



TURNING - Carbide

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ISO 513	CARBIDE			CERMET	
	CVD COATED	PVD COATED	UNCOATED	PVD COATED	UNCOATED
Steel	P01	JC8005			JU4015
	P10	JC8015	JP5015		JP4020
	P20	JC8025	JP5120		
	P30	JC8035	JP5125		
	P40				
Stainless steel	M01		JP9015		JP4020
	M10	JC9010			
	M20	JC9025	JP9030	JP5120	JP4020
	M30			JP5125	
	M40				
Cast iron	K01	JC7010			JP4020
	K10	JC7115			
	K20	JC7020	JP5125		
	K30				
Non-ferrous material	N01		JP6010		
	N10			JU6015	
	N20				
	N30				
HRSA	S01		JP3015		
	S10		JP5120		
	S20		JP5125		
	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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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
JC8005	carbide	1.740	CVD	TiCN+Al ₂ O ₃		P P01 P10	
JC8015	carbide	1.740	CVD	TiCN+Al ₂ O ₃ +TiN			P P10 P20

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			TECHNOLOGY	COMPOSITION		
JC8025	carbide	1.700	CVD	TiCN+Al ₂ O ₃ +TiN	P P20 P30	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 S05 S25	<ul style="list-style-type: none"> 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'usinages à haute température. Meilleur choix pour superalliages résistants à la chaleur (HRSA).
JP4020	cermet	1.680	PVD	TiAlN	P P10 P20	<ul style="list-style-type: none"> 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 M10 M20	
					K K10 K20	
JP5015	micrograin carbide	1.900	PVD	TiAlN	P P10 P20	<ul style="list-style-type: none"> 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 Vorschichten auch bei Edelstahl und Superlegierungen garantiert. Nuance carbure revêtue PVD qui garantit d'excellentes performances pour la finition et la semi-finition même sur acier inoxydable et superalliages.
					M M10 M20	
					S S01 S10	
JP5120	micrograin carbide	1.830	PVD	TiAlN	P P10 P20	<ul style="list-style-type: none"> 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 M10 M20	
					S S01 S10	

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			TECHNOLOGY	COMPOSITION		
JP5125	micrograin carbide	1.830	PVD	TiAlN	P P20 P30	<ul style="list-style-type: none"> High Co micrograin carbide substrate with high toughness and latest coating technology. Universal use with great reliability and long tool life.
					M M20 M30	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Hochfestes mikrokörnige Hartmetallmaterial mit hohem Co-Gehalt und innovativer Beschichtungstechnologie. Universeller Einsatz mit ausgezeichneter Zuverlässigkeit und langer Standzeit.
					S S01 S10	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 Nichtisenmaterialien. Carbure non revêtu pour applications universelles, de la finition à l'ébauche, sur des matériaux non ferreux.

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

 BLACK: CVD, UNDERLINED: PVD, **RED**: uncoated

SANDVIK		SECO		SUMITOMO		TAEGUTEC		TUNGALOY		WALTER	
carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet	carbide	cermet
GC4305	CT5015 GC1525	TP0501		AC810P AC8015P	T1000A	TT4410 TT8105B	CT3000 PV3010	T9105 T9205	NS520	WPP05S	WEP10C
GC1125 GC4315 GC4415	CT5015 GC1525	TP1501	TP1020 TP1030	AC530U AC1030U AC8015P AC8020P	T1500A T1500Z	TT4410 TT8115B TT9020	CT7000 PV3030	SH725 T9115 T9215	AT9530 GT9530 NS9530	WPP10G WPP10S	WEP10C
GC1125 GC4325 GC4425		TP2501 TP25		AC530U AC1030U AC8020P AC8025P	T2500A T2500Z T3000Z	TT4430 TT5100 TT8125B TT9020		AH725 T9125 T9225	AT9530 GT9530 NS9530	WPP20G WPP20S WMP20S	
GC4335		TP3501 TP40		AC830P AC8035P		TT8135B		T9135 T9235		WKP30S WPP30G WPP30S	
GC1115		TS2000			T1000A	TT5080	CT3000 PV3010	T6215		WSM01	
GC1115 GC2015 GC2220	GC1525 CT5015	TM1501 TS2500	TP1020 TP1030	AC610M AC6020M	T1500A	TT4410 TT5080 TT9215	CT7000 PV3030	SH725 T6215	GT9530 NS9530	WMP20S WSM10S	
GC1125 GC2025 GC2220		CP500 TM2501		AC630M AC6030M		TT4430 TT9080 TT9225		AH630 AH725 GH330 T6120	GT9530 NS9530	WMP20S WSM20S	
GC2035		TM3501 TP40		AC1030U AC530U AC6040M		TT8020 TT8080 TT9235		AH645 T6130		WSM30S	
GC3210		TK0501		AC405K AC4010K	T1000A	TT7005		T505 T5105		WKK10S	
GC3210 GC3225		TK1501		AC415K AC4015K		TT7015	CT3000 PV3010	T515 T5115	GT9530 NS9530	WKK20S	
GC3225		TK1501		AC420K		TT7025		T5125		WKP30S	
H10	-		-		-	K10	-	KS05F	-	WNN10	-
H10	-	KX	-		-	K10	-	TH10	-	WNN10 WK1	-
	-	KX	-	H1	-		-		-		-
GC1105 S05F	-	TS2050	-	AC5005S AC510U	-	TT3005 TT5080	-	AH8005	-	WSM01 WSM10S	-
GC1105 S05F S205	-	TS2000	-	AC5015S AC520U	-	TT3010 TT9080	-	AH8015	-	WSM20S	-
GC1115 S205	-	TS2500	-	AC5025S	-	TT3020 TT9080	-	AH8015	-	WSM30S	-
	-	883	-	EH510	-	K10 TT4410	-	TH10	-	WS10 WSM10S	-
H13A	-	883	-	EH520	-	K10	-	KS20	-	WS10 WSM20S	-
H13A	-		-		-		-		-		-

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			C	D	S	T	V	W		
NEGATIVE types										
			80°	55°	90°	60°	35°	80°		
P	FINISHING	NSP	 0.12 15°							
	MEDIUM	NUP	 0.2 19°							
		NMP	 0.2 18°							
		NRP	 0.32 20° 3°							
HEAVY ROUGHING	MRP	 0.45 24°								
M	FINISHING	NSM	 0.1 15° 10°							
	MEDIUM	NMM	 0.08 23° 16°							
		NRM	 0.3 21° 7°							
S	MEDIUM	NMS	 0.3 20° 10°							

			C	D	S	T	V	W	
NEGATIVE types									
			80°	55°	90°	60°	35°	80°	
K LIGHT TO MEDIUM MACHINING ROUGHING	NMK 0.30 16°		A73 SIZE 12 16 19	A79 SIZE 15	A87 SIZE 12	A94 SIZE 16 22	A102 SIZE 16	A106 SIZE 08	
			A73 SIZE 12	A79 SIZE 15		A94 SIZE 16	A102 SIZE 16	A106 SIZE 08	
			A75 SIZE 12 16 19	A80 SIZE 15	A88 SIZE 12 19	A95 SIZE 16 22	A102 SIZE 16	A107 SIZE 06 08	
			A75 SIZE 12 16 19	A81 SIZE 15	A89 SIZE 09 12	A96 SIZE 16 22		A108 SIZE 08	
	N UNIVERSAL	NMN 10°		A73 SIZE 12	A79 SIZE 15	A88 SIZE 12	A95 SIZE 16	A102 SIZE 16	A106 SIZE 06 08
		UNI MEDIUM	NUX 0.22 17° 6°		A71 SIZE 12	A78 SIZE 15		A93 SIZE 16	A105 SIZE 08
			NMU 10°			A78 SIZE 15		A93 SIZE 16	A82 SIZE 16
		WIPER	NWU 0.25 18° 3°		A74 SIZE 12	A80 SIZE 15		A95 SIZE 16	A107 SIZE 08
	NWX 0.30 16°			A74 SIZE 12				A107 SIZE 08	

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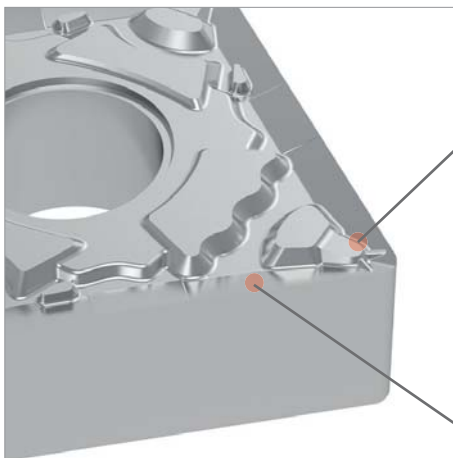
			C	D	S	T	V	W
POSITIVE types								
			80°	55°	90°	60°	35°	80°
N	UNIVERSAL	PMN 	CC A70 SIZE 06 09 12	DC A77 SIZE 07 11	SC A86 SIZE 09 12	TC A91 SIZE 09 11 16	VC A100 SIZE 11 16 22	
		PPF (ground chip breaker) 	CC A69 SIZE 06 09	DC A76 SIZE 07 11		TB, TP A90, A97 TC A91 SIZE 06 09 11	VB A98 SIZE 11	WB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

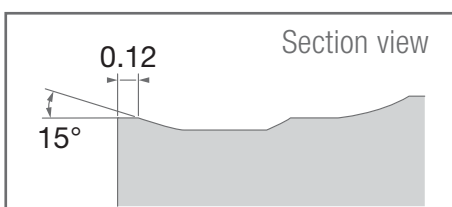
Features of NSP chipbreaker

**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

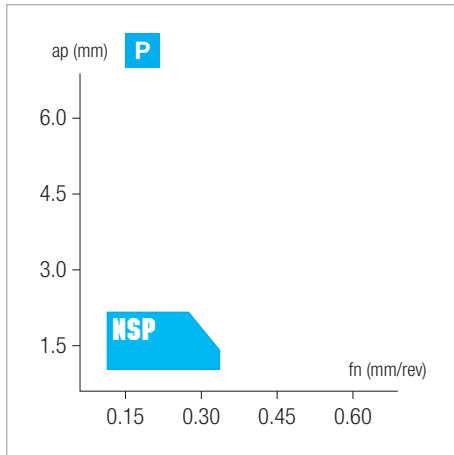
- Less crater wears
 - Excellent chip control at small depths of cut
- Minore usura per caratterizzazione
 - Eccellente controllo del truciolo a piccole profondità di taglio
- Geringer Verschleiß der Vertiefung
 - Hervorragende Spankontrolle bei kleinen Schnitttiefen
- Moindre usure en cratère
 - Excellent 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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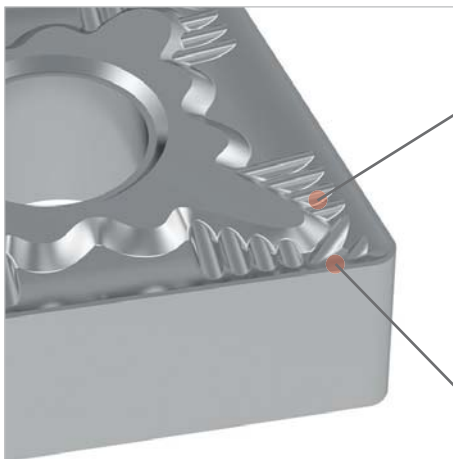
G - SPARE PARTS

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
- Rompitrucciolo 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
- 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
- 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

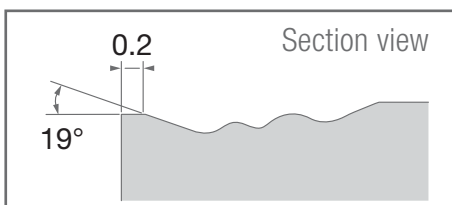


SPECIAL GROOVES

- 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

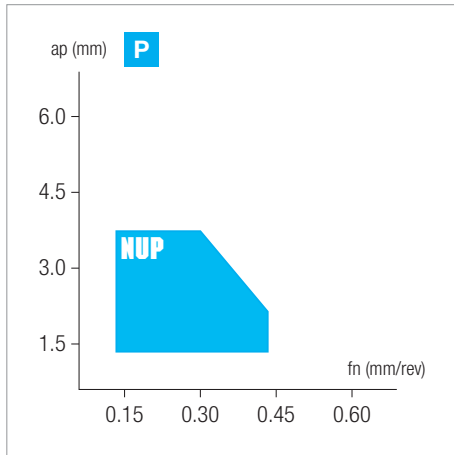
- Perfect balance between toughness and sharpness
 - Reliable cutting process for universal application
- Buon bilanciamento tra tenacità e taglienza
 - Processo di taglio affidabile in applicazioni universali
- Ausgewogenes Verhältnis zwischen Robustheit und Schärfe
 - Zuverlässiger Schneidprozess für 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 Vc 156 m/min, fn 0.3 mm/min, ap 3.1 mm, emulsion

nikkoTOOLS **7 PCS.**

Competitor A **5 PCS.**

Competitor B **4 PCS.**



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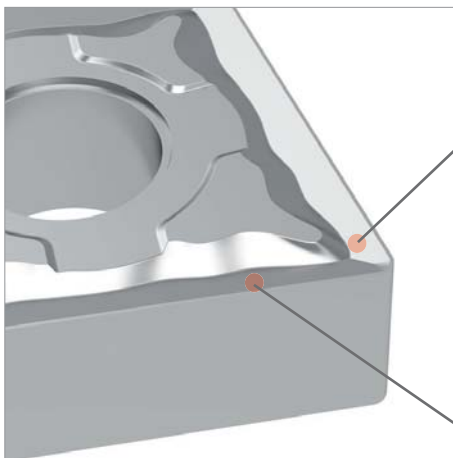
G - SPARE PARTS

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

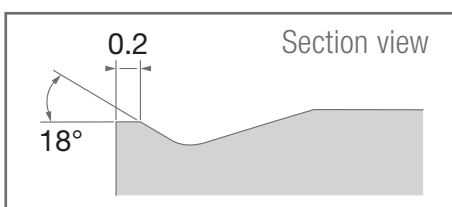


STRONG CUTTING EDGE DESIGN

- 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

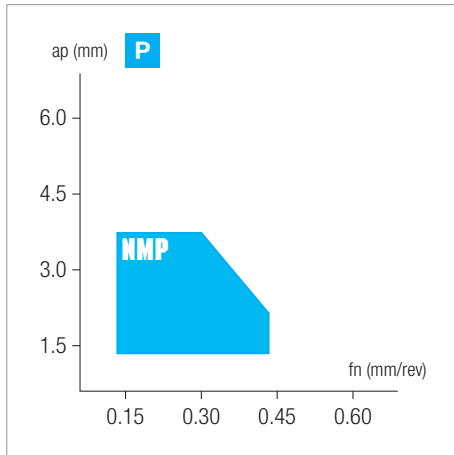
- For smooth chip flow
- Ottima evacuazione del truciolo
- Breite Nut für eine reibungslose Abfuhr der Späne
- Pour une évacuation fluide des copeaux



NMP

Chipbreaker

Application range - ISO 513



Use case

Tool type CNMG160608-NMP JC8015
Workpiece Steel 31CrMoV9 (1.8519)
Parameters Vc 190 m/min, fn 0.3 mm/min, ap 3 mm, emulsion

nikkoTOOLS **24 PCS.**

Competitor A **15 PCS.**

Competitor B **14 PCS.**



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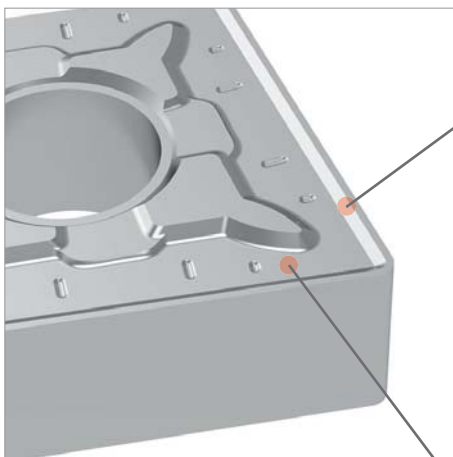
G - SPARE PARTS

NRP

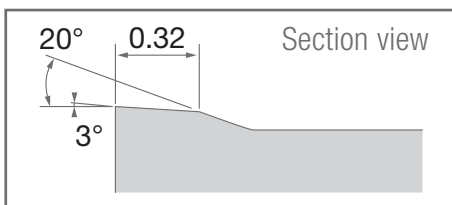
Chipbreaker

- Chipbreaker for steel, roughing application
 - Strong cutting edge with variable rake angle
 - Best choice for interrupted cut
 - Excellent chip control at high feed rate
- 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
- Spanbrecher zum Schruppen von Stahl
 - Robuste Schneidkante mit variablem Spanwinkel
 - Beste Wahl für unterbrochene Schnittbedingungen
 - Hervorragende Spankontrolle bei großen Vorschüben
- 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

