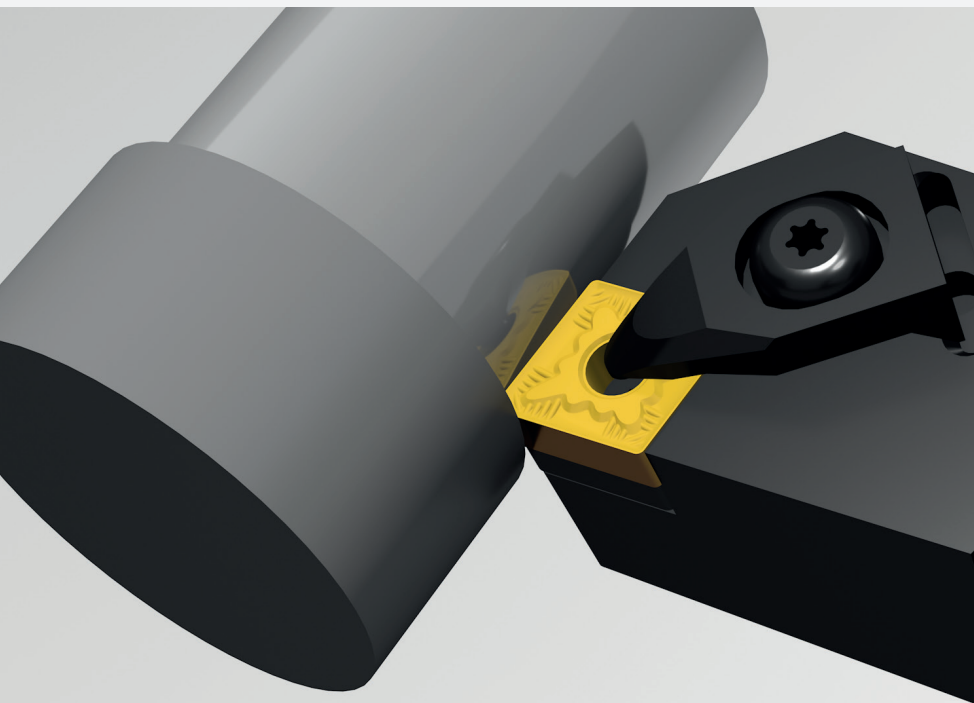




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ISO 513		CARBIDE			CERMET	
		CVD COATED	PVD COATED	UNCOATED	PVD COATED	UNCOATED
P	P01	JC8005				JU4015
	P10	JC8015	JP5015		JP4020	
	P20	JC8025	JP5120			
	P30	JC8035	JP5125			
	P40					
Steel						
M	M01		JP9015			
	M10	JC9010			JP4020	
	M20	JC9025	JP9030	JP5120		
	M30		JP5125			
	M40					
Stainless steel						
K	K01					
	K10	JC7010			JP4020	
	K20	JC7115	JP5125			
	K30	JC7020				
Cast iron						
N	N01		JP6010			
	N10			JU6015		
	N20					
	N30					
Non-ferrous material						
S	S01		JP3015			
	S10		JP5120			
	S20		JP5125			
HRSA	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. - Elevata resistenza all'usura. Prima scelta per lavorazioni generali di ghisa grigia. - Hohe Verschleißfestigkeit. Erste Wahl für die allgemeine Bearbeitung von Grauguss. - Haute résistance à l'usure. Premier choix pour usinage général de fonte grise.
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. - Elevata resistenza alla rottura. Taglio fortemente interrotto su tutte le tipologie di ghisa. - Hohe Bruchfestigkeit. Stark unterbrochener Schnitt bei allen Arten von Gusseisen. - Haute résistance à la rupture. Coupe fortement interrompue sur tout type de fonte.
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. - Buon bilanciamento tra resistenza all'usura e alla scheggiatura. Prima scelta per la lavorazione di ghisa sferoidale. - Gutes Verhältnis zwischen Verschleiß- und Splitterfestigkeit. Erste Wahl für die allgemeine Bearbeitung von Sphäroguss. - Bon équilibre entre résistance à l'usure et à l'écaillage. Premier choix pour usinage général de fonte sphéroïdale.
JC8005	carbide	1.740	CVD	TiCN+Al ₂ O ₃	P P01 P10	- High wear resistance. Excellent performance in high-speed cutting machining. - Elevata resistenza all'usura. Prestazioni eccellenti nelle lavorazioni ad alta velocità. - Hohe Verschleißfestigkeit. Hervorragende Leistung für Hochgeschwindigkeits- Schneidvorgänge. - Haute résistance à l'usure. Excellentes performances dans l'usinage à haute vitesse de coupe
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. - Buon bilanciamento tra resistenza all'usura e alla scheggiatura. Elevata resistenza all'usura, per velocità di taglio da medie ad alte. - Gutes Verhältnis zwischen Verschleiß- und Splitterfestigkeit. Hohe Verschleißfestigkeit, für mittlere bis hohe Schnittgeschwindigkeiten. - Bon équilibre entre résistance à l'usure et à l'écaillage. Haute résistance à l'usure, pour vitesses de coupe moyennes à élevées.

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			TECHNOLOGY	COMPOSITION		
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. - Grado universale consigliato per un ampio intervallo di applicazioni. Eccellente affidabilità anche con taglio mediamente interrotto. - Universelle Qualität, empfohlen für eine breite Palette von Anwendungen. Hervorragende Zuverlässigkeit auch bei mittleren Schnittunterbrechungen. - Nuance universelle recommandée pour une large gamme d'applications. Excellente fiabilité y compris en cas de coupe moyennement interrompue.
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. - Substrato resistente e rivestimento ad alta resistenza alla scheggiatura. Prima scelta per lavorazioni pesanti. - Robustes Grundmaterial und Beschichtung mit hoher Splitterfestigkeit. Erste Wahl für schwierige Bearbeitungen. - Substrat résistant et revêtement doté d'une haute résistance à l'écaillage. Premier choix pour usinages intensifs.
JC9010	carbide	1.710	CVD	TiCN+Al ₂ O ₃ +TiN	M M05 M15	- High performance thin nano coating with superior features of adhesion to the substrate. Shows great wear resistance at high-speed continuous cutting. - Sottile nano rivestimento a elevate prestazioni con migliori proprietà di adesione con il substrato. Mostra eccezionale resistenza all'usura con condizioni di taglio continuo a elevata velocità. - Hochleistungsfähige, dünne Nanobeschichtung, die eine hervorragende Haftung auf dem Untergrund ermöglicht. - Revêtement nanograin haute performance permettant une excellente adhérence au substrat.
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. - Buon bilanciamento tra resistenza all'usura e alla scheggiatura. Prima scelta per lavorazione di acciai inossidabili. - Gutes Verhältnis zwischen Verschleiß- und Splitterfestigkeit. Erste Wahl für die Bearbeitung von rostfreien Stählen. - Bon équilibre entre résistance à l'usure et à l'écaillage. Premier choix pour l'usinage d'aciers inoxydables.

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION	FEATURES
			TECHNOLOGY	COMPOSITION		
JP3015	micrograin carbide	1.950	PVD	TiAlN	S	- Great stability at high temperature machining. Best choice for HRSA materials. - Eccezionale stabilità nelle lavorazioni con elevata temperatura. La scelta migliore per superleghe resistenti al calore (HRSA). - Hervorragende Stabilität bei der Bearbeitung bei hohen Temperaturen. Optimale Wahl für hitzebeständige Superlegierungen (HRSA). - Stabilité exceptionnelle lors d'usines à haute température. Meilleur choix pour superalliages résistants à la chaleur (HRSA).
					P	- Universal grade for finishing on multiple materials under stable conditions and high cutting speed. - Grado universale per la finitura di molteplici materiali in condizioni di taglio stabili a elevata velocità. - Universalqualität für die Bearbeitung verschiedener Materialien unter stabilen Schnittbedingungen bei hoher Geschwindigkeit. - Nuance universelle pour la finition de plusieurs matériaux dans des conditions de coupe stables à grande vitesse.
					M	- Grado universale per la finitura di molteplici materiali in condizioni di taglio stabili a elevata velocità. - Universalqualität für die Bearbeitung verschiedener Materialien unter stabilen Schnittbedingungen bei hoher Geschwindigkeit. - Nuance universelle pour la finition de plusieurs matériaux dans des conditions de coupe stables à grande vitesse.
JP4020	cermet	1.680	PVD	TiAlN	K	- Universal grade for finishing on multiple materials under stable conditions and high cutting speed. - Grado universale per la finitura di molteplici materiali in condizioni di taglio stabili a elevata velocità. - Universalqualität für die Bearbeitung verschiedener Materialien unter stabilen Schnittbedingungen bei hoher Geschwindigkeit. - Nuance universelle pour la finition de plusieurs matériaux dans des conditions de coupe stables à grande vitesse.
					P	- Universal grade for finishing on multiple materials under stable conditions and high cutting speed. - Grado universale per la finitura di molteplici materiali in condizioni di taglio stabili a elevata velocità. - Universalqualität für die Bearbeitung verschiedener Materialien unter stabilen Schnittbedingungen bei hoher Geschwindigkeit. - Nuance universelle pour la finition de plusieurs matériaux dans des conditions de coupe stables à grande vitesse.
					M	- Grado universale per la finitura di molteplici materiali in condizioni di taglio stabili a elevata velocità. - Universalqualität für die Bearbeitung verschiedener Materialien unter stabilen Schnittbedingungen bei hoher Geschwindigkeit. - Nuance universelle pour la finition de plusieurs matériaux dans des conditions de coupe stables à grande vitesse.
JP5015	micrograin carbide	1.900	PVD	TiAlN	S	- PVD coated micrograin carbide grade that guarantees excellent performance on finishing and semi-finishing also on inox and super alloys. - Qualità di metallo duro con rivestimento PVD che garantisce ottime prestazioni per la finitura e semifinitura anche di acciaio inossidabile e superleghe. - PVD-beschichtete Hartmetallsorte, die hervorragende Leistung beim Schlichten und Vorschlichten auch bei Edelstahl und Superlegierungen garantiert. - Nuance carbure revêue PVD qui garantit d'excellentes performances pour la finition et la semi-finition même sur acier inoxydable et superalliages.
					P	- PVD coated micrograin carbide grade that guarantees excellent performance on finishing and semi-finishing also on inox and super alloys. - Qualità di metallo duro con rivestimento PVD che garantisce ottime prestazioni per la finitura e semifinitura anche di acciaio inossidabile e superleghe. - PVD-beschichtete Hartmetallsorte, die hervorragende Leistung beim Schlichten und Vorschlichten auch bei Edelstahl und Superlegierungen garantiert. - Nuance carbure revêue PVD qui garantit d'excellentes performances pour la finition et la semi-finition même sur acier inoxydable et superalliages.
					M	- PVD-beschichtete Hartmetallsorte, die hervorragende Leistung beim Schlichten und Vorschlichten auch bei Edelstahl und Superlegierungen garantiert. - Nuance carbure revêue PVD qui garantit d'excellentes performances pour la finition et la semi-finition même sur acier inoxydable et superalliages.
JP5120	micrograin carbide	1.830	PVD	TiAlN	P	- Excellent performances on Stainless and HRSA thanks to special coating technology. The post-coating surface treatment effectively prevents built-up edge. - Tecnologia speciale di rivestimento che bilancia resistenza all'usura e tenacità. Il trattamento superficiale post rivestimento previene efficacemente la formazione del tagliente di riporto. - Die spezielle Beschichtungstechnologie sorgt für ein ausgewogenes Verhältnis zwischen Verschleißfestigkeit und Robustheit. Die Oberflächenbehandlung nach der Beschichtung verhindert die Bildung der Aufbauschneide effektiv. - Technologie de revêtement spéciale équilibrant résistance à l'usure et ténacité. Le traitement de surface post-revêtement empêche efficacement la formation d'arêtes rapportées.
					M	- Tecnologia speciale di rivestimento che bilancia resistenza all'usura e tenacità. Il trattamento superficiale post rivestimento previene efficacemente la formazione del tagliente di riporto. - Die spezielle Beschichtungstechnologie sorgt für ein ausgewogenes Verhältnis zwischen Verschleißfestigkeit und Robustheit. Die Oberflächenbehandlung nach der Beschichtung verhindert die Bildung der Aufbauschneide effektiv. - Technologie de revêtement spéciale équilibrant résistance à l'usure et ténacité. Le traitement de surface post-revêtement empêche efficacement la formation d'arêtes rapportées.
					S	- Die spezielle Beschichtungstechnologie sorgt für ein ausgewogenes Verhältnis zwischen Verschleißfestigkeit und Robustheit. Die Oberflächenbehandlung nach der Beschichtung verhindert die Bildung der Aufbauschneide effektiv. - Technologie de revêtement spéciale équilibrant résistance à l'usure et ténacité. Le traitement de surface post-revêtement empêche efficacement la formation d'arêtes rapportées.

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			TECHNOLOGY	COMPOSITION		
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	Substrato in metallo duro micrograna ad alto contenuto di Co ad alta tenacità e avanzata tecnologia di rivestimento. Uso universale con eccellente affidabilità e lunga vita utensile.
					K K20 K30	Hochfestes mikrokörnige Hartmetallmaterial mit hohem Co-Gehalt und innovativer Beschichtungstechnologie. Universeller Einsatz mit ausgezeichneter Zuverlässigkeit und langer Standzeit.
					S S01 S10	Substrat carbure micro-grain à teneur élevée en Co à haute ténacité et technologie de revêtement avancée. Utilisation universelle à excellente fiabilité et longue durée de vie.
JP6010	micrograin carbide	2.020	PVD	TiBCN	N N05 N15	- Special coating technology suitable for a wide range of applications on non-ferrous materials. L'alternativa performante ed economica agli utensili in PCD - Speciale tecnologia di rivestimento adatta a un'ampia gamma di applicazioni su materiali non ferrosi. L'alternativa performante ed economica agli utensili in PCD - Die spezielle Beschichtungstechnologie eignet sich für eine Vielzahl von Anwendungen mit Nichtferromaterialien. Die leistungsstarke und wirtschaftliche Alternative zu PKD-Werkzeugen - Technologie de revêtement spéciale adaptée à une large gamme d'applications sur matériaux non ferreux. L'alternative performante et économique aux outils PCD
JP9015	micrograin carbide	2.020	PVD	TiAlN	M M10 M20	- Micrograin carbide with high wear resistance. First choice for stainless steel finishing. - Metallo duro micrograna con elevata resistenza all'usura. Prima scelta per la finitura di acciai inossidabili. - Mikrokörniges Hartmetall mit hoher Verschleißfestigkeit. Erste Wahl für die Feinbearbeitung von rostfreien Stählen. - Carbure micro-grain doté d'une haute résistance à l'usure. Premier choix pour la finition d'aciers inoxydables.

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION	FEATURES
			TECHNOLOGY	COMPOSITION		
JP9030	micrograin carbide	1.830	PVD	TiAlN	M M25 M35	- Micrograin carbide with superior stability at high temperature and high toughness. Great performance on interrupted cut machining of stainless steel. - Metallo duro micrograna con superiore resistenza alle alte temperature ed elevata tenacità. Eccellenti prestazioni in condizioni di taglio interrotto di acciai inossidabili. - Mikrokörniges Hartmetall mit ausgezeichneter Oxidationsbeständigkeit und großer Robustheit. Hervorragende Leistung bei unterbrochenen Schnittbedingungen bei rostfreien Stählen. - Carbure micrograin doté d'une résistance supérieure à l'oxydation et d'une ténacité élevée. Excellentes performances dans des conditions de coupe interrompue d'aciers inoxydables.
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. - Elevata resistenza all'usura nel taglio continuo ad alta velocità. Prima scelta per la finitura quando la priorità è la bassa rugosità superficiale. - Hohe Verschleißfestigkeit unter kontinuierlichen Hochgeschwindigkeits-Schnittbedingungen. Erste Wahl für die Feinbearbeitung, wenn es auf eine geringe Oberflächenrauigkeit ankommt. - Haute résistance à l'usure en coupe continue à grande vitesse. Premier choix pour la finition lorsqu'une faible rugosité de la surface est prioritaire.
JU6015	micrograin carbide	1.950	-	-	N N10 N20	- Uncoated carbide for universal use, from finishing to roughing, on non-ferrous materials. - Metallo duro non rivestito per uso universale, dalla finitura alla sgrossatura, su materiali non ferrosi. - Unbeschichtetes Hartmetall für den universellen Einsatz, von der Schlichtbearbeitung bis zum Schrappen, bei Nichteisenmaterialien. - Carbure non revêtu pour applications universelles, de la finition à l'ébauche, sur des matériaux non ferreux.

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

BLACK: CVD, UNDERLINED: PVD, RED: uncoated

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

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

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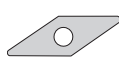
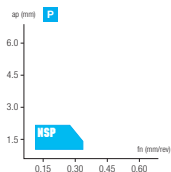
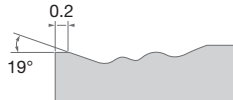
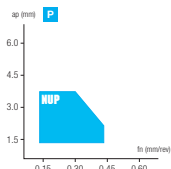
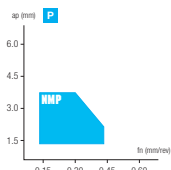
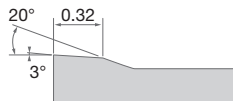
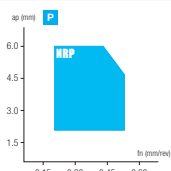
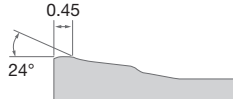
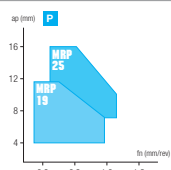
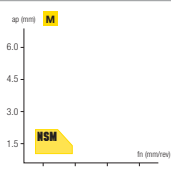
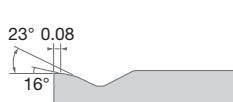
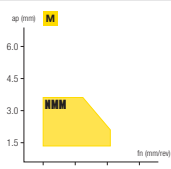
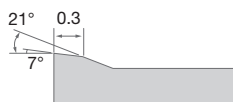
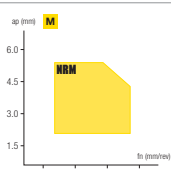
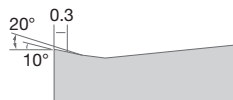
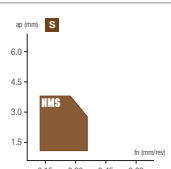
C - GROOVING

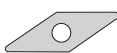
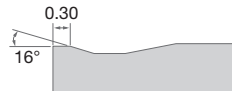
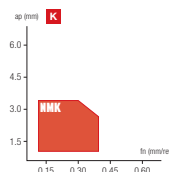
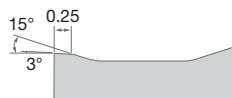
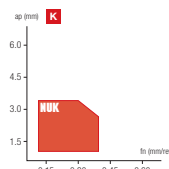
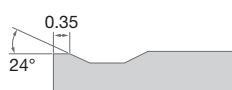
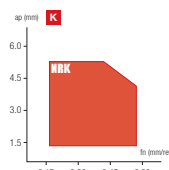
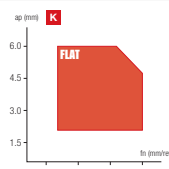
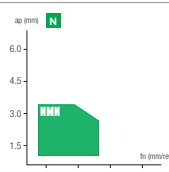
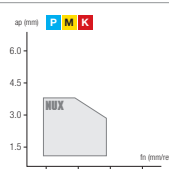
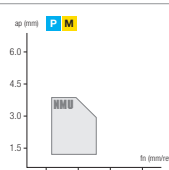
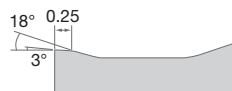
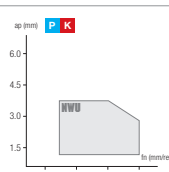
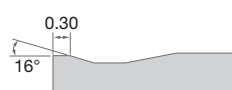
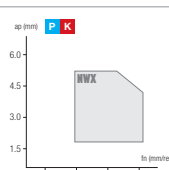
D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

NEGATIVE types			C	D	S	T	V	W
								
			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
	MEDIUM	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	
	HEAVY ROUGHING		MRP  	  SIZE 19 25		  SIZE 19 25		
M	FINISHING	NSM  	  SIZE 12	  SIZE 15		  SIZE 16	  SIZE 16	  SIZE 08
		MEDIUM	NMM  	  SIZE 09 12 16 19	  SIZE 11 15	  SIZE 12 19	  SIZE 16 22	  SIZE 16
	ROUGHING		NRM  	  SIZE 12 16 19	  SIZE 15	  SIZE 12 19	  SIZE 16	
S	MEDIUM	NMS  	  SIZE 12	  SIZE 15				  SIZE 08

NEGATIVE types			C	D	S	T	V	W	
									
K	LIGHT TO MEDIUM MACHINING	NMK	 ap (mm)  0.30 16°	 A73 SIZE 12 16 19	 A79 SIZE 15	 A87 SIZE 12	 A94 SIZE 16 22	 A102 SIZE 16	 A106 SIZE 08
		NUK	 ap (mm)  0.25 15° 3°	 A73 SIZE 12	 A79 SIZE 15		 A94 SIZE 16	 A102 SIZE 16	 A106 SIZE 08
		NRK	 ap (mm)  0.35 24°	 A75 SIZE 12 16 19	 A80 SIZE 15	 A88 SIZE 12 19	 A95 SIZE 16 22	 A102 SIZE 16	 A107 SIZE 06 08
		Flat	 ap (mm)  0°	 A75 SIZE 12 16 19	 A81 SIZE 15	 A89 SIZE 09 12	 A96 SIZE 16 22		 A108 SIZE 08
	UNIVERSAL	NMN	 ap (mm)  10°	 A73 SIZE 12	 A79 SIZE 15	 A88 SIZE 12	 A95 SIZE 16	 A102 SIZE 16	 A106 SIZE 06 08
		NUX	 ap (mm)  0.22 17° 6°	 A71 SIZE 12	 A78 SIZE 15		 A93 SIZE 16		 A105 SIZE 08
		NMU	 ap (mm)  10°		 A78 SIZE 15		 A93 SIZE 16		 A82 SIZE 16
		NWU	 ap (mm)  0.25 18° 3°	 A74 SIZE 12	 A80 SIZE 15		 A95 SIZE 16		 A107 SIZE 08
	WIPER	NWX	 ap (mm)  0.30 16°	 A74 SIZE 12					 A107 SIZE 08

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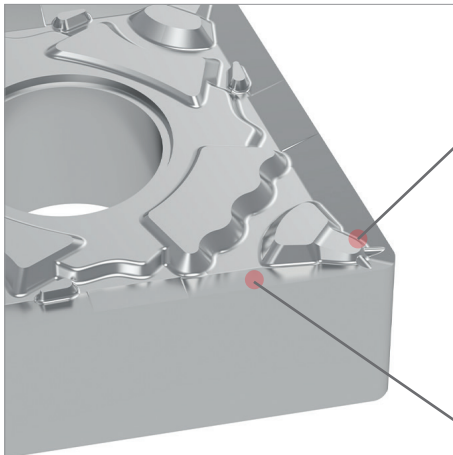
POSITIVE types			C	D	S	T	V	W
			80°	55°	90°	60°	35°	80°
N	UNIVERSAL	PMN 	CC A70 SIZE 06 09 12	DC A77 SIZE 07 11	SC A86 SIZE 09 12	TC A91 SIZE 09 11 16	VC A100 SIZE 11 16 22	
UNI	FINISHING	PPF (ground chip breaker) 	CC A69 SIZE 06 09	DC A76 SIZE 07 11		TB, TP A90, A97 TC A91 SIZE 06 09 11	VB A98 SIZE 11	WB A103 SIZE 06
	FINISHING	PFU 	CC A69 SIZE 06 09	DC A76 SIZE 07 11	SC A86 SIZE 09	TC A91 SIZE 11 16	VB A98 SIZE 11 16	
	MEDIUM	PPM (ground chip breaker) 	CC A69 SIZE 09	DC A76 SIZE 07 11		TP A97 SIZE 11	VB A98 SIZE 11	
	MEDIUM	PMU 	CC A70 SIZE 06 09 12	DC A77 SIZE 07 11 15	SC A86 SIZE 09 12	TC A91 SIZE 09 11 16 22	VB, VC A98, A100 SIZE 11 16	WC A104 SIZE 12
	MEDIUM	PPU 	CC A69 SIZE 06 09	DC A76 SIZE 07 11			VC A100 SIZE 11 16	
	ROUGHING	PRU 	CC A70 SIZE 09 12	DC A77 SIZE 11	SC A86 SIZE 09 12	TC A92 SIZE 16	VB, VC A99, A100 SIZE 16	
MICRONEGA	MEDIUM	SS 	MCN A84 	MDN A85 				
	MEDIUM	GM 	MCN A84 	MDN A85 				

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
- Spanbrecher für Schlichtbearbeitung von Stählen unter leichten Schnittbedingungen
- Schmetterlingsgeometrie zur Lenkung der Spanabfuhr
- Variabler Spanwinkel und gekrümmte Schneidkante für hervorragende Spankontrolle bei kleinen Schnitttiefen
- Hochwertige Oberflächenqualität
- Rompitrucciolo per finitura degli acciai, taglio leggero
- Geometria Butterfly che direziona il flusso del truciolo
- Angolo di spoglia variabile e tagliente ricurvo per eccellente controllo del truciolo a piccole profondità di taglio
- Finitura superficiale di elevata qualità
- Brise-copeaux pour la finition des aciers dans des conditions de coupe légères
- Géométrie en papillon qui dirige l'évacuation copeaux
- Angle de dépouille variable et ligne d'arête incurvée pour un excellent contrôle des copeaux dans les faibles profondeurs de coupe
- Finition de surface haute qualité

Features of NSP chipbreaker

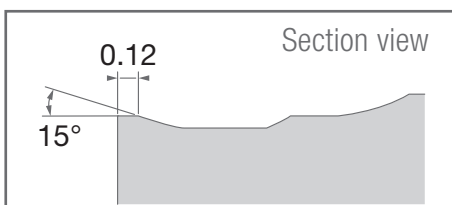


BUTTERFLY DOT

- High stability of chip flows at high feed
- Lower cutting force at low depth of cut and high feed
- Ottima stabilità del flusso del truciolo con elevati avanzamenti
- Forze di taglio ridotte a basse profondità di taglio ed elevati avanzamenti
- Hohe Spanflussstabilität bei großen Vorschüben
- Geringe Schnittkräfte bei kleinen Schnitttiefen und großen Vorschüben
- Grande stabilité de l'évacuation copeaux avec avances élevées
- Efforts de coupe réduits à faible profondeur de coupe et avances élevées

VARIABLE RAKE ANGLE AND CURVED EDGE LINE

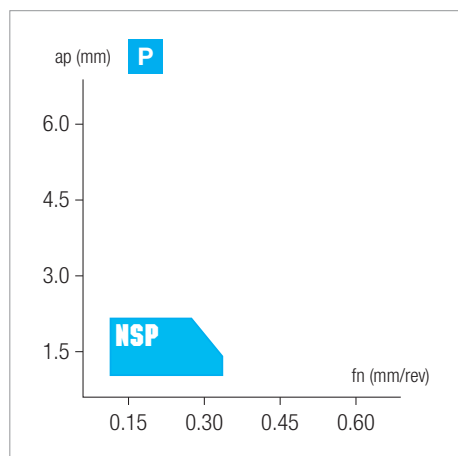
- Less crater wears
- Excellent chip control at small depths of cut
- Minore usura per caratterizzazione
- Eccellente controllo del truciolo a piccole profondità di taglio
- Geringer Verschleiß der Vertiefung
- Hervorragende Spankontrolle bei kleinen Schnitttiefen
- Moindre usure en cratère
- Excellent contrôle des copeaux à de faibles profondeurs de coupe



NSP

Chipbreaker

Application range - ISO 513



Use case

Tool type CNMG120408-NSP JC8005
Workpiece Steel C45 (1.1191)
Parameters Vc 350 m/min, fn 0.20 mm/rev,
ap 1.0 mm, emulsion

nixkoTOOLS 200 PCS.

Competitor A 180 PCS.

Competitor B 180 PCS.



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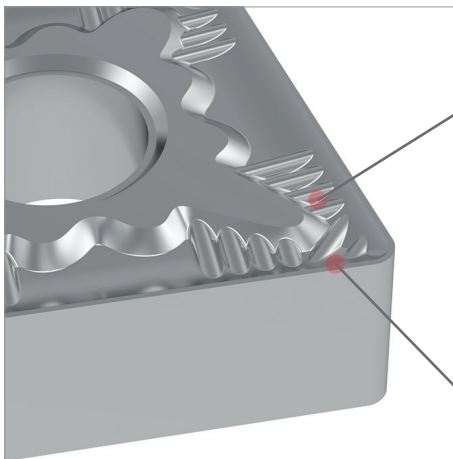
G - SPARE PARTS

NUP

Chipbreaker

- Chipbreaker for steel, semi-finishing application and medium depth of cut
- Variable rake angle and cutting edge land designed for a perfect balance between toughness and sharpness
- Special groove design for higher strength and smoother chip flow
- Universal application
- Spanbrecher für Schruppschichten von Stählen und mittlere Schnittbedingungen
- Variabler Spanwinkel und variable Schnitttiefe für ein optimales Verhältnis zwischen Robustheit und Schärfe
- Spezielles Nutendesign für erhöhte Robustheit und besseren Spanfluss
- Universelle Anwendung
- Rompitruciolo per applicazioni di semifinitura e media asportazione su acciaio
- Angolo di spoglia e spessore del pianetto variabili per un ottimo bilanciamento tra tenacità e taglienza
- Speciale disegno delle gole che migliora robustezza e flusso del truciolo
- Applicazione universale
- Brise-copeaux pour la semi-finition des aciers et profondeurs de coupe moyennes
- Angle de dépouille variable et arête de coupe conçue pour un bon équilibre entre ténacité et acuité
- Goujures spéciales conçues pour améliorer la résistance et l'évacuation des copeaux
- Application universelle

Features of NUP chipbreaker

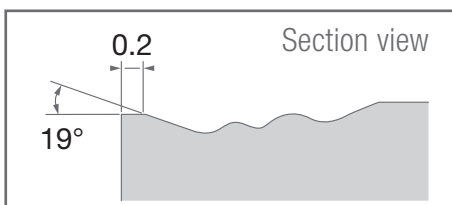


SPECIAL GROOVES

- High chipping resistance
- Improves chip forming and chip control
- Elevata resistenza alla scheggiatura
- Migliora la formazione e il controllo del truciolo
- Verbesserte Widerstandsfähigkeit
- Verbessert die Spanbildung und -kontrolle
- Haute résistance à l'écaillage
- Améliore la formation et le contrôle des copeaux

VARIABLE RAKE ANGLE AND EDGE WIDTH

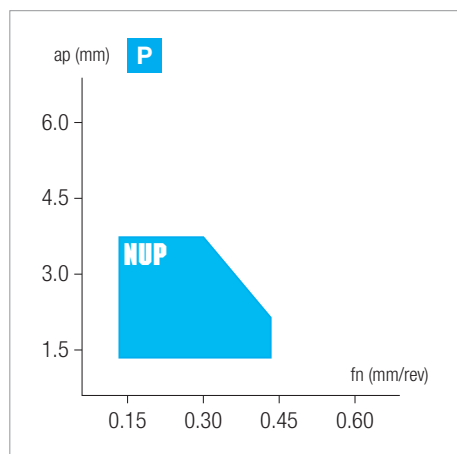
- Perfect balance between toughness and sharpness
- Reliable cutting process for universal application
- Buon bilanciamento tra tenacità e taglienza
- Processo di taglio affidabile in applicazioni universali
- Ausgewogenes Verhältnis zwischen Robustheit und Schärfe
- Zuverlässiger Schneidprozess für universelle Anwendungen
- Bon équilibre entre ténacité et acuité
- Processus de coupe fiable dans le cadre d'applications universelles



NUP

Chipbreaker

Application range - ISO 513



Use case

Tool type CNMG120412-NUP JC8025
Workpiece Steel 41CrMoAl7 (1.8709)
Parameters V_c 156 m/min, f_n 0.3 mm/min, a_p 3.1 mm, emulsion



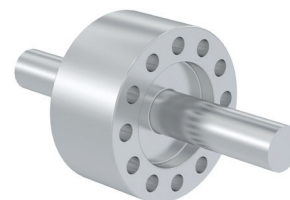
7 PCS.

Competitor A

5 PCS.

Competitor B

4 PCS.

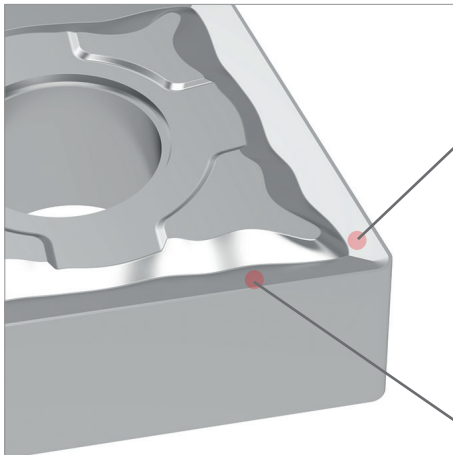


NMP

Chipbreaker

- Chipbreaker for steel semi-finishing application and medium depth of cut
- Strong cutting edge for reliable cutting process
- Large chip groove for smooth chip flow
- Excellent performance in carbon steel and alloy steel
- Spanbrecher für Schruppschichten von Stählen und mittlere Schnittbedingungen
- Robuste Schneidkante für zuverlässige Schneidprozesse
- Breite Nut für einen reibungslosen Abtransport der Späne
- Hervorragende Leistung bei Kohlenstoff- und legierten Stählen
- Rompitrucciolo per applicazioni di semifinitura e media asportazione su acciaio
- Tagliente robusto per processi di taglio affidabili
- Gole ampie per migliorare l'evacuazione dei trucioli
- Eccellenti prestazioni per le lavorazioni di acciai al carbonio e acciai legati
- Brise-copeaux pour semi-finition des aciers et profondeurs de coupe moyennes
- Arête de coupe robuste pour des processus de coupe fiables
- Large rainure à copeau pour une meilleure évacuation
- Excellentes performances pour les aciers au carbone et les aciers alliés

Features of NMP chipbreaker

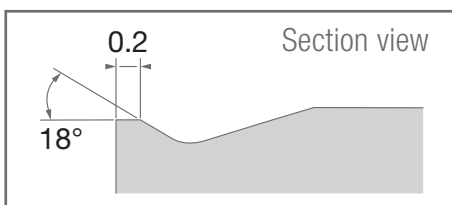


STRONG CUTTING EDGE DESIGN

- Excellent chipping resistance and highly reliable
- Improves chip forming and chip control
- Ottima resistenza alle scheggiature ed elevata affidabilità
- Migliora la formazione e il controllo del truciolo
- Höhere Robustheit und Zuverlässigkeit
- Verbessert die Spanbildung und -kontrolle
- Meilleure robustesse et fiabilité
- Améliore la formation et le contrôle des copeaux

LARGE CHIP GROOVE

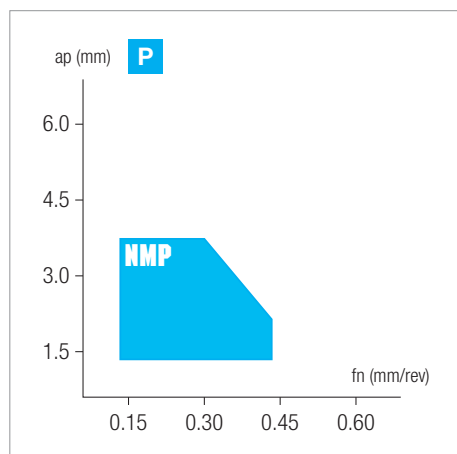
- For smooth chip flow
- Ottima evacuazione del truciolo
- Breite Nut für eine reibungslose Abfuhr der Späne
- Pour une évacuation fluide des copeaux



NMP

Chipbreaker

Application range - ISO 513



Use case

Tool type
Workpiece
Parameters

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

nikkoTOOLS

24 PCS.

Competitor A

15 PCS.

Competitor B

14 PCS.



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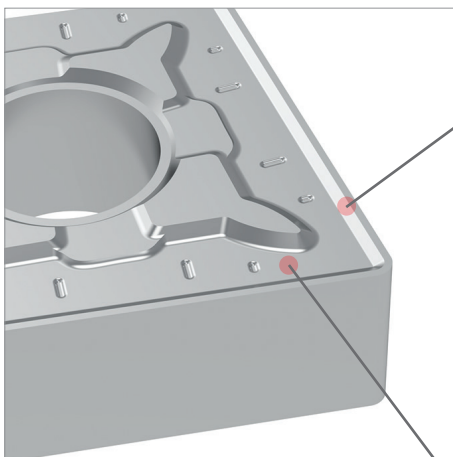
G - SPARE PARTS

NRP

Chipbreaker

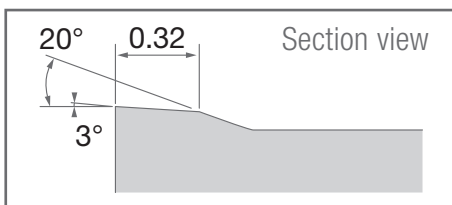
- Chipbreaker for steel, roughing application
- Strong cutting edge with variable rake angle
- Best choice for interrupted cut
- Excellent chip control at high feed rate
- Spanbrecher zum Schrappen von Stahl
- Robuste Schneidkante mit variablem Spanwinkel
- Beste Wahl für unterbrochene Schnittbedingungen
- Hervorragende Spankontrolle bei großen Vorschüben
- Rompitrucciolo per sgrossatura di acciai
- Tagliente robusto con angolo di spoglia variabile
- Migliore scelta per condizioni di taglio interrotto
- Eccellente controllo del truciolo con alti avanzamenti
- Brise-copeaux pour l'ébauche dans les aciers
- Arête de coupe robuste avec angle de dépouille variable
- Le meilleur choix pour les coupes interrompues
- Excellent contrôle des copeaux avec des avances élevées

Features of NRP chipbreaker



VARIABLE RAKE ANGLE AND EDGE WIDTH

- Uniform chip control at different cutting depth
- Reduced cutting force and high chipping resistance
- Suitable for interrupted cutting
- Controllo uniforme del truciolo alle differenti profondità di taglio
- Ridotte forze di taglio e elevata tenacità
- Consigliato per condizioni di taglio interrotto
- Gleichmäßige Spankontrolle bei unterschiedlichen Schnitttiefen
- Geringe Schnittkräfte bei großer Robustheit
- Empfohlen für unterbrochene Schnittbedingungen
- Contrôle uniforme des copeaux à différentes profondeurs de coupe
- Efforts de coupe moindres et résistance élevée à l'écaillage
- Recommandé pour la coupe interrompue



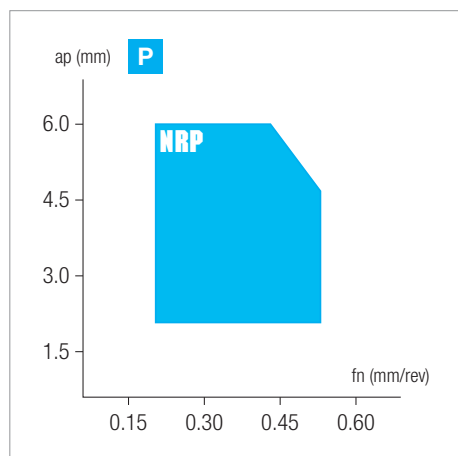
LARGE CHIP GROOVE

- Excellent chip control at medium/high feed rate
- Eccellente controllo del truciolo con avanzamenti medio/alti
- Hervorragende Spankontrolle bei mittleren/großen Vorschüben
- Excellent contrôle des copeaux avec des avances moyennes/élevées

NRP

Chipbreaker

Application range - ISO 513



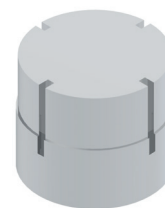
Use case

Tool type WNMG080412-NRP JC8015
Workpiece Steel 100Cr6 (1.3505)
Parameters Vc 280 m/min, fn 0.35 mm/rev, ap 2.5 mm, emulsion, interrupted cut

nixkoTOOLS 45 PCS.

Competitor A 35 PCS.

Competitor B 20 PCS.



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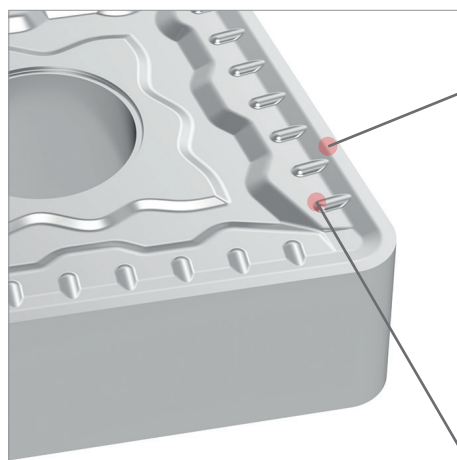
G - SPARE PARTS

MRP

Chipbreaker

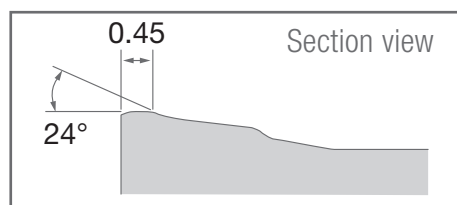
- Single side chipbreaker for steel heavy roughing
- Strong cutting edge with negative T land
- Reduced cutting force in heavy turning
- Suitable for high feed rate and high depth of cut operations
- Einseitiger Spanbrecher zum schweren Schrappen von Stählen
- Robuste Schneidkante mit negativer „T“-Fläche
- Geringere Schnittkräfte beim schweren Drehen
- Empfohlen für Bearbeitungen mit großen Vorschüben und Schnitttiefen
- Rompitrucciolo monolaterale per sgrossatura pesante di acciai
- Tagliente robusto con pianetto negativo a “T”
- Ridotte forze di taglio in tornitura pesante
- Consigliato per lavorazioni con elevati avanzamenti e grandi profondità di taglio
- Brise-copeaux unilatéral pour l'ébauche intensive d'aciers
- Arête de coupe robuste avec « T » négatif
- Efforts de coupe réduits en tournage intensif
- Recommandé pour usinage avec avances élevées et grandes profondeurs de coupe

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
- Tagliente molto robusto
- Forze di taglio ridotte
- Consigliato per elevati avanzamenti e grandi profondità di taglio
- Sehr robuste Schneidkante
- Geringere Schnittkräfte
- Empfohlen für große Vorschübe und Schnitttiefen
- Brise-copeaux unilatéral pour l'ébauche intensive d'aciers
- Arête de coupe robuste avec « T » négatif
- Efforts de coupe réduits en tournage intensif
- Recommandé pour des avances élevées et grandes profondeurs de coupe



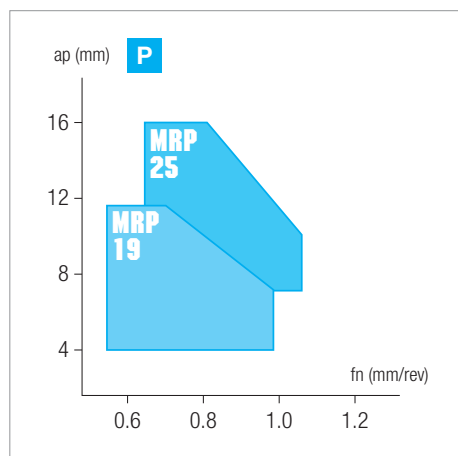
BIG GUIDING DOTS DESIGN

- Guide the chip flow to the right direction
- Guidano il flusso del truciolo verso la giusta direzione
- Lenken den Spänefluss in die richtige Richtung
- Ils guident l'évacuation des copeaux dans la bonne direction

MRP

Chipbreaker

Application range - ISO 513



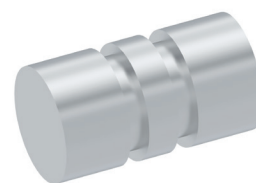
Use case

Tool type SNMM250924-MRP JC8035
Workpiece Steel 20MnCr5 (1.7147)
Parameters V_c 80 m/min, f_n 0.80 mm/rev, a_p 10.0 mm, emulsion

nikkoTOOLS 10 PCS.

Competitor A 9 PCS.

Competitor B 7 PCS.



INDEXABLE

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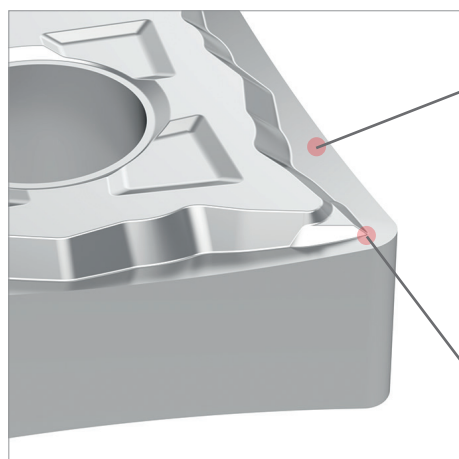
G - SPARE PARTS

NSM

Chipbreaker

- Chipbreaker for stainless steel, finishing and light cutting
 - Curved edge design
 - Strong and sharp edge
 - Excellent surface finishing
- Spanteiler für die Feinbearbeitung von rostfreiem Stahl und leichte Schnittbedingungen
 - Ausführung mit gekrümmter Schnittkante
 - Robuste, aber dennoch scharfe Schneidkante
 - Hochwertige Oberflächenqualität
- Rompitrucciolo per la finitura di acciai inossidabili, condizioni di taglio leggero
 - Design con tagliente ricurvo
 - Tagliente robusto e affilato
 - Finitura superficiale di elevata qualità
- Brise-copeaux pour finition d'aciers inoxydables dans des conditions de coupe légères
 - Arête de coupe incurvée
 - Arête de coupe robuste et affûtée
 - Finition de surface haute qualité

Features of NSM chipbreaker

**CURVED CUTTING EDGE**

- Sharp cutting edge with high stability
 - Wide chip evacuation area
- Tagliente affilato con elevata stabilità
 - Ampia area di evacuazione del truciolo
- Scharfe Schneidkante mit hoher Stabilität
 - Großer Späneabfuhrbereich
- Arête de coupe affûtée dotée d'une grande stabilité
 - Large zone d'évacuation copeaux

SMALL NOSE DESIGN

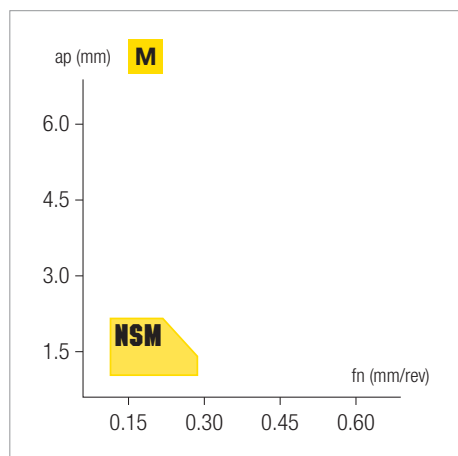
- Excellent chip control even at small depths of cut
- Eccellente controllo del truciolo anche con piccole profondità di taglio
- Hervorragende Spankontrolle bei kleinen Schnitttiefen
- Excellent contrôle des copeaux à de faibles profondeurs de coupe



NSM

Chipbreaker

Application range - ISO 513



Use case

Tool type TNMG160408-NSM JP9015
Workpiece Stainless steel AISI304 (1.4301)
Parameters V_c 240 m/min, f_n 0.13 mm/min, a_p 0.6 mm, emulsion

nikkoTOOLS 1200 PCS.

Competitor A 450 PCS.

Competitor B 420 PCS.



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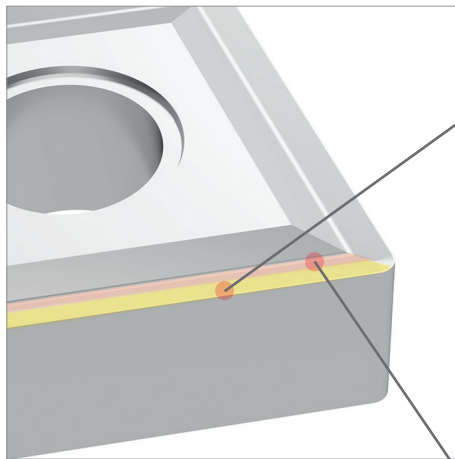
G - SPARE PARTS

NMM

Chipbreaker

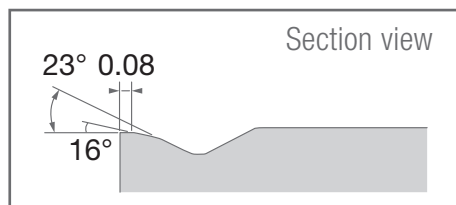
- Chipbreaker for stainless steel medium cutting
- Double rake angle design for good balance between toughness and sharpness
- Specific design for sticky material cutting
- Universal application on stainless steel
- Spanbrecher für rostfreie Stähle und mittlere Schnittbedingungen
- Ausführung mit doppeltem Spanwinkel für ein gutes Verhältnis zwischen Robustheit und Schärfe
- Spezifisches Design zum Schneiden haftender Materialien
- Universelle Anwendung bei rostfreien Stählen
- Rompitrucciolo per acciai inossidabili, condizioni di taglio medio
- Design con doppio angolo di spoglia per buon bilanciamento tra tenacità e affilatura
- Disegno specifico per il taglio di materiali con tendenza all'incollaggio
- Applicazione universale su acciai inossidabili
- Brise-copeaux pour aciers inoxydables et conditions de coupe moyennes
- Conception à double angle de dépouille pour un bon équilibre entre ténacité et acuité
- Conception spécifique pour l'usinage de matériaux collants
- Application universelle sur aciers inoxydables

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
- Tagliente affilato e tenace
- Processo di taglio affidabile in applicazioni universali
- Micro geometria adatta a materiali con tendenza all'incollaggio
- Scharfe und robuste Schneidkante
- Zuverlässiger Schneidprozess für universelle Anwendungen
- Mikrogeometrie, für pastöse Materialien geeignet
- Arête de coupe affûtée et robuste
- Processus de coupe fiable dans le cadre d'applications universelles
- Micro géométrie adaptée aux matériaux collants



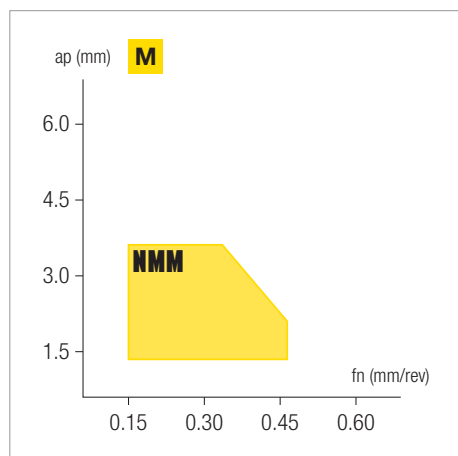
DEEP CHIP GROOVE DESIGN

- Wide and deep chip evacuation area
- Vano per l'evacuazione dei trucioli ampio e profondo
- Großer Spanabfuhrbereich bei mittleren Schnitttiefen
- Zone d'évacuation des copeaux large et profonde

NMM

Chipbreaker

Application range - ISO 513



Use case

Tool type
Workpiece
Parameters

TNMG160408-NMM JC9025
 Stainless steel AISI304 (1.4301)
 V_c 180 m/min, f_n 0.27 mm/rev,
 a_p 2.5 mm, emulsion

nixkoTOOLS

330 PCS.

Competitor A

300 PCS.

Competitor B

280 PCS.



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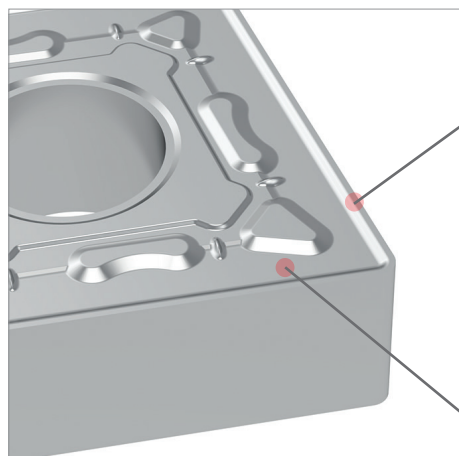
G - SPARE PARTS

NRM

Chipbreaker

- Chipbreaker for stainless steel roughing
- Strong cutting edge with double rake angle
- Excellent chip control at high feed rate
- Efficient even on irregular and oxidized surfaces
- Spanbrecher zum Schrappen von rostfreien Stählen
- Robuste Schneidkante mit doppeltem Spanwinkel
- Hervorragende Spankontrolle bei großen Vorschüben
- Geeignet für ungleichmäßige und oxidierte Oberflächen
- Rompitrucciolo per sgrossatura di acciai inossidabili
- Tagliente robusto con doppio angolo di spoglia
- Eccellente controllo del truciolo con alti avanzamenti
- Molto efficace anche su superfici irregolari e ossidate
- Brise-copeaux pour l'ébauche d'aciers inoxydables
- Arête de coupe robuste avec double angle de dépouille
- Excellent contrôle des copeaux avec des avances élevées
- Convient aux surfaces irrégulières et oxydées

Features of NRM chipbreaker

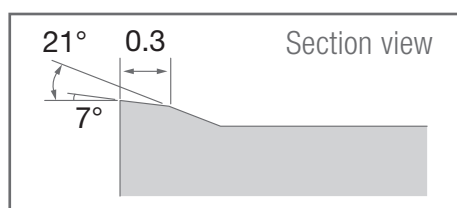


LARGE AND POSITIVE EDGE WIDTH DESIGN

- Reduced cutting force combined with strong edge
- Suitable for removing irregular and oxidized surfaces
- Ridotte forze di taglio con tagliente robusto
- Consigliato per la rimozione di superfici irregolari e ossidate
- Geringe Schnittkräfte bei großer Robustheit
- Empfohlen zum Abtragen von ungleichmäßigen und oxidierten Oberflächen
- Efforts de coupe réduits avec une arête robuste
- Recommandé pour l'usinage de surfaces irrégulières et oxydées

BIG SHALLOW CHIP GROOVE

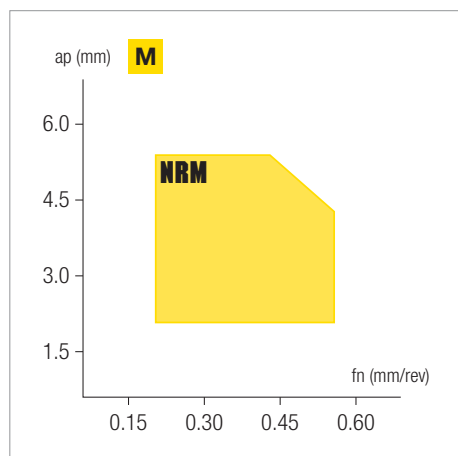
- Efficiently guides and evacuates a big volume of chips
- Eccellente controllo di grandi volumi di trucioli
- Effiziente Führung und Abfuhr großer Mengen von Spänen
- Efficace pour guider et évacuer de gros volumes de copeaux



NRM

Chipbreaker

Application range - ISO 513



Use case

Tool type CNMG160612-NRM JP9030
Workpiece Stainless steel AISI303 (1.4305)
Parameters V_c 120 m/min, f_n 0.45 mm/rev, a_p 4.0 mm, emulsion, interrupted



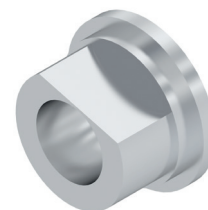
80 PCS.

Competitor A

70 PCS.

Competitor B

70 PCS.



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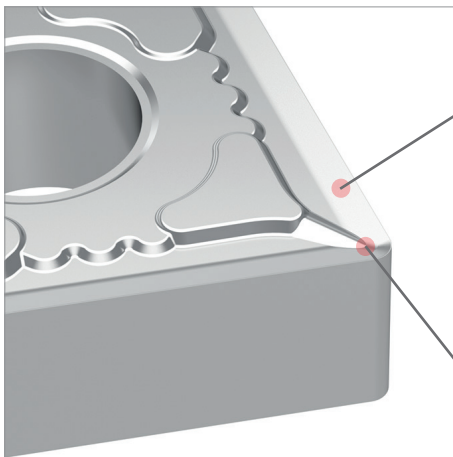
G - SPARE PARTS

NMS

Chipbreaker

- Strong and positive edge for stainless steel and super alloy
- Variable edge and rake angle angle for semi-finishing or roughing
- High reliability and stability
- Robuste Schneidkante mit scharfem Spanwinkel für rostfreie Stähle und Superlegierungen
- Variable Schneidkante und Spanwinkel zum Schruppschlichten oder Schruppen
- Hohe Zuverlässigkeit und Stabilität
- Tagliente robusto e affilato per acciai inossidabili e superleghe
- Tagliente e angolo di spoglia variabili per semifinitura o sgrossatura
- Elevate affidabilità e stabilità
- Arête de coupe robuste et affûtée pour aciers inoxydables et superalliages
- Arête et angle de dépouille variables pour semi-finition ou ébauche
- Haute fiabilité et stabilité

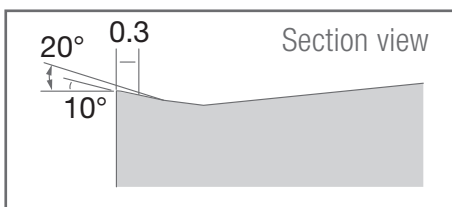
Features of NMS chipbreaker

**STRONG EDGE AND SHARP EDGE**

- Strengthened edge width provides good reliability
- Sharp edge reduces cutting resistance
- Pianetto rinforzato che offre buona affidabilità
- Angolo di spoglia affilato che riduce la resistenza al taglio
- Schneidkante mit verstärkter Breite für eine hohe Zuverlässigkeit
- Scharfer Spanwinkel zur Reduzierung des Schneidwiderstands
- Largeur de l'arête renforcée pour une bonne fiabilité
- Arête vive réduisant les efforts de coupe

SHARP NOSE WITH OPEN CHIP GROOVE

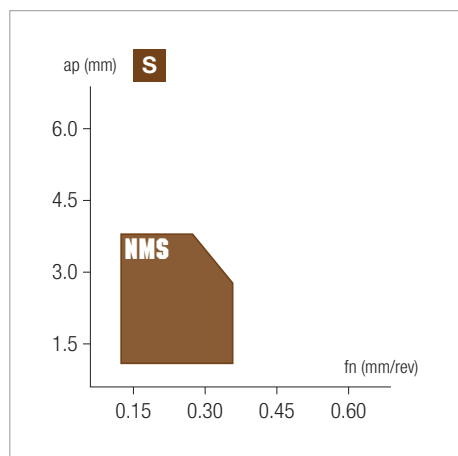
- Guides chip flow and improves chip control
- Excellent chip control at small depths of cut
- Guida il flusso del truciolo e ne migliora il controllo
- Eccellente controllo del truciolo a piccole profondità di taglio
- Lenkt den Spanfluss und verbessert die Spankontrolle
- Hervorragende Spankontrolle bei kleinen Schnittiefen
- Guide l'évacuation des copeaux et en améliore le contrôle
- Excellent contrôle des copeaux à de faibles profondeurs de coupe



NMS

Chipbreaker

Application range - ISO 513



Use case

Tool type CNMG120408-NMS JP3015
Workpiece Inconel 718 (2.4668)
Parameters Vc 50 m/min, fn 0.20 mm/rev,
 ap 1.5 mm, emulsion



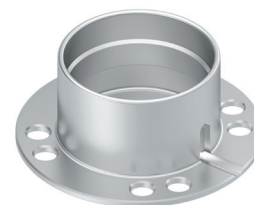
3 PCS.

Competitor A

2 PCS.

Competitor B

1 PCS.



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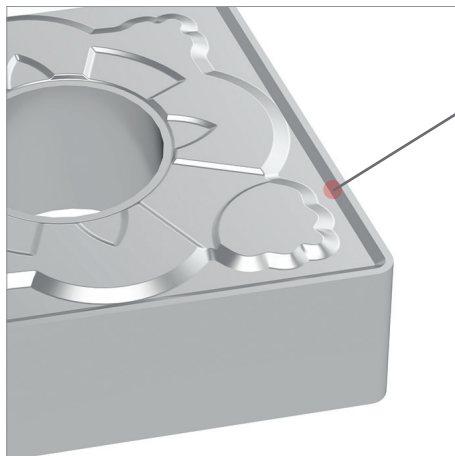
G - SPARE PARTS

NUK

Chipbreaker

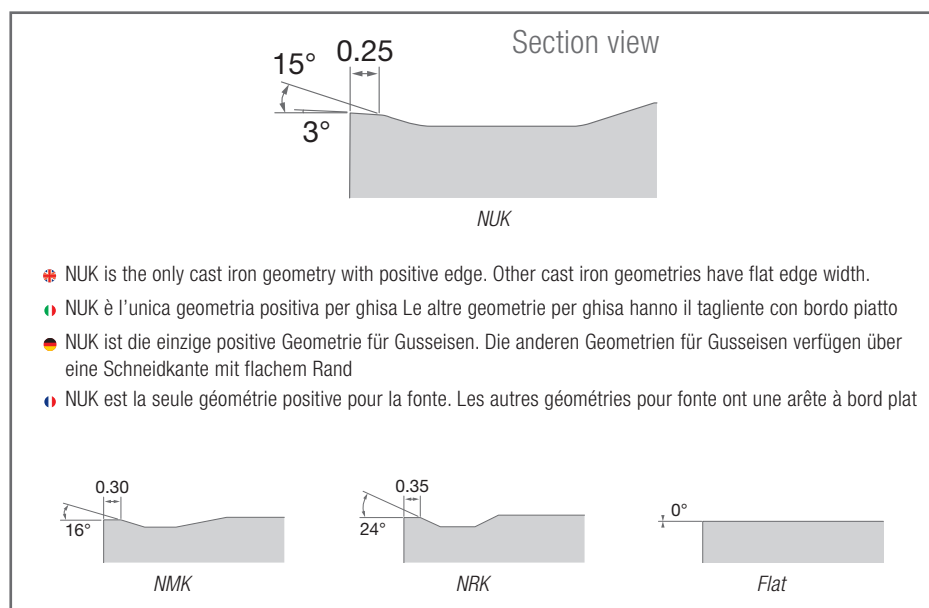
- Chipbreaker for cast iron light to medium cutting
- Effectively reduces burrs
- Specific for nodular cast iron
- Spanbrecher für Gusseisen und leichte bis mittlere Schnittbedingungen
- Effektiv bei der Reduzierung von Gratbildung
- Spezifisch für Sphäroguss
- Rompitrucciolo per ghisa, condizioni di taglio da medie a leggere
- Efficace nel ridurre la formazione di bave
- Specifico per ghisa sferoidale
- Brise-copeaux pour la fonte dans des conditions de coupe de légère à moyenne
- Efficace pour réduire la formation de bavures
- Spécifique pour fonte sphéroïdale

Features of NUK chipbreaker



POSITIVE EDGE DESIGN

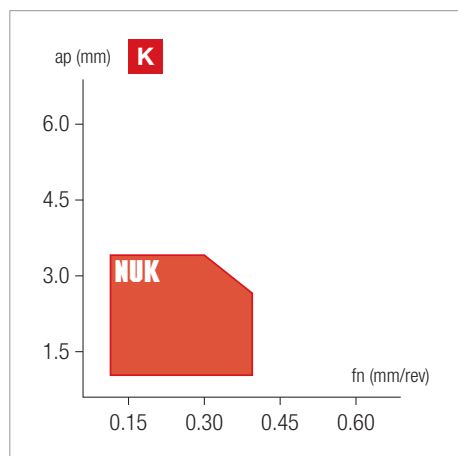
- Slightly sharper than conventional cast iron geometries
- Effectively reduces burrs
- Suitable for nodular cast iron
- Leggeremente più tagliente rispetto alle convenzionali geometrie per ghisa
- Efficace nel ridurre la formazione di bave
- Consigliato per ghisa sferoidale
- Etwas schärfer als die herkömmlichen Geometrien für Gusseisen
- Effektiv bei der Reduzierung von Gratbildung
- Empfohlen für Sphäroguss
- Légèrement plus affûtée que les géométries conventionnelles pour la fonte
- Efficace pour réduire la formation de bavures
- Recommandé pour la fonte sphéroïdale



NUK

Chipbreaker

Application range - ISO 513



Use case

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

nixkoTOOLS

880 PCS.

Competitor A

400 PCS.

Competitor B

380 PCS.



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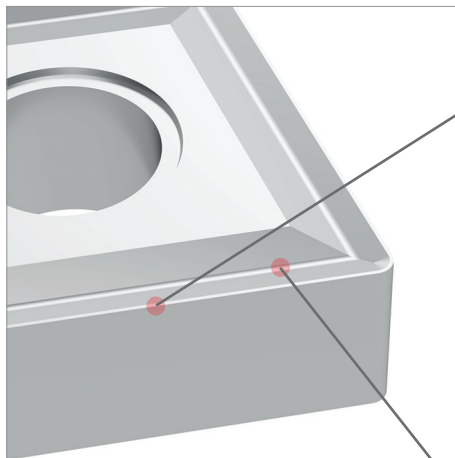
G - SPARE PARTS

NMK

Chipbreaker

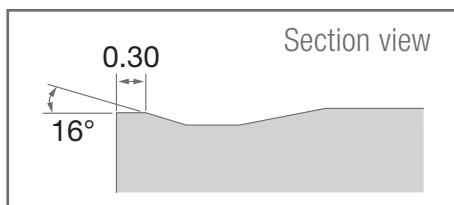
- Chipbreaker for cast iron, general machining
- Strong cutting edge
- Suitable for unstable machining
- Specific for cast iron boring operation
- Spanbrecher für allgemeine Anwendungen zum Schneiden von Gusseisen
- Verstärkte Schneidkanten
- Geeignet für die Bearbeitung unter instabilen Schnittbedingungen
- Speziell für das Bohren von Gusseisen
- Rompitrucciolo per ghisa, applicazione generica
- Tagliente rinforzato
- Per lavorazioni instabili
- Specifico per operazioni di barenatura di ghisa
- Brise-copeaux pour applications générales d'usinage dans la fonte
- Arête de coupe renforcée
- Convient à l'usinage dans des conditions de coupe instables
- Spécifique aux opérations d'alésage dans la fonte

Features of NMK chipbreaker



REINFORCED CUTTING EDGE

- Strong cutting edge but with reduced cutting force
- Suitable for unstable cutting conditions
- Problem solver for cast iron boring
- Tagliente robusto con ridotta forza di taglio
- Adatto a condizioni di taglio instabili
- Perfetto per qualsiasi problematica nella barenatura di ghisa
- Robuste Schneidkante mit niedriger Schneidkraft
- Geeignet für instabile Schnittbedingungen
- Perfekt für jegliche Probleme bei der Bearbeitung von Gusseisen
- Arête de coupe robuste avec efforts de coupe réduits
- Convient aux conditions de coupe instables
- Parfait pour toute problématique d'alésage de fonte



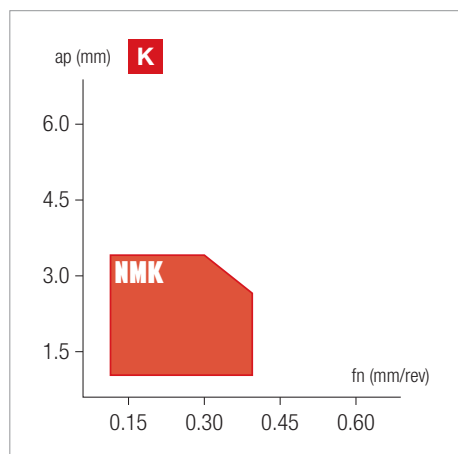
OPEN CHIP GROOVE DESIGN

- Wide chip evacuation area at medium depth of cut
- Ampia area di evacuazione del truciolo a medie profondità di taglio
- Großer Spanabfuhrbereich bei mittleren Schnitttiefen
- Large zone d'évacuation des copeaux à des profondeurs de coupe moyennes

NMK

Chipbreaker

Application range - ISO 513



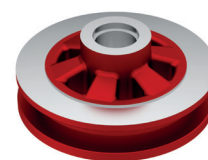
Use case

Tool type CNMG120408-NMK
Workpiece Nodular cast iron GS500 (0.7050)
Parameters · 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

nikkoTOOLS **1200 PCS.**

Competitor A **450 PCS.**

Competitor B **420 PCS.**



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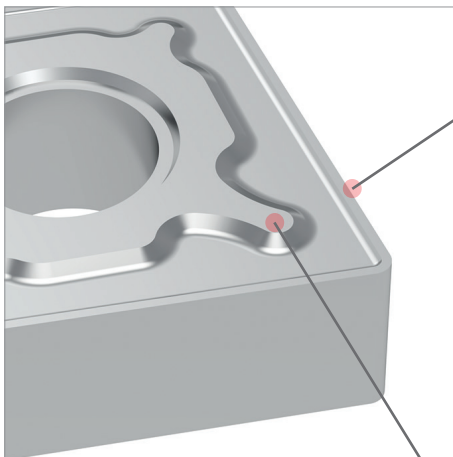
G - SPARE PARTS

NRK

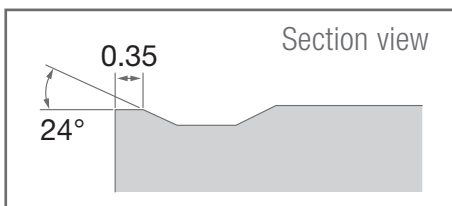
Chipbreaker

- Chipbreaker for cast iron roughing
- Replaces traditional flat top inserts
- Expert in removing black casted surface
- Extremely broad cutting range
- Rompitrucciolo per sgrossatura della ghisa
- Sostituisce i convenzionali inserti piatti
- Esperto nella rimozione di crosta superficiale
- Campo applicativo estremamente ampio
- Spanbrecher zum Schrappen von Guss
- Ersetzt herkömmliche flache Wendeschneidplatten
- Perfekt geeignet für die Abtragung von oxidierten Oberflächen
- Extrem großer Schnittbereich
- Brise-copeaux pour l'ébauche de la fonte
- Remplace les plaquettes à bouts plats conventionnelles
- Expert dans l'enlèvement de matières coulées
- Champ d'application extrêmement large

Features of NRK chipbreaker

**STRONG CUTTING EDGE DESIGN**

- Strong cutting edge and high reliability
- Suitable for large depth of cut and high feed rate
- Suitable for removing irregular and oxidized surfaces
- Tagliente robusto e affidabile
- Consigliato per lavorazioni con grandi profondità di taglio e elevati avanzamenti
- Consigliato per la rimozione di superfici irregolari con crosta
- Robuste und zuverlässige Schneidkante
- Empfohlen für die Bearbeitung mit großen Schnitttiefen und Vorschüben
- Empfohlen zum Abtragen von ungleichmäßigen und oxidierten Oberflächen
- Arête de coupe robuste et fiable
- Recommandé pour l'usinage à grandes profondeurs de coupe et grandes avances
- Recommandé pour l'usinage de surfaces irrégulières et oxydées

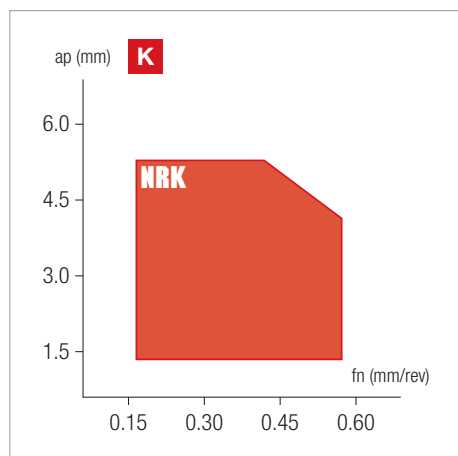
**PRECISION LAPPED SUPPORT SURFACE**

- Improves the stability and reliability under unstable conditions
- Migliora stabilità e affidabilità in condizioni di taglio instabili
- Verbesserte Stabilität und Zuverlässigkeit bei instabilen Schnittbedingungen
- Améliore stabilité et fiabilité dans des conditions de coupe instables

NRK

Chipbreaker

Application range - ISO 513



Use case

Tool type CNMG160616-NRK JC7115
Workpiece Nodular cast iron GS500 (0.7050)
Parameters V_c 180 m/min, f_n 0.35 mm/min, a_p 4 mm, emulsion



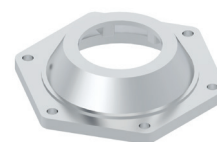
70 PCS.

Competitor A

30 PCS.

Competitor B

20 PCS.



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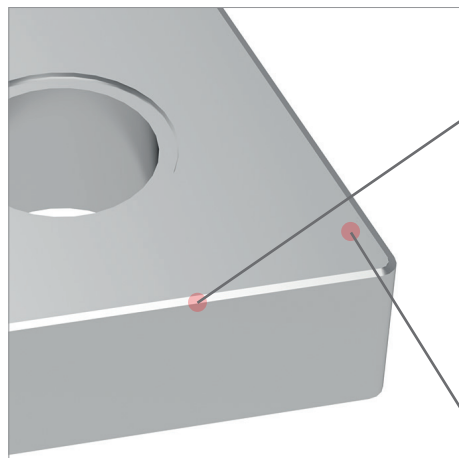
G - SPARE PARTS

Chipbreaker

Flat

- Conventional solution for cast iron general machining
- Stable and reliable cutting process
- Mainly used for GG cast iron
- Wide application range
- Die konventionelle Lösung für die allgemeine Bearbeitung von Grauguss
- Stabiler und zuverlässiger Schneidprozess
- Wird hauptsächlich für Anwendungen mit Grauguss verwendet
- Extrem großer Schnittbereich
- Soluzione convenzionale per applicazioni generiche su ghisa grigia
- Processo di taglio stabile e affidabile
- Principalmente usato per applicazioni su ghisa grigia
- Campo applicativo estremamente ampio
- Solution conventionnelle pour l'usinage général de la fonte grise
- Processus de coupe stable et fiable
- Principalement utilisé pour des applications sur fonte grise
- Large plage d'applications

Features of Flat chipbreaker

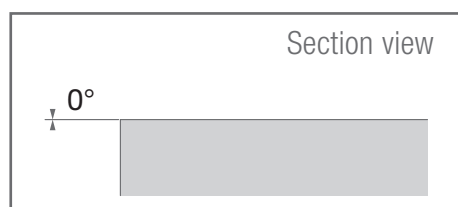


SPECIAL MICRO GEOMETRY

- Special edge preparation for low cutting force despite the flat design
- Maintains stable and reliable cutting process
- Speciale preparazione del tagliente per bassi sforzi di taglio nonostante il design piatto.
- Garantisce stabilità e affidabilità
- Spezielle Schneidkantenpräparation für geringe Schnittkräfte trotz flacher Bauform.
- Gewährleistet stabile und zuverlässige Schneidprozesse
- Préparation spéciale des arêtes de coupe pour de faibles forces de coupe malgré une conception plate
- Processus de coupe stables et fiables

CLASSICAL FLAT CHIPBREAKER

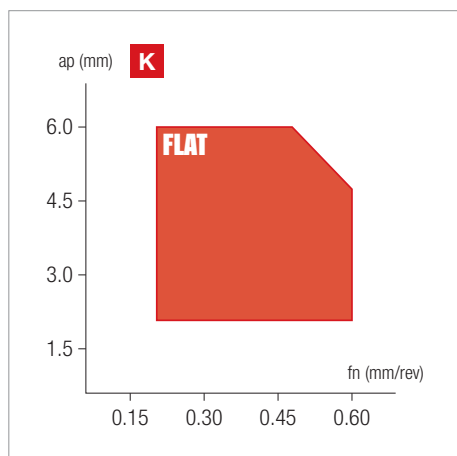
- Versatility of use, wide Vc and fn range choice
- Versatilità di impiego, ampia scelta di Vc e fn
- Für verschiedene Schnittparameter erhältlich
- Utilisation polyvalente, large choix Vc et Fn



Flat

Chipbreaker

Application range - ISO 513



Use case

Tool type

CNMA120416 JC7010

Workpiece

Grey cast iron GG25 (0.6025)

Parameters

V_c 280 m/min, f_n 0.40 mm/rev,
 a_p 3.0 mm, emulsion, interrupted cut



175 PCS.

Competitor A

150 PCS.

Competitor B

148 PCS.



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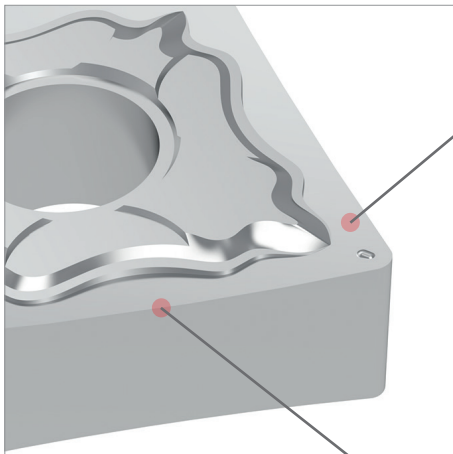
G - SPARE PARTS

NMN

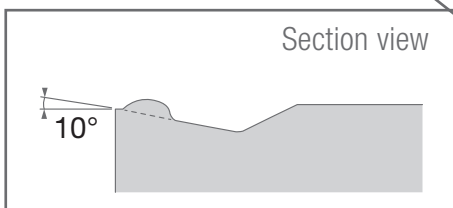
Chipbreaker

- Chipbreaker for non-ferrous materials
 - High positive rake angle
 - Ideal chip forming for smooth ejection
 - Excellent surface finishing
- Spanbrecher für Nichteisenmaterialien
 - Geometrie mit stark positivem Spanwinkel
 - Ideale Spanbildung und -abfuhr
 - Ausgezeichnete Oberflächenqualität
- Rompitrucciolo per materiali non ferrosi
 - Geometria con angolo di spoglia fortemente positivo
 - Formazione ed evacuazione del truciolo ideali
 - Eccellente finitura superficiale
- Brise-copeaux pour matériaux non ferreux
 - Géométrie à angle de dépouille fortement positif
 - Formation et évacuation idéales des copeaux
 - Excellente finition des surfaces

Features of NMN chipbreaker

**CURVED EDGE WITH SPECIAL MICRO GEOMETRY**

- Ottimo compromesso tra affilatura del tagliente e robustezza.
 - Wide space for smooth chip evacuation
 - Bends and guides the chips
- Ottimo compromesso tra affilatura del tagliente e robustezza.
 - Ampia area di evacuazione del truciolo
 - Piega e guida il truciolo
- Ausgezeichneter Kompromiss zwischen Schneidenschärfe und Stabilität.
 - Großer Späneabfuhrbereich
 - Biegt und leitet den Span
- Excellent compromis entre affûtage du tranchant et robustesse.
 - Large zone d'évacuation des copeaux
 - Plie et guide les copeaux

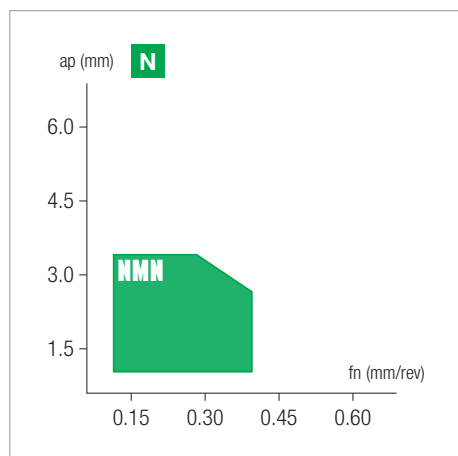
**WIDE CHIP GROOVE AND LONG EDGE**

- Effective in evacuating the chips
 - Suitable for a wide range of cutting operations
- Efficace nell'evacuazione del truciolo
 - Adatto per un ampio campo applicativo
- Effektive Spanabfuhr
 - Für eine Vielzahl von Schneidevorgängen geeignet
- Efficace pour l'évacuation des copeaux
 - Convient à une large gamme d'opérations d'usage

NMN

Chipbreaker

Application range - ISO 513



Use case

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



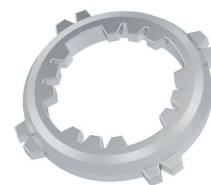
70 PCS.

