00	5.00	0.11	0.20	0.29
		30%	1.00	3.00	5.00	0.14	0.25	0.36
		10%	1.00	3.00	5.00	0.16	0.29	0.42
	SEoT13T3AGSN-GG	100%	0.50	2.50	4.50	0.10	0.18	0.26
		30%	0.50	2.50	4.50	0.12	0.22	0.32
		10%	0.50	2.50	4.50	0.14	0.26	0.38
	SEoT13T3AGSN-GH	100%	1.00	3.00	5.00	0.13	0.23	0.33
		30%	1.00	3.00	5.00	0.16	0.28	0.40
		10%	1.00	3.00	5.00	0.19	0.33	0.47
C - GROOVING	SEEW13T3AGSN	100%	1.00	3.00	5.00	0.14	0.24	0.34
		30%	1.00	3.00	5.00	0.18	0.30	0.42
		10%	1.00	3.00	5.00	0.21	0.35	0.49
	SEET13T3AGFN-AL	100%	0.50	2.50	4.50	0.06	0.11	0.16
		30%	0.50	2.50	4.50	0.08	0.14	0.20
		10%	0.50	2.50	4.50	0.09	0.16	0.23
D - MILLING	SEET13T3-WU	100%	0.50	1.00	1.50	0.06	0.13	0.20
		30%	0.50	1.00	1.50	0.08	0.16	0.24
		10%	0.50	1.00	1.50	0.09	0.18	0.27
E - DRILLING								
F - ACCESSORIES								
G - SPARE PARTS								

OKTOPLUS

Multi-edge face mill to optimize production economy

APPLICATION

- Finishing / semi-finishing / rough face milling
- Removal of the crusted surfaces
- General milling of interrupted surfaces

ISO APPLICATION FIELDS

P M K N S

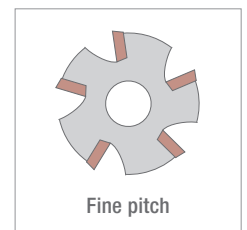
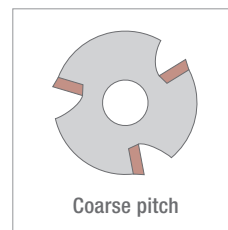
ADVANTAGES AND CHARACTERISTICS

- Super-positive cutter with a very gentle cutting action.
- Great performance even on circular interpolation milling.
- Excellent performance on difficult to machine materials (ISO M and ISO S).
- Extremely complete range of chipbreakers in both ground (E tolerance) and pressed (M tolerance) versions.



• Cutter bodies

- Arbor type with coolant
- From D50 to D160



• Inserts

- 8 cutting edges
- Edge length 06 with APMX = 4 mm and 05 with APMX = 3
- Cemented carbide grades with CVD and PVD coatings
- Geometries: SC, GP, TE, AL, WU

OKTOPLUS OD



OKTOPLUS OF



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

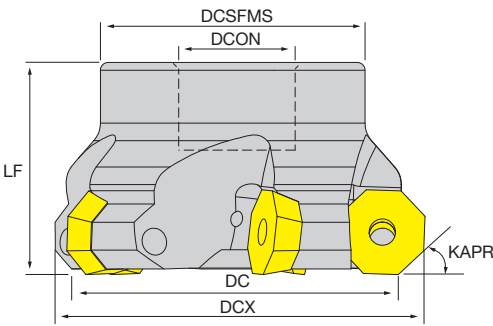
F - ACCESSORIES

G - SPARE PARTS

NT-OD

OktoPlus OD

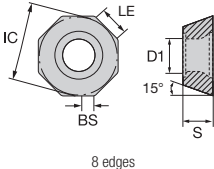
- Positive general face milling cutters
- For octagonal inserts with 8 cutting edges
- K_{apr} 43°
- With coolant through



Designation	Stock	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	DCX	WT	MIID
NT-OD06H D050-F22-Z04	●	50	4	22	40	-	48	-	60	0.34 Kg	0Doo0605
NT-OD06H D063-F22-Z05	●	63	5	22	40	-	50	-	73	0.52 Kg	0Doo0605
NT-OD06H D080-F27-Z06	●	80	6	27	50	-	60	-	90	1.05 Kg	0Doo0605
NT-OD06H D100-F32-Z07	●	100	7	32	50	-	70	-	110	1.48 Kg	0Doo0605
NT-OD06H D125-F40-Z08	●	125	8	40	63	-	80	-	135	2.60 Kg	0Doo0605
NT-OD06H D160-F40-Z10	●	160	10	40	63	-	85	-	170	3.96 Kg	0Doo0605

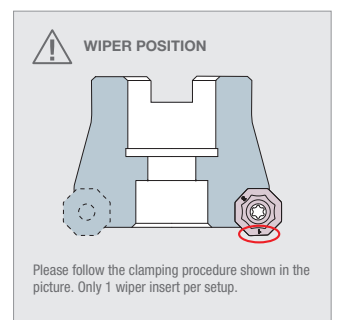
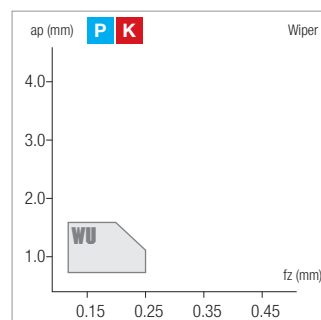
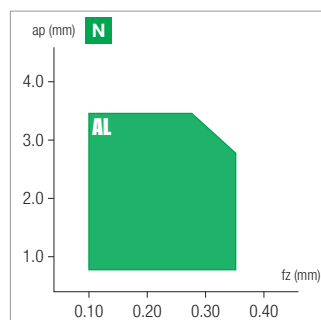
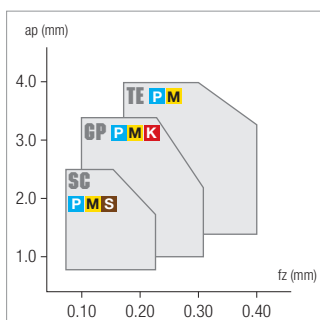
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-OD06H Dooo-Foo-Zoo	NT-ST50110T20	NT-FTB20

OD		HC: Coated carbide HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition						HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HF											
OktoPlus OD								JP7515	JP5520	JP5530	JP7525	JP9535	JU6520											
- Positive general face milling inserts 8 cutting edges - Kapr 43° - Diverse carbide grades with PVD and CVD coating grades available, covering a wide range of applications - Sharp/universal/robust/wiper geometries available	Stable machining, light cut ● 1 st choice ○ suitable						●	○				●												
	General machining, medium cut ● 1 st choice ○ suitable						●	●	●	●	●	●												
	Unstable machining, heavy cut ⚙ 1 st choice ⚙ suitable								⚙	⚙	⚙													
	Dimensions						ISO									Vc(m/min) - suggested cutting speed range (bold: 1 st choice)								
							P		100 260	100 260														
							M		60 180	60 180			80 200											
K							180 360			140 300														
N												300 1100												
S												20 60												
H																								

Designation		BS	IC	S	D1	LE	Stock									
GENERAL	GP P M K 	1.8	15.875	3.56	5.5	5					▽	●				
	ODMT060508-GP	1.8	15.875	3.56	5.5	5	●	▽	●	●	●					
LOW FORCE	SC P M S 	1.8	15.875	3.56	5.5	5		▽	▽		●					
	ODKT060508-SC	1.8	15.875	3.56	5.5	5										
REINFORCED	TE P K 	1.8	15.875	3.56	5.5	5		▽								
	ODMT060508-TE	1.8	15.875	3.56	5.5	5	○	▽	●	●						
ALUMINIUM	AL N  polished surface periphery ground	1.8	15.875	3.56	5.5	5						●				
WIPER	WU P K  2 edges	6.4	15.875	3.56	5.5	5		▽	●	●						

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

NT-OF

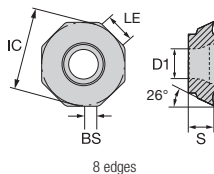
OktoPlus OF

- Positive general face milling cutters
- For octagonal inserts with 8 cutting edges
- Kapr 43°
- With coolant through

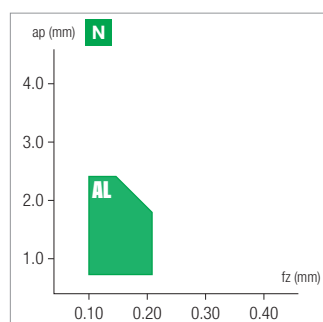
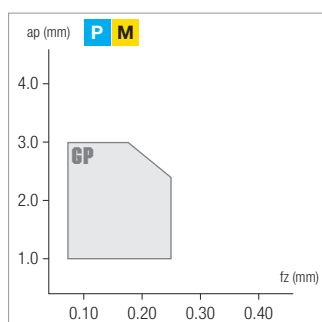
Designation	Stock	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	DCX	WT	MIID
NT-OF05H D050-F22-Z05	●	50	5	22	40	-	46.8	-	58	0.34 Kg	0F0005T3
NT-OF05H D063-F22-Z06	●	63	6	22	40	-	56	-	71	0.58 Kg	0F0005T3
NT-OF05H D080-F27-Z07	●	80	7	27	50	-	60	-	88	0.91 Kg	0F0005T3
NT-OF05H D100-F32-Z08	▲	100	8	32	50	-	70	-	108	1.40 Kg	0F0005T3

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-OF05H D000-F00-Z00	NT-ST40110T15HQ	NT-FTB15

OFKT		HC: Coated carbide HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition		HC CVD	HF PVD	HF	
OktoPlus OF				JC7530	JP5540	JU6520	
Positive general face milling inserts 8 cutting edges Kapr 43° Diverse carbide grades with PVD and CVD coating grades available, covering a wide range of applications Sharp/universal/robust/wiper geometries available	Stable machining, light cut		● 1 st choice	○ suitable			●
	General machining, medium cut		● 1 st choice	○ suitable	●	○	●
	Unstable machining, heavy cut		⚙ 1 st choice	⚙ suitable	⚙	⚙	
	Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)		
			P	80 220			
			M	60 180			
			K	160 320			
			N		300 1100		
			S	20 50			
			H				
Designation		BS	IC	S	D1	LE	Stock
GENERAL	GP P M K						
	 OFKT05T305-GP	1.1	12.7	3.97	4.4	4	▽ ●
ALUMINIUM	AL N						
	 OFKT05T305-AL	1.1	12.7	3.97	4.4	4	●
polished surface periphery ground							

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5530			JP5540					
					min	start	max	min	start	max			
	P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	100	140	180	80	120	160			
				30%	160	200	240	120	160	200			
10%				220	240	260	180	200	220				
B - THREADING	P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	80	120	160	60	100	140			
				30%	120	160	200	100	140	180			
				10%	180	200	220	160	180	200			
	P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	60	90	120						
30%				100	130	160							
10%				140	170	200							
C - GROOVING	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5530			JP5540			JP9535		
					min	start	max	min	start	max	min	start	max
	P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	60	100	140	60	100	140	80	120	160
				30%	80	130	180	80	130	180	100	150	200
10%				100	160	220	100	160	220	120	180	240	
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%				50	80	110	60	90	120	
			30%				60	90	120	70	100	130	
			10%				70	100	130	80	110	140	
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	60	90	120	60	90	120	80	110	140	
			30%	80	120	160	80	120	160	100	140	180	
			10%	100	140	180	100	140	180	120	160	200	
D - MILLING	M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%				60	90	120	70	100	130
				30%				70	100	130	80	110	140
								80	110	140	90	120	150
E - DRILLING	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC7515			JP7525					
					min	start	max	min	start	max			
	K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	180	230	280	140	180	220			
				30%	200	260	320	160	210	260			
10%				220	290	360	180	240	300				
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	120	180	240	100	140	180				
			30%	160	220	280	120	170	220				
			10%	200	260	320	140	200	260				
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	100%	100	140	180	90	120	150				
			30%	140	180	220	120	150	180				
			10%	180	220	260	150	180	210				
F - ACCESSORIES	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JU6520								
					min	start	max						
	N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		100%	300	400	500						
				30%	400	600	800						
10%				500	800	1100							
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	250	300							
			30%	300	350	400							
			10%	400	450	500							
G - SPARE PARTS	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5540			JP9535					
					min	start	max	min	start	max			
	S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	20	25	30	20	30	40			
				30%	30	35	40	30	40	50			
10%				40	45	50	40	50	60				
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%	30	40	50	40	50	60				
			30%	40	50	60	50	60	70				
			10%	50	60	70	60	70	80				

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. H1.

DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
OFKT05T305-GP	100%	1.00	2.00	3.00	0.08	0.12	0.16
	30%	1.00	2.00	3.00	0.10	0.15	0.20
	10%	1.00	2.00	3.00	0.12	0.18	0.24
ODoT060508-GP	100%	1.00	2.50	4.00	0.10	0.18	0.26
	30%	1.00	2.50	4.00	0.12	0.22	0.32
	10%	1.00	2.50	4.00	0.14	0.26	0.38
ODKT060508-SC	100%	0.50	2.00	3.50	0.08	0.14	0.20
	30%	0.50	2.00	3.50	0.10	0.17	0.24
	10%	0.50	2.00	3.50	0.12	0.20	0.28
ODoT060508-TE	100%	1.00	2.50	4.00	0.12	0.21	0.30
	30%	1.00	2.50	4.00	0.14	0.26	0.38
	10%	1.00	2.50	4.00	0.16	0.30	0.44
OFKT05T305-AL	100%	0.50	1.50	2.50	0.08	0.11	0.14
	30%	0.50	1.50	2.50	0.10	0.14	0.18
	10%	0.50	1.50	2.50	0.12	0.17	0.22
ODKT060508-AL	100%	0.50	2.00	3.50	0.08	0.14	0.20
	30%	0.50	2.00	3.50	0.10	0.17	0.24
	10%	0.50	2.00	3.50	0.12	0.20	0.28
ODKW060508-WU	100%	0.50	1.00	1.50	0.06	0.13	0.20
	30%	0.50	1.00	1.50	0.08	0.16	0.24
	10%	0.50	1.00	1.50	0.09	0.18	0.27

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

DOUBLE4FACE

First choice for high productivity face milling

APPLICATION

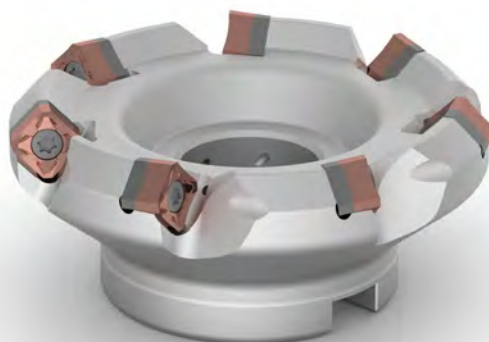
- Finishing / semi-finishing / rough face milling
- Removal of the crusted surfaces
- General milling of interrupted surfaces

ISO APPLICATION FIELDS

P M K N S

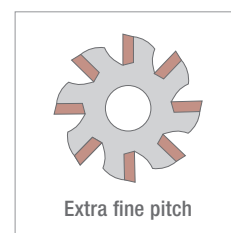
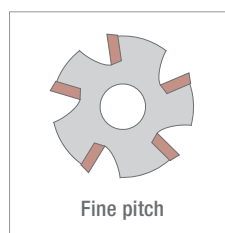
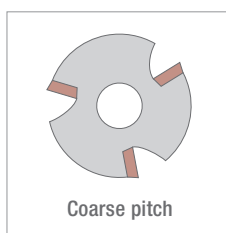
ADVANTAGES AND CHARACTERISTICS

- Curved geometry generates low cutting force and smooth cutting process.
- Shim style cutter in the entire range guarantees high stability and operational.
- Complete grades covering ISO P, M, K, N, S materials (with both PVD and CVD coating).
- Accurate inserts in tolerance E or pressed inserts in tolerance M - available both high precision and high economical solutions.



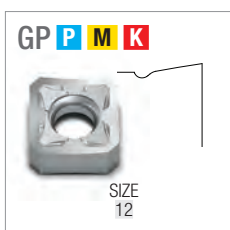
• Cutter bodies

- Arbor type with shim
- From D50 to D160



• Inserts

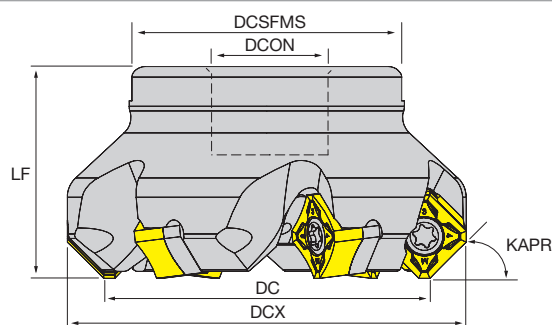
- 8 cutting edges
- Edge length 12 with APMX = 3 mm
- Cemented carbide grades with CVD and PVD coatings
- Geometries: SC, GP, TE, AL, WU wiper



NT-SX

Double4Face

- Double-sided face milling cutters, Kapr 45°
- With shims to protect the insert seats
- For double-sided square inserts with 8 cutting edges
- With coolant through



Designation	Stock	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	DCX	WT	MIID
NT-SX12H D050-F22-Z04	●	50	4	22	40	-	48	-	64	0.48 Kg	SN0X1205
NT-SX12H D050-F22-Z05	●	50	5	22	40	-	48	-	64	0.46 Kg	SN0X1205
NT-SX12H D063-F22-Z05	●	63	5	22	50	-	52	-	77	0.69 Kg	SN0X1205
NT-SX12H D063-F22-Z06	●	63	6	22	50	-	52	-	77	0.67 Kg	SN0X1205
NT-SX12H D080-F27-Z06	●	80	6	27	50	-	60	-	94	1.29 Kg	SN0X1205
NT-SX12H D080-F27-Z07	●	80	7	27	50	-	60	-	94	1.27 Kg	SN0X1205
NT-SX12H D080-F27-Z08	●	80	8	27	50	-	60	-	94	1.25 Kg	SN0X1205
NT-SX12H D100-F32-Z07	●	100	7	32	50	-	70	-	114	1.64 Kg	SN0X1205
NT-SX12H D100-F32-Z08	●	100	8	32	50	-	70	-	114	1.62 Kg	SN0X1205
NT-SX12H D100-F32-Z09	●	100	9	32	50	-	70	-	114	1.59 Kg	SN0X1205
NT-SX12H D125-F40-Z10	●	125	10	40	63	-	80	-	139	2.92 Kg	SN0X1205
NT-SX12H D160-F40-Z12	●	160	12	40	63	-	85	-	174	4.36 Kg	SN0X1205

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches	Shim	Shim screws	L wrench
NT-SX12H D000-F00-Z00					
	NT-ST40136T15	NT-FTB15	NT-SH009	NT-SR009	NT-WR040

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

SN

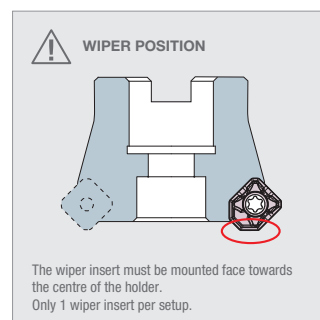
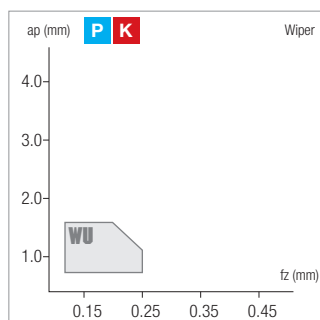
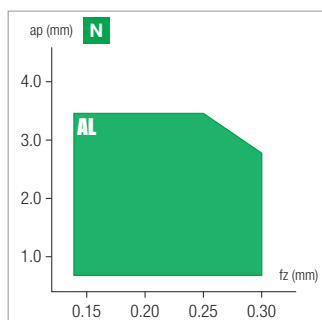
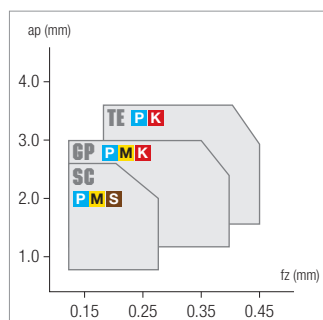
Double4Face

- Double-sided face milling inserts
- 8 cutting edges
- Curved design effectively reduces cutting force
- Kapr 45°
- Diverse carbide grades with PVD and CVD coating grades available, covering a wide range of applications
- 3D geometries, sharp/ universal/ reinforced/ wiper types available

HC: Coated carbide HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition	HC	HC	HC	HF	HF	HF	HF	HF	HF	
	CVD	CVD	CVD	PVD	PVD	PVD	PVD	PVD	PVD	
	JC7515	JC8520	JC9540	JP5520	JP5530	JP7525	JP8725	JP9535	JU6520	
Stable machining, light cut	● 1 st choice	○ suitable	●	○	○	○	○	○	○	
General machining, medium cut	● 1 st choice	○ suitable	●	●	●	●	●	●	●	
Unstable machining, heavy cut	● 1 st choice	○ suitable	●	●	●	●	●	●	●	
Dimensions		ISO								
		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)								
		P	130 300		100 260	100 260	100 280			
		M		90 210	60 180	60 180		80 200		
		K	180 360	160 320			140 300			
		N							300 1100	
		S		30 70				20 60		
		H								

Designation		BS	IC	S	D1	LE	Stock									
GENERAL	GP P M K															
	SNEX1205ANEN-GP	1.6	12.7	6.35	5.9	9.1	●				●	●	●	●		
	SNMX1205ANEN-GP	1.6	12.7	6.35	5.9	9.1	●	●	●		●	▲	●	▲		
LOW FORCE	SC P M S															
	SNEX1205ANEN-SC	1.6	12.7	6.35	5.9	9.1	●		●		●	●	▲	●		
REINFORCED	TE P K															
	SNEX1205ANSN-TE	1.6	12.7	6.35	5.9	9.1	○			▽	●	●				
	SNMX1205ANSN-TE	1.6	12.7	6.35	5.9	9.1	▲	●		▽	●	●	▲			
ALUMINIUM	AL N															
	SNEX1205ANFN-AL	1.6	12.7	6.35	5.9	9.1								●		
WIPER	WU P K															
	SNEX1205-WU	5.1	12.7	6.35	5.9	9.1	●			▽	●	●				

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC8520			JP5530			JP8725		
				min	start	max	min	start	max	min	start	max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	130	180	230	100	140	180	100	150	200
			30%	200	240	280	160	200	240	160	210	260
			10%	260	280	300	220	240	260	220	250	280
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	100	140	180	80	120	160	90	130	170
			30%	160	200	240	120	160	200	130	170	210
			10%	220	240	260	180	200	220	190	210	230
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	70	100	130	60	90	120	80	110	140
			30%	120	160	200	100	130	160	120	150	180
			10%	200	220	240	140	170	200	160	190	220
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540			JP5530			JP9535		
				min	start	max	min	start	max	min	start	max
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	90	130	170	60	100	140	80	120	160
			30%	110	160	210	80	130	180	100	150	200
			10%	130	190	250	100	160	220	120	180	240
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%	70	100	130				60	90	120
			30%	80	110	140				70	100	130
			10%	90	120	150				80	110	140
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	90	120	150	60	90	120	80	110	140
			30%	110	150	190	80	120	160	100	140	180
			10%	130	170	210	100	140	180	120	160	200
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%	80	110	140				70	100	130
			30%	90	120	150				80	110	140
			10%	100	130	160				90	120	150
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC7515			JC8520			JP7525		
				min	start	max	min	start	max	min	start	max
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	180	230	280	160	200	240	140	180	220
			30%	200	260	320	180	230	280	160	210	260
			10%	220	290	360	200	260	320	180	240	300
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	120	180	240	120	160	200	100	140	180
			30%	160	220	280	140	190	240	120	170	220
			10%	200	260	320	160	220	280	140	200	260
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	100%	100	140	180	100	130	160	90	120	150
			30%	140	180	220	120	160	200	120	150	180
			10%	180	220	260	140	190	240	150	180	210
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JU6520								
				min	start	max						
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGA)		100%	300	400	500						
			30%	400	600	800						
			10%	500	800	1100						
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	250	300						
			30%	300	350	400						
			10%	400	450	500						
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540			JP9535					
				min	start	max	min	start	max			
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	30	40	50	20	30	40			
			30%	40	50	60	30	40	50			
			10%	50	60	70	40	50	60			
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%				40	50	60			
			30%				50	60	70			
			10%				60	70	80			

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. H1.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
SNoX1205ANEN-GP	100%	1.00	2.00	3.00	0.13	0.21	0.29
	30%	1.00	2.00	3.00	0.16	0.26	0.36
	10%	1.00	2.00	3.00	0.20	0.31	0.42
SNEX1205ANEN-SC	100%	0.50	1.50	2.50	0.06	0.12	0.18
	30%	0.50	1.50	2.50	0.08	0.15	0.22
	10%	0.50	1.50	2.50	0.10	0.18	0.26
SNoX1205ANSN-TE	100%	1.00	2.00	3.00	0.16	0.25	0.34
	30%	1.00	2.00	3.00	0.20	0.32	0.44
	10%	1.00	2.00	3.00	0.24	0.38	0.52
SNEX1205ANFN-AL	100%	0.50	1.50	2.50	0.10	0.20	0.30
	30%	0.50	1.50	2.50	0.12	0.25	0.38
	10%	0.50	1.50	2.50	0.14	0.28	0.42
SNEX1205-WU	100%	0.50	1.00	1.50	0.06	0.13	0.20
	30%	0.50	1.00	1.50	0.08	0.16	0.24
	10%	0.50	1.00	1.50	0.10	0.19	0.28

DOUBLEHEX

Safe and high economical milling system for cast iron

APPLICATION

- Roughing or semi-finishing face milling of cast iron
- Adapted for interrupted surfaces
- Adapted for remove the casted hard skins

ISO APPLICATION FIELDS

K

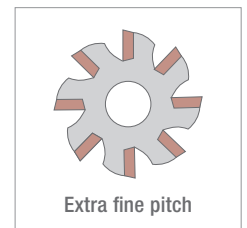
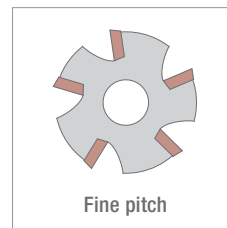
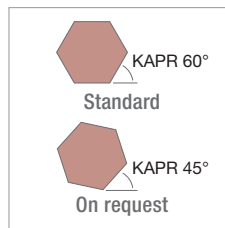
ADVANTAGES AND CHARACTERISTICS

- Fine pitch and extra-fine pitch type cutters available. Dense teeth in the cutter body allows higher table feeds with exceptional productivity.
- Precise inserts in tol.E or in tol.M, high precision or high economical solutions available.
- 3 different chipbreakers combined with both PVD and CVD grades.
- Inserts also available in solid PCBN and Silicon Nitride.
- Extremely competitive cost per cutting edge.



• Cutter bodies

- Arbor type
- From D80 to D160



• Inserts

- 12 edges
- Edge length 09 with APMX = 6 mm
- Carbide grades with PVD and CVD coatings, solid PCBN and ceramic
- Geometries: GL, GG, GH, Advanced



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

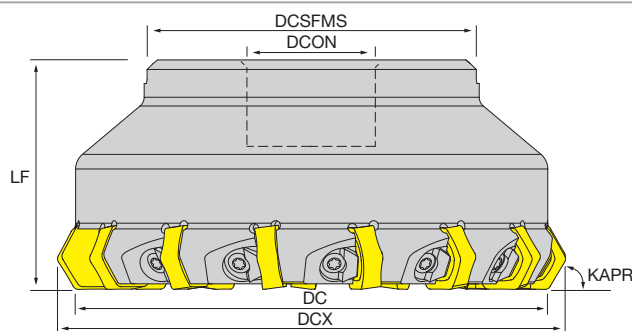
F - ACCESSORIES

G - SPARE PARTS

NT-HN

DoubleHex

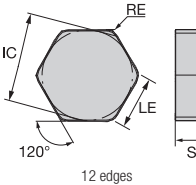
- Double-sided face milling cutters specially for cast iron
- For hexagonal inserts with 12 cutting edges
- Kapr 60° and 45° upon request
- Extra fine pitch available



Designation	Stock	DC	CICT	DCON	LF	LU	DCSFMS	CRKS	DCX	WT	MIID
KAPR 60°											
NT-HN09 D080-F27-Z08	●	80	8	27	50	-	60	-	90	1.28 Kg	HN0X0905
NT-HN09 D080-F27-Z10	●	80	10	27	50	-	60	-	90	1.23 Kg	HN0X0905
NT-HN09 D100-F32-Z10	●	100	10	32	50	-	80	-	110	1.87 Kg	HN0X0905
NT-HN09 D100-F32-Z14	●	100	14	32	50	-	80	-	110	1.80 Kg	HN0X0905
NT-HN09 D125-F40-Z12	●	125	12	40	63	-	88	-	135	3.55 Kg	HN0X0905
NT-HN09 D125-F40-Z15	●	125	15	40	63	-	88	-	135	3.33 Kg	HN0X0905
NT-HN09 D160-F40-Z15	●	160	15	40	63	-	120	-	170	5.10 Kg	HN0X0905
NT-HN09 D160-F40-Z20	●	160	20	40	63	-	120	-	170	4.98 Kg	HN0X0905
KAPR 45°											
NT-HN0945 D080-F27-Z10	●	80	10	27	50	-	60	-	92.4	1.30 Kg	HN0X0905

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Wedge	Wedge screws	L wrench
NT-HN09 D000-F00-Z00	NT-WD090	NT-SC090	NT-WR030

HN		HC: Coated carbide HF: Micrograin carbide BH: High volume CBN CN: Silicon nitride ceramic Si3N4 CVD: Chemical vapour deposition PVD: Physical vapour deposition						HC CVD	HF PVD	BH	CN
DoubleHex								JC7515	JP7525	NBH550U	NSN400
- Double-sided face milling inserts specially for cast iron - Hexagonal inserts with 12 cutting edges - Coated carbide, CBN and ceramic grades available, covering a wide range of applications - Geometries featuring different applications on cast iron, from light to heavy cutting	Stable machining, light cut						●			●	
	General machining, medium cut						●	●	●	●	
	Unstable machining, heavy cut						⚙	⚙	⚙		
	1 st choice										
	suitable										
Dimensions		ISO						Vc(m/min) - suggested cutting speed range (bold: 1 st choice)			
		P									
		M									
		K		180 360	140 300	800 2000	600 1200				
		N									
		S									
		H									
Designation		RE	IC	S	LE	AN	Stock				
GENERAL	GG K 	HNEX090520-GG	2	16.2	5.56	9.35	0°	●	●		
		HNMX090520-GG	2	16.2	5.56	9.35	0°	●	●		
LOW FORCE	GL K 	HNEX090510-GL	1	16.2	5.56	9.35	0°	●	●		
		HNEX090520-GL	2	16.2	5.56	9.35	0°	●	●		
REINFORCED	GH K 	HNEX090516-GH	1.6	16.2	5.56	9.35	0°	●	●		
		HNEX090530-GH	3	16.2	5.56	9.35	0°	●	●		
		HNMX090516-GH	1.6	16.2	5.56	9.35	0°	●	●		
ADVANCED	UE K  PCBN full solid	HNEN090520S-UE	2	16.2	5.56	9.35	0°			●	
ADVANCED	UE K  CERAMIC silicon nitride	HNEN090520T-UE	2	16.2	5.56	9.35	0°			●	
		HNEN090530T-UE	3	16.2	5.56	9.35	0°			●	

A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC7515			JP7525			
				min	start	max	min	start	max	
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	180	230	280	140	180	220	
			30%	200	260	320	160	210	260	
			10%	220	290	360	180	240	300	
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	120	180	240	100	140	180	
			30%	160	220	280	120	170	220	
			10%	200	260	320	140	200	260	
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ ADI1000)	250 ÷ 500	100%	100	140	180	90	120	150	
			30%	140	180	220	120	150	180	
			10%	180	220	260	150	180	210	

ISO 513	MATERIAL	HARDNESS HB	ae/DC	NBH550U			NSN400			
				min	start	max	min	start	max	
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	800	1000	1200	400	600	800	
			30%	1000	1300	1600	550	750	950	
			10%	1200	1600	2000	800	900	1000	

ae: radial depth of cut; DC: milling cutter diameter
Complete workpiece materials p. H1.

DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
HNx090520-GG	100%	1.00	3.00	5.00	0.10	0.25	0.40
	30%	1.00	3.00	5.00	0.13	0.32	0.51
	10%	1.00	3.00	5.00	0.16	0.38	0.60
HNEX090500-GL	100%	0.50	2.50	4.50	0.08	0.22	0.36
	30%	0.50	2.50	4.50	0.10	0.27	0.44
	10%	0.50	2.50	4.50	0.12	0.32	0.52
HNx090500-GH	100%	1.00	3.50	6.00	0.13	0.31	0.50
	30%	1.00	3.50	6.00	0.16	0.39	0.62
	10%	1.00	3.50	6.00	0.19	0.46	0.73
HNEN090500-UE	100%	1.00	2.00	3.00	0.13	0.28	0.43
	30%	1.00	2.00	3.00	0.16	0.35	0.54
	10%	1.00	2.00	3.00	0.20	0.41	0.62

A - TURNING

B - THREADING

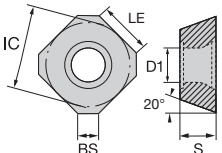
C - GROOVING

D - MILLING

E - DRILLING

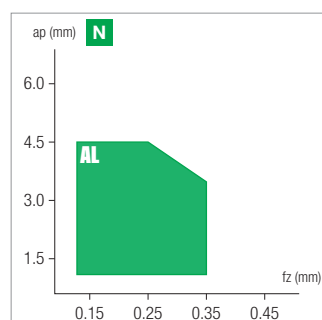
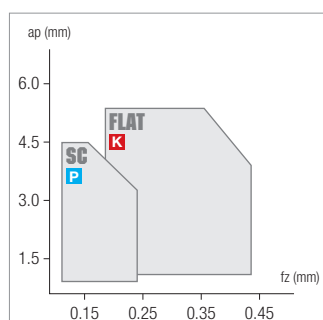
F - ACCESSORIES

G - SPARE PARTS

SEHX	HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition		HC	HF	HT	HF		
			CVD	PVD				
			JC7530	JP8725	JU4525	JU6520		
ISO	Stable machining, light cut		● 1 st choice	○ suitable				
	General machining, medium cut		● 1 st choice	↻ suitable				
	Unstable machining, heavy cut		⚙ 1 st choice	⚙ suitable				
- Positive type general face milling inserts 4 cutting edges - Kapr 45° - Diverse carbide grades with PVD and CVD coating grades available, covering a wide range of applications 3D geometries, general machining, low force, reinforced and aluminium types available	Dimensions		ISO				Vc(m/min) - suggested cutting speed range (bold: 1 st choice)	
			P	100 280	130 300			
			M					
			K	160 320				
			N			300 1100		
			S					
			H					

Designation		BS	IC	S	D1	LE	Stock			
LOW FORCE	SC P 									
	SEHX1204AFEN-SC	1.6	12.7	4.76	5.5	8.2		●	○	
	Flat K flat type									
REINFORCED	SEHX1204AFSN	1.6	12.7	4.76	5.5	8.2	▽			
ALUMINIUM	AL N polished surface periphery ground	2.5	12.7	4.76	5.5	8.2			▽	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP8725			JU4525			
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9SMn28/AVP, 1.0503/C45)	≤ 200	100%	100	150	200	130	180	230	
			30%	160	210	260	200	240	280	
			10%	220	250	280	260	280	300	
P3 - P4	Medium and high alloy steel (ex. 1.7225/42CrMo4, 1.3505/100Cr6)	200 ÷ 300	100%	90	130	170	120	150	180	
			30%	130	170	210	180	210	240	
			10%	190	210	230	230	250	270	
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X40CrMoV5-1/ORVAR, Hardox400®)	300 ÷ 400	100%	80	110	140	90	120	150	
			30%	120	150	180	150	180	210	
			10%	160	190	220	190	220	250	
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC7530						
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	160	200	240				
			30%	180	230	280				
			10%	200	260	320				
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	120	160	200				
			30%	140	190	240				
			10%	160	220	280				
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JU6520						
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGA)		100%	300	400	500				
			30%	400	600	800				
			10%	500	800	1100				
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	250	300				
			30%	300	350	400				
			10%	400	450	500				

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. H1.

A - TURNING

B - THREADING

C - GROOVING

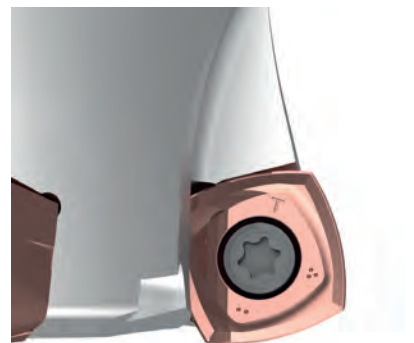
D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING	DESIGNATION	ae/DC	DEPTH OF CUT			FEED RATE		
			ap (mm)			fz (mm)		
			min	start	max	min	start	max
B - THREADING	SEHX1204AFEN-SC	100%	0.50	2.00	3.50	0.06	0.11	0.16
		30%	0.50	2.00	3.50	0.08	0.14	0.20
		10%	0.50	2.00	3.50	0.09	0.16	0.23
	SEHX1204AFSN	100%	1.50	3.00	4.50	0.14	0.24	0.34
		30%	1.50	3.00	4.50	0.18	0.30	0.42
		10%	1.50	3.00	4.50	0.21	0.35	0.49
	SEHX1204AFFN-AL	100%	0.50	2.50	4.50	0.08	0.17	0.28
		30%	0.50	2.50	4.50	0.10	0.22	0.34
		10%	0.50	2.50	4.50	0.12	0.26	0.40
C - GROOVING								
D - MILLING								
E - DRILLING								
F - ACCESSORIES								
G - SPARE PARTS								



MILLING High Feed

Quick guide .D76

HF4PLUS .D77

		HF4PLUS SD	HF4PLUS SP
		 D78	 D80
A - TURNING			
B - THREADING		 SCREW-IN	 SCREW-IN
			 CYLINDRICAL
C - GROOVING		 ARBOR	 ARBOR
D - MILLING	KAPR	13°	13°
	Insert sizes	10 / 12 / 15	07
	APMX	1.5 / 2 / 3	1
	Tool diameter	Ø35 - Ø125	Ø20 - Ø52
	Coolant holes	✓	✓
	Workpiece material	P M K S	P M K S
	No. of cutting edges	4	4
	No. of geometries	4	2
	Special features	special geometry for ISO S	-
	Face Milling 	✓	✓
E - DRILLING	Long Overhang 	✓	✓
	Ramping 	✓	✓
	Pocketing 	✓	✓
F - ACCESSORIES	Helical Interpolation 	✓	✓
	Machine load		
	Strenght		
	Range		
G - SPARE PARTS			

HF4PLUS

High productivity high feed milling system available from big to small diameters

APPLICATION

- Semi-finishing or roughing of surfaces
- Profiling and contouring
- Linear or trochoidal ramping
- Pocketing

ISO APPLICATION FIELDS

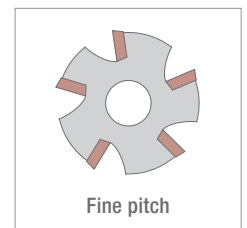
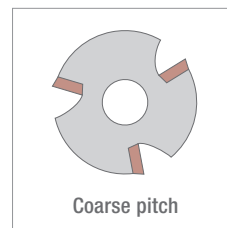
P M K S

ADVANTAGES AND CHARACTERISTICS

- High feed machining that effectively reduces cycle time and improves efficiency
- Versatile in operations and simplify the process (can do face milling, ramping, helical pocketing, counterbore and countersink, combines roughing and semi finishing)
- Multiple-curve edge design improves robustness and reliability
- Available from mini size 07 to cost-effective 10, frequent 12 and large size 15

• Cutter bodies

- Arbor type
- Cylindrical type
- Screw-in type
- Extension sleeves (steel/carbide 10xD)
- From D20 to D125



• Inserts

- 4 edges
- Edge length 07, 10, 12 and 15
- Cemented carbide grades with PVD and CVD coatings
- Geometries: SC, GP, SS, TE



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

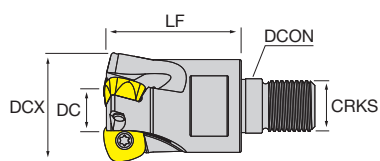
G - SPARE PARTS

NT-SD

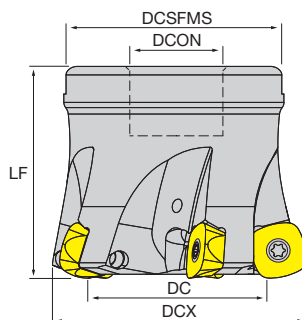
HF4Plus SD

- High feed milling system with positive square inserts, with coolant through
- Diverse combination of diameters and pitches, available with different insert sizes
- Tolerance of tool diameter (with Nikko inserts installed) 0/-0.2
- Steel and carbide arbors available for screw-in type holders

Screw-in



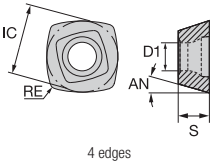
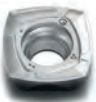
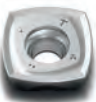
Arbor



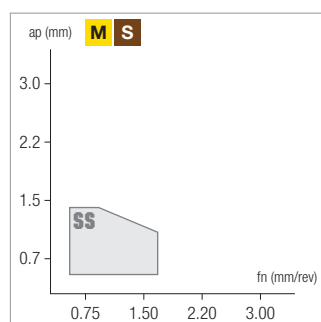
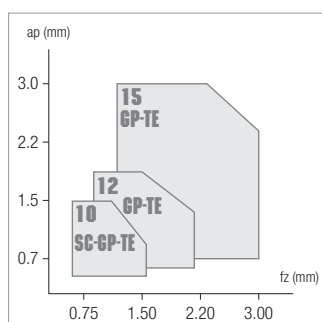
Designation	Stock	DCX	CICT	DC	DCON	LF	LU	DCSFMS	CRKS	WT	MIID
SCREW-IN											
NT-SD10HF D035-M16-Z04	●	35	4	20	17	40	-	-	M16	0.18 Kg	SDMT1004
NT-SD10HF D042-M16-Z05	●	42	5	27	17	40	-	-	M16	0.23 Kg	SDMT1004
NT-SD12HF D032-M16-Z02	●	32	2	12.5	17	43	-	-	M16	0.18 Kg	SDMT1205
NT-SD12HF D035-M16-Z03	●	35	3	15.5	17	43	-	-	M16	0.19 Kg	SDMT1205
NT-SD12HF D040-M16-Z04	●	40	4	20.5	17	43	-	-	M16	0.20 Kg	SDMT1205
NT-SD12HF D042-M16-Z04	●	42	4	22.5	17	43	-	-	M16	0.22 Kg	SDMT1205
ARBOR											
NT-SD10HF D050-F22-Z06	●	50	6	35	22	50	-	47	-	0.38 Kg	SDMT1004
NT-SD10HF D052-F22-Z06	●	52	6	37	22	50	-	47	-	0.39 Kg	SDMT1004
NT-SD10HF D063-F27-Z07	●	63	7	48	27	50	-	58	-	0.65 Kg	SDMT1004
NT-SD10HF D066-F27-Z07	●	66	7	51	27	50	-	60	-	0.72 Kg	SDMT1004
NT-SD10HF D080-F27-Z08	●	80	8	65	27	50	-	65	-	1.00 Kg	SDMT1004
NT-SD12HF D042-F16-Z04	●	42	4	22.5	16	40	-	35	-	0.19 Kg	SDMT1205
NT-SD12HF D050-F22-Z04	●	50	4	30.5	22	50	-	47	-	0.37 Kg	SDMT1205
NT-SD12HF D050-F22-Z05	●	50	5	30.5	22	50	-	47	-	0.35 Kg	SDMT1205
NT-SD12HF D052-F22-Z04	●	52	4	32.5	22	50	-	47	-	0.39 Kg	SDMT1205
NT-SD12HF D052-F22-Z05	●	52	5	32.5	22	50	-	47	-	0.37 Kg	SDMT1205
NT-SD12HF D063-F22-Z04	●	63	4	43.5	22	50	-	52	-	0.56 Kg	SDMT1205
NT-SD12HF D063-F22-Z05	●	63	5	43.5	22	50	-	52	-	0.54 Kg	SDMT1205
NT-SD12HF D063-F27-Z04	●	63	4	43.5	27	50	-	52	-	0.58 Kg	SDMT1205
NT-SD12HF D063-F27-Z05	●	63	5	43.5	27	50	-	52	-	0.56 Kg	SDMT1205
NT-SD12HF D066-F27-Z06	●	66	6	46.5	27	50	-	60	-	0.68 Kg	SDMT1205
NT-SD12HF D080-F27-Z06	●	80	6	60.5	27	50	-	65	-	0.94 Kg	SDMT1205
NT-SD12HF D080-F27-Z07	●	80	7	60.5	27	50	-	65	-	0.99 Kg	SDMT1205
NT-SD12HF D100-F32-Z07	●	100	7	80.5	32	50	-	70	-	1.60 Kg	SDMT1205
NT-SD15HF D080-F27-Z05	●	80	5	61	27	50	-	58	-	0.80 Kg	SDMT1505
NT-SD15HF D080-F27-Z06	●	80	6	61	27	50	-	58	-	0.60 Kg	SDMT1505
NT-SD15HF D100-F32-Z06	●	100	6	81	32	50	-	70	-	1.20 Kg	SDMT1505
NT-SD15HF D125-F40-Z07	●	125	7	106	40	63	-	90	-	2.28 Kg	SDMT1505

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-SD10HF D000-000-Z00	NT-ST35095T15HQ	NT-FTB15
NT-SD12HF D000-000-Z00	NT-ST40110T15HQ	NT-FTB15
NT-SD15HF D000-000-Z00	NT-ST50110T20	NT-FTB20

SDMT		HC: Coated carbide HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition		HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	
HF4Plus SD				JC8520	JC9540	JP5530	JP7525	JP8725	JP9535	JP9545	
- GP geometry is for general purpose use - SC and SS geometries are sharper, for M and S materials - TE edge is reinforced and stronger - Available with diverse carbide grades covering PMKS applications - For the program radius and various other parameters for CNC program please go to the technical instruction page, it differs with sizes and geometries	Stable machining, light cut		● 1 st choice ○ suitable	●				○			
	General machining, medium cut		● 1 st choice ○ suitable	○	●	●	●	●	●	○	
	Unstable machining, heavy cut		⚡ 1 st choice ⚡ suitable		⚡	⚡	⚡		⚡	⚡	
	Dimensions		ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)							
				P	130 300		100 260		100 280		
			M		90 210	60 180			80 200	60 180	
			K		160 320		140 300				
			N								
			S		30 70				20 60	20 50	
			H								
GENERAL											
Designation		RE	IC	S	D1	AN					Stock
	SDMT100410R-GP	10	10	4.76	4	15°	●	●	●	●	●
	SDMT120512R-GP	12	12.7	5.56	4.4	15°	●	●	●	●	
	SDMT150512R-GP	12	15.875	5.56	5.5	15°	●	●		●	●
LOW FORCE											
	SDMT100410R-SC	10	10	4.76	4	15°			●		●
SUPER SHARP											
	SDMT120512R-SS	12	12.7	5.56	4.4	15°		●			●
REINFORCED											
	SDMT100410R-TE	10	10	4.76	4	15°			●	●	●
	SDMT120512R-TE	12	12.7	5.56	4.4	15°	●		●	●	
	SDMT150512R-TE	12	15.875	5.56	5.5	15°	●			●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion



Rp SUGGESTED
PROGRAMMING RADIUS

SDMT 10	2.5
SDMT 12	3.5
SDMT 15	5.0

more details at page D83



SDMT12-SS

SS geometry generates a bigger milling cutter diameter compared to GP and TE types.

Please add **0.85 mm** to DCX values and **0.40 mm** to LF values, shown on page D78.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

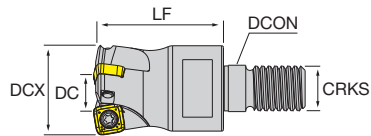
G - SPARE PARTS

NT-SP

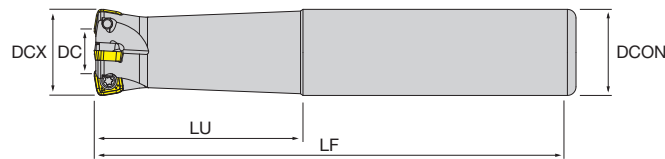
HF4Plus SP

- High feed milling system with positive square inserts, with coolant through
- Diverse combination of diameters and pitches available, focus on small diameters
- Tolerance of tool diameter (with Nikko inserts installed) 0/-0.2
- Steel and carbide arbors available for screw-in type holders

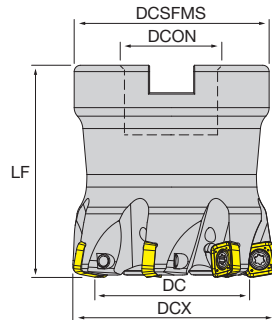
Screw-in



Cylindrical



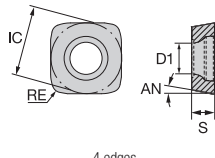
Arbor



Designation	Stock	DCX	CICT	DC	DCON	LF	LU	DCSFMS	CRKS	WT	MIID
SCREW-IN											
NT-SP07HF D020-M10-Z02	●	20	2	7.3	10.5	30	-	-	M10	0.05 Kg	SPMT07T2
NT-SP07HF D020-M10-Z03	●	20	3	7.3	10.5	30	-	-	M10	0.04 Kg	SPMT07T2
NT-SP07HF D025-M12-Z03	●	25	3	12.3	12.5	35	-	-	M12	0.10 Kg	SPMT07T2
NT-SP07HF D025-M12-Z04	●	25	4	12.3	12.5	35	-	-	M12	0.10 Kg	SPMT07T2
NT-SP07HF D032-M16-Z04	●	32	4	19.3	17	40	-	-	M16	0.19 Kg	SPMT07T2
NT-SP07HF D032-M16-Z05	●	32	5	19.3	17	40	-	-	M16	0.17 Kg	SPMT07T2
NT-SP07HF D035-M16-Z05	●	35	5	22.3	17	40	-	-	M16	0.20 Kg	SPMT07T2
NT-SP07HF D042-M16-Z06	●	42	6	29.3	17	40	-	-	M16	0.24 Kg	SPMT07T2
CYLINDRICAL											
NT-SP07HF D020-S20-Z03	●	20	3	7.3	20	130	50	-	-	0.26 Kg	SPMT07T2
NT-SP07HF D025-S25-Z03	●	25	3	12.3	25	140	60	-	-	0.44 Kg	SPMT07T2
NT-SP07HF D025-S25-Z04	●	25	4	12.3	25	140	60	-	-	0.40 Kg	SPMT07T2
NT-SP07HF D032-S32-Z05	●	32	5	19.3	32	150	70	-	-	0.79 Kg	SPMT07T2
ARBOR											
NT-SP07HF D040-F16-Z05	●	40	5	27.3	16	40	-	35	-	0.21 Kg	SPMT07T2
NT-SP07HF D040-F16-Z06	●	40	6	27.3	16	40	-	35	-	0.20 Kg	SPMT07T2
NT-SP07HF D042-F16-Z05	●	42	5	29.3	16	40	-	35	-	0.22 Kg	SPMT07T2
NT-SP07HF D042-F16-Z06	●	42	6	29.3	16	40	-	35	-	0.21 Kg	SPMT07T2
NT-SP07HF D050-F22-Z07	●	50	7	37.3	22	50	-	46	-	0.41 Kg	SPMT07T2
NT-SP07HF D052-F22-Z07	●	52	7	39.3	22	50	-	46	-	0.44 Kg	SPMT07T2

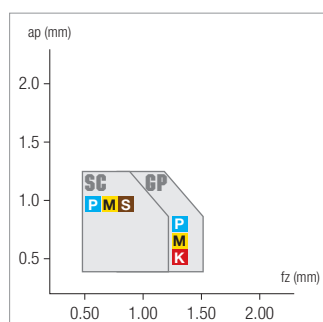
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-SP07HF D000-000-Z00	NT-ST30070T10HQ	NT-FTB10

SPMT		HC: Coated carbide HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition		HC	HC	HF	HF	HF	HF	HF	HF			
				CVD	CVD	PVD	PVD	PVD	PVD	PVD	PVD			
HF4Plus SP				JP8520	JP9540	JP5530	JP7525	JP8725	JP9535	JP9545				
- GP geometry is for general purpose use - SC is sharper for M and S materials - Available with diverse carbide grades covering PMKS applications - For the program radius and various other parameters for CNC program please go to the technical instruction page	Stable machining, light cut		● 1 st choice	○ suitable	●				○					
	General machining, medium cut		● 1 st choice	○ suitable	○	●	●	●	●	●	○			
	Unstable machining, heavy cut		⚙ 1 st choice	⚙ suitable		⚙	⚙	⚙			⚙	⚙		
	Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)									
			P	130 300		100 260		100 280						
M				90 210	60 180			80 200	60 180					
K			160 320			140 300								
N														
S				30 70				20 60	20 50					
H														

Designation		RE	IC	S	D1	AN							Stock
GENERAL	GP P M K												
	 SPMT07T210R-GP	1	7.8	2.8	3.5	11°	●	●	●	●	●	●	
LOW FORCE	SC P M S												
	 SPMT07T210R-SC	1	7.8	2.8	3.5	11°		●		●			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion



Rp SUGGESTED PROGRAMMING RADIUS	
SPMT 07	2.0
more details at page D83	

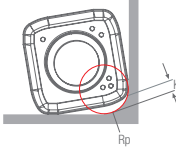
	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC8520			JP5530			JP8725		
					min	start	max	min	start	max	min	start	max
A - TURNING	P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	130	180	230	100	140	180	100	150	200
				30%	200	240	280	160	200	240	160	210	260
				10%	260	280	300	220	240	260	220	250	280
B - THREADING	P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	100	140	180	80	120	160	90	130	170
				30%	160	200	240	120	160	200	130	170	210
				10%	220	240	260	180	200	220	190	210	230
C - GROOVING	P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	70	100	130	60	90	120	80	110	140
				30%	120	160	200	100	130	160	120	150	180
				10%	200	220	240	140	170	200	160	190	220
	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540			JP9535			JP9545		
					min	start	max	min	start	max	min	start	max
D - MILLING	P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	90	130	170	80	120	160	60	100	140
				30%	110	160	210	100	150	200	80	130	180
				10%	130	190	250	120	180	240	100	160	220
E - DRILLING	P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%	70	100	130	60	90	120	50	80	110
				30%	80	110	140	70	100	130	60	90	120
				10%	90	120	150	80	110	140	70	100	130
F - ACCESSORIES	M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	90	120	150	80	110	140	60	90	120
				30%	110	150	190	100	140	180	80	120	160
				10%	130	170	210	120	160	200	100	140	180
G - SPARE PARTS	M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%	80	110	140	70	100	130	60	90	120
				30%	90	120	150	80	110	140	70	100	130
				100%	100	130	160	90	120	150	80	110	140
	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC8520			JP7525					
					min	start	max	min	start	max			
	K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	160	200	240	140	180	220			
				30%	180	230	280	160	210	260			
				10%	200	260	320	180	240	300			
	K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	120	160	200	100	140	180			
				30%	140	190	240	120	170	220			
				10%	160	220	280	140	200	260			
	K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	100%	100	130	160	90	120	150			
				30%	120	160	200	120	150	180			
				10%	140	190	240	150	180	210			
	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540			JP9535			JP9545		
					min	start	max	min	start	max	min	start	max
	S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	30	40	50	20	30	40	20	25	30
				30%	40	50	60	30	40	50	30	35	40
				10%	50	60	70	40	50	60	40	45	50
	S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%				40	50	60	30	40	50
				30%				50	60	70	40	50	60
				10%				60	70	80	50	60	70

ae: radial depth of cut; DC: milling cutter diameter
Complete workpiece materials p. H1.