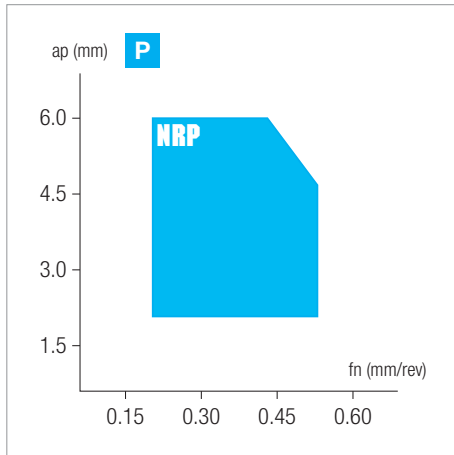
**LARGE CHIP GROOVE**

- 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

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



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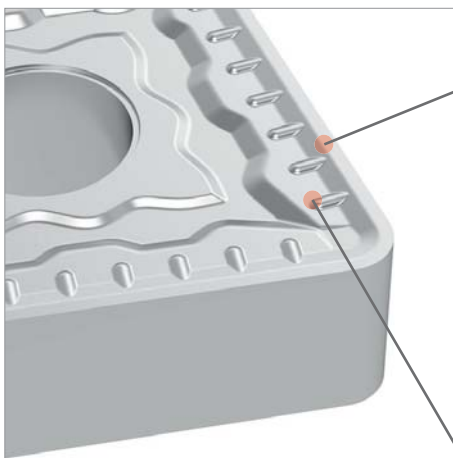
G - SPARE PARTS

MRP

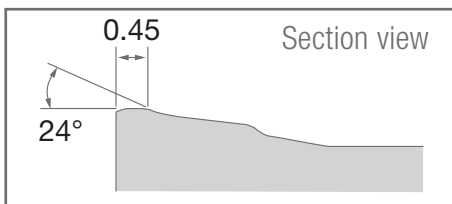
Chipbreaker

- 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 Schruppen 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

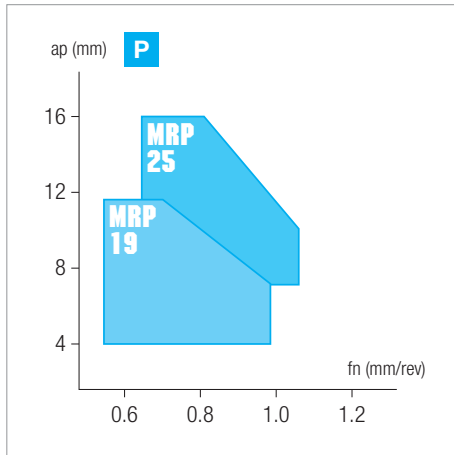
**BIG GUIDING DOTS DESIGN**

- 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 Vc 80 m/min, fn 0.80 mm/rev, ap 10.0 mm, emulsion

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



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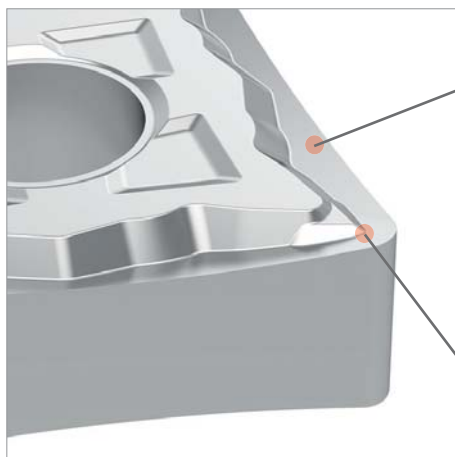
G - SPARE PARTS

NSM

Chipbreaker

- Chipbreaker for stainless steel, finishing and light cutting
 - Curved edge design
 - Strong and sharp edge
 - Excellent surface finishing
- Rompitrucciolo per la finitura di acciai inossidabili, condizioni di taglio leggero
 - Design con tagliente ricurvo
 - Tagliente robusto e affilato
 - Finitura superficiale di elevata qualità
- Spanteiler für die Feinbearbeitung von rostfreiem Stahl und leichte Schnittbedingungen
 - Ausführung mit gekrümmter Schnittkante
 - Robuste, aber dennoch scharfe Schneidkante
 - Hochwertige Oberflächenqualität
- 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 doté d'une grande stabilité
 - Large zone d'évacuation copeaux

SMALL NOSE DESIGN

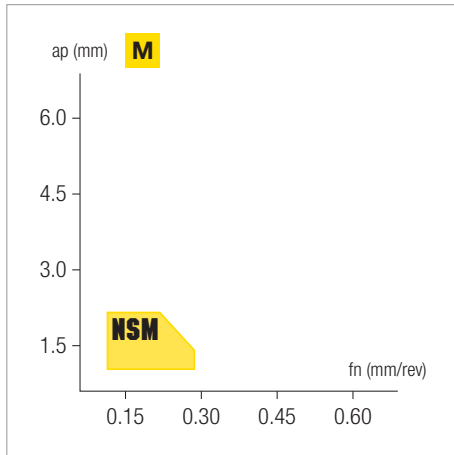
- Excellent chip control even at small depths of cut
 - Eccellente controllo del truciolo anche con piccole profondità di taglio
- Hervorragende Spankontrolle bei kleinen Schnitttiefen
 - Excellent contrôle des copeaux à de faibles profondeurs de coupe



NSM

Chipbreaker

Application range - ISO 513



Use case

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

nikkoTOOLS **1200 PCS.**

Competitor A **450 PCS.**

Competitor B **420 PCS.**



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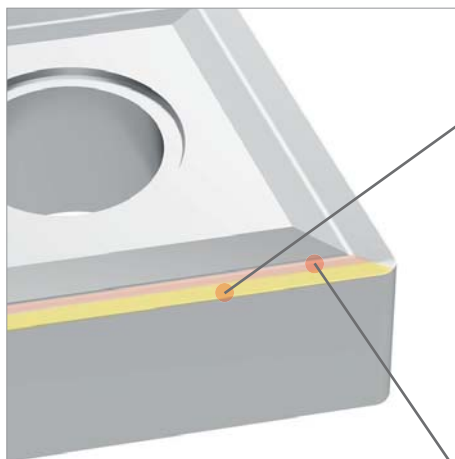
G - SPARE PARTS

NMM

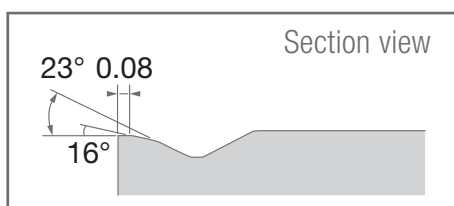
Chipbreaker

- 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

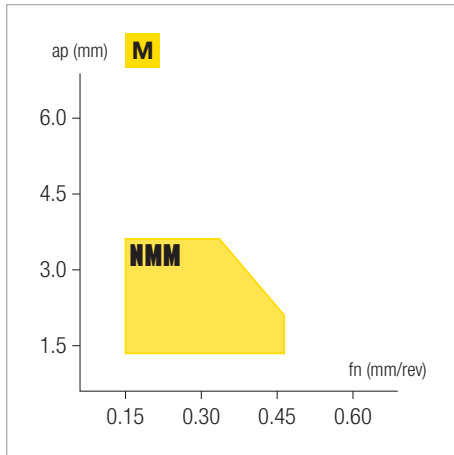
**DEEP CHIP GROOVE DESIGN**

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

nixkoTOOLS **330 PCS.**

Competitor A **300 PCS.**

Competitor B **280 PCS.**



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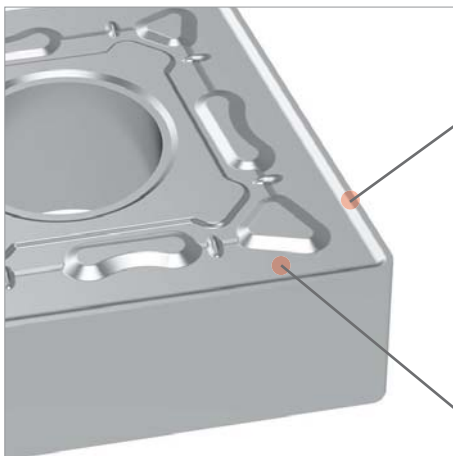
G - SPARE PARTS

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

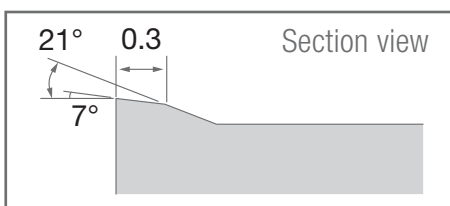


LARGE AND POSITIVE EDGE WIDTH DESIGN

- 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

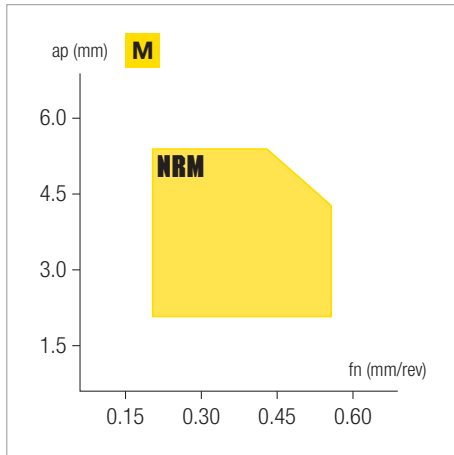
- Efficiently guides and evacuates a big volume of chips
- Eccellente controllo di grandi volumi di trucioli
- Effiziente Führung und Abfuhr großer Mengen von Spänen
- Efficace pour guider et évacuer de gros volumes de copeaux



NRM

Chipbreaker

Application range - ISO 513



Use case

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

nixkoTOOLS **80 PCS.**

Competitor A **70 PCS.**

Competitor B **70 PCS.**



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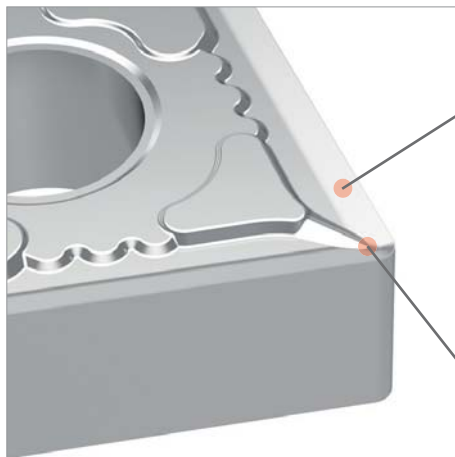
G - SPARE PARTS

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
- Tagliente robusto e affilato per acciai inossidabili e superleghe
- Tagliente e angolo di spoglia variabili per semifinitura o sgrossatura
- Elevate affidabilità e stabilità
- Robuste Schneidkante mit scharfem Spanwinkel für rostfreie Stähle und Superlegierungen
- Variable Schneidkante und Spanwinkel zum Schruppschichten oder Schruppen
- Hohe Zuverlässigkeit und Stabilität
- 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

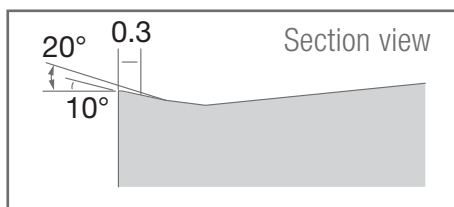


STRONG EDGE AND SHARP EDGE

- 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

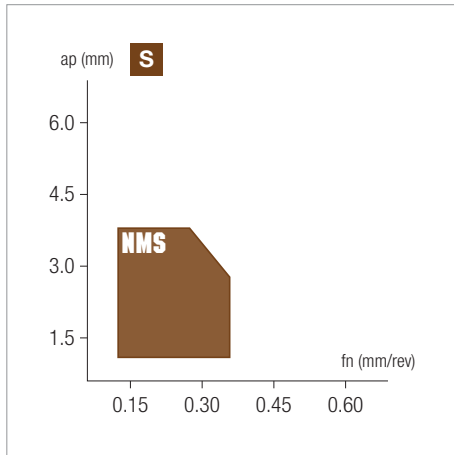
- Guides chip flow and improves chip control
- Excellent chip control at small depths of cut
- Guida il flusso del truciolo e ne migliora il controllo
- Eccellente controllo del truciolo a piccole profondità di taglio
- Lenkt den Spanfluss und verbessert die Spankontrolle
- Hervorragende Spankontrolle bei kleinen Schnitttiefen
- 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

nixkoTOOLS **3 PCS.**

Competitor A **2 PCS.**

Competitor B **1 PCS.**



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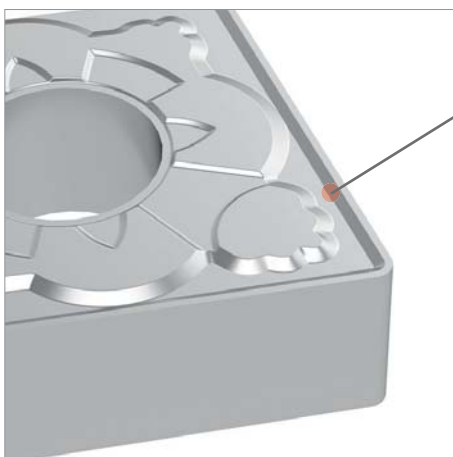
G - SPARE PARTS

NUK

Chipbreaker

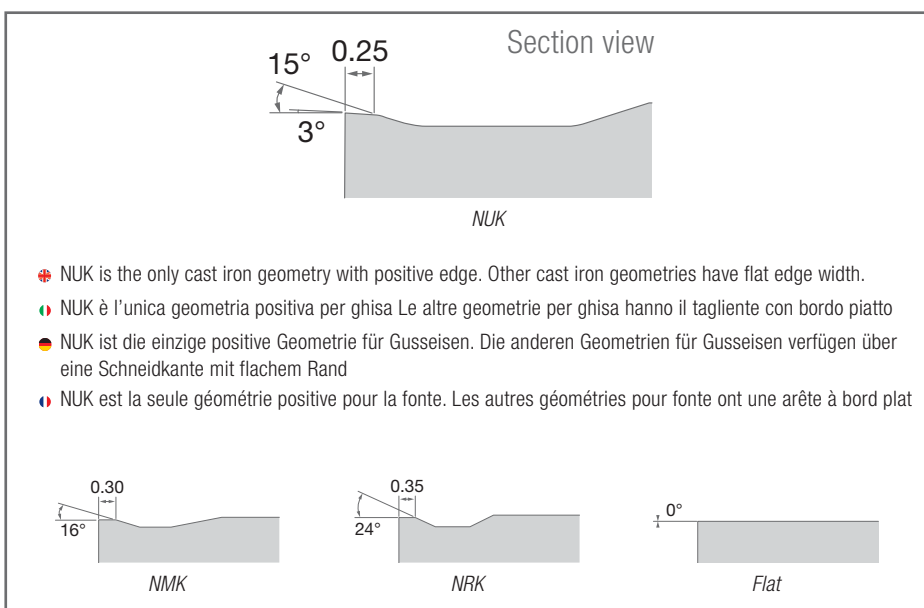
- Chipbreaker for cast iron light to medium cutting
 - Effectively reduces burrs
 - Specific for nodular cast iron
- Spanbrecher für Gusseisen und leichte bis mittlere Schnittbedingungen
 - Effektiv bei der Reduzierung von Gratbildung
 - Spezifisch für Sphäroguss
- Rompitrucciolo per ghisa, condizioni 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

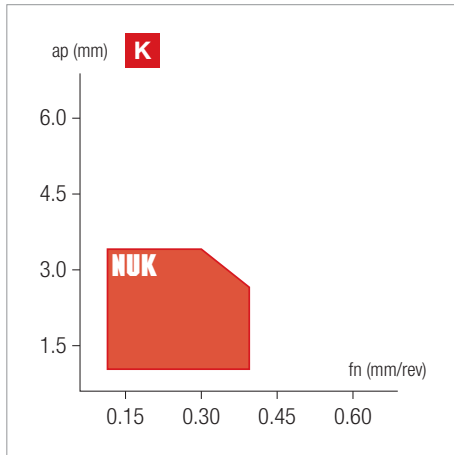
- Slightly sharper than conventional cast iron geometries
 - Effectively reduces burrs
 - Suitable for nodular cast iron
- Leggeremente più tagliente rispetto alle convenzionali geometrie per ghisa
 - Efficace nel ridurre la formazione di bave
 - Consigliato per ghisa sferoidale
- Etwas schärfer als 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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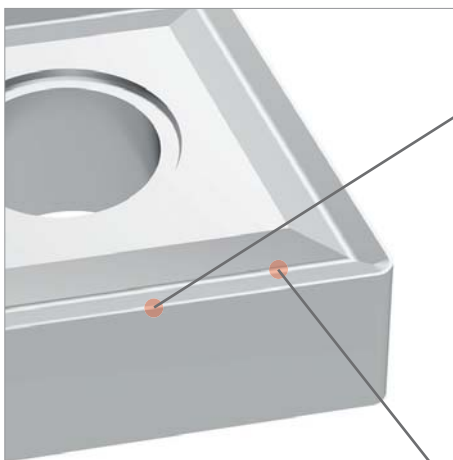
G - SPARE PARTS

