SPECIFICHE INSERTI PER UTENSILI ROTANTI – CHIAVE DI LETTURA

●Organizzazione del capitolo inserti di fresatura

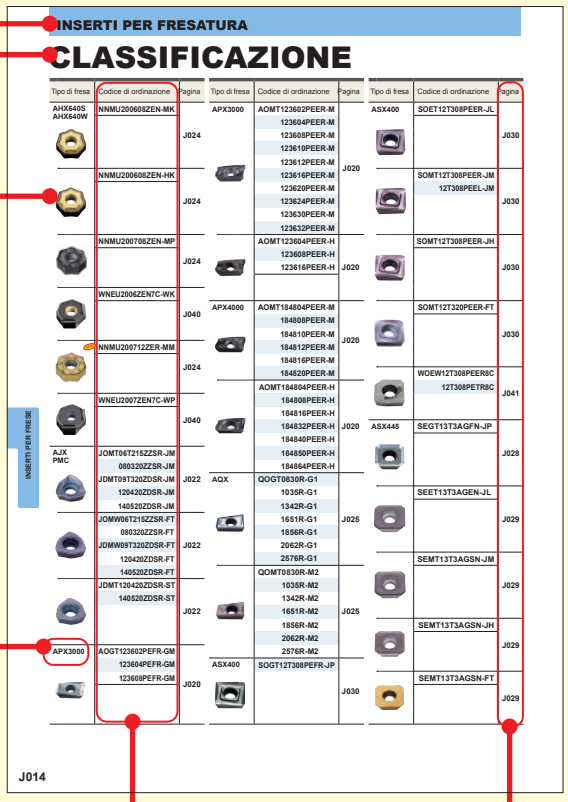
①Organizzazione secondo il tipo di tagliente.
②Le frese sono in ordine alfabetico.

●Organizzazione dei vari tipi di inserti di fresatura

①Classificati in inserti di fresatura, inserti raschianti e.
②In ordine alfabetico per numero di ordinazione.

TITOLO PAGINA

SEZIONE PRODOTTO



CODICE INSERTO

TIPO DI FRESA

FOTO DELL'INSERTO

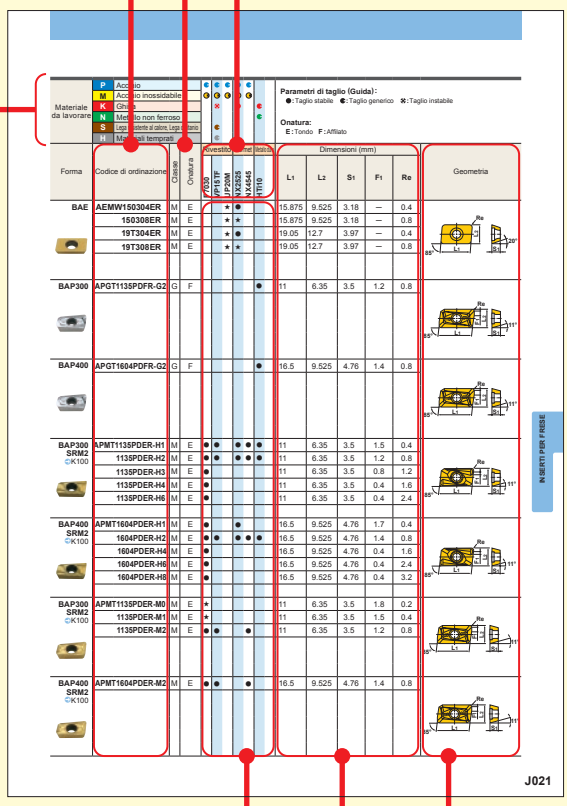
PAGINA DA CONSULTARE
Indica le pagine di riferimento per le specifiche dettagliate di inserti specifici.

GRADO RACCOMANDATO PER I VARI MATERIALI DA LAVORARE
Parametri di taglio ideali per ogni tipo di materiale da lavorare, indicati in linea generale per la scelta del grado.
●:Taglio stabile ◐:Taglio generico ✱:Taglio instabile

CODICE INSERTO

TOLLERANZA INSERTO • ONATURA

GRADI INSERTI



GEOMETRIA DELL'INSERTO

DIMENSIONI INSERTI

MAGAZZINO

UTENSILI PER FRESATURA

INSERTI PER FRESATURA

● GRADI
● CBN / PCD SINTERIZZATO

IDENTIFICAZIONE

Simbolo	Forma dell'inserto	
O	Ottagonale	
S	A Spigolo	
T	Triangolari	
C	Rombici 80°	
M	Rombici 86°	
A	A Parallelogramma 85°	
R	Tondo	
X	Esecuzione speciale	–
W	Raschiante	–

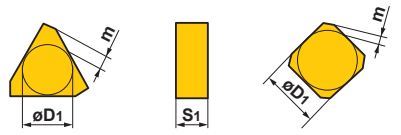
①Forma dell'inserto

Simbolo	Angolo
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Altri
X	Altri

②Angolo

①	②	③	④
S	E	E	R

③Classe di tolleranza



Simbolo	D.C.I	D1	m	S1
C	6.35 9.525	±0.025	±0.013	±0.025
E	12.70 15.875	±0.025	±0.025	±0.025
K*	6.35	±0.05	±0.013	±0.025
	9.525	±0.05	±0.013	±0.025
	12.70	±0.08	±0.013	±0.025
	15.875	±0.08	±0.013	±0.025
M*	6.35	±0.05	±0.08	±0.13
	9.525	±0.05	±0.08	±0.13
	12.70	±0.08	±0.13	±0.13
	15.875	±0.1	±0.15	±0.13

La superficie dell'inserto marcata con * è sinterizzata.

④Fissaggio e/o per rompitruciolo

Simbolo	Foro	Tipo di foro	Rompitrucioli	Figura
W	Con foro	Foro cilindrico + Svasatura (40°–60°)	No	
T	Con foro		Monolaterale	
B	Con foro	Foro cilindrico + Svasatura (70°–90°)	No	
N	Senza foro	–	No	
R	Senza foro	–	Monolaterale	
X	–	–	–	Esecuzione speciale

Simbolo R	Simbolo C	Simbolo S	Simbolo T	Diametro del cerchio inscritto (mm)
	06	06	11	6.35
	08	07	13	7.94
	09	09	16	9.525
10				10.00
12				12.00
	12	12	22	12.70
	16	15	27	15.875
20				20.00

⑤Dimensioni inserto

Simbolo	Spessore inserto (mm)
03	3.18
T3	3.97
04	4.76

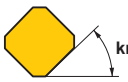
⑥Spessore inserto

Simbolo	Onatura
E	Tondo
F	Affilato
T	Smusso
S	Smusso+Onatura
X	Tondo (piccolo)
Z	Smusso (Tipo a tagliente robusto)

⑨Parametri del tagliente

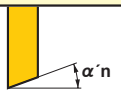
⑤	⑥			⑨		⑪		
12	03	A	F	E	R	1	-	JS
		⑦	⑧		⑩			⑫

⑦Angolo del tagliente



Simbolo	Angolo del tagliente
A	45°
E	75°
P	90°
Z	Altro Angolo

⑧Angolo del lato raschiante

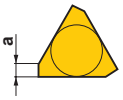


Simbolo	Angolo di spoglia inferiore
D	15°
E	20°
F	25°
G	30°
P	0°
N	11°

⑩Direzione di taglio

L	Sinistra
N	Neutro
R	Destra

⑪Larghezza del bordo raschiante



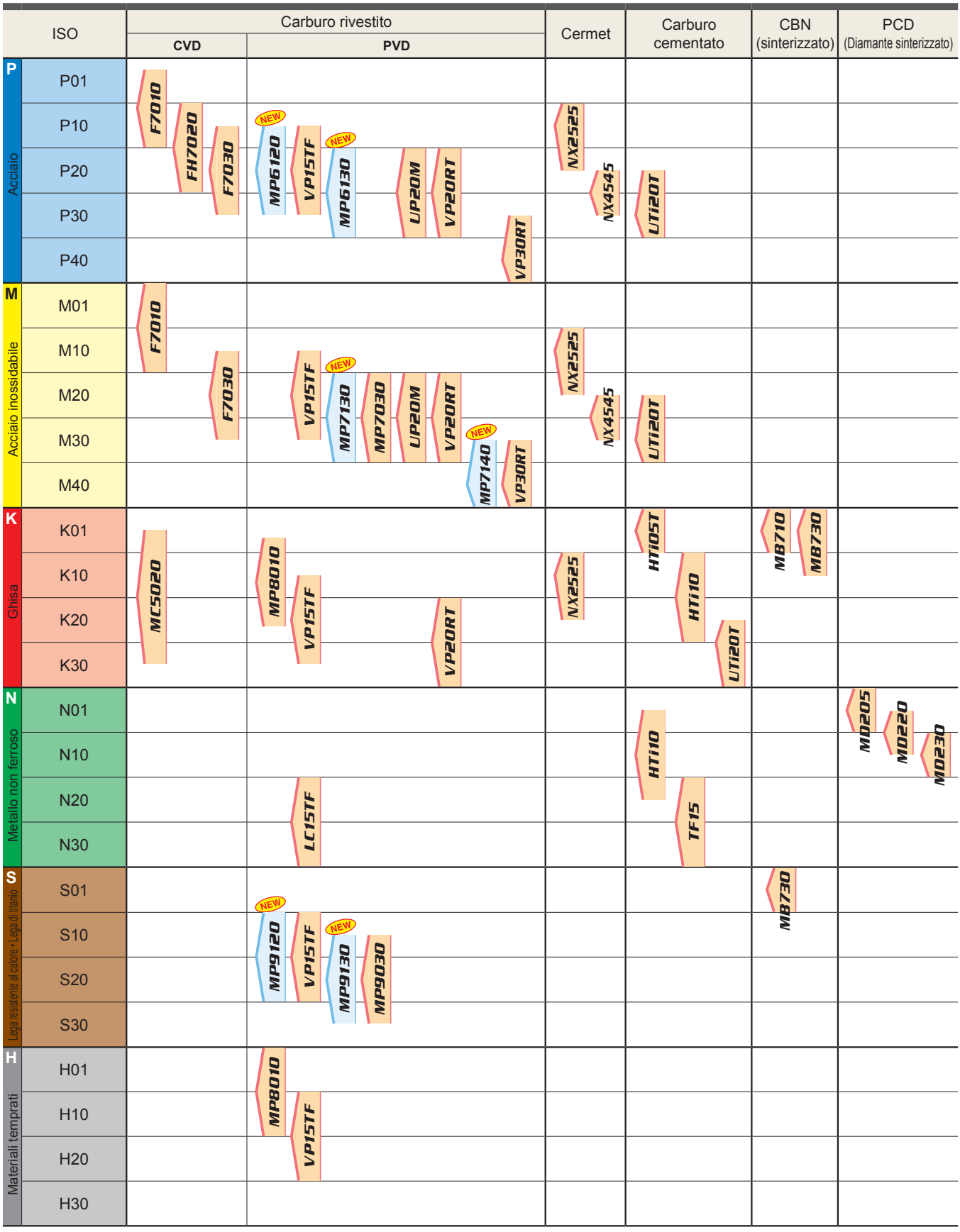
Simbolo	a
1	1.4 (1.94 solo per TEKN)
2	2.4

⑫Rompitruciolo

Simbolo	Nome
JS	Rompitruciolo JS
JH	Rompitruciolo JH
JL	Rompitruciolo JL
JM	Rompitruciolo JM
FT	Rompitruciolo FT
JP	Rompitruciolo JP