DESIGNATION	ae/DCX	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
SPMT07T210R-GP	100%	0.20	0.60	1.00	0.40	0.70	1.00
	30%	0.20	0.60	1.00	0.50	0.90	1.30
	10%	0.20	0.60	1.00	0.60	1.10	1.60
SDMT100410R-GP	100%	0.30	0.90	1.50	0.40	0.75	1.10
	30%	0.30	0.90	1.50	0.50	1.00	1.50
	10%	0.30	0.90	1.50	0.60	1.20	1.60
SDMT120512R-GP	100%	0.40	1.20	2.00	0.60	0.90	1.20
	30%	0.40	1.20	2.00	0.70	1.10	1.50
	10%	0.40	1.20	2.00	0.80	1.30	1.80
SDMT150512R-GP	100%	0.60	1.80	3.00	0.60	1.00	1.40
	30%	0.60	1.80	3.00	0.80	1.30	1.80
	10%	0.60	1.80	3.00	0.90	1.50	2.10
SPMT07T210R-SC	100%	0.20	0.60	1.00	0.30	0.60	0.90
	30%	0.20	0.60	1.00	0.40	0.80	1.20
	10%	0.20	0.60	1.00	0.50	0.90	1.40
SDMT100410R-SC	100%	0.30	0.90	1.50	0.30	0.70	1.10
	30%	0.30	0.90	1.50	0.40	0.90	1.40
	10%	0.30	0.90	1.50	0.50	1.00	1.50

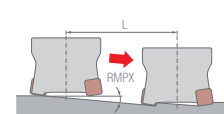
DESIGNATION	ae/DCX	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
SDMT100410R-TE	100%	0.30	0.90	1.50	0.60	0.90	1.20
	30%	0.30	0.90	1.50	0.70	1.20	1.60
	10%	0.30	0.90	1.50	0.80	1.40	1.60
SDMT120512R-TE	100%	0.40	1.20	2.00	0.70	1.00	1.30
	30%	0.40	1.20	2.00	0.90	1.30	1.70
	10%	0.40	1.20	2.00	1.00	1.50	2.00
SDMT150512R-TE	100%	0.60	1.80	3.00	0.80	1.20	1.60
	30%	0.60	1.80	3.00	1.00	1.50	2.00
	10%	0.60	1.80	3.00	1.20	1.80	2.40
SDMT120512R-SS	100%	0.40	0.70	1.00	0.50	0.80	1.10
	30%	0.40	0.70	1.00	0.60	1.00	1.40
	10%	0.40	0.70	1.00	0.70	1.20	1.70

Approximate programming radius adjustment (Rp)

	SPMT07			SDMT10			SDMT12 *			SDMT15		
	Rp	undercut K	overcut r	Rp	undercut K	overcut r	Rp	undercut K	overcut r	Rp	undercut K	overcut r
	1.5	0.69	0	2	1.18	0	3	1.28	0	4.5	1.15	0
	2	0.61	0	2.5	1.02	0	3.5	1.11	0	5	0.99	0
	2.5	0.54	0.08	3	0.86	0.02	4	0.95	0.02	5.5	0.82	0.14
	3	0.46	0.24	3.5	0.70	0.13	4.5	0.79	0.14	6	0.67	0.03

*for SDMT12-SS programming radius adjustment please see next page. Green background are suggested values.

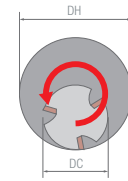
Parameters for ramping

	SPMT07			SDMT10			SDMT12 *			SDMT15		
	DCX	RMPX	L	DCX	RMPX	L	DCX	RMPX	L	DCX	RMPX	L
	20	3.5°	2.5	35	1.6°	2	32	4.0°	4.5	80		
	25	3.0°	1.6	42	1.5°	1.7	40	2.4°	3.4	100		
	32	1.2°	1.4	50	0.8°	1.5	42	2.1°	3.2	125		
	35	1.2°	1.5	52	1.0°	2	50	1.5°	2.9			
	40	1.0°	1.3	63	0.6°	1.8	52	1.0°	2			
	42	0.9°	1.3	66	0.6°	1.8	63	1.0°	2.5			
	52	0.6°	1.2	80	0.4°	1.6	66	0.9°	2.5			
							80	0.7°	2.2			
							100					

*for SDMT12-SS guide for ramping please see next page.

RMPX: max. ramping angle; L: max. ramping path

Parameters for helical milling

	SPMT07			SDMT10			SDMT12 *			SDMT15		
	DCX	DH min.	DH max.	DCX	DH min.	DH max.	DCX	DH min.	DH max.	DCX	DH min.	DH max.
	20	28	40	35	54	70	32	46	64	80		
	25	38	50	42	68	84	40	62	80	100		
	32	52	64	50	84	100	42	66	84	125		
	35	58	70	52	88	104	50	82	100			
	40	68	80	63	110	126	52	86	104			
	42	72	84	66	116	132	63	108	126			
	52	92	104	80	144	160	66	114	132			
							80	142	160			
							100					

*for SDMT12-SS guide for helical milling please see next page.

DH min.: min. cutting dia.; DH max.: max. cutting dia.

A - TURNING

B - THREADING

C - GROOVING

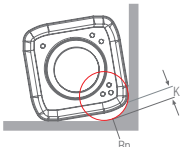
D - MILLING

E - DRILLING

F - ACCESSORIES

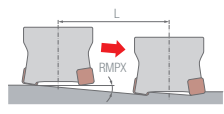
G - SPARE PARTS

Approximate programming radius adjustment (Rp)

	SDMT12-SS					
	Rp	undercut K	overcut r			
	3	1.52	0			
	3.5	1.45	0			
	4	1.28	0.07			

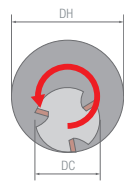
Green background are suggested values.

Parameters for ramping

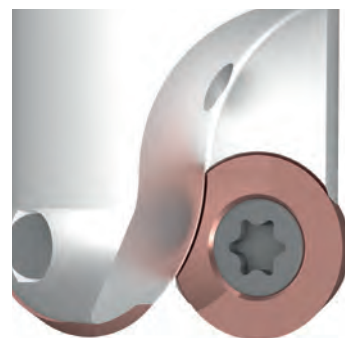
	SDMT12-SS					
	DCX	RMPX	L			
	32	5.5°	6			
	40	3.7°	5.2			
	42	3.3°	5			
	50	2.4°	4.4			
	52	2.2°	4.2			
	63	1.5°	3.7			
	66	1.4°	3.5			
	80	1.0°	3.3			

RMPX: max. ramping angle; L: max. ramping path

Parameters for helical milling

	SDMT12-SS					
	DCX	DH min.	DH max.			
	32	42	64			
	40	58	80			
	42	62	84			
	50	78	100			
	52	82	104			
	63	104	126			
	66	110	132			
	80	138	160			

DH min.: min. cutting dia.; DH max.: max. cutting dia.



MILLING Profiling

Quick guide .D84

ROUNDPLUS .D85

A - TURNING	 KAPR  APMX	ROUNDPLUS RC	ROUNDPLUS RD	ROUNDPLUS RP
		 D86	 D88	 D92
		 ARBOR	 SCREW-IN  CYLINDRICAL  ARBOR	 ARBOR
B - THREADING		KAPR	variable	variable
		Insert sizes	12 / 16 / 20	05 / 07 / 10 / 12 / 16
		APMX	3 / 4 / 5	1.25 / 1.75 / 2.5 / 3 / 4
C - GROOVING		Tool diameter	Ø063 - Ø160	Ø9 - Ø125
		Coolant holes	✓	✓
		Workpiece material	P M S	P M K S
D - MILLING		No. of cutting edges	variable	variable
		No. of geometries	1	3
		Special features	indexing faces	-
E - DRILLING		Face Milling	✓	✓
		Profiling 	✓	✓
		Long Overhang 	✓	✓
F - ACCESSORIES		Ramping	✓	✓
		Pocketing 	✓	✓
		Helical Interpolation 	✓	✓
G - SPARE PARTS		Machine load		
		Strenght		
		Range		

ROUNDPLUS

Facing and Profiling milling cutters for multi-functional application

APPLICATION

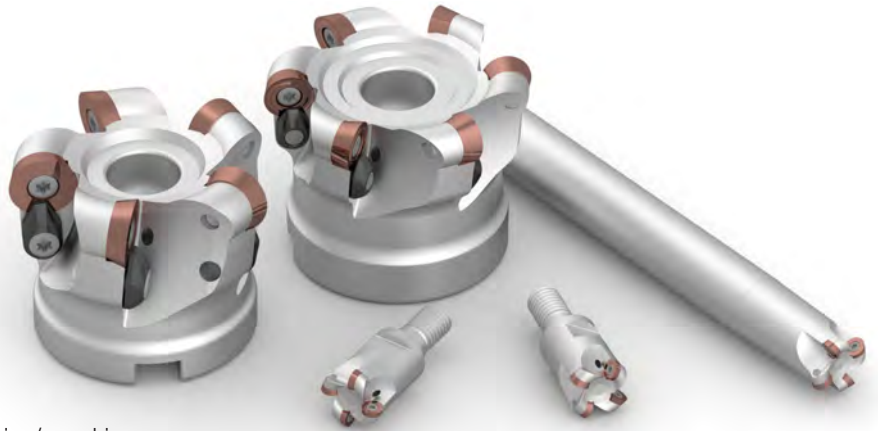
- Profiling of finishing/ semi-finishing/ roughing
- Face milling of finishing/ semi-finishing/ roughing
- Possible to do ramping and pocket interpolation

ISO APPLICATION FIELDS

P M K S

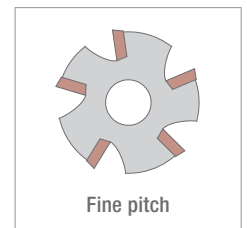
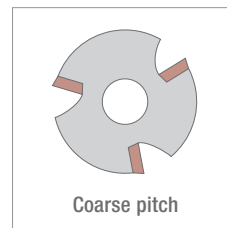
ADVANTAGES AND CHARACTERISTICS

- Insert geometries available for finishing/ semi-finishing/ roughing
- Cutters range from D9 all the way to D160
- Low cutting force with good robustness, allows long overhang working (up to 10xD)
- Multi-functional tool with good flexibility in machining



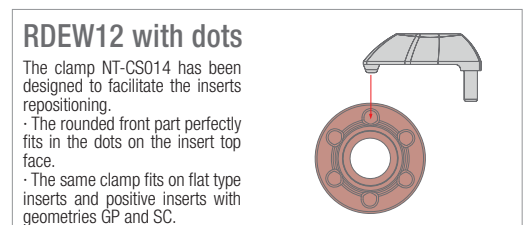
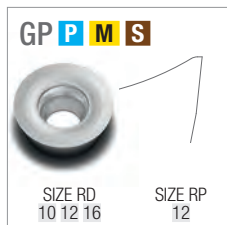
• Cutter bodies

- Arbor type
- Cylindrical type (up to 10xD)
- Screw-in type
- Extension sleeves (steel/carbide 10xD)
- From D9 to D160



• Inserts

- Multi-edges
- IC 05 / 07 / 10 / 12 / 16 / 20
- Cemented carbide grades with PVD and CVD coatings
- Geometries: SC, GP, Flat



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

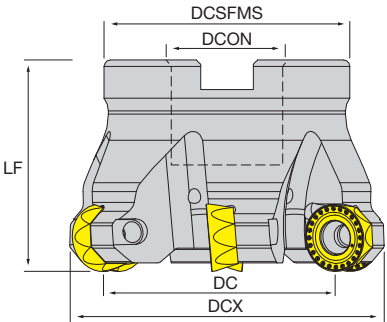
F - ACCESSORIES

G - SPARE PARTS

NT-RC

RoundPlus RC

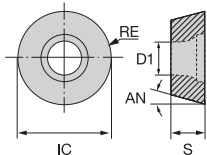
- Positive general face milling cutters for RC inserts
- All with coolant through
- Very robust milling solution for massive chip removal application



Designation	Stock	DCX	CICT	DC	DCON	LF	LU	DCSFMS	CRKS	WT	MIID
NT-RC16H D063-F22-Z05	●	63	5		22	50	-	45	-	0.46 Kg	RCEX1606
NT-RC16H D080-F27-Z06	●	80	6		27	50	-	58	-	0.78 Kg	RCEX1606
NT-RC16H D100-F32-Z06	●	100	6		32	50	-	70	-	1.26 Kg	RCEX1606
NT-RC20H D100-F32-Z06	●	100	6		32	50	-	70	-	1.19 Kg	RCEX2006
NT-RC20H D125-F40-Z07	●	125	7		40	63	-	90	-	2.71 Kg	RCEX2006
NT-RC20H D160-F40-Z08	●	160	8		40	63	-	100	-	3.98 Kg	RCEX2006

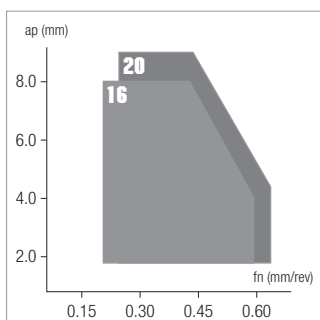
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-RC16H D000-000-Z00	NT-ST50110T20	NT-FTB20
NT-RC16H D100-F32-Z06	NT-ST50110T20	NT-TT20
NT-RC20H D000-000-Z00	NT-ST60160T25	NT-TT25

RC		HC: Coated carbide HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition																							
RoundPlus RC			HC CVD	HC CVD	HF PVD	HF PVD																			
			JC9520	JC9540	JP8725	JP9535																			
- GP geometry is for general purpose use 8 index facets for seating - Both PVD and CVD coated carbide grades available - Very reliable and cost effective solution for massive metal removal operations	Stable machining, light cut	● 1 st choice ○ suitable	●		○																				
	General machining, medium cut	● 1 st choice ○ suitable	○	●	●	●																			
	Unstable machining, heavy cut	● 1 st choice ○ suitable		●		●																			
	Dimensions	ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																						
		<table><tr><td>P</td><td>130 300</td><td>100 280</td><td></td></tr><tr><td>M</td><td>90 210</td><td>80 200</td><td></td></tr><tr><td>K</td><td>160 320</td><td></td><td></td></tr><tr><td>N</td><td></td><td></td><td></td></tr><tr><td>S</td><td>30 70</td><td>20 60</td><td></td></tr><tr><td>H</td><td></td><td></td><td></td></tr></table>	P	130 300	100 280		M	90 210	80 200		K	160 320			N				S	30 70	20 60		H		
P	130 300	100 280																							
M	90 210	80 200																							
K	160 320																								
N																									
S	30 70	20 60																							
H																									

GENERAL	Designation		RE	IC	S	D1	AN					Stock
	 with 8 indexes	RCEX1606M0E-GP-8X	8	16	6.35	5.5	7°	●	●	●	●	
		RCEX2006M0E-GP-8X	10	20	6.35	6.5	7°	●	●	●	●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion

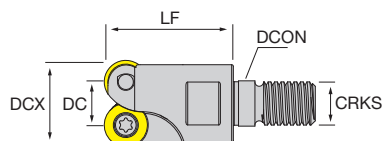


NT-RD

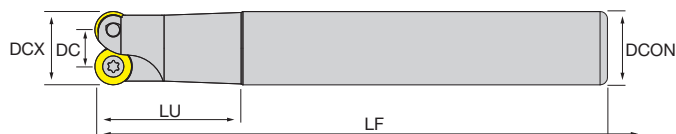
RoundPlus RD

- Positive general face milling cutters for RD inserts, with or without coolant through, various options available
- Very convenient multipurpose tool, at small depth of cut could be used as highfeed, at bigger depth of cut is robust with big radii, can also do profiling and copy milling
- Tolerance of tool diameter (with Nikko inserts installed) 0/-0.2
- Steel and carbide arbors available for screw-in type holders

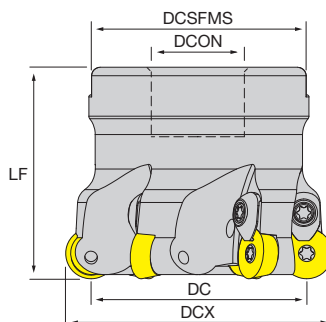
Screw-in



Cylindrical



Arbor



Designation	Stock	DCX	CICT	DC	DCON	LF	LU	DCSFMS	CRKS	WT	MIID
SCREW-IN - WITHOUT COOLANT HOLES											
NT-RD05 D012-M06-Z02	▽	12	2		6.5	18	-	-	M6	0.01 Kg	RD∞0501
NT-RD05 D012-M06-Z03	▽	12	3		6.5	18	-	-	M6	0.01 Kg	RD∞0501
NT-RD05 D013-M06-Z02	▽	13	2		6.5	18	-	-	M6	0.01 Kg	RD∞0501
NT-RD05 D013-M06-Z03	▽	13	3		6.5	18	-	-	M6	0.01 Kg	RD∞0501
NT-RD05 D016-M08-Z04	▽	16	4		8.5	23	-	-	M8	0.03 Kg	RD∞0501
NT-RD05 D017-M08-Z04	▽	17	4		8.5	23	-	-	M8	0.03 Kg	RD∞0501
NT-RD07 D016-M08-Z02	▽	16	2		8.5	23	-	-	M8	0.03 Kg	RD∞0702
NT-RD07 D017-M08-Z02	▽	17	2		8.5	23	-	-	M8	0.03 Kg	RD∞0702
NT-RD07 D017-M08-Z03	▽	17	3		8.5	23	-	-	M8	0.03 Kg	RD∞0702
NT-RD07 D021-M10-Z02	▽	21	2		10.5	30	-	-	M10	0.06 Kg	RD∞0702
NT-RD07 D021-M10-Z03	▽	21	3		10.5	30	-	-	M10	0.05 Kg	RD∞0702
NT-RD07 D025-M12-Z05	▽	25	5		12.5	35	-	-	M12	0.10 Kg	RD∞0702
NT-RD07 D026-M12-Z04	▽	26	4		12.5	35	-	-	M12	0.11 Kg	RD∞0702
NT-RD07 D026-M12-Z05	▽	26	5		12.5	35	-	-	M12	0.10 Kg	RD∞0702
NT-RD07 D035-M16-Z05	▽	35	5		17	43	-	-	M16	0.24 Kg	RD∞0702
NT-RD10 D021-M10-Z02	▽	21	2		10.5	30	-	-	M10	0.05 Kg	RD∞1003
SCREW-IN - WITH COOLANT HOLES											
NT-RD07H D016-M08-Z03	●	16	3		8.5	23	-	-	M8	0.02 Kg	RD∞0702
NT-RD07H D020-M10-Z03	●	20	3		10.5	30	-	-	M10	0.06 Kg	RD∞0702
NT-RD07H D025-M12-Z04	●	25	4		12.5	35	-	-	M12	0.09 Kg	RD∞0702
NT-RD07H D035-M16-Z06	●	35	6		17	43	-	-	M16	0.22 Kg	RD∞0702
NT-RD10H D020-M10-Z02	●	20	2		10.5	30	-	-	M10	0.05 Kg	RD∞1003
NT-RD10H D025-M12-Z03	●	25	3		12.5	35	-	-	M12	0.09 Kg	RD∞1003
NT-RD10H D026-M12-Z03	●	26	3		12.5	35	-	-	M12	0.09 Kg	RD∞1003
NT-RD10H D030-M12-Z03	●	30	3		12.5	35	-	-	M12	0.11 Kg	RD∞1003

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Designation	Stock	DCX	CICT	DC	DCON	LF	LU	DCSFMS	CRKS	WT	MIID
NT-RD10H D032-M16-Z03	●	32	3		17	43	-	-	M16	0.20 Kg	RDoo1003
NT-RD10H D032-M16-Z04	●	32	4		17	43	-	-	M16	0.18 Kg	RDoo1003
NT-RD10H D035-M16-Z03	●	35	3		17	43	-	-	M16	0.22 Kg	RDoo1003
NT-RD10H D035-M16-Z04	●	35	4		17	43	-	-	M16	0.20 Kg	RDoo1003
NT-RD10H D040-M16-Z04	●	40	4		17	43	-	-	M16	0.24 Kg	RDoo1003
NT-RD10H D042-M16-Z05	●	42	5		17	43	-	-	M16	0.21 Kg	RDoo1003
CYLINDRICAL - WITHOUT COOLANT HOLES											
NT-RD05 D009-S08-Z02	▽	9	2		8	100	12	-	-	0.04 Kg	RDoo0501
NT-RD05 D011-S10-Z02	▽	11	2		10	100	15	-	-	0.06 Kg	RDoo0501
NT-RD05 D013-S12-Z03	▽	13	3		12	100	18	-	-	0.08 Kg	RDoo0501
NT-RD05 D017-S16-Z04	▽	17	4		16	150	20	-	-	0.23 Kg	RDoo0501
NT-RD07 D021-S20-Z03	▽	21	3		20	150	25	-	-	0.35 Kg	RDoo0702
NT-RD07 D026-S25-Z05	▽	26	5		25	150	25	-	-	0.55 Kg	RDoo0702
NT-RD07 D035-S32-Z06	▽	35	6		32	150	30	-	-	0.92 Kg	RDoo0702
CYLINDRICAL - WITH COOLANT HOLES											
NT-RD05H D010-S10-Z02	●	10	2		10	100	18	-	-	0.05 Kg	RDoo0501
NT-RD05H D012-S12-Z03	●	12	3		12	100	22	-	-	0.07 Kg	RDoo0501
NT-RD05H D016-S16-Z04	●	16	4		16	150	30	-	-	0.21 Kg	RDoo0501
NT-RD07H D016-S16-Z02	●	16	2		16	150	25	-	-	0.21 Kg	RDoo0702
NT-RD07H D017-S16-Z02	●	17	2		16	150	20	-	-	0.20 Kg	RDoo0702
NT-RD07H D020-S20-Z03	●	20	3		20	150	35	-	-	0.33 Kg	RDoo0702
NT-RD07H D025-S25-Z05	●	25	5		25	150	40	-	-	0.51 Kg	RDoo0702
NT-RD10H D020-S20-Z02	●	20	2		20	150	40	-	-	0.32 Kg	RDoo1003
NT-RD10H D021-S20-Z02	●	21	2		20	150	25	-	-	0.34 Kg	RDoo1003
NT-RD10H D025-S25-Z03	●	25	3		25	150	40	-	-	0.50 Kg	RDoo1003
NT-RD10H D026-S25-Z03	●	26	3		25	150	25	-	-	0.52 Kg	RDoo1003
NT-RD10H D030-S25-Z03	●	30	3		25	150	25	-	-	0.53 Kg	RDoo1003
NT-RD10H D032-S32-Z03	●	32	3		32	150	40	-	-	0.82 Kg	RDoo1003
NT-RD10H D035-S32-Z04	●	35	4		32	150	35	-	-	0.85 Kg	RDoo1003
ARBOR - WITHOUT COOLANT HOLES											
NT-RD16 D066-F22-Z05	▽	66	5		22	50	-	56	-	0.62 Kg	RDoo1604
ARBOR - WITH COOLANT HOLES											
NT-RD10H D042-F16-Z05	●	42	5		16	40	-	35	-	0.20 Kg	RDoo1003
NT-RD10H D052-F22-Z06	●	52	6		22	40	-	46	-	0.33 Kg	RDoo1003
NT-RD12H D040-F16-Z04	○	40	4		16	50	-	-	-	-	RDoo1204
NT-RD12H D042-F16-Z04	●	42	4		16	50	-	38	-	0.25 Kg	RDoo1204
NT-RD12H D050-F22-Z04	●	50	4		22	50	-	46	-	0.35 Kg	RDoo1204
NT-RD12H D050-F22-Z05	●	50	5		22	50	-	46	-	0.37 Kg	RDoo1204
NT-RD12H D052-F22-Z04	●	52	4		22	50	-	46	-	0.40 Kg	RDoo1204
NT-RD12H D052-F22-Z05	●	52	5		22	50	-	46	-	0.42 Kg	RDoo1204
NT-RD12H D063-F22-Z05	●	63	5		22	50	-	52	-	0.56 Kg	RDoo1204
NT-RD12H D063-F22-Z06	●	63	6		22	50	-	52	-	0.58 Kg	RDoo1204
NT-RD12H D066-F22-Z06	●	66	6		22	50	-	56	-	0.71 Kg	RDoo1204
NT-RD12H D080-F27-Z07	●	80	7		27	50	-	60	-	0.93 Kg	RDoo1204
NT-RD16H D063-F22-Z05	●	63	5		22	50	-	52	-	0.50 Kg	RDoo1604
NT-RD16H D066-F27-Z05	●	66	5		27	50	-	56	-	0.56 Kg	RDoo1604
NT-RD16H D080-F27-Z05	●	80	5		27	50	-	60	-	0.85 Kg	RDoo1604
NT-RD16H D080-F27-Z06	●	80	6		27	50	-	60	-	0.87 Kg	RDoo1604
NT-RD16H D100-F32-Z07	●	100	7		32	50	-	70	-	1.22 Kg	RDoo1604
NT-RD16H D125-F40-Z08	●	125	8		40	63	-	90	-	2.50 Kg	RDoo1604

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches	Clamping set
			
NT-RD05o DCX ≤ 10	NT-ST20033T06	NT-FTB06	-
NT-RD05o DCX ≥ 11	NT-ST20040T06	NT-FTB06	-
NT-RD07o Dooo-ooo-Zoo	NT-ST25056T08HQ	NT-FTB08	-
NT-RD10o DCX ≤ 26	NT-ST35070T15	NT-FTB15	-

Spare parts	Insert screws	Flag wrenches	Clamping set
			
NT-RD10o DCX = 30	NT-ST35095T15HQ	NT-FTB15	-
NT-RD10o DCX ≥ 32	NT-ST35095T15HQ	NT-FTB15	NT-CS013
NT-RD12H Dooo-ooo-Zoo	NT-ST40110T15HQ	NT-FTB15	NT-CS014
NT-RD16H Dooo-ooo-Zoo	NT-ST45110T20	NT-FTB20	NT-CS021

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

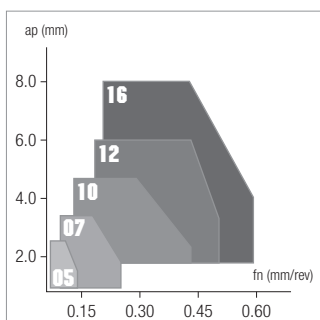
RD**RoundPlus RD**

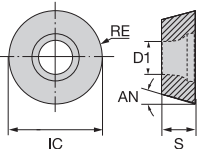
- GP geometry is for general purpose use, SC geometry is sharper
- Reinforced with chamfer edge type available in multiple sizes
- Both PVD and CVD coated different carbide grades available
- Different dots fits with the same universal-clamp on our cutters
- Very reliable and cost efficient solution for multiple purpose and massive metal removal operations

HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition	HC	HF	HF	HF	HF	HF	HT	
	CVD	PVD	PVD	PVD	PVD	PVD		
	JC9540	JP5520	JP5530	JP7525	JP8725	JP9535	JU4525	
Stable machining, light cut	● 1 st choice	○ suitable			○	●		
General machining, medium cut	● 1 st choice	○ suitable	●	●	●	●		
Unstable machining, heavy cut	⚡ 1 st choice	⚡ suitable	⚡	⚡	⚡	⚡		
Dimensions	ISO							
	Vc(m/min) - suggested cutting speed range (bold: 1st choice)							
	P	100 260	100 260	100 280	130 300			
	M	90 210	60 180	60 180	80 200			
	K			140 300				
	N							
	S	30 70			20 60			
	H							

Designation		RE	IC	S	D1	AN	Stock									
GENERAL	GP P M S	RDET0803MOE-GP	4	8	3.18	2.9	15°			○						
		RDET1003MOE-GP	5	10	3.18	4.4	15°	▽	●		▲	●				
		RDET1073MOE-GP	5	10	3.97	4.4	15°		○		○					
		RDET1204MOE-GP	6	12	4.76	4.4	15°	●		●		▲	●			
		RDMT1204MOE-GP	6	12	4.76	4.4	15°			●						
		RDET1604MOE-GP	8	16	4.76	5.5	15°		○			●	●			
LOW FORCE	SC P	RDET1204MOE-SC	6	12	4.76	4.4	15°		○							
		RDET1604MOE-SC	8	16	4.76	5.5	15°	▽	●		▲					
REINFORCED	MOE P M K	RDEW0501MOE	2.5	5	1.51	2.2	15°			●	●	●	○			
		RDEW0702MOE	3.5	7	2.38	2.8	15°						●	▽		
REINFORCED	MOT P K	RDEW0702MOT	3.5	7	2.38	2.8	15°	▽	●	●	▲					
		RDEW1003MOT	5	10	3.18	4.4	15°		●	●	●					
		RDEW1073MOT	5	10	3.97	4.4	15°	▽	●							
		RDEW1204MOT	6	12	4.76	4.4	15°		●	○	●					
		RDEW1604MOT	8	16	4.76	5.5	15°		●	●	●					
		RDMW1604MOT	8	16	4.76	5.5	15°		●		●					
REINFORCED	MOT P	RDMW1204MOT-D6	6	12	4.76	4.4	15°					●				
		RDEW1605MOT-D6	8	16	5.66	5.5	15°	▽								

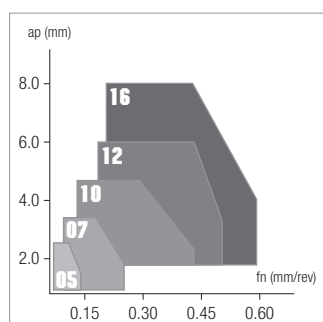
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



RD	HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition							
	HC CVD	HF PVD	HF PVD	HF PVD	HF PVD	HF PVD	HT	
RoundPlus RD	JC9540	JP5520	JP5530	JP7525	JP8725	JP9535	JU4525	
- GP geometry is for general purpose use, SC geometry is sharper - Reinforced with chamfer edge type available in multiple sizes - Both PVD and CVD coated different carbide grades available - Different dots fits with the same universal-clamp on our cutters - Very reliable and cost efficient solution for multiple purpose and massive metal removal operations	Stable machining, light cut	● 1 st choice ○ suitable					●	
	General machining, medium cut	● 1 st choice ◐ suitable	●	●	●	●		
	Unstable machining, heavy cut	⚙ 1 st choice ⚙ suitable	⚙		⚙		⚙	
	Dimensions	ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)						
	P	100 260	100 260		100 280	130 300		
	M	90 210	60 180	60 180		80 200		
	K				140 300			
	N							
	S	30 70				20 60		
	H							

Designation		RE	IC	S	D1	AN	Stock				
REINFORCED  flat type - 8 dots chamfered edge	MOT P	RDEW12T3MOT-D8	6	12	3.97	4.4	15°			○	●
		RDEW1204MOT-D8	6	12	4.76	4.4	15°			○	
		RDMW1204MOT-D8	6	12	4.76	4.4	15°			○	
		RDMW1605MOT-D8	8	16	5.66	5.5	15°			●	

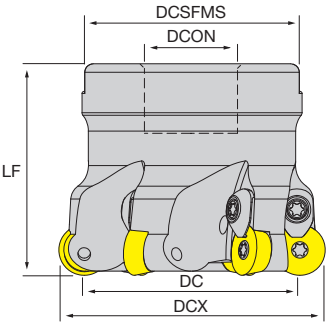
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



NT-RP

RoundPlus RP

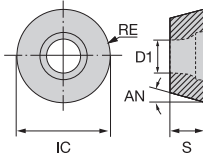
- Positive general face milling cutters for RP inserts
- All with coolant through
- High clearance angle useful for M and S material roughing



Designation	Stock	DCX	CICT	DC	DCON	LF	LU	DCSFMS	CRKS	WT	MIID
NT-RP12H D042-F16-Z04	●	42	4		16	50	-	38	-	0.26 Kg	RPoo1204
NT-RP12H D050-F22-Z05	●	50	5		22	50	-	46	-	0.40 Kg	RPoo1204
NT-RP12H D052-F22-Z05	●	52	5		22	50	-	46	-	0.40 Kg	RPoo1204
NT-RP12H D063-F22-Z06	●	63	6		22	50	-	52	-	0.59 Kg	RPoo1204
NT-RP12H D066-F22-Z06	●	66	6		22	50	-	56	-	0.73 Kg	RPoo1204
NT-RP12H D080-F27-Z07	●	80	7		27	50	-	60	-	0.94 Kg	RPoo1204

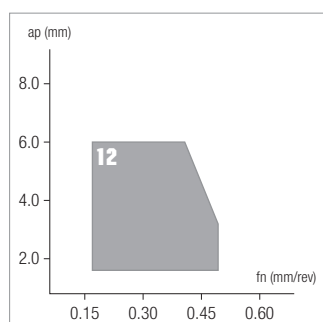
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches	Clamping set
NT-RP12H Dooo-Foo-Zoo	NT-ST40110T15HQ	NT-FTB15	NT-CS013

RP	HC: Coated carbide HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition		HC	HF	HF	HF
			CVD	PVD	PVD	PVD
RoundPlus RP			JC9540	JP5530	JP8725	JP9535
- Sharp / general purpose /reinforced with chamfer edge types available - Flat top surface or with geometries all fit with the same universal-clamp on our cutters - Both PVD and CVD coated different carbide grades available - Very reliable and cost efficient solution for roughing, especially on stainless steel or heat resistant super alloys	Stable machining, light cut	● 1 st choice	○ suitable			
	General machining, medium cut	● 1 st choice	○ suitable	●	●	
	Unstable machining, heavy cut	⚠ 1 st choice	⚠ suitable	⚠	⚠	
Dimensions		ISO				
		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)				
		P		100 260	100 280	
		M	90 210	60 180		80 200
		K				
		N				
		S	30 70			20 60
		H				

Designation		RE	IC	S	D1	AN	Stock			
GENERAL	GP P M S 	RPET1204M0E-GP	6	12	4.76	4.4	11°		●	●
	chipbreaker type honed edge	RPMT1204M0E-GP	6	12	4.76	4.4	11°	●	●	
GENERAL	GP M S 	RPET1204M0T-GP-4X	6	12	4.76	4.4	11°	●		
LOW FORCE	SC P 	RPET1204M0E-SC	6	12	4.76	4.4	11°	○		
	chipbreaker type honed edge									
REINFORCED	MOT P 	RPEW1204M0T	6	12	4.76	4.4	11°	●		
	flat type chamfered edge	RPMW1204M0T	6	12	4.76	4.4	11°	●	●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5530			JP8725			JU4225		
	P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	100	140	180	100	150	200	130	180	230
				30%	160	200	240	160	210	260	200	240	280
				10%	220	240	260	220	250	280	260	280	300
B - THREADING	P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	80	120	160	90	130	170	120	150	180
				30%	120	160	200	130	170	210	180	210	240
				10%	180	200	220	190	210	230	230	250	270
	P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	60	90	120	80	110	140	90	120	150
30%				100	130	160	120	150	180	150	180	210	
10%				140	170	200	160	190	220	190	220	250	
C - GROOVING	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540			JP5530			JP9535		
	P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	90	130	170	60	100	140	80	120	160
				30%	110	160	210	80	130	180	100	150	200
				10%	130	190	250	100	160	220	120	180	240
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%	70	100	130				60	90	120	
			30%	80	110	140				70	100	130	
			10%	90	120	150				80	110	140	
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	90	120	150	60	90	120	80	110	140	
			30%	110	150	190	80	120	160	100	140	180	
			10%	130	170	210	100	140	180	120	160	200	
D - MILLING	M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%	80	110	140				70	100	130
				30%	90	120	150				80	110	140
				100	130	160	90				120	150	
E - DRILLING	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP7525								
	K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100%	140	180	220						
				30%	160	210	260						
				10%	180	240	300						
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100%	100	140	180							
			30%	120	170	220							
			10%	140	200	260							
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	100%	90	120	150							
			30%	120	150	180							
			10%	150	180	210							
F - ACCESSORIES	ISO 513	MATERIAL	HARDNESS HB	ae/DC	JC9540			JP9535					
	S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	30	40	50	20	30	40			
				30%	40	50	60	30	40	50			
				10%	50	60	70	40	50	60			
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%				40	50	60				
			30%				50	60	70				
			10%				60	70	80				

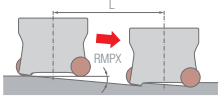
ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. H1.

DESIGNATION	ae/DCX	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
IC=10 GP chipbreaker	100%	0.50	1.50	2.50	0.10	0.18	0.26
	30%	1.00	3.00	5.00	0.12	0.21	0.30
	10%	1.00	3.00	5.00	0.16	0.28	0.40
IC=12 GP chipbreaker	100%	1.00	2.00	3.00	0.12	0.23	0.34
	30%	1.00	3.50	6.00	0.16	0.28	0.40
	10%	1.00	3.50	6.00	0.20	0.35	0.50
IC=16 GP chipbreaker	100%	1.00	2.50	4.00	0.16	0.28	0.40
	30%	1.00	4.50	8.00	0.20	0.33	0.46
	10%	1.00	4.50	8.00	0.24	0.42	0.60
IC=20 GP chipbreaker	100%	1.00	3.00	5.00	0.18	0.33	0.48
	30%	1.00	5.50	10.00	0.22	0.40	0.58
	10%	1.00	5.50	10.00	0.30	0.50	0.70
IC=12 SC chipbreaker	100%	1.00	2.00	3.00	0.12	0.20	0.28
	30%	1.00	3.50	6.00	0.14	0.24	0.34
	10%	1.00	3.50	6.00	0.16	0.28	0.40
IC=16 SC chipbreaker	100%	1.00	2.50	4.00	0.14	0.25	0.36
	30%	1.00	4.50	8.00	0.18	0.30	0.42
	10%	1.00	4.50	8.00	0.22	0.35	0.48

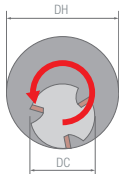
DESIGNATION	ae/DCX	DEPTH OF CUT			FEED RATE		
		ap (mm)			fz (mm)		
		min	start	max	min	start	max
IC=05 Flat (MOE)	100%	0.25	0.75	1.25	0.04	0.06	0.08
	30%	0.50	1.50	2.50	0.06	0.08	0.10
	10%	0.50	1.50	2.50	0.08	0.10	0.12
IC=07 Flat (MOE, MOT)	100%	0.25	1.00	1.75	0.08	0.12	0.16
	30%	0.50	2.00	3.50	0.10	0.15	0.20
	10%	0.50	2.00	3.50	0.12	0.18	0.24
IC=10 Flat (MOT)	100%	0.50	1.50	2.50	0.12	0.20	0.28
	30%	1.00	3.00	5.00	0.15	0.25	0.35
	10%	1.00	3.00	5.00	0.18	0.30	0.42
IC=12 Flat (MOT)	100%	1.00	2.00	3.00	0.16	0.27	0.38
	30%	1.00	3.50	6.00	0.20	0.34	0.48
	10%	1.00	3.50	6.00	0.24	0.40	0.56
IC=16 Flat (MOT)	100%	1.00	2.50	4.00	0.19	0.32	0.45
	30%	1.00	4.50	8.00	0.24	0.40	0.56
	10%	1.00	4.50	8.00	0.28	0.47	0.66

Parameters for ramping

	NT-RD05H			NT-RD07H			NT-RD10H		
	DCX	RMPX	L	DCX	RMPX	L	DCX	RMPX	L
	10	6.2°	2.1	16	4.7°	2.6	20	9.4°	6.6
	12	4.4°	1.8	17	4.1°	2.4	21	6.6°	4.8
	13	3.6°	1.6	20	3.3°	2.2	25	4.4°	3.9
	16	2.0°	1.0	25	2.3°	2.0	26	4.3°	3.9
	17	2.0°	1.0	35	2.0°	1.0	30	3.2°	3.4
							32	1.2°	1.5
							35	1.0°	1.4
							40	0.9°	1.4
							42	0.8°	1.3
							52	0.6°	0.9

RMPX: max. ramping angle; L: max. ramping path

Parameters for helical milling

	NT-RD05H			NT-RD07H			NT-RD10H		
	DCX	DH min.	DH max.	DCX	DH min.	DH max.	DCX	DH min.	DH max.
	10	12	18	16	24	30	20	22	38
	12	16	22	17	26	32	21	24	40
	13	18	24	20	32	38	25	32	48
	16	24	30	25	42	48	26	34	50
	17	26	32	35	62	68	30	42	58
							32	46	62
							35	52	68
							40	62	78
							42	66	82
							52	86	102

DH min.: min. cutting dia.; DH max.: max. cutting dia.

A - TURNING

B - THREADING

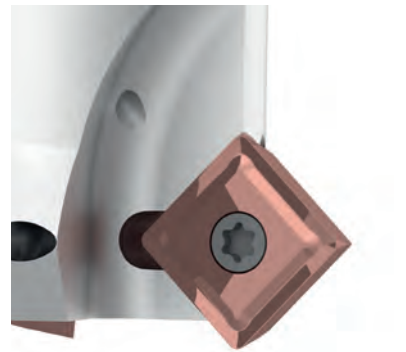
C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS



MILLING Chamfering

Quick guide .D100

CHAMFERSQUARE .D101

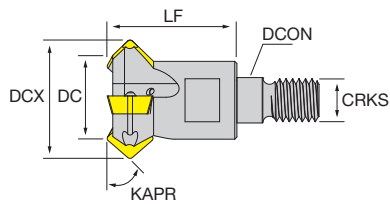
A - TURNING		CHAMFERSQUARE				
		D101				
		 SCREW-IN CYLINDRICAL				
B - THREADING						
C - GROOVING						
D - MILLING	KAPR	45°				
	Insert sizes	05 / 07 / 09				
	APMX	4.2 / 6.34 / 8.2				
	Tool diameter	Ø12 - Ø32				
	Coolant holes	✓				
	Workpiece material	P M K N				
	No. of cutting edges	4				
	No. of geometries	2				
	Special features	-				
	Chamfering	✓				
E - DRILLING	Machine load					
	Strenght					
	Precision					
	Finishing					
	Range					
F - ACCESSORIES						
G - SPARE PARTS						

NT-CHS45

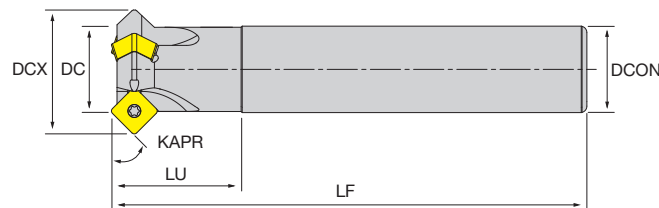
ChamferSquare

- Positive chamfering cutters for SP inserts
- All with coolant through
- Please select insert size according to your chamfer length
- Inserts could also be mounted on DRS drills

Screw-in



Cylindrical



Designation	Stock	DC	CICT	DCX	DCON	LF	LU	CRKS			MIID
SCREW-IN											
NT-CHS45 D12/19-M06-Z3-05	●	12	3	19	6.5	20	-	M6			SPoX05
NT-CHS45 D16/22-M08-Z4-05	●	16	4	22	8.5	25	-	M8			SPoX05
NT-CHS45 D20/30-M10-Z3-07	●	20	3	30	10.5	30	-	M10			SPoX07
NT-CHS45 D25/37-M12-Z3-09	●	25	3	37	12.5	35	-	M12			SPoX09
NT-CHS45 D32/44-M16-Z4-09	●	32	4	44	17	40	-	M16			SPoX09
CYLINDRICAL											
NT-CHS45 D12/19-S12-Z3-05	●	12	3	19	12	80	20	-			SPoX05
NT-CHS45 D16/22-S16-Z4-05	●	16	4	22	16	100	25	-			SPoX05
NT-CHS45 D20/30-S20-Z3-07	●	20	3	30	20	110	30	-			SPoX07
NT-CHS45 D25/37-S25-Z3-09	●	25	3	37	25	120	35	-			SPoX09
NT-CHS45 D32/44-S32-Z4-09	●	32	4	44	32	130	40	-			SPoX09

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-CHS45 D00/00-000-Z0-05	NT-ST20043T06	NT-FTB06
NT-CHS45 D00/00-000-Z0-07	NT-ST25065T07	NT-FTB07
NT-CHS45 D00/00-000-Z0-09	NT-ST35051T15	NT-FTB15

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

SP_oX

ChamferSquare

- General purpose type or fine polished sharp geometries for aluminum or non-ferrous materials available
- Diverse PVD coated carbide grades available
- Inserts could also be mounted on DRS drills

HF: Micrograin carbide
PVD: Physical vapour deposition

HF PVD	HF PVD	HF PVD	HF PVD	HF
JP5530	JP8725	JP9535	JP9635	JU6520

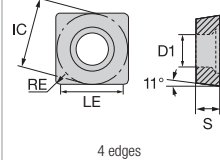
Stable machining,
light cut ● 1st choice ○ suitable

General machining,
medium cut ● 1st choice ○ suitable

Unstable machining,
heavy cut ⚡ 1st choice ⚡ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P	100 260	100 280			
M	60 180		80 200	80 180	
K					
N					300 1100
S			20 60	20 50	
H					

Designation		RE	IC	S	D1	LE	Stock				
GENERAL	GP P M										
		SPMX050204-GP	0.4	5	2.38	2.5	4.2	●	●	●	
		SPMX07T308-GP	0.8	7.94	3.97	2.8	6.34	●	●	●	
		SPMX090408-GP	0.8	9.8	4.3	4.2	8.2	●	●	▲	●
ALUMINIUM	AL N										
		SPGX050204-AL	0.4	5	2.38	2.5	4.2				●
		SPGX07T308-AL	0.8	7.94	3.97	2.8	6.34				●
	polished surface periphery ground	SPGX090408-AL	0.8	9.8	4.3	4.2	8.2				●

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5530			JP8725			
				min	start	max	min	start	max	
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	100%	100	140	180	100	150	200	
			30%	160	200	240	160	210	260	
			10%	220	240	260	220	250	280	
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100%	80	120	160	90	130	170	
			30%	120	160	200	130	170	210	
			10%	180	200	220	190	210	230	
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	100%	60	90	120	80	110	140	
			30%	100	130	160	120	150	180	
			10%	140	170	200	160	190	220	
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP5530			JP9535			
				min	start	max	min	start	max	
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	100%	60	100	140	80	120	160	
			30%	80	130	180	100	150	200	
			10%	100	160	220	120	180	240	
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	100%				60	90	120	
			30%				70	100	130	
			10%				80	110	140	
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	100%	60	90	120	80	110	140	
			30%	80	120	160	100	140	180	
			10%	100	140	180	120	160	200	
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		100%				70	100	130	
			30%				80	110	140	
							90	120	150	
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JU6520						
				min	start	max				
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGAL)		100%	300	400	500				
			30%	400	600	800				
			10%	500	800	1100				
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		100%	200	250	300				
			30%	300	350	400				
			10%	400	450	500				
ISO 513	MATERIAL	HARDNESS HB	ae/DC	JP9535						
				min	start	max				
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		100%	20	30	40				
			30%	30	40	50				
			10%	40	50	60				
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		100%	40	50	60				
			30%	50	60	70				
			10%	60	70	80				

ae: radial depth of cut; DC: milling cutter diameter

Complete workpiece materials p. H1.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

DESIGNATION	ae/Dc	FEED RATE		
		fz (mm)		
		min	start	max
SPMX050204-GP	100%	0.08	0.13	0.18
	30%	0.10	0.16	0.22
	10%	0.12	0.19	0.26
SPMX07T308-GP	100%	0.10	0.16	0.22
	30%	0.12	0.20	0.28
	10%	0.14	0.24	0.34
SPMX090408-GP	100%	0.11	0.19	0.27
	30%	0.14	0.24	0.34
	10%	0.16	0.28	0.40
SPGX050204-AL	100%	0.06	0.10	0.14
	30%	0.08	0.13	0.18
	10%	0.09	0.15	0.21
SPGX07T308-AL	100%	0.08	0.13	0.18
	30%	0.10	0.16	0.22
	10%	0.12	0.19	0.26
SPGX090408-AL	100%	0.10	0.16	0.22
	30%	0.12	0.19	0.26
	10%	0.14	0.23	0.32



MILLING Advanced

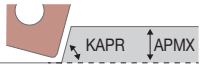
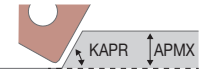
Quick guide .D106

ROUND SERIES .D108

TANGENTIAL .D110

XP SERIES .D112

SQUARE SERIES .D114

		ROUND	SQUARE	TANGENTIAL
		 D108	 D114	 D110
A - TURNING	NT-SN1288			
				
	NT-SN1275			
				
B - THREADING	NT-XP08 NT-SP12			
				
C - GROOVING	NT-RN12			
				
D - MILLING	KAPR	variable	75° / 88°	90°
	Insert sizes	12	12	12
	APMX	3		3 / 7
	Tool diameter	Ø50 - Ø100	Ø50 - Ø125	Ø50 - Ø125
	Coolant holes	✓	✓	✓
	Workpiece material	S H	K	K
	No. of cutting edges	variable	8	8
	No. of geometries	3	4	1
	Special features		chipbreaker type available	
	Face Milling 	✓	✓	✓
E - DRILLING	Side Milling 	✓	✓	✓
	Ramping 	✓	✗	✗
F - ACCESSORIES	Machine load	■ ■ ■ ■ □	■ ■ ■ □ □	■ ■ ■ □ □
	Strenght	■ ■ ■ ■ ■	■ ■ ■ □ □	■ ■ ■ ■ □
	Precision	■ ■ ■ □ □	■ ■ ■ □ □	■ ■ ■ □ □
	Finishing	■ ■ ■ □ □	■ ■ ■ □ □	■ ■ ■ □ □
	Range	■ ■ ■ □ □	■ ■ ■ ■ □	■ ■ ■ □ □
G - SPARE PARTS				

XP SERIES	
	D112
NT-SN1288 	
NT-SN1275 	
NT-XP08 NT-SP12 	 ARBOR ALU
NT-RN12 	 ARBOR STEEL
KAPR	90°
Insert sizes	08
APMX	3 (PCD) / 1 (PCBN)
Tool diameter	Ø50 - Ø125
Coolant holes	-
Workpiece material	
No. of corners	1 (PCD) / 2 (PCBN)
No. of geometries	1
Special features	
Face Milling	✓
Side Milling	✓
Ramping	✗
Machine load	
Strenght	
Precision	
Finishing	
Range	

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

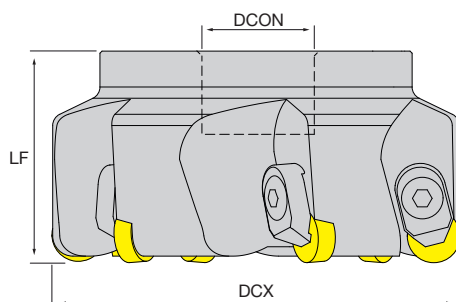
F - ACCESSORIES

G - SPARE PARTS

NT-RN

Round series

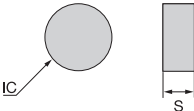
- Milling holder for doublesided solid round inserts without holes
- For dry cut milling
- Please select according to the thickness of the inserts



Designation	Stock	DCX	CICT	DCON	LF	LU	DCSFMS	CRKS		WT	MIID
FOR RNGN120400											
NT-RN12 D050-F22-Z04	●	50	4	22	50	-	45	-			RNGN1204
NT-RN12 D063-F22-Z04	●	63	4	22	50	-	45	-			RNGN1204
NT-RN12 D080-F27-Z05	●	80	5	27	50	-	58	-			RNGN1204
NT-RN12 D100-F32-Z06	●	100	6	32	50	-	75	-			RNGN1204
FOR RNGN120700											
NT-RN12X D050-F22-Z04	●	50	4	22	50	-	45	-			RNGN1207
NT-RN12X D063-F22-Z04	●	63	4	22	50	-	45	-			RNGN1207
NT-RN12X D080-F27-Z05	●	80	5	27	50	-	58	-			RNGN1207
NT-RN12X D100-F32-Z06	●	100	6	32	50	-	60	-			RNGN1207

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

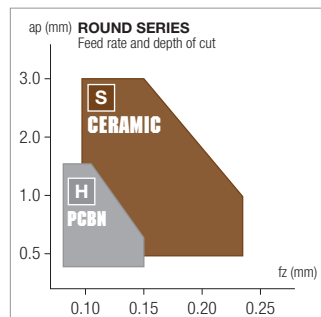
Spare parts	Clamp	Clamp screws	Springs	L wrench
NT-RN12x D000-F00-Z00	NT-CS028	NT-SC035	NT-SG028	NT-WR030

RN		BH: High volume CBN CN: Silicon nitride ceramic Si3N4 PVD: Physical vapour deposition				BH	BH	CN	
Round series						NBN900U	NBN950U	NSA6000	
- Solid CBN and solid ceramic inserts for advanced milling - Different thickness and edge preparation available upon request - Very reliable and cost efficient solution for multiple purpose use on S/H materials - Wider range available on request	Stable machining, light cut		● 1 st choice	○ suitable	○		○		
	General machining, medium cut		● 1 st choice	○ suitable	●	○	●		
	Unstable machining, heavy cut		⚙ 1 st choice	⚙ suitable	⚙	⚙	⚙		
	Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)				
			P						
M									
K									
N									
S					800 1200				
H			100 400	100 300					
Designation		RE	IC	S	AN	Stock			
PCBN	UE H								
	 full solid	RNGN120400S-UE	6.35	12.7	4.76	0°	●	●	
CERAMIC	E S								
	 SiAlON	RNGN120700E	6.35	12.7	7.94	0°		○	
CERAMIC	CC S								
	 SiAlON	RNGN120400-CC	6.35	12.7	4.76	0°		●	
		RNGN120700-CC	6.35	12.7	7.94	0°		●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

ROUND SERIES cutting speed (m/min)

S1	HRSA good machinability <25 HRC	800÷1200
S2	HRSA medium machinability 25÷35 HRC	800÷1200
S3	HRSA low machinability 35÷45 HRC	600÷1200
H1	Case-hardened steel	100÷300
H2	Bearing steel	200÷400
H3	Hardened tool steel	150÷350



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

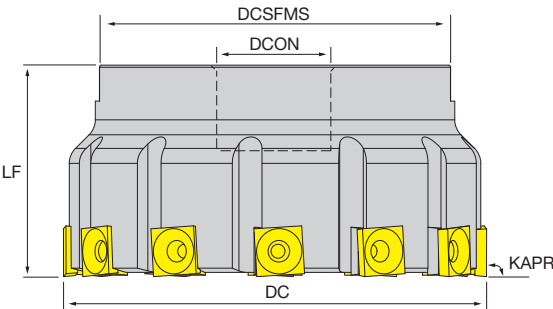
F - ACCESSORIES

G - SPARE PARTS

NT-SP

Tangential

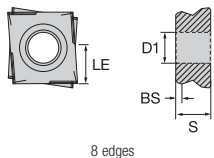
- Milling holder for tangential solid square inserts
- For dry cut milling
- Kpr 90°
- More teeth density comparing to flat-mount type



Designation	Stock	DC	CICT	DCON	LF	LU	DCSFMS	CRKS		WT	MIID
NT-SP12-TAN D050-F22-Z05	●	50	5	22	50	-	45	-			SPHX1205
NT-SP12-TAN D063-F22-Z07	●	63	7	22	50	-	50	-			SPHX1205
NT-SP12-TAN D080-F27-Z08	●	80	8	27	50	-	60	-			SPHX1205
NT-SP12-TAN D100-F32-Z12	●	100	12	32	50	-	85	-			SPHX1205
NT-SP12-TAN D125-F40-Z15	●	125	15	40	50	-	85	-			SPHX1205

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-SP12-TAN D000-F00-Z00	NT-ST40101T15	NT-FTB15

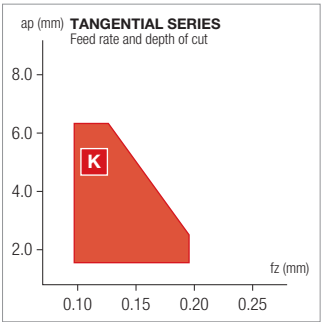
SPHX		CN: Silicon nitride ceramic Si3N4		CN	CN			
				NSN350	NSN400			
Tangential		Stable machining, light cut		● 1 st choice ○ suitable	● ●			
		General machining, medium cut		● 1 st choice ○ suitable	○ ●			
		Unstable machining, heavy cut		⚠ 1 st choice ⚠ suitable				
		Dimensions		ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)			
				P				
M								
K	600 1200			600 1200				
N								
S								
		H						
Designation		BS	S	D1	LE	AN	Stock	
CERAMIC	GP 							
	 silicon nitride	SPHX1205PCTR-GP	0.8	5.5	5.1	8	11°	● ●

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

TANGENTIAL SERIES
cutting speed (m/min)

K1	Gray cast iron

CERAMIC NSN 600-1200
roughing and finishing

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

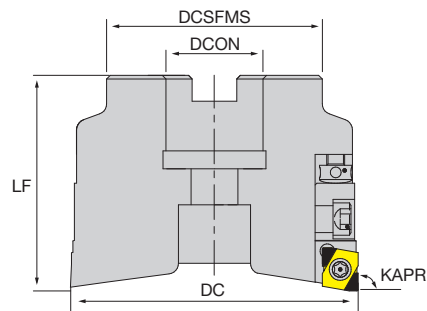
G - SPARE PARTS

NT-XP

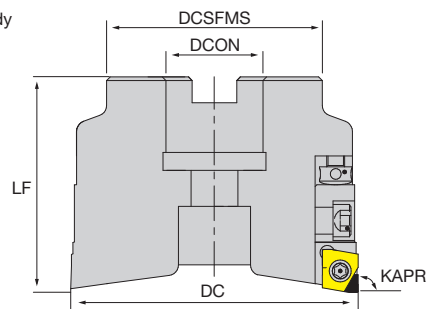
XP series

- Milling holder for brazed tip XP type inserts
- For dry cut milling
- KApr 90°
- Both aluminum light body and robust steel body available

