

TURNING

Carbide .A3
PCBN .A85
Diamond .A133
Ceramic .A167
Holders .A201



TURNING Carbide

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

ISO 513	CARBIDE			CERMET	
	CVD COATED	PVD COATED	UNCOATED	PVD COATED	UNCOATED
P Steel	P01	JC8005			JW4015
	P10	JC8015	JP5120		JP4020
	P20	JC8025	JP5125		
	P30	JC8035			
	P40				
M Stainless steel	M01		JP9015		
	M10	JC9010			JP4020
	M20	JC9025	JP9030	JP5120	
	M30			JP5125	
	M40				
K Cast iron	K01	JC7010	JP5120		JP4020
	K10	JC7115			
	K20	JC7020	JP5125		
	K30				
N Non-ferrous material	N01		JP6010		
	N10			JW6015	
	N20				
	N30				
S HRSA	S01		JP3015		
	S10				
	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 univernal use, from finishing to roughing, on non-ferrous materials.

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

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	<u>TT4410</u> <u>TT8105B</u>	CT3000 <u>PV3010</u>	T9105 T9205	NS520	WPP05S	<u>WEP10C</u>
<u>GC1125</u> GC4315 GC4415	CT5015 <u>GC1525</u>	TP1501	TP1020 <u>TP1030</u>	<u>AC530U</u> <u>AC1030U</u> AC8015P AC8020P	T1500A <u>T1500Z</u>	<u>TT4410</u> <u>TT8115B</u> <u>TT9020</u>	CT7000 <u>PV3030</u>	SH725 T9115 T9215	<u>AT9530</u> <u>GT9530</u> NS9530	WPP10G WPP10S	<u>WEP10C</u>
GC1125 GC4325 GC4425		TP2501 TP25		<u>AC530U</u> <u>AC1030U</u> AC8020P AC8025P	T2500A <u>T2500Z</u> T3000Z	<u>TT4430</u> TT5100 TT8125B <u>TT9020</u>		AH725 T9125 T9225	<u>AT9530</u> <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>	
<u>GC1115</u> GC2015 GC2220	<u>GC1525</u> CT5015	TM1501 <u>TS2500</u>	TP1020 <u>TP1030</u>	AC610M AC6020M	T1500A	<u>TT4410</u> <u>TT5080</u> <u>TT9215</u>	CT7000 <u>PV3030</u>	SH725 T6215	<u>GT9530</u> NS9530	WMP20S WSM10S	
<u>GC1125</u> GC2025 GC2220		<u>CP500</u> TM2501		AC630M AC6030M		<u>TT4430</u> <u>TT9080</u> <u>TT9225</u>		AH630 AH725 GH330 T6120	<u>GT9530</u> NS9530	WMP20S WSM20S	
<u>GC2035</u>		TM3501 TP40		<u>AC1030U</u> <u>AC530U</u> <u>AC6040M</u>		<u>TT8020</u> <u>TT8080</u> <u>TT9235</u>		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>	-	<u>AC5005S</u> <u>AC510U</u>	-	TT3005 <u>TT5080</u>	-	AH8005	-	<u>WSM01</u> <u>WSM10S</u>	-
<u>GC1105</u> S05F S205	-	<u>TS2000</u>	-	<u>AC5015S</u> <u>AC520U</u>	-	<u>TT3010</u> <u>TT9080</u>	-	AH8015	-	<u>WSM20S</u>	-
<u>GC1115</u> S205	-	<u>TS2500</u>	-	<u>AC5025S</u>	-	<u>TT3020</u> <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.

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			C	D	S	T	V	W
NEGATIVE type with hole								
			80°	55°	90°	60°	35°	80°
P	FINISHING	NSP 	 SIZE 09 12	 SIZE 11 15	 SIZE 12	 SIZE 16	 SIZE 16	 SIZE 06 08
		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			
		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
		NMS 	 SIZE 12	 SIZE 15				 SIZE 08
	HEAVY ROUGHING							

			C	D	S	T	V	W			
NEGATIVE type with hole											
			80°	55°	90°	60°	35°	80°			
K	LIGHT TO MEDIUM MACHINING	NMK	 0.30 16°	 0.15 0.30 0.45 0.60	 A42 SIZE 12 16 19	 A48 SIZE 15	 A56 SIZE 12	 A63 SIZE 16 22	 A70 SIZE 16	 A74 SIZE 08	
		NUK	 0.25 15° 3°	 0.15 0.30 0.45 0.60	 A42 SIZE 12	 A48 SIZE 15		 A63 SIZE 16	 A70 SIZE 16	 A74 SIZE 08	
		NRK	 0.35 24°	 0.15 0.30 0.45 0.60	 A44 SIZE 12 16 19	 A50 SIZE 15	 A57 SIZE 12 19	 A65 SIZE 16 22	 A70 SIZE 16	 A75 SIZE 06 08	
		Flat	 0°	 0.15 0.30 0.45 0.60	 A44 SIZE 12 16 19	 A50 SIZE 15	 A58 SIZE 12 19	 A65 SIZE 16 22		 A76 SIZE 08	
		ROUGHING	NMN	 10°	 0.15 0.30 0.45 0.60	 A42 SIZE 12	 A48 SIZE 15	 A61 SIZE 12	 A63 SIZE 16	 A70 SIZE 16	 A74 SIZE 06 08
			NUX	 0.22 17° 6°	 0.15 0.30 0.45 0.60	 A43 SIZE 12	 A49 SIZE 15		 A64 SIZE 16		 A74 SIZE 08
	NMU		 10°	 0.15 0.30 0.45 0.60		 A49 SIZE 15		 A64 SIZE 16	 KNUX 55° A51 SIZE 16		
	NWU		 0.25 18° 3°	 0.15 0.30 0.45 0.60	 A43 SIZE 12	 A49 SIZE 15		 A64 SIZE 16		 A75 SIZE 08	
	NWX		 0.30 16°	 0.15 0.30 0.45 0.60	 A43 SIZE 12					 A75 SIZE 08	

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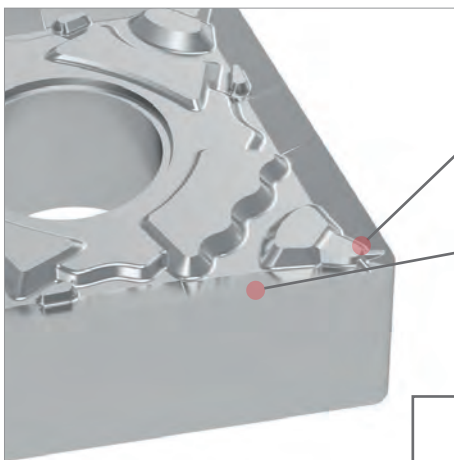
			C	D	S	T	V	W
POSITIVE type with hole								
			80°	55°	90°	60°	35°	80°
N UNIVERSAL UNI FINISHING FINISHING MEDIUM MEDIUM ROUGHING MEDIUM MEDIUM	PMN 	CC A39 DC A46 SC A55 TC A60 VC A68 SIZE 06 09 12 SIZE 07 11 SIZE 09 12 SIZE 09 11 16 SIZE 11 16 22						
		CC A38 DC A45 TB, TP A59, A66 TC A60 VB A67 WB A71 SIZE 06 09 SIZE 07 11 SIZE 06 09 11 SIZE 11 SIZE 06						
	CC A38 DC A45 SC A55 TC A60 VB A67 SIZE 06 09 SIZE 07 11 SIZE 09 SIZE 11 16 SIZE 11 16							
	CC A38 DC A45 TP A66 VB A67 SIZE 09 SIZE 07 11 SIZE 11 SIZE 11							
	CC A38 DC A45 SC A55 TC A60 VB, VC A67, A68 WC A72 SIZE 06 09 12 SIZE 07 11 15 SIZE 09 12 SIZE 09 11 16 22 SIZE 11 16 SIZE 12							
	CC A39 DC A46 SC A55 TC A61 VB, VC A67, A68 SIZE 09 12 SIZE 11 SIZE 09 12 SIZE 16 SIZE 16							
	MCN A53 MDN A54 SIZE 5°							
	MCN A53 MDN A54 SIZE 35°							

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

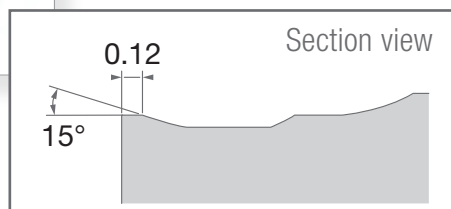


BUTTERFLY DOT

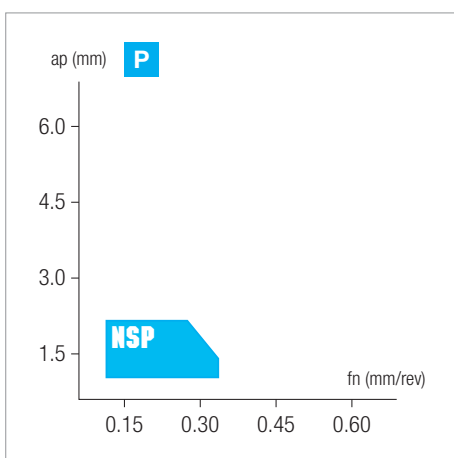
- High stability of chip flows at high feed
- Lower cutting force at low depth of cut and high feed

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
nikko TOOLS	200 PCS.
Competitor A	180 PCS.
Competitor B	180 PCS.

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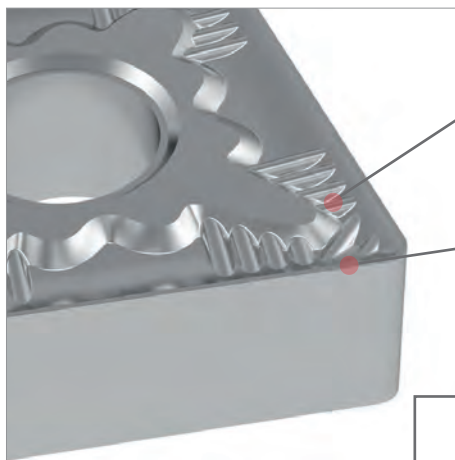
G - SPARE PARTS

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

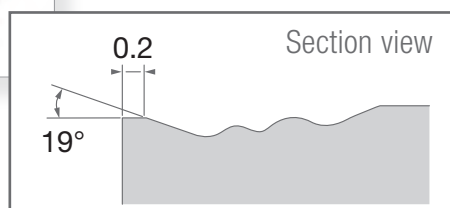


SPECIAL GROOVES

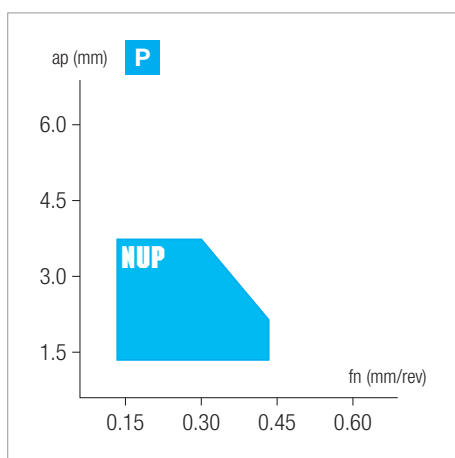
- Greater strenght
- Improves chip forming and chip control

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
nikko TOOLS	7 PCS.
Competitor A	5 PCS.
Competitor B	4 PCS.

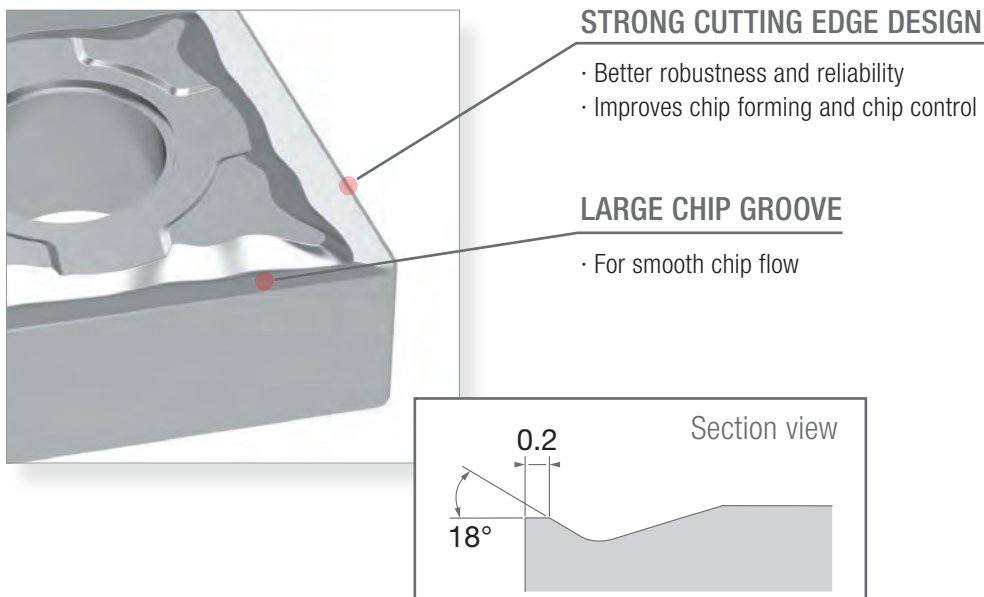


NMP

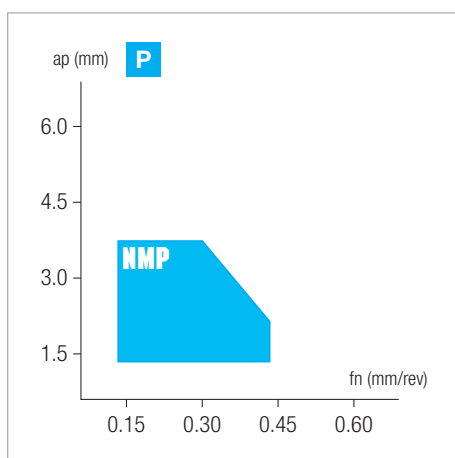
Chipbreaker

- 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	Vc 190 m/min, fn 0.3 mm/min, ap 3 mm, emulsion
Cutting Tool	CNMG160608-NMP JC8015
nikko TOOLS	24 PCS.
Competitor A	15 PCS.
Competitor B	14 PCS.

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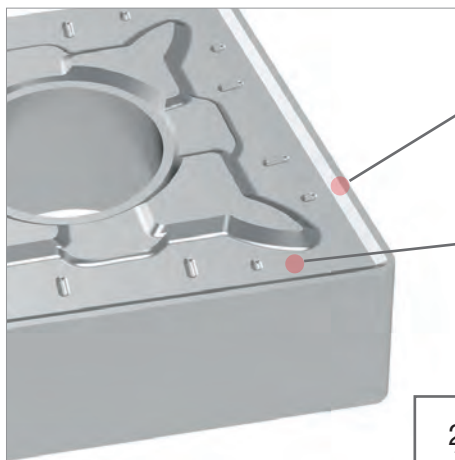
G - SPARE PARTS

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

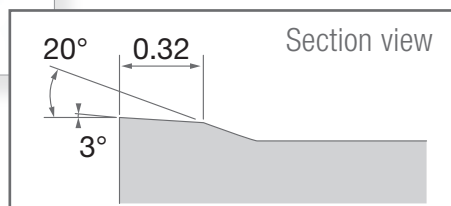


VARIABLE RAKE ANGLE AND EDGE WIDTH

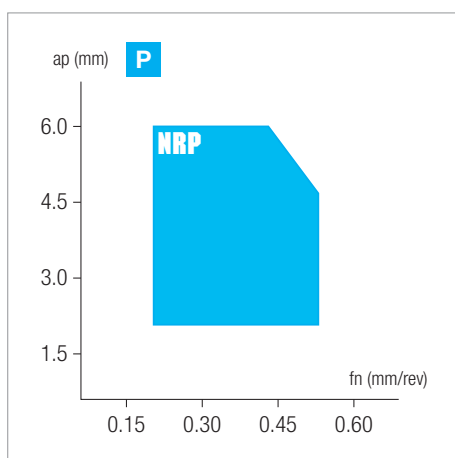
- Uniform chip control at different cutting depth
- Reduced cutting force with high toughness
- Suitable for interrupted cutting

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

nixko TOOLS	45 PCS.
Competitor A	35 PCS.
Competitor B	20 PCS.

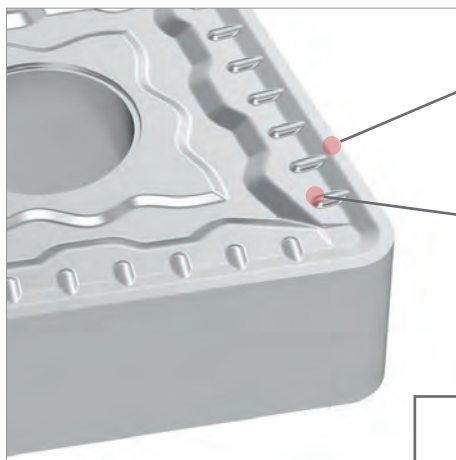


MRP

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

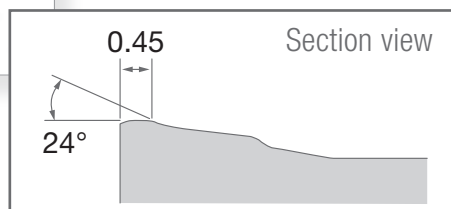


STRAIGHT EDGE WITH NEGATIVE T LAND

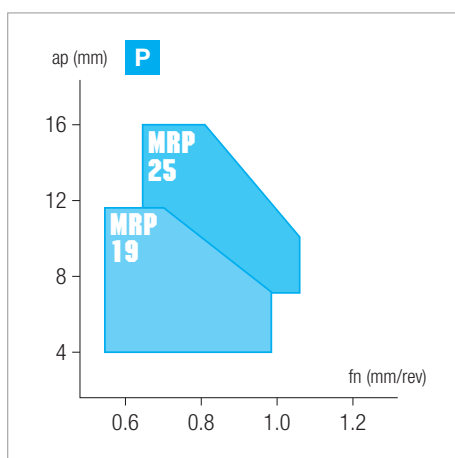
- Very tough cutting edge
- Reduced cutting force
- Suitable for high feed rate and high depth of cut

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
nixko TOOLS	10 PCS.
Competitor A	9 PCS.
Competitor B	7 PCS.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

NSM

Chipbreaker

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

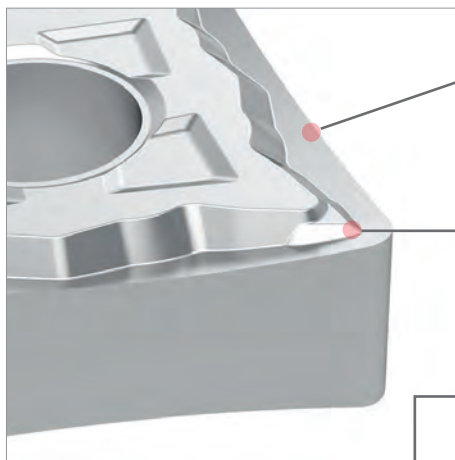
E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

- 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

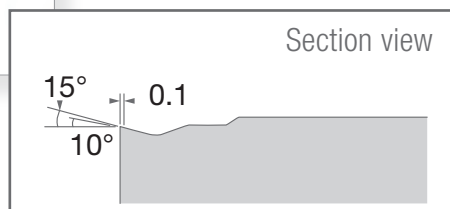


CURVED CUTTING EDGE

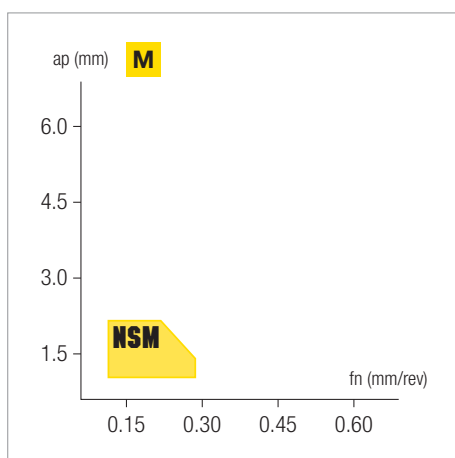
- Sharp cutting edge with high stability
- Wide chip evacuation area

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

nikko TOOLS	1200 PCS.
Competitor A	450 PCS.
Competitor B	420 PCS.

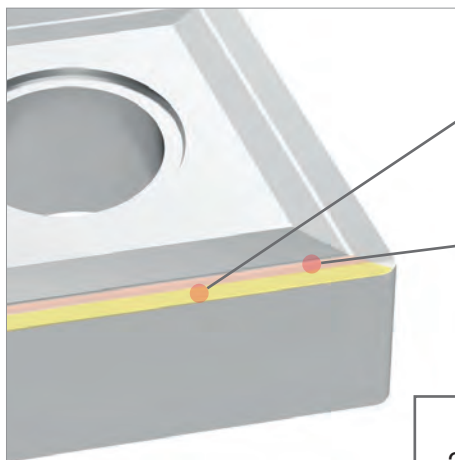


NMM

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

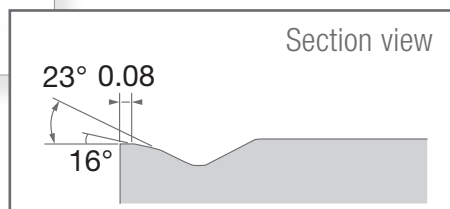


DOUBLE RAKE ANGLE DESIGN

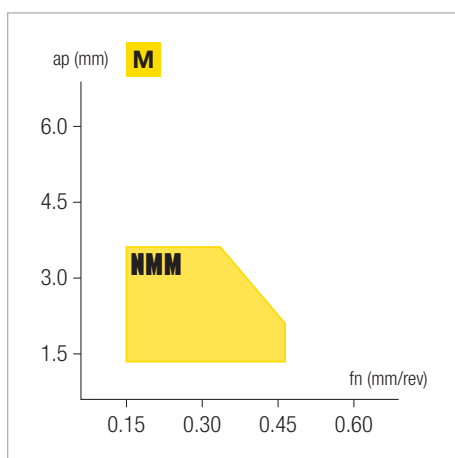
- Sharp but also tough edge
- Reliable cutting process for universal application
- Micro geometry suitable for sticky materials

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
nikko TOOLS	330 PCS.
Competitor A	300 PCS.
Competitor B	280 PCS.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

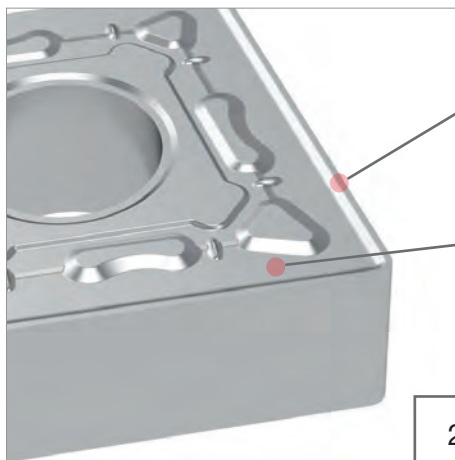
G - SPARE PARTS

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

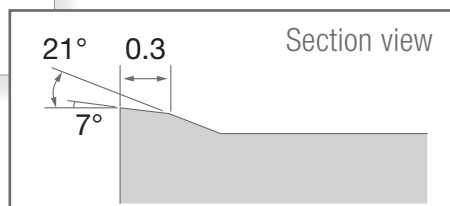


LARGE AND POSITIVE EDGE WIDTH DESIGN

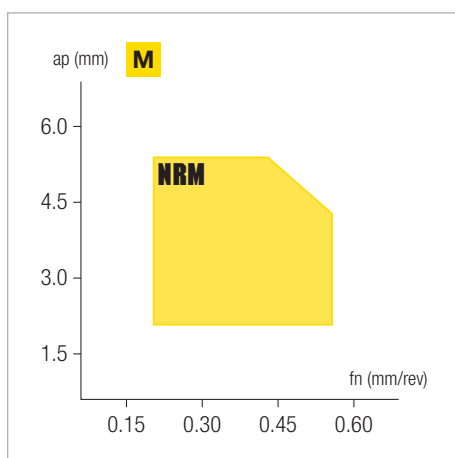
- Reduced cutting force with high toughness
- Suitable for removing irregular and oxidized surfaces

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
nikko TOOLS	80 PCS.
Competitor A	70 PCS.
Competitor B	70 PCS.

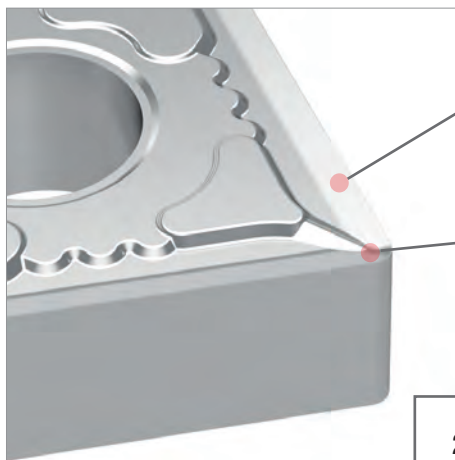


NMS

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

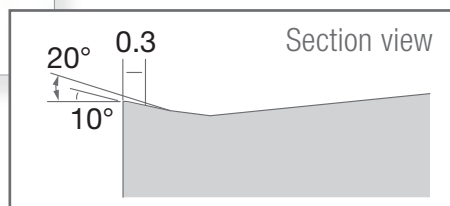


STRONG EDGE WITH SHARP RAKE DESIGN

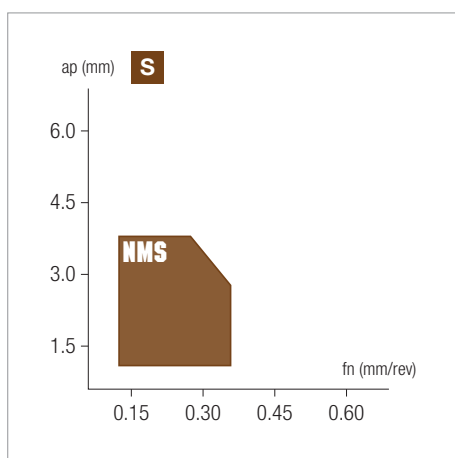
- Strengthened edge width provides good reliability
- Sharp rake reduces cutting resistance

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
nikko TOOLS	3 PCS.
Competitor A	2 PCS.
Competitor B	1 PCS.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

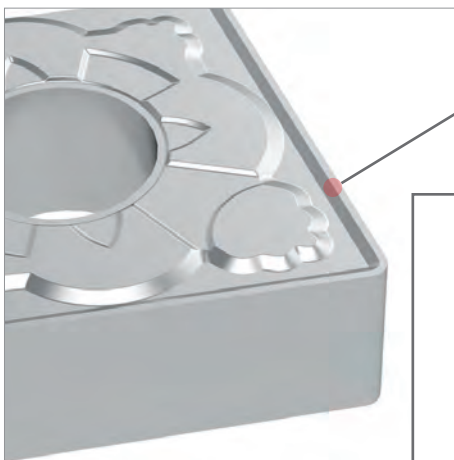
G - SPARE PARTS

NUK

Chipbreaker

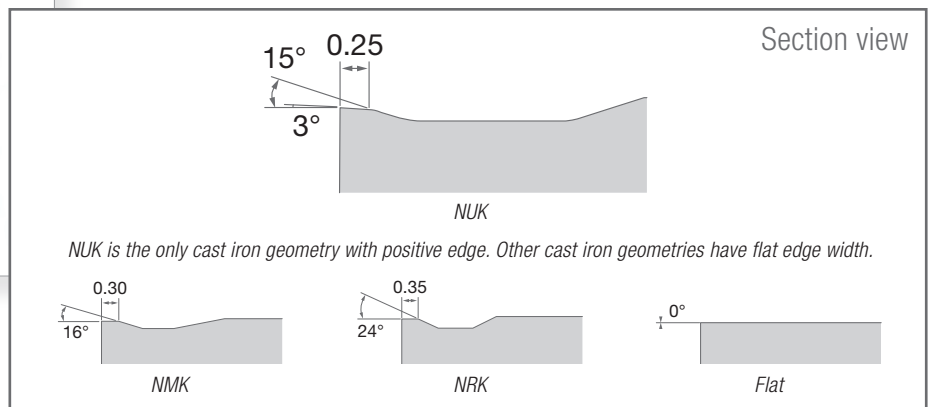
- Chipbreaker for cast iron light to medium cutting
- Effectively reduces burrs
- Specialize in nodular cast iron

• Features of NUK chipbreaker

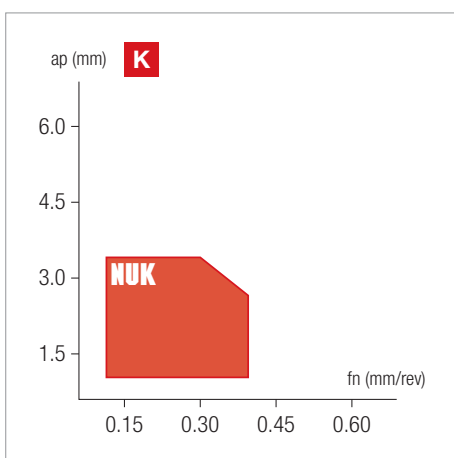


POSITIVE EDGE DESIGN

- 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

nixko TOOLS	880 PCS.
Competitor A	400 PCS.
Competitor B	380 PCS.

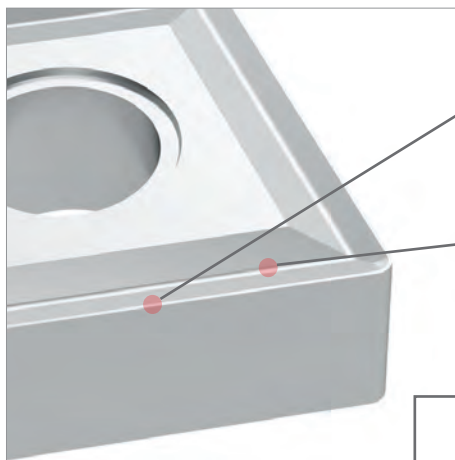


NMK

Chipbreaker

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

• Features of NMK chipbreaker

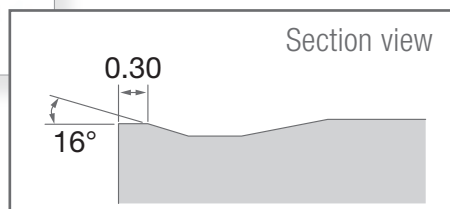


REINFORCED CUTTING EDGE

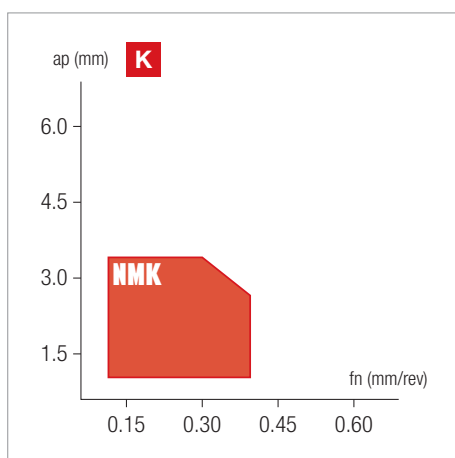
- Strong cutting edge but with reduced cutting force
- Adapted for unstable cutting conditions
- Problem solver for cast iron boring

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	<ul style="list-style-type: none"> · 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	CNMG120408-NMK
nikko TOOLS	1200 PCS.
Competitor A	450 PCS.
Competitor B	420 PCS.



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

NRK

Chipbreaker

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

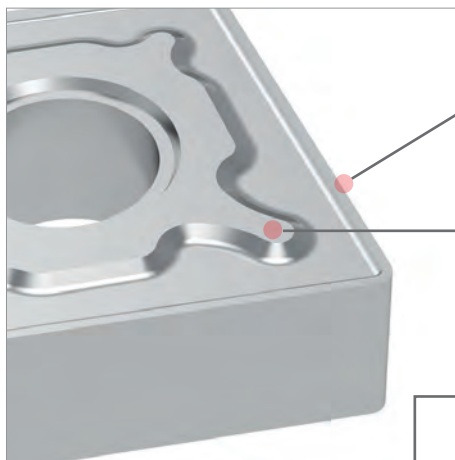
E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

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

• Features of NRK chipbreaker

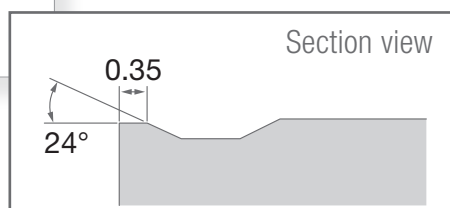


STRONG CUTTING EDGE DESIGN

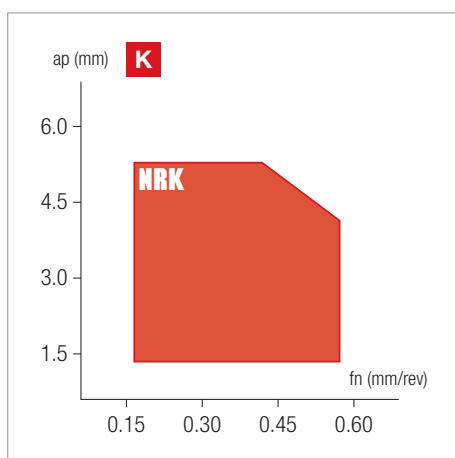
- Cutting edge robust and reliable
- Suitable for big cutting depth big feed rate operations
- Suitable for removing irregular and oxidized surfaces

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

nixko TOOLS	70 PCS.
Competitor A	30 PCS.
Competitor B	20 PCS.

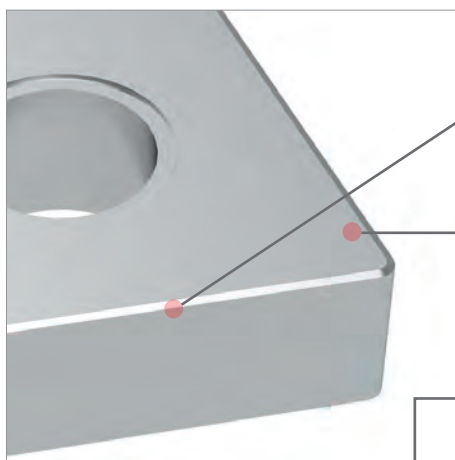


Flat

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

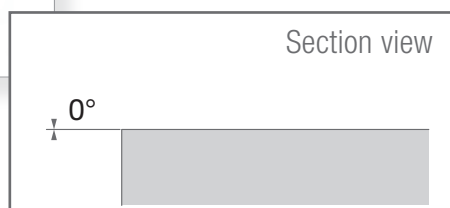


SPECIAL MICRO GEOMETRY

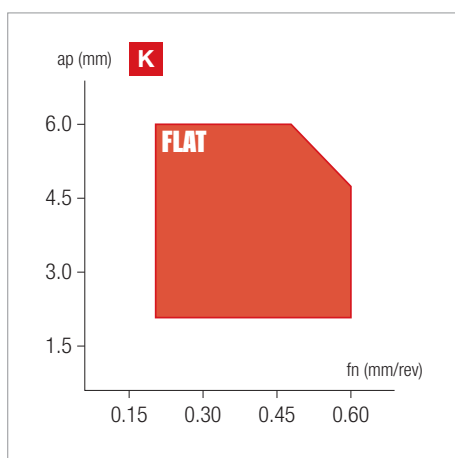
- Reduces cutting resistance
- Maintains stable and reliable cutting process

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
nixko TOOLS	175 PCS.
Competitor A	150 PCS.
Competitor B	148 PCS.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

NMN

Chipbreaker

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

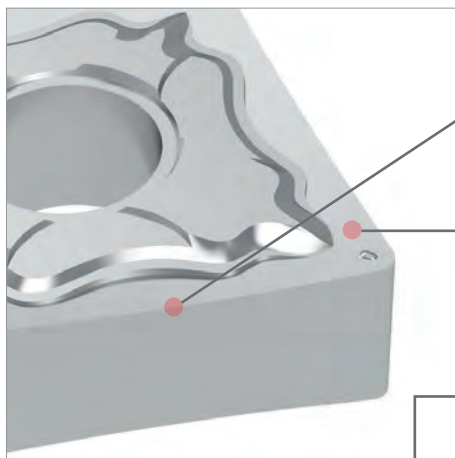
E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

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

• Features of NMN chipbreaker

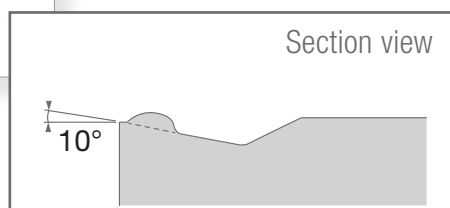


CURVED EDGE WITH SPECIAL MICRO GEOMETRY

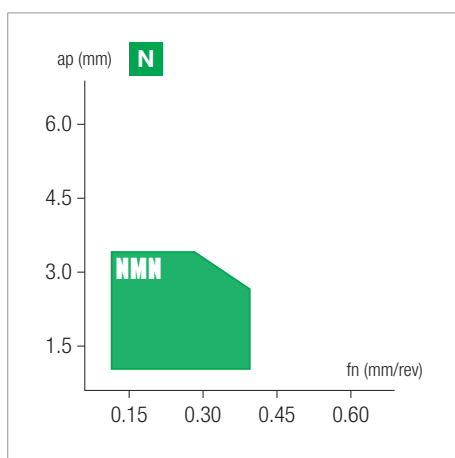
- Sharp but strong cutting edge
- Wide chip evacuation space
- Bends and guides the chips

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

nikko TOOLS	70 PCS.
Competitor A	30 PCS.
Competitor B	20 PCS.

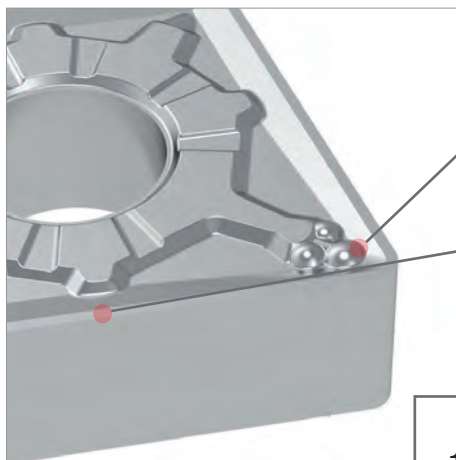


NUX

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

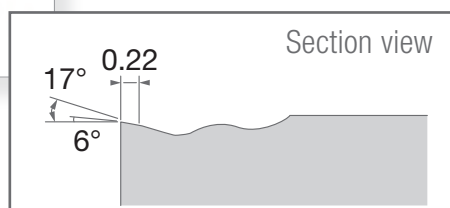


SPECIAL GROOVES

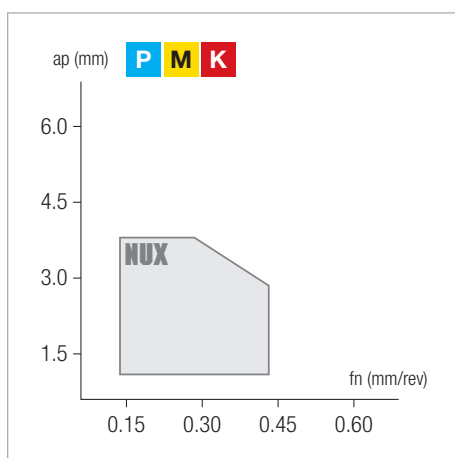
- Better robustness
- Improves chip forming and chip control

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
nixko TOOLS	40 PCS.
Competitor A	38 PCS.
Competitor B	30 PCS.

NWU

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

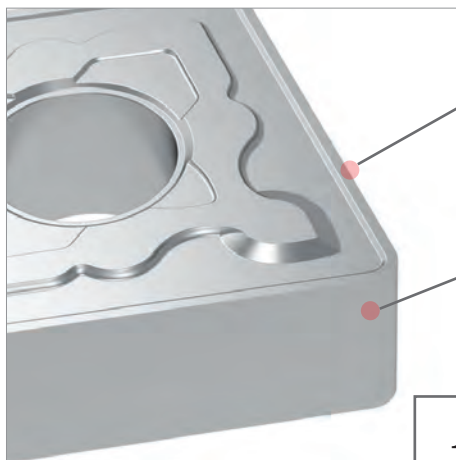
E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

- 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

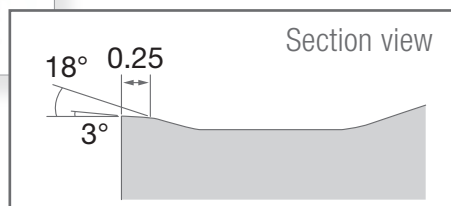


DOUBLE RAKE ANGLE EDGE

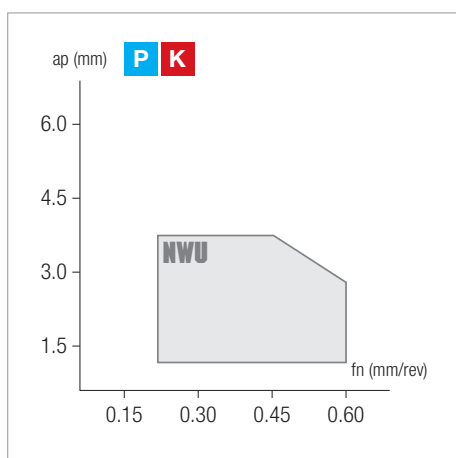
- Good balance of toughness and sharpness
- Improves chip forming and chip control
- Suitable for wider application range

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
nikko TOOLS	150 PCS.
Competitor A	140 PCS.
Competitor B	140 PCS.

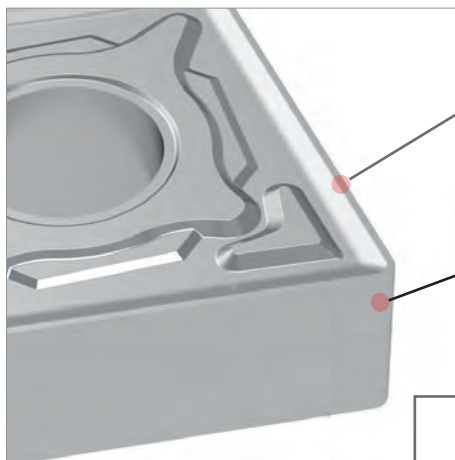


NWX

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

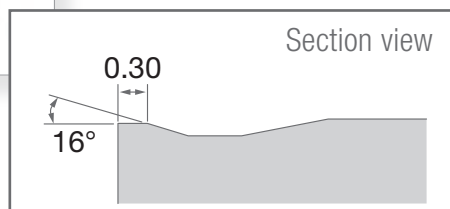


STRONG CUTTING EDGE

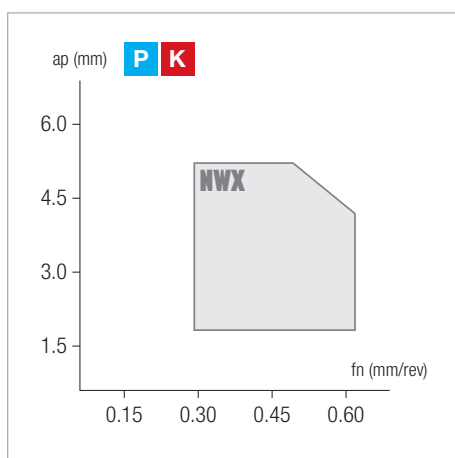
- Better robustness and reliability
- Adapted for big feed rate and big depth of cut application

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
nixko TOOLS	70 PCS.
Competitor A	55 PCS.
Competitor B	50 PCS.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

NMU^L/_R

Chipbreaker

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

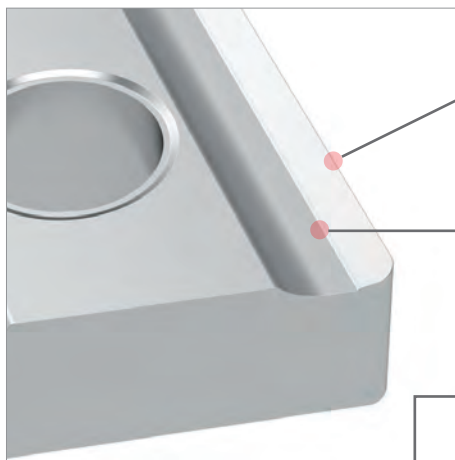
E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

- 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

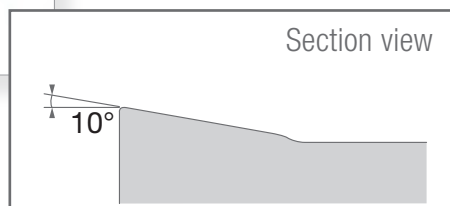


SHARP EDGE WITH SPECIAL MICRO GEOMETRY

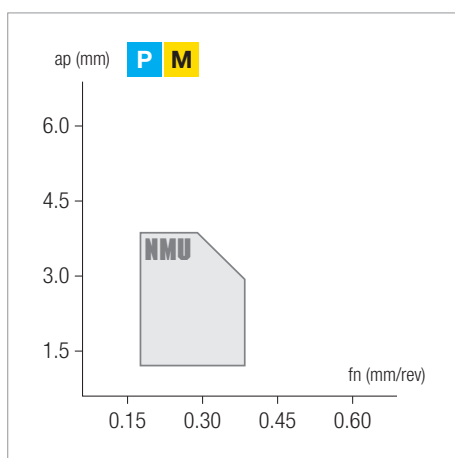
- Excellent chip forming and guided chip evacuation direction
- Minimum bending effect on the workpiece
- Suitable for unstable set-ups

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
nixko TOOLS	280 PCS.
Competitor A	250 PCS.
Competitor B	230 PCS.

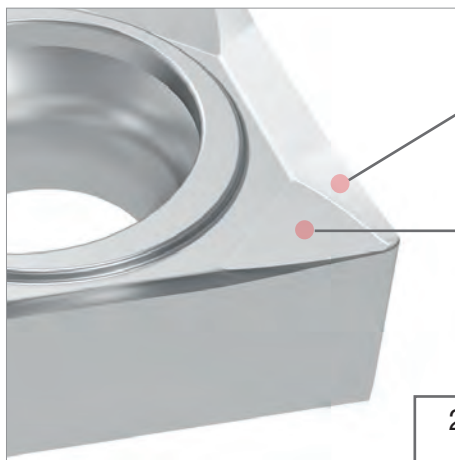


PMN

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

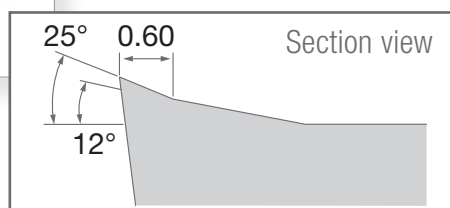


HIGHLY POSITIVE NARROW EDGE

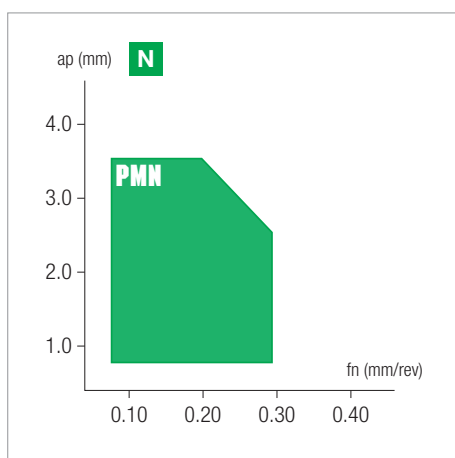
- Delightful smooth cutting process
- Improved reliability
- Fine surface finishing at higher feed rate

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

nikko TOOLS	4000 PCS.
Competitor A	1500 PCS.
Competitor B	1200 PCS.