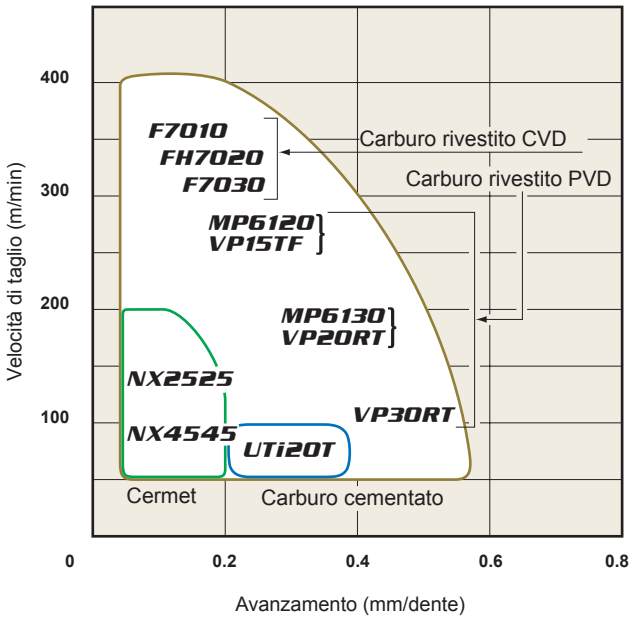
GRADI PER FRESATURA

GRADI DEGLI INSERTI INTERCAMBIABILI PER FRESATURA

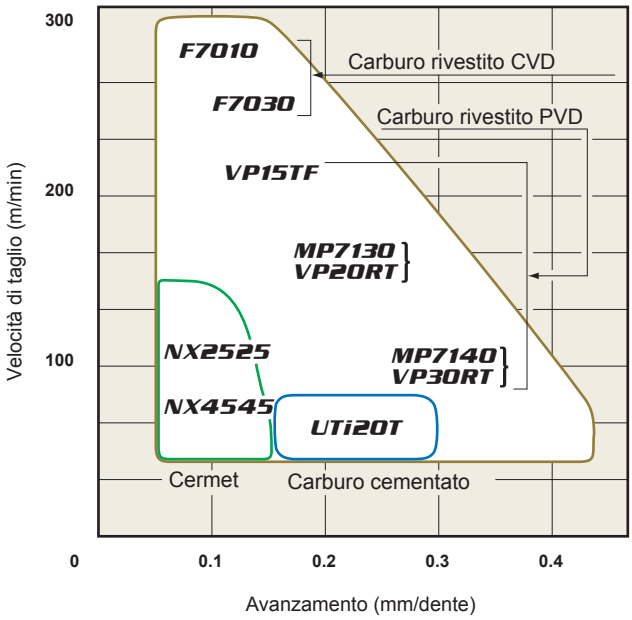


GAMMA DI APPLICAZIONI DI FRESATURA

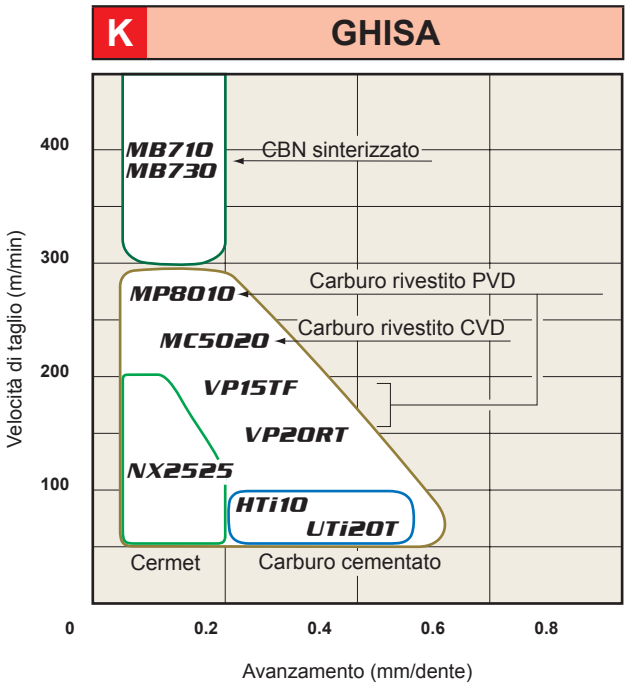
P ACCIAIO



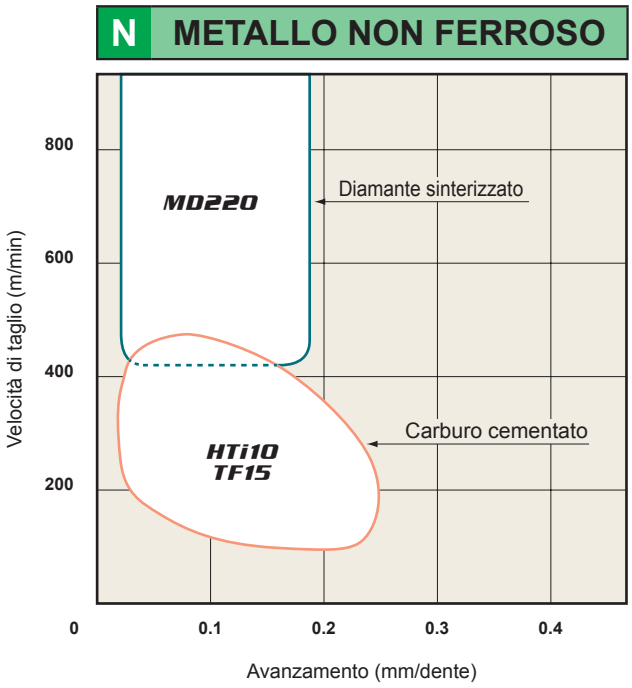
M ACCIAIO INOSSIDABILE



K GHISA



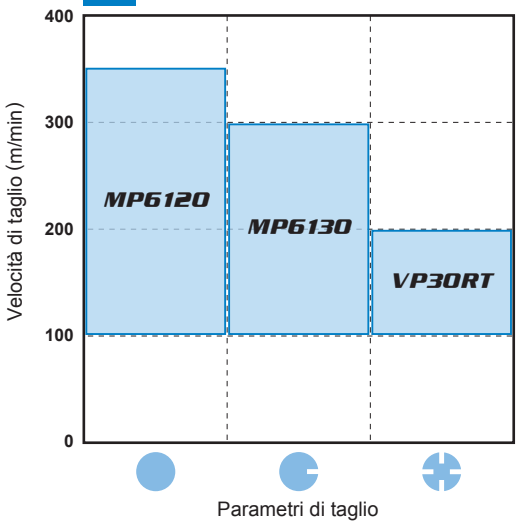
N METALLO NON FERROSO



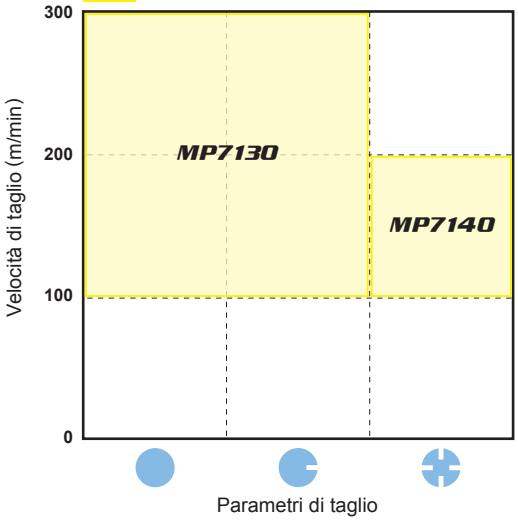
GAMMA DI APPLICAZIONI DI FRESATURA

● Il suggerimento del grado corretto da utilizzare, è basato sulle velocità di taglio e le condizioni di ogni singola lavorazione.

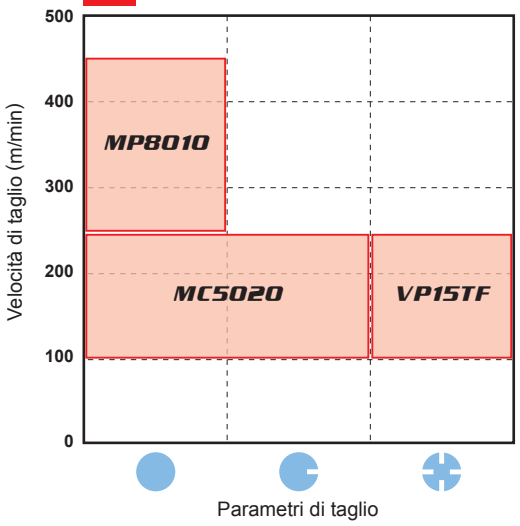
P Acciaio (Taglio di media asportazione)



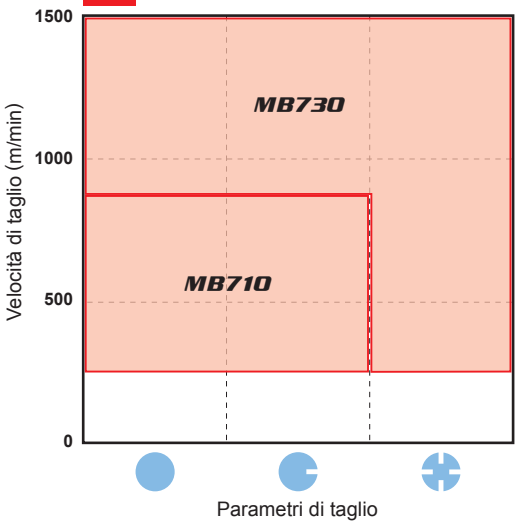
M Acciaio inossidabile



K Ghisa



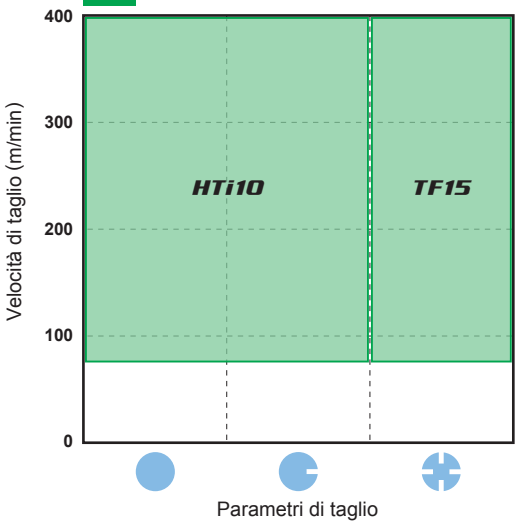
K Ghisa (CBN)



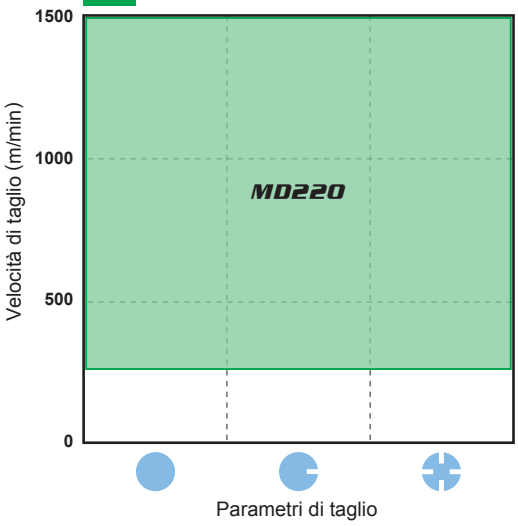
PARAMETRI DI TAGLIO

Taglio stabile	Piano di taglio Taglio a profondità costante Pre-lavorato Taglio di componenti bloccati saldamente
Taglio generico	
Taglio instabile	Taglio pesante interrotto Taglio a profondità irregolare Taglio con bloccaggio a bassa rigidità

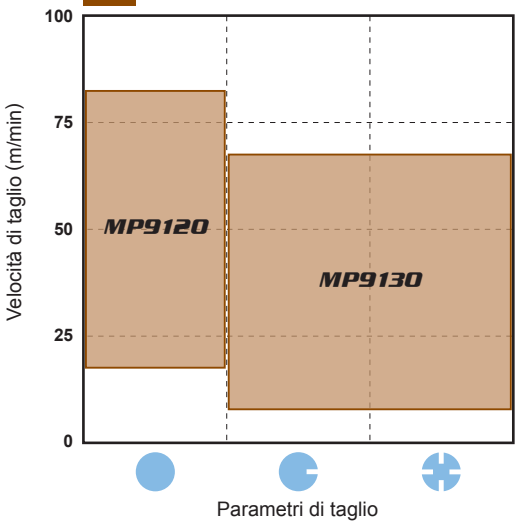
N Metallo non ferroso



N Metallo non ferroso (PCD)



S Lega resistente al calore, Lega di titanio



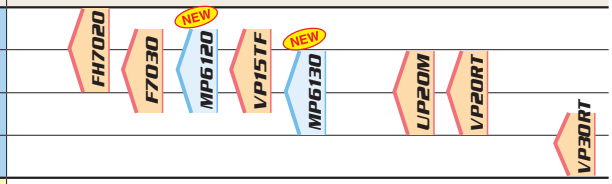
CARBURO RIVESTITO (CVD E PVD)

<CVD>
- Speciale struttura fibrosa tenace, migliora la resistenza all'usura e alla rottura.
- Copre un'ampia gamma di applicazioni e riduce il numero di utensili richiesti.

<PVD>
- Il rivestimento in PVD, prolunga la durata dell'inserto rispetto al nudo nelle medesime condizioni di taglio.
- Il rivestimento degli utensili con tagliente a spigolo vivo è possibile senza intenerire o modificare la qualità del substrato sul tagliente.

SCELTA DELL'UTENSILE

FRESATURA

	Materiale da lavorare	Grado consigliato	Velocità di taglio consigliata (m/min)	ISO	Campo di applicazione
P	Acciaio	**F7030**	200 (150 — 250)	P10	
		MP6120	150 (100 — 200)	P20	
		MP6130	150 (100 — 200)	P30	
		VP15TF	150 (100 — 200)	P40	
M	Acciaio inossidabile	**F7030**	200 (150 — 250)	M10	
		MP7030	150 (100 — 200)	M20	
		MP7130	150 (100 — 200)	M30	
		MP7140	150 (100 — 200)	M40	
		VP15TF	150 (100 — 200)		
K	Ghisa	**MC5020**	180 (100 — 250)	K01	
				K10	
		VP15TF	150 (100 — 200)	K20	
				K30	
N	Lega di alluminio	**LC15TF**	1000 (200 — 3000)	N10	
				N20	
				N30	
S	Lega resistente al calore Lega di titanio	**MP9120**	30 (20 — 40)	S01	
		VP15TF	30 (20 — 40)	S10	
		MP9130	40 (25 — 60)	S20	
		MP9030	40 (25 — 60)	S30	
H	Materiali temprati	**MP8010**	80 (50 — 120)	H01	
				H10	
		VP15TF	80 (50 — 120)	H20	
				H30	

■ = MIRACLE SIGMA

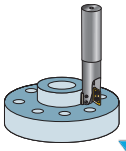
CARATTERISTICHE DEL GRADO

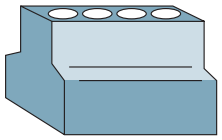
Grado	Substrato		Strato di rivestimento	
	Durezza (HRA)	T.R.S (GPa)	Composizione	Spessore
MC5020	91.0	2.2	Composto di TiCN-Al_2O_3-Ti	Spesso
FH7020	88.8	2.8	Composto di TiCN-Al_2O_3-Ti	Spesso
F7030	88.8	2.8	TiCN-Al_2O_3-TiN	Sottile
NEW **MP6120**	91.5	2.5	(Al,Ti,Cr)N	Sottile
NEW **MP6130**	90.5	2.5	(Al,Ti,Cr)N	Sottile
MP7030	90.5	2.5	Composto di (Al,Ti)N-Ti	Sottile
NEW **MP7130**	90.5	2.5	(Al,Ti,Cr)N	Sottile
NEW **MP7140**	88.8	2.8	(Al,Ti,Cr)N	Sottile

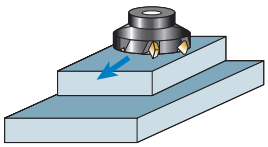
Grado	Substrato		Strato di rivestimento	
	Durezza (HRA)	T.R.S (GPa)	Composizione	Spessore
MP8010	93.5	2.3	(Al,Ti,Si)N	Sottile
NEW **MP9120**	91.5	2.5	(Al,Ti,Cr)N	Sottile
MP9030	90.5	2.5	Composto di (Al,Ti)N-Ti	Sottile
NEW **MP9130**	90.5	2.7	(Al,Ti,Cr)N	Sottile
VP15TF	91.5	2.5	(Al,Ti)N	Sottile
VP20RT	90.5	2.5	(Al,Ti)N	Sottile
VP30RT	88.8	2.8	(Al,Ti)N	Sottile
UP20M	90.5	2.0	TiN	Sottile

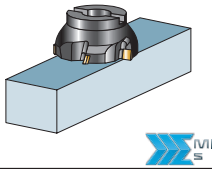
∗1GPa=102kg/mm^2

ESEMPI DI APPLICAZIONI

Utensile		**AXD4000R252SA25SA**
Inserto (grado)		**XDGX175008PDER-GM (MP9120)**
Pezzo da lavorare		JIS AC4A: Contenuto di Si 8-10% NEW 
Parametri di taglio	Velocità del mandrino (min-1)	8790
	Velocità di taglio (m/min)	690
	Avanzamento per dente (mm/dente)	0.46
	Profondità di taglio (mm)	2.5
	Larghezza di taglio (mm)	25
Refrigerante		Refrigerante esterno
Tipo di macchina		Verticale
Risultati		Poiché la lega di alluminio contenente SI tende a provocare usura all'utensile, l'inserto rivestito MP9120 ha raddoppiato la vita utensile rispetto ai prodotti non rivestiti.

Utensile		**AHX640WR16016F**
Inserto (grado)		**NNMU200608ZEN-MK (MC5020)**
Pezzo da lavorare		DIN GG25 (scalato) 
Componente		Blocco del motore
Parametri di taglio	Velocità di taglio (m/min)	155
	Avanzamento per dente (mm/giro)	0.32
	Profondità di taglio (mm)	3 — 5
	Refrigerante	Taglio a secco
Risultati		MC5020 offre una vita utensile tre volte superiore rispetto a quella dei prodotti della concorrenza, senza scheggiature del tagliente.