Steel body



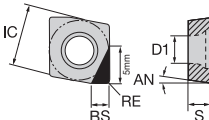
Aluminium body



Designation	Stock	DC	CICT	DCON	LF	LU	DCSFMS	CRKS		WT	MIID
STEEL BODY											
NT-XP08-ST D050-F16-Z05	●	50	5	16	50	-	32	-			XPGo0802
NT-XP08-ST D063-F22-Z06	●	63	6	22	50	-	44	-			XPGo0802
NT-XP08-ST D080-F27-Z07	●	80	7	27	50	-	60	-			XPGo0802
NT-XP08-ST D100-F32-Z08	●	100	8	32	50	-	80	-			XPGo0802
ALUMINIUM BODY											
NT-XP08-AL D063-F22-Z05	●	63	5	22	50	-	44	-			XPGo0802
NT-XP08-AL D080-F27-Z07	●	80	7	27	50	-	60	-			XPGo0802
NT-XP08-AL D100-F32-Z08	●	100	8	32	50	-	80	-			XPGo0802
NT-XP08-AL D125-F40-Z10	●	125	10	40	63	-	105	-			XPGo0802

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Cartridge	Cartridge screw	L wrench	Adjusting screw	Chip cover	Insert screws	Insert screws
NT-XP08-AL D ₀₀₀ -F ₀₀ -Z ₀₀	NT-CRD-XP08	NT-CW040	NT-WR040	NT-AD040	NT-CH030	NT-ST40100T15	NT-ST30070T10HQ
NT-XP08-ST D ₀₀₀ -F ₀₀ -Z ₀₀	NT-CRD-XP08	NT-CW040	NT-WR040	NT-AD040	-	-	NT-ST30070T10HQ

XP		BH: High volume CBN DP: Polycrystalline diamond		BH	DP	DP			
XP series				NBH450U	ND120	ND150			
- Brazed-tip type insert available in both PCBN and PCD 2 cutting edges for PCBN, 1 cutting edge for PCD - Edge length/RE/BS can be tailor made upon requests - Different grades and edge preparation also available upon requests		Stable machining, light cut	● 1 st choice ○ suitable	●	●	●			
		General machining, medium cut	● 1 st choice ○ suitable	●	●	○			
		Unstable machining, heavy cut	⚙ 1 st choice ⚙ suitable	⚙					
		Dimensions		ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)				
 DIAMOND 1 edge - PCBN 2 edges		P							
		M							
		K	500 2000						
		N	500 2000	500 2500					
		S							
		H							

Designation		RE	IC	S	D1	BS	Stock			
PCBN	UE K  chamfer+hone	XPGW080204S-UE-2C	0.4	7.91	2.38	3.6	2.5	●		
		XPGW080208S-UE-2C	0.8	7.91	2.38	3.6	2.5	●		
DIAMOND	F N  sharp edge	XPGT080204F-1C	0.4	7.91	2.38	3.6	2.5		●	●
		XPGT080208F-1C	0.8	7.91	2.38	3.6	2.5		●	○

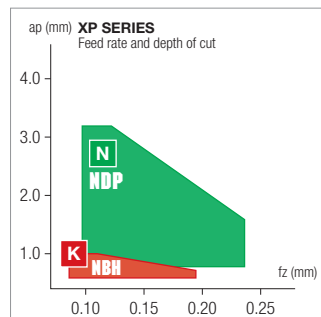
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

XP SERIES cutting speed (m/min)

K1	Gray cast iron	500÷2000
N1	Aluminium alloy Si ≤ 12	1000÷3000
N2	Aluminium alloy Si > 12	300÷1000

K PCBN NBH
only finishing

N DIAMOND NDP
roughing and finishing

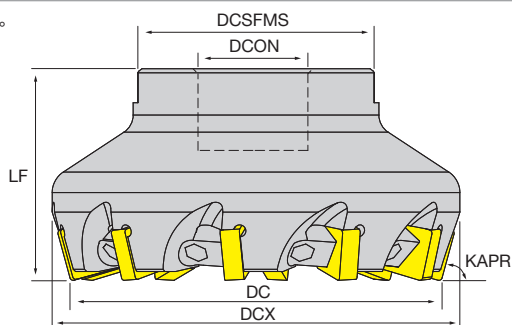


NT-SN

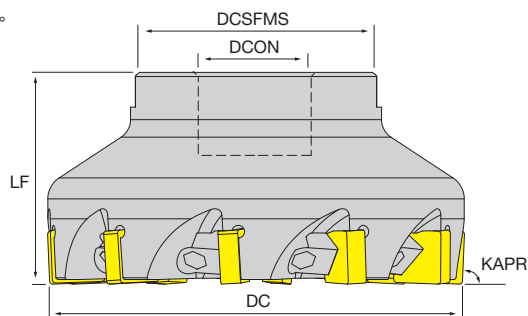
Square series

- Milling holder for doublesided solid square inserts without holes
- For dry cut milling
- Kapr 75° and 88° available
- Wider range available on request

KAPR 75°



KAPR 88°



Designation	Stock	DC	CICT	DCX	DCON	LF	LU	DCSFMS	CRKS	WT	MIID
KAPR 75°											
NT-SN1275 D050-F22-Z05	●	50	5		22	50	-	45	-		SNoN1204
NT-SN1275 D063-F22-Z06	●	63	6		22	50	-	45	-		SNoN1204
NT-SN1275 D080-F27-Z08	●	80	8		27	50	-	58	-		SNoN1204
NT-SN1275 D100-F32-Z10	●	100	10		32	50	-	60	-		SNoN1204
NT-SN1275 D125-F40-Z12	●	125	12		40	50	-	85	-		SNoN1204
KAPR 88°											
NT-SN1288 D063-F22-Z06	●	63	6	-	22	50	-	45	-		SNoN1204
NT-SN1288 D080-F27-Z08	●	80	8	-	27	50	-	58	-		SNoN1204
NT-SN1288 D100-F32-Z10	●	100	10	-	32	50	-	60	-		SNoN1204
NT-SN1288 D125-F40-Z12	●	125	12	-	40	50	-	85	-		SNoN1204

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Wedge	Wedge screws	L wrench
NT-SN1200 D000-F00-Z00	NT-WD070	NT-SC060	NT-WR030

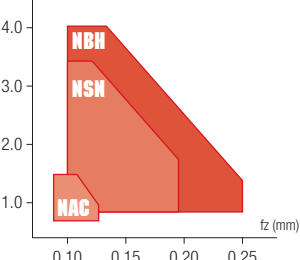
SN		CM: Mixed ceramic Al2O3 BH: High volume CBN CN: Silicon nitride ceramic Si3N4 PVD: Physical vapour deposition		CM	BH	BH	CN		
Square series				MAC200	NBH550U	NBH900U	MSN400		
• Solid square-shape CBN and solid ceramic inserts for advanced milling • Different sizes and edge preparation available upon request • Very reliable and cost efficient solution for multiple purpose use on K/H materials • Wider range available on request		Stable machining, light cut		☒ 1 st choice	☐ suitable	☒	☐		
		General machining, medium cut		☒ 1 st choice	☐ suitable	☒	☒		
		Unstable machining, heavy cut		☒ 1 st choice	☐ suitable	☒	☒		
		Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)			
8 edges				P					
				M					
				K	400 800	800 2000	800 1500	600 1200	
				N					
				S					
				H					

Designation		RE	IC	S	BS	AN	Stock				
PCBN	UE K full solid	SNGN120412S-UE	1.2	12.7	4.76	-	0°			☒	
PCBN	EN K full solid for 75° milling cutters	SNXN1204EN	-	12.7	4.76	1.4	0°		☒		
PCBN	HN K full solid for 88° milling cutters	SNXN1204HN	-	12.7	4.76	1.8	0°		☒		
PCBN	CB K full solid	SNXN120412-CB	1.2	12.7	4.76	-	0°		☒		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion

SQUARE SERIES cutting speed (m/min)

K1 Gray cast iron

PCBN **NBH** 800÷2000
roughing and finishingCERAMIC **NSN** 600÷1200
roughing and finishingCERAMIC **NAC** 400÷800
only finishingSQUARE SERIES
Feed rate and depth of cut

A - TURNING

B - THREADING

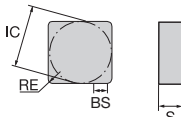
C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

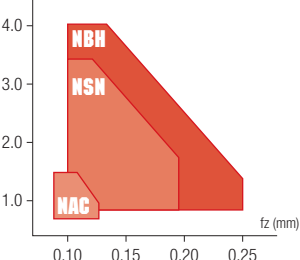
G - SPARE PARTS

SN		CM: Mixed ceramic Al2O3 BH: High volume CBN CN: Silicon nitride ceramic Si3N4 PVD: Physical vapour deposition		CM	BH	BH	CN								
				MAC200	NBH550U	NBH900U	MSN400								
Square series		Stable machining, light cut		● 1 st choice	○ suitable	●		○	●						
- Solid square-shape CBN and solid ceramic inserts for advanced milling - Different sizes and edge preparation available upon request - Very reliable and cost efficient solution for multiple purpose use on K/H materials - Wider range available on request		General machining, medium cut		● 1 st choice	○ suitable	●	●	●	●						
		Unstable machining, heavy cut		⚙ 1 st choice	⚙ suitable		⚙	⚙							
		Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)									
 8 edges				P											
				M											
				K	400 800	800 2000	800 1500	600 1200							
				N											
				S											
				H											
Designation		RE	IC	S	BS	AN	Stock								
CERAMIC	GP K  Si3N4	SNGN120412-GP	1.2	12.7	4.76	-	0°					●			
CERAMIC	EN K  Si3N4 or mixed Al2O3 for 75° milling cutters	SNXN1204EN	-	12.7	4.76	1.4	0°	●				●			
CERAMIC	HN K  Si3N4 or mixed Al2O3 for 88° milling cutters	SNXN1204HN	-	12.7	4.76	1.8	0°	●				●			
CERAMIC	CB K  Si3N4	SNXN120412-CB	1.2	12.7	4.76	-	0°					●			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

SQUARE SERIES cutting speed (m/min)

K1 Gray cast iron

PCBN **NBH** 800÷2000
roughing and finishingCERAMIC **NSN** 600÷1200
roughing and finishingCERAMIC **NAC** 400÷800
only finishingSQUARE SERIES
Feed rate and depth of cut



DRILLING

Grade table .E2

Grade details .E3

Quick guide .E4

Indexable drills - DRS .E6

Modular heads - DEX .E24

Combined series - DXP .E52

Multi-functional - SPOT DRILL .E62

Iso Trigon - ISO WCMX .E84

Carbide drills - NCD .E66

A - TURNING	ISO 513		CARBIDE			
			PVD COATED			UNCOATED
			DEX	DXP	DRS	DRS
B - THREADING	P	P01				
		P10				
		P20	JP5630	JP5725		
		P30		JP5725	JP5530	JP8725
		P40				
C - GROOVING	Steel	M01				
		M10				
		M20	JP5630		JP5530	JP9535
		M30				
		M40				
D - MILLING	Stainless steel	K01				
		K10				
		K20	JP7625	JP5725		
		K30		JP5725	JP5530	
E - DRILLING	Cast iron	K01				
		K10				
		K20	JP7625	JP5725		
		K30		JP5725	JP5530	
F - ACCESSORIES	Non-ferrous material	N01				
		N10				
		N20				JU6520
		N30				
G - SPARE PARTS	Heat resistance	S01				
		S10				
		S20			JP9535	
		S30				

GRADE	SYSTEM	HARDNESS HV	COATING		APPLICATION		FEATURES
			TECHNOLOGY	COMPOSITION			
JP5725	DEX - DXP	1.840	PVD	AlTiN	P	P15 P30	High performance grade for steel drilling with a perfect combination between toughness and wear resistance. A very good choice even for nodular cast iron machining.
					K	K10 K30	
JP5630	DEX	1.700	PVD	TiSiN	P	P30	First choice for stainless steel and free-cutting steels. Tough substrate and special coating with low friction coefficient specifically developed for sticky materials.
					M	M30	
JP7625	DEX	1.840	PVD	TiAlCrN	K	K10 K30	Very hard coating film specifically studied for abrasive materials machining. First choice for gray cast iron in combination with TE chamfered geometry.
JP5530	DRS	1.840	PVD	TiAlN	P	P20 P40	Universal grade mainly for steel application but also available for ISO M and ISO K machining.
					M	M25 M30	
					K	K25 K30	
JP8725	DRS	1.840	PVD	AlCrN	P	P15 P30	First choice for steel application. The new substrate contribute to a great performance increase compared to conventional product.
JP9535	DRS	1.640	PVD	TiAlN	M	M20 M35	First choice for stainless steel machining under general cutting conditions. Also applicable on titanium thanks to a great stability at high temperature.
					S	S15 S25	
JU6520	DRS	1.560	-	-	N	N10 N30	Uncoated grade for non-ferrous materials. The micrograin substrate toughness allows the production of very sharp ground cutting edges.

A - TURNING

B - THREADING

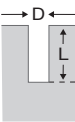
C - GROOVING

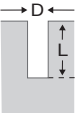
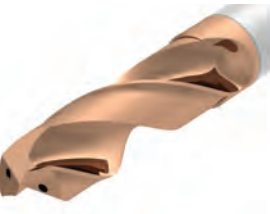
D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

		DRS	DRS PILOT	DEX
		 E6	 E18	 E24
A - TURNING				
	DRS			
	KAPR			
	DEX DXP			
	SIG°			
B - THREADING	NCD			
	SIG°			
	SPOTdrill			
	SIG°			
C - GROOVING				
D - MILLING				
E - DRILLING				
F - ACCESSORIES				
G - SPARE PARTS				

	DXP	NCD	SPOTDRILL
	 E52	 E66	 E62
 DRS  KAPR  DEX DXP  SIG°  NCD  SIG°  SPOTdrill  SIG°			 SCREW-IN  CYLINDRICAL
Tool diameter	Ø30.00 - Ø60.00	Ø3.00 - Ø20.00	Ø14.00
L / D	3 - 6 - 8 - 10	3 - 5 (8 upon request)	-
Coolant holes	✓	both	✗
Effective cutting edge	2	2	2
Point angle	SIG pilot 140°	SIG 140°	SIG 90°
Workpiece material	P K	P M K S	P M K N
No. of corners	peripheral 2 / 3	1	4
No. of geometries	1	2	2
Special features	Chip split chipbreaker	-	-
Plain Surface 	✓	✓	Spotting 
Slant Surface 	✗	✗	
Concave Surface 	✓	✓	Engraving 
Convex Surface 	✓	✓	
Stacked Plates 	✓	✓	V-Grooving 
Pipes 	✓	✓	
Half Hole 	✗	✗	Chamfering 
Hole Expansion 	✗	✗	
Precision	■ ■ ■ □ □	■ ■ ■ ■ ■	
Productivity	■ ■ ■ ■ □	■ ■ ■ ■ □	
Cost per hole	■ ■ ■ ■ □	■ ■ ■ □ □	
Range	■ ■ ■ ■ ■	■ ■ ■ ■ □	

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

DRS DRILLS

High performance universal indexable drilling system with inserts

APPLICATION

						
Plane surface	Slant surface	Concave surface	Convex surface	Pipes	Half hole	Hole expansion

ISO APPLICATION FIELDS

P M K N

ADVANTAGES AND CHARACTERISTICS

- Highly universal drilling system suitable for diverse conditions
- Highly cost-efficient system
- Twisted flute style available in 2xD and 3xD, straight flute style in 4xD and 5xD to improve chip evacuation



• Drilling bodies

- Weldon shank with internal coolant
- 2/ 3/ 4/ 5xD available from D13 to D50
- Special length and stepped body available upon request

Special carbide welding protect the body from chip friction



2D - 3D Twisted flute, coolant holes with "Y" design



4D - 5D Straight flute, coolant holes with "II" design

• Inserts

- Available sizes 05/06/07/09/11/14
- Cemented carbide grades with PVD coatings or uncoated for N materials
- Geometries: GP, AL

GP **P M K**

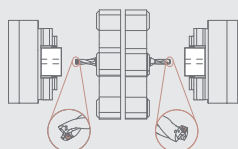


SIZE
05 06 07 09 11 14

AL **N**



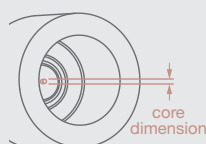
SIZE
05 06 07 09 11 14



Lathe installation

It's recommended to set the outer insert facing the operator as shown in the drawing, both for main and sub-spindle to gain the best results.

Following this suggestion, generally, the inner insert will be set below the center which is the recommended situation for optimal operation.



Quick check of the center height

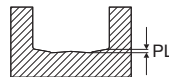
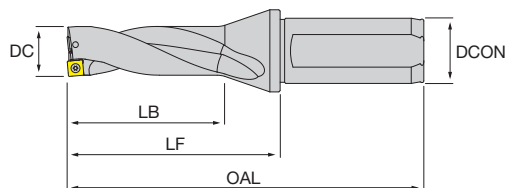
To check if the machine axis is correctly aligned, a test hole should be drilled checking the remaining core on the hole bottom.

Center-height adjustment is necessary when no core remains or if the core diameter is larger than 1mm.

2xD

DRS drill

- 2xD indexable drill body for SP inserts with helical flutes
- All with coolant through
- Please select insert size according to the drill diameter



Designation	Stock	DC	DCON	OAL	LF	LB	PL	ADJLX			MIID
NT-DRS-2D D12.50-S20-05	▽	12.5	20	94	44	26	0.4	0.5			SPoX05
NT-DRS-2D D13.00-S20-05	●	13	20	94	44	26	0.4	0.5			SPoX05
NT-DRS-2D D14.00-S20-05	●	14	20	96	46	28	0.4	0.5			SPoX05
NT-DRS-2D D15.00-S20-05	●	15	20	99	49	30	0.4	0.5			SPoX05
NT-DRS-2D D16.00-S25-06	●	16	25	108	52	32	0.5	0.5			SPoX06
NT-DRS-2D D17.00-S25-06	●	17	25	110	54	34	0.5	0.5			SPoX06
NT-DRS-2D D18.00-S25-06	●	18	25	113	57	36	0.5	0.5			SPoX06
NT-DRS-2D D19.00-S25-06	●	19	25	115	59	38	0.5	0.5			SPoX06
NT-DRS-2D D20.00-S25-06	●	20	25	119	63	40	0.5	0.5			SPoX06
NT-DRS-2D D21.00-S25-06	●	21	25	121	65	42	0.5	0.25			SPoX06
NT-DRS-2D D22.00-S25-07	●	22	25	123	67	44	0.5	0.5			SPoX07
NT-DRS-2D D23.00-S32-07	●	23	32	131	71	46	0.5	0.5			SPoX07
NT-DRS-2D D24.00-S32-07	●	24	32	134	74	48	0.5	0.5			SPoX07
NT-DRS-2D D25.00-S32-07	●	25	32	137	77	50	0.5	0.5			SPoX07
NT-DRS-2D D26.00-S32-07	●	26	32	139	79	52	0.6	0.25			SPoX07
NT-DRS-2D D27.00-S32-07	●	27	32	141	81	54	0.6	0.25			SPoX07
NT-DRS-2D D28.00-S32-09	●	28	32	144	84	56	0.8	0.5			SPoX09
NT-DRS-2D D29.00-S32-09	●	29	32	146	86	58	0.8	0.5			SPoX09
NT-DRS-2D D30.00-S32-09	●	30	32	151	91	60	0.8	0.5			SPoX09
NT-DRS-2D D31.00-S32-09	●	31	32	154	94	62	0.8	0.25			SPoX09
NT-DRS-2D D32.00-S32-09	●	32	32	156	96	64	0.8	0.25			SPoX09
NT-DRS-2D D33.00-S32-09	●	33	32	159	99	66	0.8	0.25			SPoX09
NT-DRS-2D D34.00-S40-11	●	34	40	171	101	68	0.9	0.5			SPoX11
NT-DRS-2D D35.00-S40-11	●	35	40	174	104	70	0.9	0.5			SPoX11
NT-DRS-2D D36.00-S40-11	●	36	40	177	107	72	0.9	0.5			SPoX11
NT-DRS-2D D37.00-S40-11	●	37	40	180	110	74	0.9	0.5			SPoX11
NT-DRS-2D D38.00-S40-11	●	38	40	183	113	76	0.9	0.5			SPoX11
NT-DRS-2D D39.00-S40-11	●	39	40	185	115	78	0.9	0.5			SPoX11
NT-DRS-2D D40.00-S40-11	●	40	40	188	118	80	0.9	0.25			SPoX11
NT-DRS-2D D41.00-S40-11	●	41	40	191	121	82	0.9	0.25			SPoX11
NT-DRS-2D D42.00-S40-14	●	42	40	193	123	84	1	0.5			SPoX14
NT-DRS-2D D43.00-S40-14	●	43	40	196	126	86	1	0.5			SPoX14
NT-DRS-2D D44.00-S40-14	●	44	40	198	128	88	1	0.5			SPoX14
NT-DRS-2D D45.00-S40-14	●	45	40	202	132	90	1	0.5			SPoX14
NT-DRS-2D D46.00-S40-14	●	46	40	205	135	92	1	0.5			SPoX14
NT-DRS-2D D47.00-S40-14	●	47	40	207	137	94	1	0.5			SPoX14
NT-DRS-2D D48.00-S40-14	●	48	40	210	140	96	1	0.25			SPoX14
NT-DRS-2D D49.00-S40-14	●	49	40	212	142	98	1	0.25			SPoX14
NT-DRS-2D D50.00-S40-14	●	50	40	215	145	100	1	0.25			SPoX14

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches	Spare parts	Insert screws	Flag wrenches
NT-DRS-2D D00.00-S00-05	NT-ST20043T06	NT-FTB06	NT-DRS-2D D00.00-S00-09	NT-ST35080T15	NT-FTB15
NT-DRS-2D D00.00-S00-06	NT-ST22055T06	NT-FTB06	NT-DRS-2D D00.00-S00-11	NT-ST40100T15	NT-FTB15
NT-DRS-2D D00.00-S00-07	NT-ST25065T07	NT-FTB07	NT-DRS-2D D00.00-S00-14	NT-ST50108T20	NT-FTB20

A - TURNING

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D - MILLING

E - DRILLING

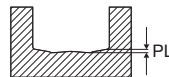
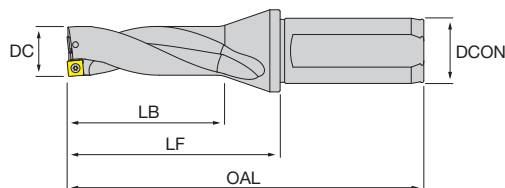
F - ACCESSORIES

G - SPARE PARTS

3xD

DRS drill

- 3xD indexable drill body for SP inserts with helical flutes
- All with coolant through
- Please select insert size according to the drill diameter



Designation	Stock	DC	DCON	OAL	LF	LB	PL	ADJLX			MIID
NT-DRS-3D D12.50-S20-05	●	12.5	20	107	57	39	0.4	0.5			SPoX05
NT-DRS-3D D13.00-S20-05	●	13	20	107	57	39	0.4	0.5			SPoX05
NT-DRS-3D D13.50-S20-05	●	13.5	20	110	60	42	0.4	0.5			SPoX05
NT-DRS-3D D14.00-S20-05	●	14	20	110	60	42	0.4	0.5			SPoX05
NT-DRS-3D D14.50-S20-05	●	14.5	20	114	64	45	0.4	0.5			SPoX05
NT-DRS-3D D15.00-S20-05	●	15	20	114	64	45	0.4	0.5			SPoX05
NT-DRS-3D D15.50-S25-06	●	15.5	25	124	68	48	0.5	0.5			SPoX06
NT-DRS-3D D16.00-S25-06	●	16	25	124	68	48	0.5	0.5			SPoX06
NT-DRS-3D D16.50-S25-06	●	16.5	25	127	71	51	0.5	0.5			SPoX06
NT-DRS-3D D17.00-S25-06	●	17	25	127	71	51	0.5	0.5			SPoX06
NT-DRS-3D D17.50-S25-06	●	17.5	25	131	75	54	0.5	0.5			SPoX06
NT-DRS-3D D18.00-S25-06	●	18	25	131	75	54	0.5	0.5			SPoX06
NT-DRS-3D D18.50-S25-06	●	18.5	25	134	78	57	0.5	0.5			SPoX06
NT-DRS-3D D19.00-S25-06	●	19	25	134	78	57	0.5	0.5			SPoX06
NT-DRS-3D D19.50-S25-06	●	19.5	25	139	83	60	0.5	0.5			SPoX06
NT-DRS-3D D20.00-S25-06	●	20	25	139	83	60	0.5	0.5			SPoX06
NT-DRS-3D D20.50-S25-06	●	20.5	25	142	86	63	0.5	0.25			SPoX06
NT-DRS-3D D21.00-S25-06	●	21	25	142	86	63	0.5	0.25			SPoX06
NT-DRS-3D D21.50-S25-06	●	21.5	25	145	89	66	0.5	0.25			SPoX06
NT-DRS-3D D22.00-S25-07	●	22	25	145	89	66	0.5	0.5			SPoX07
NT-DRS-3D D22.50-S32-07	●	22.5	32	154	94	69	0.5	0.5			SPoX07
NT-DRS-3D D23.00-S32-07	●	23	32	154	94	69	0.5	0.5			SPoX07
NT-DRS-3D D23.50-S32-07	●	23.5	32	158	98	72	0.5	0.5			SPoX07
NT-DRS-3D D24.00-S32-07	●	24	32	158	98	72	0.5	0.5			SPoX07
NT-DRS-3D D24.50-S32-07	●	24.5	32	162	102	75	0.5	0.5			SPoX07
NT-DRS-3D D25.00-S32-07	●	25	32	162	102	75	0.5	0.5			SPoX07
NT-DRS-3D D25.50-S32-07	●	25.5	32	165	105	78	0.6	0.5			SPoX07
NT-DRS-3D D26.00-S32-07	●	26	32	165	105	78	0.6	0.25			SPoX07
NT-DRS-3D D26.50-S32-07	●	26.5	32	168	108	81	0.6	0.25			SPoX07
NT-DRS-3D D27.00-S32-07	●	27	32	168	108	81	0.6	0.25			SPoX07
NT-DRS-3D D27.50-S32-07	●	27.5	32	172	112	84	0.6	0.25			SPoX07
NT-DRS-3D D28.00-S32-09	●	28	32	172	112	84	0.8	0.5			SPoX09
NT-DRS-3D D28.50-S32-09	●	28.5	32	175	115	87	0.8	0.5			SPoX09
NT-DRS-3D D29.00-S32-09	●	29	32	175	115	87	0.8	0.5			SPoX09
NT-DRS-3D D29.50-S32-09	●	29.5	32	181	121	90	0.8	0.5			SPoX09
NT-DRS-3D D30.00-S32-09	●	30	32	181	121	90	0.8	0.5			SPoX09
NT-DRS-3D D31.00-S32-09	●	31	32	185	125	93	0.8	0.25			SPoX09
NT-DRS-3D D32.00-S32-09	●	32	32	188	128	96	0.8	0.25			SPoX09
NT-DRS-3D D33.00-S32-09	●	33	32	192	132	99	0.8	0.25			SPoX09
NT-DRS-3D D34.00-S40-11	●	34	40	205	135	102	0.9	0.5			SPoX11
NT-DRS-3D D35.00-S40-11	●	35	40	209	139	105	0.9	0.5			SPoX11
NT-DRS-3D D36.00-S40-11	●	36	40	213	143	108	0.9	0.5			SPoX11
NT-DRS-3D D37.00-S40-11	●	37	40	217	147	111	0.9	0.5			SPoX11
NT-DRS-3D D38.00-S40-11	●	38	40	221	151	114	0.9	0.5			SPoX11
NT-DRS-3D D39.00-S40-11	●	39	40	224	154	117	0.9	0.25			SPoX11
NT-DRS-3D D40.00-S40-11	●	40	40	228	158	120	0.9	0.25			SPoX11
NT-DRS-3D D41.00-S40-11	●	41	40	232	162	123	0.9	0.5			SPoX11

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Designation	Stock	DC	DCON	OAL	LF	LB	PL	ADJLX			MIID
NT-DRS-3D D42.00-S40-14	●	42	40	235	165	126	1	0.5			SPoX14
NT-DRS-3D D43.00-S40-14	●	43	40	239	169	129	1	0.5			SPoX14
NT-DRS-3D D44.00-S40-14	●	44	40	242	172	132	1	0.5			SPoX14
NT-DRS-3D D45.00-S40-14	●	45	40	247	177	135	1	0.5			SPoX14
NT-DRS-3D D46.00-S40-14	●	46	40	251	181	138	1	0.5			SPoX14
NT-DRS-3D D47.00-S40-14	●	47	40	254	184	141	1	0.5			SPoX14
NT-DRS-3D D48.00-S40-14	●	48	40	258	188	144	1	0.25			SPoX14
NT-DRS-3D D49.00-S40-14	●	49	40	261	191	147	1	0.25			SPoX14
NT-DRS-3D D50.00-S40-14	●	50	40	265	195	150	1	0.25			SPoX14

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
		
NT-DRS-3D D00.00-S00-05	NT-ST20043T06	NT-FTB06
NT-DRS-3D D00.00-S00-06	NT-ST22055T06	NT-FTB06
NT-DRS-3D D00.00-S00-07	NT-ST25065T07	NT-FTB07
NT-DRS-3D D00.00-S00-09	NT-ST35080T15	NT-FTB15
NT-DRS-3D D00.00-S00-11	NT-ST40100T15	NT-FTB15
NT-DRS-3D D00.00-S00-14	NT-ST50108T20	NT-FTB20

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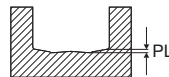
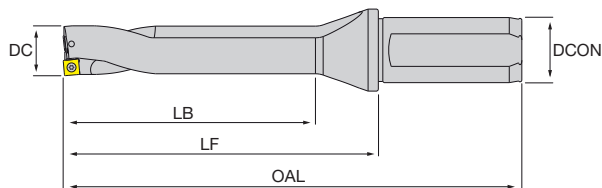
F - ACCESSORIES

G - SPARE PARTS

4xD

DRS drill

- 4xD indexable drill body for SP inserts with straight flutes
- All with coolant through
- Please select insert size according to the drill diameter



Designation	Stock	DC	DCON	OAL	LF	LB	PL	ADJLX		MIID
NT-DRS-4D D12.50-S20-05	●	12.5	20	120	70	52	0.4	0.5		SPoX05
NT-DRS-4D D13.00-S20-05	●	13	20	120	70	52	0.4	0.5		SPoX05
NT-DRS-4D D13.50-S20-05	●	13.5	20	124	74	56	0.4	0.5		SPoX05
NT-DRS-4D D14.00-S20-05	●	14	20	124	74	56	0.4	0.5		SPoX05
NT-DRS-4D D14.50-S20-05	●	14.5	20	129	79	60	0.4	0.5		SPoX05
NT-DRS-4D D15.00-S20-05	●	15	20	129	79	60	0.4	0.5		SPoX05
NT-DRS-4D D15.50-S25-06	●	15.5	25	140	84	64	0.5	0.5		SPoX06
NT-DRS-4D D16.00-S25-06	●	16	25	140	84	64	0.5	0.5		SPoX06
NT-DRS-4D D16.50-S25-06	●	16.5	25	144	88	68	0.5	0.5		SPoX06
NT-DRS-4D D17.00-S25-06	●	17	25	144	88	68	0.5	0.5		SPoX06
NT-DRS-4D D17.50-S25-06	●	17.5	25	149	93	72	0.5	0.5		SPoX06
NT-DRS-4D D18.00-S25-06	●	18	25	149	93	72	0.5	0.5		SPoX06
NT-DRS-4D D18.50-S25-06	●	18.5	25	153	97	76	0.5	0.5		SPoX06
NT-DRS-4D D19.00-S25-06	●	19	25	153	97	76	0.5	0.5		SPoX06
NT-DRS-4D D19.50-S25-06	●	19.5	25	159	103	80	0.5	0.5		SPoX06
NT-DRS-4D D20.00-S25-06	●	20	25	159	103	80	0.5	0.5		SPoX06
NT-DRS-4D D20.50-S25-06	●	20.5	25	163	107	84	0.5	0.25		SPoX06
NT-DRS-4D D21.00-S25-06	●	21	25	163	107	84	0.5	0.25		SPoX06
NT-DRS-4D D21.50-S25-06	●	21.5	25	167	111	88	0.5	0.25		SPoX06
NT-DRS-4D D22.00-S25-07	●	22	25	167	111	88	0.5	0.5		SPoX07
NT-DRS-4D D22.50-S32-07	●	22.5	32	177	117	92	0.5	0.5		SPoX07
NT-DRS-4D D23.00-S32-07	●	23	32	177	117	92	0.5	0.5		SPoX07
NT-DRS-4D D23.50-S32-07	●	23.5	32	182	122	96	0.5	0.5		SPoX07
NT-DRS-4D D24.00-S32-07	●	24	32	182	122	96	0.5	0.5		SPoX07
NT-DRS-4D D24.50-S32-07	●	24.5	32	187	127	100	0.5	0.5		SPoX07
NT-DRS-4D D25.00-S32-07	●	25	32	187	127	100	0.5	0.5		SPoX07
NT-DRS-4D D25.50-S32-07	●	25.5	32	191	131	104	0.6	0.5		SPoX07
NT-DRS-4D D26.00-S32-07	●	26	32	191	131	104	0.6	0.25		SPoX07
NT-DRS-4D D26.50-S32-07	●	26.5	32	195	135	108	0.6	0.25		SPoX07
NT-DRS-4D D27.00-S32-07	●	27	32	195	135	108	0.6	0.25		SPoX07
NT-DRS-4D D27.50-S32-07	●	27.5	32	200	140	112	0.6	0.25		SPoX07
NT-DRS-4D D28.00-S32-09	●	28	32	200	140	112	0.8	0.5		SPoX09
NT-DRS-4D D28.50-S32-09	●	28.5	32	204	144	116	0.8	0.5		SPoX09
NT-DRS-4D D29.00-S32-09	●	29	32	204	144	116	0.8	0.5		SPoX09
NT-DRS-4D D29.50-S32-09	●	29.5	32	211	151	120	0.8	0.5		SPoX09
NT-DRS-4D D30.00-S32-09	●	30	32	211	151	120	0.8	0.5		SPoX09
NT-DRS-4D D31.00-S32-09	●	31	32	216	156	124	0.8	0.25		SPoX09
NT-DRS-4D D32.00-S32-09	●	32	32	220	160	128	0.8	0.25		SPoX09
NT-DRS-4D D33.00-S32-09	●	33	32	225	165	132	0.8	0.25		SPoX09
NT-DRS-4D D34.00-S40-11	●	34	40	239	169	136	0.9	0.5		SPoX11
NT-DRS-4D D35.00-S40-11	●	35	40	244	174	140	0.9	0.5		SPoX11
NT-DRS-4D D36.00-S40-11	●	36	40	249	179	144	0.9	0.5		SPoX11
NT-DRS-4D D37.00-S40-11	●	37	40	254	184	148	0.9	0.5		SPoX11
NT-DRS-4D D38.00-S40-11	●	38	40	259	189	152	0.9	0.5		SPoX11
NT-DRS-4D D39.00-S40-11	●	39	40	263	193	156	0.9	0.25		SPoX11
NT-DRS-4D D40.00-S40-11	●	40	40	268	198	160	0.9	0.25		SPoX11
NT-DRS-4D D41.00-S40-11	▲	41	40	273	203	164	0.9	0.5		SPoX11

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Designation	Stock	DC	DCON	OAL	LF	LB	PL	ADJLX			MIID
NT-DRS-4D D42.00-S40-14	●	42	40	277	207	168	1	0.5			SPoX14
NT-DRS-4D D43.00-S40-14	●	43	40	282	212	172	1	0.5			SPoX14
NT-DRS-4D D44.00-S40-14	●	44	40	286	216	176	1	0.5			SPoX14
NT-DRS-4D D45.00-S40-14	●	45	40	292	222	180	1	0.5			SPoX14
NT-DRS-4D D46.00-S40-14	●	46	40	297	227	184	1	0.5			SPoX14
NT-DRS-4D D47.00-S40-14	●	47	40	301	231	188	1	0.5			SPoX14
NT-DRS-4D D48.00-S40-14	●	48	40	306	236	192	1	0.25			SPoX14
NT-DRS-4D D49.00-S40-14	▲	49	40	310	240	196	1	0.25			SPoX14
NT-DRS-4D D50.00-S40-14	●	50	40	315	245	200	1	0.25			SPoX14

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
		
NT-DRS-4D D00.00-S00-05	NT-ST20043T06	NT-FTB06
NT-DRS-4D D00.00-S00-06	NT-ST22055T06	NT-FTB06
NT-DRS-4D D00.00-S00-07	NT-ST25065T07	NT-FTB07
NT-DRS-4D D00.00-S00-09	NT-ST35080T15	NT-FTB15
NT-DRS-4D D00.00-S00-11	NT-ST40100T15	NT-FTB15
NT-DRS-4D D00.00-S00-14	NT-ST50108T20	NT-FTB20

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

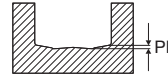
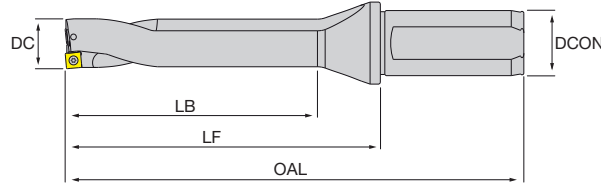
F - ACCESSORIES

G - SPARE PARTS

5xD

DRS drill

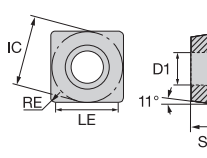
- 5xD indexable drill body for SP inserts with straight flutes
- All with coolant through
- Please select insert size according to the drill diameter



Designation	Stock	DC	DCON	OAL	LF	LB	PL	ADJLX			MIID
NT-DRS-5D D13.00-S20-05	●	13	20	133	83	65	0.4	0.5			SPoX05
NT-DRS-5D D14.00-S20-05	●	14	20	138	88	70	0.4	0.5			SPoX05
NT-DRS-5D D15.00-S20-05	●	15	20	144	94	75	0.4	0.5			SPoX05
NT-DRS-5D D16.00-S25-06	●	16	25	156	100	80	0.5	0.5			SPoX06
NT-DRS-5D D17.00-S25-06	●	17	25	161	105	85	0.5	0.5			SPoX06
NT-DRS-5D D18.00-S25-06	●	18	25	167	111	90	0.5	0.5			SPoX06
NT-DRS-5D D19.00-S25-06	●	19	25	172	116	95	0.5	0.5			SPoX06
NT-DRS-5D D20.00-S25-06	●	20	25	179	123	100	0.5	0.5			SPoX06
NT-DRS-5D D21.00-S25-06	●	21	25	184	128	105	0.5	0.25			SPoX06
NT-DRS-5D D22.00-S25-07	●	22	25	189	133	110	0.5	0.5			SPoX07
NT-DRS-5D D23.00-S32-07	●	23	32	200	140	115	0.5	0.5			SPoX07
NT-DRS-5D D24.00-S32-07	●	24	32	206	146	120	0.5	0.5			SPoX07
NT-DRS-5D D25.00-S32-07	●	25	32	212	152	125	0.5	0.5			SPoX07
NT-DRS-5D D26.00-S32-07	●	26	32	217	157	130	0.6	0.25			SPoX07
NT-DRS-5D D27.00-S32-07	●	27	32	222	162	135	0.6	0.25			SPoX07
NT-DRS-5D D28.00-S32-09	●	28	32	228	168	140	0.8	0.5			SPoX09
NT-DRS-5D D29.00-S32-09	●	29	32	233	173	145	0.8	0.5			SPoX09
NT-DRS-5D D30.00-S32-09	●	30	32	241	181	150	0.8	0.5			SPoX09
NT-DRS-5D D31.00-S32-09	●	31	32	247	187	155	0.8	0.25			SPoX09
NT-DRS-5D D32.00-S32-09	●	32	32	252	192	160	0.8	0.25			SPoX09
NT-DRS-5D D33.00-S32-09	●	33	32	258	198	165	0.8	0.25			SPoX09
NT-DRS-5D D34.00-S40-11	●	34	40	273	203	170	0.9	0.5			SPoX11
NT-DRS-5D D35.00-S40-11	●	35	40	279	209	175	0.9	0.5			SPoX11
NT-DRS-5D D36.00-S40-11	●	36	40	285	215	180	0.9	0.5			SPoX11
NT-DRS-5D D37.00-S40-11	●	37	40	291	221	185	0.9	0.5			SPoX11
NT-DRS-5D D38.00-S40-11	●	38	40	297	227	190	0.9	0.5			SPoX11
NT-DRS-5D D39.00-S40-11	●	39	40	302	232	195	0.9	0.5			SPoX11
NT-DRS-5D D40.00-S40-11	●	40	40	308	238	200	0.9	0.25			SPoX11
NT-DRS-5D D41.00-S40-11	●	41	40	314	244	205	0.9	0.25			SPoX11
NT-DRS-5D D42.00-S40-14	●	42	40	319	249	210	1	0.5			SPoX14
NT-DRS-5D D43.00-S40-14	●	43	40	325	255	215	1	0.5			SPoX14
NT-DRS-5D D44.00-S40-14	●	44	40	330	260	220	1	0.5			SPoX14
NT-DRS-5D D45.00-S40-14	●	45	40	337	267	225	1	0.5			SPoX14
NT-DRS-5D D46.00-S40-14	●	46	40	343	273	230	1	0.5			SPoX14
NT-DRS-5D D47.00-S40-14	●	47	40	348	278	235	1	0.5			SPoX14
NT-DRS-5D D48.00-S40-14	●	48	40	354	284	240	1	0.25			SPoX14
NT-DRS-5D D49.00-S40-14	●	49	40	359	289	245	1	0.25			SPoX14
NT-DRS-5D D50.00-S40-14	●	50	40	365	295	250	1	0.25			SPoX14

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches	Spare parts	Insert screws	Flag wrenches
NT-DRS-5D D00.00-S00-05	NT-ST20043T06	NT-FTB06	NT-DRS-5D D00.00-S00-09	NT-ST35080T15	NT-FTB15
NT-DRS-5D D00.00-S00-06	NT-ST22055T06	NT-FTB06	NT-DRS-5D D00.00-S00-11	NT-ST40100T15	NT-FTB15
NT-DRS-5D D00.00-S00-07	NT-ST25065T07	NT-FTB07	NT-DRS-5D D00.00-S00-14	NT-ST50108T20	NT-FTB20

SPoX		DRS drill		HF: Micrograin carbide PVD: Physical vapour deposition		HF PVD	HF PVD	HF PVD	HF PVD	HF		
						JP5530	JP8725	JP9535	JP9635	JU6520		
- General purpose type or fine polished sharp geometries for aluminum or non-ferrous materials available - Diverse PVD coated carbide grades available - Inserts could also be mounted on DRS Pilot type and ChamferSquare milling bodies				Stable machining, light cut	● 1 st choice ○ suitable		○			●		
				General machining, medium cut	● 1 st choice ○ suitable	●	●	●	●	●		
				Unstable machining, heavy cut	⚡ 1 st choice ⚡ suitable	⚡		⚡	⚡			
				Dimensions	ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)						
			P	120 240	120 240							
			M	40 100		80 160	80 160					
			K	120 180								
			N					240 400				
			S									
			H									

Designation		RE	IC	S	D1	LE	Stock					
GENERAL	GP P M K											
		SPMX050204-GP	0.4	5	2.38	2.5	4.2	●	●	●		
		SPMX060204-GP	0.4	6	2.38	2.8	5.2	●	●	●		
		SPMX077308-GP	0.8	7.94	3.97	2.8	6.34	●	●	●		
		SPMX090408-GP	0.8	9.8	4.3	4.2	8.2	●	●	▲	●	
		SPMX110408-GP	0.8	11.5	4.76	4.4	9.9	●	●	●		
SPMX140512-GP	1.2	14.3	5.2	5.5	11.9	●	●	▲	●			
ALUMINIUM	AL N											
		SPGX050204-AL	0.4	5	2.38	2.5	4.2				●	
		SPGX060204-AL	0.4	6	2.38	2.8	5.2				●	
		SPGX077308-AL	0.8	7.94	3.97	2.8	6.34				●	
		SPGX090408-AL	0.8	9.8	4.3	4.2	8.2				●	
		SPGX110408-AL	0.8	11.5	4.76	4.4	9.9				●	
SPGX140512-AL	1.2	14.3	5.2	5.5	11.9				●			

periphery ground
polished surface

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

	ISO 513	MATERIAL	HARDNESS HB	L/D	DC 12.50 ÷ 15.00			DC 15.50 ÷ 21.50			DC 22.00 ÷ 27.50		
					min	start	max	min	start	max	min	start	max
A - TURNING	P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	2xD - 3xD	0.05	0.07	0.09	0.05	0.08	0.11	0.05	0.09	0.13
				4xD	0.04	0.06	0.08	0.04	0.07	0.10	0.04	0.08	0.12
				5xD	0.04	0.05	0.06	0.04	0.06	0.08	0.04	0.07	0.10
B - THREADING	P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	2xD - 3xD	0.07	0.10	0.13	0.07	0.11	0.15	0.09	0.13	0.17
				4xD	0.06	0.09	0.12	0.06	0.10	0.14	0.08	0.12	0.16
				5xD	0.06	0.08	0.10	0.06	0.09	0.12	0.08	0.11	0.14
C - GROOVING	P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	2xD - 3xD	0.07	0.09	0.11	0.07	0.10	0.13	0.09	0.12	0.15
				4xD	0.06	0.08	0.10	0.06	0.09	0.12	0.08	0.11	0.14
				5xD	0.06	0.07	0.08	0.06	0.08	0.10	0.08	0.10	0.12
D - MILLING	P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	2xD - 3xD	0.06	0.09	0.12	0.06	0.10	0.14	0.06	0.11	0.16
				4xD	0.05	0.08	0.11	0.05	0.09	0.13	0.05	0.10	0.15
				5xD	0.05	0.06	0.07	0.05	0.08	0.11	0.05	0.09	0.13
E - DRILLING	P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	2xD - 3xD	0.05	0.08	0.11	0.05	0.09	0.13	0.05	0.10	0.15
				4xD	0.04	0.07	0.10	0.04	0.08	0.12	0.04	0.09	0.14
				5xD	0.04	0.06	0.08	0.04	0.07	0.10	0.04	0.08	0.12
F - ACCESSORIES	M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	2xD - 3xD	0.06	0.08	0.10	0.06	0.09	0.12	0.06	0.10	0.14
				4xD	0.05	0.07	0.09	0.05	0.08	0.11	0.05	0.09	0.13
				5xD	0.05	0.06	0.07	0.05	0.06	0.07	0.05	0.08	0.11
G - SPARE PARTS	M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		2xD - 3xD	0.05	0.07	0.09	0.05	0.08	0.11	0.05	0.09	0.13
				4xD	0.04	0.06	0.08	0.04	0.07	0.10	0.04	0.08	0.12
				5xD	0.04	0.05	0.06	0.04	0.06	0.08	0.04	0.07	0.10
	K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	2xD - 3xD	0.07	0.10	0.13	0.09	0.13	0.17	0.11	0.15	0.19
				4xD	0.06	0.09	0.12	0.08	0.12	0.16	0.10	0.14	0.18
				5xD	0.06	0.08	0.10	0.08	0.11	0.14	0.10	0.13	0.16
	K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	2xD - 3xD	0.07	0.09	0.11	0.08	0.12	0.16	0.09	0.14	0.19
				4xD	0.06	0.08	0.10	0.07	0.11	0.15	0.08	0.13	0.18
				5xD	0.06	0.07	0.08	0.07	0.10	0.13	0.08	0.12	0.16
	N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGA)		2xD - 3xD	0.07	0.11	0.15	0.07	0.12	0.17	0.09	0.14	0.19
				4xD	0.06	0.10	0.14	0.06	0.11	0.16	0.08	0.13	0.18
				5xD	0.06	0.09	0.12	0.06	0.10	0.14	0.08	0.12	0.16
	N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		2xD - 3xD	0.07	0.10	0.13	0.07	0.11	0.15	0.09	0.13	0.17
				4xD	0.06	0.09	0.12	0.06	0.10	0.14	0.08	0.12	0.16
				5xD	0.06	0.08	0.10	0.06	0.09	0.12	0.08	0.11	0.14

Complete workpiece materials p. H1.

(fn: mm/rev)

DC 28.00 ÷ 33.00			DC 34.00 ÷ 41.00			DC 42.00 ÷ 50.00					
min	start	max	min	start	max	min	start	max			
0.06	0.10	0.14	0.07	0.11	0.15	0.07	0.12	0.17			
0.05	0.09	0.13	0.06	0.10	0.14	0.06	0.11	0.16			
0.05	0.08	0.11	0.06	0.09	0.12	0.06	0.10	0.14			
0.09	0.14	0.19	0.11	0.16	0.21	0.11	0.17	0.23			
0.08	0.13	0.18	0.10	0.15	0.20	0.10	0.16	0.22			
0.08	0.12	0.16	0.10	0.14	0.18	0.10	0.15	0.20			
0.09	0.13	0.17	0.09	0.14	0.19	0.11	0.16	0.21			
0.08	0.12	0.16	0.08	0.13	0.18	0.10	0.15	0.20			
0.08	0.11	0.14	0.08	0.12	0.16	0.10	0.14	0.18			
0.07	0.12	0.17	0.08	0.12	0.18	0.09	0.14	0.19			
0.06	0.11	0.16	0.07	0.11	0.17	0.08	0.13	0.18			
0.06	0.10	0.14	0.07	0.10	0.13	0.08	0.12	0.16			
0.06	0.11	0.16	0.07	0.12	0.17	0.09	0.13	0.17			
0.05	0.10	0.15	0.06	0.11	0.16	0.08	0.12	0.16			
0.05	0.09	0.13	0.06	0.10	0.14	0.08	0.11	0.14			
0.07	0.11	0.15	0.08	0.12	0.16	0.09	0.13	0.17			
0.06	0.10	0.14	0.07	0.11	0.15	0.08	0.12	0.16			
0.06	0.09	0.12	0.07	0.10	0.13	0.08	0.11	0.14			
0.06	0.10	0.14	0.07	0.11	0.15	0.09	0.12	0.15			
0.05	0.09	0.13	0.06	0.10	0.14	0.08	0.11	0.14			
0.05	0.08	0.11	0.06	0.09	0.12	0.08	0.10	0.12			
0.11	0.17	0.23	0.13	0.19	0.25	0.15	0.21	0.27			
0.10	0.16	0.22	0.12	0.18	0.24	0.14	0.20	0.26			
0.10	0.15	0.20	0.12	0.17	0.22	0.14	0.19	0.24			
0.11	0.16	0.21	0.13	0.17	0.21	0.15	0.19	0.23			
0.10	0.15	0.20	0.12	0.16	0.20	0.14	0.18	0.22			
0.10	0.14	0.18	0.12	0.15	0.18	0.14	0.17	0.20			
0.09	0.15	0.21	0.11	0.17	0.23	0.13	0.18	0.23			
0.08	0.14	0.20	0.10	0.16	0.22	0.12	0.17	0.22			
0.08	0.13	0.18	0.10	0.15	0.20	0.12	0.16	0.20			
0.09	0.14	0.19	0.11	0.16	0.21	0.13	0.17	0.21			
0.08	0.13	0.18	0.10	0.15	0.20	0.12	0.16	0.20			
0.08	0.12	0.16	0.10	0.14	0.18	0.12	0.15	0.18			

Complete workpiece materials p. H1.

(fn: mm/rev)

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

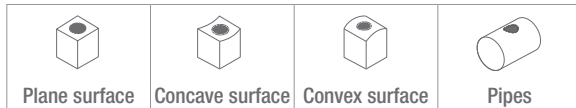
G - SPARE PARTS

Complete workpiece materials p. H1.

DRS PILOT

For extra deep holes - High performance indexable drilling system

APPLICATION



ISO APPLICATION FIELDS

P M K N

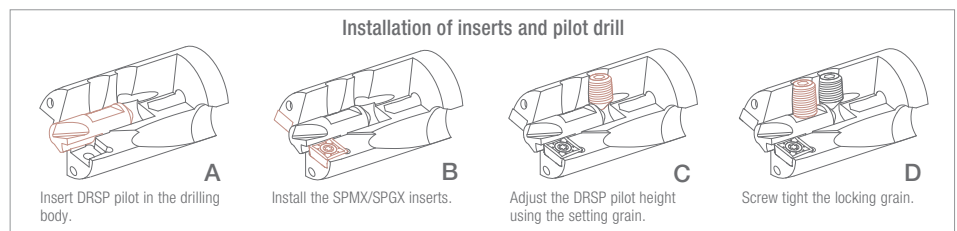
ADVANTAGES AND CHARACTERISTICS

- Highly universal drilling system suitable for diverse conditions
- Highly cost-efficient system for deep hole drilling
- The use of pilot provides better centering effect
- Straight flute design improves chip evacuation and strengthens the body



• Drilling bodies

- Weldon shank with internal coolant
- 6xD and 9xD available from D18 to D30
- Special length and stepped body available upon request



⚠ For pilot adjustment see page E22.