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

PPF

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

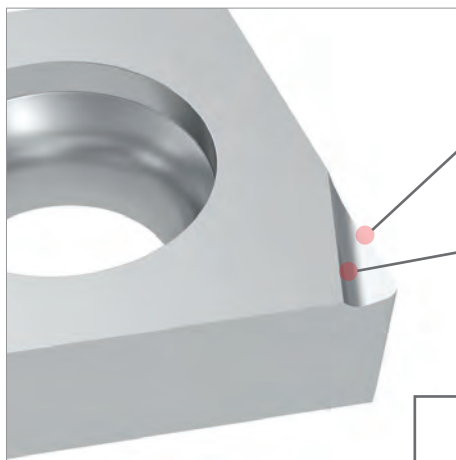
E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

- 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

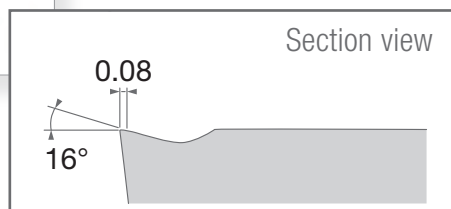


VARIABLE AND SHARP EDGE

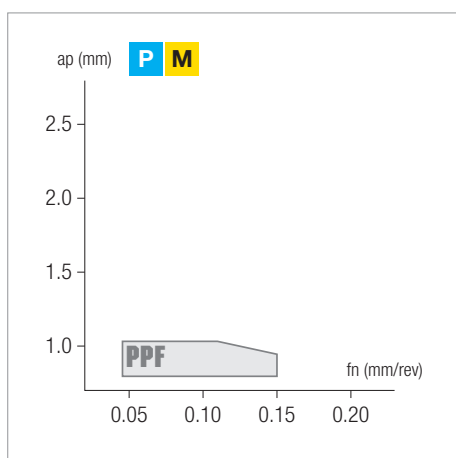
- Sharp but strong cutting edge
- Minimum bending effect on the workpiece
- Excellent surface finishing

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
nixko TOOLS	1200 PCS.
Competitor A	1150 PCS.
Competitor B	1000 PCS.

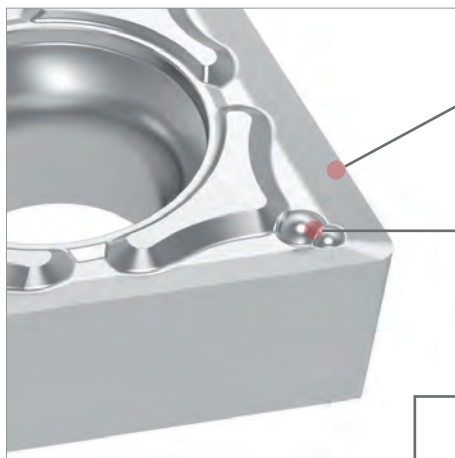


PFU

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

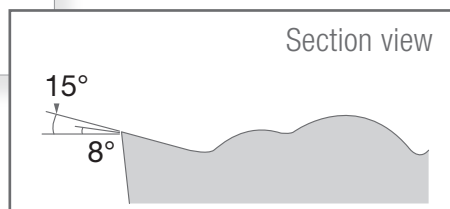


SHARP CUTTING EDGE

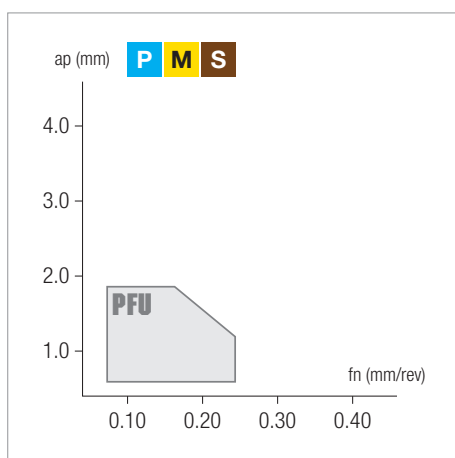
- Good surface finish
- Less vibration in boring process
- Specialize in cutting stainless and super alloys

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
nikko TOOLS	600 PCS.
Competitor A	500 PCS.
Competitor B	500 PCS.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

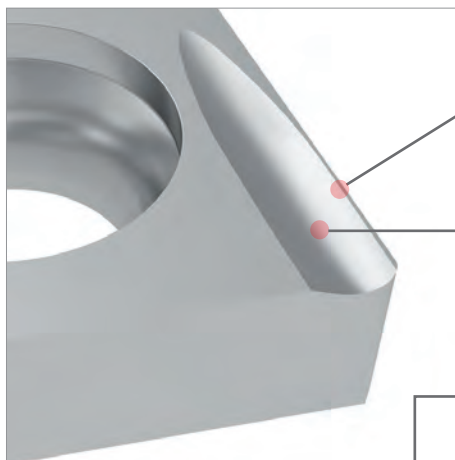
F - ACCESSORIES

G - SPARE PARTS

PPM

- 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

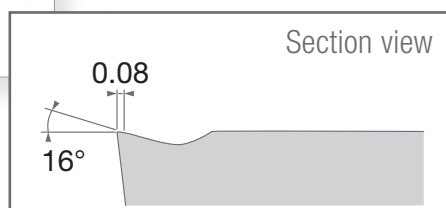


RELIABLE AND LONGER EDGE

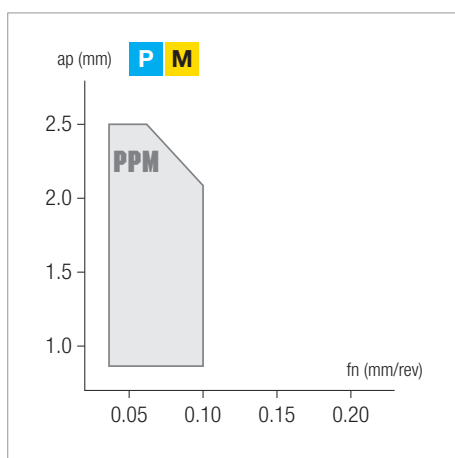
- For wide range of cutting conditions
- Minimum bending effect on the workpiece
- Reduced cutting force and stable reliable cutting

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

nikko TOOLS	800 PCS.
Competitor A	750 PCS.
Competitor B	600 PCS.

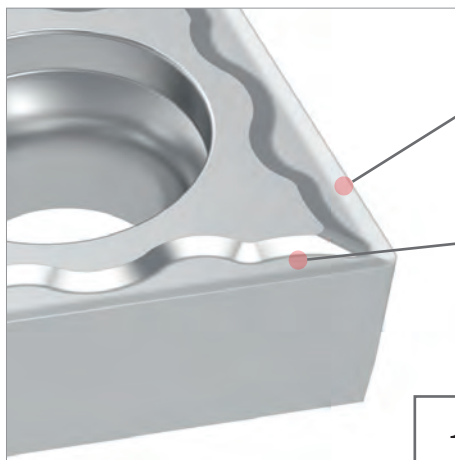


PMU

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

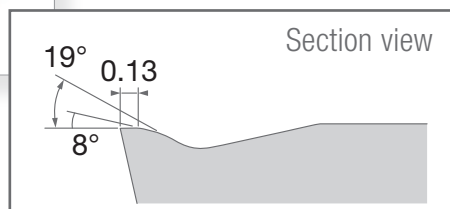


MODERATE BUT CURVED POSITIVE EDGE

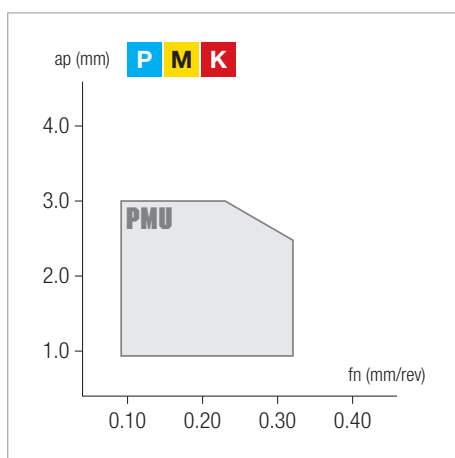
- Good balance of robustness and sharpness
- Reduced cutting force
- Improved chip forming and chip control

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 DCMT150408-PMU JP5125 (special)
Cutting Tool	nixko TOOLS 130 PCS.
Competitor A	110 PCS.
Competitor B	100 PCS.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

PRU

Chipbreaker

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

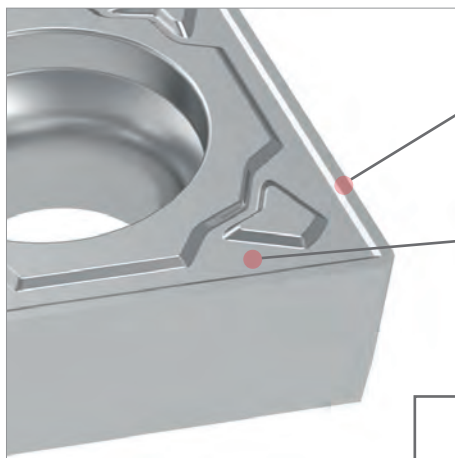
E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

- 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

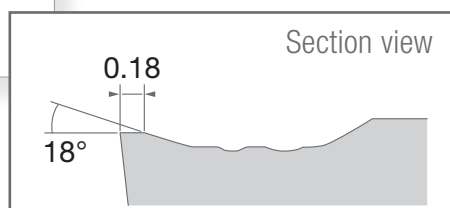


STRONG AND VARIABLE EDGE

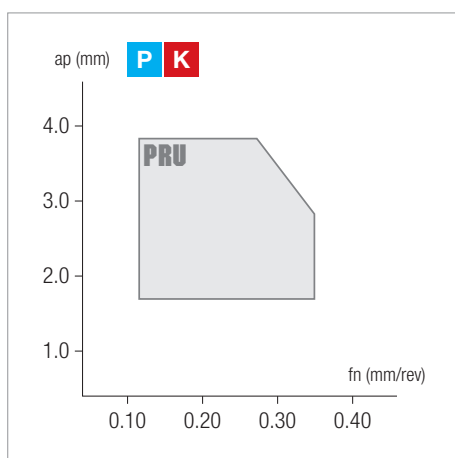
- Better robustness and reliability
- Adapted for higher feed rate
- Reduced cutting force and vibration

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
nixko TOOLS	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 / NMM	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	-	-	-	-	-	-

B - THREADING

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	finishing
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

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

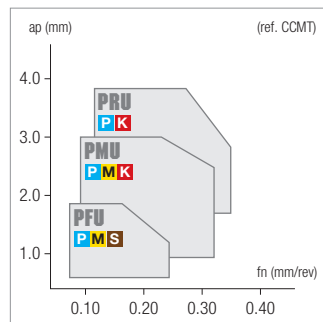
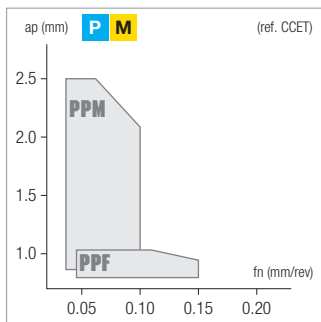
F - ACCESSORIES

G - SPARE PARTS

CC	<p>HC: Coated carbide HT: Cermet HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition</p> <p>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</p>																																																																																																																																								
ISO - with hole	<p>Stable machining, light cut ○ 1st choice ○ suitable ●</p> <p>General machining, medium cut ○ 1st choice ○ suitable ●</p> <p>Unstable machining, heavy cut ⚡ 1st choice ⚡ suitable ⚡</p>																																																																																																																																								
<ul style="list-style-type: none"> 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 	<p>Dimensions ISO Vc(m/min) - suggested cutting speed range (bold: 1st choice)</p>																																																																																																																																								
	<p> 2 edges</p>	<table border="1"> <tr> <td>P</td> <td></td> <td>200</td> <td>170</td> <td>140</td> <td></td> <td>180</td> <td>100</td> <td>90</td> <td>70</td> <td>200</td> <td></td> </tr> <tr> <td></td> <td></td> <td>380</td> <td>360</td> <td>330</td> <td></td> <td>400</td> <td>220</td> <td>200</td> <td>180</td> <td>380</td> <td></td> </tr> <tr> <td>M</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>100</td> <td>80</td> <td>100</td> <td>70</td> <td>60</td> <td>50</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>200</td> <td>180</td> <td>220</td> <td>160</td> <td>150</td> <td>140</td> </tr> <tr> <td>K</td> <td>130</td> <td>110</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>150</td> <td>90</td> <td>60</td> <td></td> </tr> <tr> <td></td> <td>380</td> <td>300</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>320</td> <td>190</td> <td>180</td> <td></td> </tr> <tr> <td>N</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>400</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1400</td> </tr> <tr> <td>S</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>200</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>20</td> <td>70</td> <td></td> <td>1000</td> </tr> <tr> <td>H</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	P		200	170	140		180	100	90	70	200				380	360	330		400	220	200	180	380		M						100	80	100	70	60	50							200	180	220	160	150	140	K	130	110						150	90	60			380	300						320	190	180		N											400												1400	S												200										20	70		1000	H												
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Designation		RE						IC						S						D1						LE						Stock											
		PPF		P M		P M S		PPU		P M S		PPM		PMU		P M K		PRU		P M K		P M S		P M S		P M S		P M S		P M S		P M S		P M S									
FINISHING		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		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		CCET09T304-h-PPM	0.4	9.525	3.97	4.4	9.3																									●	●										
MEDIUM		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	●				○	○		○																												

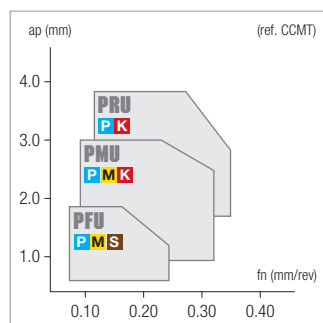
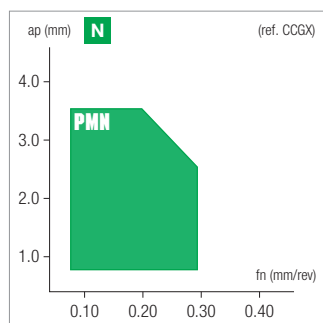
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion



<h1>CC</h1>	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
<ul style="list-style-type: none"> 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	JG7010	JG7020	JG8005	JG8015	JG8025	JG9010	JG9025	JP4020	JP5015	JP5120	JP5125	JP6010	JU4015	JU6015
	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 polished surface ground periphery	CCGX060202-PMN	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 strong edge interrupted cut	CCMT09T304-PRU	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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

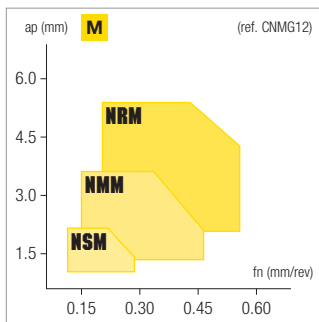
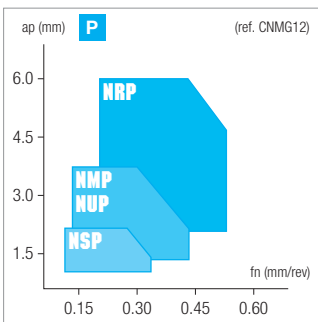
F - ACCESSORIES

G - SPARE PARTS

<h1>CN</h1> <p>ISO - with hole</p> <ul style="list-style-type: none"> 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 	<p>HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition</p>	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																																											
	<p>Stable machining, light cut ● 1st choice ○ suitable</p> <p>General machining, medium cut ● 1st choice ○ suitable</p> <p>Unstable machining, heavy cut ⚡ 1st choice ⚡ suitable</p> <p>Dimensions</p> <p>ISO</p> <table border="1"> <tr> <th></th><th>P</th><th>M</th><th>K</th><th>N</th><th>S</th><th>H</th> </tr> <tr> <td>Vc(m/min) - suggested cutting speed range (bold: 1st choice)</td> <td>200 380</td> <td>170 360</td> <td>140 330</td> <td>100 200</td> <td>170 360</td> <td>140 330</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>100 200</td> <td>80 180</td> <td>70 160</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>70 160</td> <td>50 130</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>200 1000</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>20 70</td> <td></td> </tr> </table>		P	M	K	N	S	H	Vc(m/min) - suggested cutting speed range (bold: 1st choice)	200 380	170 360	140 330	100 200	170 360	140 330					100 200	80 180	70 160					70 160	50 130								200 1000						20 70		JG7010	JG7020	JG7115	JG8005	JG8015	JG8025	JG8035	JG8215	JG8225	JG9010	JG9025	JP3015	JP9015	JP9030	JU4015	JU6015
	P	M	K	N	S	H																																																					
Vc(m/min) - suggested cutting speed range (bold: 1st choice)	200 380	170 360	140 330	100 200	170 360	140 330																																																					
				100 200	80 180	70 160																																																					
				70 160	50 130																																																						
						200 1000																																																					
					20 70																																																						

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					●	○												

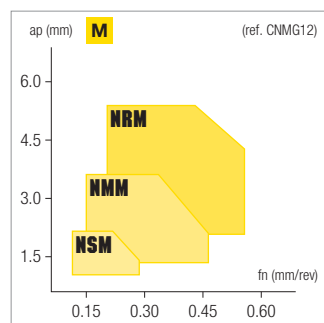
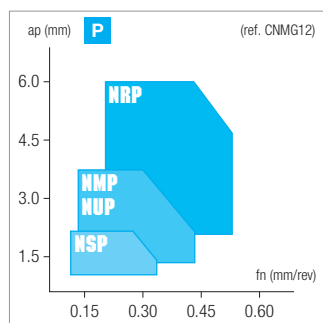
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>CN</h1>	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	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF
<ul style="list-style-type: none"> • 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	●	○	●	●	○		●		●	○	●	●		●	●		
	General machining, medium cut	●	○	●		●	●	○	●	●	○	●	●	●	●		●	
	Unstable machining, heavy cut	⊕	⊕	⊕					⊕	⊕		⊕				⊕	⊕	
	Dimensions	ISO Vc(m/min) - suggested cutting speed range (bold: 1st choice)																
<p>4 edges</p>	P			200	170	140	100	170	140							200		
	M											100	80	70	50			
	K	130	110	130														
	N	380	300	380													200	
	S													20	70			
	H																	

	Designation	RE	IC	S	D1	LE	Stock																							
MEDIUM	NUP P 	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	NMM M 	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



A - TURNING

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D - MILLING

E - DRILLING

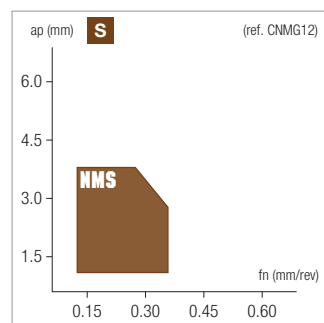
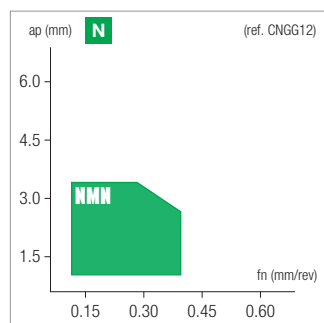
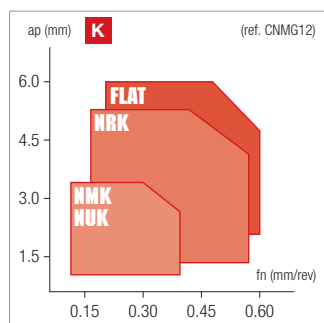
F - ACCESSORIES

G - SPARE PARTS

<h1>CN</h1>	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	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF
<ul style="list-style-type: none"> 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: 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												
MEDIUM 	NMK K	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 <p>sharp edge reduces burrs</p>	NUK K	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 <p>polished surface ground periphery</p>	NMN N	CNGG120404-NMN	0.4	12.7	4.76	5.16	12.5											●	
		CNGG120408-NMN	0.8	12.7	4.76	5.16	12.1												●
MEDIUM 	NMS S	CNMG120408-NMS	0.8	12.7	4.76	5.16	12.1											●	
		CNMG120412-NMS	1.2	12.7	4.76	5.16	11.7											●	

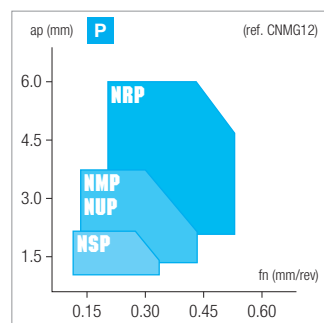
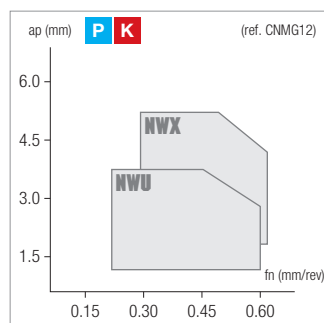
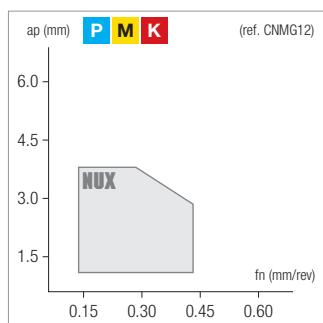
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>CN</h1>	HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition																																																																																																																											
	ISO - with hole	JG7010	JG7020	JG7115	JG8005	JG8015	JG8025	JG8035	JG8215	JG8225	JG9010	JG9025	JP3015	JP9015	JP9030	JU4015	JU6015																																																																																																											
<ul style="list-style-type: none"> 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: 1st choice)																																																																																																																											
<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="background-color: #e0f0ff;">P</td> <td></td> <td></td> <td></td> <td>200 380</td> <td>170 360</td> <td>140 330</td> <td>100 200</td> <td>170 360</td> <td>140 330</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>200 380</td> <td></td> </tr> <tr> <td style="background-color: #fff0e0;">M</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>100 200</td> <td>80 180</td> <td>70 160</td> <td>50 130</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="background-color: #ffe0e0;">K</td> <td>130 380</td> <td>110 300</td> <td>130 380</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="background-color: #e0ffe0;">N</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>200 1000</td> <td></td> </tr> <tr> <td style="background-color: #e0e0e0;">S</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>20 70</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="background-color: #e0e0e0;">H</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>																	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																	
P				200 380	170 360	140 330	100 200	170 360	140 330							200 380																																																																																																												
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		Designation						Stock															
		RE	IC	S	D1	LE																	
MEDIUM	NUX P M K universal use wide range of grades	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 wiper universal type	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 wiper reinforced edge	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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

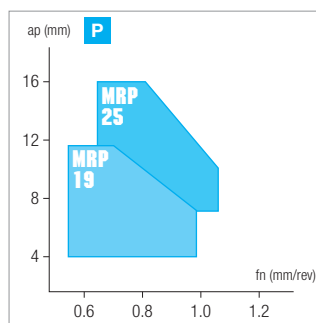
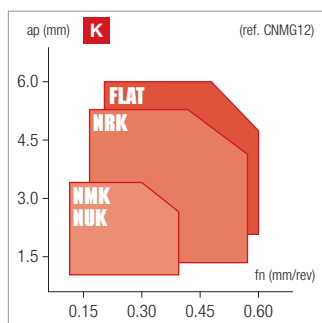
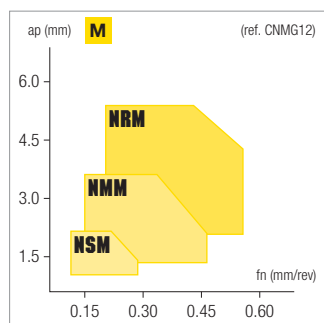
F - ACCESSORIES

G - SPARE PARTS

<h1>CN</h1>	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	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF
• 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																		
	M																		
	K	130 380	110 300	130 380															
	N																		
	S																		
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												

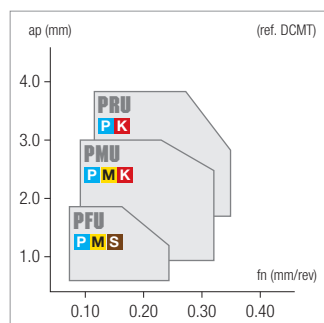
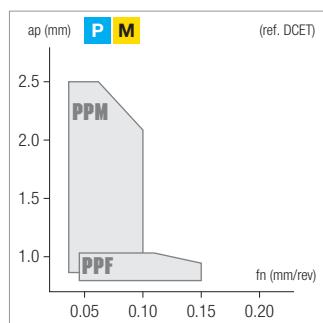
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>DC</h1>	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	
<ul style="list-style-type: none"> • 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	JC7010	JC8005	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5120	JP5125	JP6010	JU4015	JU6015	
	Dimensions	Vc(m/min) - suggested cutting speed range (bold: 1st choice)													
		ISO	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															

	Designation	RE	IC	S	D1	LE	Stock																				
							JC7010	JC8005	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5120	JP5125	JP6010	JU4015	JU6015								
FINISHING ground chipbreaker right-hand shown	PPF P M DCET070202/r-PPF	0.2	6.35	2.38	2.8	7.6																					
	DCET070204/r-PPF	0.4	6.35	2.38	2.8	7.4																					
	DCET11T302/r-PPF	0.2	9.525	3.97	4.4	11.4																					
	DCET11T304/r-PPF	0.4	9.525	3.97	4.4	11.2																					
FINISHING 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																					
MEDIUM ground chipbreaker right-hand shown	DCET070204/r-PPM	0.4	6.35	2.38	2.8	7.4																					
	DCET11T302/r-PPM	0.2	9.525	3.97	4.4	11.4																					
	DCET11T304/r-PPM	0.4	9.525	3.97	4.4	11.2																					
	MEDIUM 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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

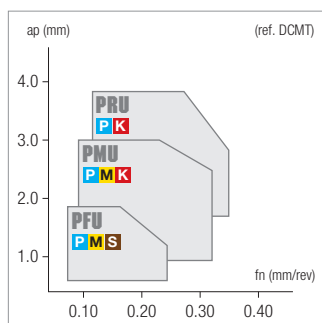
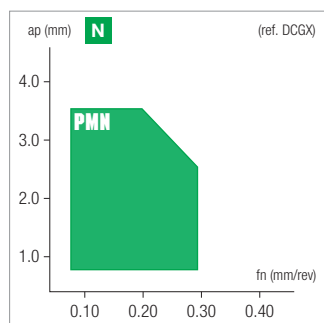
F - ACCESSORIES

G - SPARE PARTS

<h1>DC</h1>	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
<ul style="list-style-type: none"> 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: 1st 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					150 320		90 190	60 180			
	N										400 1400	200 1000	
	S								20 70				
H													

	Designation	RE	IC	S	D1	LE	Stock													
MEDIUM polished surface ground periphery	DCGX070202-PMN	0.2	6.35	2.38	2.8	7.6														
	DCGX070204-PMN	0.4	6.35	2.38	2.8	7.4														
	DCGX070208-PMN	0.8	6.35	2.38	2.8	7														
	DCGX11T302-PMN	0.2	9.525	3.97	4.4	11.4														
	DCGX11T304-PMN	0.4	9.525	3.97	4.4	11.2														
	DCGX11T308-PMN	0.8	9.525	3.97	4.4	10.8														
ROUGHING strong edge interrupted cut	DCMT11T304-PRU	0.4	9.525	3.97	4.4	11.2	●			●										
	DCMT11T308-PRU	0.8	9.525	3.97	4.4	10.8	●			●										

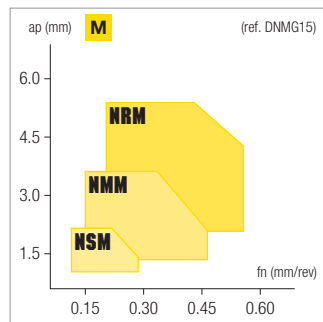
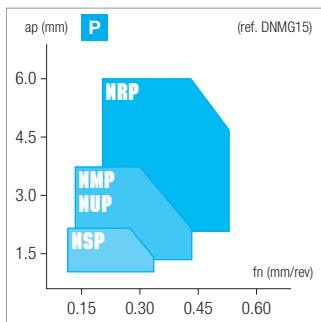
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>DN</h1>		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					
<h2>ISO - with hole</h2> <ul style="list-style-type: none"> 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 ● 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)																				
	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						Stock														
	RE	IC	S	D1	LE																
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



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

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

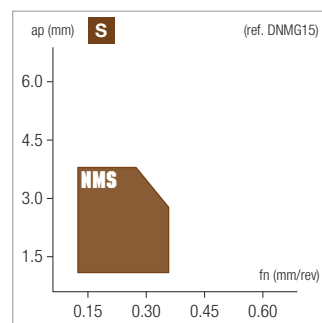
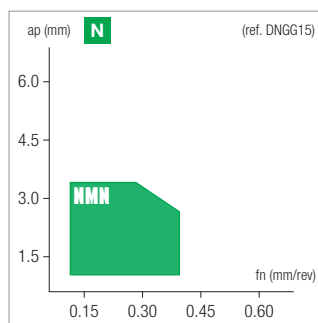
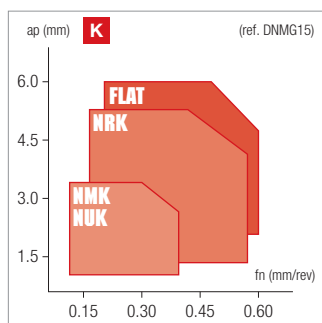
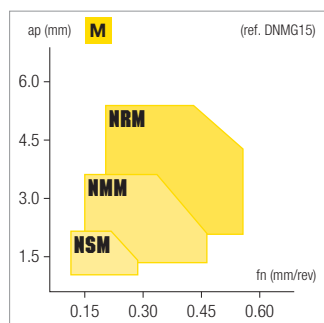
	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF
	JG7010	JG7020	JG7115	JG8005	JG8015	JG8025	JG8035	JG8215	JG8225	JG9010	JG9025	JP3015	JP9015	JP9030	JU4015	JU6015	
Stable machining, light cut	●	○	●	●	●	○	●	○	●	○	●	●	●	●	●	●	
General machining, medium cut	●	○	●	●	●	○	●	●	○	●	●	●	●	●	●	●	
Unstable machining, heavy cut	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	

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											
MEDIUM 	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 	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 	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 	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 	DNMG150608-NMS	0.8	12.7	6.35	5.16	14.7											●	
	DNMG150612-NMS	1.2	12.7	6.35	5.16	14.3											●	

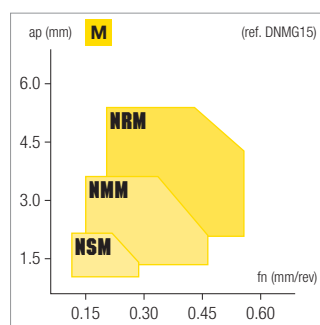
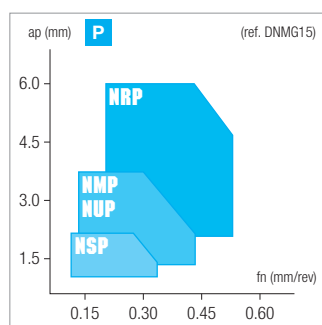
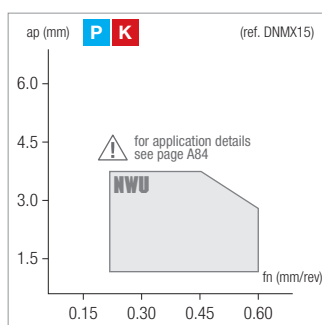
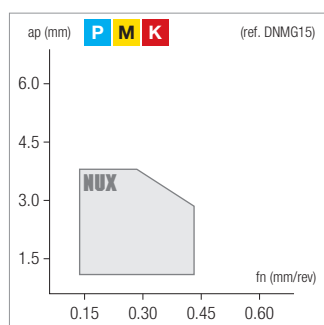
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h2>DN</h2>	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	PVD	PVD	PVD		
<h2>ISO - with hole</h2>		JG7010	JG7020	JG7115	JG8005	JG8015	JG8025	JG8035	JG8215	JG8225	JG9010	JG9025	JP3015	JP9015	JP9030	JU4015	JU6015	
		●	○	●	●	●	○		●		●	○	●	●		●	●	
<ul style="list-style-type: none"> 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 ● 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	100	170	140							200		
	M			380	360	330	200	360	330		100	80	70	50		380		
	K	130	110	130							200	180	160	130				
	N			380														
	S												20	70				
	H																	

Designation		RE	IC	S	D1	LE	Stock																				
MEDIUM NUX P M K 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 NMU P M right-hand shown (parameters p.A81)	DNMG150604-1/6-NMU	0.4	12.7	6.35	5.16	15.1						●					●										
	DNMG150608-1/6-NMU	0.8	12.7	6.35	5.16	14.7						●					●										
MEDIUM NWU P K 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 NRP P 	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 NRM M 	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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

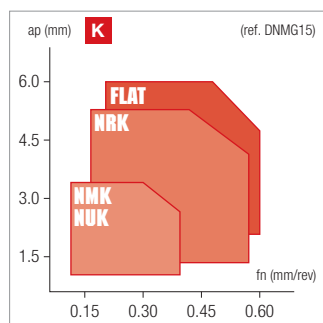
F - ACCESSORIES

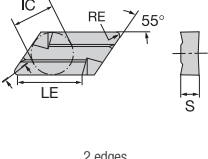
G - SPARE PARTS


<h1>DN</h1>	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	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF
<ul style="list-style-type: none"> 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	● 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					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	DNMG150608-NRK	0.8	12.7	6.35	5.16	14.7	●	○	●										
	DNMG150612-NRK	1.2	12.7	6.35	5.16	14.3	●	○	●										
ROUGHING flat K	DNMA150608	0.8	12.7	6.35	5.16	14.7	●	○	○										
	DNMA150612	1.2	12.7	6.35	5.16	14.3	●	○	●										

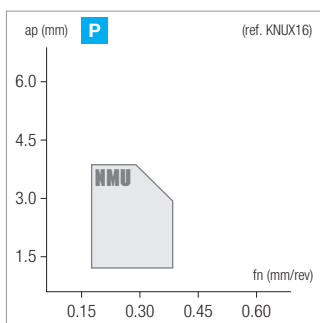
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>KN</h1>	HC: Coated carbide CVD: Chemical vapour deposition	HC CVD	
	ISO - without hole		JC8025
	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	140 330	
	M		
	K		
	N		
	S		
	H		

Designation		RE	IC	S	D1	LE	Stock	
MEDIUM  right-hand shown	NMUX160405 1/8-NMU	0.5	9.525	4.76	-	16.1	●	
	NMUX160410 1/8-NMU	1	9.525	4.76	-	15.2	●	

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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

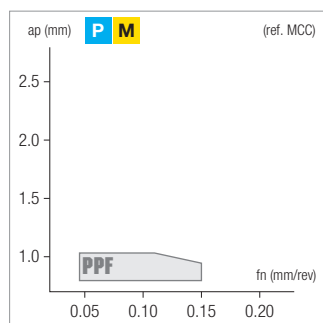
E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

<h1>MCC</h1>	HF: Micrograin carbide HT: Cermet PVD: Physical vapour deposition		HF PVD	HT					
	ISO - with hole		JP5125	JU4015					
<ul style="list-style-type: none"> 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) 	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	70 180	200 380					
		M	50 140						
		K	60 180						
		N							
		S							
		H							
Designation		RE	IC	S	D1	LE	Stock		
<p>ground chipbreaker left-hand shown</p>	PPF P M								
	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	●	●	

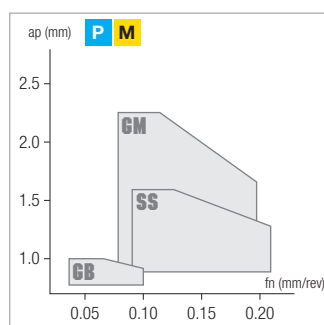
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion



<h1>MCN</h1>	HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition							HC	HF	HF	HF	HF	HT								
								CVD	PVD	PVD	PVD	PVD									
<h2>MicroNega - with hole</h2>								JC8015	JP5015	JP5025	JP5120	JP9030	JU4015								
<ul style="list-style-type: none"> • 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: 1st choice)						
	<p style="text-align: center;">4 edges</p>							P							170 100 60 90 200						
								M							360 220 180 200 380						
K							70 60 60 50														
N							160 120 150 130														
S							90 190														
H							20 30														
H							70 60														

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



A - TURNING

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E - DRILLING

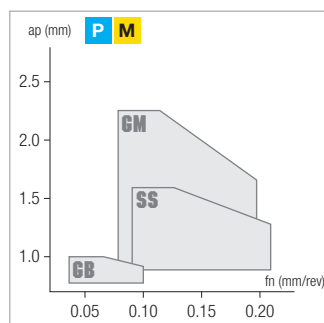
F - ACCESSORIES

G - SPARE PARTS

<h1>MDN</h1>	HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition						HC	HF	HF	HF	HF	HT						
	CVD: Chemical vapour deposition PVD: Physical vapour deposition						CVD	PVD	PVD	PVD	PVD							
<h2>MicroNega - with hole</h2>							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: 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	<p>GB P M ground chipbreaker right-hand shown</p>	MDN.R04G-GB ^{1/8}	0.4	7	3.18	3.6	8.1	▽						
MEDIUM	<p>GM P M 1st choice chip control oriented</p>	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	<p>SS P M ground periphery polished surface</p>	MDN.R02G-SS	0.2	7	3.18	3.6	8.3				▽			
	MDN.R04G-SS	0.4	7	3.18	3.6	8.1			●	▽	●			

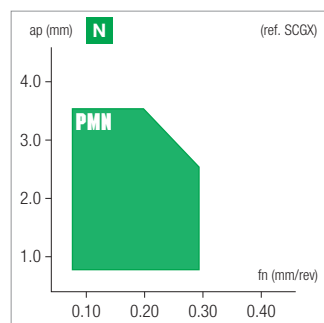
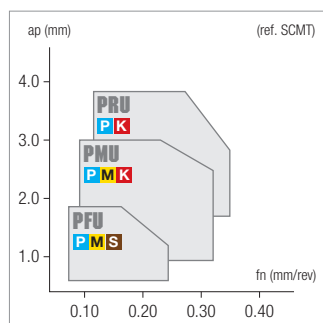
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



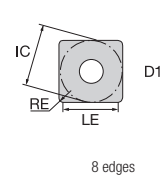
<h1 style="font-size: 2em;">SC</h1>	HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition											
	ISO - with hole	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF	
<ul style="list-style-type: none"> • Very strong 90° corner with excellent economy (4 edges on positive 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 	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>4 edges</p>	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													
							P	M	K	N	S	H	HT	HF	HF	HC	HC	HC		
FINISHING	PFU P M S sharp edge low cutting force	SCMT09T304-PFU	0.4	9.525	3.97	4.4	9.1									●				
		SCMT09T308-PFU	0.8	9.525	3.97	4.4	8.7										●	○		
MEDIUM	PMU P M K 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		○	●										
		SCMT120408-PMU	0.8	12.7	4.76	5.5	11.9	●	●	●		●								
MEDIUM	PMN N 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

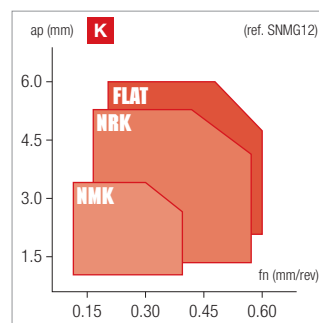
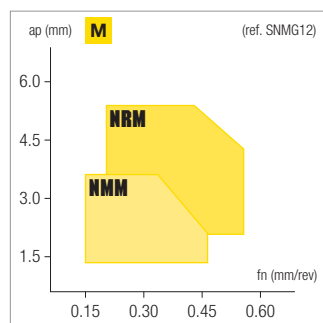
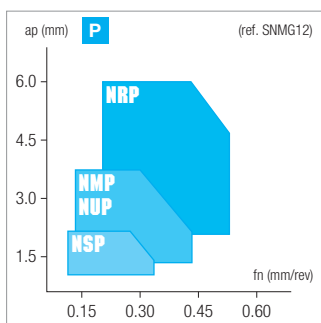


A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

<h1>SN</h1>	HC: Coated carbide 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	HC CVD	HF PVD	HF	
<ul style="list-style-type: none"> 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 	Stable machining, light cut <input checked="" type="radio"/> 1 st choice <input type="radio"/> suitable General machining, medium cut <input checked="" type="radio"/> 1 st choice <input type="radio"/> suitable Unstable machining, heavy cut <input checked="" type="radio"/> 1 st choice <input type="radio"/> suitable											
	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															
FINISHING	NSP P 	0.8	12.7	4.76	5.16	11.9																
	SNMG120408-NSP																					
MEDIUM	NMP P 	0.4	12.7	4.76	5.16	12.3																
	SNMG120404-NMP																					
	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 	0.4	12.7	4.76	5.16	12.3																
	SNMG120404-NUP																					
	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 	0.4	12.7	4.76	5.16	12.3																
	SNMG120404-NMM																					
	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 	0.8	12.7	4.76	5.16	11.9																
	SNMG120408-NMK																					
	SNMG120412-NMK	1.2	12.7	4.76	5.16	11.5																

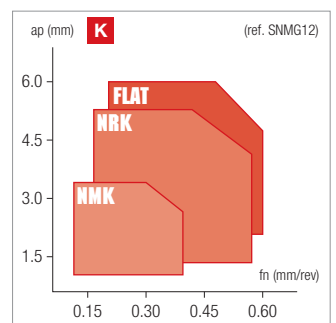
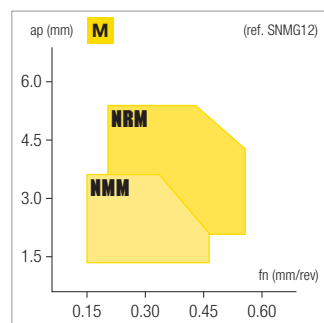
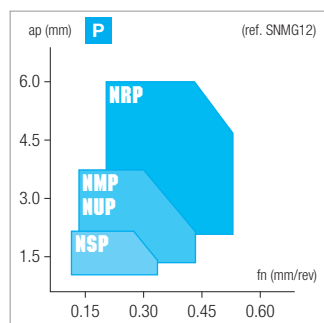
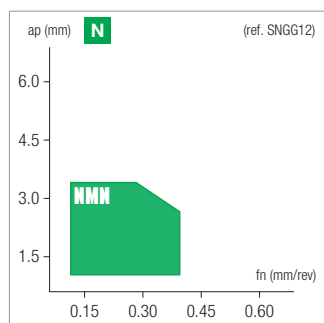
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>SN</h1>	HC: Coated carbide 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	HC CVD	HC CVD	HF PVD	HF
<ul style="list-style-type: none"> • 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 	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	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																			
	SNGG120404-NMN	0.4	12.7	4.76	5.16	12.3													○	
	SNGG120408-NMN	0.8	12.7	4.76	5.16	11.9													●	
	polished surface ground periphery																		▽	
	SNGG120412-NMN	1.2	12.7	4.76	5.16	11.5														
ROUGHING	NRP P																			
	SNUMG120408-NRP	0.8	12.7	4.76	5.16	11.9						●	○							
	SNUMG120412-NRP	1.2	12.7	4.76	5.16	11.5						●	●							
	SNUMG120416-NRP	1.6	12.7	4.76	5.16	11.1						●	●							
	SNUMG190612-NRP	1.2	19.05	6.35	7.94	17.9						○	○							
	SNUMG190616-NRP	1.6	19.05	6.35	7.94	17.5						○	●							
	SNUMG190624-NRP	2.4	19.05	6.35	7.94	16.7						●	●							
SNUMG250924-NRP	2.4	25.4	9.52	8.8	23						○									
ROUGHING	NRM M																			
	SNUMG120408-NRM	0.8	12.7	4.76	5.16	11.9							○						●	
	SNUMG120412-NRM	1.2	12.7	4.76	5.16	11.5							○						●	
	SNUMG190612-NRM	1.2	19.05	6.35	7.94	17.9							○						●	
SNUMG190616-NRM	1.6	19.05	6.35	7.94	17.9							○						●		
ROUGHING	NRK K																			
	SNUMG120408-NRK	0.8	12.7	4.76	5.16	11.9	●	○	○											
	SNUMG120412-NRK	1.2	12.7	4.76	5.16	11.5	○	○	○											
	SNUMG120416-NRK	1.6	12.7	4.76	5.16	11.1	○	●												
	SNUMG190612-NRK	1.2	19.05	6.35	7.94	17.9	○	○												
SNUMG190616-NRK	1.6	19.05	6.35	7.94	17.5	○	○													

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



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E - DRILLING

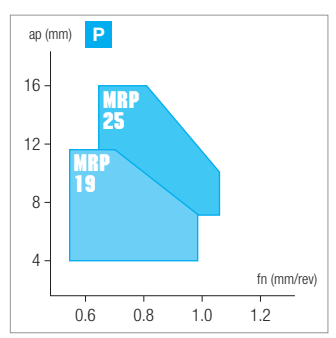
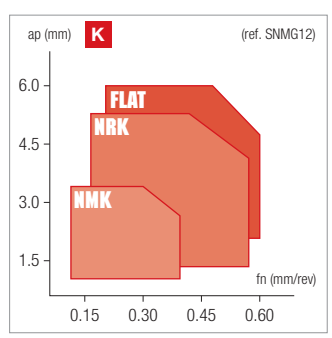
F - ACCESSORIES

G - SPARE PARTS

<h1>SN</h1>	HC: Coated carbide 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	HC CVD	HF PVD	HF
<ul style="list-style-type: none"> 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 	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	140	100				
					360	330	200				
	M							100	80	50	
								200	180	130	
	K	130	110	130							
		380	300	380							
N										200	
										1000	
S											
H											

	Designation	RE	IC	S	D1	LE	Stock												
ROUGHING flat K	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	SNMM190616-MRP	1.6	19.05	6.35	7.94	17.5					○	○							
	SNMM190624-MRP	2.4	19.05	6.35	7.94	16.7					●	●							
	SNMM250924-MRP	2.4	25.4	9.52	8.8	23					●	●							

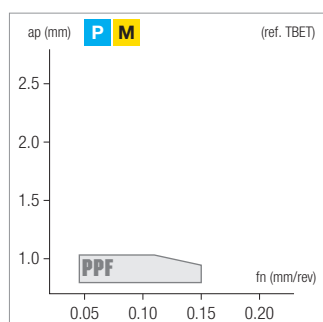
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion



<h1>TB</h1>	HF: Micrograin carbide HT: Cermet PVD: Physical vapour deposition	HF PVD	HT	
		JP5125	JU4015	
ISO - with hole	Stable machining, light cut ● 1 st choice ○ suitable	○	●	
<ul style="list-style-type: none"> 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 	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	70 180	200 380	
	M	50 140		
	K	60 180		
	N			
	S			
	H			

FINISHING	Designation	RE	IC	S	D1	LE	Stock	
							●	○
<p>ground chipbreaker right-hand shown</p>	TBET060102 ¹ / ₈ -PPF	0.2	3.97	1.59	2.3	6.7	●	●
	TBET060104 ¹ / ₈ -PPF	0.4	3.97	1.59	2.3	6.5	●	●

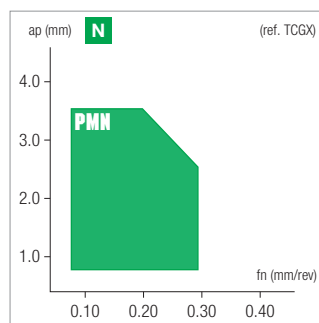
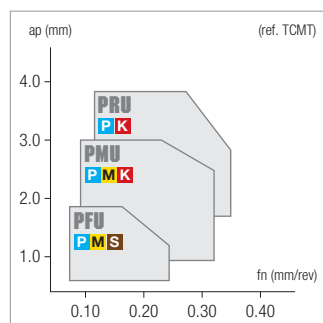
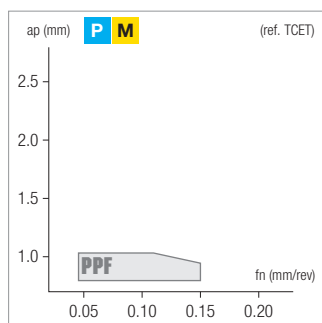
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion



<h1>TC</h1> <h2>ISO - with hole</h2> <ul style="list-style-type: none"> • 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	HC CVD JC7010	HC CVD JC7020	HC CVD JC8015	HC CVD JC8025	HC CVD JC9010	HC CVD JC9025	HT PVD JP4020	HF PVD JP5015	HF PVD JP5120	HF PVD JP5125	HF PVD JP6010	HT JU4015	HF 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													Vc(m/min) - suggested cutting speed range (bold: 1st choice)											
<p>3 edges</p>		ISO		P													170 140 180 100 90 70 200 380												
		M		130 110 100 80 100 70 60 50													380 300 200 180 220 160 150 140												
K		N		20 70													400 1400 200 1000												
S		H																											