Corpo fresa		**ASX445R12508E**
Inserto (grado)		**SEMT13T3AGSN-JM (MP6120)**
Pezzo da lavorare		JIS SCM440H NEW 
Componente		Parti macchina
Parametri di taglio	Velocità di taglio (m/min)	250
	Avanzamento (mm/dente)	0.1-0.2
	Profondità di taglio (mm)	2.0-5.0
Refrigerante		Taglio a secco
Risultati		Il grado MP6120 mostra solo una usura modesta, pur ottenendo una durata dell'utensile superiore di 11,5 volte rispetto ai gradi convenzionali.

Corpo fresa		**ASX400-050A04R**
Inserto (grado)		**SOMT12T308PEER-JM (MP7130)**
Pezzo da lavorare		JIS SUS316 NEW 
Componente		Componente strutturale
Parametri di taglio	Velocità di taglio (m/min)	88
	Avanzamento (mm/dente)	0.1
	Profondità di taglio assiale (mm)	≤2
	Profondità di taglio radiale (mm)	—
Refrigerante		Taglio a umido
Risultati		Il modello MP7130 può continuare a lavorare senza scheggiatura.

CERMET

- NX2525 per fresatura ad alta velocità.
- NX4545 per fresatura generica.

SCELTA DELL'UTENSILE

FRESATURA

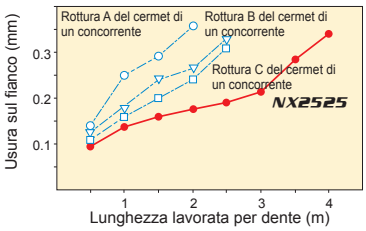
Materiale da lavorare	Grado consigliato	Velocità di taglio consigliata (m/min)	ISO	Campo di applicazione
P / M — Acciaio	NX2525	250 (150 — 350)	P10 M10	NX2525
			P20 M20	NX2525 / NX4545
	NX4545	150 (120 — 180)	P30 M30	NX4545
K — Ghisa	NX2525	200 (150 — 300)	K01	
			K10	NX2525
			K20	NX2525

(Nota) Per il taglio a umido dell'acciaio, utilizzare carburo rivestito F7030. Per il taglio di ghisa a umido utilizzare MC5020.

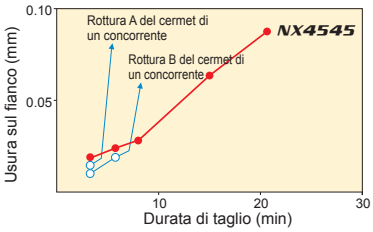
PRESTAZIONI DI TAGLIO

Prestazioni di taglio

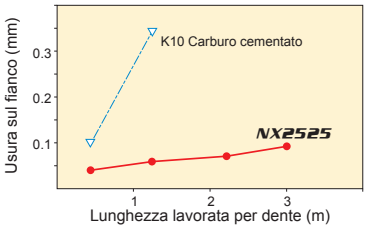
Velocità di taglio : vc Profondità di taglio : ap
Avanzamento per dente : fz Larghezza di taglio : ae



Fresatura ad alta velocità dell'acciaio
<Parametri di taglio>
Pezzo da lavorare : DIN 41CrMo4 (97W×400L)
Fresa : SE445R0506E
Inserto : SEEN1203AFTN1
vc=350m/min
ap=2.5mm
fz=0.2mm/dente
Taglio a secco



Fresatura in spallamento dell'acciaio
<Parametri di taglio>
Pezzo da lavorare : DIN 41CrMo4 (220HB)
Fresa : NSE400R503S32
Inserto : TEEN2204PETR1
vc=200m/min
fz=0.35mm/dente
ae=25mm
ap=3.0mm
Taglio dall'alto verso il basso Taglio a secco



Fresatura della ghisa
<Parametri di taglio>
Pezzo da lavorare : DIN GG30 (95W×400L)
Fresa : SE445R0506E
Inserto : SEEN1203AFTN1
vc=180m/min
ap=2.5mm
fz=0.2mm/dente
Taglio a secco

CARATTERISTICHE DEL GRADO

Grado	Substrato			
	Durezza (HRA)	T.R.S. (GPa)	Conducibilità termica (W/m·K) *	Espansione termica (x 10^{-6}/K)
NX2525	92.2	2.0	33	7.8
NX4545	90.0	2.2	33	7.8

*1GPa=102kg/mm^2, 1W/m • K=2.39×10^{-3}cal/cm • sec • ℃

CARBURO CEMENTATO

●I gradi disponibili sono UTi20T per acciaio e ghisa, e HTi10 per ghise, materiali non ferrosi e non metallici.

SCELTA DELL'UTENSILE

●FRESATURA

Materiale da lavorare		Grado consigliato	Velocità di taglio consigliata (m/min)	ISO	Campo di applicazione
P	Acciaio	**UTi20T**	120 (50 — 180)	P10	UTi20T
				P20	
				P30	
M	Acciaio inossidabile	**UTi20T**	120 (50 — 180)	M10	UTi20T
				M20	
				M30	
K	Ghisa	**HTi10**	100 (50 — 150)	K10	HTi10
				K20	
		UTi20T	120 (50 — 180)	K30	UTi20T
N	Metallo non ferroso	**HTi10 TF15**	400 (300 — 500)	N01	HTi10
				N10	
				N20	TF15
				N30	

COMPONENTE PRINCIPALE E IMPIEGO

Serie P per tagliare l'acciaio, serie K per tagliare la ghisa e serie M per tagli generici.

ISO	Componente principale	Caratteristiche	Materiale da lavorare
P M	WC-TiC-TaC-Co	Resistenza a calore/deformazione.	Acciaio al carbonio, acciaio legato, acciaio inossidabile e ghisa
K N	WC-Co	Elevata rigidità e resistenza all'usura.	Ghisa, metallo non ferroso e non metalli

CARATTERISTICHE DEL GRADO

ISO	Grado	Durezza (HRA)	Conducibilità termica (W/m•K) *	Espansione termica ($x10^{-6}$/K)	Modulo di Young (GPa) *	T.R.S (GPa) *
P M	**UTi20T**	90.5	38	5.5	520	2.0
K N	**HTi05T**	92.5	79	4.5	600	1.5
K N	**HTi10**	92.0	79	4.6	630	2.0
N	**TF15**	91.5	71	5.3	580	2.5

*1GPa=102kg/mm^2, 1W/m • K=2.39×10^{-3}cal/cm • sec • ℃

CBN (SINTERIZZATO)

- **MB710 e MB730 per taglio della ghisa.**
- **È ora disponibile BC5030 per la lavorazione ad alta velocità della ghisa.**
- **La combinazione della geometria dell'inserto BC5030 con la fresa AOX permette l'utilizzo di 16 taglienti per inserto per una lavorazione economica e ad alta efficienza.**

SCELTA DELL'UTENSILE/PARAMETRI DI TAGLIO CONSIGLIATI

FINITURA

Materiale da lavorare		Struttura	Velocità di taglio (m/min) 250 500 750 1000 1250	Avanzamento (mm/dente)	Profondità di taglio (mm)	Refrigerante
Ghisa grigia	DIN GG25	Ferritico + Perlitico	MB710 / MB730	—0.3	—0.5	A secco
	DIN GG30	Perlitico				

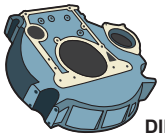
SGROSSATURA

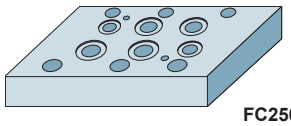
Materiale da lavorare		Struttura	Velocità di taglio (m/min) 250 500 1000 1500 2000	Avanzamento (mm/dente)	Profondità di taglio (mm)	Refrigerante
Ghisa grigia	DIN GG25	Perlitico	BC5030	—0.15	—3.0	A secco

CARATTERISTICHE E BASE

Grado	Applicazione	Caratteristiche	Componente principale	Strato di rivestimento
MB710	Per taglio generico	Grado per uso generico con buon equilibrio tra resistenza all'usura e resistenza alla rottura.	CBN TiC Al_2O_3	—
MB730	Per taglio ad alta velocità	Ha il massimo contenuto di CBN e quindi ha una buona conducibilità termica. Idoneo per le alte temperature generate durante il taglio ad alta velocità.	CBN (Alto contenuto) Lega a base di cromo	—
BC5030	Per lavorazioni ad alta velocità con grandi profondità di taglio Taglio interrotto ad alta velocità con grandi profondità di taglio	Elevato tenore di CBN ed elevata termoconducibilità. L'intero inserto è costituito da CBN sinterizzato. Ciò consente una lavorazione ad alta velocità altamente efficiente con grandi profondità di taglio. La qualità rivestita consente la rapida individuazione di taglienti logori o consumati.	CBN AlN	TiN

ESEMPI DI APPLICAZIONI

Utensile		**AOX445R10008D**
Inserto		**SL-ONEN120404ASN (BC5030)**
Macchina		Centro di lavoro
Pezzo da lavorare		 **DIN GG25**
Parametri di taglio	Velocità di taglio (m/min)	1200
	Profondità di taglio (mm)	2.8
	Larghezza di taglio (mm)	70
	Avanzamento della tavola (mm/min)	3057
	Avanzamento per dente (mm/dente)	0.1
Risultato		Vita utensile 10 volte piu' lunga ed efficienza 4 volte superiore rispetto alla ceramica. Eccellente lavorazione con finitura superficiale di Ra < 1.6µm.

Utensile		**NF10000R0408D (MB730)**
Pezzo da lavorare		 **FC250**
Componente		Componente idraulico
Parametri di taglio	Velocità di taglio (m/min)	1800
	Avanzame nto (mm/dente)	0.1
	Avanzamento della tavola (mm/min)	4584
	Profondità di taglio (mm)	0.05
	Larghezza di taglio (mm)	90
Refrigerante		Taglio a secco (taglio a umido nel processo precedente)
Eccentricità assiale (mm)		Inferiore a 0,005 mm
Risultato		Rispetto al prodotto della concorrenza, l'usura è stata ridotta offrendo una maggiore durata dell'utensile, pur mantenendo finiture superficiali superiori.

PCD (DIAMANTE SINTERIZZATO)

- **Adatto a metalli non ferrosi, quali lega di alluminio.**
- **Idoneo per finiture ad altissima velocità.**

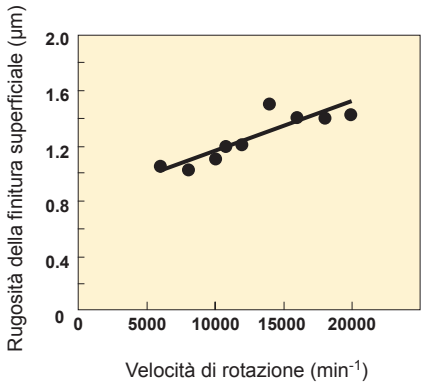
CARATTERISTICHE DEI GRADI

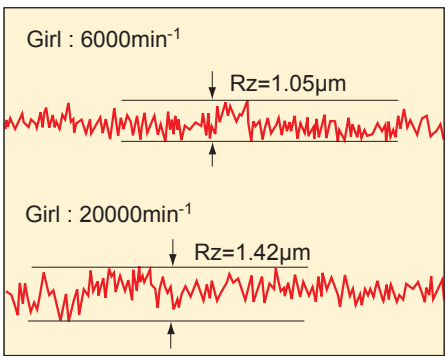
Grado	Caratteristiche
MD220	Eccellente nel bilanciamento tra resistenza all'usura e resistenza alla rottura. Per un'ampia gamma di applicazioni di lavorazione con utensili.

PARAMETRI DI TAGLIO CONSIGLIATI

Materiale da lavorare	Velocità di taglio (m/min)	Grado	Avanzamento per dente (mm/dente)	Profondità di taglio (mm)
Lega di alluminio (Si ≤12%)	1000—6000	**MD220**	—0.3	—0.5
Lega di alluminio (Si ≥13%)	200—800			

PRESTAZIONI DI TAGLIO





<Parametri di taglio>
Pezzo da lavorare : Lega di alluminio
Inserto : NP-GDCW1240PDFR2
Grado : MD220
Utensile : V10000R0406D
Avanzamento : 0.2mm/dente
Profondità di taglio : 0.5mm
Larghezza di taglio : 80mm
Taglio a secco

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	NNMU200608ZEN-HK	J024
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	WNEU2006ZEN7C-WK	J040
	NEW NNMU200712ZER-MM	J024
	WNEU2007ZEN7C-WP	J040
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	JDMT09T320ZDSR-JM	
	120420ZDSR-JM	
	140520ZDSR-JM	
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	JDMW09T320ZDSR-FT	
	120420ZDSR-FT	
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	123608PEFR-GM	

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	1342R-G1	
	1651R-G1	
	1856R-G1	
	2062R-G1	
	2576R-G1	
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	1651R-M2	
	1856R-M2	
	2062R-M2	
	2576R-M2	
ASX400	SOGT12T308PEFR-JP	J030

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	12T308PEEL-JM	
	SOMT12T308PEER-JH	J030
	SOMT12T320PEER-FT	J030
	WOEW12T308PEER8C	J041
	12T308PETR8C	
ASX445	SEGT13T3AGFN-JP	J028
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	SEMT13T3AGSN-JH	J029
	SEMT13T3AGSN-FT	J029

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	175012PDFR-GL	
	175016PDFR-GL	
	175020PDFR-GL	
	175024PDFR-GL	
	175030PDFR-GL	
	175032PDFR-GL	
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	175050PDFR-GL	
	NEW XDGX175004PDER-GM	J037
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	NEW 175012PDER-GM	
	NEW 175016PDER-GM	
	NEW 175020PDER-GM	
	NEW 175024PDER-GM	
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	NEW 175032PDER-GM	
	NEW 175040PDER-GM	
	NEW 175050PDER-GM	
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	NEW 175016PDFR-GM	
	NEW 175020PDFR-GM	
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	NEW 175050PDFR-GM	
AXD7000	XDGX227008PDFR-GL	J038
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	227020PDFR-GL	
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	1135PDER-M1	
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	1135PDER-H6	
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	SFCN1203ZFFR2	
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	10T3M0E	
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	1550PDER-G16	
	1550PDER-G20	
	1550PDER-G30	
	1550PDER-G32	
	1550PDER-G40	
	1550PDER-G50	
	XDGT1550PDFR-G04	J037
	1550PDFR-G08	
	1550PDFR-G12	
	1550PDFR-G16	
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	1603PESR1	
	1603PEZR1	
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	32E	
	SRM16C-M	J034
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	25C-M	
	30C-M	
	32C-M	
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	25E-M	
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	SRG40E	J033
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	1604PDER-H2	
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VFX6 	XNMU190912R-MS	J038
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	2204PDL	
	TPNN2204PDR	J036
Angolo dello smusso tagliente 15° 11° Positivi 	SPEN 1203EDR	J031
	1203EDL	
	SPKN 1203EDR	
	SPEN 1504EDR	
	1504EDL	
	SPNN1203EDR	J032
Angolo dello smusso tagliente 45° 15° Positivi 	SDEN1203AEN	J027
Angolo dello smusso tagliente 45° 20° Positivi 	SEER1204AFEN-JS	J027
	SEEW1204AFTN	J028
	SEMN1204AZTN	J028
Negativi 	SNMN120408	J030
	120412	