Competitor A

30 PCS.

Competitor B

20 PCS.



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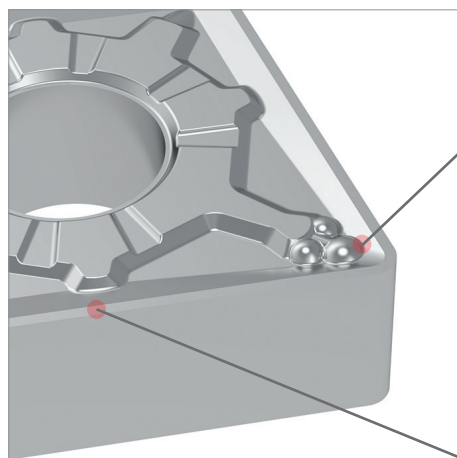
G - SPARE PARTS

NUX

Chipbreaker

- Chipbreaker for universal application
 - Double variable rake angle and edge geometry designed for toughness and high sharpness
 - Good chip formation also with limited feed rate and cutting depth
 - Universal application
- Spanteiler für universelle Anwendungen
 - Variabler Spanwinkel und variable Schneidkantenlänge für Robustheit und Schärfe
 - Gute Spanbildung auch bei geringem Vorschub und geringerer Schnitttiefe
 - Universelle Anwendung
- Rompitrucciolo per applicazioni universali
 - L'angolo di spoglia doppio e variabile unito alla particolare geometria del tagliente conferiscono elevata tenacità e taglienza.
 - Buona formazione del truciolo anche con avanzamenti e profondità di taglio ridotti
 - Applicazione universale
- Brise-copeaux pour applications universelles
 - Double angle de dépouille variable et géométrie d'arête conçus pour robustesse et acuité
 - Bonne formation de copeaux y compris avec de faibles avances et profondeurs de coupe
 - Application universelle

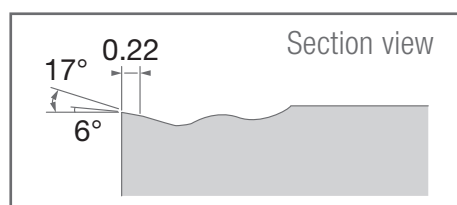
Features of NUX chipbreaker



SPECIAL GROOVES

- High toughness and chipping resistance
 - Improves chip forming and chip control
- Elevata stabilità e resistenza alle scheggiature
 - Migliora la formazione e il controllo del truciolo
- Verbesserte Robustheit
 - Verbessert die Spanbildung und -kontrolle
- Meilleure robustesse
 - Améliore la formation et le contrôle des copeaux

VARIABLE RAKE ANGLE AND EDGE WIDTH

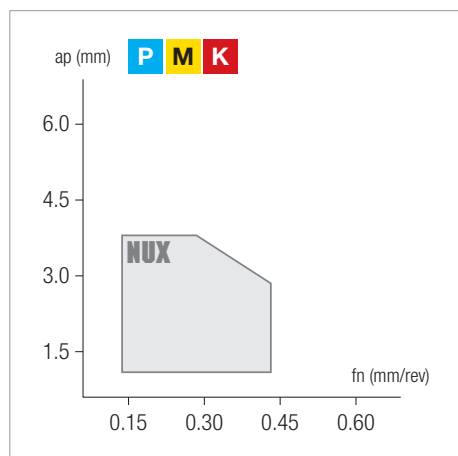


- Good balance of toughness and sharpness
 - Reliable cutting process for universal application
- Buon bilanciamento tra tenacità e taglienza
 - Processo di taglio affidabile in applicazioni universali
- Ausgewogenes Verhältnis zwischen Robustheit und Schärfe
 - Zuverlässiger Schneidprozess für universelle Anwendungen
- Bon équilibre entre robustesse et acuité
 - Processus de coupe fiable dans le cadre d'applications universelles

NUX

Chipbreaker

Application range - ISO 513



Use case

Tool type CNMG120404-NUX JC8015
Workpiece Sintered steel
Parameters V_c 300 m/min, f_n 0.12 mm/rev, a_p 1.7 mm, emulsion

nixkoTOOLS 40 PCS.

Competitor A 38 PCS.

Competitor B 30 PCS.



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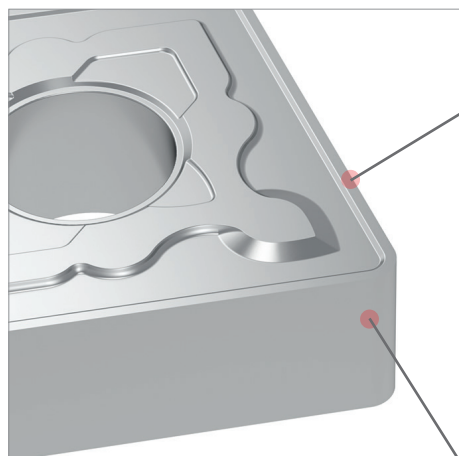
G - SPARE PARTS

NWU

Chipbreaker

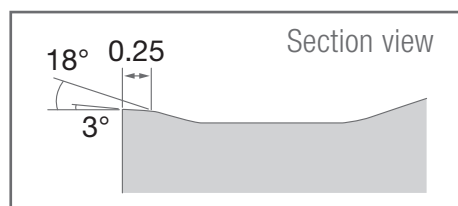
- Wiper chipbreaker for steel and cast iron
 - Anti-vibration and smooth cutting process
 - Reliable cutting edge with low cutting force
 - Universal application
- Wiper Spanbrecher für Stähle und Gusseisen
 - Vibrationssicheres und sanftes Schneiden
 - Zuverlässige Schnittkante mit geringen Schnittkräften
 - Universelle Anwendung
- Rompitrucciolo di tipo Wiper per acciai e ghisa
 - Anti-vibrazioni e taglio dolce
 - Tagliente affidabile con ridotte forze di taglio
 - Applicazione universale
- Brise-copeaux de type Wiper pour aciers et fonte
 - Anti-vibration et coupe douce
 - Arête de coupe fiable avec efforts de coupe réduits
 - Application universelle

Features of NWU chipbreaker



DOUBLE RAKE ANGLE EDGE

- Good balance of toughness and sharpness
 - Improves chip forming and chip control
 - Suitable for wide application range
- Buon bilanciamento tra tenacità e taglientezza
 - Migliora la formazione e il controllo del truciolo
 - Consigliato per un ampio campo applicativo
- Ausgewogenes Verhältnis zwischen Robustheit und Schärfe
 - Verbessert die Spanbildung und -kontrolle
 - Für einen breiten Anwendungsbereich empfohlen
- Bon équilibre entre robustesse et acuité
 - Améliore la formation et le contrôle des copeaux
 - Recommandé pour une large gamme d'applications



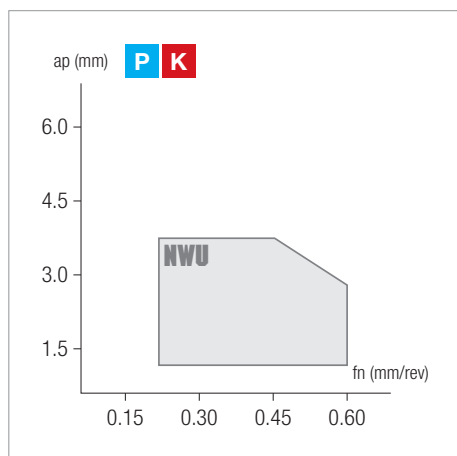
MULTIPLE-CURVE WIPER LAND

- Effective in reducing vibrations
 - Excellent surface quality
- Efficace nel ridurre le vibrazioni
 - Eccellente qualità superficiale
- Effektive Reduzierung von Vibrationen
 - Hervorragende Oberflächenqualität
- Efficace pour réduire les vibrations
 - Excellente qualité de surface

NWU

Chipbreaker

Application range - ISO 513



Use case

Tool type
Workpiece
Parameters

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

nixkoTOOLS

150 PCS.

Competitor A

140 PCS.

Competitor B

140 PCS.



✚ For more application details, please check page A84.

🇮🇹 Per maggiori dettagli applicativi, rif. pag. A84.

🇩🇪 Für weitere Details zur Anwendung, siehe Seite A84.

🇫🇷 Pour plus de détails sur les champs d'application, se reporter page A84.

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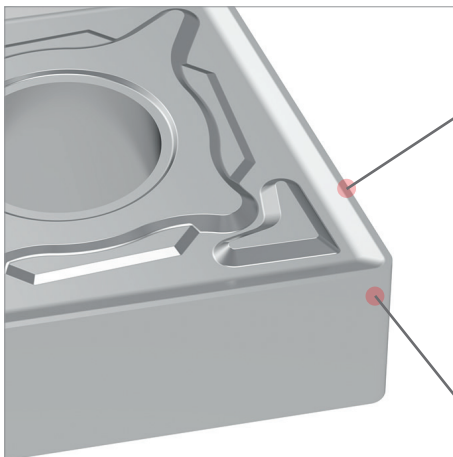
G - SPARE PARTS

NWX

Chipbreaker

- Wiper chipbreaker for steel and cast iron
 - Strong and reliable cutting edge
 - Suitable for high feed rate and large depth of cut application
 - Wide application range
- Wiper Spanbrecher für Stähle und Gusseisen
 - Robuste und zuverlässige Schneidkante
 - Empfohlen für Bearbeitungen mit großen Vorschüben und Schnitttiefen
 - Breiter Anwendungsbereich
- Rompitrucciolo di tipo Wiper per acciai e ghisa
 - Tagliente robusto e affidabile
 - Consigliato per lavorazioni con elevati avanzamenti e grandi profondità di taglio
 - Ampio campo applicativo
- Brise-copeaux de type Wiper pour aciers et fonte
 - Arête decoupe robuste et fiable
 - Recommandé pour usinage avec avances élevées et grandes profondeurs de coupe
 - Large gamme d'applications

Features of NWX chipbreaker

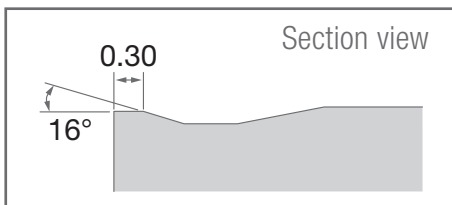


STRONG CUTTING EDGE

- Tough and reliable geometry
- Suitable for high feed rate and large depth of cut
- Migliore robustezza e affidabilità
- Adatto a lavorazioni con elevati avanzamenti e grandi profondità di taglio
- Höhere Robustheit und Zuverlässigkeit
- Für die Bearbeitung mit großem Vorschub und großer Schnitttiefe geeignet
- Géométrie robuste et fiable
- Convient à l'usinage avec des avances élevées et de grandes profondeurs de coupe

MULTIPLE-CURVE WIPER LAND

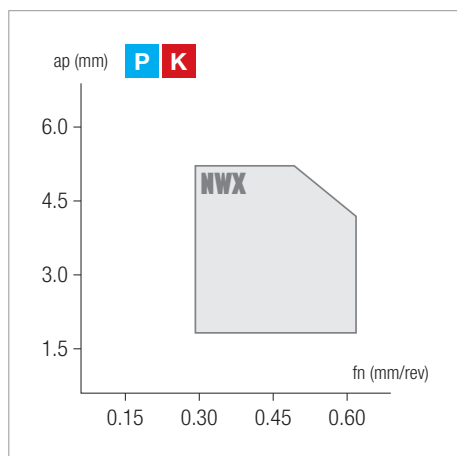
- Effectively reduce vibration
- Excellent surface quality
- Efficace nel ridurre le vibrazioni
- Eccellente qualità superficiale
- Effektive Reduzierung von Vibrationen
- Hervorragende Oberflächenqualität
- Réduit efficacement les vibrations
- Excellente qualité de surface



NWX

Chipbreaker

Application range - ISO 513



Use case

Tool type CNMG120412-NWX JC7010
Workpiece Grey cast iron GG25 (0.6025)
Parameters V_c 260 m/min, f_n 0.40 mm/rev, a_p 2.5 mm, emulsion, interrupted cut

nikkoTOOLS 70 PCS.

Competitor A 55 PCS.

Competitor B 50 PCS.



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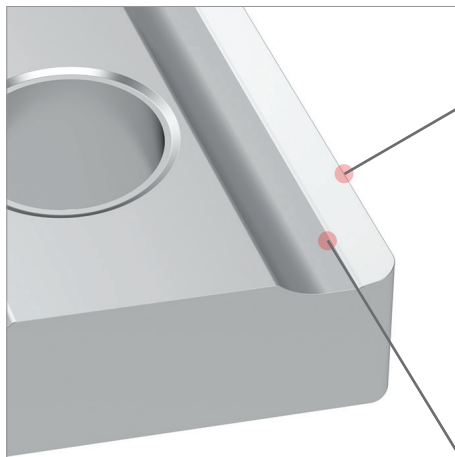
G - SPARE PARTS

NMU^L/R

Chipbreaker

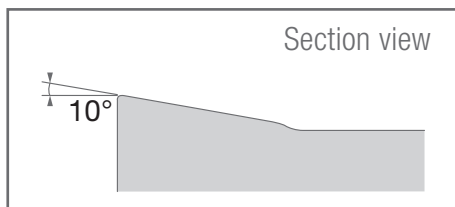
- Chipbreaker for universal use
- Highly positive geometry reduces workpiece deformation
- Excellent chip forming and guided chip evacuation
- Designed for unstable cutting conditions
- Spanbrecher für universelle Anwendungen
- Die stark positive Geometrie reduziert die Verformung des Werkstücks
- Hervorragende Spanbildung und geführte Spanabfuhr
- Geeignet für instabile Schnittbedingungen
- Rompitrucciolo per applicazioni universali
- Geometria fortemente positiva riduce la deformazione del pezzo lavorato
- Eccellente formazione ed evacuazione guidata del truciolo
- Adatto a condizioni di taglio instabili
- Brise-copeaux pour applications universelles
- La géométrie hautement positive réduit la déformation de la pièce usinée
- Excellente formation et évacuation des copeaux
- Convient aux conditions de coupe instables

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
- Eccellente formazione ed evacuazione guidata del truciolo
- Minimo effetto di deformazione sul pezzo lavorato
- Consigliato per setup instabili
- Hervorragende Spanbildung und geführte Spanabfuhr
- Minimale Verformung des Werkstücks
- Für instabile Einrichtungen empfohlen
- Excellente formation et évacuation guidée des copeaux
- Minimum de déformation sur la pièce usinée
- Recommandé pour les configurations instables



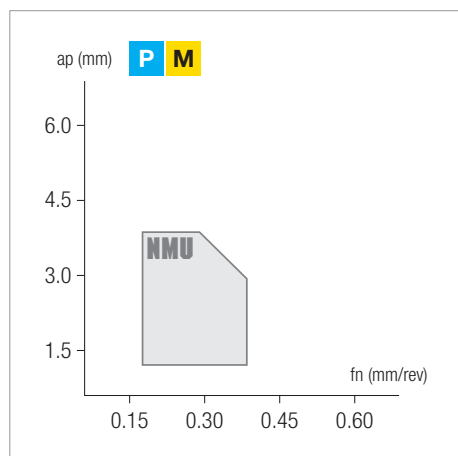
WIDE CHIP GROOVE AND LONG EDGE

- Effective in evacuating the chips
- Suitable for a wide range of cutting operations
- Efficace nell'evacuazione del truciolo
- Adatto per un ampio campo applicativo
- Effektive Spanabfuhr
- Für eine Vielzahl von Schneidevorgängen geeignet
- Efficace pour l'évacuation des copeaux
- Convient à une large gamme d'opérations d'usinage

NMU^L/R

Chipbreaker

Application range - ISO 513



Use case

Tool type DNMG150608R-NMU JC8025
Workpiece Steel C40 (1.0511)
Parameters Vc 200 m/min, f_n 0.30 mm/rev, a_p 2.0 mm, emulsion

nikkoTOOLS 280 PCS.

Competitor A 250 PCS.

Competitor B 230 PCS.



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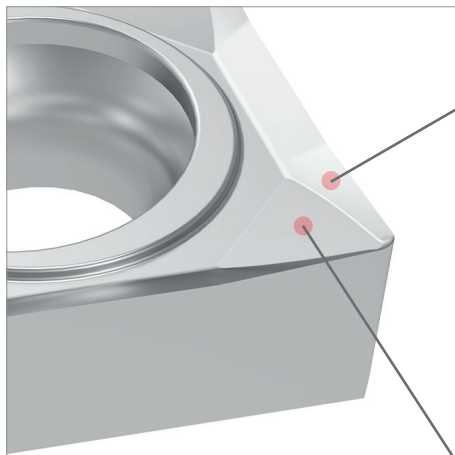
G - SPARE PARTS

PMN

Chipbreaker

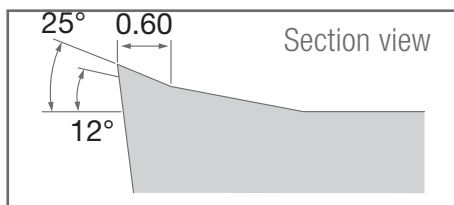
- Chipbreaker for non-ferrous materials
- Highly positive and fine polished geometry
- Excellent chip control
- Low vibration even at high feed
- Spanbrecher für Nichteisenmaterialien
- Starke positive Geometrie, fine polished
- Behutsame und geführte Spanabfuhr
- Verringert Vibrationen bei der Bearbeitung mit größeren Vorschüben
- Rompitrucciolo per materiali non ferrosi
- Geometria fortemente positiva, lappata
- Eccellente controllo del truciolo
- Vibrazioni ridotte anche con avanzamenti elevati
- Brise-copeaux pour matériaux non ferreux
- Géométrie fortement positive et polie
- Évacuation fluide et guidée des copeaux
- Réduit les vibrations lors d'usinage à des avances plus élevées

Features of PMN chipbreaker



HIGHLY POSITIVE NARROW EDGE

- Smooth cutting process
- Improved reliability
- Fine surface finishing at higher feed rate
- Elevata taglienza
- Grande affidabilità
- Eccellente finitura superficiale anche con avanzamenti elevati
- Angenehm leichtgängiger Schneidprozess
- Verbesserte Zuverlässigkeit
- Präzise Oberflächenqualität mit hohen Vorschüben
- Coupe douce
- Optimisation de la fiabilité
- Finition de surface optimisée à des avances élevées



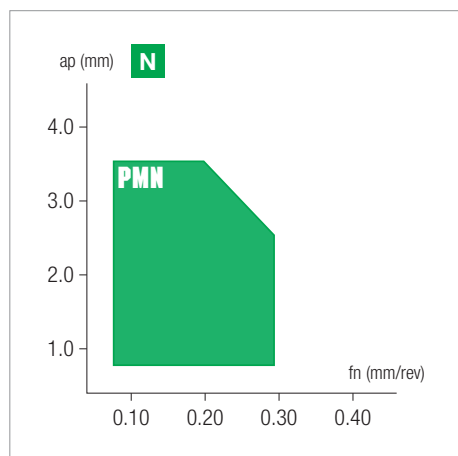
MIRROR-POLISHED SUPPORTING RAKE FACE

- Gives the sharp edge stronger support
- Guided smooth efficient chip flow
- Tagliente vivo ma al tempo stesso robusto
- Taglio dolce ed efficace evacuazione del truciolo
- Sorgt für einen sicheren Halt der scharfen Schneidkante
- Effektive und behutsame Spanabfuhr
- Donne à l'arête vive un support plus résistant
- Évacuation efficace et fluide des copeaux

PMN

Chipbreaker

Application range - ISO 513



Use case

Tool type CCGX09T304-PMN JP6010
Workpiece Alluminium alloy ERGAL (3.4365)
Parameters Vc 350 m/min, fn 0.18 mm/min, ap 0.2 mm emulsion



4000 PCS.

Competitor A

1500 PCS.

Competitor B

1200 PCS.

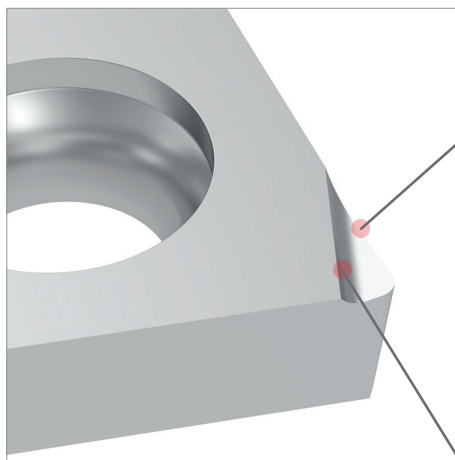


PPF

Chipbreaker

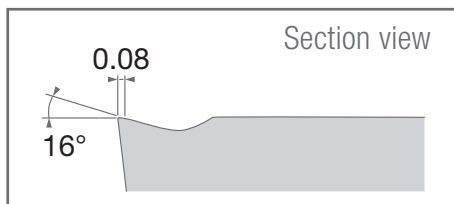
- Ground chipbreaker for small part finishing
- High precision and low cutting force
- Excellent chip control
- For steel and stainless steel finishing
- Geschliffener Spanbrecher für die Feinbearbeitung kleiner Komponenten
- Hohe Präzision und geringe Schnittkraft
- Hervorragende Spanbildung und geführte Spanabfuhr
- Für die Feinbearbeitung von Stählen und rostfreien Stählen
- Rompitruciolo rettificato per la finitura di piccoli componenti
- Elevata precisione e bassi sforzi di taglio
- Eccellente controllo del truciolo
- Per la finitura di acciai e acciai inossidabili
- Brise-copeaux rectifié pour la finition de petites pièces
- Haute précision et faible efforts de coupe
- Excellente formation et évacuation guidée des copeaux
- Pour la finition d'aciers et aciers inoxydables

Features of PPF chipbreaker



VARIABLE WIDTH AND SHARP EDGE DESIGN

- Sharp but strong cutting edge
- Minimum bending effect on the workpiece
- Excellent surface finishing
- Tagliente molto affilato e robusto
- Minimo effetto di deformazione sul pezzo lavorato
- Eccellente finitura superficiale
- Scharfe und robuste Schneidkante
- Minimale Verformung des Werkstücks
- Ausgezeichnete Oberflächenqualität
- Arête de coupe vive mais robuste
- Effet de déformation minimal sur la pièce usinée
- Excellente finition des surfaces



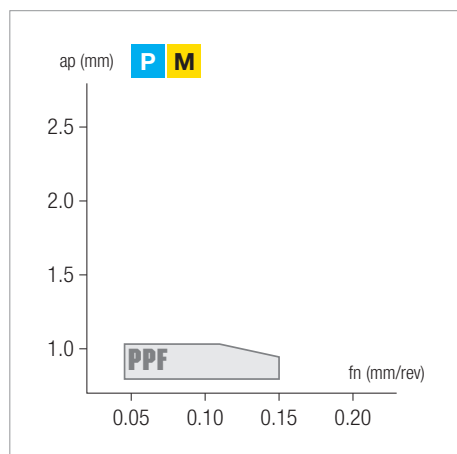
NARROW AND SHALLOW CHIP GROOVE

- Effectively breaks the chips
- Guides chip flow and reduces cutting resistance
- Spezza efficacemente il truciolo
- Guida l'evacuazione del truciolo e riduce la resistenza al taglio
- Bricht den Span effektiv auf
- Führt die Spanabfuhr und verringert den Schnittwiderstand
- Bon fractionnement des copeaux
- Bonne évacuation des copeaux et efforts de coupe réduits

PPF

Chipbreaker

Application range - ISO 513



Use case

Tool type TPEH110304L-PPF JU4015
Workpiece Steel St 37-3 (1.0116)
Parameters V_c 200 m/min, f_n 0.05 mm/rev, a_p 0.5 mm, emulsion

nixkoTOOLS 1200 PCS.

Competitor A 1150 PCS.

Competitor B 1000 PCS.



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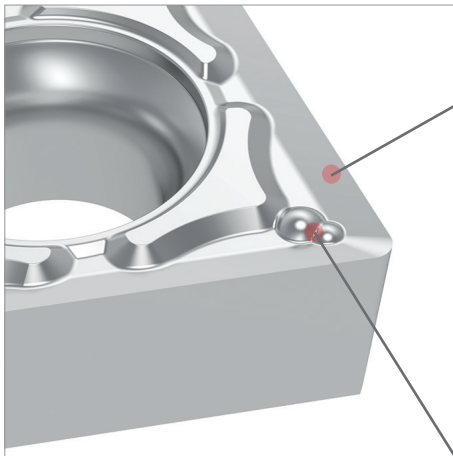
G - SPARE PARTS

PFU

Chipbreaker

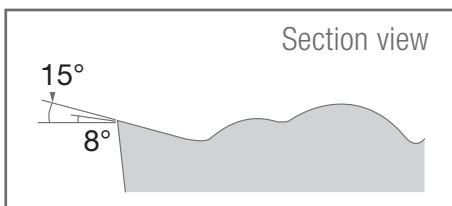
- Positive chipbreaker for ISO P, M, S materials light cutting
 - Sharp edge for excellent surface quality
 - Good chip formation also with low feed rate and small depth of cut
 - Specifically designed for stainless steels and super alloys
- Rompitrucciolo positivo per materiali ISO P, M, S in condizioni di taglio leggero
 - Tagliente affilato per eccellente finitura superficiale
 - Buona formazione del truciolo anche con avanzamenti ridotti e basse profondità di taglio
 - Progettato specificamente per acciai inossidabili e superleghe
- Positiver Spanbrecher für ISO-Materialien P, M, S unter leichten Schnittbedingungen
 - Scharfe Schneidkante für hervorragende Oberflächenqualität
 - Gute Spanbildung auch bei geringem Vorschub und geringerer Schnittiefe
 - Speziell für rostfreie Stähle und Superlegierungen konzipiert
- Brise-copeaux positif pour matériaux ISO P, M, S dans des conditions de coupe légère
 - Arête de coupe vive pour une excellente finition de surface
 - Bonne formation de copeaux y compris avec de faibles avances et profondeurs de coupe
 - Conçu spécifiquement pour aciers inoxydables et superalliages

Features of PFU chipbreaker



SHARP CUTTING EDGE

- Good surface finish
 - Very low vibration in boring process
 - Designed for cutting stainless and super alloys
- Buona finitura superficiale
 - Ridotte vibrazioni nelle operazioni di barenatura
 - Specifico per il taglio di acciai inossidabili e superleghe
- Gute Oberflächenqualität
 - Geringere Vibrationen beim Bohren
 - Speziell zum Schneiden von rostfreien Stählen und Superlegierungen
- Bonne finition de surface
 - Vibrations réduites lors d'opérations d'alésage
 - Spécifique pour la coupe d'aciers inoxydables et de superalliages



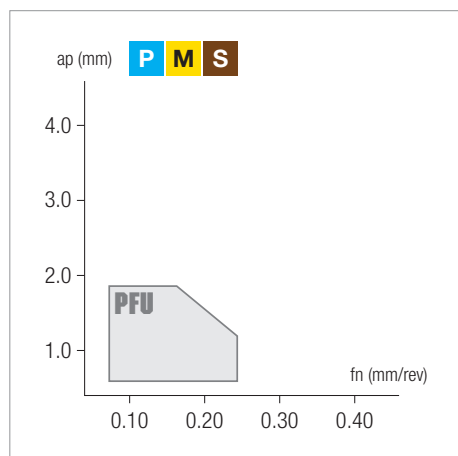
BI-SPHERICAL DESIGN

- For perfect chip control even with low feed and small depth of cut
- Eccellente controllo truciolo anche con avanzamenti e profondità di taglio ridotti
- Bricht die Späne bei niedrigem Vorschub und geringen Schnittiefen und führt sie ab
- Brise et guide l'évacuation des copeaux dans des conditions d'avances réduites et de faibles profondeurs de coupe

PFU

Chipbreaker

Application range - ISO 513



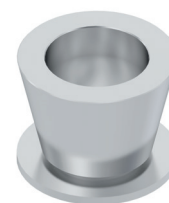
Use case

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

nixkoTOOLS 600 PCS.

Competitor A 500 PCS.

Competitor B 500 PCS.



INDEXABLE

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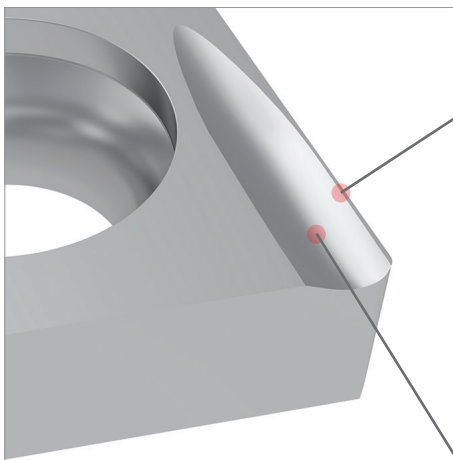
G - SPARE PARTS

PPM

Chipbreaker

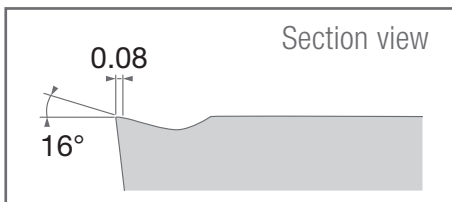
- Ground chipbreaker for small part universal machining
 - Wide application range
 - Reduced cutting force and stable cutting
 - For steel and stainless steel general machining
- Geschliffener Spanbrecher zur allgemeinen Bearbeitung von kleinen Komponenten
 - Breiter Anwendungsbereich
 - Geringe Schnittkräfte und stabiler und zuverlässiger Schnitt
 - Für die allgemeine Bearbeitung von Stählen und rostfreien Stählen
- Rompitruciolo rettificato per la lavorazione di minuteria
 - Ampio campo applicativo
 - Ridotte forze di taglio e processo stabile
 - Per lavorazione di acciai e acciai inossidabili
- Brise-copeaux rectifié pour l'usinage général de petites pièces
 - Large gamme d'applications
 - Coupe stable et efforts de coupe réduits
 - Pour l'usinage général d'aciers et aciers inoxydables

Features of PPM chipbreaker



LONG GROUND CHIPBREAKER

- For wide range of cutting conditions
 - Minimum bending effect on the workpiece
 - Reduced cutting force and stable machining
- Per un ampio campo applicativo
 - Minimo effetto di deformazione sul pezzo lavorato
 - Ridotte forze di taglio e processo affidabile
- Für eine Vielzahl von Schnittbedingungen
 - Minimale Verformung des Werkstücks
 - Geringe Schnittkräfte und stabiler und zuverlässiger Schnitt
- Pour une large plage de conditions de coupe
 - Effet de déformation minimal sur la pièce usinée
 - Coupe stable et efforts de coupe réduits



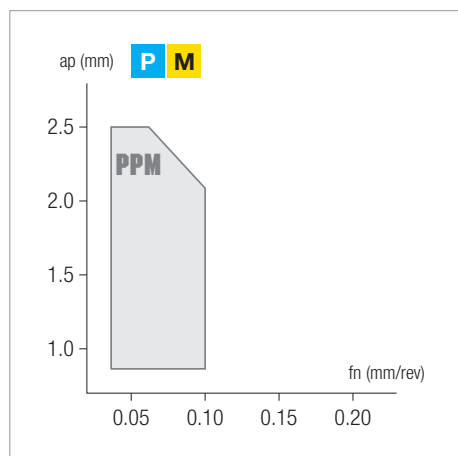
WIDE CURVED GROUND CHIPBREAKER

- Suitable for wide range of cutting conditions
 - Excellent chip control
- Consigliato per un ampio campo applicativo
 - Spezza efficacemente il truciolo e ne favorisce l'evacuazione
- Empfohlen für eine Vielzahl von Schnittbedingungen
 - Bricht Späne effektiv auf und fördert deren Abfuhr
- Recommandé pour une large plage de conditions de coupe
 - Fractionne efficacement les copeaux et en favorise l'évacuation

PPM

Chipbreaker

Application range - ISO 513



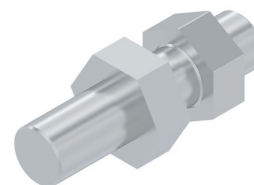
Use case

Tool type DCET11T304R-PPM JP5125
Workpiece Stainless steel AISI303 (1.4305)
Parameters V_c 100 m/min, f_n 0.10 mm/rev, a_p 1.5 mm, emulsion

nikkoTOOLS 800 PCS.

Competitor A 750 PCS.

Competitor B 600 PCS.



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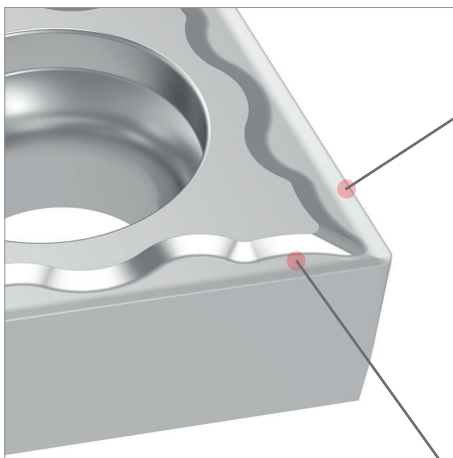
G - SPARE PARTS

PMU

Chipbreaker

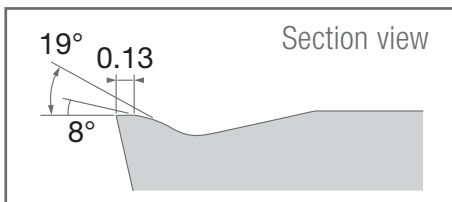
- High versatility chipbreaker for medium cutting
 - Designed with tough and sharp edge
 - Suitable for steel, stainless steel and cast iron
 - Universal application
- Sehr vielseitiger Spanbrecher für mittlere Schnittbedingungen
 - Ausgewogenes Verhältnis zwischen Robustheit und Schärfe
 - Für Anwendungen mit Stählen, rostfreien Stählen und Gusseisen
 - Universelle Anwendung
- Rompitruciolo altamente versatile per condizioni di taglio medio
 - Robusto e al tempo stesso molto affilato
 - Per applicazioni su acciai, acciai inossidabili e ghisa
 - Applicazione universale
- Brise-copeaux très polyvalent pour conditions de coupe moyenne
 - Bon équilibre entre robustesse et acuité
 - Pour applications sur aciers, aciers inoxydables et fonte
 - Application universelle

Features of PMU chipbreaker



CURVED POSITIVE EDGE DESIGN

- Good combination of strength and sharpness
 - Reduced cutting force
 - Improved chip forming and chip control
- Buon bilanciamento tra robustezza e taglientezza
 - Forze di taglio ridotte
 - Migliorata formazione e controllo del truciolo
- Ausgewogenes Verhältnis zwischen Robustheit und Schärfe
 - Geringere Schnittkräfte
 - Verbesserte Spanbildung und -kontrolle
- Bon équilibre entre robustesse et acuité
 - Force de coupe réduite
 - Meilleure formation et contrôle des copeaux



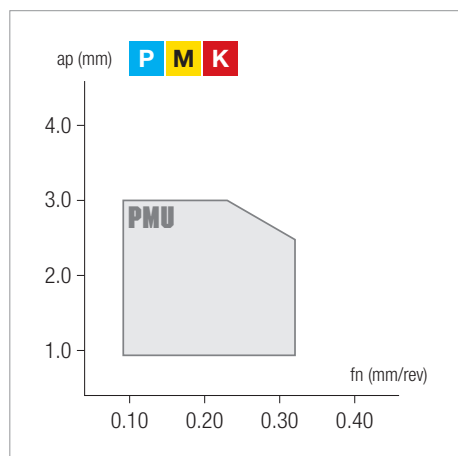
WIDE CHIP GROOVE

- Effective chip evacuation
 - Reliable cutting process for universal application
- Efficace evacuazione del truciolo
 - Processo di taglio affidabile in applicazioni universali
- Effektive Spanabfuhr
 - Zuverlässiger Schneidprozess für universelle Anwendungen
- Évacuation efficace des copeaux
 - Processus de coupe fiable dans le cadre d'applications universelles

PMU

Chipbreaker

Application range - ISO 513



Use case

Tool type DCMT150408-PMU JP5125
Workpiece Steel 41CrAlMo7 (1.8509)
Parameters Vc 180 m/min, fn 0.25 mm/rev, ap 1.5 mm, emulsion, light interrupted

nikkoTOOLS 130 PCS.

Competitor A 110 PCS.

Competitor B 100 PCS.



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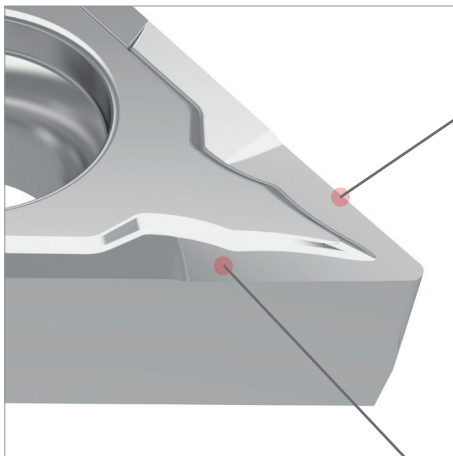
G - SPARE PARTS

PPU

Chipbreaker

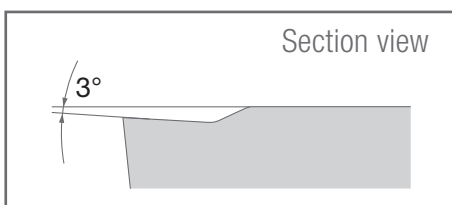
- Chipbreaker for internal universal cutting
- Low cutting force, stable machining even for interrupted boring application.
- Excellent choice for stainless steel and super alloys
- Precision ground
- Spanbrecher für universelle Anwendungen bei Innenbearbeitung
- Geringe Schnittkräfte, funktioniert auch bei unterbrochenen Rippenbohrungen
- Hervorragende Wahl für rostfreie Stähle und Superlegierungen
- Geschliffen
- Rompitruciolo per applicazioni universali di taglio interno
- Basse forze di taglio, affidabile anche per barenature con taglio interrotto (nervature)
- Scelta eccellente per acciai inossidabili e superleghe
- Rettificato di alta precisione
- Brise-copeaux pour applications universelles d'alésage
- Faibles efforts de coupe, fonctionne y compris dans des conditions de coupes interrompues
- Excellent choix pour les aciers inoxydables et superalliages
- Rectifié

Features of PPU chipbreaker



CURVED 3D CUTTING EDGE

- Low cutting force for stainless steel and sticky materials
- Good combination of strength and sharpness
- Improved chip forming and chip control
- Basse forze di taglio per acciai inossidabili e materiali pastosi
- Buon bilanciamento tra robustezza e affilatura
- Migliore formazione e controllo del truciolo
- Geringe Schnittkräfte für rostfreie Stähle und pastöse Materialien
- Ausgewogenes Verhältnis zwischen Robustheit und Schärfe
- Verbesserte Spanbildung und -kontrolle
- Faibles efforts de coupe pour aciers inoxydables et matériaux collants
- Bon équilibre entre robustesse et acuité
- Meilleure formation et contrôle des copeaux



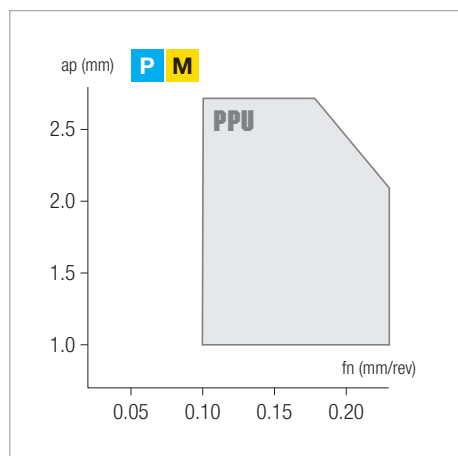
WIDE CHIP GROOVE

- Effective chip evacuation
- Reliable cutting process for universal application
- Efficace evacuazione del truciolo
- Processo di taglio affidabile in applicazioni universali
- Effektive Spanabfuhr
- Zuverlässiger Schneidprozess für universelle Anwendungen
- Évacuation efficace des copeaux
- Processus de coupe fiable dans le cadre d'applications universelles

PPU

Chipbreaker

Application range - ISO 513



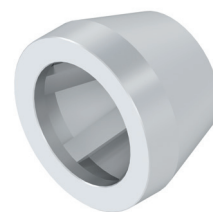
Use case

Tool type DCGT11T308-PPU JP5125
Workpiece AISI304
Parameters Vc 300m/min a_p 0.8 mm
 f_n 0.2 mm/r dry, heavy interrupted

nikkoTOOLS 45 PCS.

Competitor A 30 PCS.

Competitor B 15 PCS.



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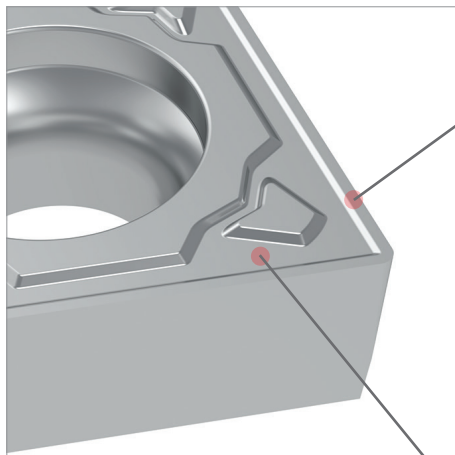
G - SPARE PARTS

PRU

Chipbreaker

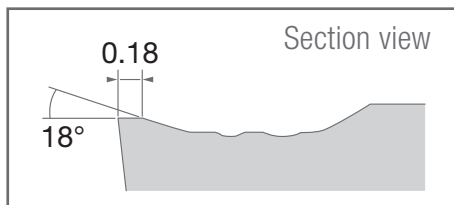
- Chipbreaker for roughing and interrupted cut conditions
 - Strong and stable cutting edge
 - Reduced cutting force and less vibration
 - High toughness and stability feed rate
- Spanbrecher zum Schruppen und für unterbrochene Schnittbedingungen
 - Robuste und zuverlässige Schneidkante
 - Geringere Schnittkräfte und Vibrationen
 - Für hohe Vorschübe geeignet
- Rompitrucciolo per sgrossatura e condizioni di taglio interrotto
 - Tagliente robusto e stabile
 - Ridotti sforzi di taglio e minori vibrazioni
 - Design per avanzamenti elevati
- Brise-copeaux pour ébauche dans des conditions de coupe interrompues
 - Arête de coupe robuste et fiable
 - Efforts de coupe réduits et moins de vibrations
 - Convient aux avances élevées

Features of PRU chipbreaker



STRONG AND VARIABLE WIDTH DESIGN

- High toughness and stability
 - Suitable for high feed rate
 - Reduced cutting force and vibration
- Migliore robustezza e affidabilità
 - Design per elevati avanzamenti
 - Ridotti sforzi di taglio e minori vibrazioni
- Höhere Robustheit und Zuverlässigkeit
 - Für hohe Vorschübe geeignet
 - Geringere Schnittkräfte und Vibrationen
- Meilleures robustesse et fiabilité
 - Convient aux avances élevées
 - Efforts de coupe réduits et moins de vibrations



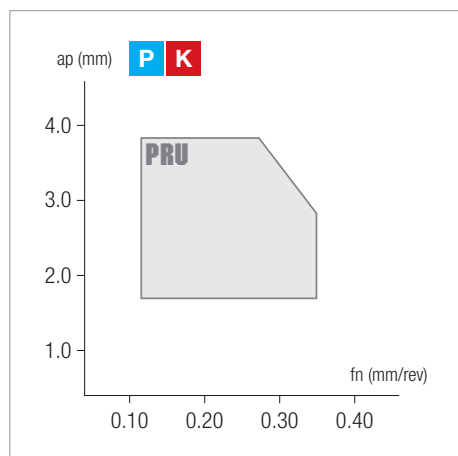
SHALLOW CHIP GROOVE

- Effectively breaks and guides the chips
- Spezza efficacemente il truciolo e ne guida l'evacuazione
- Bricht Späne effektiv auf und führt deren Abfuhr
- Casse efficacemente le copeau et en guide l'évacuation.

PRU

Chipbreaker

Application range - ISO 513



Use case

Tool type TCMT16T308-PRU JC8025
Workpiece Steel K100 (1.2008)
Parameters V_c 80 m/min, f_n 0.13 mm/rev, a_p 4.0 mm, emulsion, heavy interrupted

nixko TOOLS	50 PCS.
Competitor A	48 PCS.
Competitor B	45 PCS.

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P		FINISHING		MEDIUM		ROUGHING	
		NEGATIVE	POSITIVE	NEGATIVE	POSITIVE	NEGATIVE	POSITIVE
	wear resistance	-	JP4020 / PFU	JC8005 / NUX	JC8005 / PMU	JC8005 / NRP	-
	1 st CHOICE	JU4015 / NSP	JU4015 / PFU	JC8015 / NUX	JC8015 / PMU	JC8015 / NRP	JC8025 / PRU
	toughness	JC8005 / NSP	JC8005 / PFU	JC8025 / NUX	JC8025 / PMU	JC8025 / NRP	-
	wear resistance	JC8005 / NSP	JC8005 / PFU	JC8015 / NUX	JC8015 / PMU	JC8015 / NRP	-
	1 st CHOICE	JC8015 / NSP	JC8015 / PFU	JC8025 / NUX	JC8025 / PMU	JC8025 / NRP	JC8025 / PRU
	toughness	JC8025 / NSP	JC8025 / PFU	JC8035 / NUX	JP5125 / PMU	JC8035 / NRP	-
	wear resistance	JC8015 / NSP	JC8015 / PFU	JC8025 / NUX	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 / NUX	JC9010 / PMU	JC9010 / NRM	-
	toughness	JP9030 / NSM	JP5125 / PFU	JC9025 / NUX	JP5120 / PMU	JC9025 / NRM	-
	wear resistance	-	JP5120 / PFU	JC9010 / NUX	JC9010 / PMU	JC9010 / NRM	-
	1 st CHOICE	JP9015 / NSM	JP5125 / PFU	JC9025 / NUX	JC9025 / PMU	JC9025 / NRM	-
	toughness	JP9030 / NSM	-	JP9030 / NMM	JP5125 / PMU (PPU)	JP9030 / NRM	-
	wear resistance	JP9015 / NSM	JP5120 / PFU	JC9025 / NUX	JP5120 / PMU	JC9025 / NRM	-
	1 st CHOICE	JP9030 / NSM	JP5125 / PFU	JP9030 / NMM	JP5125 / PMU (PPU)	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	-	-	-	-

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	-	-	-	-	-	-

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 / PPU (PMU)	-	-
	wear resistance	-	JP5120 / PFU	-	JP5120 / PMU	-	-
	1 st CHOICE	-	JP5125 / PFU	JP3015 / NMS	JP5125 / PPU (PMU)	-	-
	toughness	-	-	-	-	-	-
	wear resistance	-	-	-	-	-	-
	1 st CHOICE	-	-	-	-	-	-
	toughness	-	-	-	-	-	-

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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

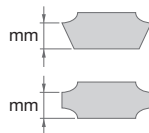
2	RELIEF ANGLE
B	5°
C	7°
D	15°
E	20°
N	0°
P	11°

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 	✓	✗	double sided
M 	✓	✗	single sided
N 	✗	✗	✗
T 	✓	40°÷60°	single sided
W 	✓	40°÷60°	✗
X	NIKKO norm		

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

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



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

8	DIRECTION
Symbol	Shape
L	
R	

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

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

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

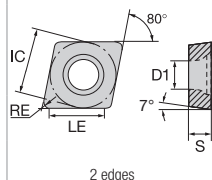
12	GRADE - coating
JC	CVD coating
JP	PVD coating
JU	uncoated

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

14	GRADE - features
xx	Classification according to ISO 513

ISO - with hole

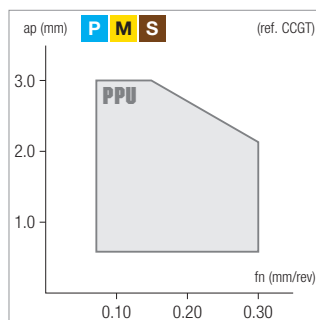
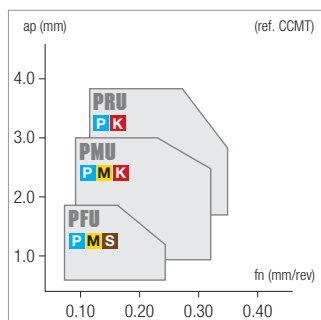
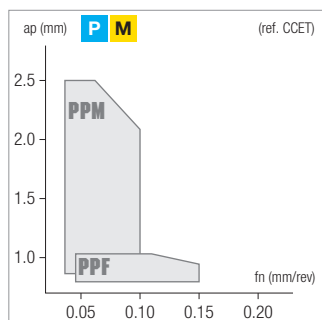
- The most popular insert shape due to high versatility
- Clearance angle 7° , less likely to have chip jamming when boring
- 80° corner can be used for both turning and facing operations



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

[illegible][illegible]

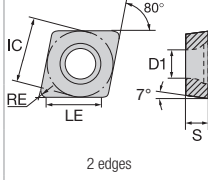
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



CC

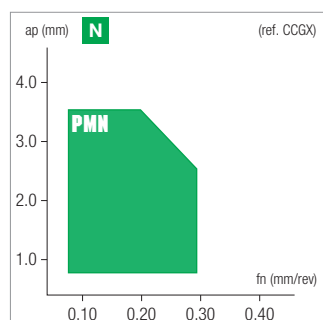
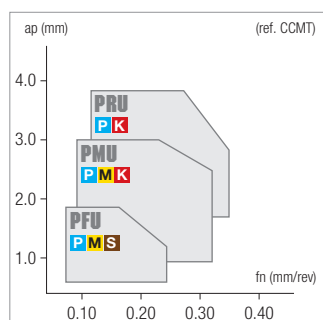
ISO - with hole

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

HF: Micrograin tungsten carbide HT: Cermet HC: Coated tungsten carbide PVD: Physical vapor deposition CVD: Chemical vapor deposition		HC	HC	HC	HC	HC	HC	HC	HT	HF	HF	HF	HF	HT	HF					
		CVD	CVD	CVD	CVD	CVD	CVD	CVD	PVD	PVD	PVD	PVD	PVD							
		JC7010	JC7020	JC8005	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5120	JP5125	JP6010	JU4015	JU6015					
Stable machining, light cut		● 1 st choice	○ suitable	●	●	○	●	○	●	●	●	○	●	●	●					
General machining, medium cut		● 1 st choice	○ suitable	●	●	○	●	○	●	●	●	○	●	○	●					
Unstable machining, heavy cut		● 1 st choice	○ suitable	●	●	○	●	○	●	●	●	○	●	○	●					
Dimensions		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	20 70	20 70							
		H																		

Designation		RE	IC	S	D1	LE	Stock													
MEDIUM	PMU P M K	CCMT060202-PMU	0.20	6.35	2.38	2.8	6.2				●	●	●	●	●			●		
		CCMT060204-PMU	0.40	6.35	2.38	2.8	6	●			●	●	●	●	●			●		
		CCMT060208-PMU	0.80	6.35	2.38	2.8	5.6	●			●	●	●	●	●			○		
		CCMT09T302-PMU	0.20	9.525	3.97	4.4	9.5				●	●	●	●	●			●		
		CCMT09T304-PMU	0.40	9.525	3.97	4.4	9.3	●			●	●	●	●	●			●		
		CCMT09T308-PMU	0.80	9.525	3.97	4.4	8.9	●	●		●	●	○	●	●			●		
		CCMT120404-PMU	0.40	12.7	4.76	5.5	12.5										●			
		CCMT120404-PMU	0.40	12.7	4.76	5.5	12.5	●			●	●		●						
		CCMT120408-PMU	0.80	12.7	4.76	5.5	12.1	●	●		●	●		●						
		CCMT120412-PMU	1.20	12.7	4.76	5.5	11.7	●			●	●		●						
MEDIUM	PMN N	CCGX060202-PMN	0.20	6.35	2.38	2.8	6.2											○	●	
		CCGX060204-PMN	0.40	6.35	2.38	2.8	6											○	●	
		CCGX060208-PMN	0.80	6.35	2.38	2.8	5.6											○	●	
		CCGX09T302-PMN	0.20	9.525	3.97	4.4	9.5											○	●	
		CCGX09T304-PMN	0.40	9.525	3.97	4.4	9.3											○	●	
		CCGX09T308-PMN	0.80	9.525	3.97	4.4	8.9											●	●	
		CCGX120402-PMN	0.20	12.7	4.76	5.5	12.7											○	○	
		CCGX120404-PMN	0.40	12.7	4.76	5.5	12.5											●	●	
		CCGX120408-PMN	0.80	12.7	4.76	5.5	12.1											●	●	
ROUGHING	PRU P K	CCMT09T304-PRU	0.40	9.525	3.97	4.4	9.3	●			●									
		CCMT09T308-PRU	0.80	9.525	3.97	4.4	8.9	●			●									
		CCMT120408-PRU	0.80	12.7	4.76	5.5	12.1	●			●									
		CCMT120412-PRU	1.20	12.7	4.76	5.5	11.7	●			●									

★ 1st choice, ☆ suitable, ● stock standard, ● non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66

CUTTING CONDITIONS p. A110

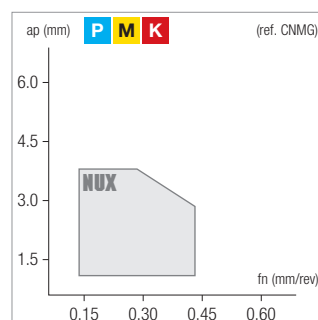
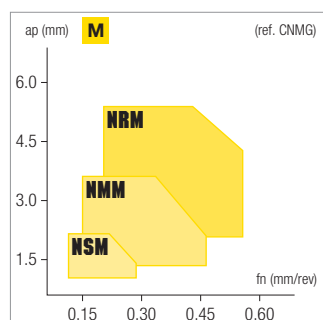
GRADES FEATURES p. A4

HOLDERS p. A255

ISO - with hole

- [illegible]

		Designation	RE	IC	S	D1	LE	Stock															
FINISHING	NSP 	CNMG090304-NSP	0.40	9.525	3.18	3.81	9.3						⊙	⊙						⊙			
		CNMG090308-NSP	0.80	9.525	3.18	3.81	8.9						⊙	⊙						⊙			
		CNMG120404-NSP	0.40	12.7	4.76	5.16	12.5						●	●	●					●			
		CNMG120408-NSP	0.80	12.7	4.76	5.16	12.1						⊙	●	●					⊙			
FINISHING	NSM 	CNMG120404-NSM	0.40	12.7	4.76	5.16	12.5											●	●				
		CNMG120408-NSM	0.80	12.7	4.76	5.16	12.1											●	●				
MEDIUM	NUX  universal use wide grades range	CNMG120404-NUX	0.40	12.7	4.76	5.16	12.5	●				●	●	●			●	●					
		CNMG120408-NUX	-	-	-	-	-	●				●	●	●			●	●					
		CNMG120412-NUX	1.20	12.7	4.76	5.16	11.7	●				●	●	●			●	●					
MEDIUM	NMP 	CNMG120404-NMP	0.40	12.7	4.76	5.16	12.5						●	●									
		CNMG120408-NMP	0.80	12.7	4.76	5.16	12.1						●	●						▽			
		CNMG120412-NMP	1.20	12.7	4.76	5.16	11.7						●	●									
		CNMG120416-NMP	1.60	12.7	4.76	5.16	11.3						●	⊙									
		CNMG160608-NMP	0.80	15.87	6.35	6.35	15.3						●	●									
		CNMG160612-NMP	1.20	15.87	6.35	6.35	14.9						●	●									
		CNMG160616-NMP	1.60	15.87	6.35	6.35	14.5						●	●									
		CNMG190612-NMP	1.20	19.05	6.35	7.94	18.1						⊙	⊙									
CNMG190616-NMP	1.60	19.05	6.35	7.94	17.7						●	⊙											

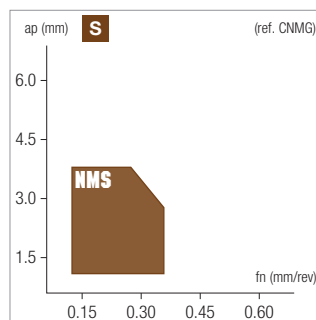
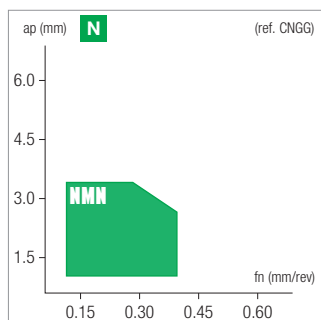


HOLDERS p. A255

ISO - with hole

- [illegible]

		Designation	RE	IC	S	D1	LE	Stock															
MEDIUM	NMK K 	CNMG120404-NMK	0.40	12.7	4.76	5.16	12.5	●	◎														
		CNMG120408-NMK	0.80	12.7	4.76	5.16	12.1	●	●														
		CNMG120412-NMK	1.20	12.7	4.76	5.16	11.7	●	◎														
		CNMG120416-NMK	1.60	12.7	4.76	5.16	11.3	●	◎														
		CNMG160608-NMK	0.80	15.87	6.35	6.35	15.3	●	◎														
		CNMG160612-NMK	1.20	15.87	6.35	6.35	14.9	●	◎														
		CNMG160616-NMK	1.60	15.87	6.35	6.35	14.5	◎	◎														
		CNMG190612-NMK	1.20	19.05	6.35	7.94	18.1	◎	◎														
	CNMG190616-NMK	1.60	19.05	6.35	7.94	17.7	◎	◎															
MEDIUM	NUK K  sharp edge reduces burrs	CNMG120404-NUK	0.40	12.7	4.76	5.16	12.5			●													
		CNMG120408-NUK	0.80	12.7	4.76	5.16	12.1	▽		●													
		CNMG120412-NUK	1.20	12.7	4.76	5.16	11.7	▽		●													
MEDIUM	NMN N  polished surface ground clearance	CNMG120404-NMN	0.40	12.7	4.76	5.16	12.5											●					
		CNMG120408-NMN	0.80	12.7	4.76	5.16	12.1											●					
MEDIUM	NMS S 	CNMG120408-NMS	0.80	12.7	4.76	5.16	12.1										●						
		CNMG120412-NMS	1.20	12.7	4.76	5.16	11.7										●						



CN

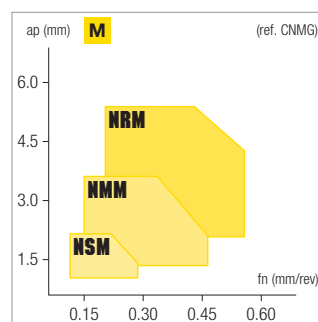
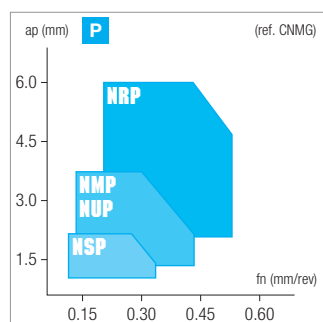
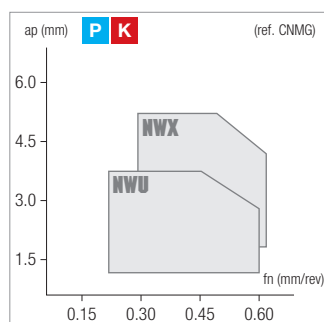
ISO - with hole

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

HF: Micrograin tungsten carbide HC: Coated tungsten carbide HT: Cermet CVD: Chemical vapor deposition PVD: Physical vapor deposition		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	PVD	PVD	PVD								
		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015							
Stable machining, light cut		● 1 st choice	○ suitable	●	●	●	○	●	○	●	●	●	●	●	●							
General machining, medium cut		● 1 st choice	○ suitable	●		●	●	○	○	●	●	●	●	●	●							
Unstable machining, heavy cut		● 1 st choice	○ suitable	●	●	●		●	●				●	●								
Dimensions		ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																				
		P			200 380	170 360	140 330	100 200							200 380							
		M							100 200	80 180		60 160	50 130									
		K	130 380	110 300	130 380																	
		N																				
		S										20 70										
		H																				

Designation		RE	IC	S	D1	LE	Stock															
MEDIUM	NWU 	CNMG120408-NWU	0.80	12.7	4.76	5.16	12.1	●					●									
		CNMG120412-NWU	1.20	12.7	4.76	5.16	11.7	●					●									
wiper universal type																						
MEDIUM	NWX 	CNMG120408-NWX	0.80	12.7	4.76	5.16	12.1	◎					●						●			
		CNMG120412-NWX	1.20	12.7	4.76	5.16	11.7	●					◎						◎			
wiper reinforced edge																						
ROUGHING	NRP 	CNMG120408-NRP	0.80	12.7	4.76	5.16	12.1				◎	●	●	●								
		CNMG120412-NRP	1.20	12.7	4.76	5.16	11.7				●	●	●	●								
		CNMG120416-NRP	1.60	12.7	4.76	5.16	11.3				◎	●	●	●								
		CNMG160612-NRP	1.20	15.87	6.35	6.35	14.9				●	●	●	◎								
		CNMG160616-NRP	1.60	15.87	6.35	6.35	14.5				●	●	●	●								
		CNMG190612-NRP	1.20	19.05	6.35	7.94	18.1						◎	◎								
		CNMG190616-NRP	1.60	19.05	6.35	7.94	17.7						○	●	◎							
		CNMG190624-NRP	2.40	19.05	6.35	7.94	16.9						◎	●	◎							
	CNMG250924-NRP	2.40	25.4	9.52	9.12	23.4							◎									
ROUGHING	NRM 	CNMG120408-NRM	0.80	12.7	4.76	5.16	12.1							●	●			●				
		CNMG120412-NRM	1.20	12.7	4.76	5.16	11.7							●	●			●				
		CNMG120416-NRM	1.60	12.7	4.76	0	-											○				
		CNMG160608-NRM	0.80	15.87	6.35	6.35	15.3								○							
		CNMG160612-NRM	1.20	15.87	6.35	6.35	14.9							○	●			●				
		CNMG190612-NRM	1.20	19.05	6.35	7.94	18.1							○				●				
		CNMG190616-NRM	1.60	19.05	6.35	7.94	17.7							○				●				

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66

CUTTING CONDITIONS p. A110

GRADES FEATURES p. A4

HOLDERS p. A255

ISO - with hole

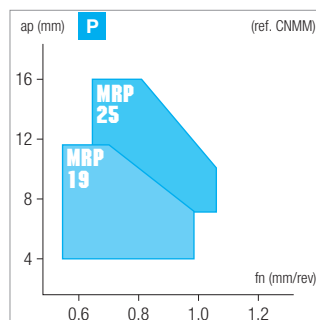
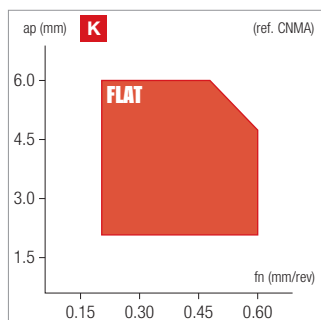
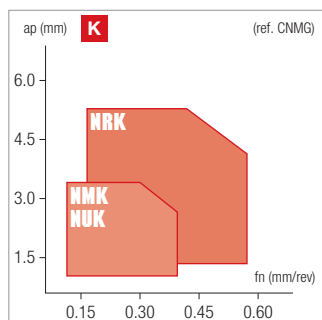
- [illegible]

		Designation	RE	IC	S	D1	LE	Stock											
ROUGHING	NRK 	CNMG120408-NRK	0.80	12.7	4.76	5.16	12.1	●	●	●									
		CNMG120412-NRK	1.20	12.7	4.76	5.16	11.7	●	●	●									
		CNMG120416-NRK	1.60	12.7	4.76	5.16	11.3	⊙	●	○									
		CNMG160612-NRK	1.20	15.87	6.35	6.35	14.9	●	●	●									
		CNMG160616-NRK	1.60	15.87	6.35	6.35	14.5	●	●	●									
		CNMG160624-NRK	2.40	15.87	6.35	6.35	-	○											
		CNMG190612-NRK	1.20	19.05	6.35	7.94	18.1	⊙	⊙										
		CNMG190616-NRK	1.60	19.05	6.35	7.94	17.7	⊙	●										
ROUGHING		CNMA120404	0.40	12.7	4.76	5.16	12.5	⊙	⊙										
		CNMA120408	0.80	12.7	4.76	5.16	12.1	●	⊙	○									
		CNMA120412	1.20	12.7	4.76	5.16	11.7	●	⊙	●									
		CNMA120416	1.60	12.7	4.76	5.16	11.3	⊙	⊙										
		CNMA160612	1.20	15.87	6.35	6.35	14.9	●	⊙	●									
		CNMA160616	1.60	15.87	6.35	6.35	14.5	⊙	⊙	●									
		CNMA190612	1.20	19.05	6.35	7.94	18.1	⊙	⊙										
		CNMA190616	1.60	19.05	6.35	7.94	17.7	●	⊙										
		CNMA190624	2.40	19.05	6.35	7.94	-		○										
HEAVY		CNMM190616-MRP	1.60	19.05	6.35	7.94	17.7				⊙	⊙							
		CNMM190624-MRP	2.40	19.05	6.35	7.94	16.9				⊙	●							
		CNMM250924-MRP	2.40	25.4	9.52	9.12	23.4				⊙	⊙							

single side

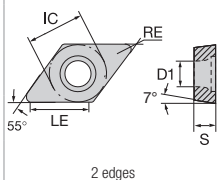
2 edges

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



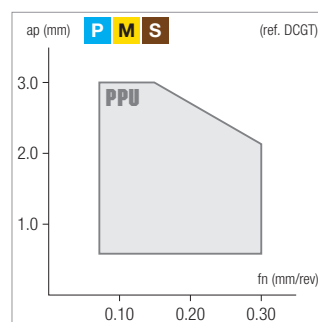
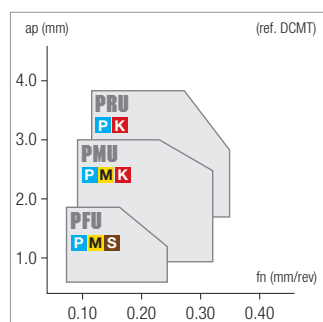
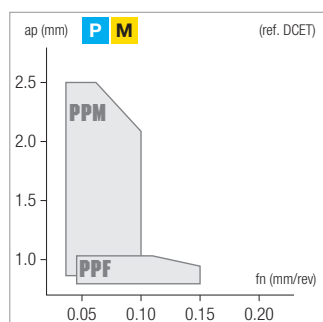
DC**ISO - with hole**

- 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

HF: Micrograin tungsten carbide HT: Cermet HC: Coated tungsten carbide PVD: Physical vapor deposition CVD: Chemical vapor deposition		HC	HC	HC	HC	HC	HC	HC	HT	HF	HF	HF	HF	HT	HF					
		CVD	CVD	CVD	CVD	CVD	CVD	CVD	PVD	PVD	PVD	PVD	PVD							
		JC7010	JC7115	JC8005	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5120	JP5125	JP6010	JU4015	JU6015					
Stable machining, light cut		● 1 st choice	○ suitable	●	●	○	●	○	●	●	●	○	●	●	●					
General machining, medium cut		● 1 st choice	○ suitable	●	●	○	●	○	○	●	●	●	○	○	○					
Unstable machining, heavy cut		▲ 1 st choice	○ suitable	▲	▲	○	▲	○				▲			○					
Dimensions		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	130 380						150 320	90 190	60 180								
		N													400 1400	200 1000				
		S									20 70	20 70	20 70							
		H																		

Designation		RE	IC	S	D1	LE	Stock												
FINISHING 	PPF P M	DCET070202L/R-PPF	0.20	6.35	2.38	2.8	7.6									●	○		
		DCET070204L/R-PPF	0.40	6.35	2.38	2.8	7.4									●	○		
		DCET11T302L/R-PPF	0.20	9.525	3.97	4.4	11.4									●	○		
		DCET11T304L/R-PPF	0.40	9.525	3.97	4.4	11.2									●	○		
ground chipbreaker right-hand shown																			
FINISHING 	PFU P M S	DCMT070202-PFU	0.20	6.35	2.38	2.8	7.6			●	○	○	○	○	●	●	○		
		DCMT070204-PFU	0.40	6.35	2.38	2.8	7.4			●	●	●	○	●	●	●	○		
		DCMT11T302-PFU	0.20	9.525	3.97	4.4	11.4			●	●	●	○	●	●	●	○		
		DCMT11T304-PFU	0.40	9.525	3.97	4.4	11.2		●	●	●	●	●	●	●	●	○		
		DCMT11T308-PFU	0.80	9.525	3.97	4.4	10.8		●	●	●	●	○	●	●	●	○		
sharp edge low cutting force																			
MEDIUM 	PPM P M	DCET070204L/R-PPM	0.40	6.35	2.38	2.8	7.4								○	○			
		DCET11T302L/R-PPM	0.20	9.525	3.97	4.4	11.4								●	○			
		DCET11T304L/R-PPM	0.40	9.525	3.97	4.4	11.2								●	○			
ground chipbreaker right-hand shown																			
MEDIUM 	PPU P M S	DCGT070202-PPU	0.20	6.35	2.38	2.8	7.6								●				
		DCGT070204-PPU	0.40	6.35	2.38	2.8	7.4								●				
		DCGT11T302-PPU	0.20	9.525	3.97	4.4	11.4								●				
		DCGT11T304-PPU	0.40	9.525	3.97	4.4	11.2								●				
		DCGT11T308-PPU	0.80	9.525	3.97	4.4	10.8								●				
ground clearance 3D chipbreaker																			

★ 1st choice, ☆ suitable, ● stock standard, ○ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66

CUTTING CONDITIONS p. A110

GRADES FEATURES p. A4

HOLDERS p. A255

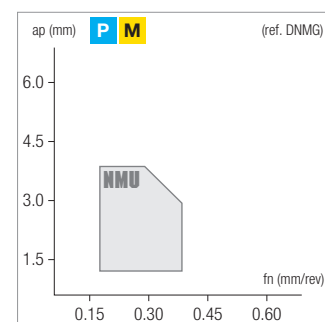
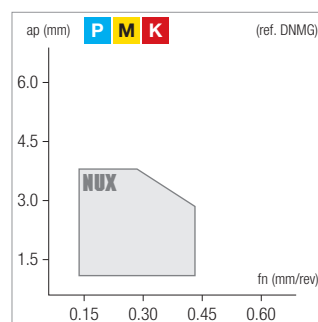
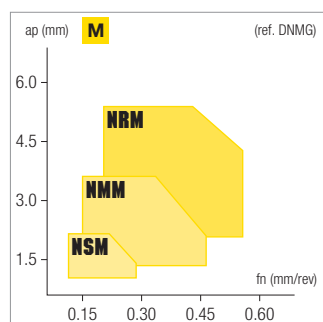
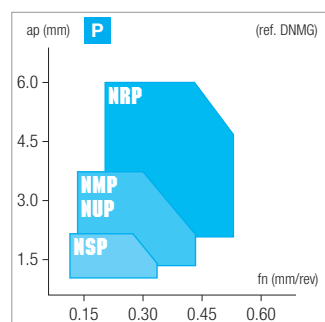
ISO - with hole

- 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

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

[illegible][illegible]

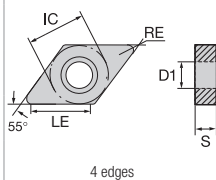
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



DN

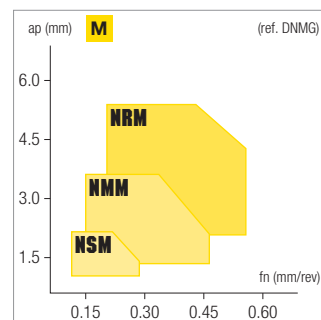
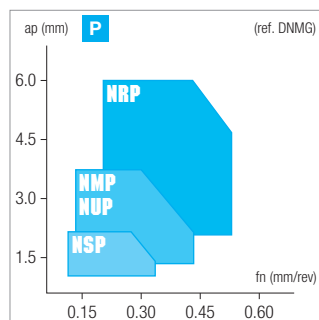
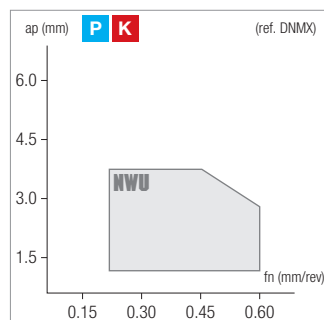
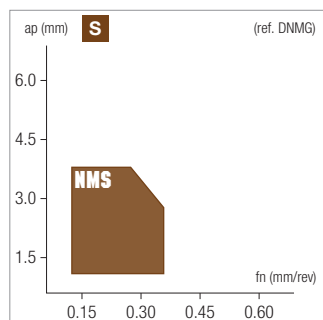
ISO - with hole

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

HF: Micrograin tungsten carbide HC: Coated tungsten carbide HT: Cermet CVD: Chemical vapor deposition PVD: Physical vapor deposition		HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HF	HT	HF	HF	HT	HF				
		CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	PVD	PVD	PVD	PVD						
		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP4020	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: 1 st choice)																			
		P			200 380	170 360	140 330	100 200				180 400			200 380						
		M							100 200	80 180		100 220	60 160	50 130							
		K	130 380	110 300	130 380							150 320									
		N														200 1000					
		S										20 70									
		H																			

Designation		RE	IC	S	D1	LE	Stock														
MEDIUM	NMS S	0.80	12.7	6.35	5.16	14.7															
	DNMG150608-NMS	1.20	12.7	6.35	5.16	14.3															
MEDIUM	NWU P K	0.80	12.7	6.35	5.16	14.7	●			○		○									
	DNMX150612-NWU	1.20	12.7	6.35	5.16	14.3	●					○									
ROUGHING	NRP P	0.80	12.7	6.35	5.16	14.7				◎	●	●	●								
	DNMG150612-NRP	1.20	12.7	6.35	5.16	14.3				◎	●	●	◎								
	DNMG150616-NRP	1.60	12.7	6.35	5.16	13.9					●	◎	●								
ROUGHING	NRM M	0.80	12.7	6.35	5.16	14.7							●				●				
	DNMG150612-NRM	1.20	12.7	6.35	5.16	14.3							●				●				
ROUGHING	NRK K	0.80	12.7	6.35	5.16	14.7	●	◎	●												
	DNMG150612-NRK	1.20	12.7	6.35	5.16	14.3	●	◎	●												

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

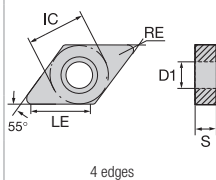


PRODUCT SELECTION p. A66

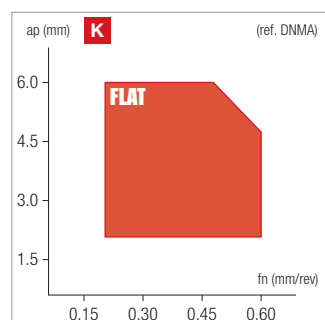
CUTTING CONDITIONS p. A110

GRADES FEATURES p. A4

HOLDERS p. A255

DN		HF: Micrograin tungsten carbide HC: Coated tungsten carbide HT: Cermet CVD: Chemical vapor deposition PVD: Physical vapor deposition																							
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		Stable machining, light cut	● 1 st choice ○ suitable	●	○	●	●	●	○		●	○	●	●	●	●	●								
		General machining, medium cut	● 1 st choice ○ suitable	●	○	●		●	●	○	○	●	●	○	●	●	●								
		Unstable machining, heavy cut	▲ 1 st choice ☆ suitable	▲	▲	▲			▲	▲							▲								
		Dimensions		ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																					
				P				200 380	170 360	140 330	100 200					180 400			200 380						
				M								100 200	80 180		100 220	60 160	50 130								
				K	130 380	110 300	130 380									150 320									
				N															200 1000						
				S												20 70									
				H																					
ROUGHING	Designation		RE	IC	S	D1	LE	Stock																	
	Flat top K 	DNMA150608	0.80	12.7	6.35	5.16	14.7	●	●	○															
		DNMA150612	1.20	12.7	6.35	5.16	14.3	●	●	●															

★ 1st choice, ☆ suitable, ● stock standard, ● non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66

CUTTING CONDITIONS p. A110

GRADES FEATURES p. A4

HOLDERS p. A255

KN**ISO - without hole**

- Classic choice for copying from fine to rough turning
- Stable clamping with 55° point angle
- Positive on the secondary cutting edge side and over the nose radius, negative on the main cutting edge side, allows a larger in-copying angle
- Affords bulk strength and able to withstand heavy stresses

 HC: Coated tungsten carbide
 CVD: Chemical vapor deposition

HC

CVD

JC8025

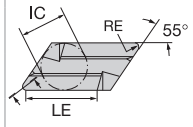
Stable machining, light cut

☒ 1st choice
 ☐ suitable

General machining, medium cut

☒ 1st choice
 ☐ suitable

Unstable machining, heavy cut

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

2 edges

P

140

330

M**K****N****S****H****Designation****RE****IC****S****D1****LE****Stock****MEDIUM****NMU**

right-hand shown

KNUX160405L/R-NMU
KNUX160410L/R-NMU

0.50

9.525

4.76

-

16.1

●

1.00

9.525

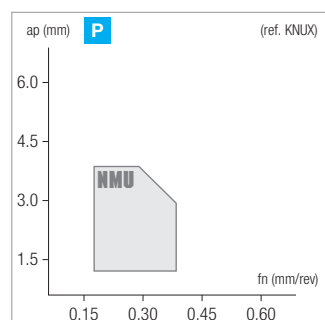
4.76

-

15.2

●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66

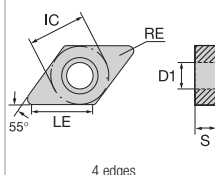
CUTTING CONDITIONS p. A110

GRADES FEATURES p. A4

HOLDERS p. A255

MicroNega

- 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 for boring application, effectively reduces the risk of chip-jamming



HF: Micrograin tungsten carbide
HT: Cermets
HC: Coated tungsten carbide
PVD: Physical vapor deposition
CVD: Chemical vapor deposition

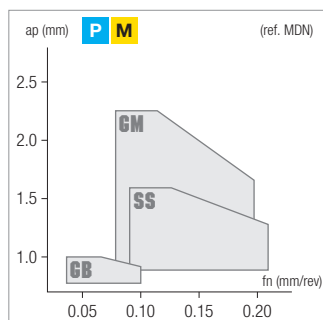
HC	HF	HF	HF	HF	HT
CVD	PVD	PVD	PVD	PVD	
JG8015	JP5015	JP5025	JP5120	JP9030	JU4015

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

[illegible]

		Designation	RE	IC	S	D1	LE							Stock
FINISHING	GB   ground chipbreaker right-hand shown	MDN.R04G-GBL/R	0.40	7	3.18	3.6	8.1		▽					
	GM   1st choice chip control oriented	MDN.R04M-GM	0.40	7	3.18	3.6	8.1	▽		▽	⊙		⊙	
		MDN.R08M-GM	0.80	7	3.18	3.6	7.7			▽				
MEDIUM	SS   ground periphery polished surface	MDN.R04G-SS	0.40	7	3.18	3.6	8.1				⊙	▽	⊙	

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

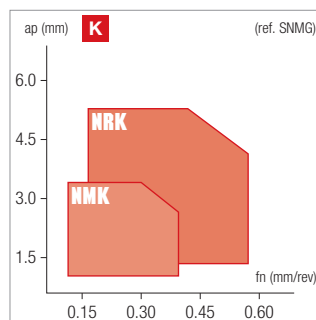
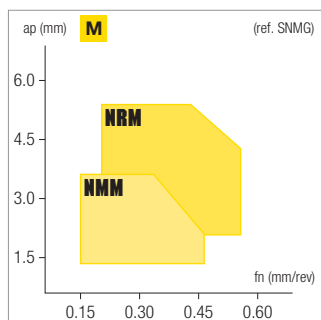
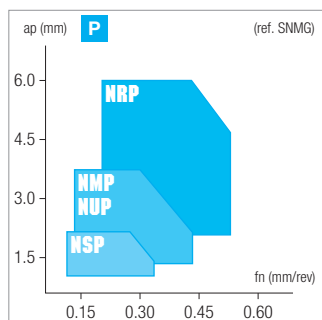


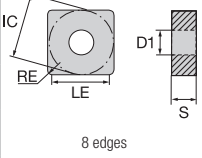
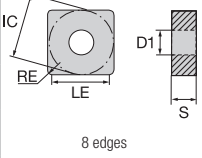
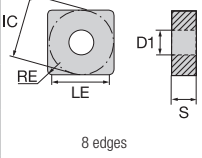
ISO - with hole

- [illegible]

		Designation	RE	IC	S	D1	LE	Stock									
FINISHING	NSP 	SNMG120408-NSP	0.80	12.7	4.76	5.16	11.9				●						
																	
MEDIUM	NMP 	SNMG120404-NMP	0.40	12.7	4.76	5.16	12.3				⊙	●					
		SNMG120408-NMP	0.80	12.7	4.76	5.16	11.9				●	●					
		SNMG120412-NMP	1.20	12.7	4.76	5.16	11.5				⊙	⊙					
		SNMG120416-NMP	1.60	12.7	4.76	5.16	11.1				○	⊙					
MEDIUM	NUP 	SNMG120404-NUP	0.40	12.7	4.76	5.16	12.3				⊙	⊙					
		SNMG120408-NUP	0.80	12.7	4.76	5.16	11.9				⊙	●	○				
		SNMG120412-NUP	1.20	12.7	4.76	5.16	11.5				⊙	●	○				
		SNMG120416-NUP	1.60	12.7	4.76	5.16	11.1				○	⊙					
MEDIUM	NMM 	SNMG120404-NMM	0.40	12.7	4.76	5.16	12.3							●	⊙		
		SNMG120408-NMM	0.80	12.7	4.76	5.16	11.9							●	⊙		
		SNMG120412-NMM	1.20	12.7	4.76	5.16	11.5							⊙	⊙		
		SNMG120416-NMM	1.60	12.7	4.76	5.16	11.1							⊙	⊙		
		SNMG190612-NMM	1.20	19.05	6.35	7.94	17.9							⊙	⊙		
		SNMG190616-NMM	1.60	19.05	6.35	7.94	17.5							⊙	⊙		
MEDIUM	NMK 	SNMG120408-NMK	0.80	12.7	4.76	5.16	11.9	●	⊙	⊙							
		SNMG120412-NMK	1.20	12.7	4.76	5.16	11.5	⊙	⊙								