NMK

Chipbreaker

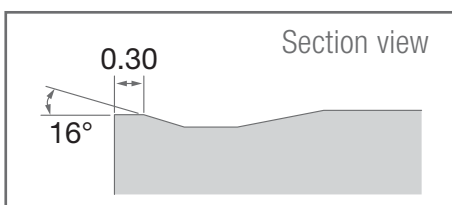
- Chipbreaker for cast iron, general machining
 - Strong cutting edge
 - Suitable for unstable machining
 - Specific for cast iron boring operation
- Spanbrecher für allgemeine Anwendungen zum Schneiden von Gusseisen
 - Verstärkte Schneidkanten
 - Geeignet für die Bearbeitung unter instabilen Schnittbedingungen
 - 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



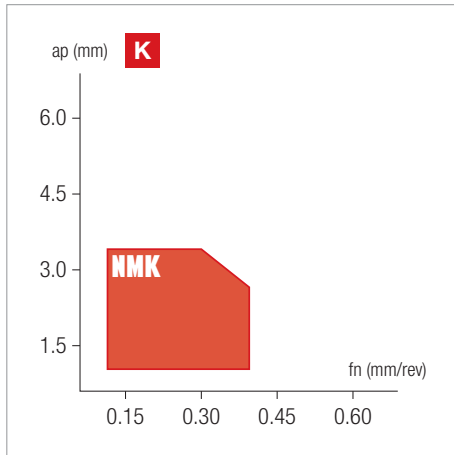
OPEN CHIP GROOVE DESIGN

- 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

nixkoTOOLS **1200 PCS.**

Competitor A **450 PCS.**

Competitor B **420 PCS.**



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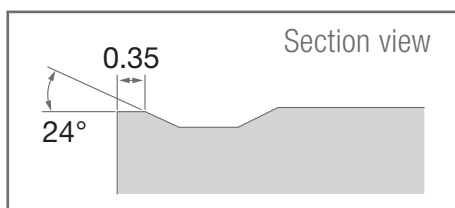
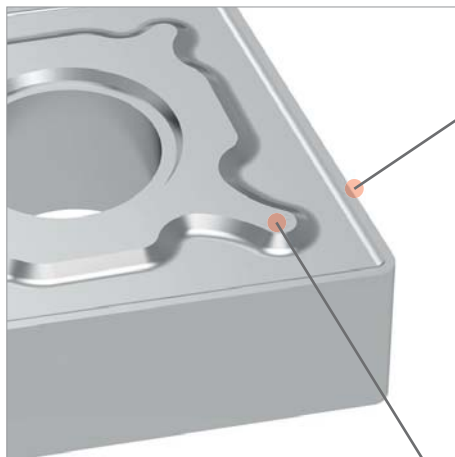
G - SPARE PARTS

NRK

Chipbreaker

- Chipbreaker for cast iron roughing
 - Replaces traditional flat top inserts
 - Expert in removing black casted surface
 - Extremely broad cutting range
- Rompitruciolo per sgrossatura della ghisa
 - Sostituisce i convenzionali inserti piatti
 - Esperto nella rimozione di crosta superficiale
 - Campo applicativo estremamente ampio
- Spanbrecher zum Schruppen von Guss
 - Ersetzt herkömmliche flache Wendschneidplatten
 - 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

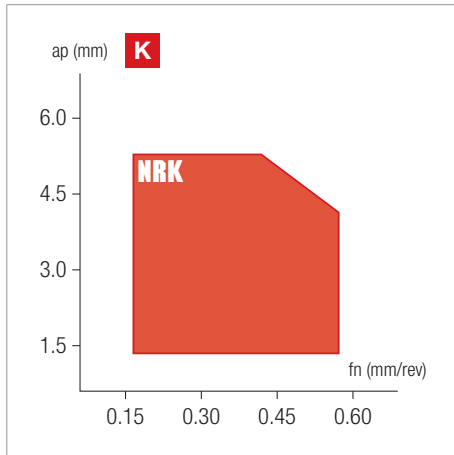
PRECISION LAPPED SUPPORT SURFACE

- 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 Vc 180 m/min, fn 0.35 mm/min, ap 4 mm, emulsion

nixkoTOOLS **70 PCS.**

Competitor A **30 PCS.**

Competitor B **20 PCS.**



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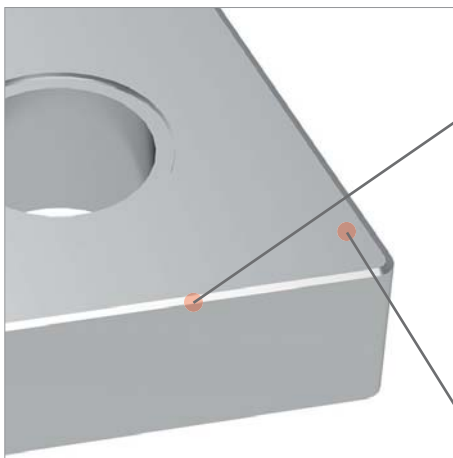
G - SPARE PARTS

Flat

Chipbreaker

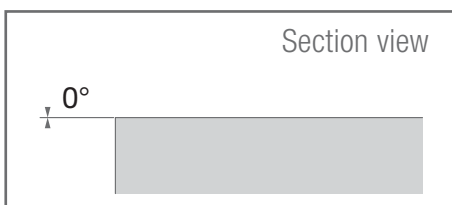
- Conventional solution for cast iron general machining
 - Stable and reliable cutting process
 - Mainly used for GG cast iron
 - Wide application range
- Die konventionelle Lösung für die allgemeine Bearbeitung von Grauguss
 - Stabiler und zuverlässiger Schneidprozess
 - Wird hauptsächlich für Anwendungen 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



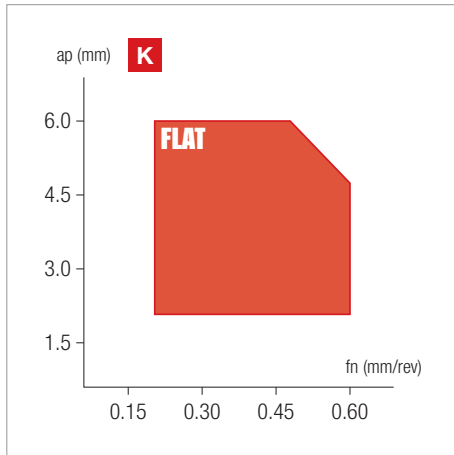
CLASSICAL FLAT CHIPBREAKER

- 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 Vc 280 m/min, fn 0.40 mm/rev, ap 3.0 mm, emulsion, interrupted cut

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



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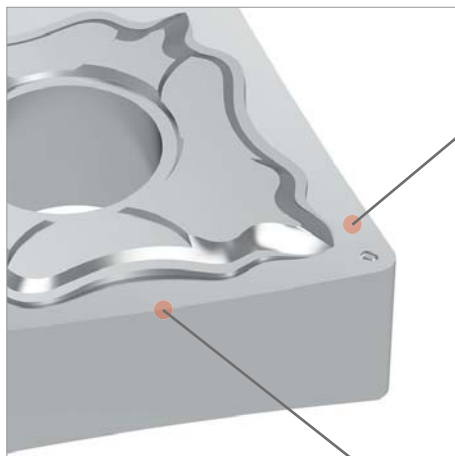
G - SPARE PARTS

NMN

Chipbreaker

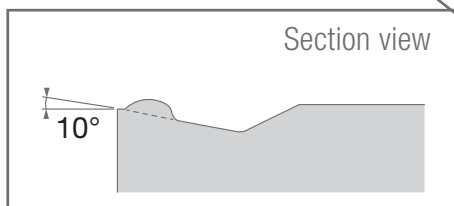
- Chipbreaker for non-ferrous materials
 - High positive rake angle
 - Ideal chip forming for smooth ejection
 - Excellent surface finishing
- Rompitrucciolo per materiali non ferrosi
 - Geometria con angolo di spoglia fortemente positivo
 - Formazione ed evacuazione del truciolo ideali
 - Eccellente finitura superficiale
- Spanbrecher für Nichteisenmaterialien
 - Geometrie mit stark positivem Spanwinkel
 - Ideale Spanbildung und -abfuhr
 - Ausgezeichnete Oberflächenqualität
- 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



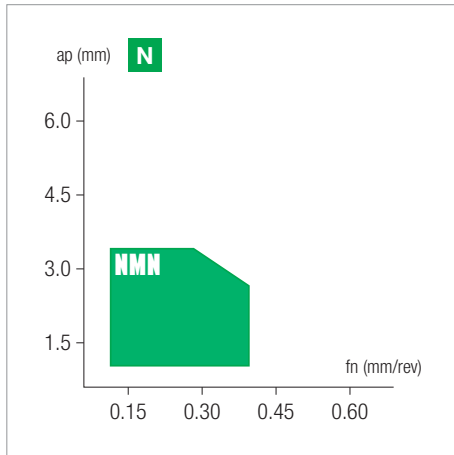
WIDE CHIP GROOVE AND LONG EDGE

- 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'usinage

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

nixkoTOOLS **70 PCS.**

Competitor A **30 PCS.**

Competitor B **20 PCS.**



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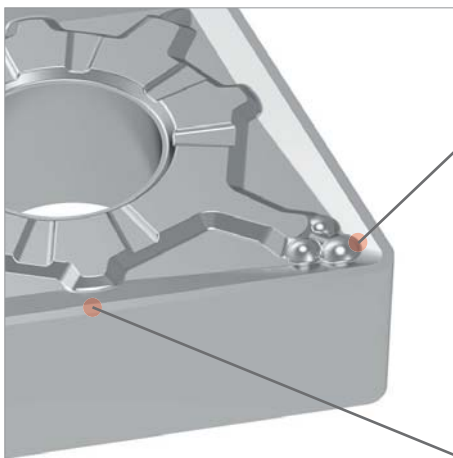
G - SPARE PARTS

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
- Rompitruciolo 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

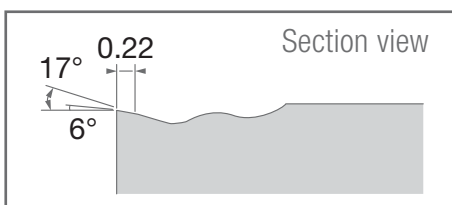


SPECIAL GROOVES

- 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

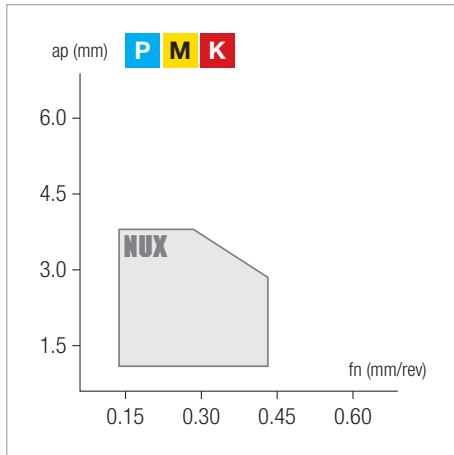
- Good balance of toughness and sharpness
 - Reliable cutting process for universal application
- Buon bilanciamento tra tenacità e taglienza
 - Processo di taglio affidabile in applicazioni universali
- Ausgewogenes Verhältnis zwischen Robustheit und Schärfe
 - Zuverlässiger Schneidprozess für universelle 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 Vc 300 m/min, fn 0.12 mm/rev, ap 1.7 mm, emulsion

nikkoTOOLS 40 PCS.

Competitor A 38 PCS.

Competitor B 30 PCS.



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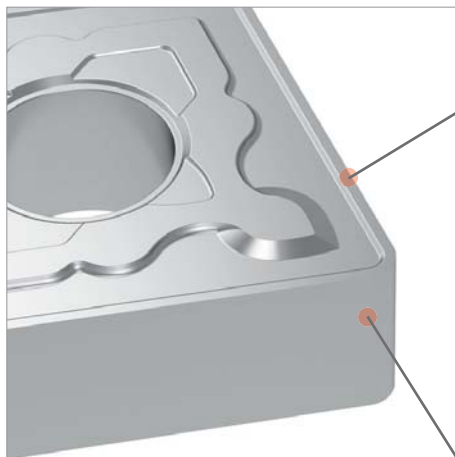
G - SPARE PARTS

NWU

Chipbreaker

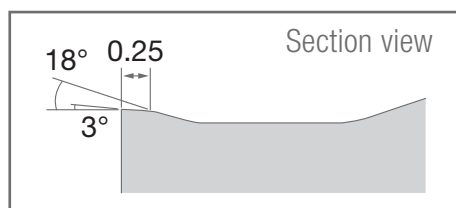
- Wiper chipbreaker for steel and cast iron
 - Anti-vibration and smooth cutting process
 - Reliable cutting edge with low cutting force
 - Universal application
- Wiper Spanbrecher für Stähle und Gusseisen
 - Vibrationsicheres und sanftes Schneiden
 - Zuverlässige Schnittkante mit geringen Schnittkräften
 - Universelle Anwendung
- Rompitrucciolo di tipo Wiper per acciai e ghisa
 - Anti-vibrazioni e taglio dolce
 - Tagliante 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



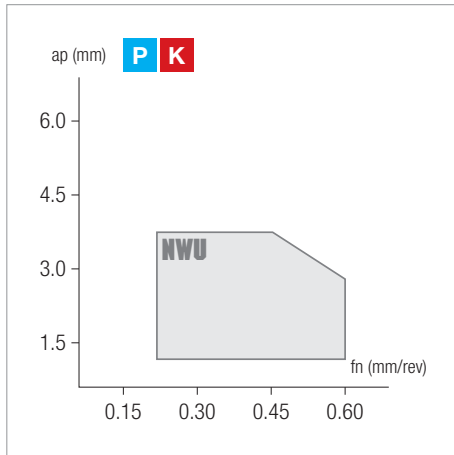
MULTIPLE-CURVE WIPER LAND

- 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 DNMX150608-NWU JC7010
Workpiece Grey cast iron GG25 (0.6025)
Parameters 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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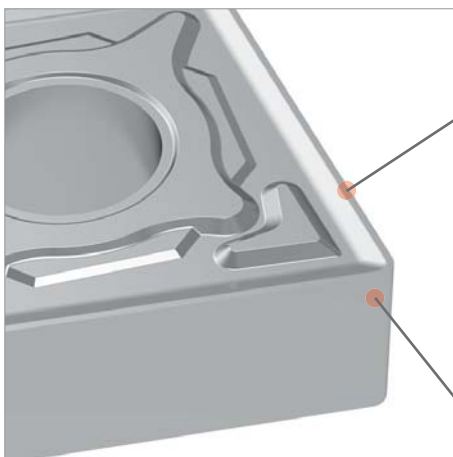
G - SPARE PARTS

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
- Rompitrucciolo di tipo Wiper per acciai e ghisa
 - Tagliante robusto e affidabile
 - Consigliato per lavorazioni con elevati avanzamenti e grandi profondità di taglio
 - Ampio campo applicativo
- Wiper Spanbrecher für Stähle und Gusseisen
 - Robuste und zuverlässige Schneidkante
 - Empfohlen für Bearbeitungen mit großen Vorschüben und Schnitttiefen
 - Breiter Anwendungsbereich
- 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

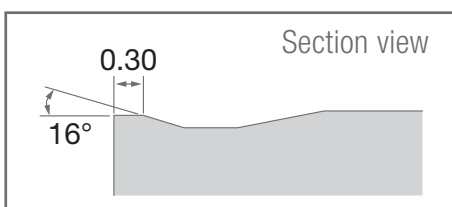


STRONG CUTTING EDGE

- 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

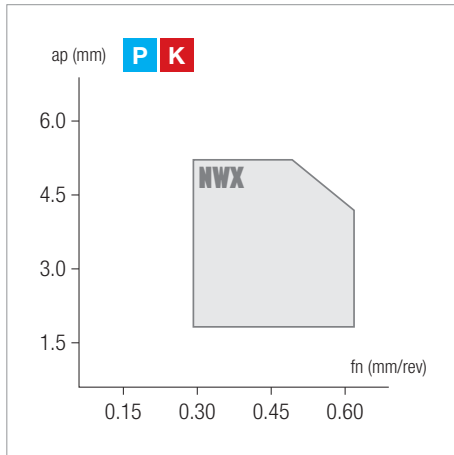
- Effectively reduce vibration
 - Excellent surface quality
- Efficace nel ridurre le vibrazioni
 - Eccellente qualità superficiale
- Effektive Reduzierung von Vibrationen
 - Hervorragende Oberflächenqualität
- Réduit efficacement les vibrations
 - Excellente qualité de surface