Tipo di fresa	Codice di ordinazione	Pagina
11° Positivi 	SPGN120304	J031
	120308	
	120312	
	150404	
	150408	
	SPMN120304	
	120304T	
	120308	
	120312	
	120408	
	120412	
	150408	
	150412	
11° Positivi 	TPMN160304	J036
	160308	
	160312	
	220404	
	220408	
	220408T	
	220412	
RRD 	RDHX0501M0E	J025
	0501M0S	
	07T1M0E	
	07T1M0S	
	0702M0E	
	0702M0S	
	1003M0E	
	1003M0S	
	12T3M0E	
	12T3M0S	
	1604M0E	
	1604M0S	
	RDMX07T1M0E	J025
	07T1M0T	
	0702M0E	
	0702M0T	
	1003M0E	
	1003M0S	
	1003M0T	
	12T3M0E	
	12T3M0S	
	12T3M0T	
	1604M0E	
	1604M0S	
	1604M0T	

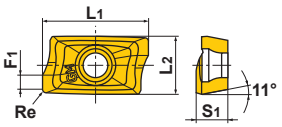
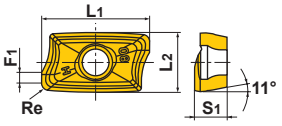
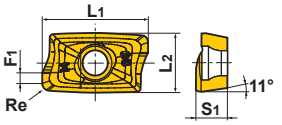
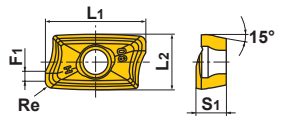
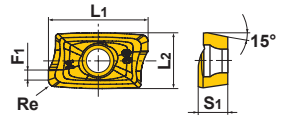
Tipo di fresa	Codice di ordinazione	Pagina
RRD 	RDZX0501M0E	J026
	07T1M0E	
	0702M0E	
	1003M0E	
	1003M0S	
	12T3M0E	
	12T3M0S	
	1604M0E	
	1604M0S	
	RPMM120400G	J026

INSERTI ROTANTI

Materiale da lavorare	
P	Acciaio
M	Acciaio inossidabile
K	Ghisa
N	Metallo non ferroso
S	Lega resistente al calore, Lega di titanio
H	Materiali temprati

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✣: Taglio instabile

Onatura:
E: Tondo **F**: Affilato

Forma	Codice di ordinazione	Classe	Onatura	Rivestito								Metallo duro		Dimensioni (mm)					Geometria
				MC5020	MP6120	MP6130	MP7130	MP9120	MP9130	VP15TF	VP20RT	TF15		L_1	L_2	S_1	F_1	Re	
APX3000 ➲K030	**AOGT123602PEFR-GM**	G	F									●		12	6.6	3.6	1.8	0.2	
	123604PEFR-GM	G	F									●		12	6.6	3.6	1.6	0.4	
	**123608PEFR-GM**	G	F									●		12	6.6	3.6	1.2	0.8	
APX3000 ➲K030	**AOMT123604PEER-H**	M	E	●	●	●	●	●	●	●	●			12	6.6	3.6	1.6	0.4	
	123608PEER-H	M	E	●	●	●	●	●	●	●	●			12	6.6	3.6	1.2	0.8	
	**123616PEER-H**	M	E	●	●	●	●	●	●	●	●			12	6.6	3.6	0.4	1.6	
APX3000 ➲K030	**AOMT123602PEER-M**	M	E		●	●	●	●	●	●	●			12	6.6	3.6	1.8	0.2	
	123604PEER-M	M	E		●	●	●	●	●	●	●			12	6.6	3.6	1.6	0.4	
	123608PEER-M	M	E		●	●	●	●	●	●	●			12	6.6	3.6	1.2	0.8	
	123610PEER-M	M	E		●	●	●	●	●	●	●			12	6.6	3.6	1.0	1.0	
	123612PEER-M	M	E		●	●	●	●	●	●	●			12	6.6	3.6	0.8	1.2	
	**123616PEER-M**	M	E		●	●	●	●	●	●	●			12	6.6	3.6	0.4	1.6	
	123620PEER-M	M	E		●	●	●	●	●	●	●			12	6.6	3.6	0.4	2.0	
	123624PEER-M	M	E		●	●	●	●	●	●	●			12	6.6	3.6	0.4	2.4	
	123630PEER-M	M	E		●	●	●	●	●	●	●			12	6.6	3.6	0.4	3.0	
	123632PEER-M	M	E		●	●	●	●	●	●	●			12	6.6	3.6	0.4	3.2	
APX4000 ➲K036	**AOMT184804PEER-H**	M	E	●	●	●	●	●	●	●	●			18	9	4.8	1.8	0.4	
	184808PEER-H	M	E	●	●	●	●	●	●	●	●			18	9	4.8	1.4	0.8	
	184816PEER-H	M	E	●	●	●	●	●	●	●	●			18	9	4.8	0.4	1.6	
	**184832PEER-H**	M	E			●	●				●			18	9	4.8	0.4	3.2	
	184840PEER-H	M	E			●	●				●			18	9	4.8	0.4	4.0	
	184850PEER-H	M	E			●	●				●			18	9	4.8	—	5.0	
	184864PEER-H	M	E			●	●				●			18	9	4.8	—	6.35	
APX4000 ➲K036	**AOMT184804PEER-M**	M	E		●	●	●	●	●	●	●			18	9	4.8	1.8	0.4	
	184808PEER-M	M	E		●	●	●	●	●	●	●			18	9	4.8	1.4	0.8	
	184810PEER-M	M	E		●			●	●	●				18	9	4.8	1.0	1.0	
	**184812PEER-M**	M	E		●			●	●	●				18	9	4.8	0.8	1.2	
	184816PEER-M	M	E		●	●	●	●	●	●	●			18	9	4.8	0.4	1.6	
	184820PEER-M	M	E		●			●	●	●				18	9	4.8	0.4	2.0	

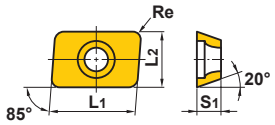
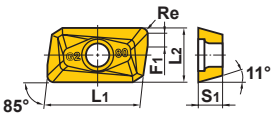
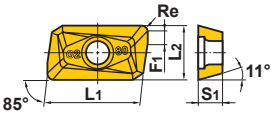
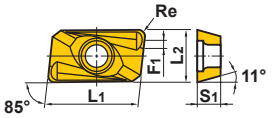
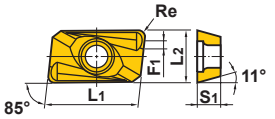
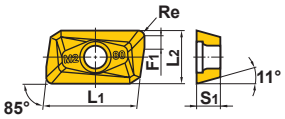
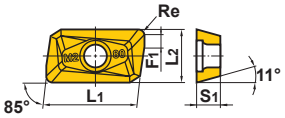
■ = MIRACLE SIGMA

● : Inventario mantenuto. ★ : Inventario mantenuto in Giappone.

Materiale da lavorare			Rivestito			Cermet		Metallo duro
	P	Acciaio	● ◐	● ◐	● ◐	● ◐		
	M	Acciaio inossidabile	◔	◔	◔	○	◔	
	K	Ghisa		✱		●		◐
	N	Metallo non ferroso						◐
	S	Lega resistente al calore, Lega di titanio		◐				
	H	Materiali temprati		◐				

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✱: Taglio instabile

Onatura:
E: Tondo **F**: Affilato

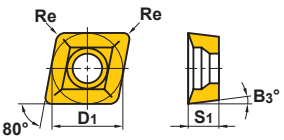
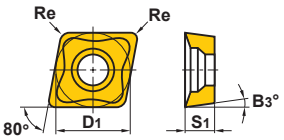
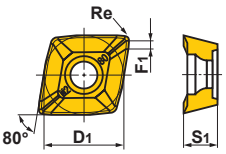
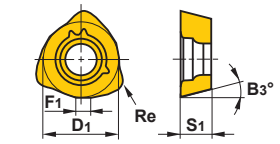
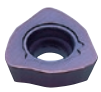
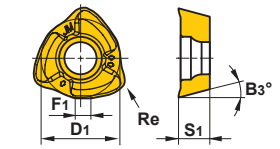
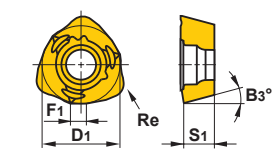
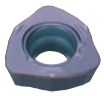
Forma	Codice di ordinazione	Classe	Onatura	F7030	VP15TF	UP20M	NX2525	NX4545	HTi10	L1	L2	S1	F1	Re	Geometria
BAE	**AEMW150304ER**	M	E			★	●			15.875	9.525	3.18	—	0.4	
	150308ER	M	E			★	★			15.875	9.525	3.18	—	0.8	
	19T304ER	M	E			★	●			19.05	12.7	3.97	—	0.4	
	19T308ER	M	E			★	★			19.05	12.7	3.97	—	0.8	
BAP300	**APGT1135PDFR-G2**	G	F						●	11	6.35	3.5	1.2	0.8	
BAP400	**APGT1604PDFR-G2**	G	F						●	16.5	9.525	4.76	1.4	0.8	
BAP300 SRM2 ➲K100	**APMT1135PDER-H1**	M	E	●	●		●	●	●	11	6.35	3.5	1.5	0.4	
	1135PDER-H2	M	E	●	●		●	●	●	11	6.35	3.5	1.2	0.8	
	1135PDER-H3	M	E	●						11	6.35	3.5	0.8	1.2	
	1135PDER-H4	M	E	●						11	6.35	3.5	0.4	1.6	
	1135PDER-H6	M	E	●						11	6.35	3.5	0.4	2.4	
BAP400 SRM2 ➲K100	**APMT1604PDER-H1**	M	E	●			●			16.5	9.525	4.76	1.7	0.4	
	1604PDER-H2	M	E	●	●		●	●	●	16.5	9.525	4.76	1.4	0.8	
	1604PDER-H4	M	E	●						16.5	9.525	4.76	0.4	1.6	
	1604PDER-H6	M	E	●						16.5	9.525	4.76	0.4	2.4	
	1604PDER-H8	M	E	●						16.5	9.525	4.76	0.4	3.2	
BAP300 SRM2 ➲K100	**APMT1135PDER-M0**	M	E	★						11	6.35	3.5	1.8	0.2	
	1135PDER-M1	M	E	★						11	6.35	3.5	1.5	0.4	
	1135PDER-M2	M	E	●	●			●		11	6.35	3.5	1.2	0.8	
BAP400 SRM2 ➲K100	**APMT1604PDER-M2**	M	E	●	●			●		16.5	9.525	4.76	1.4	0.8	

INSERTI ROTANTI

Materiale da lavorare		
	P	Acciaio
	M	Acciaio inossidabile
	K	Ghisa
	N	Metallo non ferroso
	S	Lega resistente al calore, Lega di titanio
	H	Materiali temprati

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✣: Taglio instabile

Onatura:
E: Tondo **S**: Smusso + Onatura

Forma	Codice di ordinazione	Classe	Onatura	Rivestito									Dimensioni (mm)					Geometria
				F7030	FH7020	MP6120	MP6130	MP7130	MP7140	VP15TF	VP30RT	UP20M	D1	S1	F1	Re	B3	
DCCC	CCMX083508EN-A	M	E	●								★	7.94	3.5	—	0.8	7°	
	09T308EN-A	M	E	●						●		★	9.525	3.97	—	0.8	7°	
																		
DCCC	CCMX09T308EN-B	M	E	●									9.525	3.97	—	0.8	7°	
																		
PMR ➲K114	CPMT1205ZPEN-M2	M	E							●			12.7	5.56	1.4	0.8	—	
	1205ZPEN-M3	M	E							★			12.7	5.56	1.4	1.2	—	
	1906ZPEN-M2	M	E							●			19.05	6.35	1.4	0.8	—	
	1906ZPEN-M3	M	E							★			19.05	6.35	1.4	1.2	—	
																		
AJX ➲K062 PMC ➲K116	JOMW06T215ZZSR-FT	M	S		●	●	●	●	●	●	●		6.35	2.78	1.2	1.5	13°	
	080320ZZSR-FT	M	S		●	●	●	●	●	●	●		8	3.18	1.4	2	13°	
	JDMW09T320ZDSR-FT	M	S		●	●	●	●	●	●	●		9.525	3.97	1.8	2	15°	
	120420ZDSR-FT	M	S		●	●	●	●	●	●	●		12	4.76	2.5	2	15°	
	140520ZDSR-FT	M	S		●	●	●	●	●	●	●		14	5.56	2.8	2	15°	
																		
AJX ➲K062 PMC ➲K116	JOMT06T215ZZSR-JM	M	S		●	●	●	●	●	●	●		6.35	2.78	1.2	1.5	13°	
	080320ZZSR-JM	M	S		●	●	●	●	●	●	●		8	3.18	1.4	2	13°	
	JDMT09T320ZDSR-JM	M	S		●	●	●	●	●	●	●		9.525	3.97	1.8	2	15°	
	120420ZDSR-JM	M	S		●	●	●	●	●	●	●		12	4.76	2.5	2	15°	
	140520ZDSR-JM	M	S		●	●	●	●	●	●	●		14	5.56	2.8	2	15°	
																		
AJX ➲K062 PMC ➲K116	JDMT120420ZDSR-ST	M	S		●	●	●	●	●	●	●		12	4.76	2.5	2	15°	
	140520ZDSR-ST	M	S		●	●	●	●	●	●	●		14	5.56	2.8	2	15°	
																		

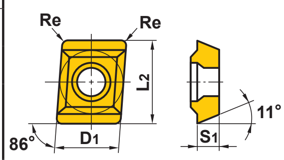
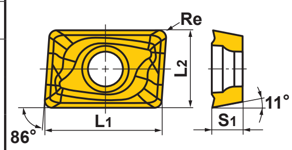
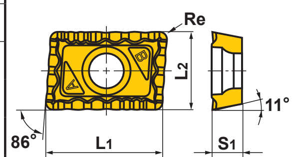
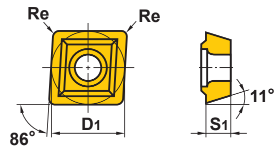
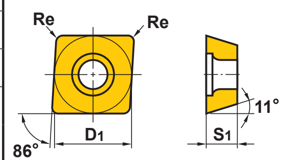
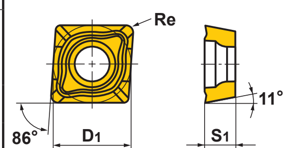
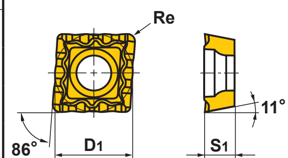
■ = MIRACLE SIGMA

● : Inventario mantenuto. ★ : Inventario mantenuto in Giappone.