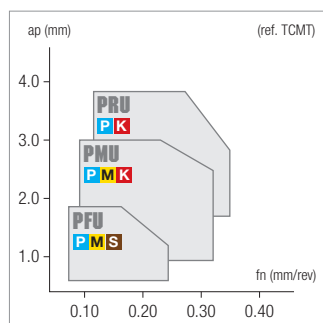
Designation		RE	IC	S	D1	LE	Stock									
FINISHING PPF P M <p>ground chipbreaker right-hand shown</p>	TCET110202/-h-PPF	0.2	6.35	2.38	2.8	10.5								●	●	
	TCET110204/-h-PPF	0.4	6.35	2.38	2.8	10.3								●	●	
FINISHING PFU P M S <p>sharp edge low cutting force</p>	TCMT110202-PFU	0.2	6.35	2.38	2.8	10.5	●	●	●	○	●	●	○	●		
	TCMT110204-PFU	0.4	6.35	2.38	2.8	10.3	●	●	●	●	●	●	●	●		
	TCMT110208-PFU	0.8	6.35	2.38	2.8	9.9							●			
	TCMT16T304-PFU	0.4	9.525	3.97	4.4	16.1							●	●		
	TCMT16T308-PFU	0.8	9.525	3.97	4.4	15.7							●	●		
MEDIUM PMU P M K <p>1st choice universal application</p>	TCMT090204-PMU	0.4	5.56	2.38	2.5	9	●	●	●						○	
	TCMT110202-PMU	0.2	6.35	2.38	2.8	10.5		○	●	●	○			●		
	TCMT110204-PMU	0.4	6.35	2.38	2.8	10.3	●	●	●	●	●		●	●	●	
	TCMT110208-PMU	0.8	6.35	2.38	2.8	9.9	●	●	●	●		●	●	●		
	TCMT16T304-PMU	0.4	9.525	3.97	4.4	16.1	●		●	●	●		●	●	●	
	TCMT16T308-PMU	0.8	9.525	3.97	4.4	15.7	●	○	●	●	●		●	●	●	
	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 PMN N <p>polished surface ground periphery</p>	TCGX090204-PMN	0.4	5.56	2.38	2.5	9								●	●	
	TCGX110202-PMN	0.2	6.35	2.38	2.8	10.5								○	○	
	TCGX110204-PMN	0.4	6.35	2.38	2.8	10.3								●	●	
	TCGX110208-PMN	0.8	6.35	2.38	2.8	9.9								○	○	
	TCGX16T302-PMN	0.2	9.525	3.97	4.4	16.3								○	○	
	TCGX16T304-PMN	0.4	9.525	3.97	4.4	16.1								●	●	
TCGX16T308-PMN	0.8	9.525	3.97	4.4	15.7								●	●		

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



<h1>TC</h1>	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		
<ul style="list-style-type: none"> 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>3 edges</p>	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																
ROUGHING	Designation	RE	IC	S	D1	LE	Stock									
<p>strong edge interrupted cut</p>	PRU P K															
	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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

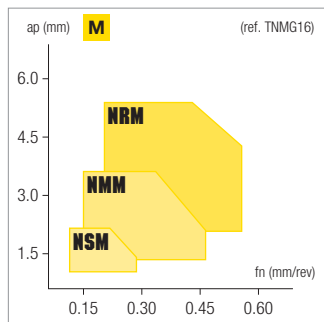
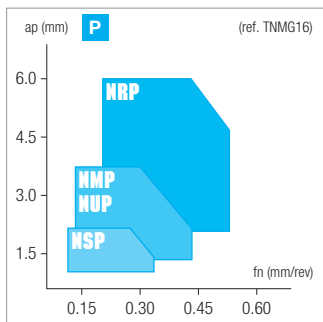
F - ACCESSORIES

G - SPARE PARTS

<h1>TN</h1> <p>ISO - with hole</p> <ul style="list-style-type: none"> 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	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			
			JG7010	JG7020	JG7115	JG8005	JG8015	JG8025	JG8035	JG8215	JG8225	JG9010	JG9025	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	Vc(m/min) - suggested cutting speed range (bold: 1st choice)															
		P				200	170	140	100	170	140					200		
						380	360	330	200	360	330					380		
		M												100	80	70	50	
														200	180	160	130	
		K	130	110	130													
			380	300	380													
N																200		
S																1000		
H																		

FINISHING	NSP P	TNMG160404-NSP	0.4	9.525	4.76	3.81	16.1											Stock	
																		○	●
		TNMG160408-NSP	0.8	9.525	4.76	3.81	15.7												●
		TNMG160408-NSP	0.8	9.525	4.76	3.81	15.7												●
		TNMG160404-NSM	0.4	9.525	4.76	3.81	16.1										●	●	
		TNMG160408-NSM	0.8	9.525	4.76	3.81	15.7										●	●	
		TNMG160404-NMP	0.4	9.525	4.76	3.81	16.1												● ●
		TNMG160408-NMP	0.8	9.525	4.76	3.81	15.7												● ●
		TNMG160412-NMP	1.2	9.525	4.76	3.81	15.3												● ○
		TNMG220408-NMP	0.8	12.7	4.76	5.16	21.2												○ ●
		TNMG220412-NMP	1.2	12.7	4.76	5.16	20.8												○ ●
		TNMG160404-NUP	0.4	9.525	4.76	3.81	16.1											● ●	● ●
		TNMG160408-NUP	0.8	9.525	4.76	3.81	15.7											● ●	● ●
		TNMG160412-NUP	1.2	9.525	4.76	3.81	15.3											● ○	○ ○
		TNMG220408-NUP	0.8	12.7	4.76	5.16	21.2												○ ○
		TNMG220412-NUP	1.2	12.7	4.76	5.16	20.8												○ ○
		TNMG220416-NUP	1.6	12.7	4.76	5.16	20.4												○ ○

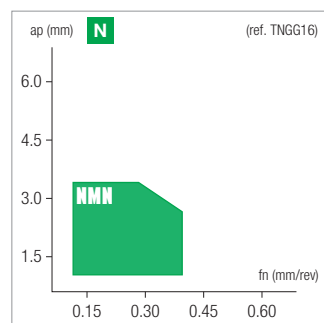
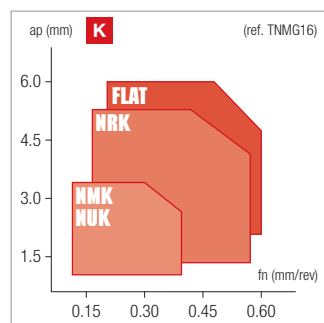
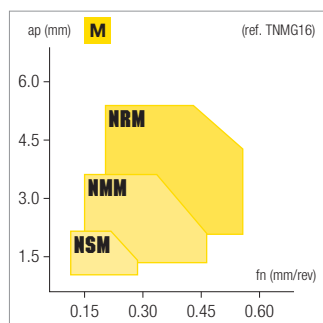
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>TN</h1>	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	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HT
<ul style="list-style-type: none"> 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: 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															
	H															

Designation		RE	IC	S	D1	LE	Stock										
M 	TNMG160404-NMM	0.4	9.525	4.76	3.81	16.1							●	●	●	▽	
	TNMG160408-NMM	0.8	9.525	4.76	3.81	15.7							●	●	●	▽	
	TNMG160412-NMM	1.2	9.525	4.76	3.81	15.3							●	●	○		
	TNMG220408-NMM	0.8	12.7	4.76	5.16	21.2							○	○			
	TNMG220412-NMM	1.2	12.7	4.76	5.16	20.8							○	○			
	TNMG220416-NMM	1.6	12.7	4.76	5.16	20.4							○	○			
K 	TNMG160404-NMK	0.4	9.525	4.76	3.81	16.1	●	○									
	TNMG160408-NMK	0.8	9.525	4.76	3.81	15.7	●	○									
	TNMG160412-NMK	1.2	9.525	4.76	3.81	15.3	●	○									
	TNMG160416-NMK	1.6	9.525	4.76	3.81	14.9	○	○	○								
	TNMG220408-NMK	0.8	12.7	4.76	5.16	21.2	○	○									
	TNMG220412-NMK	1.2	12.7	4.76	5.16	20.8	●	○									
NUK <p>sharp edge reduces burrs</p>	TNMG160404-NUK	0.4	9.525	4.76	3.81	16.1							●				
	TNMG160408-NUK	0.8	9.525	4.76	3.81	15.7							●				
	TNMG160412-NUK	1.2	9.525	4.76	3.81	15.3							●				
N <p>polished surface ground periphery</p>	TNGG160404-NMN	0.4	9.525	4.76	3.81	16.1										●	
	TNGG160408-NMN	0.8	9.525	4.76	3.81	15.7											●
	TNGG160412-NMN	1.2	9.525	4.76	3.81	15.3											▽

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



TN

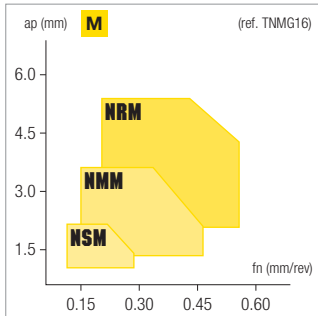
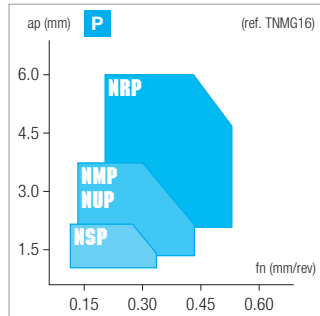
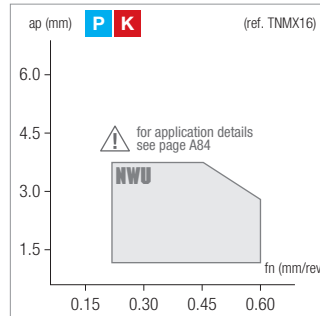
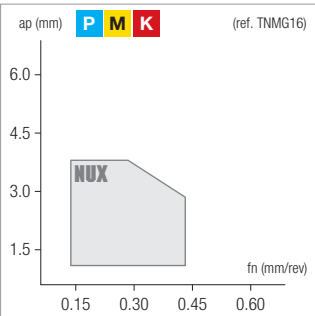
ISO - with hole

- 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

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	HT	HF	
	JG7010	JG7020	JG7115	JG8005	JG8015	JG8025	JG8035	JG8215	JG8225	JG9010	JG9025	JP9015	JP9030	JU4015	JU6015		
Stable machining, light cut	●	○	●	●	●	○		●		●	○	●		●	●		
General machining, medium cut	●	○	●		●	●	○	●	●	○	●	●	●		●		
Unstable machining, heavy cut	⊕	⊕	⊕			⊕	⊕		⊕		⊕		⊕		⊕		
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																
	H																

Designation		RE	IC	S	D1	LE	Stock										
MEDIUM universal use wide range of grades	TNMG160404-NUX	0.4	9.525	4.76	3.81	16.1	●		●	●	●			●	●		
	TNMG160408-NUX	0.8	9.525	4.76	3.81	15.7	●		●	●	●	▲	▲	●	●		
	TNMG160412-NUX	1.2	9.525	4.76	3.81	15.3	●		●	●	●	▲	▲	●	●		
MEDIUM right-hand shown (parameters p.A82)	TNMG160404/-NMU	0.4	9.525	4.76	3.81	16.1				○	●			●			
	TNMG160408/-NMU	0.8	9.525	4.76	3.81	15.7				○	●			●			
MEDIUM wiper universal type	TNMX160408-NWU	0.8	9.525	4.76	3.81	15.7	●				○						
	TNMX160412-NWU	1.2	9.525	4.76	3.81	15.3	●				○						
ROUGHING 	TNMG160408-NRP	0.8	9.525	4.76	3.81	15.7					●	○					
	TNMG160412-NRP	1.2	9.525	4.76	3.81	15.3					●	○					
	TNMG220412-NRP	1.2	12.7	4.76	5.16	20.8					○	○					
	TNMG220416-NRP	1.6	12.7	4.76	5.16	20.4					○	○					
ROUGHING 	TNMG160408-NRM	0.8	9.525	4.76	3.81	15.7							○		●		
	TNMG160412-NRM	1.2	9.525	4.76	3.81	15.3							○		●		

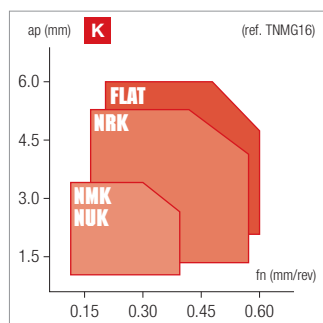
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>TN</h1>	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	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HT
<ul style="list-style-type: none"> 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: 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																
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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

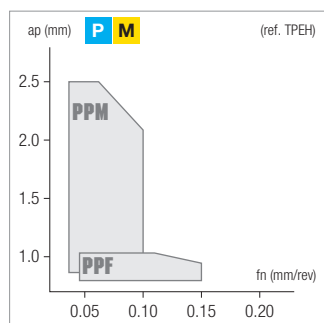
F - ACCESSORIES

G - SPARE PARTS

<h1>TP</h1>	HF: Micrograin carbide HT: Cermet PVD: Physical vapour deposition		HF PVD	HT	
	<h2>ISO - with hole</h2>		JP5125	JU4015	
<ul style="list-style-type: none"> 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 	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	70 180	200 380	
		M	50 140		
		K	60 180		
		N			
		S			
		H			

Designation		RE	IC	S	D1	LE	Stock	
FINISHING ground chipbreaker right-hand shown	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 ground chipbreaker right-hand shown	TPEH110304/r-PPM	0.4	6.35	3.18	3.3	10.6	●	●

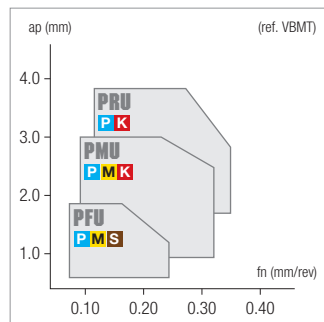
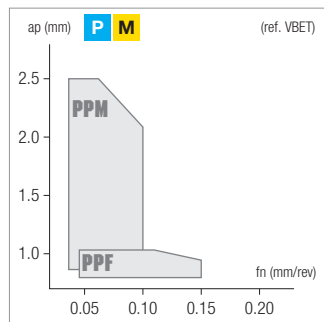
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion



VB		HC: Coated carbide HT: Cermet HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition		HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HT PVD	HF PVD	HF PVD	HF PVD	HT	
ISO - with hole				JG7010	JG8005	JG8015	JG8025	JG9025	JP4020	JP5015	JP5120	JP5125	JU4015	
• 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)	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				80 180	100 220	70 160	60 150	50 140				
		K	130 380			150 320		90 190	60 180					
		N												
		S						20 70						
		H												

Designation		RE	IC	S	D1	LE	Stock							
FINISHING	PPF P M ground chipbreaker right-hand shown	0.2	6.35	3.18	2.8	10.9							●	●
	VBET110302/4-PPF	0.4	6.35	3.18	2.8	10.7								●
FINISHING	PFU P M S sharp edge low cutting force	0.4	6.35	3.18	2.8	10.7				○	○	●	●	●
	VBMT110304-PFU	0.2	9.525	4.76	4.4	16.4						●	●	
	VBMT160404-PFU	0.4	9.525	4.76	4.4	16.2	●	●	●	●	●	●	●	●
	VBMT160408-PFU	0.8	9.525	4.76	4.4	15.8	●	●	●	●	○	●	●	●
MEDIUM	PPM P M ground chipbreaker right-hand shown	0.2	6.35	3.18	2.8	10.9							●	●
	VBET110302/4-PPM	0.4	6.35	3.18	2.8	10.7								●
MEDIUM	PMU P M K 1st choice universal application	0.4	9.525	4.76	4.4	16.2	●	●	●	●			●	●
	VBMT160404-PMU	0.8	9.525	4.76	4.4	15.8	●	●	●	●			●	●
ROUGHING	PRU P K strong edge interrupted cut	0.8	9.525	4.76	4.4	15.8	○		●					
	VBMT160408-PRU													

● 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

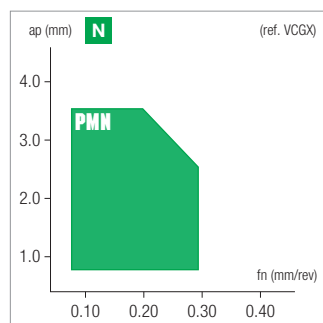
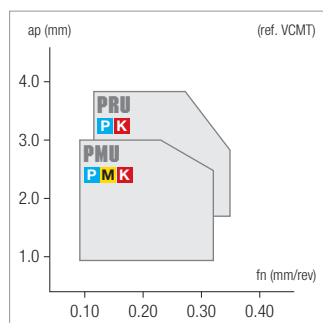
F - ACCESSORIES

G - SPARE PARTS

<h1>VC</h1>	HC: Coated carbide HF: Micrograin carbide HT: Cermet CVD: Chemical vapour deposition PVD: Physical vapour deposition	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HT	HF
	ISO - with hole	JC70 10	JC80 15	JC80 25	JC90 25	JP51 25	JP60 10	JU40 15	JU60 15
<ul style="list-style-type: none"> 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) 	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	170 360	140 330		70 180		200 380	
		M			80 180	50 140			
		K	130 380			60 180			
		N					400 1400	200 1000	
		S							
		H							

Designation		RE	IC	S	D1	LE	Stock										
MEDIUM 	PMU P M K VCMT110304-PMU	0.4	6.35	3.18	2.8	10.7	●	●	●	●							
	VCMT110308-PMU	0.8	6.35	3.18	2.8	10.3				○							
	1st choice universal application 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 	PMN N 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							○		●		
	polished surface ground periphery 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							○		○			
VCGX220530-PMN	3	12.7	5.56	5.5	19.1							●		●			
ROUGHING 	PRU P K VCMT160404-PRU	0.4	9.525	4.76	4.4	16.2	●		●								
	VCMT160408-PRU	0.8	9.525	4.76	4.4	15.8	●		●								

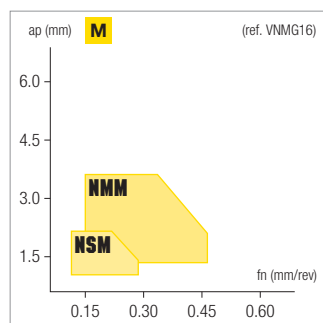
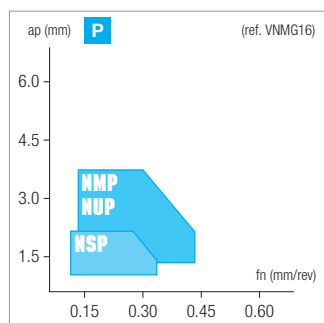
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion



<h1>VN</h1>	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	HF PVD	HF PVD	HT	HF				
	JG7010	JG7020	JG7115	JG8005	JG8015	JG8025	JG9025	JP9015	JP9030	JU4015	JU6015					
ISO - with 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															
<ul style="list-style-type: none"> 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 	Dimensions		ISO													
			Vc(m/min) - suggested cutting speed range (bold: 1st choice)													
	P															
	M															
	K	130 380	110 300	130 380												
	N															
	S															
	H															

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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

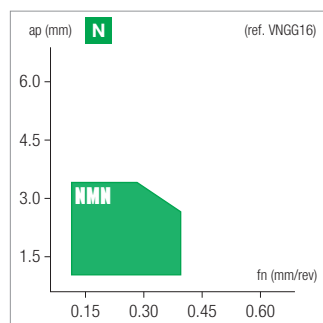
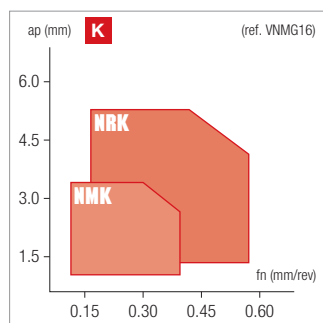
F - ACCESSORIES

G - SPARE PARTS

<h1>VN</h1>	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
<ul style="list-style-type: none"> 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	● 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	
	Unstable machining, heavy cut	⊕ 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	170	140				200	
	M				380	360	330			80	70	50
	K	130	110	130						180	160	130
	N	380	300	380								
	S											200
	H											1000

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 <p>sharp edge reduces burrs</p>	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 <p>polished surface ground periphery</p>	NMN N VNGG160404-NMN	0.4	9.525	4.76	3.81	16.2													○	
	VNGG160408-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	○	○												

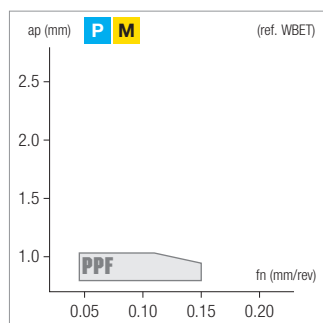
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>WB</h1>	HF: Micrograin carbide HT: Cermet PVD: Physical vapour deposition	HF PVD	HT	
		JP5125	JU4015	
ISO - with hole	Stable machining, light cut ● 1 st choice ○ suitable	○	●	
<ul style="list-style-type: none"> 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 	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	70 180	200 380	
	M	50 140		
	K	60 180		
	N			
	S			
	H			

FINISHING	Designation	RE	IC	S	D1	LE	Stock	
							●	○
<p>ground chipbreaker left-hand shown</p>	WBET060102 ¹ / ₄ -PPF	0.2	3.97	1.59	2.3	2.3	●	●
	WBET060104 ¹ / ₄ -PPF	0.4	3.97	1.59	2.3	2.1	●	●

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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

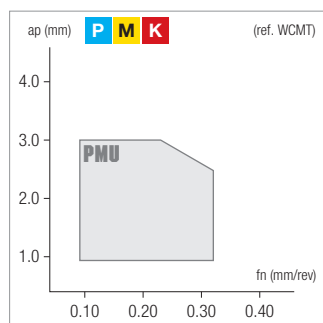
E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

<h1>WC</h1>	HC: Coated carbide HT: Cermet CVD: Chemical vapour deposition						HC CVD	HC CVD	HC CVD	HC CVD	HT	
	ISO - with hole						JC7010	JC8015	JC8025	JC9025	JU4015	
<ul style="list-style-type: none"> 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: 1st choice)									
		P	170 360	140 330	200 380							
M				80 180								
K		130 380										
N												
S												
H												
Designation	RE	IC	S	D1	LE	Stock						
MEDIUM 1 st choice universal application	WCMT12T304-PMU	0.4	9.525	3.97	4.4	6.1	●	●	●	●	●	
	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

- 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

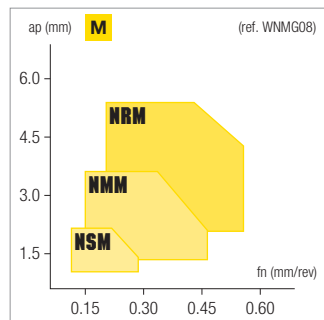
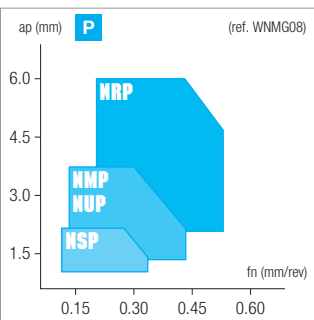
HC: Coated carbide
 HF: Micrograin carbide
 HT: Cermet
 CVD: Chemical vapour deposition
 PVD: Physical vapour deposition

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

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

	Designation	RE	IC	S	D1	LE	Stock																								
FINISHING	NSP P	WNUM060404-NSP	0.4	9.525	4.76	3.81	6.1																				●				
		WNUM060408-NSP	0.8	9.525	4.76	3.81	5.7																						●		
		WNUM080404-NSP	0.4	12.7	4.76	5.16	8.3																						●		
		WNUM080408-NSP	0.8	12.7	4.76	5.16	7.9																						●		
FINISHING	NSM M	WNUM080404-NSM	0.4	12.7	4.76	5.16	8.3																								
		WNUM080408-NSM	0.8	12.7	4.76	5.16	7.9																								
MEDIUM	NMP P	WNUM060404-NMP	0.4	9.525	4.76	3.81	6.1																								
		WNUM060408-NMP	0.8	9.525	4.76	3.81	5.7																								
		WNUM080404-NMP	0.4	12.7	4.76	5.16	8.3																								
		WNUM080408-NMP	0.8	12.7	4.76	5.16	7.9																								
		WNUM080412-NMP	1.2	12.7	4.76	5.16	7.5																								
		WNUM080416-NMP	1.6	12.7	4.76	5.16	7.1																								
MEDIUM	NUP P	WNUM060404-NUP	0.4	9.525	4.76	3.81	6.1																						●		
		WNUM060408-NUP	0.8	9.525	4.76	3.81	5.7																					○	●		
		WNUM080404-NUP	0.4	12.7	4.76	5.16	8.3																						●		
		WNUM080408-NUP	0.8	12.7	4.76	5.16	7.9																						○	●	
		WNUM080412-NUP	1.2	12.7	4.76	5.16	7.5																								
		WNUM080416-NUP	1.6	12.7	4.76	5.16	7.1																								
MEDIUM	NMM M	WNUM060404-NMM	0.4	9.525	4.76	3.81	6.1																								
		WNUM060408-NMM	0.8	9.525	4.76	3.81	5.7																								
		WNUM060412-NMM	1.2	9.525	4.76	3.81	5.3																								
		WNUM080404-NMM	0.4	12.7	4.76	5.16	8.3																								
		WNUM080408-NMM	0.8	12.7	4.76	5.16	7.9																								
		WNUM080412-NMM	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

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

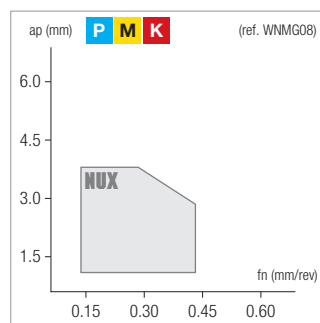
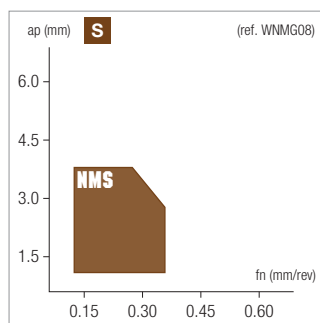
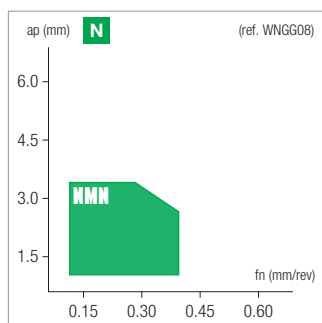
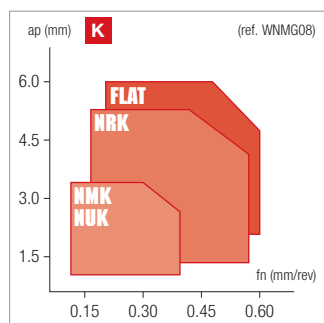
F - ACCESSORIES

G - SPARE PARTS

<h1>WN</h1>	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	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF	
<ul style="list-style-type: none"> 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	●	○	●	●	○		●		●	○	●	●		●	●				
	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		
	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 	NMK K WNMG080404-NMK	0.4	12.7	4.76	5.16	8.3	●	○															
	WNMG080408-NMK	0.8	12.7	4.76	5.16	7.9	●	○															
	WNMG080412-NMK	1.2	12.7	4.76	5.16	7.5	●	○															
MEDIUM <p>sharp edge reduces burrs</p>	NUK K WNMG080404-NUK	0.4	12.7	4.76	5.16	8.3			●														
	WNMG080408-NUK	0.8	12.7	4.76	5.16	7.9			●														
	WNMG080412-NUK	1.2	12.7	4.76	5.16	7.5			●														
MEDIUM <p>polished surface ground periphery</p>	NMN N WNGG060404-NMN	0.4	9.525	4.76	3.81	6.1													●				
	WNGG060408-NMN	0.8	9.525	4.76	3.81	5.7														○			
	WNGG080404-NMN	0.4	12.7	4.76	5.16	8.3														●			
	WNGG080408-NMN	0.8	12.7	4.76	5.16	7.9														●			
MEDIUM 	NMS S WNMG080408-NMS	0.8	12.7	4.76	5.16	7.9													●				
	WNMG080412-NMS	1.2	12.7	4.76	5.16	7.5													●				
MEDIUM <p>universal use wide range of grades</p>	NUX P M K WNMG080404-NUX	0.4	12.7	4.76	5.16	8.3	●		●	●	●			●	●								
	WNMG080408-NUX	0.8	12.7	4.76	5.16	7.9	●		●	●	●	▲	▲	●	●								
	WNMG080412-NUX	1.2	12.7	4.76	5.16	7.5	●		●	●	●	▲	▲	●	●								

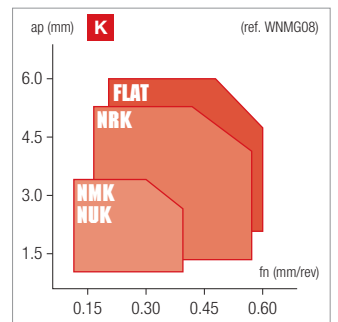
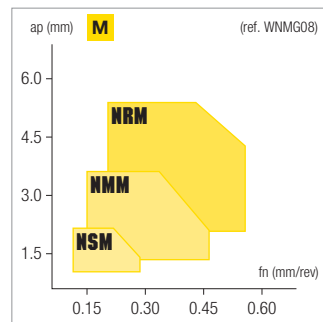
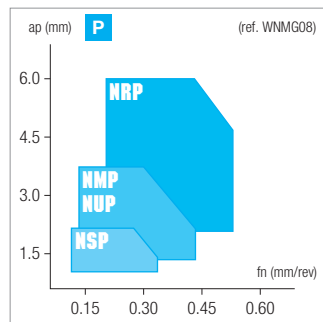
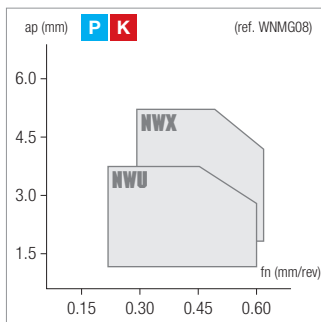
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>WN</h1>	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	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	HC CVD	
<ul style="list-style-type: none"> 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	● 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	● 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	● 1 st choice	○ suitable	
	Dimensions	ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																		
	P																			
	M																			
	K	130 380	110 300	130 380																
	N																			
	S																			
	H																			

Designation		RE	IC	S	D1	LE	Stock													
MEDIUM	NWU P K																			
	WNMG080408-NWU	0.8	12.7	4.76	5.16	7.9	●													
	WNMG080412-NWU	1.2	12.7	4.76	5.16	7.5	●													
MEDIUM	NWX P K																			
	WNMG080408-NWX	0.8	12.7	4.76	5.16	7.9	○													
	WNMG080412-NWX	1.2	12.7	4.76	5.16	7.5														
ROUGHING	NRP P																			
	WNMG080408-NRP	0.8	12.7	4.76	5.16	7.9				●	●	●	●							
	WNMG080412-NRP	1.2	12.7	4.76	5.16	7.5				●	●	●	●							
	WNMG080416-NRP	1.6	12.7	4.76	5.16	7.1				○	○	●								
ROUGHING	NRM M																			
	WNMG080408-NRM	0.8	12.7	4.76	5.16	7.9								●	●				●	
	WNMG080412-NRM	1.2	12.7	4.76	5.16	7.5								●	●				●	
ROUGHING	NRK K																			
	WNMG060408-NRK	0.8	9.525	4.76	3.81	5.7	●	●												
	WNMG080408-NRK	0.8	12.7	4.76	5.16	7.9	●	●	●											
	WNMG080412-NRK	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

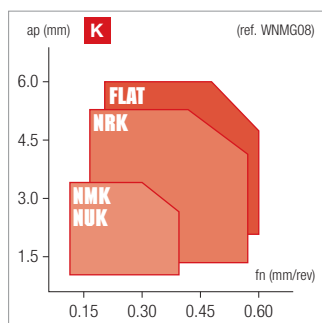
E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

<h1>WN</h1> <p>ISO - with hole</p> <ul style="list-style-type: none"> 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	HC CVD	HF PVD	HF PVD	HF PVD	HT	HF			
		JG7010	JG7020	JG7115	JG8005	JG8015	JG8025	JG8035	JG8215	JG8225	JG9010	JG9025	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																				
		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 	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

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C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

TURNING Parameters - cutting speed · CARBIDE

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
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
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
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X20Cr13/AISI420)	≤ 200	● 140	● 200	● 260	○ 120	● 180	● 240	○ 120	● 190	○ 260
P8	Precipitation hardening stainless steel (ex. 1.4548/X5CrNiCuNb17-4/17-4-PH)	≤ 450	● 100	● 130	● 160	○ 80	● 110	● 140	○ 90	● 140	○ 180
M1	Austenitic stainless steel (ex. 1.4305/X10CrNiS18-9/AISI303)	> 200	● 120	● 160	● 200	○ 100	● 90	● 180	○ 100	● 150	○ 200
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X5CrNiMo17-12-2/AISI316)		● 100	● 140	● 180	○ 80	● 120	● 160	○ 90	● 150	○ 200
K1	Grey cast iron (ex. 0.6025/GG25/EN-GJL-250)	150 ÷ 250	● 180	● 280	● 380	● 180	● 280	● 380	○ 150	● 225	○ 300
K2	Nodular cast iron (ex. 0.7050/GGG50/EN-GJS-500-7)	150 ÷ 350	● 150	● 200	● 250	● 150	● 200	● 250	○ 140	● 180	○ 220
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
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGA)		● 600	● 1000	● 1400	● 400	● 700	● 1000			
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		● 200	● 400	● 600	● 200	● 300	● 400			
S1 - S2 - S3	Fe/Ni/Co based heat resistant alloys (ex. Hastelloy, Inconel 625, Inconel 718)		● 30	● 50	● 70	● 30	● 50	● 70			
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		● 40	● 60	● 80	● 40	● 60	● 80			

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			
				● 190	275	360	● 100	140	180	● 90	130	170	○ 80	120	160	● 180	260	340
100	140	180	○	○ 180	260	340	● 90	125	160	● 80	110	140	● 70	100	120			
90	125	160	⊕										⊕ 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						
100	140	180	●	● 90	130	170	● 80	120	160	● 100	140	180	● 80	120	160			
							⊕ 70	100	130				⊕ 70	100	130			
80	100	120	●	● 70	90	110	○ 60	80	100	● 80	100	120						
70	90	110	●	● 60	80	100	● 50	70	90	● 70	90	110	● 50	70	90			
							⊕ 50	60	70				⊕ 50	60	70			
80	120	160	●	● 70	110	150	○ 60	100	140	● 80	120	160						
70	110	150	●	● 60	100	140	● 50	90	130	● 70	110	150	● 50	90	130			
							⊕ 50	80	110				⊕ 50	80	110			
70	110	150	●	● 70	100	130	○ 60	90	120	● 70	110	150						
60	100	140	●	● 60	90	120	● 60	80	100	● 60	100	140	● 60	80	100			
							⊕ 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									

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

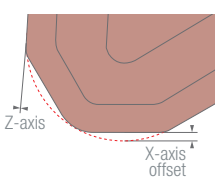
F - ACCESSORIES

G - SPARE PARTS

TURNING Parameters - wiper application details · CARBIDE

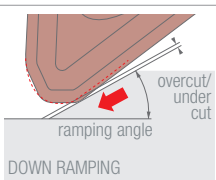
I. X-axis, Z-axis offset

INSERT RADIUS	DNMX1506 ⁰⁰	
	X-AXIS	Z-AXIS
0,8	0,065	0
1,2	0,058	0
INSERT RADIUS	TNMX1604 ⁰⁰	
	X-AXIS	Z-AXIS
0,8	0,063	0
1,2	0,066	0

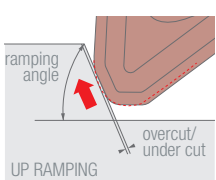


II. Ramping offset

INSERT RADIUS	DNMX1506 ⁰⁰ (KAPR 93°)						TNMX1604 ⁰⁰ - 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 ⁰⁰ (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 ⁰⁰ (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

Grade table, A86
Grade details, A87
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Product selection, A99
Designation system, A100
Insert range, A101
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A - TURNING

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E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

ISO 513		PCBN	
		PVD COATED	UNCOATED
K	K01	NBK450C	NBK450U
	K10	NBH500C	NBH500U
	K20		NB1600U
	K30		NBH900U NBH950U
S	S01	NBK450C	
	S10		
	S20		
HRSA	S30		
	H01	NBL050C	
H	H10	NBL150C	
	H20	NBL200C	
	H30	NBL250C	
		NBL300C	
Hardened steel		NBL350C	NBH900U NBH950U

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






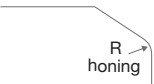






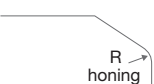






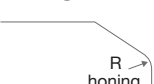

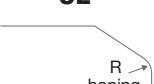








F - ACCESSORIES

G - SPARE PARTS

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

BLACK: CVD, UNDERLINED: PVD, RED: uncoated

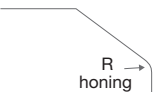



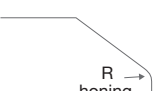

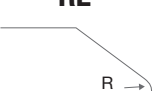

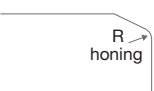

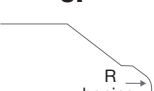

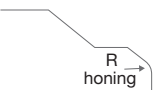

This table is our own estimation based on information available to the public and is not authorized by the company mentioned on it.

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						
H	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						
	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
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- E - DRILLING
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- G - SPARE PARTS

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NEGATIVE type with hole			C	D	S	T	V	W	
			80°	55°	90°	60°	35°	80°	
H	REINFORCED	RE  S01535 vertical brazing	 A104 SIZE 12			 A120 SIZE 16		 A127 SIZE 08	
		RE  S01535 solid brazing		 A110 SIZE 15					
		RE  S01535 full solid	 A104 SIZE 09						
H	WIPER	WE  S01015 vertical brazing	 A104 SIZE 12						
		CF  S01035 vertical brazing	 A105 SIZE 12						
H	CHIPBREAKER	CM  S01235 vertical brazing	 A105 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 R honing full solid	<input type="checkbox"/> A106 SIZE 09 12	<input type="checkbox"/> A115 SIZE 06 09 12	<input type="checkbox"/> A117 SIZE 09 12	<input type="checkbox"/> A121 SIZE 11 16		
		UE S02020 R honing full solid with dimple	<input type="checkbox"/> A106 SIZE 12		<input type="checkbox"/> A117 SIZE 12			
	SHARP	SE T01020 full solid		<input type="checkbox"/> A115 SIZE 09				
	REINFORCED	RE S02525 (size 09) - S10020 (size 12) R honing full solid		<input type="checkbox"/> A115 SIZE 09 12				
		RH S04025 R honing full solid		<input type="checkbox"/> A115 SIZE 09				
	H	UNIVERSAL	UE S02020 R honing full solid	<input type="checkbox"/> A106 SIZE 09 12	<input type="checkbox"/> A115 SIZE 09 12	<input type="checkbox"/> A117 SIZE 09 12	<input type="checkbox"/> A121 SIZE 11 16	
SHARP		SE T01020 full solid		<input type="checkbox"/> A115 SIZE 09				
REINFORCED		RE S02525 (size 09) - S10020 (size 12) R honing full solid		<input type="checkbox"/> A115 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.

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POSITIVE type with hole			C	D	R	T	V	
			80°	55°	-	60°	35°	
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		
	REINFORCED	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
		SHARP	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	
REINFORCED		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	
WIPER		WE S01015 solid brazing	CC A102 SIZE 06 09					

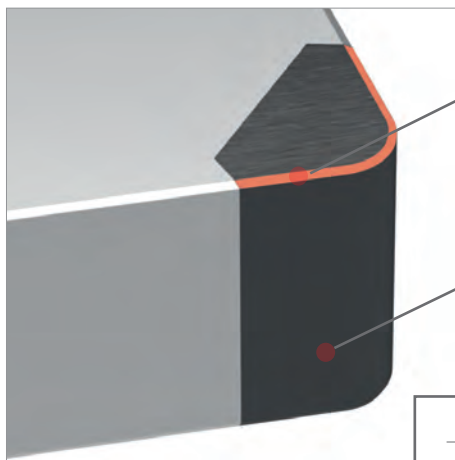
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full solid: Full PCBN structure, maximizes performances and reduce the cost per edge. High cutting speed and depth of cut can be applied.

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

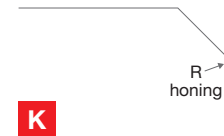


UNIVERSAL EDGE

- 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°

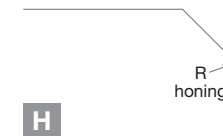
MULTIPLE SOLUTIONS

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



K

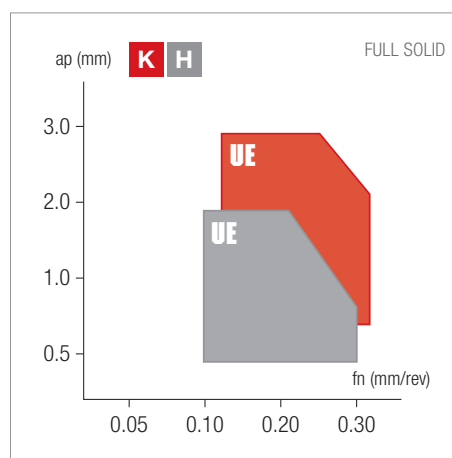
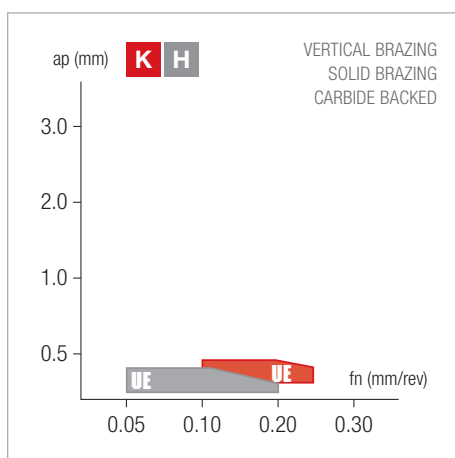
S01520
S01525
S02020



H

S01225
S02020

• Application range



DIMPLED INSERTS AVAILABLE



 High performance alternative to conventional Si₃N₄ ceramic for cast iron roughing.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

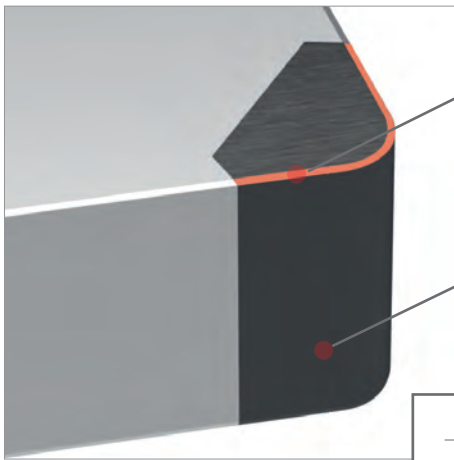
G - SPARE PARTS

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

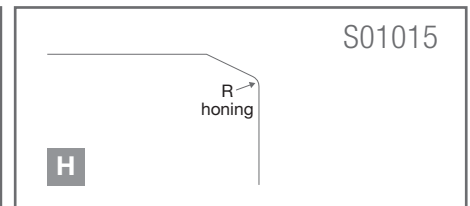
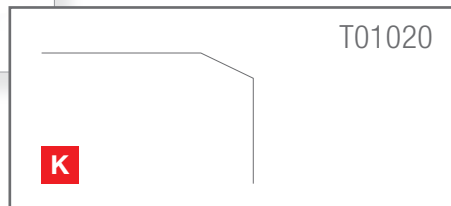


SHARP EDGE

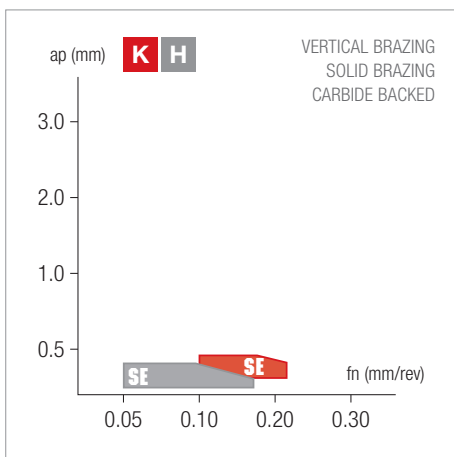
- The edge preparation has been optimized according to insert style and workpiece material
- The chamfer width is 0.10 mm with angle from 15° to 20°

MULTIPLE SOLUTIONS

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



• Application range



T TYPE AVAILABLE FOR ISO K

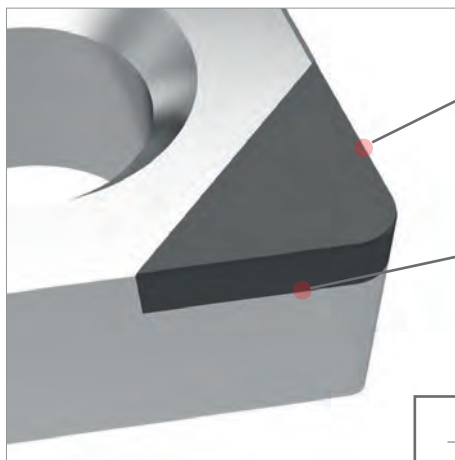
T land without honing prevent burrs formation on cast iron machining.

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.

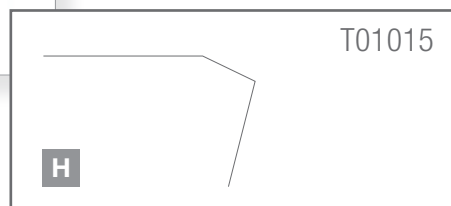
- Features of SF edge preparation

**SUPER FINE**

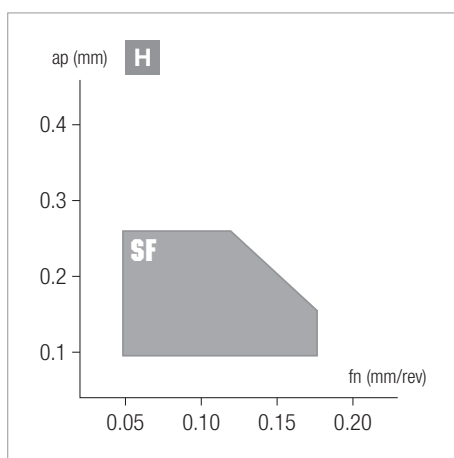
- The edge preparation has been optimized for small part machining and best dimensional tolerances
- The chamfer width is 0.10 mm with an angle of 15°, without honing

SOLID BRAZING

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



- Application range



SHARP AND PRECISE



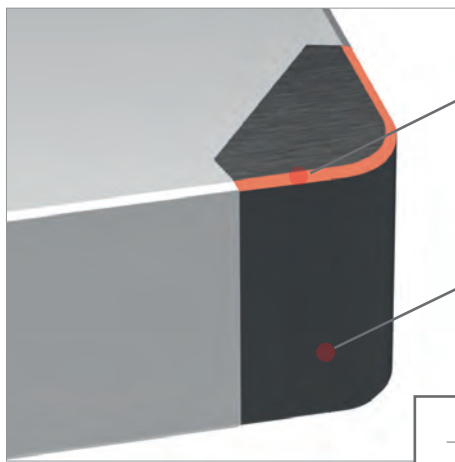
Only for positive inserts.
Perfect solution for very small radii.
0.1 radius can be produced as semi-standard product.