NWX

Chipbreaker

Application range - ISO 513



Use case

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

nikkoTOOLS **70 PCS.**

Competitor A **55 PCS.**

Competitor B **50 PCS.**



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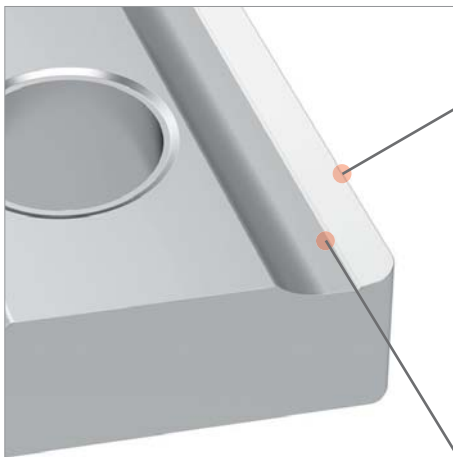
G - SPARE PARTS

NMU^L/R

Chipbreaker

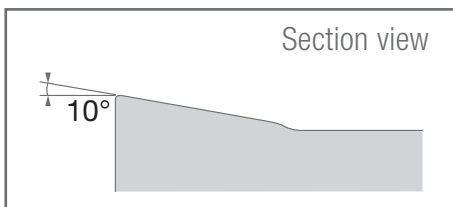
- Chipbreaker for universal use
 - Highly positive geometry reduces workpiece deformation
 - Excellent chip forming and guided chip evacuation
 - Designed for unstable cutting conditions
- Spanbrecher für universelle Anwendungen
 - Die stark positive Geometrie reduziert die Verformung des Werkstücks
 - 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



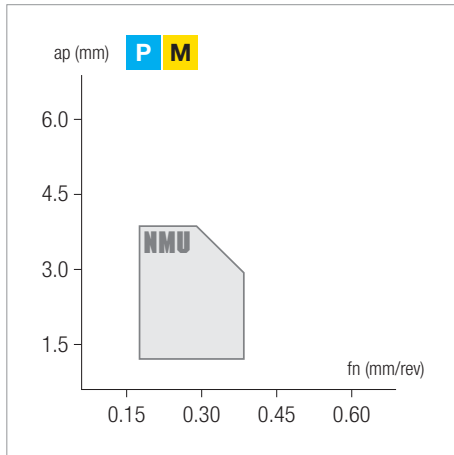
WIDE CHIP GROOVE AND LONG EDGE

- 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, fn 0.30 mm/rev, ap 2.0 mm, emulsion

nixkoTOOLS 280 PCS.

Competitor A 250 PCS.

Competitor B 230 PCS.



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F - ACCESSORIES

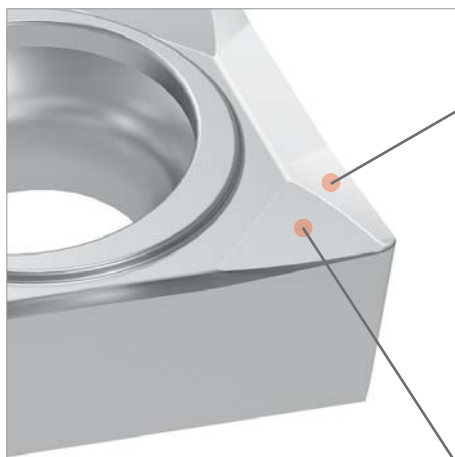
G - SPARE PARTS

PMN

Chipbreaker

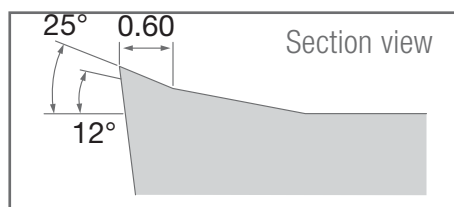
- Chipbreaker for non-ferrous materials
 - Highly positive and fine polished geometry
 - Excellent chip control
 - Low vibration even at high feed
- Spanbrecher für Nichteisenmaterialien
 - Starke positive Geometrie, fine polished
 - Behutsame und geführte Spanabfuhr
 - Verringert Vibrationen bei der 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



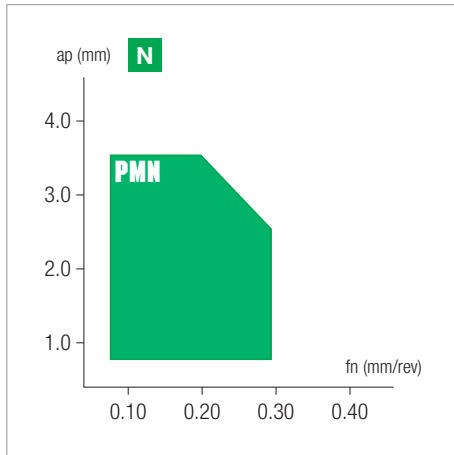
MIRROR-POLISHED SUPPORTING RAKE FACE

- 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

nixkoTOOLS **4000 PCS.**

Competitor A **1500 PCS.**

Competitor B **1200 PCS.**



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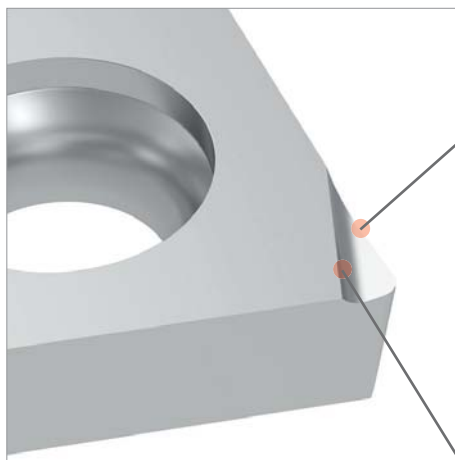
G - SPARE PARTS

PPF

Chipbreaker

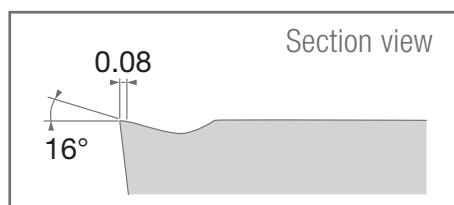
- Ground chipbreaker for small part finishing
 - High precision and low cutting force
 - Excellent chip control
 - For steel and stainless steel finishing
- Geschliffener Spanbrecher für die Feinbearbeitung kleiner Komponenten
 - Hohe Präzision und geringe Schnittkraft
 - Hervorragende Spanbildung und geführte Spanabfuhr
 - Für die Feinbearbeitung von Stählen und rostfreien Stählen
- Rompitrucciolo 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



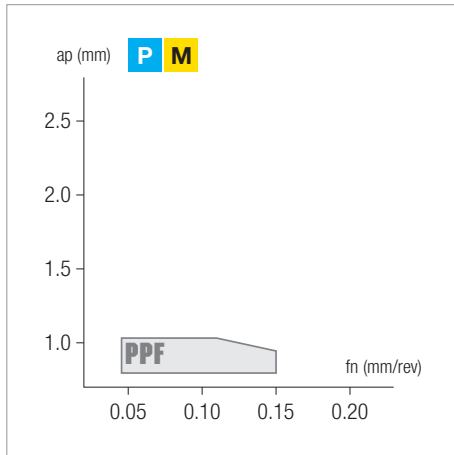
NARROW AND SHALLOW CHIP GROOVE

- 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 Vc 200 m/min, fn 0.05 mm/rev, ap 0.5 mm, emulsion

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



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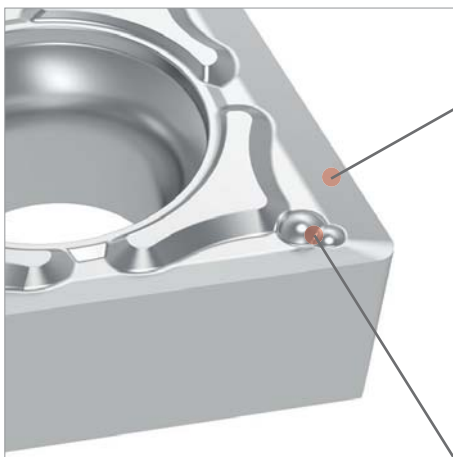
G - SPARE PARTS

PFU

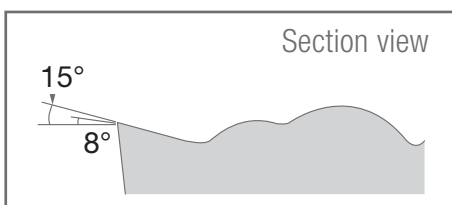
Chipbreaker

- 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
 - Tagliante 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 Schnitttiefe
 - 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

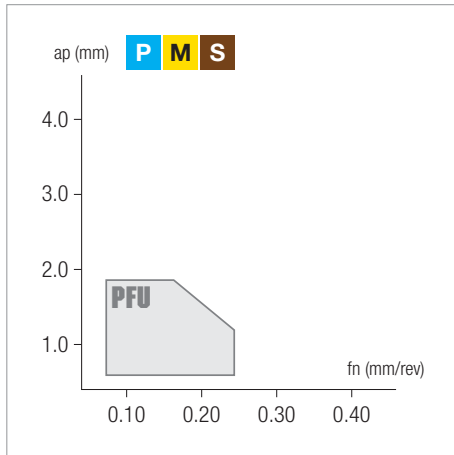
BI-SPHERICAL DESIGN

- 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 Schnitttiefen 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

nikkoTOOLS 600 PCS.

Competitor A 500 PCS.

Competitor B 500 PCS.



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G - SPARE PARTS

PPM

Chipbreaker

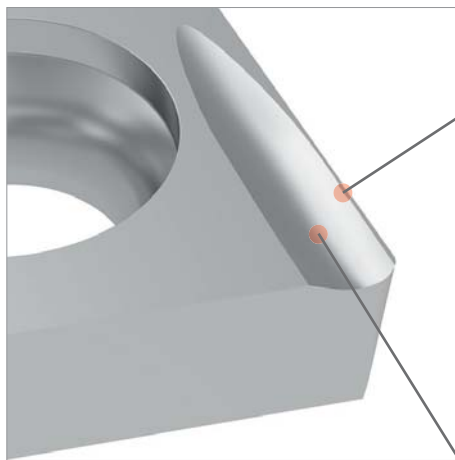
- Ground chipbreaker for small part universal machining
- Wide application range
- Reduced cutting force and stable cutting
- For steel and stainless steel general machining

- 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

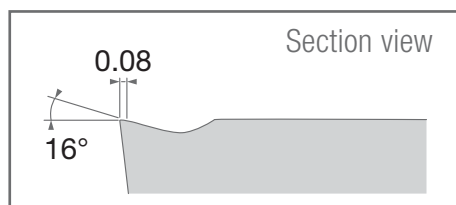
- Rompitruciolo rettificato per la lavorazione di minuteria
- Ampio campo applicativo
- Ridotte forze di taglio e processo stabile
- Per lavorazione di acciai e acciai inossidabili

- 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

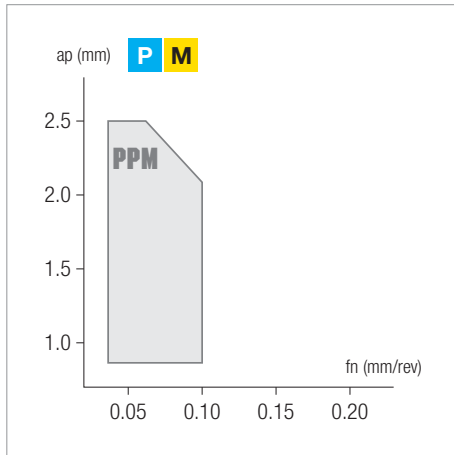
**WIDE CURVED GROUND CHIPBREAKER**

- 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 Vc 100 m/min, fn 0.10 mm/rev, ap 1.5 mm, emulsion

nixkoTOOLS 800 PCS.

Competitor A 750 PCS.

Competitor B 600 PCS.



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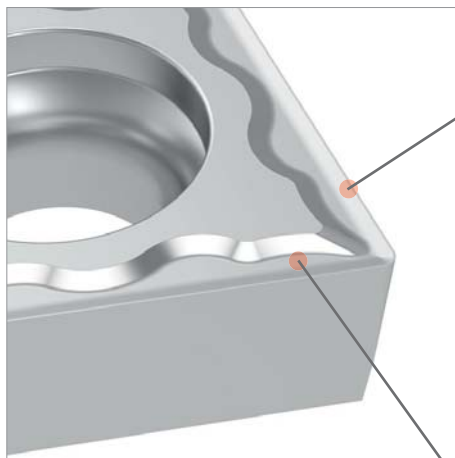
G - SPARE PARTS

PMU

Chipbreaker

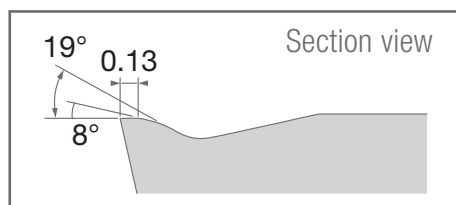
- High versatility chipbreaker for medium cutting
 - Designed with tough and sharp edge
 - Suitable for steel, stainless steel and cast iron
 - Universal application
- Sehr vielseitiger Spanbrecher für mittlere Schnittbedingungen
 - Ausgewogenes Verhältnis zwischen Robustheit und Schärfe
 - Für Anwendungen 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 taglientza
 - 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



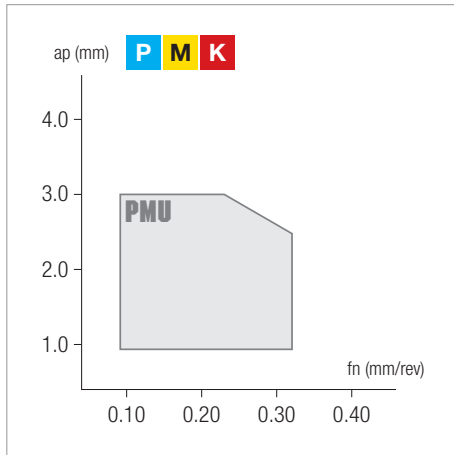
WIDE CHIP GROOVE

- 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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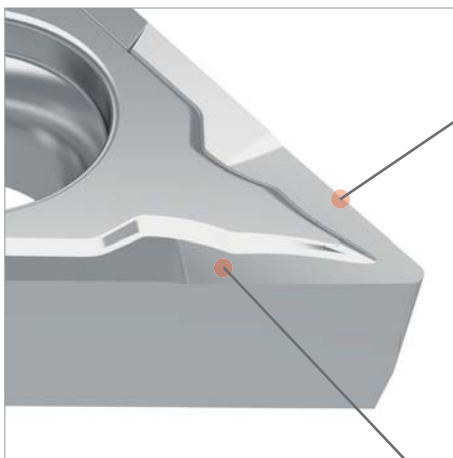
G - SPARE PARTS

PPU

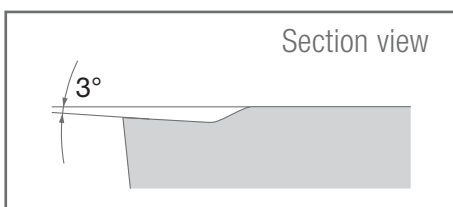
Chipbreaker

- 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
- Rompitrucciolo 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

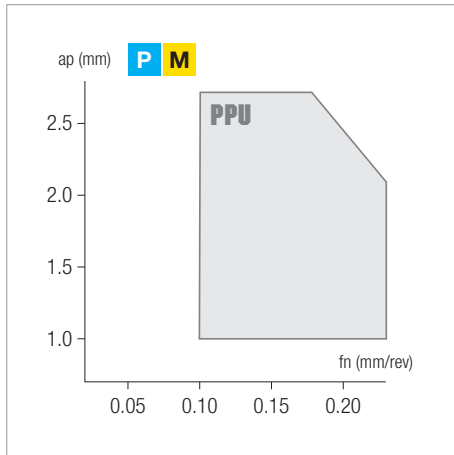
WIDE CHIP GROOVE

- 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 ap 0.8 mm
 fn 0.2 mm/r dry, heavy interrupted

nikkoTOOLS 45 PCS.

Competitor A 30 PCS.

Competitor B 15 PCS.