Materiale da lavorare			VP15TF	VP20RT	UP20M		UTi20T	
	P	Acciaio	◐	◐	◐		◐	
	M	Acciaio inossidabile	◐	◐	◐		◐	
	K	Ghisa	✤	✤			✤	
	N	Metallo non ferroso						
	S	Lega resistente al calore, Lega di titanio	◐					
	H	Materiali temprati	◐					

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✤: Taglio instabile

Onatura:
E: Tondo

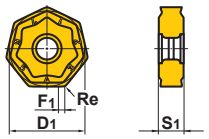
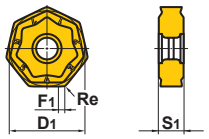
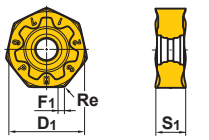
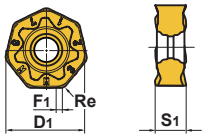
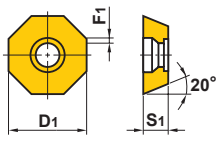
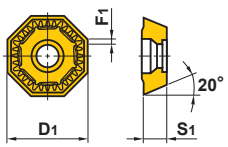
Forma	Codice di ordinazione	Classe	Onatura	Rivestito VP15TF	Rivestito VP20RT	Rivestito UP20M		Metallo duro UTi20T		Dimensioni (mm) L1	L2	D1	S1	Re	Geometria
CBJP ➲K108 **TAB** 	**JPMT060204-E**	M	E	★		●		●		—	7.94	6.5	2.38	0.4	 Inserto interno (C) indicato.
SPX ➲K087 	**JPMX140412-JM**	M	E	●	●					14.3	12.7	—	4.76	1.2	
	190412-JM	M	E	●	●					19.05	12.7	—	4.76	1.2	
SPX ➲K087 	**JPMX140412-WH**	M	E	●	●					14.3	12.7	—	4.76	1.2	
	190412-WH	M	E	●	●					19.05	12.7	—	4.76	1.2	
CBMP ➲K108 **ECMP** **TAB** 	**MPMT070308**	M	E			★		●		—	—	7.94	3.18	0.8	
	090308	M	E	★		★		●		—	—	9.525	3.18	0.8	
	120408	M	E			★		●		—	—	12.7	4.76	0.8	
TSMP ➲K107 	**MPMW070308**	M	E					●		—	—	7.94	3.18	0.8	
	090308	M	E					●		—	—	9.525	3.18	0.8	
	120408	M	E					●		—	—	12.7	4.76	0.8	
SPX ➲K087 	**MPMX120412-JM**	M	E	●	●					—	—	12.7	4.76	1.2	
SPX ➲K087 	**MPMX120412-WH**	M	E	●	●					—	—	12.7	4.76	1.2	

INSERTI ROTANTI

Materiale da lavorare		
	P	Acciaio
	M	Acciaio inossidabile
	K	Ghisa
	N	Metallo non ferroso
	S	Lega resistente al calore, Lega di titanio
	H	Materiali temprati

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✣: Taglio instabile

Onatura:
E: Tondo **S**: Smusso + Onatura **T**: Smusso

Forma	Codice di ordinazione	Classe	Onatura	Rivestito F7010	Rivestito F7030	Rivestito MC5020	Rivestito MP7030	Rivestito VP15TF	Cermet NX4545	Dimensioni (mm) D1	S1	F1	Re	Geometria
AHX640W ➲K016 **AHX640S** ➲K018 	**NNMU200608ZEN-HK**	M	E			●				20	6.55	1	0.8	
AHX640W ➲K016 **AHX640S** ➲K018 	**NNMU200608ZEN-MK**	M	E			●				20	6.55	1	0.8	
AHX640S ➲K018 	**NNMU200708ZEN-MP**	M	E					●		20	8	1	0.8	
AHX640S NEW ➲K018 	**NNMU200712ZER-MM**	M	E				●			20	8	1	1.2	
OCTACUT ➲K072 	**OEMX12T3ETR1**	M	T	●					★	12.7	3.97	1	—	
	12T3ESR1	M	S		●					12.7	3.97	1	—	
	1705ETR1	M	T	●				★	●	17	5	1.4	—	
	1705ESR1	M	S		●					17	5	1.4	—	
OCTACUT ➲K072 	**OEMX12T3EER1-JS**	M	E	●	●					12.7	3.97	1	—	
	1705EER1-JS	M	E		●					17	5	1.4	—	
	1705ETR1-JS	M	T					★		17	5	1.4	—	

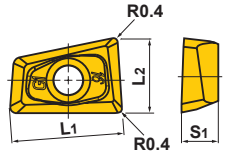
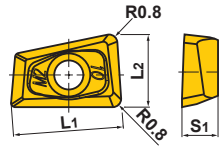
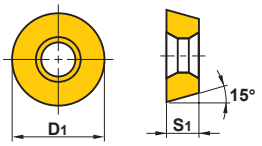
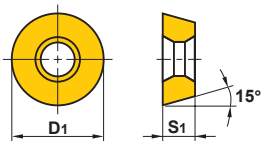
■ = MIRACLE SIGMA

● : Inventario mantenuto. ★ : Inventario mantenuto in Giappone.

Materiale da lavorare		
P	Acciaio	
M	Acciaio inossidabile	
K	Ghisa	
N	Metallo non ferroso	
S	Lega resistente al calore, Lega di titanio	
H	Materiali temprati	

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✱: Taglio instabile

Onatura:
E: Tondo **F**: Affilato **S**: Smusso + Onatura **T**: Smusso

Forma	Codice di ordinazione	Classe	Onatura	Rivestito						Metallo duro		Dimensioni (mm)				Geometria
				F7030	VP15TF	VP30RT	VP20M	VP10H	VP05HT	UTi20T	HTi10	L_1	L_2	D_1	S_1	
AQX ➲K054	**QOGT0830R-G1**	G	F ✱1		●						●	8.4	5.5	—	3	
	1035R-G1	G	F ✱1		●						●	10.6	7	—	3.5	
	1342R-G1	G	F ✱1		●						●	13.1	8.7	—	4.2	
	**1651R-G1**	G	F ✱1		●						●	16.5	11	—	5.1	
	1856R-G1	G	F ✱1		●						●	18	12	—	5.6	
	2062R-G1	G	F ✱1		●						●	20.4	13.6	—	6.2	
	2576R-G1	G	F ✱1		●						●	25.8	17.2	—	7.6	
AQX ➲K054	**QOMT0830R-M2**	M	E		●	●						8.4	5.5	—	3	
	1035R-M2	M	E		●	●						10.6	7	—	3.5	
	1342R-M2	M	E		●	●						13.1	8.7	—	4.2	
	**1651R-M2**	M	E		●	●						16.5	11	—	5.1	
	1856R-M2	M	E		●	●						18	12	—	5.6	
	2062R-M2	M	E		●	●						20.4	13.6	—	6.2	
	2576R-M2	M	E		●	●						25.8	17.2	—	7.6	
RRD ➲K078	**RDHX0501M0E**	H	E	●	●			●	●			—	—	5	1.5	
	0501M0S	H	S	●	●			●				—	—	5	1.5	
	07T1M0E	H	E	●	●			●	●			—	—	7	1.98	
	07T1M0S	H	S	●	●			●	●			—	—	7	1.98	
	0702M0E	H	E	●	●			●	●			—	—	7	2.38	
	**0702M0S**	H	S	●	●			●				—	—	7	2.38	
	1003M0E	H	E	●	●			●	●			—	—	10	3.18	
	1003M0S	H	S	●	●			●	●			—	—	10	3.18	
	12T3M0E	H	E	●	●			●	●			—	—	12	3.97	
	12T3M0S	H	S	●	●			●				—	—	12	3.97	
	1604M0E	H	E	●	●			●	●			—	—	16	4.76	
	1604M0S	H	S	●	●			●				—	—	16	4.76	
RRD ➲K078	**RDMX07T1M0E**	M	E						●			—	—	7	1.98	
	07T1M0T	M	T	●			●	●				—	—	7	1.98	
	0702M0E	M	E						●			—	—	7	2.38	
	0702M0T	M	T	●			●	●				—	—	7	2.38	
	1003M0E	M	E						●			—	—	10	3.18	
	**1003M0S**	M	S		●			●				—	—	10	3.18	
	1003M0T	M	T	●			●	●		●		—	—	10	3.18	
	12T3M0E	M	E						●			—	—	12	3.97	
	12T3M0S	M	S		●			●				—	—	12	3.97	
	12T3M0T	M	T	●			●	●		●		—	—	12	3.97	
	1604M0E	M	E						●			—	—	16	4.76	
	1604M0S	M	S		●			●				—	—	16	4.76	
	1604M0T	M	T	●			●	●		●		—	—	16	4.76	

✱1 Il grado VP15TF è "E".

INSERTI ROTANTI

Materiale da lavorare		
P	Acciaio	
M	Acciaio inossidabile	
K	Ghisa	
N	Metallo non ferroso	
S	Lega resistente al calore, Lega di titanio	
H	Materiali temprati	

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✱: Taglio instabile

Onatura:
E: Tondo **S**: Smusso + Onatura

Forma	Codice di ordinazione	Classe	Onatura	Rivestito F7010	Rivestito F7030	Rivestito VP15TF	Rivestito AP20M	Rivestito UP20M	Metallo duro UTi20T	Metallo duro HTi10	Dimensioni (mm) D1	Dimensioni (mm) S1	Geometria
RRD K078	**RDZX0501M0E**	Z	E			●					5	1.50	
	07T1M0E	Z	E			●					7	1.98	
	0702M0E	Z	E			●					7	2.38	
	1003M0E	Z	E			●					10	3.18	
	1003M0S	Z	S		●	●					10	3.18	
	12T3M0E	Z	E			●					12	3.97	
	12T3M0S	Z	S		●	●					12	3.97	
	1604M0E	Z	E			●					16	4.76	
	1604M0S	Z	S		●	●					16	4.76	
OCTACUT K072	**REMX1705SN**	M	S		★						17.25	5.2	
OCTACUT K072	**REMX12T3EN-JS**	M	E		★						12.95	4.17	
	1705EN-JS	M	E		★						17.25	5.2	
SG20 K021	**RGEN2004M0EN**	E	E			★					20	4.76	
	2004M0SN	E	S		●			●	●	●	20	4.76	
	RPMM120400G	M	E					●	●		12.7	4.76	
BRP K075	**RPMT08T2M0E-JS**	M	E		●	●			●		8	2.78	
	10T3M0E-JS	M	E		●	●			●		10	3.97	
	1204M0E-JS	M	E	●	●	●	●		●		12	4.76	
	1606M0E-JS	M	E		●	●	●				16	6.35	

● : Inventario mantenuto. ★ : Inventario mantenuto in Giappone.

Materiale da lavorare			F7010	F7030	MC5020	VP15TF	AP20M	NX2525	NX4545	UTi20T	HTi10
	P	Acciaio	●	◐		◐	◐	●	◐	◐	
	M	Acciaio inossidabile	◔	◔		◔	◔	○	◔	◔	
	K	Ghisa			◐	✱		●		✱	◐
	N	Metallo non ferroso									◐
	S	Lega resistente al calore, Lega di titanio				◐					
	H	Materiali temprati				◔					

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✱: Taglio instabile

Onatura:
E: Tondo **F**: Affilato **S**: Smusso + Onatura
T: Smusso **Z**: Forte

Forma	Codice di ordinazione	Classe	Onatura	Rivestito					Cermet		Metallo duro		Dimensioni (mm)				Geometria
				F7010	F7030	MC5020	VP15TF	AP20M	NX2525	NX4545	UTi20T	HTi10	D1	S1	F1	Re	
BRP ➲K075	**RPMW08T2M0E**	M	E								●		8	2.78	—	—	
	08T2M0T	M	T				●						8	2.78	—	—	
	10T3M0E	M	E		●					★	●		10	3.97	—	—	
	10T3M0T	M	T				●						10	3.97	—	—	
	1204M0E	M	E		●			●	●	●	●		12	4.76	—	—	
	1204M0T	M	T				●		●				12	4.76	—	—	
	1606M0E	M	E		●			●	●		●		16	6.35	—	—	
	1606M0T	M	T				●						16	6.35	—	—	
Angolo dello smusso tagliente 45°	**SDEN1203AEN**	E	T							●			12.7	3.18	1.2	—	
LSE445 **SE445**	**SECN1203AFTN1**	C	T							★			12.7	3.18	1.4	1.0	
	SEEN1203AFFN1	E	F									●	12.7	3.18	1.4	1.0	
	1203AFEN1	E	E				●						12.7	3.18	1.4	1.0	
	1203AFTN1	E	T	●					●	●			12.7	3.18	1.4	1.0	
	✱ 1203AFTN3	E	T	●						●			12.7	3.18	1.4	—	
	1203AFSN1	E	S		●	●							12.7	3.18	1.4	1.0	
	✱ 1203AFSN3	E	S		●								12.7	3.18	1.4	—	
LSE445 **SE445**	**SEER1203AFEN-JS**	E	E	●	●	●	●						12.7	3.18	1.4	1.0	
Angolo dello smusso tagliente 45°	**SEER1204AFEN-JS**	E	E	●									12.7	4.76	1.4	1.0	
SE545	**SEEN1504AFEN1**	E	E				★						15.875	4.76	1.4	1.0	
	1504AFTN1	E	T	●					●	●			15.875	4.76	1.4	1.0	
	✱ 1504AFTN3	E	T	●						●			15.875	4.76	1.4	—	
	1504AFSN1	E	S		●	●							15.875	4.76	1.4	1.0	
	1504AFZN1 NEW	E	Z						●				15.875	4.76	1.4	1.0	

✱ SEEN1203AFTN3
SEEN1203AFSN3

✱ SEEN1504AFTN3

INSERTI ROTANTI

Materiale da lavorare		
P	Acciaio	
M	Acciaio inossidabile	
K	Ghisa	
N	Metallo non ferroso	
S	Lega resistente al calore, Lega di titanio	
H	Materiali temprati	

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✱: Taglio instabile

Onatura:
E: Tondo **F**: Affilato **S**: Smusso + Onatura
T: Smusso

Forma	Codice di ordinazione	Classe	Onatura	Rivestito					Cermet		Metallo duro		Dimensioni (mm)				Geometria
				F7010	F7030	MC5020	VP15TF	UP20M	NX2525	NX4545	UTi20T	HTi10	D_1	S_1	F_1	Re	
SE545	SEER1504AFEN-JS	E	E		●	●							15.875	4.76	1.4	1.0	
SE415	SEEN1203EFFR1	E	F									●	12.7	3.18	1.4	1.0	
	1203EFER1	E	E				★						12.7	3.18	1.4	1.0	
	1203EFTR1	E	T						●	●			12.7	3.18	1.4	1.0	
	✱ 1203EFTR3	E	T						●	●			12.7	3.18	1.4	—	
	1203EFSR1	E	S		●	●							12.7	3.18	1.4	1.0	
SE415	SEER1203EFER-JS	E	E		●	●							12.7	3.18	1.4	1.0	
SE515	SECN1504EFTR1	C	T							★			15.875	4.76	1.4	1.0	
	SEEN1504EFER1	E	E				★						15.875	4.76	1.4	1.0	
	1504EFTR1	E	T							●			15.875	4.76	1.4	1.0	
NEW	1504EFTL1	E	T	●						●			15.875	4.76	1.4	1.0	
	1504EFSR1	E	S		●								15.875	4.76	1.4	1.0	
Kąt naroża 45°	SEEW1204AFTN	E	T					●	●	●	●		12.7	4.76	2.6	1.0	
Kąt naroża 45°	SEMN1204AZTN	M	T					●			●		12.7	4.76	2.0	0.2	
ASX445 ➔K010	SEGT13T3AGFN-JP	G	F									●	13.4	3.97	2.2	—	

✱ SEEN1203EFTR3
Inserto destro raffigurato.

