

● Como están organizados los insertos para herramientas rotativas

- ① Clasificado por insertos para herramientas de fresado, insertos wiper e insertos de barrenado
- ② Organizados por orden alfabético de descripción.

**DESCRIPCION
DEL INSERTO**

TIPO DE CORTADOR

FOTO DEL INSERTO

PAGINA DE CONSULTA

Indica la referencia de la página donde viene detallada las características del inserto.

GEOMETRIA DEL INSERTO **DIMENSIONES DEL INSERTO**

MARCA DE EXISTENCIA
Se muestra a mano izquierda de cada doble página.

K000

HERRAMIENTAS DE FRESADO

INSERTOS ESTANDAR

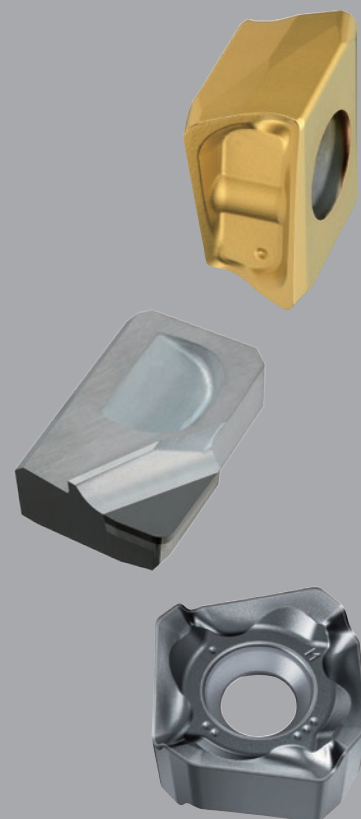
INSERTOS ESTANDAR DE CBN y PCD

GRADO DEL INSERTO

IDENTIFICACION	K002
GRADOS PARA FRESADO	K004
RANGO DE APLICACION PARA FRESADO	K005
GRADOS RECUBIERTOS (CVD Y PVD)	K008
CERMET	K010
CARBURO	K011
CBN (CBN SINTERIZADO)	K012
PCD (DIAMANTE)	K013
CLASIFICACION	K014

INSERTOS DE FRESADO ESTANDAR

INSERTOS DE FRESADO	K024
CBN Y PCD	K050
CBN Y PCD CON WIPER	K052
INSERTOS DE BARRENADO	K053



IDENTIFICACION

■ CODIGO ISO

Símbolo	Geometría de Inserto	
S	Cuadrado	
T	Triángulo	
C	Rómbica 80°	
N	Heptágono	
O	Octagonal	
M	Rómbica 86°	
A	Paralelogramo 85°	
R	Redondo	
X	Diseño Especial	—
W	Wiper	—

① Geometría de Inserto

Símbolo	Angulo de Incidencia AN
C	7° 
D	15° 
E	20° 
F	25° 
G	30° 
N	0° 
P	11° 
O	Otros
X	Otros
Mayor Angulo de Incidencia	

② Angulo de Incidencia

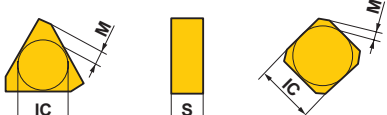
PULGADAS

①	S	E	E	R
②				
③				
④				

METRICO

S	E	E	R
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③ Tolerancia

Tolerancia				
				
Clase	IC		M	S
A	.500	±.001	±.0002	±.001
C	.250 .375	±.001	±.0005	±.001
E	.500 .625	±.001	±.001	±.001
H	.394 .492	±.0005	±.0005	±.001
G	.551	±.001	±.001	±.005
K	.250	±.002	±.0005	±.001
	.375	±.002	±.0005	±.001
	.500	±.003	±.0005	±.001
	.625	±.003	±.0005	±.001
N	.250	±.002	±.003	±.001
	.375	±.002	±.003	±.001
	.500	±.003	±.006	±.001
	.625	±.004	±.006	±.001
M	.250	±.002	±.003	±.005
	.375	±.002	±.003	±.005
	.500	±.003	±.005	±.005
	.625	±.004	±.006	±.005

④ Rompe viruta y Barreno

Métrico				
Símbolo	Barreno	Especificación del Barreno	Rompeviruta	Geometría
W	Con barreno	Barreno Cilíndrico + Cónico (40°—60°)	No	
T	Con barreno		Una cara	
U	Con barreno	Barreno Cilíndrico + Cónico (40°—60°)	Dos caras	
B	Con barreno	Barreno Cilíndrico + Cónico (70°—90°)	No	
N	Sin barreno	—	No	
R	Sin barreno	—	Una cara	
X	—	—	—	Diseño Especial

Nota 1) Símbolo de dimensiones conforme la norma ISO13399. Consulte las paginas P002-P005 para detalles.

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INSERTOS DE FRESADO

Pulgadas		Diámetro del círculo inscrito (pulgadas)	Métrico			
						
		.250		06	06	11
		.313		08	07	13
3	3	.375		09	09	16
		.394	10			
		.472	12			
4	4	.500		12	12	22
5		.625		16	15	27
		.787	20			

⑤ Tamaño de Inserto

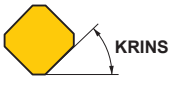
		
Pulgadas	Espesor (pigs)	Métrico
2.5	.156	T3
2	.125	03
3	.187	04

⑥ Espesor del inserto

E		Redondo
F		Filo Vivo
T		Chafilán
S		Chafilán+Honeado
Z		Chafilán

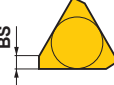
⑨ Condiciones de Filo

⑤ 4 ⑥ 2 ⑦ A ⑧ F ⑨ E ⑩ R ⑪ 1 - JS
 12 03 A F E R 1 - JS

⑦ Angulo de Ataque	
	
A	45°
E	75°
P	90°
Z	Angulo de Otros

⑧ Angulo de Incidencia del wiper	
	
D	15°
E	20°
F	25°
G	30°

⑩ Sentido de Corte	
L	Izquierdo
N	Neutro
R	Derecho

⑪ Ancho de Faceta	
	
1	.055
2	.094

⑫ Rompe Viruta	
Símbolo	Nombre
FT	Rompevirutas FT
HS	Rompevirutas HS
JH	Rompevirutas JH
JM	Rompevirutas JM
JP	Rompevirutas JP
JS	Rompevirutas JS
LS	Rompevirutas LS
MM	Rompevirutas MM
MS	Rompevirutas MS

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INSERTOS DE FRESADO

GRADOS PARA FRESADO

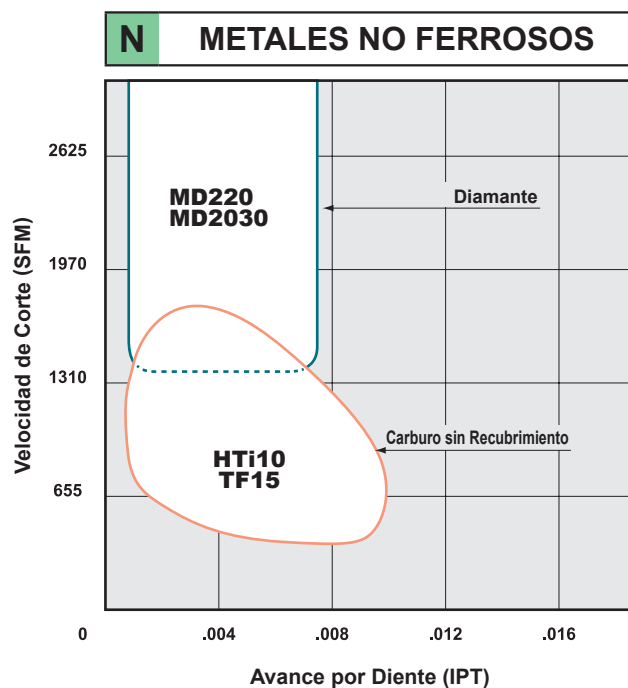
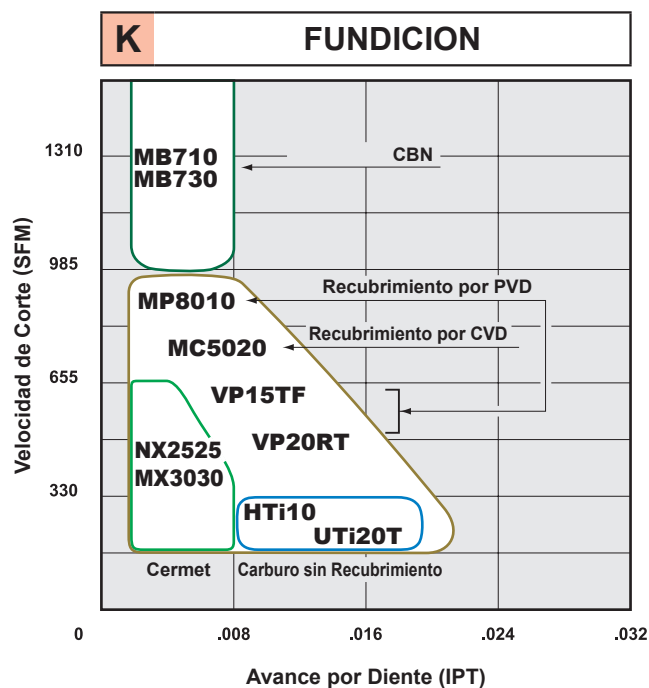
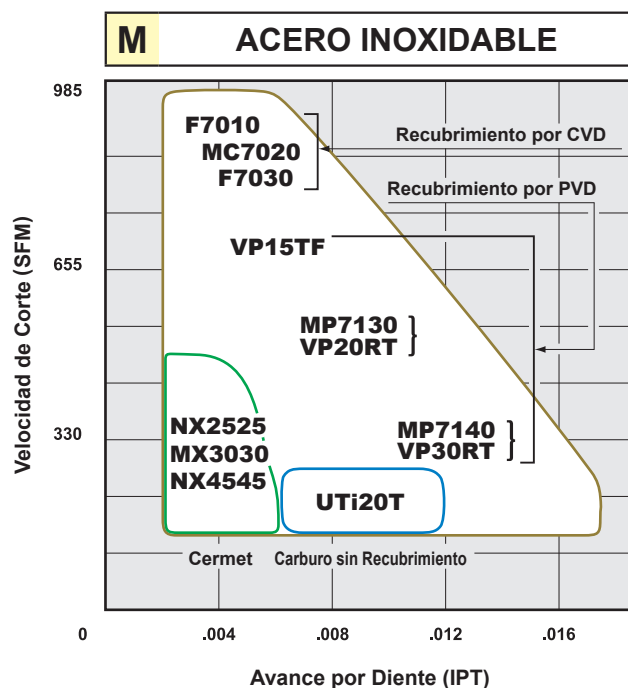
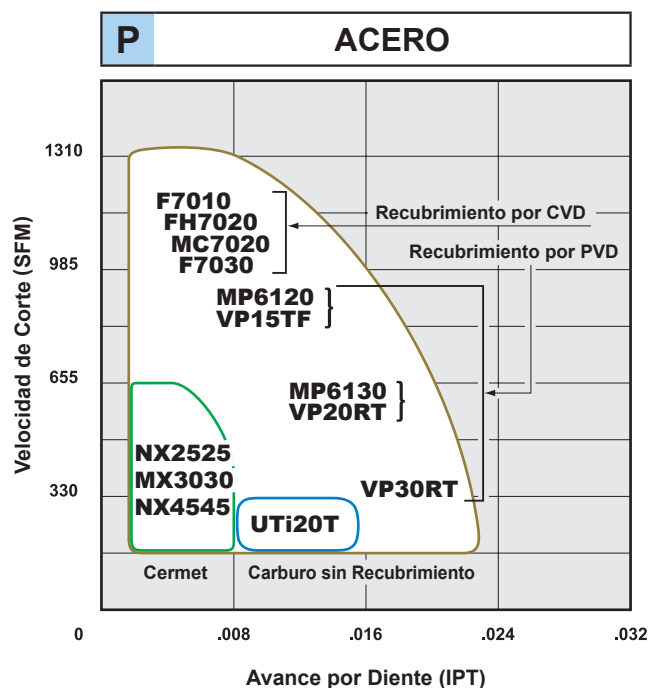
●GRADOS PARA INSERTOS DE FRESADO