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

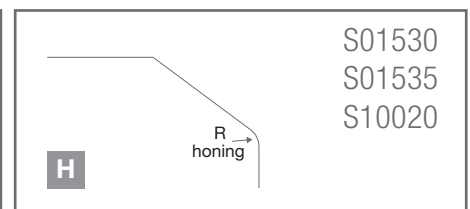
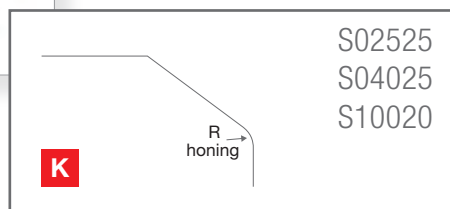


REINFORCED EDGE

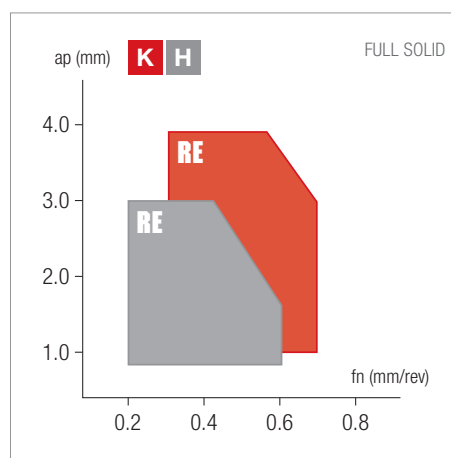
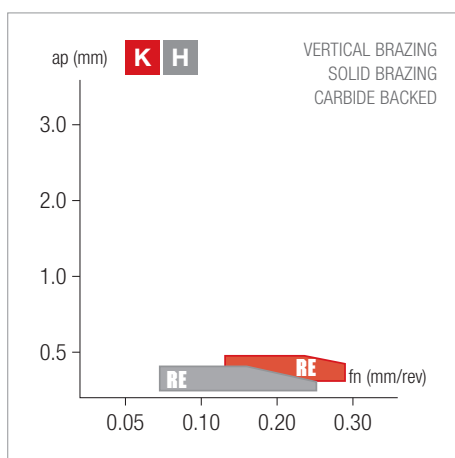
- Big chamfer and angle to keep the cutting edge strong
- The chamfer width starts from 0.15 mm for brazed type and reached 1 mm for solid


MULTIPLE SOLUTIONS

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



• Application range



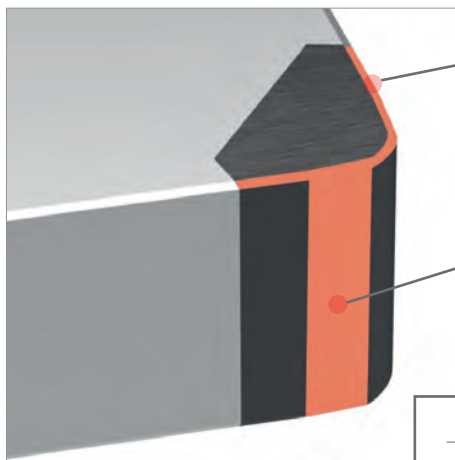

Cutting forces could be slightly higher compared to general purpose type, stable clamping and equipments are strongly recommended.

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

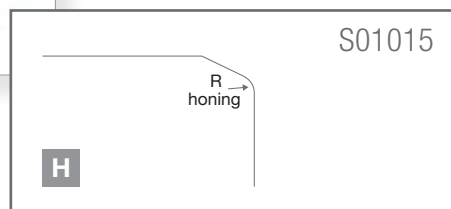


WIPER EDGE

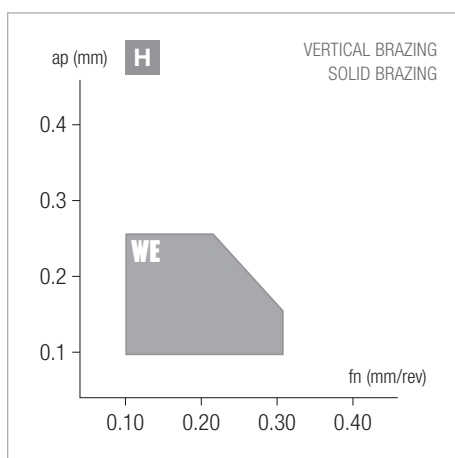
- Small chamfer and reduced angle for a very smooth cutting action
- The chamfer width is 0.1 mm with an inclination of 15°

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



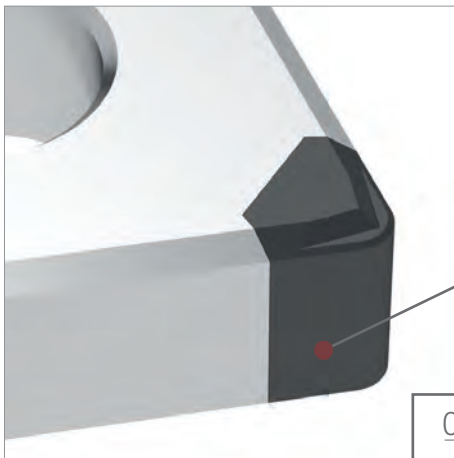
Wiper "concept" can be applied to any shape even if the most common are the one with 80° angle can be provided even in combination of full solid grades.

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

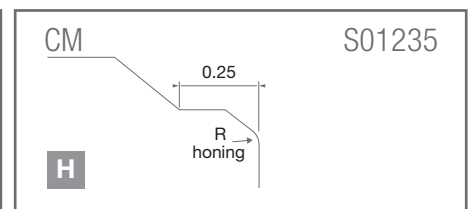
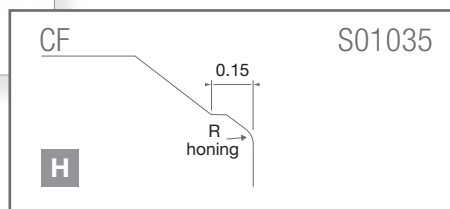


SMART DESIGN

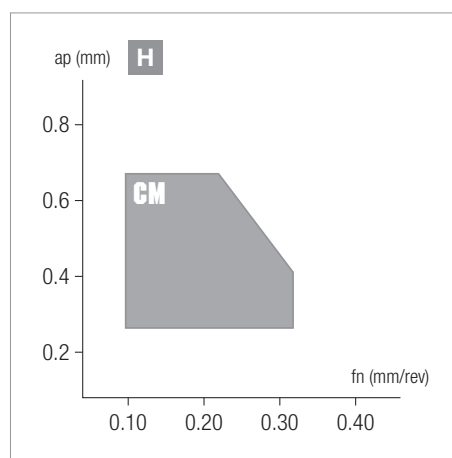
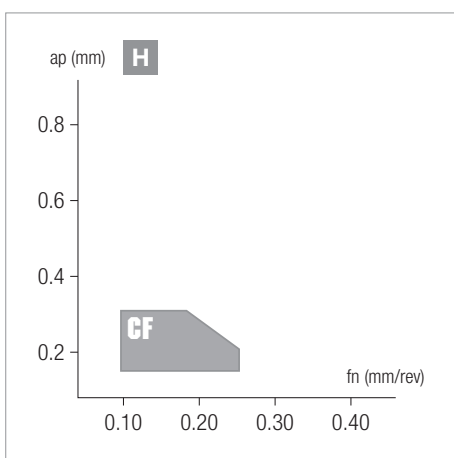
- Excellent performance thanks to the separation of chipbreaker and cutting edge
- Small chamfer to reduce cutting forces and 35° angle for a better robustness

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

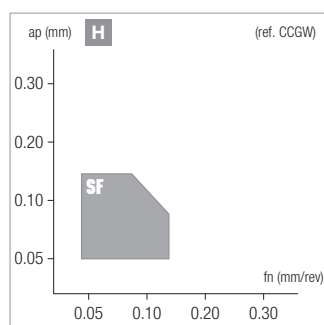
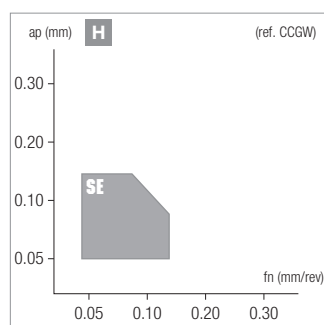
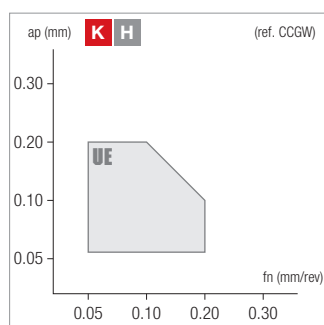
13	GRADE - material
000÷390	ISO H
400÷690	ISO K
700÷790	ISO S
800÷890	sintered materials
900÷990	universal

14	GRADE - coating
C	coated
U	uncoated
X	special

<h1>CC</h1>	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							NB H450C	NB L050C	NB L050CX	NB L150C	NB L250C	NB L300C	NB L350C	
<ul style="list-style-type: none"> 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: 1st choice)												
	P														
	M														
	K	340													
	N	1000													
	S														
H		120	120	90	90	60	60								

	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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

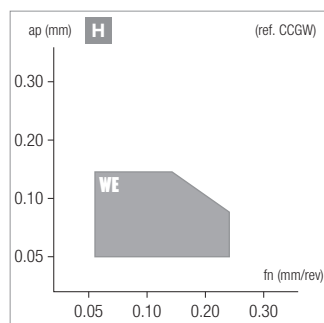
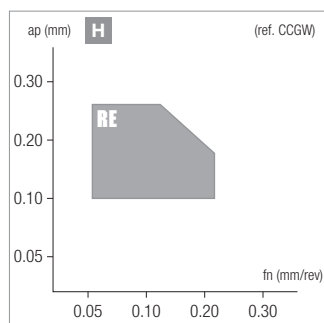
F - ACCESSORIES

G - SPARE PARTS

<h1>CC</h1>	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	MBH450C	NBL050C	NBL050CX	NBL150C	NBL250C	NBL300C	NBL350C							
<ul style="list-style-type: none"> 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	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>							
	General machining, medium cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>							
	Unstable machining, heavy cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
	Dimensions	ISO							Vc(m/min) - suggested cutting speed range (bold: 1st 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								
RE H solid brazing interrupted cut	CCGW060204S-RE-2S	0.4	6.35	2.38	2.8	2.8									<input checked="" type="radio"/>
	CCGW060208S-RE-2S	0.8	6.35	2.38	2.8	2.7									<input type="radio"/>
	CCGW09T304S-RE-2S	0.4	9.525	3.97	4.4	2.8									<input checked="" type="radio"/>
	CCGW09T308S-RE-2S	0.8	9.525	3.97	4.4	2.7									<input type="radio"/>
WE H solid brazing roughness oriented	CCGW060204S-WE-2S	0.4	6.35	2.38	2.8	2.8	<input checked="" type="radio"/>		<input checked="" type="radio"/>						
	CCGW09T304S-WE-2S	0.4	9.525	3.97	4.4	2.8	<input checked="" type="radio"/>		<input checked="" type="radio"/>						
	CCGW09T308S-WE-2S	0.8	9.525	3.97	4.4	2.7	<input type="radio"/>		<input checked="" type="radio"/>						

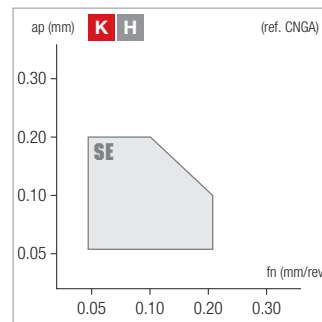
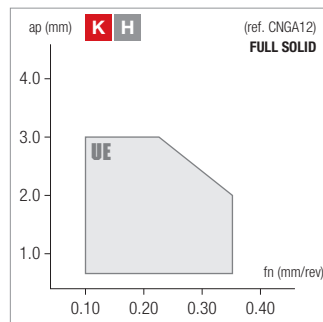
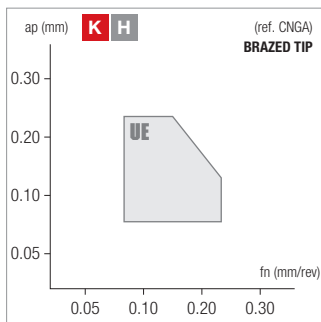
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>CN</h1>	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	MBH450C	MBH450U	MBH500C	MBH600U	MBH900U	NBL050C	NBL150C	NBL200C	NBL250C	NBL300C	NBL350C	
<ul style="list-style-type: none"> 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: 1st 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

	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



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

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

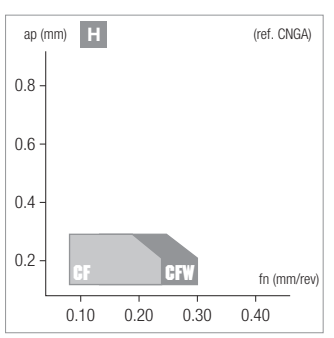
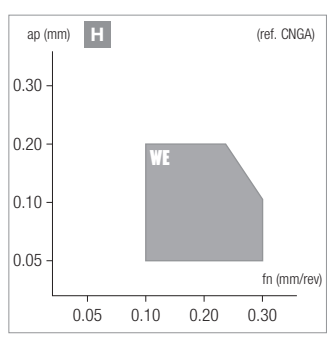
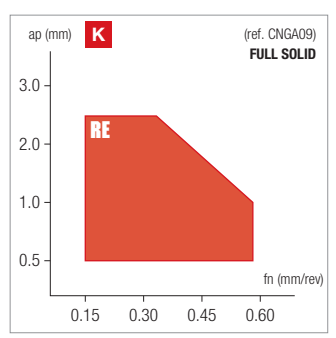
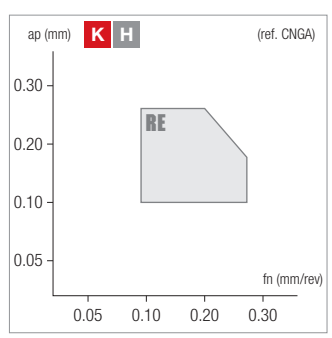
F - ACCESSORIES

G - SPARE PARTS




<h1>CN</h1>	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	MBH450C	MBH450U	MBH500C	MBH600U	MBH900U	NBL050C	NBL150C	NBL200C	NBL250C	NBL300C	NBL350C	
<ul style="list-style-type: none"> 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: 1st 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

Designation		RE	IC	S	D1	LE	Stock						
SHARP SE K	 CNGA120408T-SE-4C carbide backed without honing	0.8	12.7	4.76	5.16	2.5							
REINFORCED RE K H	 CNGA120404S-RE-4V vertical brazing interrupted cut	0.4	12.7	4.76	5.16	2.6							○
	CNGA120408S-RE-4V	0.8	12.7	4.76	5.16	2.5							●
	CNGA120412S-RE-4V	1.2	12.7	4.76	5.16	2.5							●
REINFORCED RE K	 CNGA090308S-RE full solid interrupted cut	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				●	●	○	○
	CNGA120412S-WE-4V	1.2	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							●
	CNGA120412S-CF-4V	1.2	12.7	4.76	5.16	2.5							●

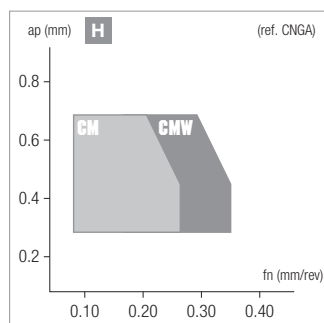
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>CN</h1>	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	
<ul style="list-style-type: none"> 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	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	General machining, medium cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
	Unstable machining, heavy cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
	Dimensions	ISO Vc(m/min) - suggested cutting speed range (bold: 1st 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	 CNGA120408S-CFW-4V	0.8	12.7	4.76	5.16	2.5						●
	vertical brazing finishing with WIPER CNGA120412S-CFW-4V	1.2	12.7	4.76	5.16	2.5						●
CHIPBREAKER CM H	 CNGA120408S-CM-4V	0.8	12.7	4.76	5.16	2.5						●
	vertical brazing medium CNGA120412S-CM-4V	1.2	12.7	4.76	5.16	2.5						●
CHIPBREAKER CMW H	 CNGA120408S-CMW-4V	0.8	12.7	4.76	5.16	2.5						●
	vertical brazing medium with WIPER CNGA120412S-CMW-4V	1.2	12.7	4.76	5.16	2.5						●

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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

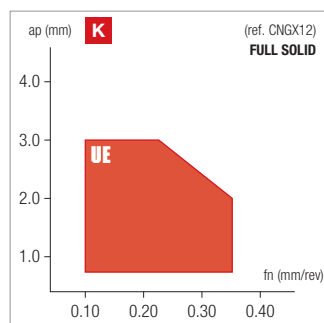
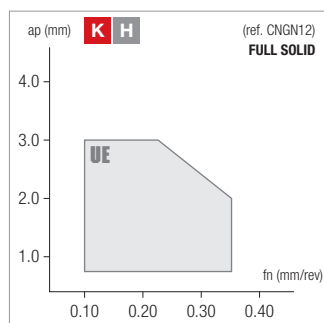
F - ACCESSORIES

G - SPARE PARTS





<h1>CN</h1>	BH: High volume CBN PVD: Physical vapour deposition			BH	BH	BH
	ISO - without hole			MBH500C	MBH900U	MBH950U
<ul style="list-style-type: none"> 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 	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	300 1500	300 1100	300 800		
	N					
	S					
	H	40 160	40 160			

Designation		RE	IC	S	D1	LE	Stock		
UNIVERSAL full solid high depth of cut	UE K H 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 full solid dimpled type	UE K CNGX120712S-UE	1.2	12.7	4.76	-	11.7	●		
	CNGX120716S-UE	1.6	12.7	4.76	-	11.3	●		

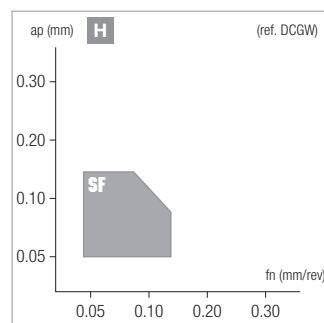
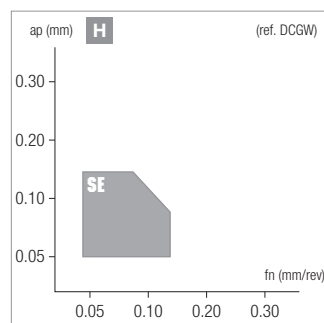
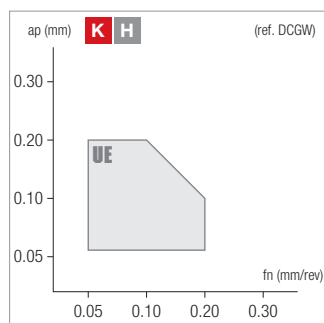
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>DC</h1>	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	PVD						
ISO - with hole								NB H450C	NB L050C	NB L050CX	NB L150C	NB L250C	NB L300C	NB L350C						
<ul style="list-style-type: none"> 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 P M K N S H							Vc(m/min) - suggested cutting speed range (bold: 1 st choice)					
							P													
							M													
							K	340												
							N	1000												
							S													
							H		120	120	90	90	60	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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

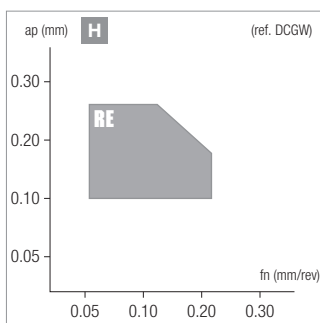
F - ACCESSORIES

G - SPARE PARTS

<h1>DC</h1>	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	NB H450C	NB L050C	NB L050CX	NB L150C	NB L250C	NB L300C	NB L350C							
<ul style="list-style-type: none"> 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	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>							
	General machining, medium cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>		<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>						
	Unstable machining, heavy cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>					<input checked="" type="radio"/>	<input checked="" type="radio"/>					
	Dimensions	ISO							Vc(m/min) - suggested cutting speed range (bold: 1st choice)						
		P													
	M														
	K	340													
	N	1000													
	S														
	H	120	280	120	280	90	220	90	180	60	180	60	150		

	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																

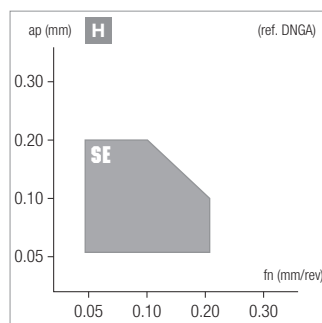
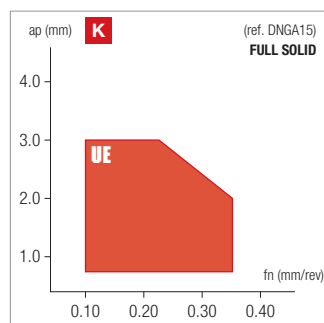
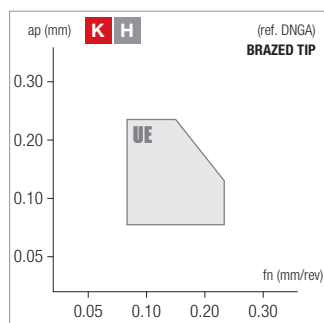
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>DN</h1>	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	BL PVD		
ISO - with hole	MBH450C	MBH500C	MBH600U	MBH900U	MBL050C	MBL150C	MBL250C	MBL300C	MBL350C			
<ul style="list-style-type: none"> 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)								
					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	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	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	DNGA150608S-UE-4C	0.8	12.7	6.35	5.16	2																		
		DNGA150608S-UE	0.8	12.7	6.35	5.16	14.7																		
UNIVERSAL	full solid high depth of cut	DNGA150612S-UE	0.8	12.7	6.35	5.16	14.3																		
		DNGA150404S-SE-4V	0.4	12.7	4.76	5.16	2.7																		
SHARP	vertical brazing	DNGA150408S-SE-4V	0.8	12.7	4.76	5.16	2.3																		

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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

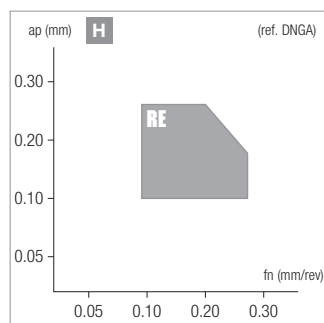
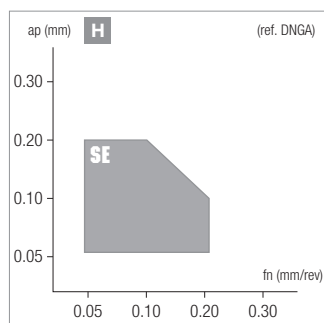
F - ACCESSORIES

G - SPARE PARTS

<h1>DN</h1>	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	BL PVD
ISO - with hole	MBH450C	MBH500C	MBH600U	MBH900U	MBL050C	MBL150C	MBL250C	MBL300C	MBL350C	
<ul style="list-style-type: none"> 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: 1st 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	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															
REINFORCED RE H	 solid brazing interrupted cut	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															

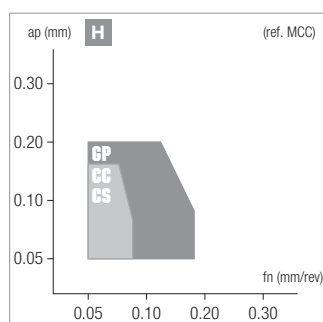
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>MCC</h1>	BL: Low volume CBN BH: High volume CBN PVD: Physical vapour deposition	BL	BL PVD	BL	BH	
		MB200	MB250	MB350	MB450U	
ISO - with hole						
<ul style="list-style-type: none"> 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: 1st choice)				
	P					
	M					
	K				400 1200	
	N					
	S					
	H	100 220	80 200	60 160		

Designation		RE	IC	S	D1	LE	Stock					
UNIVERSAL	GP KH 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



A - TURNING

B - THREADING

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D - MILLING

E - DRILLING

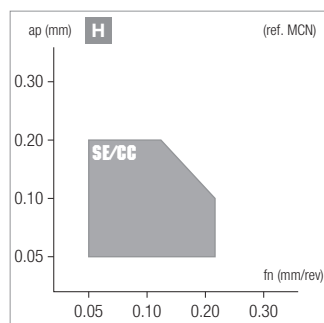
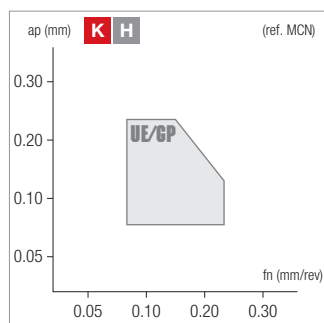
F - ACCESSORIES

G - SPARE PARTS

<h1>MCN</h1>	BL: Low volume CBN BH: High volume CBN PVD: Physical vapour deposition					BL PVD	BL PVD	BL PVD	BL PVD	BH PVD						
	<h2>MicroNega - with hole</h2>					NBL150C	NBL250C	NBS150	NBS250	NBS450						
<ul style="list-style-type: none"> 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 MicroNega 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: 1st choice)				
									P							
M																
K					400				1200							
N																
						H	90 220	90 180	90 220	80 200						

Designation		RE	IC	S	D1	LE	Stock					
UNIVERSAL 	UE H											
	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		▲				
vertical brazing	MCN.R08S-UE-4V	0.8	7.5	3.18	3.6	2.1		▲				
UNIVERSAL 	GP KH											
	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				●	▽	
vertical brazing	MCN.R08S-GP-4V	0.8	7.5	3.18	3.6	2.1				●	▽	
SHARP 	SE H											
	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		▲				
vertical brazing	MCN.R08S-SE-4V	0.8	7.5	3.18	3.6	2.1		▲				
SHARP 	CC H											
	MCN.R04S-CC-4V	0.4	7.5	3.18	3.6	2.2				●		
vertical brazing	MCN.R08S-CC-4V	0.8	7.5	3.18	3.6	2.1				●		

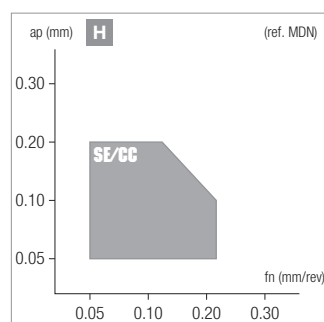
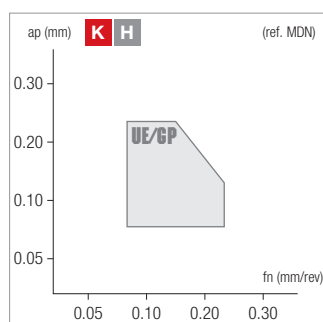
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>MDN</h1>	BL: Low volume CBN BH: High volume CBN PVD: Physical vapour deposition					BL PVD	BL PVD	BL PVD	BL PVD	BH PVD															
	<h2>MicroNega - with hole</h2>					NBL150C	NBL250C	NBS150	NBS250	NBS450															
<ul style="list-style-type: none"> • 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 MicroNega 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: 1st choice)														
			ISO		P M K N S H					400 1200															
															90 220		90 180		90 220		80 200				
																							90 220		80 200
80 200																									

Designation		RE	IC	S	D1	LE	Stock					
UNIVERSAL 	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	▲					
	MDN.R08S-UE-4V	0.8	7	3.18	3.6	1.8	▲					
UNIVERSAL 	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			●	▽		
	MDN.R08S-GP-4V	0.8	7	3.18	3.6	1.8			●	▽		
SHARP 	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	▲					
	MDN.R08S-SE-4V	0.8	7	3.18	3.6	1.8	▲					
SHARP 	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			●			
	MDN.R08S-CC-4V	0.8	7	3.18	3.6	1.8			●			

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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

<h1>RC</h1>	BH: High volume CBN		BH
	ISO - without hole		MBH6000
<ul style="list-style-type: none"> • 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 	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	
		M	
		K	300 1200
		N	
		S	
		H	

Designation		RE	IC	S	D1	LE	Stock
UNIVERSAL full solid	RCGX090700S-UE	4.76	9.525	7.94	-	-	●
	RCGX120700S-UE	6.35	12.7	7.94	-	-	●

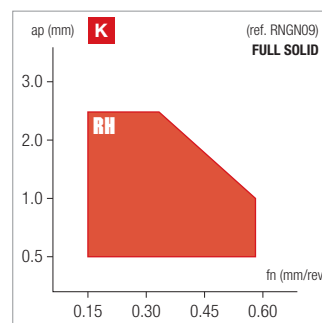
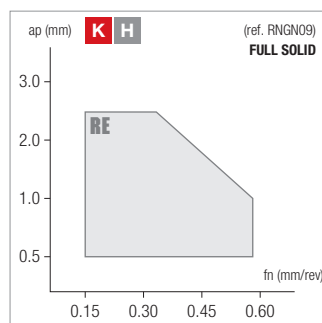
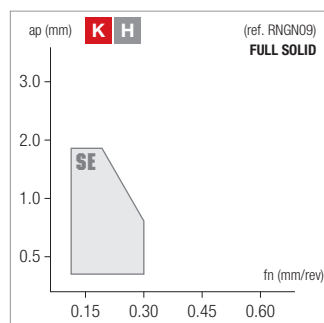
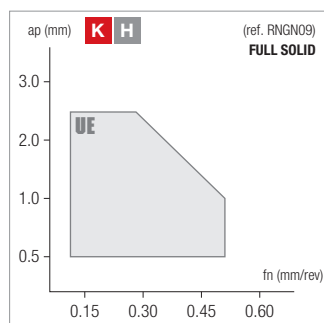
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>RN</h1>	BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition						BH	BH	BH	BH	BL	BL								
							PVD				PVD	PVD								
ISO - without hole							MBH500C	MBH500U	MBH900U	MBH950U	MBL200C	MBL250C								
<ul style="list-style-type: none"> 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	300	300	300										
							1500	1500	1100	800										
						N														
						S														
								40	40	90	90									
								160	160	200	180									

	Designation	RE	IC	S	D1	LE	Stock											
UNIVERSAL	 full solid	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	RNGN090300T-SE	4.76	9.525	3.18	-	-	●				●						
REINFORCED	 full solid interrupted cut	RNGN090300S-RE	4.76	9.525	3.18	-	-	●	●									
		RNGN120400S-RE	6.35	12.7	4.76	-	-		●	○								
REINFORCED	 full solid	RNGN090300S-RH	4.76	9.525	3.18	-	-		●									

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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

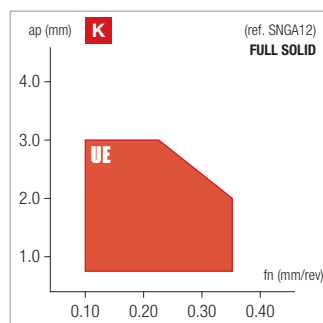
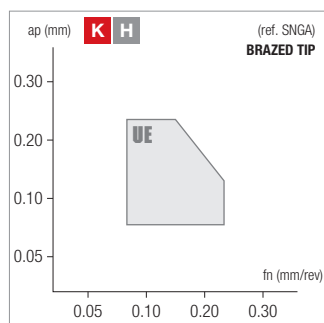
F - ACCESSORIES

G - SPARE PARTS

<h1>SN</h1>	BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition					BH PVD	BH	BH	BL PVD	BL PVD						
	ISO - with hole					MBH500C	MBH600U	MBH900U	MBL150C	MBL250C						
• 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					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	300 1500	300 1200	300 1100		
											N					
					S											
					H			40 160	90 220	90 180						

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

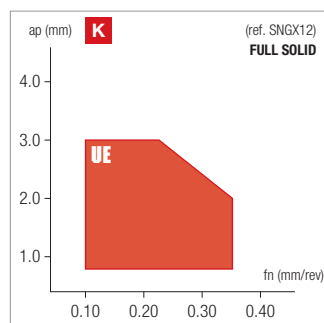
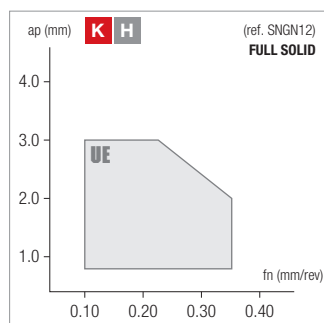
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>SN</h1>	BH: High volume CBN PVD: Physical vapour deposition				BH	BH	BH	BH
	PVD				MBH500C	MBH600U	MBH900U	MBH950U
ISO - without hole								
<ul style="list-style-type: none"> 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: 1st choice)					
	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 full solid high depth of cut	UE K H SNGN090308S-UE	0.8	9.525	3.18	-	8.7		○		
	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 full solid dimpled type	UE K SNGX120412S-UE	1.2	12.7	4.76	-	11.5		●		
	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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

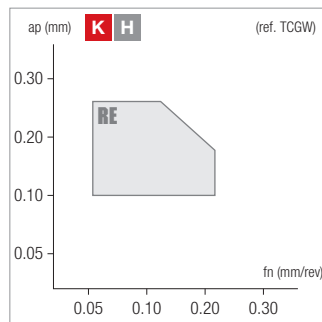
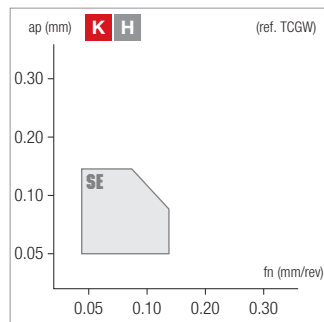
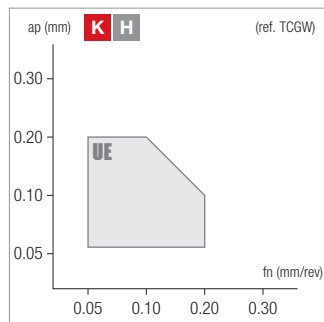
F - ACCESSORIES

G - SPARE PARTS

<h1>TC</h1>	BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition						BH	BH	BL	BL	BL	BL		
	ISO - with hole						PVD	PVD	PVD	PVD	PVD	PVD		
<ul style="list-style-type: none"> 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	340											
	N	1000	1000											
	S													
	H						120	90	90	60				
							280	220	180	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						○		

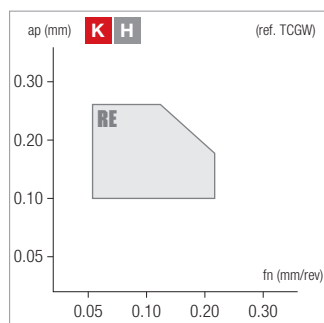
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>TC</h1>	BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition							BH	BH	BL	BL	BL	BL											
	PVD							PVD	PVD	PVD	PVD	PVD	PVD											
ISO - with hole								NBK450C	NBK450U	NBL050C	NBL150C	NBL250C	NBL350C											
<ul style="list-style-type: none"> 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: 1st choice)									
							P																	
							M																	
							K								340		340							
															1000		1000							
							N																	
							S																	
							H								120		90		90		60			
															280		220		180		150			

REINFORCED	Designation	RE	IC	S	D1	LE	Stock											
							●	○	▲	▽								
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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

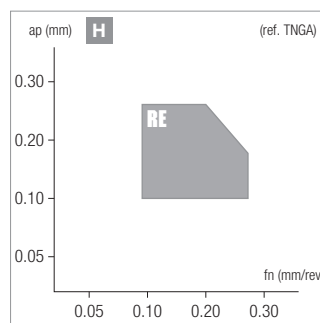
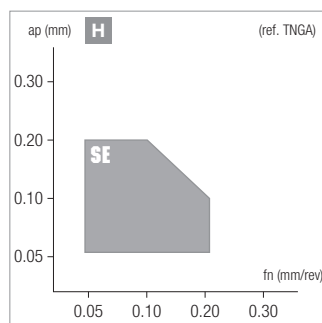
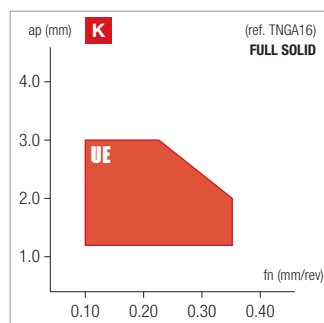
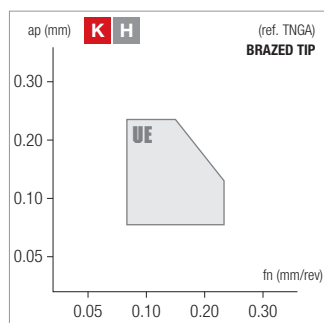
F - ACCESSORIES

G - SPARE PARTS

<h1>TN</h1>	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	BL PVD	
ISO - with hole	MBH450C	MBH500C	MBH600U	MBH900U	NBL050C	NBL150C	NBL250C	NBL300C	NBL350C		
<ul style="list-style-type: none"> 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	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable
	General machining, medium cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable
	Unstable machining, heavy cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable
	Dimensions	ISO									
<p>6 edges</p>	Vc(m/min) - suggested cutting speed range (bold: 1st 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	

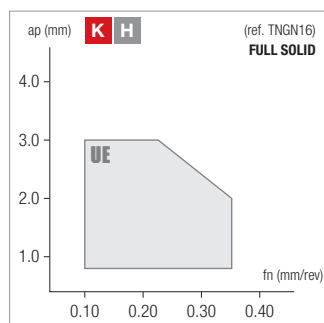
Designation		RE	IC	S	D1	LE	Stock									
UNIVERSAL vertical brazing	UE KH TNGA160404S-UE-6V	0.4	9.525	4.76	3.81	2.9	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>			
	TNGA160408S-UE-6V	0.8	9.525	4.76	3.81	2.6	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>			
	TNGA160412S-UE-6V	1.2	9.525	4.76	3.81	2.4	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			
UNIVERSAL carbide backed	UE K TNGA160404S-UE-6C	0.4	9.525	4.76	3.81	2.5	<input type="radio"/>									
	TNGA160408S-UE-6C	0.8	9.525	4.76	3.81	2.2	<input type="radio"/>									
	TNGA160412S-UE-6C	1.2	9.525	4.76	3.81	2.4	<input type="radio"/>									
UNIVERSAL full solid high depth of cut	UE K TNGA160408S-UE	0.8	9.525	4.76	3.81	15.7	<input checked="" type="radio"/>	<input type="radio"/>								
	TNGA160412S-UE	1.2	9.525	4.76	3.81	15.3	<input type="radio"/>	<input type="radio"/>								
SHARP vertical brazing	SE H TNGA160404S-SE-6V	0.4	9.525	4.76	3.81	2.9			<input type="radio"/>	<input type="radio"/>						
	TNGA160408S-SE-6V	0.8	9.525	4.76	3.81	2.6			<input type="radio"/>	<input type="radio"/>						
	TNGA160412S-SE-6V	1.2	9.525	4.76	3.81	2.4			<input type="radio"/>	<input type="radio"/>						
REINFORCED vertical brazing interrupted cut	RE H TNGA160404S-RE-6V	0.4	9.525	4.76	3.81	2.9						<input type="radio"/>				
	TNGA160408S-RE-6V	0.8	9.525	4.76	3.81	2.6						<input type="radio"/>				
	TNGA160412S-RE-6V	1.2	9.525	4.76	3.81	2.4						<input type="radio"/>				

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



<h1>TN</h1>	BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition		BH	BL			
			MBH900U	MBL200C			
ISO - without hole							
<ul style="list-style-type: none"> 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 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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

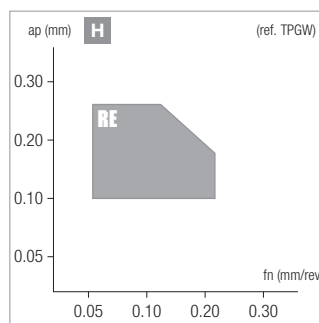
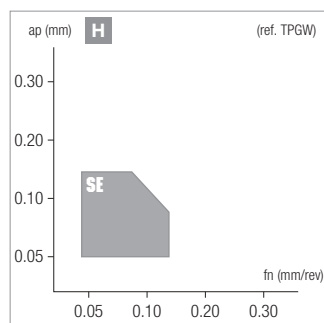
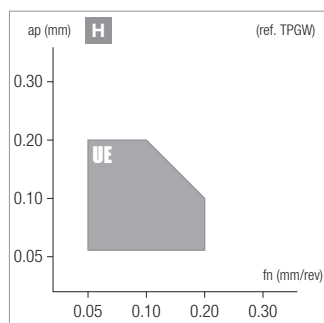
F - ACCESSORIES

G - SPARE PARTS

<h1>TP</h1>	BL: Low volume CBN PVD: Physical vapour deposition			BL PVD	BL PVD	BL PVD		
	ISO - with hole			NBL150C	NBL250C	NBL350C		
<ul style="list-style-type: none"> 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	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>	<input type="radio"/>			
	General machining, medium cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		
	Unstable machining, heavy cut	<input type="radio"/> 1 st choice	<input type="radio"/> suitable			<input checked="" type="radio"/>		
	Dimensions		ISO					Vc(m/min) - suggested cutting speed range (bold: 1st choice)
		P						
		M						
		K						
		N						
		S						
H		90	90	60				
		220	180	150				

Designation		RE	IC	S	D1	LE	Stock	
UNIVERSAL solid brazing	UE H TPGW090204S-UE-3S	0.4	5.56	2.38	3	2.5	<input checked="" type="radio"/>	
	TPGW110302S-UE-3S	0.2	6.35	3.18	3.3	2.6	<input type="radio"/>	
	TPGW110304S-UE-3S	0.4	6.35	3.18	3.3	2.5	<input checked="" type="radio"/>	<input type="radio"/>
	TPGW110308S-UE-3S	0.8	6.35	3.18	3.3	2.2	<input checked="" type="radio"/>	
SHARP solid brazing	SE H TPGW110304S-SE-3S	0.4	6.35	3.18	3.3	2.5	<input type="radio"/>	
	TPGW110308S-SE-3S	0.8	6.35	3.18	3.3	2.2	<input type="radio"/>	
REINFORCED solid brazing interrupted cut	RE H TPGW110304S-RE-3S	0.4	6.35	3.18	3.3	2.5		<input type="radio"/>

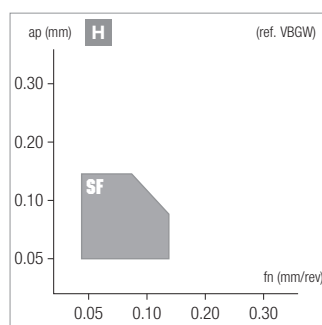
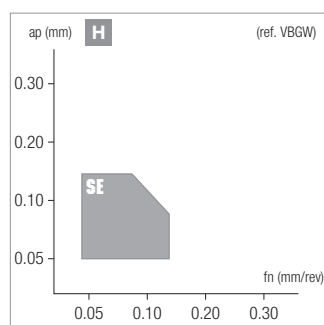
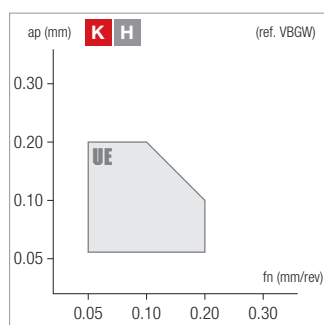
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>VB</h1>	BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition																		
	BH PVD	BH PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD											
ISO - with hole	NB H450C	NB H450U	NB L050C	NB L050CX	NB L150C	NB L250C	NB L300C	NB L350C											
<ul style="list-style-type: none"> 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: 1st choice)									
			P																
		M																	
		K	340	340	1000	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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

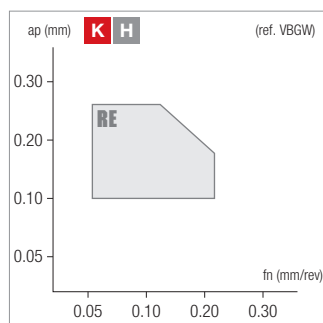
F - ACCESSORIES

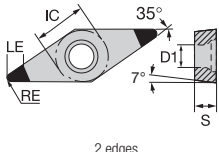
G - SPARE PARTS



<h1>VB</h1>	BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition									
	ISO - with hole	BH PVD	BH	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	BL PVD	
<ul style="list-style-type: none"> 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: 1st choice)									
	P									
	M									
	K	340	340							
		1000	1000							
	N									
S										
H			120	120	90	90	60	60		
			280	280	220	180	180	150		

Designation		RE	IC	S	D1	LE	Stock														
REINFORCED 	VBGW160404S-RE-2S	0.4	9.525	4.76	4.4	2.5															
	VBGW160408S-RE-2S	0.8	9.525	4.76	4.4	2.2															
REINFORCED 	VBGW160404S-RE-2C	0.4	9.525	4.76	4.4	2.5															
	VBGW160408S-RE-2C	0.8	9.525	4.76	4.4	2.2															

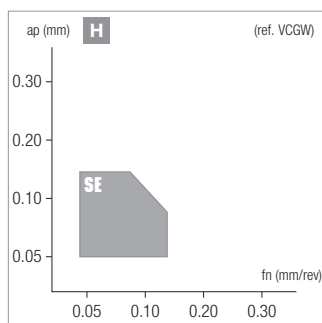
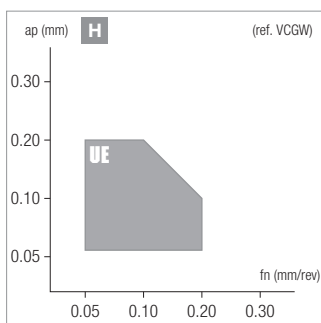
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>VC</h1>	BL: Low volume CBN PVD: Physical vapour deposition		BL PVD	BL PVD		
	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)		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 P M K N S H	

	Designation	RE	IC	S	D1	LE	Stock		
							●	○	
UNIVERSAL	 UE H solid brazing	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	 SE H solid brazing	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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

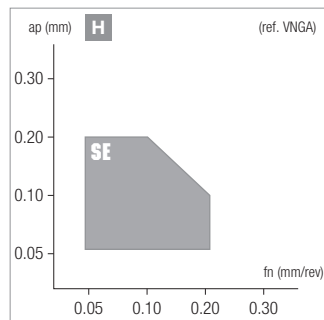
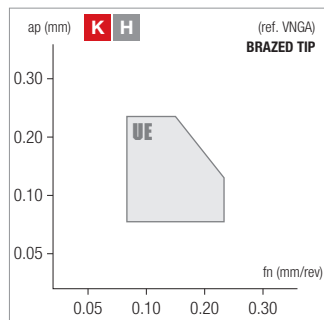
F - ACCESSORIES

G - SPARE PARTS

<h1>VN</h1>	BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition					BH PVD	BH PVD	BH PVD	BL PVD	BL PVD
	ISO - with hole					MBH450C	MBH500C	MBH900U	MBL150C	MBL250C
• 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: 1st 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	VNGA160404S-UE-4V	0.4	9.525	4.76	3.81	2.2	●	▽	○	
	VNGA160408S-UE-4V	0.8	9.525	4.76	3.81	2.3	●		○	
UNIVERSAL carbide backed	VNGA160404S-UE-4C	0.4	9.525	4.76	3.81	2.5	○			
	VNGA160408S-UE-4C	0.8	9.525	4.76	3.81	2.2	○			
SHARP vertical brazing	VNGA160404S-SE-4V	0.4	9.525	4.76	3.81	2.2			○	
	VNGA160408S-SE-4V	0.8	9.525	4.76	3.81	2.3			○	

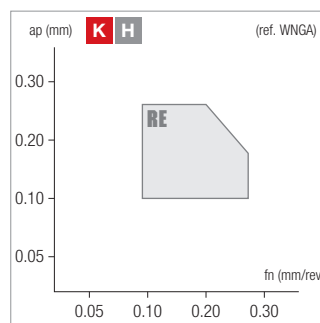
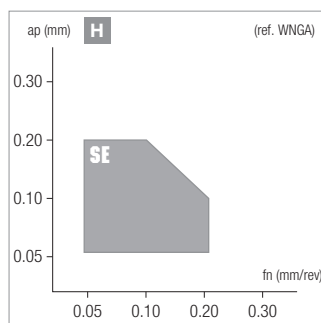
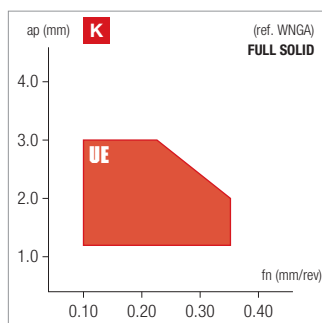
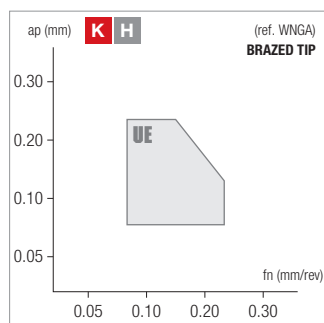
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>WN</h1>	BH: High volume CBN BL: Low volume CBN PVD: Physical vapour deposition							
	BH PVD	BH	BH	BL PVD	BL PVD	BL PVD	BL PVD	
ISO - with hole	MBH500C	MBH600U	MBH900U	MBL150C	MBL250C	MBL300C	MBL350C	
<ul style="list-style-type: none"> 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 <input checked="" type="radio"/> 1 st choice <input type="radio"/> suitable	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	General machining, medium cut <input checked="" type="radio"/> 1 st choice <input type="radio"/> suitable	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	Unstable machining, heavy cut <input checked="" type="radio"/> 1 st choice <input type="radio"/> suitable	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	Dimensions	ISO Vc(m/min) - suggested cutting speed range (bold: 1st choice)						
<p>6 edges</p>	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 vertical brazing	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			○	●	●	○		
	WNGA080412S-UE-6V	1.2	12.7	4.76	5.16	2.5			●	○	○	○		
UNIVERSAL full solid high depth of cut	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 vertical brazing	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 vertical brazing interrupted cut	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			●			●		
	WNGA080412S-RE-6V	1.2	12.7	4.76	5.16	2.5			●			○		