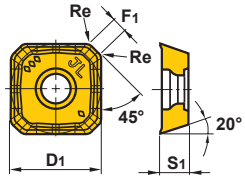
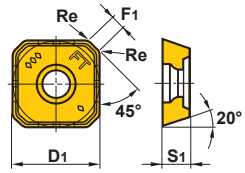
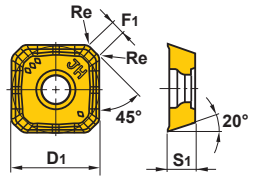
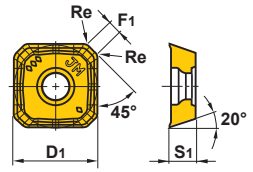
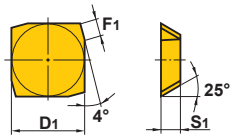
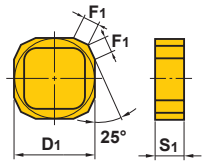
Inserto destro raffigurato.

● : Inventario mantenuto. ★ : Inventario mantenuto in Giappone.

Materiale da lavorare			F7030	MC5020	MP6120	MP6130	MP7130	MP7140	MP9120	MP9130	VP15TF	VP30RT	NX4545	VP45N	HTi10
	P	Acciaio	◐		◐	✣					◐	✣	◐	◐	
	M	Acciaio inossidabile	◔				◔	✣			◔	✣	◔	◔	
	K	Ghisa		◐							✣				◐
	N	Metallo non ferroso													◐
	S	Lega resistente al calore, Lega di titanio							◐	✣	◐				
	H	Materiali temprati									◔				

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✣: Taglio instabile

Onatura:
E: Tondo **F**: Affilato **S**: Smusso + Onatura

Forma	Codice di ordinazione	Classe	Onatura	Rivestito										Cermet		Metallo duro	Dimensioni (mm)				Geometria
				F7030	MC5020	MP6120	MP6130	MP7130	MP7140	MP9120	MP9130	VP15TF	VP30RT	NX4545	VP45N	HTi10	D_1	S_1	F_1	Re	
ASX445 ➲K010 	**SEET13T3AGEN-JL**	E	E	●		●	●	●	●	●	●	●	●	●			13.4	3.97	1.9	1.5	
ASX445 ➲K010 	**SEMT13T3AGSN-FT**	M	S		●												13.4	3.97	1.9	1.5	
ASX445 ➲K010 	**SEMT13T3AGSN-JH**	M	S	●	●	●	●	●	●	●	●	●	●				13.4	3.97	1.9	1.5	
ASX445 ➲K010 	**SEMT13T3AGSN-JM**	M	S	●	●	●	●	●	●	●	●	●	●	●	●		13.4	3.97	1.9	1.5	
BF407 	**SFAN1203ZFFR2**	A	F													●	12.7	3.175	2.4	—	 Inserto destro raffigurato.
	1203ZFFL2	A	F													★	12.7	3.175	2.4	—	
	SFCN1203ZFFR2	C	F													●	12.7	3.175	2.4	—	
BN425 DN 	**SNMF43B2G**	M	E		★												12.7	4.8	2.0	—	

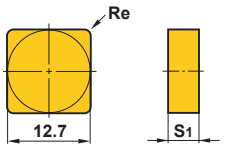
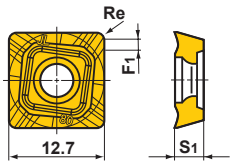
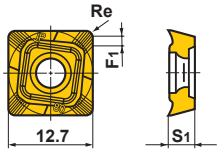
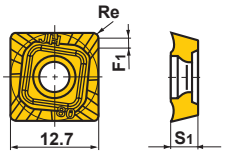
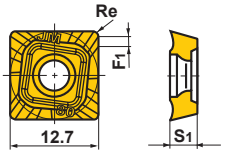
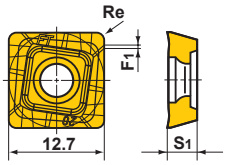
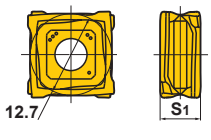
■ = MIRACLE SIGMA

INSERTI ROTANTI

Materiale da lavorare		
	P	Acciaio
	M	Acciaio inossidabile
	K	Ghisa
	N	Metallo non ferroso
	S	Lega resistente al calore, Lega di titanio
	H	Materiali temprati

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✣: Taglio instabile

Onatura:
E: Tondo F: Affilato

Forma	Codice di ordinazione	Classe	Onatura	Rivestito									Cermet		Metallo duro		Dimensioni (mm)			Geometria
				F7030	MC5020	MP6120	MP6130	MP7130	MP7140	MP9120	MP9130	VP15TF	VP30RT	NX2525	NX4545	UTi20T	HTi10	S_1	F_1	Re	
	**SNMN120408**	M	E		●									★		●	●	4.78	—	0.8	
	120412	M	E		●									★		●		4.78	—	1.2	
ASX400 ➲K026 	**SOET12T308PEER-JL**	E	E	●		●	●	●	●	●	●	●	●		●			3.97	1.4	0.8	
ASX400 ➲K026 	**SOGT12T308PEFR-JP**	G	F														●	3.97	1.4	0.8	
ASX400 ➲K026 	**SOMT12T308PEER-JH**	M	E	●	●	●	●	●	●	●	●	●	●					3.97	1.4	0.8	
ASX400 ➲K026 	**SOMT12T308PEER-JM**	M	E	●	●	●	●	●	●	●	●	●	●		●			3.97	1.4	0.8	
	12T308PEEL-JM	M	E									●						3.97	1.4	0.8	Inserto destro raffigurato.
ASX400 ➲K026 	**SOMT12T320PEER-FT**	M	E		●	●				★	★	●						3.97	0.5	2.0	
VOX400 ➲K022 	**SONX1206PER**	N	E		●							●						6.3	—	—	

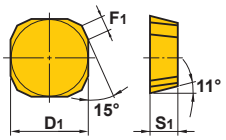
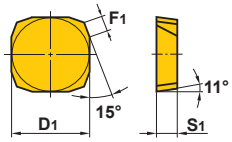
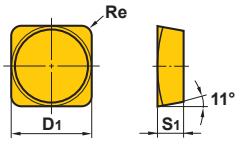
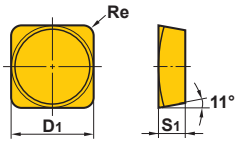
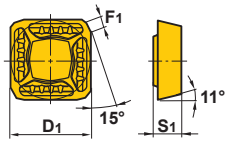
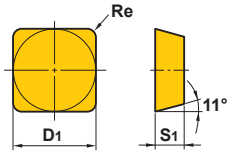
● : Inventario mantenuto. ★ : Inventario mantenuto in Giappone.

= MIRACLE SIGMA

Materiale da lavorare		
P	Acciaio	
M	Acciaio inossidabile	
K	Ghisa	
N	Metallo non ferroso	
S	Lega resistente al calore, Lega di titanio	
H	Materiali temprati	

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✱: Taglio instabile

Onatura:
E: Tondo **F**: Affilato **T**: Smusso

Forma	Codice di ordinazione	Classe	Onatura	Rivestito					Cermet		Metallo duro			Dimensioni (mm)				Geometria
				F7010	F7030	MC5020	VP15TF	UP20M	NX2525	NX4545	UTi20T	HTi05T	HTi10	D_1	S_1	F_1	Re	
Angolo dello smusso tagliente 15°	**SPEN1203EDR**	E	T *1	●	●				●	●				12.7	3.18	1.4	–	
	**1203EDL**	E	T *1						●		●		●	12.7	3.18	1.4	–	
	SPKN1203EDR	K	T			★	★							12.7	3.18	1.4	–	
	SPEN1504EDR	E	T *1					●	●	●			●	15.875	4.76	1.4	–	
	1504EDL	E	T *1								●		●	15.875	4.76	1.4	–	
																		Inserto destro raffigurato.
FBP415	**SPEN1203EEER1**	E	E			●							●	12.7	3.175	1.4	–	
	**1203EEEL1**	E	E			★							★	12.7	3.175	1.4	–	
	SPNN1203EEER1	N	E			★							★	12.7	3.175	1.4	–	
																		Inserto destro raffigurato.
FP490	**SPEN424A**	E	F									★	★	12.7	3.18	–	1.6	
																		
FP590	**SPEN535A**	E	F									★		15.875	4.76	–	2.0	
																		
FBP415	**SPER1203EEER-JS**	E	E			●								12.7	3.175	1.4	–	
																		
11° Positivi	**SPGN120304**	G	E *1						●		●		●	12.7	3.18	–	0.4	
	**120308**	G	E *1					★	●		●		●	12.7	3.18	–	0.8	
	120312	G	F										★	12.7	3.18	–	1.2	
	150404	G	E								●			15.875	4.76	–	0.4	
	150408	G	E *1										★	15.875	4.76	–	0.8	
	SPMN120304	M	E *1				★				●		●	12.7	3.18	–	0.4	
	120304T	M	T						●					12.7	3.18	–	0.4	
	120308	M	E		★		★	★			●		●	12.7	3.18	–	0.8	
	120312	M	E *1		★		★				●		●	12.7	3.18	–	1.2	
	120408	M	E *1			★					●		★	12.7	4.76	–	0.8	
	120412	M	E			★					★			12.7	4.76	–	1.2	
	150408	M	E								●			15.875	4.76	–	0.8	
	150412	M	E								●			15.875	4.76	–	1.2	

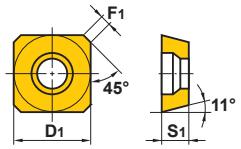
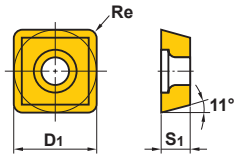
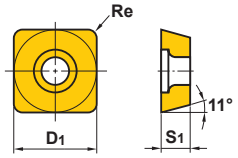
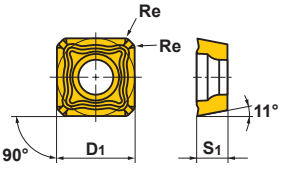
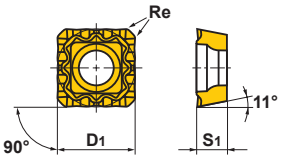
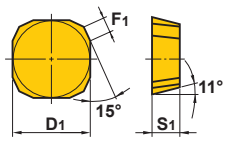
*1 Il grado HTi10T è "F".

INSERTI ROTANTI

Materiale da lavorare		
	P	Acciaio
	M	Acciaio inossidabile
	K	Ghisa
	N	Metallo non ferroso
	S	Lega resistente al calore, Lega di titanio
	H	Materiali temprati

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✲: Taglio instabile

Onatura:
E: Tondo T: Smusso

Forma	Codice di ordinazione	Classe	Onatura	Rivestito			Cermet		Metallo duro		Dimensioni (mm)				Geometria
				VP15TF	VP20RT	UP20M	NX2525	NX4545	UTi20T	HTi10	D_1	S_1	F_1	Re	
BSP 	SPMB1204APT	M	T			●			●		12.7	4.76	1.4	—	
TBE1 	SPMT120408-A	M	E			●			●		12.7	4.76	—	0.8	
CESP CFSP CGSP ➔K106 	SPMW090304	M	E *1	★		●	●	●	●	●	9.525	3.18	—	0.4	
	090308	M	E *1	★		●	●	●	●	●	9.525	3.18	—	0.8	
	120304	M	E *1	★		●	●	●	●	●	12.7	3.18	—	0.4	
	120308	M	E *1	★		●	●	●	●	●	12.7	3.18	—	0.8	
SPX ➔K087 	SPMX120408-JM	M	E	●	●						12.7	4.76	—	0.8	
SPX ➔K087 	SPMX120408-WH	M	E	●	●						12.7	4.76	—	0.8	
Angolo dello smusso tagliente 15° 	SPNN1203EDR	N	E						●		12.7	3.18	1.4	—	 Inserto destro raffigurato.

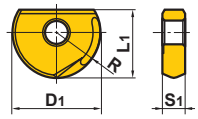
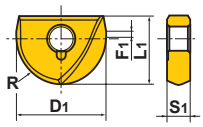
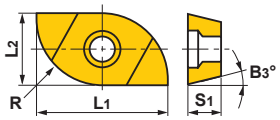
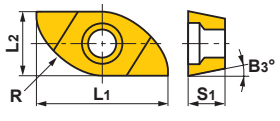
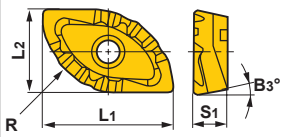
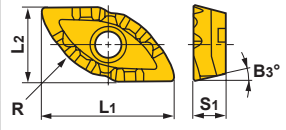
*1 Il grado HTi10T è "T".

● : Inventario mantenuto. ★ : Inventario mantenuto in Giappone.

Materiale da lavorare			EP6120	VP15TF	VP20RT	VP30RT	MP8010
	P	Acciaio	●	●	●	✱	
	M	Acciaio inossidabile		◔	◔	✱	
	K	Ghisa		✱	✱		●
	N	Metallo non ferroso	●				
	S	Lega resistente al calore, Lega di titanio		●			
	H	Materiali temprati		◔			●

Parametri di taglio (Guida):
●: Taglio stabile ◔: Taglio generico ✱: Taglio instabile

Onatura:
E: Tondo F: Affilato

Forma	Codice di ordinazione	Classe	Onatura	Rivestito					Dimensioni (mm)							Geometria
				EP6120	VP15TF	VP20RT	VP30RT	MP8010	L_1	L_2	D_1	S_1	F_1	R	B_3	
SRB ➲K092	**SRBT10**	—	F		●				8.5	—	10	2.6	—	5	—	
	12	—	F		●				10	—	12	3	—	6	—	
	16	—	F		●				12	—	16	4	—	8	—	
	20	—	F		●				15	—	20	5	—	10	—	
	25	—	F		●				18.5	—	25	6	—	12.5	—	
	30	—	F		●				22.5	—	30	7	—	15	—	
	32	—	F		●				23.5	—	32	7	—	16	—	
SRF ➲K092	✱ **SRFT10**	—	F	●	●			●	8.5	—	10	2.6	0.5	5	—	
	✱ **12**	—	F	●	●			●	10	—	12	3	0.5	6	—	
	✱ **16**	—	F	●	●			●	12	—	16	4	1	8	—	
	✱ **20**	—	F	●	●			●	15	—	20	5	1	10	—	
	✱ **25**	—	F	●	●			●	18.5	—	25	6	1	12.5	—	
	✱ **30**	—	F	●	●			●	22.5	—	30	7	1	15	—	
	✱ **32**	—	F	●	●			●	23.5	—	32	7	1	16	—	
SRM2 ➲K100	**SRG16C**	G	E		●				16	8.2	—	3.5	—	8	11°	
	20C	G	E		●				19	10.2	—	4.6	—	10	10°	
	25C	G	E		●				24	12.8	—	5.5	—	12.5	10°	
	30C	G	E		●				28	15.3	—	7	—	15	10°	
	32C	G	E		●				28	16.3	—	7	—	16	10°	
SRM2 ➲K100	**SRG16E**	G	E		●				13.5	6.7	—	3.5	—	8	11°	
	20E	G	E		●				15.5	8.5	—	4.6	—	10	9°	
	25E	G	E		●				20.5	10.2	—	5.5	—	12.5	9°	
	30E	G	E		●				25.2	12.2	—	7	—	15	9°	
	32E	G	E		●				26.1	13.1	—	7	—	16	9°	
SRM2ϕ40 ϕ50 ➲K104	✱ **SRG40C**	G	E		●	●	●		36	20.5	—	8	—	20	11°	
	✱ **50C**	G	E		●	●	●		40	26	—	8.5	—	25	11°	
SRM2ϕ40 ϕ50 ➲K104	✱ **SRG40E**	G	E		●	●	●		32	16.6	—	8	—	20	11°	
	✱ **50E**	G	E		●	●	●		35.8	20	—	8.5	—	25	11°	

✱ 2 inserti in una confezione.