• Inserts

- Available sizes 05/06/07
- Cemented carbide grades with PVD coatings or uncoated for N materials
- Geometries: GP, AL
- Pilot drill made of coated premium HSS



G

D - MILLING

E - DRILLING

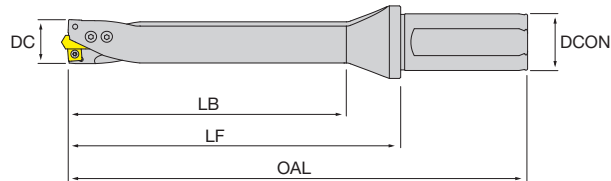
F - ACCESSORIES

G - SPARE PARTS

6xD

DRS pilot

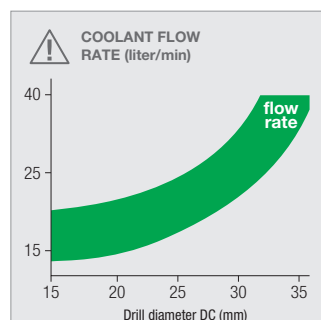
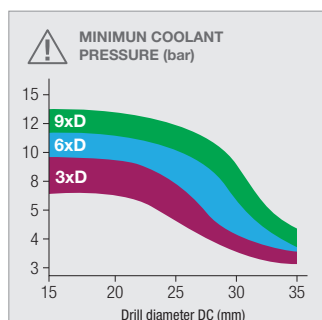
- 6xD indexable drill body with pilot and seats for SP inserts with straight flutes
- All with coolant through
- Please select insert and pilot size according to the drill diameter



Designation	Stock	DC	DCON	OAL	LF	LB				PILOT	MIID
NT-DRS-6D D18.00-S25-05P6	●	18	25	191	135	112				DRSP06	SPoX05
NT-DRS-6D D19.00-S25-05P6	●	19	25	197	141	118				DRSP06	SPoX05
NT-DRS-6D D20.00-S25-06P6	●	20	25	203	147	124				DRSP06	SPoX06
NT-DRS-6D D21.00-S25-06P6	●	21	25	209	153	130				DRSP06	SPoX06
NT-DRS-6D D22.00-S25-06P6	●	22	25	215	159	136				DRSP06	SPoX06
NT-DRS-6D D23.00-S32-06P6	●	23	32	228	168	142				DRSP06	SPoX06
NT-DRS-6D D24.00-S32-06P6	●	24	32	234	174	148				DRSP06	SPoX06
NT-DRS-6D D25.00-S32-06P6	●	25	32	240	180	154				DRSP06	SPoX06
NT-DRS-6D D26.00-S32-07P8	●	26	32	246	186	160				DRSP08	SPoX07
NT-DRS-6D D27.00-S32-07P8	●	27	32	252	192	166				DRSP08	SPoX07
NT-DRS-6D D28.00-S32-07P8	●	28	32	258	198	172				DRSP08	SPoX07
NT-DRS-6D D29.00-S32-07P8	●	29	32	264	204	178				DRSP08	SPoX07
NT-DRS-6D D30.00-S32-07P8	●	30	32	270	210	184				DRSP08	SPoX07

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

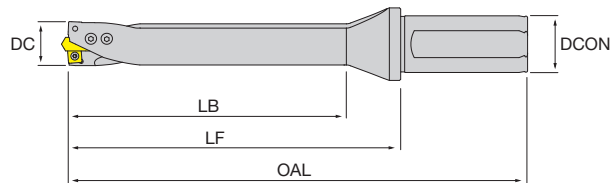
Spare parts	Insert screws	Flag wrenches	Locking grains	Setting grains	L wrench
NT-DRS-6D (DC 18÷19)	NT-ST20043T06	NT-FTB06	NT-ST042	NT-ST043	NT-WR025
NT-DRS-6D (DC 20÷22)	NT-ST22055T06	NT-FTB06	NT-ST042	NT-ST043	NT-WR025
NT-DRS-6D (DC 23÷25)	NT-ST22055T06	NT-FTB06	NT-ST044	NT-ST045	NT-WR025
NT-DRS-6D (DC 26÷30)	NT-ST25065T07	NT-FTB07	NT-ST046	NT-ST047	NT-WR030



9xD

DRS pilot

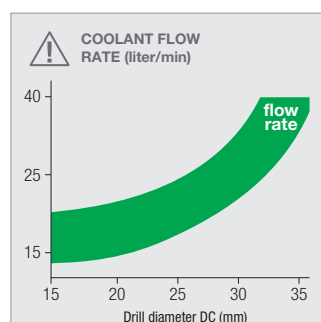
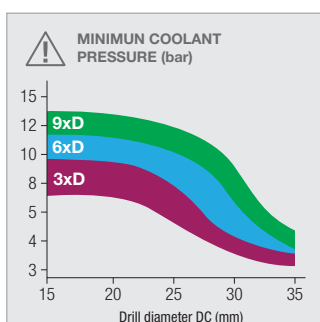
- 9xD indexable drill body with pilot and seats for SP inserts with straight flutes
- All with coolant through
- Please select insert and pilot size according to the drill diameter



Designation	Stock	DC	DCON	OAL	LF	LB				PILOT	MIID
NT-DRS-9D D18.00-S25-05P6	●	18	25	245	189	166				DRSP06	SPoX05
NT-DRS-9D D19.00-S25-05P6	●	19	25	254	198	175				DRSP06	SPoX05
NT-DRS-9D D20.00-S25-06P6	●	20	25	263	207	184				DRSP06	SPoX06
NT-DRS-9D D21.00-S25-06P6	●	21	25	272	216	193				DRSP06	SPoX06
NT-DRS-9D D22.00-S25-06P6	●	22	25	281	225	202				DRSP06	SPoX06
NT-DRS-9D D23.00-S32-06P6	●	23	32	297	237	211				DRSP06	SPoX06
NT-DRS-9D D24.00-S32-06P6	●	24	32	306	246	220				DRSP06	SPoX06
NT-DRS-9D D25.00-S32-06P6	●	25	32	315	255	229				DRSP06	SPoX06
NT-DRS-9D D26.00-S32-07P8	●	26	32	324	264	238				DRSP08	SPoX07
NT-DRS-9D D27.00-S32-07P8	●	27	32	333	273	247				DRSP08	SPoX07
NT-DRS-9D D28.00-S32-07P8	●	28	32	342	282	256				DRSP08	SPoX07
NT-DRS-9D D29.00-S32-07P8	●	29	32	351	291	265				DRSP08	SPoX07
NT-DRS-9D D30.00-S32-07P8	●	30	32	360	300	274				DRSP08	SPoX07

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches	Locking grains	Setting grains	L wrench
NT-DRS-6D (DC 18÷19)	NT-ST20043T06	NT-FTB06	NT-ST042	NT-ST043	NT-WR025
NT-DRS-6D (DC 20÷22)	NT-ST22055T06	NT-FTB06	NT-ST042	NT-ST043	NT-WR025
NT-DRS-6D (DC 23÷25)	NT-ST22055T06	NT-FTB06	NT-ST044	NT-ST045	NT-WR025
NT-DRS-6D (DC 26÷30)	NT-ST25065T07	NT-FTB07	NT-ST046	NT-ST047	NT-WR030



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING

B - THREADING

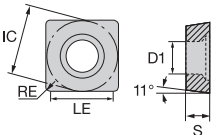
C - GROOVING

D - MILLING

E - DRILLING

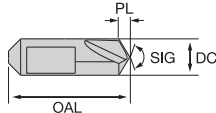
F - ACCESSORIES

G - SPARE PARTS

SPoX		HF: Micrograin carbide PVD: Physical vapour deposition		HF PVD	HF PVD	HF PVD	HF					
				JP5530	JP8725	JP9535	JU6520					
DRS pilot												
- General purpose type or fine polished sharp geometries for aluminum or non-ferrous materials available - Diverse PVD coated carbide grades available - Inserts could also be mounted on Chamfer-Square milling bodies		Stable machining, light cut	● 1 st choice	○ suitable		○		●				
		General machining, medium cut	● 1 st choice	○ suitable	●	●	●	●				
		Unstable machining, heavy cut	⚡ 1 st choice	⚡ suitable	⚡		⚡					
		Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)						
		 4 edges		P	90 200	90 200						
M	30 85				50 130							
K	90 150											
N						160 320						
S												
		H										

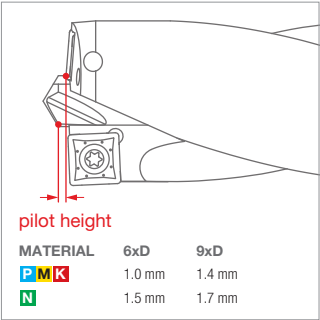
Designation		RE	IC	S	D1	LE					Stock
GENERAL	GP P M K										
		SPMX050204-GP	0.4	5	2.38	2.5	4.2	●	●	●	
		SPMX060204-GP	0.4	6	2.38	2.8	5.2	●	●	●	
		SPMX07T308-GP	0.8	7.94	3.97	2.8	6.34	●	●	●	
ALUMINIUM	AL N										
		SPGX050204-AL	0.4	5	2.38	2.5	4.2				●
		SPGX060204-AL	0.4	6	2.38	2.8	5.2				●
	periphery ground polished surface	SPGX07T308-AL	0.8	7.94	3.97	2.8	6.34				●

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Pilot		Hss: High speed steel PVD: Physical vapour deposition		Hss PVD			
				HSS TIN			
DRS pilot - TIN coated HSS pilot for DRS PILOT drills 1 Pilot is already pre-mounted on DRS Pilot drill body - Universal use for PMKN materials - Cannot be mounted on DEX Pilot		Stable machining, light cut ● 1 st choice ○ suitable					
		General machining, medium cut ● 1 st choice ○ suitable		●			
		Unstable machining, heavy cut ▲ 1 st choice ▼ suitable		▲			
		Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)	
				P		90 200	
M				50 130			
K				90 150			
N				160 320			
S							
H							

Designation		DC	OAL	PL	SIG		Stock	
GENERAL		DRSP06-GP	6	20	1.5	118°	●	
		DRSP08-GP	8	25	2.1	118°	●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING	ISO 513	MATERIAL	HARDNESS HB	L/D	JP5530			JP8725			
	P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	6XD	100	150	200	100	150	200	
				9XD	90	130	170	90	130	170	
B - THREADING	P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	6XD	80	120	160	80	120	160	
				9XD	70	105	140	70	105	140	
	C - GROOVING	P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	6XD	65	95	125	65	95	125
9XD					55	85	115	55	85	115	
D - MILLING		ISO 513	MATERIAL	HARDNESS HB	L/D	JP5530			JP9535		
	P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	6XD	40	80	120	70	100	130	
				9XD	30	60	90	50	80	110	
E - DRILLING	P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	6XD	-			60	80	100	
				9XD	-			50	70	90	
	ACCESSORIES	M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	6XD	35	60	85	70	100	130
9XD					30	50	70	50	80	110	
		M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		6XD	-			60	90	120
	9XD				-			50	80	110	
		ISO 513	MATERIAL	HARDNESS HB	L/D	JP5530					
K1		Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	6XD	110	130	150				
				9XD	90	110	130				
	K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	6XD	80	100	120				
				9XD	70	90	110				
		ISO 513	MATERIAL	HARDNESS HB	L/D	JU6520					
N1		Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ER GAL)		6XD	200	260	320				
				9XD	160	220	280				
	N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AISI12)		6XD	120	180	240				
				9XD	100	150	200				

Complete workpiece materials p. H1.

ISO 513	MATERIAL	HARDNESS HB	L/D	DC 18.00 ÷ 19.00			DC 20.00 ÷ 25.00			DC 26.00 ÷ 30.00		
				min	start	max	min	start	max	min	start	max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	6XD	0.04	0.06	0.08	0.04	0.07	0.10	0.05	0.08	0.11
			9XD	0.04	0.05	0.06	0.04	0.06	0.08	0.05	0.07	0.09
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	6XD	0.06	0.09	0.12	0.08	0.11	0.14	0.08	0.12	0.16
			9XD	0.06	0.08	0.10	0.08	0.10	0.12	0.08	0.11	0.14
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	6XD	0.06	0.08	0.10	0.08	0.10	0.12	0.08	0.11	0.14
			9XD	0.06	0.07	0.08	0.08	0.09	0.10	0.08	0.10	0.12
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	6XD	0.05	0.08	0.11	0.05	0.09	0.13	0.06	0.10	0.14
			9XD	0.05	0.07	0.09	0.05	0.08	0.11	0.06	0.09	0.12
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	6XD	0.04	0.07	0.10	0.04	0.08	0.12	0.05	0.09	0.13
			9XD	0.04	0.06	0.08	0.04	0.07	0.10	0.05	0.08	0.11
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	6XD	0.05	0.06	0.07	0.05	0.08	0.11	0.06	0.09	0.12
			9XD	0.04	0.05	0.06	0.05	0.07	0.09	0.06	0.08	0.10
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		6XD	0.04	0.06	0.08	0.04	0.07	0.10	0.05	0.08	0.11
			9XD	0.03	0.05	0.07	0.04	0.06	0.08	0.05	0.07	0.09
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	6XD	0.08	0.11	0.14	0.10	0.13	0.16	0.10	0.15	0.20
			9XD	0.08	0.10	0.12	0.10	0.12	0.14	0.10	0.14	0.18
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	6XD	0.07	0.10	0.13	0.08	0.12	0.16	0.10	0.14	0.18
			9XD	0.07	0.08	0.11	0.08	0.11	0.14	0.10	0.13	0.16
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGA)		6XD	0.06	0.10	0.14	0.08	0.12	0.16	0.08	0.13	0.18
			9XD	0.06	0.09	0.12	0.08	0.11	0.14	0.08	0.12	0.16
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		6XD	0.06	0.09	0.12	0.08	0.11	0.14	0.08	0.12	0.16
			9XD	0.06	0.08	0.10	0.08	0.10	0.12	0.08	0.11	0.14

Complete workpiece materials p. H1.

(fn: mm/rev)

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

DEX DRILLS

High productivity indexable drilling system with exchangeable heads

APPLICATION



ISO APPLICATION FIELDS

P M K

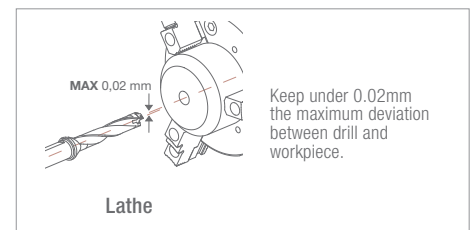
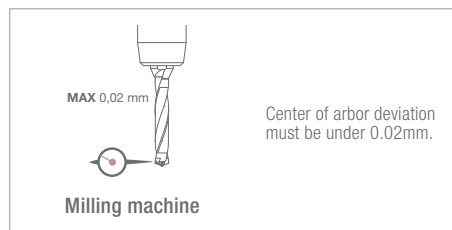
ADVANTAGES AND CHARACTERISTICS

- High reliable quick change indexable drilling system
- Solid drill head with 3D geometry, adapted for high feed rate and provides high efficiency in machining
- Attracting cost efficiency per hole, good replacement for regrind solid carbide drills



• Drilling bodies

- Weldon shank with internal coolant
- 3xD and 5xD available from D10 to D26
- Special length (1.5D, 8D and 12D) and stepped body available upon request

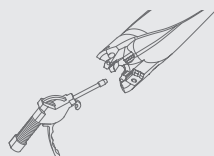


• Inserts

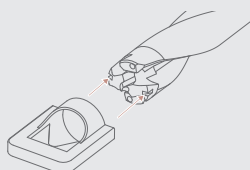
- Available D10-26, can make special diameters or stepped type
- Cemented carbide grades with PVD coatings
- Geometries: GP, SC, TE, FT (flat)



DRILLING HEADS INSTALLATION



Clean pocket with air blast.
Put insert into drill holder.



Set wrench into slots on insert flanks.
Slowly turn the wrench clockwise until stop.

3xD

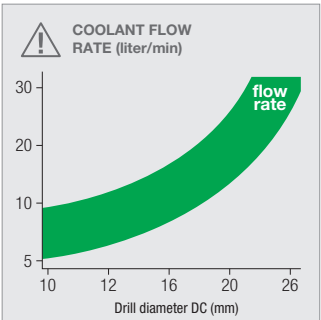
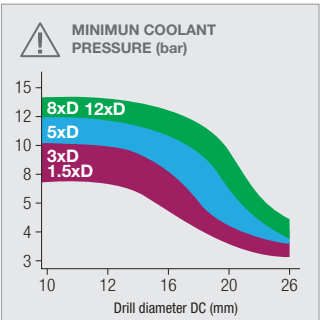
DEX drill

- 3xD indexable drill body for DEX drill head
- All with coolant through
- Different drill heads can fits into the same body, please check MIID column
- Special diameters or stepped type available upon requests

Designation	Stock	DC	DCON	OAL	LF	LB				MIID
NT-DEX-3D D10-S16F	●	10	16	95	47	38				DEX10 ⁰⁰
NT-DEX-3D D11-S16F	●	11	16	98	50	39				DEX11 ⁰⁰
NT-DEX-3D D12-S16F	●	12	16	104	56	44				DEX12 ⁰⁰
NT-DEX-3D D13-S16F	●	13	16	108	60	47				DEX13 ⁰⁰
NT-DEX-3D D14-S16F	●	14	16	112	64	50				DEX14 ⁰⁰
NT-DEX-3D D15-S20F	●	15	20	118	68	53				DEX15 ⁰⁰
NT-DEX-3D D16-S20F	●	16	20	122	72	56				DEX16 ⁰⁰
NT-DEX-3D D17-S20F	●	17	20	126	76	59				DEX17 ⁰⁰
NT-DEX-3D D18-S25F	●	18	25	136	80	62				DEX18 ⁰⁰
NT-DEX-3D D19-S25F	●	19	25	140	84	65				DEX19 ⁰⁰
NT-DEX-3D D20-S25F	●	20	25	144	88	68				DEX20 ⁰⁰
NT-DEX-3D D21-S25F	●	21	25	152	96	75				DEX21 ⁰⁰
NT-DEX-3D D22-S25F	●	22	25	157	101	81				DEX22 ⁰⁰
NT-DEX-3D D23-S32F	●	23	32	165	105	82				DEX23 ⁰⁰
NT-DEX-3D D24-S32F	●	24	32	170	110	86				DEX24 ⁰⁰
NT-DEX-3D D25/26-S32F	●	25	32	175	115	89				DEX25/26 ⁰⁰

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Head wrench
NT-DEX-3D (DC 10÷11)	NT-WR1011
NT-DEX-3D (DC 12÷17)	NT-WR1217
NT-DEX-3D (DC 18÷20)	NT-WR1820
NT-DEX-3D (DC 21÷25)	NT-WR2126



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

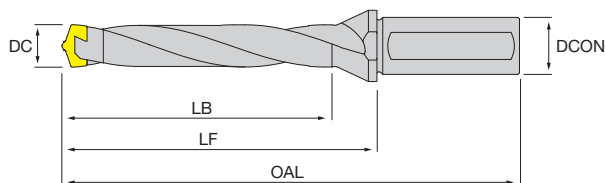
F - ACCESSORIES

G - SPARE PARTS

5xD

DEX drill

- 5xD indexable drill body for DEX drill head
- All with coolant through
- Different drill heads can fit into the same body, please check MIID column
- Special diameters or stepped type available upon requests



Designation	Stock	DC	DCON	OAL	LF	LB					MIID
NT-DEX-5D D10-S16F	●	10	16	116	68	59					DEX10 ⁰⁰
NT-DEX-5D D11-S16F	●	11	16	121	73	62					DEX11 ⁰⁰
NT-DEX-5D D12-S16F	●	12	16	130	82	70					DEX12 ⁰⁰
NT-DEX-5D D13-S16F	●	13	16	136	88	75					DEX13 ⁰⁰
NT-DEX-5D D14-S16F	●	14	16	142	94	80					DEX14 ⁰⁰
NT-DEX-5D D15-S20F	●	15	20	150	100	85					DEX15 ⁰⁰
NT-DEX-5D D16-S20F	●	16	20	156	106	90					DEX16 ⁰⁰
NT-DEX-5D D17-S20F	●	17	20	162	112	95					DEX17 ⁰⁰
NT-DEX-5D D18-S25F	●	18	25	174	118	100					DEX18 ⁰⁰
NT-DEX-5D D19-S25F	●	19	25	180	124	105					DEX19 ⁰⁰
NT-DEX-5D D20-S25F	●	20	25	186	130	110					DEX20 ⁰⁰
NT-DEX-5D D21-S25F	●	21	25	194	138	117					DEX21 ⁰⁰
NT-DEX-5D D22-S25F	●	22	25	201	145	125					DEX22 ⁰⁰
NT-DEX-5D D23-S32F	●	23	32	211	151	128					DEX23 ⁰⁰
NT-DEX-5D D24-S32F	●	24	32	218	158	134					DEX24 ⁰⁰
NT-DEX-5D D25/26-S32F	●	25	32	225	165	139					DEX25/26 ⁰⁰

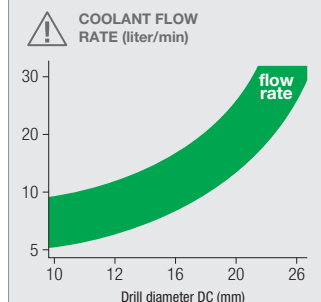
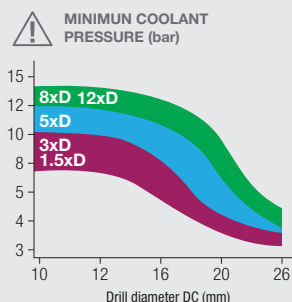
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

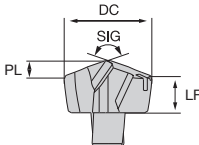
Spare parts

Head wrench



NT-DEX-5D (DC 10÷11)	NT-WR1011
NT-DEX-5D (DC 12÷17)	NT-WR1217
NT-DEX-5D (DC 18÷20)	NT-WR1820
NT-DEX-5D (DC 21÷25)	NT-WR2126



Heads		HF: Micrograin carbide PVD: Physical vapour deposition		HF PVD	HF PVD	
		JP5625	JP5725			
DEX drill		Stable machining, light cut		● 1 st choice ○ suitable	○ ○	
- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes - Can fit with 3xD or 5xD DEX drill bodies - Diameters out of catalogue can be made upon request - Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests		General machining, medium cut		● 1 st choice ○ suitable	● ●	
		Unstable machining, heavy cut		⚡ 1 st choice ⚡ suitable		
		Dimensions		ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)	
		P	55 160	55 160		
		M				
		K	60 140	60 140		
		N				
		S				
		H				

Designation		DC	DC toll.	SIG	PL	LF	Stock		
GENERAL	GP 10∞ P K 	DEX1000-GP	10	k6	140°	1.78	4.42	●	
		DEX1010-GP	10.1	k6	140°	1.8	4.4		○
		DEX1020-GP	10.2	k6	140°	1.82	4.38		●
		DEX1030-GP	10.3	k6	140°	1.84	4.36	●	▲
		DEX1040-GP	10.4	k6	140°	1.86	4.34	●	▲
		DEX1050-GP	10.5	k6	140°	1.88	4.32		●
		DEX1060-GP	10.6	k6	140°	1.9	4.3		○
		DEX1070-GP	10.7	k6	140°	1.92	4.28		○
		DEX1080-GP	10.8	k6	140°	1.94	4.26		○
		DEX1090-GP	10.9	k6	140°	1.96	4.24		○
GENERAL	GP 11∞ P K 	DEX1100-GP	11	k6	140°	1.98	4.62	●	▲
		DEX1110-GP	11.1	k6	140°	2	4.6		○
		DEX1120-GP	11.2	k6	140°	2.02	4.58		○
		DEX1130-GP	11.3	k6	140°	2.04	4.56	●	▲
		DEX1140-GP	11.4	k6	140°	2.06	4.54		○
		DEX1150-GP	11.5	k6	140°	2.08	4.52	●	▲
		DEX1160-GP	11.6	k6	140°	2.1	4.5		○
		DEX1170-GP	11.7	k6	140°	2.12	4.48		○
		DEX1180-GP	11.8	k6	140°	2.14	4.46		○
		DEX1190-GP	11.9	k6	140°	2.16	4.44		○

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

GP - Chisel edge



Big size chisel allows high feedrate machining and best centering features.

GP - Outer corner



Small chamfer for very good edge protection in general machining.

GP - Gash geometry



Gashing design allows good chip evacuation and reduce thrust load.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

Heads

DEX drill

- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes
- Can fit with 3xD or 5xD DEX drill bodies
- Diameters out of catalogue can be made upon request
- Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests

HF: Micrograin carbide
PVD: Physical vapour deposition

HF
PVD

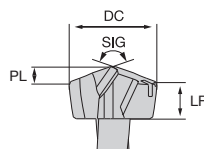
JP5625
JP5725

Stable machining,
light cut ● 1st choice ○ suitable
General machining,
medium cut ● 1st choice ○ suitable
Unstable machining,
heavy cut ⚙ 1st choice ⚙ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)



P 55 55
160 160
M
K 60 60
140 140
N
S
H

Designation		DC	DC toll.	SIG	PL	LF	Stock	
GENERAL	GP 1200 P K	DEX1200-GP	12	k6	140°	2.18	4.82	●
		DEX1210-GP	12.1	k6	140°	2.2	4.8	● ▲
		DEX1220-GP	12.2	k6	140°	2.22	4.78	● ▲
		DEX1230-GP	12.3	k6	140°	2.24	4.76	● ▲
		DEX1240-GP	12.4	k6	140°	2.26	4.74	● ▲
		DEX1250-GP	12.5	k6	140°	2.27	4.73	● ▲
		DEX1260-GP	12.6	k6	140°	2.29	4.71	●
		DEX1270-GP	12.7	k6	140°	2.31	4.69	● ▲
		DEX1280-GP	12.8	k6	140°	2.33	4.67	● ▲
		DEX1290-GP	12.9	k6	140°	2.35	4.645	● ▲
GENERAL	GP 1300 P K	DEX1300-GP	13	k6	140°	2.37	5.23	●
		DEX1310-GP	13.1	k6	140°	2.38	5.22	● ▲
		DEX1320-GP	13.2	k6	140°	2.4	5.2	●
		DEX1330-GP	13.3	k6	140°	2.42	5.18	● ▲
		DEX1340-GP	13.4	k6	140°	2.44	5.16	● ▲
		DEX1350-GP	13.5	k6	140°	2.46	5.14	●
		DEX1360-GP	13.6	k6	140°	2.47	5.13	● ▲
		DEX1370-GP	13.7	k6	140°	2.49	5.11	●
		DEX1380-GP	13.8	k6	140°	2.51	5.09	●
		DEX1390-GP	13.9	k6	140°	2.53	5.07	● ▲

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

GP - Chisel edge



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GP - Outer corner

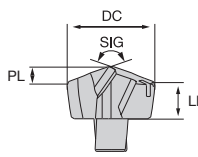


Small chamfer for very good edge protection in general machining.

GP - Gash geometry



Gashing design allows good chip evacuation and reduce thrust load.

Heads		HF: Micrograin carbide PVD: Physical vapour deposition		HF PVD	HF PVD		
DEX drill				JP5625	JP5725		
- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes - Can fit with 3xD or 5xD DEX drill bodies - Diameters out of catalogue can be made upon request - Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests		Stable machining, light cut	● 1 st choice ○ suitable	○	○		
		General machining, medium cut	● 1 st choice ○ suitable	●	●		
		Unstable machining, heavy cut	⚙ 1 st choice ⚙ suitable				
		Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)	
		P	55 160	55 160			
		M					
		K	60 140	60 140			
		N					
		S					
		H					

Designation		DC	DC toll.	SIG	PL	LF	Stock	
GENERAL	GP 14∞ 	DEX1400-GP	14	k6	140°	2.55	5.55	●
		DEX1410-GP	14.1	k6	140°	2.57	5.53	●
		DEX1420-GP	14.2	k6	140°	2.58	5.52	●
		DEX1430-GP	14.3	k6	140°	2.6	5.5	● ▲
		DEX1440-GP	14.4	k6	140°	2.62	5.48	●
		DEX1450-GP	14.5	k6	140°	2.64	5.46	●
		DEX1460-GP	14.6	k6	140°	2.66	5.44	●
		DEX1470-GP	14.7	k6	140°	2.68	5.42	● ▲
		DEX1480-GP	14.8	k6	140°	2.69	5.41	● ▲
		DEX1490-GP	14.9	k6	140°	2.71	5.39	● ▲
GENERAL	GP 15∞ 	DEX1500-GP	15	k6	140°	2.73	5.97	●
		DEX1505-GP	15.05	k6	140°			○
		DEX1510-GP	15.1	k6	140°	2.75	5.95	●
		DEX1520-GP	15.2	k6	140°	2.77	5.93	●
		DEX1530-GP	15.3	k6	140°	2.78	5.92	●
		DEX1540-GP	15.4	k6	140°	2.8	5.9	● ▲
		DEX1550-GP	15.5	k6	140°	2.82	5.88	●
		DEX1560-GP	15.6	k6	140°	2.84	5.86	●
		DEX1570-GP	15.7	k6	140°	2.86	5.84	● ▲
		DEX1580-GP	15.8	k6	140°	2.88	5.82	●
DEX1590-GP	15.9	k6	140°	2.89	5.81	● ▲		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

GP - Chisel edge



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GP - Outer corner



Small chamfer for very good edge protection in general machining.

GP - Gash geometry



Gashing design allows good chip evacuation and reduce thrust load.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

Heads

DEX drill

- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes
- Can fit with 3xD or 5xD DEX drill bodies
- Diameters out of catalogue can be made upon request
- Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests

HF: Micrograin carbide
PVD: Physical vapour deposition

HF
PVD

JP5625
JP5725

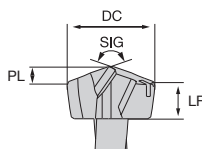
Stable machining,
light cut ● 1st choice ○ suitable

General machining,
medium cut ● 1st choice ○ suitable

Unstable machining,
heavy cut ⚙ 1st choice ⚙ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)

P

55
16055
160

M

K

60
14060
140

N

S

H

Designation		DC	DC toll.	SIG	PL	LF	Stock	
GENERAL	GP 16 [∞] P K	DEX1600-GP	16	k6	140°	2.91	5.89	●
		DEX1610-GP	16.1	k6	140°	2.93	5.87	●
		DEX1620-GP	16.2	k6	140°	2.95	5.85	● ▲
		DEX1630-GP	16.3	k6	140°	2.97	5.83	● ▲
		DEX1640-GP	16.4	k6	140°	2.98	5.82	●
		DEX1650-GP	16.5	k6	140°	3	5.8	●
		DEX1660-GP	16.6	k6	140°	3.02	5.78	● ▲
		DEX1670-GP	16.7	k6	140°	3.04	5.76	● ▲
		DEX1680-GP	16.8	k6	140°	3.06	5.74	● ▲
		DEX1690-GP	16.9	k6	140°	3.08	5.72	● ▲
GENERAL	GP 17 [∞] P K	DEX1700-GP	17	k6	140°	3.09	6.81	●
		DEX1710-GP	17.1	k6	140°	3.11	6.79	●
		DEX1720-GP	17.2	k6	140°	3.13	6.77	●
		DEX1730-GP	17.3	k6	140°	3.15	6.77	● ▲
		DEX1740-GP	17.4	k6	140°	3.17	6.75	● ▲
		DEX1750-GP	17.5	k6	140°	3.18	6.72	●
		DEX1760-GP	17.6	k6	140°	3.2	6.7	●
		DEX1770-GP	17.7	k6	140°	3.22	6.68	● ▲
		DEX1780-GP	17.8	k6	140°	3.24	6.66	●
		DEX1790-GP	17.9	k6	140°	3.26	6.64	● ▲

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

GP - Chisel edge



Big size chisel allows high feedrate machining and best centering features.

GP - Outer corner

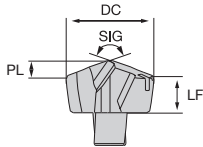


Small chamfer for very good edge protection in general machining.

GP - Gash geometry



Gashing design allows good chip evacuation and reduce thrust load.

Heads		HF: Micrograin carbide PVD: Physical vapour deposition		HF PVD	HF PVD	
		JP5625	JP5725			
DEX drill		Stable machining, light cut		○	○	
- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes - Can fit with 3xD or 5xD DEX drill bodies - Diameters out of catalogue can be made upon request - Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests		General machining, medium cut		●	●	
		Unstable machining, heavy cut		⊕	⊕	
		Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)
		P		55 160	55 160	
		M				
		K		60 140	60 140	
		N				
		S				
		H				

Designation		DC	DC toll.	SIG	PL	LF	Stock		
GENERAL	GP 18∞ P K	DEX1800-GP	18	k6	140°	3.28	7.22	●	
		DEX1810-GP	18.1	k6	140°	3.29	7.21	● ▲	
		DEX1820-GP	18.2	k6	140°	3.31	7.19	● ▲	
		DEX1830-GP	18.3	k6	140°	3.33	7.17	● ▲	
		DEX1840-GP	18.4	k6	140°	3.35	7.15	● ▲	
		DEX1850-GP	18.5	k6	140°	3.37	7.13	●	
		DEX1860-GP	18.6	k6	140°	3.38	7.12	●	
		DEX1870-GP	18.7	k6	140°	3.4	7.1	● ▲	
		DEX1880-GP	18.8	k6	140°	3.42	7.08	● ▲	
		DEX1890-GP	18.9	k6	140°	3.44	7.06	●	
GENERAL	GP 19∞ P K	DEX1900-GP	19	k6	140°	3.46	7.54	●	
		DEX1910-GP	19.1	k6	140°	3.48	7.52	● ▲	
		DEX1920-GP	19.2	k6	140°	3.49	7.51	● ▲	
		DEX1930-GP	19.3	k6	140°	3.51	7.49	● ▲	
		DEX1940-GP	19.4	k6	140°	3.53	7.47	● ▲	
		DEX1950-GP	19.5	k6	140°	3.55	7.45	● ▲	
		DEX1960-GP	19.6	k6	140°	3.57	7.43	● ▲	
		DEX1970-GP	19.7	k6	140°	3.59	7.41	● ▲	
		DEX1980-GP	19.8	k6	140°	3.6	7.4	●	
		DEX1990-GP	19.9	k6	140°	3.62	7.38	● ▲	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

GP - Chisel edge



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GP - Gash geometry



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A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

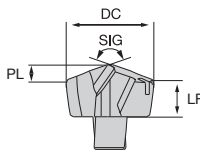
F - ACCESSORIES

G - SPARE PARTS

Heads

DEX drill

- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes
- Can fit with 3xD or 5xD DEX drill bodies
- Diameters out of catalogue can be made upon request
- Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests

HF: Micrograin carbide PVD: Physical vapour deposition		HF PVD	HF PVD	
		JP5625	JP5725	
Stable machining, light cut	● 1 st choice ○ suitable	○	○	
General machining, medium cut	● 1 st choice ○ suitable	●	●	
Unstable machining, heavy cut	● 1 st choice ○ suitable			
Dimensions		ISO		
		Vc(m/min) - suggested cutting speed range (bold: 1st choice)		
		P	55 160	55 160
		M		
		K	60 140	60 140
		N		
		S		
		H		

Designation		DC	DC toll.	SIG	PL	LF	Stock	
GENERAL	GP 20 [∞] P K	DEX2000-GP	20	k6	140°	3.64	7.96	● ▲
		DEX2010-GP	20.1	k6	140°	3.66	7.94	●
		DEX2020-GP	20.2	k6	140°	3.68	7.92	● ▲
		DEX2030-GP	20.3	k6	140°	3.69	7.91	● ▲
		DEX2040-GP	20.4	k6	140°	3.71	7.89	● ▲
		DEX2050-GP	20.5	k6	140°	3.73	7.87	●
		DEX2060-GP	20.6	k6	140°	3.75	7.85	●
		DEX2070-GP	20.7	k6	140°	3.77	7.83	● ▲
		DEX2080-GP	20.8	k6	140°	3.79	7.81	● ▲
		DEX2090-GP	20.9	k6	140°	3.8	7.8	●
GENERAL	GP 21 [∞] P K	DEX2100-GP	21	k6	140°	3.82	8.28	●
		DEX2150-GP	21.5	k6	140°	3.91	8.19	●
GENERAL	GP 22 [∞] P K	DEX2200-GP	22	k6	140°	4	8.7	●
		DEX2250-GP	22.5	k6	140°	4.09	8.61	●
GENERAL	GP 23 [∞] P K	DEX2300-GP	23	k6	140°	4.18	9.12	● ▲
		DEX2350-GP	23.5	k6	140°	4.28	9.02	●

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

GP - Chisel edge



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GP - Outer corner

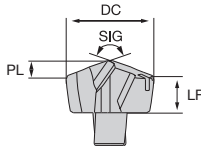


Small chamfer for very good edge protection in general machining.

GP - Gash geometry



Gashing design allows good chip evacuation and reduce thrust load.

Heads	HF: Micrograin carbide PVD: Physical vapour deposition	HF	HF											
		PVD	PVD											
DEX drill		JP5625	JP5725											
	Stable machining, light cut	● 1 st choice ○ suitable	○	○										
	General machining, medium cut	● 1 st choice ○ suitable	●	●										
	Unstable machining, heavy cut	⚙ 1 st choice ⚙ suitable												
	Dimensions	ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)											
	P	55 160	55 160											
	M													
	K	60 140	60 140											
	N													
	S													
	H													

Designation		DC	DC toll.	SIG	PL	LF	Stock			
GENERAL	GP 24 ^{oo} P K 	24	k6	140°	4.36	9.54	●	▲		
	DEX2400-GP							●		
	DEX2450-GP	24.5	k6	140°	4.46	9.44		●		
GENERAL	GP 25 ^{oo} P K 	25	k6	140°	4.55	9.95		●		
	DEX2500-GP							●	▲	
	DEX2550-GP	25.5	k6	140°	4.64	9.86	●	▲		
	DEX2600-GP	26	k6	140°	4.73	9.86		●		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

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A - TURNING

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F - ACCESSORIES

G - SPARE PARTS

Heads

DEX drill

- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes
- Can fit with 3xD or 5xD DEX drill bodies
- Diameters out of catalogue can be made upon request
- Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests

HF: Micrograin carbide
PVD: Physical vapour deposition

HF
PVD

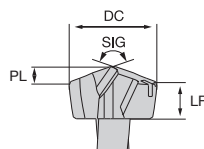
JP5630

Stable machining, light cut ● 1st choice ○ suitable
General machining, medium cut ● 1st choice ○ suitable
Unstable machining, heavy cut ▲ 1st choice ▼ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)



P 55
160
M 30
80
K
N
S
H

Designation		DC	DC toll.	SIG	PL	LF	Stock	
LOW FORCE	SC 10 _∞ P M	DEX1000-SC	10	k6	140°	1.78	4.42	●
		DEX1010-SC	10.1	k6	140°	1.8	4.4	○
		DEX1020-SC	10.2	k6	140°	1.82	4.38	●
		DEX1030-SC	10.3	k6	140°	1.84	4.36	●
		DEX1040-SC	10.4	k6	140°	1.86	4.34	●
		DEX1050-SC	10.5	k6	140°	1.88	4.32	●
		DEX1060-SC	10.6	k6	140°	1.9	4.3	○
		DEX1070-SC	10.7	k6	140°	1.92	4.28	○
		DEX1080-SC	10.8	k6	140°	1.94	4.26	○
		DEX1090-SC	10.9	k6	140°	1.96	4.24	○
LOW FORCE	SC 11 _∞ P M	DEX1100-SC	11	k6	140°	1.98	4.62	●
		DEX1110-SC	11.1	k6	140°	2	4.6	○
		DEX1120-SC	11.2	k6	140°	2.02	4.58	○
		DEX1130-SC	11.3	k6	140°	2.04	4.56	●
		DEX1140-SC	11.4	k6	140°	2.06	4.54	○
		DEX1150-SC	11.5	k6	140°	2.08	4.52	●
		DEX1160-SC	11.6	k6	140°	2.1	4.5	○
		DEX1170-SC	11.7	k6	140°	2.12	4.48	○
		DEX1180-SC	11.8	k6	140°	2.14	4.46	○
		DEX1190-SC	11.9	k6	140°	2.16	4.44	○

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion

SC - Chisel edge



Small size chisel allows perfect balancing between centering performance and torque level.

SC - Outer corner

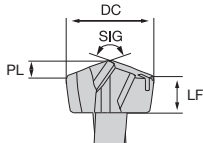


Sharp edge for better cutting action and no burr formation on sticky materials.

SC - Gash geometry



Flutes and gash design ensure fast chip evacuation and low cutting force on difficult to cut materials.

Heads	HF: Micrograin carbide PVD: Physical vapour deposition	HF PVD
		JP5630
DEX drill		
- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes - Can fit with 3xD or 5xD DEX drill bodies - Diameters out of catalogue can be made upon request - Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests	Stable machining, light cut ● 1 st choice ○ suitable	
	General machining, medium cut ● 1 st choice ○ suitable	●
	Unstable machining, heavy cut ● 1 st choice ○ suitable	○
	Dimensions	ISO
		
P		55 160
M		30 80
K		
N		
S		
	H	

Designation		DC	DC toll.	SIG	PL	LF	Stock	
LOW FORCE	SC 12∞   P M	DEX1200-SC	12	k6	140°	2.18	4.82	●
		DEX1210-SC	12.1	k6	140°	2.2	4.8	●
		DEX1220-SC	12.2	k6	140°	2.22	4.78	●
		DEX1230-SC	12.3	k6	140°	2.24	4.76	●
		DEX1240-SC	12.4	k6	140°	2.26	4.74	○
		DEX1250-SC	12.5	k6	140°	2.27	4.73	●
		DEX1260-SC	12.6	k6	140°	2.29	4.71	●
		DEX1270-SC	12.7	k6	140°	2.31	4.69	○
		DEX1280-SC	12.8	k6	140°	2.33	4.67	○
		DEX1290-SC	12.9	k6	140°	2.35	4.645	○
LOW FORCE	SC 13∞   P M	DEX1300-SC	13	k6	140°	2.37	5.23	●
		DEX1310-SC	13.1	k6	140°	2.38	5.22	●
		DEX1320-SC	13.2	k6	140°	2.4	5.2	○
		DEX1330-SC	13.3	k6	140°	2.42	5.18	○
		DEX1340-SC	13.4	k6	140°	2.44	5.16	○
		DEX1350-SC	13.5	k6	140°	2.46	5.14	●
		DEX1360-SC	13.6	k6	140°	2.47	5.13	○
		DEX1370-SC	13.7	k6	140°	2.49	5.11	○
		DEX1380-SC	13.8	k6	140°	2.51	5.09	○
		DEX1390-SC	13.9	k6	140°	2.53	5.07	●

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

SC - Chisel edge



Small size chisel allows perfect balancing between centering performance and torque level.

SC - Outer corner



Sharp edge for better cutting action and no burr formation on sticky materials.

SC - Gash geometry



Flutes and gash design ensure fast chip evacuation and low cutting force on difficult to cut materials.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

Heads

DEX drill

- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes
- Can fit with 3xD or 5xD DEX drill bodies
- Diameters out of catalogue can be made upon request
- Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests

HF: Micrograin carbide
PVD: Physical vapour deposition

HF
PVD

JP5630

Stable machining,
light cut ● 1st choice ○ suitable

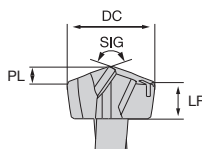
General machining,
medium cut ● 1st choice ○ suitable

Unstable machining,
heavy cut ▲ 1st choice ○ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)



P

55
160

M

30
80

K

N

S

H

Designation		DC	DC toll.	SIG	PL	LF	Stock	
LOW FORCE	SC 1400 P M	DEX1400-SC	14	k6	140°	2.55	5.55	●
		DEX1410-SC	14.1	k6	140°	2.57	5.53	●
		DEX1420-SC	14.2	k6	140°	2.58	5.52	●
		DEX1430-SC	14.3	k6	140°	2.6	5.5	○
		DEX1440-SC	14.4	k6	140°	2.62	5.48	○
		DEX1450-SC	14.5	k6	140°	2.64	5.46	●
		DEX1460-SC	14.6	k6	140°	2.66	5.44	●
		DEX1470-SC	14.7	k6	140°	2.68	5.42	○
		DEX1480-SC	14.8	k6	140°	2.69	5.41	●
		DEX1490-SC	14.9	k6	140°	2.71	5.39	○
LOW FORCE	SC 1500 P M	DEX1500-SC	15	k6	140°	2.73	5.97	●
		DEX1510-SC	15.1	k6	140°	2.75	5.95	●
		DEX1520-SC	15.2	k6	140°	2.77	5.93	●
		DEX1530-SC	15.3	k6	140°	2.78	5.92	●
		DEX1540-SC	15.4	k6	140°	2.8	5.9	○
		DEX1550-SC	15.5	k6	140°	2.82	5.88	●
		DEX1560-SC	15.6	k6	140°	2.84	5.86	○
		DEX1570-SC	15.7	k6	140°	2.86	5.84	○
		DEX1580-SC	15.8	k6	140°	2.88	5.82	○
		DEX1590-SC	15.9	k6	140°	2.89	5.81	○

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

SC - Chisel edge



Small size chisel allows perfect balancing between centering performance and torque level.

SC - Outer corner

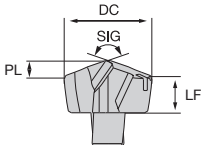


Sharp edge for better cutting action and no burr formation on sticky materials.

SC - Gash geometry



Flutes and gash design ensure fast chip evacuation and low cutting force on difficult to cut materials.

Heads		HF: Micrograin carbide PVD: Physical vapour deposition		HF PVD	
		JP5630			
DEX drill		Stable machining, light cut		● 1 st choice ○ suitable	
- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes - Can fit with 3xD or 5xD DEX drill bodies - Diameters out of catalogue can be made upon request - Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests		General machining, medium cut		● 1 st choice ○ suitable	
		Unstable machining, heavy cut		● 1 st choice ○ suitable	
Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)	
		P		55 160	
		M		30 80	
		K			
		N			
		S			
		H			

Designation		DC	DC toll.	SIG	PL	LF	Stock		
LOW FORCE	SC 16∞ P M 	DEX1600-SC	16	k6	140°	2.91	5.89	●	
		DEX1610-SC	16.1	k6	140°	2.93	5.87	○	
		DEX1620-SC	16.2	k6	140°	2.95	5.85	●	
		DEX1630-SC	16.3	k6	140°	2.97	5.83	●	
		DEX1640-SC	16.4	k6	140°	2.98	5.82	○	
		DEX1650-SC	16.5	k6	140°	3	5.8	●	
		DEX1660-SC	16.6	k6	140°	3.02	5.78	●	
		DEX1670-SC	16.7	k6	140°	3.04	5.76	○	
		DEX1680-SC	16.8	k6	140°	3.06	5.74	○	
		DEX1690-SC	16.9	k6	140°	3.08	5.72	○	
LOW FORCE	SC 17∞ P M 	DEX1700-SC	17	k6	140°	3.09	6.81	●	
		DEX1710-SC	17.1	k6	140°	3.11	6.79	●	
		DEX1720-SC	17.2	k6	140°	3.13	6.77	○	
		DEX1730-SC	17.3	k6	140°	3.15	6.75	○	
		DEX1740-SC	17.4	k6	140°	3.17	6.73	○	
		DEX1750-SC	17.5	k6	140°	3.18	6.72	●	
		DEX1760-SC	17.6	k6	140°	3.2	6.7	○	
		DEX1770-SC	17.7	k6	140°	3.22	6.68	●	
		DEX1780-SC	17.8	k6	140°	3.24	6.66	●	
		DEX1790-SC	17.9	k6	140°	3.26	6.64	○	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

SC - Chisel edge



Small size chisel allows perfect balancing between centering performance and torque level.

SC - Outer corner



Sharp edge for better cutting action and no burr formation on sticky materials.

SC - Gash geometry



Flutes and gash design ensure fast chip evacuation and low cutting force on difficult to cut materials.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

Heads

DEX drill

- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes
- Can fit with 3xD or 5xD DEX drill bodies
- Diameters out of catalogue can be made upon request
- Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests

HF: Micrograin carbide
PVD: Physical vapour deposition

HF
PVD

JP5630

Stable machining,
light cut ● 1st choice ○ suitable

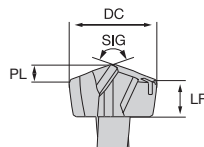
General machining,
medium cut ● 1st choice ○ suitable

Unstable machining,
heavy cut ⚙ 1st choice ⚙ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)



P

55
160

M

30
80

K

N

S

H

Designation

DC

DC toll.

SIG

PL

LF

Stock

LOW FORCE

SC 1800 P M



DEX1800-SC

18

k6

140°

3.28

7.22

●

DEX1810-SC

18.1

k6

140°

3.29

7.21

●

DEX1820-SC

18.2

k6

140°

3.31

7.19

○

DEX1830-SC

18.3

k6

140°

3.33

7.17

●

DEX1840-SC

18.4

k6

140°

3.35

7.15

○

DEX1850-SC

18.5

k6

140°

3.37

7.13

●

DEX1860-SC

18.6

k6

140°

3.38

7.12

○

DEX1870-SC

18.7

k6

140°

3.4

7.1

○

DEX1880-SC

18.8

k6

140°

3.42

7.08

○

DEX1890-SC

18.9

k6

140°

3.44

7.06

○

LOW FORCE

SC 1900 P M



DEX1900-SC

19

k6

140°

3.46

7.54

●

DEX1910-SC

19.1

k6

140°

3.48

7.52

○

DEX1920-SC

19.2

k6

140°

3.49

7.51

●

DEX1930-SC

19.3

k6

140°

3.51

7.49

●

DEX1940-SC

19.4

k6

140°

3.53

7.47

○

DEX1950-SC

19.5

k6

140°

3.55

7.45

●

DEX1960-SC

19.6

k6

140°

3.57

7.43

○

DEX1970-SC

19.7

k6

140°

3.59

7.41

●

DEX1980-SC

19.8

k6

140°

3.6

7.4

○

DEX1990-SC

19.9

k6

140°

3.62

7.38

●

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

SC - Chisel edge



Small size chisel allows perfect balancing between centering performance and torque level.

SC - Outer corner

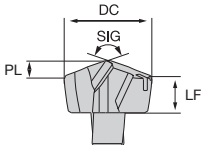


Sharp edge for better cutting action and no burr formation on sticky materials.

SC - Gash geometry



Flutes and gash design ensure fast chip evacuation and low cutting force on difficult to cut materials.

Heads		HF: Micrograin carbide PVD: Physical vapour deposition		HF PVD			
DEX drill				JP5630			
- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes - Can fit with 3xD or 5xD DEX drill bodies - Diameters out of catalogue can be made upon request - Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests		Stable machining, light cut		● 1 st choice ○ suitable			
		General machining, medium cut		● 1 st choice ○ suitable	●		
		Unstable machining, heavy cut		⚙ 1 st choice ⚙ suitable	⚙		
		Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)	
				P		55 160	
M				30 80			
K							
N							
S							
H							

Designation		DC	DC toll.	SIG	PL	LF	Stock		
LOW FORCE	 SC 20 ₀₀ P M	DEX2000-SC	20	k6	140°	3.64	7.96	●	
		DEX2010-SC	20.1	k6	140°	3.66	7.94	○	
		DEX2020-SC	20.2	k6	140°	3.68	7.92	○	
		DEX2030-SC	20.3	k6	140°	3.69	7.91	○	
		DEX2040-SC	20.4	k6	140°	3.71	7.89	○	
		DEX2050-SC	20.5	k6	140°	3.73	7.87	●	
		DEX2060-SC	20.6	k6	140°	3.75	7.85	○	
		DEX2070-SC	20.7	k6	140°	3.77	7.83	○	
		DEX2080-SC	20.8	k6	140°	3.79	7.81	○	
		DEX2090-SC	20.9	k6	140°	3.8	7.8	○	
LOW FORCE	 SC 21 ₀₀ P M	DEX2100-SC	21	k6	140°	3.82	8.28	●	
		DEX2150-SC	21.5	k6	140°	3.91	8.19	●	
LOW FORCE	 SC 22 ₀₀ P M	DEX2200-SC	22	k6	140°	4	8.7	●	
		DEX2230-SC	22.3	k6	140°			○	
		DEX2250-SC	22.5	k6	140°	4.09	8.61	●	
LOW FORCE	 SC 23 ₀₀ P M	DEX2300-SC	23	k6	140°	4.18	9.12	●	
		DEX2350-SC	23.5	k6	140°	4.28	9.02	●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

SC - Chisel edge



Small size chisel allows perfect balancing between centering performance and torque level.

SC - Outer corner



Sharp edge for better cutting action and no burr formation on sticky materials.

SC - Gash geometry



Flutes and gash design ensure fast chip evacuation and low cutting force on difficult to cut materials.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

Heads

DEX drill

- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes
- Can fit with 3xD or 5xD DEX drill bodies
- Diameters out of catalogue can be made upon request
- Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests

HF: Micrograin carbide
PVD: Physical vapour deposition

HF
PVD

JP5630

Stable machining,
light cut ● 1st choice ○ suitable

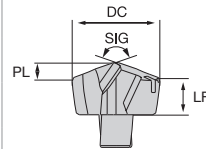
General machining,
medium cut ● 1st choice ○ suitable

Unstable machining,
heavy cut ⚠ 1st choice ⚠ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)



P 55
160
M 30
80
K
N
S
H

Designation		DC	DC toll.	SIG	PL	LF	Stock	
LOW FORCE	SC 24 [∞] P M							
	DEX2400-SC	24	k6	140°	4.36	9.54	●	
	DEX2450-SC	24.5	k6	140°	4.46	9.44	●	
LOW FORCE	SC 25 [∞] P M							
	DEX2500-SC	25	k6	140°	4.55	9.95	●	
	DEX2550-SC	25.5	k6	140°	4.64	9.86	●	
	DEX2600-SC	26	k6	140°	4.73	9.86	●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

SC - Chisel edge



Small size chisel allows perfect balancing between centering performance and torque level.

SC - Outer corner

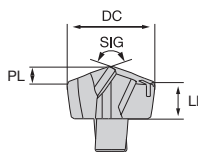


Sharp edge for better cutting action and no burr formation on sticky materials.

SC - Gash geometry

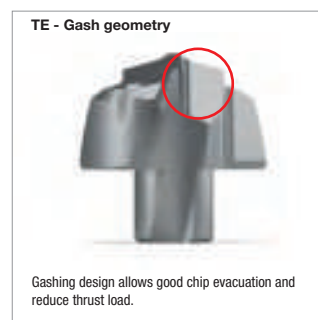
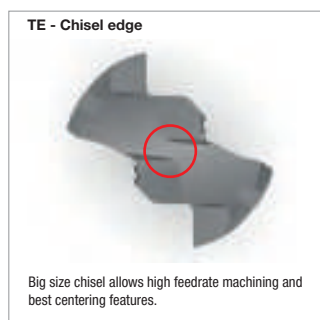


Flutes and gash design ensure fast chip evacuation and low cutting force on difficult to cut materials.

Heads		HF: Micrograin carbide PVD: Physical vapour deposition		HF PVD	
DEX drill				JP7625	
- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes - Can fit with 3xD or 5xD DEX drill bodies - Diameters out of catalogue can be made upon request - Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests		Stable machining, light cut	● 1 st choice ○ suitable		
		General machining, medium cut	● 1 st choice ○ suitable	●	
		Unstable machining, heavy cut	⚙ 1 st choice ⚙ suitable	⚙	
		Dimensions		ISO	
			Vc(m/min) - suggested cutting speed range (bold: 1 st choice)		
			P		
			M		
K	70 160				
N					
S					
H					

Designation		DC	DC toll.	SIG	PL	LF	Stock		
REINFORCED	TE 10 [∞] K								
		DEX1000-TE	10	k6	140°	1.78	4.42	●	
		DEX1020-TE	10.2	k6	140°	1.82	4.38	●	
		DEX1030-TE	10.3	k6	140°	1.84	4.36	●	
	DEX1050-TE	10.5	k6	140°	1.88	4.32	●		
REINFORCED	TE 11 [∞] K								
		DEX1100-TE	11	k6	140°	1.98	4.62	●	
	DEX1150-TE	11.5	k6	140°	2.08	4.52	●		
REINFORCED	TE 12 [∞] K								
		DEX1200-TE	12	k6	140°	2.18	4.82	●	
	DEX1250-TE	12.5	k6	140°	2.27	4.73	●		
REINFORCED	TE 13 [∞] K								
		DEX1300-TE	13	k6	140°	2.37	5.23	●	
	DEX1350-TE	13.5	k6	140°	2.46	5.14	●		
REINFORCED	TE 14 [∞] K								
		DEX1400-TE	14	k6	140°	2.55	5.55	●	
	DEX1450-TE	14.5	k6	140°	2.64	5.46	●		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

Heads

DEX drill

- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes
- Can fit with 3xD or 5xD DEX drill bodies
- Diameters out of catalogue can be made upon request
- Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests

HF: Micrograin carbide
PVD: Physical vapour deposition

HF
PVD

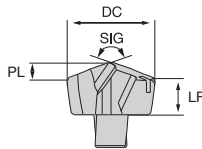
JP7625

Stable machining, light cut ● 1st choice ○ suitable
General machining, medium cut ● 1st choice ○ suitable
Unstable machining, heavy cut ⚙ 1st choice ⚙ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)



P
M
K
N
S
H

P	
M	
K	70 160
N	
S	
H	

Designation		DC	DC toll.	SIG	PL	LF	Stock	
REINFORCED	TE 1500 K	DEX1500-TE	15	k6	140°	2.73	5.97	●
		DEX1550-TE	15.5	k6	140°	2.82	5.88	●
		DEX1580-TE	15.8	k6	140°	2.88	5.82	○
REINFORCED	TE 1600 K	DEX1600-TE	16	k6	140°	2.91	5.89	●
		DEX1650-TE	16.5	k6	140°	3	5.8	●
REINFORCED	TE 1700 K	DEX1700-TE	17	k6	140°	3.09	6.81	●
		DEX1750-TE	17.5	k6	140°	3.18	6.72	●
REINFORCED	TE 1800 K	DEX1800-TE	18	k6	140°	3.28	7.22	●
		DEX1850-TE	18.5	k6	140°	3.37	7.13	●
REINFORCED	TE 1900 K	DEX1900-TE	19	k6	140°	3.46	7.54	●
		DEX1950-TE	19.5	k6	140°	3.55	7.45	●

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

TE - Chisel edge



Big size chisel allows high feedrate machining and best centering features.

TE - Outer corner

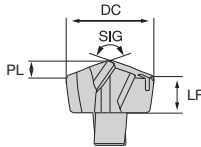


Big negative chamfer for higher performance on cast iron machining.

TE - Gash geometry



Gashing design allows good chip evacuation and reduce thrust load.