ISO	Carburo recubierto		Cermet Recubierto	Cermet	Carburo sin recubrimiento	CBN (CBN sinterizado)	PCD (Diamante sinterizado)
	CVD	PVD					
Acero	P	10					
		20					
		30					
		40					
Acero inoxidable	M	10					
		20					
		30					
		40					
Fundición	K	10					
		20					
		30					
Metales no ferrosos	N	10					
		20					
		30					
Aleaciones termoresistentes • Aleaciones de Ti	S	10					
		20					
		30					
		40					
Acero endurecido	H	10					
		20					
		30					

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INSERTOS DE FRESADO

RANGO DE APLICACION PARA FRESADO

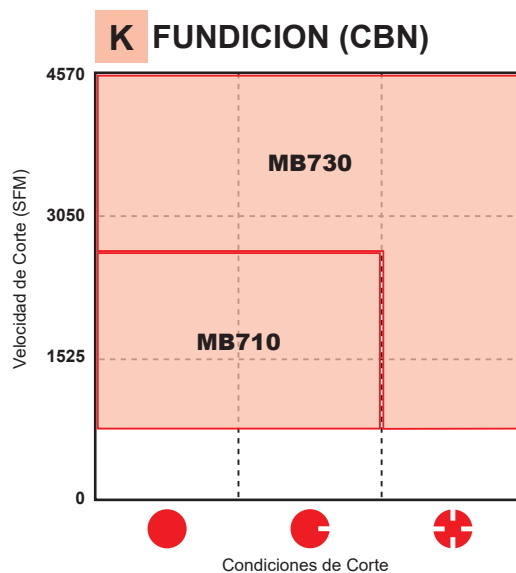
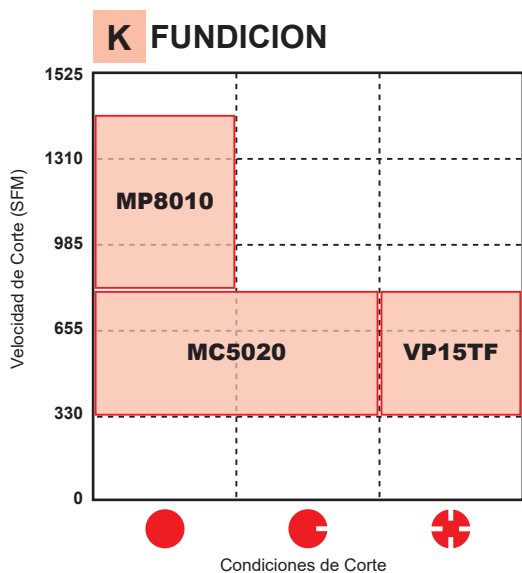
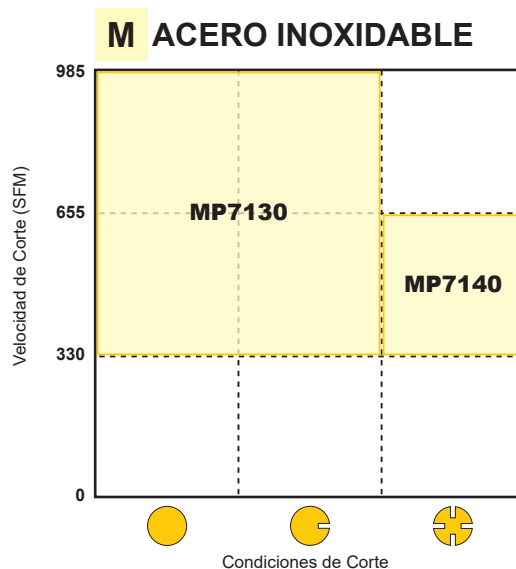
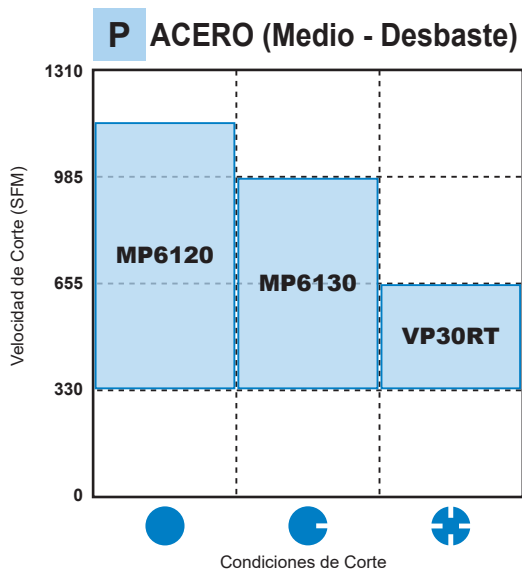


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INSERTOS DE FRESADO

RANGO DE APLICACION PARA FRESADO

- Recomendación del grado principal de inserto basado en la velocidad de corte y condiciones de corte para cada material.



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INSERTOS DE FRESADO

■ CONDICIONES DE CORTE



Corte Estable

Corte continuo
Profundidad constante
Preamaquinado
Sistema de sujeción seguro

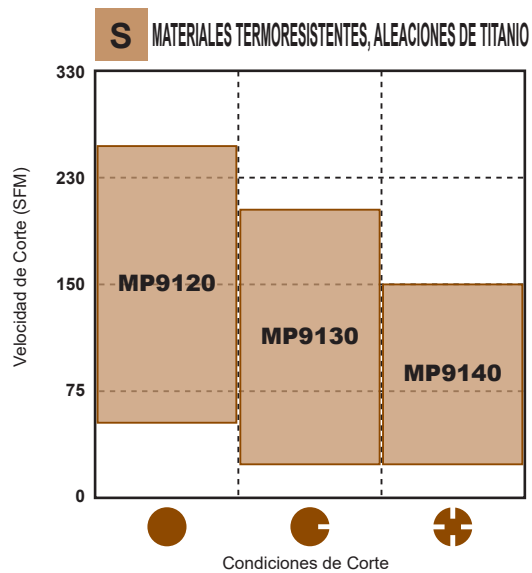
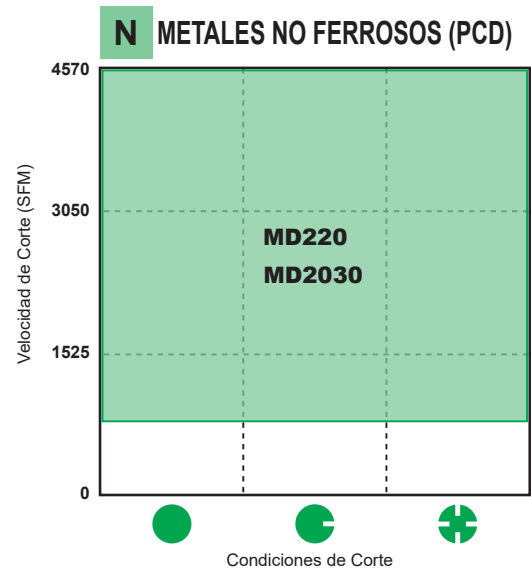
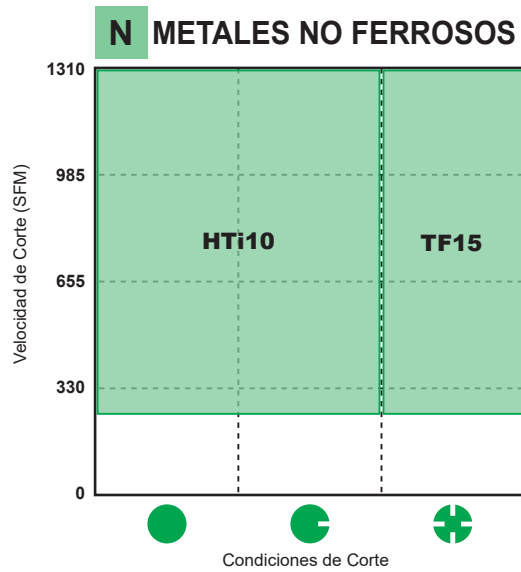


Corte General



Corte Inestable

Corte pesado e interrumpido
Profundidad de corte variable
sujeción de baja rigidez



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INSERTOS DE FRESADO

CARBURO RECUBIERTO (CVD y PVD)

<CVD>

- Estructura especial fibrosa que aumenta la resistencia al desgaste y a la rotura.
- Cubre un rango de aplicación amplio y reduce el número de herramientas requeridas.

<PVD>

- El recubrimiento PVD prolonga la vida útil comparado con el carburo cementado bajo las mismas condiciones de corte.
- El recubrimiento PVD es conveniente para herramientas con filo vivo y es posible sin necesidad de cambiar la calidad o dureza del sustrato.