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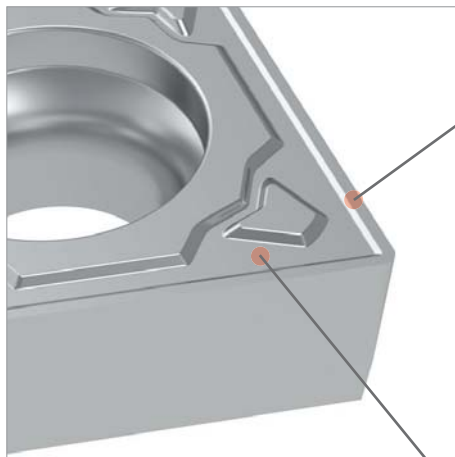
G - SPARE PARTS

PRU

Chipbreaker

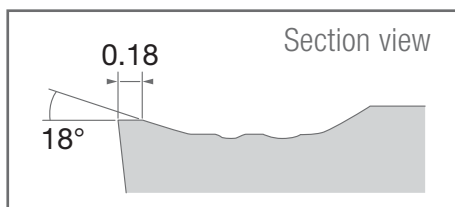
- Chipbreaker for roughing and interrupted cut conditions
 - Strong and stable cutting edge
 - Reduced cutting force and less vibration
 - High toughness and stability feed rate
- Spanbrecher zum Schruppen und für unterbrochene Schnittbedingungen
 - Robuste und zuverlässige Schneidkante
 - Geringere Schnittkräfte und Vibrationen
 - Für hohe Vorschübe geeignet
- Rompitrucciolo per sgrossatura e condizioni di taglio interrotto
 - Tagliante 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.

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

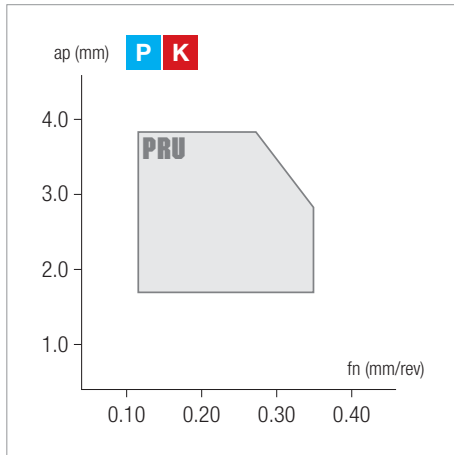
F - ACCESSORIES

G - SPARE PARTS

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

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

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

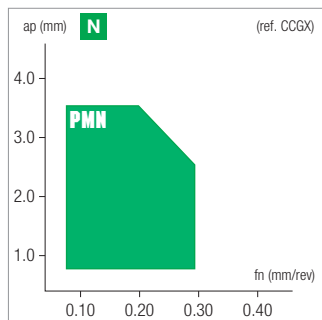
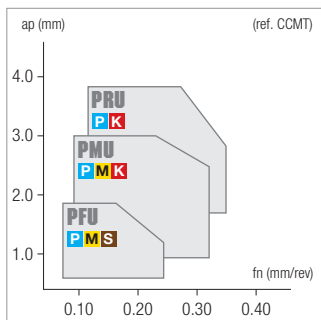
8	DIRECTION	
Symbol	Shape	
L		
R		

9	CHIPBREAKER - design	10	CHIPBREAKER - application	11	CHIPBREAKER - material
N	negative double side	F or S	finishnig	P, M, K, N, S, H	According to ISO 513
M	negative single side	M or U	medium	U, X	Universal
P	positive	R or T	roughing		
12	GRADE - coating	13	GRADE - material/application	14	GRADE - features
JC	CVD coating	10÷14	ISO H	xx	Classification according to ISO 513
JP	PVD coating	20÷24	small parts		
JU	uncoated	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		

<h1>CC</h1> <h2>ISO - with hole</h2>	HF: Micrograin tungsten carbide HT: Cermet HC: Coated tungsten carbide PVD: Physical vapor deposition CVD: Chemical vapor deposition																					
	Stable machining, light cut ● 1 st choice ○ suitable		●	○	●	●	○	●	○	●	●	●	○	●	●	●	●					
General machining, medium cut ● 1 st choice ○ suitable		●	○		●	●	○	●	○	●	●	●	○	●	○	●						
Unstable machining, heavy cut ⚡ 1 st choice ⚡ suitable		⚡	⚡					⚡					⚡			⚡						
Dimensions		ISO Vc(m/min) - suggested cutting speed range (bold: 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																				

MEDIUM	PMU P M K	Designation	RE	IC	S	D1	LE	Stock																	
								●	○	●	○	●	○	●	○	●	○	●	○	●	○	●	○		
 1st choice all-around application	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		●			○	○		○										
 polished surface ground clearance	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																●	●			
 strong edge interrupted cut	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 (MOQ), ▲ upcoming product, ▽ stock exhaustion



PRODUCT SELECTION p. A66

CUTTING CONDITIONS p. A110

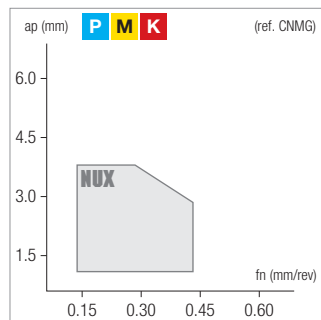
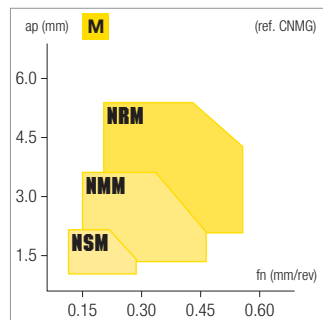
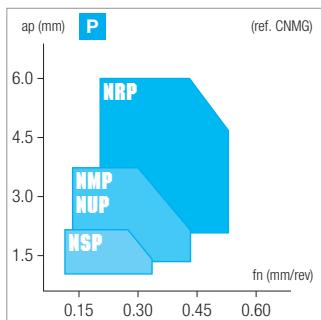
GRADES FEATURES p. A4

HOLDERS p. A255

CN	HF: Micrograin tungstein carbide HC: Coated tungstein carbide HT: Cermet CVD: Chemical vapor deposition PVD: Physical vapor deposition		HC	HC	HC	HC	HC	HC	HC	HC	HC	HF	HF	HF	HT	HF
	ISO - with hole		CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	PVD	PVD	PVD		
The most popular insert shape due to high versatility 80° corner can be used for both turning and facing operations Opposite 100° corners can be used for general roughing applications (especially facing), providing maximum economy of 8 total cutting edges		Stable machining, light cut	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable
General machining, medium cut		● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice
Unstable machining, heavy cut		● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice	○ suitable	● 1 st choice
Dimensions		ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)														
		P				200	170	140	100						200	
						380	360	330	200						380	
		M								100	80			60	50	
										200	180			160	130	
		K	130	110	130											
			380	300	380											
		N													200	
															1000	
		S											20			
													70			
		H														

	Designation	RE	IC	S	D1	LE	Stock																						
		RE	IC	S	D1	LE																							
FINISHING	NSP P	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 M	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 P M K	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 P	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																								

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



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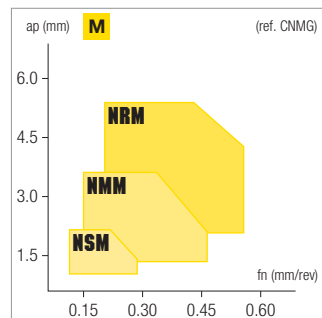
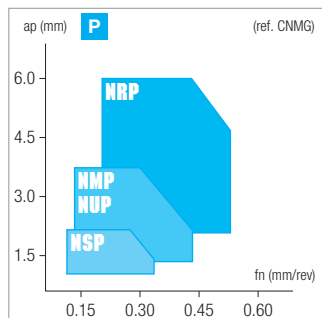
F - ACCESSORIES

G - SPARE PARTS

<h1>CN</h1> <h2>ISO - with hole</h2> <ul style="list-style-type: none"> The most popular insert shape due to high versatility 80° corner can be used for both turning and facing operations Opposite 100° corners can be used for general roughing applications (especially facing), providing maximum economy of 8 total cutting edges 	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	HF	HF	HF	HT	HF						
			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 <input checked="" type="radio"/> 1 st choice <input type="radio"/> suitable	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>					
	General machining, medium cut <input checked="" type="radio"/> 1 st choice <input type="radio"/> suitable	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>					
Unstable machining, heavy cut <input checked="" type="radio"/> 1 st choice <input type="radio"/> suitable	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>						
Dimensions	ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																			
	P				200	170	140	100							200						
	M				380	360	330	200		100	80	60	50								
	K	130	110	130	380																
	N															200					
	S											20	70								
	H																				

	Designation	RE	IC	S	D1	LE	Stock																																			
MEDIUM		CNMG090304-NUP	0.40	9.525	3.18	3.81	9.3																																			
		CNMG090308-NUP	0.80	9.525	3.18	3.81	8.9																																			
		CNMG120404-NUP	0.40	12.7	4.76	5.16	12.5																																			
		CNMG120408-NUP	0.80	12.7	4.76	5.16	12.1																																			
		CNMG120412-NUP	1.20	12.7	4.76	5.16	11.7																																			
		CNMG120416-NUP	1.60	12.7	4.76	5.16	11.3																																			
		CNMG160608-NUP	0.80	15.87	6.35	6.35	15.3																																			
		CNMG160612-NUP	1.20	15.87	6.35	6.35	14.9																																			
		CNMG190608-NUP	0.80	19.05	6.35	7.94	18.5																																			
		CNMG190612-NUP	1.20	19.05	6.35	7.94	18.1																																			
CNMG190616-NUP	1.60	19.05	6.35	7.94	17.7																																					
MEDIUM		CNMG090304-NMM	0.40	9.525	3.18	3.81	9.3																																			
		CNMG090308-NMM	0.80	9.525	3.18	3.81	8.9																																			
		CNMG120404-NMM	0.40	12.7	4.76	5.16	12.5																																			
		CNMG120408-NMM	0.80	12.7	4.76	5.16	12.1																																			
		CNMG120412-NMM	1.20	12.7	4.76	5.16	11.7																																			
		CNMG120416-NMM	1.60	12.7	4.76	5.16	11.3																																			
		CNMG160608-NMM	0.80	15.87	6.35	6.35	15.3																																			
		CNMG160612-NMM	1.20	15.87	6.35	6.35	14.9																																			
		CNMG160616-NMM	1.60	15.87	6.35	6.35	14.5																																			
		CNMG190612-NMM	1.20	19.05	6.35	7.94	18.1																																			
CNMG190616-NMM	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

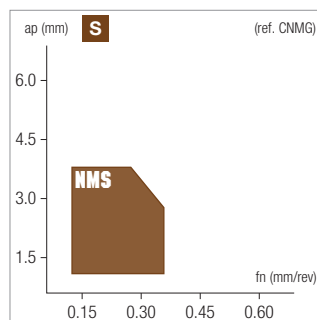
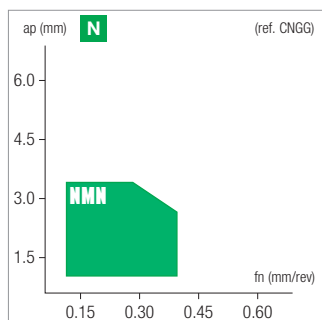
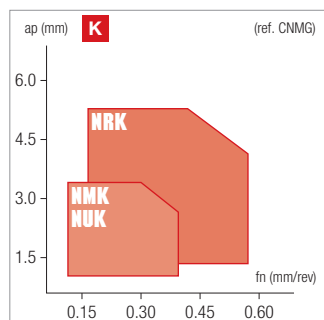
GRADES FEATURES p. A4

HOLDERS p. A255

<h1>CN</h1>	HF: Micrograin tungsten carbide HC: Coated tungsten carbide HT: Cermet CVD: Chemical vapor deposition PVD: Physical vapor deposition															
	ISO - with hole	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HF	HF	HF	HT	HF
<ul style="list-style-type: none"> The most popular insert shape due to high versatility 80° corner can be used for both turning and facing operations Opposite 100° corners can be used for general roughing applications (especially facing), providing maximum economy of 8 total cutting edges 	Stable machining, light cut	● 1 st choice ○ suitable	●	○	●	●	○	○	●	○	●	●	●	●	●	
	General machining, medium cut	● 1 st choice ○ suitable	●	○	●	●	○	○	●	○	●	●	●	●	●	
	Unstable machining, heavy cut	▲ 1 st choice ☆ suitable	▲	☆	▲	▲	☆	☆	▲	▲	☆	☆	▲	▲		
	Dimensions	ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)													
	P				200	170	140	100						200		
	M				380	360	330	200			100	80	60	50	380	
	K	130	110	130												
		380	300	380												
	N														200	
															1000	
S											20	70				
H																

	Designation	RE	IC	S	D1	LE	Stock									
							●	○	▲	☆	▲	☆	▲	☆	▲	☆
MEDIUM 	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 	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 	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 	CNMG120408-NMS	0.80	12.7	4.76	5.16	12.1							●			
	CNMG120412-NMS	1.20	12.7	4.76	5.16	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

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	HF	HF	HF	HT	HF
	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	●	○	●	●	●	○		●	○	●	●		●	●
General machining, medium cut	●	○	●		●	●	○	○	○	●	●	●	●	●
Unstable machining, heavy cut	⚡	⚡	⚡			⚡	⚡	⚡				⚡	⚡	⚡

Dimensions

4 edges

ISO

P			200	170	140	100							200
			380	360	330	200							380
M							100	80		60	50		
							200	180		160	130		
K	130	110	130										
	380	300	380										
N												200	
												1000	
S									20				
									70				
H													

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

	Designation	RE	IC	S	D1	LE	Stock																			
ROUGHING	NRK K 	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	Flat top K 	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	●	◎																	
HEAVY	MRP P single side 2 edges	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																			

★ 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

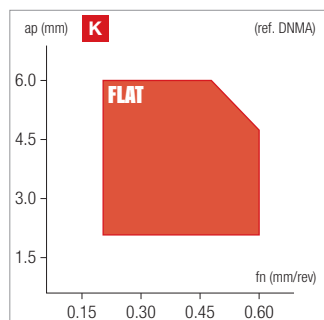
nikkoTOOLS | SORMA CUTTING SOLUTIONS

A75

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

<h1>DN</h1>	HF: Micrograin tungstein carbide HC: Coated tungstein 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																		
ISO - with hole	JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP4020	JP9015	JP9030	JU4015	JU6015																	
<ul style="list-style-type: none"> Generally the 1st choice for profile/copy turning applications Able to "In-Copy" (plunge turn into a smaller diameter) at an angle of 30° Commonly used when machining close to the tailstock 	Stable machining, light cut	● 1 st choice ○ suitable	●	○	●	●	○	●	○	●	●	●	●	●	●																	
	General machining, medium cut	● 1 st choice ○ suitable	●	○	●	●	○	○	○	●	●	○	●	●	●																	
	Unstable machining, heavy cut	▲ 1 st choice ☆ suitable	▲	▲	▲		▲	▲					▲	▲																		
Dimensions 	ISO																															
	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																															
	P			200 380	170 360	140 330	100 200				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

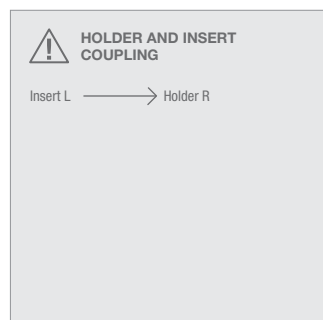
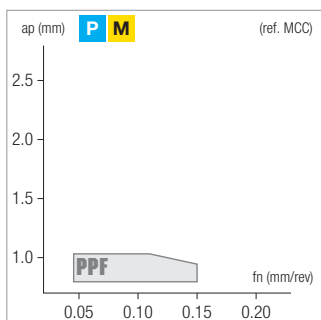
GRADES FEATURES p. A4

HOLDERS p. A255

<h1>MCC</h1> <p>ISO - with hole</p> <ul style="list-style-type: none"> • 1st solution for micro-boring • Precision ground insert with sharp geometry, tailored for microboring operation • Micro boring bar with coolant both in steel (with Vortex technology) and in carbide • Practical kits available (2 bars + 10 pcs inserts) 	HF: Micrograin tungstein carbide HT: Cermet PVD: Physical vapor deposition	HF HT PVD																		
	Stable machining, light cut: ● 1 st choice ○ suitable General machining, medium cut: ● 1 st choice ○ suitable Unstable machining, heavy cut: ★ 1 st choice ☆ suitable	● ● ○ ● ● ○ ★ ☆	JP5125 JU4015																	
	Dimensions	ISO P 70 200 180 380 M 50 140 K 60 180 N S 20 70 H	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																	