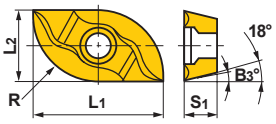
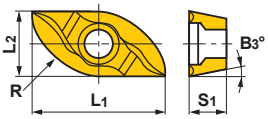
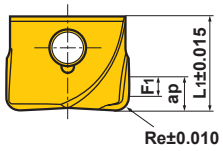
■ = MIRACLE SIGMA

INSERTI ROTANTI

Materiale da lavorare		
P	Acciaio	●
M	Acciaio inossidabile	●
K	Ghisa	✱ ●
N	Metallo non ferroso	
S	Lega resistente al calore, Lega di titanio	●
H	Materiali temprati	● ●

Parametri di taglio (Guida):
●: Taglio stabile ●: Taglio generico ✱: Taglio instabile

Onatura:
E: Tondo **F**: Affilato

Forma	Codice di ordinazione	Classe	Onatura	Rivestito VP15TF	Rivestito MP8010	L1	L2	D1	S1	F1	Re	R	B3	ap	Geometria
SRM2 ➲K100	**SRM16C-M**	M	E	●		16	8.2	—	3.5	—	—	8	11°	—	
	20C-M	M	E	●		19	10.2	—	4.6	—	—	10	10°	—	
	25C-M	M	E	●		24	12.8	—	5.5	—	—	12.5	10°	—	
	**30C-M**	M	E	●		28	15.3	—	7	—	—	15	10°	—	
	32C-M	M	E	●		28	16.3	—	7	—	—	16	10°	—	
SRM2 ➲K100	**SRM16E-M**	M	E	●		13.5	6.7	—	3.5	—	—	8	11°	—	
	20E-M	M	E	●		15.5	8.5	—	4.6	—	—	10	9°	—	
	25E-M	M	E	●		20.5	10.2	—	5.5	—	—	12.5	9°	—	
	**30E-M**	M	E	●		25.2	12.2	—	7	—	—	15	9°	—	
	32E-M	M	E	●		26.1	13.1	—	7	—	—	16	9°	—	
SUF ➲K096	**SUFT10R05**	—	F	●	●	8.5	—	10	2.6	1	0.5	—	—	1.5	
	10R10	—	F	●	●	8.5	—	10	2.6	1	1	—	—	2	
	10R20	—	F	●	●	8.5	—	10	2.6	1	2	—	—	3	
	12R05	—	F	●	●	10	—	12	3	1.2	0.5	—	—	1.7	
	12R10	—	F	●	●	10	—	12	3	1.2	1	—	—	2.2	
	12R20	—	F	●	●	10	—	12	3	1.2	2	—	—	3.2	
	12R30	—	F	●	●	10	—	12	3	1.2	3	—	—	4.2	
	16R05	—	F	●	●	12	—	16	4	1.6	0.5	—	—	2.1	
	16R10	—	F	●	●	12	—	16	4	1.6	1	—	—	2.6	
	16R15	—	F	●	●	12	—	16	4	1.6	1.5	—	—	3.1	
	16R20	—	F	●	●	12	—	16	4	1.6	2	—	—	3.6	
	16R30	—	F	●	●	12	—	16	4	1.6	3	—	—	4.6	
	20R05	—	F	●	●	15	—	20	5	2	0.5	—	—	2.5	
	20R10	—	F	●	●	15	—	20	5	2	1	—	—	3	
	**20R15**	—	F	●	●	15	—	20	5	2	1.5	—	—	3.5	
	20R20	—	F	●	●	15	—	20	5	2	2	—	—	4	
	20R30	—	F	●	●	15	—	20	5	2	3	—	—	5	
	25R05	—	F	●	●	18.5	—	25	6	2.5	0.5	—	—	3	
	25R10	—	F	●	●	18.5	—	25	6	2.5	1	—	—	3.5	
	25R20	—	F	●	●	18.5	—	25	6	2.5	2	—	—	4.5	
	25R30	—	F	●	●	18.5	—	25	6	2.5	3	—	—	5.5	
	30R05	—	F	●	●	22.5	—	30	7	3	0.5	—	—	3.5	
	30R10	—	F	●	●	22.5	—	30	7	3	1	—	—	4	
	30R20	—	F	●	●	22.5	—	30	7	3	2	—	—	5	
	30R30	—	F	●	●	22.5	—	30	7	3	3	—	—	6	
	32R05	—	F	●	●	23.5	—	32	7	3.2	0.5	—	—	3.7	
	32R10	—	F	●	●	23.5	—	32	7	3.2	1	—	—	4.2	
	32R20	—	F	●	●	23.5	—	32	7	3.2	2	—	—	5.2	

● : Inventario mantenuto. ★ : Inventario mantenuto in Giappone.

Materiale da lavorare		
P	Acciaio	
M	Acciaio inossidabile	
K	Ghisa	
N	Metallo non ferroso	
S	Lega resistente al calore, Lega di titanio	
H	Materiali temprati	

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✱: Taglio instabile

Onatura:
E: Tondo **F**: Affilato **S**: Smusso + Onatura
T: Smusso **Z**: Forte

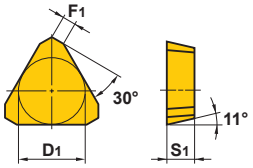
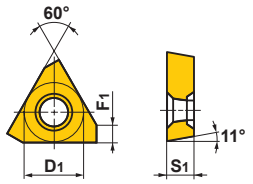
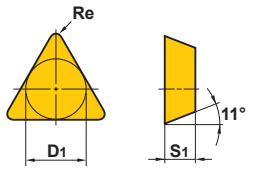
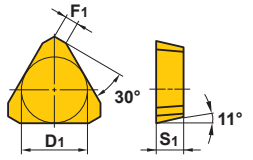
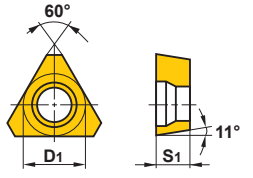
Forma	Codice di ordinazione	Classe	Onatura	Rivestito				Cermet		Metallo duro		Dimensioni (mm)				Geometria
				F7030	MC5020	VP15TF	UP20M	NX2525	NX4545	UTi20T	HTi10	D1	S1	F1	Re	
NSE300 SE300	TECN1603PEFR1W	C	F								★	9.525	3.175	1.4	0.4	Sfacciatura in finitura
	1603PEER1W	C	E								★	9.525	3.175	1.4	0.4	
	1603PETR1W	C	T					★	★	★		9.525	3.175	1.4	0.4	
NSE300 SE300	TEEN1603PEFR1	E	F								●	9.525	3.175	1.4	0.4	
	1603PEER1	E	E			★					●	9.525	3.175	1.4	0.4	
	1603PETR1	E	T				●	●	●	●		9.525	3.175	1.4	0.4	
	1603PESR1	E	S	●	●							9.525	3.175	1.4	0.4	
	1603PEZR1	E	Z					●				9.525	3.175	1.4	0.4	
NSE400 SE400	TECN2204PEFR1	C	F								★	12.7	4.76	1.4	1.0	
	2204PEER1	C	E								★	12.7	4.76	1.4	1.0	
	2204PETR1	C	T					★	★	●		12.7	4.76	1.4	1.0	
	TEEN2204PEFR1	E	F								●	12.7	4.76	1.4	1.0	
	2204PEER1	E	E			★					●	12.7	4.76	1.4	1.0	
	2204PETR1	E	T				●	●	●	●		12.7	4.76	1.4	1.0	
	2204PESR1	E	S	●	●							12.7	4.76	1.4	1.0	
	2204PEZR1	E	Z					●				12.7	4.76	1.4	1.0	
	TEKN2204PEER1	K	E								★	12.7	4.76	1.94	—	
	2204PETR1	K	T				★	★		★		12.7	4.76	1.94	—	
	2204PESR1	K	S	★								12.7	4.76	1.94	—	
	2204PETR	K	T						★			12.7	4.76	1.94	—	Inserto destro raffigurato.
NSE300	TEER1603PEER-JS	E	E	●						●		9.525	3.175	1.4	0.4	
NSE400	TEER2204PEER-JS	E	E	●						★		12.7	4.76	1.4	1.0	

INSERTI ROTANTI

Materiale da lavorare		
P	Acciaio	
M	Acciaio inossidabile	
K	Ghisa	
N	Metallo non ferroso	
S	Lega resistente al calore, Lega di titanio	
H	Materiali temprati	

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✱: Taglio instabile

Onatura:
E: Tondo **F**: Affilato

Forma	Codice di ordinazione	Classe	Onatura	Rivestito				Cermet		Metallo duro			Dimensioni (mm)				Geometria
				F7030	VP15TF	UP20M	AP10H	NX2525	NX4545	UTi20T	HTi05T	HTi10	D1	S1	F1	Re	
Angolo dello smusso tagliente 0°	**TPEN1603PPR**	E	T	●				●					9.525	3.18	1.2	—	
	1603PPN	E	T *1							●		●	9.525	3.18	1.2	—	
	2204PDR	E	T *1	●				●	●			●	12.7	4.76	1.4	—	
	2204PDL	E	T *1							●		●	12.7	4.76	1.4	—	
PMF ↪K112	**TPEW1303ZPER2**	E	E		●		●						7.94	3.18	2	—	
11° Positivi	**TPMN160304**	M	E *1	●	★	★		●		●		●	9.525	3.18	—	0.4	
	160308	M	E *2	●	★	●		●		●	★	●	9.525	3.18	—	0.8	
	160312	M	E *1			●						★	9.525	3.18	—	1.2	
	220404	M	E							●			12.7	4.76	—	0.4	
	220408	M	E *1	●	★	●				●		●	12.7	4.76	—	0.8	
	220408T	M	T					●					12.7	4.76	—	0.8	
	220412	M	E *1	★	★					●		●	12.7	4.76	—	1.2	
Angolo dello smusso tagliente 0°	**TPNN2204PDR**	N	E							●			12.7	4.76	1.4	—	
VIPER	**TPNX1605N**	N	E			★				●			9.525	5	—	—	

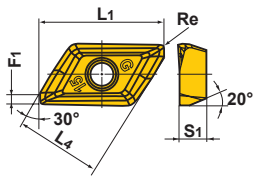
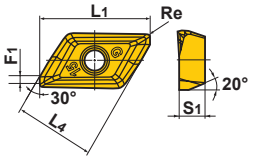
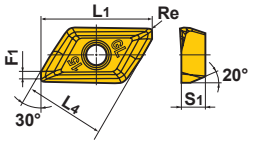
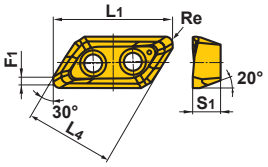
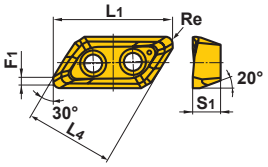
*1 Il grado HTi10T è "F".
*2 Il grado HTi10T è "F", Il grado NX2525 è "T".

● : Inventario mantenuto. ★ : Inventario mantenuto in Giappone.

Materiale da lavorare		
	P	Acciaio
	M	Acciaio inossidabile
	K	Ghisa
	N	Metallo non ferroso
	S	Lega resistente al calore, Lega di titanio
	H	Materiali temprati

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✣: Taglio instabile

Onatura:
E: Tondo F: Affilato

Forma	Codice di ordinazione	Classe	Onatura	Rivestito			Metallo duro	Dimensioni (mm)					Geometria
				MP9120	VP15TF	LC15TF	TF15	L_1	L_4	S_1	F_1	Re	
BXD4000	**XDGT1550PDER-G04**	G	E		●			22	16	5	1.5	0.4	
	1550PDER-G08	G	E		●			22	16	5	1.1	0.8	
	1550PDER-G12	G	E		●			22	16	5	0.7	1.2	
	1550PDER-G16	G	E		●			22	16	5	0.4	1.6	
	**1550PDER-G20**	G	E		●			21.7	16	5	0.2	2.0	
	1550PDER-G30	G	E		●			20	16	5	0.6	3.0	
	1550PDER-G32	G	E		●			20	16	5	0.4	3.2	
	1550PDER-G40	G	E		●			19	16	5	0.5	4.0	
	1550PDER-G50	G	E		●			18	16	5	0.4	5.0	
BXD4000	**XDGT1550PDFR-G04**	G	F			●	●	22	16	5	1.5	0.4	
	1550PDFR-G08	G	F			●	●	22	16	5	1.1	0.8	
	1550PDFR-G12	G	F			●	●	22	16	5	0.7	1.2	
	1550PDFR-G16	G	F			●	●	22	16	5	0.4	1.6	
	**1550PDFR-G20**	G	F			●	●	21.7	16	5	0.2	2.0	
	1550PDFR-G30	G	F			●	●	20	16	5	0.6	3.0	
	1550PDFR-G32	G	F			●	●	20	16	5	0.4	3.2	
	1550PDFR-G40	G	F			●	●	19	16	5	0.5	4.0	
	1550PDFR-G50	G	F			●	●	18	16	5	0.4	5.0	
BXD4000	**XDGT1550PDFR-GL04**	G	F				●	22	16	5	1.5	0.4	
	1550PDFR-GL08	G	F				●	22	16	5	1.1	0.8	
													