Heads		HF: Micrograin carbide PVD: Physical vapour deposition		HF PVD	
DEX drill				JP7625	
- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes - Can fit with 3xD or 5xD DEX drill bodies - Diameters out of catalogue can be made upon request - Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests		Stable machining, light cut		● 1 st choice ○ suitable	
		General machining, medium cut		● 1 st choice ○ suitable	●
		Unstable machining, heavy cut		● 1 st choice ○ suitable	●
		Dimensions		ISO	
				Vc(m/min) - suggested cutting speed range (bold: 1 st choice)	
P					
M					
K 70 160					
N					
		S			
		H			

Designation		DC	DC toll.	SIG	PL	LF	Stock	
REINFORCED	TE 20∞ K							
	 DEX2000-TE	20	k6	140°	3.64	7.96	●	
	DEX2050-TE	20.5	k6	140°	3.73	7.87	●	
	DEX2070-TE	20.7	k6	140°	3.77	7.83	○	
REINFORCED	TE 21∞ K							
	 DEX2100-TE	21	k6	140°	3.82	8.28	●	
	DEX2150-TE	21.5	k6	140°	3.91	8.19	●	
REINFORCED	TE 22∞ K							
	 DEX2200-TE	22	k6	140°	4	8.7	●	
	DEX2250-TE	22.5	k6	140°	4.09	8.61	●	
REINFORCED	TE 23∞ K							
	 DEX2300-TE	23	k6	140°	4.18	9.12	●	
	DEX2350-TE	23.5	k6	140°	4.28	9.02	●	
REINFORCED	TE 24∞ K							
	 DEX2400-TE	24	k6	140°	4.36	9.54	●	
	DEX2450-TE	24.5	k6	140°	4.46	9.44	●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

TE - Chisel edge



Big size chisel allows high feedrate machining and best centering features.

TE - Outer corner



Big negative chamfer for higher performance on cast iron machining.

TE - Gash geometry



Gashing design allows good chip evacuation and reduce thrust load.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

Heads		HF: Micrograin carbide PVD: Physical vapour deposition		HF PVD				
				JP7625				
DEX drill								
- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes - Can fit with 3xD or 5xD DEX drill bodies - Diameters out of catalogue can be made upon request - Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests		Stable machining, light cut ● 1 st choice ○ suitable						
		General machining, medium cut ● 1 st choice ○ suitable		●				
		Unstable machining, heavy cut ⚠ 1 st choice ⚠ suitable		⚠				
		Dimensions		ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)			
				P				
M								
K	70 160							
N								
S								
H								
Designation		DC	DC toll.	SIG	PL	LF	Stock	
REINFORCED	TE 2500 K							
	DEX2500-TE	25	k6	140°	4.55	9.95	●	
	DEX2550-TE	25.5	k6	140°	4.64	9.86	●	
	DEX2600-TE	26	k6	140°	4.73	9.86	●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

TE - Chisel edge



Big size chisel allows high feedrate machining and best centering features.

TE - Outer corner



Big negative chamfer for higher performance on cast iron machining.

TE - Gash geometry



Gashing design allows good chip evacuation and reduce thrust load.

Heads		HF: Micrograin carbide PVD: Physical vapour deposition		HF	HF						
				PVD	PVD						
DEX drill				JP5625	JP5725						
- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes - Can fit with 3xD or 5xD DEX drill bodies - Diameters out of catalogue can be made upon request - Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests		Stable machining, light cut	1 st choice suitable								
		General machining, medium cut	1 st choice suitable								
		Unstable machining, heavy cut	1 st choice suitable								
		Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)					
				P	55 160	55 160					
M											
K	60 140			60 140							
N											
S											
		H									

Designation		DC	DC toll.	SIG	PL	LF	Stock		
FLAT TYPE	FT 10 ^{oo} P K 	DEX1000-FT	10	k6	140°	1.78	4.42		
		DEX1050-FT	10.5	k6	140°	1.88	4.32		
FLAT TYPE	FT 11 ^{oo} P K 	DEX1100-FT	11	k6	140°	1.98	4.62		
		DEX1150-FT	11.5	k6	140°	2.08	4.52		
FLAT TYPE	FT 12 ^{oo} P K 	DEX1200-FT	12	k6	140°	2.18	4.82		
		DEX1250-FT	12.5	k6	140°	2.27	4.73		
FLAT TYPE	FT 13 ^{oo} P K 	DEX1300-FT	13	k6	140°	2.37	5.23		
		DEX1350-FT	13.5	k6	140°	2.46	5.14		
FLAT TYPE	FT 14 ^{oo} P K 	DEX1400-FT	14	k6	140°	2.55	5.55		
		DEX1450-FT	14.5	k6	140°	2.64	5.46		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

CUTTING CONDITIONS

Please reduce cutting speed and feed rate by 20% when using flat type drilling heads.

Heads

DEX drill

- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes
- Can fit with 3xD or 5xD DEX drill bodies
- Diameters out of catalogue can be made upon request
- Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests

HF: Micrograin carbide
PVD: Physical vapour deposition

HF
PVD

JP5625
JP5725

Stable machining,
light cut

1st choice

General machining,
medium cut

1st choice

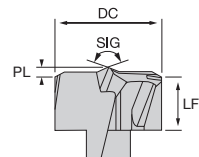
Unstable machining,
heavy cut

1st choice

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)



P
M
K
N
S
H

55
160
55
160
60
140
60
140

Designation

DC

DC toll.

SIG

PL

LF

Stock

FLAT TYPE	FT 1500 P K	DEX1500-FT	15	k6	140°	2.73	5.97		
		DEX1550-FT	15.5	k6	140°	2.82	5.88		
FLAT TYPE	FT 1600 P K	DEX1600-FT	16	k6	140°	2.91	5.89		
		DEX1650-FT	16.5	k6	140°	3	5.8		
FLAT TYPE	FT 1700 P K	DEX1700-FT	17	k6	140°	3.09	6.81		
		DEX1750-FT	17.5	k6	140°	3.18	6.72		
FLAT TYPE	FT 1800 P K	DEX1800-FT	18	k6	140°	3.28	7.22	●	▲
		DEX1850-FT	18.5	k6	140°	3.37	7.13		○
FLAT TYPE	FT 1900 P K	DEX1900-FT	19	k6	140°	3.46	7.54	●	▲
		DEX1950-FT	19.5	k6	140°	3.55	7.45		○

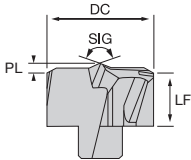
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



CUTTING CONDITIONS



Please reduce cutting speed and feed rate by 20% when using flat type drilling heads.

Heads		HF: Micrograin carbide PVD: Physical vapour deposition		HF PVD	HF PVD				
				JP5625	JP5725				
DEX drill									
- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes - Can fit with 3xD or 5xD DEX drill bodies - Diameters out of catalogue can be made upon request - Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests		Stable machining, light cut	● 1 st choice ○ suitable	○	○				
		General machining, medium cut	● 1 st choice ○ suitable	●	●				
		Unstable machining, heavy cut	⚙ 1 st choice ⚙ suitable						
		Dimensions	ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)					
			P	55 160	55 160				
M									
K	60 140		60 140						
N									
S									
H									

Designation		DC	DC toll.	SIG	PL	LF	Stock			
FLAT TYPE	FT 20 ^{oo} P K 	DEX2000-FT	20	k6	140°	3.64	7.96	●	▲	
		DEX2050-FT	20.5	k6	140°	3.73	7.87		○	
FLAT TYPE	FT 21 ^{oo} P K 	DEX2100-FT	21	k6	140°	3.82	8.28	●	▲	
		DEX2150-FT	21.5	k6	140°	3.91	8.19		○	
FLAT TYPE	FT 22 ^{oo} P K 	DEX2200-FT	22	k6	140°	4	8.7	●	▲	
		DEX2250-FT	22.5	k6	140°	4.09	8.61		○	
FLAT TYPE	FT 23 ^{oo} P K 	DEX2300-FT	23	k6	140°	4.18	9.12		●	
		DEX2350-FT	23.5	k6	140°	4.28	9.02		○	
FLAT TYPE	FT 24 ^{oo} P K 	DEX2400-FT	24	k6	140°	4.36	9.54	●	▲	
		DEX2450-FT	24.5	k6	140°	4.46	9.44		○	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

CUTTING CONDITIONS

Please reduce cutting speed and feed rate by 20% when using flat type drilling heads.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

Heads

DEX drill

- GP geometry is for general purpose use, SC geometry is more featured for stainless, and TE geometry is more featured for cast iron, FT is for making flat-bottom holes
- Can fit with 3xD or 5xD DEX drill bodies
- Diameters out of catalogue can be made upon request
- Step drill (step on the drill head or with chamfer insert on the drill body) or 1.5/ 8/ 12xD available upon requests

HF: Micrograin carbide
PVD: Physical vapour deposition

HF
PVD

JP5625
JP5725

Stable machining,
light cut

1st choice suitable

General machining,
medium cut

1st choice suitable

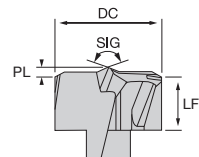
Unstable machining,
heavy cut

1st choice suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)



P
M
K
N
S
H

55
160
55
160
60
140
60
140

P	55 160	55 160
M		
K	60 140	60 140
N		
S		
H		

Designation

DC

DC toll.

SIG

PL

LF

Stock

FLAT TYPE	FT 2500 P K								
	DEX2500-FT	25	k6	140°	4.55	9.95	●	▲	
	DEX2550-FT	25.5	k6	140°	4.64	9.86		○	
	DEX2600-FT	26	k6	140°	4.73	9.86	●	▲	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



CUTTING CONDITIONS



Please reduce cutting speed and feed rate by 20% when using flat type drilling heads.

ISO 513	MATERIAL	HARDNESS HB	L/D	JP5630			JP5725			
				min	start	max	min	start	max	
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	3xD - 5xD	80	120	160	80	120	160	
			8xD	65	100	135	65	100	135	
			12xD	55	85	115	55	85	115	
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	3xD - 5xD	-			60	90	120	
			8xD	-			50	75	100	
			12xD	-			40	60	80	
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	3xD - 5xD	-			40	60	80	
			8xD	-			35	50	65	
			12xD	-			30	40	50	
ISO 513	MATERIAL	HARDNESS HB	L/D	JP5630						
				min	start	max				
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	3xD - 5xD	60	80	100				
			8xD	50	65	80				
			12xD	40	55	70				
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	3xD - 5xD	30	40	50				
			8xD	25	35	45				
			12xD	25	30	35				
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	3xD - 5xD	40	60	80				
			8xD	35	50	65				
			12xD	30	40	50				
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		3xD - 5xD	30	50	70				
			8xD	25	40	55				
			12xD	20	35	50				
ISO 513	MATERIAL	HARDNESS HB	L/D	JP5725			JP7625			
				min	start	max	min	start	max	
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	3xD - 5xD	80	110	140	100	130	160	
			8xD	70	90	110	80	100	120	
			12xD	60	80	100	70	90	110	
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	3xD - 5xD	80	100	120	100	120	140	
			8xD	70	90	110	80	100	120	
			12xD	60	80	100	70	90	110	

Complete workpiece materials p. H1.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

	ISO 513	MATERIAL	HARDNESS HB	L/D	DC 10.00 ÷ 10.99			DC 11.00 ÷ 11.99			DC 12.00 ÷ 12.99		
					min	start	max	min	start	max	min	start	max
A - TURNING	P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	3xD - 5xD	0.10	0.16	0.22	0.10	0.17	0.24	0.12	0.19	0.26
				8xD	0.08	0.13	0.18	0.08	0.14	0.20	0.10	0.15	0.20
				12xD	-	-	-	-	-	-	0.08	0.13	0.18
	P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	3xD - 5xD	0.12	0.19	0.26	0.12	0.20	0.28	0.14	0.22	0.30
				8xD	0.10	0.15	0.20	0.10	0.16	0.22	0.11	0.17	0.23
				12xD	-	-	-	-	-	-	0.10	0.15	0.20
B - THREADING	P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	3xD - 5xD	0.12	0.18	0.24	0.12	0.19	0.26	0.14	0.21	0.28
				8xD	0.10	0.14	0.18	0.10	0.15	0.20	0.11	0.16	0.21
				12xD	-	-	-	-	-	-	0.10	0.14	0.18
	P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	3xD - 5xD	0.11	0.15	0.19	0.11	0.16	0.21	0.13	0.18	0.23
				8xD	0.09	0.14	0.15	0.09	0.13	0.17	0.11	0.15	0.19
				12xD	-	-	-	-	-	-	0.09	0.12	0.15
C - GROOVING	P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	3xD - 5xD	0.09	0.14	0.19	0.09	0.15	0.21	0.11	0.16	0.21
				8xD	0.07	0.11	0.15	0.07	0.12	0.17	0.09	0.13	0.17
				12xD	-	-	-	-	-	-	0.08	0.11	0.14
	M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	3xD - 5xD	0.10	0.14	0.18	0.10	0.15	0.20	0.12	0.16	0.20
				8xD	0.08	0.11	0.14	0.08	0.12	0.16	0.10	0.13	0.16
				12xD	-	-	-	-	-	-	0.08	0.11	0.14
	M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		3xD - 5xD	0.10	0.13	0.16	0.10	0.14	0.18	0.12	0.15	0.18
				8xD	0.08	0.10	0.12	0.08	0.11	0.14	0.10	0.12	0.14
				12xD	-	-	-	-	-	-	0.08	0.10	0.12
D - MILLING	K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	3xD - 5xD	0.14	0.22	0.30	0.14	0.24	0.34	0.16	0.26	0.36
				8xD	0.11	0.18	0.25	0.11	0.19	0.27	0.12	0.20	0.28
				12xD	-	-	-	-	-	-	0.11	0.18	0.25
	K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	3xD - 5xD	0.12	0.18	0.24	0.12	0.20	0.28	0.13	0.21	0.29
				8xD	0.10	0.15	0.20	0.10	0.16	0.22	0.11	0.17	0.23
				12xD	-	-	-	-	-	-	0.09	0.14	0.19

Complete workpiece materials p. H1.

(fn: mm/rev)

DC 13.00 ÷ 13.99			DC 14.00 ÷ 14.99			DC 15.00 ÷ 16.99			DC 17.00 ÷ 19.99			DC 20.00 ÷ 22.99			DC 23.00 ÷ 26.00		
min	start	max	min	start	max	min	start	max	min	start	max	min	start	max	min	start	max
0.12	0.20	0.28	0.16	0.23	0.30	0.16	0.25	0.34	0.16	0.29	0.42	0.20	0.32	0.44	0.20	0.34	0.48
0.10	0.16	0.22	0.12	0.18	0.24	0.12	0.20	0.28	0.12	0.23	0.34	0.16	0.26	0.36	0.16	0.27	0.38
0.08	0.14	0.20	0.11	0.16	0.21	0.11	0.17	0.23	0.11	0.20	0.29	0.14	0.22	0.30	0.14	0.24	0.34
0.14	0.23	0.32	0.18	0.26	0.34	0.18	0.29	0.40	0.18	0.33	0.48	0.24	0.37	0.50	0.24	0.40	0.56
0.11	0.18	0.25	0.14	0.20	0.26	0.14	0.23	0.32	0.14	0.26	0.38	0.20	0.30	0.40	0.20	0.32	0.44
0.10	0.16	0.22	0.13	0.18	0.23	0.13	0.20	0.27	0.13	0.23	0.33	0.17	0.26	0.35	0.17	0.28	0.39
0.14	0.22	0.30	0.18	0.25	0.32	0.18	0.28	0.38	0.18	0.32	0.46	0.24	0.36	0.48	0.24	0.38	0.52
0.11	0.17	0.23	0.14	0.20	0.26	0.14	0.22	0.30	0.14	0.25	0.36	0.20	0.29	0.38	0.20	0.31	0.42
0.10	0.15	0.20	0.13	0.17	0.21	0.13	0.20	0.27	0.13	0.23	0.33	0.17	0.25	0.33	0.17	0.27	0.37
0.13	0.19	0.25	0.17	0.22	0.27	0.17	0.24	0.31	0.17	0.27	0.37	0.22	0.31	0.40	0.22	0.32	0.42
0.11	0.16	0.21	0.14	0.18	0.22	0.14	0.19	0.24	0.14	0.22	0.30	0.18	0.25	0.32	0.18	0.26	0.34
0.09	0.13	0.17	0.12	0.15	0.18	0.12	0.17	0.22	0.12	0.19	0.26	0.15	0.21	0.27	0.15	0.22	0.29
0.11	0.17	0.23	0.15	0.20	0.25	0.15	0.22	0.29	0.15	0.25	0.35	0.19	0.28	0.37	0.19	0.29	0.39
0.09	0.14	0.19	0.11	0.16	0.21	0.12	0.17	0.22	0.12	0.20	0.28	0.15	0.22	0.29	0.15	0.23	0.31
0.08	0.12	0.16	0.09	0.13	0.17	0.10	0.15	0.20	0.10	0.17	0.24	0.13	0.19	0.25	0.13	0.20	0.27
0.12	0.17	0.22	0.16	0.20	0.24	0.16	0.22	0.28	0.16	0.25	0.34	0.20	0.28	0.36	0.20	0.29	0.38
0.10	0.14	0.18	0.12	0.16	0.20	0.12	0.17	0.22	0.12	0.19	0.26	0.16	0.22	0.28	0.16	0.23	0.30
0.08	0.12	0.16	0.11	0.14	0.17	0.11	0.15	0.19	0.11	0.17	0.23	0.14	0.20	0.26	0.14	0.21	0.28
0.12	0.16	0.20	0.16	0.19	0.22	0.16	0.20	0.24	0.16	0.23	0.30	0.20	0.26	0.32	0.20	0.27	0.34
0.10	0.13	0.16	0.12	0.15	0.18	0.12	0.16	0.20	0.12	0.18	0.24	0.16	0.21	0.26	0.16	0.22	0.28
0.08	0.11	0.14	0.11	0.13	0.15	0.11	0.14	0.17	0.11	0.16	0.21	0.14	0.18	0.22	0.14	0.19	0.24
0.16	0.28	0.40	0.22	0.32	0.42	0.22	0.35	0.48	0.22	0.40	0.58	0.28	0.45	0.62	0.28	0.48	0.68
0.12	0.22	0.32	0.18	0.26	0.34	0.18	0.28	0.38	0.18	0.32	0.46	0.22	0.36	0.50	0.22	0.38	0.54
0.11	0.19	0.27	0.15	0.22	0.29	0.15	0.25	0.35	0.15	0.27	0.39	0.20	0.32	0.44	0.20	0.34	0.48
0.13	0.22	0.31	0.18	0.26	0.34	0.18	0.28	0.38	0.18	0.32	0.46	0.22	0.36	0.50	0.22	0.38	0.54
0.11	0.18	0.25	0.14	0.20	0.26	0.14	0.22	0.30	0.14	0.25	0.36	0.18	0.27	0.40	0.18	0.30	0.42
0.09	0.15	0.21	0.13	0.18	0.23	0.13	0.20	0.27	0.13	0.23	0.33	0.15	0.25	0.35	0.15	0.26	0.37

Complete workpiece materials p. H1.

(fn: mm/rev)

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

DXP

For extra deep holes - Indexable drilling system with exchangeable heads

APPLICATION

				
Plane surface	Concave surface	Convex surface	Stacked plates	Pipes

ISO APPLICATION FIELDS

P K

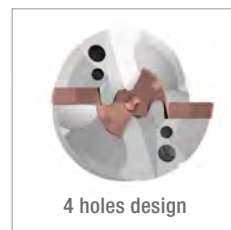
ADVANTAGES AND CHARACTERISTICS

- High performance deep hole modular drilling system
- Pilot enables better centering in deep hole drilling (available also in 3xD for who seeks better centering)
- Adapted for higher feed rate among indexable solutions



• Drilling bodies

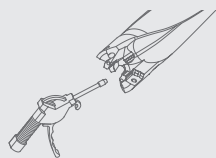
- Weldon shank with internal coolant
- 3/ 6/ 8/ 10xD available from D30 to D60
- Special length and stepped body available upon request



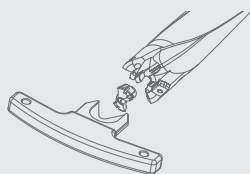
• Inserts

- Pilot head available from D15 to D28 with HC geometry for perfect self-centering and reduces drilling force.
- Peripheral insert featuring CS geometry (Chip Splitter) designed to efficiently break and eject chips

DRILLING HEADS INSTALLATION



Clean pocket with air blast.
Put insert into drill holder.

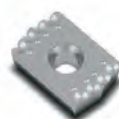


Set wrench into slots on insert flanks.
Slowly turn the wrench clockwise until stop.

HC **P K**

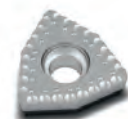


CS **P K**



SIZE
04

CS **P K**

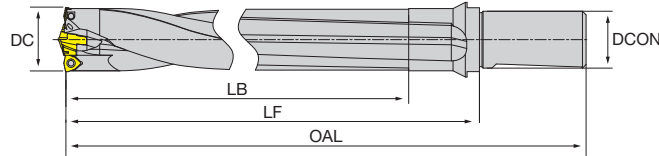


SIZE
05 06 08 10

3xD

DXP drill

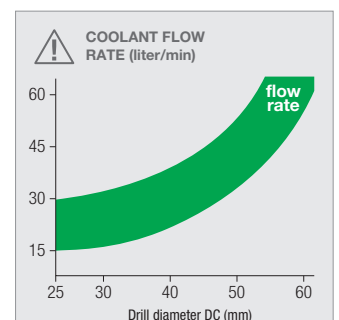
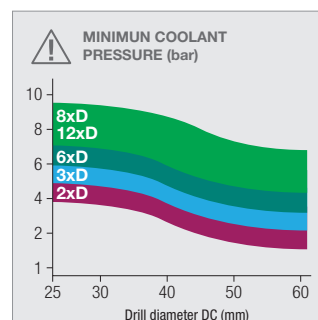
- 3xD pilot type drill body
- All with 4 coolant holes
- Please select inserts according to columns PILOT and MIID
- Peripheral inserts for D30 and D31 have a different shape compared to all the others



Designation	Stock	DC	DCON	OAL	LF	LB				PILOT	MIID
NT-DXP-03 D30-S32-P16E04	▲	30	32	185	125	99.9				DXP-P16	DXP-E04
NT-DXP-03 D31-S32-P17E04	▲	31	32	189	129	103.9				DXP-P17	DXP-E04
NT-DXP-03 D32-S32-P15E05	▲	32	32	194	134	105.7				DXP-P15	DXP-E05
NT-DXP-03 D33-S32-P16E05	▲	33	32	196	136	107.8				DXP-P16	DXP-E05
NT-DXP-03 D34-S32-P16E05	▲	34	32	199	139	110.8				DXP-P16	DXP-E05
NT-DXP-03 D35-S32-P18E05	▲	35	32	204	144	116.5				DXP-P18	DXP-E05
NT-DXP-03 D36-S32-P18E05	▲	36	32	206	146	118.5				DXP-P18	DXP-E05
NT-DXP-03 D37-S32-P16E06	▲	37	32	209	149	119.8				DXP-P16	DXP-E06
NT-DXP-03 D38-S32-P16E06	▲	38	32	214	154	122.8				DXP-P16	DXP-E06
NT-DXP-03 D39-S32-P18E06	▲	39	32	217	157	127.5				DXP-P18	DXP-E06
NT-DXP-03 D40-S32-P18E06	▲	40	32	234	164	131.5				DXP-P18	DXP-E06
NT-DXP-03 D41-S32-P19E06	▲	41	32	236	166	134				DXP-P19	DXP-E06
NT-DXP-03 D42-S50-P19E06	▲	42	50	240	170	137				DXP-P19	DXP-E06
NT-DXP-03 D43-S50-P16E08	▲	43	50	243	173	137.8				DXP-P16	DXP-E08
NT-DXP-03 D44-S50-P18E08	▲	44	50	246	176	142.5				DXP-P18	DXP-E08
NT-DXP-03 D45-S50-P18E08	▲	45	50	249	179	145.5				DXP-P18	DXP-E08
NT-DXP-03 D46-S50-P19E08	▲	46	50	252	182	149				DXP-P19	DXP-E08
NT-DXP-03 D47-S50-P20E08	▲	47	50	255	185	152.6				DXP-P20	DXP-E08
NT-DXP-03 D48-S50-P21E08	▲	48	50	259	189	156.1				DXP-P21	DXP-E08
NT-DXP-03 D49-S50-P22E08	▲	49	50	262	192	159.7				DXP-P22	DXP-E08
NT-DXP-03 D50-S50-P23E08	▲	50	50	265	195	163.3				DXP-P23	DXP-E08
NT-DXP-03 D51-S50-P24E08	▲	51	50	269	199	167.9				DXP-P24	DXP-E08
NT-DXP-03 D52-S50-P25E08	▲	52	50	280	210	170.5				DXP-P25	DXP-E08
NT-DXP-03 D53-S50-P26E08	▲	53	50	274	204	173.5				DXP-P26	DXP-E08
NT-DXP-03 D54-S50-P27E08	▲	54	50	278	208	178.5				DXP-P27	DXP-E08
NT-DXP-03 D55-S50-P28E08	▲	55	50	280	210	180.5				DXP-P28	DXP-E08
NT-DXP-03 D56-S50-P20E10	▲	56	50	283	213	179.6				DXP-P20	DXP-E10
NT-DXP-03 D57-S50-P21E10	▲	57	50	286	216	183.1				DXP-P21	DXP-E10
NT-DXP-03 D58-S50-P22E10	▲	58	50	289	219	186.7				DXP-P22	DXP-E10
NT-DXP-03 D59-S50-P23E10	▲	59	50	292	222	190.3				DXP-P23	DXP-E10
NT-DXP-03 D60-S50-P24E10	▲	60	50	295	225	193.9				DXP-P24	DXP-E10

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Head wrench	Insert screws	Flag wrenches
NT-DXP-03 (DC 30)	NT-WR1416	NT-ST25080T09	NT-FTB09
NT-DXP-03 (DC 31)	NT-WR1720	NT-ST25080T09	NT-FTB09
NT-DXP-03 (DC 32÷34)	NT-WR1416	NT-ST30080T10	NT-FTB10
NT-DXP-03 (DC 35÷36)	NT-WR1720	NT-ST30080T10	NT-FTB10
NT-DXP-03 (DC 37÷38)	NT-WR1416	NT-ST40100T15	NT-FTB15
NT-DXP-03 (DC 39÷42)	NT-WR1720	NT-ST40100T15	NT-FTB15
NT-DXP-03 (DC 43)	NT-WR1416	NT-ST40100T15	NT-FTB15
NT-DXP-03 (DC 44÷47)	NT-WR1720	NT-ST40100T15	NT-FTB15
NT-DXP-03 (DC 48÷55)	NT-WR2128	NT-ST40100T15	NT-FTB15
NT-DXP-03 (DC 56)	NT-WR1720	NT-ST50100T20	NT-FTB20
NT-DXP-03 (DC 57÷60)	NT-WR2128	NT-ST50100T20	NT-FTB20



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

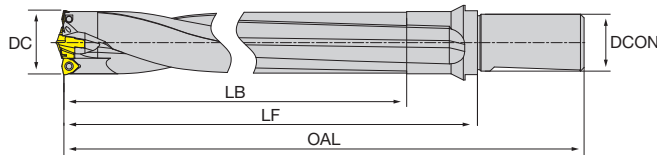
F - ACCESSORIES

G - SPARE PARTS

6xD

DXP drill

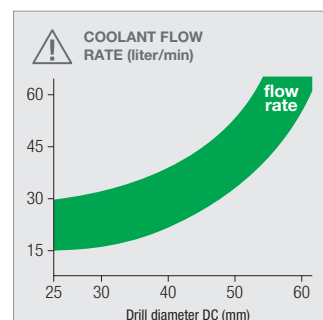
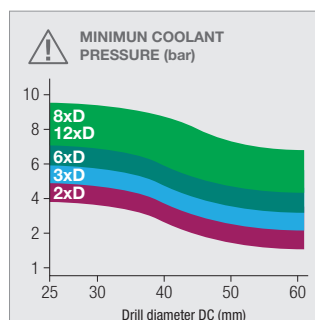
- 6xD pilot type drill body
- All with 4 coolant holes
- Please select inserts according to columns PILOT and MIID
- Peripheral inserts for D30 and D31 have a different shape compared to all the others



Designation	Stock	DC	DCON	OAL	LF	LB				PILOT	MIID
NT-DXP-06 D30-S32-P16E04	▲	30	32	275	215	189.9				DXP-P16	DXP-E04
NT-DXP-06 D31-S32-P17E04	▲	31	32	282	222	196.9				DXP-P17	DXP-E04
NT-DXP-06 D32-S32-P15E05	▲	32	32	289	229	200.7				DXP-P15	DXP-E05
NT-DXP-06 D33-S32-P16E05	▲	33	32	295	235	206.8				DXP-P16	DXP-E05
NT-DXP-06 D34-S32-P16E05	▲	34	32	301	241	212.8				DXP-P16	DXP-E05
NT-DXP-06 D35-S32-P18E05	▲	35	32	309	249	221.5				DXP-P18	DXP-E05
NT-DXP-06 D36-S32-P18E05	▲	36	32	314	254	226.5				DXP-P18	DXP-E05
NT-DXP-06 D37-S32-P16E06	▲	37	32	320	260	230.8				DXP-P16	DXP-E06
NT-DXP-06 D38-S32-P16E06	▲	38	32	328	268	236.8				DXP-P16	DXP-E06
NT-DXP-06 D39-S32-P18E06	▲	39	32	334	274	244.5				DXP-P18	DXP-E06
NT-DXP-06 D40-S32-P18E06	▲	40	32	353	283	250.5				DXP-P18	DXP-E06
NT-DXP-06 D41-S32-P19E06	▲	41	32	359	289	257				DXP-P19	DXP-E06
NT-DXP-06 D42-S50-P19E06	▲	42	50	366	296	263				DXP-P19	DXP-E06
NT-DXP-06 D43-S50-P16E08	▲	43	50	372	302	266.8				DXP-P16	DXP-E08
NT-DXP-06 D44-S50-P18E08	▲	44	50	378	308	274.5				DXP-P18	DXP-E08
NT-DXP-06 D45-S50-P18E08	▲	45	50	384	314	280.5				DXP-P18	DXP-E08
NT-DXP-06 D46-S50-P19E08	▲	46	50	390	320	287				DXP-P19	DXP-E08
NT-DXP-06 D47-S50-P20E08	▲	47	50	396	326	293.6				DXP-P20	DXP-E08
NT-DXP-06 D48-S50-P21E08	▲	48	50	403	333	300.1				DXP-P21	DXP-E08
NT-DXP-06 D49-S50-P22E08	▲	49	50	409	339	306.7				DXP-P22	DXP-E08
NT-DXP-06 D50-S50-P23E08	▲	50	50	415	345	313.3				DXP-P23	DXP-E08
NT-DXP-06 D51-S50-P24E08	▲	51	50	421	351	319.9				DXP-P24	DXP-E08
NT-DXP-06 D52-S50-P25E08	▲	52	50	427	357	326.5				DXP-P25	DXP-E08
NT-DXP-06 D53-S50-P26E08	▲	53	50	433	363	332.5				DXP-P26	DXP-E08
NT-DXP-06 D54-S50-P27E08	▲	54	50	440	370	340.5				DXP-P27	DXP-E08
NT-DXP-06 D55-S50-P28E08	▲	55	50	445	375	345.5				DXP-P28	DXP-E08
NT-DXP-06 D56-S50-P20E10	▲	56	50	451	381	347.6				DXP-P20	DXP-E10
NT-DXP-06 D57-S50-P21E10	▲	57	50	457	387	354.1				DXP-P21	DXP-E10
NT-DXP-06 D58-S50-P22E10	▲	58	50	463	393	360.7				DXP-P22	DXP-E10
NT-DXP-06 D59-S50-P23E10	▲	59	50	469	399	367.3				DXP-P23	DXP-E10
NT-DXP-06 D60-S50-P24E10	▲	60	50	475	405	373.9				DXP-P24	DXP-E10

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

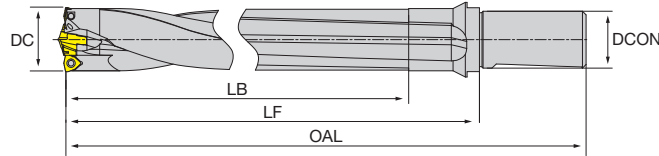
Spare parts	Head wrench	Insert screws	Flag wrenches
NT-DXP-06 (DC 30)	NT-WR1416	NT-ST25080T09	NT-FTB09
NT-DXP-06 (DC 31)	NT-WR1720	NT-ST25080T09	NT-FTB09
NT-DXP-06 (DC 32÷34)	NT-WR1416	NT-ST30080T10	NT-FTB10
NT-DXP-06 (DC 35÷36)	NT-WR1720	NT-ST30080T10	NT-FTB10
NT-DXP-06 (DC 37÷38)	NT-WR1416	NT-ST40100T15	NT-FTB15
NT-DXP-06 (DC 39÷42)	NT-WR1720	NT-ST40100T15	NT-FTB15
NT-DXP-06 (DC 43)	NT-WR1416	NT-ST40100T15	NT-FTB15
NT-DXP-06 (DC 44÷47)	NT-WR1720	NT-ST40100T15	NT-FTB15
NT-DXP-06 (DC 48÷55)	NT-WR2128	NT-ST40100T15	NT-FTB15
NT-DXP-06 (DC 56)	NT-WR1720	NT-ST50100T20	NT-FTB20
NT-DXP-06 (DC 57÷60)	NT-WR2128	NT-ST50100T20	NT-FTB20



8xD

DXP drill

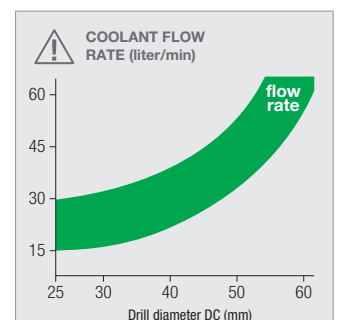
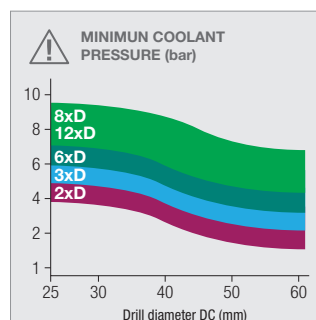
- 8xD pilot type drill body
- All with 4 coolant holes
- Please select inserts according to columns PILOT and MIID
- Peripheral inserts for D30 and D31 have a different shape compared to all the others



Designation	Stock	DC	DCON	OAL	LF	LB				PILOT	MIID
NT-DXP-08 D30-S32-P16E04	▲	30	32	335	275	249.9				DXP-P16	DXP-E04
NT-DXP-08 D31-S32-P17E04	▲	31	32	344	284	258.9				DXP-P17	DXP-E04
NT-DXP-08 D32-S32-P15E05	▲	32	32	353	293	264.7				DXP-P15	DXP-E05
NT-DXP-08 D33-S32-P16E05	▲	33	32	361	301	272.8				DXP-P16	DXP-E05
NT-DXP-08 D34-S32-P16E05	▲	34	32	369	309	280.8				DXP-P16	DXP-E05
NT-DXP-08 D35-S32-P18E05	▲	35	32	379	319	291.5				DXP-P18	DXP-E05
NT-DXP-08 D36-S32-P18E05	▲	36	32	386	326	298.5				DXP-P18	DXP-E05
NT-DXP-08 D37-S32-P16E06	▲	37	32	394	334	304.8				DXP-P16	DXP-E06
NT-DXP-08 D38-S32-P16E06	▲	38	32	404	344	312.8				DXP-P16	DXP-E06
NT-DXP-08 D39-S32-P18E06	▲	39	32	412	352	322.5				DXP-P18	DXP-E06
NT-DXP-08 D40-S32-P18E06	▲	40	32	433	363	330.5				DXP-P18	DXP-E06
NT-DXP-08 D41-S32-P19E06	▲	41	32	441	371	339				DXP-P19	DXP-E06
NT-DXP-08 D42-S50-P19E06	▲	42	50	450	380	347				DXP-P19	DXP-E06
NT-DXP-08 D43-S50-P16E08	▲	43	50	458	388	352.8				DXP-P16	DXP-E08
NT-DXP-08 D44-S50-P18E08	▲	44	50	466	396	362.5				DXP-P18	DXP-E08
NT-DXP-08 D45-S50-P18E08	▲	45	50	474	404	370.5				DXP-P18	DXP-E08
NT-DXP-08 D46-S50-P19E08	▲	46	50	482	412	379				DXP-P19	DXP-E08
NT-DXP-08 D47-S50-P20E08	▲	47	50	490	420	387.6				DXP-P20	DXP-E08
NT-DXP-08 D48-S50-P21E08	▲	48	50	499	429	396.1				DXP-P21	DXP-E08
NT-DXP-08 D49-S50-P22E08	▲	49	50	507	437	404.7				DXP-P22	DXP-E08
NT-DXP-08 D50-S50-P23E08	▲	50	50	515	445	413.3				DXP-P23	DXP-E08
NT-DXP-08 D51-S50-P24E08	▲	51	50	523	453	421.9				DXP-P24	DXP-E08
NT-DXP-08 D52-S50-P25E08	▲	52	50	531	461	430.5				DXP-P25	DXP-E08
NT-DXP-08 D53-S50-P26E08	▲	53	50	539	469	438.5				DXP-P26	DXP-E08
NT-DXP-08 D54-S50-P27E08	▲	54	50	548	478	448.5				DXP-P27	DXP-E08
NT-DXP-08 D55-S50-P28E08	▲	55	50	555	485	455.5				DXP-P28	DXP-E08
NT-DXP-08 D56-S50-P20E10	▲	56	50	563	493	459.6				DXP-P20	DXP-E10
NT-DXP-08 D57-S50-P21E10	▲	57	50	571	501	468.1				DXP-P21	DXP-E10
NT-DXP-08 D58-S50-P22E10	▲	58	50	579	509	476.7				DXP-P22	DXP-E10
NT-DXP-08 D59-S50-P23E10	▲	59	50	587	517	485.3				DXP-P23	DXP-E10
NT-DXP-08 D60-S50-P24E10	▲	60	50	595	525	493.9				DXP-P24	DXP-E10

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

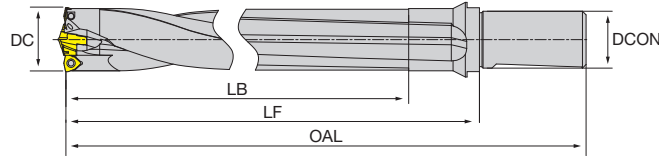
Spare parts	Head wrench	Insert screws	Flag wrenches
NT-DXP-08 (DC 30)	NT-WR1416	NT-ST25080T09	NT-FTB09
NT-DXP-08 (DC 31)	NT-WR1720	NT-ST25080T09	NT-FTB09
NT-DXP-08 (DC 32÷34)	NT-WR1416	NT-ST30080T10	NT-FTB10
NT-DXP-08 (DC 35÷36)	NT-WR1720	NT-ST30080T10	NT-FTB10
NT-DXP-08 (DC 37÷38)	NT-WR1416	NT-ST40100T15	NT-FTB15
NT-DXP-08 (DC 39÷42)	NT-WR1720	NT-ST40100T15	NT-FTB15
NT-DXP-08 (DC 43)	NT-WR1416	NT-ST40100T15	NT-FTB15
NT-DXP-08 (DC 44÷47)	NT-WR1720	NT-ST40100T15	NT-FTB15
NT-DXP-08 (DC 48÷55)	NT-WR2128	NT-ST40100T15	NT-FTB15
NT-DXP-08 (DC 56)	NT-WR1720	NT-ST50100T20	NT-FTB20
NT-DXP-08 (DC 57÷60)	NT-WR2128	NT-ST50100T20	NT-FTB20



10xD

DXP drill

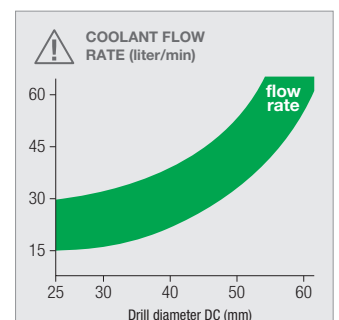
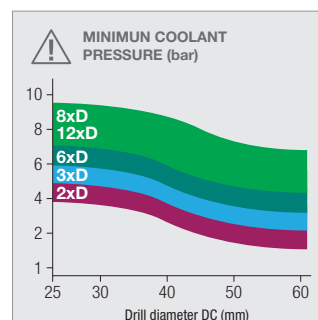
- 10xD pilot type drill body
- All with 4 coolant holes
- Please select inserts according to columns PILOT and MIID
- Peripheral inserts for D30 and D31 have a different shape compared to all the others

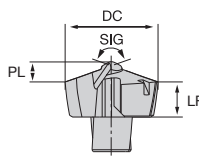


Designation	Stock	DC	DCON	OAL	LF	LB				PILOT	MIID
NT-DXP-10 D30-S32-P16E04	▲	30	32	395	335	319.9				DXP-P16	DXP-E04
NT-DXP-10 D31-S32-P17E04	▲	31	32	406	346	320.9				DXP-P17	DXP-E04
NT-DXP-10 D32-S32-P15E05	▲	32	32	417	357	328.7				DXP-P15	DXP-E05
NT-DXP-10 D33-S32-P16E05	▲	33	32	427	367	338.8				DXP-P16	DXP-E05
NT-DXP-10 D34-S32-P16E05	▲	34	32	437	377	328.8				DXP-P16	DXP-E05
NT-DXP-10 D35-S32-P18E05	▲	35	32	448	388	360.5				DXP-P18	DXP-E05
NT-DXP-10 D36-S32-P18E05	▲	36	32	458	398	370.5				DXP-P18	DXP-E05
NT-DXP-10 D37-S32-P16E06	▲	37	32	468	408	378.8				DXP-P16	DXP-E06
NT-DXP-10 D38-S32-P16E06	▲	38	32	480	420	388.8				DXP-P16	DXP-E06
NT-DXP-10 D39-S32-P18E06	▲	39	32	490	430	400.5				DXP-P18	DXP-E06
NT-DXP-10 D40-S32-P18E06	▲	40	32	513	443	410.5				DXP-P18	DXP-E06
NT-DXP-10 D41-S32-P19E06	▲	41	32	523	453	421				DXP-P19	DXP-E06
NT-DXP-10 D42-S50-P19E06	▲	42	50	534	464	431				DXP-P19	DXP-E06
NT-DXP-10 D43-S50-P16E08	▲	43	50	544	474	438.8				DXP-P16	DXP-E08
NT-DXP-10 D44-S50-P18E08	▲	44	50	554	484	450.5				DXP-P18	DXP-E08
NT-DXP-10 D45-S50-P18E08	▲	45	50	564	494	460.5				DXP-P18	DXP-E08
NT-DXP-10 D46-S50-P19E08	▲	46	50	574	504	471				DXP-P19	DXP-E08
NT-DXP-10 D47-S50-P20E08	▲	47	50	584	514	481.6				DXP-P20	DXP-E08
NT-DXP-10 D48-S50-P21E08	▲	48	50	595	525	492.1				DXP-P21	DXP-E08
NT-DXP-10 D49-S50-P22E08	▲	49	50	605	535	502.7				DXP-P22	DXP-E08
NT-DXP-10 D50-S50-P23E08	▲	50	50	615	545	513.3				DXP-P23	DXP-E08
NT-DXP-10 D51-S50-P24E08	▲	51	50	625	555	523.9				DXP-P24	DXP-E08
NT-DXP-10 D52-S50-P25E08	▲	52	50	635	565	534.5				DXP-P25	DXP-E08
NT-DXP-10 D53-S50-P26E08	▲	53	50	645	575	544.5				DXP-P26	DXP-E08
NT-DXP-10 D54-S50-P27E08	▲	54	50	656	586	556.5				DXP-P27	DXP-E08
NT-DXP-10 D55-S50-P28E08	▲	55	50	665	595	565.5				DXP-P28	DXP-E08
NT-DXP-10 D56-S50-P20E10	▲	56	50	675	605	571.6				DXP-P20	DXP-E10
NT-DXP-10 D57-S50-P21E10	▲	57	50	685	615	582.1				DXP-P21	DXP-E10
NT-DXP-10 D58-S50-P22E10	▲	58	50	695	625	592.7				DXP-P22	DXP-E10
NT-DXP-10 D59-S50-P23E10	▲	59	50	705	635	603.3				DXP-P23	DXP-E10
NT-DXP-10 D60-S50-P24E10	▲	60	50	715	645	613.9				DXP-P24	DXP-E10

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Head wrench	Insert screws	Flag wrenches
NT-DXP-10 (DC 30)	NT-WR1416	NT-ST25080T09	NT-FTB09
NT-DXP-10 (DC 31)	NT-WR1720	NT-ST25080T09	NT-FTB09
NT-DXP-10 (DC 32÷34)	NT-WR1416	NT-ST30080T10	NT-FTB10
NT-DXP-10 (DC 35÷36)	NT-WR1720	NT-ST30080T10	NT-FTB10
NT-DXP-10 (DC 37÷38)	NT-WR1416	NT-ST40100T15	NT-FTB15
NT-DXP-10 (DC 39÷42)	NT-WR1720	NT-ST40100T15	NT-FTB15
NT-DXP-10 (DC 43)	NT-WR1416	NT-ST40100T15	NT-FTB15
NT-DXP-10 (DC 44÷47)	NT-WR1720	NT-ST40100T15	NT-FTB15
NT-DXP-10 (DC 48÷55)	NT-WR2128	NT-ST40100T15	NT-FTB15
NT-DXP-10 (DC 56)	NT-WR1720	NT-ST50100T20	NT-FTB20
NT-DXP-10 (DC 57÷60)	NT-WR2128	NT-ST50100T20	NT-FTB20



Pilot		HF: Micrograin carbide PVD: Physical vapour deposition		HF PVD			
DXP drill				JP5725			
• PVD coated carbide pilot HC (high concentricity) pilot is for general purpose use • DXP pilot may look like a DEX drill head but they're not interchangeable • Step drills can be made upon request		Stable machining, light cut		● 1 st choice ○ suitable	○		
		General machining, medium cut		● 1 st choice ○ suitable	●		
		Unstable machining, heavy cut		⚠ 1 st choice ⚠ suitable			
		Dimensions		ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)		
					P	55 160	
	M						
	K			60 140			
	N						
	S						
			H				

Designation		DC	DC toll.	SIG	PL	LF	Stock	
HC P K  high centering	DXP-P15-HC	15	k6	150°	3.05	5.65	▲	
	DXP-P16-HC	16	k6	150°	3.25	5.55	▲	
	DXP-P17-HC	17	k6	150°	3.35	6.55	▲	
	DXP-P18-HC	18	k6	150°	3.5	7	▲	
	DXP-P19-HC	19	k6	150°	3.83	7.17	▲	
	DXP-P20-HC	20	k6	150°	4.03	7.57	▲	
	DXP-P21-HC	21	k6	150°	4.23	7.87	▲	
	DXP-P22-HC	22	k6	150°	4.51	8.19	●	
	DXP-P23-HC	23	k6	150°	4.8	8.5	▲	
	DXP-P24-HC	24	k6	150°	4.9	9	▲	
	DXP-P25-HC	25	k6	150°	4.92	9.58	▲	
	DXP-P26-HC	26	k6	150°	5.16	9.34	▲	
	DXP-P27-HC	27	k6	150°	5.41	10.09	▲	
	DXP-P28-HC	28	k6	150°	5.62	9.88	▲	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

HC - Perfect centering



Improved centering for big diameters extra long drilling bodies (until 10xD).

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

External

DXP drill

- New generation "Chip Splitter"
- Specially waved edge splits the chips, improves heat dissipation, prolongs the tool life, improves hole quality
- Peripheral inserts for DXP drill
- Step drills can be made upon request

HF: Micrograin carbide
PVD: Physical vapour deposition

HF
PVD

JP5725

Stable machining, light cut ● 1st choice ○ suitable

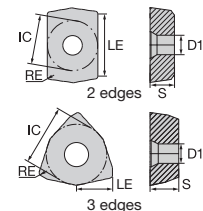
General machining, medium cut ● 1st choice ○ suitable

Unstable machining, heavy cut ⚠ 1st choice ⚠ suitable

Dimensions

ISO

Vc(m/min) - suggested cutting speed range (bold: 1st choice)



P

55
160

M

60
140

K

60
140

N

60
140

S

60
140

H

60
140

Designation

RE

IC

S

D1

LE

Stock

GENERAL	CS P K		RE	IC	S	D1	LE	
		DXP-E04-CS	0.4	7.26	3.79	2.85	10.76	▲
		DXP-E05-CS	0.8	8	3.75	3.4	5.29	▲
		DXP-E06-CS	0.8	10	3.75	4.4	6.62	▲
		DXP-E08-CS	0.8	12	4.75	4.4	7.94	●
		DXP-E10-CS	0.8	15	5.25	5.5	9.92	▲

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

CS - Chips formation



The short chips created by CS geometry can be easily ejected even on very deep holes.

ISO 513	MATERIAL	HARDNESS HB	L/D	JP5725				
				min	start	max		
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	3xD - 6xD	80	120	160		
			8xD	65	100	135		
			10xD	55	85	115		
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	3xD - 6xD	60	90	120		
			8xD	50	75	100		
			10xD	40	60	80		
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	3xD - 6xD	40	60	80		
			8xD	35	50	65		
			10xD	30	40	50		
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	3xD - 6xD	80	110	140		
			8xD	70	90	110		
			10xD	60	80	100		
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	3xD - 6xD	80	100	120		
			8xD	70	90	110		
			10xD	60	80	100		

Complete workpiece materials p. H1.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING	ISO 513	MATERIAL	HARDNESS HB	L/D	DC 30.00 ÷ 35.00			DC 36.00 ÷ 40.00			DC 41.00 ÷ 45.00		
					min	start	max	min	start	max	min	start	max
	P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	3xD - 6xD 8xD 10xD	0.16 0.12 0.10	0.22 0.17 0.15	0.28 0.22 0.20	0.18 0.14 0.12	0.25 0.20 0.17	0.32 0.26 0.22	0.18 0.14 0.12	0.27 0.21 0.18	0.36 0.28 0.24
B - THREADING	P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	3xD - 6xD 8xD 10xD	0.18 0.14 0.12	0.25 0.20 0.17	0.32 0.26 0.22	0.20 0.16 0.14	0.28 0.22 0.19	0.36 0.28 0.24	0.20 0.16 0.14	0.31 0.25 0.22	0.42 0.34 0.30
	P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	3xD - 6xD 8xD 10xD	0.18 0.14 0.12	0.24 0.19 0.16	0.30 0.24 0.20	0.20 0.16 0.14	0.27 0.21 0.18	0.34 0.26 0.22	0.20 0.16 0.14	0.30 0.24 0.21	0.40 0.32 0.28
	K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	3xD - 6xD 8xD 10xD	0.20 0.16 0.14	0.27 0.21 0.18	0.34 0.26 0.22	0.22 0.18 0.16	0.30 0.24 0.21	0.38 0.30 0.26	0.22 0.18 0.16	0.33 0.27 0.23	0.44 0.36 0.30
C - GROOVING	K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	3xD - 6xD 8xD 10xD	0.16 0.12 0.10	0.22 0.17 0.15	0.28 0.22 0.20	0.18 0.14 0.12	0.24 0.19 0.16	0.30 0.24 0.20	0.18 0.14 0.12	0.28 0.21 0.18	0.36 0.28 0.24

Complete workpiece materials p. H1.