FINISHING	Designation	RE	IC	S	D1	LE	Stock																													
							●	○																												
<p>ground chipbreaker left-hand shown</p>	MCC.R02L-PPF	0.20	3.5	1.4	1.9	3.8	●	●																												
	MCC.R04L-PPF	0.40	3.5	1.4	1.9	3.8	●	○																												

★ 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

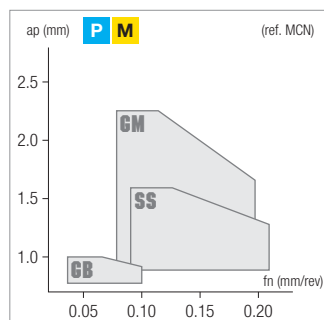
HOLDERS p. A255

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

MCN	HF: Micrograin tungstein carbide HT: Cermet PVD: Physical vapor deposition						HF	HF	HF	HF	HT											
	PVD						PVD	PVD	PVD	PVD												
MicroNeg							JP5015	JP5025	JP5120	JP9030	JU4015											
Stable machining, light cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>											
General machining, medium cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>											
Unstable machining, heavy cut	<input checked="" type="radio"/> 1 st choice	<input type="radio"/> suitable	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>											
Dimensions	ISO						Vc(m/min) - suggested cutting speed range (bold: 1 st choice)															
	P	100 220	70 180	90 200		200 380																
	M	70 160	50 140	60 150	50 130																	
	K		60 180	90 190																		
	N																					
	S	20 70		20 70																		
	H																					

	Designation	RE	IC	S	D1	LE	Stock															
FINISHING	GB P M ground chipbreaker right-hand shown	MCN.R04G-GBL/R	0.40	7.5	3.18	3.6	7.2	▽														
	MEDIUM	GM P M 1st choice chip control oriented	MCN.R04M-GM MCN.R08M-GM	0.40 0.80	7.5 7.5	3.18 3.18	3.6 3.6	7.2 6.8		▽		○			○							
MEDIUM		SS P M S ground periphery polished surface	MCN.R04G-SS	0.40	7.5	3.18	3.6	7.2			○	▽	○									

★ 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

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

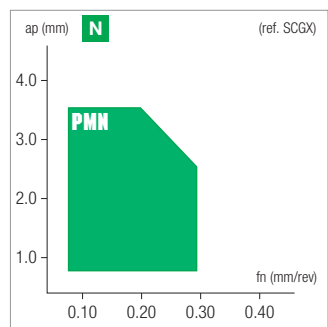
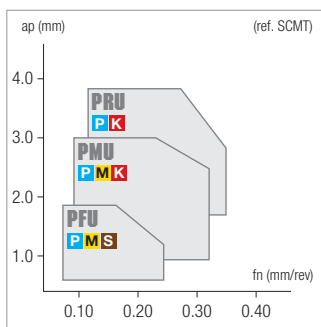
F - ACCESSORIES

G - SPARE PARTS

<h1>SC</h1>	HF: Micrograin tungstein carbide HC: Coated tungstein carbide HT: Cermet PVD: Physical vapor deposition CVD: Chemical vapor deposition										HC	HC	HC	HC	HC	HF	HF	HF	HT	HF										
	CVD CVD CVD CVD CVD PVD PVD PVD																													
ISO - with hole											JC7010	JC8015	JC8025	JC9010	JC9025	JP5120	JP5125	JP6010	JU4015	JU6015										
<ul style="list-style-type: none"> Very strong 90° corner with excellent economy (4 edges on positive inserts) Mostly used for rough facing operations, especially on castings, forgings and rough-sawed blanks High radial forces push against the workpiece when used for turning Should always be used in a stable set-up 											Stable machining, light cut ● 1 st choice ○ suitable		●	●	○	●	○	●	○	●	●	●								
											General machining, medium cut ● 1 st choice ○ suitable		●	●	○	○	●	●	○	○	○	○	○							
											Unstable machining, heavy cut ⚠ 1 st choice ⚠ suitable		⚠	⚠	⚠	⚠	⚠	⚠	⚠	⚠	⚠	⚠	⚠							
Dimensions											ISO Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																			
											P	170	140			90	70													
												360	330			200	180													
											M			100	80	60	50													
														200	180	150	140													
											K	130							90	60										
	380				190	180																								
N											400																			
											1400						200													
																	1000													
S								20	20																					
								70	70																					
H																														

Designation		RE	IC	S	D1	LE	Stock														
FINISHING	PFU PMS	0.40	9.525	3.97	4.4	9.1											●				
	SCMT09T304-PFU	0.80	9.525	3.97	4.4	8.7											●	○			
MEDIUM	PMU PMK	0.40	9.525	3.97	4.4	9.1	◎	●	●	○	●								○		
	SCMT09T308-PMU	0.80	9.525	3.97	4.4	8.7	●	◎	●		●								○		
	SCMT120404-PMU	0.40	12.7	4.76	5.5	12.3		◎	●												
	SCMT120408-PMU	0.80	12.7	4.76	5.5	11.9	●	●	●		●										
MEDIUM	PMN N	0.40	9.525	3.97	4.4	9.1												○	●		
	SCGX09T304-PMN	0.80	9.525	3.97	4.4	8.7												○	●		
	SCGX120404-PMN	0.40	12.7	4.76	5.5	12.3												○	●		
	SCGX120408-PMN	0.80	12.7	4.76	5.5	11.9												○	●		
ROUGHING	PRU PK	0.80	9.525	3.97	4.4	8.7	●		◎												
	SCMT120408-PRU	0.80	12.7	4.76	5.5	11.9	●		●												

★ 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

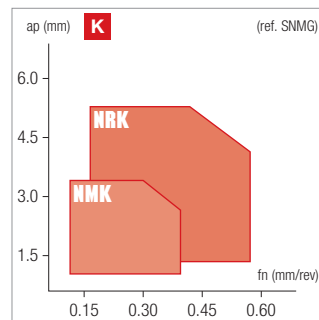
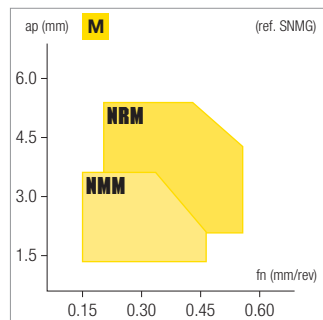
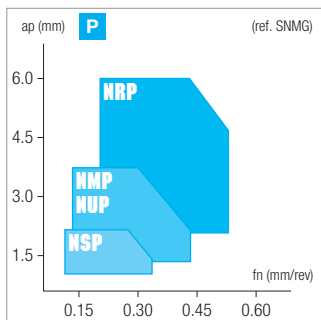
GRADES FEATURES p. A4

HOLDERS p. A255

<h1>SN</h1>	HF: Micrograin tungstein carbide HC: Coated tungstein carbide CVD: Chemical vapor deposition PVD: Physical vapor deposition											HC	HC	HC	HC	HC	HC	HC	HC	HC	HF	HF									
	CVD											CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	PVD											
<h2>ISO - with hole</h2>											● 1 st choice ○ suitable ● 1 st choice ○ suitable ⚙ 1 st choice ⚙ suitable																				
<ul style="list-style-type: none"> Very strong 90° corner with excellent economy (8 edges on double-sided inserts) Mostly used for rough facing operations, especially on castings, forgings and rough-sawed blanks High radial forces push against the workpiece when used for turning Should always be used in a stable set-up 											Dimensions					ISO						Vc(m/min) - suggested cutting speed range (bold: 1st choice)									
																P 170 140 100 360 330 200 M K 130 110 130 380 300 380 N 200 S 1000 H						(Color-coded grid for Vc ranges)									

		Designation						Stock										
		RE	IC	S	D1	LE												
FINISHING	NSP P	SNMG120408-NSP	0.80	12.7	4.76	5.16	11.9											
MEDIUM	NMP P	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 P	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 M	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 K	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

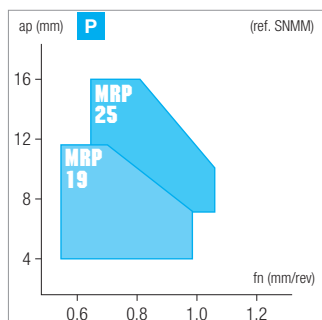
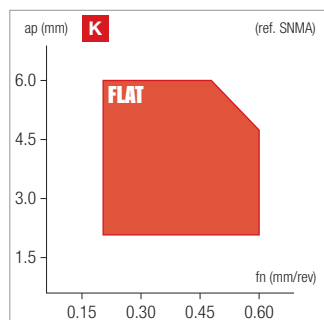


INDEXABLE
A - TURNING
B - THREADING
C - GROOVING
D - MILLING
E - DRILLING
F - ACCESSORIES
G - SPARE PARTS

<h1>SN</h1>	HF: Micrograin tungstein carbide HC: Coated tungstein carbide CVD: Chemical vapor deposition PVD: Physical vapor deposition																					
	ISO - with hole	HC	HC	HC	HC	HC	HC	HC	HC	HF	HF											
<ul style="list-style-type: none"> Very strong 90° corner with excellent economy (8 edges on double-sided inserts) Mostly used for rough facing operations, especially on castings, forgings and rough-sawed blanks High radial forces push against the workpiece when used for turning Should always be used in a stable set-up 	Stable machining, light cut	● 1 st choice ○ suitable	●	○	●	●	○		●	○		●										
	General machining, medium cut	● 1 st choice ○ suitable	●	○	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Unstable machining, heavy cut	⚡ 1 st choice ⚡ suitable	⚡	⚡	⚡				⚡	⚡		⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡	
	Dimensions	ISO	Vc(m/min) - suggested cutting speed range (bold: 1st choice)																			
<p>8 edges</p>	P				170	140	100															
	M				360	330	200					100	80	50								
	K	130	110	130																		
	N	380	300	380																		
	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					○	○										

★ 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

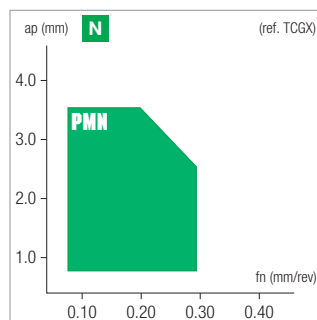
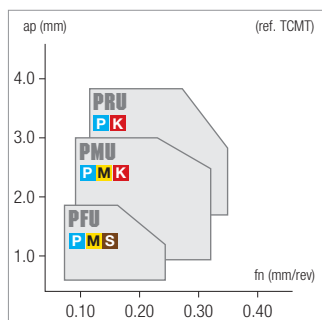
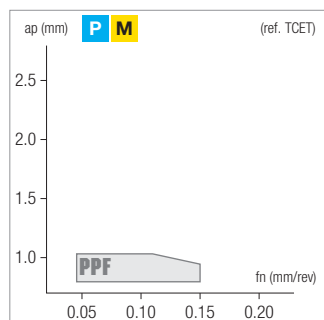
GRADES FEATURES p. A4

HOLDERS p. A255

<h1>TC</h1>	HF: Micrograin tungsten carbide HT: Cermet HC: Coated tungsten carbide PVD: Physical vapor deposition CVD: Chemical vapor deposition															
	ISO - with hole	HC	HC	HC	HC	HC	HC	HC	HT	HF	HF	HF	HF	HF	HT	HF
<ul style="list-style-type: none"> Very versatile insert shape Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket Extra clearance between the insert and the workpiece bore, greatly reduce the risk of chip jamming Boring bars made of steel (Vortex technology) and carbide are available 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	140			180	100	70	90	70	200		
	M				360	330			400	220	180	200	180	380		
	K	130	110	130	380				150	60	90	60	180			
	N													400	200	
	S									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											●	○				
	TCET110202L/R-PPF	0.40	6.35	2.38	2.8	10.3											●	○				
FINISHING	TCMT110202-PFU	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	TCMT090204-PMU	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	●	○		○	●	○			●	○		○				
MEDIUM	TCMT220408-PMU	0.80	12.7	4.76	5.5	21.2	○		●													
	TCGX090204-PMN	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

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

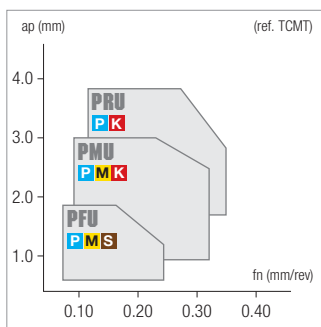
E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

TC	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			
ISO - with hole	CVD	CVD	CVD	CVD	CVD	CVD	CVD	PVD	PVD	PVD	PVD	PVD	PVD					
<ul style="list-style-type: none"> Very versatile insert shape Excellent choice for general boring due to very stable seating of the insert in the boring bar pocket Extra clearance between the insert and the workpiece bore, greatly reduce the risk of chip jamming Boring bars made of steel (Vortex technology) and carbide are available 80° C shape insert is recommended when a stronger edge is required 	Stable machining, light cut	<input type="radio"/> 1 st choice <input type="radio"/> suitable																
	General machining, medium cut	<input type="radio"/> 1 st choice <input type="radio"/> suitable																
	Unstable machining, heavy cut	<input type="radio"/> 1 st choice <input type="radio"/> suitable																
Dimensions	ISO																	
	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																	
	P				170	140			180	100	70	90	70		200			
M				360	330			400	220	180	200	180		380				
K	130	110	130					150	60	90	60							
N	380	300	380					320	180	190	180							
S									20	20	20							
H									70	70	70							
Designation	RE	IC	S	D1	LE	Stock												
ROUGHING strong edge interrupted cut	TCMT16T304-PRU	0.40	9.525	3.97	4.4	16.1	<input type="radio"/>											
	TCMT16T308-PRU	0.80	9.525	3.97	4.4	15.7	<input checked="" type="radio"/>											

★ 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

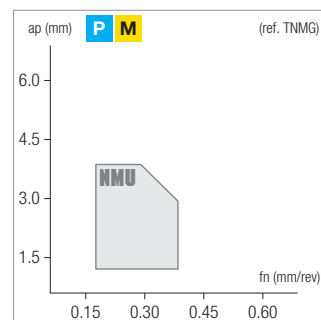
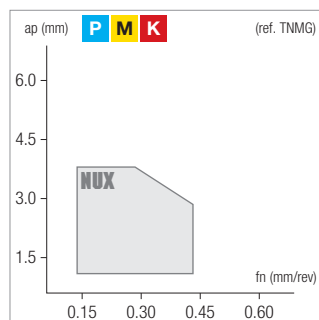
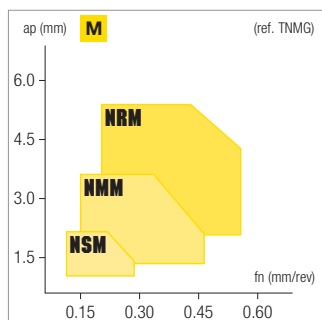
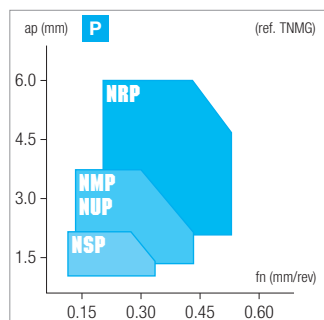
GRADES FEATURES p. A4

HOLDERS p. A255

<h1>TN</h1>	HF: Micrograin tungstein carbide HC: Coated tungstein carbide HT: Cermet CVD: Chemical vapor deposition PVD: Physical vapor deposition													HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HF	HF	HT	HF							
	ISO - with hole	JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP9015	JP9030	JU4015	JUG015																				
<ul style="list-style-type: none"> Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading Good economy with up to 6 cutting edges 	Stable machining, light cut	● 1 st choice ○ suitable	●	○	●	●	○	○	●	○	●	○	●	●																				
	General machining, medium cut	● 1 st choice ○ suitable	●	○	●		●	○	○	●	●	●	●	●																				
	Unstable machining, heavy cut	● 1 st choice ○ suitable	●	○	○		○	○	○	○	○	○	○	○																				
Dimensions		ISO																																
		Vc(m/min) - suggested cutting speed range (bold: 1 st choice)																																
		P				200	170	140	100							200																		
		M				380	360	330	200							100	80	60	50															
		K	130	110	130	380																												
		N																																
		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