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

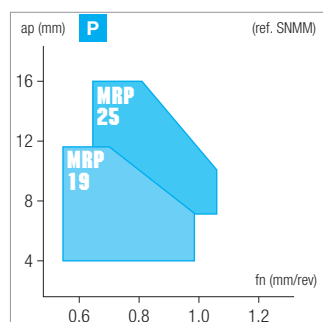
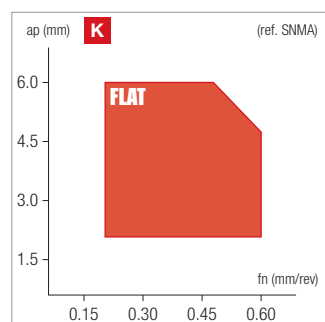


SN		HF: Micrograin tungsten carbide HC: Coated tungsten carbide CVD: Chemical vapor deposition PVD: Physical vapor deposition																		
ISO - with hole																				
• Very strong 90° corner with excellent economy (8 edges on double-sided inserts) • Mostly used for rough facing operations, especially on castings, forgings and rough-sawed blanks • 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																				
S																				
H																				

Designation		RE	IC	S	D1	LE	Stock										
ROUGHING	Flat top K	SNMA090308	0.80	9.525	3.18	3.81	8.7	●									
		SNMA120408	0.80	12.7	4.76	5.16	11.9	●	○	○							
		SNMA120412	1.20	12.7	4.76	5.16	11.5	●	○	○							
		SNMA120416	1.60	12.7	4.76	5.16	11.1	●	○								
HEAVY	MRP P	SNMM190616-MRP	1.60	19.05	6.35	7.94	17.5				○	○					
		SNMM190624-MRP	2.40	19.05	6.35	7.94	16.7				○	○					
		SNMM250924-MRP	2.40	25.4	9.52	8.8	23					○	○				

single side
2 edges

★ 1st choice, ☆ suitable, ● stock standard, ○ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

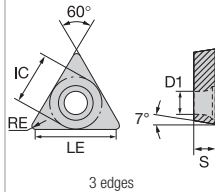


PRODUCT SELECTION p. A66

CUTTING CONDITIONS p. A110

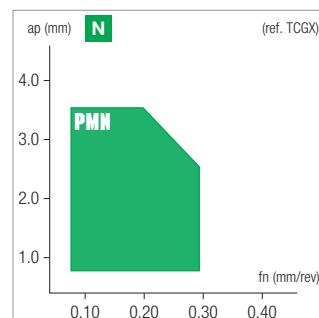
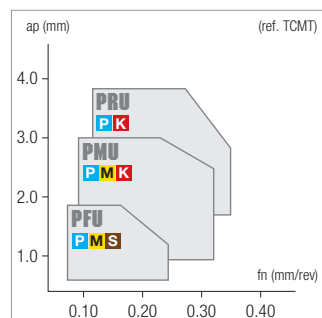
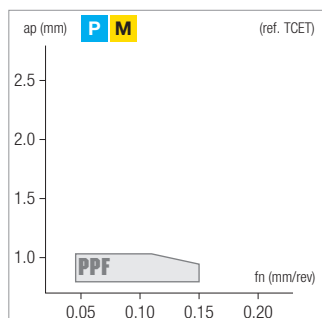
GRADES FEATURES p. A4

HOLDERS p. A255

TC		HF: Micrograin tungsten carbide HT: Cermet HC: Coated tungsten carbide PVD: Physical vapor deposition CVD: Chemical vapor deposition																							
ISO - with hole																									
• Very versatile insert shape • Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket • Extra clearance between the insert and the workpiece bore, greatly reduce the risk of chip jamming • Boring bars made of steel (Vortex technology) and carbide are available • 80° C shape insert is recommended when a stronger edge is required		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			180 400	100 220	70 180	90 200	70 180		200 380									
M										100 200	80 180	100 220	70 160	50 140	60 150	50 140									
K	130 380			110 300	130 380							150 320		60 180	90 190	60 180									
N																	400 1400		200 1000						
S												20 70	20 70	20 70											
H																									

Designation		RE	IC	S	D1	LE	Stock																
FINISHING	PPF P M	0.20	6.35	2.38	2.8	10.5												○	○				
	TCET110204L/R-PPF	0.40	6.35	2.38	2.8	10.3												○	○				
FINISHING	PFU P M S	0.20	6.35	2.38	2.8	10.5			○	○		○	○	●	●	●	▲		●				
	TCMT110204-PFU	0.40	6.35	2.38	2.8	10.3			●	●		●	●	●		●	●		○				
	TCMT110208-PFU	0.80	6.35	2.38	2.8	9.9										●							
	TCMT16T304-PFU	0.40	9.525	3.97	4.4	16.1										●	●						
	TCMT16T308-PFU	0.80	9.525	3.97	4.4	15.7										●	●						
MEDIUM	PMU P M K	0.40	5.56	2.38	2.5	9	●			●	●		●						○				
	TCMT110202-PMU	0.20	6.35	2.38	2.8	10.5			○	●		○	○		▽				○				
	TCMT110204-PMU	0.40	6.35	2.38	2.8	10.3	●			●	●	○	●	●		●	●		○				
	TCMT110208-PMU	0.80	6.35	2.38	2.8	9.9	●		○	●	●		●			●			○				
	TCMT16T304-PMU	0.40	9.525	3.97	4.4	16.1	●			●	●		●				●		●				
	TCMT16T308-PMU	0.80	9.525	3.97	4.4	15.7	●	○	○	●	●		●			●	●		○				
	TCMT16T312-PMU	1.20	9.525	3.97	4.4	15.3	●	●			○												
	TCMT220408-PMU	0.80	12.7	4.76	5.5	21.2	○				●												
MEDIUM	PMN N	0.40	5.56	2.38	2.5	9												○		●			
	TCGX110202-PMN	0.20	6.35	2.38	2.8	10.5												○		○			
	TCGX110204-PMN	0.40	6.35	2.38	2.8	10.3												●		○			
	TCGX110208-PMN	0.80	6.35	2.38	2.8	9.9												○		●			
	TCGX16T302-PMN	0.20	9.525	3.97	4.4	16.3												○		●			
	TCGX16T304-PMN	0.40	9.525	3.97	4.4	16.1												●		●			
	TCGX16T308-PMN	0.80	9.525	3.97	4.4	15.7												●		●			

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66

CUTTING CONDITIONS p. A110

GRADES FEATURES p. A4

HOLDERS p. A255

TC

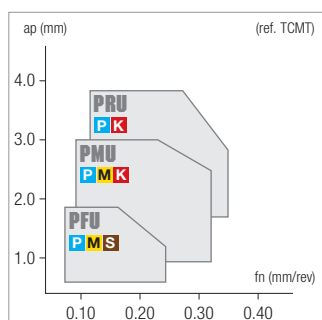
ISO - with hole

- Very versatile insert shape
- Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket
- Extra clearance between the insert and the workpiece bore, greatly reduce the risk of chip jamming
- Boring bars made of steel (Vortex technology) and carbide are available
- 80° C shape insert is recommended when a stronger edge is required

HF: Micrograin tungsten carbide HT: Cermet HC: Coated tungsten carbide PVD: Physical vapor deposition CVD: Chemical vapor deposition		HC	HC	HC	HC	HC	HC	HC	HT	HF	HF	HF	HF	HF	HT	HF					
		CVD	CVD	CVD	CVD	CVD	CVD	CVD	PVD	PVD	PVD	PVD	PVD	PVD							
		JC7010	JC7020	JC7115	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5025	JP5120	JP5125	JP6010	JU4015	JU6015					
Stable machining, light cut	● 1 st choice ○ suitable	●	○	●	●	○	●	○	●	●	○	●	○	●	●	●					
General machining, medium cut	● 1 st choice ○ suitable	●	○	●	●	●	○	●	○	●	●	●	●	○		●					
Unstable machining, heavy cut	⚙ 1 st choice ⚙ suitable	⚙	⚙	⚙		⚙		⚙			⚙	⚙				⚙					
Dimensions		ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																			
3 edges		P				170 360	140 330			180 400	100 220	70 180	90 200	70 180		200 380					
		M							100 200	80 180	100 220	70 160	50 140	60 150	50 140						
		K	130 380	110 300	130 380						150 320		60 180	90 190	60 180						
		N														400 1400		200 1000			
		S											20 70		20 70	20 70					
		H																			

Designation		RE	IC	S	D1	LE	Stock													
ROUGHING	PRU P K	0.40	9.525	3.97	4.4	16.1	○				●									
	TCMT16T304-PRU																			
	TCMT16T308-PRU	0.80	9.525	3.97	4.4	15.7	●				●									

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

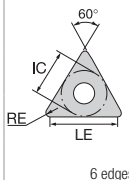


PRODUCT SELECTION p. A66

CUTTING CONDITIONS p. A110

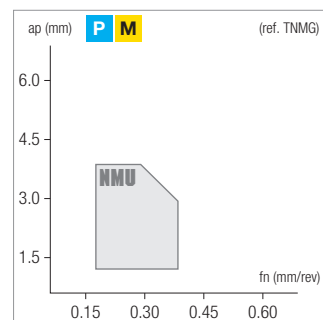
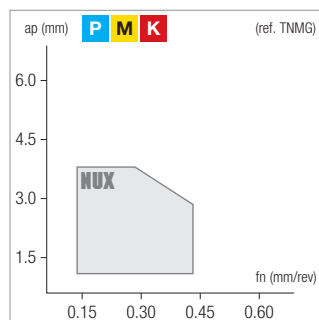
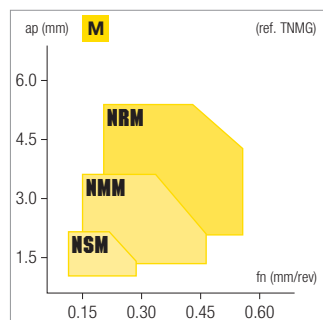
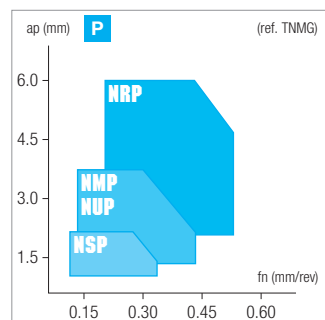
GRADES FEATURES p. A4

HOLDERS p. A255

TN	HF: Micrograin tungsten carbide HC: Coated tungsten carbide HT: Cermet CVD: Chemical vapor deposition PVD: Physical vapor deposition															
	HC CVD HC CVD HC CVD HC CVD HC CVD HC CVD HC CVD HC CVD HF PVD HF PVD HT HF															
ISO - with hole	JC7010 JC7020 JC7115 JC8005 JC8015 JC8025 JC8035 JC9010 JC9025 JP9015 JP9030 JU4015 JU6015															
- Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading - Good economy with up to 6 cutting edges	Stable machining, light cut	● 1 st choice ○ suitable	●	○	●	●	●	○	●	○	●	○	●	○	●	●
	General machining, medium cut	● 1 st choice ○ suitable	●	○	●	●	●	○	○	○	●	●	●	●	●	●
	Unstable machining, heavy cut	● 1 st choice ○ suitable	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Dimensions	ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)															
	P				200 380	170 360	140 330	100 200						200 380		
	M								100 200	80 180	60 160	50 130				
	K	130 380	110 300	130 380												
	N													200 1000		
	S															
	H															

Designation		RE	IC	S	D1	LE	Stock													
FINISHING	NSP P	TNMG160404-NSP	0.40	9.525	4.76	3.81	16.1				●	●	●					●		
		TNMG160408-NSP	0.80	9.525	4.76	3.81	15.7				●	●	●					●		
FINISHING	NSM M	TNMG160404-NSM	0.40	9.525	4.76	3.81	16.1										●	○		
		TNMG160408-NSM	0.80	9.525	4.76	3.81	15.7										▲	○		
MEDIUM	NUX P M K	TNMG160404-NUX	0.40	9.525	4.76	3.81	16.1	●		●	●	●		●	●					
		TNMG160408-NUX	0.80	9.525	4.76	3.81	15.7	●		●	●	●		●	●					
		TNMG160412-NUX	1.20	9.525	4.76	3.81	15.3	●		●	●	●		●	●					
MEDIUM	NMU P M	TNMG160404L/R-NMU	0.40	9.525	4.76	3.81	16.1			●	●			●						
		TNMG160408L/R-NMU	0.80	9.525	4.76	3.81	15.7			○	●			●						
MEDIUM	NMP P	TNMG160404-NMP	0.40	9.525	4.76	3.81	16.1			●	●									
		TNMG160408-NMP	0.80	9.525	4.76	3.81	15.7			●	●						▽			
		TNMG160412-NMP	1.20	9.525	4.76	3.81	15.3			●	●									
		TNMG220404-NMP	0.40	12.7	4.76	0	-			●										
		TNMG220408-NMP	0.80	12.7	4.76	5.16	21.2			●	●									
		TNMG220412-NMP	1.20	12.7	4.76	5.16	20.8			●	●									

★ 1st choice, ☆ suitable, ● stock standard, ○ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66

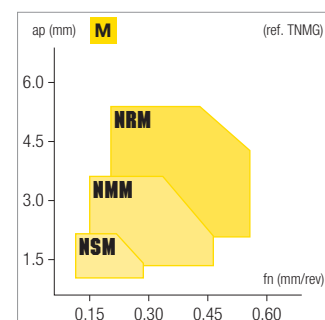
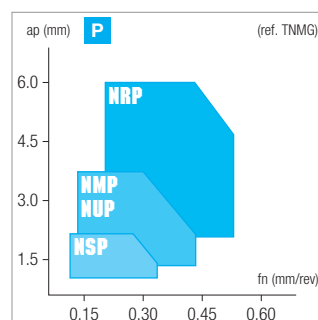
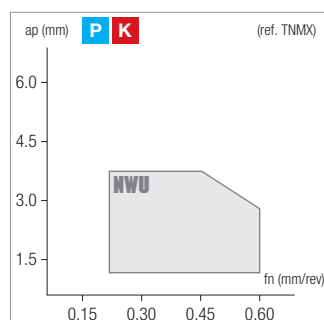
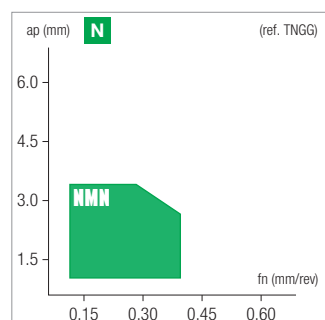
CUTTING CONDITIONS p. A110

GRADES FEATURES p. A4

HOLDERS p. A255

TN		HF: Micrograin tungsten carbide HC: Coated tungsten carbide HT: Cermet CVD: Chemical vapor deposition PVD: Physical vapor deposition																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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		Stable machining, light cut	● 1 st choice ○ suitable	●	○	●	●	●	○		●	○	●		●	○		●	○																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

★ 1st choice, ☆ suitable, ● stock standard, ○ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66

CUTTING CONDITIONS p. A110

GRADES FEATURES p. A4

HOLDERS p. A255

ISO - with hole

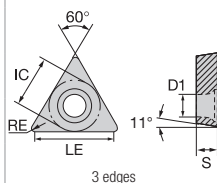
- JW4015

Unstable machining, heavy cut	 1 st choice  suitable
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Dimensions

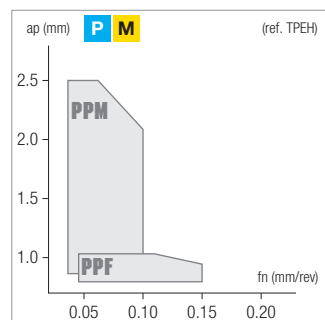
ISO

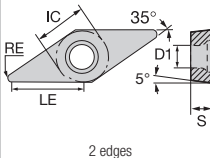
Vc(m/min) - suggested cutting speed range (bold: 1st choice)

[illegible]

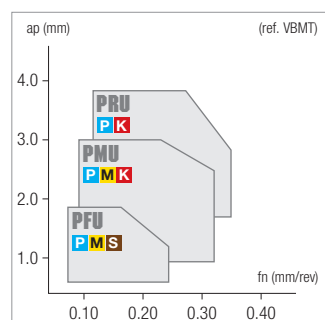
	Designation	RE	IC	S	D1	LE			Stock
FINISHING	PPF P M	TPEH090202L/R-PPF	0.20	5.56	2.38	3	9.7	● ●	
		TPEH090204L/R-PPF	0.40	5.56	2.38	3	9.5	● ●	
		TPEH110302L/R-PPF	0.20	6.35	3.18	3.3	10.8	● ●	
		TPEH110304L/R-PPF	0.40	6.35	3.18	3.3	10.6	● ●	
	ground chipbreaker right-hand shown								
MEDIUM	PPM P M	TPEH110304L/R-PPM	0.40	6.35	3.18	3.3	10.6	● ●	
									
	ground chipbreaker right-hand shown								

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



VB		HF: Micrograin tungstein carbide HT: Cermet HC: Coated tungstein carbide PVD: Physical vapor deposition CVD: Chemical vapor deposition																							
		HC	HC	HC	HC	HC	HC	HT	HF	HF	HF	HF	HF	HT											
		CVD	CVD	CVD	CVD	CVD	CVD	PVD	PVD	PVD	PVD	PVD	PVD												
		JC7010	JC8005	JC8015	JC8025	JC9010	JC9025	JP4020	JP5015	JP5025	JP5120	JP5125	JU4015												
• 1st choice for complex 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 can have improved performances	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	70 180	90 200	70 180	200 380												
		M				100 200	80 180	100 220	70 160	50 140	60 150	50 140													
		K	130 380					150 320		60 180	90 190	60 180													
		N																							
		S							20 70		20 70	20 70													
		H																							
Designation		RE	IC	S	D1	LE	Stock																		
ROUGHING  strong edge interrupted cut	PRU P K	VBMT160408-PRU	0.80	9.525	4.76	4.4	15.8	○				●													

★ 1st choice, ☆ suitable, ● stock standard, ● non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66

CUTTING CONDITIONS p. A110

GRADES FEATURES p. A4

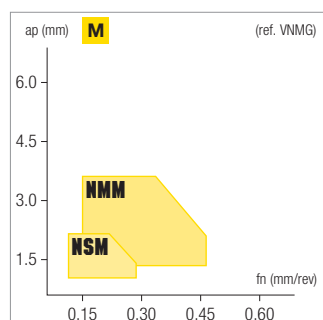
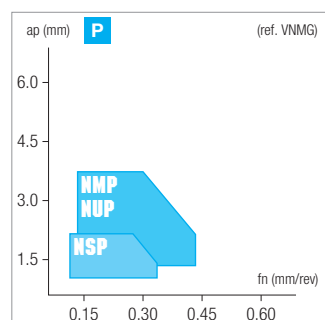
HOLDERS p. A255

ISO - with hole

- [illegible]

		Designation		RE	IC	S	D1	LE	Stock										
FINISHING	NSP  	VNMG160404-NSP	0.40	9.525	4.76	3.81	16.2					●	●	●				◎	
		VNMG160408-NSP	0.80	9.525	4.76	3.81	15.8					●	●	◎				◎	
FINISHING	NSM  	VNMG160404-NSM	0.40	9.525	4.76	3.81	16.2								●	●			
		VNMG160408-NSM	0.80	9.525	4.76	3.81	15.8								●	●			
MEDIUM	NMP  	VNMG160404-NMP	0.40	9.525	4.76	3.81	16.2					●	●					▽	
		VNMG160408-NMP	0.80	9.525	4.76	3.81	15.8					●	●					▽	
		VNMG160412-NMP	1.20	9.525	4.76	3.81	15.4					◎	●						
MEDIUM	NUP  	VNMG160404-NUP	0.40	9.525	4.76	3.81	16.2					◎	◎					◎	
		VNMG160408-NUP	0.80	9.525	4.76	3.81	15.8					◎	◎					◎	
		VNMG160412-NUP	1.20	9.525	4.76	3.81	15.4					◎	◎						
MEDIUM	NMM  	VNMG160404-NMM	0.40	9.525	4.76	3.81	16.2							●			◎	▽	
		VNMG160408-NMM	0.80	9.525	4.76	3.81	15.8							◎			◎	▽	

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



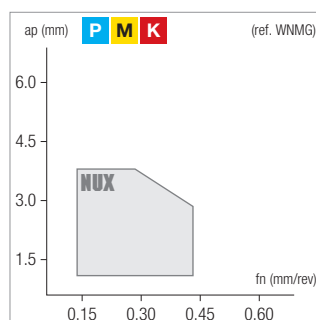
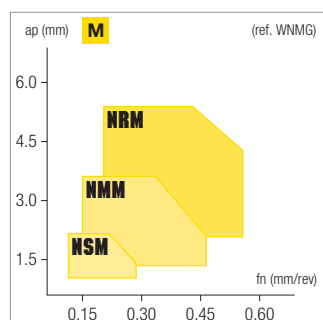
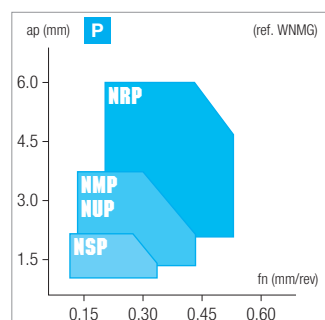
ISO - with hole

- 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
- Lighter ap is recommended compared to C shape inserts

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

[illegible][illegible]

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



WN		HF: Micrograin tungsten carbide HC: Coated tungsten carbide HT: Cermet CVD: Chemical vapor deposition PVD: Physical vapor deposition																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
		HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HF	HF	HF	HF																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

WN

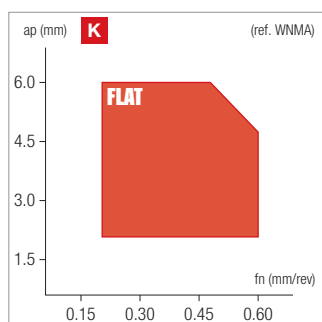
ISO - with hole

- 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
- Lighter ap is recommended compared to C shape inserts

HF: Micrograin tungsten carbide HC: Coated tungsten carbide HT: Cermet CVD: Chemical vapor deposition PVD: Physical vapor 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												
		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015													
Stable machining, light cut	● 1 st choice ○ suitable	●	○	●	●	●	○		●	○	●	●		●	●													
General machining, medium cut	● 1 st choice ○ suitable	●	○	●		●	●	○	○	●	●	●	●		●													
Unstable machining, heavy cut	⚙ 1 st choice ⚙ suitable	⚙	⚙	⚙			⚙	⚙		⚙			⚙	⚙														
Dimensions		ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																										
6 edges		P				200 380	170 360	140 330	100 200								200 380											
		M								100 200	80 180		60 160	50 130														
		K	130 380	110 300	130 380																							
		N																										
		S																										
		H																										

Designation		RE	IC	S	D1	LE	Stock																				
ROUGHING	Flat top K	WNMA080408	0.80	12.7	4.76	5.16	7.9	●	●	○																	
		WNMA080412	1.20	12.7	4.76	5.16	7.5	●	●	○																	
		WNMA080416	1.60	12.7	4.76	5.16	7.1	●	●	○																	

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66

CUTTING CONDITIONS p. A110

GRADES FEATURES p. A4

HOLDERS p. A255

ISO 513	MATERIAL	HARDNESS HB	JC8005			JC8015			JC8025		
			min	start	max	min	start	max	min	start	max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9SMn28/AVP, 1.0503/C45)	≤ 200	● 200	290	380	● 180	270	360	○ 170	250	330
			● 170	245	320	● 160	245	320	● 160	225	290
									⊕ 140	195	250
P3 - P4	Medium and high alloy steel (ex. 1.7225/42CrMo4, 1.3505/100Cr6)	200 ÷ 300	● 180	260	340	● 160	240	320	○ 150	220	290
						● 150	225	300	● 140	205	270
									⊕ 130	190	250
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X40CrMoV5-1/ORVAR, Hardox400®)	300 ÷ 400	● 160	240	320	● 140	220	300	○ 140	205	270
						● 130	205	280	● 130	190	250
									⊕ 120	170	220
ISO 513	MATERIAL	HARDNESS HB	JC9010			JC9025			JP4020		
			min	start	max	min	start	max	min	start	max
P7	Ferritic and martensitic stainless steel (ex. 1.4021/X20Cr13/AISI420)	≤ 200	● 140	200	260	○ 120	180	240	● 140	210	280
			○ 120	180	240	● 110	165	220	○ 120	190	260
						⊕ 100	150	200			
P8	Precipitation hardening stainless steel (ex. 1.4548/X5CrNiCuNb17-4/17-4-PH)	≤ 450	● 100	130	160	○ 80	110	140	● 100	140	180
			○ 90	120	150	● 70	100	130	○ 90	125	160
						⊕ 60	90	120			
M1	Austenitic stainless steel (ex. 1.4305/X10CrNiS18-9/AISI303)	> 200	● 120	160	200	○ 100	90	180	● 120	170	220
			○ 100	140	180	● 90	130	170	○ 100	150	200
						⊕ 80	120	160			
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X5CrNiMo17-12-2/AISI316)		● 100	140	180	○ 80	120	160	● 100	150	200
			○ 90	125	160	● 70	110	150	○ 90	135	180
						⊕ 60	100	140			
ISO 513	MATERIAL	HARDNESS HB	JC7010			JC7115			JC7020		
			min	start	max	min	start	max	min	start	max
K1	Grey cast iron (ex. 0.6025/GG25/EN-GJL-250)	150 ÷ 250	● 180	280	380	● 180	280	380	○ 150	225	300
			● 150	225	300	● 150	225	300	○ 120	170	220
			⊕ 130	195	260	⊕ 130	195	260	⊕ 110	155	200
K2	Nodular cast iron (ex. 0.7050/GGG50/EN-GJS-500-7)	150 ÷ 350	● 150	200	250	● 150	200	250	○ 140	180	220
			● 130	175	220	● 130	175	220	○ 120	160	200
			⊕ 120	160	200	⊕ 120	160	200	⊕ 100	145	180
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	● 140	190	240	● 140	190	240	○ 120	165	210
			● 120	165	210	● 120	165	210	○ 110	145	180
			⊕ 110	155	200	⊕ 110	155	200	⊕ 100	125	150
ISO 513	MATERIAL	HARDNESS HB	JP6010			JU6015					
			min	start	max	min	start	max			
N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGA)		● 600	1000	1400	● 400	700	1000			
			○ 400	600	800	● 300	500	700			
						⊕ 200	400	600			
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		● 200	400	600	● 200	300	400			
			○ 200	300	400	● 200	250	300			
						⊕ 100	150	200			
ISO 513	MATERIAL	HARDNESS HB	JP3015			JP5015			JP5125		
			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)		● 30	50	70	● 30	50	70	● 30	50	70
			● 20	40	60	● 20	40	60	● 20	40	60
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		● 40	60	80	● 40	60	80	● 40	60	80
			● 30	50	70	● 30	50	70	● 30	50	70

JC8035				JP4020				JP5015				JP5120				JP5125				JU4015			
min	start	max		min	start	max		min	start	max		min	start	max		min	start	max		min	start	max	
120	160	200	⌚	200	300	400	●	120	170	220	●	100	150	200	●	100	140	180	○	200	290	380	●
100	130	160	⚙	180	260	340	⌚	100	140	180	●	90	130	170	●	80	120	160	●				
																70	100	130	⚙				
100	140	180	⌚	190	275	360	●	100	140	180	●	90	130	170	●	80	120	160	○	180	260	340	●
90	125	160	⚙	180	260	340	⌚	90	125	160	●	80	110	140	●	70	100	120	●				
																60	80	100	⚙				
90	120	150	⌚					90	120	150	●	80	110	150	●	70	100	130	○				
80	110	140	⚙					80	110	140	●	70	100	130	●	60	90	120	●				
																60	80	100	⚙				
JP5015				JP5120				JP5125				JP9015				JP9030							
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	⚙												

INDEXABLE

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
CCET060202-1/8-PPF	0.10	0.40	0.70	0.04	0.07	0.10
CCET060204-1/8-PPF	0.10	0.40	0.70	0.04	0.08	0.12
CCET09T302-1/8-PPF	0.10	0.50	0.90	0.04	0.08	0.12
CCET09T304-1/8-PPF	0.10	0.50	0.90	0.04	0.90	0.14
CCET09T304-1/8-PPM	0.50	1.50	2.50	0.04	0.07	0.10
CCGT060202-PPU	0.50	1.50	2.50	0.05	0.10	0.15
CCGT060204-PPU	0.50	1.50	2.50	0.05	0.10	0.15
CCGX060202-PMN	0.30	1.50	2.70	0.05	0.10	0.15
CCGX060204-PMN	0.30	1.50	2.70	0.06	0.13	0.20
CCGX060208-PMN	0.30	1.50	2.70	0.08	0.16	0.24
CCGT09T302-PPU	0.60	1.80	3.00	0.06	0.13	0.20
CCGT09T304-PPU	0.60	1.80	3.00	0.07	0.16	0.25
CCGT09T308-PPU	0.60	1.80	3.00	0.08	0.19	0.30
CCGX09T302-PMN	0.50	2.00	3.50	0.06	0.11	0.16
CCGX09T304-PMN	0.50	2.00	3.50	0.08	0.16	0.24
CCGX09T308-PMN	0.50	2.00	3.50	0.10	0.20	0.30
CCGX120402-PMN	0.50	3.00	5.50	0.08	0.14	0.20
CCGX120404-PMN	0.50	3.00	5.50	0.10	0.20	0.30
CCGX120408-PMN	0.50	3.00	5.50	0.15	0.25	0.35
CCMT060202-PFU	0.20	0.80	1.40	0.04	0.08	0.12
CCMT060202-PMU	0.50	1.50	2.50	0.05	0.10	0.15
CCMT060204-PFU	0.20	0.80	1.40	0.05	0.11	0.17
CCMT060204-PMU	0.50	1.50	2.50	0.06	0.13	0.20
CCMT060208-PMU	0.50	1.50	2.50	0.08	0.16	0.24
CCMT09T302-PFU	0.30	1.00	1.70	0.05	0.10	0.15
CCMT09T302-PMU	0.60	1.80	3.00	0.06	0.13	0.20
CCMT09T304-PFU	0.30	1.00	1.70	0.06	0.14	0.22
CCMT09T304-PMU	0.60	1.80	3.00	0.07	0.16	0.25
CCMT09T304-PRU	1.50	2.50	3.50	0.10	0.19	0.28
CCMT09T308-PFU	0.30	1.00	1.70	0.08	0.16	0.24
CCMT09T308-PMU	0.60	1.80	3.00	0.08	0.19	0.30
CCMT09T308-PRU	1.50	2.50	3.50	0.12	0.22	0.32
CCMT120404-PMU	0.80	2.20	3.60	0.08	0.17	0.26
CCMT120408-PMU	0.80	2.20	3.60	0.10	0.22	0.32
CCMT120408-PRU	1.50	3.00	4.50	0.14	0.26	0.38
CCMT120412-PMU	0.80	2.20	3.60	0.12	0.24	0.36
CCMT120412-PRU	1.50	3.00	4.50	0.16	0.28	0.40
CNGG120404-NMN	0.50	2.00	3.50	0.10	0.20	0.30
CNGG120408-NMN	0.50	2.00	3.50	0.15	0.25	0.35
CNMA120404	2.00	4.00	6.00	0.15	0.25	0.35
CNMA120408	2.00	4.00	6.00	0.25	0.35	0.45
CNMA120412	2.00	4.00	6.00	0.35	0.45	0.55
CNMA120416	2.00	4.00	6.00	0.45	0.55	0.65
CNMA160612	4.00	7.00	10.00	0.45	0.60	0.75
CNMA160616	4.00	7.00	10.00	0.50	0.65	0.80
CNMA190612	6.00	9.00	12.00	0.50	0.65	0.80
CNMA190616	6.00	9.00	12.00	0.55	0.70	0.85
CNMG090304-NMM	0.70	1.50	2.30	0.13	0.20	0.27
CNMG090304-NSP	0.30	0.70	1.10	0.06	0.12	0.18
CNMG090304-NUP	0.70	1.50	2.30	0.08	0.15	0.22
CNMG090308-NMM	0.70	1.50	2.30	0.18	0.25	0.32
CNMG090308-NSP	0.30	0.70	1.10	0.08	0.16	0.24
CNMG090308-NUP	0.70	1.50	2.30	0.12	0.20	0.28
CNMG120404-NMK	0.50	2.00	3.50	0.10	0.20	0.30
CNMG120404-NMM	1.00	2.50	4.00	0.15	0.25	0.35
CNMG120404-NMP	1.50	2.50	3.50	0.12	0.20	0.28
CNMG120404-NSM	0.40	1.20	2.00	0.08	0.14	0.20
CNMG120404-NSP	0.40	1.20	2.00	0.08	0.15	0.22

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
CNMG120404-NUK	0.50	2.00	3.50	0.10	0.20	0.30
CNMG120404-NUP	1.00	2.50	4.00	0.10	0.20	0.30
CNMG120404-NUX	1.00	2.50	4.00	0.10	0.20	0.30
CNMG120408-NMK	0.50	2.00	3.50	0.15	0.25	0.35
CNMG120408-NMM	1.00	2.50	4.00	0.20	0.30	0.40
CNMG120408-NMP	1.50	2.50	3.50	0.16	0.25	0.34
CNMG120408-NRK	1.50	4.00	6.50	0.20	0.30	0.40
CNMG120408-NRM	2.00	3.50	5.00	0.20	0.35	0.50
CNMG120408-NRP	2.00	4.00	6.00	0.25	0.35	0.45
CNMG120408-NSM	0.40	1.20	2.00	0.10	0.18	0.26
CNMG120408-NSP	0.40	1.20	2.00	0.10	0.22	0.34
CNMG120408-NUK	0.50	2.00	3.50	0.15	0.25	0.35
CNMG120408-NUP	1.00	2.50	4.00	0.15	0.25	0.35
CNMG120408-NUX	1.00	2.50	4.00	0.15	0.25	0.35
CNMG120408-NWU	0.50	1.50	2.50	0.20	0.40	0.60
CNMG120408-NWX	1.00	2.50	4.00	0.20	0.40	0.60
CNMG120412-NMK	0.50	2.00	3.50	0.20	0.30	0.40
CNMG120412-NMM	1.00	2.50	4.00	0.25	0.35	0.45
CNMG120412-NMP	1.50	2.50	3.50	0.20	0.30	0.40
CNMG120412-NRK	1.50	4.00	6.50	0.25	0.35	0.45
CNMG120412-NRM	2.00	3.50	5.00	0.25	0.40	0.55
CNMG120412-NRP	2.00	4.00	6.00	0.30	0.40	0.50
CNMG120412-NUK	0.50	2.00	3.50	0.20	0.30	0.40
CNMG120412-NUP	1.00	2.50	4.00	0.18	0.30	0.42
CNMG120412-NUX	1.00	2.50	4.00	0.18	0.30	0.42
CNMG120412-NWU	0.50	1.50	2.50	0.25	0.45	0.65
CNMG120412-NWX	1.00	2.50	4.00	0.25	0.45	0.65
CNMG120416-NMK	0.50	2.00	3.50	0.25	0.35	0.45
CNMG120416-NMM	1.00	2.50	4.00	0.30	0.40	0.50
CNMG120416-NMP	1.50	2.50	3.50	0.25	0.35	0.45
CNMG120416-NRK	1.50	4.00	6.50	0.30	0.40	0.50
CNMG120416-NRP	2.00	4.00	6.00	0.35	0.45	0.55
CNMG120416-NUP	1.00	2.50	4.00	0.20	0.35	0.50
CNMG160608-NMK	2.00	4.00	6.00	0.25	0.35	0.45
CNMG160608-NMM	2.00	4.50	7.00	0.25	0.35	0.45
CNMG160608-NMP	3.00	4.50	6.00	0.20	0.30	0.40
CNMG160608-NRM	3.00	5.50	8.00	0.25	0.40	0.55
CNMG160608-NUP	2.00	4.50	7.00	0.18	0.30	0.42
CNMG160612-NMK	2.00	4.00	6.00	0.30	0.40	0.50
CNMG160612-NMM	2.00	4.50	7.00	0.30	0.40	0.50
CNMG160612-NMP	3.00	4.50	6.00	0.25	0.35	0.45
CNMG160612-NRK	3.00	6.00	9.00	0.40	0.55	0.70
CNMG160612-NRM	3.00	5.50	8.00	0.30	0.45	0.60
CNMG160612-NRP	4.00	6.00	8.00	0.35	0.50	0.65
CNMG160612-NUP	2.00	4.50	7.00	0.22	0.35	0.48
CNMG160616-NMK	2.00	4.00	6.00	0.35	0.45	0.55
CNMG160616-NMM	2.00	4.50	7.00	0.35	0.45	0.55
CNMG160616-NMP	3.00	4.50	6.00	0.30	0.40	0.50
CNMG160616-NRK	3.00	6.00	9.00	0.45	0.60	0.75
CNMG160616-NRP	4.00	6.00	8.00	0.40	0.55	0.70
CNMG190608-NUP	3.00	6.00	9.00	0.22	0.35	0.48
CNMG190612-NMK	3.00	5.00	7.00	0.35	0.45	0.55
CNMG190612-NMM	3.00	6.00	9.00	0.35	0.45	0.55
CNMG190612-NMP	4.00	6.00	8.00	0.30	0.40	0.50
CNMG190612-NRK	5.00	8.00	11.00	0.45	0.60	0.75
CNMG190612-NRM	5.00	7.50	10.00	0.40	0.55	0.70
CNMG190612-NRP	6.00	8.00	10.00	0.40	0.55	0.70
CNMG190612-NUP	3.00	6.00	9.00	0.25	0.40	0.55

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
CNMG190616-NMK	3.00	5.00	7.00	0.40	0.50	0.60
CNMG190616-NMM	3.00	6.00	9.00	0.40	0.50	0.60
CNMG190616-NMP	4.00	6.00	8.00	0.32	0.45	0.58
CNMG190616-NRK	5.00	8.00	11.00	0.50	0.65	0.80
CNMG190616-NRM	5.00	7.50	10.00	0.45	0.60	0.75
CNMG190616-NRP	6.00	8.00	10.00	0.45	0.60	0.75
CNMG190616-NUP	3.00	6.00	9.00	0.30	0.45	0.60
CNMG190624-NRP	6.00	8.00	10.00	0.50	0.65	0.80
CNMG250924-NRP	6.00	10.00	14.00	0.50	0.70	0.90
CNMM190616-MRP	6.00	9.00	12.00	0.60	0.75	0.90
CNMM190624-MRP	6.00	9.00	12.00	0.65	0.80	0.95
CNMM250924-MRP	8.00	12.00	16.00	0.70	0.90	1.10
DCET070202-PPF	0.10	0.40	0.70	0.04	0.07	0.10
DCET070204-PPF	0.10	0.40	0.70	0.04	0.08	0.12
DCET070204-PPM	0.40	1.00	1.60	0.03	0.06	0.09
DCET11T302-PPF	0.10	0.50	0.90	0.04	0.08	0.12
DCET11T302-PPM	0.50	1.50	2.50	0.04	0.06	0.08
DCET11T304-M-PPF	0.10	0.50	0.90	0.04	0.90	0.14
DCET11T304-M-PPM	0.50	1.50	2.50	0.04	0.07	0.10
DCGT070202-PPU	0.50	1.50	2.50	0.05	0.10	0.15
DCGT070204-PPU	0.50	1.50	2.50	0.06	0.13	0.20
DCGX070202-PMN	0.30	1.50	2.70	0.05	0.10	0.15
DCGX070204-PMN	0.30	1.50	2.70	0.06	0.13	0.20
DCGX070208-PMN	0.30	1.50	2.70	0.08	0.16	0.24
DCGT11T302-PPU	0.60	1.80	3.00	0.06	0.13	0.20
DCGT11T304-PPU	0.60	1.80	3.00	0.07	0.16	0.25
DCGT11T308-PPU	0.60	1.80	3.00	0.08	0.19	0.30
DCGX11T302-PMN	0.50	2.00	3.50	0.06	0.11	0.16
DCGX11T304-PMN	0.50	2.00	3.50	0.08	0.16	0.24
DCGX11T308-PMN	0.50	2.00	3.50	0.10	0.20	0.30
DCMT070202-PFU	0.20	0.80	1.40	0.04	0.08	0.12
DCMT070202-PMU	0.50	1.50	2.50	0.05	0.10	0.15
DCMT070204-PFU	0.20	0.80	1.40	0.05	0.11	0.17
DCMT070204-PMU	0.50	1.50	2.50	0.06	0.13	0.20
DCMT070208-PMU	0.50	1.50	2.50	0.08	0.16	0.24
DCMT11T302-PFU	0.30	1.00	1.70	0.05	0.10	0.15
DCMT11T302-PMU	0.60	1.80	3.00	0.06	0.13	0.20
DCMT11T304-PFU	0.30	1.00	1.70	0.06	0.14	0.22
DCMT11T304-PMU	0.60	1.80	3.00	0.07	0.16	0.25
DCMT11T304-PRU	1.50	2.50	3.50	0.10	0.19	0.28
DCMT11T308-PFU	0.30	1.00	1.70	0.08	0.16	0.24
DCMT11T308-PMU	0.60	1.80	3.00	0.08	0.19	0.30
DCMT11T308-PRU	1.50	2.50	3.50	0.12	0.22	0.32
DCMT11T312-PMU	0.60	1.80	3.00	0.10	0.22	0.34
DCMT150404-PMU	0.80	2.20	3.60	0.08	0.17	0.26
DCMT150408-PMU	0.80	2.20	3.60	0.10	0.22	0.32
DCMT150412-PMU	0.80	2.20	3.60	0.12	0.24	0.36
DNGG150604-NMN	0.50	2.00	3.50	0.10	0.20	0.30
DNGG150608-NMN	0.50	2.00	3.50	0.15	0.25	0.35
DNMA150608	2.00	4.00	6.00	0.15	0.25	0.35
DNMA150612	2.00	4.00	6.00	0.35	0.45	0.55
DNMG110404-NMM	0.70	1.50	2.30	0.13	0.20	0.27
DNMG110404-NMP	1.00	1.50	2.00	0.10	0.15	0.20
DNMG110404-NSP	0.30	0.70	1.10	0.06	0.12	0.18
DNMG110404-NUP	0.70	1.50	2.30	0.08	0.15	0.22
DNMG110408-NMM	0.70	1.50	2.30	0.18	0.25	0.32
DNMG110408-NMP	1.00	1.50	2.00	0.15	0.20	0.25
DNMG110408-NSP	0.30	0.70	1.10	0.08	0.16	0.24

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
DNMG110408-NUP	0.70	1.50	2.30	0.12	0.20	0.28
DNMG110412-NUP	0.70	1.50	2.30	0.15	0.25	0.35
DNMG150604- $\frac{1}{8}$ -NMU	1.00	2.50	4.00	0.15	0.25	0.35
DNMG150604-NMK	0.50	2.00	3.50	0.10	0.20	0.30
DNMG150604-NMM	1.00	2.50	4.00	0.15	0.25	0.35
DNMG150604-NMP	1.50	2.50	3.50	0.12	0.20	0.28
DNMG150604-NSM	0.40	1.20	2.00	0.08	0.14	0.20
DNMG150604-NSP	0.40	1.20	2.00	0.08	0.15	0.22
DNMG150604-NUK	0.50	2.00	3.50	0.10	0.20	0.30
DNMG150604-NUP	1.00	2.50	4.00	0.10	0.20	0.30
DNMG150604-NUX	1.00	2.50	4.00	0.10	0.20	0.30
DNMG150608- $\frac{1}{8}$ -NMU	1.00	2.50	4.00	0.20	0.30	0.40
DNMG150608-NMK	0.50	2.00	3.50	0.15	0.25	0.35
DNMG150608-NMM	1.00	2.50	4.00	0.20	0.30	0.40
DNMG150608-NMP	1.50	2.50	3.50	0.16	0.25	0.34
DNMG150608-NRK	1.50	4.00	6.50	0.20	0.30	0.40
DNMG150608-NRM	2.00	3.50	5.00	0.20	0.35	0.50
DNMG150608-NRP	2.00	4.00	6.00	0.25	0.35	0.45
DNMG150608-NSM	0.40	1.20	2.00	0.10	0.18	0.26
DNMG150608-NSP	0.40	1.20	2.00	0.10	0.22	0.34
DNMG150608-NUK	0.50	2.00	3.50	0.15	0.25	0.35
DNMG150608-NUP	1.00	2.50	4.00	0.15	0.25	0.35
DNMG150608-NUX	1.00	2.50	4.00	0.15	0.25	0.35
DNMG150612-NMK	0.50	2.00	3.50	0.20	0.30	0.40
DNMG150612-NMM	1.00	2.50	4.00	0.25	0.35	0.45
DNMG150612-NMP	1.50	2.50	3.50	0.20	0.30	0.40
DNMG150612-NRK	1.50	4.00	6.50	0.25	0.35	0.45
DNMG150612-NRM	2.00	3.50	5.00	0.25	0.40	0.55
DNMG150612-NRP	2.00	4.00	6.00	0.30	0.40	0.50
DNMG150612-NUK	0.50	2.00	3.50	0.20	0.30	0.40
DNMG150612-NUP	1.00	2.50	4.00	0.18	0.30	0.42
DNMG150612-NUX	1.00	2.50	4.00	0.18	0.30	0.42
DNMG150616-NMK	0.50	2.00	3.50	0.25	0.35	0.45
DNMG150616-NMP	1.50	2.50	3.50	0.25	0.35	0.45
DNMG150616-NRP	2.00	4.00	6.00	0.35	0.45	0.55
DNMX150608-NWU	0.50	1.50	2.50	0.20	0.40	0.60
DNMX150612-NWU	0.50	1.50	2.50	0.25	0.45	0.65
KNUX160405- $\frac{1}{8}$ -NMU	1.00	2.50	4.00	0.15	0.25	0.35
KNUX160410- $\frac{1}{8}$ -NMU	1.00	2.50	4.00	0.20	0.30	0.40
MCC.R02L-PPF	0.05	0.20	0.35	0.03	0.05	0.07
MCC.R04L-PPF	0.05	0.20	0.35	0.04	0.06	0.08
MCN.R02G-SS	0.60	1.20	1.80	0.08	0.14	0.20
MCN.R04-GB $\frac{1}{8}$	0.20	0.50	0.80	0.05	0.10	0.15
MCN.R04G-SS	0.60	1.20	1.80	0.10	0.17	0.24
MCN.R04M-GM	0.80	1.50	2.20	0.08	0.15	0.22
MCN.R08M-GM	0.80	1.50	2.20	0.10	0.17	0.24
MDN.R02G-SS	0.60	1.20	1.80	0.08	0.14	0.20
MDN.R04-GB $\frac{1}{8}$	0.20	0.50	0.80	0.05	0.10	0.15
MDN.R04G-SS	0.60	1.20	1.80	0.10	0.17	0.24
MDN.R04M-GM	0.80	1.50	2.20	0.08	0.15	0.22
MDN.R08M-GM	0.80	1.50	2.20	0.10	0.17	0.24
SCGX09T304-PMN	0.50	2.00	3.50	0.08	0.16	0.24
SCGX120404-PMN	0.50	3.00	5.50	0.10	0.20	0.30
SCGX120408-PMN	0.50	3.00	5.50	0.15	0.25	0.35
SCMT09T304-PFU	0.30	1.00	1.70	0.06	0.14	0.22
SCMT09T304-PMU	0.60	1.80	3.00	0.07	0.16	0.25
SCMT09T308-PFU	0.30	1.00	1.70	0.08	0.16	0.24

INDEXABLE

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
SCMT09T308-PMU	0.60	1.80	3.00	0.08	0.19	0.30
SCMT09T308-PRU	1.50	2.50	3.50	0.12	0.22	0.32
SCMT120404-PMU	0.80	2.20	3.60	0.08	0.17	0.26
SCMT120408-PMU	0.80	2.20	3.60	0.10	0.22	0.32
SCMT120408-PRU	1.50	3.00	4.50	0.14	0.26	0.38
SNGG120404-NMN	0.50	2.00	3.50	0.10	0.20	0.30
SNGG120408-NMN	0.50	2.00	3.50	0.15	0.25	0.35
SNGG120412-NMN	0.50	2.00	3.50	0.20	0.30	0.40
SNMA090308	1.00	2.00	3.00	0.22	0.30	0.38
SNMA120408	2.00	4.00	6.00	0.25	0.35	0.45
SNMA120412	2.00	4.00	6.00	0.35	0.45	0.55
SNMA120416	2.00	4.00	6.00	0.45	0.55	0.65
SNMG120404-NMM	1.00	2.50	4.00	0.15	0.25	0.35
SNMG120404-NMP	1.50	2.50	3.50	0.12	0.20	0.28
SNMG120404-NSP	0.40	1.20	2.00	0.08	0.15	0.22
SNMG120404-NUP	1.00	2.50	4.00	0.10	0.20	0.30
SNMG120408-NMK	0.50	2.00	3.50	0.15	0.25	0.35
SNMG120408-NMM	1.00	2.50	4.00	0.20	0.30	0.40
SNMG120408-NMP	1.50	2.50	3.50	0.16	0.25	0.34
SNMG120408-NRK	1.50	4.00	6.50	0.20	0.30	0.40
SNMG120408-NRM	2.00	3.50	5.00	0.20	0.35	0.50
SNMG120408-NRP	2.00	4.00	6.00	0.25	0.35	0.45
SNMG120408-NSP	0.40	1.20	2.00	0.10	0.22	0.34
SNMG120408-NUP	1.00	2.50	4.00	0.15	0.25	0.35
SNMG120412-NMK	0.50	2.00	3.50	0.20	0.30	0.40
SNMG120412-NMM	1.00	2.50	4.00	0.25	0.35	0.45
SNMG120412-NMP	1.50	2.50	3.50	0.20	0.30	0.40
SNMG120412-NRK	1.50	4.00	6.50	0.25	0.35	0.45
SNMG120412-NRM	2.00	3.50	5.00	0.25	0.40	0.55
SNMG120412-NRP	2.00	4.00	6.00	0.30	0.40	0.50
SNMG120412-NUP	1.00	2.50	4.00	0.18	0.30	0.42
SNMG120416-NMM	1.00	2.50	4.00	0.30	0.40	0.50
SNMG120416-NMP	1.50	2.50	3.50	0.25	0.35	0.45
SNMG120416-NRK	1.50	4.00	6.50	0.30	0.40	0.50
SNMG120416-NRP	2.00	4.00	6.00	0.35	0.45	0.55
SNMG120416-NUP	1.00	2.50	4.00	0.20	0.35	0.50
SNMG190612-NMM	3.00	6.00	9.00	0.35	0.45	0.55
SNMG190612-NRK	5.00	8.00	11.00	0.45	0.60	0.75
SNMG190612-NRM	5.00	7.50	10.00	0.40	0.55	0.70
SNMG190612-NRP	6.00	8.00	10.00	0.40	0.55	0.70
SNMG190616-NMM	3.00	6.00	9.00	0.40	0.50	0.60
SNMG190616-NRK	5.00	8.00	11.00	0.50	0.65	0.80
SNMG190616-NRM	5.00	7.50	10.00	0.45	0.60	0.75
SNMG190616-NRP	6.00	8.00	10.00	0.45	0.60	0.75
SNMG190624-NRP	6.00	8.00	10.00	0.50	0.65	0.80
SNMG250924-NRP	6.00	10.00	14.00	0.50	0.70	0.90
SNMM190616-MRP	6.00	9.00	12.00	0.60	0.75	0.90
SNMM190624-MRP	6.00	9.00	12.00	0.65	0.80	0.95
SNMM250924-MRP	8.00	12.00	16.00	0.70	0.90	1.10
TBET060102 $\frac{1}{4}$ -PPF	0.10	0.30	0.50	0.03	0.06	0.09
TBET060104 $\frac{1}{4}$ -PPF	0.10	0.30	0.50	0.04	0.07	0.10
TCET110202 $\frac{1}{4}$ -PPF	0.10	0.40	0.70	0.04	0.07	0.10
TCET110204 $\frac{1}{4}$ -PPF	0.10	0.40	0.70	0.04	0.08	0.12
TCGX090204-PMN	0.30	1.00	1.70	0.05	0.11	0.17
TCGX110202-PMN	0.30	1.50	2.70	0.05	0.10	0.15
TCGX110204-PMN	0.30	1.50	2.70	0.06	0.13	0.20
TCGX110208-PMN	0.30	1.50	2.70	0.08	0.16	0.24
TCGX16T302-PMN	0.50	2.00	3.50	0.06	0.11	0.16

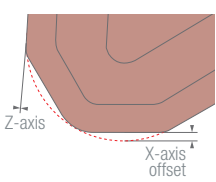
DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
TCGX16T304-PMN	0.50	2.00	3.50	0.08	0.16	0.24
TCGX16T308-PMN	0.50	2.00	3.50	0.10	0.20	0.30
TCMT090204-PMU	0.50	1.00	1.50	0.05	0.09	0.13
TCMT110202-PFU	0.20	0.80	1.40	0.04	0.08	0.12
TCMT110202-PMU	0.50	1.50	2.50	0.05	0.10	0.15
TCMT110204-PFU	0.20	0.80	1.40	0.05	0.11	0.17
TCMT110204-PMU	0.50	1.50	2.50	0.06	0.13	0.20
TCMT110208-PFU	0.20	0.80	1.40	0.06	0.13	0.20
TCMT110208-PMU	0.50	1.50	2.50	0.08	0.16	0.24
TCMT16T304-PFU	0.30	1.00	1.70	0.06	0.14	0.22
TCMT16T304-PMU	0.60	1.80	3.00	0.07	0.16	0.25
TCMT16T304-PRU	1.50	2.50	3.50	0.10	0.19	0.28
TCMT16T308-PFU	0.30	1.00	1.70	0.08	0.16	0.24
TCMT16T308-PMU	0.60	1.80	3.00	0.08	0.19	0.30
TCMT16T308-PRU	1.50	2.50	3.50	0.12	0.22	0.32
TCMT16T312-PMU	0.60	1.80	3.00	0.10	0.22	0.34
TCMT220408-PMU	0.80	2.20	3.60	0.10	0.22	0.32
TNGG160404-NMN	0.50	2.00	3.50	0.10	0.20	0.30
TNGG160408-NMN	0.50	2.00	3.50	0.15	0.25	0.35
TNGG160412-NMN	0.50	2.00	3.50	0.20	0.30	0.40
TNMA160404	2.00	4.00	6.00	0.15	0.25	0.35
TNMA160408	2.00	4.00	6.00	0.25	0.35	0.45
TNMA160412	2.00	4.00	6.00	0.35	0.45	0.55
TNMA160416	2.00	4.00	6.00	0.45	0.55	0.65
TNMA220408	4.00	7.00	10.00	0.35	0.50	0.65
TNMA220412	4.00	7.00	10.00	0.45	0.60	0.75
TNMA220416	4.00	7.00	10.00	0.50	0.65	0.80
TNMG160404 $\frac{1}{4}$ -NMU	1.00	2.50	4.00	0.15	0.25	0.35
TNMG160404-NMK	0.50	2.00	3.50	0.10	0.20	0.30
TNMG160404-NMM	1.00	2.50	4.00	0.15	0.25	0.35
TNMG160404-NMP	1.50	2.50	3.50	0.12	0.20	0.28
TNMG160404-NSM	0.40	1.20	2.00	0.08	0.14	0.20
TNMG160404-NSP	0.40	1.20	2.00	0.08	0.15	0.22
TNMG160404-NUK	0.50	2.00	3.50	0.10	0.20	0.30
TNMG160404-NUP	1.00	2.50	4.00	0.10	0.20	0.30
TNMG160404-NUJ	1.00	2.50	4.00	0.10	0.20	0.30
TNMG160408 $\frac{1}{4}$ -NMU	1.00	2.50	4.00	0.20	0.30	0.40
TNMG160408-NMK	0.50	2.00	3.50	0.15	0.25	0.35
TNMG160408-NMM	1.00	2.50	4.00	0.20	0.30	0.40
TNMG160408-NMP	1.50	2.50	3.50	0.16	0.25	0.34
TNMG160408-NRK	1.50	4.00	6.50	0.20	0.30	0.40
TNMG160408-NRM	2.00	3.50	5.00	0.20	0.35	0.50
TNMG160408-NRP	2.00	4.00	6.00	0.25	0.35	0.45
TNMG160408-NSM	0.40	1.20	2.00	0.10	0.18	0.26
TNMG160408-NSP	0.40	1.20	2.00	0.10	0.22	0.34
TNMG160408-NUK	0.50	2.00	3.50	0.15	0.25	0.35
TNMG160408-NUP	1.00	2.50	4.00	0.15	0.25	0.35
TNMG160408-NUX	1.00	2.50	4.00	0.15	0.25	0.35
TNMG160412-NMK	0.50	2.00	3.50	0.20	0.30	0.40
TNMG160412-NMM	1.00	2.50	4.00	0.25	0.35	0.45
TNMG160412-NMP	1.50	2.50	3.50	0.20	0.30	0.40
TNMG160412-NRK	1.50	4.00	6.50	0.25	0.35	0.45
TNMG160412-NRM	2.00	3.50	5.00	0.25	0.40	0.55
TNMG160412-NRP	2.00	4.00	6.00	0.30	0.40	0.50
TNMG160412-NUK	0.50	2.00	3.50	0.20	0.30	0.40
TNMG160412-NUP	1.00	2.50	4.00	0.18	0.30	0.42
TNMG160412-NUX	1.00	2.50	4.00	0.18	0.30	0.42
TNMG160416-NMK	0.50	2.00	3.50	0.25	0.35	0.45

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
TNMG220408-NMK	2.00	4.00	6.00	0.25	0.35	0.45
TNMG220408-NMM	2.00	4.50	7.00	0.25	0.35	0.45
TNMG220408-NMP	3.00	4.50	6.00	0.20	0.30	0.40
TNMG220408-NRK	3.00	6.00	9.00	0.35	0.50	0.65
TNMG220408-NUP	2.00	4.50	7.00	0.18	0.30	0.42
TNMG220412-NMK	2.00	4.00	6.00	0.30	0.40	0.50
TNMG220412-NMM	2.00	4.50	7.00	0.30	0.40	0.50
TNMG220412-NMP	3.00	4.50	6.00	0.25	0.35	0.45
TNMG220412-NRK	3.00	6.00	9.00	0.40	0.55	0.70
TNMG220412-NRP	4.00	6.00	8.00	0.35	0.50	0.65
TNMG220412-NUP	2.00	4.50	7.00	0.22	0.35	0.48
TNMG220416-NMK	2.00	4.00	6.00	0.35	0.45	0.55
TNMG220416-NMM	2.00	4.50	7.00	0.35	0.45	0.55
TNMG220416-NRK	3.00	6.00	9.00	0.45	0.60	0.75
TNMG220416-NRP	4.00	6.00	8.00	0.40	0.55	0.70
TNMG220416-NUP	2.00	4.50	7.00	0.24	0.40	0.56
TNMX160408-NWU	0.50	1.50	2.50	0.20	0.40	0.60
TNMX160412-NWU	0.50	1.50	2.50	0.25	0.45	0.65
TPEH090202 $\frac{1}{8}$ -PPF	0.10	0.30	0.50	0.03	0.06	0.09
TPEH090204 $\frac{1}{8}$ -PPF	0.10	0.30	0.50	0.04	0.70	0.10
TPEH110302 $\frac{1}{8}$ -PPF	0.10	0.40	0.70	0.04	0.07	0.10
TPEH110304 $\frac{1}{8}$ -PPF	0.10	0.40	0.70	0.04	0.08	0.12
TPEH110304 $\frac{1}{8}$ -PPM	0.40	1.00	1.60	0.03	0.06	0.09
VBET110302 $\frac{1}{8}$ -PPF	0.10	0.40	0.70	0.04	0.07	0.10
VBET110302 $\frac{1}{8}$ -PPM	0.40	1.00	1.60	0.03	0.05	0.07
VBET110304 $\frac{1}{8}$ -PPF	0.10	0.40	0.70	0.04	0.08	0.12
VBET110304 $\frac{1}{8}$ -PPM	0.40	1.00	1.60	0.03	0.06	0.09
VBMT110304-PFU	0.20	0.80	1.40	0.05	0.11	0.17
VBMT160402-PFU	0.30	1.00	1.70	0.05	0.10	0.15
VBMT160404-PFU	0.30	1.00	1.70	0.06	0.14	0.22
VBMT160404-PMU	0.60	1.80	3.00	0.07	0.16	0.25
VBMT160408-PFU	0.30	1.00	1.70	0.08	0.16	0.24
VBMT160408-PMU	0.60	1.80	3.00	0.08	0.19	0.30
VBMT160408-PRU	1.50	2.50	3.50	0.12	0.22	0.32
VCGT110302-PPU	0.50	1.50	2.50	0.05	0.10	0.15
VCGT110304-PPU	0.50	1.50	2.50	0.06	0.13	0.20
VCGX110302-PMN	0.30	1.50	2.70	0.05	0.10	0.15
VCGX110304-PMN	0.30	1.50	2.70	0.06	0.13	0.20
VCGX110308-PMN	0.30	1.50	2.70	0.08	0.16	0.24
VCGT160402-PPU	0.60	1.80	3.00	0.06	0.13	0.20
VCGT160404-PPU	0.60	1.80	3.00	0.07	0.16	0.25
VCGT160408-PPU	0.60	1.80	3.00	0.08	0.19	0.30
VCGX160402-PMN	0.50	2.00	3.50	0.06	0.11	0.16
VCGX160404-PMN	0.50	2.00	3.50	0.08	0.16	0.24
VCGX160408-PMN	0.50	2.00	3.50	0.10	0.20	0.30
VCGX160412-PMN	0.50	2.00	3.50	0.12	0.24	0.36
VCGX220512-PMN	1.00	3.00	5.00	0.14	0.27	0.40
VCGX220516-PMN	1.00	3.00	5.00	0.14	0.30	0.46
VCGX220530-PMN	1.00	3.00	5.00	0.20	0.40	0.60
VCMT110304-PMU	0.50	1.50	2.50	0.06	0.13	0.20
VCMT110308-PMU	0.50	1.50	2.50	0.08	0.16	0.24
VCMT160404-PMU	0.60	1.80	3.00	0.07	0.16	0.25
VCMT160404-PRU	1.50	2.50	3.50	0.10	0.19	0.28
VCMT160408-PMU	0.60	1.80	3.00	0.08	0.19	0.30
VCMT160408-PRU	1.50	2.50	3.50	0.12	0.22	0.32
VNGG160404-NMN	0.50	2.00	3.50	0.10	0.20	0.30
VNGG160408-NMN	0.50	2.00	3.50	0.15	0.25	0.35

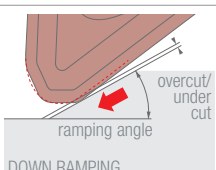
DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
VNMG160404-NMK	0.50	2.00	3.50	0.10	0.20	0.30
VNMG160404-NMM	1.00	2.50	4.00	0.15	0.25	0.35
VNMG160404-NMP	1.50	2.50	3.50	0.12	0.20	0.28
VNMG160404-NSM	0.40	1.20	2.00	0.08	0.14	0.20
VNMG160404-NSP	0.40	1.20	2.00	0.08	0.15	0.22
VNMG160404-NUK	0.50	2.00	3.50	0.10	0.20	0.30
VNMG160404-NUP	1.00	2.50	4.00	0.10	0.20	0.30
VNMG160408-NMK	0.50	2.00	3.50	0.15	0.25	0.35
VNMG160408-NMM	1.00	2.50	4.00	0.20	0.30	0.40
VNMG160408-NMP	1.50	2.50	3.50	0.16	0.25	0.34
VNMG160408-NRK	1.50	4.00	6.50	0.20	0.30	0.40
VNMG160408-NSM	0.40	1.20	2.00	0.10	0.18	0.26
VNMG160408-NSP	0.40	1.20	2.00	0.10	0.22	0.34
VNMG160408-NUK	0.50	2.00	3.50	0.15	0.25	0.35
VNMG160408-NUP	1.00	2.50	4.00	0.15	0.25	0.35
VNMG160412-NMK	0.50	2.00	3.50	0.20	0.30	0.40
VNMG160412-NMP	1.50	2.50	3.50	0.20	0.30	0.40
VNMG160412-NRK	1.50	4.00	6.50	0.25	0.35	0.45
VNMG160412-NUK	0.50	2.00	3.50	0.20	0.30	0.40
VNMG160412-NUP	1.00	2.50	4.00	0.18	0.30	0.42
WBET060102 $\frac{1}{8}$ -PPF	0.10	0.30	0.50	0.03	0.06	0.09
WBET060104 $\frac{1}{8}$ -PPF	0.10	0.30	0.50	0.04	0.07	0.10
WCMT12T304-PMU	0.60	1.80	3.00	0.07	0.16	0.25
WCMT12T308-PMU	0.60	1.80	3.00	0.08	0.19	0.30
WNGG060404-NMN	0.30	1.00	1.70	0.08	0.15	0.22
WNGG060408-NMN	0.30	1.00	1.70	0.10	0.20	0.30
WNGG080404-NMN	0.50	2.00	3.50	0.10	0.20	0.30
WNGG080408-NMN	0.50	2.00	3.50	0.15	0.25	0.35
WNMA080408	2.00	4.00	6.00	0.25	0.35	0.45
WNMA080412	2.00	4.00	6.00	0.35	0.45	0.55
WNMA080416	2.00	4.00	6.00	0.45	0.55	0.65
WNMG060404-NMM	0.70	1.50	2.30	0.13	0.20	0.27
WNMG060404-NMP	1.00	1.50	2.00	0.10	0.15	0.20
WNMG060404-NSP	0.30	0.70	1.10	0.06	0.12	0.18
WNMG060404-NUP	0.70	1.50	2.30	0.08	0.15	0.22
WNMG060408-NMM	0.70	1.50	2.30	0.18	0.25	0.32
WNMG060408-NMP	1.00	1.50	2.00	0.15	0.20	0.25
WNMG060408-NRK	1.00	2.00	3.00	0.15	0.25	0.35
WNMG060408-NSP	0.30	0.70	1.10	0.08	0.16	0.24
WNMG060408-NUP	0.70	1.50	2.30	0.12	0.20	0.28
WNMG060412-NMM	0.70	1.50	2.30	0.20	0.28	0.36
WNMG080404-NMK	0.50	2.00	3.50	0.10	0.20	0.30
WNMG080404-NMM	1.00	2.50	4.00	0.15	0.25	0.35
WNMG080404-NMP	1.50	2.50	3.50	0.12	0.20	0.28
WNMG080404-NSM	0.40	1.20	2.00	0.08	0.14	0.20
WNMG080404-NSP	0.40	1.20	2.00	0.08	0.15	0.22
WNMG080404-NUK	0.50	2.00	3.50	0.10	0.20	0.30
WNMG080404-NUP	1.00	2.50	4.00	0.10	0.20	0.30
WNMG080404-NUX	1.00	2.50	4.00	0.10	0.20	0.30
WNMG080408-NMK	0.50	2.00	3.50	0.15	0.25	0.35
WNMG080408-NMM	1.00	2.50	4.00	0.20	0.30	0.40
WNMG080408-NMP	1.50	2.50	3.50	0.16	0.25	0.34
WNMG080408-NRK	1.50	4.00	6.50	0.20	0.30	0.40
WNMG080408-NRM	2.00	3.50	5.00	0.20	0.35	0.50
WNMG080408-NRP	2.00	4.00	6.00	0.25	0.35	0.45
WNMG080408-NSM	0.40	1.20	2.00	0.10	0.18	0.26
WNMG080408-NSP	0.40	1.20	2.00	0.10	0.22	0.34

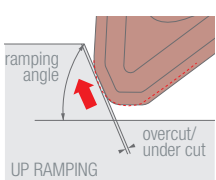
DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
WNMG080408-NUK	0.50	2.00	3.50	0.15	0.25	0.35
WNMG080408-NUP	1.00	2.50	4.00	0.15	0.25	0.35
WNMG080408-NUX	1.00	2.50	4.00	0.15	0.25	0.35
WNMG080408-NWU	0.50	1.50	2.50	0.20	0.40	0.60
WNMG080408-NWX	1.00	2.50	4.00	0.20	0.40	0.60
WNMG080412-NMK	0.50	2.00	3.50	0.20	0.30	0.40
WNMG080412-NMM	1.00	2.50	4.00	0.25	0.35	0.45
WNMG080412-NMP	1.50	2.50	3.50	0.20	0.30	0.40
WNMG080412-NRK	1.50	4.00	6.50	0.25	0.35	0.45
WNMG080412-NRM	2.00	3.50	5.00	0.25	0.40	0.55
WNMG080412-NRP	2.00	4.00	6.00	0.30	0.40	0.50
WNMG080412-NUK	0.50	2.00	3.50	0.20	0.30	0.40
WNMG080412-NUP	1.00	2.50	4.00	0.18	0.30	0.42
WNMG080412-NUX	1.00	2.50	4.00	0.18	0.30	0.42
WNMG080412-NWU	0.50	1.50	2.50	0.25	0.45	0.65
WNMG080416-NMP	1.50	2.50	3.50	0.25	0.35	0.45
WNMG080416-NRP	2.00	4.00	6.00	0.35	0.45	0.55
WNMG080416-NUP	1.00	2.50	4.00	0.20	0.35	0.50

I. X-axis, Z-axis offset

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

II. Ramping offset

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

	INSERT RADIUS	DNMX1506 ∞ (KAPR 93°)									
		0°	5°	10°	15°	20°	25°	30°	35°	40°	45°
	0,8	0	0,019	0,034	0,046	0,054	0,057	0,057	0,052	0,044	0,031
	1,2	0	0,017	0,03	0,041	0,047	0,05	0,05	0,046	0,038	0,028
	INSERT RADIUS	50°	55°	60°	65°	70°	75°	80°	85°	90°	
		0,8	0,015	-0,005	-0,029	-0,021	-0,008	0	0,004	0,004	0
	1,2	0,013	-0,004	-0,025	-0,015	-0,001	0,006	0,008	0,005	0	
	INSERT RADIUS	TNMX1604 ∞ (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

Grades selection guide	.A120
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ISO 513		PCBN	
		PVD COATED	UNCOATED
K	K01	NBH450C	NBH450U
	K10	NBH500C	NBH500U
	K20		NBH600U
	K30		NBH900U
Cast iron			NBH950U
S	S01	NBH450C	
	S10		
	S20		
	S30		
HRSA			
H	H01	NBL050C	
	H10	NBL150C	
	H20	NBL200C	
	H30	NBL250C	
Hardened steel		NBL300C	
		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	- Great performance on high speed machining under continuous cutting conditions. - Eccellenti prestazioni in lavorazioni a elevata velocità in condizioni di taglio continuo. - Ausgezeichnete Leistung bei der Hochgeschwindigkeitsbearbeitung auf kontinuierlichen Schnittbedingungen. - Extrême ténacité dans des conditions de coupe fortement interrompues.
NBL050CX	Low volume CBN 40%	2.700	PVD	AlCrN		- Same substrate of NBL050C with a different coating that enhances the sharpness of cutting edge preparation. - Stesso substrato di NBL050C con un diverso rivestimento che esalta l'affilatura della preparazione del tagliente. - Dasselbe Grundmaterial wie NBL050C mit anderer Beschichtung, die die Schärfe der Schneidkantenpräparation erhöht. - Même substrat que le NBL050C avec un revêtement différent qui améliore l'affûtage de préparation du tranchant.
NBL150C	Low volume CBN 50%	2.900	PVD	AlTiN		- First choice for continuous cut machining. High reliability under various cutting conditions, from low to high cutting speed. - Prima scelta per condizioni di taglio continuo. Alta affidabilità in differenti condizioni di taglio, per velocità di taglio da basse a elevate. - Beste Wahl für kontinuierliche Schnittbedingungen. Hohe Zuverlässigkeit unter verschiedenen Schnittbedingungen, bei niedrigen bis hohen Schnittgeschwindigkeiten. - Premier choix pour conditions de coupe continue. Haute fiabilité dans différentes conditions de coupe, pour vitesses de coupe lentes à élevées.
NBL200C	Low volume CBN 55%	3.000	PVD	AlTiNSi ₃ N ₄		- New universal grade mainly combined with full solid style and solid brazing. Coating layer with extreme hardness allows great wear resistance. - Nuovo grado universale principalmente combinato con full solid e solid brazing. Strato di rivestimento con estrema durezza che assicura eccellente resistenza all'usura. - Die neue universelle Qualität wird hauptsächlich mit den Voll-CBN Platten und den Platten mit Vertical Brazing Vollöttechnologie kombiniert. Eine extrem harte Beschichtung sorgt für eine hervorragende Verschleißfestigkeit. - Nouvelle nuance universelle principalement associée au format entièrement solide et au tout brasage. Couche de revêtement extrêmement dure qui assure une excellente résistance à l'usure.
NBL250C	Low volume CBN 60%	3.200	PVD	AlTiN		- First choice for general machining even with light to medium interruptions. - Prima scelta per lavorazioni generiche anche in caso di leggero o medio taglio interrotto. - Erste Wahl für allgemeine Bearbeitungen unter leichten bis mittleren Schnittbedingungen. - Premier choix pour usinages généraux, y compris dans des conditions de coupe avec interruptions légères à moyennes.

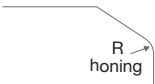
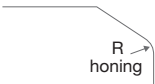
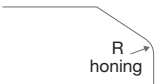
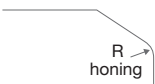
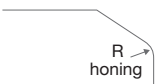
NBL300C	Low volume CBN 70%	3.300	PVD	AlTiN	H	H10 H30	- All-around grade with a perfect balance between toughness and wear resistance. Can be applied both on interrupted and continuous cut. - Grado universale con un perfetto bilanciamento tra tenacità e resistenza all'usura. Può essere usato per taglio interrotto e taglio continuo. - Universalqualität mit einem perfekten Verhältnis von Robustheit und Verschleißfestigkeit. Kann für unterbrochene und kontinuierliche Schneidvorgänge eingesetzt werden. - Qualité universelle avec équilibre parfait entre ténacité et résistance à l'usure. Peut être utilisé dans des conditions de coupe interrompue et de coupe continue.
NBL350C	Low volume CBN 75%	3.400	PVD	AlTiN	H	H20 H35	- Extreme toughness for heavy interrupted cut. - Tenacità estrema per condizioni di taglio fortemente interrotto. - Extreme Robustheit für stark unterbrochene Schnittbedingungen. - Extrême ténacité dans des conditions de coupe fortement interrompues.
NBH450C	High volume CBN 95%	4.400	PVD	TiCN+TiN	K	K01 K20	- First choice for grey cast iron finishing at very high cutting condition and with great wear resistance. - Prima scelta per la finitura di ghisa grigia a velocità di taglio molto elevate e con eccellente resistenza all'usura. - Erste Wahl für die Bearbeitung von Grauguss bei hohen Schnittgeschwindigkeiten und mit ausgezeichneter Verschleißfestigkeit. - Premier choix pour finition de fonte grise à des vitesses de coupe très élevées, avec une excellente résistance à l'usure.
NBH450U	High volume CBN 95%	4.400	-	-	K	K01 K20	- Same as NBH450C but uncoated. Generally suggested under interrupted conditions. - Come NBH450C ma non rivestito. Generalmente consigliato per condizioni di taglio interrotto. - Wie NBH450C, aber unbeschichtet. Generell empfohlen für unterbrochene Schnittbedingungen. - Identique au NBH450C mais non revêtu. Généralement recommandé dans des conditions de coupe interrompues.
NBH500C	High volume CBN 90%	4.200	PVD	AlTiN	K	K10 K25	- Main choice for grey cast iron machining with negative inserts, both for finishing and roughing. Mostly available for full solid geometries. - Scelta principale per finitura e semifinitura di ghisa grigia con inserti negativi. Principalmente disponibile per geometrie integrali. - Erste Wahl für das Schlichten und Schruppschlichten von Grauguss mit negativen Wendschneidplatten. Überwiegend für Voll-CBN Platten verfügbar. - Premier choix pour la finition et la semi-finition de fonte grise avec plaquettes négatives. Principalement disponible pour des géométries "full" PCBN.
NBH500U	High volume CBN 90%	4.200	-	-	K	K10 K25	- Same as NBH500C but uncoated. Generally suggested under most severe cutting conditions. - Come NBH500C ma non rivestito. Generalmente consigliato per le condizioni di taglio più gravose. - Wie NBH500C, aber unbeschichtet. Generell empfohlen für schwierigste Schnittbedingungen. - Identique au NBH500C mais non revêtu. Généralement recommandé dans des conditions de coupe les plus exigeantes.

NBH600U	High volume CBN 90%	3.800	-	-	K	K20 K30	✚ Tough grade for severe applications on cast iron. Coarse CBN grain combined with a metallic binder for maximum stability even on interrupted cut. 🇮🇹 Grado tenace per applicazioni gravose sulla ghisa. CBN di grana grossa con legante metallico per affidabilità massima anche su taglio interrotto. 🇩🇪 Robuste Qualität für schwere Anwendungen mit Gusseisen. Grobes CBN-Pulver in Kombination mit einem Metallbindemittel für maximale Zuverlässigkeit auch bei unterbrochenen Schnittbedingungen. 🇫🇷 Nuance tenace pour applications intensives sur fonte. Poudre CBN grossière combinée à un liant métallique pour une fiabilité maximale y compris dans des conditions de coupe interrompues.
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. 🇮🇹 Grado universale per applicazioni gravose su materiali dei gruppi ISO K e ISO H. Elevata affidabilità nelle operazioni di sgrossatura.
					K	K25 K35	🇩🇪 Universelle Qualität für schwere Anwendungen bei Materialien der Gruppen ISO K und ISO H. Hohe Zuverlässigkeit bei der Vorbearbeitung. 🇫🇷 Nuance universelle pour applications intensives sur les matériaux des groupes ISO K et ISO H. Haute fiabilité dans les opérations d'ébauche.
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. 🇮🇹 Tenacità estrema, principalmente per lavorazione della ghisa, consigliato come grado alternativo anche per acciai temprati.
					K	K30 K35	🇩🇪 Extreme Robustheit, hauptsächlich für Gusseisen, auch empfohlen als eine alternative Qualität für gehärtete Stähle. 🇫🇷 Ténacité extrême, principalement pour la fonte, recommandée comme nuance alternative y compris pour aciers trempés.

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

BLACK: CVD, UNDERLINED: PVD, RED: uncoated

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

NEGATIVE type with hole			C	D	S	T	V	W	
									
			80°	55°	90°	60°	35°	80°	
K	UNIVERSAL	UE  S01520 carbide backed	 SIZE 12 	 SIZE 15 		 SIZE 16 	 SIZE 16 		
		UE  S01525 vertical brazing	 SIZE MCN 	 SIZE MDN 	 SIZE 12 	 SIZE 16 	 SIZE 16 	 SIZE 08 	
		UE  S02020 full solid	 SIZE 09 12 	 SIZE 15 	 SIZE 12 	 SIZE 16 		 SIZE 08 	
	SHARP	SE  T01020 carbide backed	 SIZE 12 						
		UNIVERSAL	UE  S01225 vertical brazing	 SIZE MCN 	 SIZE MDN 	 SIZE 12 	 SIZE 16 	 SIZE 16 	 SIZE 08 
			UE  S01225 solid brazing		 SIZE 15 				
	UE  S02020 full solid		 SIZE 09 12 						

carbide backed: the PCBN material is produced with a carbide layer that improves mechanical properties and simplifies 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 reduces the cost per edge. High cutting speed and depth of cut can be applied.

INDEXABLE

A - TURNING

B - THREADING

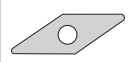
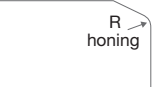
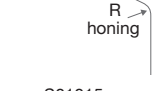
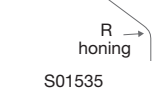
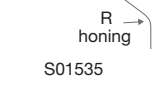
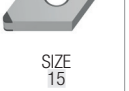
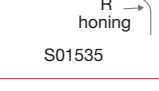
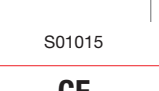
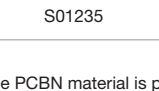
C - GROOVING

D - MILLING

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F - ACCESSORIES

G - SPARE PARTS

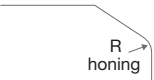
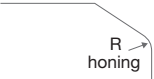
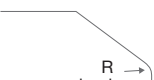
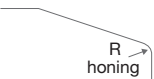
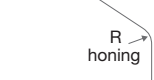
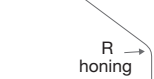
NEGATIVE type with hole			C	D	S	T	V	W
								
			80°	55°	90°	60°	35°	80°
H	SHARP	SE  S01015 vertical brazing	 A155 SIZE MCN 12	 A153 SIZE MDN 15		 A163 SIZE 16	 A170 SIZE 16	 A171 SIZE 08
		SE  S01015 solid brazing		 A154 SIZE 15				
	REINFORCED	RE  S01535 vertical brazing	 A147 SIZE 12			 A164 SIZE 16		 A171 SIZE 08
		RE  S01535 solid brazing		 A154 SIZE 15				
		RE  S01535 full solid	 A147 SIZE 09					
		WE  S01015 vertical brazing	 A148 SIZE 12					
	CHIPBREAKER	CF  S01035 vertical brazing	 A148 SIZE 12					
		CM  S01235 vertical brazing	 A148 SIZE 12					

carbide backed: the PCBN material is produced with a carbide layer that improves mechanical properties and simplifies 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 reduces the cost per edge. High cutting speed and depth of cut can be applied.