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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

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				○ 500	800	1100									
● 400	900	1400	○ 400	800	1200	● 400	700	1000	○ 400	600	800						
⊕ 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	min	start	max
○ 100	140	180	○ 80	130	180												
● 90	130	170	● 70	120	170	○ 70	110	150									
			⊕ 60	110	160	⊕ 60	100	140									
○ 80	130	180	○ 80	120	160							○ 80	130	180			
● 70	120	170	● 70	110	150	○ 70	100	130				● 70	120	170			
			⊕ 60	100	140	⊕ 60	90	120				⊕ 65	110	155			
○ 70	110	150	○ 70	100	130							○ 70	110	150			
● 60	100	140	● 60	90	120	○ 60	80	100				● 60	100	140			
			⊕ 50	80	110	⊕ 50	70	90				⊕ 60	90	120			
									○ 100	140	180	○ 80	130	180	○ 80	130	180
									● 90	130	170	● 70	120	170	● 70	120	170
									⊕ 80	120	160	⊕ 50	100	150	⊕ 70	110	150

Complete workpiece materials p. H1.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

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
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
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

A - TURNING

B - THREADING

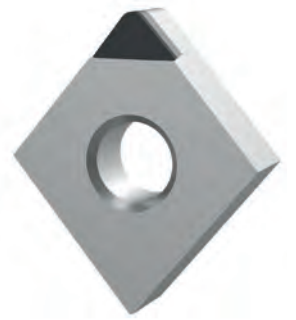
C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS



TURNING Diamond

- Grade table, A134
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A - TURNING

B - THREADING

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ISO 513		DIAMOND		
		PCD	CVD	MONO
Non-ferrous materials N	N01	ND190	NDD*	NDM*
	N10	ND150		
	N20	ND100		
	N30	ND050		
S	S01			
	S10	ND050		
	S20			
HRSA	S30			
Hardened steel H	H01	ND190		
	H10			
	H20			
	H30			

HRSA: Heat resistant super alloy

*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, AISi, 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	nixkoTOOLS	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

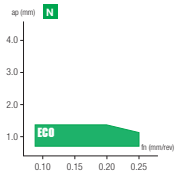


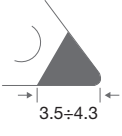


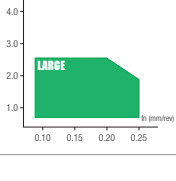



C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

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

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

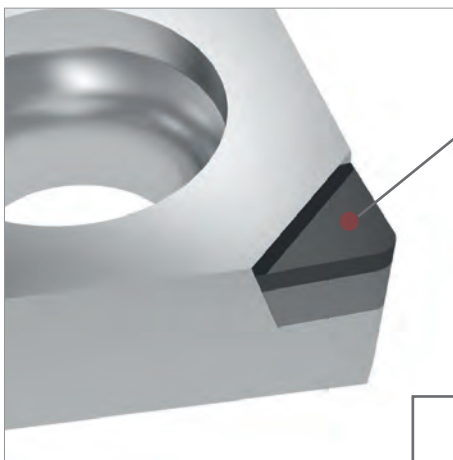
			C	D	T	V		
POSITIVE type with hole								
			80°	55°	60°	35°		
N	SLANT TIP	ECO	CC A145 SIZE 06 09 12	DC A148 SIZE 07 11	TC, TP A154, A157 SIZE 08 09 11 16	VB, VC A158, A160 SIZE 11 16		
		LARGE	CC A145 SIZE 06 09 12	DC A148 SIZE 07 11	TC A154 SIZE 11 16	VB, VC A158, A160 SIZE 16		
	FLAT TIP	ECO	CC A145 MCC 06 09 12	DC A148 SIZE 07 11	TC, TP A154, A157 SIZE 08 09 11 16	VB, VC A158, A160 SIZE 11 16		
		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		
		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		
		CBG	CC A146 SIZE 09	DC A149 SIZE 11	TC, TP A155, A157 SIZE 09 11 16	VB, VC A158, A160 SIZE 11 16		
		1S	CC A146 SIZE 06 09	DC A149 SIZE 07 11	TC A155 SIZE 09 11 16	VC A161 SIZE 11 16		
	FULL EDGE	FF	CC A146 SIZE 09	DC A149 SIZE 07 11	TC A155 SIZE 11 16			
		FF	CC A146 SIZE 09	DC A149 SIZE 07 11	TC A155 SIZE 11 16			

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 cleared flank face

• Features of Slant tip cutting edge

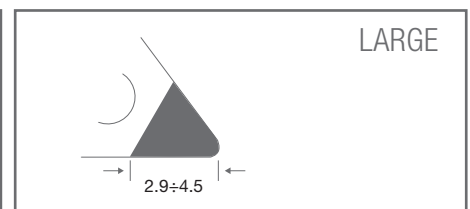
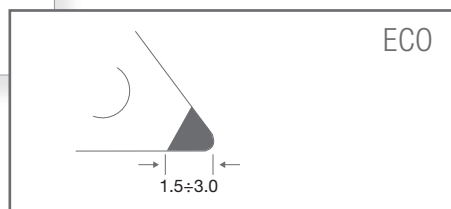


SOFT CUTTING ACTION

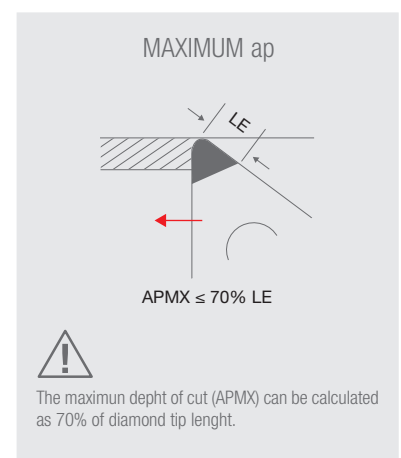
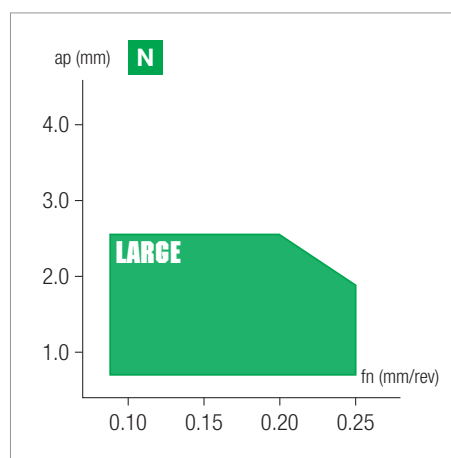
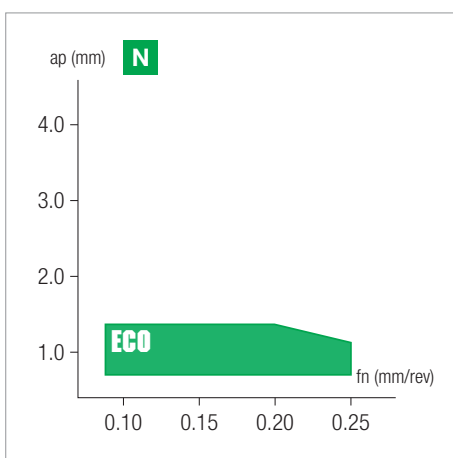
- The cutting edge is completely sharp (F type) as for all NIKKO diamond solutions
- The rake angle of all slant type is from 7° to 10°

BROAD RANGE

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



• Application range

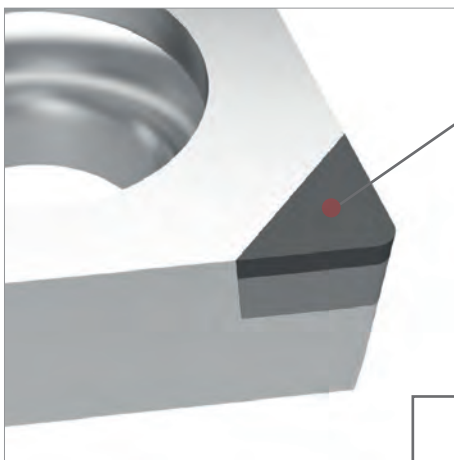


Flat tip

Cutting edge

- 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

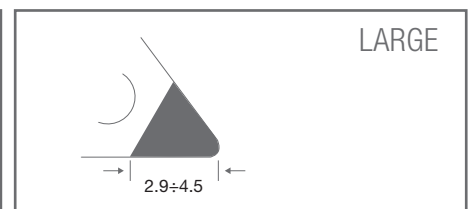
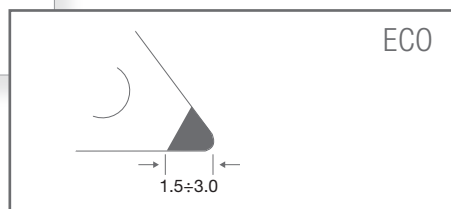


RELIABLE CUTTING EDGE

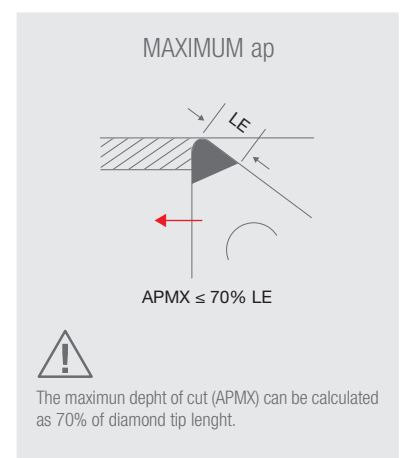
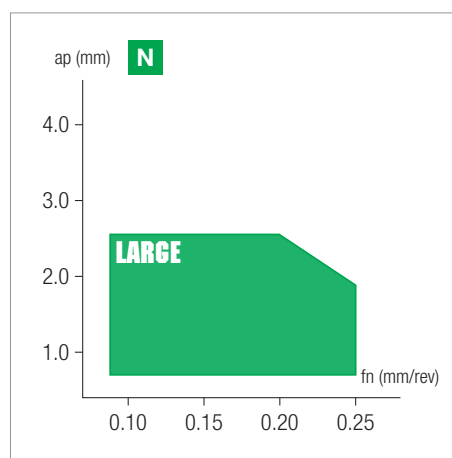
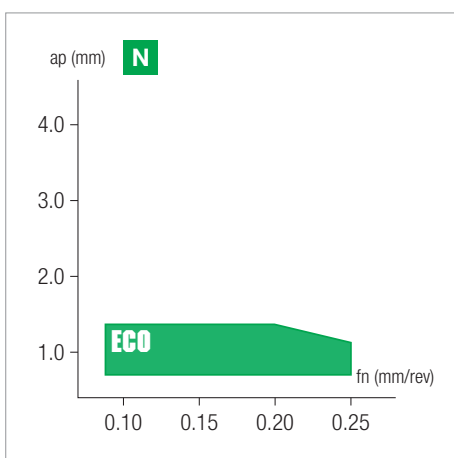
- Sharp edge combined with robust rake face well balances the edge strength
- First choice for universal use

BROAD RANGE

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



Application range

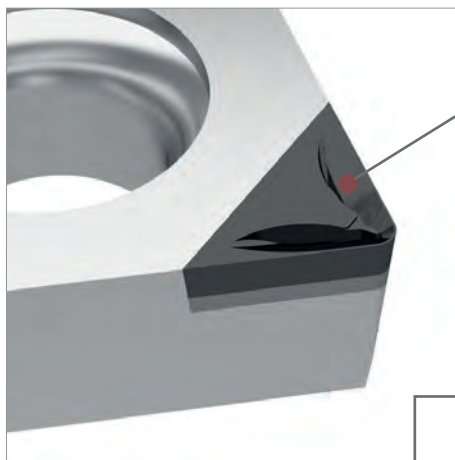


CBU - 3D chipbreaker

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

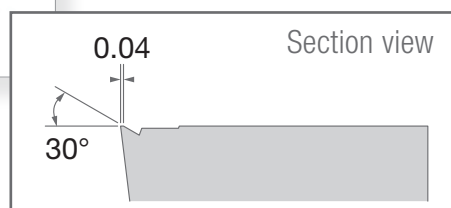


STATE OF THE ART GEOMETRY

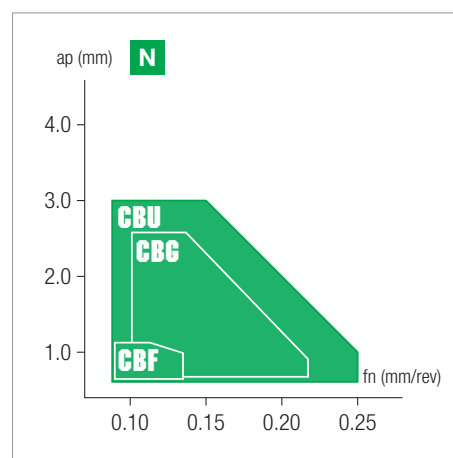
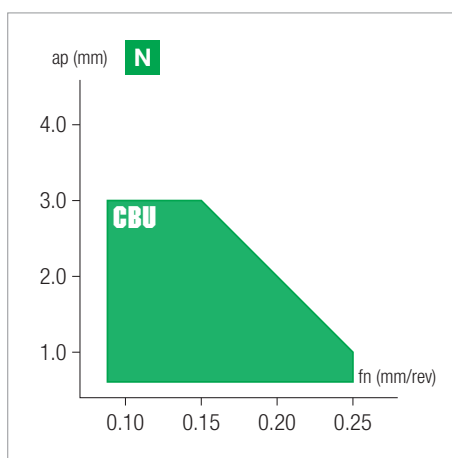
- Optimized rake face and tailored chip groove effectively improves the chip control performances
- Variable land to support broad range of application from finishing to roughing

BROAD RANGE

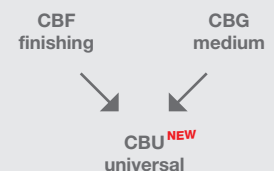
- Most common shapes and radii available as standard
- Tailor-made also possible upon request



• Application range



CBU VS. CONVENTIONAL STYLE



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

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

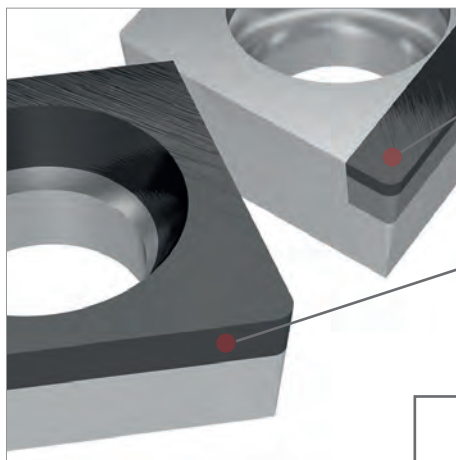
F - ACCESSORIES

G - SPARE PARTS

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

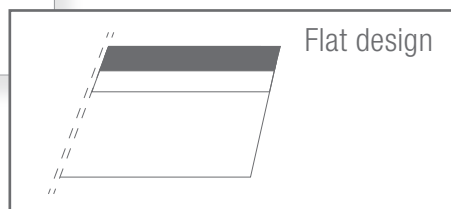


1S - FULL EDGE

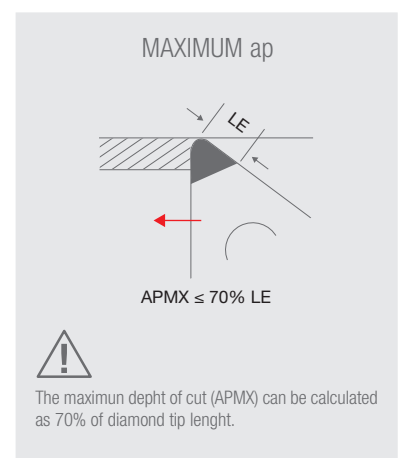
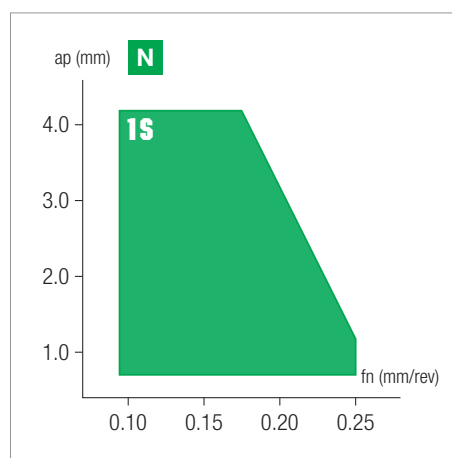
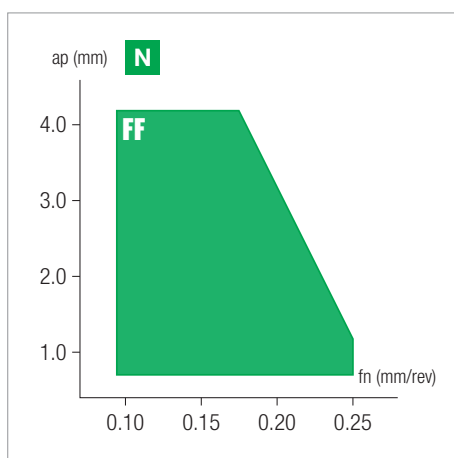
- Increased tip length allows higher depth of cut in comparison with conventional type
- Very common for long chamfering application

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

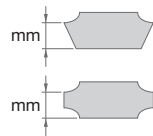
2	RELIEF ANGLE
B	5°
C	7°
D	15°
E	20°
N	0°
P	11°

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	✓	✗	double sided
M	✓	✗	single sided
N	✗	✗	✗
T	✓	40° ÷ 60°	single sided
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)

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

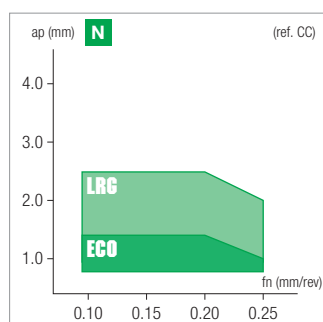
F - ACCESSORIES

G - SPARE PARTS

<h1>CC</h1>	DP: Polycrystalline diamond						DP	DP	DP	DP	DP	DP
	ISO - with hole						ND050	ND100	ND120	ND150	ND190	NDP010
<ul style="list-style-type: none"> 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: 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 tip angle 7°	eco N 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 large tip tip angle 7°	LRG N 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 large tip	LRG N 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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

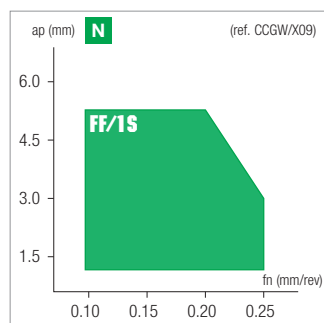
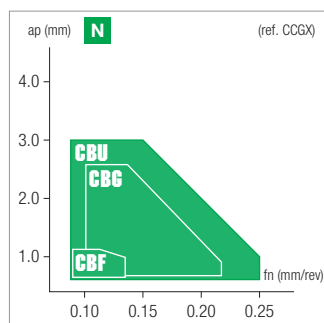
F - ACCESSORIES

G - SPARE PARTS

<h1>CC</h1>	DP: Polycrystalline diamond						DP	DP	DP	DP	DP	DP
	ISO - with hole	ND050	ND100	ND120	ND150	ND190	NDP010					
<ul style="list-style-type: none"> 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	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>		
	General machining, medium cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>		
	Unstable machining, heavy cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	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	450 2400					
	S	40 100										
	H											

Designation		RE	IC	S	D1	LE	Stock						
3D CHIPBREAKER universal use	CCBU N											●	
	CCGX060202-CBU	0.2	6.35	2.38	2.8	3.3							●
	CCGX060204-CBU	0.4	6.35	2.38	2.8	3.1							●
	CCGX060208-CBU	0.8	6.35	2.38	2.8	2.6							●
	CCGX09T304-CBU	0.4	9.525	3.97	4.4	3.5							●
CCGX09T308-CBU	0.8	9.525	3.97	4.4	3.3							●	
3D CHIPBREAKER finishing	CCBF N												
	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 medium	CCBG N												
CCGX09T308-CBG	0.8	9.525	3.97	4.4	4.2					▽			
FULL EDGE high depth of cut right-hand shown	1S N												
	CCGX060204/8-1S	0.4	6.35	2.38	2.8	6					○		
CCGX09T304/8-1S	0.4	9.525	3.97	4.4	9.3					○			
FULL FACE high depth of cut	FF N												
CCGW09T304-FF	0.4	9.525	3.97	4.4	9.3							●	

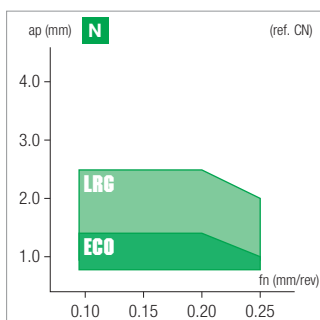
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>CN</h1>	DP: Polycrystalline diamond	DP	
		ND100	
<h2>ISO - with hole</h2>	Stable machining, light cut ● 1 st choice ○ suitable ●		
	General machining, medium cut ● 1 st choice ○ suitable ●		
	Unstable machining, heavy cut ▲ 1 st choice ○ suitable		
<ul style="list-style-type: none"> 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 	Dimensions	ISO	
		P	Vc(m/min) - suggested cutting speed range (bold: 1st choice)
		M	
		K	
		N	450 2400
S			
	H		

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

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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

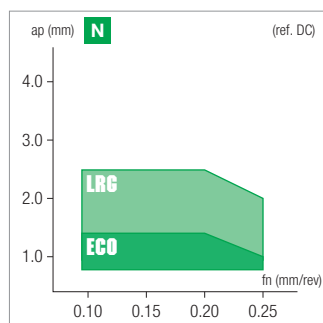
F - ACCESSORIES

G - SPARE PARTS

<h1>DC</h1>	DP: Polycrystalline diamond						DP	DP	DP	DP	DP	DP									
	ISO - with hole						ND050	ND100	ND120	ND150	ND190	NDP010									
<ul style="list-style-type: none"> 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)									
						P															
						M															
						K															
						N	400	450	450	350	400	450									
						S	2000	2400	2400	800	1000	2400									
H	40	100																			

Designation		RE	IC	S	D1	LE	Stock										
SLANT TIP 	eco N																
	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																
	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																
	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																
	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	○											

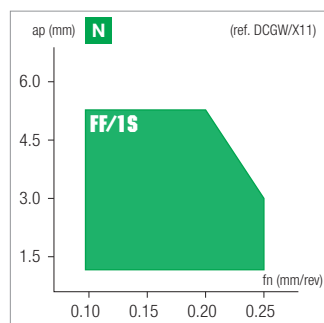
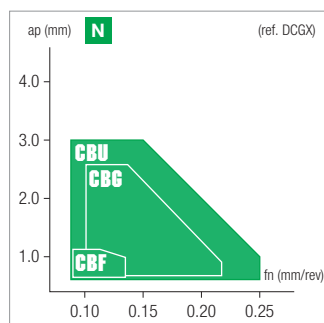
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>DC</h1>	DP: Polycrystalline diamond							
	DP	DP	DP	DP	DP	DP	DP	
ISO - with hole	ND050	ND100	ND120	ND150	ND190	NDP010		
<ul style="list-style-type: none"> • 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)	
	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 universal use	DCGX070202-CBU	0.2	6.35	2.38	2.8	3.4							●	
		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 finishing	DCGX070202-CBF	0.2	6.35	2.38	2.8	3				▽				
		DCGX11T302-CBF	0.2	9.525	3.97	4.4	4				▽				
3D CHIPBREAKER	CBG N medium	DCGX11T308-CBG	0.8	9.525	3.97	4.4	3.5				▽				
FULL EDGE	1S N high depth of cut right-hand shown	DCGX070204/1S	0.4	6.35	2.38	2.8	7.4						●		
		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 high depth of cut	DCGW070204-FF	0.4	6.35	2.38	2.8	7.4							●	
		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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

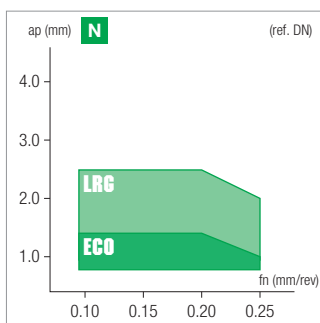
F - ACCESSORIES

G - SPARE PARTS

<h1>DN</h1>	DP: Polycrystalline diamond		DP
	<h2>ISO - with hole</h2>		ND100
<ul style="list-style-type: none"> • 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 	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	450 2400	
	S		
	H		

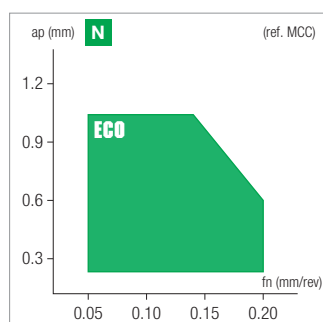
Designation		RE	IC	S	D1	LE	Stock	
SLANT TIP 	eco N	0.4	12.7	6.35	5.16	2.4	○	
	DNGM150604							
	tip angle 7°	0.8	12.7	6.35	5.16	2	○	
	DNGM150608							
SLANT TIP 	LRG N	0.4	12.7	6.35	5.16	3.9	○	
	DNGM150604-LRG							
	large tip tip angle 7°	0.8	12.7	6.35	5.16	3.5	○	
	DNGM150608-LRG							
FLAT TIP 	eco N	0.4	12.7	6.35	5.16	2.4	○	
	DNGA150604							
		0.8	12.7	6.35	5.16	2	●	
	DNGA150608							
FLAT TIP 	LRG N	0.4	12.7	6.35	5.16	3.9	○	
	DNGA150604-LRG							
	large tip	0.8	12.7	6.35	5.16	3.5	○	
	DNGA150608-LRG							

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



<h1>MCC</h1>	DP: Polycrystalline diamond			DP	DP	DP			
	ISO - with hole			ND050	ND120	ND190			
<ul style="list-style-type: none"> 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: 1st choice)						
	P								
	M								
	K								
	N	400 2000	450 2400	400 1000					
	S	40 100							
	H								
Designation	RE	IC	S	D1	LE	Stock			
FLAT TIP 	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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

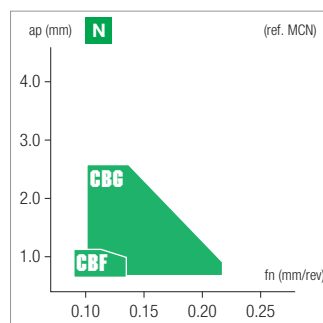
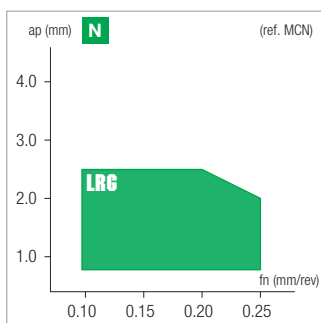
F - ACCESSORIES

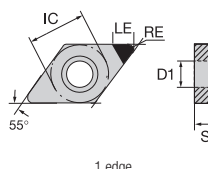
G - SPARE PARTS




<h1>MCN</h1>	DP: Polycrystalline diamond	DP
	MicroNega - with hole	ND120
<ul style="list-style-type: none"> • 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: 1st choice)
		P M K N 450 S 2400 H

Designation		RE	IC	S	D1	LE	Stock
FLAT TIP LRG N large tip	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 finishing	MCN.R02G-CBF	0.2	7.5	3.18	3.6	3.3	●
	MCN.R04G-CBF	0.4	7.5	3.18	3.6	3.3	●
3D CHIPBREAKER CBG N medium	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	●

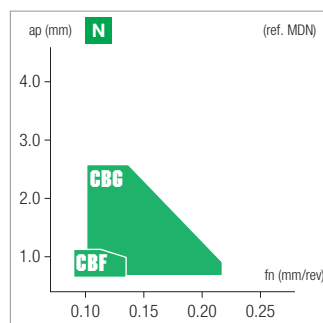
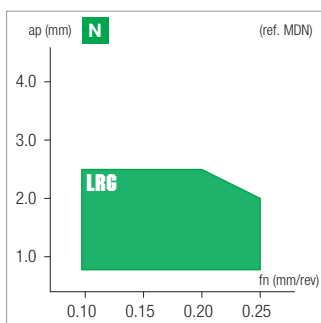
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>MDN</h1>	DP: Polycrystalline diamond	DP
	ND120	
<p>MicroNega - with hole</p> <ul style="list-style-type: none"> • 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: 1st choice)
	P M K N 450 S 2400 H	

Designation		RE	IC	S	D1	LE	Stock
FLAT TIP  LRG N large tip	MDN.R02G-LRG	0.2	7	3.18	3.6	3.1 ●	
	MDN.R04G-LRG	0.4	7	3.18	3.6	2.9 ●	
	MDN.R08G-LRG	0.8	7	3.18	3.6	2.5 ●	
3D CHIPBREAKER  CBF N finishing	MDN.R02G-CBF	0.2	7	3.18	3.6	3.1 ●	
	MDN.R04G-CBF	0.4	7	3.18	3.6	2.9 ●	
3D CHIPBREAKER  CBG N medium	MDN.R04G-CBG	0.4	7	3.18	3.6	2.9 ●	
	MDN.R08G-CBG	0.8	7	3.18	3.6	2.5 ●	

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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

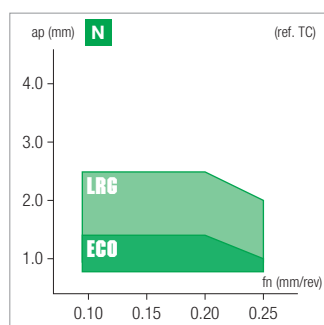
F - ACCESSORIES

G - SPARE PARTS

<h1>TC</h1>	DP: Polycrystalline diamond					DP	DP	DP	DP	DP
	ISO - with hole					ND050	ND100	ND120	ND150	NDP010
<ul style="list-style-type: none"> • 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	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
	General machining, medium cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	
	Unstable machining, heavy cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Dimensions	ISO				Vc(m/min) - suggested cutting speed range (bold: 1st choice)				
	P									
	M									
	K									
	N	400	450	450	350	450				
	S	40	100							
	H									

Designation		RE	IC	S	D1	LE	Stock					
SLANT TIP tip angle 7°	eco N TCGT090202	0.2	5.56	2.38	2.5	2.6		<input type="radio"/>				
	TCGT090204	0.4	5.56	2.38	2.5	2.5		<input type="radio"/>				
	TCGT110202	0.2	6.35	2.38	2.8	2.6		<input type="radio"/>				
	TCGT110204	0.4	6.35	2.38	2.8	2.5		<input checked="" type="radio"/>				
	TCGT110208	0.8	6.35	2.38	2.8	2.2		<input type="radio"/>				
	TCGT16T304	0.4	9.525	3.97	4.4	2.5		<input type="radio"/>				
	TCGT16T308	0.8	9.525	3.97	4.4	2.2		<input type="radio"/>				
SLANT TIP large tip tip angle 7°	TCGT110204-LRG	0.4	6.35	2.38	2.8	4		<input type="radio"/>				
	TCGT110208-LRG	0.8	6.35	2.38	2.8	3.7		<input type="radio"/>				
	TCGT16T304-LRG	0.4	9.525	3.97	4.4	4		<input type="radio"/>				
	TCGT16T308-LRG	0.8	9.525	3.97	4.4	3.7		<input type="radio"/>				
FLAT TIP 	eco N TCGW090202	0.2	5.56	2.38	2.5	2.6		<input type="radio"/>				
	TCGW090204	0.4	5.56	2.38	2.5	2.5		<input checked="" type="radio"/>				
	TCGW110202	0.2	6.35	2.38	2.8	2.6		<input type="radio"/>				
	TCGW110204	0.4	6.35	2.38	2.8	2.5		<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		
	TCGW110208	0.8	6.35	2.38	2.8	2.2		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	TCGW16T304	0.4	9.525	3.97	4.4	2.5		<input checked="" type="radio"/>				
	TCGW16T308	0.8	9.525	3.97	4.4	2.2		<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		
FLAT TIP large tip	TCGW110204-LRG	0.4	6.35	2.38	2.8	4		<input type="radio"/>				
	TCGW110208-LRG	0.8	6.35	2.38	2.8	3.7		<input checked="" type="radio"/>				
	TCGW16T304-LRG	0.4	9.525	3.97	4.4	4		<input checked="" type="radio"/>				
	TCGW16T308-LRG	0.8	9.525	3.97	4.4	3.7		<input checked="" type="radio"/>				

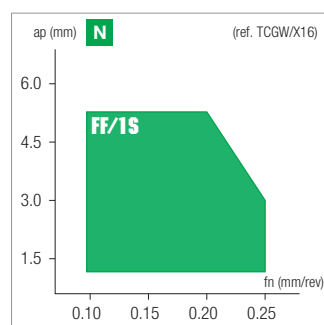
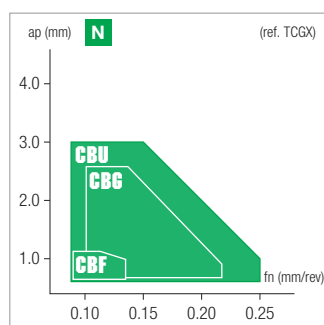
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>TC</h1>	DP: Polycrystalline diamond					DP	DP	DP	DP	DP
	ISO - with hole					ND050	ND100	ND120	ND150	NDP010
<ul style="list-style-type: none"> • 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	<input type="radio"/>	1 st choice	<input type="radio"/>	suitable	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
	General machining, medium cut	<input checked="" type="radio"/>	1 st choice	<input type="radio"/>	suitable	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Unstable machining, heavy cut	<input checked="" type="radio"/>	1 st choice	<input type="radio"/>	suitable	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Dimensions	ISO					Vc(m/min) - suggested cutting speed range (bold: 1st choice)			
	P									
	M									
	K									
	N	400	450	450	350	450				
	S	2000	2400	2400	800	2400				
H	40	100								

Designation		RE	IC	S	D1	LE	Stock					
3D CHIPBREAKER CBU N 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 CBF N 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 CBG N 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			▽			
FULL EDGE 1S N 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 FF N 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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

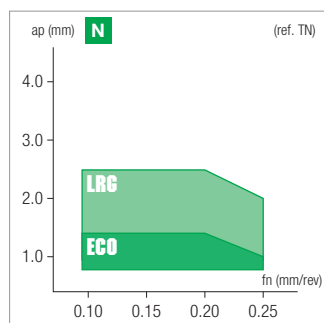
F - ACCESSORIES

G - SPARE PARTS

<h1>TN</h1>	DP: Polycrystalline diamond	DP											
	ISO - with hole	ND100											
<ul style="list-style-type: none"> 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												
	<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"> <p>Dimensions</p> </div> <div style="text-align: center;"> <p>ISO</p> <table border="1"> <tr><td>P</td></tr> <tr><td>M</td></tr> <tr><td>K</td></tr> <tr><td>N</td></tr> <tr><td>S</td></tr> <tr><td>H</td></tr> </table> </div> <div style="text-align: center;"> <p>Vc(m/min) - suggested cutting speed range (bold: 1st choice)</p> <table border="1"> <tr><td>P</td></tr> <tr><td>M</td></tr> <tr><td>K</td></tr> <tr><td>N</td></tr> <tr><td>S</td></tr> <tr><td>H</td></tr> </table> </div> </div>	P	M	K	N	S	H	P	M	K	N	S	H
P													
M													
K													
N													
S													
H													
P													
M													
K													
N													
S													
H													

Designation		RE	IC	S	D1	LE	Stock
SLANT TIP eco N	TNGM160404	0.4	9.525	4.76	3.81	2.5	●
	TNGM160408	0.8	9.525	4.76	3.81	2	○
SLANT TIP LRG N	TNGM160404-LRG	0.4	9.525	4.76	3.81	4	○
	TNGM160408-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	TNGA160404-LRG	0.4	9.525	4.76	3.81	4	○
	TNGA160408-LRG	0.8	9.525	4.76	3.81	3.7	○

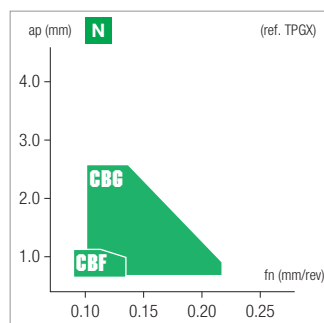
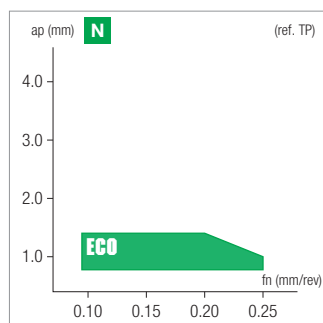
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion



<h1>TP</h1>	DP: Polycrystalline diamond			DP	DP	DP
	ISO - with hole			ND050	ND100	ND120
<ul style="list-style-type: none"> • 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 tip angle 7°	eco N 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 finishing	CBF N 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 medium	CBG N 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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

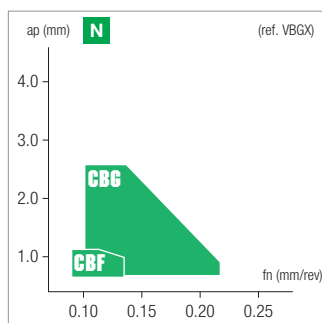
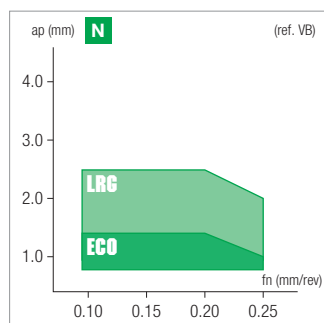
F - ACCESSORIES

G - SPARE PARTS

<h1>VB</h1>	DP: Polycrystalline diamond					DP	DP	DP	DP	DP	
	ISO - with hole					ND050	ND100	ND120	ND150	ND190	
<ul style="list-style-type: none"> 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: 1st choice)	
		P									
		M									
		K									
		N	400 2000	450 2400	450 2400	350 800	400 1000				
		S	40 100								

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	●				
	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	●				
	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	●				
	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			▽		
	VBGX160404-CBF	0.4	9.525	4.76	4.4	4.5			▽		

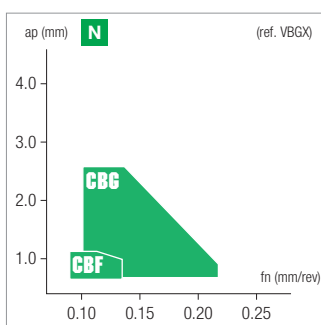
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



VB	DP: Polycrystalline diamond					DP	DP	DP	DP	DP	
	ISO - with hole	ND050	ND100	ND120	ND150	ND190					
<ul style="list-style-type: none"> 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: 1st choice)								
		P									
M											
K											
N		400	450	450	350	400					
S		2000	2400	2400	800	1000					
H		40									

3D CHIPBREAKER	CBG N	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				▽		
medium	VBGX160408-CBG	0.8	9.525	4.76	4.4	3.7				▽		

● 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

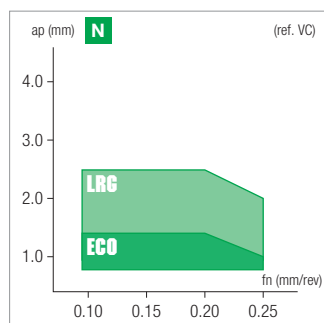
F - ACCESSORIES

G - SPARE PARTS

<h1>VC</h1>	DP: Polycrystalline diamond									
	DP	DP	DP	DP	DP	DP	DP			
ISO - with hole	ND050	ND100	ND120	ND150	ND190	NDP010				
<ul style="list-style-type: none"> 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						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	450 2400			
	S	40 100								
	H									

Designation		RE	IC	S	D1	LE	Stock										
SLANT TIP tip angle 7°	eco N VCGT110302	0.2	6.35	3.18	2.8	3	○	●									
	VCGT110304	0.4	6.35	3.18	2.8	2.5		○									
	VCGT160402	0.2	9.525	4.76	4.4	3		●									
	VCGT160404	0.4	9.525	4.76	4.4	2.5	○	●		●	○						
	VCGT160408	0.8	9.525	4.76	4.4	2.2	●	●		●	○						
SLANT TIP large tip tip angle 7°	LRG N VCGT160404-LRG	0.4	9.525	4.76	4.4	4.5		●									
	VCGT160408-LRG	0.8	9.525	4.76	4.4	3.7		●									
FLAT TIP 	eco N VCGW110302	0.2	6.35	3.18	2.8	3	●	●									
	VCGW110304	0.4	6.35	3.18	2.8	2.5		●									
	VCGW160404	0.4	9.525	4.76	4.4	2.5	○	●		○	○						
	VCGW160408	0.8	9.525	4.76	4.4	2.2	●	●		○	○						
FLAT TIP large tip	LRG N VCGW110304-LRG	0.4	6.35	3.18	2.8	4.5		●									
	VCGW160404-LRG	0.4	9.525	4.76	4.4	4.5		●									
	VCGW160408-LRG	0.8	9.525	4.76	4.4	3.7		●									
	VCGW160412-LRG	1.2	9.525	4.76	4.4	3.3		○									

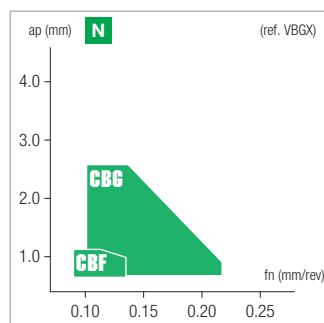
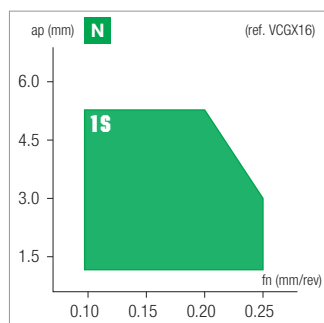
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>VC</h1>	DP: Polycrystalline diamond							
	DP	DP	DP	DP	DP	DP	DP	
ISO - with hole	ND050	ND100	ND120	ND150	ND190	NDP010		
<ul style="list-style-type: none"> 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	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
	General machining, medium cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Unstable machining, heavy cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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								
3D CHIPBREAKER	CBU N	VCGX110302-CBU	0.2	6.35	3.18	2.8	4.5								●
		VCGX110304-CBU	0.4	6.35	3.18	2.8	4								●
	universal use	VCGX160404-CBU	0.4	9.525	4.76	4.4	5								●
		VCGX160408-CBU	0.8	9.525	4.76	4.4	4.4								●
3D CHIPBREAKER	CBF N	VCGX110302-CBF	0.2	6.35	3.18	2.8	5						▽		
	finishing	VCGX110304-CBF	0.4	6.35	3.18	2.8	4.5						▽		
3D CHIPBREAKER	CBG N	VCGX110304-CBG	0.4	6.35	3.18	2.8	4.5						▽		
FULL EDGE	1S N	VCGX110304 ^{1/2} -1S	0.4	6.35	3.18	2.8	10.7								●
high depth of cut right-hand shown	VCGX160404 ^{1/2} -1S	0.4	9.525	4.76	4.4	16.2									●

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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

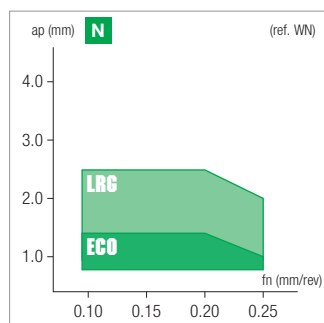
F - ACCESSORIES

G - SPARE PARTS

<h1>WN</h1>	DP: Polycrystalline diamond		DP
	ISO - with hole		ND100
<ul style="list-style-type: none"> 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 	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	450 2400	
	S		
	H		

Designation		RE	IC	S	D1	LE	Stock	
SLANT TIP	eco N 	0.4	12.7	4.76	5.16	2.8	●	
	WNGM080404							
	tip angle 7°	0.8	12.7	4.76	5.16	2.7	●	
	WNGM080408							
SLANT TIP	LRG N 	0.4	12.7	4.76	5.16	4.3	○	
	WNGM080404-LRG							
	large tip tip angle 7°	0.8	12.7	4.76	5.16	4.2	○	
	WNGM080408-LRG							
FLAT TIP	eco N 	0.4	12.7	4.76	5.16	2.8	●	
	WNGA080404							
		0.8	12.7	4.76	5.16	2.7	○	
	WNGA080408							
FLAT TIP	LRG N 	0.4	12.7	4.76	5.16	4.3	○	
	WNGA080404-LRG							
	large tip	0.8	12.7	4.76	5.16	4.2	○	
	WNGA080408-LRG							

● 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

	DESIGNATION	DEPTH OF CUT			FEED RATE		
		ap (mm)			fn (mm/rev)		
		min	start	max	min	start	max
A - TURNING	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
B - THREADING	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
C - GROOVING	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
	CCGW09T304-LRG	0.40	1.20	2.00	0.10	0.15	0.20
	CCGW09T304-LRG	0.40	1.20	2.00	0.10	0.15	0.20
	CCGW09T304-LRG	0.40	1.20	2.00	0.10	0.15	0.20
	CCGW09T304-LRG	0.40	1.20	2.00	0.10	0.15	0.20
	CCGW09T304-LRG	0.40	1.20	2.00	0.10	0.15	0.20
	CCGW09T304-LRG	0.40	1.20	2.00	0.10	0.15	0.20
D - MILLING	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
E - DRILLING	CCGX060204-CBU	0.20	1.50	2.80	0.04	0.12	0.20
	CCGX060204- $\frac{1}{4}$ -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- $\frac{1}{4}$ -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
F - ACCESSORIES	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
G - SPARE PARTS	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-LRG	0.40	1.20	2.00	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-LRG	0.40	1.20	2.00	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-LRG	0.40	1.50	2.60	0.10	0.15	0.20
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- $\frac{1}{4}$ -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- $\frac{1}{4}$ -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- $\frac{1}{4}$ -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-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
VCGX110304½-1S	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
VCGX160404½-1S	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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	ISO 513	CERAMIC				
		Si ₃ N ₄	Al ₂ O ₃ MIXED	PVD COATED Al ₂ O ₃ MIXED	SiAlON	WHISKER
A - TURNING	K	K01	NSN350 NSM400 NSN450	NAC200		
		K10				
		K20				
B - THREADING	Cast iron	K30				
		S01				NWR700 NWR750
C - GROOVING	S	S10			NSA600 NSA650	
		S20				
		S30				
D - MILLING	HRSA	H01		NAC150		
		H10		NAC200 NAC250		
		H20				
		H30				
E - DRILLING	Hardened steel	H01				
		H10				
		H20				
		H30				
F - ACCESSORIES	HRSA	H01				
		H10				
		H20				
		H30				
G - SPARE PARTS	HRSA	H01				
		H10				
		H20				
		H30				

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.