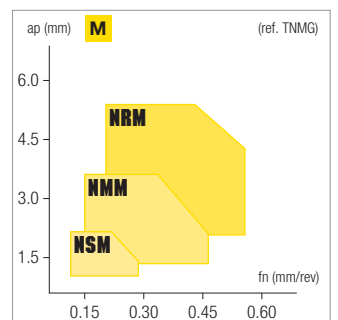
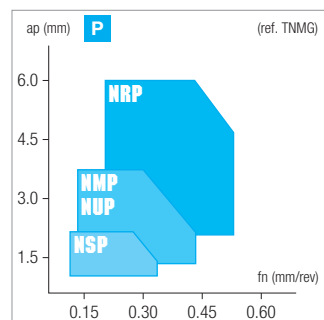
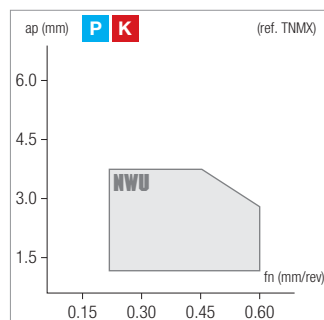
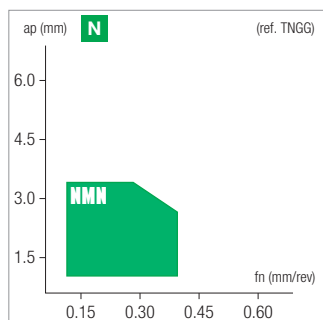
GRADES FEATURES p. A4

HOLDERS p. A255

<h1>TN</h1> <p>ISO - with hole</p> <ul style="list-style-type: none"> Very versatile insert shape, can be used for turning, facing, boring, copy turning and basic profiling, sometimes even threading Good economy with up to 6 cutting edges 	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	HT	HF	
	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	PVD	PVD				
	JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP9015	JP9030	JU4015	JU6015				
	● 1 st choice ○ suitable	● 1 st choice ○ suitable	● 1 st choice ○ suitable	● 1 st choice ○ suitable	● 1 st choice ○ suitable	● 1 st choice ○ suitable	● 1 st choice ○ suitable	● 1 st choice ○ suitable	● 1 st choice ○ suitable	● 1 st choice ○ suitable	● 1 st choice ○ suitable	● 1 st choice ○ suitable	● 1 st choice ○ suitable	● 1 st choice ○ suitable			
Stable machining, light cut		General machining, medium cut		Unstable machining, heavy cut													
<p>6 edges</p>		Dimensions ISO Vc(m/min) - suggested cutting speed range (bold: 1st 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															
MEDIUM 	NMN N	0.40	9.525	4.76	3.81	16.1											●					
	TNGG160404-NMN																					●
	TNGG160408-NMN						0.80	9.525	4.76	3.81	15.7											▽
MEDIUM 	NWU PK	1.20	9.525	4.76	3.81	15.3	●				○											
	TNMX160412-NWU						0.80	9.525	4.76	3.81	15.7	●				○						
ROUGHING 	NRP P	1.20	9.525	4.76	3.81	15.3					●	○										
	TNMG160408-NRP						0.80	9.525	4.76	3.81	15.7					●	○					
	TNMG160412-NRP						1.20	9.525	4.76	3.81	15.3					○						
	TNMG220412-NRP						1.20	12.7	4.76	5.16	20.8					○	○					
ROUGHING 	NRK K	1.60	12.7	4.76	5.16	20.4					○											
	TNMG220416-NRP						1.60	12.7	4.76	5.16	20.4					○						
	TNMG220408-NRK						0.80	12.7	4.76	5.16	21.2	●	○									
	TNMG220412-NRK						1.20	12.7	4.76	5.16	20.8	●	○									
ROUGHING 	NRK K	1.60	12.7	4.76	5.16	20.4					○											
	TNMG220416-NRK						1.60	12.7	4.76	5.16	20.4	●	○									
	TNMG220408-NRK						0.80	12.7	4.76	5.16	21.2	●	○									
	TNMG220412-NRK						1.20	12.7	4.76	5.16	20.8	●	○									

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



PRODUCT SELECTION p. A66

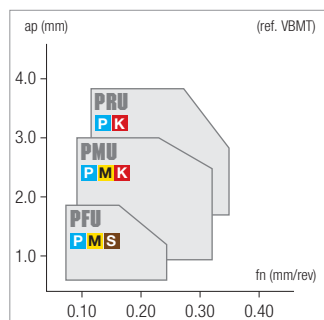
CUTTING CONDITIONS p. A110

GRADES FEATURES p. A4

HOLDERS p. A255

<h1>VB</h1>	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	HT
	ISO - with hole	CVD	CVD	CVD	CVD	CVD	CVD	PVD	PVD	PVD	PVD	PVD													
<ul style="list-style-type: none"> 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 PRU P K strong edge interrupted cut	VBMT160408-PRU	RE	IC	S	D1	LE	○		●																

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



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

VC

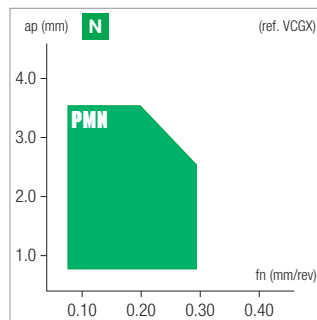
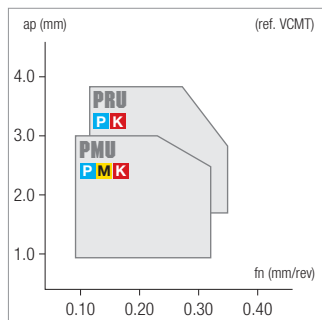
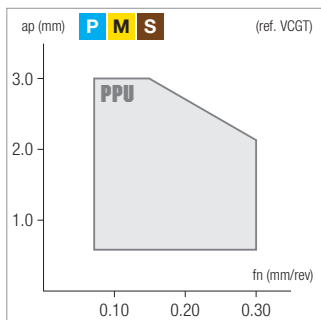
ISO - with hole

- 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
- Positive style can be used for external and internal applications, in many cases can have improved performances

HF: Micrograin tungsten carbide HC: Coated tungsten carbide HT: Cermet PVD: Physical vapor deposition CVD: Chemical vapor deposition		HC	HC	HC	HC	HF	HF	HT	HF	HF														
		CVD	CVD	CVD	CVD	PVD	PVD				JC7010	JC8015	JC8025	JC9025	JP5125	JP6010	JU4015	JU6010	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	170 360	140 330	70 180	200 380																			
	M			80 180	50 140																			
	K	130 380			60 180																			
	N				400 1400	200 1000																		
	S			20 70																				
H																								

MEDIUM	PPU PMS	 ground clearance 3D chipbreaker	Designation						Stock																				
			RE	IC	S	D1	LE																						
	VCMT110302-PPU	0.20	6.35	3.18	2.8	10.9																					●		
	VCGT110304-PPU	0.40	6.35	3.18	2.8	10.7																					●		
	VCGT160402-PPU	0.20	9.525	4.76	4.4	16.4																					●		
	VCGT160404-PPU	0.40	9.525	4.76	4.4	16.2																					●		
	VCGT160408-PPU	0.80	9.525	4.76	4.4	15.8																					●		
MEDIUM	PMU PMK	 1st choice all-around application	VCMT110304-PMU	0.40	6.35	3.18	2.8	10.7	◎	●	●	●															●		
	VCMT110308-PMU		0.80	6.35	3.18	2.8	10.3																				◎		
	VCGT160404-PMU		0.40	9.525	4.76	4.4	16.2	●	●	●	●	●															○		
	VCGT160408-PMU		0.80	9.525	4.76	4.4	15.8	●	●	●	●	●															●		
MEDIUM	PMN N	 polished surface ground clearance	VCGX110302-PMN	0.20	6.35	3.18	2.8	10.9																			○	●	
	VCGX110304-PMN		0.40	6.35	3.18	2.8	-																					●	
	VCGX110308-PMN		0.80	6.35	3.18	2.8	10.3																					●	
	VCGX160402-PMN		0.20	9.525	4.76	4.4	16.4																					○	●
	VCGX160404-PMN		0.40	9.525	4.76	0	-																					○	●
	VCGX160408-PMN		0.80	9.525	4.76	0	-																					○	●
	VCGX160412-PMN		1.20	9.525	4.76	4.4	15.4																					○	○
	VCGX220512-PMN		1.20	12.7	5.56	5.5	20.9																					○	○
	VCGX220516-PMN	1.60	12.7	5.56	5.5	20.5																					○	▽	○
	VCGX220530-PMN	3.00	12.7	5.56	5.5	-																					○	●	
ROUGHING	PRU PK	 strong edge interrupted cut	VCMT160404-PRU	0.40	9.525	4.76	4.4	16.2	◎		○																		
	VCMT160408-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

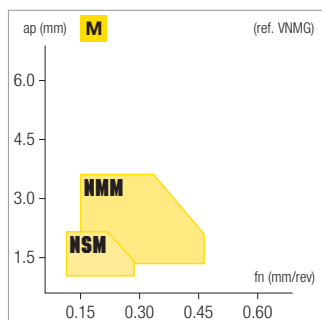
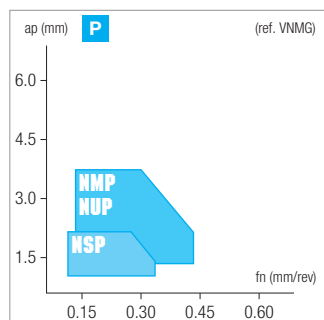
GRADES FEATURES p. A4

HOLDERS p. A255

<h1>VN</h1>	HF: Micrograin tungsten carbide HC: Coated tungsten carbide HT: Cermet CVD: Chemical vapor deposition PVD: Physical vapor deposition												
	ISO - with hole												
<ul style="list-style-type: none"> 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 Lighter ap and fn are recommended for this shape Double sided style should mainly be used for external applications 	Stable machining, light cut	● 1 st choice ○ suitable	●	○	●	●	○	○	●	●	●	●	
	General machining, medium cut	● 1 st choice ○ suitable	●	○	●	●	●	●	●	●	●	●	
	Unstable machining, heavy cut	▲ 1 st choice ☆ suitable	▲	▲	▲					▲	▲	▲	
	Dimensions		ISO										
		Vc(m/min) - suggested cutting speed range (bold: 1st choice)											
		P				200	170	140				200	
		M				380	360	330				380	
		K	130	110	130	380				80	60	50	
		N											200
		S											1000

	Designation	RE	IC	S	D1	LE	Stock											
FINISHING	NSP P	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 M	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 P	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 P	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 M	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



PRODUCT SELECTION p. A66

CUTTING CONDITIONS p. A110

GRADES FEATURES p. A4

HOLDERS p. A255

VN

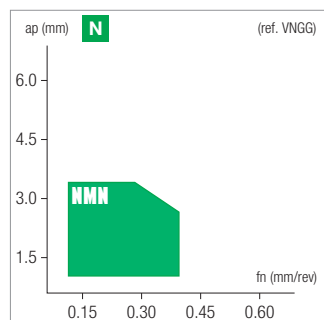
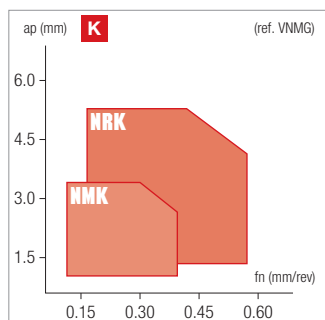
ISO - with hole

- 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
- Lighter ap and fn are recommended for this shape
- Double sided style should mainly be used for external applications

HF: Micrograin tungstein carbide HC: Coated tungstein carbide HT: Cermet CVD: Chemical vapor deposition PVD: Physical vapor deposition		HC	HC	HC	HC	HC	HC	HC	HF	HF	HT	HF													
		CVD	CVD	CVD	CVD	CVD	CVD	CVD	PVD	PVD															
		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC9025	JP9015	JP9030	JU4015	JU6015													
Stable machining, light cut	● 1 st choice ○ suitable	●	○	●	●	●	○	○	●		●	●													
General machining, medium cut	● 1 st choice ○ suitable	●	○	●		●	●	●	●	●		●													
Unstable machining, heavy cut	⊕ 1 st choice ⊕ suitable	⊕	⊕	⊕			⊕	⊕			⊕														
Dimensions		ISO																							
		Vc(m/min) - suggested cutting speed range (bold: 1st choice)																							
		P					200	170	140	380	360	330					200	380							
		M													80	60	50								
															180	160	130								
		K	130	110	130	380																			
			380	300	380																				
N																	200	1000							
S																									
H																									

	Designation	RE	IC	S	D1	LE	Stock																	
							●	○	○	○	○	○	○	○	○	○	○	○	○	○				
MEDIUM	NMK K 	VNMG160404-NMK	0.40	9.525	4.76	3.81	16.2	●	○															
		VNMG160408-NMK	0.80	9.525	4.76	3.81	15.8	●	○															
		VNMG160412-NMK	1.20	9.525	4.76	3.81	15.4	○	○															
MEDIUM	NUK K 	VNMG160404-NUK	0.40	9.525	4.76	3.81	16.2			○														
		VNMG160408-NUK	0.80	9.525	4.76	3.81	15.8			○														
		VNMG160412-NUK	1.20	9.525	4.76	3.81	15.4			○														
MEDIUM	NMN N 	VNGG160404-NMN	0.40	9.525	4.76	3.81	16.2														○			
		VNGG160408-NMN	0.80	9.525	4.76	3.81	15.8														○			
ROUGHING	NRK K 	VNMG160408-NRK	0.80	9.525	4.76	3.81	15.8	●	○															
		VNMG160412-NRK	1.20	9.525	4.76	3.81	15.4	●	○															

* 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

WC

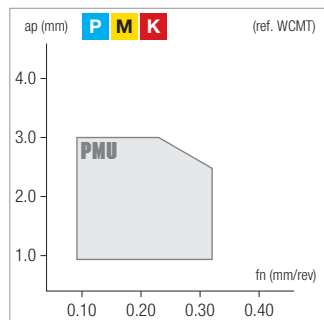
ISO - with hole

- 3-corner 80° diamond shape that can increase economy compared to C-shape inserts
- Generally used on more moderate depths of cut and feedrates than C-shape inserts
- Lighter ap is recommended compared to C-shape inserts

HC: Coated tungstein carbide HT: Cermet CVD: Chemical vapor deposition		HC	HC	HC	HC	HT																		
		CVD	CVD	CVD	CVD																			
		JC7010	JC8015	JC8025	JC9025	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	⚠	⚠	⚠	⚠																			
Dimensions		ISO																						
		Vc(m/min) - suggested cutting speed range (bold: 1st choice)																						
		P	170	140	200																			
			360	330	380																			
		M			80																			
					180																			
		K	130																					
	380																							
N																								
S																								
H																								

MEDIUM	PMU P M K	Designation						Stock				
		RE	IC	S	D1	LE	●	⊙	⊙	⊙	⊙	
 1st choice all-around application	WCMT12T304-PMU	0.40	9.525	3.97	4.4	6.1	●	⊙	⊙	⊙	⊙	
	WCMT12T308-PMU	0.80	9.525	3.97	4.4	5.7	⊙	⊙	⊙	⊙	⊙	

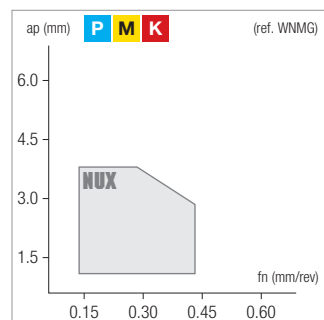
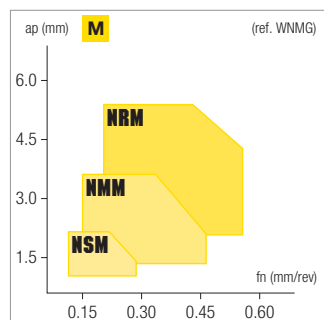
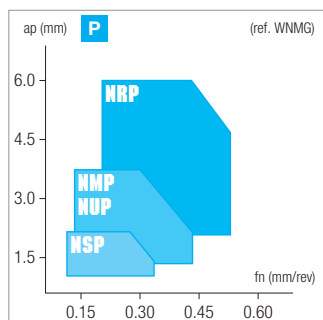
★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion



<h1>WN</h1>	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	HF	HF	HF	HT	HF
	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	CVD	PVD	PVD	PVD			
ISO - with hole		JC7010	JC7020	JC7115	JC8005	JC8015	JC8025	JC8035	JC9010	JC9025	JP3015	JP9015	JP9030	JU4015	JU6015
• 6-corner 80° diamond shape that can increase economy compared to CNMG-style inserts	Stable machining, light cut	● 1 st choice	○ suitable	●	●	●	○	○	●	○	●	●	●	●	●
• Generally used on more moderate depths of cut and feedrates than CNMG-style inserts	General machining, medium cut	● 1 st choice	○ suitable	○	○	○	○	○	○	○	○	○	○	○	○
• Lighter ap is recommended compared to C shape inserts	Unstable machining, heavy cut	▲ 1 st choice	▲ suitable	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	Dimensions	ISO													
		Vc(m/min) - suggested cutting speed range (bold: 1st choice)													
	P				200	170	140	100							200
	M				380	360	330	200			100	80	60	50	380
	K	130	110	130	380										
	N													200	
	S											20	70	1000	
	H														