SELECCION ESTANDAR

FRESADO

Material	Grado Recomendado	Recomendación Velocidad de Corte (SFM)	ISO	Rango de Aplicación
P Acero	F7030	655 (490 – 820)	P 10 20 30 40	
	MC7020	655 (490 – 820)		
	MP6120	490 (330 – 655)		
	MP6130	490 (330 – 655)		
	VP15TF	490 (330 – 655)		
M Acero Inoxidable	F7030	655 (490 – 820)	M 10 20 30 40	
	MC7020	720 (560 – 885)		
	MP7030	490 (330 – 655)		
	MP7130	490 (330 – 655)		
	MP7140	490 (330 – 655)		
	VP15TF	490 (330 – 655)		
K Fundición	MC5020	590 (330 – 820)	K 10 20 30	
	VP15TF	490 (330 – 655)		
N Aluminio Aleado	LC15TF	3280 (655 – 9840)	N 10 20 30	
S Aleaciones Termoresistentes Aleaciones de Titanio	MP9120	100 (65 – 130)	S 10 20 30 40	
	VP15TF	100 (65 – 130)		
	MP9130	80 (65 – 115)		
	NEW MP9140	65 (50 – 100)		
H Acero Endurecido	MP8010	260 (165 – 395)	H 10 20 30	
	VP15TF	260 (165 – 395)		

■ CARACTERISTICAS DE LOS GRADOS

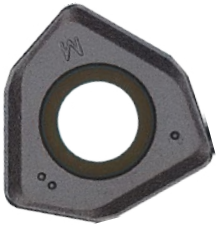
Grado	Sustrato	Capa de Recubrimiento	
	Dureza (HRA)	Composición	Espesor
MC5020	91.0	TiCN-Al ₂ O ₃ -Ti Avance	Grueso
MC7020	88.8	TiCN-Al ₂ O ₃ Avance	Grueso
FH7020	88.8	TiCN-Al ₂ O ₃ -Ti Avance	Grueso
F7030	88.8	TiCN-Al ₂ O ₃ -TiN	Delgado
MP6120	91.5	(Al,Ti,Cr)N	Delgado
MP6130	90.5	(Al,Ti,Cr)N	Delgado
MP7030	90.5	(Al,Ti)N-Ti Avance	Delgado
MP7130	90.5	(Al,Ti)N-Ti Avance	Delgado
MP7140	88.8	(Al,Ti)N-Ti Avance	Delgado

Grado	Sustrato	Capa de Recubrimiento	
	Dureza (HRA)	Composición	Espesor
MP8010	93.5	(Al,Ti,Si)N	Delgado
MP9120	91.5	(Al,Ti,Cr)N	Delgado
MP9130	90.5	(Al,Ti,Cr)N	Delgado
NEW MP9140	89.0	Al-(Al,Ti)N	Delgado
VP15TF	91.5	(Al,Ti)N	Delgado
VP20RT	90.5	(Al,Ti)N	Delgado
VP30RT	88.8	(Al,Ti)N	Delgado
UP20M	90.5	Ti Avance	Delgado

Nota 1) La dureza interna representa los valores típicos que se muestran como dureza.

Para maquinado de Acero y Acero Inoxidable

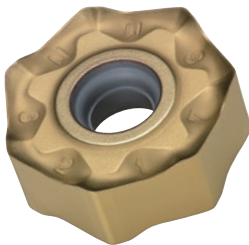
MC7020



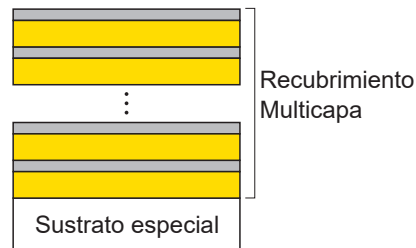
Las capas de micro grano resistentes al desgaste de Al₂O₃ y TiCN fibroso proporcionan una excelente resistencia al desgaste a altas velocidades de corte. El uso de un carburo cementado especialmente desarrollado que proporciona una resistencia superior a la fractura y grietas térmicas que evita la fractura repentina del filo de corte.

Para maquinado de Acero Inoxidable

MP7030



El grado MP7030 tiene una multi capa del nuevo compuesto de Ti recientemente desarrollado, con una resistencia superior al desgaste y a la fractura en el maquinado de acero inoxidable. Un sustrato especial tenaz de carburo cementado proporciona un excelente rendimiento en el maquinado de materiales difíciles de cortar como acero inoxidable.



Maquinado de aleaciones Termoresistentes y aleaciones de Titanio

MP9130



Un sustrato de carburo cementado súper fino mejorado a aumentado la tenacidad mientras mantiene la dureza. El recubrimiento acumulado de Al-Ti-Cr-N asegura una resistencia óptima al calor y al desgaste. La combinación de estas propiedades da como resultado una excelente resistencia a la fractura y a la soldadura gracias al bajo coeficiente de fricción cuando se maquina aleaciones de titanio.

NEW

MP9140



La nueva tecnología de recubrimiento Al-(Al, Ti)N proporciona estabilización de la fase de alta dureza y mejora dramáticamente la resistencia al desgaste, craterización y soldadura.

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INSERTOS DE FRESADO

K009

CERMET

- NX2525 para Fresado a alta velocidad.
- MX3030, NX4545 para Fresado General.

SELECCION ESTANDAR FRESADO

Material	Grado Recomendado	Recomendación Velocidad de Corte (SFM)	ISO	Rango de Aplicación
P Acero	NX2525	820 (490 – 1150)	P 10	NX2525 MX3030 NX4545
	MX3030 NX4545	490 (390 – 590)	M 20 30	
K Fundición	NX2525	655 (490 – 985)	K 10	
	MX3030	490 (390 – 590)	K 20	MX3030

Nota 1) En caso de corte con refrigerante utilice grado VP15TF para maquinar acero y grado MC5020 para fundición.

CARACTERISTICAS DE LOS GRADOS

Grado	Dureza (HRA)
NX2525	92.2
MX3030	90.0
NX4545	90.0

Nota 1) La dureza interna representa los valores típicos que se muestran como dureza

K

INSERTOS DE FRESADO

CARBURO

● Disponible en UTi20T para acero y fundición y HTi10 para fundición, metales no ferrosos y no metales.

SELECCION ESTANDAR

FRESADO

Material	Grado Recomendado	Recomendación Velocidad de Corte (SFM)	ISO	Rango de Aplicación
P Acero	UTi20T	395 (165 — 590)	10	
			20	
			30	UTi20T
M Acero Inoxidable	UTi20T	395 (165 — 590)	10	
			20	
			30	UTi20T
K Fundición	HTi10	330 (165 — 490)	10	HTi10
	UTi20T	395 (165 — 590)	20	
			30	UTi20T
N Metales no ferrosos	HTi10 TF15	1310 (985 — 1640)	10	HTi10
			20	
			30	TF15

COMPONENTES Y APLICACION

ISO	Componentes	Características	Material
P M	WC-TiC-TaC-Co	Resistencia a la térmica / deformación	Acero al carbón, Acero aleado, Acero inoxidable y Fundición
K N	WC-Co	Alta rigidez y resistencia al desgaste.	Fundición, Metales no ferrosos y No-metálicos

CARACTERISTICAS DE LOS GRADOS

ISO	Grado	Dureza (HRA)
P M	UTi20T	90.5
K N	HTi05T	92.5
	HTi10	92.0
N	TF15	91.5

Nota 1) La dureza interna representa los valores típicos que se muestran como dureza

K

INSERTOS DE FRESADO

CBN (CBN SINTERIZADO)



- Grados MB710 y MB730 para maquinado de fundición.
- Grado BC5030 disponible para maquinado de alta velocidad en fundición.
- Gracias a la combinación del grado BC5030 y la geometría del inserto para el cortador AOX se pueden utilizar hasta 16 filos por inserto, lo cual permite un maquinado rentable de alta eficiencia.

SELECCION ESTANDAR / CONDICIONES DE CORTE RECOMENDADAS

ACABADO

Material	Estructura	Velocidad de Corte (SFPM)					Avance por Diente (IPT)	Prof. de corte (plgs)	Refrigerante
		820	1640	2460	3280	4100			
Fundición Gris	JIS FC250	MB710 MB730					— .012	— .020	Seco
	JIS FC300								

DESBASTE

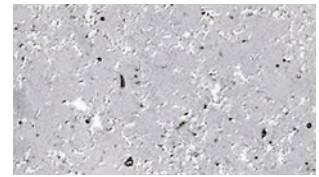
Material	Estructura	Velocidad de Corte (SFM)					Avance por Diente (IPT)	Prof. de corte (plgs)	Refrigerante
		820	1640	3280	4920	6560			
Fundición Gris	JIS FC250			BC5030			— .006	— .118	Seco

CARACTERISTICAS Y COMPONENTES

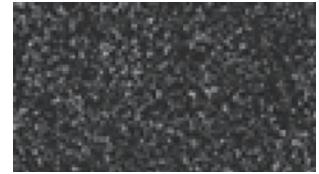
Grado	Aplicación	Características	Componentes	Recubrimiento
MB710	Para Corte General	Grado de uso general con un excelente balance de resistencia al desgaste y a la fractura.	CBN TiC Al ₂ O ₃	—
MB730	Para Corte a Alta Velocidad Para corte Interrumpido	MB730 tiene un alto contenido de CBN por eso es un buen conductor térmico. Es adecuado para altas temperaturas generadas por alta velocidad.	CBN (Alto contenido) Aleación a Base Cobalto	—
BC5030	Maquinado a alta velocidad en grandes profundidades de corte Maquinado interrumpido a alta velocidad en grandes profundidades de corte	El alto contenido de CBN y un alta conductividad térmica. Todo el inserto está compuesto de CBN sinterizado, esto permite altas velocidades, alta eficiencia en el maquinado de grandes profundidades de corte. Grado recubierto para fácil identificación de los filos usados.	CBN AIN	TiN

PCD (DIAMANTE SINTERIZADO)

- Corte adecuado para Aluminio y Metales no Ferrosos.
- Adecuado para acabado con súper alta velocidad.



Micro-estructura del grado MD220



Micro-estructura del grado MD2030

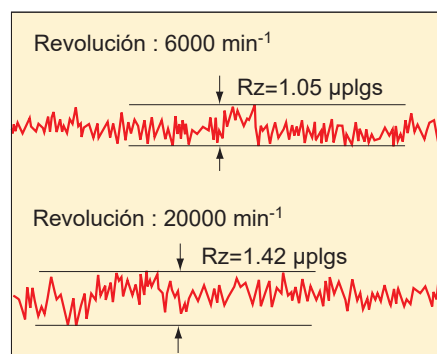
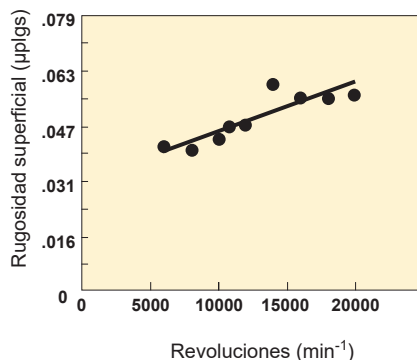
■ CARACTERÍSTICAS DE LOS GRADOS

Grado	Características
MD220	Excelente balance entre resistencia al desgaste y resistencia a la fractura. Rango de aplicación amplio.
MD2030	Mejor resistencia a la fractura cuando se utiliza en aplicaciones inestables. La estabilidad del filo de corte permite maquinar en una amplia variedad de materiales y condiciones de trabajo.