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

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

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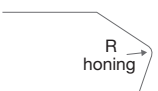
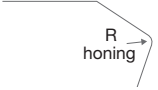
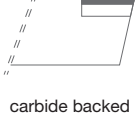
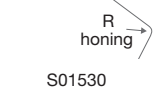
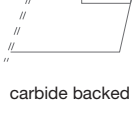
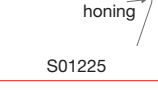
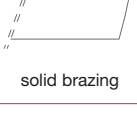
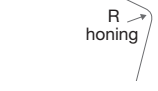
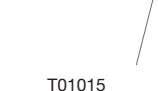
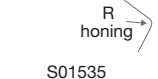
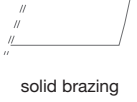
C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

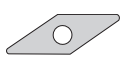
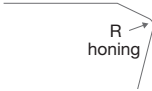
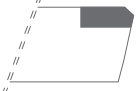
POSITIVE type with hole			C	D	R	T	V			
										
			80°	55°	-	60°	35°			
K	UNIVERSAL	UE  S01520	 carbide backed	CC  A144  SIZE 06 09	DC  A151  SIZE 11		TC  A161  SIZE 09 11 16	VB  A167  SIZE 16		
		UE  S02020	 full solid			RC  A157  SIZE 09 12				
	SHARP	SE  T01020	 carbide backed				TC  A161  SIZE 11			
		RE  S01530	 carbide backed				TC  A162  SIZE 11 16	VB  A168  SIZE 16		
	H	UNIVERSAL	UE  S01225	 solid brazing	CC  A144  SIZE 06 09 12	DC  A151  SIZE 07 11		TC, TP  A161, A166  SIZE 09 11 16	VB, VC  A167, A169  SIZE 11 16	
			SE  S01015	 solid brazing	CC  A144  SIZE 06 09	DC  A151  SIZE 07 11		TC, TP  A161, A166  SIZE 11 16	VB, VC  A167, A169  SIZE 11 16	
		SHARP	SF  T01015	 solid brazing	CC  A144, A145  SIZE 06 09	DC  A151  SIZE 07 11			VB  A167  SIZE 11 16	
			RE  S01535	 solid brazing	CC  A145  SIZE 06 09	DC  A152  SIZE 07 11		TC, TP  A162, A166  SIZE 11 16	VB  A168  SIZE 16	

carbide backed: the PCBN material is produced with a carbide layer that improves mechanical properties and simplifies 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 reduces the cost per edge. High cutting speed and depth of cut can be applied.

POSITIVE type with hole			C	D	R	T	V	
								
			80°	55°	-	60°	35°	
H	WIPER	WE	 S01015	 solid brazing	CC  A145  SIZE 06 09			

carbide backed: the PCBN material is produced with a carbide layer that improves mechanical properties and simplifies 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 reduces the cost per edge. High cutting speed and depth of cut can be applied.

UE

Edge preparation

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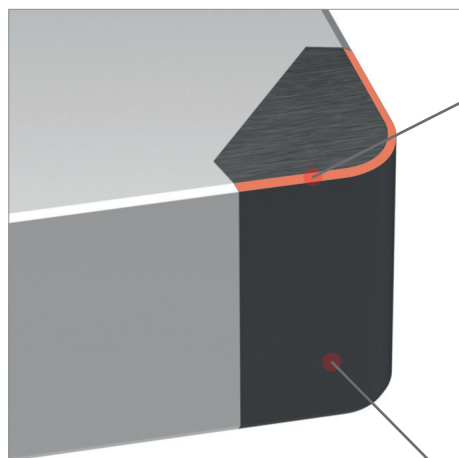
G - SPARE PARTS

- 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 for sharp and strong cutting edge design
- Erste Wahl für die allgemeine Bearbeitung unter verschiedenen Schnittbedingungen, vom kontinuierlichen bis zum unterbrochenen Schnitt.
 - Erhältlich in einer Vielzahl von Qualitäten für die Bearbeitung von Gusseisen und gehärteten Stählen
 - Die Universalschneidkante (UE) ist in verschiedenen PCBN-Typen erhältlich: Grundmaterial aus Hartmetall, integrales Löten, vertikales Löten und full solid
 - Optimaler Kompromiss zwischen Schärfe und Robustheit der Schneidkante
- Prima scelta per lavorazioni generali in condizioni di taglio variabili, da taglio continuo a interrotto.
 - Disponibile in un'ampia gamma di gradi per la lavorazione di ghisa e acciai temprati
 - Il tagliente universale (UE) può essere fornito in diverse tipologie PCBN: supporto in metallo duro, brasatura integrale, brasatura verticale e integrale
 - Miglior compromesso tra tagliente e robustezza del tagliente
- Premier choix pour les applications générales d'usinage dans des conditions de coupe variables, de la coupe continue à la coupe interrompue.
 - Disponible dans une large gamme de nuances pour l'usinage de fonte et d'aciers trempés
 - L'arête de coupe universelle (UE) est disponible dans différents types de PCBN : support en carbure, brasage intégral, brasage vertical et entièrement solide
 - Meilleur compromis entre acuité et résistance de l'arête de coupe

UE

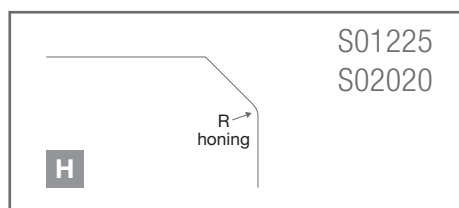
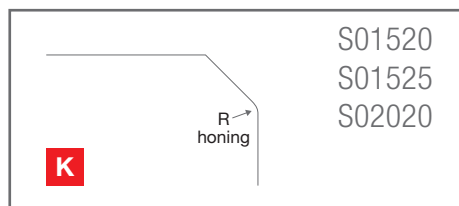
Edge preparation

Features of UE edge preparation



UNIVERSAL EDGE

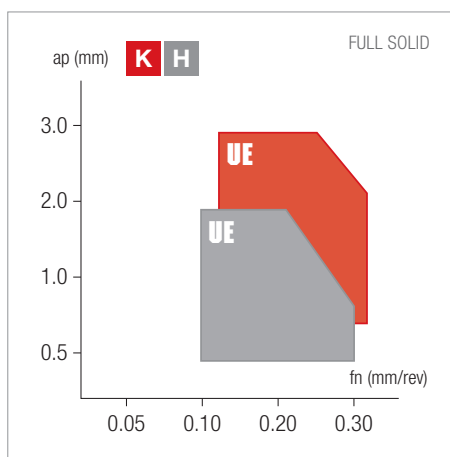
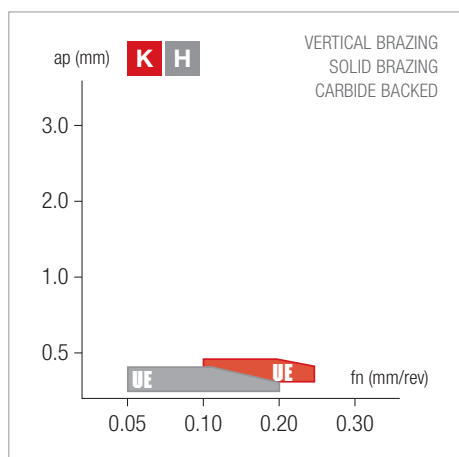
- The edge preparation has been optimized according to insert style and workpiece material
- Chamfer width from 0.12 mm to 0.20 mm with an angle of 20° - 25°
- La preparazione del tagliente è stata ottimizzata in base al campo di applicazione e al materiale da lavorare.
- Larghezza smusso da 0.12 a 0.20 mm con angolo di 20° - 25°
- Die Schneidkantenpräparation ist auf den Einsatzbereich und das zu bearbeitende Material optimiert
- Fasenbreite 0,12 bis 0,20 mm bei einem Winkel von 20° bis 25°
- La préparation des arêtes de coupe a été optimisée en fonction du domaine d'application et du matériau à usiner
- Largeur de chanfrein de 0,12 à 0,20 mm avec angle de 20 ° - 25 °



MULTIPLE SOLUTIONS

- All NIKKO PCBN format available: full solid, vertical brazing, solid tip, and carbide backed
- Tutti i formati Nikko Tools PCBN disponibili: integrale, brasatura verticale, riporto integrale, supporto in carburo
- Alle von Nikko Tools erhältlichen PCBN-Formate: Vollmassiv, vertikales Löten, Vollflötung, Grundmaterial aus Hartmetall
- Tous les formats PCBN Nikko Tools disponibles : entièrement solide, brasage vertical, pointe solide et support en carbure

Application range - ISO 513



DIMPLED INSERTS AVAILABLE



- High performance alternative to conventional Si3N4 ceramic for cast iron roughing.
- Alternativa ad alte prestazioni rispetto alla convenzionale ceramica Si3N4 per sgrossatura della ghisa.
- Leistungsfähige Alternative zu herkömmlicher Si3N4-Keramik zum Schrumpfen von Gusseisen.
- Alternative hautes performances à la céramique Si3N4 traditionnelle pour l'ébauche de la fonte.

SE

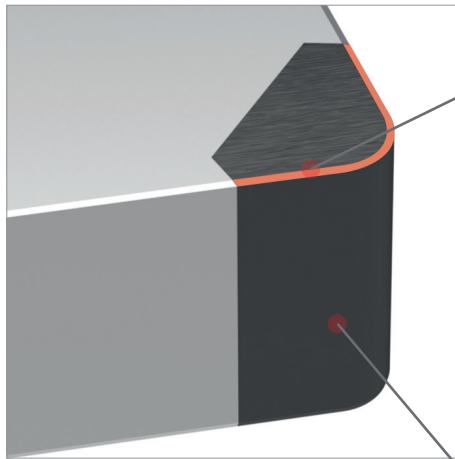
Edge preparation

- 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 burrs formation
- Empfohlen für kontinuierliche Schneidanwendungen unter stabilen Schnittbedingungen
 - 10 % geringere Schnittkräfte im Vergleich zu herkömmlichen Standardausführungen für allgemeine Anwendungen
 - Scharfe Kantenpräparation mit hochverschleißfester CBN-Qualität, wodurch die Gratbildung deutlich reduziert wird
- Raccomandato per applicazioni con taglio continuo in condizioni di taglio stabili
 - Forze di taglio ridotte del 10% rispetto ai più comuni design per applicazioni generiche
 - La geometria molto affilata unita al grado CBN con elevata resistenza all'usura riducono la formazione di bave.
- Recommandé pour applications de coupe continues dans des conditions de coupe stables
 - Efforts de coupe réduits de 10 % par rapport aux conceptions pour applications générales les plus courantes
 - Préparation de l'arête de coupe avec nuance CBN très résistante à l'usure qui réduit considérablement la formation de bavures

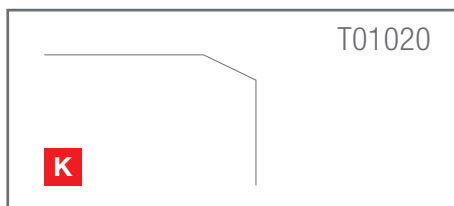
SE

Edge preparation

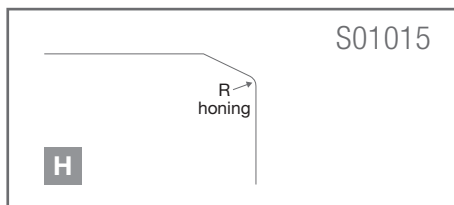
Features of SE edge preparation

**SHARP EDGE**

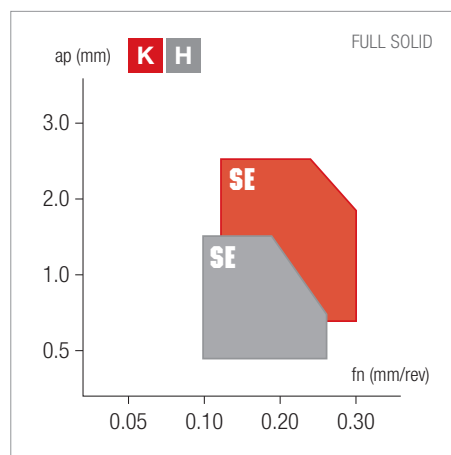
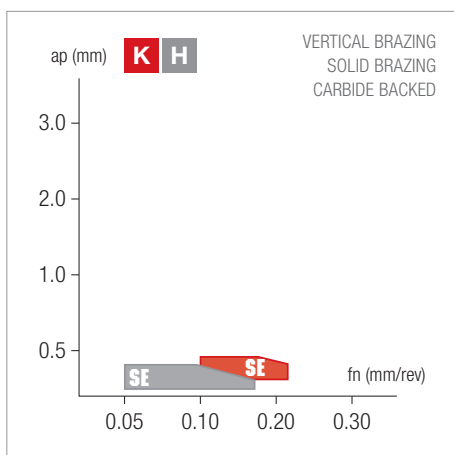
- The edge preparation has been optimized according to insert style and workpiece material
- The chamfer width is 0.10 mm with angle from 15° to 20°
- La preparazione del tagliente ottimizzata in accordo allo stile dell'inserto e al materiale
- Larghezza smusso 0.10 mm con angolo da 15° a 20°
- Optimierte Schneidkantenpräparation je nach Ausführung und Material der Wendeschneidplatte
- Fasenbreite 0,10 mm mit einem Winkel von 15° bis 20°
- Préparation d'arête optimisée en fonction du type de plaquette et de la matière
- Largeur de chanfrein 0,10 mm avec angle de 15 ° à 20 °

**MULTIPLE SOLUTIONS**

- All NIKKO PCBN format available: full solid, vertical brazing, solid tip, and carbide backed
- Tutti i formati Nikko Tools PCBN disponibili: integrale, brasatura verticale, brasatura integrale, supporto in metallo duro
- Alle von Nikko Tools erhältlichen PCBN-Formate: Vollmassiv, vertikales Löten, Vollflötung, Grundmaterial aus Hartmetall
- Tous les formats PCBN Nikko Tools disponibles : entièrement solide, brasage vertical, pointe solide et support en carbure



Application range - ISO 513



T TYPE AVAILABLE FOR ISO K



- T land without honing prevent burrs formation on cast iron machining.
- Pianetto a T senza onatura che previene la formazione di bave nella lavorazione della ghisa.
- T-Fläche ohne Honen, was die Gratbildung bei der Bearbeitung von Gusseisen verhindert.
- Plaquette en T sans honing qui évite la formation de bavures lors de l'usinage de la fonte.

SF

Edge preparation

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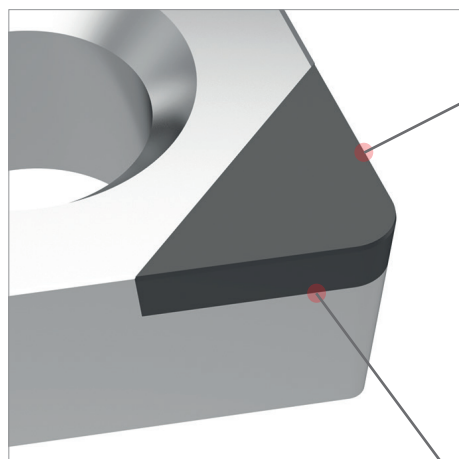
G - SPARE PARTS

- Recommended for small parts high precision machining under continuous cutting conditions
 - Low cutting force 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
- Raccomandato per lavorazioni di minuteria di alta precisione in condizioni di taglio continuo
 - Le basse forze di taglio consentono la lavorazione di pezzi sottili, evitando vibrazioni e ottenendo rigorose tolleranze dimensionali.
 - La geometria SF per superfinitura di precisione è combinata con una versione speciale di NBL050C chiamata NBL050CX con un rivestimento specificamente studiato per esaltarne la taglieria
- Empfohlen für die Präzisionsbearbeitung von sehr kleinen Komponenten unter kontinuierlichen Schnittbedingungen
 - Die geringen Schnittkräfte ermöglichen die Bearbeitung dünner Teile, vermeiden Vibrationen und erreichen genaue Maßtoleranzen.
 - Die SF-Geometrie für die präzise Feinstbearbeitung wird mit einer speziellen Ausführung des NBL050C, dem NBL050CX, kombiniert, der über eine spezielle Beschichtung verfügt, die die Schneidwirkung verbessert
- Recommandé pour les usinages haute précision de très petites pièces dans des conditions de coupe continues
 - Les faibles efforts de coupe permettent l'usinage de pièces fines, évitant les vibrations et atteignant des tolérances dimensionnelles serrées.
 - La géométrie SF pour superfinition de précision est associée à une version spéciale du NBL050C dénommée NBL050CX dotée d'un revêtement pour renforcer l'action de coupe de la géométrie

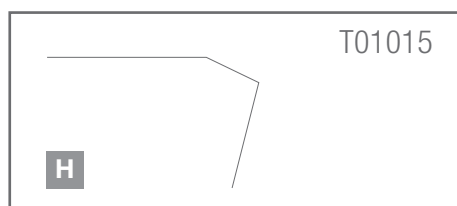
SF

Edge preparation

Features of SF edge preparation

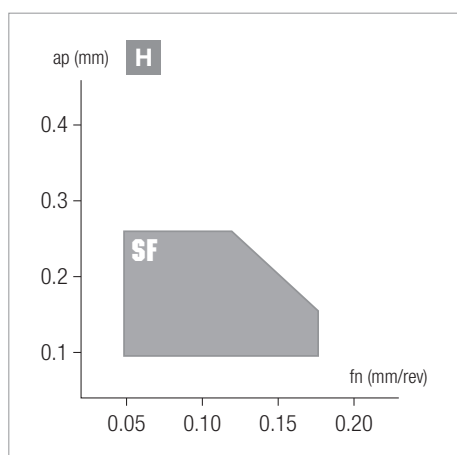
**SUPER FINE**

- 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
- La preparazione del tagliente è ottimizzata per la lavorazione di particolari di piccole dimensioni e l'ottenimento delle migliori tolleranze dimensionali
- Larghezza smusso 0.10 mm con angolo di 15°, senza onatura
- Optimierte Schneidenkantenpräparation für die Bearbeitung kleiner Details und zum Erreichen der besten Maßtoleranzen
- Fasenbreite 0,10 mm bei 15° Winkel, ohne Honen
- Préparation d'arête optimisée pour l'usinage de détails aux dimensions réduites et l'obtention de meilleures tolérances dimensionnelles
- Largeur de chanfrein 0,10 mm avec angle de 15°, sans rodage

**SOLID BRAZING**

- Direct brazing between PCBN and carbide, with special vacuum technology, produces a pure and stable cutting material
- La saldobrasatura con speciale tecnologia vacuum brazing tra PCBN e metallo duro, consente di ottenere un tagliente puro e stabile
- Das Schweißlöten von PCBN und Hartmetall mit spezieller Vakuumtechnik sorgt für ein sauberes und zuverlässiges Schneidmaterial
- Le brasage direct entre PCBN et carbure, avec une technologie spéciale sous vide, produit un matériau de coupe pur et fiable

Application range - ISO 513

**SHARP AND PRECISE**

- Only for positive inserts.
Perfect solution for very small radii.
0.1 radius can be produced as semi-standard product.
- Solo per inserti positivi.
La soluzione perfetta per raggi molto piccoli.
Il raggio 0.1 può essere prodotto come semi-standard.
- Nur für positive Wendeschneidplatten.
Die perfekte Lösung für sehr kleine Radien.
Der Radius 0,1 kann als Semi-Standard hergestellt werden.
- Uniquement pour plaquettes positives.
Parfaite solution pour les très petits rayons.
Le rayon 0,1 peut être produit en semi-standard.

RE

Edge preparation

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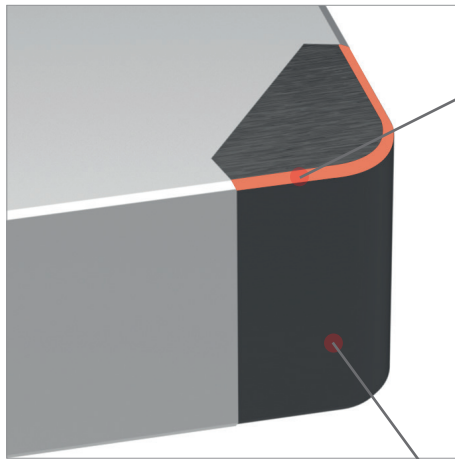
G - SPARE PARTS

- 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
- Speziell für hohe Zuverlässigkeit unter stark unterbrochenen Schnittbedingungen entwickelt.
 - Bei gehärtetem Stahl verbessert ein breiter Spanwinkel die Robustheit der Schneidkante
 - Die RE-Geometrie mit verstärkter Schneidkante wird stets mit Qualitäten hoher Robustheit kombiniert
 - Die RE-Geometrie als Voll-CBN-Wendeschneidplatten ist eine hervorragende Lösung für die Walzenbearbeitung in der Stahlindustrie
- Progettato specificamente per assicurare elevata affidabilità in condizioni di taglio fortemente interrotto.
 - Nel caso di acciai temprati, un ampio angolo di spoglia migliora la robustezza del tagliente
 - La geometria RE con tagliente rinforzato è sempre combinata a gradi di elevata tenacità
 - La geometria RE su inserti tondi integrali CBN è la soluzione ottimale per la lavorazione dei rulli nell'industria siderurgica
- Spécialement conçu pour garantir une fiabilité élevée dans des conditions de coupe fortement interrompues.
 - Dans le cas des aciers trempés, un angle de dépouille important améliore la résistance de l'arête de coupe
 - La géométrie RE à arête de coupe renforcée est toujours associée à des nuances de haute ténacité
 - La géométrie RE sur plaquettes rondes intégrales CBN est une excellente solution pour l'usinage des rouleaux dans l'industrie sidérurgique

RE

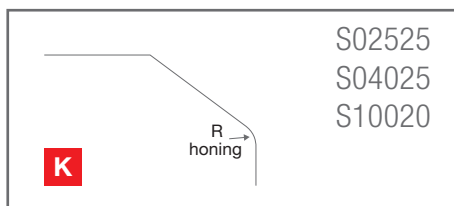
Edge preparation

Features of RE edge preparation



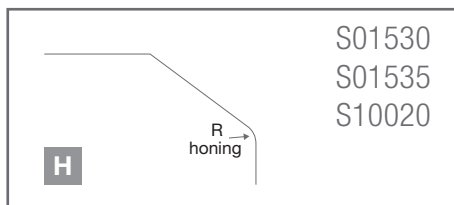
REINFORCED EDGE

- Big chamfer and angle to keep the cutting edge strong
- The chamfer width starts from 0.15 mm for brazed type and reaches 1 mm for solid
- Grande smusso e ampio angolo di spoglia per mantenere il tagliente robusto
- Larghezza smusso: parte da 0.15 mm per tipologia saldobrasata e arriva a 1 mm nella versione integrale
- Große Fase und breiter Spanwinkel für eine robuste Schneidkante
- Fasenbreite: ab 0,15 mm für die schweißgelötete Ausführung und bis zu 1 mm in der Voll CBN Ausführung
- Grand chanfrein et grand angle de dépouille pour maintenir une arête de coupe robuste
- Largeur de chanfrein : commence à 0,15 mm pour le type brasé, jusqu'à 1 mm dans la version intégrale

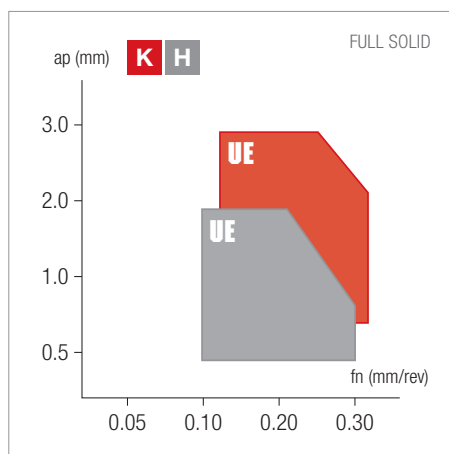
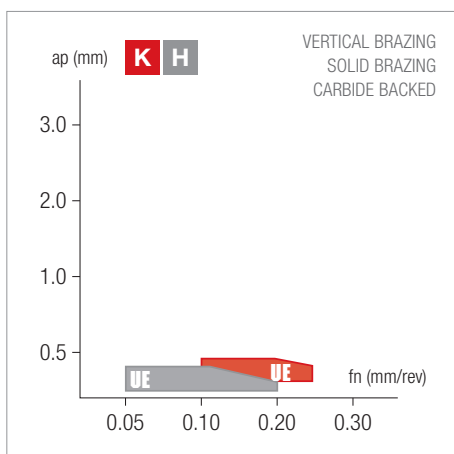


MULTIPLE SOLUTIONS

- All NIKKO PCBN format available: full solid, vertical brazing, solid brazing, and carbide backed
- Tutti i formati Nikko Tools PCBN disponibili: interamente solido, brasatura verticale, intera brasatura, supporto in metallo duro
- Alle von Nikko Tools erhältlichen PCBN-Formate: Voll CBN, vertikales Löten, Volltötung, Grundmaterial aus Hartmetall
- Tous les formats PCBN Nikko Tools disponibles : entièrement solide, brasage vertical, pointe solide et support en carbure



Application range - ISO 513



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

• Le forze di taglio possono risultare leggermente più elevate rispetto alle tipologie per uso generale: si raccomanda l'uso di attrezzature e un fissaggio stabile.

• Die Schnittkräfte können etwas höher sein als bei Allzwecktypen: Es wird empfohlen, Werkzeuge und eine sichere Befestigung zu verwenden.

• Les efforts de coupe peuvent être légèrement supérieurs par rapport aux types d'applications générales : un serrage stable et des équipements sont recommandés.

WE

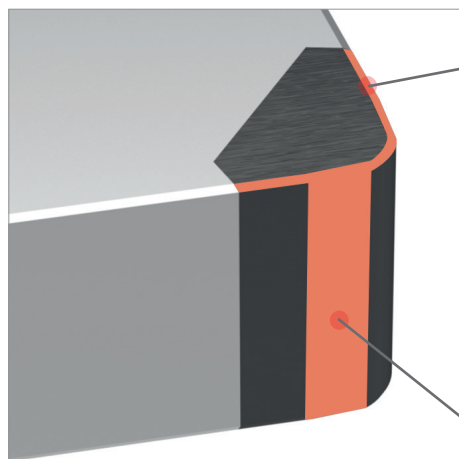
Edge preparation

- Wiper geometry with special arc design for maximum performance and low cutting forces
 - Improves productivity when used at 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
- Wendeschneidplattengeometrie mit speziellem Bogendesign für maximale Leistung und geringe Schnittkräfte
 - Verbessert die Produktivität bei der Verwendung mit großen Vorschüben; verbessert die Qualität der geschliffenen Oberfläche unter konventionellen Schnittbedingungen
 - Die Wendeschneidplattengeometrie WE (Wiper Edge) ist in einer Vielzahl von Qualitäten für gehärtete Stähle erhältlich
- Geometria raschiante con speciale disegno ad arco per le massime prestazioni e basse forze di taglio
 - Migliora la produttività quando usato con elevati avanzamenti; raggiunge la qualità delle superfici rettificate in condizioni di taglio convenzionali
 - Geometria raschiante WE (wiper edge) disponibile in un'ampia gamma di gradi per acciai temprati
- Géométrie WIPER avec conception en arc spéciale pour des performances maximales et de faibles efforts de coupe
 - Améliore la productivité si utilisé à des avances élevées ; atteint la qualité des surfaces rectifiées dans des conditions de coupe conventionnelles
 - Géométrie wiper WE disponible dans une large gamme de nuances pour aciers trempés

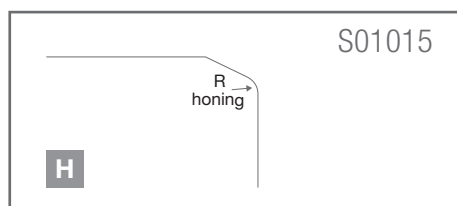
WE

Edge preparation

Features of WE edge preparation

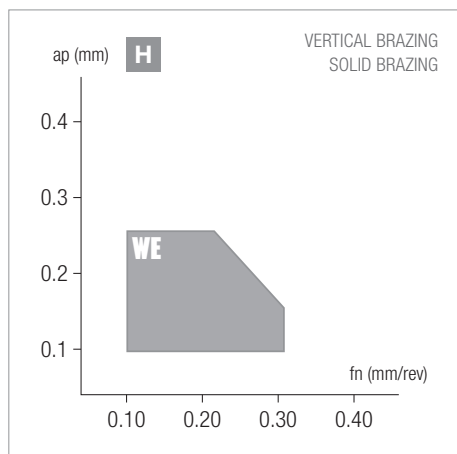
WIPER EDGE

- Small chamfer and reduced angle for a very smooth cutting action
• The chamfer width is 0.1 mm with an inclination of 15°
- Piccolo smusso e ridotto angolo per azione di taglio estremamente leggera
• Larghezza smusso di 0.1 mm con inclinazione di 15°
- Kleine Fase und kleiner Winkel für extrem behutsames Schneiden
• Fasenbreite von 0,1 mm bei 15° Neigung
- Petit chanfrein et angle réduit pour une coupe extrêmement douce
• Largeur de chanfrein de 0,1 mm avec inclinaison de 15 °

ARC GEOMETRY

- Multiple arc wiper instead of conventional straight wiper land effectively reduces vibrations, creates better surface and suitable for wider feed range
- Il pianetto raschiante multicurva, rispetto ai pianetti raschianti convenzionali dritti, riduce efficacemente le vibrazioni per ottenere migliori superfici e si adatta a un ampio intervallo di avanzamenti
- Die mehrkurvige Wendschneidplatte reduziert im Vergleich zu herkömmlichen geraden Schneidplatten effektiv die Vibration für bessere Oberflächen und passt sich an eine Vielzahl von Vorschüben an
- La plaquette WIPER ARC multiple, par rapport aux plaquettes wiper droites classiques, réduit efficacement les vibrations pour obtenir de meilleures surfaces et s'adapte à une plage d'avances plus large

Application range - ISO 513



SPECIAL DESIGN UPON REQUEST



- Wiper "concept" can be applied to any shape and it can be provided even in combination of full solid grades.
- Il concetto di raschiante può essere usato per qualsiasi geometria anche se le più comuni sono quelle con angolo di 80° che possono essere fornite anche in combinazione a gradi integrali.
- Das Wendschneidplattenkonzept kann für jede beliebige Geometrie verwendet werden, auch wenn die gängigsten Geometrien die mit einem Winkel von 80° sind, die auch in einer Kombination mit integralen Qualitäten geliefert werden können.
- Le concept de wiper peut être appliqué à n'importe quelle forme, bien que les plus courantes soient celles avec un angle de 80 ° qui peuvent également être fournies en combinaison avec des qualités intégrales.

CF/CM

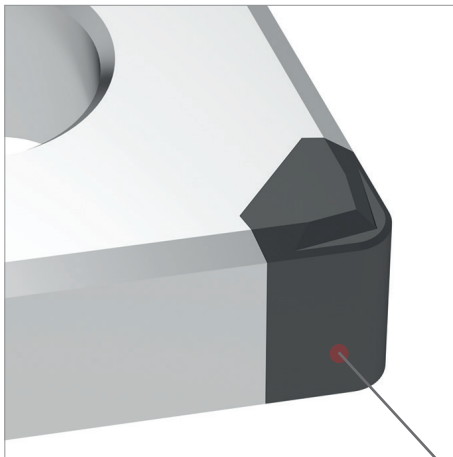
Edge preparation

- Solution for surface hardened or sintered steel workpieces like gears and shafts;
 - The edge preparation is suitable for interrupted cut on hardened surfaces and sintered steel at high hardness;
 - The stepped chipbreaker effectively controls the chips especially when cutting the softer part under the hardened layer
 - Tailor-made solutions can be realized both for negative and positive inserts
- 3D-Spanbrecher für optimierte Fluss- und Spankontrolle bei schwierigen Anwendungen.
 - CM ist auf das Abtragen der gehärteten Schicht spezialisiert, wohingegen CF vor allem für gehärtete Stähle geeignet ist, bei denen die Spanabfuhr schwierig ist (typische Anwendung: Innendrehen)
 - Es können kundenspezifische Lösungen für negative und positive Wendeschneidplatten realisiert werden
- Rompitrucciolo 3D per il miglior controllo truciolo anche nelle applicazioni più complesse.
 - CM è specializzato nella rimozione dello strato cementato, mentre CF è principalmente per acciai temprati in cui l'evacuazione del truciolo è impegnativa (tipica applicazione: tornitura interna)
 - Si possono realizzare soluzioni su misura per inserti negativi e positivi
- Brise-copeaux 3D pour évacuation copeau optimisée et contrôle des copeaux dans les applications les plus exigeantes.
 - CM est spécialisé dans l'enlèvement de la couche de cémentation, tandis que CF est principalement destiné aux aciers trempés où l'évacuation des copeaux est exigeante (application typique : tournage interne)
 - La création de solutions sur mesure est possible pour les plaquettes négatives et positives

CF/CM

Edge preparation

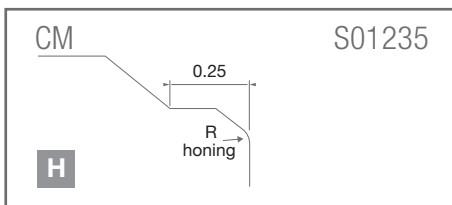
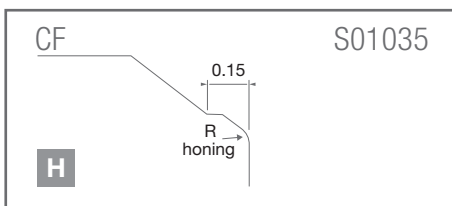
Features of CF/CM edge preparation

SMART DESIGN

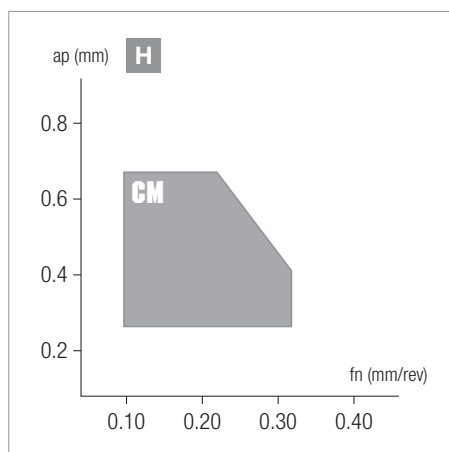
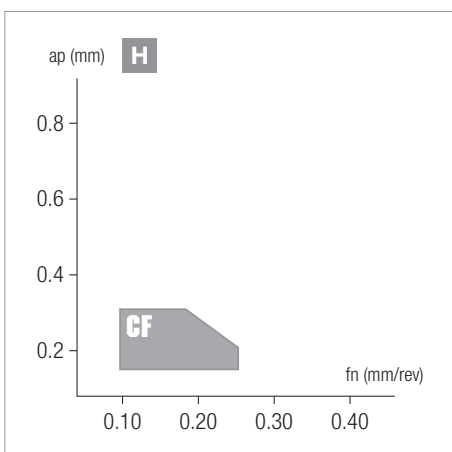
- Excellent performance thanks to the chipbreaker and cutting edge design.
- Small chamfer to reduce cutting forces and 35° angle for a higher strength
- Prestazioni eccellenti grazie all'alto design di rompitruciolo e tagliente
- Piccolo smusso per ridurre le forze di taglio e 35° per maggiore robustezza
- Hervorragende Leistung durch die Trennung von Spanbrecher und Schneidkante
- Kleine Fase zur Reduzierung der Schnittkräfte und 35° für mehr Robustheit
- Excellentes performances grâce à la séparation entre le brise-copeaux et l'arête de coupe
- Petit chanfrein pour réduire les efforts de coupe et un angle à 35 ° pour une solidité accrue

GREAT RELIABILITY

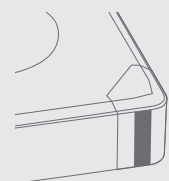
- Available with stable and reliable vertical brazing technology
- Disponibile con tecnologia di brasatura verticale stabile e affidabile
- Erhältlich mit stabiler und zuverlässiger vertikaler Löttechnologie
- Disponible avec une technologie de brasage verticale stable et fiable



Application range - ISO 513



CHIPBREAKER+WIPER AVAILABLE



- The combined types CFW and CMW are also available. Perfect chip control and great surface finishing in one step.
- Disponibili anche le tipologie combinate CFW e CMW. Perfetto controllo del truciolo e ottima finitura superficiale in un unico passaggio.
- Auch kombinierte CFW- und CMW-Typen sind erhältlich. Perfekte Spankontrolle und hervorragende Oberflächenqualität in einem einzigen Arbeitsgang.
- Les types combinés CFW et CMW sont également disponibles. Contrôle parfait des copeaux et excellente finition de surface en une seule passe.

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 / SE	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	NBL150C / WE	NBL150C / 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	-

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

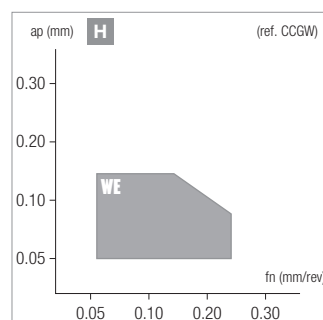
11	EDGE PREPARATION
SE	sharp edge
UE	universal edge
RE	reinforced edge
WE	wiper edge
CBx	chipbreaker (CBF finishing, CBM medium)

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

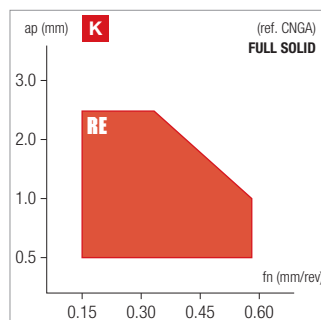
★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



ISO - with hole

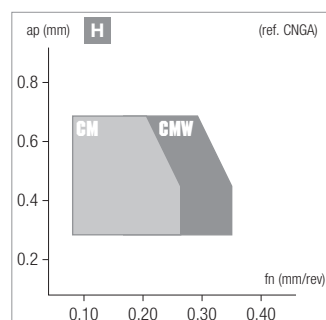
- | | | BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition | | | | | | | | | | | | | | | | | | | |
|----------------------------------|--|---|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-----------|--|--|--|--|--|--|--|--|
| | | BH | BH | BH | BH | BL | BL | BL | BL | BL | BL | BL | | | | | | | | | |
| | | PVD | PVD | PVD | PVD | PVD | PVD | PVD | PVD | PVD | PVD | | | | | | | | | | |
| | | NBH450C | NBH450U | NBH500C | NBH600U | NBH900U | NBL050C | NBL150C | NBL200C | NBL250C | NBL300C | NBL350C | | | | | | | | | |
| Stable machining,
light cut | ☒ 1 st choice ☐ suitable | ☒ | ☒ | ☐ | | ☐ | ☒ | ☒ | ☒ | ☐ | ☐ | | | | | | | | | | |
| General machining,
medium cut | ☒ 1 st choice ☐ suitable | ☒ | ☒ | ☒ | ☐ | ☒ | | ☐ | ☒ | ☒ | ☒ | ☐ | | | | | | | | | |
| Unstable machining,
heavy cut | ☒ 1 st choice ☐ suitable | ☒ | ☒ | ☒ | ☒ | ☒ | | | | | ☒ | ☒ | | | | | | | | | |
| Dimensions | | ISO Vc(m/min) - suggested cutting speed range (bold: 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 | | | | | | | | |

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



CN		BL: Low CBN volume BH: High CBN volume PVD: Physical vapor deposition																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
ISO - with hole		BH BH BH BH BH BL BL BL BL BL BL PVD PVD PVD PVD PVD PVD PVD PVD PVD PVD PVD PVD																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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• 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		Stable machining, light cut	 1 st choice	 suitable																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

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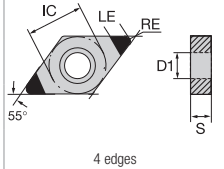


PRODUCT SELECTION p. A142

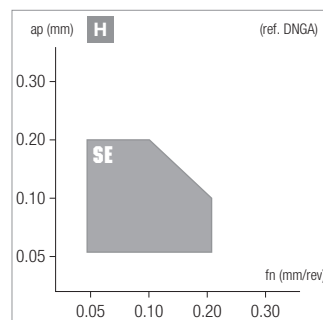
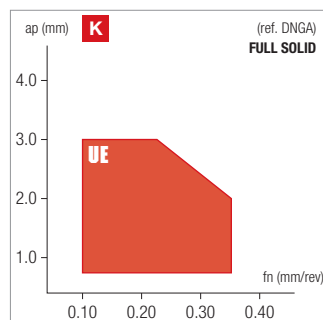
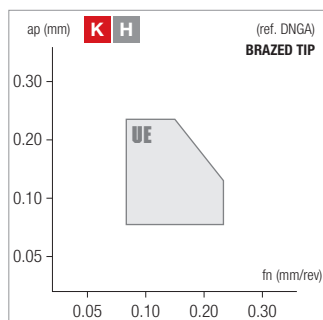
CUTTING CONDITIONS p. A177

GRADES FEATURES p. A120

HOLDERS p. A255

DN		BL: Low CBN volume BH: High CBN volume PVD: Physical vapor deposition																			
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° - 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	UE K H	DNGA150404S-UE-4V	0.40	12.7	4.76	5.16	2.7					○	●								
		DNGA150408S-UE-4V	0.80	12.7	4.76	5.16	2.3					○	○								
		DNGA150604S-UE-4V	0.40	12.7	6.35	5.16	2.7			●											
		DNGA150608S-UE-4V	0.80	12.7	6.35	5.16	2.3		●	○											
		DNGA150612S-UE-4V	1.20	12.7	6.35	5.16	2		●												
UNIVERSAL	UE H	DNGA150604S-UE-4S	0.40	12.7	6.35	5.16	2.4				○	●	●	●	○						
		DNGA150608S-UE-4S	0.80	12.7	6.35	5.16	2				○	●	●	●	○						
	DNGA150612S-UE-4S	1.20	12.7	6.35	5.16	2.1					○	○	○	○	○						
UNIVERSAL	UE K	DNGA150608S-UE-4C	0.80	12.7	6.35	5.16	2	○													
UNIVERSAL	UE K	DNGA150608S-UE	0.80	12.7	6.35	5.16	14.7		●	○											
	DNGA150612S-UE	0.80	12.7	6.35	5.16	14.3		●	○												
SHARP	SE H	DNGA150404S-SE-4V	0.40	12.7	4.76	5.16	2.7				○	○									
	DNGA150408S-SE-4V	0.80	12.7	4.76	5.16	2.3					○	○									

★ 1st choice, ☆ suitable, ● stock standard, ● non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A142

CUTTING CONDITIONS p. A177

GRADES FEATURES p. A120

HOLDERS p. A255

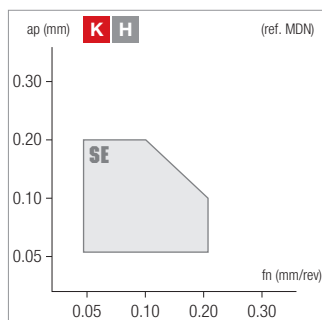
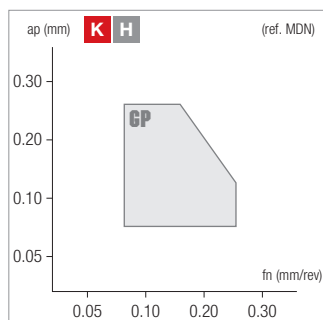
MCN MicroNega		BL: Low CBN volume BH: High CBN volume PVD: Physical vapor deposition		BL	BL	BH																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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MicroNega

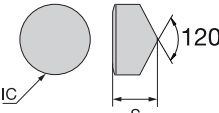
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|---|--|---|--|---------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| BL: Low CBN volume
BH: High CBN volume
PVD: Physical vapor deposition | | BL | BL | BH | | | | | | | | | | | | | | | | |
| | | PVD | PVD | PVD | | | | | | | | | | | | | | | | |
| | | NBS150 | NBS250 | NBS450 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| 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>4 edges</p> | | P | | | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | | | |
| | | K | 340 | | | | | | | | | | | | | | | | | |
| | | | 1000 | | | | | | | | | | | | | | | | | |
| | | N | | | | | | | | | | | | | | | | | | |
| | | S | | | | | | | | | | | | | | | | | | |
| | | H | 90 | 90 | | | | | | | | | | | | | | | | |
| | | | 220 | 180 | | | | | | | | | | | | | | | | |

		Designation	RE	IC	S	D1	LE	Stock			
UNIVERSAL	GP K H 	MDN.R02S-GP-4V	0.20	7	3.18	3.6	2.4		○	▽	
		MDN.R04S-GP-4V	0.40	7	3.18	3.6	2.2		○	▽	
		MDN.R08S-GP-4V	0.80	7	3.18	3.6	1.8		○	▽	
	vertical brazing										
SHARP	CC H 	MDN.R02S-CC-4V	0.20	7	3.18	3.6	2.4	○			
		MDN.R04S-CC-4V	0.40	7	3.18	3.6	2.2	○			
		MDN.R08S-CC-4V	0.80	7	3.18	3.6	1.8	○			

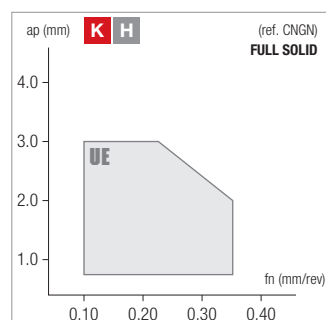
★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



HOLDERS p. A255

RC		BH: High CBN volume																	
		BH																	
ISO - without hole		NBHCOOU																	
- 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																	
		General machining, medium cut																	
		Unstable machining, heavy cut																	
Dimensions		ISO		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)															
		P																	
		M																	
		K																	
		N																	
		S																	
		H																	
Designation		RE	IC	S	D1	LE	Stock												
UNIVERSAL	UE K	RC6X090700S-UE	4.76	9.525	7.94	-	●												
		RC6X120700S-UE	6.35	12.7	7.94	-	●												

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A142

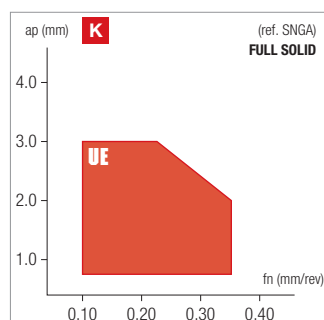
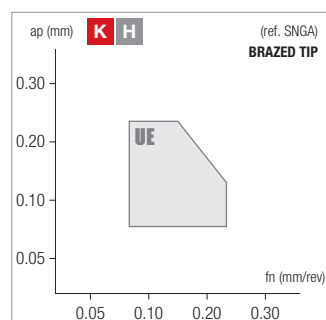
CUTTING CONDITIONS p. A177

GRADES FEATURES p. A120

HOLDERS p. A255

SN		BH: High CBN volume BL: Low CBN volume PVD: Physical vapor deposition		BH	BH	BH	BL	BL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							</
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★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A142

CUTTING CONDITIONS p. A177

GRADES FEATURES p. A120

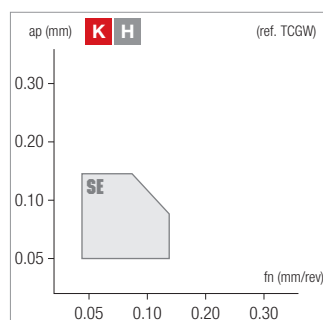
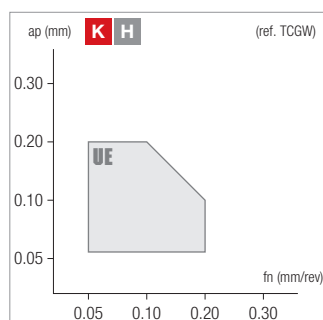
HOLDERS p. A255

ISO - with hole

- [illegible]

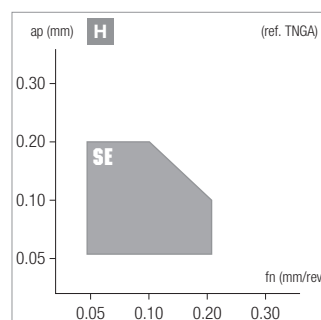
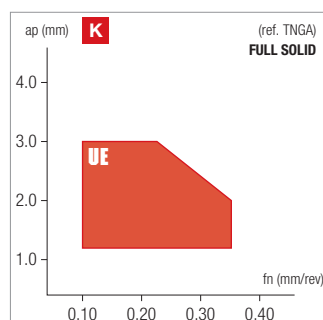
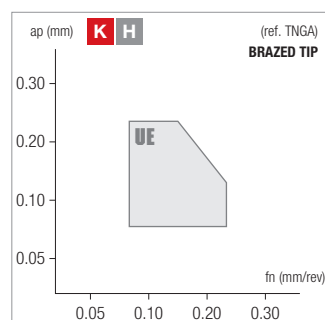
	Designation	RE	IC	S	D1	LE	Stock							
UNIVERSAL 	UE H	TCGW110204S-UE-3S	0.40	6.35	2.38	2.8	2.5			○	●	●		
		TCGW110208S-UE-3S	0.80	6.35	2.38	2.8	2.2				⊙	●		
		TCGW16T304S-UE-3S	0.40	9.525	3.97	4.4	2.5			○	○	●		
		TCGW16T308S-UE-3S	0.80	9.525	3.97	4.4	2.2				○	●		
solid tip														
UNIVERSAL 	UE K	TCGW090204S-UE-3C	0.40	5.56	2.38	2.5	2.5	○						
		TCGW110204S-UE-3C	0.40	6.35	2.38	2.8	2.5	●						
		TCGW110208S-UE-3C	0.80	6.35	2.38	2.8	2.2	●						
		TCGW16T304S-UE-3C	0.40	9.525	3.97	4.4	2.5	●						
		TCGW16T308S-UE-3C	0.80	9.525	3.97	4.4	2.2	●						
carbide backed														
SHARP 	SE H	TCGW110204S-SE-3S	0.40	6.35	2.38	2.8	2.5			○	●			
		TCGW110208S-SE-3S	0.80	6.35	2.38	2.8	2.2				○			
		TCGW16T304S-SE-3S	0.40	9.525	3.97	4.4	2.5			○	○			
		TCGW16T308S-SE-3S	0.80	9.525	3.97	4.4	2.2				○			
solid tip														
SHARP 	SE K	TCGW110204T-SE-3C	0.40	6.35	2.38	2.8	2.5	○						
carbide backed without hone														

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



TN		BL: Low CBN volume BH: High CBN volume PVD: Physical vapor deposition		BH	BH	BH	BH	BL	BL	BL	BL	BL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

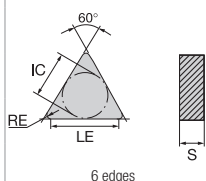


PRODUCT SELECTION p. A142

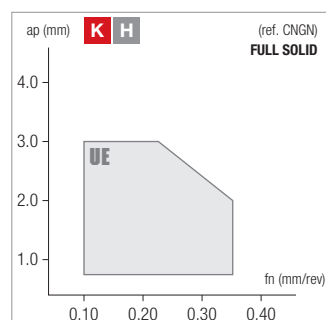
CUTTING CONDITIONS p. A177

GRADES FEATURES p. A120

HOLDERS p. A255

TN		BH: High CBN volume BL: Low CBN volume PVD: Physical vapor deposition		BH	BL																	
						NBH900U	NBL200C															
ISO - without hole																						
• Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading • Good economy with up to 6 cutting edges • T16 has a similar depth of cut as CN12		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																		
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Designation		RE	IC	S	D1	LE	Stock															
UNIVERSAL	UE K H	TNGN160408S-UE	0.80	9.525	4.76	-	15.7															
	 full solid																					

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



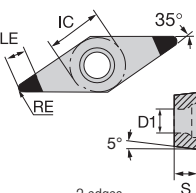
PRODUCT SELECTION p. A142

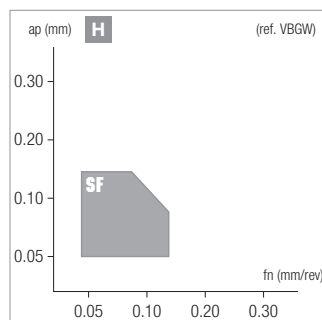
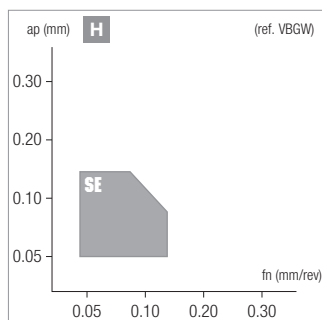
CUTTING CONDITIONS p. A177

GRADES FEATURES p. A120

HOLDERS p. A255

ISO - with hole

- | | | CBN volume | | | | | | | | CBN volume | | | | | | | | |
|--|-------------------------------------|--|-------------|-------------|------------|-----------------|-----------|-----------|-----------|----------------|----|----|----|-----------------|----|----|----|--|
| | | Low CBN volume | | | | High CBN volume | | | | Low CBN volume | | | | High CBN volume | | | | |
| | | PVD | BH | BL | BL | PVD | BH | BL | BL | PVD | BH | BL | BL | PVD | BH | BL | BL | |
| | | NBH450C | NBH450U | NBL050C | NBL050CX | NBL150C | NBL250C | NBL300C | NBL350C | | | | | | | | | |
| Stable machining,
light cut | ● 1 st choice ○ suitable | ● | ● | ● | ● | ● | ○ | ○ | | | | | | | | | | |
| General machining,
medium cut | ● 1 st choice ○ suitable | ● | ● | | | ○ | ● | ● | ○ | | | | | | | | | |
| Unstable machining,
heavy cut | ⚙ 1 st choice ⚙ suitable | ⚙ | ⚙ | | | | | ⚙ | ⚙ | | | | | | | | | |
| Dimensions | | Vc(m/min) - suggested cutting speed range (bold: 1st choice) | | | | | | | | | | | | | | | | |
|  <p>2 edges</p> | | P | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | |
| | | K | 340
1000 | 340
1000 | | | | | | | | | | | | | | |
| | | N | | | | | | | | | | | | | | | | |
| | | S | | | | | | | | | | | | | | | | |
| | | H | | | 120
280 | 120
280 | 90
220 | 90
180 | 60
180 | 60
150 | | | | | | | | |

[illegible]

VB

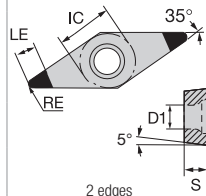
ISO - with hole

- 1st choice for complex 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
 ☒ 1st choice
 ☐ suitable

 General machining, medium cut
 ☒ 1st choice
 ☐ suitable

 Unstable machining, heavy cut
 ☒ 1st choice
 ☐ suitable

Dimensions

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

340

340

1000

1000

120

120

90

90

60

60

Designation
RE
IC
S
D1
LE
Stock
REINFORCED
RE H

 solid tip
interrupted cut

VBGW160404S-RE-2S

0.40

9.525

4.76

4.4

2.5

VBGW160408S-RE-2S

0.80

9.525

4.76

4.4

2.2

REINFORCED
RE K

 carbide backed
interrupted cut

VBGW160404S-RE-2C

0.40

9.525

4.76

4.4

2.5

VBGW160408S-RE-2C

0.80

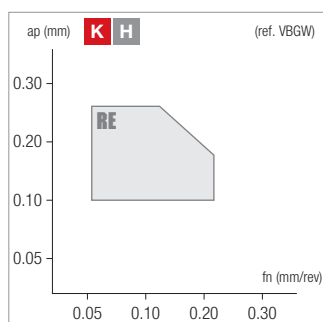
9.525

4.76

4.4

2.2

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A142

CUTTING CONDITIONS p. A177

GRADES FEATURES p. A120

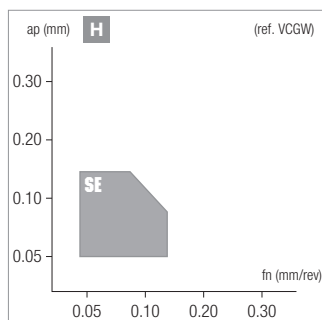
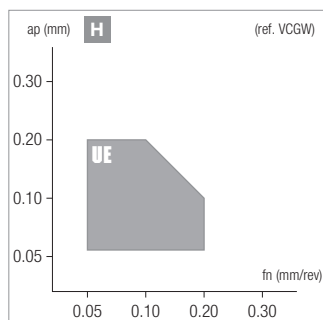
HOLDERS p. A255

ISO - with hole

- [illegible]

[illegible]

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

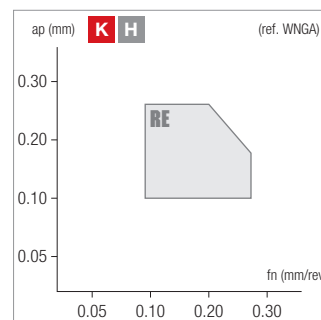
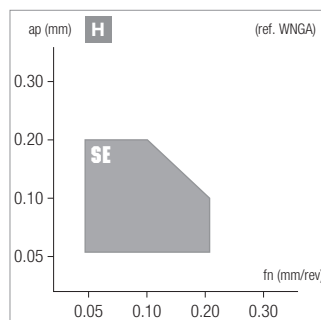
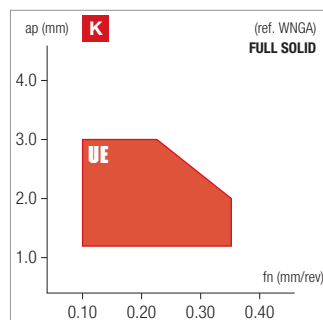
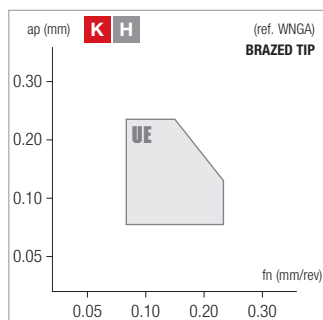


ISO - with hole

- | | | BH | BH | BL | BL | BL | BL | | | | | | | | | | | |
|----------------------------------|-------------------------------------|--|----------------|----------------|----------------|----------------|----------------|----------------|---|--|--|--|--|--|--|--|--|--|
| | | PVD | | PVD | PVD | PVD | PVD | | | | | | | | | | | |
| | | NBH500C | NBH600U | NBH900U | NBL150C | NBL250C | NBL300C | NBL350C | | | | | | | | | | |
| Stable machining,
light cut | ● 1 st choice ○ suitable | ○ | | ○ | ● | ○ | ○ | | | | | | | | | | | |
| General machining,
medium cut | ● 1 st choice ○ suitable | ● | ○ | ● | ○ | ● | ● | ○ | | | | | | | | | | |
| Unstable machining,
heavy cut | ⚙ 1 st choice ⚙ suitable | ⚙ | ⚙ | ⚙ | | | | ⚙ | ⚙ | | | | | | | | | |
| Dimensions | | ISO | | | | | | | | | | | | | | | | |
| | | Vc(m/min) - suggested cutting speed range (bold: 1st choice) | | | | | | | | | | | | | | | | |
| | | P | | | | | | | | | | | | | | | | |
| | | M | | | | | | | | | | | | | | | | |
| | | K | 300
1500 | 300
1200 | 300
1100 | | | | | | | | | | | | | |
| | | N | | | | | | | | | | | | | | | | |
| | | S | | | | | | | | | | | | | | | | |
| | | H | | 40
160 | 90
220 | 90
180 | 60
180 | 60
150 | | | | | | | | | | |
- 6 edges

		Designation	RE	IC	S	D1	LE	Stock							
UNIVERSAL	 vertical brazing	WNGA080404S-UE-6V	0.40	12.7	4.76	5.16	2.6			○		○	○	○	
		WNGA080408S-UE-6V	0.80	12.7	4.76	5.16	2.6			○		●	●	○	
		WNGA080412S-UE-6V	1.20	12.7	4.76	5.16	2.5			○		○	○	○	
UNIVERSAL	 full solid high depth of cut	WNGA080408S-UE	0.80	12.7	4.76	5.16	7.9	○	○						
		WNGA080412S-UE	1.20	12.7	4.76	5.16	7.5	○	○						
SHARP	 vertical brazing	WNGA080404S-SE-6V	0.40	12.7	4.76	5.16	2.6				○				
		WNGA080408S-SE-6V	0.80	12.7	4.76	5.16	2.6				○				
REINFORCED	 vertical brazing interrupted cut	WNGA080404S-RE-6V	0.40	12.7	4.76	5.16	2.6			○			○		
		WNGA080408S-RE-6V	0.80	12.7	4.76	5.16	2.6			○			●		
		WNGA080412S-RE-6V	1.20	12.7	4.76	5.16	2.5			◎			○		

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



HOLDERS p. A255

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. M1.

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

Complete workpiece materials p. M1.

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

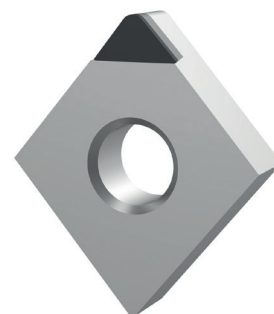
DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
CCGW060202S-SE-2S	0.05	0.10	0.15	0.04	0.06	0.08
CCGW060202S-UE-2S	0.06	0.13	0.20	0.05	0.10	0.15
CCGW060202T-SF-2S	0.05	0.10	0.15	0.04	0.06	0.08
CCGW060204S-RE-2S	0.08	0.16	0.25	0.06	0.13	0.20
CCGW060204S-SE-2S	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
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

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
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
MCN.R02S-GP-4V	0.07	0.16	0.25	0.06	0.12	0.18
MCN.R02S-SE-4V	0.06	0.13	0.20	0.05	0.10	0.15
MCN.R02S-UE-4V	0.07	0.16	0.25	0.06	0.12	0.18
MCN.R04S-CC-4V	0.06	0.13	0.20	0.06	0.12	0.18

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
MCN.R04S-GP-4V	0.07	0.16	0.25	0.08	0.14	0.20
MCN.R04S-SE-4V	0.06	0.13	0.20	0.06	0.12	0.18
MCN.R04S-UE-4V	0.07	0.16	0.25	0.08	0.14	0.20
MCN.R08S-CC-4V	0.06	0.13	0.20	0.06	0.13	0.20
MCN.R08S-GP-4V	0.07	0.16	0.25	0.08	0.15	0.22
MCN.R08S-SE-4V	0.06	0.13	0.20	0.06	0.13	0.20
MCN.R08S-UE-4V	0.07	0.16	0.25	0.08	0.15	0.22
MDN.R02S-CC-4V	0.06	0.13	0.20	0.05	0.10	0.15
MDN.R02S-GP-4V	0.07	0.16	0.25	0.06	0.12	0.18
MDN.R02S-SE-4V	0.06	0.13	0.20	0.05	0.10	0.15
MDN.R02S-UE-4V	0.07	0.16	0.25	0.06	0.12	0.18
MDN.R04S-CC-4V	0.06	0.13	0.20	0.06	0.12	0.18
MDN.R04S-GP-4V	0.07	0.16	0.25	0.08	0.14	0.20
MDN.R04S-SE-4V	0.06	0.13	0.20	0.06	0.12	0.18
MDN.R04S-UE-4V	0.07	0.16	0.25	0.08	0.14	0.20
MDN.R08S-CC-4V	0.06	0.13	0.20	0.06	0.13	0.20
MDN.R08S-GP-4V	0.07	0.16	0.25	0.08	0.15	0.22
MDN.R08S-SE-4V	0.06	0.13	0.20	0.06	0.13	0.20
MDN.R08S-UE-4V	0.07	0.16	0.25	0.08	0.15	0.22
RCGX090700S-UE	0.50	1.50	2.50	0.10	0.30	0.50
RCGX120700S-UE	0.50	2.00	3.50	0.10	0.35	0.60
RNGN060300S-UE	0.50	1.00	1.50	0.10	0.20	0.30
RNGN090300S-RE	0.50	1.50	2.50	0.15	0.35	0.55
RNGN090300S-RH	0.50	1.50	2.50	0.15	0.35	0.55
RNGN090300S-UE	0.50	1.50	2.50	0.10	0.30	0.50
RNGN090300T-SE	0.20	1.00	1.80	0.10	0.20	0.30
RNGN120300S-UE	0.50	2.00	3.50	0.10	0.35	0.60
RNGN120400S-RE	0.50	2.00	3.50	0.10	0.45	0.80
RNGN120400S-UE	0.50	2.00	3.50	0.10	0.35	0.60
SNGA120404S-UE-8V	0.07	0.16	0.25	0.08	0.14	0.20
SNGA120408S-UE	1.00	2.00	3.00	0.10	0.20	0.30
SNGA120408S-UE-8V	0.07	0.16	0.25	0.08	0.15	0.22
SNGA120412S-UE	1.00	2.00	3.00	0.10	0.23	0.36
SNGA120412S-UE-8V	0.07	0.16	0.25	0.08	0.16	0.24
SNGN090308S-UE	0.50	1.50	2.50	0.10	0.20	0.30
SNGN090312S-UE	0.50	1.50	2.50	0.10	0.23	0.36
SNGN090316S-UE	0.50	1.50	2.50	0.10	0.25	0.40
SNGN090412S-UE	0.50	1.50	2.50	0.10	0.23	0.36
SNGN120408S-UE	1.00	2.00	3.00	0.10	0.20	0.30
SNGN120412S-UE	1.00	2.00	3.00	0.10	0.23	0.36
SNGN120416S-UE	1.00	2.00	3.00	0.10	0.25	0.40
SNGX120412S-UE	1.00	2.00	3.00	0.10	0.23	0.36
SNGX120712S-UE	1.00	2.00	3.00	0.10	0.23	0.36
SNGX120716S-UE	1.00	2.00	3.00	0.10	0.25	0.40
TCGW090204S-UE-3C	0.06	0.13	0.20	0.06	0.12	0.18
TCGW110204S-RE-3S	0.08	0.16	0.25	0.06	0.13	0.20
TCGW110204S-SE-3S	0.05	0.10	0.15	0.04	0.08	0.12
TCGW110204S-UE-3C	0.06	0.13	0.20	0.06	0.12	0.18
TCGW110204S-UE-3S	0.06	0.13	0.20	0.06	0.12	0.18
TCGW110204T-SE-3C	0.05	0.10	0.15	0.04	0.08	0.12
TCGW110208S-RE-3C	0.08	0.16	0.25	0.06	0.14	0.22
TCGW110208S-RE-3S	0.08	0.16	0.25	0.06	0.14	0.22
TCGW110208S-SE-3S	0.05	0.10	0.15	0.05	0.10	0.15
TCGW110208S-UE-3C	0.06	0.13	0.20	0.06	0.13	0.20
TCGW110208S-UE-3S	0.06	0.13	0.20	0.06	0.13	0.20
TCGW16T304S-RE-3S	0.08	0.16	0.25	0.06	0.13	0.20
TCGW16T304S-SE-3S	0.05	0.10	0.15	0.04	0.08	0.12
TCGW16T304S-UE-3C	0.06	0.13	0.20	0.06	0.12	0.18

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

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
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



TURNING - Diamond

Grades selection guide	.A178
Grades features	.A179
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Product selection	.A192
Designation system	.A193
Inserts range	.A194
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ISO 513		DIAMOND		
		PCD	CVD	MONO
N Non-ferrous materials	N01	ND190	NDD *	NDM *
	N10	ND150		
	N20	ND100		
	N30	ND050		
S HRSA	S01			
	S10	ND050		
	S20			
	S30			
H Hardened steel	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. 🇮🇹 Eccellente finitura superficiale e ottima tenacità. Prima scelta per lavorazione di leghe di titanio. 🇩🇪 Ausgezeichnete Oberflächenqualität und hervorragende Robustheit. Erste Wahl für die Bearbeitung von Titan-Legierungen. 🇫🇷 Excellente finition de surface et excellente ténacité. Premier choix pour l'usinage d'alliages de titane.
ND100 new name: NDP010	diamond 95%	6.000	10 µm	Wc + Co	N N10 N30	✚ First choice for all-around applications on non-ferrous materials. 🇮🇹 Prima scelta per lavorazioni universali su materiali non ferrosi. 🇩🇪 Erste Wahl für die universelle Bearbeitung von Nichteisenmaterialien. 🇫🇷 Premier choix pour usinages universels sur matériaux non ferreux.
ND150 new name: NDP020	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. 🇮🇹 Grado multimodale per una perfetta combinazione fra tenacità e resistenza all'usura. Buona soluzione per applicazioni su alluminio ad alto tenore di silicio e bi-metalli. 🇩🇪 Multimodale Qualität für eine perfekte Kombination aus Robustheit und Verschleißfestigkeit. Gute Lösung für Anwendungen mit Aluminium mit hohem Siliziumgehalt und Bimetallen. 🇫🇷 Qualité multimodale pour une combinaison parfaite entre ténacité et résistance à l'usure. Bonne solution pour applications sur aluminium à haute teneur en silicium et bi-métaux.
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. 🇮🇹 Eccellente resistenza all'usura. Prima scelta per leghe di alluminio ad alto contenuto in silicio (Si > 13%), metallo duro in tungsteno e ceramica. 🇩🇪 Hervorragende Verschleißfestigkeit. Erste Wahl für Aluminiumlegierungen mit hohem Siliziumgehalt (Si > 13 %), Hartmetall und Keramik. 🇫🇷 Excellente résistance à l'usure. Premier choix pour alliages d'aluminium à haute teneur en silicium (Si > 13 %), carbure et céramique.
NDD CVD diamond	-	8.000	-	binder free	N N01 N10	✚ Longer tool life compared to PCD grades. Best performance on abrasive materials such as AISi, graphite, CFRP carbon fiber-reinforced plastic. 🇮🇹 Migliore vita utensile confrontata con i gradi PCD. Migliori prestazioni su materiali abrasivi quali AISi, grafite, e materiali plastici rinforzati in fibra di carbonio (CFRP). 🇩🇪 Verbesserte Standzeit gegenüber den PCD-Qualitäten. Bessere Leistung bei abrasiven Materialien wie AISi, Graphit und kohlenstofffaserverstärktem Kunststoff (CFK). 🇫🇷 Meilleure durée de vie de l'outil par rapport aux nuances PCD. Performances optimisées sur des matériaux abrasifs tels que l'AISi, le graphite et les plastiques renforcés en fibre de carbone (CFRP).

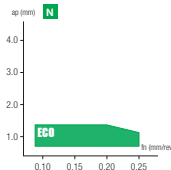
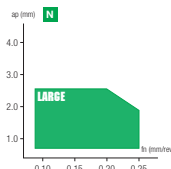
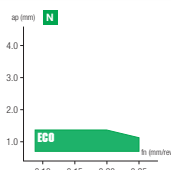
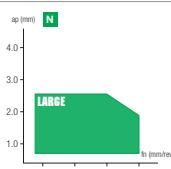
NDD-CVD diamond and NDM-monocrystalline diamond are available upon request
 ND120: same features of ND100

GRADE	COMPOSITION	HARDNESS HV	GRAIN SIZE	BINDER	APPLICATION	FEATURES
NDM Monocrystalline diamond	-	10.000	-	binder free	N N01 N05	- Best surface finishing reaching nanometers roughness value not reachable with conventional polycrystalline tools. - Eccezionale finitura superficiale con valori di rugosità nanometrici, irraggiungibili con utensili policristallini convenzionali. - Verbesserte Oberflächenqualität (Rauheitswerte im Nanometerbereich), wie sie mit herkömmlichen polykristallinen Werkzeugmaterialien nicht erreicht werden kann. - Meilleure finition de surface (valeurs de rugosité de l'ordre du nanomètre), inatteignable avec des outils polycristallins conventionnels.

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

ISO 513			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.

NEGATIVE type with hole				C	D	T	W		
									
				80°	55°	60°	80°		
N	SLANT TIP	ECO  2.0÷2.8	 ap (mm) N 4.0 3.0 2.0 1.0 0.10 0.15 0.20 0.25 Rz (mm/min)	 A196 SIZE 12	 A199 SIZE 15	 A205 SIZE 16	 A211 SIZE 08		
		LARGE  3.5÷4.3	 ap (mm) N 4.0 3.0 2.0 1.0 0.10 0.15 0.20 0.25 Rz (mm/min)	 A196 SIZE 12	 A199 SIZE 15	 A205 SIZE 16	 A211 SIZE 08		
	FLAT TIP	ECO  2.0÷2.8	 ap (mm) N 4.0 3.0 2.0 1.0 0.10 0.15 0.20 0.25 Rz (mm/min)	 A196 SIZE 12	 A199 SIZE 15	 A205 SIZE 16	 A211 SIZE 08		
		LARGE  3.5÷4.3	 ap (mm) N 4.0 3.0 2.0 1.0 0.10 0.15 0.20 0.25 Rz (mm/min)	 A196 SIZE 12	 A199 SIZE 15	 A205 SIZE 16	 A211 SIZE 08		

POSITIVE type with hole			C	D	T	V		
			80°	55°	60°	35°		
N	SLANT TIP	ECO	CC A194 SIZE 06 09 12	DC A197 SIZE 07 11	TC, TP A203, A206 SIZE 08 09 11 16	VB, VC A207, A209 SIZE 11 16		
		 1.5÷3.0						
	FLAT TIP	LARGE	CC A194 SIZE 06 09 12	DC A197 SIZE 07 11	TC A203 SIZE 11 16	VB, VC A207, A209 SIZE 16		
		 2.9÷4.5						
	3D CHIPBREAKER	ECO	CC A194 SIZE MCC 06 09 12	DC A197 SIZE 07 11	TC, TP A203, A206 SIZE 08 09 11 16	VB, VC A207, A209 SIZE 11 16		
		 1.5÷3.0						
		LARGE	CC A194 SIZE 06 09 12	DC A197 SIZE 07 11	TC A203 SIZE 11 16	VB, VC A207, A209 SIZE 16		
		 2.9÷4.5						
		CBU	CC A195 SIZE 06 09	DC A198 SIZE 07 11	TC A204 SIZE 11 16	VC A209 SIZE 11 16		
		 0.04 30°						
		CBF	CC A195 SIZE 06	DC A198 SIZE 07	TC, TP A204, A206 SIZE 09 11 16	VB A207 SIZE 11 16		
		 0.05 30°						
		CBG	CC A195 SIZE 09	DC A149 SIZE 11	TC A204 SIZE 09 11	VB A208 SIZE 11 16		
		 0.1 20°						
	FULL EDGE	1S	CC A195 SIZE 06 09 12	DC A198 SIZE 07 11	TC A204 SIZE 09 11 16	VC A210 SIZE 11 16		
	FULL FACE	FF	CC A195 SIZE 06 09	DC A198 SIZE 07 11	TC A204 SIZE 11 16			

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

Slant tip

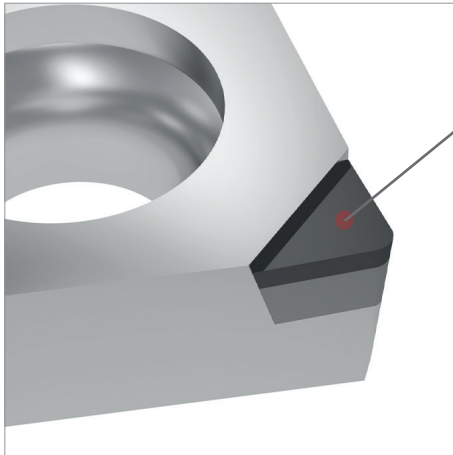
Cutting edge

- 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 vibrations and burrs formation
 - Creating smaller cutting force, the slant tip is especially helpful on long shaft and thin wall work piece machining
 - Possible to provide tailored combination of small radii with extra clearance on the flank face
- La placchetta diamantata è saldobrasata con un'inclinazione di $7^{\circ} \div 10^{\circ}$. Soluzione disponibile per riporto PCD nelle dimensioni eco e grande
 - L'angolo di spoglia positivo riduce efficacemente le vibrazioni e la formazione di bave
 - Generando piccole forze di taglio, la placchetta PCD inclinata è particolarmente utile nella lavorazione di alberi lunghi e pareti sottili
 - Design che permette di combinare spoglia aggiuntiva e raggi di piccole dimensioni
- Die PKD Wendeplatte wird in einem Winkel von $7^{\circ} \div 10^{\circ}$ gelötet. Lösung für Bestückungen in Eco- und Großformaten erhältlich
 - Der positive Spanwinkel reduziert effektiv Vibrationen und Gratbildung
 - Die geeignete Wendeplatte erzeugt geringe Schnittkräfte und ist besonders bei der Bearbeitung langer Wellen und dünner Wände nützlich
 - Design, das die Kombination von zusätzlichem Span und kleinen Radien ermöglicht
- La pointe diamant est brasée avec une inclinaison de $7^{\circ} \div 10^{\circ}$. Solution aussi bien disponible pour l'éco que pour les grandes dimensions de pointes
 - L'angle de dépouille positif réduit efficacement les vibrations et la formation de bavures
 - Générant de faibles efforts de coupe, la pointe inclinée est particulièrement utile lors de l'usinage d'arbres longs et de parois fines
 - Conception permettant de combiner un râteau supplémentaire et de petits rayons

Slant tip

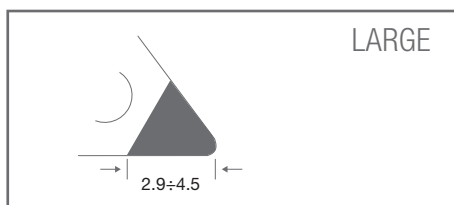
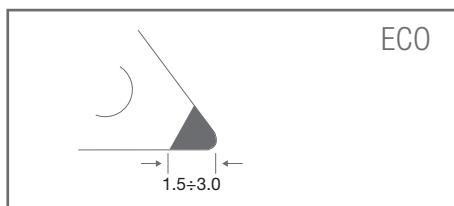
Cutting edge

Features of Slant tip cutting edge



LIGHT CUTTING ACTION

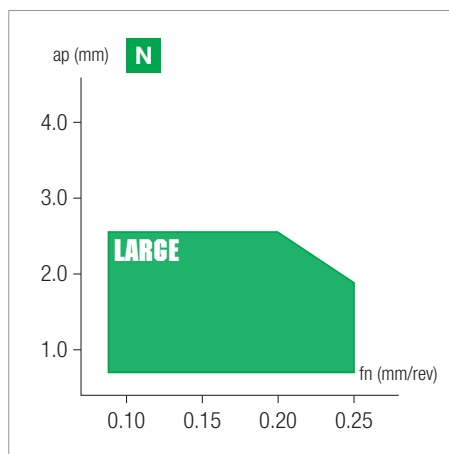
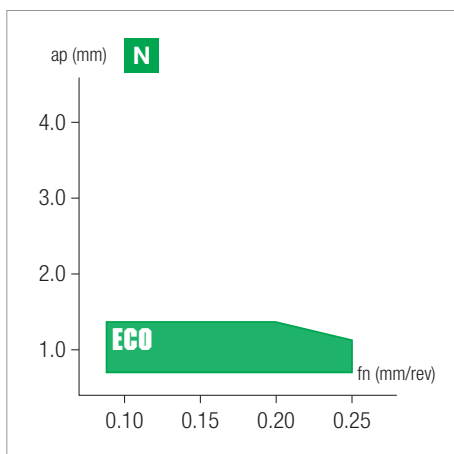
- The cutting edge is completely sharp (F type) as for all NIKKO TOOLS diamond solutions
- The rake angle of all slant type is from 7° to 10°
- Tagliente interamente affilato (tipo F) come in tutte le soluzioni diamantate Nikko Tools
- The rake angle of all slant types is from 7° to 10°
- Vollständig geschliffene Schneidkante (F-Typ) wie bei allen Diamantlösungen von Nikko Tools
- Der Spanwinkel aller schrägen Typen variiert zwischen 7° und 10°
- L'arête de coupe est entièrement affûtée (type F) comme dans toutes les solutions diamantées Nikko Tools
- L'angle de dépouille de tous les types inclinés varie entre 7 ° et 10 °



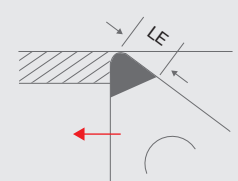
BROAD RANGE

- The availability of different tip sizes allows to face both finishing and roughing applications
- La disponibilità di taglienti saldobrasati con differenti dimensioni consente di affrontare applicazioni di finitura e di sgrossatura
- Die Verfügbarkeit von Platten in verschiedenen Größen ermöglicht sowohl Schlicht- als auch Schrappanwendungen
- La disponibilité de différentes dimensions de pointes permet d'aborder les applications de finition et d'ébauche

Application range - ISO 513



MAXIMUM ap



APMX ≤ 70% LE

!