(fn: mm/rev)

DC 46.00 ÷ 50.00			DC 51.00 ÷ 55.00			DC 56.00 ÷ 60.00					
min	start	max	min	start	max	min	start	max			
0.20	0.30	0.40	0.20	0.32	0.44	0.22	0.34	0.46			
0.16	0.24	0.32	0.16	0.26	0.36	0.18	0.27	0.36			
0.14	0.21	0.28	0.14	0.22	0.30	0.16	0.24	0.32			
0.22	0.29	0.46	0.22	0.36	0.50	0.24	0.38	0.52			
0.18	0.27	0.36	0.18	0.27	0.40	0.20	0.31	0.42			
0.16	0.24	0.32	0.16	0.26	0.36	0.16	0.26	0.36			
0.22	0.33	0.44	0.22	0.35	0.48	0.24	0.37	0.50			
0.18	0.27	0.36	0.18	0.28	0.38	0.20	0.30	0.40			
0.16	0.23	0.30	0.16	0.25	0.34	0.16	0.26	0.36			
0.24	0.36	0.48	0.24	0.38	0.52	0.26	0.40	0.54			
0.20	0.29	0.38	0.20	0.31	0.42	0.20	0.32	0.44			
0.16	0.25	0.34	0.16	0.26	0.36	0.18	0.28	0.38			
0.20	0.29	0.38	0.20	0.31	0.42	0.20	0.32	0.44			
0.16	0.23	0.30	0.16	0.25	0.34	0.16	0.26	0.36			
0.14	0.20	0.26	0.14	0.22	0.30	0.14	0.22	0.30			

Complete workpiece materials p. H1.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

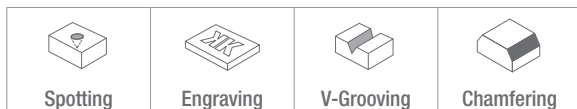
F - ACCESSORIES

G - SPARE PARTS

SPOT DRILL

High quality multipurpose system

APPLICATION



ISO APPLICATION FIELDS

P M K N

ADVANTAGES AND CHARACTERISTICS

- Highly universal system for chamfering, engraving, spot drilling or milling grooves
- Convenient to use with great flexibility
- Inserts available with different radii and for diverse workpiece materials



● Drilling bodies

- Cylindrical type and screw-in type
- Max. drilling dia. 14mm, min. drilling dia. 2.4mm
- Smart kit of 1 holder plus 4 inserts available
- Extension sleeves (steel/carbon 10xD)



● Inserts

- Available R03/08 for PMK, R04/08 for aluminium
- Cemented carbide grades with PVD coatings or uncoated for N materials
- Geometries: GP, AL

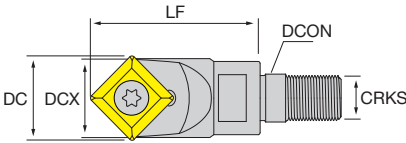


NT-SPOT

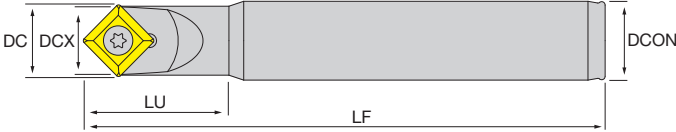
SPOT drill

- Spot drill system with SPOT inserts
- External coolant
- Multifunctional system for maximum versatility
- Inserts cannot be mounted on DRS drills or ChamferSquare milling holders

Screw-in



Cylindrical



Designation	Stock	DC	DCX	CICT	DCON	LF	LU	CRKS			MIID
SCREW-IN											
NT-SPOT D14-M08-L052	●	15.4	14	1	8.5	35	-	M8			SPOT11
CYLINDRICAL											
NT-SPOT D14-S16-L100	●	15.4	14	1	16	100	30	-			SPOT11

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches
NT-SPOT D14-000-L000	NT-ST35080T15	NT-FTB15

A - TURNING

B - THREADING

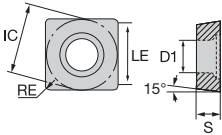
C - GROOVING

D - MILLING

E - DRILLING

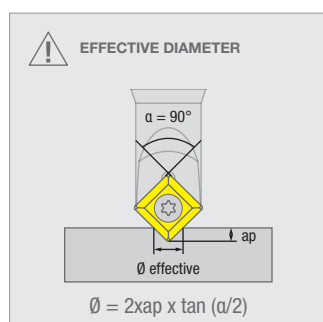
F - ACCESSORIES

G - SPARE PARTS

SPOT11		HF: Micrograin carbide PVD: Physical vapour deposition		HF PVD	HF PVD	HF PVD	HF				
				JP7525	JP8725	JP9535	JUG520				
SPOT drill											
- General purpose type or fine polished sharp geometries for aluminum or non-ferrous materials available - Diverse PVD coated or uncoated carbide grades available - Multiple radii available for each geometry - Inserts cannot be mounted on DRS drills or ChamferSquare milling holders		Stable machining, light cut	● 1 st choice	○ suitable		○		●			
		General machining, medium cut	● 1 st choice	○ suitable	●	●	●	●			
		Unstable machining, heavy cut	⚡ 1 st choice	⚡ suitable	⚡		⚡				
		Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)					
				P		120 240					
M					80 160						
K	100 160										
N						240 400					
S											
H											

Designation		RE	IC	S	D1	LE	Stock			
GENERAL	GP P M K									
										
	SPOT11 R03-GP	0.3	11	3.97	4.3	10.4	●	●	●	
	SPOT11 R08-GP	0.8	11	3.97	4.3	9.4	●	●	●	
ALUMINIUM	AL N									
										
	SPOT11 R04-AL	0.4	11	3.97	4.3	10.2				●
	polished surface SPOT11 R08-AL	0.8	11	3.97	4.3	9.4				●

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



ISO 513	MATERIAL	HARDNESS HB	JP8725				
			min	start	max		
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	120	180	240		
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	100	150	200		
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	80	120	160		
ISO 513	MATERIAL	HARDNESS HB	JP9535				
			min	start	max		
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	80	120	160		
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	60	90	120		
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	80	120	160		
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		60	100	140		
ISO 513	MATERIAL	HARDNESS HB	JP7525				
			min	start	max		
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	100	130	160		
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	100	110	120		
ISO 513	MATERIAL	HARDNESS HB	JU6520				
			min	start	max		
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGA)		240	320	400		
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		160	230	300		

Complete workpiece materials p. H1.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

NCD DRILLS

High performance solid carbide drill series

APPLICATION

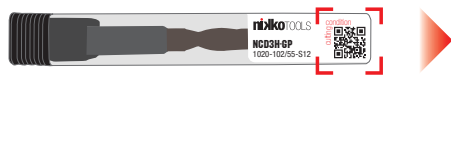


ISO APPLICATION FIELDS

P M K S

ADVANTAGES AND CHARACTERISTICS

- Premium quality delivering top class performance
- Suitable for different types of holes and surfaces on diverse materials
- Twisted flute style with or without coolant available in 3xD and 5xD as standards, for other sizes and step drills we can provide as special
- Cutting parameters available on smart phone



• Range

- D3-20mm, 3xD and 5xD, with and without coolant
- Special length and step drill available upon request

• Geometries

- GP for general purpose, wide application range
- SC for reduced cutting force and smooth cutting



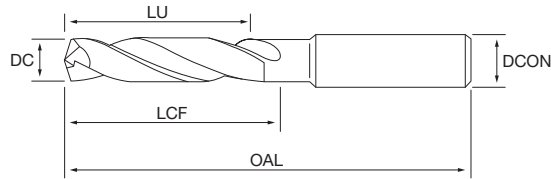
NCD3-GP

NCD

- First choice for steel and cast iron machining (<45 HRC)
- **Without** coolant holes
- Self centering geometry for accurate holes
- AlTiN-nano based coating for long lasting tool life

3xD

P K



Designation	Stock	DC	ULDR	LU	LCF	OAL	DCON	SIG			
NCD3-GP 0300-062/020-S06	●	3	3	14	20	62	6	140°			
NCD3-GP 0310-062/020-S06	●	3.1	3	14	20	62	6	140°			
NCD3-GP 0320-062/020-S06	●	3.2	3	14	20	62	6	140°			
NCD3-GP 0330-062/020-S06	●	3.3	3	14	20	62	6	140°			
NCD3-GP 0340-062/020-S06	●	3.4	3	14	20	62	6	140°			
NCD3-GP 0350-062/020-S06	●	3.5	3	14	20	62	6	140°			
NCD3-GP 0360-062/020-S06	●	3.6	3	14	20	62	6	140°			
NCD3-GP 0370-062/020-S06	●	3.7	3	14	20	62	6	140°			
NCD3-GP 0380-066/024-S06	●	3.8	3	17	24	66	6	140°			
NCD3-GP 0390-066/024-S06	●	3.9	3	17	24	66	6	140°			
NCD3-GP 0400-066/024-S06	●	4	3	17	24	66	6	140°			
NCD3-GP 0410-066/024-S06	●	4.1	3	17	24	66	6	140°			
NCD3-GP 0420-066/024-S06	●	4.2	3	17	24	66	6	140°			
NCD3-GP 0430-066/024-S06	●	4.3	3	17	24	66	6	140°			
NCD3-GP 0440-066/024-S06	●	4.4	3	17	24	66	6	140°			
NCD3-GP 0450-066/024-S06	●	4.5	3	17	24	66	6	140°			
NCD3-GP 0460-066/024-S06	●	4.6	3	17	24	66	6	140°			
NCD3-GP 0470-066/024-S06	●	4.7	3	17	24	66	6	140°			
NCD3-GP 0480-066/028-S06	●	4.8	3	20	28	66	6	140°			
NCD3-GP 0490-066/028-S06	●	4.9	3	20	28	66	6	140°			
NCD3-GP 0500-066/028-S06	●	5	3	20	28	66	6	140°			
NCD3-GP 0510-066/028-S06	●	5.1	3	20	28	66	6	140°			
NCD3-GP 0520-066/028-S06	●	5.2	3	20	28	66	6	140°			
NCD3-GP 0530-066/028-S06	●	5.3	3	20	28	66	6	140°			
NCD3-GP 0540-066/028-S06	●	5.4	3	20	28	66	6	140°			
NCD3-GP 0550-066/028-S06	●	5.5	3	20	28	66	6	140°			
NCD3-GP 0560-066/028-S06	●	5.6	3	20	28	66	6	140°			
NCD3-GP 0570-066/028-S06	●	5.7	3	20	28	66	6	140°			
NCD3-GP 0580-066/028-S06	●	5.8	3	20	28	66	6	140°			
NCD3-GP 0590-066/028-S06	●	5.9	3	20	28	66	6	140°			
NCD3-GP 0600-066/028-S06	●	6	3	20	28	66	6	140°			
NCD3-GP 0610-079/034-S08	●	6.1	3	24	34	79	8	140°			
NCD3-GP 0620-079/034-S08	●	6.2	3	24	34	79	8	140°			
NCD3-GP 0630-079/034-S08	●	6.3	3	24	34	79	8	140°			
NCD3-GP 0640-079/034-S08	●	6.4	3	24	34	79	8	140°			
NCD3-GP 0650-079/034-S08	●	6.5	3	24	34	79	8	140°			
NCD3-GP 0660-079/034-S08	●	6.6	3	24	34	79	8	140°			
NCD3-GP 0670-079/034-S08	●	6.7	3	24	34	79	8	140°			
NCD3-GP 0680-079/034-S08	●	6.8	3	24	34	79	8	140°			
NCD3-GP 0690-079/034-S08	●	6.9	3	24	34	79	8	140°			
NCD3-GP 0700-079/034-S08	●	7	3	24	34	79	8	140°			
NCD3-GP 0710-079/041-S08	●	7.1	3	29	41	79	8	140°			
NCD3-GP 0720-079/041-S08	●	7.2	3	29	41	79	8	140°			
NCD3-GP 0730-079/041-S08	●	7.3	3	29	41	79	8	140°			
NCD3-GP 0740-079/041-S08	●	7.4	3	29	41	79	8	140°			
NCD3-GP 0750-079/041-S08	●	7.5	3	29	41	79	8	140°			
NCD3-GP 0760-079/041-S08	●	7.6	3	29	41	79	8	140°			
NCD3-GP 0770-079/041-S08	●	7.7	3	29	41	79	8	140°			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

	Designation	Stock	DC	ULDR	LU	LCF	OAL	DCON	SIG			
A - TURNING	NCD3-GP 0780-079/041-S08	●	7.8	3	29	41	79	8	140°			
	NCD3-GP 0790-079/041-S08	●	7.9	3	29	41	79	8	140°			
	NCD3-GP 0800-079/041-S08	●	8	3	29	41	79	8	140°			
	NCD3-GP 0810-089/047-S10	●	8.1	3	35	47	89	10	140°			
	NCD3-GP 0820-089/047-S10	●	8.2	3	35	47	89	10	140°			
	NCD3-GP 0830-089/047-S10	●	8.3	3	35	47	89	10	140°			
B - THREADING	NCD3-GP 0840-089/047-S10	●	8.4	3	35	47	89	10	140°			
	NCD3-GP 0850-089/047-S10	●	8.5	3	35	47	89	10	140°			
	NCD3-GP 0860-089/047-S10	●	8.6	3	35	47	89	10	140°			
	NCD3-GP 0870-089/047-S10	●	8.7	3	35	47	89	10	140°			
	NCD3-GP 0880-089/047-S10	●	8.8	3	35	47	89	10	140°			
	NCD3-GP 0890-089/047-S10	●	8.9	3	35	47	89	10	140°			
	NCD3-GP 0900-089/047-S10	●	9	3	35	47	89	10	140°			
	NCD3-GP 0910-089/047-S10	●	9.1	3	35	47	89	10	140°			
	NCD3-GP 0920-089/047-S10	●	9.2	3	35	47	89	10	140°			
	NCD3-GP 0930-089/047-S10	●	9.3	3	35	47	89	10	140°			
	NCD3-GP 0940-089/047-S10	●	9.4	3	35	47	89	10	140°			
	NCD3-GP 0950-089/047-S10	●	9.5	3	35	47	89	10	140°			
C - GROOVING	NCD3-GP 0960-089/047-S10	●	9.6	3	35	47	89	10	140°			
	NCD3-GP 0970-089/047-S10	●	9.7	3	35	47	89	10	140°			
	NCD3-GP 0980-089/047-S10	●	9.8	3	35	47	89	10	140°			
	NCD3-GP 0990-089/047-S10	●	9.9	3	35	47	89	10	140°			
	NCD3-GP 1000-089/047-S10	●	10	3	35	47	89	10	140°			
	NCD3-GP 1010-102/055-S12	●	10.1	3	40	55	102	12	140°			
	NCD3-GP 1020-102/055-S12	●	10.2	3	40	55	102	12	140°			
	NCD3-GP 1030-102/055-S12	●	10.3	3	40	55	102	12	140°			
	NCD3-GP 1040-102/055-S12	●	10.4	3	40	55	102	12	140°			
	NCD3-GP 1050-102/055-S12	●	10.5	3	40	55	102	12	140°			
	NCD3-GP 1060-102/055-S12	●	10.6	3	40	55	102	12	140°			
	NCD3-GP 1070-102/055-S12	●	10.7	3	40	55	102	12	140°			
D - MILLING	NCD3-GP 1080-102/055-S12	●	10.8	3	40	55	102	12	140°			
	NCD3-GP 1090-102/055-S12	●	10.9	3	40	55	102	12	140°			
	NCD3-GP 1100-102/055-S12	●	11	3	40	55	102	12	140°			
	NCD3-GP 1110-102/055-S12	●	11.1	3	40	55	102	12	140°			
	NCD3-GP 1120-102/055-S12	●	11.2	3	40	55	102	12	140°			
	NCD3-GP 1130-102/055-S12	●	11.3	3	40	55	102	12	140°			
	NCD3-GP 1140-102/055-S12	●	11.4	3	40	55	102	12	140°			
	NCD3-GP 1150-102/055-S12	●	11.5	3	40	55	102	12	140°			
	NCD3-GP 1160-102/055-S12	●	11.6	3	40	55	102	12	140°			
	NCD3-GP 1170-102/055-S12	●	11.7	3	40	55	102	12	140°			
	NCD3-GP 1180-102/055-S12	●	11.8	3	40	55	102	12	140°			
	NCD3-GP 1190-102/055-S12	●	11.9	3	40	55	102	12	140°			
E - DRILLING	NCD3-GP 1200-102/055-S12	●	12	3	40	55	102	12	140°			
	NCD3-GP 1250-107/060-S14	●	12.5	3	43	60	107	14	140°			
	NCD3-GP 1300-107/060-S14	●	13	3	43	60	107	14	140°			
	NCD3-GP 1350-107/060-S14	●	13.5	3	43	60	107	14	140°			
	NCD3-GP 1400-107/060-S14	●	14	3	43	60	107	14	140°			
	NCD3-GP 1450-115/065-S16	●	14.5	3	45	65	115	16	140°			
	NCD3-GP 1500-115/065-S16	●	15	3	49	65	115	16	140°			
	NCD3-GP 1550-115/065-S16	●	15.5	3	49	65	115	16	140°			
	NCD3-GP 1600-115/065-S16	●	16	3	49	65	115	16	140°			
	NCD3-GP 1650-123/073-S18	●	16.5	3	52	73	123	18	140°			
	NCD3-GP 1700-123/073-S18	●	17	3	52	73	123	18	140°			
	NCD3-GP 1750-123/073-S18	●	17.5	3	52	73	123	18	140°			
F - ACCESSORIES	NCD3-GP 1800-123/073-S18	●	18	3	52	73	123	18	140°			
	NCD3-GP 1850-131/079-S20	●	18.5	3	55	79	131	20	140°			
	NCD3-GP 1900-131/079-S20	●	19	3	55	79	131	20	140°			
	NCD3-GP 1950-131/079-S20	●	19.5	3	55	79	131	20	140°			
	NCD3-GP 2000-131/079-S20	●	20	3	55	79	131	20	140°			
G - SPARE PARTS												

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

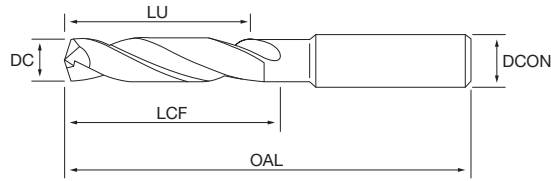
NCD5-GP

NCD

- First choice for steel and cast iron machining (<45 HRC)
- **Without** coolant holes
- Self centering geometry for accurate holes
- AlTiN-nano based coating for long lasting tool life

5xD

P K



Designation	Stock	DC	ULDR	LU	LCF	OAL	DCON	SIG			
NCD5-GP 0300-066/028-S06	●	3	5	23	28	66	6	140°			
NCD5-GP 0310-066/028-S06	●	3.1	5	23	28	66	6	140°			
NCD5-GP 0320-066/028-S06	●	3.2	5	23	28	66	6	140°			
NCD5-GP 0330-066/028-S06	●	3.3	5	23	28	66	6	140°			
NCD5-GP 0340-066/028-S06	●	3.4	5	23	28	66	6	140°			
NCD5-GP 0350-066/028-S06	●	3.5	5	23	28	66	6	140°			
NCD5-GP 0360-066/028-S06	●	3.6	5	23	28	66	6	140°			
NCD5-GP 0370-066/028-S06	●	3.7	5	23	28	66	6	140°			
NCD5-GP 0380-074/036-S06	●	3.8	5	29	36	74	6	140°			
NCD5-GP 0390-074/036-S06	●	3.9	5	29	36	74	6	140°			
NCD5-GP 0400-074/036-S06	●	4	5	29	36	74	6	140°			
NCD5-GP 0410-074/036-S06	●	4.1	5	29	36	74	6	140°			
NCD5-GP 0420-074/036-S06	●	4.2	5	29	36	74	6	140°			
NCD5-GP 0430-074/036-S06	●	4.3	5	29	36	74	6	140°			
NCD5-GP 0440-074/036-S06	●	4.4	5	29	36	74	6	140°			
NCD5-GP 0450-074/036-S06	●	4.5	5	29	36	74	6	140°			
NCD5-GP 0460-074/036-S06	●	4.6	5	29	36	74	6	140°			
NCD5-GP 0470-074/036-S06	●	4.7	5	29	36	74	6	140°			
NCD5-GP 0480-082/044-S06	●	4.8	5	35	44	82	6	140°			
NCD5-GP 0490-082/044-S06	●	4.9	5	35	44	82	6	140°			
NCD5-GP 0500-082/044-S06	●	5	5	35	44	82	6	140°			
NCD5-GP 0510-082/044-S06	●	5.1	5	35	44	82	6	140°			
NCD5-GP 0520-082/044-S06	●	5.2	5	35	44	82	6	140°			
NCD5-GP 0530-082/044-S06	●	5.3	5	35	44	82	6	140°			
NCD5-GP 0540-082/044-S06	●	5.4	5	35	44	82	6	140°			
NCD5-GP 0550-082/044-S06	●	5.5	5	35	44	82	6	140°			
NCD5-GP 0560-082/044-S06	●	5.6	5	35	44	82	6	140°			
NCD5-GP 0570-082/044-S06	●	5.7	5	35	44	82	6	140°			
NCD5-GP 0580-082/044-S06	●	5.8	5	35	44	82	6	140°			
NCD5-GP 0590-082/044-S06	●	5.9	5	35	44	82	6	140°			
NCD5-GP 0600-082/044-S06	●	6	5	35	44	82	6	140°			
NCD5-GP 0610-091/053-S08	●	6.1	5	43	53	91	8	140°			
NCD5-GP 0620-091/053-S08	●	6.2	5	43	53	91	8	140°			
NCD5-GP 0630-091/053-S08	●	6.3	5	43	53	91	8	140°			
NCD5-GP 0640-091/053-S08	●	6.4	5	43	53	91	8	140°			
NCD5-GP 0650-091/053-S08	●	6.5	5	43	53	91	8	140°			
NCD5-GP 0660-091/053-S08	●	6.6	5	43	53	91	8	140°			
NCD5-GP 0670-091/053-S08	●	6.7	5	43	53	91	8	140°			
NCD5-GP 0680-091/053-S08	●	6.8	5	43	53	91	8	140°			
NCD5-GP 0690-091/053-S08	●	6.9	5	43	53	91	8	140°			
NCD5-GP 0700-091/053-S08	●	7	5	43	53	91	8	140°			
NCD5-GP 0710-091/053-S08	●	7.1	5	43	53	91	8	140°			
NCD5-GP 0720-091/053-S08	●	7.2	5	43	53	91	8	140°			
NCD5-GP 0730-091/053-S08	●	7.3	5	43	53	91	8	140°			
NCD5-GP 0740-091/053-S08	●	7.4	5	43	53	91	8	140°			
NCD5-GP 0750-091/053-S08	●	7.5	5	43	53	91	8	140°			
NCD5-GP 0760-091/053-S08	●	7.6	5	43	53	91	8	140°			
NCD5-GP 0770-091/053-S08	●	7.7	5	43	53	91	8	140°			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

	Designation	Stock	DC	ULDR	LU	LCF	OAL	DCON	SIG			
A - TURNING	NCD5-GP 0780-091/053-S08	●	7.8	5	43	53	91	8	140°			
	NCD5-GP 0790-091/053-S08	●	7.9	5	43	53	91	8	140°			
	NCD5-GP 0800-091/053-S08	●	8	5	43	53	91	8	140°			
	NCD5-GP 0810-103/061-S10	●	8.1	5	48.85	61	103	10	140°			
	NCD5-GP 0820-103/061-S10	●	8.2	5	48.7	61	103	10	140°			
	NCD5-GP 0830-103/061-S10	●	8.3	5	48.55	61	103	10	140°			
B - THREADING	NCD5-GP 0840-103/061-S10	●	8.4	5	49	61	103	10	140°			
	NCD5-GP 0850-103/061-S10	●	8.5	5	49	61	103	10	140°			
	NCD5-GP 0860-103/061-S10	●	8.6	5	49	61	103	10	140°			
	NCD5-GP 0870-103/061-S10	●	8.7	5	49	61	103	10	140°			
	NCD5-GP 0880-103/061-S10	●	8.8	5	49	61	103	10	140°			
	NCD5-GP 0890-103/061-S10	●	8.9	5	49	61	103	10	140°			
	NCD5-GP 0900-103/061-S10	●	9	5	49	61	103	10	140°			
	NCD5-GP 0910-103/061-S10	●	9.1	5	49	61	103	10	140°			
	NCD5-GP 0920-103/061-S10	●	9.2	5	49	61	103	10	140°			
	NCD5-GP 0930-103/061-S10	●	9.3	5	49	61	103	10	140°			
	NCD5-GP 0940-103/061-S10	●	9.4	5	49	61	103	10	140°			
	NCD5-GP 0950-103/061-S10	●	9.5	5	49	61	103	10	140°			
	NCD5-GP 0960-103/061-S10	●	9.6	5	49	61	103	10	140°			
	NCD5-GP 0970-103/061-S10	●	9.7	5	49	61	103	10	140°			
C - GROOVING	NCD5-GP 0980-103/061-S10	●	9.8	5	49	61	103	10	140°			
	NCD5-GP 0990-103/061-S10	●	9.9	5	49	61	103	10	140°			
	NCD5-GP 1000-103/061-S10	●	10	5	49	61	103	10	140°			
	NCD5-GP 1010-118/071-S12	●	10.1	5	52	71	118	12	140°			
	NCD5-GP 1020-118/071-S12	●	10.2	5	52	71	118	12	140°			
	NCD5-GP 1030-118/071-S12	●	10.3	5	52	71	118	12	140°			
	NCD5-GP 1040-118/071-S12	●	10.4	5	52	71	118	12	140°			
	NCD5-GP 1050-118/071-S12	●	10.5	5	52	71	118	12	140°			
	NCD5-GP 1060-118/071-S12	●	10.6	5	52	71	118	12	140°			
	NCD5-GP 1070-118/071-S12	●	10.7	5	52	71	118	12	140°			
D - MILLING	NCD5-GP 1080-118/071-S12	●	10.8	5	52	71	118	12	140°			
	NCD5-GP 1090-118/071-S12	●	10.9	5	52	71	118	12	140°			
	NCD5-GP 1100-118/071-S12	●	11	5	52	71	118	12	140°			
	NCD5-GP 1110-118/071-S12	●	11.1	5	52	71	118	12	140°			
	NCD5-GP 1120-118/071-S12	●	11.2	5	52	71	118	12	140°			
	NCD5-GP 1130-118/071-S12	●	11.3	5	52	71	118	12	140°			
	NCD5-GP 1140-118/071-S12	●	11.4	5	52	71	118	12	140°			
	NCD5-GP 1150-118/071-S12	●	11.5	5	52	71	118	12	140°			
	NCD5-GP 1160-118/071-S12	●	11.6	5	52	71	118	12	140°			
	NCD5-GP 1170-118/071-S12	●	11.7	5	52	71	118	12	140°			
E - DRILLING	NCD5-GP 1180-118/071-S12	●	11.8	5	52	71	118	12	140°			
	NCD5-GP 1190-118/071-S12	●	11.9	5	52	71	118	12	140°			
	NCD5-GP 1200-118/071-S12	●	12	5	52	71	118	12	140°			
	NCD5-GP 1250-124/077-S14	●	12.5	5	63	77	124	14	140°			
	NCD5-GP 1300-124/077-S14	●	13	5	63	77	124	14	140°			
	NCD5-GP 1350-124/077-S14	●	13.5	5	63	77	124	14	140°			
	NCD5-GP 1400-124/077-S14	●	14	5	63	77	124	14	140°			
	NCD5-GP 1450-133/083-S16	●	14.5	5	67	83	133	16	140°			
	NCD5-GP 1500-133/083-S16	●	15	5	67	83	133	16	140°			
	NCD5-GP 1550-133/083-S16	●	15.5	5	67	83	133	16	140°			
F - ACCESSORIES	NCD5-GP 1600-133/083-S16	●	16	5	67	83	133	16	140°			
	NCD5-GP 1650-143/093-S18	●	16.5	5	75	93	143	18	140°			
	NCD5-GP 1700-143/093-S18	●	17	5	75	93	143	18	140°			
	NCD5-GP 1750-143/093-S18	●	17.5	5	75	93	143	18	140°			
	NCD5-GP 1800-143/093-S18	●	18	5	75	93	143	18	140°			
	NCD5-GP 1850-153/101-S20	●	18.5	5	81	101	153	20	140°			
	NCD5-GP 1900-153/101-S20	●	19	5	81	101	153	20	140°			
	NCD5-GP 1950-153/101-S20	●	19.5	5	81	101	153	20	140°			
	NCD5-GP 2000-153/101-S20	●	20	5	81	101	153	20	140°			
G - SPARE PARTS												

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

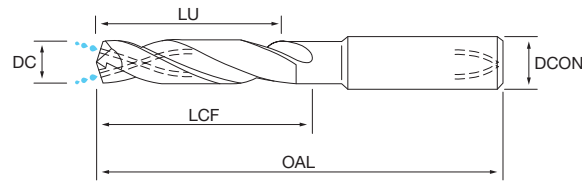
NCD3H-GP

NCD

- First choice for steel and cast iron machining (<45 HRC)
- With coolant holes
- Self centering geometry for accurate holes
- AlTiN-nano based coating for long lasting tool life

3xD
 with coolant holes

P K



Designation	Stock	DC	ULDR	LU	LCF	OAL	DCON	SIG			
NCD3H-GP 0300-062/020-S06	●	3	3	14	20	62	6	140°			
NCD3H-GP 0310-062/020-S06	●	3.1	3	14	20	62	6	140°			
NCD3H-GP 0320-062/020-S06	●	3.2	3	14	20	62	6	140°			
NCD3H-GP 0330-062/020-S06	●	3.3	3	14	20	62	6	140°			
NCD3H-GP 0340-062/020-S06	●	3.4	3	14	20	62	6	140°			
NCD3H-GP 0350-062/020-S06	●	3.5	3	14	20	62	6	140°			
NCD3H-GP 0360-062/020-S06	●	3.6	3	14	20	62	6	140°			
NCD3H-GP 0370-062/020-S06	●	3.7	3	14	20	62	6	140°			
NCD3H-GP 0380-066/024-S06	●	3.8	3	17	24	66	6	140°			
NCD3H-GP 0390-066/024-S06	●	3.9	3	17	24	66	6	140°			
NCD3H-GP 0400-066/024-S06	●	4	3	17	24	66	6	140°			
NCD3H-GP 0410-066/024-S06	●	4.1	3	17	24	66	6	140°			
NCD3H-GP 0420-066/024-S06	●	4.2	3	17	24	66	6	140°			
NCD3H-GP 0430-066/024-S06	●	4.3	3	17	24	66	6	140°			
NCD3H-GP 0440-066/024-S06	●	4.4	3	17	24	66	6	140°			
NCD3H-GP 0450-066/024-S06	●	4.5	3	17	24	66	6	140°			
NCD3H-GP 0460-066/024-S06	●	4.6	3	17	24	66	6	140°			
NCD3H-GP 0470-066/024-S06	●	4.7	3	17	24	66	6	140°			
NCD3H-GP 0480-066/028-S06	●	4.8	3	20	28	66	6	140°			
NCD3H-GP 0490-066/028-S06	●	4.9	3	20	28	66	6	140°			
NCD3H-GP 0500-066/028-S06	●	5	3	20	28	66	6	140°			
NCD3H-GP 0510-066/028-S06	●	5.1	3	20	28	66	6	140°			
NCD3H-GP 0520-066/028-S06	●	5.2	3	20	28	66	6	140°			
NCD3H-GP 0530-066/028-S06	●	5.3	3	20	28	66	6	140°			
NCD3H-GP 0540-066/028-S06	●	5.4	3	20	28	66	6	140°			
NCD3H-GP 0550-066/028-S06	●	5.5	3	20	28	66	6	140°			
NCD3H-GP 0560-066/028-S06	●	5.6	3	20	28	66	6	140°			
NCD3H-GP 0570-066/028-S06	●	5.7	3	20	28	66	6	140°			
NCD3H-GP 0580-066/028-S06	●	5.8	3	20	28	66	6	140°			
NCD3H-GP 0590-066/028-S06	●	5.9	3	20	28	66	6	140°			
NCD3H-GP 0600-066/028-S06	●	6	3	20	28	66	6	140°			
NCD3H-GP 0610-079/034-S08	●	6.1	3	24	34	79	8	140°			
NCD3H-GP 0620-079/034-S08	●	6.2	3	24	34	79	8	140°			
NCD3H-GP 0630-079/034-S08	●	6.3	3	24	34	79	8	140°			
NCD3H-GP 0640-079/034-S08	●	6.4	3	24	34	79	8	140°			
NCD3H-GP 0650-079/034-S08	●	6.5	3	24	34	79	8	140°			
NCD3H-GP 0660-079/034-S08	●	6.6	3	24	34	79	8	140°			
NCD3H-GP 0670-079/034-S08	●	6.7	3	24	34	79	8	140°			
NCD3H-GP 0680-079/034-S08	●	6.8	3	24	34	79	8	140°			
NCD3H-GP 0690-079/034-S08	●	6.9	3	24	34	79	8	140°			
NCD3H-GP 0700-079/034-S08	●	7	3	24	34	79	8	140°			
NCD3H-GP 0710-079/041-S08	●	7.1	3	29	41	79	8	140°			
NCD3H-GP 0720-079/041-S08	●	7.2	3	29	41	79	8	140°			
NCD3H-GP 0730-079/041-S08	●	7.3	3	29	41	79	8	140°			
NCD3H-GP 0740-079/041-S08	●	7.4	3	29	41	79	8	140°			
NCD3H-GP 0750-079/041-S08	●	7.5	3	29	41	79	8	140°			
NCD3H-GP 0760-079/041-S08	●	7.6	3	29	41	79	8	140°			
NCD3H-GP 0770-079/041-S08	●	7.7	3	29	41	79	8	140°			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

	Designation	Stock	DC	ULDR	LU	LCF	OAL	DCON	SIG			
A - TURNING	NCD3H-GP 0780-079/041-S08	●	7.8	3	29	41	79	8	140°			
	NCD3H-GP 0790-079/041-S08	●	7.9	3	29	41	79	8	140°			
	NCD3H-GP 0800-079/041-S08	●	8	3	29	41	79	8	140°			
	NCD3H-GP 0810-089/047-S10	●	8.1	3	35	47	89	10	140°			
	NCD3H-GP 0820-089/047-S10	●	8.2	3	35	47	89	10	140°			
	NCD3H-GP 0830-089/047-S10	●	8.3	3	35	47	89	10	140°			
B - THREADING	NCD3H-GP 0840-089/047-S10	●	8.4	3	35	47	89	10	140°			
	NCD3H-GP 0850-089/047-S10	●	8.5	3	35	47	89	10	140°			
	NCD3H-GP 0860-089/047-S10	●	8.6	3	35	47	89	10	140°			
	NCD3H-GP 0870-089/047-S10	●	8.7	3	35	47	89	10	140°			
	NCD3H-GP 0880-089/047-S10	●	8.8	3	35	47	89	10	140°			
	NCD3H-GP 0890-089/047-S10	●	8.9	3	35	47	89	10	140°			
	NCD3H-GP 0900-089/047-S10	●	9	3	35	47	89	10	140°			
	NCD3H-GP 0910-089/047-S10	●	9.1	3	35	47	89	10	140°			
	NCD3H-GP 0920-089/047-S10	●	9.2	3	35	47	89	10	140°			
	NCD3H-GP 0930-089/047-S10	●	9.3	3	35	47	89	10	140°			
	NCD3H-GP 0940-089/047-S10	●	9.4	3	35	47	89	10	140°			
	NCD3H-GP 0950-089/047-S10	●	9.5	3	35	47	89	10	140°			
C - GROOVING	NCD3H-GP 0960-089/047-S10	●	9.6	3	35	47	89	10	140°			
	NCD3H-GP 0970-089/047-S10	●	9.7	3	35	47	89	10	140°			
	NCD3H-GP 0980-089/047-S10	●	9.8	3	35	47	89	10	140°			
	NCD3H-GP 0990-089/047-S10	●	9.9	3	35	47	89	10	140°			
	NCD3H-GP 1000-089/047-S10	●	10	3	35	47	89	10	140°			
	NCD3H-GP 1010-102/055-S12	●	10.1	3	40	55	102	12	140°			
	NCD3H-GP 1020-102/055-S12	●	10.2	3	40	55	102	12	140°			
	NCD3H-GP 1030-102/055-S12	●	10.3	3	40	55	102	12	140°			
	NCD3H-GP 1040-102/055-S12	●	10.4	3	40	55	102	12	140°			
	NCD3H-GP 1050-102/055-S12	●	10.5	3	40	55	102	12	140°			
	NCD3H-GP 1060-102/055-S12	●	10.6	3	40	55	102	12	140°			
	NCD3H-GP 1070-102/055-S12	●	10.7	3	40	55	102	12	140°			
D - MILLING	NCD3H-GP 1080-102/055-S12	●	10.8	3	40	55	102	12	140°			
	NCD3H-GP 1090-102/055-S12	●	10.9	3	40	55	102	12	140°			
	NCD3H-GP 1100-102/055-S12	●	11	3	40	55	102	12	140°			
	NCD3H-GP 1110-102/055-S12	●	11.1	3	40	55	102	12	140°			
	NCD3H-GP 1120-102/055-S12	●	11.2	3	40	55	102	12	140°			
	NCD3H-GP 1130-102/055-S12	●	11.3	3	40	55	102	12	140°			
	NCD3H-GP 1140-102/055-S12	●	11.4	3	40	55	102	12	140°			
	NCD3H-GP 1150-102/055-S12	●	11.5	3	40	55	102	12	140°			
	NCD3H-GP 1160-102/055-S12	●	11.6	3	40	55	102	12	140°			
	NCD3H-GP 1170-102/055-S12	●	11.7	3	40	55	102	12	140°			
	NCD3H-GP 1180-102/055-S12	●	11.8	3	40	55	102	12	140°			
	NCD3H-GP 1190-102/055-S12	●	11.9	3	40	55	102	12	140°			
E - DRILLING	NCD3H-GP 1200-102/055-S12	●	12	3	40	55	102	12	140°			
	NCD3H-GP 1250-107/060-S14	●	12.5	3	43	60	107	14	140°			
	NCD3H-GP 1300-107/060-S14	●	13	3	43	60	107	14	140°			
	NCD3H-GP 1350-107/060-S14	●	13.5	3	43	60	107	14	140°			
	NCD3H-GP 1400-107/060-S14	●	14	3	43	60	107	14	140°			
	NCD3H-GP 1450-115/065-S16	●	14.5	3	45	65	115	16	140°			
	NCD3H-GP 1500-115/065-S16	●	15	3	49	65	115	16	140°			
	NCD3H-GP 1550-115/065-S16	●	15.5	3	49	65	115	16	140°			
	NCD3H-GP 1600-115/065-S16	●	16	3	49	65	115	16	140°			
	NCD3H-GP 1650-123/073-S18	●	16.5	3	52	73	123	18	140°			
	NCD3H-GP 1700-123/073-S18	●	17	3	52	73	123	18	140°			
	NCD3H-GP 1750-123/073-S18	●	17.5	3	52	73	123	18	140°			
F - ACCESSORIES	NCD3H-GP 1800-123/073-S18	●	18	3	52	73	123	18	140°			
	NCD3H-GP 1850-131/079-S20	●	18.5	3	55	79	131	20	140°			
	NCD3H-GP 1900-131/079-S20	●	19	3	55	79	131	20	140°			
	NCD3H-GP 1950-131/079-S20	●	19.5	3	55	79	131	20	140°			
	NCD3H-GP 2000-131/079-S20	●	20	3	55	79	131	20	140°			
	NCD3H-GP 2050-131/079-S20	●	20.5	3	55	79	131	20	140°			
	NCD3H-GP 2100-131/079-S20	●	21	3	55	79	131	20	140°			
	NCD3H-GP 2150-131/079-S20	●	21.5	3	55	79	131	20	140°			
	NCD3H-GP 2200-131/079-S20	●	22	3	55	79	131	20	140°			
	NCD3H-GP 2250-131/079-S20	●	22.5	3	55	79	131	20	140°			
	NCD3H-GP 2300-131/079-S20	●	23	3	55	79	131	20	140°			
	NCD3H-GP 2350-131/079-S20	●	23.5	3	55	79	131	20	140°			
G - SPARE PARTS	NCD3H-GP 2400-131/079-S20	●	24	3	55	79	131	20	140°			
	NCD3H-GP 2450-131/079-S20	●	24.5	3	55	79	131	20	140°			
	NCD3H-GP 2500-131/079-S20	●	25	3	55	79	131	20	140°			
	NCD3H-GP 2550-131/079-S20	●	25.5	3	55	79	131	20	140°			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

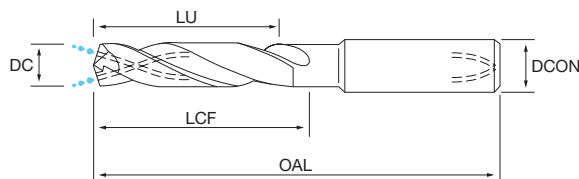
NCD5H-GP

NCD

- First choice for steel and cast iron machining (<45 HRC)
- With coolant holes
- Self centering geometry for accurate holes
- AlTiN-nano based coating for long lasting tool life

5xD
 with coolant holes

P K



Designation	Stock	DC	ULDR	LU	LCF	OAL	DCON	SIG			
NCD5H-GP 0300-066/028-S06	●	3	5	23	28	66	6	140°			
NCD5H-GP 0310-066/028-S06	●	3.1	5	23	28	66	6	140°			
NCD5H-GP 0320-066/028-S06	●	3.2	5	23	28	66	6	140°			
NCD5H-GP 0330-066/028-S06	●	3.3	5	23	28	66	6	140°			
NCD5H-GP 0340-066/028-S06	●	3.4	5	23	28	66	6	140°			
NCD5H-GP 0350-066/028-S06	●	3.5	5	23	28	66	6	140°			
NCD5H-GP 0360-066/028-S06	●	3.6	5	23	28	66	6	140°			
NCD5H-GP 0370-066/028-S06	●	3.7	5	23	28	66	6	140°			
NCD5H-GP 0380-074/036-S06	●	3.8	5	29	36	74	6	140°			
NCD5H-GP 0390-074/036-S06	●	3.9	5	29	36	74	6	140°			
NCD5H-GP 0400-074/036-S06	●	4	5	29	36	74	6	140°			
NCD5H-GP 0410-074/036-S06	●	4.1	5	29	36	74	6	140°			
NCD5H-GP 0420-074/036-S06	●	4.2	5	29	36	74	6	140°			
NCD5H-GP 0430-074/036-S06	●	4.3	5	29	36	74	6	140°			
NCD5H-GP 0440-074/036-S06	●	4.4	5	29	36	74	6	140°			
NCD5H-GP 0450-074/036-S06	●	4.5	5	29	36	74	6	140°			
NCD5H-GP 0460-074/036-S06	●	4.6	5	29	36	74	6	140°			
NCD5H-GP 0470-074/036-S06	●	4.7	5	29	36	74	6	140°			
NCD5H-GP 0480-082/044-S06	●	4.8	5	35	44	82	6	140°			
NCD5H-GP 0490-082/044-S06	●	4.9	5	35	44	82	6	140°			
NCD5H-GP 0500-082/044-S06	●	5	5	35	44	82	6	140°			
NCD5H-GP 0510-082/044-S06	●	5.1	5	35	44	82	6	140°			
NCD5H-GP 0520-082/044-S06	●	5.2	5	35	44	82	6	140°			
NCD5H-GP 0530-082/044-S06	●	5.3	5	35	44	82	6	140°			
NCD5H-GP 0540-082/044-S06	●	5.4	5	35	44	82	6	140°			
NCD5H-GP 0550-082/044-S06	●	5.5	5	35	44	82	6	140°			
NCD5H-GP 0560-082/044-S06	●	5.6	5	35	44	82	6	140°			
NCD5H-GP 0570-082/044-S06	●	5.7	5	35	44	82	6	140°			
NCD5H-GP 0580-082/044-S06	●	5.8	5	35	44	82	6	140°			
NCD5H-GP 0590-082/044-S06	●	5.9	5	35	44	82	6	140°			
NCD5H-GP 0600-082/044-S06	●	6	5	35	44	82	6	140°			
NCD5H-GP 0610-091/053-S08	●	6.1	5	43	53	91	8	140°			
NCD5H-GP 0620-091/053-S08	●	6.2	5	43	53	91	8	140°			
NCD5H-GP 0630-091/053-S08	●	6.3	5	43	53	91	8	140°			
NCD5H-GP 0640-091/053-S08	●	6.4	5	43	53	91	8	140°			
NCD5H-GP 0650-091/053-S08	●	6.5	5	43	53	91	8	140°			
NCD5H-GP 0660-091/053-S08	●	6.6	5	43	53	91	8	140°			
NCD5H-GP 0670-091/053-S08	●	6.7	5	43	53	91	8	140°			
NCD5H-GP 0680-091/053-S08	●	6.8	5	43	53	91	8	140°			
NCD5H-GP 0690-091/053-S08	●	6.9	5	43	53	91	8	140°			
NCD5H-GP 0700-091/053-S08	●	7	5	43	53	91	8	140°			
NCD5H-GP 0710-091/053-S08	●	7.1	5	43	53	91	8	140°			
NCD5H-GP 0720-091/053-S08	●	7.2	5	43	53	91	8	140°			
NCD5H-GP 0730-091/053-S08	●	7.3	5	43	53	91	8	140°			
NCD5H-GP 0740-091/053-S08	●	7.4	5	43	53	91	8	140°			
NCD5H-GP 0750-091/053-S08	●	7.5	5	43	53	91	8	140°			
NCD5H-GP 0760-091/053-S08	●	7.6	5	43	53	91	8	140°			
NCD5H-GP 0770-091/053-S08	●	7.7	5	43	53	91	8	140°			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

	Designation	Stock	DC	ULDR	LU	LCF	OAL	DCON	SIG			
A - TURNING	NCD5H-GP 0780-091/053-S08	●	7.8	5	43	53	91	8	140°			
	NCD5H-GP 0790-091/053-S08	●	7.9	5	43	53	91	8	140°			
	NCD5H-GP 0800-091/053-S08	●	8	5	43	53	91	8	140°			
	NCD5H-GP 0810-103/061-S10	●	8.1	5	48.85	61	103	10	140°			
	NCD5H-GP 0820-103/061-S10	●	8.2	5	48.7	61	103	10	140°			
	NCD5H-GP 0830-103/061-S10	●	8.3	5	48.55	61	103	10	140°			
B - THREADING	NCD5H-GP 0840-103/061-S10	●	8.4	5	49	61	103	10	140°			
	NCD5H-GP 0850-103/061-S10	●	8.5	5	49	61	103	10	140°			
	NCD5H-GP 0860-103/061-S10	●	8.6	5	49	61	103	10	140°			
	NCD5H-GP 0870-103/061-S10	●	8.7	5	49	61	103	10	140°			
	NCD5H-GP 0880-103/061-S10	●	8.8	5	49	61	103	10	140°			
	NCD5H-GP 0890-103/061-S10	●	8.9	5	49	61	103	10	140°			
	NCD5H-GP 0900-103/061-S10	●	9	5	49	61	103	10	140°			
	NCD5H-GP 0910-103/061-S10	●	9.1	5	49	61	103	10	140°			
	NCD5H-GP 0920-103/061-S10	●	9.2	5	49	61	103	10	140°			
	NCD5H-GP 0930-103/061-S10	●	9.3	5	49	61	103	10	140°			
	NCD5H-GP 0940-103/061-S10	●	9.4	5	49	61	103	10	140°			
	NCD5H-GP 0950-103/061-S10	●	9.5	5	49	61	103	10	140°			
	NCD5H-GP 0960-103/061-S10	●	9.6	5	49	61	103	10	140°			
	NCD5H-GP 0970-103/061-S10	●	9.7	5	49	61	103	10	140°			
C - GROOVING	NCD5H-GP 0980-103/061-S10	●	9.8	5	49	61	103	10	140°			
	NCD5H-GP 0990-103/061-S10	●	9.9	5	49	61	103	10	140°			
	NCD5H-GP 1000-103/061-S10	●	10	5	49	61	103	10	140°			
	NCD5H-GP 1010-118/071-S12	●	10.1	5	52	71	118	12	140°			
	NCD5H-GP 1020-118/071-S12	●	10.2	5	52	71	118	12	140°			
	NCD5H-GP 1030-118/071-S12	●	10.3	5	52	71	118	12	140°			
	NCD5H-GP 1040-118/071-S12	●	10.4	5	52	71	118	12	140°			
	NCD5H-GP 1050-118/071-S12	●	10.5	5	52	71	118	12	140°			
	NCD5H-GP 1060-118/071-S12	●	10.6	5	52	71	118	12	140°			
	NCD5H-GP 1070-118/071-S12	●	10.7	5	52	71	118	12	140°			
D - MILLING	NCD5H-GP 1080-118/071-S12	●	10.8	5	52	71	118	12	140°			
	NCD5H-GP 1090-118/071-S12	●	10.9	5	52	71	118	12	140°			
	NCD5H-GP 1100-118/071-S12	●	11	5	52	71	118	12	140°			
	NCD5H-GP 1110-118/071-S12	●	11.1	5	52	71	118	12	140°			
	NCD5H-GP 1120-118/071-S12	●	11.2	5	52	71	118	12	140°			
	NCD5H-GP 1130-118/071-S12	●	11.3	5	52	71	118	12	140°			
	NCD5H-GP 1140-118/071-S12	●	11.4	5	52	71	118	12	140°			
	NCD5H-GP 1150-118/071-S12	●	11.5	5	52	71	118	12	140°			
	NCD5H-GP 1160-118/071-S12	●	11.6	5	52	71	118	12	140°			
	NCD5H-GP 1170-118/071-S12	●	11.7	5	52	71	118	12	140°			
E - DRILLING	NCD5H-GP 1180-118/071-S12	●	11.8	5	52	71	118	12	140°			
	NCD5H-GP 1190-118/071-S12	●	11.9	5	52	71	118	12	140°			
	NCD5H-GP 1200-118/071-S12	●	12	5	52	71	118	12	140°			
	NCD5H-GP 1250-124/077-S14	●	12.5	5	63	77	124	14	140°			
	NCD5H-GP 1300-124/077-S14	●	13	5	63	77	124	14	140°			
	NCD5H-GP 1350-124/077-S14	●	13.5	5	63	77	124	14	140°			
	NCD5H-GP 1400-124/077-S14	●	14	5	63	77	124	14	140°			
	NCD5H-GP 1450-133/083-S16	●	14.5	5	67	83	133	16	140°			
	NCD5H-GP 1500-133/083-S16	●	15	5	67	83	133	16	140°			
	NCD5H-GP 1550-133/083-S16	●	15.5	5	67	83	133	16	140°			
F - ACCESSORIES	NCD5H-GP 1600-133/083-S16	●	16	5	67	83	133	16	140°			
	NCD5H-GP 1650-143/093-S18	●	16.5	5	75	93	143	18	140°			
	NCD5H-GP 1700-143/093-S18	●	17	5	75	93	143	18	140°			
	NCD5H-GP 1750-143/093-S18	●	17.5	5	75	93	143	18	140°			
	NCD5H-GP 1800-143/093-S18	●	18	5	75	93	143	18	140°			
	NCD5H-GP 1850-153/101-S20	●	18.5	5	81	101	153	20	140°			
	NCD5H-GP 1900-153/101-S20	●	19	5	81	101	153	20	140°			
	NCD5H-GP 1950-153/101-S20	●	19.5	5	81	101	153	20	140°			
	NCD5H-GP 2000-153/101-S20	●	20	5	81	101	153	20	140°			
G - SPARE PARTS												

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

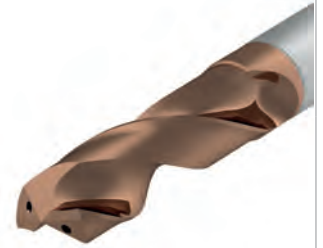
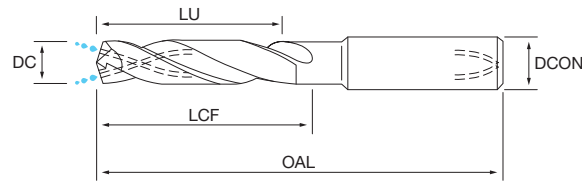
NCD3H-SC

NCD

- First choice for stainless steel and sticky free-cutting steels
- With coolant holes
- Self centering geometry for accurate holes
- AlCrN based multilayer coating with very low friction coefficient to reduce built up edge

3xD
with coolant holes

P M S



Designation	Stock	DC	ULDR	LU	LCF	OAL	DCON	SIG			
NCD3H-SC 0300-062/020-S06	●	3	3	14	20	62	6	140°			
NCD3H-SC 0310-062/020-S06	●	3.1	3	14	20	62	6	140°			
NCD3H-SC 0320-062/020-S06	●	3.2	3	14	20	62	6	140°			
NCD3H-SC 0330-062/020-S06	●	3.3	3	14	20	62	6	140°			
NCD3H-SC 0340-062/020-S06	●	3.4	3	14	20	62	6	140°			
NCD3H-SC 0350-062/020-S06	●	3.5	3	14	20	62	6	140°			
NCD3H-SC 0360-062/020-S06	●	3.6	3	14	20	62	6	140°			
NCD3H-SC 0370-062/020-S06	●	3.7	3	14	20	62	6	140°			
NCD3H-SC 0380-066/024-S06	●	3.8	3	17	24	66	6	140°			
NCD3H-SC 0390-066/024-S06	●	3.9	3	17	24	66	6	140°			
NCD3H-SC 0400-066/024-S06	●	4	3	17	24	66	6	140°			
NCD3H-SC 0410-066/024-S06	●	4.1	3	17	24	66	6	140°			
NCD3H-SC 0420-066/024-S06	●	4.2	3	17	24	66	6	140°			
NCD3H-SC 0430-066/024-S06	●	4.3	3	17	24	66	6	140°			
NCD3H-SC 0440-066/024-S06	●	4.4	3	17	24	66	6	140°			
NCD3H-SC 0450-066/024-S06	●	4.5	3	17	24	66	6	140°			
NCD3H-SC 0460-066/024-S06	●	4.6	3	17	24	66	6	140°			
NCD3H-SC 0470-066/024-S06	●	4.7	3	17	24	66	6	140°			
NCD3H-SC 0480-066/028-S06	●	4.8	3	20	28	66	6	140°			
NCD3H-SC 0490-066/028-S06	●	4.9	3	20	28	66	6	140°			
NCD3H-SC 0500-066/028-S06	●	5	3	20	28	66	6	140°			
NCD3H-SC 0510-066/028-S06	●	5.1	3	20	28	66	6	140°			
NCD3H-SC 0520-066/028-S06	●	5.2	3	20	28	66	6	140°			
NCD3H-SC 0530-066/028-S06	●	5.3	3	20	28	66	6	140°			
NCD3H-SC 0540-066/028-S06	●	5.4	3	20	28	66	6	140°			
NCD3H-SC 0550-066/028-S06	●	5.5	3	20	28	66	6	140°			
NCD3H-SC 0560-066/028-S06	●	5.6	3	20	28	66	6	140°			
NCD3H-SC 0570-066/028-S06	●	5.7	3	20	28	66	6	140°			
NCD3H-SC 0580-066/028-S06	●	5.8	3	20	28	66	6	140°			
NCD3H-SC 0590-066/028-S06	●	5.9	3	20	28	66	6	140°			
NCD3H-SC 0600-066/028-S06	●	6	3	20	28	66	6	140°			
NCD3H-SC 0610-079/034-S08	●	6.1	3	24	34	79	8	140°			
NCD3H-SC 0620-079/034-S08	●	6.2	3	24	34	79	8	140°			
NCD3H-SC 0630-079/034-S08	●	6.3	3	24	34	79	8	140°			
NCD3H-SC 0640-079/034-S08	●	6.4	3	24	34	79	8	140°			
NCD3H-SC 0650-079/034-S08	●	6.5	3	24	34	79	8	140°			
NCD3H-SC 0660-079/034-S08	●	6.6	3	24	34	79	8	140°			
NCD3H-SC 0670-079/034-S08	●	6.7	3	24	34	79	8	140°			
NCD3H-SC 0680-079/034-S08	●	6.8	3	24	34	79	8	140°			
NCD3H-SC 0690-079/034-S08	●	6.9	3	24	34	79	8	140°			
NCD3H-SC 0700-079/034-S08	●	7	3	24	34	79	8	140°			
NCD3H-SC 0710-079/041-S08	●	7.1	3	29	41	79	8	140°			
NCD3H-SC 0720-079/041-S08	●	7.2	3	29	41	79	8	140°			
NCD3H-SC 0730-079/041-S08	●	7.3	3	29	41	79	8	140°			
NCD3H-SC 0740-079/041-S08	●	7.4	3	29	41	79	8	140°			
NCD3H-SC 0750-079/041-S08	●	7.5	3	29	41	79	8	140°			
NCD3H-SC 0760-079/041-S08	●	7.6	3	29	41	79	8	140°			
NCD3H-SC 0770-079/041-S08	●	7.7	3	29	41	79	8	140°			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

	Designation	Stock	DC	ULDR	LU	LCF	OAL	DCON	SIG			
A - TURNING	NCD3H-SC 0780-079/041-S08	●	7.8	3	29	41	79	8	140°			
	NCD3H-SC 0790-079/041-S08	●	7.9	3	29	41	79	8	140°			
	NCD3H-SC 0800-079/041-S08	●	8	3	29	41	79	8	140°			
	NCD3H-SC 0810-089/047-S10	●	8.1	3	35	47	89	10	140°			
	NCD3H-SC 0820-089/047-S10	●	8.2	3	35	47	89	10	140°			
	NCD3H-SC 0830-089/047-S10	●	8.3	3	35	47	89	10	140°			
B - THREADING	NCD3H-SC 0840-089/047-S10	●	8.4	3	35	47	89	10	140°			
	NCD3H-SC 0850-089/047-S10	●	8.5	3	35	47	89	10	140°			
	NCD3H-SC 0860-089/047-S10	●	8.6	3	35	47	89	10	140°			
	NCD3H-SC 0870-089/047-S10	●	8.7	3	35	47	89	10	140°			
	NCD3H-SC 0880-089/047-S10	●	8.8	3	35	47	89	10	140°			
	NCD3H-SC 0890-089/047-S10	●	8.9	3	35	47	89	10	140°			
	NCD3H-SC 0900-089/047-S10	●	9	3	35	47	89	10	140°			
	NCD3H-SC 0910-089/047-S10	●	9.1	3	35	47	89	10	140°			
	NCD3H-SC 0920-089/047-S10	●	9.2	3	35	47	89	10	140°			
	NCD3H-SC 0930-089/047-S10	●	9.3	3	35	47	89	10	140°			
C - GROOVING	NCD3H-SC 0940-089/047-S10	●	9.4	3	35	47	89	10	140°			
	NCD3H-SC 0950-089/047-S10	●	9.5	3	35	47	89	10	140°			
	NCD3H-SC 0960-089/047-S10	●	9.6	3	35	47	89	10	140°			
	NCD3H-SC 0970-089/047-S10	●	9.7	3	35	47	89	10	140°			
	NCD3H-SC 0980-089/047-S10	●	9.8	3	35	47	89	10	140°			
	NCD3H-SC 0990-089/047-S10	●	9.9	3	35	47	89	10	140°			
	NCD3H-SC 1000-089/047-S10	●	10	3	35	47	89	10	140°			
	NCD3H-SC 1010-102/055-S12	●	10.1	3	40	55	102	12	140°			
	NCD3H-SC 1020-102/055-S12	●	10.2	3	40	55	102	12	140°			
	NCD3H-SC 1030-102/055-S12	●	10.3	3	40	55	102	12	140°			
D - MILLING	NCD3H-SC 1040-102/055-S12	●	10.4	3	40	55	102	12	140°			
	NCD3H-SC 1050-102/055-S12	●	10.5	3	40	55	102	12	140°			
	NCD3H-SC 1060-102/055-S12	●	10.6	3	40	55	102	12	140°			
	NCD3H-SC 1070-102/055-S12	●	10.7	3	40	55	102	12	140°			
	NCD3H-SC 1080-102/055-S12	●	10.8	3	40	55	102	12	140°			
	NCD3H-SC 1090-102/055-S12	●	10.9	3	40	55	102	12	140°			
	NCD3H-SC 1100-102/055-S12	●	11	3	40	55	102	12	140°			
	NCD3H-SC 1110-102/055-S12	●	11.1	3	40	55	102	12	140°			
	NCD3H-SC 1120-102/055-S12	●	11.2	3	40	55	102	12	140°			
	NCD3H-SC 1130-102/055-S12	●	11.3	3	40	55	102	12	140°			
E - DRILLING	NCD3H-SC 1140-102/055-S12	●	11.4	3	40	55	102	12	140°			
	NCD3H-SC 1150-102/055-S12	●	11.5	3	40	55	102	12	140°			
	NCD3H-SC 1160-102/055-S12	●	11.6	3	40	55	102	12	140°			
	NCD3H-SC 1170-102/055-S12	●	11.7	3	40	55	102	12	140°			
	NCD3H-SC 1180-102/055-S12	●	11.8	3	40	55	102	12	140°			
	NCD3H-SC 1190-102/055-S12	●	11.9	3	40	55	102	12	140°			
	NCD3H-SC 1200-102/055-S12	●	12	3	40	55	102	12	140°			
	NCD3H-SC 1250-107/060-S14	●	12.5	3	43	60	107	14	140°			
	NCD3H-SC 1300-107/060-S14	●	13	3	43	60	107	14	140°			
	NCD3H-SC 1350-107/060-S14	●	13.5	3	43	60	107	14	140°			
F - ACCESSORIES	NCD3H-SC 1400-107/060-S14	●	14	3	43	60	107	14	140°			
	NCD3H-SC 1450-115/065-S16	●	14.5	3	45	65	115	16	140°			
	NCD3H-SC 1500-115/065-S16	●	15	3	49	65	115	16	140°			
	NCD3H-SC 1550-115/065-S16	●	15.5	3	49	65	115	16	140°			
	NCD3H-SC 1600-115/065-S16	●	16	3	49	65	115	16	140°			
G - SPARE PARTS	NCD3H-SC 1650-123/073-S18	●	16.5	3	52	73	123	18	140°			
	NCD3H-SC 1700-123/073-S18	●	17	3	52	73	123	18	140°			
	NCD3H-SC 1750-123/073-S18	●	17.5	3	52	73	123	18	140°			
	NCD3H-SC 1800-123/073-S18	●	18	3	52	73	123	18	140°			
	NCD3H-SC 1850-131/079-S20	●	18.5	3	55	79	131	20	140°			
	NCD3H-SC 1900-131/079-S20	●	19	3	55	79	131	20	140°			
	NCD3H-SC 1950-131/079-S20	●	19.5	3	55	79	131	20	140°			
	NCD3H-SC 2000-131/079-S20	●	20	3	55	79	131	20	140°			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