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A - TURNING

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C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

ISO 513	nikkoTOOLS	CERAMTEC	ISCAR	KENNAMETAL	KYOCERA	NTK	SANDVIK	TAEGUTEK	TUNGALOY	UNION	WALTER		
K	K01 - K10	NSN350 NSN400	SL654C SL658C	IS6 IS8	KYK10	KS6015	CC6190 GC1690	AS500	FX105	SN500 SN600	WCK10		
	K10 - K20	NSN400 NSN450	SL500 SL550C SL506 SL606	IS8 IS80	KY3500 KYK25	CS7050 KS6050	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	 A181 SIZE 12 16	 A183 SIZE 15	 A188 SIZE 12	 A190 SIZE 16	 A193 SIZE 16	 A194 SIZE 08
K	WIPER	WU T02020	 A181 SIZE 12					
S	UNIVERSAL	GP T02020	 A181 SIZE 12					
H	UNIVERSAL	GP T02020	 A181 SIZE 12 16	 A183 SIZE 15	 A188 SIZE 12	 A190 SIZE 16	 A193 SIZE 16	 A194 SIZE 08
	SHARP	GS S01525 (NAC150) - S02020 (NAC200)	 A181 SIZE 12	 A183 SIZE 15		 A190 SIZE 16	 A193 SIZE 16	
WIPER	CC T01020	 A181 SIZE 12	 A183 SIZE 15	 A188 SIZE 12	 A190 SIZE 16	 A193 SIZE 16	 A194 SIZE 08	
		WU T02020	 A181 SIZE 12					

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

A - TURNING

B - THREADING

C - GROOVING





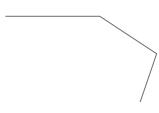
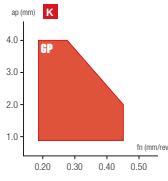



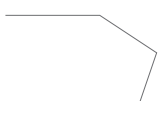
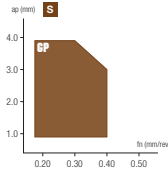


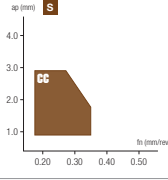


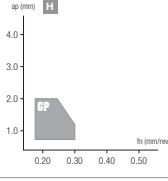


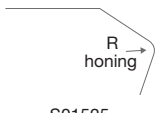
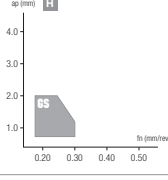


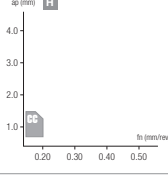

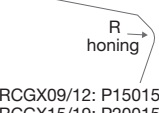
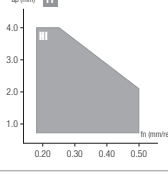

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

NEGATIVE type without hole			C	D	R	S	T
			80°	55°	-	90°	60°
K	UNIVERSAL	GP T02020 	 A178 SIZE 12		 A182 SIZE 12	 A189 SIZE 12	 A191 SIZE 16
			 A182 SIZE 12			 A189 SIZE 12	
S	UNIVERSAL	GP T02020 	 A182 SIZE 12		 A186 SIZE 12 19	 A189 SIZE 12	
			 A182 SIZE 12			 A189 SIZE 12	
	SHARP	CC T01020 			 A186 SIZE 12	 A189 SIZE 12	
H	UNIVERSAL	GP T02020 	 A182 SIZE 12	 A184 SIZE 15	 A186 SIZE 12	 A189 SIZE 12	 A191 SIZE 16
			 A182 SIZE 12			 A189 SIZE 12	
REINFORCED		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	GP			CC  SIZE 09 12	SC  SIZE 09 12	TP  SIZE 11 16		
		T02020							
S	UNIVERSAL	GP				RC  SIZE 09 12			
		T02020							
S	SHARP	CC				RC  SIZE 06 09 12			
		T01020							
H	UNIVERSAL	GP				RC  SIZE 06 09 12	TP  SIZE 11 16		
		T02020							
	SHARP	GS					TP  SIZE 11 16		
		S01525							
SHARP	CC					TP  SIZE 11 16			
	T01020								
REINFORCED		HI				RC  SIZE 09 12 15 19			
			RCGX09/12: P15015 RCGX15/19: P20015						

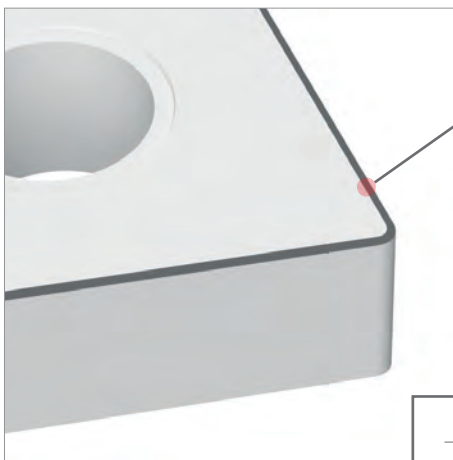
A - TURNING
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CC

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

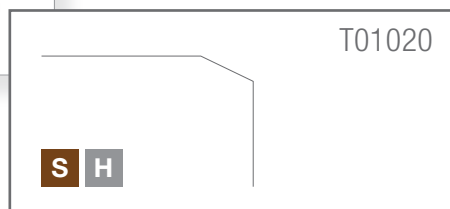


LOW CUTTING FORCE

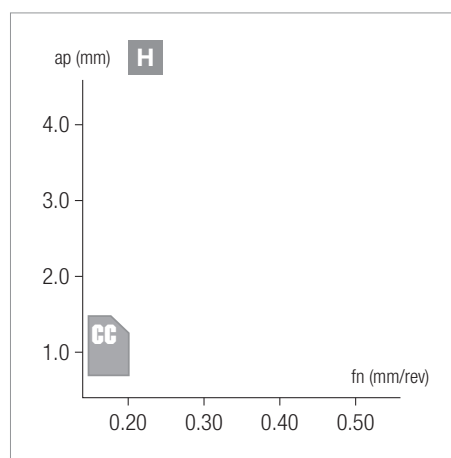
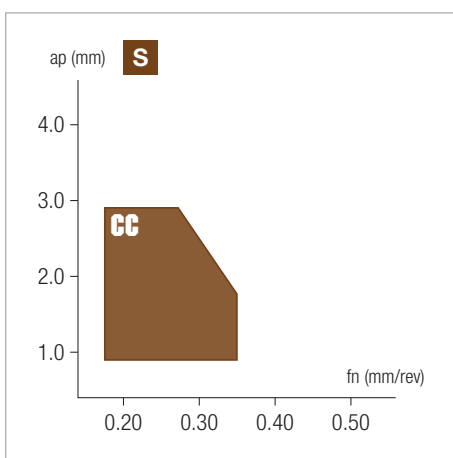
- The edge preparation has been optimized for low cutting forces action
- The chamfer width is 0.10 mm with an angle of 20° without round honing

BROAD RANGE

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



• Application range



CC SiAlON

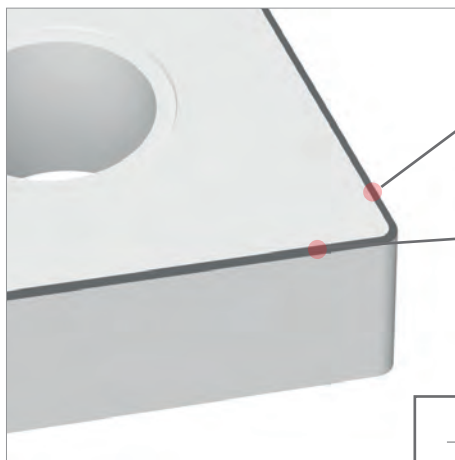
In combination with NSA grades must be considered as first choice for general purpose machining.

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

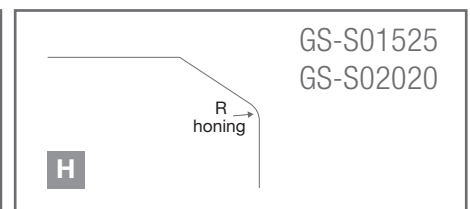
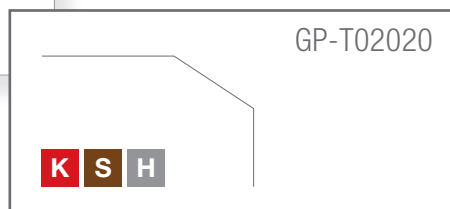


GP - FIRST CHOICE

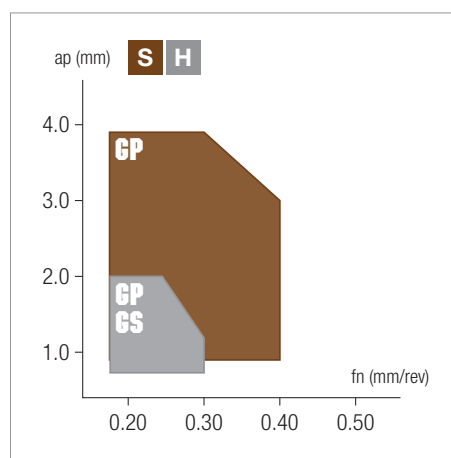
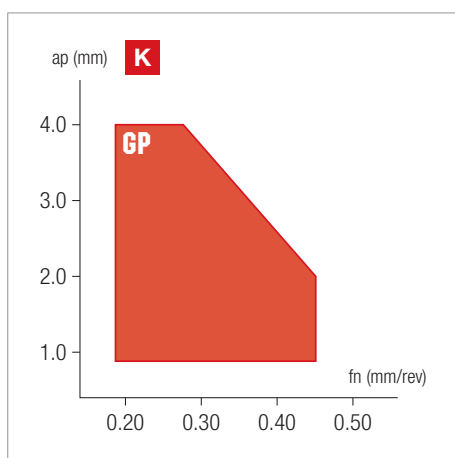
- Applicable from continuous to light interrupted cut. Guarantee reliable performances
- The chamfer width, in most of the cases, is 0.20 mm with an angle of 20°

GS - STRENGTHEN THE EDGE

- Same features of GP but with an additional reinforced honing



• 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.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

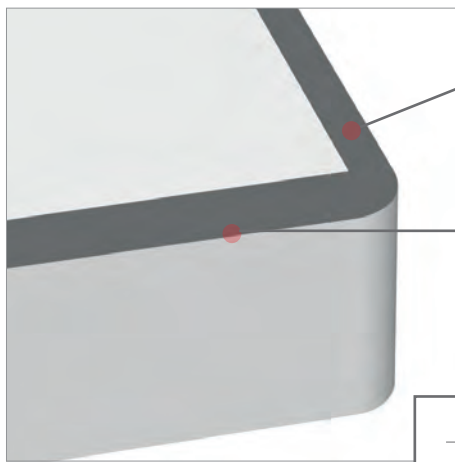
G - SPARE PARTS

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

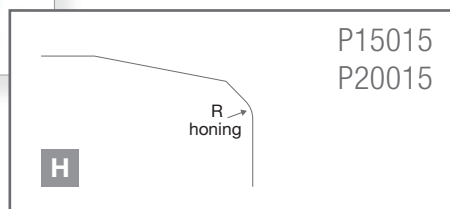


DOUBLE CHAMFER

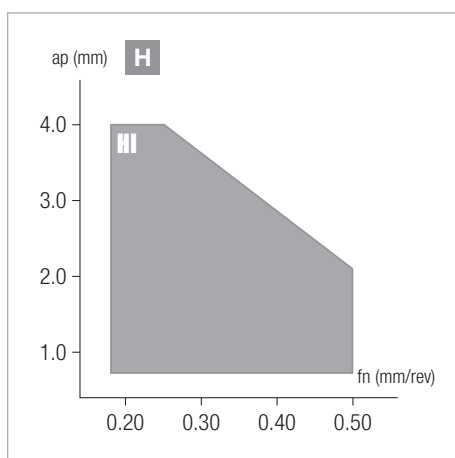
- Main chamfer size starts from 1,5 mm and can reach 2 mm for biggest inserts, with an angle of 15°
- Secondary chamfer width is 0.20 mm with an angle from 25° to 30°

REINFORCING HONING

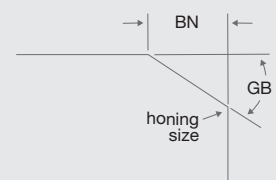
- As further reinforcement, the cutting edge honing has been increased compared to general purpose edge preparation



• Application range



SPECIAL CHAMFER UPON REQUEST



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

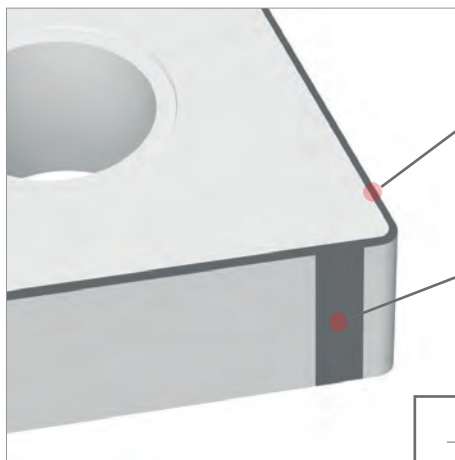
HT type, for example is a round insert with a double chamfered geometry without round honing.

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)

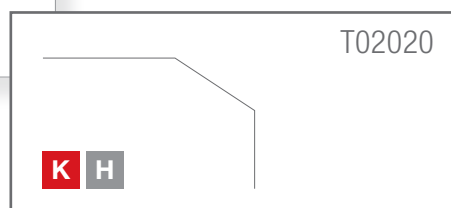
- Features of WU edge preparation

**GENERAL PURPOSE**

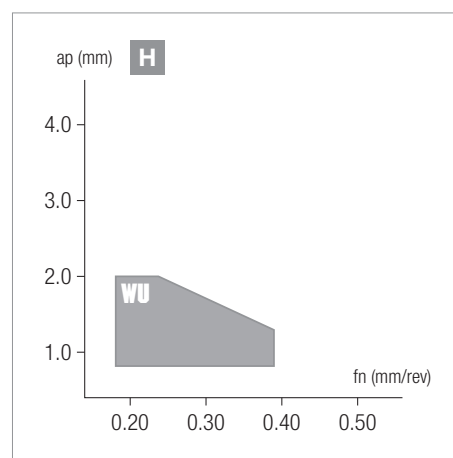
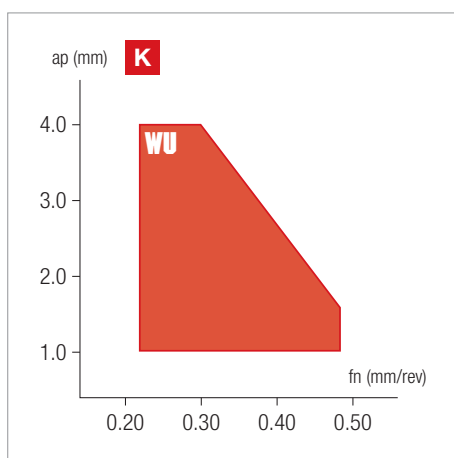
- Small T land chamfer without honing produces for low cutting forces and good accuracy
- The chamfer width is 0.2 mm with an inclination of 20°

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

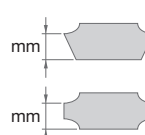
2	RELIEF ANGLE
B	5°
C	7°
D	15°
E	20°
N	0°
P	11°

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

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

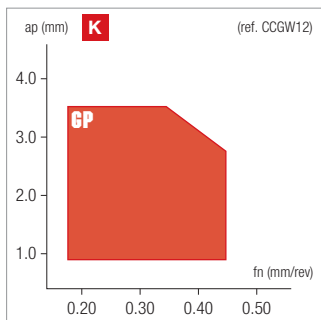
F - ACCESSORIES

G - SPARE PARTS

<h1>CC</h1>	CN: Silicon nitride ceramic Si3N4		CN
	<h2>ISO - with hole</h2>		MSN400
<ul style="list-style-type: none"> 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 		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 400 1000	
		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	●

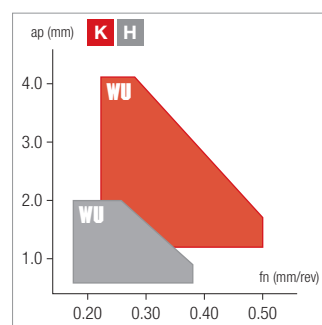
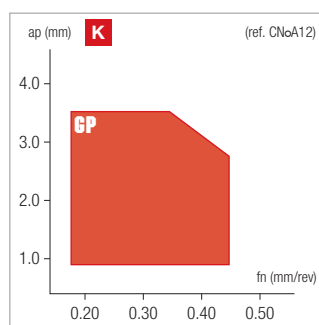
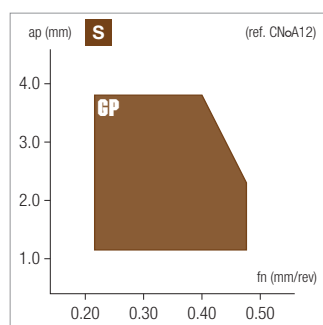
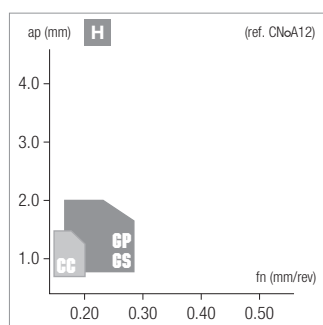
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>CN</h1>	CM: Mixed ceramic Al ₂ O ₃ CN: Silicon nitride ceramic Si ₃ N ₄ PVD: Physical vapour deposition							CM	CM	CM	CN	CN	CN	CN	
	ISO - with hole	MAC150	MAC200	MAC250	NSA6000	NSN350	NSN400	NSN450							
<ul style="list-style-type: none"> 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: 1st choice)						
	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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

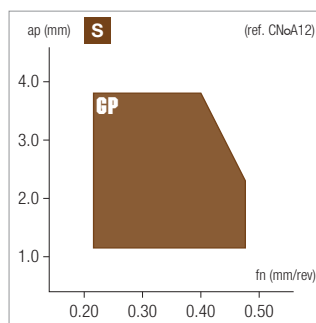
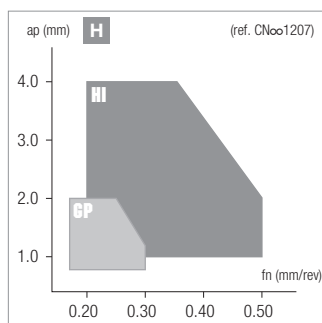
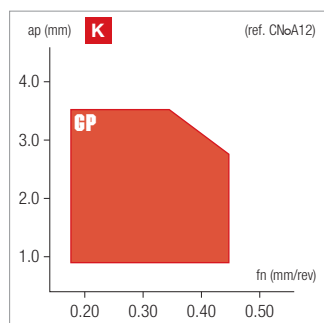
F - ACCESSORIES

G - SPARE PARTS

<h1>CN</h1>	CM: Mixed ceramic Al2O3 CN: Silicon nitride ceramic Si3N4 CR: Whisker reinforced ceramic																																																																											
	ISO - without hole	CM	CM	CN	CN	CN	CN	CN	CN	CR	CR																																																																	
<ul style="list-style-type: none"> 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: 1st choice)	<table border="1"> <tr> <td>P</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>M</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>K</td><td>400 600</td><td></td><td></td><td></td><td></td><td>500 1000</td><td>400 1000</td><td>400 800</td><td></td><td></td> </tr> <tr> <td>N</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>S</td><td></td><td></td><td>150 350</td><td>150 400</td><td>150 250</td><td></td><td></td><td></td><td>250 500</td><td>200 450</td> </tr> <tr> <td>H</td><td>70 180</td><td>60 150</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>										P											M											K	400 600					500 1000	400 1000	400 800			N											S			150 350	150 400	150 250				250 500	200 450	H	70 180	60 150							
P																																																																												
M																																																																												
K	400 600					500 1000	400 1000	400 800																																																																				
N																																																																												
S			150 350	150 400	150 250				250 500	200 450																																																																		
H	70 180	60 150																																																																										

	Designation	RE	IC	S	D1	LE	Stock									
UNIVERSAL 	GP K S H CNMN120412-GP	1.2	12.7	4.76	-	11.7										○
	CNMN120416-GP	1.6	12.7	4.76	-	11.3										○
	CNGN120708-GP	0.8	12.7	7.94	-	12.1	○	▽								○
	CNGN120712-GP	1.2	12.7	7.94	-	11.7	○	▽	▽							○
	CNGN120716-GP	1.6	12.7	7.94	-	11.3	○									○
UNIVERSAL 	GP K S H CNGX120708-GP	0.8	12.7	7.94	-	12.1	●									
	CNGX120712-GP	1.2	12.7	7.94	-	11.7	●									
	CNMX120712-GP	1.2	12.7	7.94	-	11.7		▽	▲				●			
	CNMX120716-GP	1.6	12.7	7.94	-	11.3			▲				●	●	●	
REINFORCED 	HI H CNGN120712-HI	1.2	12.7	7.94	-	11.7		○								
	CNGN120716-HI	1.6	12.7	7.94	-	11.3		○								

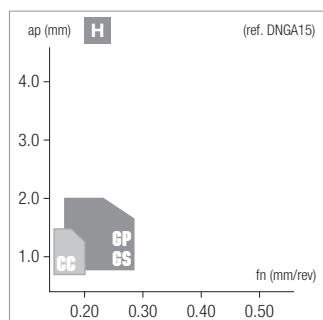
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>DN</h1>	CM: Mixed ceramic Al2O3 PVD: Physical vapour deposition			CM	CM	CM	
				MAC150	MAC200	MAC250	
ISO - with 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						
<ul style="list-style-type: none"> 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 	Dimensions		ISO				
			Vc(m/min) - suggested cutting speed range (bold: 1st choice)				
			P				
			M				
			K	400 600			
			N				
			S				
			H	100 200	70 180	60 150	

Designation		RE	IC	S	D1	LE	Stock		
UNIVERSAL		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		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		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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

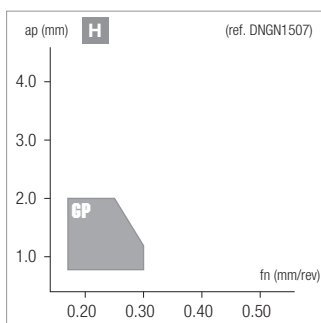
F - ACCESSORIES

G - SPARE PARTS

<h1>DN</h1>	CM: Mixed ceramic Al2O3	CM												
		MAC200												
<h2>ISO - without hole</h2>														
<ul style="list-style-type: none"> 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: 1st choice)											
		<table border="1"> <tr><td>P</td><td></td></tr> <tr><td>M</td><td></td></tr> <tr><td>K</td><td>400 600</td></tr> <tr><td>N</td><td></td></tr> <tr><td>S</td><td></td></tr> <tr><td>H</td><td>70 180</td></tr> </table>	P		M		K	400 600	N		S		H	70 180
P														
M														
K	400 600													
N														
S														
H	70 180													

UNIVERSAL	GP H	Designation	RE	IC	S	D1	LE	Stock	
		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	○	

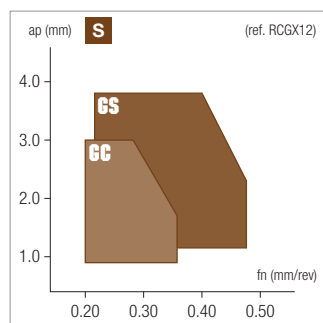
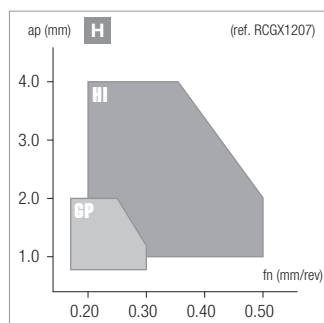
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>RC</h1>	CM: Mixed ceramic Al ₂ O ₃ CN: Silicon nitride ceramic Si ₃ N ₄ CR: Whisker reinforced ceramic PVD: Physical vapour deposition		CM	CM	CM	CN	CN	CN	CR	CR
	ISO - without hole		MAC150	MAC200	MAC250	MSA600	MSA6000	MSA650	NWR700	NWR750
<ul style="list-style-type: none"> Very strong and robust shape and style, able to confront diverse challenges during the machining process Cornical tail secures the seating in the insert pocket of the holder Different edge preparation with wide range of grades covering the majority of application area 	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		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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

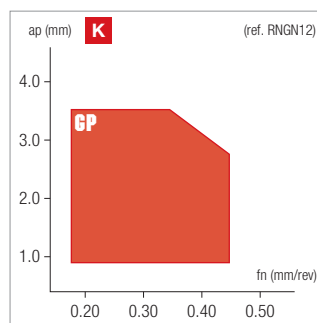
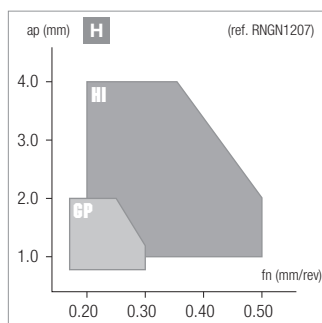
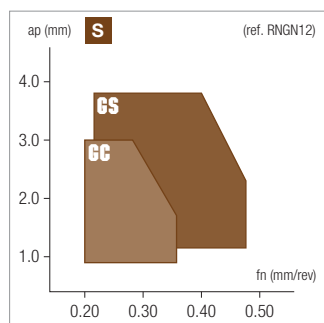
F - ACCESSORIES

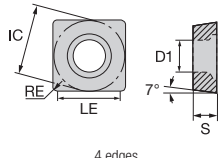

G - SPARE PARTS

<h1>RN</h1>	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	CM PVD	CM	CM	CN	CN	CN	CN	CR	CR	
<ul style="list-style-type: none"> 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 	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		400 600					400 1000			
	N										
	S				150 350	150 400	150 250		250 500	200 450	
H	100 200	70 180	60 150								

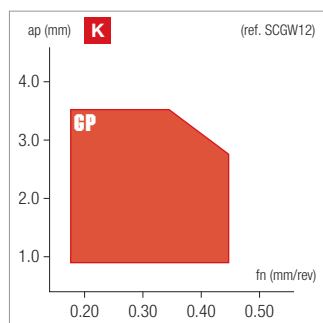
	Designation	RE	IC	S	D1	LE	Stock														
UNIVERSAL 	GP K S H RNGN120400-GP	6.35	12.7	4.76	-	-	●														
	RNGN120700-GP	6.35	12.7	7.94	-	-	○	○	○	▽		▽	○	○	○						
	RNGN190700-GP	9.525	19.05	7.94	-	-								▽							
SHARP 	CC S RNGN120400-CC	6.35	12.7	4.76	-	-						●									
	RNGN120700-CC	6.35	12.7	7.94	-	-						●									
REINFORCED 	HI H RNGN120700-HI	6.35	12.7	7.94	-	-	●	●	●												
REINFORCED 	HT H RNGN120700-HT	6.35	12.7	7.94	-	-	●		●												

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



<h1>SC</h1>	CN: Silicon nitride ceramic Si3N4		CN					
	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 P M K 400 1000 N S H			
		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)						
UNIVERSAL	Designation		RE	IC	S	D1	LE	Stock
		SCGW09T308-GP	0.8	9.525	3.97	4.4	8.7	●
		SCGW120408-GP	0.8	12.7	4.76	5.5	11.9	●

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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

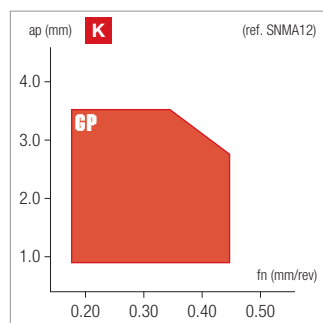
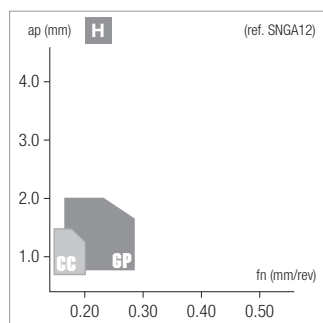
F - ACCESSORIES

G - SPARE PARTS

<h1>SN</h1>	CM: Mixed ceramic Al2O3 CN: Silicon nitride ceramic Si3N4	CM	CN
		MAC200	NSM400
ISO - with hole			
<ul style="list-style-type: none"> 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: 1st choice)	
	P		
	M		
	K	400 600	400 1000
	N		
	S		
	H	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	●	

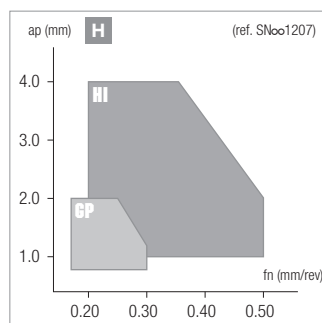
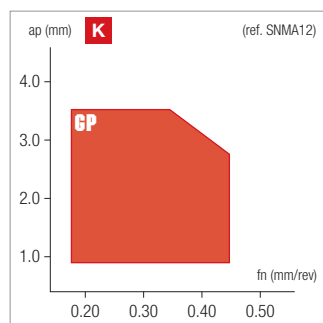
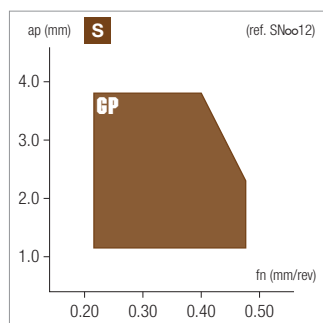
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▼ stock exhaustion



<h1>SN</h1>	CM: Mixed ceramic Al ₂ O ₃ CN: Silicon nitride ceramic Si ₃ N ₄ CR: Whisker reinforced ceramic PVD: Physical vapour deposition							
	CM PVD	CM	CM	CN	CN	CN	CN	CR
ISO - without hole	MAC150	MAC200	MAC250	NSA600	NSA6000	NSN400	NSN450	NWR750
<ul style="list-style-type: none"> 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				

	Designation	RE	IC	S	D1	LE	Stock													
UNIVERSAL		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		●											
		SNGN120716-GP	1.6	12.7	7.94	-	11.1		○											
UNIVERSAL	<p>dimpled type</p>	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							▲	●					
		SNMX120716-GP	1.6	12.7	7.94	-	11.1						▽	▲	●					
REINFORCED		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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

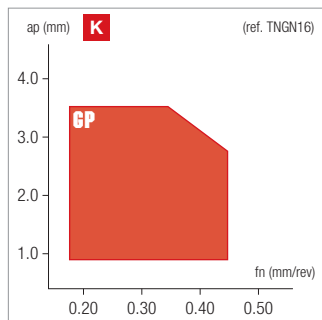
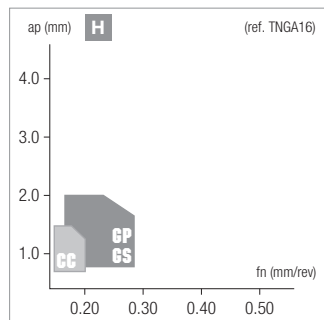
F - ACCESSORIES

G - SPARE PARTS

<h1>TN</h1>	CM: Mixed ceramic Al2O3 CN: Silicon nitride ceramic Si3N4 PVD: Physical vapour deposition				CM	CM	CM	CN
	ISO - with hole	MAC150	MAC200	MAC250	MSN400			
<ul style="list-style-type: none"> 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	100 200	70 180	60 150				

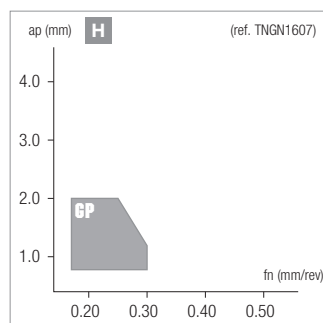
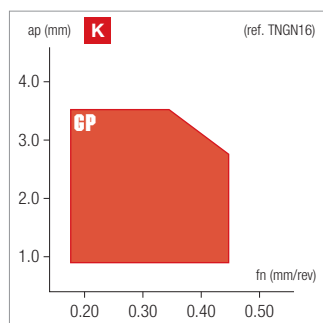
Designation		RE	IC	S	D1	LE	Stock				
UNIVERSAL 	TNGA160404-GP	0.4	9.525	4.76	3.81	16.1	●				
	TNGA160408-GP	0.8	9.525	4.76	3.81	15.7	●	●	○		
	TNGA160412-GP	1.2	9.525	4.76	3.81	15.3	●	●	●		
UNIVERSAL 	TNGA160404-GS	0.4	9.525	4.76	3.81	16.1	●	●			
	TNGA160408-GS	0.8	9.525	4.76	3.81	15.7	●	●			
	TNGA160412-GS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



<h1>TN</h1>	CM: Mixed ceramic Al ₂ O ₃ CN: Silicon nitride ceramic Si ₃ N ₄		CM	CN			
	ISO - without hole		MAC200	MSN400			
<ul style="list-style-type: none"> 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: 1st choice)				
		P M K 400 600 N S H 70 180	400 400 600 1000				
Designation	RE	IC	S	D1	LE	Stock	
UNIVERSAL 	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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

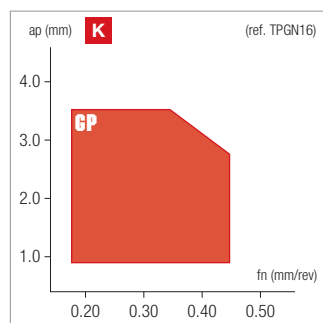
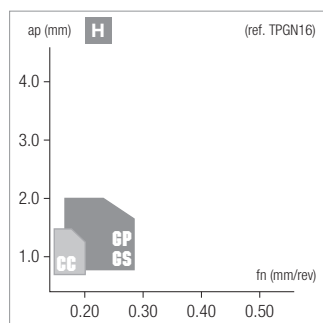
F - ACCESSORIES

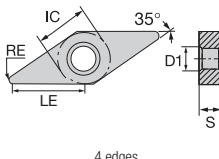
G - SPARE PARTS

<h1>TP</h1>	CM: Mixed ceramic Al2O3 CN: Silicon nitride ceramic Si3N4 PVD: Physical vapour deposition			CM	CM	CN	
	ISO - without hole			MAC150	MAC200	MSN400	
<ul style="list-style-type: none"> 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 	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				

Designation		RE	IC	S	D1	LE	Stock	
UNIVERSAL 	TPGN110302-GP	0.2	6.35	3.18	-	10.8	●	
	TPGN110304-GP	0.4	6.35	3.18	-	10.6	●	○
	TPGN110308-GP	0.8	6.35	3.18	-	10.2	●	●
	TPGN160304-GP	0.4	9.525	3.18	-	16.1	●	○
	TPGN160308-GP	0.8	9.525	3.18	-	15.7	●	●
	TPGN160312-GP	1.2	9.525	3.18	-	15.3		●
UNIVERSAL 	TPGN110302-GS	0.2	6.35	3.18	-	10.8	○	
	TPGN110304-GS	0.4	6.35	3.18	-	10.6	●	
	TPGN110308-GS	0.8	6.35	3.18	-	10.2	○	
	TPGN160304-GS	0.4	9.525	3.18	-	16.1	●	
	TPGN160308-GS	0.8	9.525	3.18	-	15.7	●	
SHARP 	TPGN110302-CC	0.2	6.35	3.18	-	10.8	○	●
	TPGN110304-CC	0.4	6.35	3.18	-	10.6	○	●
	TPGN110308-CC	0.8	6.35	3.18	-	10.2	●	○
	TPGN160304-CC	0.4	9.525	3.18	-	16.1	●	●
	TPGN160308-CC	0.8	9.525	3.18	-	15.7	●	●
TPGN160312-CC	1.2	9.525	3.18	-	15.3		●	

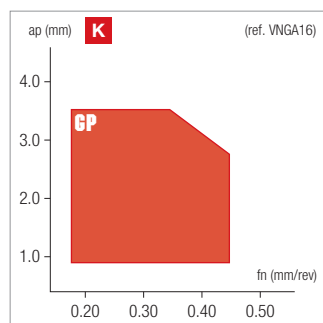
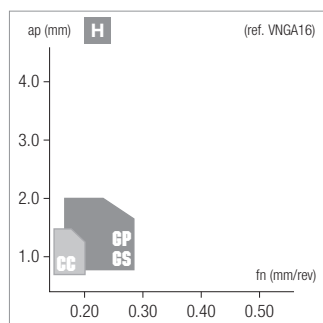
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>VN</h1>	CM: Mixed ceramic Al2O3 CN: Silicon nitride ceramic Si3N4 PVD: Physical vapour deposition				CM	CM	CM	CN
	ISO - with hole				MAC150	MAC200	MAC250	MSN400
<ul style="list-style-type: none"> • 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 KH										
	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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

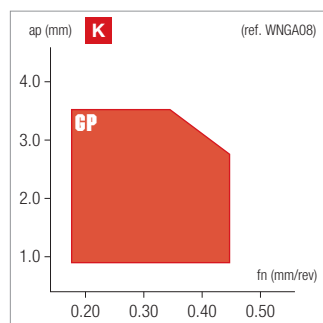
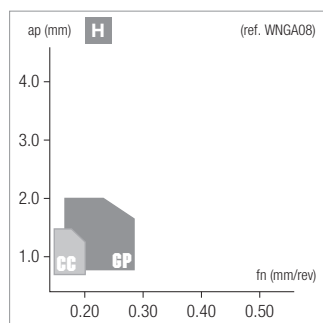
F - ACCESSORIES

G - SPARE PARTS

<h1>WN</h1>	CM: Mixed ceramic Al2O3 CN: Silicon nitride ceramic Si3N4		CM	CN			
	ISO - with hole		MAC200	MSN400			
<ul style="list-style-type: none"> 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	●	●			
	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	400 600	400 1000			
		N					
		S					
		H	70 180				

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

B - THREADING

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

C - GROOVING

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.

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

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
CNMM120412-GP K	1.00	2.50	4.00	0.16	0.31	0.46
CNMM120416-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

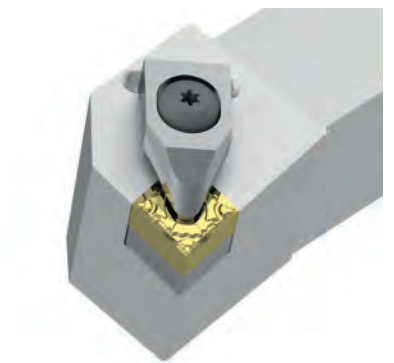
C - GROOVING

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

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

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)
∞	

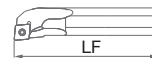
8	HOLDER LENGTH (LF)
Symbol	
F	80 mm
G	90 mm
H	100 mm
J	110 mm
K	125 mm
L	140 mm
M	150 mm
N	160 mm
P	170 mm
Q	180 mm
R	200 mm
X	NIKKO norm

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)
	

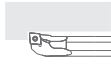

3	HOLDER LENGTH (LF)
	
Symbol	
F	80 mm
G	90 mm
H	100 mm
J	110 mm
K	125 mm
L	140 mm
M	150 mm
N	160 mm
P	170 mm
Q	180 mm
R	200 mm
S	250 mm
T	300 mm
U	350 mm
V	400 mm
W	450 mm
Y	500 mm
X	NIKKO norm

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



























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 ₀₀	SCAC  A214	SCLC  A215	SCLC N  A216	SCMC  A217	
	CN ₀₀	DCLN  A224	MCKN  A225	MCLN  A226	MCRN  A227	PCLN  A228
B - THREADING	DC ₀₀	SDAC  A232	SDJC  A233	SDJC N  A234	SDNC  A235	
	DN ₀₀	DDJN  A244	MDJN  A245	PDJN  A246		
C - GROOVING	SC ₀₀	SSDC  A255				
	SN ₀₀	MSBN  A257	MSDN  A258	MSKN  A259	MSSN  A260	
D - MILLING	TC ₀₀	STAC  A264	STFC  A265	STGC  A266		
	TN ₀₀	DTGN  A271	DTJN  A272	MTJN  A273		
E - DRILLING	VB ₀₀	SVHB  A278	SVJB  A279	SVJB N  A280	SVWB  A281	
	VC ₀₀	SVJC  A283	SVJC N  A284	SVPC  A285	SVVC  A286	
F - ACCESSORIES	VN ₀₀	DVJN  A291	DVVN  A292	MVJN  A293	MVVN  A294	
	WN ₀₀	DWLN  A299	MWLN  A300	PWLN  A301		
G - SPARE PARTS	MicroNega	MCN  A251	MDN  A253			

CC _{oo}	SCLC  DMIN: 8 mm	A <input type="checkbox"/> A218 E <input type="checkbox"/> A220 S <input type="checkbox"/> A221 V <input type="checkbox"/> A222	SCZC  DMIN: 12 mm	S <input type="checkbox"/> A223		
	DCLN  DMIN: 32 mm	A <input type="checkbox"/> A229	MCLN  DMIN: 25 mm	S <input type="checkbox"/> A230	PCLN  DMIN: 32 mm	A <input type="checkbox"/> A231
DC _{oo}	SDQC  DMIN: 13 mm	S <input type="checkbox"/> A236 V <input type="checkbox"/> A237	SDUC  DMIN: 13 mm	A <input type="checkbox"/> A238 E <input type="checkbox"/> A239 S <input type="checkbox"/> A240 V <input type="checkbox"/> A241	SDZC  DMIN: 14 mm	S <input type="checkbox"/> A242 V <input type="checkbox"/> A243
	DDUN  DMIN: 32 mm	A <input type="checkbox"/> A247	MDUN  DMIN: 40 mm	S <input type="checkbox"/> A248		
MCC	MICRO-CC  DMIN: 5 mm	E <input type="checkbox"/> A249 V <input type="checkbox"/> A250				
SC _{oo}	SSKC  DMIN: 16 mm	S <input type="checkbox"/> A256				
SN _{oo}	MSKN  DMIN: 25 mm	S <input type="checkbox"/> A261				
TB _{oo}	STLB  DMIN: 7 mm	V <input type="checkbox"/> A262	STUB  DMIN: 10 mm	S <input type="checkbox"/> A263		
	STFC  DMIN: 12 mm	A <input type="checkbox"/> A267 E <input type="checkbox"/> A268 S <input type="checkbox"/> A269	STLC  DMIN: 14 mm	V <input type="checkbox"/> A270		
TN _{oo}	DTFN  DMIN: 32 mm	A <input type="checkbox"/> A274	MTUN  DMIN: 25 mm	S <input type="checkbox"/> A275		
TP _{oo}	CTUP  DMIN: 16 mm	S <input type="checkbox"/> A276	STUP  DMIN: 12 mm	S <input type="checkbox"/> A277		
VB _{oo}	SVJB  DMIN: 25 mm	V <input type="checkbox"/> A282				
VC _{oo}	SVJC  DMIN: 14 mm	S <input type="checkbox"/> A287	SVQC  DMIN: 22 mm	S <input type="checkbox"/> A288	SVUC  DMIN: 22 mm	S <input type="checkbox"/> A289
					SVZC  DMIN: 30 mm	S <input type="checkbox"/> A290

- 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

A - TURNING

B - THREADING










C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

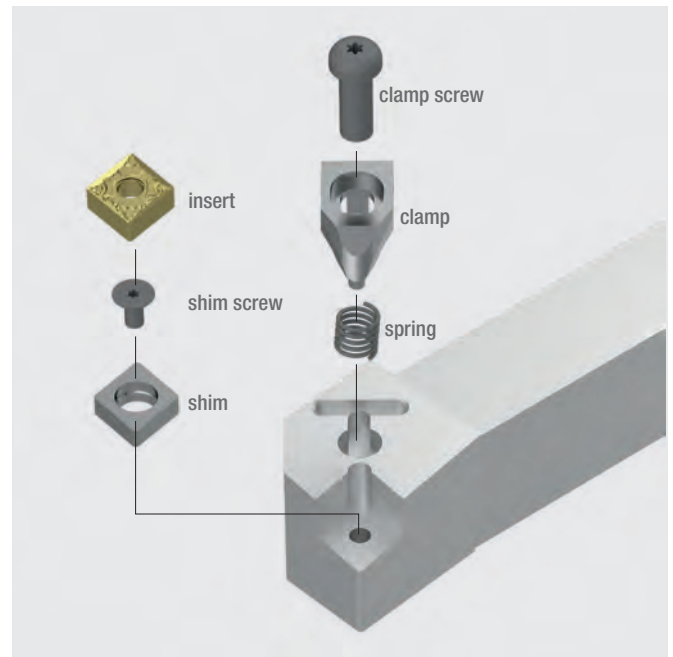
G - SPARE PARTS

VN _∞	MVQN  DMIN: 33 mm S <input type="checkbox"/> A295	MVUN  DMIN: 37 mm S <input type="checkbox"/> A296		
	WB _∞  DMIN: 6 mm V <input type="checkbox"/> A297			
WC _∞  DMIN: 14 mm V <input type="checkbox"/> A298				
WN _∞	DWLN  DMIN: 32 mm A <input type="checkbox"/> A302	MWLN  DMIN: 22 mm S <input type="checkbox"/> A303	PWLN  DMIN: 30 mm A <input type="checkbox"/> A304	
	MicroNega  DMIN: 10 mm V <input type="checkbox"/> A252	MDN  DMIN: 15 mm V <input type="checkbox"/> 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_∞)



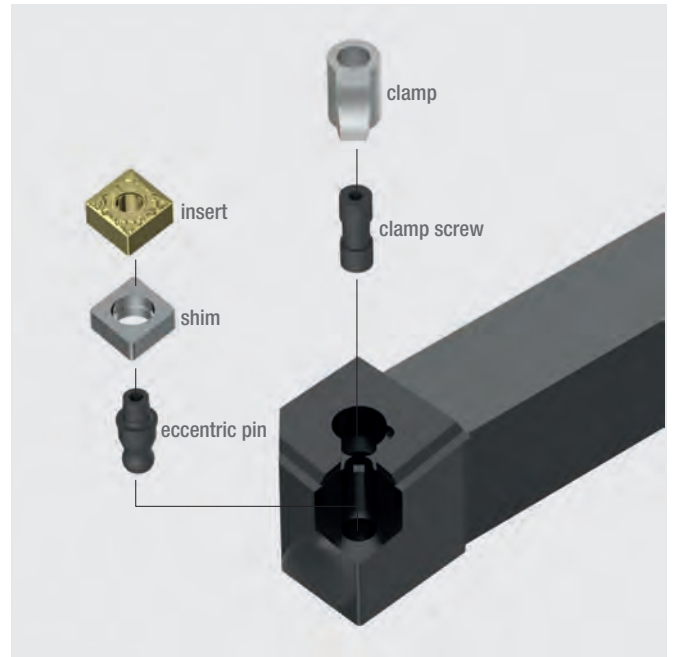
A DTFN (TN_∞)



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.



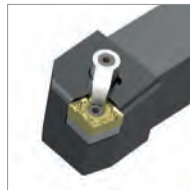
EXTERNAL



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

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

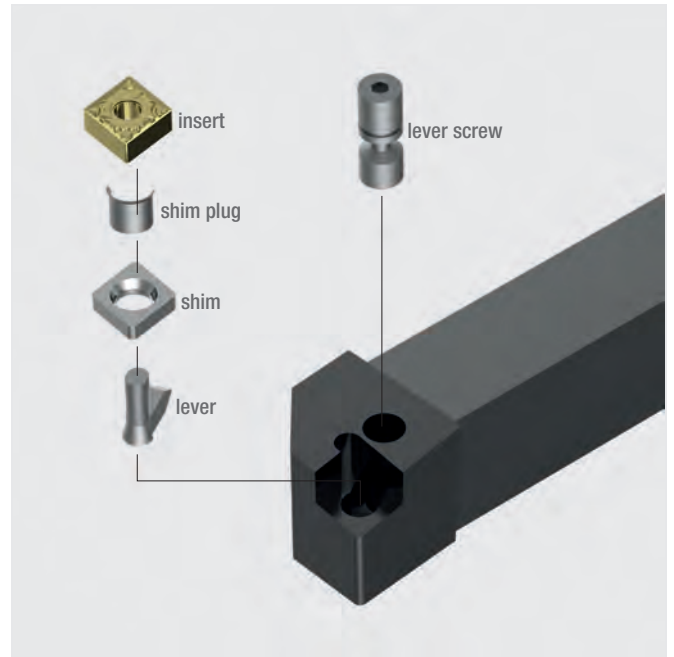
E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

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 ∞)

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

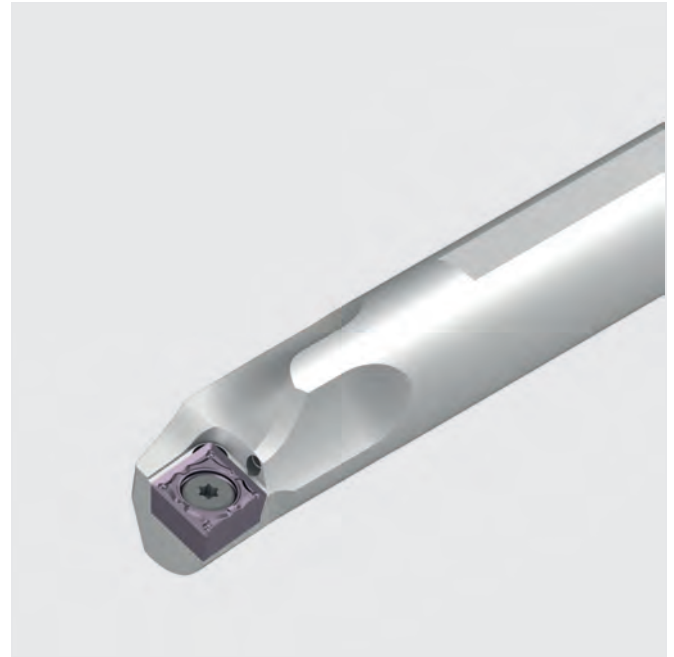
F - ACCESSORIES

G - SPARE PARTS

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.