- The maximum depth of cut (APMX) can be calculated as 70% of diamond tip length.
- La profondità massima di taglio (APMX) può essere calcolata come il 70% della lunghezza della punta diamantata.
- Die maximale Schnitttiefe (APMX) kann als 70 % der Länge der PKD Bestückung berechnet werden.
- La profondeur de coupe maximale (APMX) peut être calculée comme 70 % de la longueur de la pointe diamantée

Flat tip

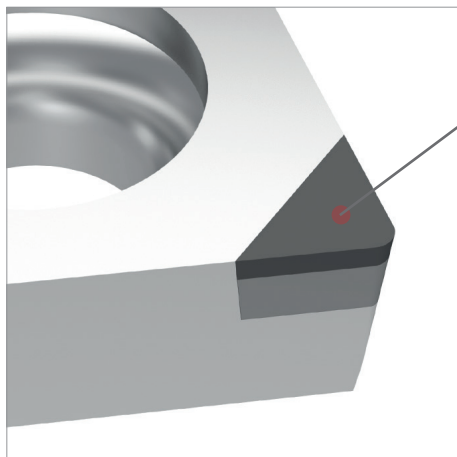
Cutting edge

- All-around solution for every kind of operations 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
- Universallösung für jede Art von Bearbeitung von Nichteisenmaterialien. Komplette flache PKD Wendeplatte, erhältlich in verschiedenen Bestückungen - Eco und Groß
 - Zuverlässige und robuste Schneidkante mit hervorragender Oberflächenqualität
 - Die flache Schneidkante kann für kontinuierliche und unterbrochene Schnittbedingungen eingesetzt werden.
- Soluzione universale per qualsiasi tipo di operazione su materiali non ferrosi. Il tagliente saldobrasato completamente piatto, è disponibile nelle dimensioni eco e grande
 - Tagliente affidabile e robusto in grado di ottenere eccellente finitura superficiale
 - Tagliente piatto utilizzabile per condizioni di taglio continuo e taglio interrotto.
- Solution universelle pour tout type d'opération sur matériaux non ferreux. Pointe diamantée entièrement plate, disponible en formats éco et grand
 - Arête de coupe fiable et robuste apportant une excellente finition de surface
 - L'arête de coupe plate peut être utilisée dans des conditions de coupe continues et de coupe interrompues.

Flat tip

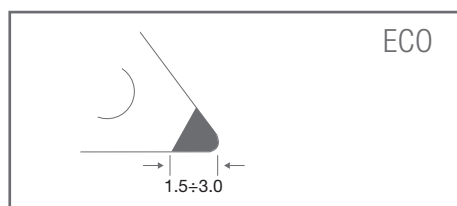
Cutting edge

Features of Flat tip cutting edge



RELIABLE CUTTING EDGE

- Sharp edge and strong rake face for smooth and stable machining
• First choice for universal use
- Tagliente affilato e spoglia robusta per ottenere taglienza e stabilità
• Prima scelta per uso universale
- Scharfe Schneidkante in Verbindung mit einer stabilen Spanfläche für ein ausgewogenes Maß an Schnittkantenrobustheit
• Erste Wahl für universellen Einsatz
- Arête vive combinée à une solide surface de dépouille pour une coupe douce et un usinage stable
• Premier choix pour une utilisation universelle

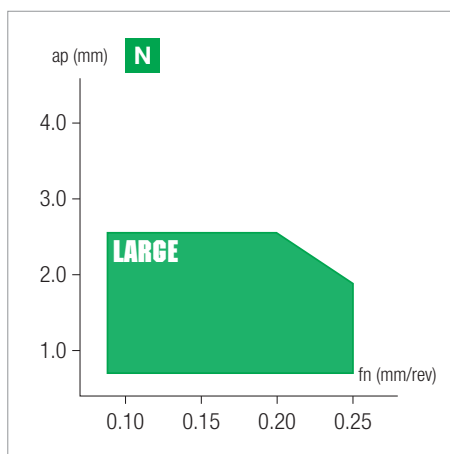
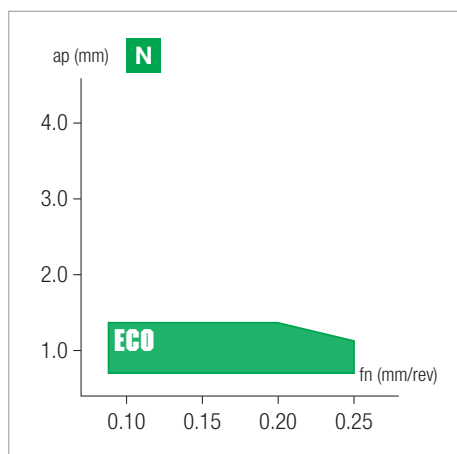


BROAD RANGE

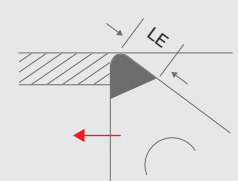
- Different tip sizes available covering various applications from finishing to roughing
- Taglienti saldobrasati con differenti dimensioni a copertura di diverse applicazioni, dalla finitura alla sgrossatura
- Die Bohrer sind in verschiedenen Größen erhältlich, um unterschiedliche Anwendungen abzudecken, vom Schlichten bis zum Schruppen
- La disponibilité de différentes dimensions de pointes permet d'aborder les applications de finition et d'ébauche



Application range - ISO 513



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CBU - 3D chipbreaker

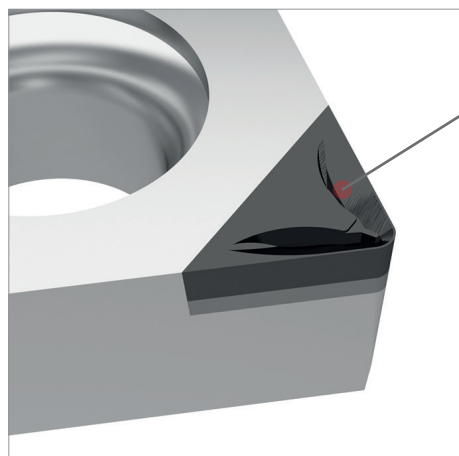
Cutting edge

- 3D laser chipbreaker geometry for excellent chip control
 - Variable edge allows reliable performances from finishing to roughing
 - Recommended for mass production and automated workpiece handling thanks to the excellent chip control
 - Effectively avoids twisted chips scratching the workpiece surface
- Die programmierte Geometrie wird durch modernste Lasertechnologie umgesetzt und bietet eine hervorragende Spankontrolle
 - Variable Schneidkante zur Anpassung der Geometrie für die Bearbeitung vom Schlichten bis zum Schruppen
 - Empfohlen für die Herstellung von Großserien, insbesondere bei automatisiertem Werkstück-Handling, aufgrund der verbesserten Spankontrolle
 - Beugt effektiv dem Verkratzen der bereits bearbeiteten Oberfläche durch verdrehte Späne vor
- Rompitruicolo 3D ricavato con tecnologia laser, garantisce ottimo controllo trucioli
 - La geometria variabile del tagliente permette lavorazioni che vanno dalla finitura alla sgrossatura
 - Raccomandato per produzione di grandi lotti, specialmente con movimentazione automatizzata dei pezzi, grazie al migliore controllo del truciolo
 - Evita efficacemente che il truciolo attorcigliato graffi la superficie già lavorata
- Géométrie du brise copeau laser 3D pour un contrôle optimal des copeaux
 - Arête variable, permet une solution fiable pour l'usinage de la finition à l'ébauche
 - Recommandé pour la production de grandes séries et à la manipulation automatisée des pièces, grâce à un meilleur contrôle des copeaux
 - Empêche efficacement le recyclage des copeaux qui peut rayer la surface déjà usinée

CBU - 3D chipbreaker

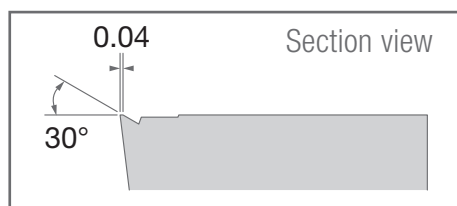
Cutting edge

Features of CBU chipbreaker



STATE OF THE ART GEOMETRY

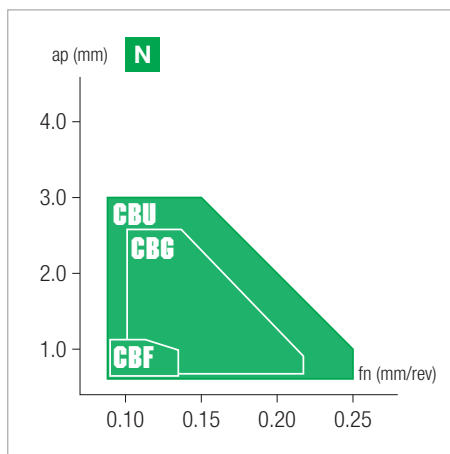
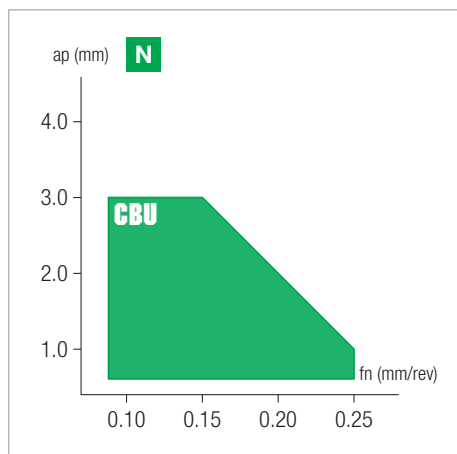
- Optimized rake face and tailored chip groove effectively improve the chip control performances
- Variable land to support broad range of applications from finishing to roughing
- Superficie di spoglia ottimizzata e scanalatura ad hoc per effettivo miglioramento delle prestazioni nel controllo del truciolo
- Pianetto variabile per supportare ampio campo applicativo, dalla finitura alla sgrossatura
- Optimierte Spanfläche und Ad-hoc-Nuten für die effektive Leistungsverbesserung bei der Spankontrolle
- Variable Fläche für ein breites Anwendungsspektrum vom Schlichten bis zum Schruppen
- Face de dépouille optimisée et goujure à copeau sur mesure pour une amélioration efficace des performances de contrôle des copeaux
- Support variable pour prendre en charge une large gamme d'applications, de la finition à l'ébauche



BROAD RANGE

- Most common shapes and radii available as standard
- Tailor-made also possible upon request
- Forme e raggi più comuni disponibili come standard
- Disponibili su richiesta versioni personalizzate
- Standardmäßig sind die meisten gängigen Formen und Radien erhältlich
- Auf Anfrage sind kundenspezifische Ausführungen erhältlich
- Formes et rayons les plus courants disponibles en version standard
- Versions sur mesure disponibles sur demande

Application range - ISO 513



MAXIMUM ap

CBF finishing CBG medium

CBU^{NEW} universal



- CBU cover the application range of our previous series (CBF, CBG) with improved performances.
- CBU copre l'intervallo applicativo delle precedenti serie Nikko Tools (CBF, CBG) con prestazioni migliorate.
- CBU deckt den Anwendungsbereich der bisherigen Nikko Tools-Serien (CBF, CBG) ab, jedoch mit verbesserter Leistung.
- CBU couvre la gamme d'applications des séries précédentes de Nikko Tools (CBF, CBG) avec une optimisation des performances.

Full Face/Full Edge

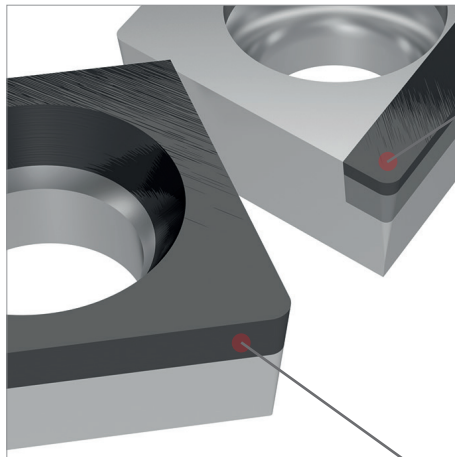
Cutting edge

- Extra large diamond tip or full face style for tough applications and large depth of cut.
 - 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), it is generally necessary to define the cutting direction (R or L)
- Diamant, extragroß und volle Schneidkante oder volle Fläche, für schwere oder spezielle Schnittbedingungen
 - Optimale Lösung für große Schnitttiefen mit hohen Vorschüben, für die Bearbeitung von Fasen und in allen Fällen, in denen ein PKD Wendepatte mit langer Bestückung, aufgrund der besonderen Abmessungen des Werkstücks, erforderlich ist
 - Beim Vollschnittkantentyp (1S) ist es generell notwendig, die Schnittrichtung anzugeben (R/L, rechts oder links)
- Plachetta diamantata extra large o full face per applicazioni gravose e profondità di taglio elevate.
 - Migliore soluzione per grandi profondità di taglio con alti avanzamenti, lavorazione di smussi e in tutti i casi in cui sia richiesta una lunga punta diamantata per le particolari dimensioni del pezzo da lavorare
 - Nel tipo a tagliente pieno (1S) è generalmente necessario definire la direzione di taglio (R/L, destra o sinistra)
- Pointe diamant extra-large ou surface complète pour applications intensives et grandes profondeurs de coupe
 - La meilleure solution pour les grandes profondeurs de coupe à avances élevées, le chanfreinage et chaque fois qu'une pointe longue diamantée est nécessaire en raison de la forme spécifique de la pièce à usiner.
 - Pour le type arête complète (1S), il est généralement nécessaire de définir la direction de coupe (R/L, droite ou gauche)

Full Face/Full Edge

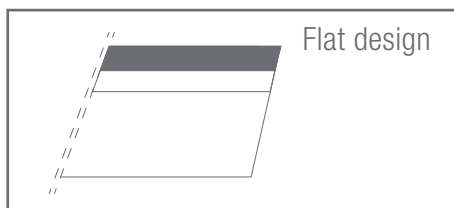
Cutting edge

Features of long cutting edge types



1S - FULL EDGE

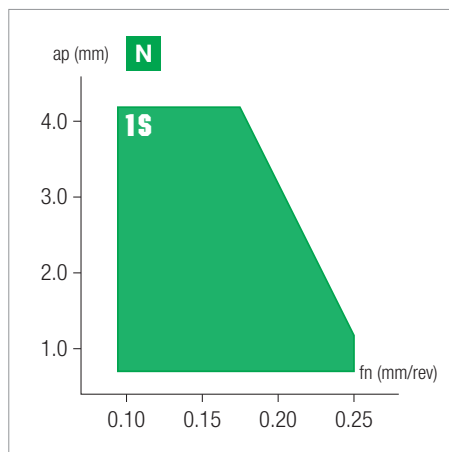
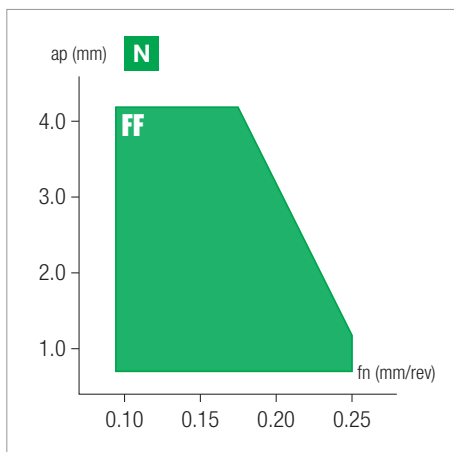
- Increased tip length allows higher depth of cut in comparison with conventional type
- Very common for long chamfering application
- Massima lunghezza del tagliente per maggiore profondità di taglio rispetto alle tipologie convenzionali
- Molto comune nelle applicazioni con lunghi smussi
- Größere Schnittkante für mehr Schnittiefe als bei herkömmlichen Typen
- Sehr gängig bei Anwendungen mit langen Fasen
- Longueur de pointe optimisée pour une plus grande profondeur de coupe par rapport aux types conventionnels
- Très courant dans les applications avec de longs chanfreins



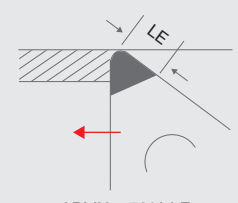
FF - FULL FACE

- Great cost effective solution due to multiple cutting edges available
- Maximum connection strength between PCD layer and carbide support
- Soluzione con costo/tagliente molto contenuto
- Massimo ancoraggio tra supporto in metallo duro e PCD
- Hervorragende kostengünstige Lösung durch Verfügbarkeit von mehreren Schneidkanten
- Maximale Verbindungskraft zwischen PCD-Schicht und Hartmetall-Grundmaterial
- Excellente solution économique grâce aux multiples arêtes de coupe disponibles
- Force de connexion maximale entre la couche PCD et le support en carbure

Application range - ISO 513



MAXIMUM ap



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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	-	-	-	-		

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

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

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

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

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

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

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

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

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

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

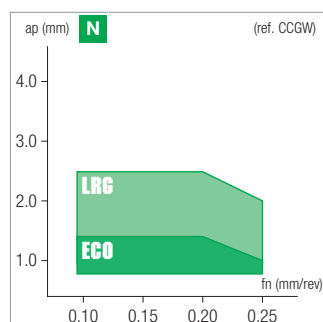
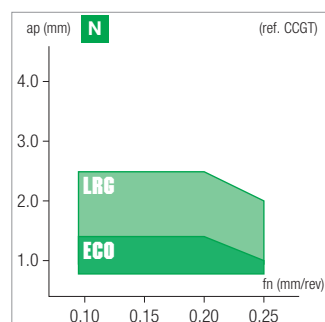
10	GRADE - grit size
xxx	diamond grit (µm)

ISO - with hole

- [illegible]

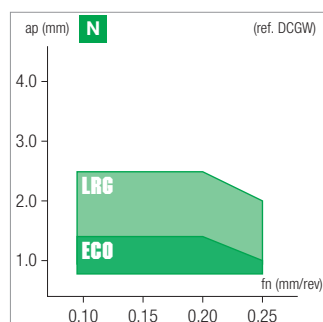
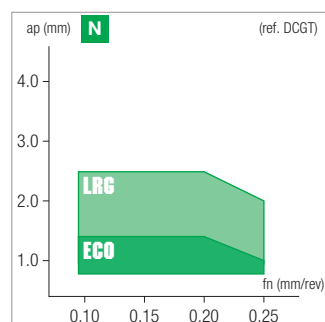
		Designation	RE	IC	S	D1	LE	Stock									
SLANT TIP	eco N S  7° tip angle	CCGT060202	0.20	6.35	2.38	2.8	2.8		●								
		CCGT060204	0.40	6.35	2.38	2.8	2.8	○	●		○						
		CCGT060208	0.80	6.35	2.38	2.8	2.7		○								
		CCGT09T302	0.20	9.525	3.97	4.4	2.8		●								
		CCGT09T304	0.40	9.525	3.97	4.4	2.8	⊙	●		○	○					
		CCGT09T308	0.80	9.525	3.97	4.4	2.7	○	●		○	○					
		CCGT120404	0.40	12.7	4.76	5.5	2.8		●								
		CCGT120408	0.80	12.7	4.76	5.5	2.7		○								
SLANT TIP	LRG N  large tip 7° tip angle	CCGT060204-LRG	0.40	6.35	2.38	2.8	3.2		○								
		CCGT09T304-LRG	0.40	9.525	3.97	4.4	4.3		⊙								
		CCGT09T308-LRG	0.80	9.525	3.97	4.4	4.2		●								
		CCGT120404-LRG	0.40	12.7	4.76	5.5	4.3		○								
		CCGT120408-LRG	0.80	12.7	4.76	5.5	4.2		○								
FLAT TIP	eco N S  7° tip angle	CCGW060202	0.20	6.35	2.38	2.8	2.8	○	●		○						
		CCGW060204	0.40	6.35	2.38	2.8	2.8		⊙	●		⊙					
		CCGW060208	0.80	6.35	2.38	2.8	2.7	○	○		○						
		CCGW09T302	0.20	9.525	3.97	4.4	2.8		●								
		CCGW09T304	0.40	9.525	3.97	4.4	2.8	●	●		○	⊙					
		CCGW09T308	0.80	9.525	3.97	4.4	2.7	⊙	●		○	⊙					
		CCGW120404	0.40	12.7	4.76	5.5	2.8	○	○		○						
		CCGW120408	0.80	12.7	4.76	5.5	2.7	○	○		○						
FLAT TIP	LRG N  large tip	CCGW060204-LRG	0.40	6.35	2.38	2.8	3.2		○								
		CCGW09T304-LRG	0.40	9.525	3.97	4.4	4.3		●								
		CCGW09T308-LRG	0.80	9.525	3.97	4.4	4.2		○								
		CCGW120404-LRG	0.40	12.7	4.76	5.5	4.3		●								
		CCGW120408-LRG	0.80	12.7	4.76	5.5	4.2		○								

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



DC		DP: Polycrystalline diamond																			
ISO - with hole																					
- 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																			
SLANT TIP	eco N S	Designation	RE	IC	S	D1	LE	Stock													
								●													
7° tip angle		DCGT070202	0.20	6.35	2.38	2.8	2.5	●													
		DCGT070204	0.40	6.35	2.38	2.8	2.4	●													
		DCGT070208	0.80	6.35	2.38	2.8	2	⊙													
		DCGT11T302	0.20	9.525	3.97	4.4	2.5	●													
		DCGT11T304	0.40	9.525	3.97	4.4	2.4	○ ●		○	○										
		DCGT11T308	0.80	9.525	3.97	4.4	2	○ ●		○	○										
SLANT TIP	LRG N	DCGT070204-LRG	0.40	6.35	2.38	2.8	2.9	○													
		DCGT11T304-LRG	0.40	9.525	3.97	4.4	3.9	●													
		DCGT11T308-LRG	0.80	9.525	3.97	4.4	3.5	●													
FLAT TIP	eco N S	DCGW070202	0.20	6.35	2.38	2.8	2.5	⊙ ●		○											
		DCGW070204	0.40	6.35	2.38	2.8	2.4	○ ●		○											
		DCGW070208	0.80	6.35	2.38	2.8	2	○ ○		○											
		DCGW11T302	0.20	9.525	3.97	4.4	2.5	○ ●		○											
		DCGW11T304	0.40	9.525	3.97	4.4	2.4	⊙ ●		●	○										
		DCGW11T308	0.80	9.525	3.97	4.4	2	● ●		○	○										
FLAT TIP	LRG N	DCGW070204-LRG	0.40	6.35	2.38	2.8	2.9	●													
		DCGW11T304-LRG	0.40	9.525	3.97	4.4	3.9	●													
		DCGW11T308-LRG	0.80	9.525	3.97	4.4	3.5	○													
		DCGW11T312-LRG	1.20	9.525	3.97	4.4	-												○		

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A192

CUTTING CONDITIONS p. A121

GRADES FEATURES p. A178

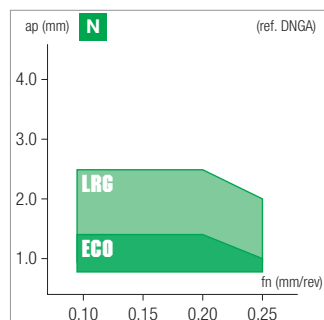
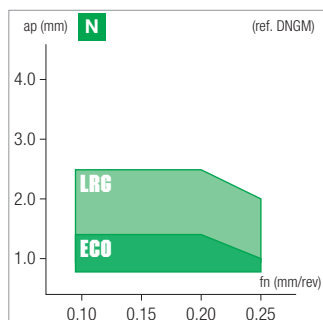
HOLDERS p. A255

ISO - with hole

- [illegible]

		Designation	RE	IC	S	D1	LE		Stock
SLANT TIP	eco 	DNGM150604	0.40	12.7	6.35	5.16	2.4	○	
		DNGM150608	0.80	12.7	6.35	5.16	2	○	
	7° tip angle								
SLANT TIP	LRG 	DNGM150604-LRG	0.40	12.7	6.35	5.16	3.9	○	
		DNGM150608-LRG	0.80	12.7	6.35	5.16	3.5	○	
	large tip 7° tip angle								
FLAT TIP	eco 	DNGA150604	0.40	12.7	6.35	5.16	2.4	○	
		DNGA150608	0.80	12.7	6.35	5.16	2	○	
FLAT TIP	LRG 	DNGA150604-LRG	0.40	12.7	6.35	5.16	3.9	○	
		DNGA150608-LRG	0.80	12.7	6.35	5.16	3.5	○	
	large tip								

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



MicroNega

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

DP: Polycrystalline diamond	DP
-----------------------------	----

DP

ND120

Stable machining,
light cut ☒ 1st choice ☐ suitable

General machining,
medium cut

Unstable machining, heavy cut	1 st choice suitable
----------------------------------	---

Dimensions

ISO

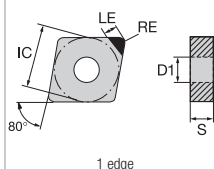
Vc(m/min) - suggested cutting speed range (bold: 1st choice)

p

K

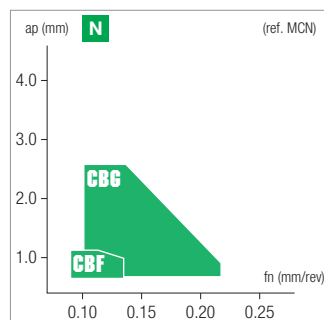
N

c

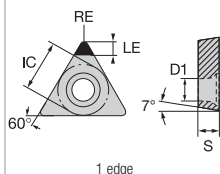


1 edge

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

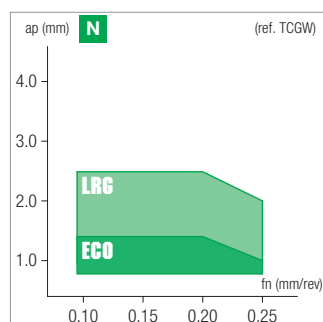
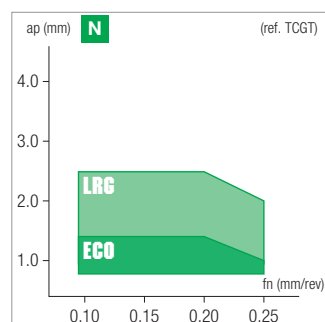


TC	DP: Polycrystalline diamond										DP	DP	DP	DP	DP																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Designation		RE	IC	S	D1	LE	Stock									
SLANT TIP	eco N	TCGT090202	0.20	5.56	2.38	2.5	2.6		○							
		TCGT090204	0.40	5.56	2.38	2.5	2.5		○							
		TCGT110202	0.20	6.35	2.38	2.8	2.6		○							
		TCGT110204	0.40	6.35	2.38	2.8	2.5		●							
		TCGT110208	0.80	6.35	2.38	2.8	2.2		○							
		TCGT16T304	0.40	9.525	3.97	4.4	2.5		○							
		TCGT16T308	0.80	9.525	3.97	4.4	2.2		○							
SLANT TIP	LRG N	TCGT110204-LRG	0.40	6.35	2.38	2.8	4		○							
		TCGT110208-LRG	0.80	6.35	2.38	2.8	3.7		○							
		TCGT16T304-LRG	0.40	9.525	3.97	4.4	4		○							
		TCGT16T308-LRG	0.80	9.525	3.97	4.4	3.7		○							
FLAT TIP	eco N S	TCGW090202	0.20	5.56	2.38	2.5	2.6		○							
		TCGW090204	0.40	5.56	2.38	2.5	2.5		●							
		TCGW110202	0.20	6.35	2.38	2.8	2.6		○							
		TCGW110204	0.40	6.35	2.38	2.8	2.5		⊙	●		○				
		TCGW110208	0.80	6.35	2.38	2.8	2.2		○	○		○				
		TCGW16T304	0.40	9.525	3.97	4.4	2.5		●	●						
		TCGW16T308	0.80	9.525	3.97	4.4	2.2		⊙	●		○				
FLAT TIP	LRG N	TCGW110204-LRG	0.40	6.35	2.38	2.8	4		○							
		TCGW110208-LRG	0.80	6.35	2.38	2.8	3.7		○							
		TCGW16T304-LRG	0.40	9.525	3.97	4.4	4		●							
		TCGW16T308-LRG	0.80	9.525	3.97	4.4	3.7		●							

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A192

CUTTING CONDITIONS p. A121

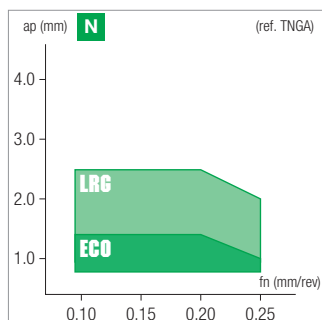
GRADES FEATURES p. A178

HOLDERS p. A255

ISO - with hole

- [illegible]

		Designation	RE	IC	S	D1	LE	Stock	
SLANT TIP	eco 	TNGM160404	0.40	9.525	4.76	3.81	2.5	●	
		TNGM160408	0.80	9.525	4.76	3.81	2	○	
 7° tip angle									
SLANT TIP	LRG 	TNGM160404-LRG	0.40	9.525	4.76	3.81	4	○	
		TNGM160408-LRG	0.80	9.525	4.76	3.81	3.7	○	
 large tip 7° tip angle									
FLAT TIP	eco 	TNGA160404	0.40	9.525	4.76	3.81	2.5	○	
		TNGA160408	0.80	9.525	4.76	3.81	2	○	
									
FLAT TIP	LRG 	TNGA160404-LRG	0.40	9.525	4.76	3.81	4	○	
		TNGA160408-LRG	0.80	9.525	4.76	3.81	3.7	○	
 large tip									

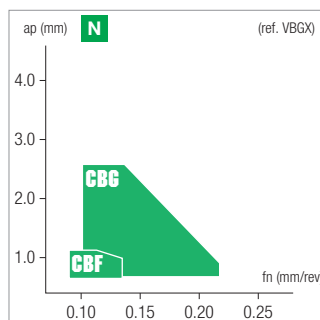
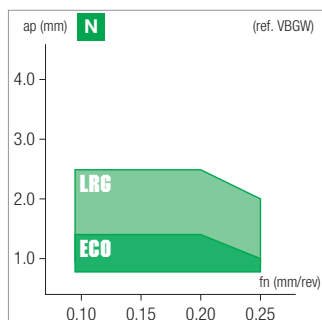


ISO - with hole

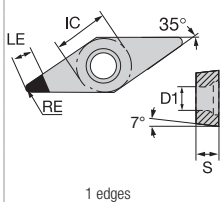
- [illegible]

		Designation	RE	IC	S	D1	LE					Stock	
SLANT TIP	eco N S 	VBGT110302	0.20	6.35	3.18	2.8	3		⊙		⊙		
		VBGT110304	0.40	6.35	3.18	2.8	2.5		○				
		VBGT160404	0.40	9.525	4.76	4.4	2.5	●	●		○	○	
		VBGT160408	0.80	9.525	4.76	4.4	2.2	⊙	●		⊙	○	
7° tip angle													
SLANT TIP	LRG N 	VBGT160404-LRG	0.40	9.525	4.76	4.4	4.5		●				
		VBGT160408-LRG	0.80	9.525	4.76	4.4	3.7		●				
large tip 7° tip angle													
FLAT TIP	eco N S 	VBGW110302	0.20	6.35	3.18	2.8	3	⊙	⊙		○		
		VBGW110304	0.40	6.35	3.18	2.8	2.5	○	⊙		○		
		VBGW160404	0.40	9.525	4.76	4.4	2.5	○	●		○	○	
		VBGW160408	0.80	9.525	4.76	4.4	2.2	○	○		○	○	
FLAT TIP	LRG N 	VBGW160404-LRG	0.40	9.525	4.76	4.4	4.5		●				
		VBGW160408-LRG	0.80	9.525	4.76	4.4	3.7		●				
large tip													
3D CHIPBREAKER	CBF N 	VBGX110302-CBF	0.20	6.35	3.18	2.8	5			▽			
		VBGX110304-CBF	0.40	6.35	3.18	2.8	4.5			▽			
		VBGX160404-CBF	0.40	9.525	4.76	4.4	4.5			▽			
finishing													

Figure 10 is a graph showing the relationship between ap (mm) on the y-axis and fn (mm/rev) on the x-axis. The y-axis ranges from 0 to 4.0 mm, and the x-axis ranges from 0.10 to 0.25 mm/rev. The graph is divided into three regions: N (dark green), LRG (medium green), and ECO (light green). The N region is a horizontal band at the top. The LRG region is a trapezoidal area below N. The ECO region is a trapezoidal area below LRG.

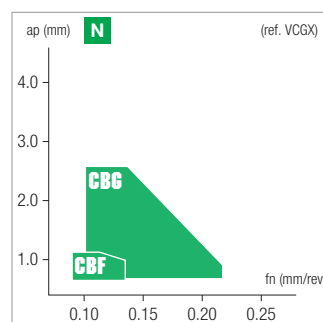
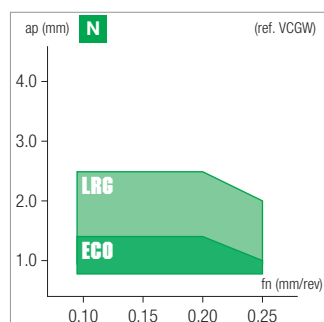
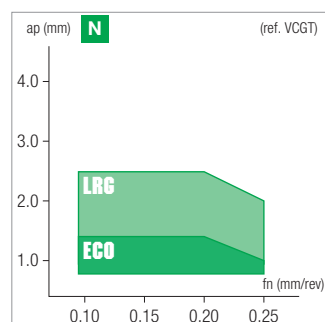


HOLDERS p. A255

VC	DP: Polycrystalline diamond																			
ISO - with hole																				
1st choice for complex 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																			
	General machining, medium cut																			
	Unstable machining, heavy cut																			
Dimensions										ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)									
 1 edges										P										
										M										
										K										
										N	400 2000	450 2400	350 800	400 1000	450 2400					
										S	40 100									
										H										

Designation					RE	IC	S	D1	LE	Stock									
SLANT TIP	eco N S		7° tip angle	VC GT110302	0.20	6.35	3.18	2.8	3	○	●								
				VC GT110304	0.40	6.35	3.18	2.8	2.5		○								
				VC GT160402	0.20	9.525	4.76	4.4	3		●								
				VC GT160404	0.40	9.525	4.76	4.4	2.5	○	●	⊙	○						
				VC GT160408	0.80	9.525	4.76	4.4	2.2	⊙	●	⊙	○						
SLANT TIP	LRG N		large tip 7° tip angle	VC GT160404-LRG	0.40	9.525	4.76	4.4	4.5		●								
				VC GT160408-LRG	0.80	9.525	4.76	4.4	3.7		⊙								
FLAT TIP	eco N S			VC GW110302	0.20	6.35	3.18	2.8	3	⊙	●								
				VC GW110304	0.40	6.35	3.18	2.8	2.5		●								
				VC GW160404	0.40	9.525	4.76	4.4	2.5	○	●	○	○						
				VC GW160408	0.80	9.525	4.76	4.4	2.2	⊙	○	○	○						
FLAT TIP	LRG N		large tip	VC GW110304-LRG	0.40	6.35	3.18	2.8	4.5		●								
				VC GW160404-LRG	0.40	9.525	4.76	4.4	4.5		●								
				VC GW160408-LRG	0.80	9.525	4.76	4.4	3.7		●								
				VC GW160412-LRG	1.20	9.525	4.76	4.4	3.3		○								
3D CHIPBREAKER	CBU N		universal use	VC GX110302-CBU	0.20	6.35	3.18	2.8	4.5					●					
				VC GX110304-CBU	0.40	6.35	3.18	2.8	4					●					
				VC GX160404-CBU	0.40	9.525	4.76	4.4	5					●					
				VC GX160408-CBU	0.80	9.525	4.76	4.4	4.4					●					

★ 1st choice, ☆ suitable, ● stock standard, ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A192

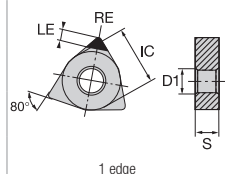
CUTTING CONDITIONS p. A121

GRADES FEATURES p. A178

HOLDERS p. A255

ISO - with hole

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



DP: Polycrystalline diamond

NP

ND100

Stable machining,
light cut

General machining, medium cut	 1 st choice  suitable
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Unstable machining, heavy cut	 1 st choice  suitable
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Dimensions

ISO

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

D

2

Designation

Stock

SLANT TIP

eco **N**

7° tip angle

SLANT TIP

LRG **N**

large tip

FLAT TIP

7	tip ang

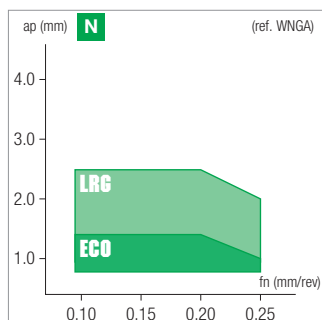
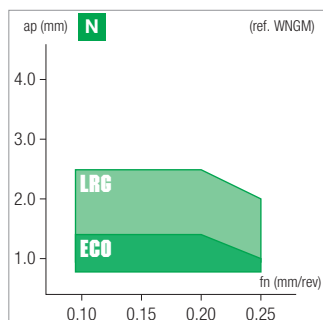


AT TIP	
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1



★ 1st choice. ☆ suitable. ● stock standard. ⊙ non-stock standard (no MOQ). ○ non-stock standard (MOQ). ▲ upcoming product. ▽ 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/ERGA)	○ 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									

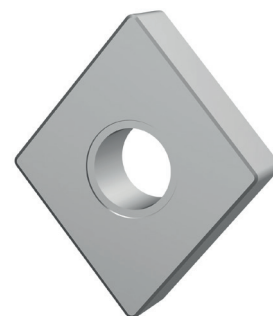
Complete workpiece materials p. M1.

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
CCGT060202	0.40	1.00	1.60	0.05	0.10	0.15
CCGT060204	0.40	1.00	1.60	0.10	0.15	0.20
CCGT060204-LRG	0.40	1.20	2.00	0.10	0.15	0.20
CCGT060208	0.40	1.00	1.60	0.15	0.20	0.25
CCGT09T302	0.40	1.00	1.60	0.05	0.10	0.15
CCGT09T304	0.40	1.00	1.60	0.10	0.15	0.20
CCGT09T304-LRG	0.40	1.20	2.00	0.10	0.15	0.20
CCGT09T308	0.40	1.00	1.60	0.15	0.20	0.25
CCGT09T308-LRG	0.40	1.50	2.60	0.10	0.15	0.20
CCGT120404	0.40	1.00	1.60	0.10	0.15	0.20
CCGT120404-LRG	0.40	1.20	2.00	0.10	0.15	0.20
CCGT120408	0.40	1.00	1.60	0.15	0.20	0.25
CCGT120408-LRG	0.40	1.50	2.60	0.10	0.15	0.20
CCGW060202	0.40	1.00	1.60	0.05	0.10	0.15
CCGW060204	0.40	1.00	1.60	0.10	0.15	0.20
CCGW060204-LRG	0.40	1.20	2.00	0.10	0.15	0.20
CCGW060208	0.40	1.00	1.60	0.15	0.20	0.25
CCGW09T302	0.40	1.00	1.60	0.05	0.10	0.15
CCGW09T304	0.40	1.00	1.60	0.10	0.15	0.20
CCGW09T304-LRG	0.40	1.20	2.00	0.10	0.15	0.20
CCGW09T308	0.40	1.00	1.60	0.15	0.20	0.25
CCGW09T308-LRG	0.40	1.50	2.60	0.10	0.15	0.20
CCGW09T308-FF	0.50	3.00	5.50	0.15	0.20	0.25
CCGW09T308-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-FF	0.50	3.00	5.50	0.15	0.20	0.25
CCGW09T308-LRG	0.40	1.50	2.60	0.10	0.15	0.20
CCGW120404	0.40	1.00	1.60	0.10	0.15	0.20
CCGW120404-LRG	0.40	1.20	2.00	0.10	0.15	0.20
CCGW120408	0.40	1.00	1.60	0.15	0.20	0.25
CCGW120408-LRG	0.40	1.50	2.60	0.10	0.15	0.20
CCGX060202-CBF	0.20	0.60	1.00	0.04	0.08	0.12
CCGX060202-CBU	0.20	1.50	2.80	0.04	0.08	0.12
CCGX060204-CBF	0.20	0.60	1.00	0.05	0.10	0.15
CCGX060204-CBG	0.40	1.20	2.00	0.10	0.15	0.20
CCGX060204-CBU	0.20	1.50	2.80	0.04	0.12	0.20
CCGX060204-1/8-1S	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
CCGX09T304-1/8-1S	0.50	3.00	5.50	0.10	0.15	0.20
CCGX09T308-CBG	0.50	1.50	2.50	0.15	0.20	0.25
CCGX09T308-CBU	0.20	1.50	2.80	0.08	0.18	0.26
CNGA120404	0.40	1.00	1.60	0.10	0.15	0.20
CNGA120404-LRG	0.40	1.20	2.00	0.10	0.15	0.20
CNGA120408	0.40	1.00	1.60	0.15	0.20	0.25
CNGA120408-LRG	0.40	1.50	2.60	0.10	0.15	0.20
CNGM120404	0.40	1.00	1.60	0.10	0.15	0.20
CNGM120404-LRG	0.40	1.20	2.00	0.10	0.15	0.20
CNGM120408	0.40	1.00	1.60	0.15	0.20	0.25
CNGM120408-LRG	0.40	1.50	2.60	0.10	0.15	0.20
DCGT070202	0.40	1.00	1.60	0.05	0.10	0.15
DCGT070204	0.40	1.00	1.60	0.10	0.15	0.20
DCGT070204-LRG	0.40	1.20	2.00	0.10	0.15	0.20
DCGT070208	0.40	1.00	1.60	0.15	0.20	0.25
DCGT11T302	0.40	1.00	1.60	0.05	0.10	0.15
DCGT11T304	0.40	1.00	1.60	0.10	0.15	0.20
DCGT11T304-LRG	0.40	1.20	2.00	0.10	0.15	0.20
DCGT11T308	0.40	1.00	1.60	0.15	0.20	0.25
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

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
DCGW070204	0.40	1.00	1.60	0.10	0.15	0.20
DCGW070204-FF	0.50	2.00	3.50	0.10	0.15	0.20
DCGW070204-LRG	0.40	1.20	2.00	0.10	0.15	0.20
DCGW070208	0.40	1.00	1.60	0.15	0.20	0.25
DCGW11T302	0.40	1.00	1.60	0.05	0.10	0.15
DCGW11T304	0.40	1.00	1.60	0.10	0.15	0.20
DCGW11T304-FF	0.50	3.00	5.50	0.10	0.15	0.20
DCGW11T304-LRG	0.40	1.20	2.00	0.10	0.15	0.20
DCGW11T308	0.40	1.00	1.60	0.15	0.20	0.25
DCGW11T308-FF	0.50	3.00	5.50	0.15	0.20	0.25
DCGW11T308-LRG	0.40	1.50	2.60	0.10	0.15	0.20
DCGX070202-CBF	0.20	0.60	1.00	0.04	0.08	0.12
DCGX070202-CBU	0.20	1.50	2.80	0.04	0.08	0.12
DCGX070204-1/8-1S	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
DCGX11T304-1/8-1S	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
DCGX11T308-1/8-1S	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
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

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
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
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

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



TURNING - Ceramic

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Inserts range . A234
Parameters .A250

ISO 513		CERAMIC				
		Si ₃ N ₄	Al ₂ O ₃ MIXED	PVD COATED Al ₂ O ₃ MIXED	SiAlON	WHISKER
K	K01	NSN350	NAC200			
	K10					
	K20	NSN400	NSN450			
	K30					
S	S01					NWR700
	S10				NSA6000	NWR750
	S20				NSA650	
	S30					
H	H01		NAC200	NAC150		
	H10		NAC250			
	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 status. - La ceramica rivestita migliora la durata dell'utensile; la superficie gialla facilita il controllo dello stato di usura. - Die beschichtete Keramik verbessert die Standzeit des Werkzeugs; die gelbe Oberfläche dient zur Erkennung der Verschleißentwicklung. - La céramique revêtue améliore la durée de vie de l'outil ; la surface jaune permet d'identifier l'évolution de l'usure.
NAC200	Al ₂ O ₃ +TiCN	2.300	-	-	K K01 K20	- First choice for finishing of hardened steel and cast iron in stable conditions. - Prima scelta per finitura di acciai temprati e ghisa in condizioni di taglio stabili.
					H H01 H20	- Erste Wahl für die Feinbearbeitung von gehärteten Stählen und Gusseisen unter stabilen Schnittbedingungen. - Premier choix pour la finition d'aciers trempés et de fonte dans des conditions de coupe stables.
NAC250	Al ₂ O ₃ +TiC	2.100	-	-	H H10 H25	- Tough ceramic for general purpose applications with high reliability. - Ceramica tenace per impiego generico con elevata affidabilità. - Robuste Keramik für allgemeine Zwecke mit hoher Zuverlässigkeit. - Céramique tenace à usage générique d'une grande fiabilité.
NSN350	Si ₃ N ₄	1.700	-	-	K K05 K20	- High wear resistance for continuous cut applications at very high cutting speed. - Elevata resistenza all'usura per applicazioni con condizioni di taglio continuo ad alte velocità di taglio. - Hohe Verschleißfestigkeit für Anwendungen mit kontinuierlichen Schnittbedingungen bei hohen Schnittgeschwindigkeiten. - Haute résistance à l'usure pour applications avec des conditions de coupe continue à des vitesses de coupe élevées.
NSN400	Si ₃ N ₄	1.700	-	-	K K05 K30	- First choice for roughing of grey cast iron even with interrupted cut. - Prima scelta per sgrossatura di ghisa grigia anche con taglio interrotto. - Erste Wahl für das Schrappen von Grauguss, auch bei unterbrochenem Schnitt. - Premier choix pour le dégrossissage de la fonte grise, y compris en coupe interrompue.
NSN450	Si ₃ N ₄	1.600	-	-	K K20 K30	- Toughest silicon nitride grade for very difficult applications. - Il più tenace grado in nitrato di silicio per applicazioni molto difficili. - Die härteste Qualität aus Siliziumnitrid für sehr schwierige Anwendungen. - La nuance de nitrure de silicium la plus tenace pour applications très difficiles.

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GRADE	COMPOSITION	HARDNESS HV	COATING		APPLICATION	FEATURES
			TECHNOLOGY	COMPOSITION		
NWR700	Al ₂ O ₃ +SiC	2.100	-	-	S S01 S15	- Reinforced alumina ceramic with excellent flank and notch wear resistance, first choice for high speed stable machining of heat resistant super alloys. - Ceramica di allumina rinforzata con eccellente resistenza all'usura del fianco e dell'intaglio, prima scelta per lavorazioni stabili ad alta velocità di superleghe resistenti al calore. - Verstärkte Aluminiumoxidkeramik mit hervorragendem Flanken- und Schlitzverschleiß, die erste Wahl für die stabile Hochgeschwindigkeitsbearbeitung von hitzebeständigen Superlegierungen. - Céramique d'alumine renforcée dotée d'une excellente usure du flanc et de l'entaille, premier choix pour usinages stables à grande vitesse de superalliages résistants à la chaleur.
NWR750	Al ₂ O ₃ +SiC	2.100	-	-	S S05 S20	- Reinforced alumina ceramic with improved toughness, suitable even on heavy interrupted cut. - Ceramica di allumina rinforzata con elevata tenacità, applicabile anche con condizioni di taglio fortemente interrotto. - Verstärkte Aluminiumoxidkeramik mit verbesserter Robustheit, auch bei stark unterbrochenen Schnittbedingungen einsetzbar. - Céramique d'alumine renforcée à ténacité optimisée, applicable y compris dans des conditions de coupe très interrompue.
NSA6000	SiAlON	1.800	-	-	S S10 S30	- First choice for heat resistance super alloys (HRSA) machining with variable cutting conditions. Toughness and wear resistance are well-balanced. - Prima scelta per superleghe resistenti al calore (HRSA) in condizioni di taglio variabili. Buon bilanciamento fra tenacità e resistenza all'usura. - Erste Wahl für hitzebeständige Superlegierungen (HRSA) unter unterschiedlichen Schnittbedingungen. Gutes Verhältnis zwischen Robustheit und Verschleißfestigkeit. - Premier choix pour superalliages résistants à la chaleur (HRSA) dans des conditions de coupe variables. Bon équilibre entre ténacité et résistance à l'usure.
NSA650	SiAlON	1.700	-	-	S S15 S35	- Excellent thermal and shock resistance for severe applications on HRSA. - Eccellente resistenza termica e agli urti per applicazioni gravose su superleghe resistenti al calore (HRSA). - Hervorragende Hitze- und Zähigkeit für schwere Anwendungen mit hitzebeständigen Superlegierungen (HRSA). - Eccellente résistance thermique et aux chocs pour applications intensives sur superalliages résistants à la chaleur (HRSA).

ISO 513		nixkoTOOLS	CERAMTEC	ISCAR	KENAMETAL	KYOCERA	NTK	SANDVIK	TAEGUTEC	TUNGALOY	UNION	WALTER
K	K01 - K10	NSN350 NSN400	SL654C SL658C	IS6 IS8	KYK10	KS6015	SX6	CC6190 GC1690	AS500	FX105	SN500 SN600	WCK10
	K10 - K20	NSN400 NSN450	SL500 SL550C SL506 SL606	IS8 IS80	KY3500 KYK25	CS7050 KS6050	SX6	CC6190	AS500	CX710 FX105	NC400 SN300 SN400	WCK10
	K20 - K30	NSN450	SL508 SL608		KY3500	KS6050	SP9 SX9		AS10	CX710	SN300	
S	HRSA	S01 - S10	NWR700 NWR750			CF1	WA1 WA5	CC670	TC430		SW400 SW800	WWS20
		S10 - S20	NSA6000	LST320	IS25 IS9	KY4300 KYS25	SX7 SX3	CC6060 CC6160	TC3020	TS200	SN800	WIS10
		S20 - S30	NSA6000 NSA650	LST320	IS35	KY1540 KYS30	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.

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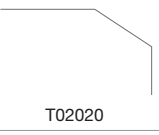
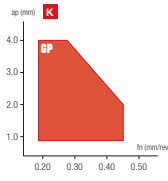
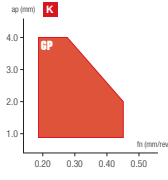
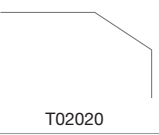
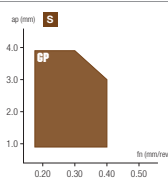
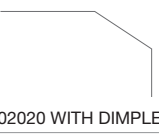
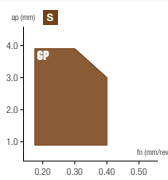
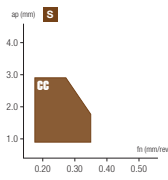
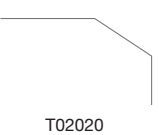
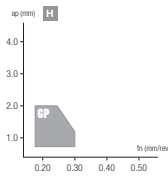
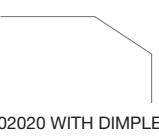
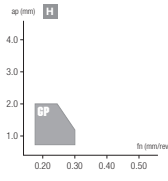
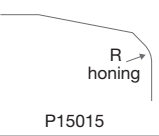
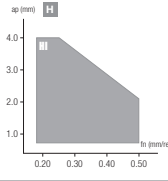
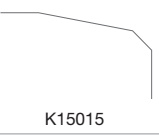
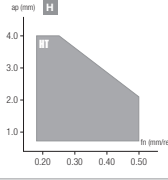
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NEGATIVE type with hole			C	D	S	T	V	W
			80°	55°	90°	60°	35°	80°
K	UNIVERSAL	GP T02020	 A235 SIZE 12 16	 A237 SIZE 15	 A242 SIZE 12	 A244 SIZE 16	 A247 SIZE 16	 A248 SIZE 08
	WIPER	WU T02020	 A235 SIZE 12					
S	UNIVERSAL	GP T02020	 A235 SIZE 12					
H	UNIVERSAL	GP T02020	 A235 SIZE 12 16	 A237 SIZE 15	 A242 SIZE 12	 A244 SIZE 16	 A247 SIZE 16	 A248 SIZE 08
		GS S01525 (NAC150) - S02020 (NAC200) R honing	 A235 SIZE 12	 A237 SIZE 15		 A244 SIZE 16	 A247 SIZE 16	
	SHARP	CC T01020	 A235 SIZE 12	 A237 SIZE 15	 A242 SIZE 12	 A244 SIZE 16	 A247 SIZE 16	 A248 SIZE 08
	WIPER	WU T02020	 A235 SIZE 12					

NEGATIVE type without hole			C	D	R	S	T	
								
			80°	55°	-	90°	60°	
K	UNIVERSAL	GP  T02020	 ap (mm) 4.0 3.0 2.0 1.0 0.20 0.30 0.40 0.50 fs (mm/min)	 A236  SIZE 12		 A240  SIZE 12	 A243  SIZE 12	 A245  SIZE 16
		GP  T02020 WITH DIMPLE	 ap (mm) 4.0 3.0 2.0 1.0 0.20 0.30 0.40 0.50 fs (mm/min)	 A236  SIZE 12		 A243  SIZE 12		
S	UNIVERSAL	GP  T02020	 ap (mm) 4.0 3.0 2.0 1.0 0.20 0.30 0.40 0.50 fs (mm/min)	 A236  SIZE 12		 A240  SIZE 12 19	 A243  SIZE 12	
		GP  T02020 WITH DIMPLE	 ap (mm) 4.0 3.0 2.0 1.0 0.20 0.30 0.40 0.50 fs (mm/min)	 A236  SIZE 12		 A243  SIZE 12		
	SHARP	CC  T01020	 ap (mm) 4.0 3.0 2.0 1.0 0.20 0.30 0.40 0.50 fs (mm/min)		 A240  SIZE 12			
H	UNIVERSAL	GP  T02020	 ap (mm) 4.0 3.0 2.0 1.0 0.20 0.30 0.40 0.50 fs (mm/min)	 A236  SIZE 12	 A238  SIZE 15	 A240  SIZE 12	 A243  SIZE 12	
		GP  T02020 WITH DIMPLE	 ap (mm) 4.0 3.0 2.0 1.0 0.20 0.30 0.40 0.50 fs (mm/min)	 A236  SIZE 12		 A243  SIZE 12		
	REINFORCED	HI  P15015	 ap (mm) 4.0 3.0 2.0 1.0 0.20 0.30 0.40 0.50 fs (mm/min)	 A236  SIZE 12		 A240  SIZE 12	 A243  SIZE 12 19	
		HT  K15015	 ap (mm) 4.0 3.0 2.0 1.0 0.20 0.30 0.40 0.50 fs (mm/min)		 A240  SIZE 12			

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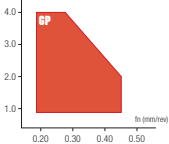
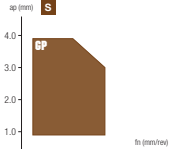
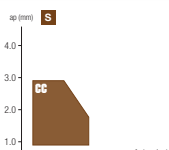
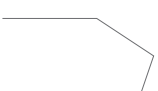
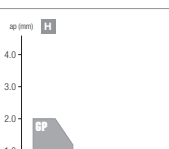
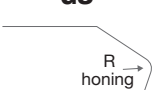
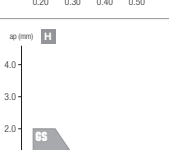
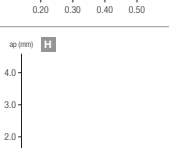
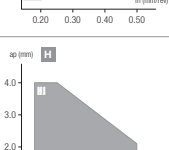
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POSITIVE type				C	R	S	T		
									
				80°	-	90°	60°		
K	UNIVERSAL	 T02020	 ap (mm) vs. fs (mm/min) graph for K	CC  A234 SIZE 09 12		SC  A241 SIZE 09 12	TP  A246 SIZE 11 16		
		 T02020	 ap (mm) vs. fs (mm/min) graph for S		RC  A239 SIZE 06 09 12				
S	UNIVERSAL	 T02020	 ap (mm) vs. fs (mm/min) graph for S		RC  A239 SIZE 06 09 12				
		 T01020	 ap (mm) vs. fs (mm/min) graph for S		RC  A239 SIZE 06 09 12				
H	UNIVERSAL	 T02020	 ap (mm) vs. fs (mm/min) graph for H		RC  A239 SIZE 06 09 12		TP  A246 SIZE 11 16		
		 S01525	 ap (mm) vs. fs (mm/min) graph for H		RC  A239 SIZE 06		TP  A246 SIZE 11 16		
	SHARP	 T01020	 ap (mm) vs. fs (mm/min) graph for H				TP  A246 SIZE 11 16		
		 RCGX09/12: P15015 RCGX15/19: P20015	 ap (mm) vs. fs (mm/min) graph for H		RC A239 SIZE 09 12 15 19				

CC

Edge preparation

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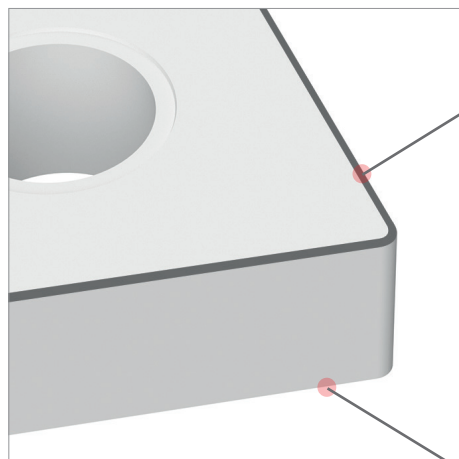
G - SPARE PARTS

- 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 with SiAlON (only round inserts) for HRSA machining
- Empfohlen für stabile und kontinuierliche Schnittbedingungen
 - Die scharfe Schneide reduziert Schnittkräfte und Gratbildung
 - Die Präparation der CC-Schneidkante (Continuous Cut) wird im Allgemeinen mit einer Mischung aus Keramik für gehärtete Stähle und SiAlON (nur für runde Wendeschneidplatten) für die Bearbeitung von hitzebeständigen Superlegierungen (HRSA) kombiniert
- Raccomandato per condizioni stabili di taglio continuo
 - Tagliente affilato che riduce forze di taglio e formazione di bave
 - La preparazione del tagliente CC (Continuous Cut) è generalmente combinata con ceramiche miste per acciai temprati e con SiAlON (solo per inserti rotondi) per lavorazione di superleghe resistenti al calore (HRSA)
- Recommandé pour des conditions stables de coupe continue
 - L'arête de coupe affûtée réduit les forces de coupe et la formation de bavures
 - La préparation de l'arête de coupe CC (Continuous Cut) est généralement associée à un mélange de céramiques pour aciers trempés et de SiAlON (pour inserts ronds uniquement) pour l'usinage de superalliages résistants à la chaleur (HRSA)

CC

Edge preparation

Features of CC edge preparation

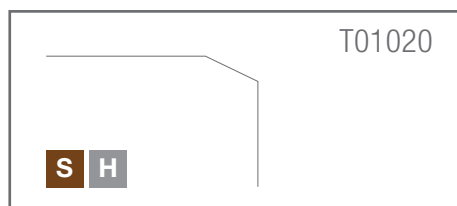


LOW CUTTING FORCE

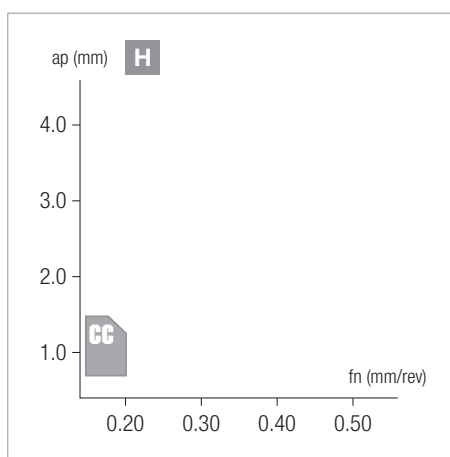
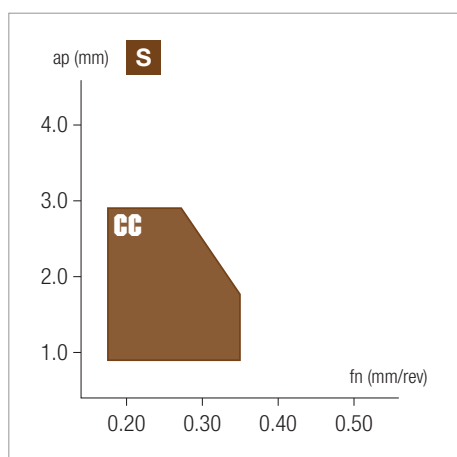
- The edge preparation has been optimized for low cutting forces action
- The chamfer width is 0.10 mm with an angle of 20° without round honing
- Preparazione del tagliente ottimizzata per azione con basse forze di taglio
- Larghezza smusso 0.10 mm con angolo di 20°, senza onatura
- Optimierte Präparation der Schneidkante für den Einsatz mit geringen Schneidkräften
- Fasenbreite 0,10 mm bei 20° Winkel, ohne Honen
- Préparation optimisée de l'arête de coupe pour une faible force de coupe
- Largeur de chanfrein 0,10 mm avec angle de 20°, sans rodage

BROAD RANGE

- Available in most common shapes and radii, both positive and negative
- Rompitruciolo positivi e negativi disponibili nelle più comuni forme e raggi
- Positive und negative Spanbrecher in den gängigsten Formen und Radien erhältlich
- Positive und negative Spanteiler in den gängigsten Formen und Radien erhältlich



Application range - ISO 513



CC SiAlON



- In combination with NSA grades must be considered the first choice for general purpose machining.
- Combinato con gradi NSA è da considerare prima scelta per impiego generico.
- Zusammen mit den NSA-Qualitäten die erste Wahl für den allgemeinen Einsatz.
- Combiné avec les qualités NSA, il est considéré comme le premier choix pour un usage générique.

GP/GS

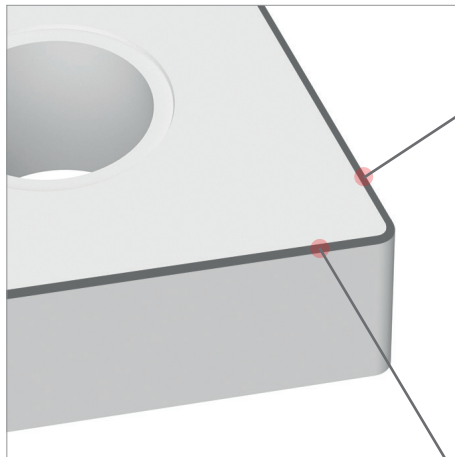
Edge preparation

- First choice for almost every kind of applications on cast iron (NSN series) and hardened steel (NAC series)
 - Sharp and tough edge for stable machining
 - 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
- Erste Wahl für nahezu alle Anwendungen mit Gusseisen (NSN-Serie) und gehärteten Stählen (NAC-Serie)
 - Ausgewogenes Verhältnis zwischen Schärfe und Robustheit
 - GP (Allzweck) ist in Kombination von 3 Keramikfamilien erhältlich: Siliziumnitrid, Whisker reinforced und Aluminiumoxid-Keramikmischung. GS (Allzweck mit Honen) nur in Verbindung mit der Serie NAC
- Prima scelta per quasi tutte le applicazioni su ghisa (serie NSN) e acciai temprati (serie NAC)
 - Buon bilanciamento tra taglienza e robustezza
 - GP (impiego generico) disponibile in combinazione di 3 famiglie di ceramica: nitrato di silicio, whisker reinforced e mix di ceramica di allumina. GS (impiego generico con onatura) combinato solo con serie NAC
- Premier choix pour la quasi totalité des applications sur fonte (série NSN) et aciers trempés (série NAC)
 - Bon équilibre entre affûtage et solidité
 - GP (usage générique) disponible en association avec 3 familles de céramiques : nitrure de silicium, whisker renforcé et mélange céramique alumine. GS (usage générique avec rodage) uniquement combiné avec la série NAC

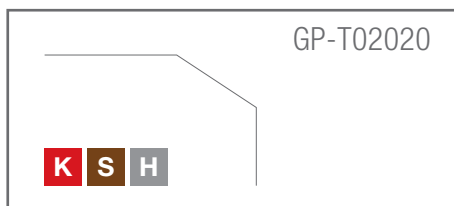
GP/GS

Edge preparation

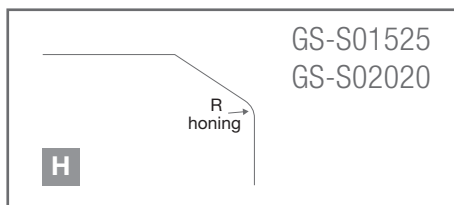
Features of “G” edge preparation

**GP - FIRST CHOICE**

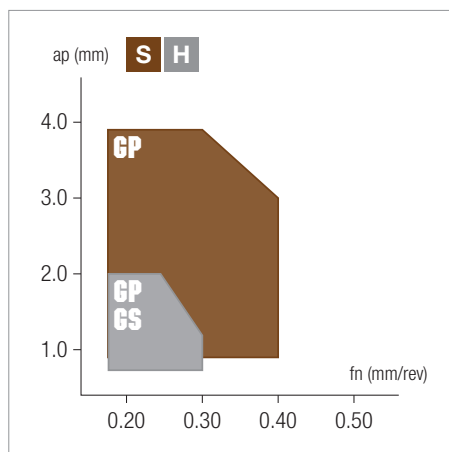
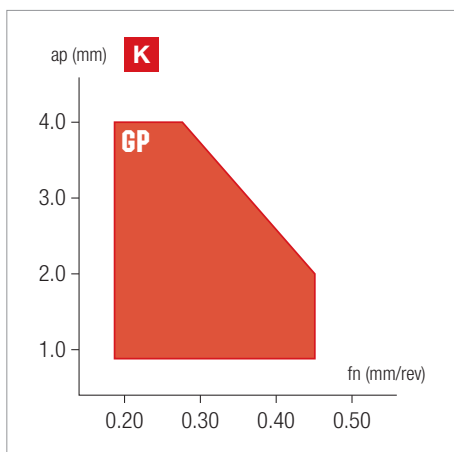
- Suitable from continuous to light interrupted cut. Guarantees reliable performances
- The most common chamfer shape is 0.20mm width and 20° angle.
- Adatto per condizioni di taglio da continuo a leggermente interrotto. Assicura prestazioni affidabili
- Larghezza smusso, nella maggior parte dei casi, di 0.20 mm con angolo di 20°
- Geeignet für kontinuierliche bis leicht unterbrochene Schnittbedingungen. Sorgt für zuverlässige Leistung
- Fasenbreite, in den meisten Fällen 0,20 mm bei 20° Winkel
- Convient aux conditions de coupe continue à légèrement interrompue. Garantit des performances fiables
- Largeur de chanfrein, dans la plupart des cas, 0,20 mm avec un angle de 20 °

**GS - STRENGTHEN THE EDGE**

- Same features of GP but with an additional reinforced honing
- Stesse caratteristiche di GP con addizionale con onatura di rinforzo
- Die gleichen Eigenschaften wie GP mit zusätzlichem verstärkenden Honen
- Mêmes caractéristiques que GP avec rodage de renfort



Application range - ISO 513

**ISO H FIRST CHOICE**

- In combination with NSA grades must be considered as first choice for general purpose machining.
- Combinato con gradi NSA è da considerare prima scelta per Impiego generico.
- Zusammen mit den NSA-Qualitäten die erste Wahl für den allgemeinen Einsatz.
- Combiné avec les qualités NSA, il est considéré comme le premier choix pour un usage générique.

HI

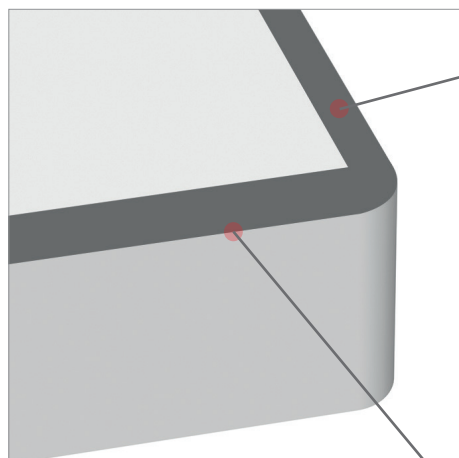
Edge preparation

- Edge geometry 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
- Angefaster Standard-Rand, verbunden mit einem breiten Fasenwinkel, für harte Schnittbedingungen ausgelegt
- Präparation der Schneidkante HI für die Bearbeitung harter Materialien, hauptsächlich in Verbindung mit der NAC-Serie erhältlich
- Häufig bei der Bearbeitung von Stahlwalzen verwendet
- Geometria del tagliente progettata per sopportare condizioni di taglio gravose
- Preparazione del tagliente HI focalizzata sulla lavorazione di materiali duri, disponibile principalmente in combinazione con la serie NAC
- Comunemente impiegato nella lavorazione di rulli in acciaio
- Bord biseauté standard lié à un grand angle de chanfrein, conçu pour résister à des conditions de coupe intenses
- Préparation du tranchant HI axée sur l'usinage de matériaux durs, principalement disponible en association avec la série NAC
- Couramment utilisé dans l'usinage de rouleaux en acier

HI

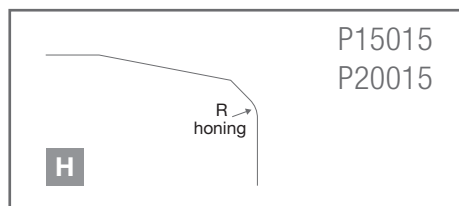
Edge preparation

Features of HI edge preparation



DOUBLE CHAMFER

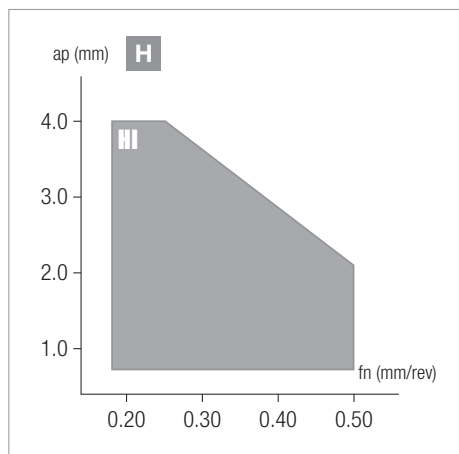
- Main chamfer size starts from 1,5 mm and can reach 2 mm for biggest inserts, with an angle of 15°
- Secondary chamfer width is 0.20 mm with an angle from 25° to 30°
- Dimensioni dello smusso da 1,5mm fino a 2mm negli inserti più grandi, con angolo di 15°
- Larghezza smusso secondario 0.20 mm con angolo da 25° a 30°
- Hauptfase von 1,5 mm bis 2 mm bei den größten Wendeschneidplatten, mit einem Winkel von 15°
- Sekundäre Fasenbreite 0,20 mm mit einem Winkel von 25° bis 30°
- Taille principale du chanfrein de 1,5 mm à 2 mm dans les inserts plus grands, avec un angle de 15°
- Chanfrein secondaire de 0,20 mm de largeur avec angle de 25° à 30°



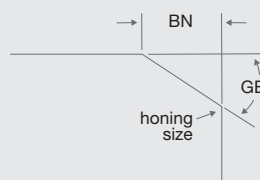
REINFORCING HONING

- As further reinforcement, the cutting edge honing has been increased compared to general purpose edge preparation
- Come rinforzo ulteriore, l'onatura del tagliente è stata incrementata rispetto alla preparazione del tagliente per impiego generico.
- Als zusätzliche Verstärkung wurde das Honen der Schneidkante im Vergleich zur Präparation der Allzweckschneidkante erhöht.
- En guise de renforcement supplémentaire, le rodage du tranchant a été augmenté par rapport à la préparation du tranchant destiné à un usage générique.

Application range - ISO 513



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.
- Tipologia con grande smusso generalmente combinata a inserti rotondi per i quali possiamo fornire anche soluzioni su misura. Esempio di tipologia HT: inserto tondo con geometria a doppio smusso senza onatura.

- Die großen Fasen werden gewöhnlich mit runden Wendeschneidplatten kombiniert, für die wir auch kundenspezifische Lösungen anbieten können. Beispiel für den HT-Typ: runde Wendeschneidplatten mit doppelt abgeschrägter Geometrie ohne Honen.
- Die großen Fasen werden gewöhnlich mit runden Wendeschneidplatten kombiniert, für die wir auch kundenspezifische Lösungen anbieten können. Beispiel für den HT-Typ: runde Wendeschneidplatten mit doppelt abgeschrägter Geometrie ohne Honen.

WU

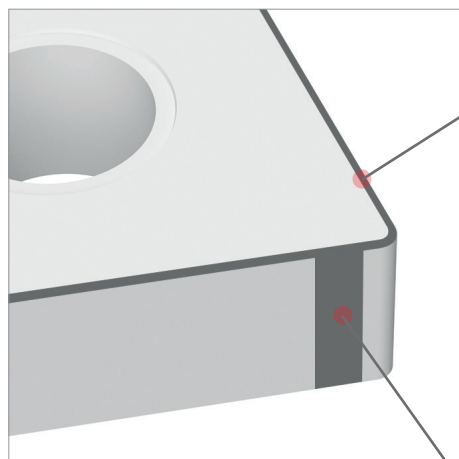
Edge preparation

- 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 grey cast iron and mixed alumina ceramic (NAC200) for hardened steel
 - Combined with standard 80° shapes (CNGA)
- Kann mit hohen Vorschüben zur Erhöhung der Produktivität oder mit Standardvorschüben für eine hervorragende Oberflächenqualität verwendet werden
 - WU-Wendescheidplatte erhältlich in Kombination mit der Qualität Siliziumnitrid (NSN400) und Aluminiumoxidkeramik (NAC) für gehärtete Stähle
 - Kombiniert mit Standard 80°-Formen (CNGA)
- Può essere impiegato con avanzamenti elevati per migliorare la produttività o con avanzamenti standard per raggiungere eccellente qualità superficiale
 - Tagliente WU raschiante disponibile in combinazione con grado in nitrato di silicio (NSN400) per ghisa grigia e ceramica di allumina mista (NAC) per acciai temprati
 - Combinato con forme standard 80° (CNGA)
- Il peut être employé à des avances élevées pour améliorer la productivité ou à des avances standards pour obtenir une excellente qualité de surface
 - Arête de coupe racleur WU disponible en association avec une nuance de nitrure de silicium (NSN400) et un mélange de céramique d'alumine (NAC) pour aciers trempés
 - Associé avec des formes standards 80 ° (CNGA)

WU

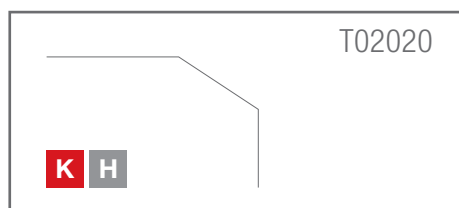
Edge preparation

Features of WU edge preparation



GENERAL PURPOSE

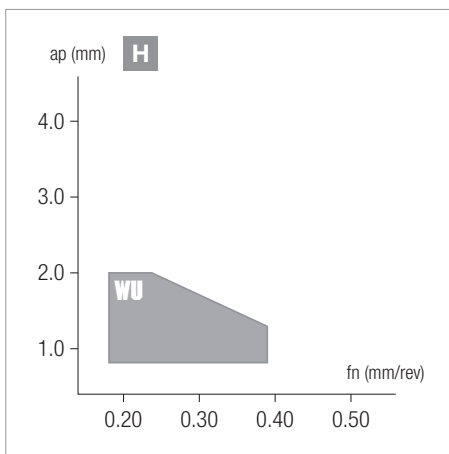
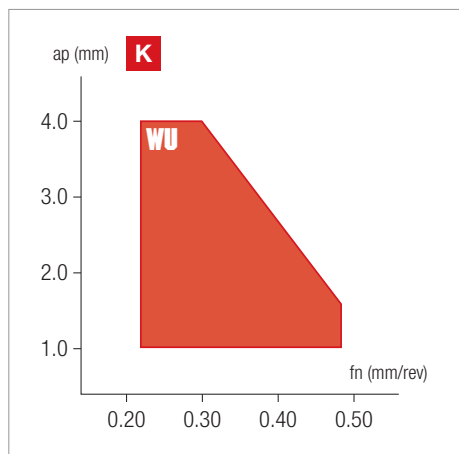
- Small T land chamfer without honing designed for low cutting forces and good accuracy
• The chamfer width is 0.2 mm with an inclination of 20°
- Smusso ridotto senza onatura per basse forze di taglio e buona accuratezza
• Larghezza smusso di 0.2 mm con inclinazione di 20°
- Kleine Fase der T-Fläche ohne Honen für geringe Schnittkräfte und gute Genauigkeit
• Fasenbreite von 0,2 mm bei 20° Neigung
- Petit biseautage sur plaquette en T sans rodage pour de faibles forces de coupe et une bonne précision
• Largeur de chanfrein de 0,2 mm avec inclinaison de 20 °



ARC WIPER

- A big arc at optimized position as wiper geometry instead of conventional straight wiper land, effectively reduces vibration and ensures better surface quality
- Grande arco in posizione ottimizzata come geometria raschiante al posto del convenzionale pianetto raschiante diritto per efficace riduzione delle vibrazioni e migliore qualità superficiale
- Großer Bereich in optimierter Position als Wendeschneidplattengeometrie anstelle der herkömmlichen geraden Schneidplatte für effektive Reduzierung von Vibrationen und verbesserte Oberflächenqualität
- Grand arc en position optimisée comme géométrie racleuse au lieu de la plaquette de racleuse droite conventionnelle pour une réduction efficace des vibrations et une qualité de surface optimisée

Application range - ISO 513



NOT ONLY FOR FINISHING



- The wiper edge design can create better surface quality at medium or higher feed cutting conditions
- Quando è usato in condizioni di taglio con avanzamenti medi o elevati, il design del tagliente raschiante realizza una migliore qualità superficiale.
- Beim Einsatz unter Schnittbedingungen mit mittleren oder großen Vorschüben sorgt das Design der Wendeschneidplatte für eine bessere Oberflächenqualität.
- Si utilisée dans des conditions de coupe à avance moyenne ou élevée, la conception du tranchant racleur permet d'obtenir une meilleure qualité de surface.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

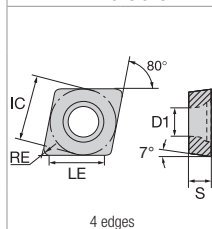
CC

ISO - with hole

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

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

Dimensions



ISO

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

P

M

K

N

S

H

400

1000

Designation

RE

IC

S

D1

LE

Stock

UNIVERSAL

GP



CCGW09T308-GP

0.80

9.525

3.97

4.4

8.9

○

CCGW09T312-GP

1.20

9.525

3.97

4.4

8.5

○

CCGW120408-GP

0.80

12.7

4.76

5.5

12.1

○

CCGW120412-GP

1.20

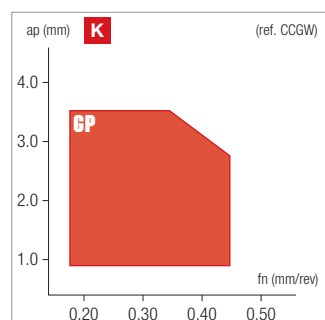
12.7

4.76

5.5

11.7

○

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

PRODUCT SELECTION p. A232

CUTTING CONDITIONS p. A250

GRADES FEATURES p. A216

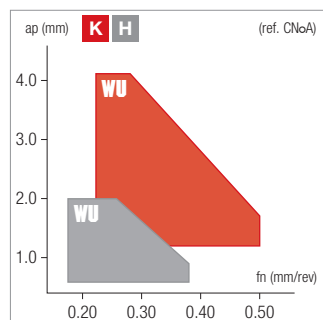
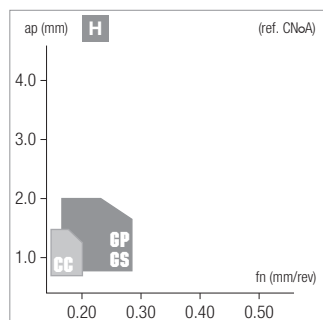
HOLDERS p. A255

ISO - with hole

- [illegible]

		Designation	RE	IC	S	D1	LE	Stock									
UNIVERSAL	GP 	CNGA120404-GP	0.40	12.7	4.76	5.16	12.5		●								
		CNGA120408-GP	0.80	12.7	4.76	5.16	12.1		●	●	●						
		CNGA120412-GP	1.20	12.7	4.76	5.16	11.7		●	●	○		⊙				
		CNGA120416-GP	1.60	12.7	4.76	5.16	-		⊙								
		CNGA160612-GP	1.20	15.87	6.35	6.35	14.9		⊙								
		CNGA160616-GP	1.60	15.87	6.35	6.35	14.5		○								
		CNMA120408-GP	0.80	12.7	4.76	5.16	12.1					○	●	○			
		CNMA120412-GP	1.20	12.7	4.76	5.16	11.7					○	●	○			
		CNMA120416-GP	1.60	12.7	4.76	5.16	11.3					○	⊙	○			
		CNMA160612-GP	1.20	15.87	6.35	6.35	14.9						⊙				
CNMA160616-GP	1.60	15.87	6.35	6.35	14.5						⊙						
UNIVERSAL	GS 	CNGA120404-GS	0.40	12.7	4.76	5.16	12.5		●								
		CNGA120408-GS	0.80	12.7	4.76	5.16	12.1		●	●							
		CNGA120412-GS	1.20	12.7	4.76	5.16	11.7		●	○							
SHARP	CC 	CNGA120404-CC	0.40	12.7	4.76	5.16	12.5		○	●							
		CNGA120408-CC	0.80	12.7	4.76	5.16	12.1		●	●							
		CNGA120412-CC	1.20	12.7	4.76	5.16	11.7		○	○							
WIPER	WU 	CNGA120410-WU	1.00	12.7	4.76	5.16	11.9		○				⊙				

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

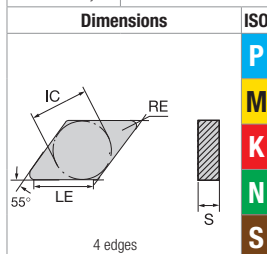


DN

ISO - without hole

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

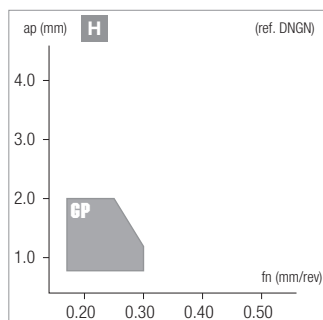
Stable machining, light cut	● 1 st choice ○ suitable
General machining, medium cut	● 1 st choice ○ suitable
Unstable machining, heavy cut	● 1 st choice ○ suitable



ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)															
P																
M																
K	400															
N	600															
S																
H	70															
	180															

Designation		RE	IC	S	D1	LE	Stock		
UNIVERSAL	GP 	DNGN150712-GP	1.20	12.7	7.94	-	14.3	○	
		DNGN150716-GP	1.60	12.7	7.94	-	13.9	○	

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A232

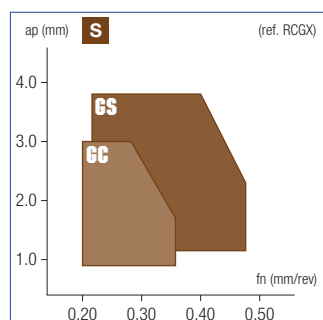
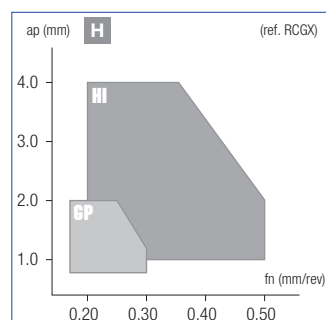
CUTTING CONDITIONS p. A250

GRADES FEATURES p. A216

HOLDERS p. A255

RC		CN: Silicon nitride CM: Mixed ceramic CC: Coated ceramic CR: Reinforced ceramic PVD: Physical vapor deposition		CC	CM	CM	CN	CR	CR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									</
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★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A232

CUTTING CONDITIONS p. A250

GRADES FEATURES p. A216

HOLDERS p. A255

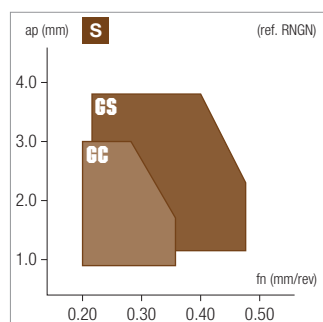
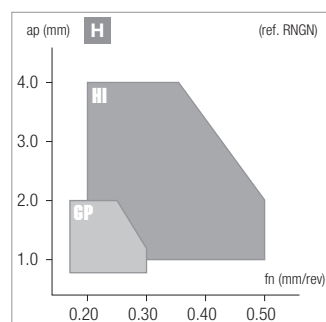
ISO - without hole

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

[illegible]

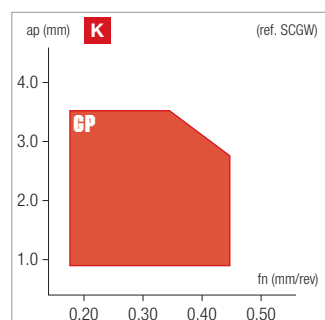
		Designation		RE	IC	S	D1	LE													Stock
UNIVERSAL	GP  	RNGN120400-GP	6.35	12.7	4.76	-	-		●							○	○				
		RNGN120700-GP	6.35	12.7	7.94	-	-	○	○	○	▽		▽	○	○	○					
		RNGN190700-GP	9.53	19.05	7.94	-	-									▽					
SHARP	CC  	RNGN120400-CC	6.35	12.7	4.76	-	-						●								
		RNGN120700-CC	6.35	12.7	7.94	-	-						●								
LOW FORCE	E  	RNGN120700E	6.35	12.7	7.94	-	-						○								
REINFORCED	HI  	RNGN120700-HI	6.35	12.7	7.94	-	-	●	●	●											
REINFORCED	HT  	RNGN120700-HT	6.35	12.7	7.94	-	-	⊙		⊙											

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



SC		CN: Silicon nitride		CN																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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★ 1st choice, ☆ suitable, ● stock standard, ○ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



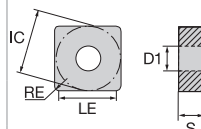
SN

ISO - with hole

- Very strong 90° corner with excellent economy (4 edges on positive inserts)
- Mostly used on roughing
- High radial forces push against the workpiece when used for turning
- Should always be used in a stable set-up

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

Dimensions



8 edges

CM

CN

MAC200

NSM400

ISO

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

P

M

K

N

S

H

400

600

400

180

400

1000

70

180

Designation

RE

IC

S

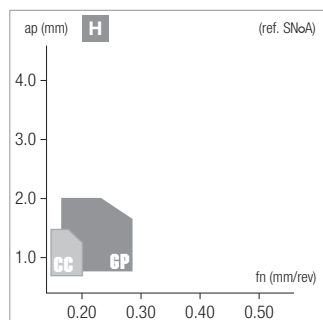
D1

LE

Stock

UNIVERSAL	GP	K H	SNGA120404-GP	0.40	12.7	4.76	5.16	12.3	●		
			SNGA120408-GP	0.80	12.7	4.76	5.16	11.9	●		
			SNGA120412-GP	1.20	12.7	4.76	5.16	11.5	●		
			SNMA120408-GP	0.80	12.7	4.76	5.16	11.9		●	
			SNMA120412-GP	1.20	12.7	4.76	5.16	11.5		●	
			SNMA120416-GP	1.60	12.7	4.76	5.16	11.1		○	
SHARP	CC	H	SNGA120404-CC	0.40	12.7	4.76	5.16	12.3	◎		
			SNGA120408-CC	0.80	12.7	4.76	5.16	11.9	○		
			SNGA120412-CC	1.20	12.7	4.76	5.16	11.5	○		

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A232

CUTTING CONDITIONS p. A250

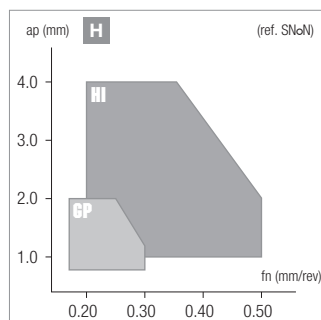
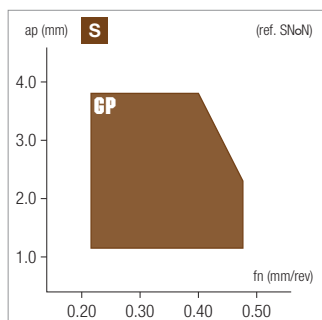
GRADES FEATURES p. A216

HOLDERS p. A255

ISO - without hole

- [illegible]

		Designation	RE	IC	S	D1	LE											Stock
UNIVERSAL	GP K S H 	SNGN120404-GP	0.40	12.7	4.76	-	-							▽				
		SNGN120408-GP	0.80	12.7	4.76	-	11.9							●				
		SNGN120412-GP	1.20	12.7	4.76	-	11.5						○	●	⊙	▽		
		SNGN120708-GP	0.80	12.7	7.94	-	11.9	⊙	●									
		SNGN120712-GP	1.20	12.7	7.94	-	11.5		●									
		SNGN120716-GP	1.60	12.7	7.94	-	11.1		○					⊙				
		SNMN120416-GP	1.60	12.7	4.76	-	11.1							⊙				
UNIVERSAL	GP K S H 	SNGX120708-GP	0.80	12.7	7.94	-	11.9		⊙									
		SNGX120712-GP	1.20	12.7	7.94	-	11.5		●									
		SNMX120712-GP	1.20	12.7	7.94	-	11.5						▲	○				
		SNMX120716-GP	1.60	12.7	7.94	-	11.1				▽	▲	●					
REINFORCED	HI H 																	
		SNGN120716-HI	1.60	12.7	7.94	-	11.1			○								
		SNGN120724-HI	2.40	12.7	7.94	-	10.3		○									
		SNGN190720-HI	2.00	19.05	7.94	-	-		⊙	⊙								



★ 1st choice. ☆ suitable. ● stock standard. ⊙ non-stock standard (no MOQ). ○ non-stock standard (MOQ). ▲ upcoming product. ▽ stock exhaustion



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

Complete workpiece materials p. M1.