Designation		RE	IC	S	D1	LE	Stock														
FINISHING	NSP P	0.40	9.525	4.76	3.81	6.1															
		0.80	9.525	4.76	3.81	5.7						●	○								
	WNUMG080404-NSP	0.40	12.7	4.76	5.16	8.3						●	○								
	WNUMG080408-NSP	0.80	12.7	4.76	5.16	7.9						●	○								
FINISHING	NSM M	0.40	12.7	4.76	5.16	8.3														●	●
		0.80	12.7	4.76	5.16	7.9														●	●
MEDIUM	NUX P M K	0.40	12.7	4.76	5.16	8.3	●		●	●	●		●	●							
		0.80	12.7	4.76	5.16	7.9	●		●	●	●		●	●							
	WNUMG080412-NUX	1.20	12.7	4.76	5.16	7.5	●		●	●	●		●	●							
MEDIUM	NMP P	0.40	9.525	4.76	3.81	6.1						○	●								
		0.80	9.525	4.76	3.81	5.7						●	●								
	WNUMG080404-NMP	0.40	12.7	4.76	5.16	8.3						○	●							▽	
	WNUMG080408-NMP	0.80	12.7	4.76	5.16	7.9						●	●							▽	
	WNUMG080412-NMP	1.20	12.7	4.76	5.16	7.5						●	●								
	WNUMG080416-NMP	1.60	12.7	4.76	5.16	7.1						○	○								
MEDIUM	NUP P	0.40	9.525	4.76	3.81	6.1						○	●								○
		0.80	9.525	4.76	3.81	5.7						○	●								○
	WNUMG080404-NUP	0.40	12.7	4.76	5.16	8.3						●	●								○
	WNUMG080408-NUP	0.80	12.7	4.76	5.16	7.9						●	●								○
	WNUMG080412-NUP	1.20	12.7	4.76	5.16	7.5						●	●								○
	WNUMG080416-NUP	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

WN

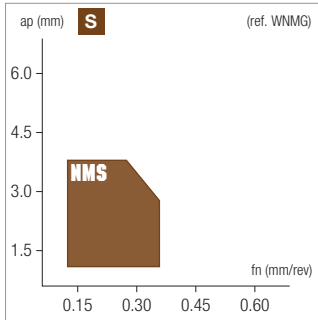
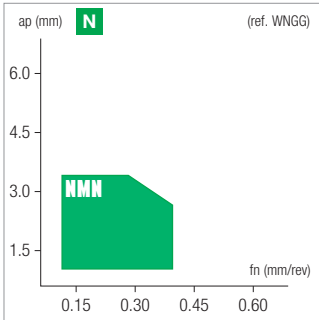
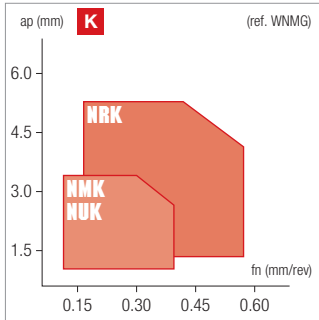
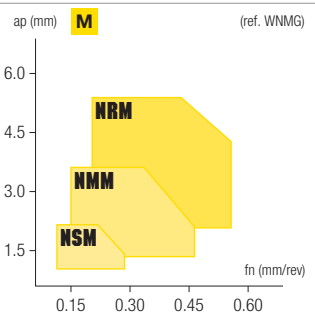
ISO - with hole

- 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	HF	HF	HF	HT	HF						
	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	●	○	●	●	●	○		●	○	●	●		●	●						
General machining, medium cut	●	○	●		●	●	○	○	●	●	●	●	●	●						
Unstable machining, heavy cut	⊕	⊕	⊕			⊕	⊕	⊕					⊕	⊕						
Dimensions	ISO Vc(m/min) - suggested cutting speed range (bold: 1st choice)																			
	P				200	170	140	100											200	
					380	360	330	200											380	
	M									100	80									
										200	180			60	50					
														160	130					
	K	130	110																	
	380	300	130	380																
N																				
																			200	
																			1000	
S																				
													20							
													70							
H																				

Designation		RE	IC	S	D1	LE	Stock																	
M	WNMG060404-NMM	0.40	9.525	4.76	3.81	6.1												○	●	○	●			
	WNMG060408-NMM	0.80	9.525	4.76	3.81	5.7												○	●	○	●			
	WNMG060412-NMM	1.20	9.525	4.76	3.81	5.3												○	●	○	●			
	WNMG080404-NMM	0.40	12.7	4.76	5.16	8.3												●	●	○	●		▽	
	WNMG080408-NMM	0.80	12.7	4.76	5.16	7.9												●	●	○	●		▽	
	WNMG080412-NMM	1.20	12.7	4.76	5.16	7.5												○	●	○	●			
K	WNMG080404-NMK	0.40	12.7	4.76	5.16	8.3	●	○																
	WNMG080408-NMK	0.80	12.7	4.76	5.16	7.9	●	○																
	WNMG080412-NMK	1.20	12.7	4.76	5.16	7.5	●	○																
K	WNMG080404-NUK	0.40	12.7	4.76	5.16	8.3																		
	WNMG080408-NUK	0.80	12.7	4.76	5.16	7.9																		
	WNMG080412-NUK	1.20	12.7	4.76	5.16	7.5																		
N	WNGG060404-NMN	0.40	9.525	4.76	3.81	6.1																		●
	WNGG060408-NMN	0.80	9.525	4.76	3.81	5.7																		○
	WNGG080404-NMN	0.40	12.7	4.76	5.16	8.3																		●
	WNGG080408-NMN	0.80	12.7	4.76	5.16	7.9																		●
S	WNMG080408-NMS	0.80	12.7	4.76	5.16	7.9																		●
	WNMG080412-NMS	1.20	12.7	4.76	5.16	7.5																		●

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



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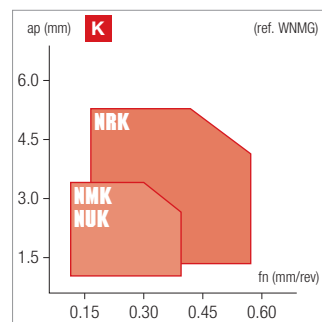
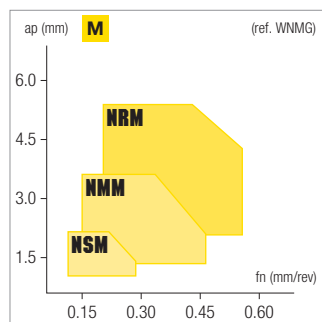
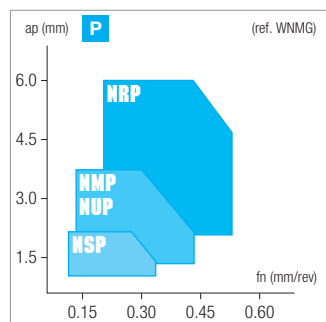
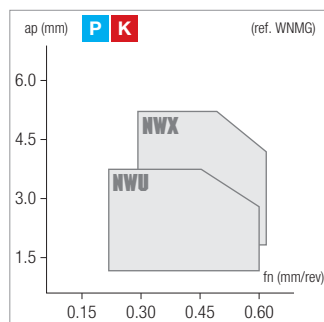
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<h1>WN</h1>	HF: Micrograin tungsten carbide HC: Coated tungsten carbide HT: Cermet CVD: Chemical vapor deposition PVD: Physical vapor deposition															
	ISO - with hole	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HC	HF	HF	HF	HT
<ul style="list-style-type: none"> 6-corner 80° diamond shape that can increase economy compared to CNMG-style inserts Generally used on more moderate depths of cut and feedrates than CNMG-style inserts Lighter ap is recommended compared to C shape inserts 	Stable machining, light cut	● 1 st choice ○ suitable	●	○	●	●	●	○	○	●	○	●	●	●	●	●
	General machining, medium cut	● 1 st choice ○ suitable	●	○	●	●	●	○	○	●	●	●	●	●	●	●
	Unstable machining, heavy cut	● 1 st choice ○ suitable	●	○	●	●	●	○	○	●	●	●	●	●	●	●
	Dimensions		ISO	Vc(m/min) - suggested cutting speed range (bold: 1 st choice)												
			P			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										20 70			
			H													

	Designation	RE	IC	S	D1	LE	Stock															
							●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
MEDIUM	NWU P K	0.80	12.7	4.76	5.16	7.9	●	○	○				○									
	WNMG080408-NWU	1.20	12.7	4.76	5.16	7.5	○						○									
MEDIUM	NWX P K	0.80	12.7	4.76	5.16	7.9	○					●					○					
	WNMG080412-NWX	1.20	12.7	4.76	5.16	7.5											○					
ROUGHING	NRP P	0.80	12.7	4.76	5.16	7.9					●	●	●	●								
	WNMG080408-NRP	1.20	12.7	4.76	5.16	7.5					●	●	●	●								
	WNMG080412-NRP	1.60	12.7	4.76	5.16	7.1					○	○	●									
ROUGHING	NRM M	0.80	12.7	4.76	5.16	7.9								●	●		●					
	WNMG080408-NRM	1.20	12.7	4.76	5.16	7.5								●	●		●					
ROUGHING	NRK K	0.80	9.525	4.76	3.81	5.7	●	●														
	WNMG080408-NRK	0.80	12.7	4.76	5.16	7.9	●	●	●													
	WNMG080412-NRK	1.20	12.7	4.76	5.16	7.5	●	●	●													

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



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CUTTING CONDITIONS p. A110

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ISO 513	MATERIAL	HARDNESS HB	JC8005			JC8015			JC8025		
			min	start	max	min	start	max	min	start	max
P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9SMn28/AVP, 1.0503/C45)	≤ 200	● 200	290	380	● 180	270	360	○ 170	250	330
			● 170	245	320	● 160	225	290			
			⊕ 140	195	250	⊕ 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	⊕ 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	⊕ 120	170	220			
ISO 513	MATERIAL	HARDNESS HB	JC9010			JC9025			JP4020		
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	⊕ 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	⊕ 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	⊕ 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	⊕ 60	100	140			
ISO 513	MATERIAL	HARDNESS HB	JC7010			JC7115			JC7020		
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					
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	⊕ 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	⊕ 100	150	200			
ISO 513	MATERIAL	HARDNESS HB	JP3015			JP5015			JP5125		
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
			● 40	60	80	● 40	60	80	● 40	60	80
S4 - S5	Titanium alloys (ex. TiAl2Sn4Zr2MoSi)		● 30	50	70	● 30	50	70	● 30	50	70
			● 40	60	80	● 40	60	80	● 40	60	80

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	⊕												

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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 ^{1/2} -PPF	0.10	0.40	0.70	0.04	0.07	0.10
DCET070204 ^{1/2} -PPF	0.10	0.40	0.70	0.04	0.08	0.12
DCET070204 ^{1/2} -PPM	0.40	1.00	1.60	0.03	0.06	0.09
DCET11T302 ^{1/2} -PPF	0.10	0.50	0.90	0.04	0.08	0.12
DCET11T302 ^{1/2} -PPM	0.50	1.50	2.50	0.04	0.06	0.08
DCET11T304 ^{1/2} -PPF	0.10	0.50	0.90	0.04	0.90	0.14
DCET11T304 ^{1/2} -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 ^{1/2} -NNU	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 ^{1/2} -NNU	1.00	2.50	4.00	0.20	0.30	0.40
DNMG150608-NMK	0.50	2.00	3.50	0.15	0.25	0.35
DNMG150608-NMM	1.00	2.50	4.00	0.20	0.30	0.40
DNMG150608-NMP	1.50	2.50	3.50	0.16	0.25	0.34
DNMG150608-NRK	1.50	4.00	6.50	0.20	0.30	0.40
DNMG150608-NRM	2.00	3.50	5.00	0.20	0.35	0.50
DNMG150608-NRP	2.00	4.00	6.00	0.25	0.35	0.45
DNMG150608-NSM	0.40	1.20	2.00	0.10	0.18	0.26
DNMG150608-NSP	0.40	1.20	2.00	0.10	0.22	0.34
DNMG150608-NUK	0.50	2.00	3.50	0.15	0.25	0.35
DNMG150608-NUP	1.00	2.50	4.00	0.15	0.25	0.35
DNMG150608-NUX	1.00	2.50	4.00	0.15	0.25	0.35
DNMG150612-NMK	0.50	2.00	3.50	0.20	0.30	0.40
DNMG150612-NMM	1.00	2.50	4.00	0.25	0.35	0.45
DNMG150612-NMP	1.50	2.50	3.50	0.20	0.30	0.40
DNMG150612-NRK	1.50	4.00	6.50	0.25	0.35	0.45
DNMG150612-NRM	2.00	3.50	5.00	0.25	0.40	0.55
DNMG150612-NRP	2.00	4.00	6.00	0.30	0.40	0.50
DNMG150612-NUK	0.50	2.00	3.50	0.20	0.30	0.40
DNMG150612-NUP	1.00	2.50	4.00	0.18	0.30	0.42
DNMG150612-NUX	1.00	2.50	4.00	0.18	0.30	0.42
DNMG150616-NMK	0.50	2.00	3.50	0.25	0.35	0.45
DNMG150616-NMP	1.50	2.50	3.50	0.25	0.35	0.45
DNMG150616-NRP	2.00	4.00	6.00	0.35	0.45	0.55
DNMG150608-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 ^{1/2} -NNU	1.00	2.50	4.00	0.15	0.25	0.35
KNUX160410 ^{1/2} -NNU	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 ^{1/2}	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 ^{1/2}	0.20	0.50	0.80	0.05	0.10	0.15
MDN.R04G-SS	0.60	1.20	1.80	0.10	0.17	0.24
MDN.R04M-GM	0.80	1.50	2.20	0.08	0.15	0.22
MDN.R08M-GM	0.80	1.50	2.20	0.10	0.17	0.24
SCGX09T304-PMN	0.50	2.00	3.50	0.08	0.16	0.24
SCGX09T308-PMN	0.50	2.00	3.50	0.10	0.20	0.30
SCGX120404-PMN	0.50	3.00	5.50	0.10	0.20	0.30
SCGX120408-PMN	0.50	3.00	5.50	0.15	0.25	0.35
SCMT09T304-PFU	0.30	1.00	1.70	0.06	0.14	0.22
SCMT09T304-PMU	0.60	1.80	3.00	0.07	0.16	0.25
SCMT09T308-PFU	0.30	1.00	1.70	0.08	0.16	0.24

INDEXABLE

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

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 ¹ / ₄ -PPF	0.10	0.30	0.50	0.03	0.06	0.09
TBET060104 ¹ / ₄ -PPF	0.10	0.30	0.50	0.04	0.07	0.10
TCET110202 ¹ / ₄ -PPF	0.10	0.40	0.70	0.04	0.07	0.10
TCET110204 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 ¹ / ₄ -NMU	1.00	2.50	4.00	0.15	0.25	0.35
TNMG160404-NMK	0.50	2.00	3.50	0.10	0.20	0.30
TNMG160404-NMM	1.00	2.50	4.00	0.15	0.25	0.35
TNMG160404-NMP	1.50	2.50	3.50	0.12	0.20	0.28
TNMG160404-NSM	0.40	1.20	2.00	0.08	0.14	0.20
TNMG160404-NSP	0.40	1.20	2.00	0.08	0.15	0.22
TNMG160404-NUK	0.50	2.00	3.50	0.10	0.20	0.30
TNMG160404-NUP	1.00	2.50	4.00	0.10	0.20	0.30
TNMG160404-NUX	1.00	2.50	4.00	0.10	0.20	0.30
TNMG160408 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
TNMG160412-NWU	0.50	1.50	2.50	0.25	0.45	0.65
TPEH090202 ¹ / ₄ -PPF	0.10	0.30	0.50	0.03	0.06	0.09
TPEH090204 ¹ / ₈ -PPF	0.10	0.30	0.50	0.04	0.70	0.10
TPEH110302 ¹ / ₈ -PPF	0.10	0.40	0.70	0.04	0.07	0.10
TPEH110304 ¹ / ₈ -PPF	0.10	0.40	0.70	0.04	0.08	0.12
TPEH110304 ¹ / ₈ -PPM	0.40	1.00	1.60	0.03	0.06	0.09
VBET110302 ¹ / ₈ -PPF	0.10	0.40	0.70	0.04	0.07	0.10
VBET110302 ¹ / ₈ -PPM	0.40	1.00	1.60	0.03	0.05	0.07
VBET110304 ¹ / ₈ -PPF	0.10	0.40	0.70	0.04	0.08	0.12
VBET110304 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 ¹ / ₈ -PPF	0.10	0.30	0.50	0.03	0.06	0.09
WBET060104 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

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
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°)										
INSERT RADIUS	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.