■ CONDICIONES DE CORTE RECOMENDADAS

Material	Velocidad de Corte (SFM)	Grado	Avance por Diente (IPT)	Prof. de corte (plgs)
Aluminio Aleado (Si ≤12%)	3280—19685	MD220 MD2030	—.012	—.020
Aluminio Aleado (Si ≥13%)	655—2625			

■ RENDIMIENTO DE CORTE



<Condiciones de Corte>

Material : Aluminio Aleado
 Inserto : NP-GDCW1240PDFR2
 Grado : MD220
 Herramienta : V10000R0406D
 Avance por Diente : .008 IPT
 Prof. de corte : .020 plgs
 Ancho de Corte : 3.150 plgs
 Corte Seco

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INSERTOS DE FRESADO

CLASIFICACION

Descripción	Descripción (ISO)	Geometría	Página	Descripción	Descripción (ISO)	Geometría	Página
AEMW150304ER	AEMW150304ER	BAE500	K030	APMT1135PDER-M0	APMT1135PDER-M0	BAP300	K031
AEMW150308ER	AEMW150308ER			APMT1135PDER-M1	APMT1135PDER-M1		
				APMT1135PDER-M2	APMT1135PDER-M2		
AEMW19T304ER	AEMW19T304ER	BAE600	K031	APGT1604PDFR-G2	APGT1604PDFR-G2	BAP400	K031
AEMW19T308ER	AEMW19T308ER						
AOGT123602PEFR-GM	AOGT123602PEFR-GM	APX3000	K026	APMT1604PDER-H1	APMT1604PDER-H1		K031
AOGT123604PEFR-GM	AOGT123604PEFR-GM	⤵L096		APMT1604PDER-H2	APMT1604PDER-H2		
AOGT123608PEFR-GM	AOGT123608PEFR-GM			APMT1604PDER-H4	APMT1604PDER-H4		
				APMT1604PDER-H6	APMT1604PDER-H6		
AOMT123604PEER-H	AOMT123604PEER-H		K026	APMT1604PDER-H8	APMT1604PDER-H8		K031
AOMT123608PEER-H	AOMT123608PEER-H			APMT1604PDER-M2	APMT1604PDER-M2		
AOMT123616PEER-H	AOMT123616PEER-H						
AOMT123602PEER-M	AOMT123602PEER-M		K026	CCMX083508ENA	CCMX083508EN-A	LER	K035
AOMT123604PEER-M	AOMT123604PEER-M			CCMX09T308ENA	CCMX09T308EN-A	⤵L194	
AOMT123608PEER-M	AOMT123608PEER-M						K035
AOMT123610PEER-M	AOMT123610PEER-M						
AOMT123612PEER-M	AOMT123612PEER-M						K035
AOMT123616PEER-M	AOMT123616PEER-M						
AOMT123620PEER-M	AOMT123620PEER-M						
AOMT123624PEER-M	AOMT123624PEER-M						
AOMT123630PEER-M	AOMT123630PEER-M						
AOMT123632PEER-M	AOMT123632PEER-M						
AOMT184804PEER-H	AOMT184804PEER-H	APX4000	K026	CPMT1205ZPEN-M2	CPMT1205ZPEN-M2	PMR	K036
AOMT184808PEER-H	AOMT184808PEER-H	⤵L110		CPMT1205ZPEN-M3	CPMT1205ZPEN-M3	⤵L291	
AOMT184816PEER-H	AOMT184816PEER-H						
AOMT184832PEER-H	AOMT184832PEER-H						
AOMT184840PEER-H	AOMT184840PEER-H						
AOMT184850PEER-H	AOMT184850PEER-H			GOER1404PXFR2	GOER1404PXFR2	FMAX	K051
AOMT184864PEER-H	AOMT184864PEER-H			GOER1408PXFR2	GOER1408PXFR2	⤵L070	
							
AOMT184804PEER-M	AOMT184804PEER-M		K026				K051
AOMT184808PEER-M	AOMT184808PEER-M						
AOMT184810PEER-M	AOMT184810PEER-M						K051
AOMT184812PEER-M	AOMT184812PEER-M						
AOMT184816PEER-M	AOMT184816PEER-M						
AOMT184820PEER-M	AOMT184820PEER-M						K051
APGT1135PDFR-G2	APGT1135PDFR-G2	BAP300	K031				
							
APMT1135PDER-H1	APMT1135PDER-H1		K031				K051
APMT1135PDER-H2	APMT1135PDER-H2						
APMT1135PDER-H6	APMT1135PDER-H6						

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HNMX1206EN06-R	HNMX1206EN06-R	BMR L292 	K032	LNGU130804PNER-M	LNGU130804PNER-M	VAS400 Cortador Lateral L088 	K043
				LNGU130804PNEL-M	LNGU130804PNEL-M		
				LNGU130808PNER-M	LNGU130808PNER-M		
				LNGU130808PNEL-M	LNGU130808PNEL-M		
HNMX1206ER12-R	HNMX1206ER12-R		K032	LNGU130812PNER-M	LNGU130812PNER-M		
				LNGU130812PNEL-M	LNGU130812PNEL-M		
				LNGU130816PNER-M	LNGU130816PNER-M		
				LNGU130816PNEL-M	LNGU130816PNEL-M		
JOMW06T215ZZSR-FT	JOMW06T215ZZSR-FT	AJX L206 	K025	LNGU130820PNER-M	LNGU130820PNER-M		
JOMW080320ZZSR-FT	JOMW080320ZZSR-FT			LNGU130820PNEL-M	LNGU130820PNEL-M		
JDMW09T320ZDSR-FT	JDMW09T320ZDSR-FT			LNGU130824PNER-M	LNGU130824PNER-M		
JDMW120420ZDSR-FT	JDMW120420ZDSR-FT			LNGU130824PNEL-M	LNGU130824PNEL-M		
JDMW140520ZDSR-FT	JDMW140520ZDSR-FT			LNGU130830PNER-M	LNGU130830PNER-M		
JOMT06T216ZZER-JL	JOMT06T216ZZER-JL		K025	LNGU130830PNEL-M	LNGU130830PNEL-M		
JOMT080322ZZER-JL	JOMT080322ZZER-JL			LNGU130840PNER-M	LNGU130840PNER-M		
JDMT09T323ZDER-JL	JDMT09T323ZDER-JL		K025	LNGU130840PNEL-M	LNGU130840PNEL-M		
JDMT120423ZDER-JL	JDMT120423ZDER-JL			LNGU130850PNER-M	LNGU130850PNER-M		
JDMT140523ZDER-JL	JDMT140523ZDER-JL			LNGU130850PNEL-M	LNGU130850PNEL-M		
JOMT06T215ZZSR-JM	JOMT06T215ZZSR-JM		K025	NEW LNGU130804PNER-R	LNGU130804PNER-R		
JOMT080320ZZSR-JM	JOMT080320ZZSR-JM			NEW LNGU130804PNEL-R	LNGU130804PNEL-R		
JDMT09T320ZDSR-JM	JDMT09T320ZDSR-JM		K025	NEW LNGU130808PNER-R	LNGU130808PNER-R		
JDMT120420ZDSR-JM	JDMT120420ZDSR-JM			NEW LNGU130808PNEL-R	LNGU130808PNEL-R		
JDMT140520ZDSR-JM	JDMT140520ZDSR-JM			NEW LNGU130812PNER-R	LNGU130812PNER-R		
JDMT120420ZDSR-ST	JDMT120420ZDSR-ST		K025	NEW LNGU130812PNEL-R	LNGU130812PNEL-R		
JDMT140520ZDSR-ST	JDMT140520ZDSR-ST			NEW LNGU130816PNER-R	LNGU130816PNER-R		
				NEW LNGU130816PNEL-R	LNGU130816PNEL-R		
				NEW LNGU130820PNER-R	LNGU130820PNER-R		
JOMU140715ZZER-L	JOMU140715ZZER-L	WJX L224 NEW 	K047	NEW LNGU130820PNEL-R	LNGU130820PNEL-R		
JOMU140715ZZER-M	JOMU140715ZZER-M			NEW LNGU130824PNER-R	LNGU130824PNER-R		
JOMU140715ZZER-R	JOMU140715ZZER-R			NEW LNGU130824PNEL-R	LNGU130824PNEL-R		
				NEW LNGU130830PNER-R	LNGU130830PNER-R		
				NEW LNGU130830PNEL-R	LNGU130830PNEL-R		
JPMT060204-E	JPMT060204-E		K049	NEW LNGU130840PNER-R	LNGU130840PNER-R		
				NEW LNGU130840PNEL-R	LNGU130840PNEL-R		
				NEW LNGU130850PNER-R	LNGU130850PNER-R		
				NEW LNGU130850PNEL-R	LNGU130850PNEL-R		
JPMX140412-JM	JPMX140412-JM	SPX L180 	K039				
JPMX190412-JM	JPMX190412-JM						
JPMX140412-WH	JPMX140412-WH		K039				
JPMX190412-WH	JPMX190412-WH						