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

Complete workpiece materials p. M1.

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

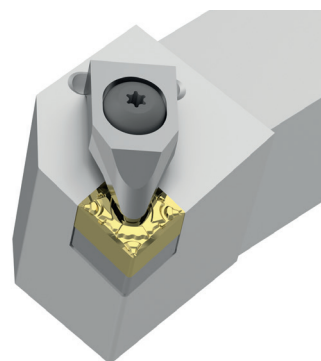
F - ACCESSORIES

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
CNMN120412-GP K	1.00	2.50	4.00	0.16	0.31	0.46
CNMN120416-GP K	1.00	2.50	4.00	0.18	0.33	0.48
CNMX120712-GP K	1.00	2.50	4.00	0.16	0.31	0.46
CNMX120716-GP K	1.00	2.50	4.00	0.18	0.33	0.48
DNGA150604-CC H	0.20	0.70	1.20	0.04	0.08	0.12
DNGA150604-GP H	0.40	1.20	2.00	0.06	0.14	0.22
DNGA150604-GS H	0.40	1.20	2.00	0.06	0.14	0.22
DNGA150608-CC H	0.20	0.70	1.20	0.05	0.10	0.15
DNGA150608-GP H	0.40	1.20	2.00	0.10	0.20	0.30
DNGA150608-GS H	0.40	1.20	2.00	0.10	0.20	0.30
DNGA150612-CC H	0.20	0.70	1.20	0.06	0.13	0.20
DNGA150612-GP H	0.40	1.20	2.00	0.12	0.23	0.34
DNGA150612-GS H	0.40	1.20	2.00	0.12	0.23	0.34
DNGA150616-GP H	0.40	1.20	2.00	0.14	0.26	0.38
DNGN150708-GP H	0.40	1.20	2.00	0.10	0.20	0.30
DNGN150712-GP H	0.40	1.20	2.00	0.12	0.23	0.34
DNGN150716-GP H	0.40	1.20	2.00	0.14	0.26	0.38
RCGX060600-CC S	1.00	1.50	2.00	0.18	0.28	0.38
RCGX060600-GS H	0.40	1.20	2.00	0.10	0.24	0.38
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

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
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
TNGN160708-GP K	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

DESIGNATION	DEPTH OF CUT			FEED RATE		
	ap (mm)			fn (mm/rev)		
	min	start	max	min	start	max
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



TURNING - Holders

Designation system .A256
Holders selection .A258
Clamping system details .A266
Boring bars features .A272
Holders range .A277

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

ACCORDING TO NIKKO STANDARD (OPTIONAL);
"CH" = COOL HOLDERS, HIGH PRESSURE COOLANT
HOLDERS.

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  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° 

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)
∞	

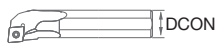
8	HOLDER LENGTH (LF)
Symbol	
F	80 mm
G	90 mm
H	100 mm
J	110 mm
K	125 mm
L	140 mm
M	150 mm
N	160 mm
P	170 mm
Q	180 mm
R	200 mm
X	NIKKO norm

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° 		

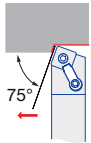
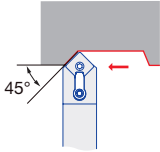
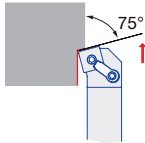
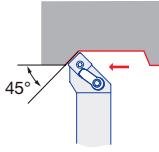
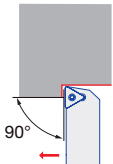
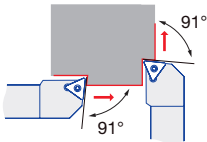
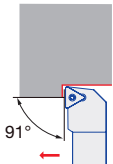
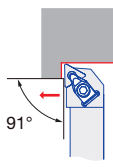
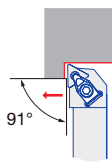
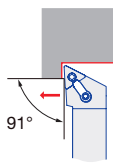
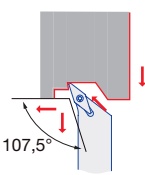
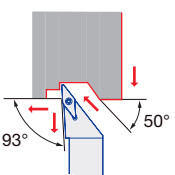
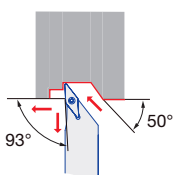
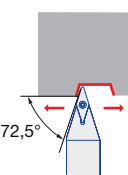
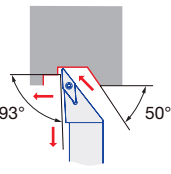
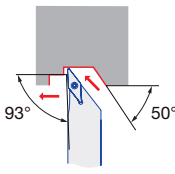
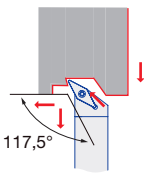
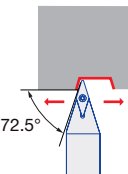
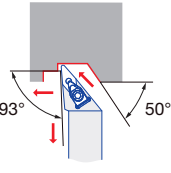
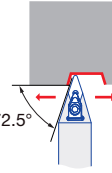
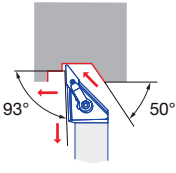
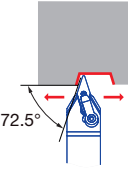
7	INSERT RELIEF ANGLE
B	5°
C	7°
D	15°
E	20°
N	0°
P	11°

8	DIRECTION
Symbol	Shape
L	
R	

9	INSERT SIZE
---	-------------

10	MINIMUM BORE DIAMETER (DMIN)
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CC _∞	SCAC A277	SCLC S A279	SCLC N A278	SCMC A280
CN _∞	DCLN A288	MCKN A289	MCLN A290	MCRN A291
CN _∞	PCLN A292			
DC _∞	SDAC A296	SDJC A297	SDJC N A298	SDNC A300
DN _∞	DDJN A310	MDJN A311	PDJN A312	
SC _∞	SSDC A323			

SNo	MSBN  A328	MSDN  A329	MSKN  A330	MSSN  A331
	STAC  A335	STFC  A336	STGC  A337	
	DTGN  A342	DTJN  A343	MTJN  A344	
	SVHB  A349	SVJB  A350	SVJB N  A351	SWB  A352
VCo	SVJC  A354	SVJC N  A355	SVPC  A356	SWC  A357
	DVJN  A362	DWN  A363	MVJN  A364	MVJN  A365

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INDEXABLE

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B - THREADING

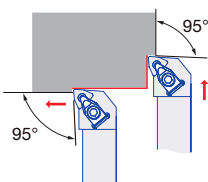
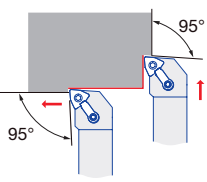
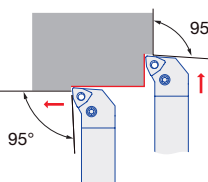
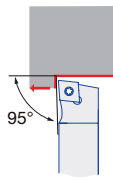
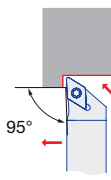
C - GROOVING

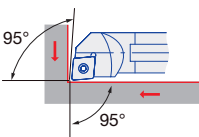
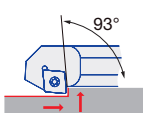
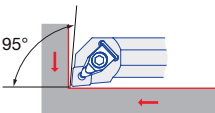
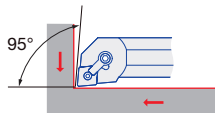
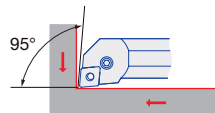
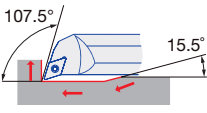
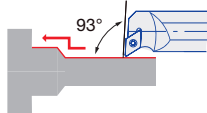
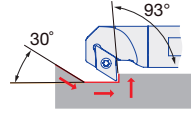
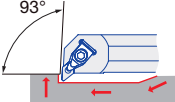
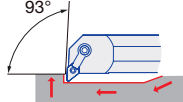
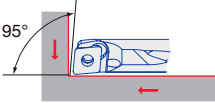
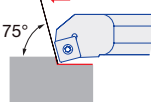
D - MILLING

E - DRILLING

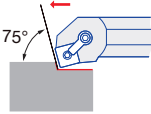
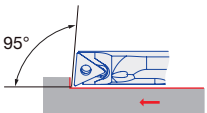
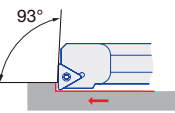
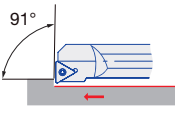
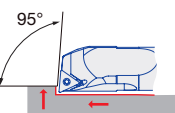
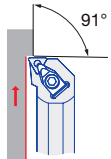
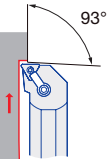
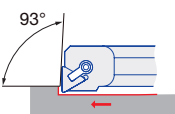
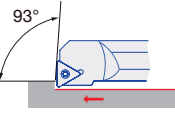
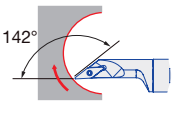
F - ACCESSORIES

G - SPARE PARTS

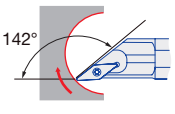
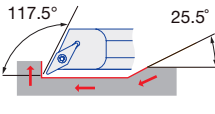
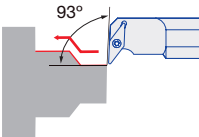
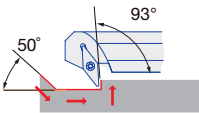
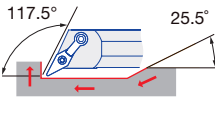
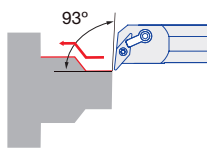
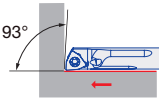
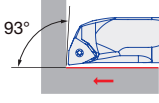
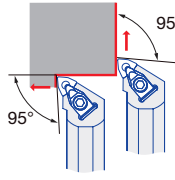
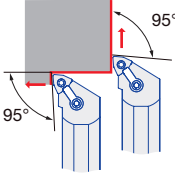
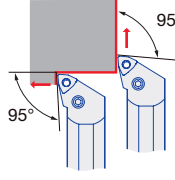
WN_∞	DWLN  A370	MWLN  A371	PWLN  A372	
	MCN  A317	MDN  A319		
MicroNega				

CC _∞	SCLC  DMIN: 8 mm A ☐ A281 E ☐ A283 S ☐ A284 V ☐ A286	SCZC  DMIN: 12 mm S ☐ A285	
	DCLN  DMIN: 32 mm A ☐ A293	MCLN  DMIN: 25 mm S ☐ A296	PCLN  DMIN: 32 mm A ☐ A294
DC _∞	SDQC  DMIN: 13 mm S ☐ A304 V ☐ A307	SDUC  DMIN: 13 mm A ☐ A302 E ☐ A303 S ☐ A305 V ☐ A308	SDZC  DMIN: 14 mm S ☐ A306 V ☐ A309
DN _∞	DDUN  DMIN: 32 mm A ☐ A313	MDUN  DMIN: 40 mm S ☐ A314	
MCC	MICRO-CC  DMIN: 5 mm E ☐ A315 V ☐ A316		
	SSKC  DMIN: 16 mm S ☐ A324		

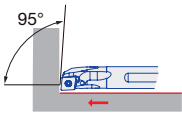
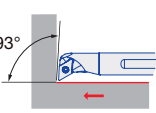
A Steel with coolant
E Carbide with coolant
S Steel without coolant
V Vortex with coolant

SN _∞	MSKN  DMIN: 25 mm S  A332		
TB _∞	STLB  DMIN: 7 mm V  A334	STUB  DMIN: 10 mm S  A333	
TC _∞	STFC  DMIN: 12 mm A  A338 E  A339 S  A340	STLC  DMIN: 14 mm V  A341	
TN _∞	DTFN  DMIN: 32 mm A  A345	MTUN  DMIN: 25 mm S  A346	
TP _∞	CTUP  DMIN: 16 mm S  A347	STUP  DMIN: 12 mm S  A348	
VB _∞	SVJB  DMIN: 25 mm V  A353		

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

VC _∞	SVJC  DMIN: 14 mm S  A358	SVQC  DMIN: 22 mm S  A359	SVUC  DMIN: 22 mm S  A360
	SVZC  DMIN: 30 mm S  A361		
VN _∞	MVQN  DMIN: 33 mm S  A366	MVUN  DMIN: 37 mm S  A367	
	SWUB  DMIN: 6 mm V  A368		
WC _∞	SWUC  DMIN: 14 mm V  A369		
	DWLN  DMIN: 32 mm A  A373	MWLN  DMIN: 22 mm S  A375	PWLN  DMIN: 30 mm A  A374

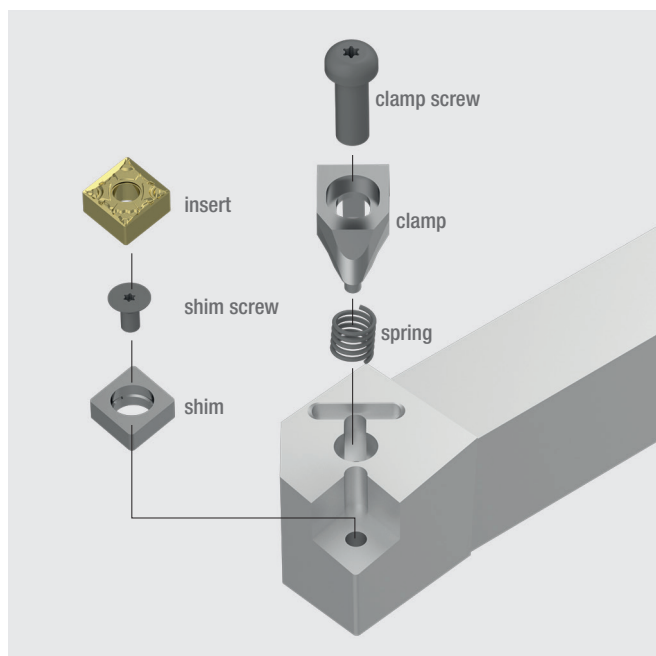
A Steel with coolant
E Carbide with coolant
S Steel without coolant
V Vortex with coolant

MicroNega	MCN	MDN	
	 DMIN: 10 mm	 DMIN: 15 mm	
	V  A318	V  A320	

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

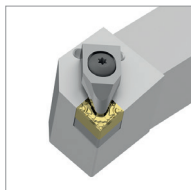
D CLAMPING

- Fast and reliable double clamping system
 - The insert is pushed down against the holder's seat with a single action.
 - Excellent repeatability and accuracy thanks to the strong clamping forces that assure a perfect contact between shim and insert.
 - Optimized design to avoid chip interferences.
- Schnelles und zuverlässiges Doppelspannsystem
 - Die Wendschneidplatte wird in einem Arbeitsgang nach unten und gegen die Aufnahme gedrückt.
 - Hervorragende Wiederholbarkeit und Genauigkeit durch hohe Spannkraften, die den perfekten Kontakt zwischen Ausgleichsstücken und Wendschneidplatte gewährleisten.
 - Optimierte Ausführung zur Vermeidung von Spaninterferenzen.
- Doppio sistema di serraggio rapido e affidabile
 - L'inserto viene spinto verso il basso e contro la sede con una singola operazione.
 - Eccellenti ripetibilità e precisione grazie alla forza di serraggio che assicura perfetto contatto con il sotto-plachetta
 - Design ottimizzato per evitare interferenze del truciolo.
- Double système de serrage rapide et fiable
 - La plaquette est poussée vers le bas et contre le logement en une seule opération.
 - Excellente répétabilité et précision grâce à d'importantes forces de serrage qui assurent un contact parfait entre l'assise et la plaquette.
 - Conception optimisée pour éviter les bourrages copeaux.

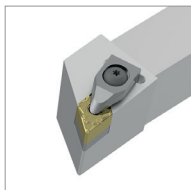


D CLAMPING

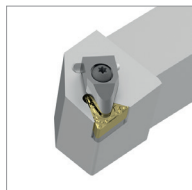
EXTERNAL



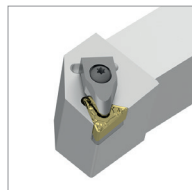
DCLN (CN ∞)



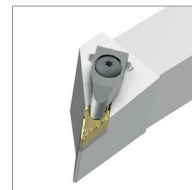
DDJN (DN ∞)



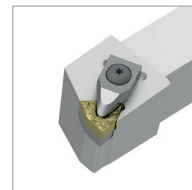
DTGN (TN ∞)



DTJN (TN ∞)

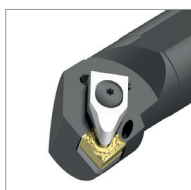


DVJN (VN ∞)



DWLN (WN ∞)

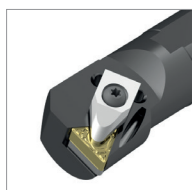
INTERNAL



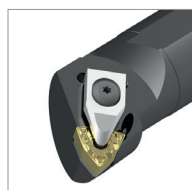
A DCLN (CN ∞)



A DDUN (DN ∞)



A DTFN (TN ∞)



A DWLN (WN ∞)

INDEXABLE

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D - MILLING

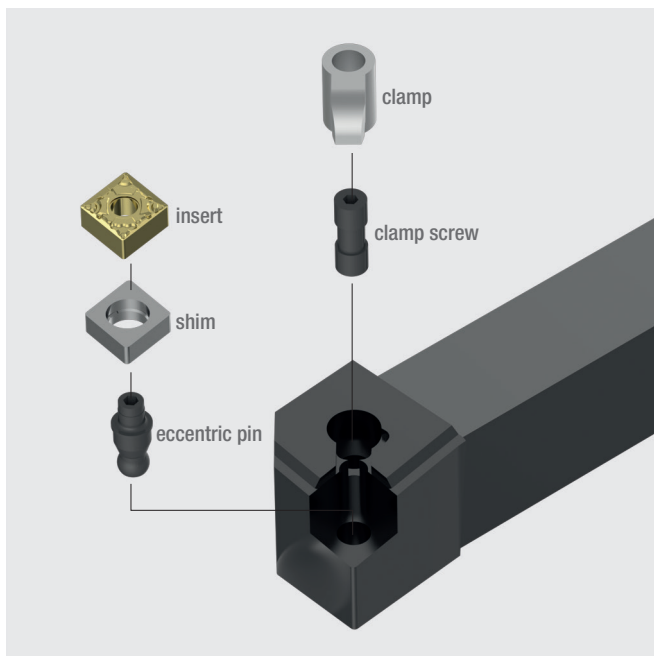
E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

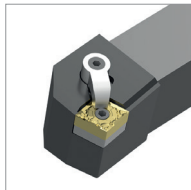
M CLAMPING

- Combination of top clamping and eccentric pin-lock.
 - Rigid clamping, perfect for ceramic and solid PCBN inserts.
 - Good solution for heavy machining, double clamping ensures the strenght to support strong stress.
 - If necessary, only for light-cut, can be used without top clamp.
- Kombination aus oberer Spannung und exzentrischem Sicherungsstift.
 - Starre Klemmung, perfekt für Keramik und Voll- PCBN- Wendeschneidplatten.
 - Diese hervorragende Lösung für die schwere Bearbeitung ist dank der doppelten Spannung sehr belastbar.
 - Kann bei Bedarf auch ohne obere Klemme verwendet werden, jedoch nur unter stabilen Schnittbedingungen.
- Combinazione di serraggio superiore e perno di bloccaggio eccentrico.
 - Serraggio rigido, perfetto per inserti in ceramica e inserti PCBN integrali.
 - Ottima soluzione per lavorazioni pesanti, il doppio serraggio assicura resistenza alle forti sollecitazioni.
 - Può essere usato senza staffa, se necessario, solo in condizioni di taglio stabili.
- Combinaison d'un serrage par bride sur le dessus et d'un pion de serrage exentrique
 - Serrage rigide, idéal pour plaquettes en Céramique et PCBN
 - Excellente solution pour l'usinage dure, le double serrage assure une résistance aux fortes sollicitations.
 - Peut être utilisé sans brides sur le dessus si nécessaire uniquement dans des conditions de coupe stables.

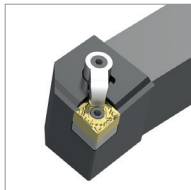


M CLAMPING

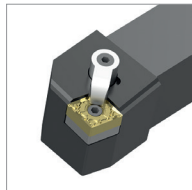
EXTERNAL



MCKN (CN₀₀)



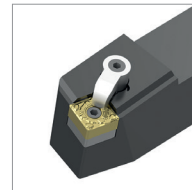
MCLN (CN₀₀)



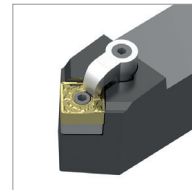
MCRN (CN₀₀)



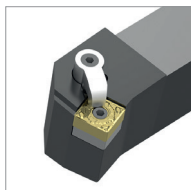
MDJN (DN₀₀)



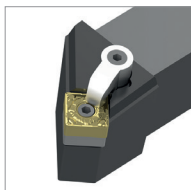
MSBN (SN₀₀)



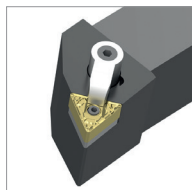
MSDNN (SN₀₀)



MSKN (SN₀₀)



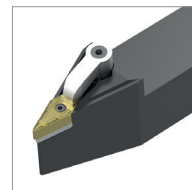
MSSN (SN₀₀)



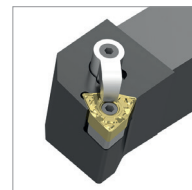
MTJN (TN₀₀)



MVJN (VN₀₀)



MVVNN (VN₀₀)



MWLN (WN₀₀)

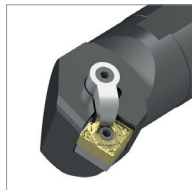
INTERNAL



S MCLN (CN₀₀)



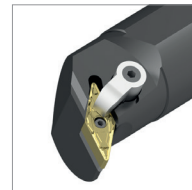
S MDUN (DN₀₀)



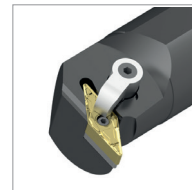
S MSKN (SN₀₀)



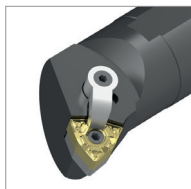
S MTUN (TN₀₀)



S MVQN (VN₀₀)



S MVUN (VN₀₀)



S MWLN (WN₀₀)

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

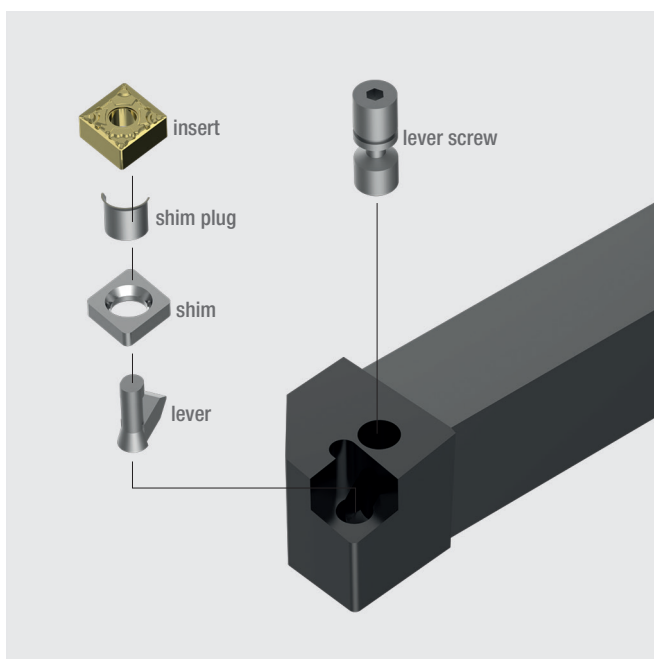
E - DRILLING

F - ACCESSORIES

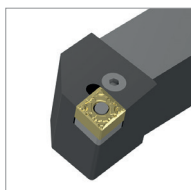
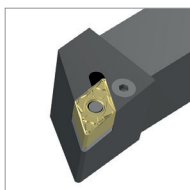
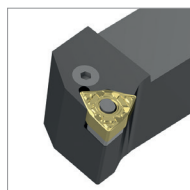
G - SPARE PARTS

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.
- Kostengünstige und einfach anzuwendende Lösung.
 - Empfohlen für Anwendungen mit stabilen bis mittleren Schnittbedingungen.
 - Die fehlende Klammer an der Oberseite sorgt für eine einwandfreie Abfuhr der Späne.
 - Schneller Austausch der Wendeschneidplatte.
- Soluzione economica e di facile impiego.
 - Raccomandato per applicazioni con condizioni di taglio da stabile a medie.
 - L'assenza della staffa evita potenziali interferenze nell'evacuazione dei trucioli.
 - Rapida sostituzione dell'inserto.
- Solution économique et simple d'utilisation
 - Recommandé pour des applications dans des conditions de coupe stables à moyennes.
 - L'absence de serrage sur la partie supérieure garantit une bonne évacuation des copeaux.
 - Changement rapide de la plaquette



EXTERNAL

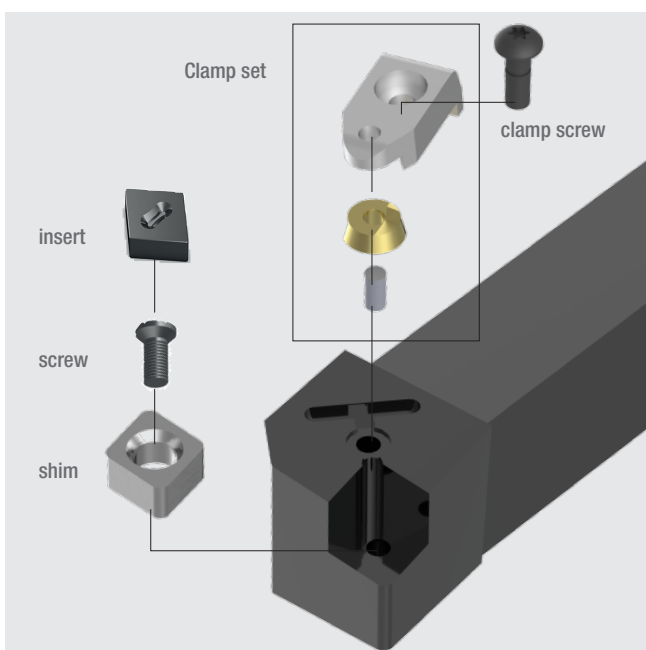
PCLN (CN ∞)PDJN (DN ∞)PWLN (WN ∞)

INTERNAL

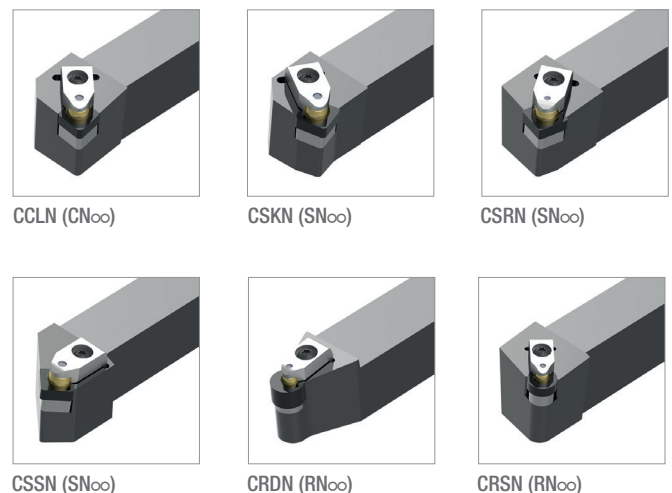
A PCLN (CN ∞)A PWLN (WN ∞)

ADVANCED TURNING HOLDERS

- Reliable clamping system for full solid CBN or ceramic insert, flat top, and with dimple
 - Clamp made of steel and with a carbide part for fixing the CBN/ ceramic inserts.
 - Highly wear-resistant carbide interface; it can maintain the same clamping precision and reliability throughout roughing processes and through repeated changing of CBN/ceramic inserts
 - The steel body of the clamp can effectively absorb vibrations from machining processes and protect the CBN/ceramic inserts
- Zuverlässiges Spannsystem für VOLL CBN-, Keramik-, Flat Top- und Wendepplatten mit Indexierungen
 - Die Klemmel besteht aus Stahl, mit einer VHM Spitze zur fixierung der CBN/Keramikplatte
 - Dieses Teil besteht aus verschleißfestem VHM, und kann die gleiche Genauigkeit, auch bei Schruppprozessen und ständigem Wechsel der Wendepplatte aus CBN/Keramik, garantieren
 - Der Stahlhalter kann auf optimaler Weise schwingungen dämpfen, und somit die CBN/Keramikplatte schützen
- Sistema di bloccaggio affidabile per inserti in CBN o ceramica, pieni, con superficie superiore piana e con fossetta.
 - Fissaggio in acciaio e con una porzione in metallo duro per il fissaggio degli inserti in CBN/ceramica.
 - Interfaccia in metallo duro altamente resistente all'usura; assicura la stessa precisione e affidabilità di bloccaggio nelle lavorazioni di sgrossatura e anche dopo ripetute sostituzioni degli inserti in CBN/ceramica.
 - Il corpo in acciaio assorbe efficacemente le vibrazioni derivanti dalle lavorazioni meccaniche e protegge gli inserti in CBN/ceramica.
- Système de serrage fiable pour plaquettes en CBN massif ou en céramique, à sommet plat et à alvéoles.
 - Pince en acier avec une partie en carbure pour la fixation des plaquettes CBN/céramique
 - Interface en carbure hautement résistante à l'usure ; elle peut maintenir la même précision de serrage et la même fiabilité tout au long des processus d'ébauche et lors des changements répétés des plaquettes CBN/céramique
 - Le corps en acier de la pince peut absorber efficacement les vibrations des processus d'usinage et protéger les plaquettes CBN/céramique



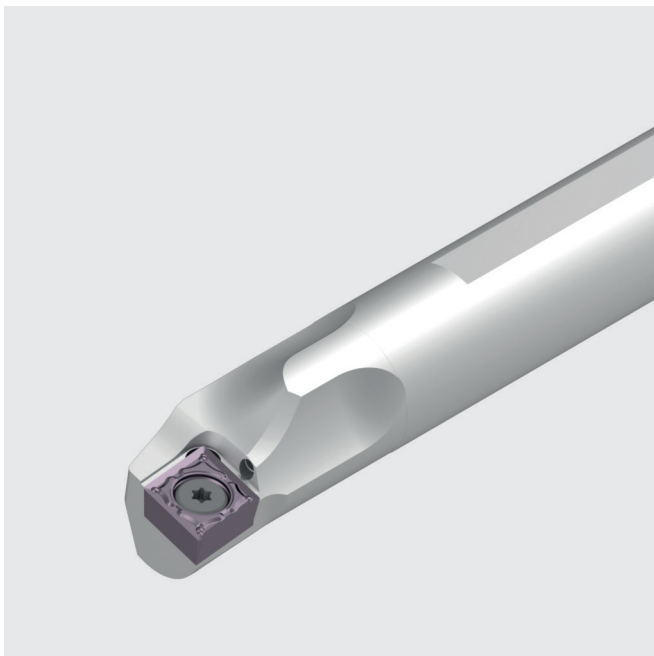
EXTERNAL



VORTEXBAR

Technology for internal machining

- Special 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 available on the whole line-up.
- Ausführung mit spezieller Schneidkante für hervorragende Spanabfuhr, verhindert das Festklemmen auch bei langen Spänen.
 - Hochwertiger Werkzeugstahl, der selbst bei großen Überkragungen (max. 5xD) Vibrationen reduziert.
 - Breites Angebot an Abmessungen und Geometrien zum Drehen, Ziehen, Profilieren und Gewindedrehen.
 - Alle Produkte sind mit internen Kühlkanälen erhältlich.
- Design esclusivo che permette un'ottima evacuazione anche nelle barenature di materiali a truciolo lungo.
 - Acciaio per utensili di alta qualità che riduce le vibrazioni anche con elevate sporgenze (max 5xD).
 - Ampia gamma di dimensioni e geometrie per tornitura, tornitura in tiro, profilatura e filettatura.
 - Intera gamma disponibile con refrigerazione interna.
- Conception spéciale pour une excellente évacuation des copeaux, évite le bourrage y compris avec de longs copeaux.
 - Acier à outil de haute qualité qui réduit les vibrations y compris avec de longs porte à faux (max 5xD).
 - Large gamme de dimensions et géométries pour le tournage, le tournage en tirant, l'usinage de gorges et le filetage.
 - Gamme complète disponible avec arrosage interne.

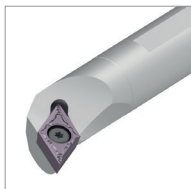


VORTEXBAR

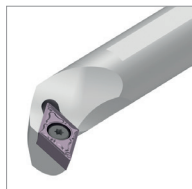
Technology for internal machining



V SCLC (CC ∞)



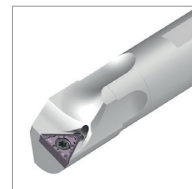
V SDQC (DC ∞)



V SDUC (DC ∞)



V SDZC (DC ∞)



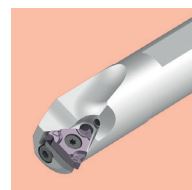
V STLC (TC ∞)



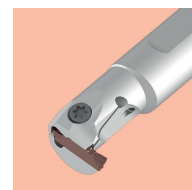
V SVJB (VB ∞)



V SWUC (WC ∞)



V SIR
Threading



NDB I
Grooving

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

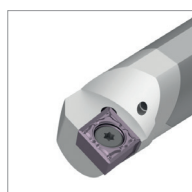
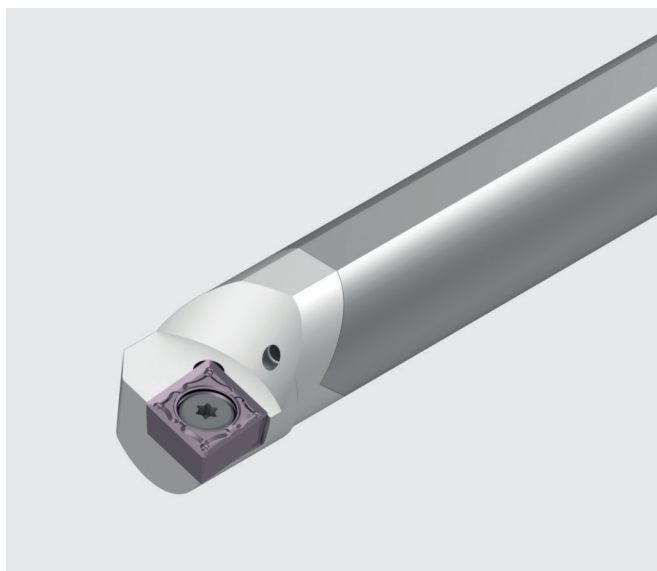
F - ACCESSORIES

G - SPARE PARTS

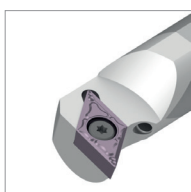
CARBIDE BAR

Technology for internal machining

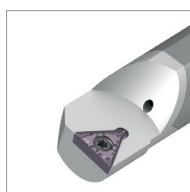
- High quality carbide boring bar for precision machining, prevents vibrations even with long overhang (max 7xD).
 - Excellent strength thanks to a very stable "V" shape brazing.
 - Suggested for precision machining when the highest standards of quality are required (surface finishing, hole accuracy, tool life).
 - Internal coolant channels available on the whole line-up.
- Qualitativ hochwertige Hartmetall-Bohrstange für Präzisionsbearbeitung, die selbst bei großem Übertragungen (max. 7xD) Vibrationen verhindert
 - Hervorragende Robustheit durch hochstabile V-förmige Lötung
 - Empfohlen für Präzisionsbearbeitungen, die höchste Qualitätsstandards erfordern (verbesserte Rauheit, Toleranzen und Standzeiten der Werkzeuge)
 - Alle Produkte sind mit internen Kühlkanälen erhältlich.
- Barra per barenatura in metallo duro di alta qualità per lavorazioni di precisione, previene le vibrazioni anche con elevate sporgenze (max 7xD)
 - Eccellente robustezza grazie alla brasatura con forma a "V" altamente stabile
 - Consigliato per lavorazioni di precisione che richiedono i più elevati standard di qualità (rugosità, tolleranze e vita utensile migliorate)
 - Intera gamma disponibile con canali di refrigerazione interna.
- Barre d'alésage en carbure de haute qualité pour usinages de précision, évite les vibrations y compris avec des porte à faux élevés (max 7xD)
 - Excellente robustesse grâce au brasage en forme de V très stable
 - Recommandé pour usinages de précision qui nécessitent les standards qualité les plus exigeants (rugosité, tolérances et durée de vie des outils améliorées)
 - Gamme complète disponible avec arrosage interne.



E SCLC (CCoo)



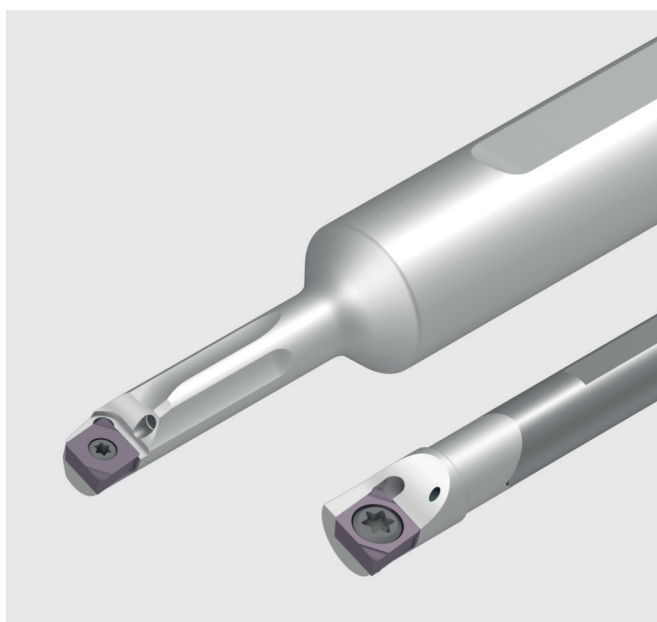
E SDUC (DCoo)



E STFC (TCoo)

MICROBORING

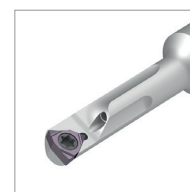
- Complete line-up of small tools for internal machining, starting from 5 mm hole diameter, with high precision ground inserts (carbide and advanced materials).
 - MicroVortex types combine high quality tool steel and advanced head design, reducing vibrations and reaching perfect chip evacuation.
 - Micro CC holder is available also in high quality carbide for most demanding applications (longer overhang and hardened material machining in combination with PCBN inserts)..
 - Internal coolant channels available on the whole line-up.
- Komplette Linie von kleinen Werkzeugen für die interne Bearbeitung, ab 5 mm Durchmesser, mit hochpräzisen Wendeschneidplatten (Hartmetall und innovative Materialien), die mechanisch eingespannt werden.
 - Der MicroVortex kombiniert hochwertige Werkzeuge und ein innovatives Kopfdesign, was Vibrationen reduziert und eine perfekte Spanabfuhr ermöglicht.
 - Der Micro CC-Werkzeughalter ist auch aus hochwertigem Hartmetall für schwierigere Anwendungen (große Überstände, Bearbeitung von harten Materialien) erhältlich.
 - Alle Produkte sind mit internen Kühlkanälen erhältlich.
- Linea completa di piccoli utensili per lavorazioni interne, a partire da diametro di 5 mm, con inserti rettificati precisi (metallo duro e materiali avanzati).
 - La tipologia MicroVortex combina utensili di elevata qualità e disegno avanzato della testa, che riducono le vibrazioni e consentono una perfetta evacuazione del truciolo.
 - Il portautensile Micro CC è disponibile anche in metallo duro di alta qualità per le applicazioni più gravose (elevate sporgenze, barenatura di materiali temprati in combinazione con inserti PCBN).
 - Intera gamma disponibile con canali di refrigerazione interna.
- Gamme complète de petits outils pour l'alésage, à partir du diamètre 5 mm, avec plaquettes rectifiées haute précision (carbure et matériaux avancés).
 - Le type MicroVortex combine des outils haute qualité et une conception avancée, qui réduisent les vibrations et permettent une parfaite évacuation des copeaux.
 - Le porte-outil Micro CC est également disponible en carbure de haute qualité pour les applications les plus difficiles (longs porte à faux, usinage de matériaux durs).
 - Gamme complète disponible avec arrosage interne.



VORTEX



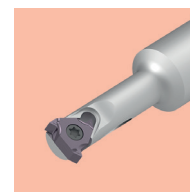
V MCC

V STLb (TB ∞)V SWUB (WB ∞)

CARBIDE

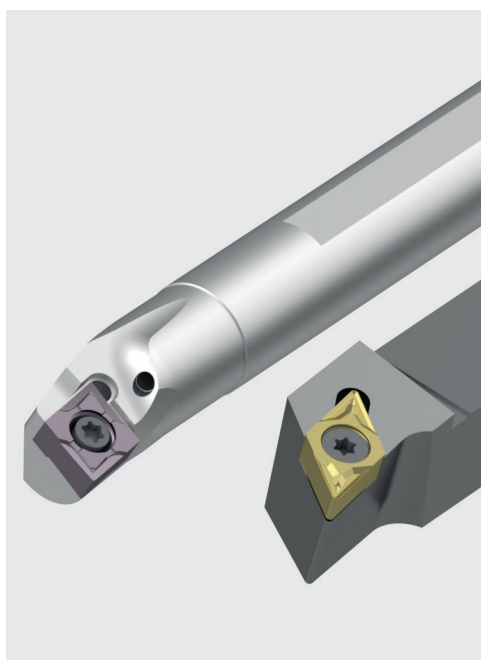


E MCC

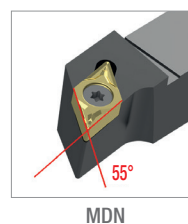
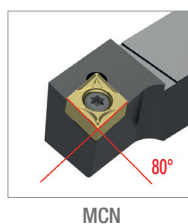
V SIR
Threading

MICRONEGA

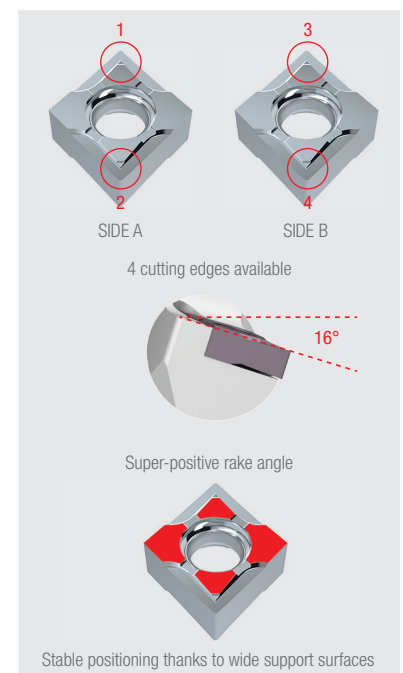
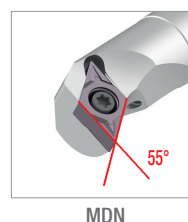
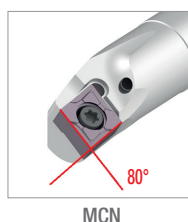
- Small negative as technical and economical alternative to positive inserts for external and internal turning operations.
 - From semi-finishing to medium machining, available both with economical sintered chipbreaker (GM) and precision ground type (SS) for higher accuracy and lower cutting force.
 - 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.
- Sistema di "mini" inserti negativi quale alternativa tecnica ed economica rispetto ai convenzionali inserti positivi per tornitura esterna ed interna.
 - Dalla semifinitura alla media asportazione, disponibile con rompitruciolo sinterizzato, più economico, (tipo GM) e nella versione rettificata (tipo SS) per lavorazioni precise e basse forze di taglio.
 - Portautensili per esterni di piccole dimensioni, per la lavorazione di piccoli particolari, senza offset della testa.
 - Barre di barenatura con tecnologia VORTEX che migliora l'evacuazione del truciolo grazie all'innovativo design della testa.
- Kleine negative Wendeschneidplatten als Alternative zu positiven Wendeschneidplatten für externe und interne Drehbearbeitungen.
 - Vom Schruppschlichten unter mittleren Schnittbedingungen, erhältlich in Ausführungen mit dem günstigeren gesinterten Spanbrecher (Typ GM) bis zum geschliffenen (Typ SS) für maximale Genauigkeit und geringe Schnittkräfte.
 - Werkzeughalter mit kleinen Außenabmessungen, für die Bearbeitung kleiner Details, ohne Kopfversatz.
 - Interne Bohrstangen mit VORTEX-Technologie, was die Spanabfuhr durch ein innovatives Kopfdesign verbessert.
- Petites plaquettes négatives comme alternative aux positives pour des opérations de tournage exter et inter.
 - De la semi-finition à la moyenne ébauche, disponibles dans les versions avec un brise-copeaux brut de frittage plus économique (type GM) aux versions rectifiées (type SS) pour une précision maximale et de faibles forces de coupe.
 - Porte-outils à encombrement réduit, pour l'usinage de petites pièces, sans déport de tête.
 - Barres d'alésage dotée de la technologie VORTEX qui améliore l'évacuation des copeaux grâce au design innovant de la tête.



EXTERNAL



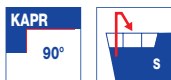
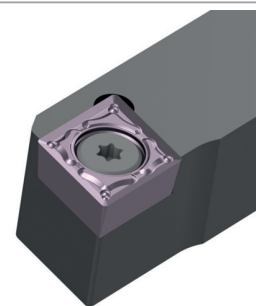
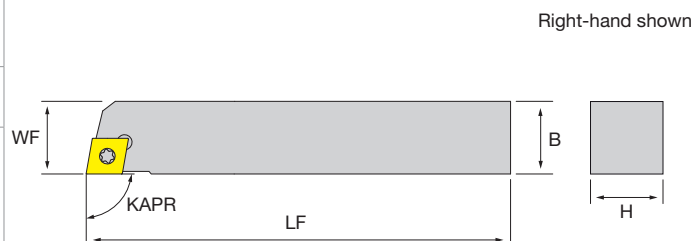
INTERNAL



SCAC

ISO CC - Positive

- External turning (KAPR 90°)
- Holds CC-style inserts, tightened by screw
- Suitable for lathes without offset



Designation	H	B	WF	LF	KAPR	MIID					Stock
LEFT-HAND											
NT-SCACL0808K06	8	8	8	125	90°	CC∞0602					●
NT-SCACL1010K06	10	10	10	125	90°	CC∞0602					●
NT-SCACL1212K06	12	12	12	125	90°	CC∞0602					●
NT-SCACL1212K09	12	12	12	125	90°	CC∞09T3					●
NT-SCACL1616K09	16	16	16	125	90°	CC∞09T3					●
RIGHT-HAND											
NT-SCACR0808K06	8	8	8	125	90°	CC∞0602					●
NT-SCACR1010K06	10	10	10	125	90°	CC∞0602					●
NT-SCACR1212K06	12	12	12	125	90°	CC∞0602					●
NT-SCACR1212K09	12	12	12	125	90°	CC∞09T3					●
NT-SCACR1616K09	16	16	16	125	90°	CC∞09T3					●
NT-SCACR2020K12	20	20	20	125	90°	CC∞1204					●

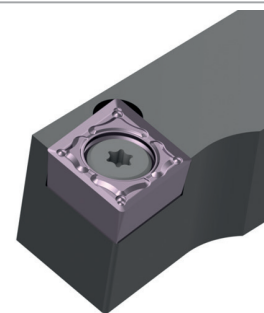
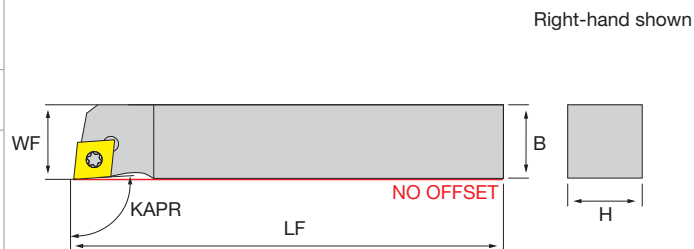
★ 1st choice, ☆ suitable, ● stock standard, ● non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-SCAC ¹ /R0000006	NT-ST25060T07B	NT-FT07
NT-SCAC ¹ /R0000009	NT-ST25060T07B	NT-FT07
NT-SCAC ¹ /R0000012	NT-ST40140T15	NT-FT15

SCLC N

ISO CC - Positive

- External turning (KAPR 95°)
- Holds CC-style inserts, tightened by screw
- Suitable for lathes without offset



Designation	H	B	WF	LF	KAPR	MIID						Stock
LEFT-HAND												
NT-SCLCL0808H06N	8	8	8	100	95°	CC∞0602						⊙
NT-SCLCL1010K06N	10	10	10	125	95°	CC∞0602						⊙
NT-SCLCL1212K09N	12	12	12	125	95°	CC∞09T3						●
NT-SCLCL1616K09N	16	16	16	125	95°	CC∞09T3						●
RIGHT-HAND												
NT-SCLCR0808H06N	8	8	8	100	95°	CC∞0602						⊙
NT-SCLCR1010K06N	10	10	10	125	95°	CC∞0602						●
NT-SCLCR1212K09N	12	12	12	125	95°	CC∞09T3						●
NT-SCLCR1616K09N	16	16	16	125	95°	CC∞09T3						●

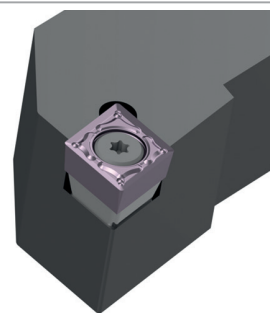
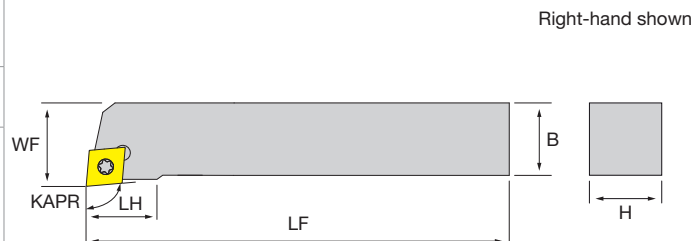
★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-SCLC*/R0000006N	NT-ST25060T07B	NT-FT07
NT-SCLC*/R0000009N	NT-ST35089T15	NT-FT15

SCLC S

ISO CC - Positive

- External turning (KAPR 95°)
- Holds CC-style inserts, tightened by screw
- With shim



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-SCLCL2020K09S	20	20	25	125	22	95°	CC∞09T3				●
NT-SCLCL2525M09S	25	25	32	150	25	95°	CC∞09T3				●
NT-SCLCL2020K12S	20	20	25	125	22	95°	CC∞1204				●
NT-SCLCL2525M12S	25	25	32	150	25	95°	CC∞1204				●
RIGHT-HAND											
NT-SCLCR2020K09S	20	20	25	125	22	95°	CC∞09T3				●
NT-SCLCR2525M09S	25	25	32	150	25	95°	CC∞09T3				●
NT-SCLCR2020K12S	20	20	25	125	22	95°	CC∞1204				●
NT-SCLCR2525M12S	25	25	32	150	25	95°	CC∞1204				●

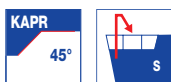
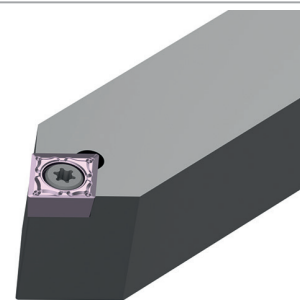
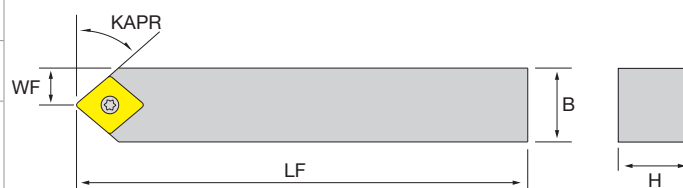
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Shim screw	L wrench	Insert screw	Flag wrench
NT-SCLC/ROOOO09S	NT-SH011	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15
NT-SCLC/ROOOO12S	NT-SH001	NT-SR001	NT-WR040	NT-ST40140T15	NT-FT15

SCMC

ISO CC - Positive

- External turning (KAPR 50°), Neutral position
- Holds CC-style inserts, tightened by screw



Designation	H	B	WF	LF	KAPR	MIID					Stock
NEUTRAL HOLDERS											
NT-SCMCN2020K09	20	20	10	125	50°	CC∞09T3					●
NT-SCMCN2525M09	25	25	12.5	150	50°	CC∞09T3					●

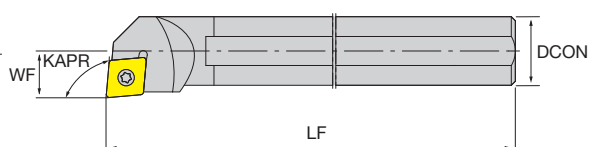
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-SCMCN∞∞∞∞09	 NT-ST35089T15	 NT-FT15

A SCLC

ISO CC - Positive

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



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A08H-SCLCL06	10	8	5	100	95°	13°	CC∞0602				●
NT-A10K-SCLCL06	12	10	6	125	95°	12°	CC∞0602				●
NT-A12M-SCLCL06	14	12	7	150	95°	9°	CC∞0602				●
NT-A16Q-SCLCL06	18	16	9	180	95°	7°	CC∞0602				●
NT-A12M-SCLCL09	14	12	7	150	95°	13°	CC∞09T3				●
NT-A16Q-SCLCL09	18	16	9	180	95°	9°	CC∞09T3				●
NT-A20R-SCLCL09	22	20	11	200	95°	5°	CC∞09T3				●
RIGHT-HAND											
NT-A10K-SCLCR06	12	10	6	125	95°	12°	CC∞0602				●
NT-A12M-SCLCR06	14	12	7	150	95°	9°	CC∞0602				●
NT-A16Q-SCLCR06	18	16	9	180	95°	7°	CC∞0602				●
NT-A08H-SCLCR06	10	8	5	100	95°	13°	CC∞0602				●
NT-A12M-SCLCR09	14	12	7	150	95°	13°	CC∞09T3				●
NT-A16Q-SCLCR09	18	16	9	180	95°	9°	CC∞09T3				●
NT-A20R-SCLCR09	22	20	11	200	95°	5°	CC∞09T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-A08H-SCLC*/r06	NT-ST25060T07B	NT-FT07
NT-A10K-SCLC*/r06	NT-ST25060T07B	NT-FT07
NT-A12M-SCLC*/r06	NT-ST25060T07B	NT-FT07
NT-A16Q-SCLC*/r06	NT-ST25060T07B	NT-FT07
NT-A12M-SCLC*/r09	NT-ST35073T15	NT-FT15
NT-A16Q-SCLC*/r09	NT-ST35073T15	NT-FT15
NT-A20R-SCLC*/r09	NT-ST35073T15	NT-FT15



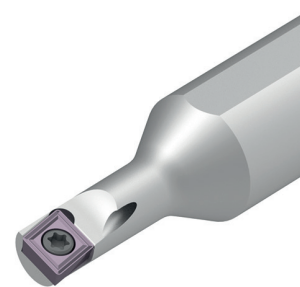
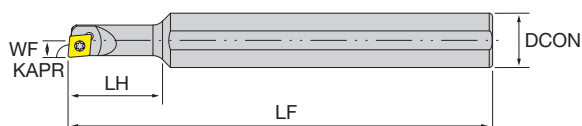
HOLDER AND INSERT COUPLING

Holder R → Insert L
 Holder L → Insert R

A16K SCLC

ISO CC - Positive

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



Designation	DMIN	DCON	WF	LF	LH	KAPR	GAMO	MIID			Stock
LEFT-HAND WITH REDUCED NECK											
NT-A16K-07-SCLCL06-L20	8	16	4	125	20	95°	15°	CC∞0602			●
NT-A16K-08-SCLCL06-L20	9	16	4.5	125	20	95°	12°	CC∞0602			●
NT-A16K-09-SCLCL06-L25	10	16	5	125	25	95°	11°	CC∞0602			⊙
RIGHT-HAND WITH REDUCED NECK											
NT-A16K-07-SCLCR06-L20	8	16	4	125	20	95°	15°	CC∞0602			●
NT-A16K-08-SCLCR06-L20	9	16	4.5	125	20	95°	12°	CC∞0602			⊙
NT-A16K-09-SCLCR06-L25	10	16	5	125	25	95°	11°	CC∞0602			⊙

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-A16K-∞-SCLC/∞06-L∞	NT-ST25060T07B	NT-FT07



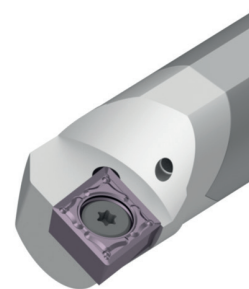
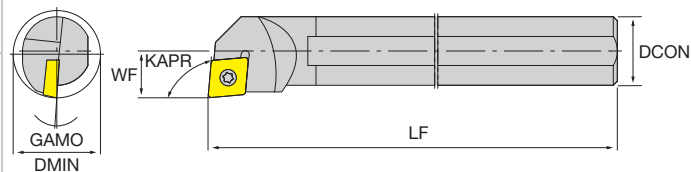
HOLDER AND INSERT COUPLING

Holder R → Insert L
 Holder L → Insert R

E SCLC

ISO CC - Positive

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



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-E08K-SCLCL06	10	8	5	125	95°	14°	CC∞0602				●
NT-E10K-SCLCL06	12	10	6	125	95°	12°	CC∞0602				●
NT-E12M-SCLCL06	14	12	7	150	95°	10°	CC∞0602				●
NT-E12M-SCLCL09	16	12	8	150	95°	10°	CC∞09T3				●
NT-E16R-SCLCL09	18	16	9	200	95°	10°	CC∞09T3				●
NT-E20R-SCLCL09	22	20	11	200	95°	8°	CC∞09T3				●
RIGHT-HAND											
NT-E08K-SCLCR06	10	8	5	125	95°	14°	CC∞0602				●
NT-E10K-SCLCR06	12	10	6	125	95°	12°	CC∞0602				●
NT-E12M-SCLCR06	14	12	7	150	95°	10°	CC∞0602				●
NT-E12M-SCLCR09	16	12	8	150	95°	10°	CC∞09T3				●
NT-E16R-SCLCR09	18	16	9	200	95°	10°	CC∞09T3				●
NT-E20R-SCLCR09	22	20	11	200	95°	8°	CC∞09T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-E08K-SCLC ¹ / ₀₆	NT-ST25060T07B	NT-FT07
NT-E10K-SCLC ¹ / ₀₆	NT-ST25060T07B	NT-FT07
NT-E12M-SCLC ¹ / ₀₆	NT-ST25060T07B	NT-FT07
NT-E12M-SCLC ¹ / ₀₉	NT-ST35073T15	NT-FT15
NT-E16R-SCLC ¹ / ₀₉	NT-ST35073T15	NT-FT15
NT-E20R-SCLCL09	NT-ST35073T15	NT-FT15



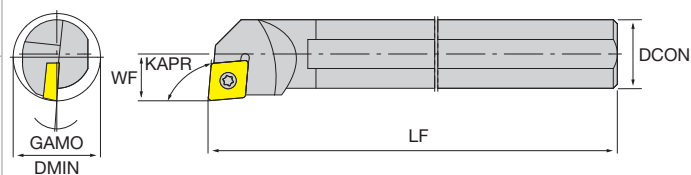
HOLDER AND INSERT COUPLING

Holder R → Insert L
 Holder L → Insert R

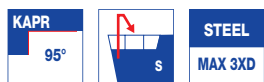
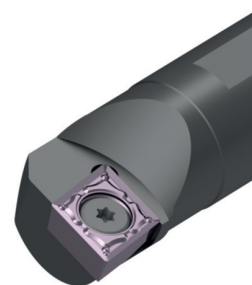
S SCLC

ISO CC - Positive

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



Right-hand shown



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S08H-SCLCL06	10	8	5	100	95°	13°	CC∞0602				●
NT-S10K-SCLCL06	12	10	6	125	95°	12°	CC∞0602				●
NT-S12M-SCLCL06	14	12	7	150	95°	9°	CC∞0602				●
NT-S16Q-SCLCL06	18	16	9	180	95°	7°	CC∞0602				◎
NT-S12M-SCLCL09	14	12	7	150	95°	13°	CC∞09T3				●
NT-S16Q-SCLCL09	18	16	9	180	95°	9°	CC∞09T3				●
NT-S20R-SCLCL09	22	20	11	200	95°	5°	CC∞09T3				●
NT-S20R-SCLCL12	25	20	13	200	95°	8°	CC∞1204				●
NT-S25R-SCLCL12	32	25	17	200	95°	8°	CC∞1204				●
NT-S32S-SCLCL12S	40	32	22	250	95°	6°	CC∞1204				●
NT-S40T-SCLCL12S	50	40	27	300	95°	4°	CC∞1204				●
RIGHT-HAND											
NT-S08H-SCLCR06	10	8	5	100	95°	13°	CC∞0602				●
NT-S10K-SCLCR06	12	10	6	125	95°	12°	CC∞0602				●
NT-S12M-SCLCR06	14	12	7	150	95°	9°	CC∞0602				●
NT-S16Q-SCLCR06	18	16	9	180	95°	7°	CC∞0602				●
NT-S12M-SCLCR09	14	12	7	150	95°	13°	CC∞09T3				●
NT-S16Q-SCLCR09	18	16	9	180	95°	9°	CC∞09T3				●
NT-S20R-SCLCR09	22	20	11	200	95°	5°	CC∞09T3				●
NT-S20R-SCLCR12	25	20	13	200	95°	8°	CC∞1204				●
NT-S25R-SCLCR12	32	25	17	200	95°	8°	CC∞1204				●
NT-S32S-SCLCR12S	40	32	22	250	95°	6°	CC∞1204				●
NT-S40T-SCLCR12S	50	40	27	300	95°	4°	CC∞1204				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
NT-S08H-SCLC'/h06	NT-ST25060T07B	NT-FT07	-	-	-
NT-S10K-SCLC'/h06	NT-ST25060T07B	NT-FT07	-	-	-
NT-S12M-SCLC'/h06	NT-ST25060T07B	NT-FT07	-	-	-
NT-S16Q-SCLC'/h06	NT-ST25060T07B	NT-FT07	-	-	-
NT-S12M-SCLC'/h09	NT-ST35073T15	NT-FT15	-	-	-
NT-S16Q-SCLC'/h09	NT-ST35073T15	NT-FT15	-	-	-
NT-S20R-SCLC'/h09	NT-ST35089T15	NT-FT15	-	-	-
NT-S20R-SCLC'/h12	NT-ST40115T15	NT-FT15	-	-	-
NT-S25R-SCLC'/h12	NT-ST40115T15	NT-FT15	-	-	-
NT-S32R-SCLC'/h12S	NT-ST40140T15	NT-FT15	NT-SH001	NT-SR001	NT-WR040
NT-S40T-SCLC'/h12S	NT-ST40140T15	NT-FT15	NT-SH001	NT-SR001	NT-WR040



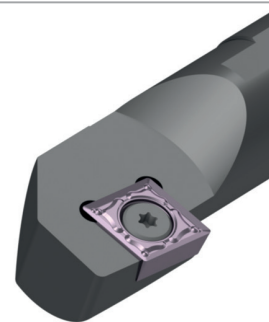
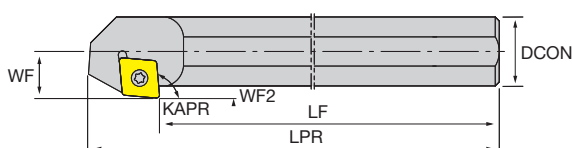
HOLDER AND INSERT COUPLING

Holder R → Insert L
 Holder L → Insert R

S SCZC

ISO CC - Positive

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



Designation	DMIN	DCON	WF	WF2	LF	LH	KAPR	GAMO	MID	Stock
LEFT-HAND										
NT-S08H-SCZCL06	12	8	6.5	2.5	100	-	93°	13°	CC∞0602	●
NT-S10K-SCZCL06	14	10	7.5	2.5	125	-	93°	12°	CC∞0602	●
NT-S12M-SCZCL06	16	12	8.5	2.5	150	-	93°	10°	CC∞0602	●
NT-S16Q-SCZCL09	21	16	11.5	3.5	180	-	93°	10°	CC∞09T3	●
NT-S20R-SCZCL09	25	20	13.5	3.5	200	-	93°	8°	CC∞09T3	●
NT-S25R-SCZCL09	32	25	16	3.5	200	-	93°	8°	CC∞09T3	●
RIGHT-HAND										
NT-S08H-SCZCR06	12	8	6.5	2.5	100	-	93°	13°	CC∞0602	●
NT-S10K-SCZCR06	14	10	7.5	2.5	125	-	93°	12°	CC∞0602	●
NT-S12M-SCZCR06	16	12	8.5	2.5	150	-	93°	10°	CC∞0602	●
NT-S16Q-SCZCR09	21	16	11.5	3.5	180	-	93°	10°	CC∞09T3	●
NT-S20R-SCZCR09	25	20	13.5	3.5	200	-	93°	8°	CC∞09T3	●
NT-S25R-SCZCR09	32	25	16	3.5	200	-	93°	8°	CC∞09T3	●

★ 1st choice, ☆ suitable, ● stock standard, ● non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-S08H-SCZC'/r06	NT-ST25060T07B	NT-FT07
NT-S10K-SCZC'/r06	NT-ST25060T07B	NT-FT07
NT-S12M-SCZC'/r06	NT-ST25060T07B	NT-FT07
NT-S16Q-SCZC'/r09	NT-ST35089T15	NT-FT15
NT-S20R-SCZC'/r09	NT-ST35089T15	NT-FT15
NT-S25R-SCZC'/r09	NT-ST35089T15	NT-FT15



HOLDER AND INSERT COUPLING

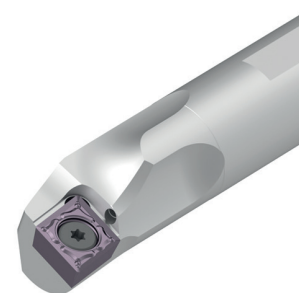
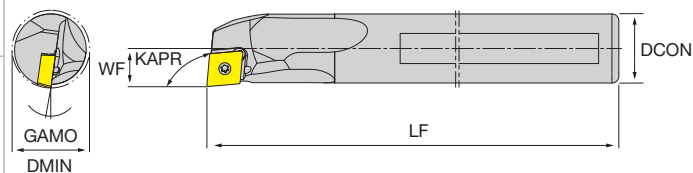
Holder R → Insert R

Holder L → Insert L

V SCLC

ISO CC - Positive

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



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-V08H-SCLCL06-10	10	8	5	100	95°	14°	CC∞0602				●
NT-V10K-SCLCL06-12	12	10	6	125	95°	12°	CC∞0602				●
NT-V12M-SCLCL06-14	14	12	7	150	95°	10°	CC∞0602				●
NT-V12M-SCLCL09-14	14	12	7	150	95°	12°	CC∞09T3				●
NT-V16Q-SCLCL09-18	18	16	9	180	95°	10°	CC∞09T3				●
NT-V20R-SCLCL09-22	22	20	11	200	95°	8°	CC∞09T3				●
NT-V25S-SCLCL09-27	27	25	13.5	250	95°	6°	CC∞09T3				●
NT-V20R-SCLCL12-25	25	20	13	200	95°	7°	CC∞1204				○
NT-V25S-SCLCL12-32	32	25	17	250	95°	5°	CC∞1204				●
RIGHT-HAND											
NT-V08H-SCLCR06-10	10	8	5	100	95°	14°	CC∞0602				●
NT-V10K-SCLCR06-12	12	10	6	125	95°	12°	CC∞0602				●
NT-V12M-SCLCR06-14	14	12	7	150	95°	10°	CC∞0602				●
NT-V12M-SCLCR09-14	14	12	7	150	95°	12°	CC∞09T3				●
NT-V16Q-SCLCR09-18	18	16	9	180	95°	10°	CC∞09T3				●
NT-V20R-SCLCR09-22	22	20	11	200	95°	8°	CC∞09T3				●
NT-V25S-SCLCR09-27	27	25	13.5	250	95°	6°	CC∞09T3				●
NT-V20R-SCLCR12-25	25	20	13	200	95°	7°	CC∞1204				●
NT-V25S-SCLCR12-32	32	25	17	250	95°	5°	CC∞1204				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-V08H-SCLC/∞06-10	NT-ST25060T07B	NT-FT07
NT-V10K-SCLC/∞06-12	NT-ST25060T07B	NT-FT07
NT-V12M-SCLC/∞06-14	NT-ST25060T07B	NT-FT07
NT-V12M-SCLC/∞09-14	NT-ST35073T15	NT-FT15
NT-V16Q-SCLC/∞09-18	NT-ST35073T15	NT-FT15
NT-V20R-SCLC/∞09-22	NT-ST35089T15	NT-FT15
NT-V25S-SCLC/∞09-27	NT-ST35089T15	NT-FT15
NT-V20R-SCLC/∞12-25	NT-ST40115T15	NT-FT15
NT-V25S-SCLC/∞12-32	NT-ST40115T15	NT-FT15



HOLDER AND INSERT COUPLING

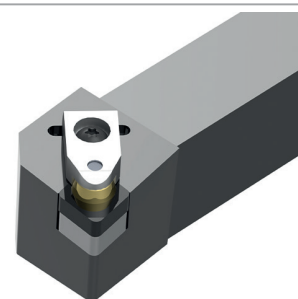
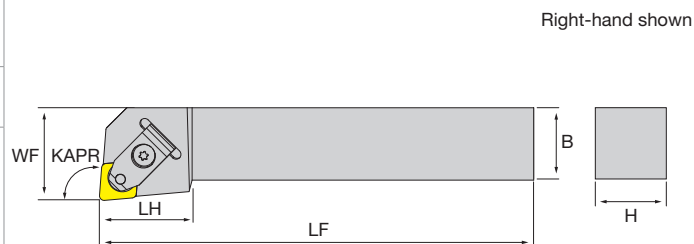
Holder R → Insert L

Holder L → Insert R

CCLN

ISO CN - Advanced

- For full solid CBN and ceramic inserts, reliable clamping
- Suitable for flat top and dimple type insert



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
RIGHT-HAND											
NT-CCLNR2525M12	25	25	32	150	32	95°	CN∞1204				▲

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	L wrench	Clamping set	Shim screw	Shim
NT-CCLNR2525M12	NT-WR030 / NT-WR025	NT-CS152	NT-ST130	NT-SH031



+



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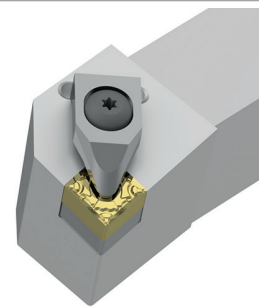
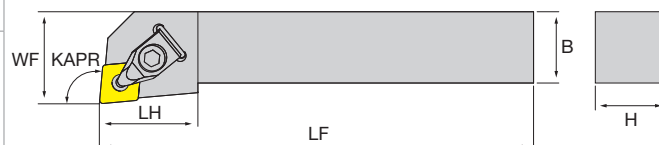
G - SPARE PARTS

DCLN

ISO CN - Negative

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

Right-hand shown



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-DCLNL1616H09X	16	16	20	100	33	95°	CN∞0903				◎
NT-DCLNL2020K09X	20	20	25	125	30	95°	CN∞0903				◎
NT-DCLNL2525M09X	25	25	32	150	30	95°	CN∞0903				◎
NT-DCLNL2020K12X	20	20	25	125	40	95°	CN∞1204				●
NT-DCLNL2525M12X	25	25	32	150	36	95°	CN∞1204				●
NT-DCLNL3225P12X	32	25	32	170	36	95°	CN∞1204				●
RIGHT-HAND											
NT-DCLNR1616H09X	16	16	20	100	33	95°	CN∞0903				◎
NT-DCLNR2020K09X	20	20	25	125	30	95°	CN∞0903				●
NT-DCLNR2525M09X	25	25	32	150	30	95°	CN∞0903				●
NT-DCLNR2020K12X	20	20	25	125	40	95°	CN∞1204				●
NT-DCLNR2525M12X	25	25	32	150	36	95°	CN∞1204				●
NT-DCLNR3225P12X	32	25	32	170	36	95°	CN∞1204				●