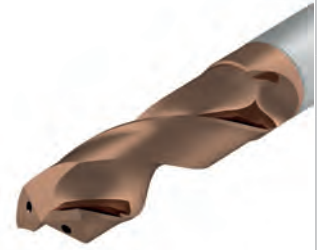
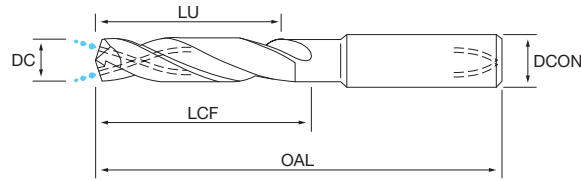
NCD5H-SC

NCD

- First choice for stainless steel and sticky free-cutting steels
- With coolant holes
- Self centering geometry for accurate holes
- AlCrN based multilayer coating with very low friction coefficient to reduce built up edge

5xD
 with coolant holes

P M S



Designation	Stock	DC	ULDR	LU	LCF	OAL	DCON	SIG			
NCD5H-SC 0300-066/028-S06	●	3	5	23	28	66	6	140°			
NCD5H-SC 0310-066/028-S06	●	3.1	5	23	28	66	6	140°			
NCD5H-SC 0320-066/028-S06	●	3.2	5	23	28	66	6	140°			
NCD5H-SC 0330-066/028-S06	●	3.3	5	23	28	66	6	140°			
NCD5H-SC 0340-066/028-S06	●	3.4	5	23	28	66	6	140°			
NCD5H-SC 0350-066/028-S06	●	3.5	5	23	28	66	6	140°			
NCD5H-SC 0360-066/028-S06	●	3.6	5	23	28	66	6	140°			
NCD5H-SC 0370-066/028-S06	●	3.7	5	23	28	66	6	140°			
NCD5H-SC 0380-074/036-S06	●	3.8	5	29	36	74	6	140°			
NCD5H-SC 0390-074/036-S06	●	3.9	5	29	36	74	6	140°			
NCD5H-SC 0400-074/036-S06	●	4	5	29	36	74	6	140°			
NCD5H-SC 0410-074/036-S06	●	4.1	5	29	36	74	6	140°			
NCD5H-SC 0420-074/036-S06	●	4.2	5	29	36	74	6	140°			
NCD5H-SC 0430-074/036-S06	●	4.3	5	29	36	74	6	140°			
NCD5H-SC 0440-074/036-S06	●	4.4	5	29	36	74	6	140°			
NCD5H-SC 0450-074/036-S06	●	4.5	5	29	36	74	6	140°			
NCD5H-SC 0460-074/036-S06	●	4.6	5	29	36	74	6	140°			
NCD5H-SC 0470-074/036-S06	●	4.7	5	29	36	74	6	140°			
NCD5H-SC 0480-082/044-S06	●	4.8	5	35	44	82	6	140°			
NCD5H-SC 0490-082/044-S06	●	4.9	5	35	44	82	6	140°			
NCD5H-SC 0500-082/044-S06	●	5	5	35	44	82	6	140°			
NCD5H-SC 0510-082/044-S06	●	5.1	5	35	44	82	6	140°			
NCD5H-SC 0520-082/044-S06	●	5.2	5	35	44	82	6	140°			
NCD5H-SC 0530-082/044-S06	●	5.3	5	35	44	82	6	140°			
NCD5H-SC 0540-082/044-S06	●	5.4	5	35	44	82	6	140°			
NCD5H-SC 0550-082/044-S06	●	5.5	5	35	44	82	6	140°			
NCD5H-SC 0560-082/044-S06	●	5.6	5	35	44	82	6	140°			
NCD5H-SC 0570-082/044-S06	●	5.7	5	35	44	82	6	140°			
NCD5H-SC 0580-082/044-S06	●	5.8	5	35	44	82	6	140°			
NCD5H-SC 0590-082/044-S06	●	5.9	5	35	44	82	6	140°			
NCD5H-SC 0600-082/044-S06	●	6	5	35	44	82	6	140°			
NCD5H-SC 0610-091/053-S08	●	6.1	5	43	53	91	8	140°			
NCD5H-SC 0620-091/053-S08	●	6.2	5	43	53	91	8	140°			
NCD5H-SC 0630-091/053-S08	●	6.3	5	43	53	91	8	140°			
NCD5H-SC 0640-091/053-S08	●	6.4	5	43	53	91	8	140°			
NCD5H-SC 0650-091/053-S08	●	6.5	5	43	53	91	8	140°			
NCD5H-SC 0660-091/053-S08	●	6.6	5	43	53	91	8	140°			
NCD5H-SC 0670-091/053-S08	●	6.7	5	43	53	91	8	140°			
NCD5H-SC 0680-091/053-S08	●	6.8	5	43	53	91	8	140°			
NCD5H-SC 0690-091/053-S08	●	6.9	5	43	53	91	8	140°			
NCD5H-SC 0700-091/053-S08	●	7	5	43	53	91	8	140°			
NCD5H-SC 0710-091/053-S08	●	7.1	5	43	53	91	8	140°			
NCD5H-SC 0720-091/053-S08	●	7.2	5	43	53	91	8	140°			
NCD5H-SC 0730-091/053-S08	●	7.3	5	43	53	91	8	140°			
NCD5H-SC 0740-091/053-S08	●	7.4	5	43	53	91	8	140°			
NCD5H-SC 0750-091/053-S08	●	7.5	5	43	53	91	8	140°			
NCD5H-SC 0760-091/053-S08	●	7.6	5	43	53	91	8	140°			
NCD5H-SC 0770-091/053-S08	●	7.7	5	43	53	91	8	140°			

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

	Designation	Stock	DC	ULDR	LU	LCF	OAL	DCON	SIG			
A - TURNING	NCD5H-SC 0780-091/053-S08	●	7.8	5	43	53	91	8	140°			
	NCD5H-SC 0790-091/053-S08	●	7.9	5	43	53	91	8	140°			
	NCD5H-SC 0800-091/053-S08	●	8	5	43	53	91	8	140°			
	NCD5H-SC 0810-103/061-S10	●	8.1	5	48.85	61	103	10	140°			
	NCD5H-SC 0820-103/061-S10	●	8.2	5	48.7	61	103	10	140°			
	NCD5H-SC 0830-103/061-S10	●	8.3	5	48.55	61	103	10	140°			
B - THREADING	NCD5H-SC 0840-103/061-S10	●	8.4	5	49	61	103	10	140°			
	NCD5H-SC 0850-103/061-S10	●	8.5	5	49	61	103	10	140°			
	NCD5H-SC 0860-103/061-S10	●	8.6	5	49	61	103	10	140°			
	NCD5H-SC 0870-103/061-S10	●	8.7	5	49	61	103	10	140°			
	NCD5H-SC 0880-103/061-S10	●	8.8	5	49	61	103	10	140°			
	NCD5H-SC 0890-103/061-S10	●	8.9	5	49	61	103	10	140°			
	NCD5H-SC 0900-103/061-S10	●	9	5	49	61	103	10	140°			
	NCD5H-SC 0910-103/061-S10	●	9.1	5	49	61	103	10	140°			
	NCD5H-SC 0920-103/061-S10	●	9.2	5	49	61	103	10	140°			
	NCD5H-SC 0930-103/061-S10	●	9.3	5	49	61	103	10	140°			
	NCD5H-SC 0940-103/061-S10	●	9.4	5	49	61	103	10	140°			
	NCD5H-SC 0950-103/061-S10	●	9.5	5	49	61	103	10	140°			
	NCD5H-SC 0960-103/061-S10	●	9.6	5	49	61	103	10	140°			
	NCD5H-SC 0970-103/061-S10	●	9.7	5	49	61	103	10	140°			
C - GROOVING	NCD5H-SC 0980-103/061-S10	●	9.8	5	49	61	103	10	140°			
	NCD5H-SC 0990-103/061-S10	●	9.9	5	49	61	103	10	140°			
	NCD5H-SC 1000-103/061-S10	●	10	5	49	61	103	10	140°			
	NCD5H-SC 1010-118/071-S12	●	10.1	5	52	71	118	12	140°			
	NCD5H-SC 1020-118/071-S12	●	10.2	5	52	71	118	12	140°			
	NCD5H-SC 1030-118/071-S12	●	10.3	5	52	71	118	12	140°			
	NCD5H-SC 1040-118/071-S12	●	10.4	5	52	71	118	12	140°			
	NCD5H-SC 1050-118/071-S12	●	10.5	5	52	71	118	12	140°			
	NCD5H-SC 1060-118/071-S12	●	10.6	5	52	71	118	12	140°			
	NCD5H-SC 1070-118/071-S12	●	10.7	5	52	71	118	12	140°			
D - MILLING	NCD5H-SC 1080-118/071-S12	●	10.8	5	52	71	118	12	140°			
	NCD5H-SC 1090-118/071-S12	●	10.9	5	52	71	118	12	140°			
	NCD5H-SC 1100-118/071-S12	●	11	5	52	71	118	12	140°			
	NCD5H-SC 1110-118/071-S12	●	11.1	5	52	71	118	12	140°			
	NCD5H-SC 1120-118/071-S12	●	11.2	5	52	71	118	12	140°			
	NCD5H-SC 1130-118/071-S12	●	11.3	5	52	71	118	12	140°			
	NCD5H-SC 1140-118/071-S12	●	11.4	5	52	71	118	12	140°			
	NCD5H-SC 1150-118/071-S12	●	11.5	5	52	71	118	12	140°			
	NCD5H-SC 1160-118/071-S12	●	11.6	5	52	71	118	12	140°			
	NCD5H-SC 1170-118/071-S12	●	11.7	5	52	71	118	12	140°			
E - DRILLING	NCD5H-SC 1180-118/071-S12	●	11.8	5	52	71	118	12	140°			
	NCD5H-SC 1190-118/071-S12	●	11.9	5	52	71	118	12	140°			
	NCD5H-SC 1200-118/071-S12	●	12	5	52	71	118	12	140°			
	NCD5H-SC 1250-124/077-S14	●	12.5	5	63	77	124	14	140°			
	NCD5H-SC 1300-124/077-S14	●	13	5	63	77	124	14	140°			
	NCD5H-SC 1350-124/077-S14	●	13.5	5	63	77	124	14	140°			
	NCD5H-SC 1400-124/077-S14	●	14	5	63	77	124	14	140°			
	NCD5H-SC 1450-133/083-S16	●	14.5	5	67	83	133	16	140°			
	NCD5H-SC 1500-133/083-S16	●	15	5	67	83	133	16	140°			
	NCD5H-SC 1550-133/083-S16	●	15.5	5	67	83	133	16	140°			
F - ACCESSORIES	NCD5H-SC 1600-133/083-S16	●	16	5	67	83	133	16	140°			
	NCD5H-SC 1650-143/093-S18	●	16.5	5	75	93	143	18	140°			
	NCD5H-SC 1700-143/093-S18	●	17	5	75	93	143	18	140°			
	NCD5H-SC 1750-143/093-S18	●	17.5	5	75	93	143	18	140°			
	NCD5H-SC 1800-143/093-S18	●	18	5	75	93	143	18	140°			
	NCD5H-SC 1850-153/101-S20	●	18.5	5	81	101	153	20	140°			
	NCD5H-SC 1900-153/101-S20	●	19	5	81	101	153	20	140°			
	NCD5H-SC 1950-153/101-S20	●	19.5	5	81	101	153	20	140°			
	NCD5H-SC 2000-153/101-S20	●	20	5	81	101	153	20	140°			
G - SPARE PARTS												

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

ISO 513	MATERIAL	HARDNESS HB	L/D	NCD GP			NCD H GP			NCD H SC		
				min	start	max	min	start	max	min	start	max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	3XD ÷ 5XD	80	100	120	100	130	160	100	130	160
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	3XD ÷ 5XD	60	80	100	80	110	140	80	110	140
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	3XD ÷ 5XD	40	60	80	60	90	120	-	-	-
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	3XD ÷ 5XD	-	-	-	-	-	-	50	60	70
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	3XD ÷ 5XD	-	-	-	-	-	-	20	25	30
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	3XD ÷ 5XD	-	-	-	-	-	-	40	60	80
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		3XD ÷ 5XD	-	-	-	-	-	-	20	30	40
K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	3XD ÷ 5XD	80	90	100	100	120	140	-	-	-
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	3XD ÷ 5XD	40	60	80	60	90	120	-	-	-
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		3XD ÷ 5XD	-	-	-	-	-	-	30	40	50
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		3XD ÷ 5XD	-	-	-	-	-	-	40	50	60

Complete workpiece materials p. **H1**.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

	ISO 513	MATERIAL	HARDNESS HB	TYPE	DC 3.00 ÷ 3.99			DC 4.00 ÷ 4.99			DC 5.00 ÷ 5.99		
					min	start	max	min	start	max	min	start	max
A - TURNING	P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	NCD GP	0.14	0.16	0.18	0.15	0.17	0.19	0.16	0.18	0.20
				NCD H GP	0.15	0.17	0.19	0.16	0.18	0.20	0.17	0.19	0.21
				NCD H SC	0.13	0.15	0.17	0.14	0.16	0.18	0.15	0.17	0.19
	P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	NCD GP	0.10	0.12	0.14	0.11	0.13	0.15	0.12	0.14	0.16
				NCD H GP	0.11	0.13	0.15	0.12	0.14	0.16	0.13	0.15	0.17
				NCD H SC	0.09	0.11	0.13	0.10	0.12	0.14	0.11	0.13	0.15
B - THREADING	P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	NCD GP	0.08	0.10	0.12	0.09	0.11	0.13	0.10	0.12	0.14
				NCD H GP	0.08	0.10	0.13	0.09	0.12	0.14	0.10	0.13	0.15
				NCD H SC	-	-	-	-	-	-	-	-	-
	P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	NCD GP	-	-	-	-	-	-	-	-	-
				NCD H GP	-	-	-	-	-	-	-	-	-
				NCD H SC	0.05	0.08	0.11	0.06	0.09	0.12	0.07	0.10	0.13
	P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	NCD GP	-	-	-	-	-	-	-	-	-
				NCD H GP	-	-	-	-	-	-	-	-	-
				NCD H SC	0.06	0.07	0.08	0.05	0.07	0.09	0.06	0.08	0.10
C - GROOVING	M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	NCD GP	-	-	-	-	-	-	-	-	-
				NCD H GP	-	-	-	-	-	-	-	-	-
				NCD H SC	0.02	0.05	0.08	0.03	0.06	0.09	0.06	0.08	0.10
	M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		NCD GP	-	-	-	-	-	-	-	-	-
				NCD H GP	-	-	-	-	-	-	-	-	-
				NCD H SC	0.02	0.04	0.06	0.03	0.05	0.07	0.04	0.06	0.08
	K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	NCD GP	0.16	0.18	0.20	0.17	0.19	0.21	0.18	0.20	0.22
				NCD H GP	0.17	0.19	0.21	0.18	0.20	0.22	0.19	0.21	0.23
				NCD H SC	-	-	-	-	-	-	-	-	-
D - MILLING	K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	NCD GP	0.12	0.14	0.16	0.13	0.15	0.17	0.14	0.16	0.18
				NCD H GP	0.13	0.15	0.17	0.14	0.16	0.18	0.15	0.17	0.19
				NCD H SC	-	-	-	-	-	-	-	-	-
	S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		NCD GP	-	-	-	-	-	-	-	-	-
				NCD H GP	-	-	-	-	-	-	-	-	-
				NCD H SC	0.01	0.02	0.04	0.01	0.03	0.05	0.02	0.04	0.06
E - DRILLING	S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		NCD GP	-	-	-	-	-	-	-	-	-
				NCD H GP	-	-	-	-	-	-	-	-	-
				NCD H SC	0.01	0.03	0.05	0.02	0.04	0.06	0.03	0.05	0.07

Complete workpiece materials p. H1.

(fn: mm/rev)

F - ACCESSORIES

G - SPARE PARTS

DC 6.00 ÷ 6.99			DC 7.00 ÷ 7.99			DC 8.00 ÷ 8.99			DC 9.00 ÷ 9.99			DC 10.00 ÷ 10.99			DC 11.00 ÷ 11.99		
min	start	max	min	start	max	min	start	max	min	start	max	min	start	max	min	start	max
0.17	0.19	0.21	0.18	0.20	0.22	0.19	0.21	0.23	0.20	0.22	0.24	0.21	0.23	0.25	0.22	0.24	0.26
0.18	0.20	0.22	0.19	0.21	0.23	0.20	0.22	0.24	0.21	0.23	0.25	0.22	0.24	0.26	0.23	0.25	0.27
0.16	0.18	0.20	0.17	0.19	0.21	0.18	0.20	0.22	0.19	0.21	0.23	0.20	0.22	0.24	0.21	0.23	0.25
0.13	0.15	0.17	0.14	0.16	0.18	0.15	0.17	0.19	0.16	0.18	0.20	0.17	0.19	0.21	0.18	0.20	0.22
0.14	0.16	0.18	0.15	0.17	0.19	0.16	0.18	0.20	0.17	0.19	0.21	0.18	0.20	0.22	0.19	0.21	0.23
0.12	0.14	0.16	0.13	0.15	0.17	0.14	0.16	0.18	0.15	0.17	0.19	0.16	0.18	0.20	0.17	0.19	0.21
0.11	0.13	0.15	0.12	0.14	0.16	0.13	0.15	0.17	0.14	0.16	0.18	0.15	0.17	0.19	0.16	0.18	0.20
0.12	0.14	0.16	0.13	0.15	0.17	0.14	0.16	0.18	0.15	0.17	0.19	0.16	0.18	0.20	0.17	0.19	0.21
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.10	0.12	0.14	0.11	0.13	0.15	0.12	0.14	0.16	0.13	0.15	0.17	0.14	0.16	0.18	0.15	0.17	0.19
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.06	0.09	0.12	0.07	0.10	0.13	0.08	0.11	0.14	0.11	0.13	0.15	0.12	0.14	0.16	0.12	0.15	0.18
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.07	0.09	0.11	0.07	0.10	0.13	0.10	0.12	0.14	0.11	0.13	0.15	0.12	0.14	0.16	0.13	0.15	0.17
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.05	0.07	0.09	0.05	0.08	0.11	0.06	0.09	0.12	0.09	0.11	0.13	0.10	0.12	0.14	0.11	0.13	0.15
0.19	0.21	0.23	0.20	0.22	0.24	0.21	0.23	0.25	0.22	0.24	0.26	0.23	0.25	0.27	0.24	0.26	0.28
0.20	0.22	0.24	0.21	0.23	0.25	0.22	0.24	0.26	0.23	0.25	0.27	0.24	0.26	0.28	0.25	0.27	0.29
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.15	0.17	0.19	0.16	0.18	0.20	0.17	0.19	0.21	0.18	0.20	0.22	0.19	0.21	0.23	0.20	0.22	0.24
0.16	0.18	0.20	0.17	0.19	0.21	0.18	0.20	0.22	0.19	0.21	0.23	0.20	0.22	0.24	0.21	0.23	0.25
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.03	0.05	0.07	0.04	0.06	0.08	0.05	0.07	0.09	0.05	0.08	0.11	0.06	0.09	0.12	0.09	0.11	0.13
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.04	0.06	0.08	0.05	0.07	0.09	0.05	0.08	0.11	0.06	0.09	0.12	0.09	0.11	0.13	0.10	0.12	0.14

Complete workpiece materials p. H1.

(fn: mm/rev)

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

	ISO 513	MATERIAL	HARDNESS HB	TYPE	DC 12.00 ÷ 12.99			DC 13.00 ÷ 13.99			DC 14.00 ÷ 14.99		
					min	start	max	min	start	max	min	start	max
A - TURNING	P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	NCD GP	0.23	0.25	0.27	0.24	0.26	0.28	0.25	0.27	0.29
				NCD H GP	0.24	0.26	0.28	0.25	0.27	0.29	0.26	0.28	0.30
				NCD H SC	0.22	0.24	0.26	0.23	0.25	0.27	0.24	0.26	0.28
	P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	NCD GP	0.19	0.21	0.22	0.20	0.22	0.24	0.21	0.23	0.25
				NCD H GP	0.20	0.22	0.24	0.21	0.23	0.25	0.22	0.24	0.26
				NCD H SC	0.18	0.20	0.22	0.19	0.21	0.23	0.20	0.22	0.24
B - THREADING	P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	NCD GP	0.17	0.19	0.21	0.18	0.20	0.22	0.19	0.21	0.23
				NCD H GP	0.18	0.20	0.22	0.19	0.21	0.23	0.20	0.22	0.24
				NCD H SC	-	-	-	-	-	-	-	-	-
	P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	NCD GP	-	-	-	-	-	-	-	-	-
				NCD H GP	-	-	-	-	-	-	-	-	-
				NCD H SC	0.16	0.18	0.20	0.17	0.19	0.21	0.18	0.20	0.22
	P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	NCD GP	-	-	-	-	-	-	-	-	-
				NCD H GP	-	-	-	-	-	-	-	-	-
				NCD H SC	0.13	0.16	0.19	0.16	0.18	0.20	0.17	0.19	0.21
C - GROOVING	M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	NCD GP	-	-	-	-	-	-	-	-	-
				NCD H GP	-	-	-	-	-	-	-	-	-
				NCD H SC	0.14	0.16	0.18	0.15	0.17	0.19	0.16	0.18	0.20
	M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		NCD GP	-	-	-	-	-	-	-	-	-
				NCD H GP	-	-	-	-	-	-	-	-	-
				NCD H SC	0.12	0.14	0.16	0.13	0.15	0.17	0.14	0.16	0.18
	K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	NCD GP	0.25	0.27	0.29	0.26	0.28	0.30	0.27	0.29	0.31
				NCD H GP	0.26	0.28	0.30	0.27	0.29	0.32	0.28	0.30	0.33
				NCD H SC	-	-	-	-	-	-	-	-	-
D - MILLING	K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	NCD GP	0.21	0.23	0.25	0.22	0.24	0.26	0.23	0.25	0.27
				NCD H GP	0.22	0.24	0.26	0.23	0.25	0.27	0.24	0.26	0.28
				NCD H SC	-	-	-	-	-	-	-	-	-
	S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		NCD GP	-	-	-	-	-	-	-	-	-
				NCD H GP	-	-	-	-	-	-	-	-	-
				NCD H SC	0.10	0.12	0.14	0.11	0.13	0.15	0.12	0.14	0.16
E - DRILLING	S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		NCD GP	-	-	-	-	-	-	-	-	-
				NCD H GP	-	-	-	-	-	-	-	-	-
				NCD H SC	0.11	0.13	0.15	0.12	0.14	0.16	0.13	0.15	0.17

Complete workpiece materials p. H1.

(fn: mm/rev)

F - ACCESSORIES

G - SPARE PARTS

DC 15.00 ÷ 15.99			DC 16.00 ÷ 16.99			DC 17.00 ÷ 17.99			DC 18.00 ÷ 18.99			DC 19.00 ÷ 19.99			DC 20.00 ÷ 20.99		
min	start	max	min	start	max	min	start	max	min	start	max	min	start	max	min	start	max
0.26	0.28	0.30	0.29	0.29	0.31	0.28	0.30	0.32	0.29	0.31	0.33	0.30	0.32	0.34	0.31	0.33	0.35
0.27	0.29	0.32	0.30	0.30	0.33	0.29	0.32	0.34	0.30	0.33	0.35	0.32	0.34	0.36	0.33	0.35	0.37
0.25	0.27	0.29	0.30	0.30	0.30	0.26	0.29	0.32	0.27	0.30	0.33	0.30	0.32	0.34	0.31	0.33	0.35
0.22	0.24	0.26	0.23	0.25	0.27	0.24	0.26	0.28	0.25	0.27	0.29	0.26	0.28	0.30	0.27	0.29	0.31
0.23	0.25	0.27	0.24	0.26	0.28	0.25	0.27	0.29	0.26	0.28	0.30	0.27	0.29	0.32	0.28	0.30	0.33
0.21	0.23	0.25	0.22	0.24	0.26	0.23	0.25	0.27	0.24	0.26	0.28	0.25	0.27	0.29	0.26	0.28	0.30
0.20	0.22	0.24	0.21	0.23	0.25	0.22	0.24	0.26	0.23	0.25	0.27	0.24	0.26	0.28	0.25	0.27	0.29
0.21	0.23	0.25	0.22	0.24	0.26	0.23	0.25	0.27	0.24	0.26	0.28	0.25	0.27	0.29	0.26	0.28	0.30
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.19	0.21	0.23	0.20	0.22	0.24	0.21	0.23	0.25	0.22	0.24	0.26	0.23	0.25	0.27	0.24	0.26	0.28
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.17	0.20	0.23	0.18	0.21	0.24	0.21	0.23	0.25	0.22	0.24	0.26	0.22	0.25	0.28	0.24	0.26	0.28
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.17	0.19	0.21	0.18	0.20	0.22	0.19	0.21	0.23	0.20	0.22	0.24	0.21	0.23	0.25	0.22	0.24	0.26
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.15	0.17	0.19	0.16	0.18	0.20	0.17	0.19	0.21	0.18	0.20	0.22	0.19	0.21	0.23	0.20	0.22	0.24
0.28	0.30	0.32	0.29	0.31	0.33	0.30	0.32	0.34	0.31	0.33	0.35	0.32	0.34	0.36	0.33	0.35	0.37
0.29	0.32	0.34	0.30	0.33	0.35	0.32	0.34	0.36	0.33	0.35	0.37	0.34	0.36	0.38	0.35	0.37	0.39
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.24	0.26	0.28	0.25	0.27	0.29	0.26	0.28	0.30	0.27	0.29	0.31	0.28	0.30	0.32	0.29	0.31	0.33
0.25	0.27	0.29	0.26	0.28	0.30	0.27	0.29	0.32	0.28	0.30	0.33	0.29	0.32	0.34	0.30	0.33	0.35
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.13	0.15	0.17	0.14	0.16	0.18	0.15	0.17	0.19	0.16	0.18	0.20	0.17	0.19	0.21	0.18	0.20	0.22
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0.14	0.16	0.18	0.15	0.17	0.19	0.16	0.18	0.20	0.17	0.19	0.21	0.18	0.20	0.22	0.19	0.21	0.23

Complete workpiece materials p. H1.

(fn: mm/rev)

A - TURNING

B - THREADING

C - GROOVING

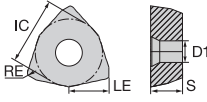
D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

- A - TURNING
- B - THREADING
- C - GROOVING
- D - MILLING
- E - DRILLING
- F - ACCESSORIES
- G - SPARE PARTS

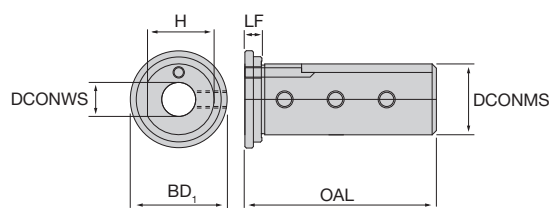
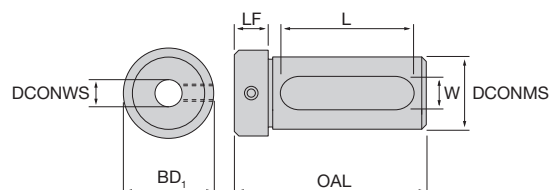
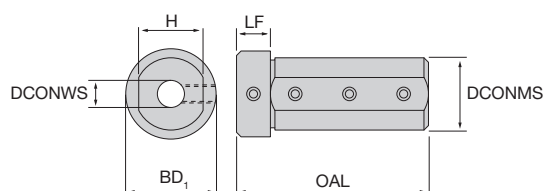
WCMX	HF: Micrograin carbide PVD: Physical vapour deposition	HF PVD						
		JP5530						
ISO								
- ISO drilling inserts with geometry for general purposes - PVD coated carbide grade for universal use - Inserts could be mounted on ISO drill bodies with seats of the same IC circle	Stable machining, light cut	● 1 st choice ○ suitable						
	General machining, medium cut	● 1 st choice ○ suitable	●					
	Unstable machining, heavy cut	⚙ 1 st choice ⚙ suitable	⚙					
	Dimensions	ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)					
	P	120 240						
	M	40 100						
	K	120 180						
	N							
	S							
	H							
GENERAL 	Designation	RE	IC	S	D1	LE		Stock
	GP P M K							
	WCMX030208-GP	0.8	5.56	2.38	2.8	-	●	
	WCMX040208-GP	0.8	6.35	2.38	2.9	-	●	
	WCMX050308-GP	0.8	7.94	3.18	3.4	-	●	
	WCMX06T308-GP	0.8	9.52	3.97	3.8	-	●	
	WCMX080412-GP	1.2	12.7	4.76	4.4	-	●	

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

ACCESSORIES

NT-SLB

Sleeves for boring bars



Designation	Stock	DCONWS	DCONMS	OAL	H	LF	BD1	L	W		
SCREWS LOCK SLEEVE											
NT-SLB S03 D16-L62	●	3	16	62	14.5	7	20	-	-		
NT-SLB S04 D16-L62	●	4	16	62	14.5	7	20	-	-		
NT-SLB S04 D20-L67	●	4	20	67	17.5	7	27	-	-		
NT-SLB S04 D32-L80	●	4	32	80	29.5	15	38	-	-		
NT-SLB S05 D16-L62	●	5	16	62	14.5	7	20	-	-		
NT-SLB S05 D20-L67	●	5	20	67	17.5	7	27	-	-		
NT-SLB S05 D32-L85	●	5	32	85	29.5	15	38	-	-		
NT-SLB S05 D40-L100	●	5	40	100	38	15	46	-	-		
NT-SLB S06 D16-L62	●	6	16	62	14.5	7	20	-	-		
NT-SLB S06 D20-L52	●	6	20	52	17.5	7	25	-	-		
NT-SLB S06 D20-L67	●	6	20	67	17.5	7	27	-	-		
NT-SLB S06 D32-L85	●	6	32	85	29.5	15	38	-	-		
NT-SLB S06 D40-L100	●	6	40	100	38	15	46	-	-		
NT-SLB S07 D20-L67	●	7	20	67	17.5	7	27	-	-		
NT-SLB S07 D32-L85	●	7	32	85	29.5	15	38	-	-		
NT-SLB S07 D40-L100	●	7	40	100	38	15	46	-	-		
NT-SLB S08 D16-L62	●	8	16	62	14.5	7	20	-	-		
NT-SLB S08 D20-L52	●	8	20	52	17.5	7	25	-	-		
NT-SLB S08 D20-L67	●	8	20	67	17.5	7	27	-	-		
NT-SLB S08 D32-L85	●	8	32	85	29.5	15	38	-	-		
NT-SLB S08 D40-L100	●	8	40	100	38	15	46	-	-		
NT-SLB S08 D50-L100	●	8	50	100	48	15	58	-	-		
NT-SLB S10 D20-L52	●	10	20	52	17.5	7	25	-	-		
NT-SLB S10 D20-L67	●	10	20	67	17.5	7	27	-	-		
NT-SLB S10 D32-L100	●	10	32	100	29.5	15	38	-	-		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Designation	Stock	DCONWS	DCONMS	OAL	H	LF	BD1	L	W		
NT-SLB S10 D40-L100	●	10	40	100	38	15	46	-	-		
NT-SLB S10 D50-L100	●	10	50	100	48	15	58	-	-		
NT-SLB S12 D20-L52	●	12	20	52	17.5	7	25	-	-		
NT-SLB S12 D20-L67	●	12	20	67	17.5	7	27	-	-		
NT-SLB S12 D32-L100	●	12	32	100	29.5	15	38	-	-		
NT-SLB S12 D40-L100	●	12	40	100	38	15	46	-	-		
NT-SLB S12 D50-L100	●	12	50	100	48	15	58	-	-		
NT-SLB S14 D32-L100	●	14	32	100	29.5	15	38	-	-		
NT-SLB S14 D40-L100	●	14	40	100	38	15	46	-	-		
NT-SLB S14 D50-L100	●	14	50	100	48	15	58	-	-		
NT-SLB S15 D32-L100	●	15	32	100	29.5	15	38	-	-		
NT-SLB S15 D40-L100	●	15	40	100	38	15	46	-	-		
NT-SLB S16 D32-L100	●	16	32	100	29.5	15	38	-	-		
NT-SLB S16 D40-L100	●	16	40	100	38	15	46	-	-		
NT-SLB S16 D50-L100	●	16	50	100	48	15	58	-	-		
NT-SLB S18 D32-L100	●	18	32	100	29.5	15	38	-	-		
NT-SLB S18 D40-L100	●	18	40	100	38	15	46	-	-		
NT-SLB S18 D50-L100	●	18	50	100	48	15	58	-	-		
NT-SLB S20 D50-L100	●	20	50	100	48	15	58	-	-		
NT-SLB S25 D50-L100	●	25	50	100	48	15	58	-	-		
THROUGH HOLE SLEEVE											
NT-SLB S10 D16-L62	●	10	16	62	-	7	20	50	11		
NT-SLB S12 D16-L62	●	12	16	62	-	7	20	50	11		
NT-SLB S14 D20-L67	●	14	20	67	-	7	27	55	13		
NT-SLB S14 D25-L64	●	14	25	64	-	6	35	51	12		
NT-SLB S15 D20-L67	●	15	20	67	-	7	27	55	13		
NT-SLB S15 D25-L64	●	15	25	64	-	6	35	51	12		
NT-SLB S16 D20-L52	●	16	20	52	-	7	25	40	11		
NT-SLB S16 D20-L67	●	16	20	67	-	7	27	55	13		
NT-SLB S16 D25-L64	●	16	25	64	-	6	35	51	12		
NT-SLB S17 D25-L64	●	17	25	64	-	6	35	51	12		
NT-SLB S18 D25-L64	●	18	25	64	-	6	35	51	12		
NT-SLB S20 D25-L64	●	20	25	64	-	6	35	51	12		
NT-SLB S20 D32-L100	●	20	32	100	-	15	38	77	14		
NT-SLB S20 D40-L100	●	20	40	100	-	15	46	77	14		
NT-SLB S22 D25-L64	●	22	25	64	-	6	35	51	12		
NT-SLB S22 D32-L100	●	22	32	100	-	15	38	77	14		
NT-SLB S22 D40-L100	●	22	40	100	-	15	46	77	14		
NT-SLB S25 D32-L100	●	25	32	100	-	15	38	77	14		
NT-SLB S25 D40-L100	●	25	40	100	-	15	46	77	14		
NT-SLB S32 D40-L100	●	32	40	100	-	15	46	77	14		
NT-SLB S32 D50-L100	●	32	50	100	-	15	46	77	14		
NT-SLB S40 D50-L100	●	40	50	100	-	15	58	77	14		
SCREWS LOCK WITH COOLANT SLEEVE											
NT-SLB S04 D25-L64	●	4	25	64	23.5	6	35	-	-		
NT-SLB S05 D25-L64	●	5	25	64	23.5	6	35	-	-		
NT-SLB S06 D25-L64	●	6	25	64	23.5	6	35	-	-		
NT-SLB S07 D25-L64	●	7	25	64	23.5	6	35	-	-		
NT-SLB S08 D25-L64	●	8	25	64	23.5	6	35	-	-		
NT-SLB S09 D25-L64	●	9	25	64	23.5	6	35	-	-		
NT-SLB S10 D25-L64	●	10	25	64	23.5	6	35	-	-		
NT-SLB S11 D25-L64	●	11	25	64	23.5	6	35	-	-		
NT-SLB S12 D25-L64	●	12	25	64	23.5	6	35	-	-		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

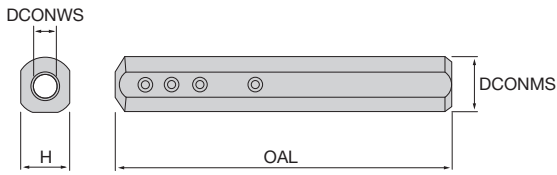
F - ACCESSORIES

G - SPARE PARTS

- A - TURNING
- B - THREADING
- C - GROOVING
- D - MILLING
- E - DRILLING
- F - ACCESSORIES
- G - SPARE PARTS

NT-SLV

Sleeves for boring bars





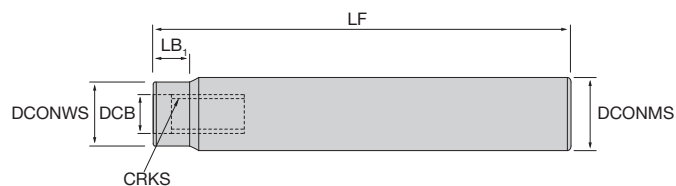
Designation	Stock	DCONWS	DCONMS	OAL	H						
SCREWS LOCK SLEEVE											
NT-SLV S03 D16-L100	●	3	16	100	14						
NT-SLV S04 D16-L100	●	4	16	100	14						
NT-SLV S05 D16-L100	●	5	16	100	14						
NT-SLV S06 D16-L100	●	6	16	100	14						

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

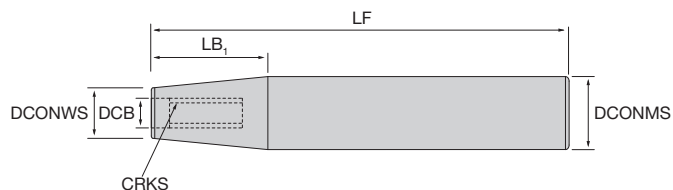
NT-ARB

Arbors for screw-in cutters

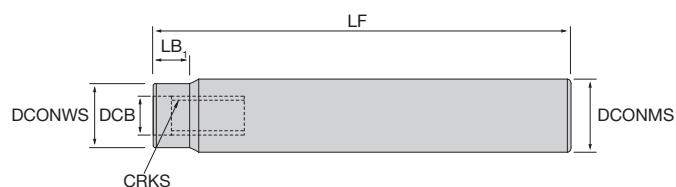
Steel straight shank



Steel tapered shank



Carbide shank, straight type and shrink-neck type



Designation	Stock	DCONMS	CRKS	DCONWS	DCB	LF	LB1				
STEEL STRAIGHT SHANK											
NT-ARB D12-M06-120	●	12	M6	11	6.5	120	10				
NT-ARB D16-M08-150	●	16	M8	14	8.5	150	10				
NT-ARB D16-M08-200	●	16	M8	14	8.5	200	10				
NT-ARB D20-M10-150	●	20	M10	18	10.5	150	12				
NT-ARB D20-M10-250	●	20	M10	18	10.5	250	12				
NT-ARB D25-M12-200	●	25	M12	23	12.5	200	15				
NT-ARB D25-M12-300	●	25	M12	23	12.5	300	15				
NT-ARB D32-M16-200	●	32	M16	29	17	200	18				
NT-ARB D32-M16-350	●	32	M16	29	17	350	18				
STEEL TAPERED SHANK											
NT-ARB D16-M06-150T	●	16	M6	11	6.5	150	40				
NT-ARB D16-M06-200T	●	16	M6	11	6.5	200	40				
NT-ARB D20-M08-200T	●	20	M8	14	8.5	200	50				
NT-ARB D20-M08-250T	●	20	M8	14	8.5	250	50				
NT-ARB D25-M10-200T	●	25	M10	18	10.5	200	60				
NT-ARB D25-M10-250T	●	25	M10	18	10.5	250	60				
NT-ARB D32-M12-250T	●	32	M12	23	12.5	250	70				
NT-ARB D32-M12-350T	●	32	M12	23	12.5	350	70				
CARBIDE STRAIGHT SHANK											
NT-ARB-HM D12-11-M06-100	●	12	M6	11	6.5	100	37				
NT-ARB-HM D12-11-M06-150	●	12	M6	11	6.5	150	52				
NT-ARB-HM D12-M06-100	●	12	M6	12	6.5	100	-				
NT-ARB-HM D12-M06-150	●	12	M6	12	6.5	150	-				
NT-ARB-HM D12-M06-200	●	12	M6	12	6.5	200	-				
NT-ARB-HM D16-13.8-M08-150	●	16	M8	13.8	8.5	150	42				

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING
B - THREADING
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Designation	Stock	DCONMS	CRKS	DCONWS	DCB	LF	LB1				
NT-ARB-HM D16-13.8-M08-200	●	16	M8	13.8	8.5	200	57				
NT-ARB-HM D16-M08-100	●	16	M8	16	8.5	100	-				
NT-ARB-HM D16-M08-150	●	16	M8	16	8.5	150	-				
NT-ARB-HM D16-M08-200	●	16	M8	16	8.5	200	-				
NT-ARB-HM D20-18.2-M10-150	●	20	M10	18.2	10.5	150	54				
NT-ARB-HM D20-18.2-M10-200	●	20	M10	18.2	10.5	200	78				
NT-ARB-HM D20-M10-100	●	20	M10	20	10.5	100	-				
NT-ARB-HM D20-M10-150	●	20	M10	20	10.5	150	-				
NT-ARB-HM D20-M10-200	●	20	M10	20	10.5	200	-				
NT-ARB-HM D20-M10-300	●	20	M10	20	10.5	300	-				
NT-ARB-HM D25-M12-100	●	25	M12	25	12.5	100	-				
NT-ARB-HM D25-M12-150	●	25	M12	25	12.5	150	-				
NT-ARB-HM D25-M12-200	●	25	M12	25	12.5	200	-				
NT-ARB-HM D25-M12-300	●	25	M12	25	12.5	300	-				

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

SPARE PARTS

Screws, G2

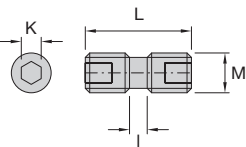
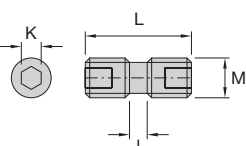
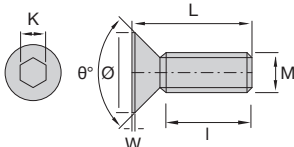
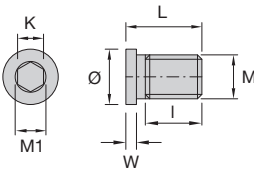
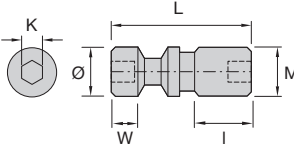
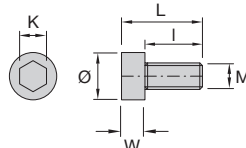
Clamps and wedges, G5

Shims, G6

Wrenches and screwdrivers, G9

Miscellaneous, G11

	Designation	M	Ø	L	I	W	θ	K	Torque		Chapter
Insert screws	NT-ST	NT-ST16031T06	M1.6X0.35	2.6	3.3	1	0.8	60°	T6	0.2	A
		NT-ST20033T06	M2.0X0.40	2.7	3.3	2.2	0.5	60°	T6	0.4	D
		NT-ST20038T06	M2.0X0.40	2.7	3.8	2.6	0.6	60°	T6	0.4	A
		NT-ST20040T06	M2.0X0.40	2.7	4	2.9	0.5	60°	T6	0.4	D
		NT-ST20043T06	M2.0X0.40	2.7	4.3	2.5	1	60°	T6	0.4	D,E
		NT-ST22049T07	M2.2X0.45	3.1	4.9	3.3	0.5	60°	T7	0.7	A
		NT-ST22055T06	M2.2X0.45	3	5.5	4	0.8	60°	T6	0.7	E
		NT-ST25050T07	M2.5X0.45	3.1	5	3.1	1	60°	T7	0.9	A
		NT-ST25056T08HQ	M2.5X0.45	3.5	5.6	3.4	0.6	60°	T8	1.2	D
		NT-ST25059T08	M2.5X0.45	4	6	3.9	0.5	60°	T8	0.9	B
		NT-ST25060T07	M2.5X0.45	3.5	6	3.6	0.5	60°	T7	0.9	A
		NT-ST25060T08	M2.5X0.45	3.85	6	3.9	0.95	60°	T8	1.2	D
		NT-ST25065T07	M2.5X0.45	3.5	6.5	4.1	0.5	60°	T7	0.9	D,E
		NT-ST25065T08	M2.5X0.45	3.5	6.5	4.6	0.7	60°	T8	0.9	A
		NT-ST25080T09	M2.5X0.45	3.5	7.8	5.9	0.5	60°	T9	0.9	E
		NT-ST30058T10	M3.0X0.50	4.3	5.8	4.4	1	90°	T10	1.5	A
		NT-ST30068T10	M3.0X0.50	4.3	6.8	5.4	0.5	90°	T10	1.5	A
		NT-ST30070T10	M3.0X0.50	4.3	7	5.1	0.5	60°	T10	1.5	A
		NT-ST30070T10HQ	M3.0X0.50	4.4	7	4.4	0.9	60°	T10	2	D
		NT-ST30080T10	M3.0X0.50	4.3	8	5.7	2.9	60°	T10	1.5	E
		NT-ST35051T15	M3.5X0.60	5.1	8.8	6	1.3	60°	T15	2.3	D
		NT-ST35070T15	M3.5X0.60	5.3	7	4.6	0.8	60°	T15	2.3	D
		NT-ST35073T15	M3.5X0.60	5.5	7.3	4.3	0.5	60°	T15	2.3	A
		NT-ST35080T15	M3.5X0.60	5.5	8	5.5	1	60°	T15	2.3	E
		NT-ST35089T15	M3.5X0.60	5.5	8.9	5.9	0.7	60°	T15	2.3	A,B
		NT-ST35089T15B	M3.5X0.60	5.1	8.9	6	1.2	60°	T15	2.3	A
		NT-ST35095T15HQ	M3.5X0.60	5.3	9.5	6	1.5	60°	T15	3	D
		NT-ST35115T15	M3.5X0.60	5.5	11.5	8	1.3	60°	T15	2.3	A,B
		NT-ST35120T15	M3.5X0.60	5.3	12	9.5	0.9	60°	T15	2.3	D
		NT-ST40090T15	M4.0X0.70	5.5	9	6.1	1	60°	T15	3.4	A
		NT-ST40095T15HQ	M4.0X0.70	5.5	9.5	6.6	1	60°	T15	4.5	D
		NT-ST40100T15	M4.0X0.70	5.5	10	7	1.2	60°	T15	3.4	E
		NT-ST40101T15	M4.0X0.70	6.5	10.1	8	0.5	90°	T15	3.4	D
		NT-ST40110T15HQ	M4.0X0.70	5.5	11	8.2	1.6	60°	T15	4.5	D
		NT-ST40115T15	M4.0X0.50	6.8	11.5	8.6	1.3	60°	T15	3.4	A,C
		NT-ST40136T15	M4.0X0.70	7.1	13.6	10	0.9	60°	T15	3.4	D
		NT-ST40140T15	M4.0X0.50	6.8	13.8	10.1	1	60°	T15	3.4	A
		NT-ST45110T20	M4.5X0.75	6.8	11	7.9	1.1	60°	T20	4.9	D
		NT-ST45111T15	M4.5X0.75	6.8	11.1	8.2	0.5	60°	T15	4.9	D
		NT-ST50100T20	M5.0X0.80	6.4	12.1	8.4	1	40°	T20	6.7	E
		NT-ST50108T20	M5.0X0.80	6.4	10.8	5.5	1	43°	T20	6.7	E
		NT-ST50110T20	M5.0X0.80	7	11	8.2	1.1	60°	T20	6.7	C,D
		NT-ST60160T25	M6.0X1.00	8.5	16	11.5	0.9	60°	T25	11.4	D
Clamp screws	NT-SC	NT-SC035	M6.0X1.00	10	15	6.3	3.7	3			D
		NT-SC200	M6.0X1.00	9.7	24	20.2	3.8	T20			A
		NT-SC250	M4.0X0.70	6.8	18.8	15.2	3.6	T15			A
		NT-SC300	M5.0X0.80	8.3	20.8	15.9	4.9	4			C

	Designation	M	L	I	K					Chapter
Clamp screws - double type	NT-SC double thread	NT-SC005	M5.0X0.80	15	5	2.5				A
		NT-SC008	M6.0X1.00	24	7	3				A
		NT-SC010	M6.0X1.00	30	7	3				A
		NT-SC030	M5.0X0.80	18	7	2.5				A
		NT-SC070	M8.0X1.00	30	7	4				A
										
	Designation	M	L	I	K					Chapter
Wedge screws	NT-SC	NT-SC060	M6.0X1.00	17	2.5	3				D
		NT-SC090	M6.0X1.00	20.2	3.5	3				D
										
	Designation	M	Ø	L	I	W	Ø	K		Chapter
Shim screws	NT-ST	NT-ST022	M2.0X0.40	3	5	3	0.5	60°	T6	A,B
		NT-ST031	M3.0X0.50	6	8	6	0.1	90°	2	A
		NT-ST200	M4.0X0.70	7.9	10	7	0.7	90°	2.5	A
		NT-ST250	M4.0X0.70	6.3	7.5	5.2	0.5	90°	T15	A
										
	Designation	M	Ø	L	I	W	M1	K		Chapter
Shim screws - double type	NT-SR with inside thread	NT-SR001	M6.0X0.75	7.8	9	6	1.5	M3.0X0.50	4	A
		NT-SR002	M5.0X0.50	6.3	6	3.5	1.2	M3.0X0.50	3.5	D
		NT-SR009	M6.0X0.75	7.8	7.5	4.1	1.6	M4.0X0.70	4	D
		NT-SR010	M5.0X0.50	6.3	8.6	6	1.2	M3.0X0.50	3.5	A
										
	Designation	M	Ø	L	I	W	K			Chapter
Levers screws	NT-SC	NT-SC015	M6.0X1.00	5.95	17	7	3	2.5		A
		NT-SC020	M8.0X1.00	8	23.5	10	6	3		A
		NT-SC025	M8.0X1.00	8	21	7	6	3		A
										
	Designation	M	Ø	L	I	W	K			Chapter
Locking screws	NT-SC	NT-SC001	M5.0X0.80	8.5	25.5	20	6	4		C
		NT-SC002	M6.0X1.00	10	25	20	5	4		C
		NT-SC003	M3.0X0.50	5.5	9	6	3	2.5		B
		NT-SC004	M4.0X0.70	7	12	8	4	3		B
										

A - TURNING

B - THREADING

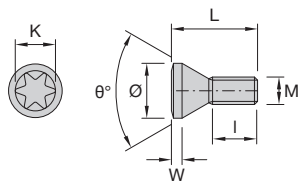
C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

Locking screws	Designation		M	Ø	L	I	W	θ	K			Chapter	
		NT-ST	NT-ST051	M5.0X0.80	7	13.2	10.1	0.5	60°	T20			C
			NT-ST076	M4.0X0.70	5.7	12	7	1	60°	T15			C
			NT-ST077	M5.0X0.80	7.2	16	11	1.2	60°	T15			C
Cartridge screw	Designation		M	Ø	L	I	W	K				Chapter	
	NT-CW	NT-CW040	M5.0X0.80	8.5	16.5	11.5	5	4				D	
Adjusting screw	Designation		M	Ø	d	L	I	W				Chapter	
	NT-AD	NT-AD040	M5.0X0.80	9	2	14	8	6				D	

		Designation	M	L	I	W	H					Chapter	
Clamps	NT-CS with thread	NT-CS005	M5.0X0.80	13.6	10	7.8	7.1					A	
		NT-CS009	M5.0X0.80	14.9	11	7.8	11					A	
		NT-CS010	M6.0X1.00	18.2	13	9.4	13.5					A	
		NT-CS015	M8.0X1.00	22.3	17	10.8	17.4					A	
		NT-CS025	M6.0X1.00	21.5	17	9.4	13.7					A	
		NT-CS030	M5.0X0.80	16.9	12.5	7.9	7.9					A	
		NT-CS070	M8.0X1.00	19.4	13.5	10.7	16.8					A	
		NT-CS075	M6.0X1.00	24.5	19.5	9.7	13.7					A	
Clamps	NT-CS with hole	NT-CS028	Ø 6.3	20	12	12	6					D	
		NT-CS200	Ø 6.4	26	17.5	13	11					A	
		NT-CS210	Ø 6.4	29	20.3	12.1	11					A	
		NT-CS250	Ø 4.2	21	13.3	11	10					A	
		NT-CS300L	Ø 5.5	28	15.2	15	12.5					C	
		NT-CS300R	Ø 5.5	28	15.2	15	12.5					C	
Clamping sets	NT-CS clamp+screw	NT-CS003	M4.0X0.70	13.5	7.5	7.7	14.3	2.5				A	
		NT-CS013	M3.5X0.60	11.5	6.4	7.7	9	T15				D	
		NT-CS014	M3.5X0.60	11.5	6.4	7.7	9	T15				D	
		NT-CS021	M5.0X0.80	16.5	9.5	9.25	11	T20				D	
Wedges	NT-WD	NT-WD070	M6.0X1.00	11.8	9.6	7.3	9	7.5				D	
		NT-WD090	M6.0X1.00	9.96	7.8	5.96	10	9.5				D	

A - TURNING

B - THREADING

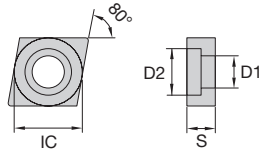
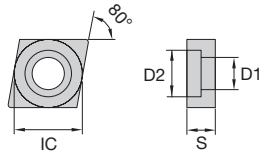
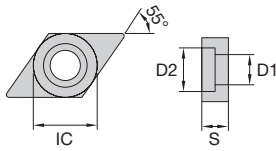
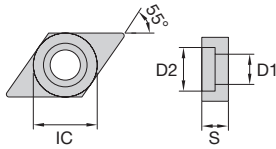
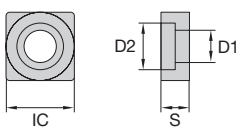
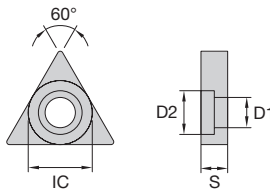
C - GROOVING

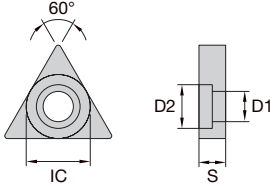
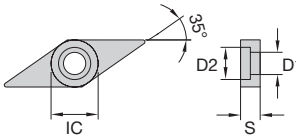
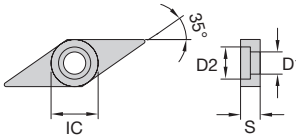
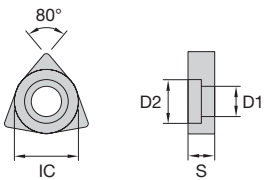
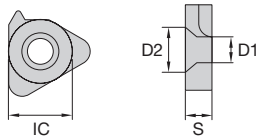
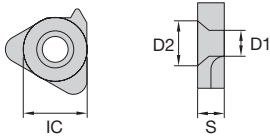
D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

Shims for turning	Designation		IC	S	D1	D2					Chapter
	NT-SH (CC ∞)	NT-SH001	11.4	3.9	6.6	8.2					A
		NT-SH011	8.5	3.2	5.4	6.7					A
											
Shims for turning	Designation		IC	S	D1	D2					Chapter
	NT-SH (CN ∞)	NT-SH012	9.3	3.2	4.9	6.8					A
		NT-SH030	12.4	4.8	7.5	8.2					A
		NT-SH035	12.6	3.2	6.9	8.5					A
		NT-SH055	15.5	4.8	9.9	11					A
		NT-SH080	18.7	4.8	11.4	12.3					A
											
Shims for turning	Designation		IC	S	D1	D2					Chapter
	NT-SH (DC ∞)	NT-SH007	6.9	3.2	5.4	6.7					A
											
Shims for turning	Designation		IC	S	D1	D2					Chapter
	NT-SH (DN ∞)	NT-SH020	8.5	3.2	6.9	8.9					A
		NT-SH025	8.2	6.5	7.5	8					A
		NT-SH045	8.2	4.8	7.5	8					A
											
Shims for turning	Designation		IC	S	D1	D2					Chapter
	NT-SH (SN ∞)	NT-SH070	12.3	4.8	7.5	8.2					A
		NT-SH090	18.7	4.8	11.3	13					A
											