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS



V SCLC (CC∞)



V SDQC (DC∞)



V SDUC (DC∞)



V SDZC (DC∞)



V STLC (TC∞)



V SVJB (VB∞)



V SWUC (WC∞)



V SIR
Threading



NDB I
Grooving

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

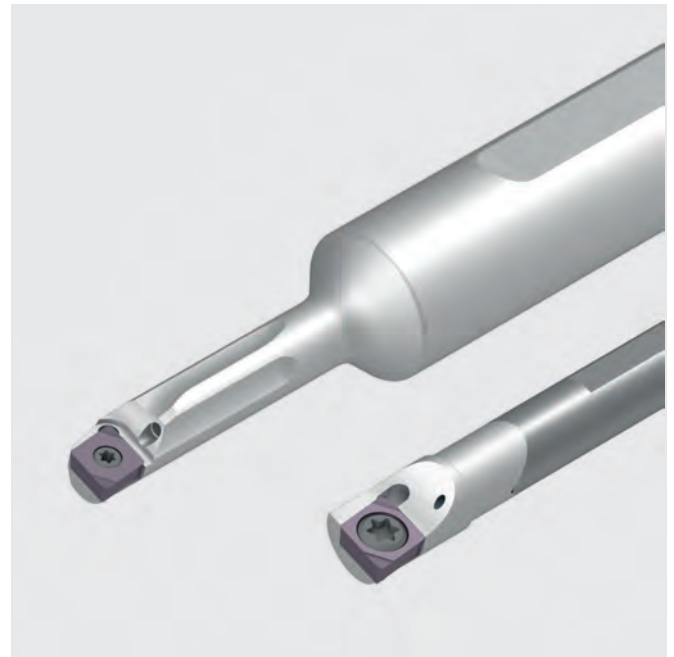
E - DRILLING

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 STLB (TB∞)



V SWUB (WB∞)



V SIR
Threading

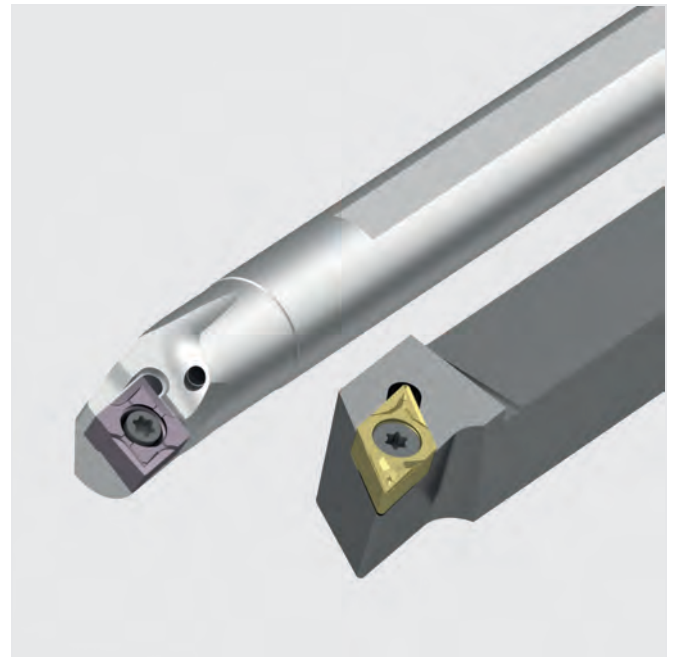
CARBIDE



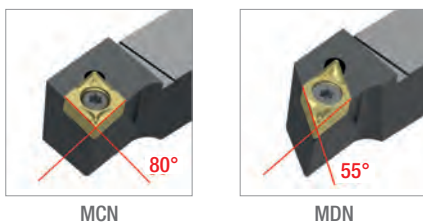
E MCC

MICRONEGA

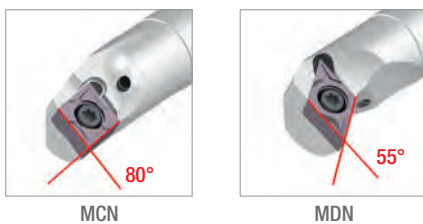
- Small negative inserts providing an alternative to positive inserts for external and internal turning operations.
- From semi-finishing to medium machining, available both with economical sintered chipbreaker (GM) and precision ground type (SS) for higher accuracy and lower cutting force.
- External 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



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

SCAC

ISO - CC

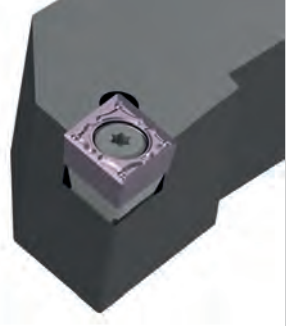
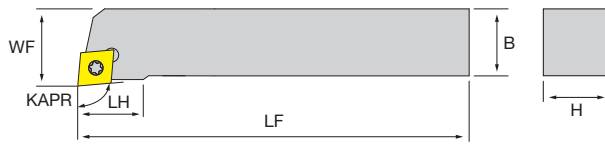
- External turning (KAPR 90°)
- Holds CC-style inserts, tightened by screw
- Available on lathes without offset
- Convenient to change inserts

Right-hand shown

Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SCAC ¹ / _h 0808K06	○	○	8	8	8	125	-	-	90°			CC ₀₀ 0602 ₀₀
NT-SCAC ¹ / _h 1010K06	●	●	10	10	10	125	-	-	90°			CC ₀₀ 0602 ₀₀
NT-SCAC ¹ / _h 1212K06	●	●	12	12	12	125	-	-	90°			CC ₀₀ 0602 ₀₀
NT-SCAC ¹ / _h 1212K09	●	●	12	12	12	125	-	-	90°			CC ₀₀ 09T3 ₀₀
NT-SCAC ¹ / _h 1616K09	●	●	16	16	16	125	-	-	90°			CC ₀₀ 09T3 ₀₀

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

Spare parts	Insert screws	Flag wrenches
NT-SCAC ¹ / _R 0000006	NT-ST25060T07	NT-FT07
NT-SCAC ¹ / _R 0000009	NT-ST35089T15	NT-FT15

<h1>SCLC</h1>	Right-hand shown	
<h2>ISO - CC</h2>		
<ul style="list-style-type: none"> • External turning (KAPR 95°) • Holds CC-style inserts, tightened by screw • Convenient to change inserts 		

Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SCLC ¹ / _r 2020K09S	●	●	20	20	25	125	22	-	95°			CC [∞] 09T3 [∞]
NT-SCLC ¹ / _r 2525M09S	●	●	25	25	32	150	25	-	95°			CC [∞] 09T3 [∞]
NT-SCLC ¹ / _r 2020K12S	●	●	20	20	25	125	22	-	95°			CC [∞] 1204 [∞]
NT-SCLC ¹ / _r 2525M12S	●	●	25	25	32	150	25	-	95°			CC [∞] 1204 [∞]

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

Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SCLC ¹ / _r 0000009S	 NT-SH011	 NT-SR010	 NT-WR035	 NT-ST35115T15	 NT-FT15
NT-SCLC ¹ / _r 0000012S	 NT-SH001	 NT-SR001	 NT-WR040	 NT-ST40140T15	 NT-FT15

- 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

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 ^{∕r} 0808K06N	○	○	8	8	8	100	-	-	95°			CC∞0602∞
NT-SCLC ^{∕r} 1010K06N	●	●	10	10	10	125	-	-	95°			CC∞0602∞
NT-SCLC ^{∕r} 1212K09N	●	●	12	12	12	125	-	-	95°			CC∞09T3∞
NT-SCLC ^{∕r} 1616K09N	●	●	16	16	16	125	-	-	95°			CC∞09T3∞

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

Spare parts	Insert screws	Flag wrenches
NT-SCLC ^{∕r} 0808K06N	NT-ST25060T07	NT-FT07
NT-SCLC ^{∕r} 1010K06N	NT-ST35089T15	NT-FT15

<h1>SCMC</h1>		
<h2>ISO - CC</h2>		
<ul style="list-style-type: none"> • 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°			CC∞∞09T3∞
NT-SCMCN2525M09	○	25	25	12.5	150	-	-	40°			CC∞∞09T3∞

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

Spare parts	Insert screws	Flag wrenches
SCMCN∞∞∞∞∞09	NT-ST35089T15	NT-FT15

- 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

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/ø06	●	●	10	8	5	100	-	-	95°	13°	CC∞0602∞
NT-A10K-SCLC/ø06	●	●	12	10	6	125	-	-	95°	12°	CC∞0602∞
NT-A12M-SCLC/ø06	●	●	14	12	7	150	-	-	95°	9°	CC∞0602∞
NT-A16Q-SCLC/ø06	●	●	18	16	9	180	-	-	95°	7°	CC∞0602∞
NT-A12M-SCLC/ø09	●	●	14	12	7	150	-	-	95°	13°	CC∞09T3∞
NT-A16Q-SCLC/ø09	●	●	18	16	9	180	-	-	95°	9°	CC∞09T3∞
NT-A20R-SCLC/ø09	●	●	22	20	11	200	-	-	95°	5°	CC∞09T3∞

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

Spare parts	Insert screws	Flag wrenches
NT-A08H-SCLC/ø06	NT-ST25050T07	NT-FT07
NT-A10K-SCLC/ø06	NT-ST25060T07	NT-FT07
NT-A12M-SCLC/ø06	NT-ST25060T07	NT-FT07
NT-A16Q-SCLC/ø06	NT-ST25060T07	NT-FT07
NT-A12M-SCLC/ø09	NT-ST35073T15	NT-FT15
NT-A16Q-SCLC/ø09	NT-ST35073T15	NT-FT15
NT-A20R-SCLC/ø09	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

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-A16K-07-SCLC/ø06-L20	●	●	8	16	4	125	20	-	95°	15°		CC∞0602∞
NT-A16K-08-SCLC/ø06-L20	●	●	9	16	4.5	125	20	-	95°	12°		CC∞0602∞
NT-A16K-09-SCLC/ø06-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/ø06-L∞	NT-ST25060T07	NT-FT07

- 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

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

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO		MIID
	L	R										
NT-E08K-SCLC'/#06	●	●	10	8	5	125	-	-	95°	9°		CC∞0602∞
NT-E10K-SCLC'/#06	●	●	12	10	6	125	-	-	95°	7°		CC∞0602∞
NT-E12M-SCLC'/#06	●	●	14	12	7	150	-	-	95°	6°		CC∞0602∞
NT-E12M-SCLC'/#09	●	●	14	12	7	150	-	-	95°	6°		CC∞09T3∞
NT-E16R-SCLC'/#09	●	●	18	16	9	200	-	-	95°	7°		CC∞09T3∞
NT-E20R-SCLC'/#09	●	●	22	20	11	200	-	-	95°	5°		CC∞09T3∞

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

Spare parts	Insert screws	Flag wrenches
NT-E08K-SCLC'/#06	NT-ST25050T07	NT-FT07
NT-E10K-SCLC'/#06	NT-ST25060T07	NT-FT07
NT-E12M-SCLC'/#06	NT-ST25060T07	NT-FT07
NT-E12M-SCLC'/#09	NT-ST35073T15	NT-FT15
NT-E16R-SCLC'/#09	NT-ST35073T15	NT-FT15
NT-E20R-SCLC'/#09	NT-ST35089T15	NT-FT15

<h1>S SCLC</h1>	STEEL	Right-hand shown	
<h2>ISO - CC</h2>			
<ul style="list-style-type: none"> Internal turning (KAPR 95°) Steel boring bar without internal coolant Holds CC-style inserts, tightened by screws 			

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-S08H-SCLC ^{1/2} /r06	●	●	10	8	5	100	-	-	95°	13°	CC∞0602∞
NT-S10K-SCLC ^{1/2} /r06	●	●	12	10	6	125	-	-	95°	12°	CC∞0602∞
NT-S12M-SCLC ^{1/2} /r06	●	●	14	12	7	150	-	-	95°	9°	CC∞0602∞
NT-S16Q-SCLC ^{1/2} /r06	●	●	18	16	9	180	-	-	95°	7°	CC∞0602∞
NT-S12M-SCLC ^{1/2} /r09	●	●	14	12	7	150	-	-	95°	13°	CC∞09T3∞
NT-S16Q-SCLC ^{1/2} /r09	●	●	18	16	9	180	-	-	95°	9°	CC∞09T3∞
NT-S20R-SCLC ^{1/2} /r09	●	●	22	20	11	200	-	-	95°	5°	CC∞09T3∞
NT-S20R-SCLC ^{1/2} /r12	●	●	25	20	13	200	-	-	95°	8°	CC∞1204∞
NT-S25R-SCLC ^{1/2} /r12	●	●	32	25	17	200	-	-	95°	8°	CC∞1204∞
WITH SHIM											
NT-S32S-SCLC ^{1/2} /r12S	●	●	40	32	22	250	-	-	95°	6°	CC∞1204∞
NT-S40T-SCLC ^{1/2} /r12S	●	●	50	40	27	300	-	-	95°	4°	CC∞1204∞

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

Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-S08H-SCLC ^{1/2} /r06	-	-	-	NT-ST25050T07	NT-FT07
NT-S10K-SCLC ^{1/2} /r06	-	-	-	NT-ST25060T07	NT-FT07
NT-S12M-SCLC ^{1/2} /r06	-	-	-	NT-ST25060T07	NT-FT07
NT-S16Q-SCLC ^{1/2} /r06	-	-	-	NT-ST25060T07	NT-FT07
NT-S12M-SCLC ^{1/2} /r09	-	-	-	NT-ST35073T15	NT-FT15
NT-S16Q-SCLC ^{1/2} /r09	-	-	-	NT-ST35073T15	NT-FT15
NT-S20R-SCLC ^{1/2} /r09	-	-	-	NT-ST35089T15	NT-FT15
NT-S20R-SCLC ^{1/2} /r12	-	-	-	NT-ST40115T15	NT-FT15
NT-S25R-SCLC ^{1/2} /r12	-	-	-	NT-ST40115T15	NT-FT15
NT-S32S-SCLC ^{1/2} /r12S	NT-SH001	NT-SR001	NT-WR040	NT-ST40140T15	NT-FT15
NT-S40T-SCLC ^{1/2} /r12S	NT-SH001	NT-SR001	NT-WR040	NT-ST40140T15	NT-FT15

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

V SCLC

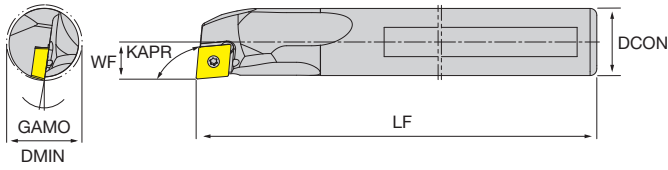
ISO - CC

- 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/φ06-10	●	●	10	8	5	100	-	-	95°	14°		CC∞0602∞
NT-V10K-SCLC/φ06-12	●	●	12	10	6	125	-	-	95°	12°		CC∞0602∞
NT-V12M-SCLC/φ06-14	●	●	14	12	7	150	-	-	95°	10°		CC∞0602∞
NT-V12M-SCLC/φ09-14	●	●	14	12	7	150	-	-	95°	12°		CC∞09T3∞
NT-V16Q-SCLC/φ09-18	●	●	18	16	9	180	-	-	95°	10°		CC∞09T3∞
NT-V20R-SCLC/φ09-22	●	●	22	20	11	200	-	-	95°	8°		CC∞09T3∞
NT-V25S-SCLC/φ09-27	●	●	27	25	13.5	250	-	-	95°	6°		CC∞09T3∞
NT-V20R-SCLC/φ12-25	●	●	25	20	13	200	-	-	95°	7°		CC∞1204∞
NT-V25S-SCLC/φ12-32	●	●	32	25	17	250	-	-	95°	5°		CC∞1204∞

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

Spare parts	Insert screws	Flag wrenches
NT-V08H-SCLC/φ06-10	NT-ST25050T07	NT-FT07
NT-V10K-SCLC/φ06-12	NT-ST25060T07	NT-FT07
NT-V12M-SCLC/φ06-14	NT-ST25060T07	NT-FT07
NT-V12M-SCLC/φ09-14	NT-ST35073T15	NT-FT15
NT-V16Q-SCLC/φ09-18	NT-ST35073T15	NT-FT15
NT-V20R-SCLC/φ09-22	NT-ST35089T15	NT-FT15
NT-V25S-SCLC/φ09-27	NT-ST35089T15	NT-FT15
NT-V20R-SCLC/φ12-25	NT-ST40115T15	NT-FT15
NT-V25S-SCLC/φ12-32	NT-ST40115T15	NT-FT15

<h1>S SCZC</h1>	STEEL	Right-hand shown	
<h2>ISO - CC</h2>			
<ul style="list-style-type: none"> • Internal back turning (KAPR 93°) • Steel boring bar without internal coolant • Holds CC-style inserts, tightened by screws 			

Designation	Stock		DMIN	DCON	WF	WF2	LF	LH	LPR	KAPR	GAMO	MIID
	L	R										
NT-S08H-SCZC ^{1/2} /r06	●	●	12	8	6.5	2.5	100	-	110	93°	13°	CC∞0602∞
NT-S10K-SCZC ^{1/2} /r06	●	●	14	10	7.5	2.5	125	-	135	93°	12°	CC∞0602∞
NT-S12M-SCZC ^{1/2} /r06	●	●	16	12	8.5	2.5	150	-	160	93°	10°	CC∞0602∞
NT-S16Q-SCZC ^{1/2} /r09	●	●	21	16	11.5	3.5	180	-	196	93°	10°	CC∞09T3∞
NT-S20R-SCZC ^{1/2} /r09	●	●	25	20	13.5	3.5	200	-	218	93°	8°	CC∞09T3∞
NT-S25R-SCZC ^{1/2} /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 ^{1/2} /r06	NT-ST25050T07	NT-FT07
NT-S10K-SCZC ^{1/2} /r06	NT-ST25060T07	NT-FT07
NT-S12M-SCZC ^{1/2} /r06	NT-ST25060T07	NT-FT07
NT-S16Q-SCZC ^{1/2} /r09	NT-ST35089T15	NT-FT15
NT-S20R-SCZC ^{1/2} /r09	NT-ST35089T15	NT-FT15
NT-S25R-SCZC ^{1/2} /r09	NT-ST35089T15	NT-FT15

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

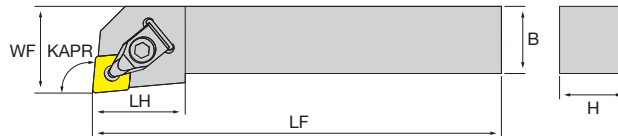
A - TURNING

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



B - THREADING

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

C - GROOVING

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

D - MILLING

E - DRILLING

F - ACCESSORIES

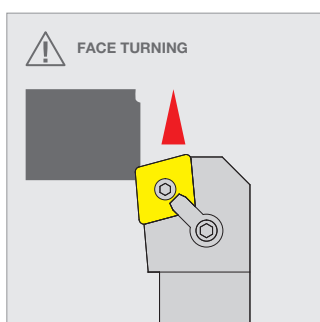
G - SPARE PARTS

<h1>MCKN</h1>	Right-hand shown	
<h2>ISO - CN</h2>		
<ul style="list-style-type: none"> • External turning (KAPR 75°) • 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-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



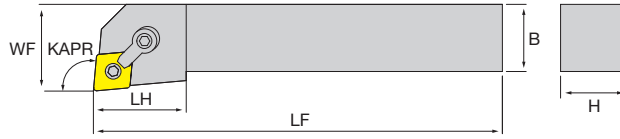
- A - TURNING
- B - THREADING
- C - GROOVING
- D - MILLING
- E - DRILLING
- F - ACCESSORIES
- G - SPARE PARTS

MCLN

ISO - CN

- External turning (KAPR 95°)
- 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-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

A - TURNING

B - THREADING


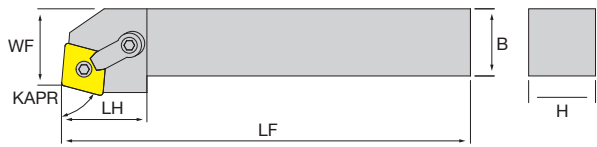
C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

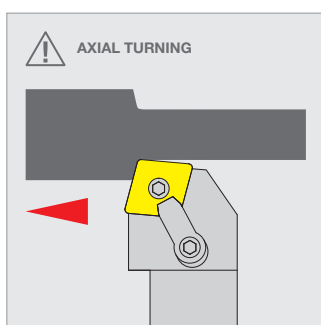
G - SPARE PARTS

<h1>MCRN</h1>	Right-hand shown	
<h2>ISO - CN</h2>		
<ul style="list-style-type: none"> • External turning (KAPR 75°) • Holds CN-style inserts • Double locking with Eccentric pins and bracket. Excellent clamping force • Mostly used for roughing, especially facing 		

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/ᵣ∞∞∞∞12	NT-SH030	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MCRN/ᵣ∞∞∞∞16	NT-SH055	NT-SP040	NT-CS010	NT-SC010	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

PCLN

ISO - CN

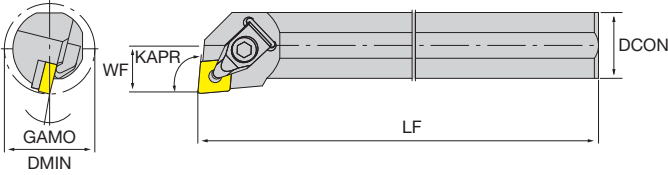

- External turning (KAPR 95°)
- Holds CN-style inserts
- Easy to use Levers-lock clamping
- Suitable for long-chip materials

Right-hand shown

Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-PCLN ¹ / _R 1616H09	●	●	16	16	20	100	20	-	95°			CN∞0903∞
NT-PCLN ¹ / _R 2020K09	●	●	20	20	25	125	20	-	95°			CN∞0903∞
NT-PCLN ¹ / _R 2525M09	●	●	25	25	32	150	23	-	95°			CN∞0903∞
NT-PCLN ¹ / _R 2020K12	●	●	20	20	25	125	26	-	95°			CN∞1204∞
NT-PCLN ¹ / _R 2525M12	●	●	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 ¹ / _R ∞∞∞∞09					
NT-PCLN ¹ / _R ∞∞∞∞12					

<h1 style="margin: 0;">A DCLN</h1>	<p>STEEL ▲ with internal coolant</p> <p style="text-align: right;">Right-hand shown</p> 	
<h2 style="margin: 0;">ISO - CN</h2>		
<ul style="list-style-type: none"> 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 		

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-A25R-DCLN ^{1/8} 12	●	●	32	25	17	200	-	-	95°	14°	CN∞1204∞
NT-A32S-DCLN ^{1/8} 12	●	●	40	32	22	250	-	-	95°	14°	CN∞1204∞
NT-A40T-DCLN ^{1/8} 12	●	●	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 ^{1/8} 12	 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

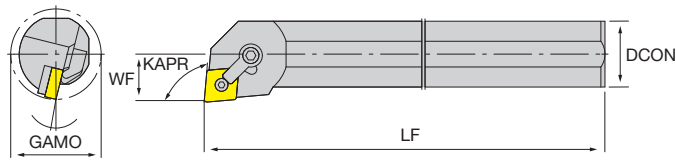
S MCLN

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


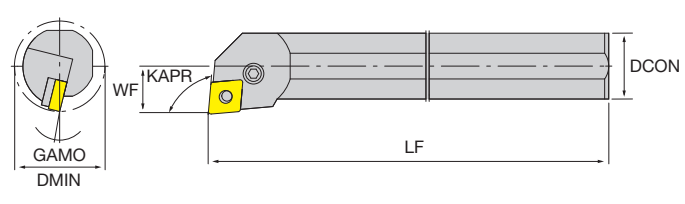
Right-hand shown



Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-S20R-MCLN ^h /r12	●	●	25	20	13	200	-	-	95°	17°	CN∞1204∞
NT-S25R-MCLN ^h /r12	●	●	32	25	17	200	-	-	95°	14°	CN∞1204∞
NT-S32S-MCLN ^h /r12	●	●	40	32	22	250	-	-	95°	14°	CN∞1204∞
NT-S40T-MCLN ^h /r12	●	●	50	40	27	300	-	-	95°	12°	CN∞1204∞
NT-S50U-MCLN ^h /r12	●	●	63	50	35	350	-	-	95°	12°	CN∞1204∞
NT-S40T-MCLN ^h /r16	●	●	50	40	27	300	-	-	95°	11°	CN∞1606∞
NT-S50U-MCLN ^h /r16	●	●	63	50	35	350	-	-	95°	12°	CN∞1606∞
NT-S50U-MCLN ^h /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 ^h /r12	-	NT-SP035	NT-WR025	NT-CS030	NT-SC030	NT-WR025
NT-S25R-MCLN ^h /r12	-	NT-SP035	NT-WR025	NT-CS010	NT-SC008	NT-WR030
NT-S32S-MCLN ^h /r12	NT-SH030	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S40T-MCLN ^h /r12	NT-SH030	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S50U-MCLN ^h /r12	NT-SH030	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S40T-MCLN ^h /r16	NT-SH055	NT-SP040	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S50U-MCLN ^h /r16	NT-SH055	NT-SP040	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S50U-MCLN ^h /r19	NT-SH080	NT-SP050	NT-WR030	NT-CS015	NT-SC070	NT-WR040

<h1>A PCLN</h1>	<p>STEEL</p> <p>with internal coolant</p>	Right-hand shown	
<h2>ISO - CN</h2>			
<ul style="list-style-type: none"> • 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 			

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-A25R-PCLN ^{1/8} 12	●	●	32	25	17	200	-	-	95°	11°	CN∞1204∞
NT-A32S-PCLN ^{1/8} 12	●	●	40	32	22	250	-	-	95°	11°	CN∞1204∞
NT-A40T-PCLN ^{1/8} 12	●	●	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 ^{1/8} 12	-	NT-SR015	NT-LL015	NT-SC015	NT-WR025
NT-A32S-PCLN ^{1/8} 12	NT-SH035	NT-SR020	NT-LL020	NT-SC025	NT-WR030
NT-A40T-PCLN ^{1/8} 12	NT-SH035	NT-SR020	NT-LL020	NT-SC025	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

SDAC

ISO - DC

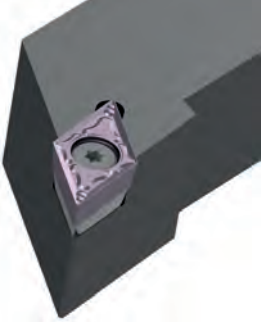
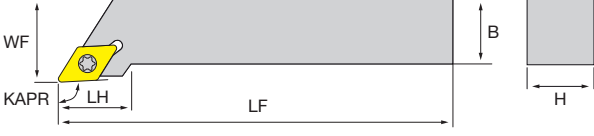
- External turning (KAPR 90°)
- Holds DC-style inserts, tightened by screw
- Convenient to change inserts
- Available on lathes without offset

Right-hand shown

Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SDAC ⁺ /R0808K07	○	○	8	8	8	125	-	-	90°			DC∞0702∞
NT-SDAC ⁺ /R1010K07	●	●	10	10	10	125	-	-	90°			DC∞0702∞
NT-SDAC ⁺ /R1212K07	●	●	12	12	12	125	-	-	90°			DC∞0702∞
NT-SDAC ⁺ /R1212K11	●	●	12	12	12	125	-	-	90°			DC∞11T3∞
NT-SDAC ⁺ /R1616K11	●	●	16	16	16	125	-	-	90°			DC∞11T3∞

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

Spare parts	Insert screws	Flag wrenches
NT-SDAC ⁺ /R∞∞∞∞07	NT-ST25060T07	NT-FT07
NT-SDAC ⁺ /R∞∞∞∞11	NT-ST35089T15B	NT-FT15

<h1>SDJC</h1>	Right-hand shown	
<h2>ISO - DC</h2>		
<ul style="list-style-type: none"> • External turning (KAPR 93°) • 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
	L	R										
WITHOUT SHIM												
NT-SDJC/ra1616H11	●	●	16	16	20	100	18	-	93°			DCoo11T3oo
NT-SDJC/ra2020K11	●	●	20	20	25	125	23	-	93°			DCoo11T3oo
NT-SDJC/ra2525M11	●	●	25	25	32	150	27	-	93°			DCoo11T3oo
WITH SHIM												
NT-SDJC/ra2020K11S	●	●	20	20	25	125	22	-	93°			DCoo11T3oo
NT-SDJC/ra2525M11S	●	●	25	25	32	150	25	-	93°			DCoo11T3oo

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

Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SDJC/rooooo11	-	-	-	NT-ST35089T15B	NT-FT15
NT-SDJC/rooooo11S	NT-SH007	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15

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

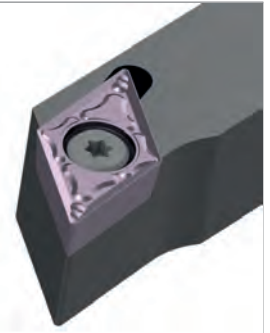
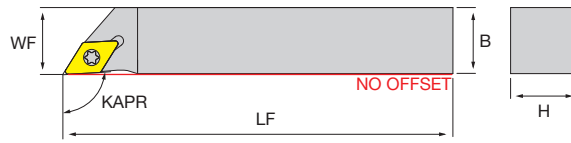
A - TURNING

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



B - THREADING

Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SDJC ⁺ / _R 0808K07N	○	○	8	8	8	125	-	-	93°			DC∞0702∞
NT-SDJC ⁺ / _R 1010K07N	●	●	10	10	10	125	-	-	93°			DC∞0702∞
NT-SDJC ⁺ / _R 1212K07N	○	○	12	12	12	125	-	-	93°			DC∞0702∞
NT-SDJC ⁺ / _R 1212K11N	●	●	12	12	12	125	-	-	93°			DC∞11T3∞
NT-SDJC ⁺ / _R 1616K11N	●	●	16	16	16	125	-	-	93°			DC∞11T3∞

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

C - GROOVING

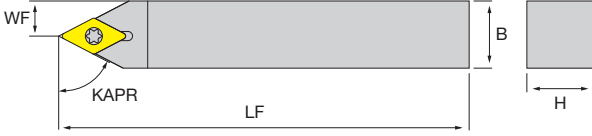
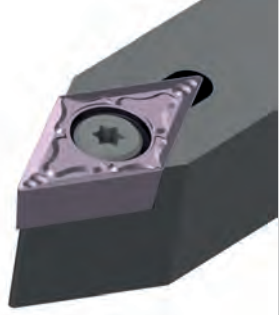
Spare parts	Insert screws	Flag wrenches
NT-SDJC ⁺ / _R ∞∞∞∞07N	NT-ST25060T07	NT-FT07
NT-SDJC ⁺ / _R ∞∞∞∞11N	NT-ST35089T15B	NT-FT15

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

SDNC		
ISO - DC		
<ul style="list-style-type: none"> • 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°		DC∞∞0702∞∞
NT-SDNCN1010H07	○	10	10	5	100	-	-	62.5°		DC∞∞0702∞∞
NT-SDNCN1212H11	●	12	12	6	100	-	-	62.5°		DC∞∞11T3∞∞
NT-SDNCN1616H11	●	16	16	8	100	-	-	62.5°		DC∞∞11T3∞∞
NT-SDNCN2020K11	●	20	20	10	125	-	-	62.5°		DC∞∞11T3∞∞
NT-SDNCN2525M11	●	25	25	12.5	150	-	-	62.5°		DC∞∞11T3∞∞
WITH SHIM										
NT-SDNCN2020K11S	○	20	20	10	125	-	-	62.5°		DC∞∞11T3∞∞
NT-SDNCN2525M11S	○	25	25	12.5	150	-	-	62.5°		DC∞∞11T3∞∞

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

Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SDNCN∞∞∞∞07	-	-	-	NT-ST25060T07	NT-FT07
NT-SDNCN∞∞∞∞11	-	-	-	NT-ST35089T15B	NT-FT15
NT-SDNCN∞∞∞∞11S	NT-SH007	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15

- 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

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 ^{1/8} 07	●	●	13	10	7	150	-	-	107.5°	10°	DC∞0702∞
NT-S12M-SDQC ^{1/8} 07	●	●	16	12	9	150	-	-	107.5°	8°	DC∞0702∞
NT-S16Q-SDQC ^{1/8} 07	●	●	20	16	11	180	-	-	107.5°	6°	DC∞0702∞
NT-S20R-SDQC ^{1/8} 07	●	●	25	20	13	200	-	-	107.5°	6°	DC∞0702∞
NT-S16Q-SDQC ^{1/8} 11	●	●	20	16	11	180	-	-	107.5°	6°	DC∞11T3∞
NT-S20R-SDQC ^{1/8} 11	●	●	25	20	13	200	-	-	107.5°	8°	DC∞11T3∞
NT-S25R-SDQC ^{1/8} 11	●	●	32	25	17	200	-	-	107.5°	4°	DC∞11T3∞
NT-S32S-SDQC ^{1/8} 11	●	●	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 ^{1/8} 07	NT-ST25060T07	NT-FT07
NT-S∞∞-SDQC ^{1/8} 11	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 - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

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 [▲] /r07	●	●	13	10	7	150	-	-	93°	10°	DC∞0702∞
NT-A12M-SDUC [▲] /r07	●	●	16	12	9	150	-	-	93°	8°	DC∞0702∞
NT-A16Q-SDUC [▲] /r07	●	●	20	16	1	180	-	-	93°	6°	DC∞0702∞
NT-A20R-SDUC [▲] /r07	●	●	25	20	13	200	-	-	93°	5°	DC∞0702∞
NT-A16Q-SDUC [▲] /r11	●	●	20	16	1	180	-	-	93°	7°	DC∞11T3∞
NT-A20R-SDUC [▲] /r11	●	●	25	20	13	200	-	-	93°	8°	DC∞11T3∞

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

Spare parts	Insert screws	Flag wrenches
NT-A∞∞-SDUC [▲] /r07	NT-ST25060T07	NT-FT07
NT-A∞∞-SDUC [▲] /r11	NT-ST35089T15B	NT-FT15

<h1 style="margin: 0;">E SDUC</h1>	<p>CARBIDE with internal coolant</p> <p style="text-align: right;">Right-hand shown</p>	
<h2 style="margin: 0;">ISO - DC</h2>		
<ul style="list-style-type: none"> Internal turning (KAPR 93°) Carbide boring bar with internal coolant through. Maximum overhang: 7xDCON Holds DC-style inserts, tightened by screws 		

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∞0702∞
NT-E12M-SDUC ^{1/8} 07	●	●	16	12	9	150	-	-	93°	8°	DC∞0702∞
NT-E16R-SDUC ^{1/8} 11	●	●	20	16	11	200	-	-	93°	7°	DC∞11T3∞
NT-E20R-SDUC ^{1/8} 11	●	●	25	20	13	200	-	-	93°	8°	DC∞11T3∞

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

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

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING

B - THREADING

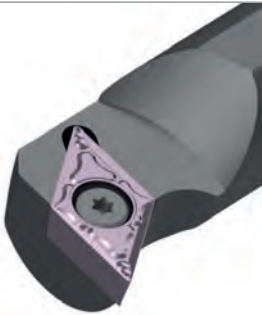
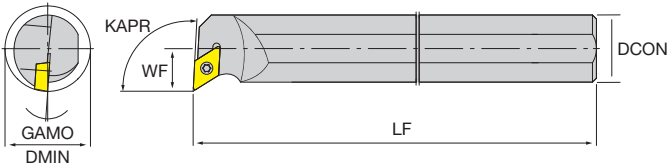
C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

<h1>S SDUC</h1>	STEEL	Right-hand shown	
<h2>ISO - DC</h2>			
<ul style="list-style-type: none"> • Internal turning (KAPR 93°) • Steel boring bar without internal coolant • Holds DC-style inserts, tightened by screws 			

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-S10M-SDUC ^{1/8} 07	●	●	13	10	7	150	-	-	93°	10°	DC [∞] 0702 [∞]
NT-S12M-SDUC ^{1/8} 07	●	●	16	12	9	150	-	-	93°	8°	DC [∞] 0702 [∞]
NT-S16Q-SDUC ^{1/8} 07	●	●	20	16	11	180	-	-	93°	6°	DC [∞] 0702 [∞]
NT-S20R-SDUC ^{1/8} 07	●	●	25	20	13	200	-	-	93°	5°	DC [∞] 0702 [∞]
NT-S16Q-SDUC ^{1/8} 11	●	●	20	16	11	180	-	-	93°	7°	DC [∞] 11T3 [∞]
NT-S20R-SDUC ^{1/8} 11	●	●	25	20	13	200	-	-	93°	8°	DC [∞] 11T3 [∞]
NT-S25R-SDUC ^{1/8} 11	●	●	32	25	17	200	-	-	93°	4°	DC [∞] 11T3 [∞]
NT-S32S-SDUC ^{1/8} 11	●	●	40	32	22	250	-	-	93°	4°	DC [∞] 11T3 [∞]
NT-S40T-SDUC ^{1/8} 11	○	○	50	40	24	300	-	-	93°	2°	DC [∞] 11T3 [∞]

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

Spare parts	Insert screws	Flag wrenches
NT-S [∞] -SDUC ^{1/8} 07	 NT-ST25060T07	 NT-FT07
NT-S [∞] -SDUC ^{1/8} 11	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°	DC∞0702∞
NT-V12M-SDUC ^{1/8} -07-16	●	●	16	12	9.7	150	-	-	93°	5°	DC∞0702∞
NT-V16Q-SDUC ^{1/8} -07-20	●	●	20	16	11.7	180	-	-	93°	5°	DC∞0702∞
NT-V20R-SDUC ^{1/8} -07-25	●	●	25	20	13.7	200	-	-	93°	5°	DC∞0702∞
NT-V16Q-SDUC ^{1/8} -11-23	●	●	23	16	14.5	180	-	-	93°	5°	DC∞11T3∞
NT-V20R-SDUC ^{1/8} -11-27	●	●	27	20	16.5	200	-	-	93°	5°	DC∞11T3∞
NT-V25S-SDUC ^{1/8} -11-32	●	●	32	25	19	250	-	-	93°	5°	DC∞11T3∞

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

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



A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

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 / _h 07	○	○	14	10	8.5	3.5	139	11	150	93°	10°	DC∞0702∞
NT-S12M-SDZC ¹ / _h 07	●	●	17	12	10.5	4.5	139	11	150	93°	9°	DC∞0702∞
NT-S16Q-SDZC ¹ / _h 07	●	●	21	16	12.5	4.5	169	11	180	93°	8°	DC∞0702∞
NT-S20R-SDZC ¹ / _h 11	●	●	26	20	15.5	5.5	184	16	200	93°	8°	DC∞11T3∞
NT-S25R-SDZC ¹ / _h 11	○	○	33	25	18	5.5	180	20	200	93°	6°	DC∞11T3∞
NT-S32S-SDZC ¹ / _h 11	○	○	38	32	21.5	5.5	230	20	250	93°	4°	DC∞11T3∞

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

Spare parts	Insert screws	Flag wrenches
NT-S∞∞-SDZC ¹ / _h 07	NT-ST25060T07	NT-FT07
NT-S∞∞-SDZC ¹ / _h 11	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 Right-hand shown

VORTEX
▲ with internal coolant

Standard design Right-hand shown

VORTEX
▲ with internal coolant

Designation	Stock		DMIN	DCON	WF	WF2	LF	LH	LPR	KAPR	GAMO	MIID
	L	R										
REDUCED NECK												
NT-V16Q-SDZC ^{1/4} /h07-14	●	●	14	16	12.4	4.4	170	30	180	93°	5°	DC∞0702∞
NT-V20R-SDZC ^{1/4} /h11-20	●	●	20	20	16.1	6.1	185	40	200	93°	5°	DC∞11T3∞
STANDARD DESIGN												
NT-V10L-SDZC ^{1/4} /h07-14	●	●	14	10	8.7	3.7	130.5	14	140	93°	5°	DC∞0702∞
NT-V12M-SDZC ^{1/4} /h07-16	●	●	16	12	9.7	3.7	139.5	10.5	150	93°	5°	DC∞0702∞
NT-V16Q-SDZC ^{1/4} /h07-20	●	●	20	16	11.7	3.7	169.5	17.5	180	93°	5°	DC∞0702∞
NT-V16Q-SDZC ^{1/4} /h11-23	●	●	23	16	14.5	6.5	165	15	180	93°	5°	DC∞11T3∞
NT-V20R-SDZC ^{1/4} /h11-27	●	●	27	20	16.5	6.5	185	15	200	93°	5°	DC∞11T3∞
NT-V25S-SDZC ^{1/4} /h11-32	●	●	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 ^{1/4} /h07-∞	NT-ST25060T07	NT-FT07
NT-V∞-SDZC ^{1/4} /h11-∞	NT-ST35089T15B	NT-FT15

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

A - TURNING

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

B - THREADING

Designation	Stock		H	B	WF	LF	LH	LPR	KAPR		MIID
	L	R									
NT-DDJN/1616H11X	●	●	16	16	20	100	36	-	93°		DN∞1104∞
NT-DDJN/2020K11X	●	●	20	20	25	125	36	-	93°		DN∞1104∞
NT-DDJN/2525M11X	●	●	25	25	32	150	36	-	93°		DN∞1104∞
NT-DDJN/2020K1506X	●	●	20	20	25	125	43	-	93°		DN∞1506∞
NT-DDJN/2525M1506X	●	●	25	25	32	150	43	-	93°		DN∞1506∞
NT-DDJN/3225P1506X	●	●	32	25	32	170	43	-	93°		DN∞1506∞

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

C - GROOVING

Spare parts	Shim	Shim screws	L wrench	Clamp	Springs	Clamp screws	L wrench
NT-DDJN/∞∞∞∞11X							
NT-DDJN/∞∞∞∞1506X							

D - MILLING


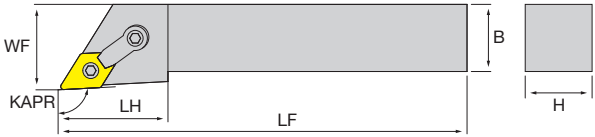
E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

DN∞1504∞

NT-SH025
For 04 thickness, please order separately the correct shim

<h1>MDJN</h1>	Right-hand shown	
<h2>ISO - DN</h2>		
<ul style="list-style-type: none"> • External turning (KAPR 93°) • Holds DN-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-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


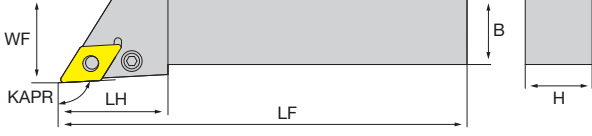
Spare parts	Shim	Eccentric pins	Clamp	Clamp screws	L wrench
NT-MDJN [▲] /r∞∞∞∞∞1506	 NT-SH045	 NT-SP025	 NT-CS025	 NT-SC010	 NT-WR030

 DN∞1504∞



NT-SH025
For 04 thickness, please order separately the correct shim

A - TURNING

<h1>PDJN</h1>	Right-hand shown	
<h2>ISO - DN</h2>		
<ul style="list-style-type: none"> • External turning (KAPR 93°) • Holds DN-style inserts • Easy to use Levers-lock clamping • Suitable for long-chip materials 		

B - THREADING

Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-PDJN [▲] /R2525M1506	●	●	25	25	32	150	36	-	93°			DN∞1506∞

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

C - GROOVING

Spare parts	Shim	Shim plugs	Levers	Levers screws	L wrench
NT-PDJN [▲] /R∞∞∞∞1506	 NT-SH020	 NT-SR020	 NT-LL020	 NT-SC020	 NT-WR020

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

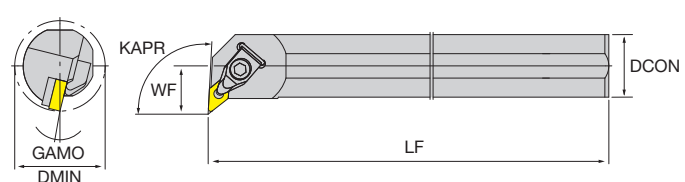
A DDUN


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 ¹ /r1506	●	●	32	25	17	200	-	-	93°	16°	DN∞1506∞
NT-A32S-DDUN ¹ /r1506	●	●	40	32	22	250	-	-	93°	12°	DN∞1506∞
NT-A40T-DDUN ¹ /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 ¹ /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

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

<h1>S MDUN</h1>	STEEL	Right-hand shown	
<h2>ISO - DN</h2>			
<ul style="list-style-type: none"> Internal turning (KAPR 93°) Steel boring bar without internal coolant Holds DN-style inserts Double locking with Eccentric pins and bracket. Excellent clamping force 			

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-S32S-MDUN/1506	●	●	40	32	22	250	-	-	93°	17°	DN∞1506∞
NT-S40T-MDUN/1506	●	●	50	40	27	300	-	-	93°	15°	DN∞1506∞
NT-S50U-MDUN/1506	●	●	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/1506					
NT-S40T-MDUN/1506					
NT-S50U-MDUN/1506					

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- ¹ / _R H	●		6	5	3	100	-	-	95°	13°	MCC.Roo
WITH INTERNAL COOLANT											
NT-E04G-MICRO-CC- ¹ / _R H	●		5	4	2.5	90	-	-	95°	15°	MCC.Roo
NT-E05H-MICRO-CC- ¹ / _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 ⁰⁰⁰ -MICRO-CC-RH	NT-ST16031T06	NT-FT06
NT-E ⁰⁰⁰ -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

V MICRO-CC

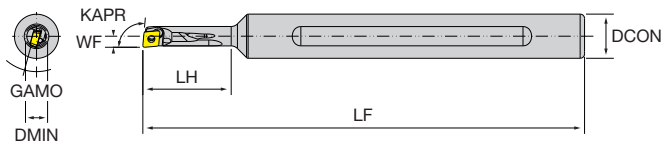
ISO - MCC

- 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.R∞
NT-V10H-MICRO-CC-1/8H-06		●	6	10	3	100	25	-	95°	13°	MCC.R∞

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

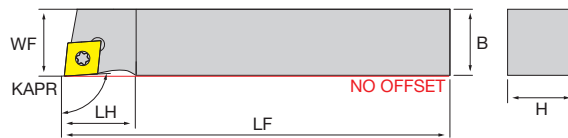
Spare parts	Insert screws	Flag wrenches
		
NT-V10H-MICRO-CC-RH-∞	NT-ST16031T06	NT-FT06

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

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

V MICRO-CN

MicroNega - 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-V ∞ -MICRO-CN-1/8H- ∞	 NT-ST30070T10	 NT-FT10

EXCELLENT STABILITY

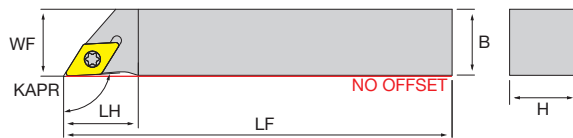
The design of MCN inserts was done with great attention to the connection surfaces, to achieve a great stability and reliability

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

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

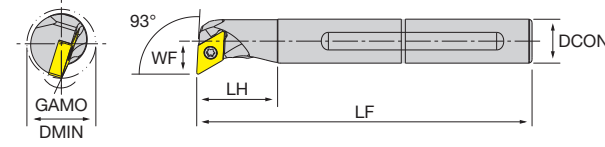
V MICRO-DN


MicroNega - 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-R∞
NT-V12M-MICRO-DN-1/8H-16	●	●	16	12	9	150	22	-	93°	17°	MDN-R∞
NT-V16Q-MICRO-DN-1/8H-20	●	●	20	16	11	180	22	-	93°	15°	MDN-R∞
NT-V20R-MICRO-DN-1/8H-25	●	●	25	20	13	200	23	-	93°	13°	MDN-R∞

● 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

<h1>SSDC</h1>		
<p>ISO - SC</p> <ul style="list-style-type: none"> • 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°		SC∞09T3∞
NT-SSDCN2525M09	●	25	25	12.5	150	-	-	45°		SC∞09T3∞
NT-SSDCN2020K12	●	20	20	10	125	-	-	45°		SC∞1204∞
NT-SSDCN2525M12	●	25	25	12.5	150	-	-	45°		SC∞1204∞