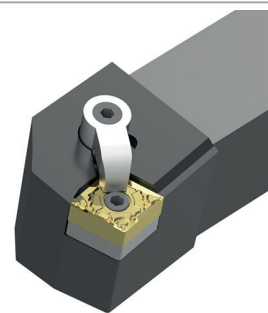
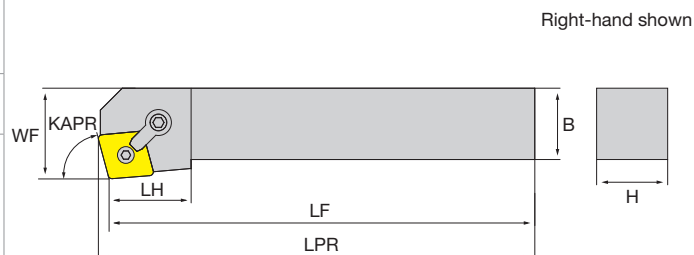
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Shim screw	L wrench	Clamp	Spring	Clamp screw
NT-DCLN ⁺ /R0000009X	NT-SH012	NT-ST031	NT-WR020 / NT-TX15	NT-CS250	NT-SG250	NT-SC250
NT-DCLN ⁺ /R0000012X	NT-SH030	NT-ST200	NT-WR025 / NT-TX20	NT-CS200	NT-SG200	NT-SC200

MCKN

ISO CN - Negative

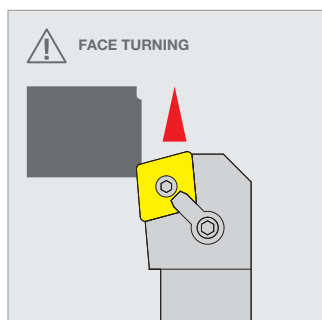
- External turning (KAPR 75°)
- Holds CN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force
- Mostly used for roughing



Designation	H	B	WF	LF	LH	LPR	KAPR	MIID			Stock
LEFT-HAND											
NT-MCKNL2020K12	20	20	25	122	37	125	75°	CN∞1204			●
NT-MCKNL2525M12	25	25	32	147	34	150	75°	CN∞1204			●
NT-MCKNL3232P12	32	32	40	167	40	170	75°	CN∞1204			●
NT-MCKNL3232P16	32	32	40	167	40	170	75°	CN∞1606			⊙
RIGHT-HAND											
NT-MCKNR2020K12	20	20	25	122	37	125	75°	CN∞1204			⊙
NT-MCKNR2525M12	25	25	32	147	34	150	75°	CN∞1204			●
NT-MCKNR3232P12	32	32	40	167	40	170	75°	CN∞1204			●
NT-MCKNR3232P16	32	32	40	167	40	170	75°	CN∞1606			⊙

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
NT-MCKN/80000012	NT-SH030	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MCKN/80000016	NT-SH055	NT-SP040	NT-CS010	NT-SC010	NT-WR030



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F - ACCESSORIES

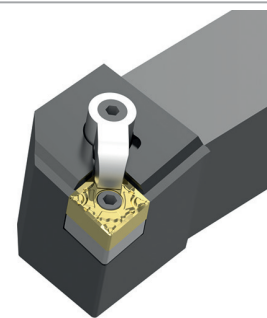
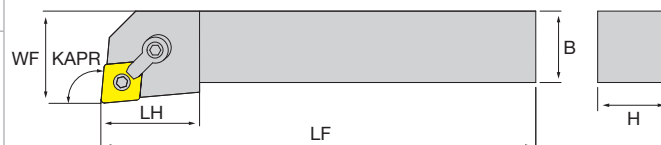
G - SPARE PARTS

MCLN

ISO CN - Negative

- 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	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-MCLNL2020K12	20	20	25	125	33	95°	CN∞1204				●
NT-MCLNL2525M12	25	25	32	150	33	95°	CN∞1204				●
NT-MCLNL3232P12	32	32	40	170	33	95°	CN∞1204				●
NT-MCLNL2525M16	25	25	32	150	33	95°	CN∞1606				●
NT-MCLNL3232P16	32	32	40	170	33	95°	CN∞1606				●
NT-MCLNL3232P19	32	32	40	170	38	95°	CN∞1906				◎
NT-MCLNL4040S19	40	40	50	250	38	95°	CN∞1906				◎
RIGHT-HAND											
NT-MCLNR2020K12	20	20	25	125	33	95°	CN∞1204				●
NT-MCLNR2525M12	25	25	32	150	33	95°	CN∞1204				●
NT-MCLNR3232P12	32	32	40	170	33	95°	CN∞1204				●
NT-MCLNR2525M16	25	25	32	150	33	95°	CN∞1606				●
NT-MCLNR3232P16	32	32	40	170	33	95°	CN∞1606				●
NT-MCLNR3232P19	32	32	40	170	38	95°	CN∞1906				◎
NT-MCLNR4040S19	40	40	50	250	38	95°	CN∞1906				◎

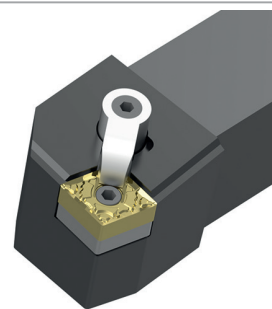
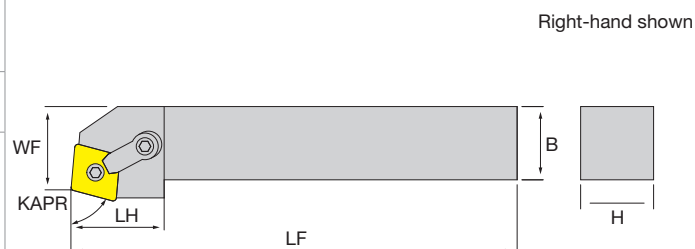
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
NT-MCLN/∞0000012	NT-SH030	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MCLN/∞0000016	NT-SH055	NT-SP040	NT-CS010	NT-SC010	NT-WR030
NT-MCLN/∞0000019	NT-SH080	NT-SP050	NT-CS015	NT-SC070	NT-WR040

MCRN

ISO CN - Negative

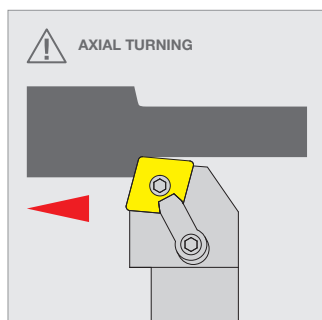
- External turning (KAPR 75°)
- Holds CN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force
- Mostly used for roughing, especially facing



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-MCRNL2020K12	20	20	22	125	37	75°	CN∞1204				⊙
NT-MCRNL2525M12	25	25	27	150	34	75°	CN∞1204				●
NT-MCRNL3232P12	32	32	35	170	40	75°	CN∞1204				⊙
NT-MCRNL3232P16	32	32	35	170	40	75°	CN∞1606				⊙
RIGHT-HAND											
NT-MCRNR2020K12	20	20	22	125	37	75°	CN∞1204				●
NT-MCRNR2525M12	25	25	27	150	34	75°	CN∞1204				●
NT-MCRNR3232P12	32	32	35	170	40	75°	CN∞1204				⊙
NT-MCRNR3232P16	32	32	35	170	40	75°	CN∞1606				⊙

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
NT-MCRN/10000012	NT-SH030	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MCRN/10000016	NT-SH055	NT-SP040	NT-CS010	NT-SC010	NT-WR030

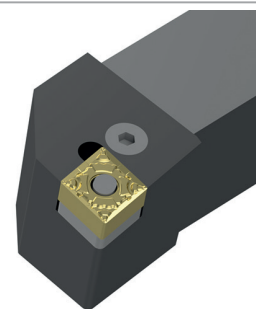
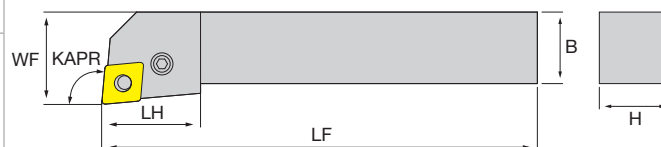


PCLN

ISO CN - Negative

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

Right-hand shown



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-PCLNL1616H09	16	16	20	100	20	95°	CN-∞0903				⊙
NT-PCLNL2020K09	20	20	25	125	20	95°	CN-∞0903				⊙
NT-PCLNL2525M09	25	25	32	150	23	95°	CN-∞0903				⊙
NT-PCLNL2020K12	20	20	25	125	26	95°	CN-∞1204				●
NT-PCLNL2525M12	25	25	32	150	26	95°	CN-∞1204				●
RIGHT-HAND											
NT-PCLNR1616H09	16	16	20	100	20	95°	CN-∞0903				●
NT-PCLNR2020K09	20	20	25	125	20	95°	CN-∞0903				⊙
NT-PCLNR2525M09	25	25	32	150	23	95°	CN-∞0903				⊙
NT-PCLNR2020K12	20	20	25	125	26	95°	CN-∞1204				●
NT-PCLNR2525M12	25	25	32	150	26	95°	CN-∞1204				●

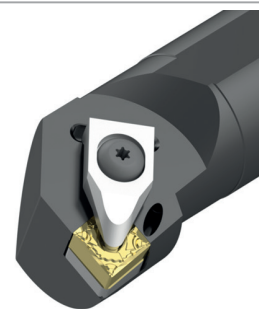
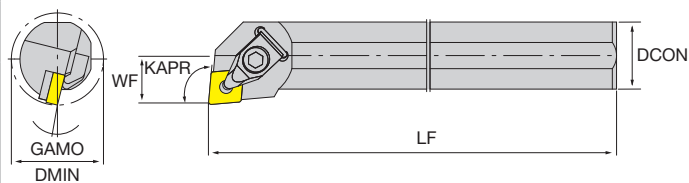
★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Elastic plug	Lever	Screw lever	L wrench
NT-PCLN/RO000009	NT-SH012	NT-SR012	NT-LL012	NT-SC015	NT-WR025
NT-PCLN/RO000012	NT-SH035	NT-SR020	NT-LL020	NT-SC025	NT-WR030

A DCLN

ISO CN - Negative

- 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	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A25R-DCLNL12	32	25	17	200	95°	14°	CN∞1204				●
NT-A32S-DCLNL12	40	32	22	250	95°	14°	CN∞1204				●
NT-A40T-DCLNL12	50	40	27	300	95°	12°	CN∞1204				●
RIGHT-HAND											
NT-A25R-DCLNR12	32	25	17	200	95°	14°	CN∞1204				●
NT-A32S-DCLNR12	40	32	22	250	95°	14°	CN∞1204				●
NT-A40T-DCLNR12	50	40	27	300	95°	12°	CN∞1204				●

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Shim screw	L wrench	Clamp	Spring
NT-A∞-DCLN-1/12	NT-SH035	NT-ST200	NT-WR025 / NT-TX20	NT-CS200	NT-SG200

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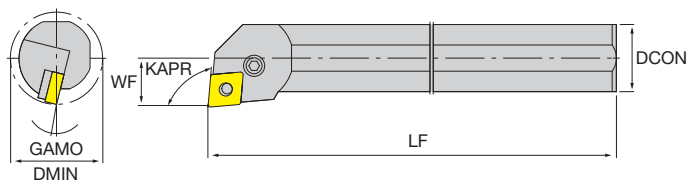
F - ACCESSORIES

G - SPARE PARTS

A PCLN

ISO CN - Negative

- 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	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A25R-PCLNL12	32	25	17	200	95°	11°	CN∞1204				●
NT-A32S-PCLNL12	40	32	22	250	95°	11°	CN∞1204				●
NT-A40T-PCLNL12	50	40	27	300	95°	10°	CN∞1204				●
RIGHT-HAND											
NT-A25R-PCLNR12	32	25	17	200	95°	11°	CN∞1204				●
NT-A32S-PCLNR12	40	32	22	250	95°	11°	CN∞1204				●
NT-A40T-PCLNR12	50	40	27	300	95°	10°	CN∞1204				●

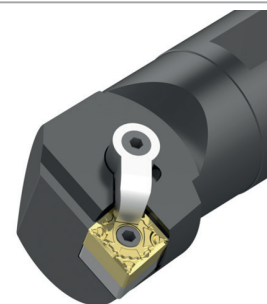
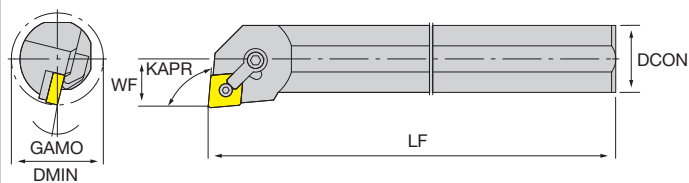
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Elastic plug	Lever	Screw lever	L wrench	Shim
NT-A25R-PCLN ^h /r12	NT-SR015	NT-LL015	NT-SC015	NT-WR025	
NT-A32S-PCLN ^h /r12	NT-SR020	NT-LL020	NT-SC025	NT-WR030	NT-SH035
NT-A40T-PCLN ^h /r12	NT-SR020	NT-LL020	NT-SC025	NT-WR030	NT-SH035

S MCLN

ISO CN - Negative

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



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S20R-MCLNL12	25	20	13	200	95°	17°	CN∞1204				●
NT-S25R-MCLNL12	32	25	17	200	95°	14°	CN∞1204				●
NT-S32S-MCLNL12	40	32	22	250	95°	14°	CN∞1204				●
NT-S40T-MCLNL12	50	40	27	300	95°	12°	CN∞1204				●
NT-S50U-MCLNL12	63	50	35	350	95°	12°	CN∞1204				●
NT-S40T-MCLNL16	50	40	27	300	95°	11°	CN∞1606				●
NT-S50U-MCLNL16	63	50	35	350	95°	12°	CN∞1606				●
NT-S50U-MCLNL19	63	50	35	350	95°	12°	CN∞1906				◎
RIGHT-HAND											
NT-S20R-MCLNR12	25	20	13	200	95°	17°	CN∞1204				●
NT-S25R-MCLNR12	32	25	17	200	95°	14°	CN∞1204				●
NT-S32S-MCLNR12	40	32	22	250	95°	14°	CN∞1204				●
NT-S40T-MCLNR12	50	40	27	300	95°	12°	CN∞1204				●
NT-S50U-MCLNR12	63	50	35	350	95°	12°	CN∞1204				●
NT-S40T-MCLNR16	50	40	27	300	95°	11°	CN∞1606				◎
NT-S50U-MCLNR16	63	50	35	350	95°	12°	CN∞1606				●
NT-S50U-MCLNR19	63	50	35	350	95°	12°	CN∞1906				◎

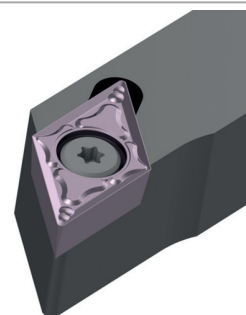
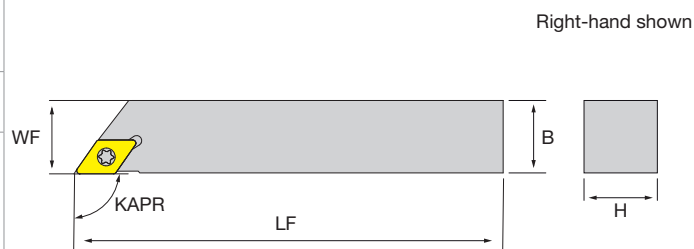
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Eccentric pin	L wrench	Clamp	Clamp screw	Shim
NT-S20R-MCLN ^h /12	NT-SP010	NT-WR030	NT-CS010	NT-SC010	-
NT-S25R-MCLN ^h /12	NT-SP010	NT-WR030 / NT-WR025	NT-CS010	NT-SC010	-
NT-S32S-MCLN ^h /12	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-SH030
NT-S40T-MCLN ^h /12	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-SH030
NT-S50U-MCLN ^h /12	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-SH030
NT-S40T-MCLN ^h /16	NT-SP040	NT-WR030	NT-CS010	NT-SC010	NT-SH055
NT-S50U-MCLN ^h /16	NT-SP040	NT-WR030	NT-CS010	NT-SC010	NT-SH055
NT-S50U-MCLN ^h /19	NT-SP050	NT-WR040 / NT-WR030	NT-CS015	NT-SC070	NT-SH080

SDAC

ISO DC - Positive

- External turning (KAPR 90°)
- Holds DC-style inserts, tightened by screw
- Suitable for lathes without offset



Designation	H	B	WF	LF	KAPR	MIID					Stock
LEFT-HAND											
NT-SDACL0808K07	8	8	8	125	90°	DC∞0702					●
NT-SDACL1010K07	10	10	10	125	90°	DC∞0702					●
NT-SDACL1212K07	12	12	12	125	90°	DC∞0702					●
NT-SDACL1212K11	12	12	12	125	90°	DC∞11T3					●
NT-SDACL1616K11	16	16	16	125	90°	DC∞11T3					●
RIGHT-HAND											
NT-SDACR0808K07	8	8	8	125	90°	DC∞0702					●
NT-SDACR1010K07	10	10	10	125	90°	DC∞0702					●
NT-SDACR1212K07	12	12	12	125	90°	DC∞0702					●
NT-SDACR1212K11	12	12	12	125	90°	DC∞11T3					●
NT-SDACR1616K11	16	16	16	125	90°	DC∞11T3					●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

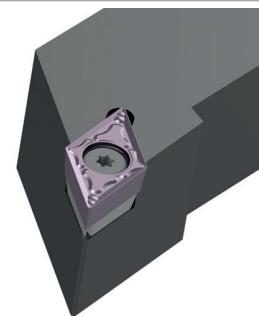
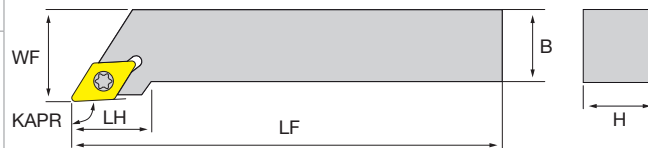
Spare parts	Insert screw	Flag wrench
NT-SDAC/ROOOO07	NT-ST25060T07B	NT-FT07
NT-SDAC/ROOOO11	NT-ST35089T15B	NT-FT15

SDJC

ISO DC - Positive

- External turning (KAPR 93°)
- Holds DC-style inserts, tightened by screw

Right-hand shown



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-SDJCL1616H11	16	16	20	100	18	93°	DC∞11T3				●
NT-SDJCL2020K11	20	20	25	125	23	93°	DC∞11T3				●
NT-SDJCL2525M11	25	25	32	150	27	93°	DC∞11T3				●
RIGHT-HAND											
NT-SDJCR1616H11	16	16	20	100	18	93°	DC∞11T3				●
NT-SDJCR2020K11	20	20	25	125	23	93°	DC∞11T3				●
NT-SDJCR2525M11	25	25	32	150	27	93°	DC∞11T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-SDJC [☆] /R0000011	NT-ST35089T15B	NT-FT15

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

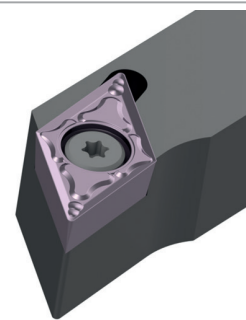
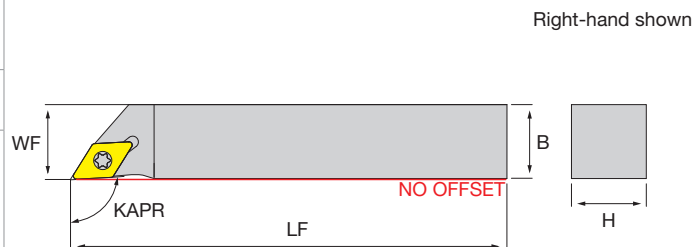
F - ACCESSORIES

G - SPARE PARTS

SDJC N

ISO DC - Positive

- External turning (KAPR 93°)
- Holds DC-style inserts, tightened by screw
- Suitable for lathes without offset



Designation	H	B	WF	LF	KAPR	MIID						Stock
LEFT-HAND												
NT-SDJCL0808K07N	8	8	8	125	93°	DC∞0702						⊙
NT-SDJCL1010K07N	10	10	10	125	93°	DC∞0702						⊙
NT-SDJCL1212K07N	12	12	12	125	93°	DC∞0702						⊙
NT-SDJCL1212K11N	12	12	12	125	93°	DC∞11T3						●
NT-SDJCL1616K11N	16	16	16	125	93°	DC∞11T3						●
RIGHT-HAND												
NT-SDJCR0808K07N	8	8	8	125	93°	DC∞0702						⊙
NT-SDJCR1010K07N	10	10	10	125	93°	DC∞0702						●
NT-SDJCR1212K07N	12	12	12	125	93°	DC∞0702						●
NT-SDJCR1212K11N	12	12	12	125	93°	DC∞11T3						●
NT-SDJCR1616K11N	16	16	16	125	93°	DC∞11T3						●

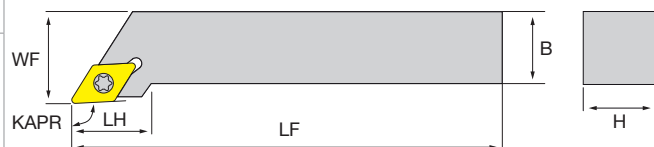
★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-SDJC/RO000007N	NT-ST25060T07B	NT-FT07
NT-SDJC/RO000011N	NT-ST35089T15B	NT-FT15

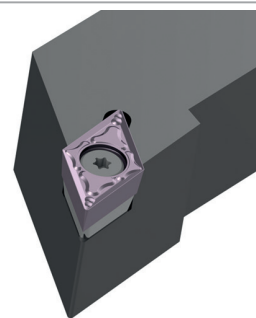
SDJC S

ISO DC - Positive

- External turning (KAPR 93°)
- Holds DC-style inserts, tightened by screw
- With shim



Right-hand shown



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-SDJCL2020K11S	20	20	25	125	22	93°	DC∞11T3				●
NT-SDJCL2525M11S	25	25	32	150	25	93°	DC∞11T3				●
RIGHT-HAND											
NT-SDJCR2020K11S	20	20	25	125	22	93°	DC∞11T3				●
NT-SDJCR2525M11S	25	25	32	150	25	93°	DC∞11T3				●

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Shim screw	L wrench	Insert screw	Flag wrench
NT-SDJC-/R0000011S	NT-SH007	NT-SR010	NT-WR035	NT-ST35089T15B	NT-FT15

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

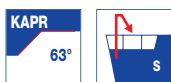
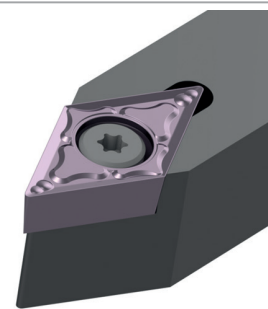
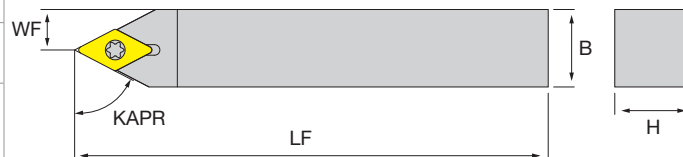
F - ACCESSORIES

G - SPARE PARTS

SDNC

ISO DC - Positive

- External turning (KAPR 62.5°), Neutral position
- Holds DC-style inserts, tightened by screw



Designation	H	B	WF	LF	KAPR	MIID					Stock
NEUTRAL HOLDERS											
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					●

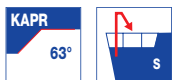
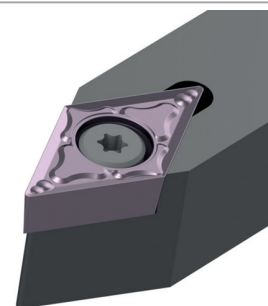
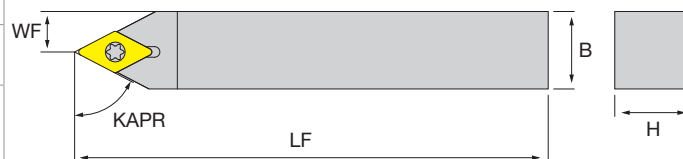
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-SDNCN∞∞∞∞07	NT-ST25060T07B	NT-FT07
NT-SDNCN∞∞∞∞11	NT-ST35089T15B	NT-FT15

SDNC S

ISO DC - Positive

- External turning (KAPR 62.5°), Neutral position
- Holds DC-style inserts, tightened by screw
- With shim



Designation	H	B	WF	LF	KAPR	MIID					Stock
NEUTRAL HOLDERS											
NT-SDNCN2020K11S	20	20	10	125	62.5°	DC∞11T3					●
NT-SDNCN2525M11S	25	25	12.5	150	62.5°	DC∞11T3					●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Shim screw	L wrench	Insert screw	Flag wrench
NT-SDNCN∞∞∞∞11S	 NT-SH007	 NT-SR010	 NT-WR035	 NT-ST35089T15B	 NT-FT15

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

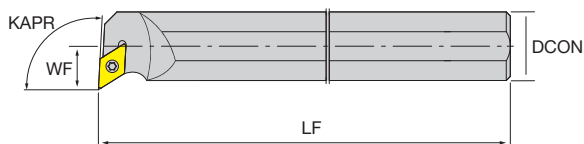
F - ACCESSORIES

G - SPARE PARTS

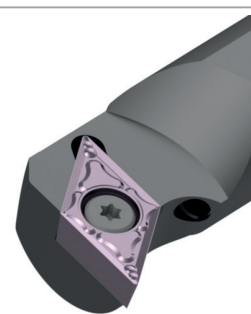
A SDUC

ISO DC - Positive

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



Right-hand shown



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A10M-SDUCL07	13	10	7	150	93°	10°	DC∞0702				●
NT-A12M-SDUCL07	16	12	9	150	93°	8°	DC∞0702				●
NT-A16Q-SDUCL07	20	16	1	180	93°	6°	DC∞0702				●
NT-A20R-SDUCL07	25	20	13	200	93°	5°	DC∞0702				◎
NT-A16Q-SDUCL11	20	16	1	180	93°	7°	DC∞11T3				●
NT-A20R-SDUCL11	25	20	13	200	93°	8°	DC∞11T3				●
RIGHT-HAND											
NT-A10M-SDUCR07	13	10	7	150	93°	10°	DC∞0702				●
NT-A12M-SDUCR07	16	12	9	150	93°	8°	DC∞0702				●
NT-A16Q-SDUCR07	20	16	1	180	93°	6°	DC∞0702				●
NT-A20R-SDUCR07	25	20	13	200	93°	5°	DC∞0702				◎
NT-A16Q-SDUCR11	20	16	1	180	93°	7°	DC∞11T3				●
NT-A20R-SDUCR11	25	20	13	200	93°	8°	DC∞11T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-A∞∞-SDUC ¹ /r07	NT-ST25060T07B	NT-FT07
NT-A∞∞-SDUC ¹ /r11	NT-ST35089T15B	NT-FT15



HOLDER AND INSERT COUPLING

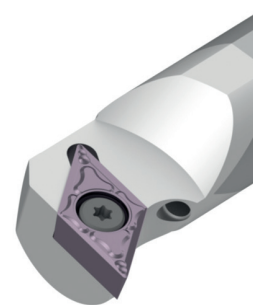
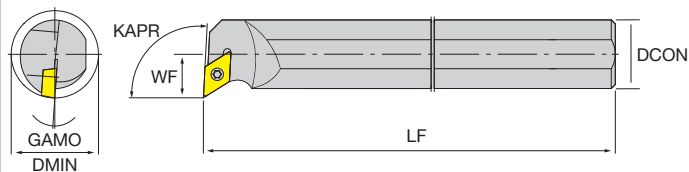
Holder R → Insert L

Holder L → Insert R

E SDUC

ISO DC - Positive

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



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-E10K-SDUCL07	13	10	7	125	93°	15°	DC∞0702				●
NT-E12M-SDUCL07	16	12	9	150	93°	10°	DC∞0702				●
NT-E16R-SDUCL11	20	16	11	200	93°	10°	DC∞11T3				●
NT-E20R-SDUCL11	25	20	13	200	93°	10°	DC∞11T3				●
RIGHT-HAND											
NT-E10K-SDUCR07	13	10	7	125	93°	15°	DC∞0702				●
NT-E12M-SDUCR07	16	12	9	150	93°	10°	DC∞0702				●
NT-E16R-SDUCR11	20	16	11	200	93°	10°	DC∞11T3				●
NT-E20R-SDUCR11	25	20	13	200	93°	10°	DC∞11T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-E∞∞-SDUC ¹ / _R 07	NT-ST25060T07B	NT-FT07
NT-E∞∞-SDUC ¹ / _R 11	NT-ST35089T15B	NT-FT15



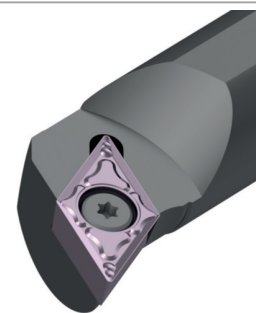
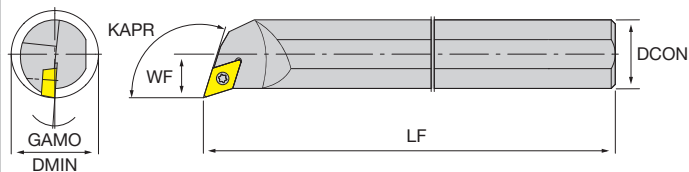
HOLDER AND INSERT COUPLING

Holder R → Insert L
Holder L → Insert R

S SDQC

ISO DC - Positive

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



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S10M-SDQCL07	13	10	7	150	107.5°	10°	DC∞0702				●
NT-S12M-SDQCL07	16	12	9	150	107.5°	8°	DC∞0702				●
NT-S16Q-SDQCL07	20	16	11	180	107.5°	6°	DC∞0702				●
NT-S20R-SDQCL07	25	20	13	200	107.5°	6°	DC∞0702				◎
NT-S16Q-SDQCL11	20	16	11	180	107.5°	6°	DC∞11T3				●
NT-S20R-SDQCL11	25	20	13	200	107.5°	8°	DC∞11T3				●
NT-S25R-SDQCL11	32	25	17	200	107.5°	4°	DC∞11T3				●
NT-S32S-SDQCL11	40	32	22	250	107.5°	4°	DC∞11T3				●
RIGHT-HAND											
NT-S10M-SDQCR07	13	10	7	150	107.5°	10°	DC∞0702				●
NT-S12M-SDQCR07	16	12	9	150	107.5°	8°	DC∞0702				●
NT-S16Q-SDQCR07	20	16	11	180	107.5°	6°	DC∞0702				●
NT-S20R-SDQCR07	25	20	13	200	107.5°	6°	DC∞0702				◎
NT-S16Q-SDQCR11	20	16	11	180	107.5°	6°	DC∞11T3				●
NT-S20R-SDQCR11	25	20	13	200	107.5°	8°	DC∞11T3				●
NT-S25R-SDQCR11	32	25	17	200	107.5°	4°	DC∞11T3				●
NT-S32S-SDQCR11	40	32	22	250	107.5°	4°	DC∞11T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-S∞∞-SDQC'/∞07	NT-ST25060T07B	NT-FT07
NT-S∞∞-SDQC'/∞11	NT-ST35089T15B	NT-FT15



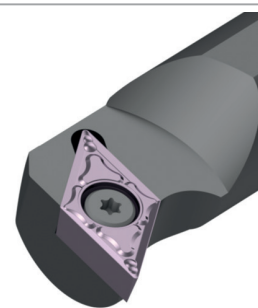
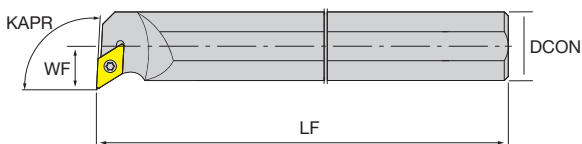
HOLDER AND INSERT COUPLING

Holder R → Insert L
 Holder L → Insert R

S SDUC

ISO DC - Positive

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



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S10M-SDUCL07	13	10	7	150	93°	10°	DC∞0702				●
NT-S12M-SDUCL07	16	12	9	150	93°	8°	DC∞0702				●
NT-S16Q-SDUCL07	20	16	11	180	93°	6°	DC∞0702				●
NT-S20R-SDUCL07	25	20	13	200	93°	5°	DC∞0702				◎
NT-S16Q-SDUCL11	20	16	11	180	93°	7°	DC∞11T3				●
NT-S20R-SDUCL11	25	20	13	200	93°	8°	DC∞11T3				●
NT-S25R-SDUCL11	32	25	17	200	93°	4°	DC∞11T3				●
NT-S32S-SDUCL11	40	32	22	250	93°	4°	DC∞11T3				●
NT-S40T-SDUCL11	50	40	24	300	93°	2°	DC∞11T3				◎
RIGHT-HAND											
NT-S10M-SDUCR07	13	10	7	150	93°	10°	DC∞0702				●
NT-S12M-SDUCR07	16	12	9	150	93°	8°	DC∞0702				●
NT-S16Q-SDUCR07	20	16	11	180	93°	6°	DC∞0702				●
NT-S20R-SDUCR07	25	20	13	200	93°	5°	DC∞0702				●
NT-S16Q-SDUCR11	20	16	11	180	93°	7°	DC∞11T3				●
NT-S20R-SDUCR11	25	20	13	200	93°	8°	DC∞11T3				●
NT-S25R-SDUCR11	32	25	17	200	93°	4°	DC∞11T3				●
NT-S32S-SDUCR11	40	32	22	250	93°	4°	DC∞11T3				●
NT-S40T-SDUCR11	50	40	24	300	93°	2°	DC∞11T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-S∞-SDUC/∞07	NT-ST25060T07B	NT-FT07
NT-S∞-SDUC/∞11	NT-ST35089T15B	NT-FT15



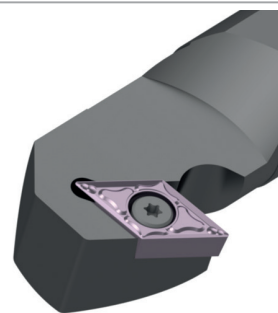
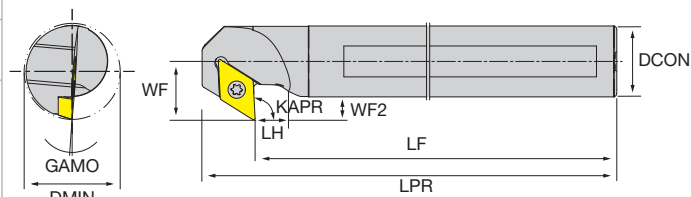
HOLDER AND INSERT COUPLING

Holder R → Insert L
 Holder L → Insert R

S SDZC

ISO DC - Positive

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



Designation	DMIN	DCON	WF	WF2	LF	LH	LPR	KAPR	GAMO	MIID	Stock
LEFT-HAND											
NT-S10M-SDZCL07	14	10	8.5	3.5	139	11	150	93°	10°	DC∞0702	⊙
NT-S12M-SDZCL07	17	12	10.5	4.5	139	11	150	93°	9°	DC∞0702	⊙
NT-S16Q-SDZCL07	21	16	12.5	4.5	169	11	180	93°	8°	DC∞0702	⊙
NT-S20R-SDZCL11	26	20	15.5	5.5	184	16	200	93°	8°	DC∞11T3	⊙
NT-S25R-SDZCL11	33	25	18	5.5	180	20	200	93°	6°	DC∞11T3	⊙
NT-S32S-SDZCL11S	38	32	21.5	5.5	230	20	250	93°	4°	DC∞11T3	⊙
RIGHT-HAND											
NT-S10M-SDZCR07	14	10	8.5	3.5	139	11	150	93°	10°	DC∞0702	⊙
NT-S12M-SDZCR07	17	12	10.5	4.5	139	11	150	93°	9°	DC∞0702	●
NT-S16Q-SDZCR07	21	16	12.5	4.5	169	11	180	93°	8°	DC∞0702	⊙
NT-S20R-SDZCR11	26	20	15.5	5.5	184	16	200	93°	8°	DC∞11T3	●
NT-S25R-SDZCR11	33	25	18	5.5	180	20	200	93°	6°	DC∞11T3	⊙
NT-S32S-SDZCR11S	38	32	21.5	5.5	230	20	250	93°	4°	DC∞11T3	⊙

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
NT-S∞∞-SDZC'∞07	NT-ST25060T07B	NT-FT07	-	-	-
NT-S∞∞-SDZC'∞11	NT-ST35089T15B	NT-FT15	-	-	-
NT-S∞∞-SDZC'∞11S	NT-ST35089T15B	NT-FT15	NT-SH007	NT-SR010	NT-WR035



HOLDER AND INSERT COUPLING

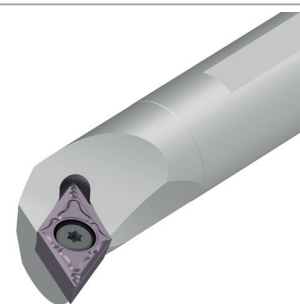
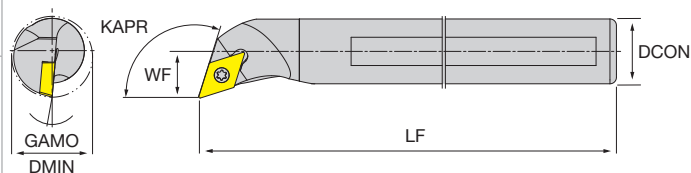
Holder R → Insert R

Holder L → Insert L

V SDQC

ISO DC - Positive

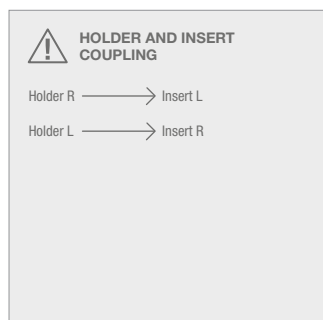
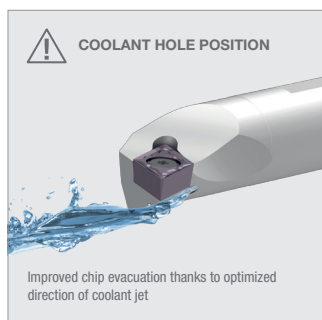
- Internal turning (KAPR 107.5°)
- Vortex boring bar (anti-vibration steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds DC-style inserts, tightened by screws
- Special chip evacuation path



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-V10K-SDQCL07-13	13	10	7.7	125	107.5°	10°	DC∞0702				●
NT-V12M-SDQCL07-16	16	12	9.7	150	107.5°	8°	DC∞0702				●
NT-V16Q-SDQCL07-20	20	16	11.7	180	107.5°	6°	DC∞0702				●
NT-V20R-SDQCL07-25	25	20	13.7	200	107.5°	5°	DC∞0702				◎
NT-V16Q-SDQCL11-20	20	16	11.5	180	107.5°	6°	DC∞11T3				●
NT-V20R-SDQCL11-25	25	20	14.4	200	107.5°	5°	DC∞11T3				●
NT-V25S-SDQCL11-30	30	25	16.9	250	107.5°	4°	DC∞11T3				●
RIGHT-HAND											
NT-V10K-SDQCR07-13	13	10	7.7	125	107.5°	10°	DC∞0702				●
NT-V12M-SDQCR07-16	16	12	9.7	150	107.5°	8°	DC∞0702				●
NT-V16Q-SDQCR07-20	20	16	11.7	180	107.5°	6°	DC∞0702				●
NT-V20R-SDQCR07-25	25	20	13.7	200	107.5°	5°	DC∞0702				●
NT-V16Q-SDQCR11-20	20	16	11.5	180	107.5°	6°	DC∞11T3				●
NT-V20R-SDQCR11-25	25	20	14.4	200	107.5°	5°	DC∞11T3				●
NT-V25S-SDQCR11-30	30	25	16.9	250	107.5°	4°	DC∞11T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

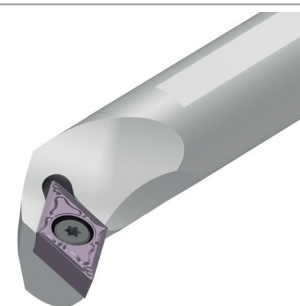
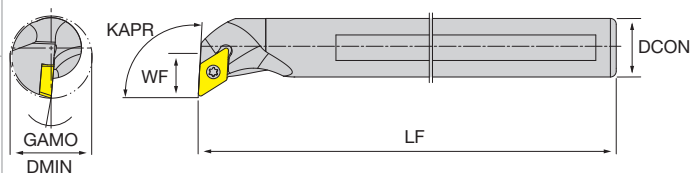
Spare parts	Insert screw	Flag wrench
NT-V∞-SDQC ¹ / ₁₀ 07-∞	NT-ST25060T07B	NT-FT07
NT-V∞-SDQC ¹ / ₁₁ ∞-∞	NT-ST35089T15B	NT-FT15



V SDUC

ISO DC - Positive

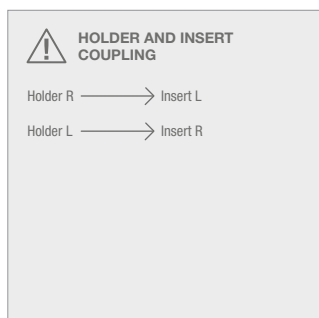
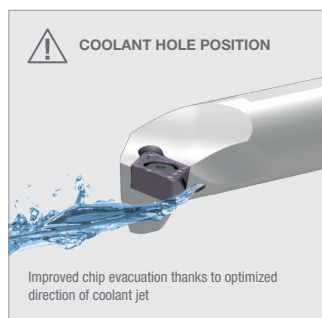
- Internal turning (KAPR 93°)
- Vortex boring bar (anti-vibration steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds DC-style inserts, tightened by screws
- Special chip evacuation path



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID					Stock
LEFT-HAND												
NT-V10K-SDUCL07-14	14	10	8.7	125	93°	5°	DC∞0702					●
NT-V12M-SDUCL07-16	16	12	9.7	150	93°	5°	DC∞0702					●
NT-V16Q-SDUCL07-20	20	16	11.7	180	93°	5°	DC∞0702					●
NT-V20R-SDUCL07-25	25	20	13.7	200	93°	5°	DC∞0702					●
NT-V16Q-SDUCL11-23	23	16	14.5	180	93°	5°	DC∞11T3					●
NT-V20R-SDUCL11-27	27	20	16.5	200	93°	5°	DC∞11T3					●
NT-V25S-SDUCL11-32	32	25	19	250	93°	5°	DC∞11T3					●
RIGHT-HAND												
NT-V10K-SDUCR07-14	14	10	8.7	125	93°	5°	DC∞0702					●
NT-V12M-SDUCR07-16	16	12	9.7	150	93°	5°	DC∞0702					●
NT-V16Q-SDUCR07-20	20	16	11.7	180	93°	5°	DC∞0702					●
NT-V20R-SDUCR07-25	25	20	13.7	200	93°	5°	DC∞0702					●
NT-V16Q-SDUCR11-23	23	16	14.5	180	93°	5°	DC∞11T3					●
NT-V20R-SDUCR11-27	27	20	16.5	200	93°	5°	DC∞11T3					●
NT-V25S-SDUCR11-32	32	25	19	250	93°	5°	DC∞11T3					●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-V∞-SDUC ¹ / _n 07-∞	NT-ST25060T07B	NT-FT07
NT-V∞-SDUC ¹ / _n 11-∞	NT-ST35089T15B	NT-FT15



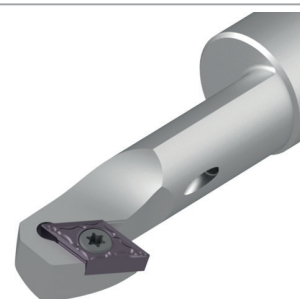
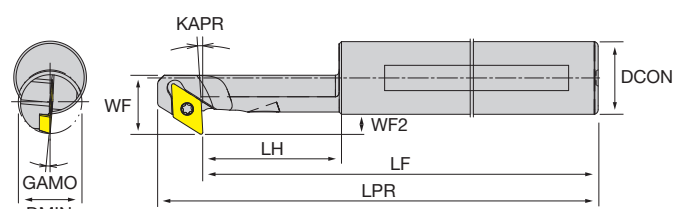
V SDZC

ISO DC - Positive

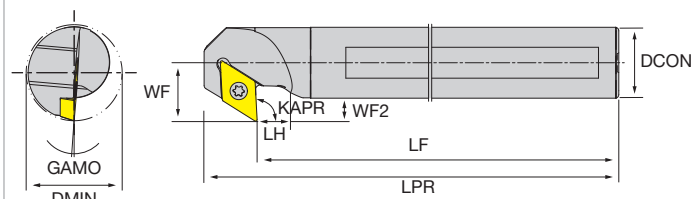
- Internal back turning (KAPR 93°)
- Vortex boring bar (anti-vibration steel) with internal coolant through. Maximum overhang: 5xDCON
- Holds DC-style inserts, tightened by screws
- Special chip evacuation path

Reduced neck

Right-hand shown



Right-hand shown



Designation	DMIN	DCON	WF	WF2	LF	LH	LPR	KAPR	GAMO	MIID	Stock
LEFT-HAND WITH REDUCED NECK											
NT-V16Q-SDZCL07-14	14	16	12.4	4.4	169.5	30	180	93°	5°	DC∞0702	●
NT-V20R-SDZCL11-20	20	20	16.1	6.1	185	40	200	93°	5°	DC∞11T3	◎
LEFT-HAND											
NT-V10L-SDZCL07-14	14	10	8.7	3.7	130.5	14	140	93°	5°	DC∞0702	◎
NT-V12M-SDZCL07-16	16	12	9.7	3.7	139.5	10.5	150	93°	5°	DC∞0702	◎
NT-V16Q-SDZCL07-20	20	16	11.7	3.7	169.5	17.5	180	93°	5°	DC∞0702	◎
NT-V16Q-SDZCL11-23	23	16	14.5	6.5	165	15	180	93°	5°	DC∞11T3	◎
NT-V20R-SDZCL11-27	27	20	16.5	6.5	185	15	200	93°	5°	DC∞11T3	◎
NT-V25S-SDZCL11-32	32	25	19	6.5	235	15	250	93°	5°	DC∞11T3	●
RIGHT-HAND WITH REDUCED NECK											
NT-V16Q-SDZCR07-14	14	16	12.4	4.4	169.5	30	180	93°	5°	DC∞0702	◎
NT-V20R-SDZCR11-20	20	20	16.1	6.1	185	40	200	93°	5°	DC∞11T3	●
RIGHT-HAND											
NT-V10L-SDZCR07-14	14	10	8.7	3.7	130.5	14	140	93°	5°	DC∞0702	●
NT-V12M-SDZCR07-16	16	12	9.7	3.7	139.5	10.5	150	93°	5°	DC∞0702	◎
NT-V16Q-SDZCR07-20	20	16	11.7	3.7	169.5	17.5	180	93°	5°	DC∞0702	◎
NT-V16Q-SDZCR11-23	23	16	14.5	6.5	165	15	180	93°	5°	DC∞11T3	◎
NT-V20R-SDZCR11-27	27	20	16.5	6.5	185	15	200	93°	5°	DC∞11T3	●
NT-V25S-SDZCR11-32	32	25	19	6.5	235	15	250	93°	5°	DC∞11T3	◎

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-V∞-SDZC/∞07-∞	NT-ST25060T07B	NT-FT07
NT-V∞-SDZC/∞11-∞	NT-ST35089T15B	NT-FT15


HOLDER AND INSERT COUPLING

Holder R → Insert R

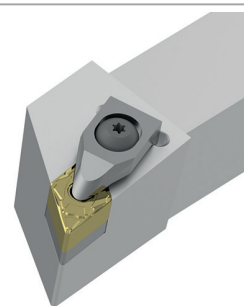
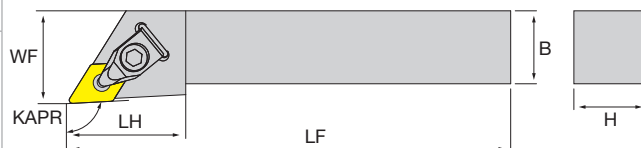
Holder L → Insert L

DDJN

ISO DN - Negative

- External turning (KAPR 93°)
- Holds DN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening

Right-hand shown



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-DDJNL1616H11X	16	16	20	100	36	93°	DN∞1104				◎
NT-DDJNL2020K11X	20	20	25	125	36	93°	DN∞1104				●
NT-DDJNL2525M11X	25	25	32	150	36	93°	DN∞1104				●
NT-DDJNL2020K1506X	20	20	25	125	43	93°	DN∞1506				●
NT-DDJNL2525M1506X	25	25	32	150	43	93°	DN∞1506				●
NT-DDJNL3225P1506X	32	25	32	170	43	93°	DN∞1506				●
RIGHT-HAND											
NT-DDJNR1616H11X	16	16	20	100	36	93°	DN∞1104				◎
NT-DDJNR2525M11X	25	25	32	150	36	93°	DN∞1104				●
NT-DDJNR2020K1506X	20	20	25	125	43	93°	DN∞1506				●
NT-DDJNR2525M1506X	25	25	32	150	43	93°	DN∞1506				●
NT-DDJNR3225P1506X	32	25	32	170	43	93°	DN∞1506				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Shim screw	L wrench	Clamp	Spring	Clamp screw
NT-DDJN ⁺ /r0000011X	NT-SH007	NT-ST250	NT-WR020 / NT-TX15	NT-CS250	NT-SG250	NT-SC250
NT-DDJN ⁺ /r000001506X	NT-SH045	NT-ST200	NT-WR025 / NT-TX20	NT-CS200	NT-SG200	NT-SC200

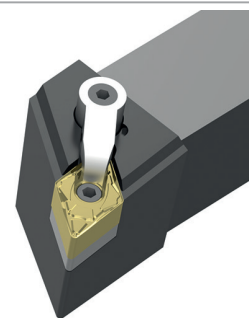
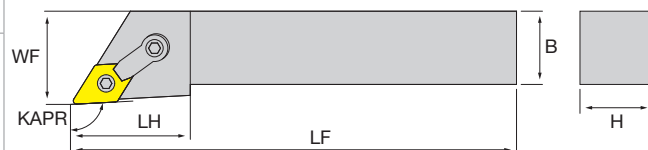


MDJN

ISO DN - Negative

- External turning (KAPR 93°)
- Holds DN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force

Right-hand shown



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-MDJNL2020K1506	20	20	25	125	36	93°	DN∞1506				●
NT-MDJNL2525M1506	25	25	32	150	36	93°	DN∞1506				●
NT-MDJNL3232P1506	32	32	40	170	43	93°	DN∞1506				●
RIGHT-HAND											
NT-MDJNR2020K1506	20	20	25	125	36	93°	DN∞1506				●
NT-MDJNR2525M1506	25	25	32	150	36	93°	DN∞1506				●
NT-MDJNR3232P1506	32	32	40	170	43	93°	DN∞1506				●

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
NT-MDJN/8000001506	NT-SH045	NT-SP025	NT-CS025	NT-SC010	NT-WR030



INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

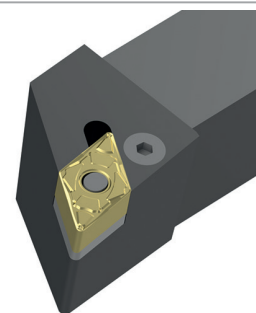
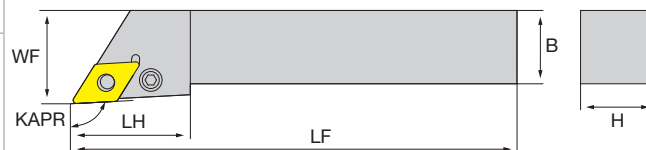
G - SPARE PARTS

PDJN

ISO DN - Negative

- External turning (KAPR 93°)
- Holds DN-style inserts
- Easy to use Levers-lock clamping
- Suitable for long-chip materials

Right-hand shown



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-PDJNL2525M1506	25	25	32	150	36	93°	DN=1506				●
RIGHT-HAND											
NT-PDJNR2525M1506	25	25	32	150	36	93°	DN=1506				●

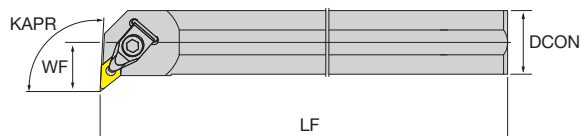
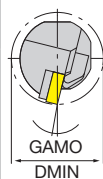
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Elastic plug	Lever	Screw lever	L wrench
NT-PDJN ⁺ /R000001506	NT-SH020	NT-SR020	NT-LL020	NT-SC020	NT-WR020

A DDUN

ISO DN - Negative

- 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



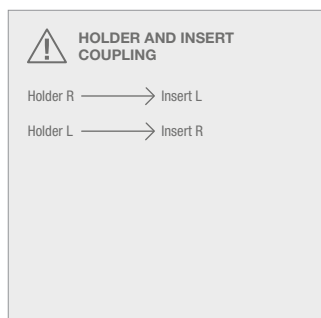
Right-hand shown



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A25R-DDUNL1506	32	25	17	200	93°	16°	DN∞1506				●
NT-A32S-DDUNL1506	40	32	22	250	93°	12°	DN∞1506				●
NT-A40T-DDUNL1506	50	40	27	300	93°	10°	DN∞1506				●
RIGHT-HAND											
NT-A25R-DDUNR1506	32	25	17	200	93°	16°	DN∞1506				●
NT-A32S-DDUNR1506	40	32	22	250	93°	12°	DN∞1506				●
NT-A40T-DDUNR1506	50	40	27	300	93°	10°	DN∞1506				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

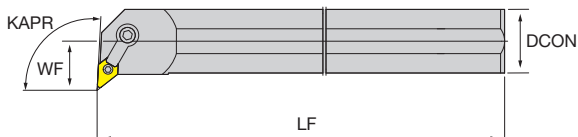
Spare parts	Shim	Shim screw	L wrench	Clamp	Spring	Clamp screw
NT-A∞∞-DDUN-1506	NT-SH020	NT-ST200	NT-WR025 / NT-TX20	NT-CS200	NT-SG200	NT-SC200



S MDUN

ISO DN - Negative

- Internal turning (KAPR 93°)
- Steel boring bar without internal coolant
- Holds DN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force



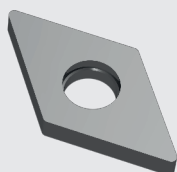
Right-hand shown



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S32S-MDUNL1506	40	32	22	250	93°	17°	DN∞1506				●
NT-S40T-MDUNL1506	50	40	27	300	93°	15°	DN∞1506				●
NT-S50U-MDUNL1506	63	50	35	350	93°	12°	DN∞1506				●
RIGHT-HAND											
NT-S32S-MDUNR1506	40	32	22	250	93°	17°	DN∞1506				●
NT-S40T-MDUNR1506	50	40	27	300	93°	15°	DN∞1506				●
NT-S50U-MDUNR1506	63	50	35	350	93°	12°	DN∞1506				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
NT-S32S-MDUN/R1506	NT-SH045	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-S40T-MDUN/R1506	NT-SH045	NT-SP025	NT-CS025	NT-SC010	NT-WR030
NT-S50U-MDUN/R1506	NT-SH045	NT-SP025	NT-CS025	NT-SC010	NT-WR030


 DN00150400


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

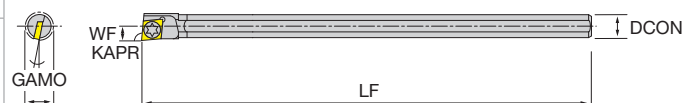

HOLDER AND INSERT COUPLING

Holder R → Insert L
Holder L → Insert R

E MCC

Micro CC - Positive

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



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
RIGHT-HAND											
NT-E04G-MICRO-CC-RH	5	4	2.5	90	95°	15°	MCC				●
NT-E05H-MICRO-CC-RH	6	5	3	100	95°	13°	MCC				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-E000-MICRO-CC-RH	NT-ST16031T06	NT-FT06



SLEEVE AVAILABLE



Please find all the available sleeves at chapter F-ACCESSORIES



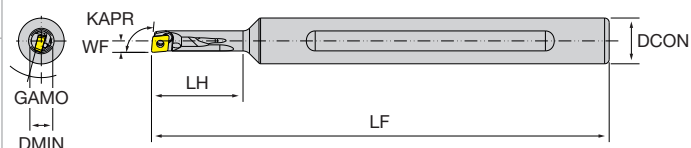
HOLDER AND INSERT COUPLING

Holder R → Insert L

V MCC

Micro CC - Positive

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



Designation	DMIN	DCON	WF	LF	LH	KAPR	GAMO	MIID			Stock
LEFT-HAND WITH REDUCED NECK											
NT-V10H-MICRO-CC-LH-06	6	10	3	100	25	95°	13°	MCC			○
RIGHT-HAND WITH REDUCED NECK											
NT-V10H-MICRO-CC-RH-05	5	10	2.5	100	20	95°	15°	MCC			●
NT-V10H-MICRO-CC-RH-06	6	10	3	100	25	95°	13°	MCC			●

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-V10H-MICRO-CC-1/8H-∞	NT-ST25060T07B	NT-FT07



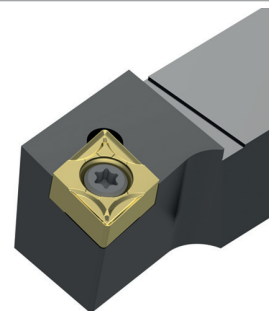
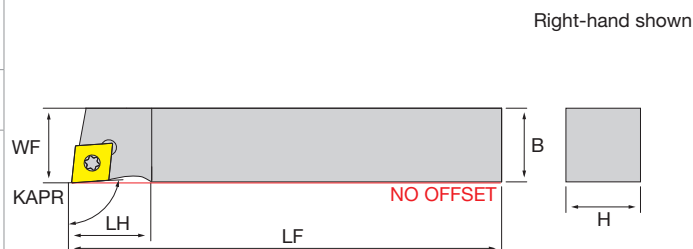
HOLDER AND INSERT
COUPLING

Holder R → Insert L

EX MCN

MicroNega - MCN

- External turning (KAPR 95°)
- Holds MCN-style inserts, tightened by screw
- Suitable for lathes without offset

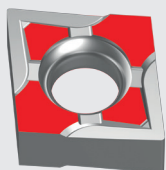


Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-EX10H-MICRO-CN-LH	10	10	10	100	15	95°	MCN				⊙
NT-EX12H-MICRO-CN-LH	12	12	12	100	15	95°	MCN				⊙
NT-EX16K-MICRO-CN-LH	16	16	16	125	15	95°	MCN				⊙
NT-EX20K-MICRO-CN-LH	20	20	20	120	15	95°	MCN				▽
NT-EX25M-MICRO-CN-LH	25	25	25	150	15	95°	MCN				▽
RIGHT-HAND											
NT-EX10H-MICRO-CN-RH	10	10	10	100	15	95°	MCN				⊙
NT-EX12H-MICRO-CN-RH	12	12	12	100	15	95°	MCN				●
NT-EX16K-MICRO-CN-RH	16	16	16	125	15	95°	MCN				⊙
NT-EX20K-MICRO-CN-RH	20	20	20	120	15	95°	MCN				▽
NT-EX25M-MICRO-CN-RH	25	25	25	150	15	95°	MCN				▽

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-EX ₀₀₀ -MICRO-CN-1/8H	NT-ST30070T10	NT-FT10

EXCELLENT STABILITY

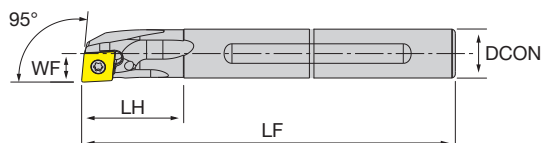


The design of MCN inserts was done with great attention to the connection surfaces, to achieve a great stability and reliability

V MCN

MicroNega - MCN

- Internal turning (KAPR 95°)
- Vortex boring bar (anti-vibration steel) with internal coolant through
- Holds MCN-style inserts, tightened by screws
- Special chip evacuation path



Right-hand shown



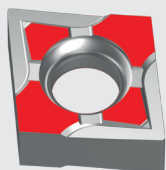
Designation	DMIN	DCON	WF	LF	LH	KAPR	GAMO	MIID			Stock
LEFT-HAND											
NT-V08H-MICRO-CN-LH-10	10	8	5.5	100	20	95°	24°	MCN			●
NT-V10K-MICRO-CN-LH-12	12	10	6	125	21	95°	21°	MCN			●
NT-V12M-MICRO-CN-LH-14	14	12	7	150	25	95°	20°	MCN			●
NT-V16Q-MICRO-CN-LH-18	18	16	9	180	31	95°	17°	MCN			●
NT-V20R-MICRO-CN-LH-22	22	20	11	200	37	95°	17°	MCN			●
RIGHT-HAND											
NT-V08H-MICRO-CN-RH-10	10	8	5.5	100	20	95°	24°	MCN			●
NT-V10K-MICRO-CN-RH-12	12	10	6	125	21	95°	21°	MCN			●
NT-V12M-MICRO-CN-RH-14	14	12	7	150	25	95°	20°	MCN			●
NT-V16Q-MICRO-CN-RH-18	18	16	9	180	31	95°	17°	MCN			●
NT-V20R-MICRO-CN-RH-22	22	20	11	200	37	95°	17°	MCN			●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-V000-MICRO-CN-1/4H-00	NT-ST30070T10	NT-FT10



EXCELLENT STABILITY



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



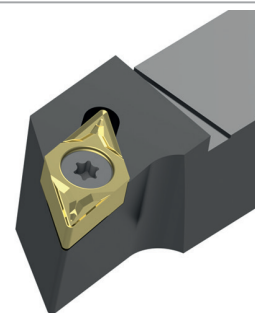
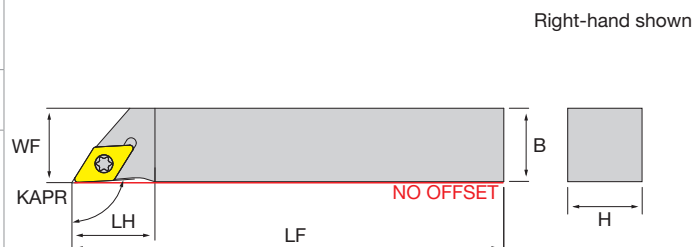
HOLDER AND INSERT COUPLING

Holder R → Insert L
 Holder L → Insert R

EX MDN

MicroNeg - MDN

- External turning (KAPR 95°)
- Holds MDN-style inserts, tightened by screw
- Suitable for lathes without offset



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-EX10H-MICRO-DN-LH	10	10	10	100	18	95°	MDN				⊙
NT-EX12H-MICRO-DN-LH	12	12	12	100	18	95°	MDN				●
NT-EX16K-MICRO-DN-LH	16	16	16	125	18	95°	MDN				⊙
NT-EX20K-MICRO-DN-LH	20	20	20	120	15	95°	MDN				▽
NT-EX25M-MICRO-DN-LH	25	25	25	150	15	95°	MDN				▽
RIGHT-HAND											
NT-EX10H-MICRO-DN-RH	10	10	10	100	18	95°	MDN				⊙
NT-EX12H-MICRO-DN-RH	12	12	12	100	18	95°	MDN				●
NT-EX16K-MICRO-DN-RH	16	16	16	125	18	95°	MDN				⊙
NT-EX20K-MICRO-DN-RH	20	20	20	120	15	95°	MDN				▽
NT-EX25M-MICRO-DN-RH	25	25	25	150	15	95°	MDN				▽

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

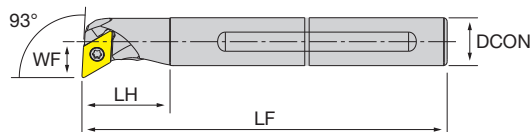
Spare parts	Insert screw	Flag wrench
NT-EX ₀₀₀ -MICRO-DN-1/8H	NT-ST30070T10	NT-FT10



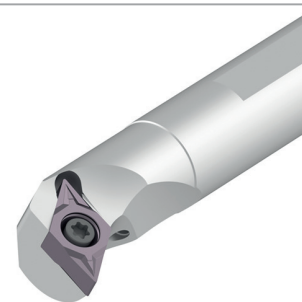
V MDN

MicroNega - MDN

- Internal turning (KAPR 93°)
- Vortex boring bar (anti-vibration steel) with internal coolant through
- Holds MDN-style inserts, tightened by screws
- Special chip evacuation path



Right-hand shown



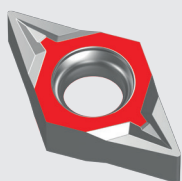
Designation	DMIN	DCON	WF	LF	LH	KAPR	GAMO	MIID			Stock
LEFT-HAND											
NT-V10K-MICRO-DN-LH-15	15	10	9.8	125	19	93°	19°	MDN			●
NT-V12M-MICRO-DN-LH-16	16	12	9	150	22	93°	17°	MDN			●
NT-V16Q-MICRO-DN-LH-20	20	16	11	180	22	93°	15°	MDN			●
NT-V20R-MICRO-DN-LH-25	25	20	13	200	23	93°	13°	MDN			●
RIGHT-HAND											
NT-V10K-MICRO-DN-RH-15	15	10	9.8	125	19	93°	19°	MDN			●
NT-V12M-MICRO-DN-RH-16	16	12	9	150	22	93°	17°	MDN			●
NT-V16Q-MICRO-DN-RH-20	20	16	11	180	22	93°	15°	MDN			●
NT-V20R-MICRO-DN-RH-25	25	20	13	200	23	93°	13°	MDN			●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-V ₀₀₀ -MICRO-DN- ¹ / ₈ H- ₀₀	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



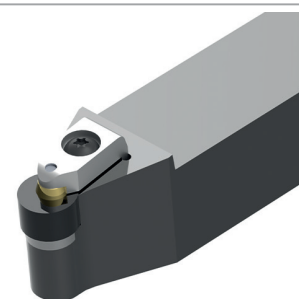
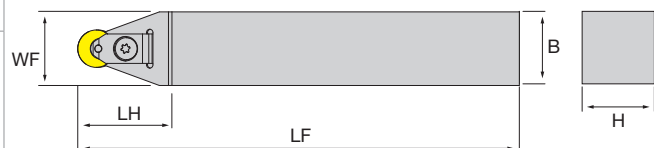
HOLDER AND INSERT COUPLING

Holder R → Insert L
 Holder L → Insert R

CRDNN

ISO RN - Advanced

- For full solid CBN and ceramic inserts, reliable clamping
- Suitable for flat top and dimple type insert



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
NEUTRAL HOLDERS											
NT-CRDNN2525M09	25	25	12.5	150	32	-	RNGN0903				▲
NT-CRDNN2525M12	25	25	12.5	150	32	-	RNGN1204				▲

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	L wrench	Clamping set	Shim screw	Shim
NT-CRDNN2525M09	NT-WR030	NT-CS154	NT-ST110	NT-SH100
NT-CRDNN2525M12	NT-TX15	NT-CS155	NT-ST110	NT-SH102



INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

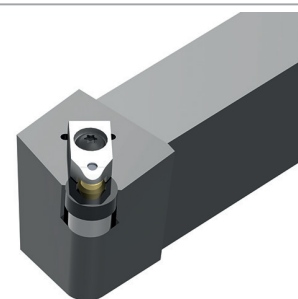
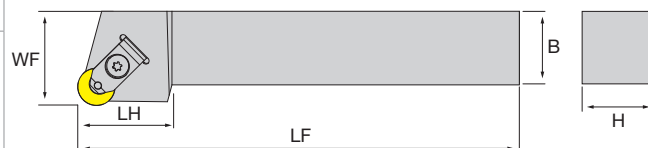
F - ACCESSORIES

G - SPARE PARTS

CRSN

ISO RN - Advanced

- For full solid CBN and ceramic inserts, reliable clamping
- Suitable for flat top and dimple type insert

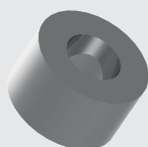


Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
RIGHT-HAND											
NT-CRSNR2525M09	25	25	32	150	32	-	RNGN0903				▲
NT-CRSNR2525M12	25	25	32	150	32	-	RNGN1204				▲

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	L wrench	Clamping set	Shim screw	Shim
NT-CRSNR2525M09	NT-WR030	NT-CS110	NT-ST110	NT-SH100
NT-CRSNR2525M12	NT-TX15	NT-CS120	NT-ST110	NT-SH102

! RNGN120700

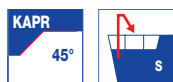
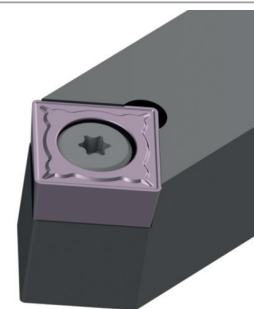
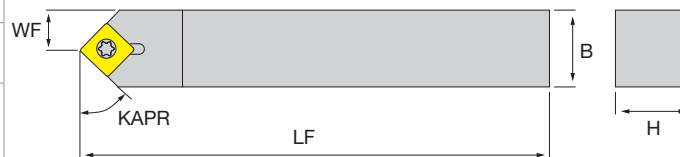


NT-SH101
For 07 thickness, please order separately the correct shim

SSDC

ISO SC - Positive

- External turning (KAPR 45°), Neutral position
- Holds SC-style inserts, tightened by screw



Designation	H	B	WF	LF	KAPR	MIID					Stock
NEUTRAL HOLDERS											
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					●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-SSDCN∞∞∞∞09	NT-ST40090T15	NT-FT15
NT-SSDCN∞∞∞∞12	NT-ST40115T15	NT-FT15

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

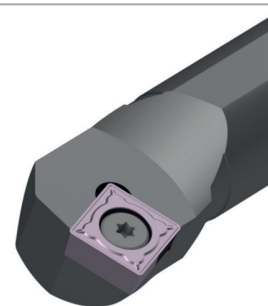
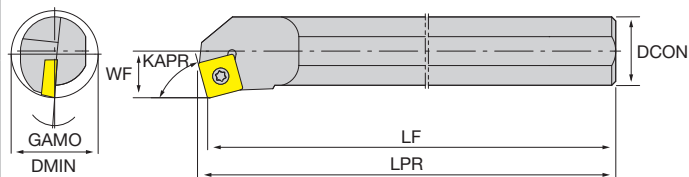
F - ACCESSORIES

G - SPARE PARTS

S SSKC

ISO SC - Positive

- Internal turning (KAPR 75°)
- Steel boring bar without internal coolant
- Holds SC-style inserts, tightened by screws



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S12M-SSKCL09	16	12	8.5	147	75°	12°	SC∞09T3				●
NT-S16Q-SSKCL09	20	16	11	177	75°	11°	SC∞09T3				●
NT-S20R-SSKCL09	25	20	13	196	75°	6°	SC∞09T3				●
NT-S25R-SSKCL09	31	25	15	198	75°	6°	SC∞09T3				●
NT-S25R-SSKCL12	32	25	17	196	75°	7°	SC∞1204				●
NT-S32S-SSKCL12	40	32	22	246	75°	7°	SC∞1204				●
RIGHT-HAND											
NT-S12M-SSKCR09	16	12	8.5	147	75°	12°	SC∞09T3				●
NT-S16Q-SSKCR09	20	16	11	177	75°	11°	SC∞09T3				●
NT-S20R-SSKCR09	25	20	13	196	75°	6°	SC∞09T3				●
NT-S25R-SSKCR09	31	25	15	198	75°	6°	SC∞09T3				●
NT-S25R-SSKCR12	32	25	17	196	75°	7°	SC∞1204				●
NT-S32S-SSKCR12	40	32	22	246	75°	7°	SC∞1204				●

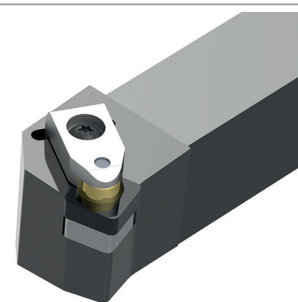
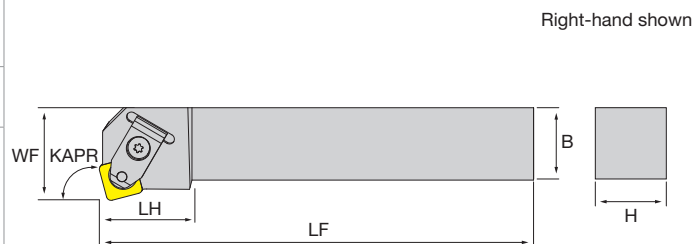
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-S∞∞-SSKC'/n09	NT-ST40090T15	NT-FT15
NT-S∞∞-SSKC'/n12	NT-ST40115T15	NT-FT15

CSKN

ISO SN - Advanced

- For full solid CBN and ceramic inserts, reliable clamping
- Suitable for flat top and dimple type insert



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
RIGHT-HAND											
NT-CSKNR2525M12	25	25	32	150	32	75°	SN∞1204				▲

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	L wrench	Clamping set	Shim screw	Shim
NT-CSKNR2525M12	NT-WR030 / NT-WR025	NT-CS152	NT-ST130	NT-SH071



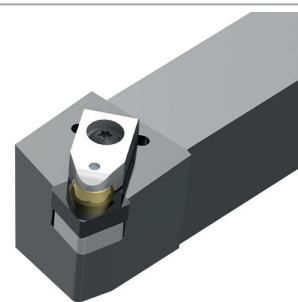
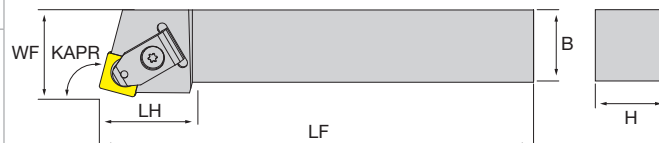
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CSRN**ISO SN - Advanced**

- For full solid CBN and ceramic inserts, reliable clamping
- Suitable for flat top and dimple type insert

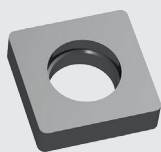
Right-hand shown



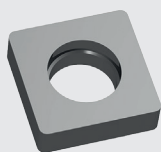
Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
RIGHT-HAND											
NT-CSRNR2525M12	25	25	27	150	32	75°	SN∞1204				▲

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	L wrench	Clamping set	Shim screw	Shim
				
	NT-WR030 / NT-WR025	NT-CS152	NT-ST130	NT-SH071


SNON120700
**NT-SH072**

For 07 thickness, please order separately the correct shim


SNOX120700
**NT-SH072**

For 07 thickness, please order separately the correct shim

+

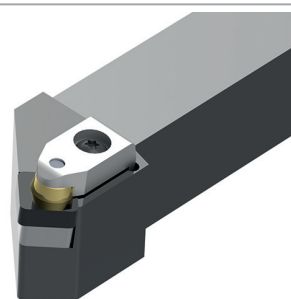
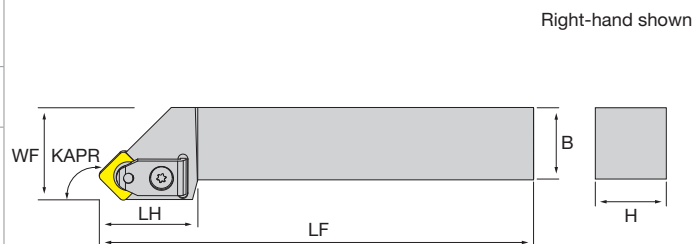

SNOX120700
**NT-CS153**

For dimple top inserts, please order separately the correct clamp

CSSN

ISO SN - Advanced

- For full solid CBN and ceramic inserts, reliable clamping
- Suitable for flat top and dimple type insert



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
RIGHT-HAND											
NT-CSSNR2525M12	25	25	32	150	34	45°	SN∞1204				▲

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	L wrench	Clamping set	Shim screw	Shim
				
	NT-WR030 / NT-WR025	NT-CS152	NT-ST130	NT-SH071



+



INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

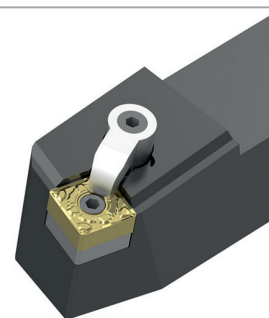
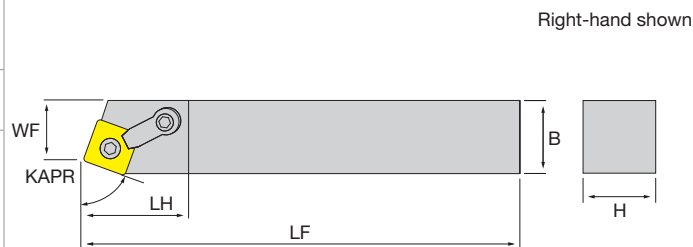
F - ACCESSORIES

G - SPARE PARTS

MSBN

ISO SN - Negative

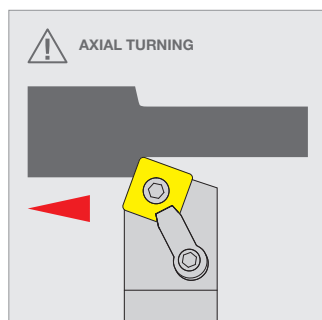
- External turning (KAPR 75°)
- Holds SN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-MSBNL2020K12	20	20	17	125	37	75°	SN-1204				●
NT-MSBNL2525M12	25	25	22	150	37	75°	SN-1204				●
NT-MSBNL3232P12	32	32	27	170	42	75°	SN-1204				●
NT-MSBNL3232P19	32	32	27	170	42	75°	SN-1906				●
NT-MSBNL4040S19	40	40	35	250	42	75°	SN-1906				●
RIGHT-HAND											
NT-MSBNR2020K12	20	20	17	125	37	75°	SN-1204				●
NT-MSBNR2525M12	25	25	22	150	37	75°	SN-1204				●
NT-MSBNR3232P12	32	32	27	170	42	75°	SN-1204				●
NT-MSBNR3232P19	32	32	27	170	42	75°	SN-1906				●
NT-MSBNR4040S19	40	40	35	250	42	75°	SN-1906				●

★ 1st choice, ☆ suitable, ● stock standard, ● non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

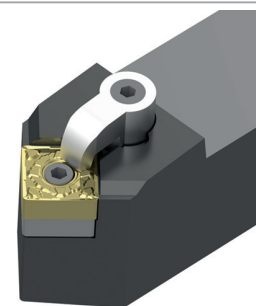
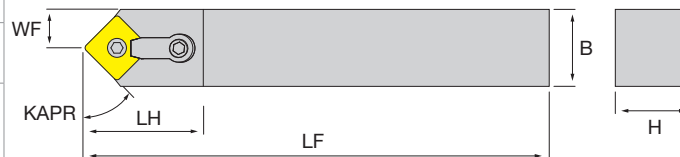
Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
NT-MSBN/10000012	NT-SH070	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MSBN/10000019	NT-SH090	NT-SP050	NT-CS015	NT-SC070	NT-WR040



MSDN

ISO SN - Negative

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



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
NEUTRAL HOLDERS											
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				⊙

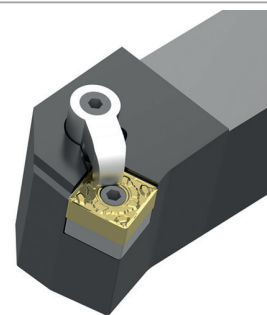
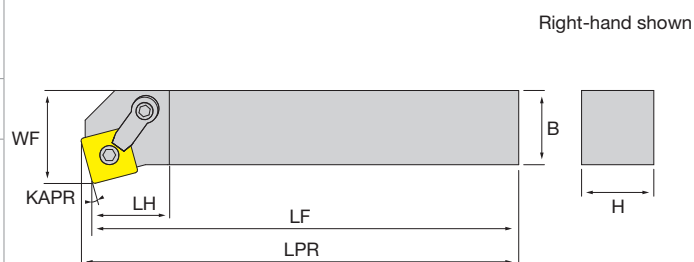
★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
NT-MSDNN0000012	NT-SH070	NT-SP010	NT-CS010	NT-SC010	NT-WR030

MSKN

ISO SN - Negative

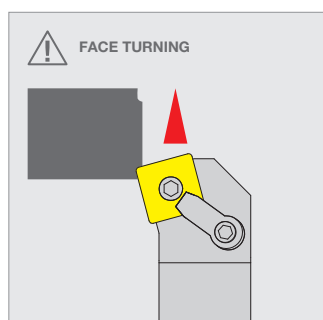
- External turning (KAPR 75°)
- Holds SN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force



Designation	H	B	WF	LF	LH	LPR	KAPR	MID			Stock
LEFT-HAND											
NT-MSKNL2020K12	20	20	25	122	37	125	75°	SN∞1204			●
NT-MSKNL2525M12	25	25	32	147	37	150	75°	SN∞1204			●
NT-MSKNL3232P12	32	32	40	167	42	170	75°	SN∞1204			⊙
NT-MSKNL4040S19	40	40	50	247	42	250	75°	SN∞1906			⊙
RIGHT-HAND											
NT-MSKNR2020K12	20	20	25	122	37	125	75°	SN∞1204			●
NT-MSKNR2525M12	25	25	32	147	37	150	75°	SN∞1204			●
NT-MSKNR3232P12	32	32	40	167	42	170	75°	SN∞1204			⊙
NT-MSKNR4040S19	40	40	50	247	42	250	75°	SN∞1906			⊙