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LNGU171004PNER-R	LNGU171004PNER-R	VAS500 Cortador Lateral ⊖L092 	K044	LOGU0904020PNER-M	LOGU0904020PNER-M	VPX200 ⊖L124 NEW 	K046
LNGU171004PNEL-R	LNGU171004PNEL-R			LOGU0904040PNER-M	LOGU0904040PNER-M		
LNGU171008PNER-R	LNGU171008PNER-R			LOGU0904080PNER-M	LOGU0904080PNER-M		
LNGU171008PNEL-R	LNGU171008PNEL-R			LOGU0904100PNER-M	LOGU0904100PNER-M		
LNGU171012PNER-R	LNGU171012PNER-R			LOGU0904120PNER-M	LOGU0904120PNER-M		
LNGU171012PNEL-R	LNGU171012PNEL-R			LOGU0904160PNER-M	LOGU0904160PNER-M		
LNGU171016PNER-R	LNGU171016PNER-R			LOGU0904020PNFR-M	LOGU0904020PNFR-M		
LNGU171016PNEL-R	LNGU171016PNEL-R			LOGU0904040PNFR-M	LOGU0904040PNFR-M		
LNGU171020PNER-R	LNGU171020PNER-R			LOGU0904080PNFR-M	LOGU0904080PNFR-M		
LNGU171020PNEL-R	LNGU171020PNEL-R			LOGU0904100PNFR-M	LOGU0904100PNFR-M		
LNGU171024PNER-R	LNGU171024PNER-R			LOGU0904120PNFR-M	LOGU0904120PNFR-M		
LNGU171024PNEL-R	LNGU171024PNEL-R			LOGU0904160PNFR-M	LOGU0904160PNFR-M		
LNGU171030PNER-R	LNGU171030PNER-R			LOGU1207020PNER-M	LOGU1207020PNER-M	VPX300 ⊖L140 NEW 	K047
LNGU171030PNEL-R	LNGU171030PNEL-R			LOGU1207040PNER-M	LOGU1207040PNER-M		
LNGU171040PNER-R	LNGU171040PNER-R			LOGU1207080PNER-M	LOGU1207080PNER-M		
LNGU171040PNEL-R	LNGU171040PNEL-R			LOGU1207100PNER-M	LOGU1207100PNER-M		
LNGU171050PNER-R	LNGU171050PNER-R			LOGU1207120PNER-M	LOGU1207120PNER-M		
LNGU171050PNEL-R	LNGU171050PNEL-R			LOGU1207160PNER-M	LOGU1207160PNER-M		
LNGU171060PNER-R	LNGU171060PNER-R			LOGU1207200PNER-M	LOGU1207200PNER-M		
LNGU171060PNEL-R	LNGU171060PNEL-R			LOGU1207240PNER-M	LOGU1207240PNER-M		
LNGU171070PNER-R	LNGU171070PNER-R			LOGU1207300PNER-M	LOGU1207300PNER-M		
LNGU171070PNEL-R	LNGU171070PNEL-R			LOGU1207320PNER-M	LOGU1207320PNER-M		
LOGU0904020PNER-L	LOGU0904020PNER-L	VPX200 ⊖L124 NEW 	K046	LOGU1207020PNFR-M	LOGU1207020PNFR-M		
LOGU0904040PNER-L	LOGU0904040PNER-L			LOGU1207040PNFR-M	LOGU1207040PNFR-M		
LOGU0904080PNER-L	LOGU0904080PNER-L			LOGU1207080PNFR-M	LOGU1207080PNFR-M		
LOGU0904100PNER-L	LOGU0904100PNER-L			LOGU1207100PNFR-M	LOGU1207100PNFR-M		
LOGU0904120PNER-L	LOGU0904120PNER-L			LOGU1207120PNFR-M	LOGU1207120PNFR-M		
LOGU0904160PNER-L	LOGU0904160PNER-L			LOGU1207160PNFR-M	LOGU1207160PNFR-M		
LOGU0904020PNFR-L	LOGU0904020PNFR-L			LOGU1207200PNFR-M	LOGU1207200PNFR-M		
LOGU0904040PNFR-L	LOGU0904040PNFR-L			LOGU1207240PNFR-M	LOGU1207240PNFR-M		
LOGU0904080PNFR-L	LOGU0904080PNFR-L			LOGU1207300PNFR-M	LOGU1207300PNFR-M		
LOGU0904100PNFR-L	LOGU0904100PNFR-L			LOGU1207320PNFR-M	LOGU1207320PNFR-M		
LOGU0904120PNFR-L	LOGU0904120PNFR-L						
LOGU0904160PNFR-L	LOGU0904160PNFR-L						

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MPMX120412-JM	MPMX120412-JM	SPX ⊕L180 	K039
MPMX120412-WH	MPMX120412-WH		K039
NNMU130508ZER-L	NNMU130508ZER-L	AHX440S ⊕L038 	K024
NNMU130508ZEN-M	NNMU130508ZEN-M		
NNMU130532ZEN-M	NNMU130532ZEN-M		
NNMU130532ZEN-R	NNMU130532ZEN-R		
NNMU200608ZEN-HK	NNMU200608ZEN-HK	AHX640S ⊕L048 AHX640W ⊕L060 	K024
NNMU200608ZEN-MK	NNMU200608ZEN-MK		K024
NNMU200708ZEN-M	NNMU200708ZEN-M	AHX640S ⊕L048 	K024
NNMU200708ZEN-MP	NNMU200708ZEN-MP		K024
NNMU200712ZER-L	NNMU200712ZER-L		K025
NNMU200712ZER-MM	NNMU200712ZER-MM		K024
NP-GDCN2004PDSR3	NP-GDCN2004PDSR3	NF10000 	K051
NP-WEEW13T3AGFR3C	NP-WEEW13T3AGFR3C	ASX445 ⊕L030 	K052
NP-WEEW13T3AGTR3C	NP-WEEW13T3AGTR3C		
NP-WFC42ZFER2	NP-WFC42ZFER2	BF407 	K052
NP-WFC42ZFER6	NP-WFC42ZFER6		

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OEMX12T3ETR1	OEMX12T3ETR1	BOE ⊕L256 	K032
OEMX12T3ESR1	OEMX12T3ESR1		
OEMX1705ETR1	OEMX1705ETR1		
OEMX1705ESR1	OEMX1705ESR1		
OEMX12T3EER1-JS	OEMX12T3EER1-JS		K033
OEMX12T3ETR1-JS	OEMX12T3ETR1-JS		
OEMX1705EER1-JS	OEMX1705EER1-JS		
OEMX1705ETR1-JS	OEMX1705ETR1-JS		
OEMX12T3ETR1	OEMX12T3ETR1		K050
OEMX12T3ETR5	OEMX12T3ETR5		
QOGT0830R-G1	QOGT0830R-G1	AQX ⊕L196 	K027
QOGT0934R-G1	QOGT0934R-G1		
QOGT1443R-G1	QOGT1443R-G1		
QOGT1651R-G1	QOGT1651R-G1		
QOGT1959R-G1	QOGT1959R-G1		
QOMT0830R-M2	QOMT0830R-M2		K027
QOMT0934R-M2	QOMT0934R-M2		
QOMT1443R-M2	QOMT1443R-M2		
QOMT1651R-M2	QOMT1651R-M2		
QOMT1959R-M2	QOMT1959R-M2		
QOGT0830R-G1	QOGT0830R-G1	AQX(METRICO) ⊕L196 	K027
QOGT1035R-G1	QOGT1035R-G1		
QOGT1342R-G1	QOGT1342R-G1		
QOGT1651R-G1	QOGT1651R-G1		
QOGT1856R-G1	QOGT1856R-G1		
QOGT2062R-G1	QOGT2062R-G1		
QOGT2576R-G1	QOGT2576R-G1		
QOMT0830R-M2	QOMT0830R-M2		K027
QOMT1035R-M2	QOMT1035R-M2		
QOMT1342R-M2	QOMT1342R-M2		
QOMT1651R-M2	QOMT1651R-M2		
QOMT1856R-M2	QOMT1856R-M2		
QOMT2062R-M2	QOMT2062R-M2		
QOMT2576R-M2	QOMT2576R-M2		
RPHT1040M0E4-L	RPHT1040M0E4-L	ARP ⊕L236 	K027
RPHT1040M0E4-M	RPHT1040M0E4-M		
RPHT1040M0E4-R	RPHT1040M0E4-R		
RPHT1248M0E4-L	RPHT1248M0E4-L		
RPHT1248M0E4-M	RPHT1248M0E4-M		
RPHT1248M0E4-R	RPHT1248M0E4-R		
RPMT1040M0E4-L	RPMT1040M0E4-L		
RPMT1040M0E4-M	RPMT1040M0E4-M		
RPMT1040M0E4-R	RPMT1040M0E4-R		
RPMT1248M0E4-L	RPMT1248M0E4-L		
RPMT1248M0E4-M	RPMT1248M0E4-M		
RPMT1248M0E4-R	RPMT1248M0E4-R		

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RDMW0517M0E	RDMW0517M0E	ARX(METRICO) L248 	K027
RDMW0620M0E	RDMW0620M0E		
RDMW0724M0E	RDMW0724M0E		
REMX1705EN	REMX1705EN	BOE L256 	K033
REMX1705SN	REMX1705SN		
REMX12T3EN-JS	REMX12T3EN-JS		K033
REMX1705EN-JS	REMX1705EN-JS		
RGEN2004EN	RGEN2004M0EN	SG20 	K038
RGEN2004SN	RGEN2004M0SN		
RPMT07T200E-JS	RPMT07T200E-JS	BRP L252 	K033
RPMT09T300E-JS	RPMT09T300E-JS		
RPMT120400E-JS	RPMT120400E-JS		K033
RPMT150600E-JS	RPMT150600E-JS		
RPMW120400E	RPMW120400E		
RPMW150600E	RPMW150600E		
SDEN42AEN	SDEN1203AEN	Angulo de ataque 45° Positivos de 15° 	K048
SDKN42AEN	SDKN1203AEN		
SDKN42AETN	SDKN1203AETN		
SDKN53AETN	SDKN1504AETN		
SEEN42EFFF1	SEEN1203EFFF1	SE415 	K037
SEEN42EFER1	SEEN1203EFER1		
SEEN42EFTR1	SEEN1203EFTR1		K037
SEEN42EFSR1	SEEN1203EFSR1		
SEKN42EFSR1	SEKN1203EFSR1		
SEKN42EFTR1	SEKN1203EFTR1		K037
SEKN42EFTR	SEKN1203EFTR		
SEER42EFER-JS	SEER1203EFER-JS		K037

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SECN42AFTN1	SECN1203AFTN1	SE445 	K037
SEEN42AFFN1	SEEN1203AFFN1		
SEEN42AFEN1	SEEN1203AFEN1		
SEEN42AFTN1	SEEN1203AFTN1		
SEEN42AFSN1	SEEN1203AFSN1		
SEEN42AFXN1	SEEN1203AFXN1		
SEKN42AFSN1	SEKN1203AFSN1		K037
SEKN42AFTN1	SEKN1203AFTN1		
SEKN42AFTN	SEKN1203AFTN		
SEER42AFEN-JS	SEER1203AFEN-JS		K037
SEER42AFXN-JS	SEER1203AFXN-JS		
SECN42AFFR1	SECN1203AFFR1		K052
SEEN53EFER1	SEEN1504EFER1	SE515 	K038
SEEN53AFEN1	SEEN1504AFEN1	SE545 	K038
SEEN53AFTN1	SEEN1504AFTN1		
SEEN53AFSN1	SEEN1504AFSN1		
SEKN53AFSN1	SEKN1504AFSN1		K038
SEKN53AFTN1	SEKN1504AFTN1		
SEER53AFEN-JS	SEER1504AFEN-JS		K038
SEET13T3AGEN-JL	SEET13T3AGEN-JL	ASX445 L030 	K028
SEMT13T3AGSN-JM	SEMT13T3AGSN-JM		K029
SEMT13T3AGSN-JH	SEMT13T3AGSN-JH		K029
SEMT13T3AGSN-FT	SEMT13T3AGSN-FT		K029
SEGT13T3AGFN-JP	SEGT13T3AGFN-JP		K029