AXD4000 ➲K044	**XDGX175004PDFR-GL**	G	F			★	●	23	17.5	5	1.7	0.4	
	175008PDFR-GL	G	F			★	●	23	17.5	5	1.3	0.8	
	175012PDFR-GL	G	F			★	●	23	17.5	5	0.9	1.2	
	175016PDFR-GL	G	F			★	●	22	17.5	5	1.4	1.6	
	175020PDFR-GL	G	F			★	●	22	17.5	5	1.0	2.0	
	**175024PDFR-GL**	G	F			★	●	22	17.5	5	0.6	2.4	
	175030PDFR-GL	G	F			★	●	21.1	17.5	5	0.8	3.0	
	175032PDFR-GL	G	F			★	●	21.1	17.5	5	0.6	3.2	
	175040PDFR-GL	G	F			★	●	20	17.5	5	0.8	4.0	
	175050PDFR-GL	G	F			★	●	19.4	17.5	5	0.4	5.0	
AXD4000 ➲K044	NEW **XDGX175004PDER-GM**	G	E	●				23.0	17.5	5	1.7	0.4	
	NEW **175008PDER-GM**	G	E	●				23.0	17.5	5	1.3	0.8	
	NEW **175012PDER-GM**	G	E	●				23.0	17.5	5	0.9	1.2	
	NEW **175016PDER-GM**	G	E	●				22.0	17.5	5	1.4	1.6	
	NEW **175020PDER-GM**	G	E	●				22.0	17.5	5	1.0	2.0	
	NEW **175024PDER-GM**	G	E	●				22.0	17.5	5	0.6	2.4	
	NEW **175030PDER-GM**	G	E	●				21.1	17.5	5	0.8	3.0	
	NEW **175032PDER-GM**	G	E	●				21.1	17.5	5	0.6	3.2	
	NEW **175040PDER-GM**	G	E	●				20.0	17.5	5	0.5	4.0	
	NEW **175050PDER-GM**	G	E	●				19.4	17.5	5	0.4	5.0	

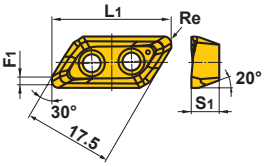
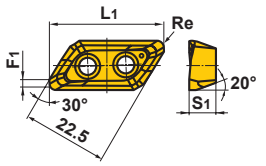
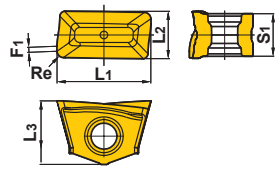
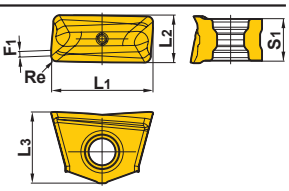
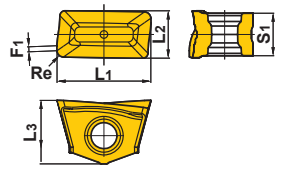
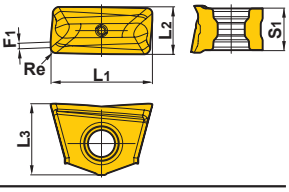
■ = MIRACLE SIGMA

INSERTI ROTANTI

Materiale da lavorare	
P	Acciaio
M	Acciaio inossidabile
K	Ghisa
N	Metallo non ferroso
S	Lega resistente al calore, Lega di titanio
H	Materiali temprati

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✣: Taglio instabile

Onatura:
E: Tondo F: Affilato

Forma	Codice di ordinazione	Classe	Onatura	Rivestito MP9130	Rivestito LC15TF	Cermet MP9030	Metallo duro TF15	L1	L2	L3	S1	F1	Re	Geometria
AXD4000 ➔K044	NEW XDGX175004PDFR-GM	G	F				●	23.0	—	—	5	1.7	0.4	
	NEW 175008PDFR-GM	G	F				●	23.0	—	—	5	1.3	0.8	
	NEW 175012PDFR-GM	G	F				●	23.0	—	—	5	0.9	1.2	
	NEW 175016PDFR-GM	G	F				●	22.0	—	—	5	1.4	1.6	
	NEW 175020PDFR-GM	G	F				●	22.0	—	—	5	1.0	2.0	
	NEW 175024PDFR-GM	G	F				●	22.0	—	—	5	0.6	2.4	
	NEW 175030PDFR-GM	G	F				●	21.1	—	—	5	0.8	3.0	
	NEW 175032PDFR-GM	G	F				●	21.1	—	—	5	0.6	3.2	
	NEW 175040PDFR-GM	G	F				●	20.0	—	—	5	0.5	4.0	
	NEW 175050PDFR-GM	G	F				●	19.4	—	—	5	0.4	5.0	
AXD7000 ➔K050	XDGX227008PDFR-GL	G	F		★		●	30.0	—	—	7	2.0	0.8	
	227016PDFR-GL	G	F		★		●	30.0	—	—	7	1.2	1.6	
	227020PDFR-GL	G	F		★		●	30.0	—	—	7	0.8	2.0	
	227030PDFR-GL	G	F		★		●	28.8	—	—	7	0.8	3.0	
	227032PDFR-GL	G	F		★		●	28.8	—	—	7	0.6	3.2	
	227040PDFR-GL	G	F		★		●	27.5	—	—	7	0.9	4.0	
	227050PDFR-GL	G	F		★		●	27.0	—	—	7	0.4	5.0	
VFX5 ➔K082	XNMU160708R-MS	M	E			●		16.0	7.0	11.1	6.5	1.0	0.8	
	160712R-MS	M	E			●		16.0	7.0	11.1	6.5	1.0	1.2	
	160716R-MS	M	E			●		16.0	7.0	11.1	6.5	1.0	1.6	
	160724R-MS	M	E			●		16.0	7.0	11.1	6.5	1.0	2.4	
	160732R-MS	M	E			●		17.3	7.0	11.1	6.5	—	3.2	
	160740R-MS	M	E			●		18.9	7.0	11.1	6.5	—	4.0	
	160708R-HS	M	E			●		16.0	7.0	11.1	6.5	1.0	0.8	
VFX5 ➔K082	NEW XNMU160708R-LS	M	E	●				16.0	7.0	11.1	6.5	1.0	0.8	
														
VFX6 ➔K085	XNMU190912R-MS	M	E			●		19.1	9.5	12.7	8.5	1.0	1.2	
	190916R-MS	M	E			●		19.1	9.5	12.7	8.5	1.0	1.6	
	190924R-MS	M	E			●		19.1	9.5	12.7	8.5	1.0	2.4	
	190932R-MS	M	E			●		20.2	9.5	12.7	8.5	—	3.2	
	190940R-MS	M	E			●		21.8	9.5	12.7	8.5	—	4.0	
	190950R-MS	M	E			●		21.8	9.5	12.7	8.5	—	5.0	
	190912R-HS	M	E			●		19.1	9.5	12.7	8.5	1.0	1.2	
VFX6 ➔K085	NEW XNMU190912R-LS	M	E	●				19.1	9.5	12.7	8.5	1.0	1.2	
														

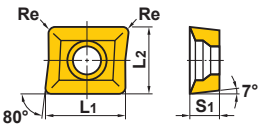
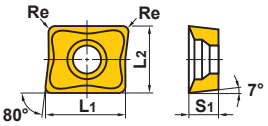
■ = MIRACLE SIGMA

● : Inventario mantenuto. ★ : Inventario mantenuto in Giappone.

Materiale da lavorare			F7030	VP15TF	UP20M
	P	Acciaio	◐	◐	◐
	M	Acciaio inossidabile	◔	◔	◔
	K	Ghisa		✣	
	N	Metallo non ferroso			
	S	Lega resistente al calore, Lega di titanio		◐	
	H	Materiali temprati		◔	

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✣: Taglio instabile

Onatura:
E: Tondo

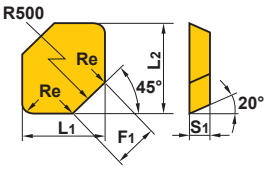
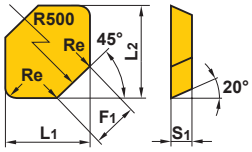
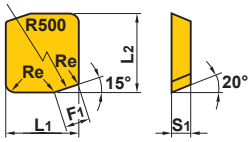
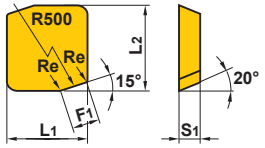
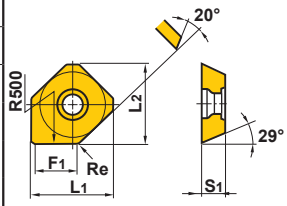
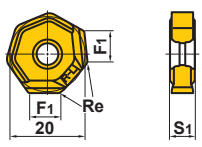
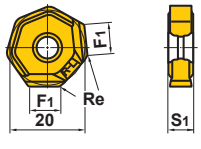
Forma	Codice di ordinazione	Classe	Onatura	Rivestito F7030	Rivestito VP15TF	Rivestito UP20M	Dimensioni (mm) L_1	L_2	S_1	Re	Geometria
DCCC	**ZCMX083508ER-A**	M	E	●			10.4	7.94	3.5	0.8	
	**09T308ER-A**	M	E	●	●	●	12.0	9.525	3.97	0.8	
DCCC	**ZCMX09T308ER-B**	M	E	●		★	12.0	9.525	3.97	0.8	
											

INSERTO RASCHIANTE

Materiale da lavorare		Rivestito MC5020	Rivestito VP15TF	Cermet NX2525	Cermet rivestito VP25N	Metallo duro HTi05T
P	Acciaio	●	◐	●	●	
M	Acciaio inossidabile		◔	○		
K	Ghisa	◐	✱	●	●	●
N	Metallo non ferroso					●
S	Lega resistente al calore, Lega di titanio		◑			
H	Materiali temprati		◐			

Parametri di taglio (Guida):
●: Taglio stabile ◐: Taglio generico ✱: Taglio instabile

Onatura:
E: Tondo **T**: Smusso

Forma	Codice di ordinazione	Classe	Onatura	MC5020	VP15TF	NX2525	VP25N	HTi05T	L1	L2	S1	F1	Re	Geometria
LSE445 **SE445**	**WEC42AFTR5C**	C	T			●			12.7	15.33	3.18	5	1.0	 Inserto destro raffigurato.
														
SE545	**WEC53AFER5C**	C	E					●	15.875	18.505	4.76	5	1.0	
	53AFTR5C	C	T			●			15.875	18.505	4.76	5	1.0	
														
SE415	**WEC42EFER5C**	C	E					●	12.7	13.728	3.18	5	1.0	 Inserto destro raffigurato.
	42EFTR5C	C	T			●			12.7	13.728	3.18	5	1.0	
														
SE515	**WEC53EFTR5C**	C	T			●			15.875	16.903	4.76	5	1.0	 Inserto destro raffigurato.
														
ASX445 ➲K010	**WEEW13T3AGER8C**	E	E	●	●			●	16.48	16.6	3.97	7.5	1.5	
	13T3AGTR8C	E	T			●	●		16.48	16.6	3.97	7.5	1.5	
														
AHX640S ➲K018 **AHX640W** ➲K016	**WNEU2006ZEN7C-WK**	E	E	●					—	—	6.55	7.4	0.8	
														
AHX640S ➲K018	**WNEU2007ZEN7C-WP**	M	E		●				—	—	7.2	7.1	0.8	
														

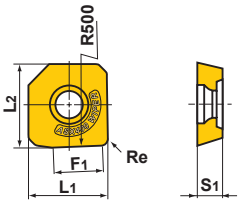
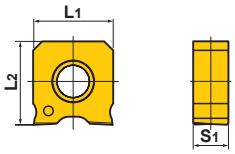
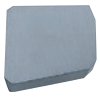
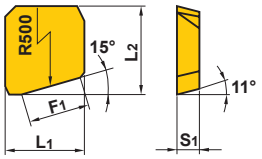
● : Inventario mantenuto. ★ : Inventario mantenuto in Giappone.

INSERTO RASCHIANTE

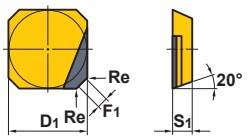
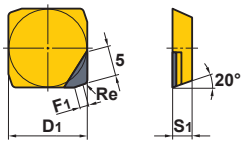
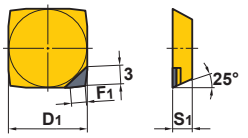
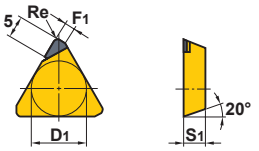
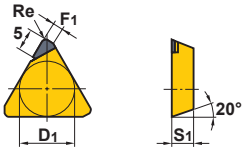
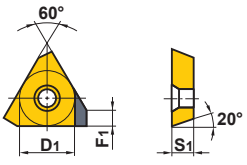
Materiale da lavorare		
P	Acciaio	●
M	Acciaio inossidabile	●
K	Ghisa	●
N	Metallo non ferroso	●
S	Lega resistente al calore, Lega di titanio	●
H	Materiali temprati	●

Parametri di taglio (Guida):
●: Taglio stabile ●: Taglio generico ✱: Taglio instabile

Onatura:
E: Tondo **T:** Smusso

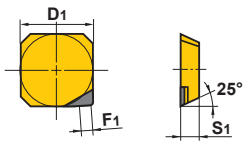
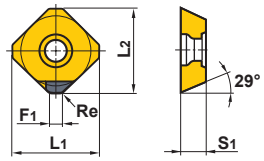
Forma	Codice di ordinazione	Classe	Onatura	Rivestito VP15TF	Cermet NX2525	Metallo duro HTi05T	Dimensioni (mm) L_1	L_2	S_1	F_1	Re	Geometria
ASX400 ➲K026 	**WOEW12T308PEER8C**	E	E			●	12.5	13.2	3.97	8	0.8	
	12T308PETR8C	E	T		●		12.5	13.2	3.97	8	0.8	
VOX400 NEW ➲K022 	**WOEX1206PER5C**	N	E	●			12.5	13.025	5.5	—	—	
FBP415 	**WPC42EEER10C**	C	E			●	12.7	15.163	3.175	10	—	 Inserto destro raffigurato.
	42EEEL10C	C	E			★	12.7	15.163	3.175	10	—	

CBN E PCD

Forma	Codice di ordinazione	Classe	CBN		PCD		Dimensioni (mm)				Geometria
			MB710		MD220		D_1	S_1	F_1	Re	
LSE445 SE445	SECN1203AFFR1	C			★		12.7	3.18	1.4	1.0	
SE415	SECN1203EFFR1	C			★		12.7	3.18	1.4	1.0	
BF407	SFCN1203ZFFR2	C			★		12.7	3.175	2.4	—	
NSE300	TECN1603PEFR1	C			★		9.525	3.175	1.4	0.4	
NSE400	TECN2204PEFR1	C			★		12.7	4.76	1.4	1.0	
PMF K112	TPEW1303ZPTR2	E	●				7.94	3.18	2	—	

● : Inventario mantenuto. ★ : Inventario mantenuto in Giappone.

CBN E PCD CON RASCHIANTE (RASCHIANTE)

Forma	Codice di ordinazione	Classe	CBN		PCD		Dimensioni (mm)						Geometria
			MB710		MD220		L_1	L_2	D_1	S_1	F_1	Re	
BF407	**NP-WFC42ZFER2**	C			★		—	—	12.4	3.175	2.4	—	
													
ASX445 ➲K010	**WEEW13T3AGFR3C**	E			●		16.48	16.6	—	3.97	3.0	1.5	
	**13T3AGTR3C**	E	●				16.48	16.6	—	3.97	3.0	1.5	
BF407	**WFC42ZFER2**	C			●		—	—	12.4	3.175	2.4	—