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

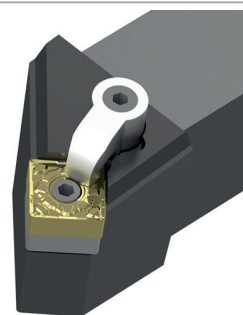
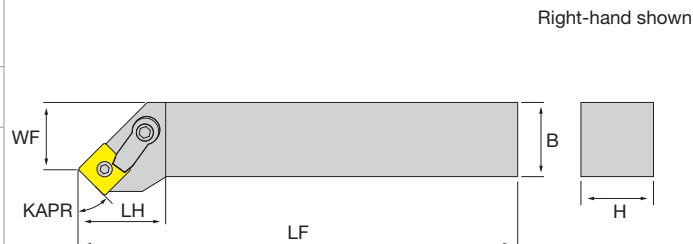
Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
NT-MSKN/80000012	NT-SH070	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MSKN/80000019	NT-SH090	NT-SP050	NT-CS015	NT-SC070	NT-WR040



MSSN

ISO SN - Negative

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



Designation	H	B	WF	LF	KAPR	MIID					Stock
LEFT-HAND											
NT-MSSNL2020K12	20	20	25	125	45°	SN∞1204					●
NT-MSSNL2525M12	25	25	32	150	45°	SN∞1204					●
NT-MSSNL3232P12	32	32	40	170	45°	SN∞1204					⊙
NT-MSSNL3232P19	32	32	40	170	45°	SN∞1906					⊙
NT-MSSNL4040S19	40	40	40	250	45°	SN∞1906					⊙
RIGHT-HAND											
NT-MSSNR2020K12	20	20	25	125	45°	SN∞1204					●
NT-MSSNR2525M12	25	25	32	150	45°	SN∞1204					●
NT-MSSNR3232P12	32	32	40	170	45°	SN∞1204					⊙
NT-MSSNR3232P19	32	32	40	170	45°	SN∞1906					⊙
NT-MSSNR4040S19	40	40	40	250	45°	SN∞1906					⊙

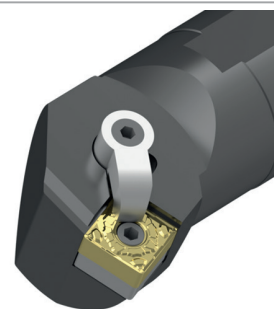
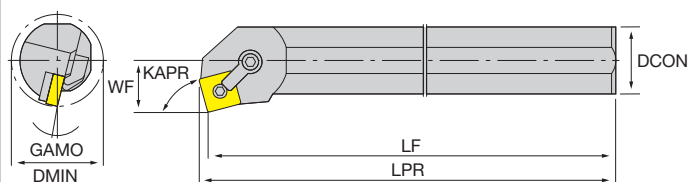
★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	Clamp	Clamp screw	L wrench
NT-MSSN/80000012	NT-SH070	NT-SP010	NT-CS010	NT-SC010	NT-WR030
NT-MSSN/80000019	NT-SH090	NT-SP050	NT-CS015	NT-SC070	NT-WR040

S MSKN

ISO SN - Negative

- 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	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S20R-MSKNL12	25	20	13	200	75°	17°	SN∞1204				●
NT-S25R-MSKNL12	32	25	17	200	75°	14°	SN∞1204				●
NT-S32S-MSKNL12	40	32	22	250	75°	14°	SN∞1204				●
NT-S40T-MSKNL12	50	40	27	300	75°	15°	SN∞1204				●
NT-S50U-MSKNL12	63	50	35	350	75°	12°	SN∞1204				●
NT-S50U-MSKNL19	63	50	35	350	75°	8°	SN∞1906				●
RIGHT-HAND											
NT-S20R-MSKNR12	25	20	13	200	75°	17°	SN∞1204				●
NT-S25R-MSKNR12	32	25	17	200	75°	14°	SN∞1204				●
NT-S32S-MSKNR12	40	32	22	250	75°	14°	SN∞1204				●
NT-S40T-MSKNR12	50	40	27	300	75°	15°	SN∞1204				●
NT-S50U-MSKNR12	63	50	35	350	75°	12°	SN∞1204				●
NT-S50U-MSKNR19	63	50	35	350	75°	8°	SN∞1906				●

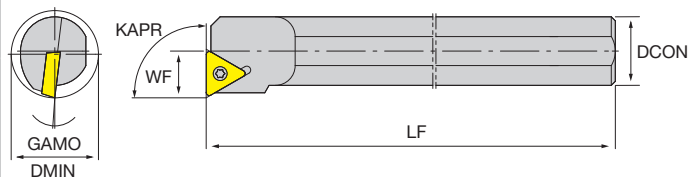
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Eccentric pin	Clamp	Clamp screw	L wrench	Shim
NT-S20R-MSKN ¹ /r12	NT-SP035	NT-CS030	NT-SC030	NT-WR025	-
NT-S25R-MSKN ¹ /r12	NT-SP035	NT-CS030	NT-SC030	NT-WR025 / NT-WR030	-
NT-S32S-MSKN ¹ /r12	NT-SP010	NT-CS010	NT-SC010	NT-WR030	NT-SH070
NT-S40T-MSKN ¹ /r12	NT-SP010	NT-CS010	NT-SC010	NT-WR030	NT-SH070
NT-S50U-MSKN ¹ /r12	NT-SP010	NT-CS010	NT-SC010	NT-WR030	NT-SH070
NT-S50U-MSKN ¹ /r19	NT-SP050	NT-CS015	NT-SC070	NT-WR030 / NT-WR040	NT-SH090

S STUB

ISO TB - Positive

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



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S08H-STUBL06-10	10	8	4	100	93°	12°	TB∞0601				⊙
RIGHT-HAND											
NT-S08H-STUBR06-10	10	8	4	100	93°	12°	TB∞0601				●

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-S08H-STUB ^{1/2} /R06-∞	NT-ST20038T06	NT-FT06



HOLDER AND INSERT COUPLING

Holder R → Insert L
 Holder L → Insert R

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

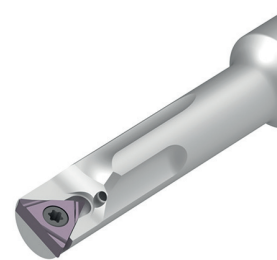
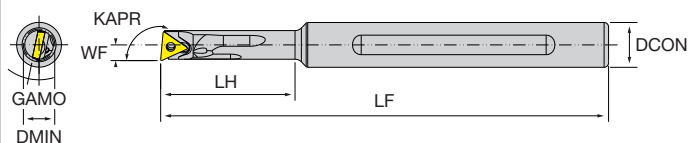
G - SPARE PARTS

V STLB

ISO TB - Positive

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

Right-hand shown



Designation	DMIN	DCON	WF	LF	LH	KAPR	GAMO	MIID			Stock
RIGHT-HAND WITH REDUCED NECK											
NT-V10H-STLBR06-07	7	10	3.5	100	30	95°	12°	TB∞0601			●
NT-V10H-STLBR06-08	8	10	4	100	35	95°	12°	TB∞0601			●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-V10H-STLB*/h06-∞	NT-ST20038T06	NT-FT06



HOLDER AND INSERT COUPLING

Holder R → Insert L

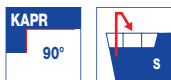
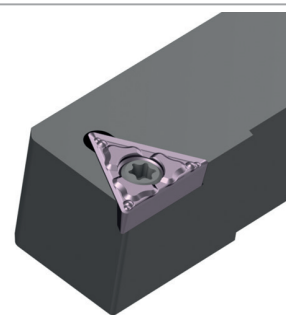
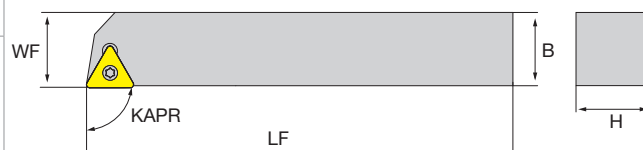
Holder L → Insert R

STAC

ISO TC - Positive

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

Right-hand shown



Designation	H	B	WF	LF	KAPR	MIID					Stock
LEFT-HAND											
NT-STACL0808H09	8	8	8.5	100	90°	TC∞0902					●
NT-STACL1010H09	10	10	10.5	100	90°	TC∞0902					●
NT-STACL1212H11	12	12	12.5	100	90°	TC∞1102					●
NT-STACL1616H11	16	16	16.5	100	90°	TC∞1102					●
RIGHT-HAND											
NT-STACR0808H09	8	8	8.5	100	90°	TC∞0902					●
NT-STACR1010H09	10	10	10.5	100	90°	TC∞0902					●
NT-STACR1212H11	12	12	12.5	100	90°	TC∞1102					●
NT-STACR1616H11	16	16	16.5	100	90°	TC∞1102					●

★ 1st choice, ☆ suitable, ● stock standard, ● non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-STAC*/R0000009	NT-ST22049T07	NT-FT07
NT-STAC*/R0000011	NT-ST25060T07B	NT-FT07

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

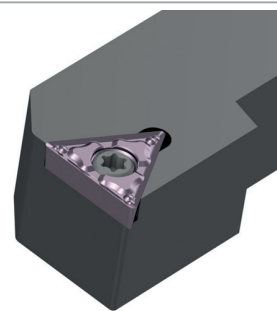
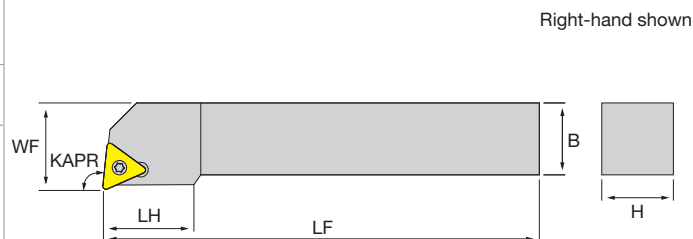
F - ACCESSORIES

G - SPARE PARTS

STFC

ISO TC - Positive

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



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-STFCL0808H09	8	8	10	100	12	91°	TC∞0902				●
NT-STFCL1010H09	10	10	12	100	12	91°	TC∞0902				●
NT-STFCL1212H11	12	12	16	100	17	91°	TC∞1102				●
NT-STFCL1616H11	16	16	20	100	18	91°	TC∞1102				●
NT-STFCL2020K16	20	20	25	125	22	91°	TC∞16T3				●
NT-STFCL2525M16	25	25	32	150	25	91°	TC∞16T3				●
RIGHT-HAND											
NT-STFCR0808H09	8	8	10	100	12	91°	TC∞0902				●
NT-STFCR1010H09	10	10	12	100	12	91°	TC∞0902				●
NT-STFCR1212H11	12	12	16	100	17	91°	TC∞1102				●
NT-STFCR1616H11	16	16	20	100	18	91°	TC∞1102				●
NT-STFCR2020K16	20	20	25	125	22	91°	TC∞16T3				●
NT-STFCR2525M16	25	25	32	150	25	91°	TC∞16T3				●

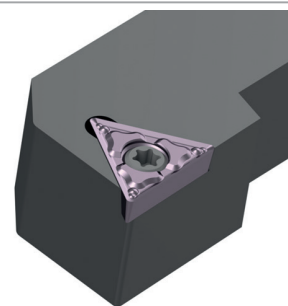
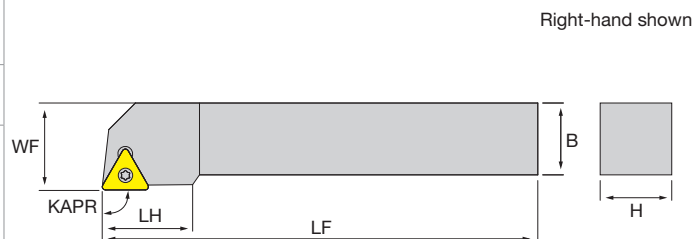
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-STFC [☆] /R0000009	NT-ST22049T07	NT-FT07
NT-STFC [☆] /R0000011	NT-ST25060T07B	NT-FT07
NT-STFC [☆] /R0000016	NT-ST40090T15	NT-FT15

STGC

ISO TC - Positive

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



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-STGCL1212H11	12	12	16	100	17	91°	TC∞1102				⊙
NT-STGCL1616H11	16	16	20	100	18	91°	TC∞1102				⊙
NT-STGCL2020K16	20	20	25	125	22	91°	TC∞16T3				●
NT-STGCL2525M16	25	25	32	150	25	91°	TC∞16T3				●
RIGHT-HAND											
NT-STGCR1212H11	12	12	16	100	17	91°	TC∞1102				⊙
NT-STGCR1616H11	16	16	20	100	18	91°	TC∞1102				⊙
NT-STGCR2020K16	20	20	25	125	22	91°	TC∞16T3				●
NT-STGCR2525M16	25	25	32	150	25	91°	TC∞16T3				●

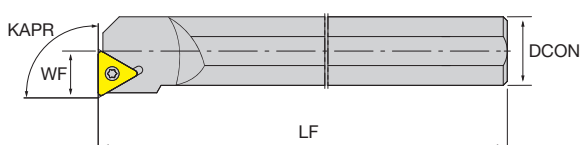
★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-STGC [▽] /R0000011	NT-ST25060T07B	NT-FT07
NT-STGC [▽] /R0000016	NT-ST40090T15	NT-FT15

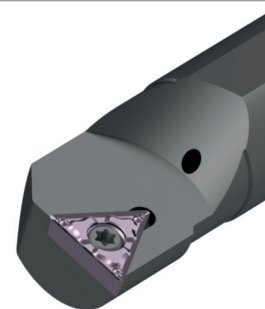
A STFC

ISO TC - Positive

- Internal turning (KAPR 91°)
- Steel boring bar with internal coolant through
- Holds TC-style inserts, tightened by screws



Right-hand shown



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A10K-STFCL11	14	10	7	125	91°	12°	TC∞1102				●
NT-A12M-STFCL11	14	12	7	150	91°	10°	TC∞1102				●
NT-A16Q-STFCL11	18	16	9	180	91°	8°	TC∞1102				●
NT-A20R-STFCL11	25	20	13	200	91°	3°	TC∞1102				●
RIGHT-HAND											
NT-A10K-STFCR11	14	10	7	125	91°	12°	TC∞1102				●
NT-A12M-STFCR11	14	12	7	150	91°	10°	TC∞1102				●
NT-A16Q-STFCR11	18	16	9	180	91°	8°	TC∞1102				●
NT-A20R-STFCR11	25	20	13	200	91°	3°	TC∞1102				●

★ 1st choice, ☆ suitable, ● stock standard, ● non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-A∞∞-STFC ¹ / _R 11	NT-ST25060T07B	NT-FT07



HOLDER AND INSERT COUPLING

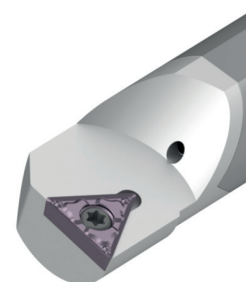
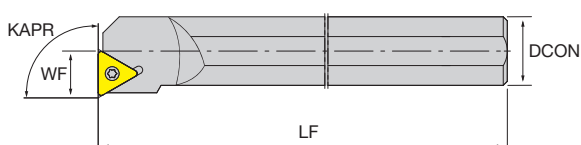
Holder R → Insert L

Holder L → Insert R

E STFC

ISO TC - Positive

- Internal turning (KAPR 91°)
- Carbide boring bar with internal coolant through. Maximum overhang: 7xDCON
- Holds TC-style inserts, tightened by screws



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-E10K-STFCL11	12	10	6	125	91°	10°	TC _∞ 1102				⊙
NT-E12M-STFCL11	16	12	8	150	91°	10°	TC _∞ 1102				●
NT-E16R-STFCL11	20	16	10	200	91°	12°	TC _∞ 1102				●
NT-E20R-STFCL11	25	20	13	200	91°	12°	TC _∞ 1102				●
RIGHT-HAND											
NT-E10K-STFCR11	12	10	6	125	91°	10°	TC _∞ 1102				●
NT-E12M-STFCR11	16	12	8	150	91°	10°	TC _∞ 1102				●
NT-E16R-STFCR11	20	16	10	200	91°	12°	TC _∞ 1102				●
NT-E20R-STFCR11	25	20	13	200	91°	12°	TC _∞ 1102				●

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-E ₀₀₀ -STFC _{1/8} 11	NT-ST25060T07B	NT-FT07



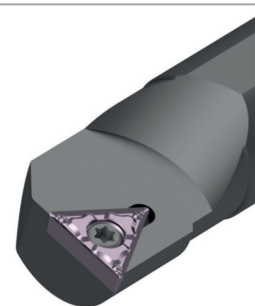
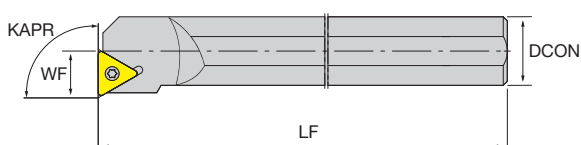
HOLDER AND INSERT COUPLING

Holder R → Insert L
 Holder L → Insert R

S STFC

ISO TC - Positive

- Internal turning (KAPR 91°)
- Steel boring bar without internal coolant
- Holds TC-style inserts, tightened by screws



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S08H-STFCL09	12	8	6	100	91°	15°	TC∞0902				●
NT-S10K-STFCL09	14	10	7	125	91°	15°	TC∞0902				●
NT-S12M-STFCL09	16	12	9	150	91°	10°	TC∞0902				●
NT-S10K-STFCL11	14	10	7	125	91°	12°	TC∞1102				●
NT-S12M-STFCL11	14	12	7	150	91°	10°	TC∞1102				●
NT-S16Q-STFCL11	18	16	9	180	91°	8°	TC∞1102				●
NT-S20R-STFCL11	25	20	13	200	91°	3°	TC∞1102				●
NT-S20R-STFCL16	25	20	13	200	91°	8°	TC∞16T3				●
NT-S25R-STFCL16	32	25	17	200	91°	6°	TC∞16T3				●
NT-S32S-STFCL16	39	32	22	250	91°	4°	TC∞16T3				●
RIGHT-HAND											
NT-S08H-STFCR09	12	8	6	100	91°	15°	TC∞0902				●
NT-S10K-STFCR09	14	10	7	125	91°	15°	TC∞0902				●
NT-S12M-STFCR09	16	12	9	150	91°	10°	TC∞0902				●
NT-S10K-STFCR11	14	10	7	125	91°	12°	TC∞1102				●
NT-S12M-STFCR11	14	12	7	150	91°	10°	TC∞1102				●
NT-S16Q-STFCR11	18	16	9	180	91°	8°	TC∞1102				●
NT-S20R-STFCR11	25	20	13	200	91°	3°	TC∞1102				●
NT-S20R-STFCR16	25	20	13	200	91°	8°	TC∞16T3				●
NT-S25R-STFCR16	32	25	17	200	91°	6°	TC∞16T3				●
NT-S32S-STFCR16	39	32	22	250	91°	4°	TC∞16T3				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-S∞-STFC ¹ / _n 09	NT-ST22049T07	NT-FT07
NT-S∞-STFC ¹ / _n 11	NT-ST25060T07B	NT-FT07
NT-S∞-STFC ¹ / _n 16	NT-ST40090T15	NT-FT15



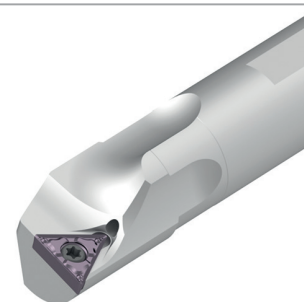
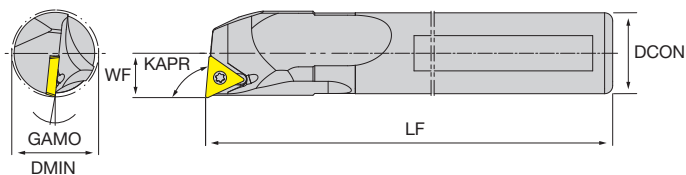
HOLDER AND INSERT COUPLING

Holder R → Insert L
 Holder L → Insert R

V STLC

ISO TC - Positive

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



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-V08H-STLCL09-10	10	8	5	100	95°	14°	TC∞0902				⊙
NT-V10K-STLCL09-12	12	10	6	125	95°	12°	TC∞0902				⊙
NT-V12M-STLCL09-14	14	12	7	150	95°	10°	TC∞0902				⊙
NT-V10K-STLCL11-12	12	10	6	125	95°	12°	TC∞1102				●
NT-V12M-STLCL11-14	14	12	7	150	95°	10°	TC∞1102				●
NT-V16Q-STLCL11-18	18	16	9	180	95°	8°	TC∞1102				●
NT-V20R-STLCL11-22	22	20	11	200	95°	6°	TC∞1102				●
NT-V20R-STLCL16-25	25	20	12.5	200	95°	8°	TC∞16T3				●
NT-V25S-STLCL16-32	32	25	16	250	95°	6°	TC∞16T3				●
RIGHT-HAND											
NT-V08H-STLCR09-10	10	8	5	100	95°	14°	TC∞0902				⊙
NT-V10K-STLCR09-12	12	10	6	125	95°	12°	TC∞0902				●
NT-V12M-STLCR09-14	14	12	7	150	95°	10°	TC∞0902				⊙
NT-V10K-STLCR11-12	12	10	6	125	95°	12°	TC∞1102				●
NT-V12M-STLCR11-14	14	12	7	150	95°	10°	TC∞1102				●
NT-V16Q-STLCR11-18	18	16	9	180	95°	8°	TC∞1102				●
NT-V20R-STLCR11-22	22	20	11	200	95°	6°	TC∞1102				●
NT-V20R-STLCR16-25	25	20	12.5	200	95°	8°	TC∞16T3				●
NT-V25S-STLCR16-32	32	25	16	250	95°	6°	TC∞16T3				●

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-V∞-STLC ¹ / ₁₆ 09-∞	NT-ST22049T07	NT-FT07
NT-V∞-STLC ¹ / ₁₆ 11-∞	NT-ST25060T07B	NT-FT07
NT-V∞-STLC ¹ / ₁₆ 16-∞	NT-ST40090T15	NT-FT15



HOLDER AND INSERT COUPLING

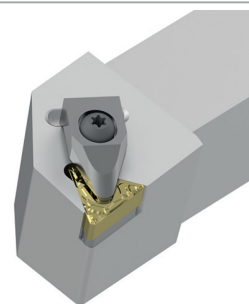
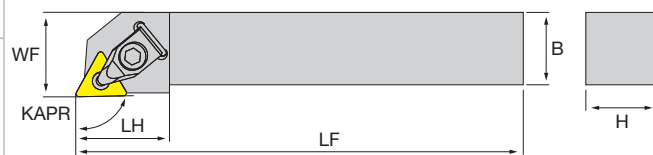
Holder R → Insert L
 Holder L → Insert R

DTGN

ISO TN - Negative

- External turning (KAPR 91°)
- Holds TN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening

Right-hand shown



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-DTGNL2020K16X	20	20	25	125	33	91°	TN∞1604				●
NT-DTGNL2525M16X	25	25	32	150	33	91°	TN∞1604				●
RIGHT-HAND											
NT-DTGNR2020K16X	20	20	25	125	33	91°	TN∞1604				●
NT-DTGNR2525M16X	25	25	32	150	33	91°	TN∞1604				●

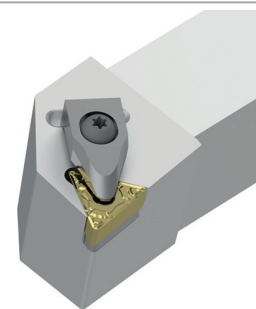
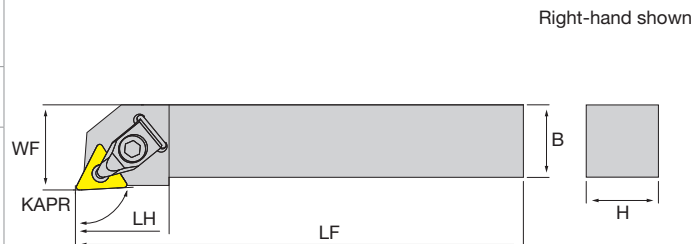
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Shim screw	Clamp	Spring	Clamp screw	L wrench
NT-DTGN⁺/R0000016X	NT-SH006	NT-ST250	NT-CS250	NT-SG250	NT-SC250	NT-TX15

DTJN

ISO TN - Negative

- External turning (KAPR 93°)
- Holds TN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-DTJNL2020K16X	20	20	25	125	33	93°	TN-1604				●
NT-DTJNL2525M16X	25	25	32	150	33	93°	TN-1604				●
RIGHT-HAND											
NT-DTJNR2020K16X	20	20	25	125	33	93°	TN-1604				●
NT-DTJNR2525M16X	25	25	32	150	33	93°	TN-1604				●

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

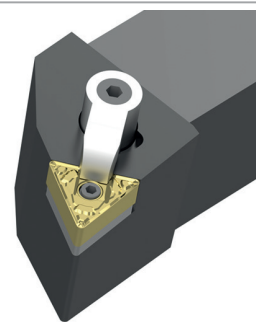
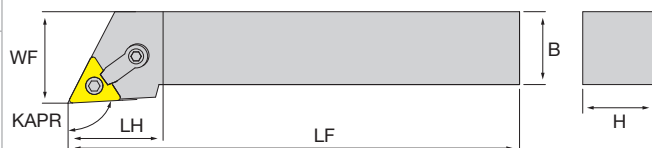
Spare parts	Shim	Shim screw	Clamp	Spring	Clamp screw	L wrench
NT-DTJN-/-R0000016X	NT-SH006	NT-ST250	NT-CS250	NT-SG250	NT-SC250	NT-TX15

MTJN

ISO TN - Negative

- External turning (KAPR 93°)
- Holds TN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force

Right-hand shown



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-MTJNL2020K16	20	20	25	125	33	93°	TN∞1604				●
NT-MTJNL2525M16	25	25	32	150	35	93°	TN∞1604				●
NT-MTJNL3232P16	32	32	40	170	43	93°	TN∞1604				●
NT-MTJNL2525M22	25	25	32	150	43	93°	TN∞2204				⊙
NT-MTJNL3225P22	32	25	32	170	43	93°	TN∞2204				⊙
RIGHT-HAND											
NT-MTJNR2020K16	20	20	25	125	33	93°	TN∞1604				●
NT-MTJNR2525M16	25	25	32	150	35	93°	TN∞1604				●
NT-MTJNR3232P16	32	32	40	170	43	93°	TN∞1604				●
NT-MTJNR2525M22	25	25	32	150	43	93°	TN∞2204				●
NT-MTJNR3225P22	32	25	32	170	43	93°	TN∞2204				●

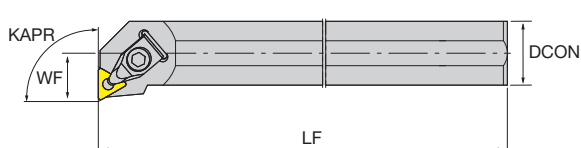
★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	L wrench	Clamp	Clamp screw
NT-MTJN- <i>r</i> 2020K16	NT-SH005	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC008
NT-MTJN- <i>r</i> 2525M16	NT-SH005	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC008
NT-MTJN- <i>r</i> 3232P16	NT-SH005	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC008
NT-MTJN- <i>r</i> 2525M22	NT-SH008	NT-SP010	NT-WR030 / NT-WR040	NT-CS070	NT-SC070
NT-MTJN- <i>r</i> 3225P22	NT-SH008	NT-SP010	NT-WR030 / NT-WR040	NT-CS070	NT-SC070

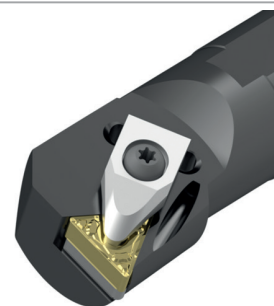
A DTFN

ISO TN - Negative

- 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



Right-hand shown



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A25R-DTFNL16	32	25	17	200	91°	13°	TN-1604				●
NT-A32S-DTFNL16	40	32	22	250	91°	13°	TN-1604				●
RIGHT-HAND											
NT-A25R-DTFNR16	32	25	17	200	91°	13°	TN-1604				●
NT-A32S-DTFNR16	40	32	22	250	91°	13°	TN-1604				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Shim screw	Clamp	Spring	Clamp screw	L wrench
NT-A ₀₀₀ -DTFN/-16	NT-SH006	NT-ST250	NT-CS250	NT-SG250	NT-SC250	NT-TX15



HOLDER AND INSERT COUPLING

Holder R → Insert L
Holder L → Insert R

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

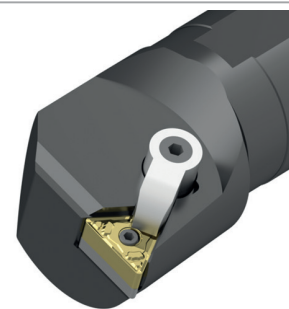
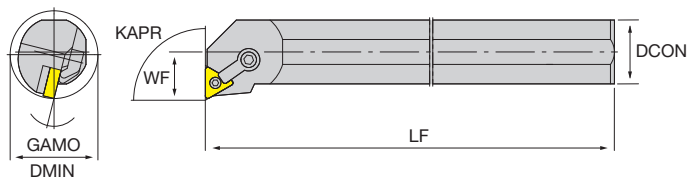
F - ACCESSORIES

G - SPARE PARTS

S MTUN

ISO TN - Negative

- 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	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S20R-MTUNL16	25	20	13	200	93°	17°	TN∞1604				●
NT-S25R-MTUNL16	32	25	17	200	93°	12°	TN∞1604				●
NT-S32S-MTUNL16	40	32	22	250	93°	10°	TN∞1604				●
NT-S40T-MTUNL16	50	40	27	300	93°	10°	TN∞1604				●
NT-S50U-MTUNL16	63	50	35	350	93°	8°	TN∞1604				●
NT-S40T-MTUNL22	50	40	27	300	93°	15°	TN∞2204				◎
NT-S50U-MTUNL22	63	50	35	350	93°	12°	TN∞2204				◎
RIGHT-HAND											
NT-S20R-MTUNR16	25	20	13	200	93°	17°	TN∞1604				●
NT-S25R-MTUNR16	32	25	17	200	93°	12°	TN∞1604				●
NT-S32S-MTUNR16	40	32	22	250	93°	10°	TN∞1604				●
NT-S40T-MTUNR16	50	40	27	300	93°	10°	TN∞1604				●
NT-S50U-MTUNR16	63	50	35	350	93°	8°	TN∞1604				●
NT-S40T-MTUNR22	50	40	27	300	93°	15°	TN∞2204				◎
NT-S50U-MTUNR22	63	50	35	350	93°	12°	TN∞2204				◎

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Eccentric pin	L wrench	Clamp	Clamp screw	Shim
NT-S20R-MTUN ^h 16	NT-SP030	NT-WR020 / NT-WR025	NT-CS030	NT-SC030	-
NT-S25R-MTUN ^h 16	NT-SP030	NT-WR020 / NT-WR030	NT-CS010	NT-SC008	-
NT-S32S-MTUN ^h 16	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC010	NT-SH005
NT-S40T-MTUN ^h 16	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC010	NT-SH005
NT-S50U-MTUN ^h 16	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC010	NT-SH005
NT-S40T-MTUN ^h 22	NT-SP010	NT-WR030 / NT-WR040	NT-CS070	NT-SC070	NT-SH008
NT-S50U-MTUN ^h 22	NT-SP010	NT-WR030 / NT-WR040	NT-CS070	NT-SC070	NT-SH008

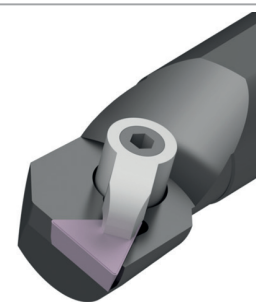
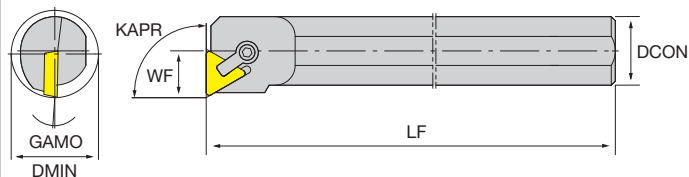
! HOLDER AND INSERT COUPLING

Holder R → Insert L
 Holder L → Insert R

S CTUP

ISO TP - Positive

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



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S12M-CTUPL11	16	12	9	150	93°	6°	TP∞1103				●
NT-S16Q-CTUPL11	20	16	11	180	93°	3°	TP∞1103				●
NT-S20R-CTUPL11	25	20	13	200	93°	3°	TP∞1103				●
NT-S25R-CTUPL16	32	25	17	200	93°	3°	TP∞1603				●
NT-S32S-CTUPL16	40	32	22	250	93°	3°	TP∞1603				●
RIGHT-HAND											
NT-S12M-CTUPR11	16	12	9	150	93°	6°	TP∞1103				●
NT-S16Q-CTUPR11	20	16	11	180	93°	3°	TP∞1103				●
NT-S20R-CTUPR11	25	20	13	200	93°	3°	TP∞1103				●
NT-S25R-CTUPR16	32	25	17	200	93°	3°	TP∞1603				●
NT-S32S-CTUPR16	40	32	22	250	93°	3°	TP∞1603				●

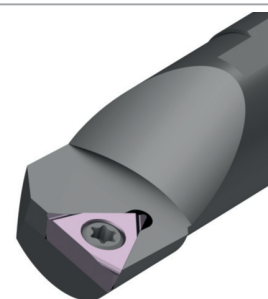
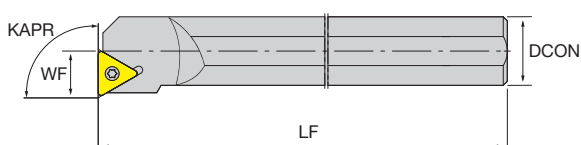
★ 1st choice, ☆ suitable, ● stock standard, ● non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Clamping set	L wrench	Clamp	Clamp screw	Shim	Shim screw	Flag wrench
NT-S12M-CTUP ¹ / ₁₁	NT-CS003	NT-WR025	-	-	-	-	-
NT-S16Q-CTUP ¹ / ₁₁	-	NT-WR025	NT-CS005	NT-SC005	-	-	-
NT-S20R-CTUP ¹ / ₁₁	-	NT-WR025	NT-CS005	NT-SC005	-	-	-
NT-S25R-CTUP ¹ / ₁₆	-	NT-WR030	NT-CS010	NT-SC008	NT-SH002	NT-ST022	NT-FT06
NT-S32S-CTUP ¹ / ₁₆	-	NT-WR030	NT-CS010	NT-SC008	NT-SH002	NT-ST022	NT-FT06

S STUP

ISO TP - Positive

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



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S10K-STUPL09	12	10	6	125	93°	8°	TP∞0902				●
NT-S12M-STUPL09	14	12	7	150	93°	5°	TP∞0902				●
NT-S10K-STUPL11	12	10	6	125	93°	8°	TP∞1103				●
NT-S12M-STUPL11	14	12	7	150	93°	7°	TP∞1103				●
NT-S16Q-STUPL11	18	16	9	180	93°	4°	TP∞1103				●
RIGHT-HAND											
NT-S10K-STUPR09	12	10	6	125	93°	8°	TP∞0902				●
NT-S12M-STUPR09	14	12	7	150	93°	5°	TP∞0902				●
NT-S10K-STUPR11	12	10	6	125	93°	8°	TP∞1103				●
NT-S12M-STUPR11	14	12	7	150	93°	7°	TP∞1103				●
NT-S16Q-STUPR11	18	16	9	180	93°	4°	TP∞1103				●
NT-S20R-STUPR11	22	20	11	200	93°	2°	TP∞1103				●

★ 1st choice, ☆ suitable, ● stock standard, ● non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-S10K-STUP ^{L/R} 09	NT-ST30058T10	NT-FT10
NT-S12M-STUP ^{L/R} 09	NT-ST30058T10	NT-FT10
NT-S10K-STUP ^{L/R} 11	NT-ST30058T10	NT-FT10
NT-S12M-STUP ^{L/R} 11	NT-ST30058T10	NT-FT10
NT-S16Q-STUP ^{L/R} 11	NT-ST30058T10	NT-FT10
NT-S20R-STUP ^{L/R} 11	NT-ST30058T10	NT-FT10



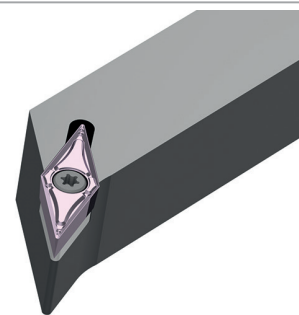
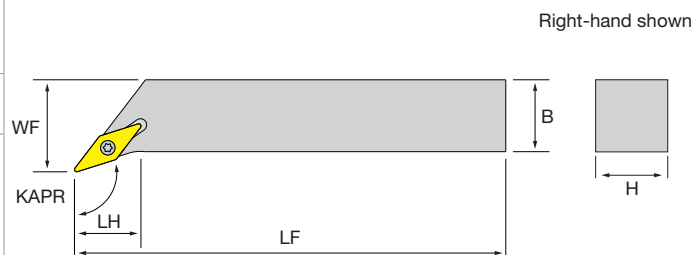
HOLDER AND INSERT COUPLING

Holder R → Insert L
 Holder L → Insert R

SVHB

ISO VB - Positive

- External turning (KAPR 107.5°)
- Holds VB/VC-style inserts, tightened by screw



Designation	H	B	WF	LF	LH	LPR	KAPR	MIID			Stock
LEFT-HAND											
NT-SVHBL2525M16	25	25	32	150	23	-	107.5°	VB∞1604			●
RIGHT-HAND											
NT-SVHBR2525M16	25	25	32	150	23	-	107.5°	VB∞1604			●

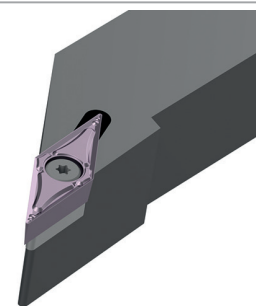
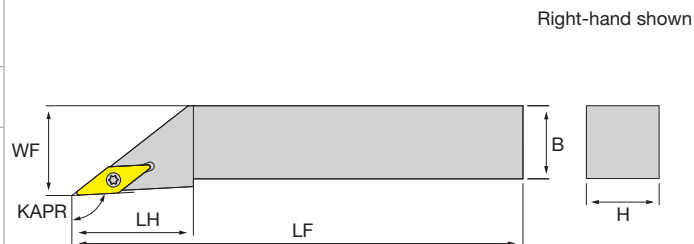
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Shim screw	L wrench	Insert screw	Flag wrench
NT-SVHB ¹ /r2525M16	NT-SH050	NT-SR010	NT-WR035	NT-ST35115T15	NT-FT15

SVJB

ISO VB - Positive

- External turning (KAPR 93°)
- Holds VB/VC-style inserts, tightened by screw



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-SVJBL2020K11	20	20	25	125	22	93°	VB∞1103				●
NT-SVJBL2020K16	20	20	25	125	33	93°	VB∞1604				●
NT-SVJBL2525M16	25	25	32	150	38	93°	VB∞1604				●
NT-SVJBL3232P16	-	-	-	-	-	-	VB∞1604				⊙
RIGHT-HAND											
NT-SVJBR2020K11	20	20	25	125	22	93°	VB∞1103				●
NT-SVJBR2020K16	20	20	25	125	33	93°	VB∞1604				●
NT-SVJBR2525M16	25	25	32	150	38	93°	VB∞1604				●
NT-SVJBR3232P16	-	-	-	-	-	-	VB∞1604				⊙

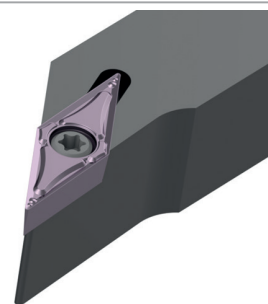
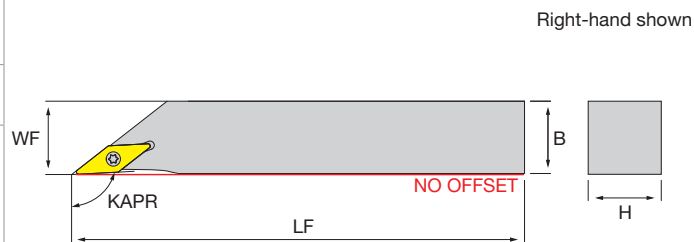
★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
NT-SVJB ¹ /R0000011	NT-ST25060T07B	NT-FT07	-	-	-
NT-SVJB ¹ /R0000016	NT-ST35115T15	NT-FT15	NT-SH050	NT-SR010	NT-WR035

SVJB N

ISO VB - Positive

- External turning (KAPR 93°)
- Holds VB/VC-style inserts, tightened by screw
- Suitable for lathes without offset



Designation	H	B	WF	LF	KAPR	MIID					Stock
LEFT-HAND											
NT-SVJBL1212K11N	12	12	12	125	93°	VB∞1103					●
NT-SVJBL1616K11N	16	16	16	125	93°	VB∞1103					●
NT-SVJBL1616H16N	16	16	16	100	93°	VB∞1604					●
RIGHT-HAND											
NT-SVJBR1212K11N	12	12	12	125	93°	VB∞1103					●
NT-SVJBR1616K11N	16	16	16	125	93°	VB∞1103					●
NT-SVJBR1616H16N	16	16	16	100	93°	VB∞1604					●

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
NT-SVJB ^{1/2} /R0000011N	NT-ST25060T07B	NT-FT07	-	-	-
NT-SVJB ^{1/2} /R0000016N	NT-ST35115T15	NT-FT15	NT-SH050	NT-SR010	NT-WR035

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

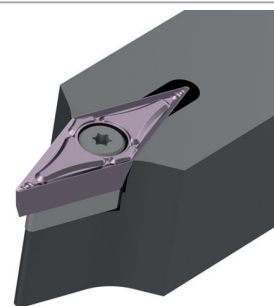
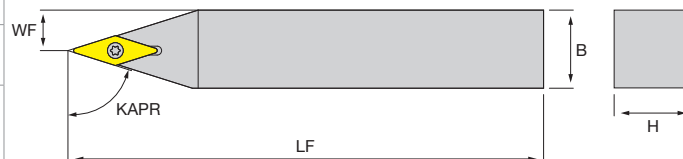
F - ACCESSORIES

G - SPARE PARTS

SVVB

ISO VB - Positive

- External turning (KAPR 72.5°), Neutral position
- Holds VB/VC-style inserts, tightened by screw



Designation	H	B	WF	LF	KAPR	MIID					Stock
NEUTRAL HOLDERS											
NT-SVVBN2020K11	20	20	10	125	72.5°	VB∞1103					●
NT-SVVBN2525M11	25	25	12.5	150	72.5°	VB∞1103					●
NT-SVVBN2020K16	20	20	10	125	72.5°	VB∞1604					●
NT-SVVBN2525M16	25	25	12.5	150	72.5°	VB∞1604					●

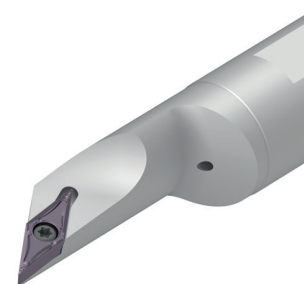
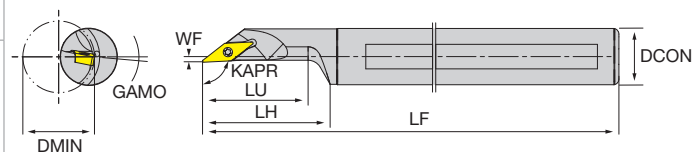
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
NT-SVVBN∞∞∞∞11	NT-ST25060T07B	NT-FT07	-	-	-
NT-SVVBN∞∞∞∞16	NT-ST35115T15	NT-FT15	NT-SH050	NT-SR010	NT-WR035

V SVJB

ISO VB - Positive

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



Designation	DMIN	DCON	WF	LF	LH	KAPR	GAMO	MIID			Stock
LEFT-HAND WITH REDUCED NECK											
NT-V20R-SVJBL11-25	25	20	2	200	48	93°	5°	VB∞1103			●
NT-V25S-SVJBL11-30	30	25	3.5	250	58	93°	5°	VB∞1103			●
RIGHT-HAND WITH REDUCED NECK											
NT-V20R-SVJBR11-25	25	20	2	200	48	93°	5°	VB∞1103			●
NT-V25S-SVJBR11-30	30	25	3.5	250	58	93°	5°	VB∞1103			●

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-V∞-SVJB ^{1/4} 11-∞	NT-ST25060T07B	NT-FT07



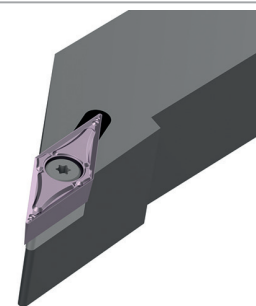
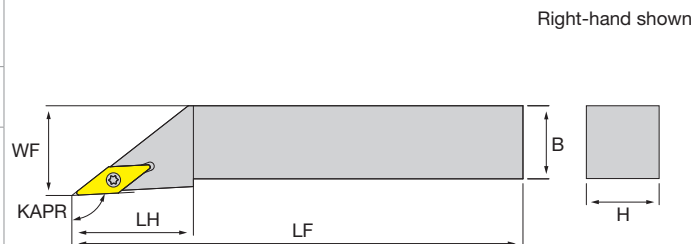
HOLDER AND INSERT COUPLING

Holder R → Insert L
Holder L → Insert R

SVJC

ISO VC - Positive

- External turning (KAPR 93°)
- Holds VC/VB-style inserts, tightened by screw



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-SVJCL2020K11	20	20	25	125	22	93°	VC∞1103				●
NT-SVJCL2020K16	20	20	25	125	33	93°	VC∞1604				●
NT-SVJCL2525M16	25	25	32	150	38	93°	VC∞1604				●
RIGHT-HAND											
NT-SVJCR2020K11	20	20	25	125	22	93°	VC∞1103				●
NT-SVJCR2020K16	20	20	25	125	33	93°	VC∞1604				●
NT-SVJCR2525M16	25	25	32	150	38	93°	VC∞1604				●

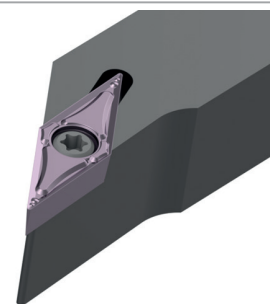
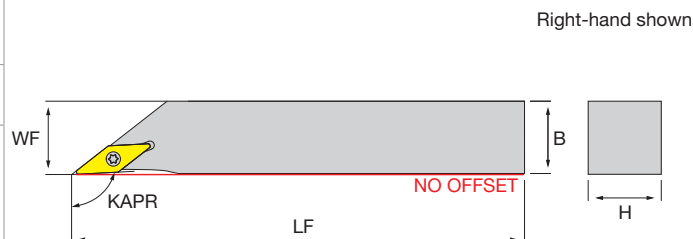
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
NT-SVJC*/R0000011	NT-ST25060T07B	NT-FT07	-	-	-
NT-SVJC*/R0000016	NT-ST35115T15	NT-FT15	NT-SH050	NT-SR010	NT-WR035

SVJC N

ISO VC - Positive

- External turning (KAPR 93°)
- Holds VC/VB-style inserts, tightened by screw
- Suitable for lathes without offset



Designation	H	B	WF	LF	KAPR	MIID					Stock
LEFT-HAND											
NT-SVJCL1010K11N	10	10	10	125	93°	VC∞1103					⊙
NT-SVJCL1212K11N	12	12	12	125	93°	VC∞1103					●
NT-SVJCL1616K11N	16	16	16	125	93°	VC∞1103					●
NT-SVJCL1616H16N	16	16	16	100	93°	VC∞1604					●
RIGHT-HAND											
NT-SVJCR1010K11N	10	10	10	125	93°	VC∞1103					⊙
NT-SVJCR1212K11N	12	12	12	125	93°	VC∞1103					●
NT-SVJCR1616K11N	16	16	16	125	93°	VC∞1103					●
NT-SVJCR1616H16N	16	16	16	100	93°	VC∞1604					●

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
NT-SVJC*/R0000011N	NT-ST25060T07B	NT-FT07	-	-	-
NT-SVJC*/R0000016N	NT-ST35115T15	NT-FT15	NT-SH050	NT-SR010	NT-WR035

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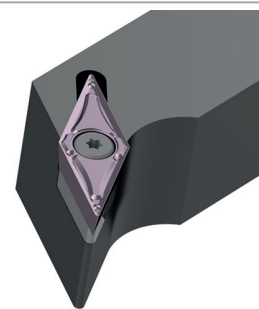
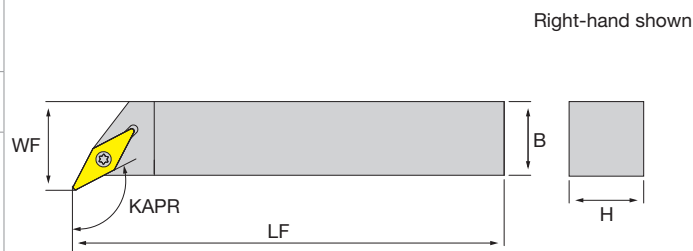
F - ACCESSORIES

G - SPARE PARTS

SVPC

ISO VC - Positive

- External turning (KAPR 117.5°)
- Holds VC/VB-style inserts, tightened by screw



Designation	H	B	WF	LF	KAPR	MIID					Stock
LEFT-HAND											
NT-SVPCL1010H11	10	10	14.5	100	117.5°	VC∞1103					◎
NT-SVPCL1212H11	12	12	16.5	100	117.5°	VC∞1103					●
NT-SVPCL1616H11	16	16	20.5	100	117.5°	VC∞1103					●
NT-SVPCL2020K16	20	20	25	125	117.5°	VC∞1604					●
NT-SVPCL2525M16	25	25	32	150	117.5°	VC∞1604					●
RIGHT-HAND											
NT-SVPCR1010H11	10	10	14.5	100	117.5°	VC∞1103					◎
NT-SVPCR1212H11	12	12	16.5	100	117.5°	VC∞1103					●
NT-SVPCR1616H11	16	16	20.5	100	117.5°	VC∞1103					●
NT-SVPCR2020K16	20	20	25	125	117.5°	VC∞1604					●
NT-SVPCR2525M16	25	25	32	150	117.5°	VC∞1604					●

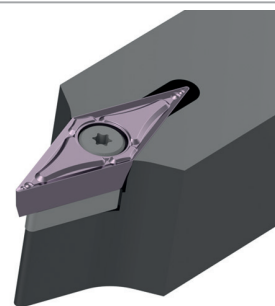
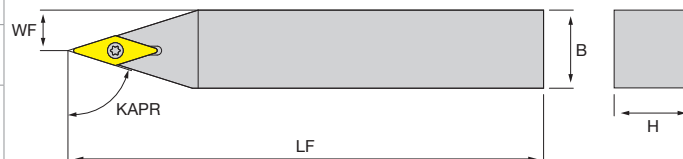
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
					
NT-SVPC/ROOOO11	NT-ST25060T07B	NT-FT07	-	-	-
NT-SVPC/ROOOO16	NT-ST35115T15	NT-FT15	NT-SH050	NT-SR010	NT-WR035

SVVC

ISO VC - Positive

- External turning (KAPR 72.5°), Neutral position
- Holds VC/VB-style inserts, tightened by screw



Designation	H	B	WF	LF	KAPR	MIID					Stock
NEUTRAL HOLDERS											
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					●

★ 1st choice, ☆ suitable, ● stock standard, ☉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench	Shim	Shim screw	L wrench
					
NT-SVVCN∞∞∞∞11	NT-ST25060T07B	NT-FT07	-	-	-
NT-SVVCN∞∞∞∞16	NT-ST35115T15	NT-FT15	NT-SH050	NT-SR010	NT-WR035

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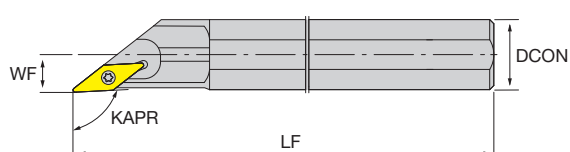
F - ACCESSORIES

G - SPARE PARTS

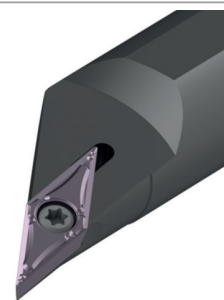
S SVJC

ISO VC - Positive

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



Right-hand shown



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S12M-SVJCL11	14	12	7	150	93°	7°	VC∞1103				●
NT-S16Q-SVJCL11	18	16	9	180	93°	7°	VC∞1103				●
NT-S16Q-SVJCL16	18	16	9	180	93°	7°	VC∞1604				●
NT-S20R-SVJCL16	21	20	10.5	200	93°	6°	VC∞1604				●
NT-S25R-SVJCL16	27	25	13.5	200	93°	6°	VC∞1604				●
NT-S32S-SVJCL16	34	32	17	250	93°	4°	VC∞1604				●
NT-S40T-SVJCL16	44	40	22	300	93°	4°	VC∞1604				●
RIGHT-HAND											
NT-S12M-SVJCR11	14	12	7	150	93°	7°	VC∞1103				●
NT-S16Q-SVJCR11	18	16	9	180	93°	7°	VC∞1103				●
NT-S16Q-SVJCR16	18	16	9	180	93°	7°	VC∞1604				●
NT-S20R-SVJCR16	21	20	10.5	200	93°	6°	VC∞1604				●
NT-S25R-SVJCR16	27	25	13.5	200	93°	6°	VC∞1604				●
NT-S32S-SVJCR16	34	32	17	250	93°	4°	VC∞1604				●
NT-S40T-SVJCR16	44	40	22	300	93°	4°	VC∞1604				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-S∞-SVJC/11	NT-ST25060T07B	NT-FT07
NT-S∞-SVJC/16	NT-ST35089T15	NT-FT15



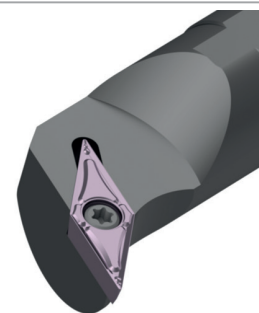
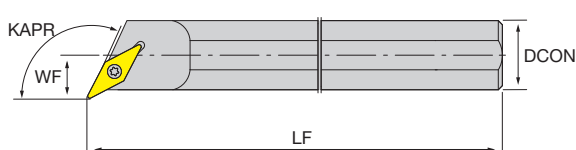
HOLDER AND INSERT COUPLING

Holder R → Insert L
 Holder L → Insert R

S SVQC

ISO VC - Positive

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



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S16Q-SVQCL11	22	16	13	180	107.5°	7°	VC∞1103				●
NT-S20R-SVQCL11	27	20	15	200	107.5°	6°	VC∞1103				⊙
NT-S20R-SVQCL16	30	20	19	200	107.5°	8°	VC∞1604				⊙
NT-S25R-SVQCL16	34	25	20.5	200	107.5°	4°	VC∞1604				●
NT-S32S-SVQCL16	41	32	22.5	250	107.5°	8°	VC∞1604				●
NT-S40T-SVQCL16	50	40	27	300	107.5°	6°	VC∞1604				⊙
RIGHT-HAND											
NT-S16Q-SVQCR11	22	16	13	180	107.5°	7°	VC∞1103				●
NT-S20R-SVQCR11	27	20	15	200	107.5°	6°	VC∞1103				⊙
NT-S20R-SVQCR16	30	20	19	200	107.5°	8°	VC∞1604				●
NT-S25R-SVQCR16	34	25	20.5	200	107.5°	4°	VC∞1604				●
NT-S32S-SVQCR16	41	32	22.5	250	107.5°	8°	VC∞1604				⊙
NT-S40T-SVQCR16	50	40	27	300	107.5°	6°	VC∞1604				⊙

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-S000-SVQC ¹ /11	NT-ST25060T07B	NT-FT07
NT-S000-SVQC ¹ /16	NT-ST35089T15	NT-FT15



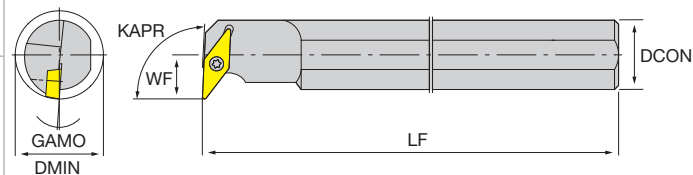
HOLDER AND INSERT COUPLING

Holder R → Insert L
Holder L → Insert R

S SVUC

ISO VC - Positive

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



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S16Q-SVUCL11	22	16	13	180	93°	7°	VC∞1103				●
NT-S20R-SVUCL11	27	20	15	200	93°	6°	VC∞1103				●
NT-S20R-SVUCL16	31	20	19	200	93°	8°	VC∞1604				●
NT-S25R-SVUCL16	33	25	20.5	200	93°	7°	VC∞1604				⊙
NT-S32S-SVUCL16	42	32	22.5	250	93°	5°	VC∞1604				●
NT-S40T-SVUCL16	51	40	27	300	93°	4°	VC∞1604				⊙
RIGHT-HAND											
NT-S16Q-SVUCR11	22	16	13	180	93°	7°	VC∞1103				●
NT-S20R-SVUCR11	27	20	15	200	93°	6°	VC∞1103				●
NT-S20R-SVUCR16	31	20	19	200	93°	8°	VC∞1604				●
NT-S25R-SVUCR16	33	25	20.5	200	93°	7°	VC∞1604				●
NT-S32S-SVUCR16	42	32	22.5	250	93°	5°	VC∞1604				●
NT-S40T-SVUCR16	51	40	27	300	93°	4°	VC∞1604				⊙

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-S000-SVUC'11	NT-ST25060T07B	NT-FT07
NT-S000-SVUC'16	NT-ST35089T15	NT-FT15



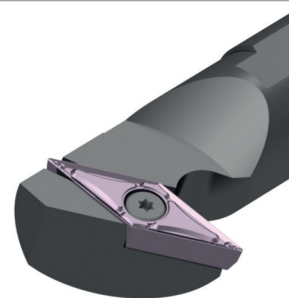
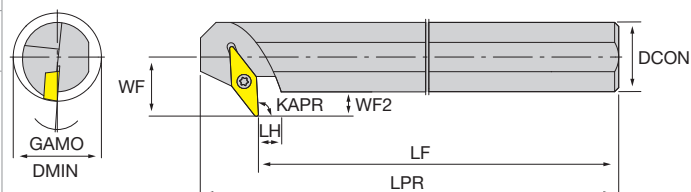
HOLDER AND INSERT COUPLING

Holder R → Insert L
 Holder L → Insert R

S SVZC

ISO VC - Positive

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



Designation	DMIN	DCON	WF	WF2	LF	LPR	KAPR	GAMO	MID		Stock
LEFT-HAND											
NT-S20R-SVZCL16	30	20	17	7	183	217	93°	7.5°	VC∞1604		⊙
NT-S25R-SVZCL16	35	25	19.5	7	180	220	93°	7.5°	VC∞1604		⊙
NT-S32S-SVZCL16	40	32	23	7	230	270	93°	7.5°	VC∞1604		⊙
RIGHT-HAND											
NT-S20R-SVZCR16	30	20	17	7	183	217	93°	7.5°	VC∞1604		⊙
NT-S25R-SVZCR16	35	25	19.5	7	180	220	93°	7.5°	VC∞1604		●
NT-S32S-SVZCR16	40	32	23	7	230	270	93°	7.5°	VC∞1604		⊙

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
		
NT-S∞-SVZC/-R16	NT-ST35089T15	NT-FT15



HOLDER AND INSERT COUPLING

Holder R → Insert R

Holder L → Insert L

INDEXABLE

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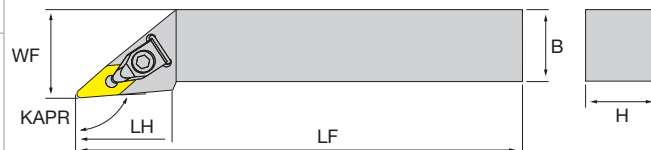
G - SPARE PARTS

DVJN

ISO VN - Negative

- External turning (KAPR 93°)
- Holds VN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening

Right-hand shown



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-DVJNL2020K16X	20	20	25	125	50	93°	VN-∞1604				●
NT-DVJNL2525M16X	25	25	32	150	46	93°	VN-∞1604				●
RIGHT-HAND											
NT-DVJNR2020K16X	20	20	25	125	50	93°	VN-∞1604				●
NT-DVJNR2525M16X	25	25	32	150	46	93°	VN-∞1604				●

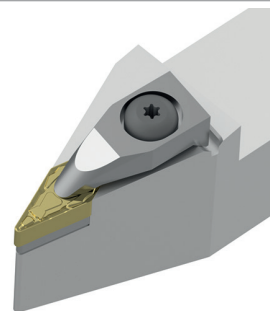
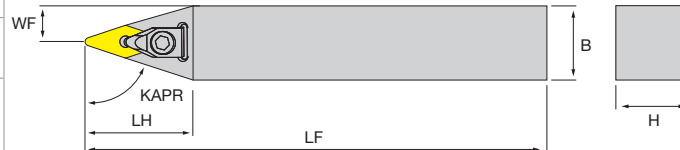
★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Shim screw	L wrench	Clamp	Spring	Clamp screw
NT-DVJN ⁺ /R0000016X	NT-SH075	NT-ST250	NT-TX15 / NT-TX20	NT-CS210 / NT-CS200	NT-SG200	NT-SC200

DVVN

ISO VN - Negative

- External turning (KAPR 72.5°), Neutral position
- Holds VN-style inserts
- Double pushing and pulling action with a single movement
- Quick and safe tightening



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
NEUTRAL HOLDERS											
NT-DVVNN2020K16X	20	20	10	125	47	72.5°	VN-1604				●
NT-DVVNN2525M16X	25	25	12.5	150	47	72.5°	VN-1604				●

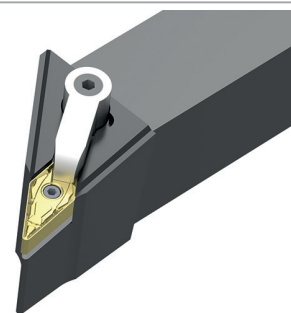
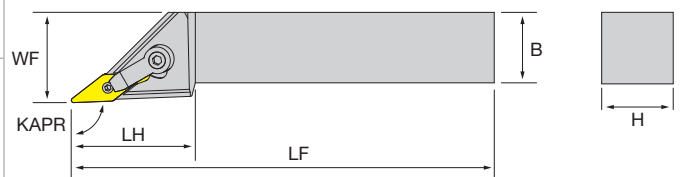
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Shim screw	L wrench	Clamp	Spring	Clamp screw
NT-DVVNN-16X	NT-SH075	NT-ST250	NT-TX15 / NT-TX20	NT-CS210 / NT-CS200	NT-SG200	NT-SC200

MVJN

ISO VN - Negative

- External turning (KAPR 93°)
- Holds VN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-MVJNL2020K16	20	20	25	125	39	93°	VN-1604				●
NT-MVJNL2525M16	25	25	32	150	44	93°	VN-1604				●
NT-MVJNL3232P16	32	32	40	170	45	93°	VN-1604				⊙
RIGHT-HAND											
NT-MVJNR2020K16	20	20	25	125	39	93°	VN-1604				●
NT-MVJNR2525M16	25	25	32	150	44	93°	VN-1604				●
NT-MVJNR3232P16	32	32	40	170	45	93°	VN-1604				⊙

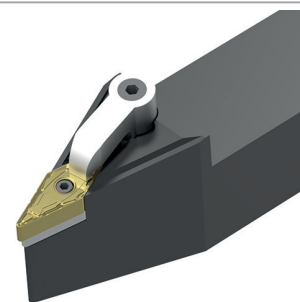
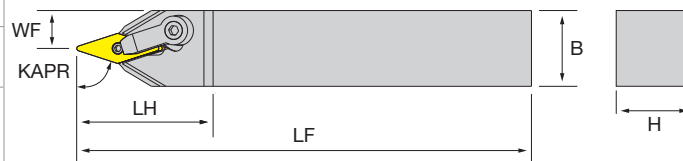
★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	L wrench	Clamp	Clamp screw
NT-MVJN/-/80000016	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS075	NT-SC010

MVVN

ISO VN - Negative

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



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
NEUTRAL HOLDERS											
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				☉

★ 1st choice, ☆ suitable, ● stock standard, ☉ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	L wrench	Clamp	Clamp screw
NT-MVVNN0000016	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS075	NT-SC010

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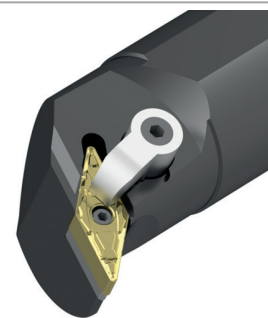
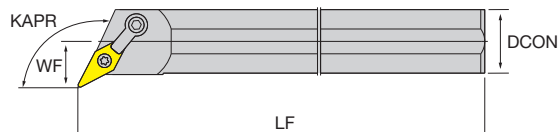
F - ACCESSORIES

G - SPARE PARTS

S MVQN

ISO VN - Negative

- 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	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S25R-MVQNL16	33	25	20	200	107.5°	12°	VN∞1604				●
NT-S32S-MVQNL16	40	32	23	250	107.5°	17°	VN∞1604				●
NT-S40T-MVQNL16	50	40	27	300	107.5°	15°	VN∞1604				●
NT-S50U-MVQNL16	63	50	33	350	107.5°	12°	VN∞1604				●
RIGHT-HAND											
NT-S25R-MVQNR16	33	25	20	200	107.5°	12°	VN∞1604				●
NT-S32S-MVQNR16	40	32	23	250	107.5°	17°	VN∞1604				●
NT-S40T-MVQNR16	50	40	27	300	107.5°	15°	VN∞1604				●
NT-S50U-MVQNR16	63	50	33	350	107.5°	12°	VN∞1604				●

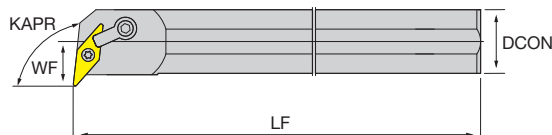
★ 1st choice, ☆ suitable, ● stock standard, ● non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	L wrench	Clamp	Clamp screw
NT-S25R-MVQN ^h /r16	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC008
NT-S32S-MVQN ^h /r16	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC008
NT-S40T-MVQN ^h /r16	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC010
NT-S50U-MVQN ^h /r16	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC010

S MVUN

ISO VN - Negative

- 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	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S25R-MVUNL16	37	25	20	200	93°	12°	VN-1604				●
NT-S32S-MVUNL16	40	32	22	250	93°	12°	VN-1604				●
NT-S40T-MVUNL16	50	40	27	300	93°	15°	VN-1604				●
NT-S50U-MVUNL16	63	50	32	350	93°	12°	VN-1604				●
RIGHT-HAND											
NT-S25R-MVUNR16	37	25	20	200	93°	12°	VN-1604				●
NT-S32S-MVUNR16	40	32	22	250	93°	12°	VN-1604				●
NT-S40T-MVUNR16	50	40	27	300	93°	15°	VN-1604				●
NT-S50U-MVUNR16	63	50	32	350	93°	12°	VN-1604				●

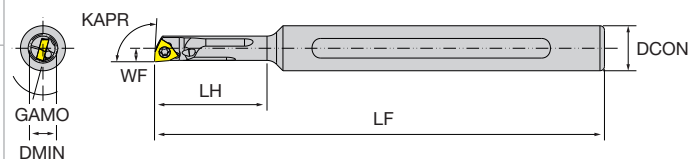
★ 1st choice, ☆ suitable, ● stock standard, ● non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Eccentric pin	L wrench	Clamp	Clamp screw
NT-S25R-MVUN ^{1/16}	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC008
NT-S32S-MVUN ^{1/16}	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC008
NT-S40T-MVUN ^{1/16}	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC010
NT-S50U-MVUN ^{1/16}	NT-SH075	NT-SP020	NT-WR020 / NT-WR030	NT-CS010	NT-SC010

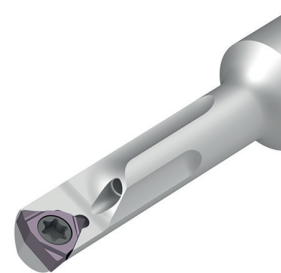
V SWUB

ISO WB - Positive

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



Right-hand shown



Designation	DMIN	DCON	WF	LF	LH	KAPR	GAMO	MIID			Stock
RIGHT-HAND WITH REDUCED NECK											
NT-V10H-SWUBR06-06	6	10	3	100	25	93°	15°	WB∞0601			●
NT-V10H-SWUBR06-07	7	10	3.5	100	30	93°	13°	WB∞0601			●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-V10H-SWUB [☆] /R06-∞	NT-ST20038T06	NT-FT06



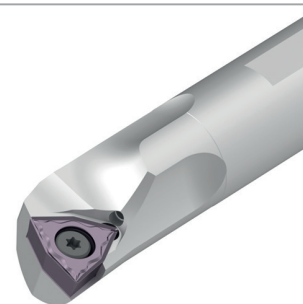
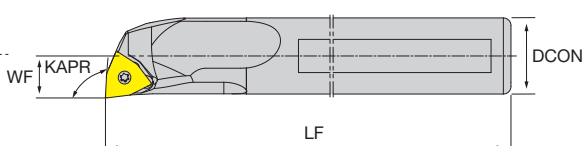
HOLDER AND INSERT COUPLING

Holder R → Insert L
 Holder L → Insert R

V SWUC

ISO WC - Positive

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



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-V12M-SWUCL12-14	14	12	7	150	93°	13°	WC∞12T3				●
NT-V16Q-SWUCL12-18	18	16	9	180	93°	10°	WC∞12T3				●
NT-V20R-SWUCL12-22	22	20	11	200	93°	8°	WC∞12T3				●
NT-V25S-SWUCL12-27	27	25	13.5	250	93°	8°	WC∞12T3				●
RIGHT-HAND											
NT-V12M-SWUCR12-14	14	12	7	150	93°	13°	WC∞12T3				●
NT-V16Q-SWUCR12-18	18	16	9	180	93°	10°	WC∞12T3				●
NT-V20R-SWUCR12-22	22	20	11	200	93°	8°	WC∞12T3				●
NT-V25S-SWUCR12-27	27	25	13.5	250	93°	8°	WC∞12T3				●

★ 1st choice, ☆ suitable, ● stock standard, ● non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	Flag wrench
NT-V∞-SWUC*/r12-∞	NT-ST40090T15	NT-FT15

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

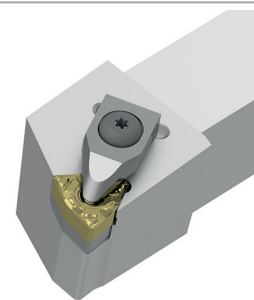
G - SPARE PARTS

DWLN

ISO WN - Negative

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

Right-hand shown



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-DWLN1616H06X	16	16	20	100	33	95°	WN-0604				●
NT-DWLN2020K06X	20	20	25	125	33	95°	WN-0604				●
NT-DWLN2020K08X	20	20	25	125	40	95°	WN-0804				●
NT-DWLN2525M06X	25	25	32	150	33	95°	WN-0604				●
NT-DWLN2525M08X	25	25	32	150	40	95°	WN-0804				●
NT-DWLN3225P08X	32	25	32	170	40	95°	WN-0804				●
RIGHT-HAND											
NT-DWLN1616H06X	16	16	20	100	33	95°	WN-0604				●
NT-DWLN2020K06X	20	20	25	125	33	95°	WN-0604				●
NT-DWLN2020K08X	20	20	25	125	40	95°	WN-0804				●
NT-DWLN2525M06X	25	25	32	150	33	95°	WN-0604				●
NT-DWLN2525M08X	25	25	32	150	40	95°	WN-0804				●
NT-DWLN3225P08X	32	25	32	170	40	95°	WN-0804				●

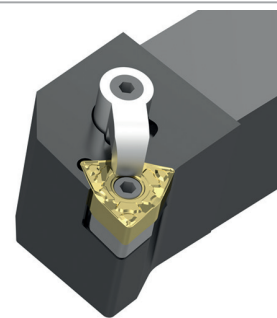
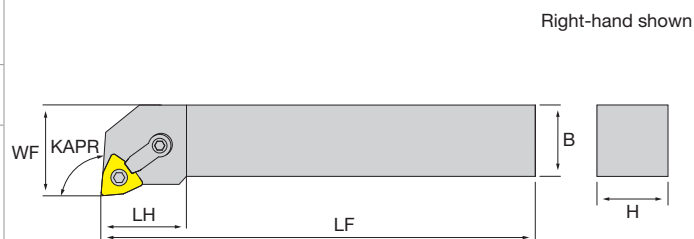
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Shim screw	Clamp	Spring	Clamp screw	L wrench
NT-DWLN ¹ /R0000006X	NT-SH003	NT-ST250	NT-CS250	NT-SG250	NT-SC250	NT-TX15
NT-DWLN ¹ /R0000008X	NT-SH010	NT-ST200	NT-CS200	NT-SG200	NT-SC200	NT-WR025 / NT-TX20

MWLN

ISO WN - Negative

- External turning (KAPR 95°)
- Holds WN-style inserts
- Double locking with Eccentric pins and bracket. Excellent clamping force



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-MWLN2020K06	20	20	25	125	33	95°	WN-0604				●
NT-MWLN2020K08	20	20	25	125	33	95°	WN-0804				●
NT-MWLN2525M06	25	25	32	150	26	95°	WN-0604				●
NT-MWLN2525M08	25	25	32	150	26	95°	WN-0804				●
NT-MWLN3232P08	32	32	40	170	26	95°	WN-0804				●
RIGHT-HAND											
NT-MWLN2020K06	20	20	25	125	33	95°	WN-0604				●
NT-MWLN2020K08	20	20	25	125	33	95°	WN-0804				●
NT-MWLN2525M06	25	25	32	150	26	95°	WN-0604				●
NT-MWLN2525M08	25	25	32	150	26	95°	WN-0804				●
NT-MWLN3232P08	32	32	40	170	26	95°	WN-0804				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

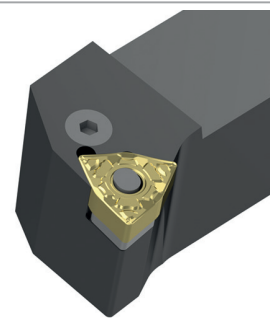
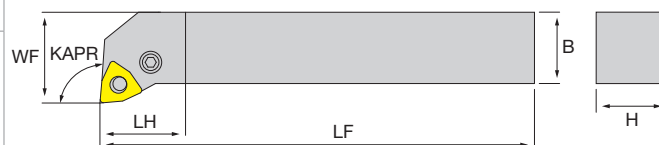
Spare parts	Shim	Eccentric pin	L wrench	Clamp	Clamp screw
NT-MWLN ⁴ /R0000006	NT-SH003	NT-SP020	NT-WR020 / NT-WR025	NT-CS009	NT-SC030
NT-MWLN ⁴ /R0000008	NT-SH010	NT-SP010	NT-WR030	NT-CS010	NT-SC010

PWLN

ISO WN - Negative

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

Right-hand shown



Designation	H	B	WF	LF	LH	KAPR	MIID				Stock
LEFT-HAND											
NT-PWLN12020K08	20	20	25	125	20	95°	WN-0804				●
NT-PWLN12525M08	25	25	32	150	26	95°	WN-0804				●
RIGHT-HAND											
NT-PWLN12020K08	20	20	25	125	20	95°	WN-0804				●
NT-PWLN12525M08	25	25	32	150	26	95°	WN-0804				●

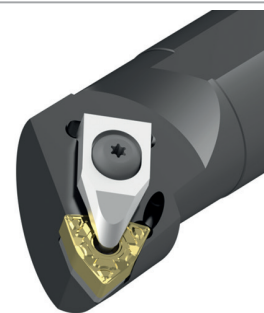
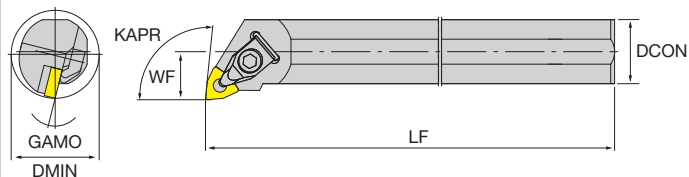
★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Elastic plug	Lever	Screw lever	L wrench
NT-PWLN-12020K08	NT-SH015	NT-SR020	NT-LL020	NT-SC025	NT-WR030

A DWLN

ISO WN - Negative

- 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



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A25R-DWLNLO8	32	25	17	200	95°	14°	WN-0804				●
NT-A32S-DWLNLO8	40	32	22	250	95°	14°	WN-0804				●
NT-A40T-DWLNLO8	50	40	27	300	95°	12°	WN-0804				●
RIGHT-HAND											
NT-A25R-DWLNRO8	32	25	17	200	95°	14°	WN-0804				●
NT-A32S-DWLNRO8	40	32	22	250	95°	14°	WN-0804				●
NT-A40T-DWLNRO8	50	40	27	300	95°	12°	WN-0804				●

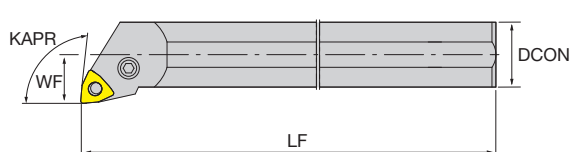
★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Shim	Shim screw	L wrench	Clamp	Spring	Clamp screw
NT-A-000-DWLN-08	NT-SH015	NT-ST200	NT-WR025 / NT-TX20	NT-CS200	NT-SG200	NT-SC200

A PWLN

ISO WN - Negative

- 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



Designation	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-A25R-PWLNLO8	30	25	17	200	95°	12°	WN∞0804				●
NT-A32S-PWLNLO8	40	32	22	250	95°	10°	WN∞0804				●
NT-A40T-PWLNLO8	48	40	27	300	95°	8°	WN∞0804				●
RIGHT-HAND											
NT-A25R-PWLNRO8	30	25	17	200	95°	12°	WN∞0804				●
NT-A32S-PWLNRO8	40	32	22	250	95°	10°	WN∞0804				●
NT-A40T-PWLNRO8	48	40	27	300	95°	8°	WN∞0804				●

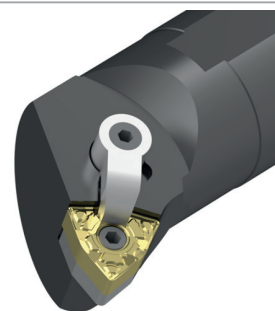
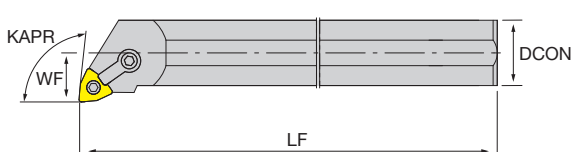
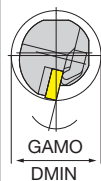
★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Elastic plug	Lever	Screw lever	L wrench	Shim
NT-A25R-PWLN/r08	NT-SR015	NT-LL015	NT-SC015	NT-WR025	-
NT-A32S-PWLN/r08	NT-SR020	NT-LL020	NT-SC025	NT-WR030	NT-SH015
NT-A40T-PWLN/r08	NT-SR020	NT-LL020	NT-SC025	NT-WR030	NT-SH015

S MWLN

ISO WN - Negative

- 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	DMIN	DCON	WF	LF	KAPR	GAMO	MIID				Stock
LEFT-HAND											
NT-S16Q-MWLN06	22	16	11	180	95°	18°	WN-0604				◎
NT-S20R-MWLN08	25	20	13	200	95°	17°	WN-0804				●
NT-S25R-MWLN08	32	25	17	200	95°	14°	WN-0804				●
NT-S32S-MWLN08	40	32	22	250	95°	14°	WN-0804				●
NT-S40T-MWLN08	50	40	27	300	95°	12°	WN-0804				●
NT-S50U-MWLN08	63	50	35	350	95°	12°	WN-0804				●
RIGHT-HAND											
NT-S16Q-MWLN06	22	16	11	180	95°	18°	WN-0604				◎
NT-S20R-MWLN08	25	20	13	200	95°	17°	WN-0804				●
NT-S25R-MWLN08	32	25	17	200	95°	14°	WN-0804				●
NT-S32S-MWLN08	40	32	22	250	95°	14°	WN-0804				●
NT-S40T-MWLN08	50	40	27	300	95°	12°	WN-0804				●
NT-S50U-MWLN08	63	50	35	350	95°	12°	WN-0804				●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Eccentric pin	L wrench	Clamp	Clamp screw	Shim
NT-S16Q-MWLN/06	NT-SP030	NT-WR020 / NT-WR025	NT-CS030	NT-SC030	-
NT-S20R-MWLN/08	NT-SP035	NT-WR025	NT-CS030	NT-SC030	-
NT-S25R-MWLN/08	NT-SP035	NT-WR025 / NT-WR030	NT-CS010	NT-SC008	-
NT-S32S-MWLN/08	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-SH010
NT-S40T-MWLN/08	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-SH010
NT-S50U-MWLN/08	NT-SP010	NT-WR030	NT-CS010	NT-SC010	NT-SH010