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SEER43AFEN-JS	SEER1204AFEN-JS	Angulo de ataque 45° Positivos de 20° 	K048	SOMT12T308PEER-JH	SOMT12T308PEER-JH	ASX400 	K028
SEKN42AGTN	SEKN1203AGTN	Angulo de ataque 45° Positivos de 20° 	K048	SOMT12T320PEER-FT	SOMT12T320PEER-FT		K028
SFAN42ZFFR2	SFAN1203ZFFR2	BF407 	K032	SOGT12T308PEFR-JP	SOGT12T308PEFR-JP		K028
SFAN42ZFFL2	SFAN1203ZFFL2						
SFCN42ZFFR2	SFCN1203ZFFR2						
SFCN42ZFFR2	SFCN1203ZFFR2		K050	SONX1206PER	SONX1206PER	VOX400  Cortador Lateral VOS 	K046
				SONX1206PEL	SONX1206PEL		
SL-ONEN120404ASN	SL-ONEN120404ASN	AOX445  	K050	SPEN42EEER1	SPEN1203EEER1	FBP415 	K034
				SPEN42EEEL1	SPEN1203EEEL1		K035
SNMN432	SNMN120408	Negativos 	K049	SPNN42EEER1	SPNN1203EEER1		K035
SNMN433	SNMN120412			SPNN42EEEL1	SPNN1203EEEL1		
SNMU140812ANER-M	SNMU140812ANER-M	WSX445  	K047	SPER42EEER-JS	SPER1203EEER-JS		K035
SNMU140812ANEL-M	SNMU140812ANEL-M						
SNMU140812ANER-R	SNMU140812ANER-R			SPEN42EETR1	SPEN1203EETR1		K050
SNMU140812ANEL-R	SNMU140812ANEL-R						
SNMU140812ANER-H	SNMU140812ANER-H			SPKN42EDR	SPKN1203EDR	Angulo de ataque 15° Positivos de 11° 	K048
SNGU140812ANER-L	SNGU140812ANER-L			SPKN53EDR	SPKN1504EDR		
NEW SNGU140812ANEL-L	SNGU140812ANEL-L			SPMB1204APT	SPMB1204APT	BSP 	K033
SNGU140812ANER-M	SNGU140812ANER-M			SPMM432A	SPMT120408-A		K042
SNGU140812ANEL-M	SNGU140812ANEL-M					TBE1 	
SNGU140812ANFR-L	SNGU140812ANFR-L			SPMN421	SPMN120304	Positivos de 11° 	K049
NEW SNGU140812ANFL-L	SNGU140812ANFL-L			SPMN421T	SPMN120304T		
WNGU1406ANEN8C-M	WNGU1406ANEN8C-M		K048	SPMN422	SPMN120308		
SOET12T308PEER-JL	SOET12T308PEER-JL	ASX400  	K028	SPMN423	SPMN120312		
SOMT12T308PEER-JM	SOMT12T308PEER-JM	ASX400  Cortador Lateral ASX  	K028	SPMN432	SPMN120408		
SOMT12T308PEEL-JM	SOMT12T308PEEL-JM			SPMN433	SPMN120412		
				SPMN532	SPMN150408		

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SPMW321	SPMW090304	CFSP ➔L260 	K034	SRM212C	SRM212C	SRM2 ➔L274 	K041
SPMW322	SPMW090308			SRM216C	SRM216C		
SPMW421	SPMW120304			SRM220C	SRM220C		
SPMW422	SPMW120308						
SPMX120408-JM	SPMX120408-JM	SPX ➔L180 	K039	SRM212E	SRM212E		K041
				SRM216E	SRM216E		
			K039	SRM210C-M	SRM210C-M		K041
SPMX120408-WH	SPMX120408-WH			SRM212C-M	SRM212C-M		
				SRM216C-M	SRM216C-M		
				SRM220C-M	SRM220C-M		
SRFT0375	SRFT0375	SRF ➔L262 	K040	SRM210E-M	SRM210E-M		K041
SRFT0500	SRFT0500			SRM212E-M	SRM212E-M		
SRFT0625	SRFT0625			SRM216E-M	SRM216E-M		
SRFT0750	SRFT0750			SRM220E-M	SRM220E-M		
SRFT1000	SRFT1000						
SRFT1250	SRFT1250						
SRFT10	SRFT10	SRF(METRICO) ➔L262 	K040	SRM16C-M	SRM16C-M	SRM2(METRICO) ➔L274 	K041
SRFT12	SRFT12			SRM20C-M	SRM20C-M		
SRFT16	SRFT16			SRM25C-M	SRM25C-M		
SRFT20	SRFT20			SRM30C-M	SRM30C-M		
SRFT25	SRFT25			SRM32C-M	SRM32C-M		K042
SRFT30	SRFT30			SRM16E-M	SRM16E-M		
SRFT32	SRFT32			SRM20E-M	SRM20E-M		
				SRM25E-M	SRM25E-M		
SRG40C	SRG40C	SRM2 40/50 ➔L286 	K042	SRM30E-M	SRM30E-M		
SRG50C	SRG50C			SRM32E-M	SRM32E-M		
SRG40E	SRG40E		K042				
SRG50E	SRG50E						
SRG16C	SRG16C	SRM2(METRICO) ➔L274 	K041				
SRG20C	SRG20C						
SRG25C	SRG25C						
SRG30C	SRG30C						
SRG32C	SRG32C						
SRG16E	SRG16E		K041				
SRG20E	SRG20E						
SRG25E	SRG25E						
SRG30E	SRG30E						
SRG32E	SRG32E						

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INSERTOS DE FRESADO

Descripción	Descripción (ISO)	Geometría	Página
SUFT10R05	SUFT10R05	SUF(METRICO) ↻L262	K040
SUFT10R10	SUFT10R10		
SUFT10R20	SUFT10R20		
SUFT12R05	SUFT12R05		
SUFT12R10	SUFT12R10		
SUFT12R20	SUFT12R20		
SUFT12R30	SUFT12R30		
SUFT16R05	SUFT16R05		
SUFT16R10	SUFT16R10		
SUFT16R15	SUFT16R15		
SUFT16R20	SUFT16R20		
SUFT16R30	SUFT16R30		
SUFT20R05	SUFT20R05		
SUFT20R10	SUFT20R10		
SUFT20R15	SUFT20R15		
SUFT20R20	SUFT20R20		
SUFT20R30	SUFT20R30		
SUFT25R05	SUFT25R05		
SUFT25R10	SUFT25R10		
SUFT25R20	SUFT25R20		
SUFT25R30	SUFT25R30		
SUFT30R05	SUFT30R05		
SUFT30R10	SUFT30R10		
SUFT30R20	SUFT30R20		
SUFT30R30	SUFT30R30		
SUFT32R05	SUFT32R05		
SUFT32R10	SUFT32R10		
SUFT32R20	SUFT32R20		
TECN32PEFR1W	TECN1603PEFR1W	NSE300	K036
TECN32PEER1W	TECN1603PEER1W		
TECN32PETR1W	TECN1603PETR1W		
TEEN32PEFR1	TEEN1603PEFR1	↻L262	K036
TEEN32PEER1	TEEN1603PEER1		
TEEN32PETR1	TEEN1603PETR1		
TEEN32PESR1	TEEN1603PESR1		
TEER32PEER-JS	TEER1603PEER-JS	↻L262	K036
TECN43PEFR1	TECN2204PEFR1	NSE400 SE400	K036
TECN43PEER1	TECN2204PEER1		
TECN43PETR1	TECN2204PETR1		
TEEN43PEFR1	TEEN2204PEFR1		
TEEN43PEER1	TEEN2204PEER1		
TEEN43PETR1	TEEN2204PETR1		
TEEN43PESR1	TEEN2204PESR1		
TEKN43PEER1	TEKN2204PEER1		
TEKN43PESR1	TEKN2204PESR1		
TEKN43PETR1	TEKN2204PETR1		
TEKN43PETR	TEKN2204PETR		

Descripción	Descripción (ISO)	Geometría	Página
TEER43PEER-JS	TEER2204PEER-JS	NSE400 SE400	K036
TPEW1303ZPER2	TPEW1303ZPER2	PMF ↻L290	K036
TPEW1303ZPTR2	TPEW1303ZPTR2		K052
TPKN32PPR	TPKN1603PPR	Angulo de ataque 0° Positivos de 11°	K048
TPKN43PDR	TPKN2204PDR		
TPMN321	TPMN160304	Positivos de 11°	K049
TPMN322	TPMN160308		
TPMN323	TPMN160312		
TPMN431	TPMN220404		
TPMN432	TPMN220408		
WEC42EFER5C	WEC42EFER5C	SE415	K037
WEC42EFTR5C	WEC42EFTR5C		
WEC42AFTR5C	WEC42AFTR5C	SE445	K038
WEC42AFFR5C	WEC42AFFR5C		K052
WEC42AFTR5C	WEC42AFTR5C		K052
WEC53AFER5C	WEC53AFER5C	SE545	K038
WEC53AFTR5C	WEC53AFTR5C		
WEEW13T3AGER8C	WEEW13T3AGER8C	ASX445 ↻L030	K029
WEEW13T3AGTR8C	WEEW13T3AGTR8C		
WFC42ZFER2	WFC42ZFER2	BF407	K052