Shims for turning	Designation		IC	S	D1	D2					Chapter
	NT-SH (TN ∞)	NT-SH005	6.7	3.2	5.8	6.6					A
		NT-SH006	6.6	3.2	4.8	6.6					A
		NT-SH008	8.3	4.9	7.5	8.2					A
											

	Designation	IC	S	D1	D2						Chapter
Shims for turning	NT-SH (TP _∞)	NT-SH002	5.5	3.2	2.4	5.3					A
											
Shims for turning	NT-SH (VB _∞ -VC _∞)	NT-SH050	6.8	3.2	5.4	6.6					A
											
Shims for turning	NT-SH (VN _∞)	NT-SH075	6.8	3.2	5.9	6.6					A
											
Shims for turning	NT-SH (WN _∞)	NT-SH003	6.6	3.3	5.9	6.7					A
		NT-SH010	8	4.8	7.3	8					A
		NT-SH015	8.8	3.2	6.8	9					A
											
Shims for threading	NT-SH (ER-IL)	NT-SH060	9.5	3.2	4.5	6.4					B
		NT-SH060+1°	9.5	3.2	4.5	6					B
		NT-SH060-1°	9.5	3.2	4.5	6					B
		NT-SH066	12.6	4	5.1						B
											
Shims for threading	NT-SH (IR-EL)	NT-SH065	9.5	3.2	4.5	6.4					B
		NT-SH067	12.6	4	5.1						B
											

A - TURNING

B - THREADING

C - GROOVING

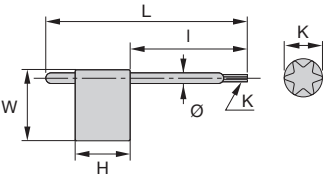
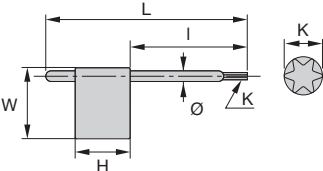
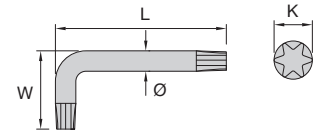
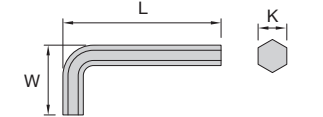
D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING	Shims for milling	Designation	IC	S	D1	D2						Chapter
		NT-SH (4FacePlus) NT-SH004	10.7	3	5.2	6.9						D
B - THREADING	Shims for milling	Designation	IC	S	D1	D2						Chapter
		NT-SH (Double4Face) NT-SH009	12.6	3.15	6.7	8.7						D
C - GROOVING												
D - MILLING												
E - DRILLING												
F - ACCESSORIES												
G - SPARE PARTS												

Flag wrenches	Designation		Ø	L	I	W	H	K					
		NT-FT yellow (torx)	NT-FT06	3.5	82	45	23	23	T6				
			NT-FT07	3.5	84	47	23	23	T7				
			NT-FT08	3.5	82	45	23	23	T8				
			NT-FT09	3	73	37	23	19	T9				
			NT-FT10	3.5	83	46	23	23	T10				
		NT-FT15	3.5	83	46	23	23	T12					
Flag wrenches	Designation		Ø	L	I	W	H	K					
		NT-FT blue (torx)	NT-FTB06	3	85	49	21	22	T6				
			NT-FTB07	3	85	49	21	22	T7				
			NT-FTB08	3	85	49	21	22	T8				
			NT-FTB09	3	85	49	21	22	T9				
			NT-FTB10	3	85	49	21	22	T10				
		NT-FTB15	4	85	49	29	24	T15					
		NT-FTB20	4	90	52	29	24	T20					
Flag wrenches	Designation		Ø	L	I	W	H	K					
	NT-FT yellow (torx plus)	NT-FTP08	3.5	88	51	23	23	IP8					
L wrenches	Designation		Ø	L	W	K							
		NT-TX (torx)	NT-TX15	3.5	57	19	T15						
			NT-TX20	4	62	23	T20						
L wrenches	Designation		Ø	L	W	K							
		NT-WR (hexagonal)	NT-WR020	-	51	18	2						
			NT-WR025	-	53	18	2.5						
			NT-WR030	-	66	23	3						
			NT-WR035	-	69	25	3.5						
			NT-WR040	-	74	29	4						
		NT-WR050	-			5							
Screwdrivers	Designation		Ø	L	I	K							
	NT-DT	NT-DT20	5	175	80	T20							

A - TURNING

B - THREADING

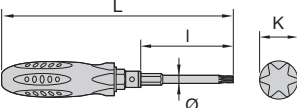
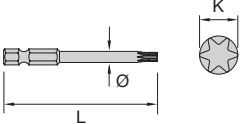
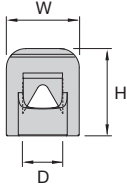
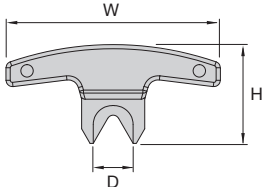
C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

Designation		Ø	L	I	K	Torque					
Screwdrivers	NT-TSD torque control	NT-TSD TX08-1.2	3	200	60	T8	1.2 NM				
		NT-TSD TX10-2.0	3.9	200	60	T10	2.0 NM				
		NT-TSD TX15-3.0	4	200	60	T15	3.0 NM				
											
Designation		Ø	L	K							
Screwdrivers	Interchangeable bit	NT-TORX BIT IP08	3	70	IP8						
		NT-TORX BIT TX08	3	70	T8						
		NT-TORX BIT TX10	4	70	T10						
		NT-TORX BIT TX15	4	70	T15						
											
Designation		W	H	D							Chapter
Head wrenches	NT-WR (DEX)	NT-WR1011	24	30	12						E
		NT-WR1217	34	39	18						E
		NT-WR1820	38	45	22						E
		NT-WR2126	45	54	29						E
											
Designation		W	H	D							Chapter
Head wrenches	NT-WR (DXP)	NT-WR1416	102	47.1	17						E
		NT-WR1720	102	47.1	19						E
		NT-WR2128	102	47.1	29						E
											

Designation		M	L	I	Ø	D	K				Chapter
Eccentric pins	NT-SP	NT-SP010	M6.0X1.00	17.7	4.5	5	7.8	3			A
		NT-SP020	M5.0X0.80	14	3.4	3.7	6.2	2			A
		NT-SP025	M6.0X1.00	19.2	4.5	5	7.8	2.5			A
		NT-SP030	M5.0X0.80	11	3.4	3.7	5.6	2			A
		NT-SP035	M5.0X0.80	11	4.4	5	5.6	2			A
		NT-SP040	M8.0X1.00	21.8	4.7	6.2	10.3	3			A
		NT-SP050	M10.0X1.00	21.8	4.7	7.8	11.8	4			A
Designation											Chapter
Levers	NT-LL	NT-LL012		3.4	12	9.9	3.6				A
		NT-LL015		4.4	10	13.6	4.7				A
		NT-LL020		5	14.5	14.3	4.6				A
Designation											Chapter
Shim plugs	NT-SR	NT-SR012		6.2	5.8	3.5					A
		NT-SR015		6.5	3	4.5					A
		NT-SR020		8.6	7	4					A
Designation											Chapter
Springs	NT-SG	NT-SG028		3.5	8						D
		NT-SG200		8	16						A
		NT-SG250		5.5	12						A
Designation											Chapter
Locking grains	NT-ST	NT-ST042	M5.0X0.80	6	2.5						E
		NT-ST044	M5.0X0.80	8	2.5						E
		NT-ST046	M6.0X1.00	10	3						E
		NT-ST095	M4.0X0.70	4	2						A
Designation											Chapter
Setting grains	NT-ST	NT-ST043	M5.0X0.80	6	2.5						E
		NT-ST045	M5.0X0.80	8	2.5						E
		NT-ST047	M6.0X1.00	10	3						E

A - TURNING

B - THREADING

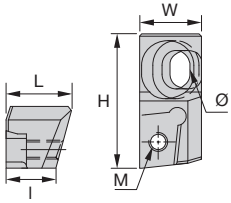
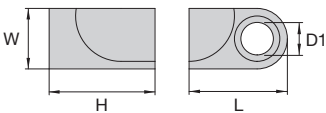
C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING	Cartridge	Designation	M	H	W	Ø	MIID					Chapter
		NT-CRD NT-CRD-XP08 	M3.0X0.50	29.5	11	5.5	XPGe08					D
B - THREADING	Chip cover	Designation	D1	L	H	W						Chapter
		NT-CH NT-CH030 	6	13	14	8						D
C - GROOVING												
D - MILLING												
E - DRILLING												
F - ACCESSORIES												
G - SPARE PARTS												

WORKPIECE MATERIALS

Gr.	Materials	W.-Nr	DIN	EN-Nr.	EN	UNI	BS	JIS	AFNOR
P1	Free cutting steel and structural steel Rm < 500 N/mm ²	1.0037	St 37-2	1.0037	S235JR	Fe 360 B		STKM 12 C	E 24-2
		1.0116	St 37-3	1.0038	S235JRG2	Fe 360 D FF	4360-40 C		E 24-3, E 24-4
		1.0144	St 44-3 N	1.0144	S275J2G3	Fe 430 D FF	4360-43 C	SM 41 C	E 28-3, E 28-4
		1.0301	C 10	1.0301	C 10	C 10	045 M 10	S 10 C	34 C 10, XC 10
		1.0401	C 15			C 15, C 16	080 M 15		37 C 12, XC 18
		1.0402	C 22	1.0402	C 22	C 20, C 21	050 A 20		C 20
		1.0570	St 52-3	1.0570	S355JR	Fe 510 B	4360-50 C	SM 50 YA	E 36-3, E 36-4
		1.0715	9 SMn 28	1.0715	11 SMn 30	CF 9 SMn 28	230 M 07	SUM 22	S 250
		1.0718	9 SMnPb 28	1.0718	11 SMnPb 30	CF 9 SMnPb 28		SUM 22 L	S 250 Pb
		1.0721	10 S 20	1.0721	10 S 20	CF 10 S 20	210 M 15		10 F 1
		1.0722	10 SPb 20			CF 10 SPb 20			10 PbF 2
		1.0723	15 S 20	1.0725	15 SMn 13		210 A 15	SUM 32	
		1.0726	35 S 20	1.0726	35 S20		212 M 36		35 MF 4
		1.0727	46 S 20	1.0727	46 S20		212 M 44		45 MF 4
		1.0736	9 SMn 36	1.0736	11 SMn 37	CF 9 SMn 36	240 M 07		S 300
		1.0765	36 SMnPb 14		36 SMnPb 14	CF 35 SMnPb 10	216 M 36		35 MF 6 Pb
		1.1141	Ck 15	1.1141	C 15R	C 15, C 16	080 M 15	S 15 C, S 15 CK	XC 15, XC 18
			Ck 25			C 25	060 A 25	S 25 C	XC 25
P2	Carbon steel and low alloy steel Rm 500÷700 N/mm ²	1.0501	C 35		C 35	C 35	060 A 35		55 C 35
		1.0503	C 45	1.0503	E 335	C 45	80 M 46	S 45 C	65 C 45
		1.0511	C 40		C 40	C 40	080 M 40	S 40 C	60 C 40
		1.0535	St 70-2	1.0070	E 360	Fe 690			A 70-2
		1.0601	C 60	1.0601	C60	C 60	080 A 62		CC 55
		1.1157	40 Mn 4				150 M 36		35 M 5
		1.1165	30 Mn 5	1.1165	G 28 Mn6		120 M 36	SMn 1 H, SCMn 2	
		1.1181	Ck 35	1.1181	C 35E	C 35	080 M 36	S 35 C	XC 38 H1
		1.1191	Ck 45	1.1191	C 45E	C 45	080 M 46	S 45 C	XC 42
		1.1221	Ck 60	1.1221	C 60E	C 60	080 A 62	S 58 C	XC 60
		1.1740	C 60 W					SK 7	Y3 55
		1.2162	21 MnCr 5					SCR 420 H	20 NC 5
		1.5415	15 Mo 3	1.5415	16 Mo 3	16 Mo 3	1501-240		15 D 3
		1.5423	16 Mo 5			16 Mo 5	1503-245-420	SB 450 M	
		1.5752	14 NiCr 14	1.5752	14 NiCr 14		655 M 13	SNC 815 (H)	12 NC 15
		1.5919	15 CrNi 6			16 CrNi 4	S 107		16 NC 6
		1.6587	18 CrNiMo 7 6	1.6587	18 NiCrMo 7 6	18 NiCrMo 7	820 A 16		18 NCD 6
		1.7131	16 MnCr 5	1.7131	16 MnCr 5	16 MnCr 5	527 M 17	SCR 415	16 MC 5
		1.7139	16 MnCrS 5	1.7139	16 MnCrS 5				
		1.7147	20 MnCr 5	1.7147	20 MnCr 5	20 MnCr 5		SMnC 420 (H)	20 MC 5
		1.7149	20 MnCrS 5	1.7149	20 MnCrS 5			SMnC 21 H	20 MnCrS 5
		1.7335	13 CrMo 4 4	1.7335	13 CrMo 4 5	14 CrMo 4 5	1501-620 Gr. 27		15 CD 3.5
		1.7337	16 CrMo 4 4			14 CrMo 4 5	1501-620 Gr. 27		15 CD 4.5
		1.7380	10 CrMo 9 10	1.7380	10 CrMo 9 10	12 CrMo 9 10	1501-622 Gr. 31		10 CD 9.10
P3	Medium alloy steel Rm 600÷800 N/mm ²	1.0904	55 Si 7	1.7100	55 SiCr7	55 Si 8	250 A 53		55 S 7
		1.2330	35 CrMo 4			35 CrMo 4	708 A 37		34 CD 4
		1.2542	45 WCrV 7			45 WCrV 8 KU	BS 1		
		1.2714	56 NiCrMoV 7	1.2714		56 NiCrMoV7-KU	BH 224-5	SKT 4	
		1.5121	46 MnSi 4						
		1.5710	36 NiCr 6				640 A 35	SNC 236	35 NC 6
		1.5736	36 NiCr 10			35 NiCr 9		SNC 631 (H)	35 NC 11
		1.6511	36 CrNiMo 4		36 CrNiMo 4	38 NiCrMo 4 (KB)	816 M 40		40 NCD 3
		1.6582	34 CrNiMo 6	1.6582	34 CrNiMo 6	35 NiCrMo 6 (KW)	817 M 40	SNCM 447	35 NCD 6
		1.7033	34 Cr 4	1.7033	34 Cr 4	34 Cr 4 (KB)	530 A 32	SCR 430 (H)	32 C 4
		1.7035	41 Cr 4	1.7035	41 Cr 4	41 Cr 4	530 M 40	SCR 440 (H)	42 C 4
		1.7218	25 CrMo 4	1.7218	25 CrMo 4	25 CrMo 4 (KB)	708 M 25	SCM 425	25 CD 4 S
		1.7225	42 CrMo 4	1.7225	42 CrMo 4	42 CrMo 4	708 M 40	SCM 440 (H)	42 CD 4
		1.7361	32 CrMo 12			32 CrMo 12	722 M 24		30 CD 12
		1.8159	50 CrV 4	1.8159	50 CrV 4	51 CrV 4	735 A 50	SUP 10	50 CV 4
		1.8509	41 CrAlMo 7	1.8509	41 CrAlMo 7 10	41 CrAlMo 7	905 M 39	SACM 645	40 CAD 6.12

SS	UNS	U.N.E. / I.H.A.	AISI-ASTM	GOST	ČSN	Trade Mark	Structure
1311				16D			
1312, 1313			A573 Grade 58	18kp	11 378		
1412, 1414			A573 Grade 70	St14kP	11 448		
	G10100		1010	10			
1350	G10170	F.1110	1015	15			
1450	G10200		1020, 1023	20	12 024		
2172, 2132				17G1S	11 523		
1912	G12130		1213			AVP	
1914	G12134		12 L 13				
			1108				
			11 L 08				
1922							
1957	G11400		1140	40			
1973	G11460		1146				
	G12150		12 L14			AVZ	
			11 L 37	AS35G2		PR80	
1370	G10170	F.1511	1015	15			
	G10250	F.1120	1025	25			
1550	G10350	F.1130	1035	35	12 040		
1650	G10430	F.5110	1045	45	12 050		
			1040	40	12 041		
1655		F.1150	1055	55			
	G10600		1060	60	12 061		
	G10390		1039	40G			
	G13300		1330	30G2			
1572	G10340	F.1135	1035	35			
1672	G10420	F.1140	1045	45	12 050		
1665, 1678	G10640	F.1150	1064	60			
			1060	60			
2912			A204 Grade A		15 020		
	G45200		4520				
	G33106		3310, 9314	20X2H4A	16 420		
			4320		16 220		
2511	G51170	F.1516	5115	12KHN2	14 220		
				18HG			
	G51200		5120	20KH	14 221		
			5120 H	20KH			
2216			A182-F11, A182-F12	12KHM	15 121		
2216			A387 Grade 12 Cl. 2				
2218	J21890	F.155	A182-F22	12KH8	15 313		
2085, 2090		F.144	9255	55S2			
2234	T51620	F.1250	4135	35KHM			
2710	T41901	F.5241	S1	5KHV2S			
	T61206		L6	5KHNV			
			5045				
			3135				
			3435				
	G98400		9840				
2541	G43400	F.1280	4340	38H2N2MA	16 343		
	G51320		5132	35KH			
	G51400		5140	40H	14 140		
2225	G41300	F.1251	4130	20KHM	15 130		
2244	G41400	F.1252	4142, 4140	38HM	15 142		
2240							
2230	H61500	F.143	6150	50KHFA	15 260		
2940	K24065	F.1740	A355 Cl. A				

Gr.	Materials	W.-Nr	DIN	EN-Nr.	EN	UNI	BS	JIS	AFNOR
P4	High alloy steel Rm 800÷1000 N/mm ²	1.1231	Ck 67	1.1231	C 67S	C 70	060 A 67		XC 68
		1.1274	Ck 101	1.1274	C 100S		060 A 96	SUP 4	
		1.1545	C 105 W1	1.1545	C 105U	C 100 KU			Y1 105
		1.1645	C 105 W2			C 100 KU		SK 3	Y1 105
		1.1663	C 125 W			C 120 KU		SK 2	Y2 120
		1.2210	115 CrV 3	1.2210	107 CrV 3	107 CrV 3 KU			100 C 3
		1.2510	100 MnCrW 4			95 MnWCr 5 KU	BO 1	SKS 3	90 MWCV 5
		1.2842	90 MnCrV 8	1.2842	90 MnCrV 8	90 MnVCr 8 KU	BO 2		90 MV 8
		1.3505	100 Cr 6	1.3505	100 Cr 6	100 Cr 6	534 A 99	SUJ 2	100 C 6
P5	Tool steel Rm 900÷1200 N/mm ²	1.2080	X 210 Cr 12	1.2080	X 210 Cr 12	X 210 Cr 13 KU	BD 3	SKD 1	Z 200 C 12
		1.2311	40 CrMnMo 7						
		1.2312	40 CrMnMoS 86						
		1.2343	X 38 CrMoV 5 1			X 37 CrMoV 5 1 KU	BH 11	SKD 6	Z 38 CDV 5
		1.2344	X 40 CrMoV 5 1	1.2344	X 40 CrMoV 5 1	X 40 CrMo 5 1 1 KU	BH 13	SKD 61	Z 40 CDV 5
		1.2363	X 100 CrMoV 5	1.2363	X 100 CrMoV 5 1	X 100 CrMoV 5 1 KU	BA 2	SKD 12	Z 100 CDV 5
		1.2365	X 32 CrMoV 3 3			30 CrMoV 12 27 KU	BH 10	SKD 7	32 DCV 28
		1.2379	X 155 CrVMo 12 1			X 155 CrMo 12 KU			
		1.2436	X 210 CrW 12			X 215 CrW 12 1 KU		SKD 2	
		1.2601	X 165 CrMoV 12			X 165 CrMoW 12 KU			
		1.2713	55 NiCrMoV 6					SKT 4	55 NCDV 7
		1.2714	56 NiCrMoV 7			56 NiCrMoV 7 KU			
		1.3243	S 6-5-2-5	1.3243	HS 6-5-2-5	HS 6-5-2-5		SKH 55	Z 85 WDKCV 06-05-05-04-02
		1.3247	S 2-10-1-8	1.3247	HS 2-10-1-8	HS 2-9-1-8	BM 42	SKH 51	Z 110 DKCWV 09-08-04
		1.3255	S 18-1-2-5	1.3255	HS 18-1-2-5	HS 18-1-1-5	BT 4	SKH 3	Z 80 WKCV 18-05-04-01
		1.3343	S 6-5-2	1.3343	HS 6-5-2	HS 6-5-2	BM 2	SKH 9, SKH 51	Z 85 WDCV 06-05-04-02
		1.3348	S 2-9-2	1.3348	HS 2-9-2	HS 2-9-2		SKH 58	Z 100 DCWV 09-04-02-02
		1.3355	S 18-0-1	1.3355	HS 18-0-1	HS 18-0-1	BT 1	SKH 2	Z 80 WCV 18-04-01
P6	High tensile strength steel Rm 1200÷1480 N/mm ² HRC 38÷45	1.6546	40 NiCrMo 2 2	1.6546	40 NiCrMo 2 KD	40NiCrMo2	311 - Type 7	SNCM 240	40 NCD 2
		1.7045	42 Cr 4	1.7045		41Cr4	530 A 40	SCR 440	42 C 4 TS
P7	Ferritic - Martensitic stainless steel	1.4000	X 6 Cr 13	1.4000	X 6 Cr 13	X 6 Cr 13	403 S 17	SUS 403	Z 6 C 12
		1.4006	X 10 Cr 13	1.4006	X 12 Cr 13	X 12 Cr 13	410 S 21	SUS 410	Z 10 C 13
		1.4016	X 6 Cr 17	1.4016	X 6 Cr 17	X 8 Cr 17	430 S 15	SUS 430	Z 8 C 17
		1.4021	X 20 Cr 13	1.4021	X 20 Cr 13	X 20 Cr 13	420 S 37	SUS 420 J 1	Z 20 C 13
		1.4031	X 40 Cr 13	1.4031	X 39 Cr 13	X 40 Cr 14	420 S 45	SUS 420	Z 40 C 14
		1.4109	X 65 CrMo 14	1.4109	X 70 CrMo 15			SUS 440 A	Z 70 D 14
		1.4112	X 90 CrMoV 18	1.4112	X 90 CrMoV 18	X CrTi 12	409 S 19	SUS 440 B	Z 2 CND 18 05
		1.4125	X 105 CrMo 17	1.4125	X 105 CrMo 17	X 105 CrMo 17		SUS 440 C	Z 100 CD 17
		1.4313	X 5 CrNi 13 4	1.4313	X 5 CrNiMo 13 3	X 6 CrNi 13 04	425 C 11	SCS 5	Z 5 CN 13.4
P8	PH stainless steel	1.4749	X 18 CrN 28	1.4749	X 18 CrN 28				Z 18 C 25
		1.4534	X 3 CrNiMoAl 13 8 2	1.4534	X 6 NiCrTiMoV 25 15				
		1.4540	X 4 CrNiCuNb 16 4	1.4540	X 4 CrNiCuNb 16 4	Z 4 CNUNb 16.4 M			Z 4 CNUNb 16.4 M
		1.4548	X 5 CrNiCuNb 17 4	1.4548	X 5 CrNiCuNb 17 4	Z 6 CNU 17.4		SCS 24, SUS 630	
		1.4568	X 7 CrNiAl 17 7	1.4564	X 3 CrNiMoAl 13 8 2	X 7 CrNiAl 17 7	301 S 81	SUS 631	Z 9 CAN 17.7
		1.6356	X 2 NiCoMoTi 18 12 4	1.6356	X 2 NiCoMoTi 18 12 4				

SS	UNS	U.N.E. / I.H.A.	AISI-ASTM	GOST	ČSN	Trade Mark	Structure
1770	G10700	F.5103	1070	70			
1870	G10950	F.5117	1095				
1880		F.5118	W1	U10A			
				U10			
			W1	U13			
	T61202	F.520L	L2	11KHF			
2140	T31501	F.5220	O1	9KHVG			
	T31502		O2	9G2F		K720	
2258	G51986	F.5230	52100	SHKH15	14 109		
						TOOLOX 33	
	T30403	F.5212	D3	KH12		K100	
						M201	
						M200 - HOLDAX	
	T20811		H11	4KH5MFS		VIDAR - W300	
2242	T20813	F.5318	H13	4KH5MF1S		ORVAR - W302	
2260	T30102	F.5227	A2	9KH5VF			
	T20810		H10	3KH3M3F		W320	
						K110	
2312		F.5213		KH12			
2310				KH12MF			
	T61206	F.520.S	L6	5KHNM			
			L6			W500	
2723		F.5613	M35	R6M5K5			
	T11342		M42	R2AM9K5			
	T12004		T4	R18K5F2			
2722	T11302	F.5603	M2	R6M5		S600	
2782	T11307		M7				
	T12001		T1	R18			
	G86400		8640			Monix	
2245			5140				
						HARDOX 400®	
						HARDOX 450®	
						TOOLOX 40®	
						TOOLOX 44®	
2301	S41008		403	08KH13			Ferritic
2302	S41000	F.3401	410, CA-15	12KH13			Martensitic
2320	S43000	F.3113	430	12KH17			Ferritic
2303	S42000	F.5261	420	20KH13	17 022		Martensitic
2304	S40280	F.3404	420 C	40KH13			Martensitic
	S44002		440 A				Martensitic
2327	S44003		440 B	95KH18			Martensitic
	S44004		440 C	95KH18			Martensitic
2385	S41500		A182 F6NM				Martensitic
2322	S44600		446	15KH28			Ferritic
	S13800		XM-13			PH13-8 Mo	Austenitic
	S15500		XM-12			15-5-PH	Martensitic
	S17400		630			17-4-PH	Martensitic
2388	S17700		631	09KH17N7YU1		17-7-PH	Austenitic/Ferritic
	K93160		AMS 6515				Martensitic

Gr.	Materials	W.-Nr	DIN	EN-Nr.	EN	UNI	BS	JIS	AFNOR
M1	Austenitic stainless steel (good machinability)	1.4300	X 12 CrNi 18 8	1.4300	X 12 CrNi 18 8		302 S 25	SUS 302	Z 12 CN 18
		1.4301	X 5 CrNi 18 10	1.4301	X 5 CrNi 18 10	X 5 CrNi 18 11	304 S 31	SUS 304	Z 6 CN 18.09
		1.4305	X 10 CrNiS 18 9	1.4305	X 10 CrNiS 18 9	X 10 CrNi 18 09	303 S 31	SUS 303	Z 10 CNF 18.09
		1.4306	X 2 CrNi 19 11	1.4306	X 2 CrNi 19 11	X 3 Cr Ni 18 11	304 S 12	SUS 304 L	Z 2 CN 18.10
		1.4310	X 12 CrNi 17 7	1.4310	X 9 CrNi 18 8	X 12 CrNi 17 07	301 S 21	SUS 301	Z 12 CN 17.07
		1.4550	X 6 CrNiNb 18 10	1.4550	X 6 CrNiNb 18 10	X 6 CrNiNb 18 11	347 S 31	SUS 347	Z 6 CNNb 18.10
M2	Austenitic stainless steel (medium machinability) and Duplex	1.4311	X 2 CrNiN 19 11	1.4311	X 2 CrNiN 18 10	X 2 CrNiN 18 11	304 S 62	SUS 304 LN	Z 2 CN 18 .10 Az
		1.4335	X 12 CrNi 25 21	1.4335	X 12 CrNi 25 21	X 6 CrNi 26 20	310 S 24	SUH 310, SUS 310 S	Z 12 CN 25.20
		1.4401	X 5 CrNiMo 17 12 2	1.4401	X 5 CrNiMo 17 12 2	X 5 CrNiMo 17 12	316 S 31	SUS 316	Z 3 CND 17.11.1
		1.4417	X 2 CrNiMoSi 19 5	1.4424	X 2 CrNiMoSi 19 5				Z 2 CND 18.05.03
		1.4429	X 2 CrNiMoN 17 13 3	1.4429	X 2 CrNiMoN 17 13 3	X 2 CrNiMoN 17 13 3	316 S 62	SUS 316 LN	Z 2 CND 17.13 Az
		1.4435	X 2 CrNiMo 18 14 3	1.4435	X 2 CrNiMo 18 14 3	X 2 CrNiMo 17 13 2	316 S 12	SCS 16, SUS 316 L	Z 2 CND 17.13
		1.4438	X2 CrNiMo 18 16			X2CrNiMo18 16	317 S 12	SUS 317 L	Z 2 CND 19.15
		1.4460	X 4 CrNiMo 27 5 2	1.4460	X 3 CrNiMo 27 5 2	X 3 CrNiMo 27 5 2		SUS 329 J 1	Z 3 CND 25.7 Az
		1.4462	X 2 CrNiMoN 22 5	1.4462	X 2 CrNiMoN 22 5 3	X 2 CrNiMoN 22 5	332 S 15		Z 2 CND 22.05 Az
		1.4466	X 5 CrNi 18 15	1.4466	X 3 CrNiMo 18 12 3	X 5 CrNi 18 15	317 S 16	SUS 317	
		1.4541	X10 CrNiTi 18 9	1.4541		X6CrNiTi18 11	321 S 12	SUS 321	Z 6 CND 18.10
		1.4550	X 6 CrNiNb 18 10	1.4550	X 6 CrNiNb 18 10	X 6 CrNiNb 18 11	347 S 31	SUS 347	Z 6 CNNb 18.10
		1.4571	X10 CrNiMoTi 18 10			X6CrNiMoTi 17 12	320 S 17	-	Z 6 CNDT 17.12
		1.4893	X 9 CrNiSiNCE 21 11 2	1.4835	X 9 CrNiSiNCE 21 11 2		310 S 31		
M3	Super austenitic stainless steel and super Duplex	1.4410	X 2 CrNiMoN 25 7 4	1.4410	X 2 CrNiMoN 25 7 4	X 2 CrNiMoN 25 7 4			Z 3 CND 25.07 Az
		1.4501	X 2 CrNiMoCuWN 15 7 4			X 2 CrNiMoCuWN 15 7 4			
		1.4529	X 1 CrNiMoN 20 18 7	1.4547	X 1 CrNiMoN 20 18 7	X 1 CrNiMoN 20 18 7			Z 1 CNDU 20.18.05 Az
		1.4539	X 2 NiCrMoCu 25 20 5	1.4539	X 2 NiCrMoCu 25 20 5		904 S 13		Z 2 NCDU 25 20
		1.4652	X 2 CrNiMoN 25 22 7	1.4652	X 1 CrNiMoN 25 22 8				
		1.4876	X 10 NiCrAlTi 32 20	1.4876	X 10 NiCrAlTi 32 20			NCF 800	Z 10 NC 32.21
		1.4943	X 4 NiCrTi 25 15	1.4980	X 5 CrNiCuNb 16 4		HR 51	SUH 660	Z 6 NCTDV 25.15
K1	Grey cast iron 150 ÷ 250 HB	0.6015	GG-15	5.1200	EN-GJL-150	G15	Grade 150	FC 150	Ft 15 D
		0.6020	GG-20	5.1300	EN-GJL-200	G20	Grade 220	FC 200	Ft 20 D
		0.6025	GG-25	5.1301	EN-GJL-250	G25	Grade 260	FC 250	Ft 25 D
		0.6027	GG-220 HB		EN-GJL-215				
		0.6035	GG-35	5.1303	EN-GJL-350	G35	Grade 350	FC 350	Ft 35 D
K2	Nodular cast iron 150 ÷ 350 HB	0.7033	GGG 35.3	5.3100	EN-GJS-350-22		Grade 350/22	FCD 350-22L	FGS 370-17
		0.7040	GGG 40	5.3106	EN-GJS-400-15	GS400-12	Grade 420/12		FGS 400-12
		0.7043	GGG 40.3	5.3105	EN-GJS-400-18	GSO 42/17	Grade 370/17	FCD 400-18L	FGS 370-17
		0.7050	GGG 50	5.3200	EN-GJS-500-7	GS500-7	Grade 500/7	FCD 500-7	FGS 500-7
		0.7060	GGG 60	5.3201	EN-GJS-600-3	GS600-3	Grade 600/3	FCD 600-3	FGS 600-3
		0.7070	GGG 70	5.3300	EN-GJS-700-2	GS700-2	Grade 700/2	FCD 700-2	FGS 700-2
		0.8155	GTS-55-04		EN-GJMB-550-4	P 55-04	P 540/5	PCMP55-04	P 540/5
		0.9990	GGV-40	5.2201	EN-GJV-400				
			GGV-45	5.2300	EN-GJV-450				
K3	ADI cast iron 250 ÷ 500 HB		GJS-800-8	5.3301	EN-GJS-800-8				
			GJS-1000-5		EN-GJS-1000-5				
			GJS-1200-2		EN-GJS-1200-2				
			GJS-1400-1	5.3405	EN-GJS-1400-1				
K4	Austenitic cast iron 120 ÷ 260 HB	0.6655	GGL-NiCuCr 15 6 2		EN-GJLA-XNiCuCr 15-6-2		Grade F1		FGL Ni15 Cu6 Cr2
		0.6660	GGL-NiCr 20 2		EN-GJLA-XNiCr 20-2		Grade F2		FGL Ni20 Cr2
		0.6676	GGL-NiCr 30 3		EN-GJLA-XNiCr 30-3		Grade F3		FGL Ni30 Cr3
		0.7652	GGG-NiMn 13 7		EN-GJSA-XNiMn 13-7		Grade S6		FGS Ni13 Mn7
		0.7660	GGG-NiCr 20 2	5.3500	EN-GJSA-XNiCr 20-2		Grade S2		FGS Ni20 Cr2
		0.7673	GGG-NiMn 23 4		EN-GJSA-XNiMn 23-4		Grade S2M		FGS Ni23 Mn4
		0.7676	GGG-NiCr 30 3	5.3507	EN-GJSA-XNiCr 30-3		Grade S3		FGS Ni30 Cr3
		0.7683	GGG-Ni 35	5.3504	EN-GJSA-XNi 35				FGS Ni35

SS	UNS	U.N.E. / I.H.A.	AISI-ASTM	GOST	ČSN	Trade Mark	Structure
2331	S30200		302	12KH18N9			Austenitic
2333	S30400	F.3504	304	08KH18N10	17 240		Austenitic
2346	S30300	F.3508	303	12KH19N9			Austenitic
2352	S30403	F.3504	304 L	03KH18N11			Austenitic
	S30100	F.3517	301	07KH16N6			Austenitic
2338	S34700		347	08KH18N12B			Austenitic
2371	S30453	F.3541	304 LN	03KH18N11			Austenitic
2361	S31008		310 S	12KH25N20			Austenitic
2347	S31600	F.3534	316	08KH17H13M2T	17 346		Austenitic
2376	S31500						Duplex
2375	S31653		316 LN	03KH16N15M3			Austenitic
2353	S31603	F.3533	316 L	03KH17N14M3	17 349		Austenitic
2367			317 L				Austenitic
2324	S32900		329				Duplex
2377	S31803		329 LN				Duplex
2366	S31700		317	08KH17H15M3T			Austenitic
2337			321				Austenitic
2338	S34700	F.3524	347	08KH18N12B			Austenitic
2350			316 Ti				Austenitic
2368	S30815						Austenitic
2328	S32750		F 53				Super duplex
	S32760		F 55-329 S				Super duplex
2778	S31254						Super Austenitic
2562	N08904		904L				Super Austenitic
	S32654						Super Austenitic
	N08800					Alloy 800	Austenitic
2570	S66286		660			A286	Austenitic
01 15-00	F11601		A48 25 B	Sc 15	422 415		Lamellar
01 20-00	F12101		A48 30 B	Sc 20	422 420		Lamellar
01 25-00	F12401		A48 35 B	Sc 25	422 425		Lamellar
02 19							Lamellar
01 35-00	F13502		A48 50 B	Sc 35			Lamellar
07 17-15					422 303		Nodular
07 17-02		FGE 38-17		Vc 42-12	422 304		Nodular
07 17-12	F32800		60-40-18	Vc 42-12	422 314		Nodular
07 27-02	F33800	FGE 50-7	A536, 80-55-06	Vc 50-2	422 305		Nodular
07 32-03	F34100	FGE 60-2	A476, 80-60-03	Vc 60-2	422 306		Nodular
07 37-01	F34800	FGE 70-2	A536, 100-70-03	Vc 70-2	422 307		Nodular
08 54-00	F24130		A220 60004				Malleable
			Grade 400-15				Vermicular
			Grade 450				Vermicular
			Grade 500				Vermicular
	ADI grade 1		850/550/10			ADI 800	Ductile austempered
	ADI grade 2		1050/700/7			ADI 1000	Ductile austempered
	ADI grade 3		1200/850/4			ADI 1200	Ductile austempered
	ADI grade 4		1400/1100/1			ADI 1400	Ductile austempered
	F41000		A436 Type 1			Ni-Resist 1	Lamellar
05 23-00	F41002		A436 Type 2			Ni-Resist 2	Lamellar
	F41004		A436 Type 3			Ni-Resist 3	Lamellar
07 72-00						Nodumag	Nodular
	F43000		A436 Type D-2			Ni-Resist D-2	Nodular
	F43010		A439 Type D-2M			Ni-Resist D-2M	Nodular
	F43003		A436 Type D-3			Ni-Resist D-3	Nodular
	F43006		A439 Type D-5			Ni-Resist D-5	Nodular

Gr.	Materials	W.-Nr	DIN	EN-Nr.	EN	UNI	BS	JIS	AFNOR
N1	Aluminium alloy < 12% Si	3.0205	Al 99			9001/1	1C	A1x3	A4
		3.0255	Al99.5	Al99.5	AW-1050A	9001/2	1B	(A1050)	A-5/1050A
		3.0505	AlMn0.5Mg0.5				N31		
		3.0517	AlMn1Cu	AlMn1Cu	AW-3003			A3003	A-M1/3003
		3.0615	AlMgSiPb						ASGPB
		3.1255	AlCuSiMn	AlCuSiMn	AW-2014		H15		A-U4SG
		3.1305	AlCuMg0.5			9002/1	L86		AU2G
		3.1325	AlCuMg 1			9002/2	(H14)	A3x2	AU4G
		3.1355	AlCuMg 2			9002/4	DTD5090	A3x4	AU4G1
		3.1645	AlCuMgPb			9002/8	-	-	AU4Pb
		3.1655	AlCuBiPb	AlCuBiPb	AW-2011		FC1	A2011	A-U5PbBi
		3.2161	G-AlSi8Cu3	AlSi8Cu3(Si)	AC-46200				
		3.2315	AlSi1MgMn	AlMgSi1	AW-6082	90006/4	H30		A-SGM0.7
		3.2341	G-AlSi5Mg		AC-42000	3599	LM25	AC 4C	A-S7G
		3.2381	G-AlSi10Mg	AlSi10Mg(Fe)	AC-43400		LM9		A-S10G
		3.2383	G-AlSi10Mg (Cu)		43200		(LM9)		A-S10UG
		33.206	AlMgSi0.5	AlMgSi0.5	AW-6060		(H9)		A-GS/6060
		3.3210	AlMgSi0.7	AlMgSi0.7	AW-6063		(H10)	(A6063)	A-GSUC/6061
		3.3211	AlMg1SiCu			9006/2	H20	A2x4	AGSUC
		3.3315	AlMg1	AlMg1	AW-5005		N41		A-G0.6
		3.3316	AlMg1.5			9005/7			
		3.3523	AlMg2.5			9005/2		A2x1	AG2.5C
		3.3535	AlMg3			9005/8	N5/N56		AG3
		3.3547	AlMg4.5Mn0.7			9005/5	N8	A2x7	AG4.5MC
		3.3555	AlMg5				N6		A-G5
		3.4335	AlZn4.5Mg1	AlZn4.5Mg1	AW-7020		H17		A-Z5G
		34.365	AlZn5.5MgCu		AW-7075	9007/2	2L95	A7075	A-Z5GU
		3.5612	G-MgAl6Zn	MgAl6Zn	MG-P-63		MAG-E-121		G-A6-Z1
		3.5812	G-MgAl8Zn	MgAl8Zn	MG-P-61				(G-A7-Z1)
N2	Aluminium alloy > 12% Si and Aluminium-Magnesium	32.382	G-AlSi12	AlSi12	AC-44200	4514	LM6	AC3A	AS 13
		3.2583	G-AlSi12 (Cu)	AlSi12 (Cu)	AC-47000		LM20	Al-Si12Cu	
		3.5101	G-MgZn4SE1Zr1				MAG5		G-Z4TR
		3.5102	G-MgZn5Th2Zr1						
		35.103	G-MgSe3Zn2Zr1	MgSe3Zn2Zr1	MN65120		MAG6-TE		ZRE1
		3.5106	G-MgAg3SE2Zr1				MAG 12		G-Ag22,5
		3.5312	G-MgAl3Zn				MAG-E-111		
		3.5912	G-MgAl9Zn1				MAG7		G-A9Z1
N3	Copper alloy	2.0040	OF Cu		CW008A		C103	C1020	Cu/c1
		2.0060	E-Cu57		CW004A	E-Cu57	C101	C1100	Cu/a1
		2.0070	SE Cu		CW021A				
		2.0090	SF Cu		CW024A		C106	C1220	Cu/b
		2.0240	CuZn15	CuZn15	CW502L		CZ102	C2300	CuZn15
		2.0321	CuZn37		CW508L		CZ108		CuZn37
		2.0401	CuZn39Pb3	CuZn39Pb3	CW614N		CZ121		CuZn39Pb3
		2.0402	CuZn40Pb2	CuZn40Pb2	CW612N		CZ120		CuZn39Pb2
		20.530	CuZn38Sn1	CuZn38Sn1	CW717R				
		2.0790	CuNi18Zn19Pb	CW408J					CuNi18Zn19Pb1
		2.0872	CuNi10Fe1Mn	CuNi10Fe1Mn			CN102		CuNi10Fe1Mn
		2.0940	CuAl10Fe		CC331G		AB1		CuAl10Fe
		2.0975	CuAl10Ni		CC333G		AB2		CuAl10Ni5Fe5
		2.1050	CuSn10		CC480K		CT1		CuSn10
		2.1087	CuSn10Zn						
		2.1176	CuPb10Sn		CW352H		LB2		CuSn10Pb10
		2.1202	SB Cu				C107		

SS	UNS	U.N.E. / I.H.A.	AISI-ASTM	GOST	ČSN	Trade Mark	Structure
4010			A1200				
4007	AA1050A		A1050/1050A				
			3105				
	AA3003					Aluman 100	
			6012				
4338	AA2014		2014			Avional 660	
			2117			Avional 050	
			2017			Avional 100	
			2024			Avional 150	
4335			2030				
4355	AA2011		2011			Recidal 11	
4251	A13800		A380				
4212	A96082		6082			Anticorodal 100	
4244			B26				
4253	A13600		B85				
4103	AA6060					Anticorodal 063	
4104, 4107	AA6005						
			6061			Anticorodal 061	
4106	AA5005					Peraluman 080	
			5050			Peraluman 150	
4120			5052			Peraluman 250	
			5154			Peraluman 350	
4140	A95083		5083			Peraluman 440	
			5056			Peraluman 500	
4425	AA7020		7020				
	A97075		7075	B95		Ergal	
	M11600		AZ61A				
			AZ80A				
			A413.2				
	M12330		AMS 4442				
			AZ31B				
	C10200						
	C11000						
	C10300						
	C12200						
5112	C23000			L90			
5150	C27200						
5170	C38500						
5168	C37800						
	C46400			LO60-1			
	C76300						
5667	C70600						
5710	C95200		CA952	BrA9ZH3L			
5716	C95500		CA955	BrA10ZH4N4L			
5443	C90700						
5458	C90500						
5640	C93700		CA937				
	C14200						

Gr.	Materials	W.-Nr	DIN	EN-Nr.	EN	UNI	BS	JIS	AFNOR
N4	Brass alloy and Bronze alloy	2.0220	CuZn5		CW500L		CZ125	C2100	
		2.0230	CuZn10		CW501L		CZ101	C2200	
		2.0250	CuZn20		CW503L		CZ103	C2400	
		2.0265	CuZn30		CW505L		CZ106	C2600	
		2.0331	CuZn36Pb1.5		CW600N		CZ119	C3501	
		2.0360	CuZn40		CW509L		CZ109	C2800	
		2.0372	CuZn39Pb0.5		CW610N		CZ123		
		2.0375	CuZn36Pb3		CW603N		CZ124	C3601	
		2.0380	CuZn39Pb2		CW612N		CZ 131	C3771	
		2.0401	CuZn39Pb3	12164	CW614N	5705	CZ121	C3603	
		2.0402	CuZn40Pb2		CW617N		CZ122		
		2.0410	CuZn44Pb2	CuZn44Pb2	CW622N		CZ104		
		2.0460	CuZn20Al2				CZ110		
		2.0470	CuZn28Sn1	CuZn28Sn1	CW706R				CuZn29Sn1
		2.0932	CuAl8Fe3		CW303G				
		2.0966	CuAl10Ni5Fe4		CW307G		CA104		
		2.1010	CuSn2				-	-	
		2.1016	CuSn4				PB101	C5111	
		21.020	CuSn6	CuSn6	CW452K		PB103	C5191	CuSn6
		2.1030	CUSn8				PB104	C5212	
N5	Plastic material								
N6	Carbon fiber and composite								
S1	Heat resistant super alloy (HRSA) Ni base (good machinability) 25 HRC	1.4980							Z3NCT25
		2.4617							NiMo28
			NiCr17Mo17FeW						NC17DWY
		2.4816	NiCr15Fe						NC15Fe
		2.4851	NiCr23Fe						NC15FeA
		2.4856	NiCr22Mo9Nb						NC22DNb
		2.4669	NiCr 15 Fe 7 TiAl				HR505		NC19FeNB
S2	Heat resistant super alloy (HRSA) Ni base (medium machinability) 25 ÷ 35 HRC								
		1.4876	X10NiCrAlTi32-21				3075		
		2.4858	NiCr21Mo						NC21FeDU
		2.4665	NiCr22FeMo				HR6,204		NC22FeD
		2.4856	NiCr22Mo9Nb						NC22DNb
		2.4856	NiCr22Mo9Nb						NC22DNb
		2.4668	NiCr19Fe19NbMo				HR8		NC19FeNb
		2.4668	NiCr19Fe19NbMo				HR8		NC19FeNb
		2.4630	NiCr20Ti				HR5,203-4		NC20T
		2.4631	NiCr20TiAl				HR401,601		NC20TA
		2.4654	NiCr20Co14MoTi						NC20K14
S3	Heat resistant super alloy (HRSA) Ni base (low machinability) 35 ÷ 45 HRC								
		2.4654	NiCr20Co14MoTi						NC20K14
		2.4668	NiCr19Fe19NbMo				HR8		NC19FeNb
		2.4669	NiCr 15 Fe 7 TiAl				HR505		NC19FeNB
			NiW13Co10Cr9AlTi						
			NiCo10W10Cr9AlTi						
			NiCr18CoMoAlTi						NCK19DAT
			NiCo15Cr15MoAlTi						NCKD20AT

SS	UNS	U.N.E. / I.H.A.	AISI-ASTM	GOST	ČSN	Trade Mark	Structure
	C21000						
	C22000						
	C24000						
	C26000						
	C34000						
	C28000						
	C36500						
	C36000						
	C37700						
	C38500					OT-58	
	C38000						
5272	C68700			LAMsh77-2-0.05			
	C68700						
5220	C44300			LOMsh70-1-0.05			
	C61400						
	C63000						
	C50700						
	C51100						
5428	C51900			BrOF6.5-0.15			
	C52100						
							Polycarbonate
							E-glass
							Epoxy
							HTA
							HX
							Kevlar
							PEEK
							PPS
							T300
							T700
							T800
			5725			Discolloy	HRSA Iron-based
	N10665					Hastelloy B-2	HRSA Nickel-based
	N10002					Hastelloy C (casting)	HRSA Nickel-based
	N06600					Inconel 600	HRSA Nickel-based
	N06601					Inconel 601	HRSA Nickel-based
	N06625					Inconel 625 (casting)	HRSA Nickel-based
						Inconel 706	HRSA Nickel-based
	N07750					Inconel X750 (solubilized)	HRSA Nickel-based
						Stellite	HRSA Cobalt-based
	N08800					Incoloy 800	HRSA Iron-based
	N08825					Incoloy 825	HRSA Iron-based
	N06002					Hastelloy X	HRSA Nickel-based
	N06625					Inconel 625 (forged)	HRSA Nickel-based
	N06625					Inconel 625 (pipe)	HRSA Nickel-based
	N07718					Inconel 718 (casting)	HRSA Nickel-based
	N07718					Inconel 718 (pipe)	HRSA Nickel-based
	N06075					Nimonic 80	HRSA Nickel-based
	N07080					Nimonic 81	HRSA Nickel-based
	N07001					Waspalloy (casting)	HRSA Nickel-based
						Haynes	HRSA Cobalt-based
	N07001					Waspalloy (forged)	HRSA Nickel-based
	N07718					Inconel 718 (forged)	HRSA Nickel-based
	N07750					Inconel X750 (precipitation)	HRSA Nickel-based
						Mar-M 200	HRSA Nickel-based
						Mar-M 247	HRSA Nickel-based
						Rene 95	HRSA Nickel-based
						Udimet 500	HRSA Nickel-based
						Udimet 700	HRSA Nickel-based

Gr.	Materials	W.-Nr	DIN	EN-Nr.	EN	UNI	BS	JIS	AFNOR
S4	Titanium alloy good machinability		TiAl2Sn4Zr2MoSi						
			TiAl2Sn4Zr6Mo						
		3.7055	Ti 99,6						
		3.7195	Ti3Al2.5V						
		3.7115	TiAl5Sn2.5				TA14/17		
		3.7124	TiCu2,5						
		3.7155	TiAl6Zr5Mo0,5						
		3.7165	TiAl6V4 ELI				TA11		
		3.7175	TiAl6V6Sn2						
		3.7185	TiAl4Mo4Sn2						
		3.7025	Ti 99,8				TA 1		
		3.7035	Ti 99,7a				TA 2-5		
S5	Titanium alloy medium machinability								
		3.7164	TiAl6V4						
			Ti5Al2.5Sn						
			TiAl2Sn4Zr2MoSi						
			TiAl2Sn4Zr6Mo						
H1	Hardened steel 50 ÷ 56 HRC	1.1231	Ck 67	1.1231	C 67S	C 70	060 A 67		XC 68
		1.1248	Ck 75	1.1248	C 75S	C 75	060 A 78		XC 75
		1.1274	Ck 101	1.1274	C 100S		060 A 96	SUP 4	
		1.1545	C 105 W1	1.1545	C 105U	C 100 KU			Y1 105
		1.2550	60 WCrV 7			55 WCrV 8 KU			55 WC 20
		1.7131	16 MnCr 5	1.7131	16 MnCr 5	16 MnCr 5	527 M 17	SCR 415	16 MC 5
		1.7176	55 Cr 3	1.7176	55 Cr 3	55 Cr 3	527 A 60	SUP 9 (A)	55 C 3
		2.4669	NiCr 15 Fe 7 TiAl				HR505		NC19FeNB
H2	Hardened bearing steel 54 ÷ 62 HRC	1.2210	115 CrV 3	1.2210	107 CrV 3	107 CrV 3 KU			100 C 3
		1.2510	100 MnCrW 4			95 MnWCr 5 KU	B0 1	SKS 3	90 MWCV 5
		1.2842	90 MnCrV 8	1.2842	90 MnCrV 8	90 MnVCr 8 KU	B0 2		90 MV 8
		1.3505	100 Cr 6	1.3505	100 Cr 6	100 Cr 6	534 A 99	SUJ 2	100 C 6
H3	Hardened tool steel 60 ÷ 65 HRC	1.2344	X 40 CrMoV 5 1	1.2344	X 40 CrMoV 5 1	X 40 CrMo 5 1 1 KU	BH 13	SKD 61	Z 40 CDV 5
		1.2363	X 100 CrMoV 5 1	1.2363	X 100 CrMoV 5	X 100 CrMoV 5 1 KU	BA 2	SKD 12	Z 100 CDV 5
		1.2379	X 155 CrVMo 12 1		X 155 CrVMo 12 1	X 155 CrVMo 12 1 KU	BD 2	SKD 11	Z 160 CDV 12
		1.2436	X 210 CrW 12			X 215 CrW 12 1 KU		SKD 2	
		1.2601	X 165 CrMoV 12			X 165 CrMoW 12 KU			
		1.2713	55 NiCrMoV 6					SKT 4	55 NCDV 7
		1.3243	S 6-5-2-5	1.3243	HS 6-5-2-5	HS 6-5-2-5		SKH 55	Z 85 WDKCV 06-05-05-04-02
		1.3247	S 2-10-1-8	1.3247	HS 2-10-1-8	HS 2-9-1-8	BM 42	SKH 51	Z 110 DKCWV 09-08-
H4	Hardened martensitic stainless steel 50 ÷ 56 HRC	1.3355	S 18-0-1	1.3355	HS 18-0-1	HS 18-0-1	BT 1	SKH 2	Z 80 WCV 18-04-01
		1.4021	X 20 Cr 13	1.4021	X 20 Cr 13	X 20 Cr 13	420 S 37	SUS 420 J 1	Z 20 C 13
		1.4109	X 65 CrMo 14	1.4109	X 70 CrMo 15			SUS 440 A	Z 70 D 14
		1.4112	X 90 CrMoV 18	1.4112	X 90 CrMoV 18	X CrTi 12	409 S 19	SUS 440 B	Z 2 CND 18 05
		1.4125	X 105 CrMo 17	1.4125	X 105 CrMo 17	X 105 CrMo 17		SUS 440 C	Z 100 CD 17
		1.4542	X 5 CrNiCuNb 16 4	1.4542	X 5 CrNiCuNb 16 4			SUS 630	
		1.4568	X 7 CrNiAl 17 7	1.4568	X 7 CrNiAl 17 7	X 7 CrNiAl 17 7	301 S 81	SUS 631	Z 9 CAN 17.7
		1.4943	X 4 NiCrTi 25 15	1.4980	X 6 NiCrTiMoV 25 15		HR 51	SUH 660	Z 6 NCTDV 25.15
H5	Hardened white cast iron 48 ÷ 55 HRC	0.9620	G-X330 NiCr 4 2	0.9620	EN-GJN-HV520		Grade 2 A		FB Ni4 Cr2 BC
		0.9625	G-X260 NiCr 4 2	0.9625	EN-GJN-HV550		Grade 2 B		FB Ni4 Cr2 HC
		0.9630	G-X300 CrNiSi 9 5 2	0.9630	EN-GJN-HV600		Grade 2 C, D, E		FB Cr9 Ni5

SS	UNS	U.N.E. / I.H.A.	AISI-ASTM	GOST	ČSN	Trade Mark	Structure
	R50250		265-G1			Grade 1	
	R50400		265-G2			Grade 2	
	R50550		265-G3			Grade 3	
	R56320					Grade 9	
	R50700		265-G4			Grade 4	
	R56400					Grade 5	
						Grade 6	
			4975			6242	
	R56260					6246	
1770	G10700	F.5103	1070	70			
1774, 1778	G10780	F.5107	1078, 1080	75			
1870	G10950	F.5117	1095				
1880		F.5118	W1	U10A			
			S1	5KHV2SF			
2511	G51170	F.1516	5115	12KH12	14 220		
2253	G51550		5155				
	N07750					Inconel X750 (solubilized)	HRSA Nickel-based
	T61202	F.520L	L2	11KHF			
2140	T31501	F.5220	O1	9KHVG			
	T31502		O2	9G2F			
2258	G51986	F.5230	52100	SHKH15	14 109		
2242	T20813	F.5318	H13	4KH5MF1S			
2260	T30102	F.5227	A2	9KH5VF			
	T30402	F.5211	D2	KH12MF			
2312		F.5213		KH12			
2310				KH12MF			
	T61206	F.520.S	L6	5KHNM			
2723		F.5613	M35	R6M5K5			
	T11342		M42	R2AM9K5			
	T12001		T1	R18			
2303	S42000	F.5261	420	20KH13	17 022		
	S44002		440 A				
2327	S44003		440 B	95KH18			
	S44004		440 C	95KH18			
	S17400		SAE 630			17-4 PH	H900
2388	S17700		AMS 5528	09KH17N7YU1		17-7 PH	TH1050
2570	S66286		660			A286	
05 12-00	F45001		A532 IB			Ni-Hard 2	
05 13-00	F45000		A532 IA			Ni-Hard 1	
04 57-00	F45003		A532 ID			Ni-Hard 4	

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