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

Spare parts	Insert screws	Flag wrenches
NT-SSDCN∞∞∞∞09	NT-ST40090T15	NT-FT15
NT-SSDCN∞∞∞∞12	NT-ST40115T15	NT-FT15

- 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

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 / _h 09	●	●	16	12	8.5	147	-	150	75°	12°		SC [∞] 09T3 [∞]
NT-S16Q-SSKC ¹ / _h 09	●	●	20	16	11	177	-	180	75°	11°		SC [∞] 09T3 [∞]
NT-S20R-SSKC ¹ / _h 09	●	●	25	20	13	196	-	200	75°	6°		SC [∞] 09T3 [∞]
NT-S25R-SSKC ¹ / _h 09	●	●	31	25	15	198	-	200	75°	6°		SC [∞] 09T3 [∞]
NT-S25R-SSKC ¹ / _h 12	●	●	32	25	17	196	-	200	75°	7°		SC [∞] 1204 [∞]
NT-S32S-SSKC ¹ / _h 12	●	●	40	32	22	246	-	250	75°	7°		SC [∞] 1204 [∞]

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

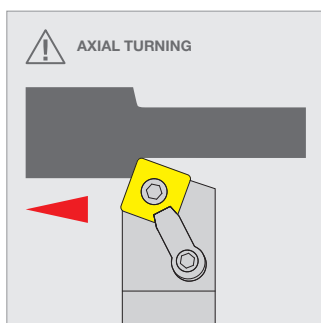
Spare parts	Insert screws	Flag wrenches
NT-S [∞] -SSKC ¹ / _h 09	NT-ST40090T15	NT-FT15
NT-S [∞] -SSKC ¹ / _h 12	NT-ST40115T15	NT-FT15

<h1>MSBN</h1>	Right-hand shown	
<h2>ISO - SN</h2>		
<ul style="list-style-type: none"> External turning (KAPR 75°) 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-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

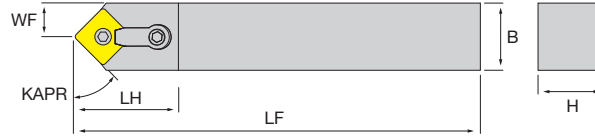


A - TURNING

MSDN

ISO - SN

- External turning (KAPR 45°), Neutral position
- Holds SN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force



B - THREADING

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

C - GROOVING


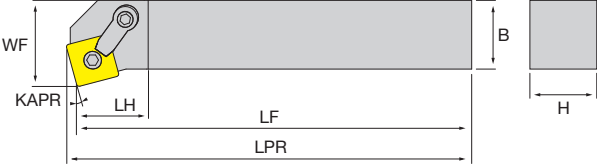
Spare parts	Shim	Eccentric pins	Clamp	Clamp screws	L wrench
NT-MSDNN∞∞∞∞12	 NT-SH070	 NT-SP010	 NT-CS010	 NT-SC010	 NT-WR030

D - MILLING

E - DRILLING

F - ACCESSORIES

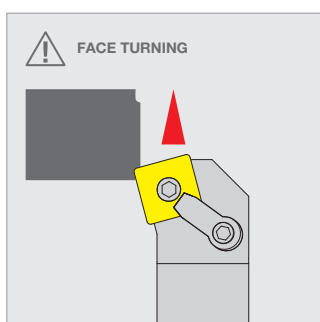
G - SPARE PARTS

<h1>MSKN</h1>	Right-hand shown	
<h2>ISO - SN</h2>		
<ul style="list-style-type: none"> • External turning (KAPR 75°) • 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-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

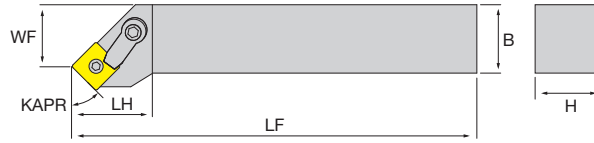


MSSN

ISO - SN

- External turning (KAPR 45°)
- 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-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

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

<h1 style="margin: 0;">S MSKN</h1>	<p>STEEL Right-hand shown</p>	
<h2 style="margin: 0;">ISO - SN</h2>		
<ul style="list-style-type: none"> Internal turning (KAPR 75°) Steel boring bar without internal coolant Holds SN-style inserts Double locking with Eccentric pins and bracket. Excellent clamping force 		

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-S20R-MSKN ^h /r12	●	●	25	20	13	200	-		75°	17°	SN∞1204∞
NT-S25R-MSKN ^h /r12	●	●	32	25	17	200	-		75°	14°	SN∞1204∞
NT-S32S-MSKN ^h /r12	●	●	40	32	22	250	-		75°	14°	SN∞1204∞
NT-S40T-MSKN ^h /r12	●	●	50	40	27	300	-		75°	15°	SN∞1204∞
NT-S50U-MSKN ^h /r12	●	●	63	50	35	350	-		75°	12°	SN∞1204∞
NT-S50U-MSKN ^h /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 ^h /r12	-	NT-SP035	NT-WR025	NT-CS030	NT-SC030	NT-WR025
NT-S25R-MSKN ^h /r12	-	NT-SP035	NT-WR025	NT-CS010	NT-SC008	NT-WR030
NT-S32S-MSKN ^h /r12	NT-SH070	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S40T-MSKN ^h /r12	NT-SH070	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S50U-MSKN ^h /r12	NT-SH070	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-WR030
NT-S50U-MSKN ^h /r19	NT-SH090	NT-SP050	NT-WR030	NT-CS015	NT-SC070	NT-WR040

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

V STLB

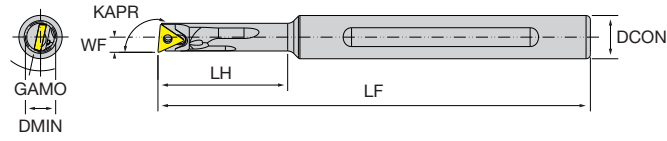
ISO - TB

- 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 /#06-07		●	7	10	3.5	100	30	-	95°	12°	TB∞0601∞
NT-V10H-STLB ¹ /#06-08		●	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 /#06-∞	 NT-ST20038T06

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

<h1 style="margin: 0;">S STUB</h1>	<p>STEEL Right-hand shown</p>	
<h2 style="margin: 0;">ISO - TB</h2> <ul style="list-style-type: none"> Internal turning (KAPR 93°) Steel boring bar without internal coolant Holds TB style inserts, tightened by screws 		

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-S08H-STUB ^{1/2} /r06	●	●	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 ^{1/2} /r06	 NT-ST20038T06	 NT-FT06

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

A - TURNING

STAC

ISO - TC

- External turning (KAPR 90°)
- Holds TC-style inserts, tightened by screw
- Convenient to change inserts

Right-hand shown

B - THREADING

Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-STAC ¹ / _R 0808H09	○	○	8	8	8.5	100	-	-	90°			TC∞0902∞
NT-STAC ¹ / _R 1010H09	○	○	10	10	10.5	100	-	-	90°			TC∞0902∞
NT-STAC ¹ / _R 1212H11	●	●	12	12	12.5	100	-	-	90°			TC∞1102∞
NT-STAC ¹ / _R 1616H11	●	●	16	16	16.5	100	-	-	90°			TC∞1102∞

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

C - GROOVING

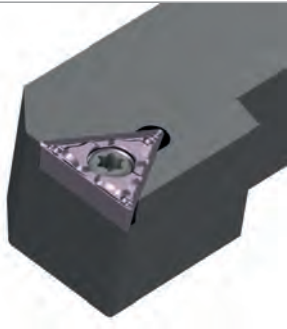
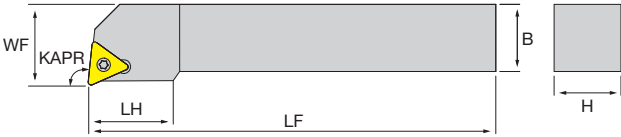
Spare parts	Insert screws	Flag wrenches
NT-STAC ¹ / _R ∞∞∞∞09	NT-ST22049T07	NT-FT07
NT-STAC ¹ / _R ∞∞∞∞11	NT-ST25060T07	NT-FT07

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

STFC	Right-hand shown	
ISO - TC		
<ul style="list-style-type: none"> • External turning (KAPR 91°) • Holds TC-style inserts, tightened by screw • Convenient to change inserts 		

Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-STFC/r0808H09	○	○	8	8	10	100	12	-	91°			TC∞0902∞
NT-STFC/r1010H09	○	○	10	10	12	100	12	-	91°			TC∞0902∞
NT-STFC/r1212H11	●	●	12	12	16	100	17	-	91°			TC∞1102∞
NT-STFC/r1616H11	○	○	16	16	20	100	18	-	91°			TC∞1102∞
NT-STFC/r2020K16	●	●	20	20	25	125	22	-	91°			TC∞16T3∞
NT-STFC/r2525M16	●	●	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/r∞∞∞∞09	NT-ST22049T07	NT-FT07
NT-STFC/r∞∞∞∞11	NT-ST25060T07	NT-FT07
NT-STFC/r∞∞∞∞16	NT-ST40090T15	NT-FT15

- 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

STGC

ISO - TC

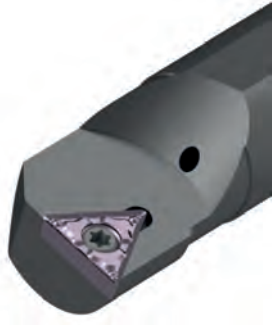
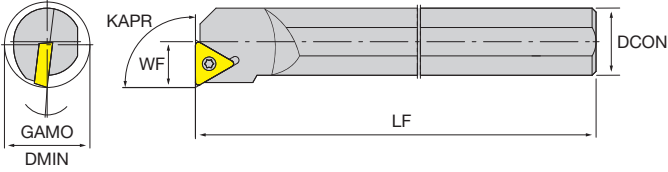
- External turning (KAPR 91°)
- Holds TC-style inserts, tightened by screw
- Convenient to change inserts

Right-hand shown

Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-STGC [▲] / _R 1212H11	○	○	12	12	16	100	17	-	91°			TC [∞] 1102 [∞]
NT-STGC [▲] / _R 1616H11	○	○	16	16	20	100	18	-	91°			TC [∞] 1102 [∞]
NT-STGC [▲] / _R 2020K16	●	●	20	20	25	125	22	-	91°			TC [∞] 16T3 [∞]
NT-STGC [▲] / _R 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-STGC [▲] / _R 11	NT-ST25060T07	NT-FT07
NT-STGC [▲] / _R 16	NT-ST40090T15	NT-FT15

<h1 style="margin: 0;">A STFC</h1>	<p>STEEL</p> <p>▲ with internal coolant</p> <p style="text-align: right;">Right-hand shown</p>	
<h2 style="margin: 0;">ISO - TC</h2> <ul style="list-style-type: none"> Internal turning (KAPR 91°) Steel boring bar with internal coolant through Holds TC-style inserts, tightened by screws 		

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-A10K-STFC ¹ / _h 11	●	●	14	10	7	125	-	-	91°	12°	TC _∞ 1102 _∞
NT-A12M-STFC ¹ / _h 11	●	●	14	12	7	150	-	-	91°	10°	TC _∞ 1102 _∞
NT-A16Q-STFC ¹ / _h 11	●	●	18	16	9	180	-	-	91°	8°	TC _∞ 1102 _∞
NT-A20R-STFC ¹ / _h 11	●	●	25	20	13	200	-	-	91°	3°	TC _∞ 1102 _∞

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

Spare parts	Insert screws	Flag wrenches
NT-A _∞ -STFC ¹ / _h 11	 NT-ST25060T07	 NT-FT07

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

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

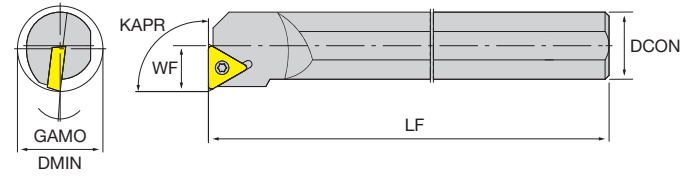

CARBIDE
▶ with internal coolant

Right-hand shown

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-E10K-STFC ¹ / _R 11	●	●	12	10	6	125	-	-	91°	12°	TC _∞ 1102 _∞
NT-E12M-STFC ¹ / _R 11	●	●	14	12	7	150	-	-	91°	10°	TC _∞ 1102 _∞
NT-E16R-STFC ¹ / _R 11	●	●	18	16	9	200	-	-	91°	8°	TC _∞ 1102 _∞
NT-E20R-STFC ¹ / _R 11	●	●	25	20	11	200	-	-	91°	6°	TC _∞ 1102 _∞

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

Spare parts	Insert screws	Flag wrenches
	NT-E _{∞∞} -STFC ¹ / _R 11	 NT-ST25060T07

<h1>S STFC</h1>	<p>STEEL Right-hand shown</p> 	
<h2>ISO - TC</h2>		
<ul style="list-style-type: none"> Internal turning (KAPR 91°) Steel boring bar without internal coolant Holds TC-style inserts, tightened by screws 		

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-S08H-STFC ¹ /r09	○	○	12	8	6	100	-	-	91°	15°	TC _∞ 0902 _∞
NT-S10K-STFC ¹ /r09	○	○	14	10	7	125	-	-	91°	15°	TC _∞ 0902 _∞
NT-S12M-STFC ¹ /r09	○	○	16	12	9	150	-	-	91°	10°	TC _∞ 0902 _∞
NT-S10K-STFC ¹ /r11	●	●	14	10	7	125	-	-	91°	12°	TC _∞ 1102 _∞
NT-S12M-STFC ¹ /r11	●	●	14	12	7	150	-	-	91°	10°	TC _∞ 1102 _∞
NT-S16Q-STFC ¹ /r11	●	●	18	16	9	180	-	-	91°	8°	TC _∞ 1102 _∞
NT-S20R-STFC ¹ /r11	○	○	25	20	13	200	-	-	91°	3°	TC _∞ 1102 _∞
NT-S20R-STFC ¹ /r16	●	●	25	20	13	200	-	-	91°	8°	TC _∞ 16T3 _∞
NT-S25R-STFC ¹ /r16	●	●	32	25	17	200	-	-	91°	6°	TC _∞ 16T3 _∞
NT-S32S-STFC ¹ /r16	○	○	39	32	22	250	-	-	91°	4°	TC _∞ 16T3 _∞

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

Spare parts	Insert screws	Flag wrenches
		
NT-S _∞ -STFC ¹ /r09	NT-ST22049T07	NT-FT07
NT-S _∞ -STFC ¹ /r11	NT-ST25060T07	NT-FT07
NT-S _∞ -STFC ¹ /r16	NT-ST35089T15	NT-FT15

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

V STLC

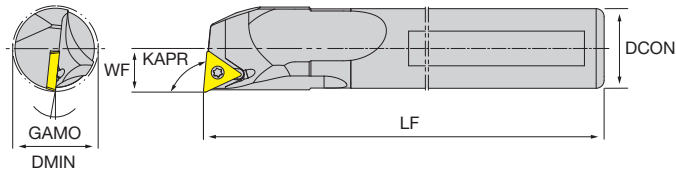
ISO - TC

- 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


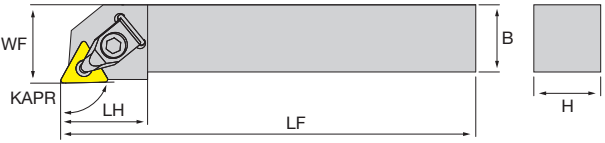
Right-hand shown



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

<h1>DTGN</h1>	Right-hand shown	
<h2>ISO - TN</h2>		
<ul style="list-style-type: none"> • External turning (KAPR 91°) • Holds TN-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
	L	R										
NT-DTGN ^h /r2020K16X	●	●	20	20	25	125	33	-	91°			TN∞1604∞
NT-DTGN ^h /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 ^h /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

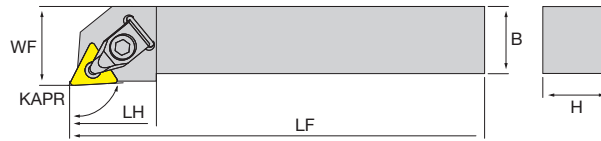
A - TURNING

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



B - THREADING

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

C - GROOVING


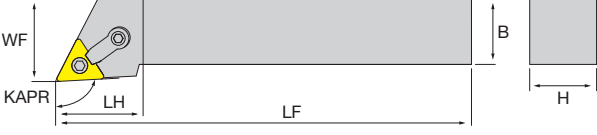
Spare parts	Shim	Shim screws	Clamp	Springs	Clamp screws	L wrench
NT-DTJN [∞] /R [∞] 16X	NT-SH006	NT-ST250	NT-CS250	NT-SG250	NT-SC250	NT-TX15

D - MILLING

E - DRILLING







F - ACCESSORIES

G - SPARE PARTS

<h1>MTJN</h1>	Right-hand shown	
<h2>ISO - TN</h2>		
<ul style="list-style-type: none"> • External turning (KAPR 93°) • Holds TN-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-MTJN/ø2020K16	●	●	20	20	25	125	33	-	93°			TN∞1604∞
NT-MTJN/ø2525M16	●	●	25	25	32	150	35	-	93°			TN∞1604∞
NT-MTJN/ø3232P16	●	●	32	32	40	170	43	-	93°			TN∞1604∞
NT-MTJN/ø2525M22	●	●	25	25	32	150	43	-	93°			TN∞2204∞
NT-MTJN/ø3225P22	●	●	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/ø2020K16						
NT-MTJN/ø2525M16	NT-SH005	NT-SP020	NT-WR020	NT-CS010	NT-SC010	NT-WR030
NT-MTJN/ø3232P16	NT-SH005	NT-SP020	NT-WR020	NT-CS010	NT-SC010	NT-WR030
NT-MTJN/ø2525M22	NT-SH008	NT-SP010	NT-WR030	NT-CS070	NT-SC070	NT-WR040
NT-MTJN/ø3225P22	NT-SH008	NT-SP010	NT-WR030	NT-CS070	NT-SC070	NT-WR040

- 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

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

<h1>S MTUN</h1>	STEEL	Right-hand shown	
<h2>ISO - TN</h2>			
<ul style="list-style-type: none"> • Internal turning (KAPR 93°) • Steel boring bar without internal coolant • Holds TN-style inserts • Double locking with Eccentric pins and bracket. Excellent clamping force 			

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∞1604∞
NT-S25R-MTUN ^h /r16	●	●	32	25	17	200	-	-	93°	12°	TN∞1604∞
NT-S32S-MTUN ^h /r16	●	●	40	32	22	250	-	-	93°	10°	TN∞1604∞
NT-S40T-MTUN ^h /r16	●	●	50	40	27	300	-	-	93°	10°	TN∞1604∞
NT-S50U-MTUN ^h /r16	●	●	63	50	35	350	-	-	93°	8°	TN∞1604∞
NT-S40T-MTUN ^h /r22	○	○	50	40	27	300	-	-	93°	15°	TN∞2204∞
NT-S50U-MTUN ^h /r22	○	○	63	50	35	350	-	-	93°	12°	TN∞2204∞

● 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

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

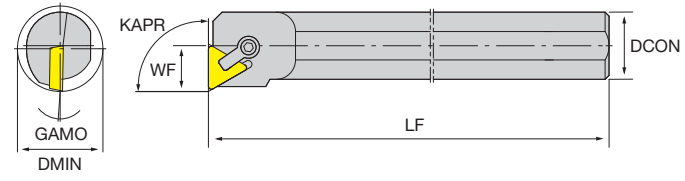
G - SPARE PARTS


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

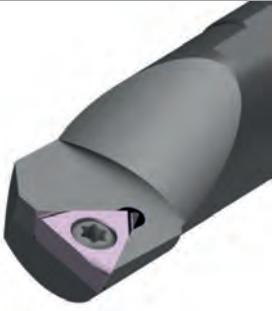
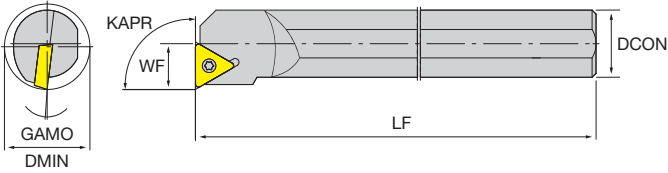




Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-S12M-CTUP ¹ / _R 11	●	●	16	12	9	150	-	-	93°	6°	TP∞1103∞
NT-S16Q-CTUP ¹ / _R 11	●	●	20	16	11	180	-	-	93°	3°	TP∞1103∞
NT-S20R-CTUP ¹ / _R 11	●	●	25	20	13	200	-	-	93°	3°	TP∞1103∞
NT-S25R-CTUP ¹ / _R 16	●	●	32	25	17	200	-	-	93°	3°	TP∞1603∞
NT-S32S-CTUP ¹ / _R 16	●	●	40	32	22	250	-	-	93°	3°	TP∞1603∞



● 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 ¹ / _R 11	-	-	-	NT-CS003	-	-	NT-WR025
NT-S16Q-CTUP ¹ / _R 11	-	-	-	-	NT-CS005	NT-SC005	NT-WR025
NT-S20R-CTUP ¹ / _R 11	-	-	-	-	NT-CS005	NT-SC005	NT-WR025
NT-S25R-CTUP ¹ / _R 16	NT-SH002	NT-ST022	NT-FT06	-	NT-CS010	NT-SC008	NT-WR030
NT-S32S-CTUP ¹ / _R 16	NT-SH002	NT-ST022	NT-FT06	-	NT-CS010	NT-SC008	NT-WR030

<h1>S STUP</h1>	STEEL	Right-hand shown	
ISO - TP			
<ul style="list-style-type: none"> • Internal turning (KAPR 93°) • Steel boring bar without internal coolant • Holds TP style inserts, tightened by screws 			

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-S10K-STUP [▲] / _R 09	●	●	12	10	6	125	-	-	93°	8°	TP ^{∞∞} 0902 ^{∞∞}
NT-S12M-STUP [▲] / _R 09	●	●	14	12	7	150	-	-	93°	5°	TP ^{∞∞} 0902 ^{∞∞}
NT-S10K-STUP [▲] / _R 11	●	●	12	10	6	125	-	-	93°	8°	TP ^{∞∞} 1103 ^{∞∞}
NT-S12M-STUP [▲] / _R 11	●	●	14	12	7	150	-	-	93°	7°	TP ^{∞∞} 1103 ^{∞∞}
NT-S16Q-STUP [▲] / _R 11	●	●	18	16	9	180	-	-	93°	4°	TP ^{∞∞} 1103 ^{∞∞}
NT-S20R-STUP [▲] / _R 11	○	○	22	20	11	200	-	-	93°	2°	TP ^{∞∞} 1103 ^{∞∞}

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

Spare parts	Insert screws	Flag wrenches
NT-S10K-STUP [▲] / _R 09		
NT-S12M-STUP [▲] / _R 09	NT-ST25065T08	NT-FT08
NT-S10K-STUP [▲] / _R 11	NT-ST25065T08	NT-FT08
NT-S12M-STUP [▲] / _R 11	NT-ST30058T10	NT-FT10
NT-S16Q-STUP [▲] / _R 11	NT-ST30058T10	NT-FT10
NT-S20R-STUP [▲] / _R 11	NT-ST30068T10	NT-FT10
	NT-ST30068T10	NT-FT10

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING

SVHB

ISO - VB

- External turning (KAPR 107.5°)
- Holds VB-style inserts, tightened by screw
- Convenient to change inserts, with shim

Right-hand shown

B - THREADING

Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SVHB ^{1/2} /r2525M16	○	○	25	25	32	150	23	-	107.5°			VB∞1604∞

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

C - GROOVING


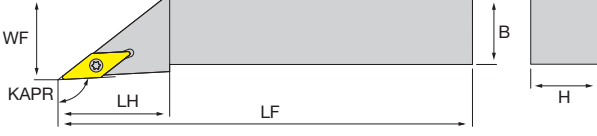
Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SVHB ^{1/2} /r2525M16	NT-SH050	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

<h1>SVJB</h1>	Right-hand shown	
<h2>ISO - VB</h2>		
<ul style="list-style-type: none"> • External turning (KAPR 93°) • 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-SVJB ^{1/2} /r2020K11	●	●	20	20	25	125	22	-	93°			VB∞1103∞
NT-SVJB ^{1/2} /r2020K16	●	●	20	20	25	125	33	-	93°			VB∞1604∞
NT-SVJB ^{1/2} /r2525M16	●	●	25	25	32	150	38	-	93°			VB∞1604∞

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

Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SVJB ^{1/2} /r∞∞∞∞11	-	-	-	NT-ST25060T07	NT-FT07
NT-SVJB ^{1/2} /r∞∞∞∞16	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

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

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 ^{1/8} 1212K11N	●	●	12	12	12	125	-	-	93°			VB [∞] 1103 [∞]
NT-SVJB ^{1/8} 1616K11N	●	●	16	16	16	125	-	-	93°			VB [∞] 1103 [∞]
NT-SVJB ^{1/8} 1616H16N	●	●	16	16	16	100	-	-	93°			VB [∞] 1604 [∞]

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

Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SVJB ^{1/8} R [∞] 11N	-	-	-	NT-ST25060T07	NT-FT07
NT-SVJB ^{1/8} R [∞] 16N	NT-SH050	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15

<h1>SVVB</h1>		
<h2>ISO - VB</h2>		
<ul style="list-style-type: none"> • 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°			VB∞1103∞
NT-SVVB2525M11			25	25	12.5	150	-	-	72.5°			VB∞1103∞
NT-SVVB2020K16			20	20	10	125	-	-	72.5°			VB∞1604∞
NT-SVVB2525M16			25	25	12.5	150	-	-	72.5°			VB∞1604∞

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

Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SVVB∞∞∞∞11	-	-	-	NT-ST25060T07	NT-FT07
NT-SVVB∞∞∞∞16	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

A - TURNING

V SVJB

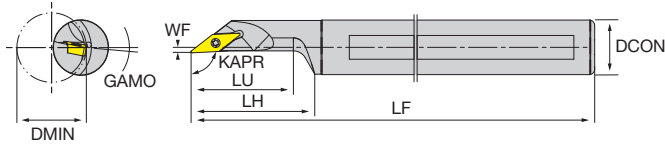
VORTEX

with internal coolant

Right-hand shown

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



B - THREADING

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 [∞] 1103 [∞]
NT-V25S-SVJB ^{1/8} 11-30	●	●	30	25	3.5	250	58	46	93°	5°	VB [∞] 1103 [∞]

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

C - GROOVING


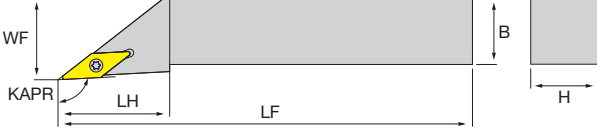
Spare parts	Insert screws	Flag wrenches
		
NT-V [∞] -SVJB ^{1/8} 11- [∞]	NT-ST25060T07	NT-FT07

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

<h1>SVJC</h1>	Right-hand shown	
<h2>ISO - VC</h2>		
<ul style="list-style-type: none"> • External turning (KAPR 93°) • 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-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/r∞∞∞∞11	-	-	-	NT-ST25060T07	NT-FT07
NT-SVJC/r∞∞∞∞16	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

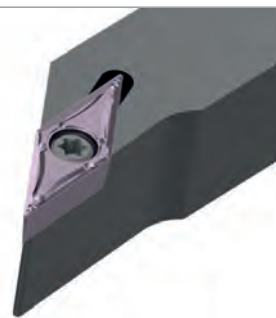
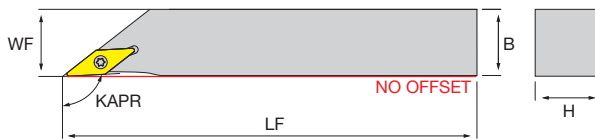
A - TURNING

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



B - THREADING

Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-SVJC/r1010K11N	○	○	10	10	10	125	-	-	93°			VC∞1103∞
NT-SVJC/r1212K11N	●	●	12	12	12	125	-	-	93°			VC∞1103∞
NT-SVJC/r1616K11N	●	●	16	16	16	125	-	-	93°			VC∞1103∞
NT-SVJC/r1616H16N	●	●	16	16	16	100	-	-	93°			VC∞1604∞

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

C - GROOVING


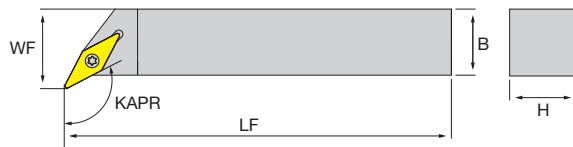
Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SVJC/r∞∞∞∞11N	-	-	-	NT-ST25060T07	NT-FT07
NT-SVJC/r∞∞∞∞16N	NT-SH050	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

<h1>SVPC</h1>	Right-hand shown	
<h2>ISO - VC</h2>		
<ul style="list-style-type: none"> • External turning (KAPR 117.5°) • 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-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

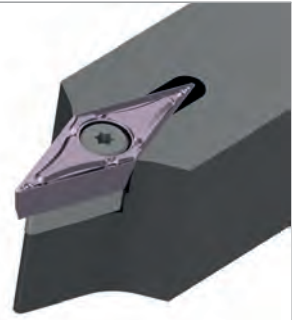
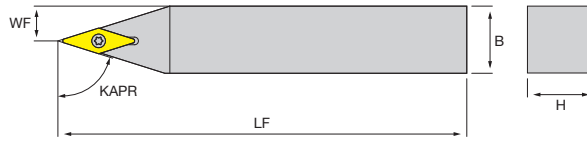
Spare parts	Shim	Shim screws	L wrench	Insert screws	Flag wrenches
NT-SVPC/r∞∞∞∞11	-	-	-	NT-ST25060T07	NT-FT07
NT-SVPC/r∞∞∞∞16	NT-SH050	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15

- 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∞∞∞∞11	-	-	-	NT-ST25060T07	NT-FT07
NT-SVVCN∞∞∞∞16	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

<h1 style="margin: 0;">S SVJC</h1>	<p>STEEL</p> <p>Right-hand shown</p>		
<h2 style="margin: 0;">ISO - VC</h2>			
<ul style="list-style-type: none"> ● 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-S12M-SVJC ¹ / _R 11	○	○	14	12	7	150	-	-	93°	7°	VC [∞] 1103 [∞]
NT-S16Q-SVJC ¹ / _R 11	●	●	18	16	9	180	-	-	93°	7°	VC [∞] 1103 [∞]
NT-S16Q-SVJC ¹ / _R 16	●	●	18	16	9	180	-	-	93°	7°	VC [∞] 1604 [∞]
NT-S20R-SVJC ¹ / _R 16	●	●	21	20	10.5	200	-	-	93°	6°	VC [∞] 1604 [∞]
NT-S25R-SVJC ¹ / _R 16	○	○	27	25	13.5	200	-	-	93°	6°	VC [∞] 1604 [∞]
NT-S32S-SVJC ¹ / _R 16	●	●	34	32	17	250	-	-	93°	4°	VC [∞] 1604 [∞]
NT-S40T-SVJC ¹ / _R 16	○	○	44	40	22	300	-	-	93°	4°	VC [∞] 1604 [∞]

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

Spare parts	Insert screws	Flag wrenches
NT-S [∞] -SVJC ¹ / _R 11	NT-ST25060T07	NT-FT07
NT-S [∞] -SVJC ¹ / _R 16	NT-ST35089T15	NT-FT15

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

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 / _h 11	●	●	22	16	13	180	-	-	107.5°	7°	VC∞1103∞
NT-S20R-SVQC ¹ / _h 11	○	○	27	20	15	200	-	-	107.5°	6°	VC∞1103∞
NT-S20R-SVQC ¹ / _h 16	○	○	30	20	19	200	-	-	107.5°	8°	VC∞1604∞
NT-S25R-SVQC ¹ / _h 16	●	●	34	25	20.5	200	-	-	107.5°	4°	VC∞1604∞
NT-S32S-SVQC ¹ / _h 16	●	●	41	32	22.5	250	-	-	107.5°	8°	VC∞1604∞
NT-S40T-SVQC ¹ / _h 16	○	○	50	40	27	300	-	-	107.5°	6°	VC∞1604∞

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

Spare parts	Insert screws	Flag wrenches
NT-S∞∞-SVQC ¹ / _h 11	NT-ST25060T07	NT-FT07
NT-S∞∞-SVQC ¹ / _h 16	NT-ST35089T15	NT-FT15

<h1 style="margin: 0;">S SVUC</h1>	<p>STEEL</p> <p>Right-hand shown</p>	
<h2 style="margin: 0;">ISO - VC</h2>		
<ul style="list-style-type: none"> • 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 ^{1/8} 11	●	●	22	16	13	180	-	-	93°	7°	VC∞1103∞
NT-S20R-SVUC ^{1/8} 11	●	●	27	20	15	200	-	-	93°	6°	VC∞1103∞
NT-S20R-SVUC ^{1/8} 16	●	●	31	20	19	200	-	-	93°	8°	VC∞1604∞
NT-S25R-SVUC ^{1/8} 16	○	○	33	25	20.5	200	-	-	93°	7°	VC∞1604∞
NT-S32S-SVUC ^{1/8} 16	●	●	42	32	22.5	250	-	-	93°	5°	VC∞1604∞
NT-S40T-SVUC ^{1/8} 16	○	○	51	40	27	300	-	-	93°	4°	VC∞1604∞

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

Spare parts	Insert screws	Flag wrenches
NT-S∞∞-SVUC ^{1/8} 11	NT-ST25060T07	NT-FT07
NT-S∞∞-SVUC ^{1/8} 16	NT-ST35089T15	NT-FT15

- 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


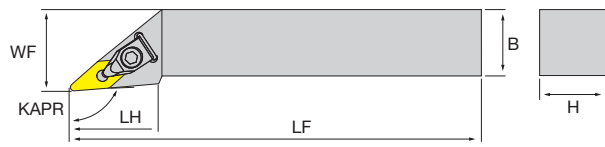
G - SPARE PARTS

<h1 style="margin: 0;">S SVZC</h1>	<p style="text-align: center;">STEEL Right-hand shown</p>	
<h2 style="margin: 0;">ISO - VC</h2> <ul style="list-style-type: none"> Internal back turning (KAPR 93°) Steel boring bar without internal coolant Holds VC style inserts, tightened by screws 		

Designation	Stock		DMIN	DCON	WF	WF2	LF	LH	LPR	KAPR	GAMO	MIID
	L	R										
NT-S20R-SVZC ¹ / ₁₆	●	●	30	20	17	7			217	93°	7.5°	VC [∞] 1604 [∞]
NT-S25R-SVZC ¹ / ₁₆	●	●	35	25	19.5	7			220	93°	7.5°	VC [∞] 1604 [∞]
NT-S32S-SVZC ¹ / 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 ¹ / ₁₆	NT-ST35089T15	NT-FT15

<h1>DVJN</h1>	Right-hand shown	
<h2>ISO - VN</h2>		
<ul style="list-style-type: none"> • External turning (KAPR 93°) • 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
	L	R										
NT-DVJN ¹ /R2020K16X	●	●	20	20	25	125	50	-	93°			VN∞1604∞
NT-DVJN ¹ /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 ¹ /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

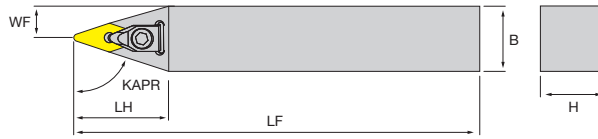
G - SPARE PARTS

A - TURNING

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



B - THREADING

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

C - GROOVING

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

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

MVJN	Right-hand shown	
ISO - VN		
<ul style="list-style-type: none"> 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/2020K16	●	●	20	20	25	125	39	-	93°			VN∞1604∞
NT-MVJN/2525M16	●	●	25	25	32	150	44	-	93°			VN∞1604∞
NT-MVJN/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/∞∞∞∞16	NT-SH075	NT-SP020	NT-WR020	NT-CS075	NT-SC010	NT-WR030

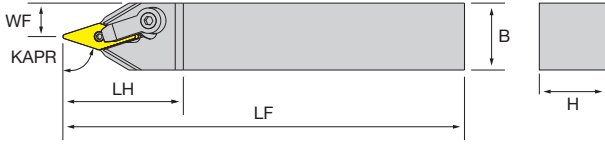
- A - TURNING
- B - THREADING
- C - GROOVING
- D - MILLING
- E - DRILLING
- F - ACCESSORIES
- G - SPARE PARTS


A - TURNING

MVVN

ISO - VN

- External turning (KAPR 72.5°), Neutral position
- Holds VN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force





B - THREADING

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

C - GROOVING

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

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

<h1>S MVQN</h1>	STEEL	Right-hand shown	
<h2>ISO - VN</h2>			
<ul style="list-style-type: none"> • 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 			

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-S25R-MVQN ^{1/8} 16	●	●	33	25	20	200	-	-	107.5°	12°	VN ¹⁰⁰ 1604 ¹⁰⁰
NT-S32S-MVQN ^{1/8} 16	○	○	40	32	23	250	-	-	107.5°	17°	VN ¹⁰⁰ 1604 ¹⁰⁰
NT-S40T-MVQN ^{1/8} 16	○	○	50	40	27	300	-	-	107.5°	15°	VN ¹⁰⁰ 1604 ¹⁰⁰
NT-S50U-MVQN ^{1/8} 16	●	●	63	50	33	350	-	-	107.5°	12°	VN ¹⁰⁰ 1604 ¹⁰⁰

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

Spare parts	Shim	Eccentric pins	L wrench	Clamp	Clamp screws	L wrench
NT-S25R-MVQN ^{1/8} 16	NT-SH075	NT-SP020	NT-WR020	NT-CS010	NT-SC008	NT-WR030
NT-S32S-MVQN ^{1/8} 16	NT-SH075	NT-SP020	NT-WR020	NT-CS010	NT-SC008	NT-WR030
NT-S40T-MVQN ^{1/8} 16	NT-SH075	NT-SP020	NT-WR020	NT-CS010	NT-SC010	NT-WR030
NT-S50U-MVQN ^{1/8} 16	NT-SH075	NT-SP020	NT-WR020	NT-CS010	NT-SC010	NT-WR030

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING

B - THREADING


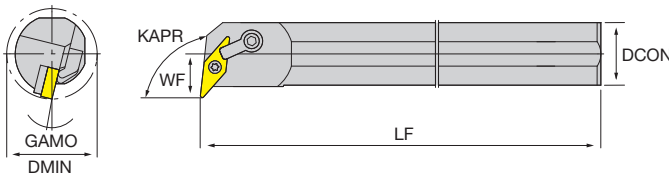
C - GROOVING

D - MILLING

E - DRILLING




F - ACCESSORIES

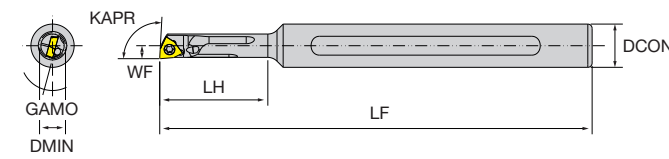

G - SPARE PARTS

<h1>S MVUN</h1>	STEEL	Right-hand shown	
<h2>ISO - VN</h2>			
<ul style="list-style-type: none"> • Internal turning (KAPR 93°) • Steel boring bar without internal coolant • Holds VN-style inserts • Double locking with Eccentric pins and bracket. Excellent clamping force 			

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-S25R-MVUN ^{1/8} 16	●	●	37	25	20	200	-	-	93°	12°	VN∞1604∞
NT-S32S-MVUN ^{1/8} 16	●	●	40	32	22	250	-	-	93°	12°	VN∞1604∞
NT-S40T-MVUN ^{1/8} 16	●	●	50	40	27	300	-	-	93°	15°	VN∞1604∞
NT-S50U-MVUN ^{1/8} 16	○	○	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 ^{1/8} 16						
NT-S32S-MVUN ^{1/8} 16	NT-SH075	NT-SP020	NT-WR020	NT-CS010	NT-SC008	NT-WR030
NT-S40T-MVUN ^{1/8} 16	NT-SH075	NT-SP020	NT-WR020	NT-CS010	NT-SC010	NT-WR030
NT-S50U-MVUN ^{1/8} 16	NT-SH075	NT-SP020	NT-WR020	NT-CS010	NT-SC010	NT-WR030

<h1 style="margin: 0;">V SWUB</h1>	<p>VORTEX ▲ with internal coolant</p> <p style="text-align: right;">Right-hand shown</p> 	
<h2 style="margin: 0;">ISO - WB</h2>		
<ul style="list-style-type: none"> 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 		

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-V10H-SWUB ⁺ / _R 06-06		●	6	10	3	100	25	-	93°	15°	WB _∞ 0601 _∞
NT-V10H-SWUB ⁺ / _R 06-07		●	7	10	3.5	100	30	-	93°	13°	WB _∞ 0601 _∞

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

Spare parts	Insert screws	Flag wrenches
NT-V10H-SWUB ⁺ / _R 06-∞	 NT-ST20038T06	 NT-FT06

- 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

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

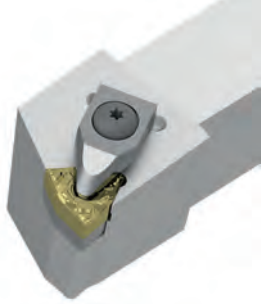
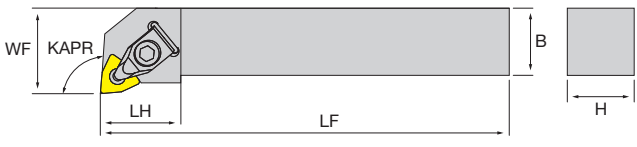
VORTEX
with internal coolant

Right-hand shown

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-V12M-SWUC/12-14	●	●	14	12	7	150	-	-	93°	13°	WC ₀₀ 12T3 ₀₀
NT-V16Q-SWUC/12-18	●	●	18	16	9	180	-	-	93°	10°	WC ₀₀ 12T3 ₀₀
NT-V20R-SWUC/12-22	●	●	22	20	11	200	-	-	93°	8°	WC ₀₀ 12T3 ₀₀
NT-V25S-SWUC/12-27	●	●	27	25	13.5	250	-	-	93°	8°	WC ₀₀ 12T3 ₀₀








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

Spare parts	Insert screws	Flag wrenches
NT-V ₀₀₀ -SWUC/12- ₀₀	NT-ST40090T15	NT-FT15

<h1>DWLN</h1>	Right-hand shown	
<h2>ISO - WN</h2>		
<ul style="list-style-type: none"> • External turning (KAPR 95°) • Holds WN-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
	L	R										
NT-DWLN [▲] /r1616H06X	●	●	16	16	20	100	33	-	95°			WN [∞] 0604 [∞]
NT-DWLN [▲] /r2020K06X	●	●	20	20	25	125	33	-	95°			WN [∞] 0604 [∞]
NT-DWLN [▲] /r2525M06X	●	●	25	25	32	150	33	-	95°			WN [∞] 0604 [∞]
NT-DWLN [▲] /r2020K08X	●	●	20	20	25	125	40	-	95°			WN [∞] 0804 [∞]
NT-DWLN [▲] /r2525M08X	●	●	25	25	32	150	40	-	95°			WN [∞] 0804 [∞]
NT-DWLN [▲] /r3225P08X	●	●	32	25	32	170	40	-	95°			WN [∞] 0804 [∞]

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

Spare parts	Shim	Shim screws	L wrench	Clamp	Springs	Clamp screws	L wrench
NT-DWLN [▲] /r [∞] 0 [∞] 00 [∞] 06X							
NT-DWLN [▲] /r [∞] 0 [∞] 00 [∞] 08X	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

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













Right-hand shown

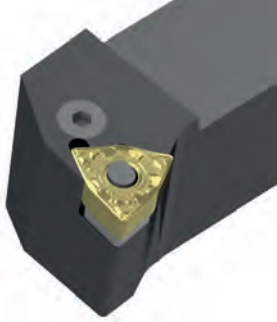
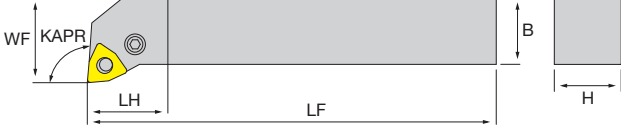




Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-MWLN ⁺ /r2020K06	○	○	20	20	25	125	33	-	95°			WN00060400
NT-MWLN ⁺ /r2525M06	○	○	25	25	32	150	26	-	95°			WN00060400
NT-MWLN ⁺ /r2020K08	●	●	20	20	25	125	33	-	95°			WN00080400
NT-MWLN ⁺ /r2525M08	●	●	25	25	32	150	26	-	95°			WN00080400
NT-MWLN ⁺ /r3232P08	●	●	32	32	40	170	26	-	95°			WN00080400

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

Spare parts	Shim	Eccentric pins	L wrench	Clamp	Clamp screws	L wrench
NT-MWLN ⁺ /r00000D6	 NT-SH003	 NT-SP020	 NT-WR020	 NT-CS009	 NT-SC030	 NT-WR025
NT-MWLN ⁺ /r00000D8	 NT-SH010	 NT-SP010	 NT-WR030	 NT-CS010	 NT-SC010	 NT-WR030

<h1>PWLN</h1>	Right-hand shown	
<h2>ISO - WN</h2>		
<ul style="list-style-type: none"> • External turning (KAPR 95°) • Holds WN-style inserts • Easy to use Levers-lock clamping • Suitable for long-chip materials 		

Designation	Stock		H	B	WF	LF	LH	LPR	KAPR			MIID
	L	R										
NT-PWLN/2020K08	●	●	20	20	25	125	20	-	95°			WN00080400
NT-PWLN/2525M08	●	●	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/00000008	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 - 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°	WN ⁰⁰ 0804 ⁰⁰
NT-A32S-DWLN ¹ /r08	●	●	40	32	22	250	-	-	95°	14°	WN ⁰⁰ 0804 ⁰⁰
NT-A40T-DWLN ¹ /r08	●	●	50	40	27	300	-	-	95°	12°	WN ⁰⁰ 0804 ⁰⁰

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

Spare parts	Shim	Shim screws	L wrench	Clamp	Springs	Clamp screws	L wrench
NT-A ⁰⁰⁰ -DWLN ¹ /r08	NT-SH015	NT-ST200	NT-WR025	NT-CS200	NT-SG200	NT-SC200	NT-TX20

<h1>S MWLN</h1>	STEEL	Right-hand shown	
ISO - WN		<ul style="list-style-type: none"> • Internal turning (KAPR 95°) • Steel boring bar without internal coolant • Holds WN-style inserts • Double locking with Eccentric pins and bracket. Excellent clamping force 	

Designation	Stock		DMIN	DCON	WF	LF	LH	LPR	KAPR	GAMO	MIID
	L	R									
NT-S16Q-MWLN/ø06	○	○	22	16	11	180	-	-	95°	18°	WN ₀₀ 0604 ₀₀
NT-S20R-MWLN/ø08	●	●	25	20	13	200	-	-	95°	17°	WN ₀₀ 0804 ₀₀
NT-S25R-MWLN/ø08	●	●	32	25	17	200	-	-	95°	14°	WN ₀₀ 0804 ₀₀
NT-S32S-MWLN/ø08	●	●	40	32	22	250	-	-	95°	14°	WN ₀₀ 0804 ₀₀
NT-S40T-MWLN/ø08	●	●	50	40	27	300	-	-	95°	12°	WN ₀₀ 0804 ₀₀
NT-S50U-MWLN/ø08	●	●	63	50	35	350	-	-	95°	12°	WN ₀₀ 0804 ₀₀

● 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 - 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

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 ¹ /ø08	●	●	30	25	17	200	-	-	95°	12°	WN ₀₀ 0804 ₀₀
NT-A32S-PWLN ¹ /ø08	●	●	40	32	22	250	-	-	95°	10°	WN ₀₀ 0804 ₀₀
NT-A40T-PWLN ¹ /ø08	●	●	48	40	27	300	-	-	95°	8°	WN ₀₀ 0804 ₀₀

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

Spare parts	Shim	Shim plugs	Levers	Levers screws	L wrench
NT-A25R-PWLN ¹ /ø08	-	NT-SR015	NT-LL015	NT-SC015	NT-WR025
NT-A32S-PWLN ¹ /ø08	NT-SH015	NT-SR020	NT-LL020	NT-SC025	NT-WR030
NT-A40T-PWLN ¹ /ø08	NT-SH015	NT-SR020	NT-LL020	NT-SC025	NT-WR030