CLASIFICACION

Descripción	Descripción (ISO)	Geometría	Página	Descripción	Descripción (ISO)	Geometría	Página
WNEU1305ZEN4C-M	WNEU1305ZEN4C-M	AHX440S ➔L038 	K024	XDGT1550PDR-GL04	XDGT1550PDR-GL04	BXD4000 ➔L176 	K034
				XDGT1550PDR-GL08	XDGT1550PDR-GL08		
WNEU2006ZEN7C-WK	WNEU2006ZEN7C-WK	AHX640S ➔L048 AHX640W ➔L060 	K025	XDGX175004PDR-GL	XDGX175004PDR-GL	AXD4000 ➔L156 	K029
				XDGX175008PDR-GL	XDGX175008PDR-GL		
				XDGX175012PDR-GL	XDGX175012PDR-GL		
				XDGX175016PDR-GL	XDGX175016PDR-GL		
				XDGX175020PDR-GL	XDGX175020PDR-GL		
				XDGX175024PDR-GL	XDGX175024PDR-GL		
WNEU2007ZEN7C-M	WNEU2007ZEN7C-M	AHX640S ➔L048 	K025	XDGX175030PDR-GL	XDGX175030PDR-GL		
WNEU2007ZEN7C-WP	WNEU2007ZEN7C-WP			XDGX175032PDR-GL	XDGX175032PDR-GL		
				XDGX175040PDR-GL	XDGX175040PDR-GL		
				XDGX175050PDR-GL	XDGX175050PDR-GL		
WOEW12T308PEER8C	WOEW12T308PEER8C	ASX400 ➔L082 	K028	XDGX175004PDER-GM	XDGX175004PDER-GM		
WOEW12T308PETR8C	WOEW12T308PETR8C			XDGX175008PDER-GM	XDGX175008PDER-GM		
				XDGX175012PDER-GM	XDGX175012PDER-GM		
				XDGX175016PDER-GM	XDGX175016PDER-GM		
WOEX1206PER5C	WOEX1206PER5C	VOX400 ➔L076 	K046	XDGX175020PDER-GM	XDGX175020PDER-GM		K030
				XDGX175024PDER-GM	XDGX175024PDER-GM		
				XDGX175030PDER-GM	XDGX175030PDER-GM		
				XDGX175032PDER-GM	XDGX175032PDER-GM		
WPC42EEER10C	WPC42EEER10C	FBP415 	K035	XDGX175040PDER-GM	XDGX175040PDER-GM		
WPC42EEEL10C	WPC42EEEL10C			XDGX175050PDER-GM	XDGX175050PDER-GM		
				XDGX175004PDR-GM	XDGX175004PDR-GM		
				XDGX175008PDR-GM	XDGX175008PDR-GM		
WPC42EETR10C	WPC42EETR10C		K052	XDGX175012PDR-GM	XDGX175012PDR-GM		
				XDGX175016PDR-GM	XDGX175016PDR-GM		K030
				XDGX175020PDR-GM	XDGX175020PDR-GM		
				XDGX175024PDR-GM	XDGX175024PDR-GM		
XDGT1550PDER-G04	XDGT1550PDER-G04	BXD4000 ➔L176 	K034	XDGX175030PDR-GM	XDGX175030PDR-GM		
XDGT1550PDER-G08	XDGT1550PDER-G08			XDGX175032PDR-GM	XDGX175032PDR-GM		
XDGT1550PDER-G12	XDGT1550PDER-G12			XDGX175040PDR-GM	XDGX175040PDR-GM		
XDGT1550PDER-G16	XDGT1550PDER-G16			XDGX175050PDR-GM	XDGX175050PDR-GM		
XDGT1550PDER-G20	XDGT1550PDER-G20			XDGX227008PDR-GL	XDGX227008PDR-GL	AXD7000 ➔L166 	K030
XDGT1550PDER-G30	XDGT1550PDER-G30			XDGX227016PDR-GL	XDGX227016PDR-GL		
XDGT1550PDER-G32	XDGT1550PDER-G32			XDGX227020PDR-GL	XDGX227020PDR-GL		
XDGT1550PDER-G40	XDGT1550PDER-G40			XDGX227024PDR-GL	XDGX227024PDR-GL		
XDGT1550PDER-G50	XDGT1550PDER-G50			XDGX227030PDR-GL	XDGX227030PDR-GL		
XDGT1550PDR-G04	XDGT1550PDR-G04			XDGX227032PDR-GL	XDGX227032PDR-GL		
XDGT1550PDR-G08	XDGT1550PDR-G08			XDGX227040PDR-GL	XDGX227040PDR-GL		
XDGT1550PDR-G12	XDGT1550PDR-G12			XDGX227050PDR-GL	XDGX227050PDR-GL		
XDGT1550PDR-G16	XDGT1550PDR-G16		K034	XDGX227008PDER-GLA	XDGX227008PDER-GLA		
XDGT1550PDR-G20	XDGT1550PDR-G20			XDGX227016PDER-GLA	XDGX227016PDER-GLA		
XDGT1550PDR-G30	XDGT1550PDR-G30			XDGX227020PDER-GLA	XDGX227020PDER-GLA		
XDGT1550PDR-G32	XDGT1550PDR-G32			XDGX227024PDER-GLA	XDGX227024PDER-GLA		
XDGT1550PDR-G40	XDGT1550PDR-G40			XDGX227030PDER-GLA	XDGX227030PDER-GLA		
XDGT1550PDR-G50	XDGT1550PDR-G50			XDGX227032PDER-GLA	XDGX227032PDER-GLA		
				XDGX227040PDER-GLA	XDGX227040PDER-GLA		
				XDGX227050PDER-GLA	XDGX227050PDER-GLA		

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INSERTOS DE FRESADO

Descripción	Descripción (ISO)	Geometría	Página	Descripción	Descripción (ISO)	Geometría	Página
XNMU160708R-MS	XNMU160708R-MS	VFX5 ⌀L186 	K045	ZCMX083508ERA	ZCMX083508ER-A	LER ⌀L194 	K035
XNMU160712R-MS	XNMU160712R-MS			ZCMX09T308ERA	ZCMX09T308ER-A		
XNMU160716R-MS	XNMU160716R-MS						
XNMU160724R-MS	XNMU160724R-MS						
XNMU160732R-MS	XNMU160732R-MS						
XNMU160740R-MS	XNMU160740R-MS						
XNMU160708R-HS	XNMU160708R-HS		K045	ZCMX09T308ERB	ZCMX09T308ER-B		K035
XNMU160708R-LS	XNMU160708R-LS		K045	TAWC12T301-45GM	TAWC12T301-45GM	TAW 	K053
XNMU190912R-MS	XNMU190912R-MS	VFX6 ⌀L190 	K045				
XNMU190916R-MS	XNMU190916R-MS						
XNMU190924R-MS	XNMU190924R-MS						
XNMU190932R-MS	XNMU190932R-MS						
XNMU190940R-MS	XNMU190940R-MS						
XNMU190950R-MS	XNMU190950R-MS						
XNMU190912R-HS	XNMU190912R-HS		K045				
XNMU190912R-LS	XNMU190912R-LS		K045				
XPGT13T3PDER-G1	XPGT13T3PDER-G1	BAP3500 	K032				
XPGT13T3PDER-G2	XPGT13T3PDER-G2						
XPGT13T3PDER-G6	XPGT13T3PDER-G6						
XPGT13T3PDER-G75	XPGT13T3PDER-G75						
XPGT13T3PDER-G8	XPGT13T3PDER-G8		K032				
XPGT13T3PDFR-G1	XPGT13T3PDFR-G1						
XPGT13T3PDFR-G2	XPGT13T3PDFR-G2						
XPGT13T3PDFR-G6	XPGT13T3PDFR-G6						
XPGT13T3PDFR-G75	XPGT13T3PDFR-G75		K032				
XPGT13T3PDFR-G8	XPGT13T3PDFR-G8						
XPMT13T3PDER-M1	XPMT13T3PDER-M1						
XPMT13T3PDER-M2	XPMT13T3PDER-M2						
XPMT13T3PDER-M6	XPMT13T3PDER-M6		K032				
XPMT13T3PDER-M75	XPMT13T3PDER-M75						
XPMT13T3PDER-M8	XPMT13T3PDER-M8						

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INSERTOS DE FRESADO

INSERTOS DE FRESADO

Material	P	Acero											Condiciones de Corte (Guía) :					
	M	Acero Inoxidable											● : Corte Estable					
	K	Fundición											● : Corte General					
	N	Metales no ferrosos											✱ : Corte Inestable					
	S	Aleaciones Termoresistentes, Aleaciones de Titanio											Honeado :					
H	Acero Endurecido											E : Redondo						
Geometría	Descripción	Descripción (ISO)	Clase	Honeado	Recubierto										Dimensiones (plgs)			
					MC5020	MP6120	MP6130	MP7130	MP7140	MP9120	MP9130	VP15TF	VP20RT	MP7030	IC	S	BS	RE
 AHX440S L038 AHX475S L044	NNMU130508ZER-L	NNMU130508ZER-L	M	E	●	●	●	●	●			★			.528	.227	.039	.031
	NNMU130508ZEN-M	NNMU130508ZEN-M	M	E	●	●	●	●	●			★			.528	.219	.039	.031
	NNMU130532ZEN-M	NNMU130532ZEN-M	M	E	●	●	●	●	●			★			.528	.219	—	.126
	NNMU130532ZEN-R	NNMU130532ZEN-R	M	E	●	●	●	●	●			★			.528	.215	—	.126
 AHX440S L038	WNEU1305ZEN4C-M	WNEU1305ZEN4C-M	E	E	●	●						●			.528	.201	.157	.106
 AHX640S L048	NNMU200708ZEN-M	NNMU200708ZEN-M	M	E		●	●								.787	.315	.039	.031
 AHX640S L048	NNMU200708ZEN-MP	NNMU200708ZEN-MP	M	E								●			.787	.315	.039	.031
 AHX640S L048	NNMU200712ZER-MM	NNMU200712ZER-MM	M	E									●		.787	.315	.039	.047
 AHX640S L048 AHX640W L060	NNMU200608ZEN-HK	NNMU200608ZEN-HK	M	E	●							●	●		.787	.258	.039	.031
 AHX640S L048 AHX640W L060	NNMU200608ZEN-MK	NNMU200608ZEN-MK	M	E	●							●	●		.787	.258	.039	.031

● : Existencia ★ : Existencia en Japón
 <10 insertos por caja>

Material	P	Acero																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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● = NEW

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INSERTOS DE FRESADO

INSERTOS DE FRESADO

Material	P	Acero	Recubierto	Carburo	Condiciones de Corte (Guía) :														
	M	Acero Inoxidable			● : Corte Estable														
	K	Fundición			● : Corte General														
	N	Metales no ferrosos			✱ : Corte Inestable														
	S	Aleaciones Termoresistentes, Aleaciones de Titanio			Honeado :														
H	Acero Endurecido	E : Redondo F : Filo Vivo																	
Geometría	Descripción	Descripción (ISO)	Clase	Honeado	Dimensiones (plgs)														
					MC5020	MP6120	MP6130	MP7130	MP7140	MP9120	MP9130	VP15TF	VP20RT	VP30RT	HT110	TF15	L	W1	S
APX3000 ⚙L096 	AOGT123602PEFR-GM	AOGT123602PEFR-GM	G	F										●	.472	.260	.142	.071	.008
	AOGT123604PEFR-GM	AOGT123604PEFR-GM	G	F										●	.472	.260	.142	.063	.016
	AOGT123608PEFR-GM	AOGT123608PEFR-GM	G	F										●	.472	.260	.142	.047	.031
APX3000 ⚙L096 	AOMT123604PEER-H	AOMT123604PEER-H	M	E	●	●	●	●	●	●	●	●			.472	.260	.142	.063	.016
	AOMT123608PEER-H	AOMT123608PEER-H	M	E	●	●	●	●	●	●	●	●			.472	.260	.142	.047	.031
	AOMT123616PEER-H	AOMT123616PEER-H	M	E	●	●	●	●	●	●	●	●			.472	.260	.142	.016	.063
APX3000 ⚙L096 	AOMT123602PEER-M	AOMT123602PEER-M	M	E	●	●	●	●	●	●	●	●			.472	.260	.142	.071	.008
	AOMT123604PEER-M	AOMT123604PEER-M	M	E	●	●	●	●	●	●	●	●			.472	.260	.142	.063	.016
	AOMT123608PEER-M	AOMT123608PEER-M	M	E	●	●	●	●	●	●	●	●			.472	.260	.142	.047	.031
	AOMT123610PEER-M	AOMT123610PEER-M	M	E	●	●	●	●	●	★	★				.472	.260	.142	.039	.039
	AOMT123612PEER-M	AOMT123612PEER-M	M	E	●	●	●	●	●	●	●	●			.472	.260	.142	.031	.047
	AOMT123616PEER-M	AOMT123616PEER-M	M	E	●	●	●	●	●	●	●	●			.472	.260	.142	.016	.063
	AOMT123620PEER-M	AOMT123620PEER-M	M	E	●	●	●	●	●	●	●	●			.472	.260	.142	.016	.079
	AOMT123624PEER-M	AOMT123624PEER-M	M	E	●	●	●	●	●	●	●	●			.472	.260	.142	.016	.094
	AOMT123630PEER-M	AOMT123630PEER-M	M	E	●	●	●	●	●	●	●	●			.472	.260	.142	.016	.118
	AOMT123632PEER-M	AOMT123632PEER-M	M	E	●	●	●	●	●	●	●	●			.472	.260	.142	.016	.126
APX4000 ⚙L110 	AOMT184804PEER-H	AOMT184804PEER-H	M	E	●	●	●	●	●	●	●	●			.709	.354	.189	.071	.016
	AOMT184808PEER-H	AOMT184808PEER-H	M	E	●	●	●	●	●	●	●	●			.709	.354	.189	.055	.031
	AOMT184816PEER-H	AOMT184816PEER-H	M	E	●	●	●	●	●	●	●	●			.709	.354	.189	.016	.063
	AOMT184832PEER-H	AOMT184832PEER-H	M	E		●	●				●				.709	.354	.189	.016	.126
	AOMT184840PEER-H	AOMT184840PEER-H	M	E		●	●				●				.709	.354	.189	.016	.157
	AOMT184850PEER-H	AOMT184850PEER-H	M	E		●	●				●				.709	.354	.189	—	.197
	AOMT184864PEER-H	AOMT184864PEER-H	M	E		●	●				●				.709	.354	.189	—	.250
APX4000 ⚙L110 	AOMT184804PEER-M	AOMT184804PEER-M	M	E	●	●	●	●	●	●	●	●			.709	.354	.189	.071	.016
	AOMT184808PEER-M	AOMT184808PEER-M	M	E	●	●	●	●	●	●	●	●			.709	.354	.189	.055	.031
	AOMT184810PEER-M	AOMT184810PEER-M	M	E	●			●	●	★					.709	.354	.189	.039	.039
	AOMT184812PEER-M	AOMT184812PEER-M	M	E	●			●	●	●					.709	.354	.189	.031	.047
	AOMT184816PEER-M	AOMT184816PEER-M	M	E	●	●	●	●	●	●	●	●			.709	.354	.189	.016	.063
	AOMT184820PEER-M	AOMT184820PEER-M	M	E	●			●	●	★					.709	.354	.189	.016	.079

INSERTOS DE FRESADO

K027

INSERTOS DE FRESADO

K028 ● : Existencia ★ : Existencia en Japón <10 insertos por caja>

K

INSERTOS DE FRESADO

INSERTOS DE FRESADO

● : Existencia ★ : Existencia en Japón □ : A fabricar según de demanda.
<10 insertos por caja>

INSERTOS DE FRESADO

Material	P	Acero						
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K

INSERTOS DE FRESADO

INSERTOS DE FRESADO

K034

● : Existencia ★ : Existencia en Japón
<10 insertos por caja>

INSERTOS DE FRESADO

Material	P	Acero					Condiciones de Corte (Guía) :							
	M	Acero Inoxidable					●	●	●	●	●	●		
	K	Fundición					●	●	●	●	●	●		
	N	Metales no ferrosos					●	●	●	●	●	●		
	S	Aleaciones Termoresistentes, Aleaciones de Titanio					●	●	●	●	●	●		
	H	Acero Endurecido					●	●	●	●	●	●		
Geometría	Descripción	Descripción (ISO)	Clase	Honeado	Recubierto		Cermet	Carburo	Dimensiones (plgs)					
					F7030	MC5020	VP15TF	UP20M	AP10H	NX2525	NX4545	UT120T	HT110	IC
NSE300 Para mayor precisión 	TECN32PEFR1W	TECN1603PEFR1W	C	F						★	.375	.125	.055	.016
	TECN32PEER1W	TECN1603PEER1W	C	E						★	.375	.125	.055	.016
	TECN32PETR1W	TECN1603PETR1W	C	T					★	★	.375	.125	.055	.016
NSE300 	TEEN32PEFR1	TEEN1603PEFR1	E	F						●	.375	.125	.055	.016
	TEEN32PEER1	TEEN1603PEER1	E	E			●			●	.375	.125	.055	.016
	TEEN32PETR1	TEEN1603PETR1	E	T			●		★	●	.375	.125	.055	.016
	TEEN32PESR1	TEEN1603PESR1	E	S	●	★					.375	.125	.055	.016
NSE300 	TEER32PEER-JS	TEER1603PEER-JS	E	E	●					★	.375	.125	.055	.016
NSE400 SE400 	TECN43PEFR1	TECN2204PEFR1	C	F						●	.500	.187	.055	.039
	TECN43PEER1	TECN2204PEER1	C	E						★	.500	.187	.055	.039
	TECN43PETR1	TECN2204PETR1	C	T					★	★	.500	.187	.055	.039
	TEEN43PEFR1	TEEN2204PEFR1	E	F						●	.500	.187	.055	.039
	TEEN43PEER1	TEEN2204PEER1	E	E			●			●	.500	.187	.055	.039
	TEEN43PETR1	TEEN2204PETR1	E	T			●		●	●	.500	.187	.055	.039
	TEEN43PESR1	TEEN2204PESR1	E	S	●	★					.500	.187	.055	.039
	TEKN43PEER1	TEKN2204PEER1	K	E						★	.500	.187	.076	—
	TEKN43PESR1	TEKN2204PESR1	K	S	★						.500	.187	.076	—
	TEKN43PETR1	TEKN2204PETR1	K	T			★		★	★	.500	.187	.076	—
	TEKN43PETR	TEKN2204PETR	K	T					★		.500	.187	.076	—
NSE400 SE400 	TEER43PEER-JS	TEER2204PEER-JS	E	E	★					★	.500	.187	.055	.039
PMF L290 	TPEW1303ZPER2	TPEW1303ZPER2	E	E			●	●			.313	.125	.079	—

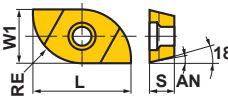
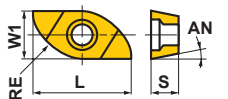
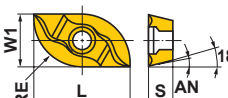
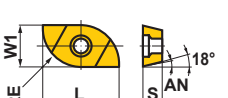
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INSERTOS DE FRESADO

INSERTOS DE FRESADO

INSERTOS DE FRESADO

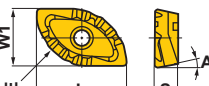
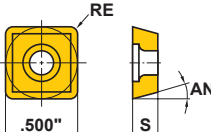
INSERTOS DE FRESADO

Material	P	Acero		Condiciones de Corte (Guía) :	●	: Corte Estable				
	M	Acero Inoxidable			●	: Corte General				
	K	Fundición			✖	: Corte Inestable				
	N	Metales no ferrosos			Honeado :					
	S	Aleaciones Termoresistentes, Aleaciones de Titanio			E	: Redondo				
	H	Acero Endurecido								
Geometría	Descripción	Descripción (ISO)	Clase	Honeado	Recubierto	Dimensiones (plgs)				
					MP6120 MP9120 VP15TF	RE	L	W1	S	AN
SRM2 	SRM212C	SRM212C	M	E	●●●●	.375	.748	.385	.169	11°
	SRM216C	SRM216C	M	E	●●●●	.500	.945	.512	.216	11°
	SRM220C	SRM220C	M	E	●●●●	.625	1.102	.638	.275	11°
SRM2 	SRM212E	SRM212E	M	E	●●●●	.375	.610	.315	.169	11°
	SRM216E	SRM216E	M	E	●●●●	.500	.807	.409	.216	11°
	SRM220E	SRM220E	M	E	●●●●	.625	.964	.520	.275	11°
SRM2 	SRM210C-M	SRM210C-M	M	E	●●●●	.313	.630	.323	.138	11°
	SRM212C-M	SRM212C-M	M	E	●●●●	.375	.748	.385	.169	11°
	SRM216C-M	SRM216C-M	M	E	●●●●	.500	.945	.512	.216	11°
	SRM220C-M	SRM220C-M	M	E	●●●●	.625	1.102	.638	.275	11°
SRM2 	SRM210E-M	SRM210E-M	M	E	●●●●	.313	.531	.258	.138	11°
	SRM212E-M	SRM212E-M	M	E	●●●●	.375	.610	.315	.169	11°
	SRM216E-M	SRM216E-M	M	E	●●●●	.500	.807	.409	.216	11°
	SRM220E-M	SRM220E-M	M	E	●●●●	.625	.964	.520	.275	11°
SRM2 (METRICO) 	SRG16C	SRG16C	G	E	★★★	.315	.630	.323	.138	11°
	SRG20C	SRG20C	G	E	★★★	.394	.748	.402	.181	10°
	SRG25C	SRG25C	G	E	★★★	.492	.945	.504	.217	10°
	SRG30C	SRG30C	G	E	★★★	.591	1.102	.602	.276	10°
	SRG32C	SRG32C	G	E	★★★	.630	1.102	.642	.276	10°
SRM2 (METRICO) 	SRG16E	SRG16E	G	E	★★★	.315	.531	.264	.138	11°
	SRG20E	SRG20E	G	E	★★★	.394	.610	.335	.181	9°
	SRG25E	SRG25E	G	E	★★★	.492	.807	.402	.217	9°
	SRG30E	SRG30E	G	E	★★★	.591	.992	.480	.276	9°
	SRG32E	SRG32E	G	E	★★★	.630	1.028	.516	.276	9°
SRM2 (METRICO) 	SRM16C-M	SRM16C-M	M	E	★★★	.315	.630	.323	.138	11°
	SRM20C-M	SRM20C-M	M	E	★★★	.394	.748	.402	.181	10°
	SRM25C-M	SRM25C-M	M	E	★★★	.492	.945	.504	.217	10°
	SRM30C-M	SRM30C-M	M	E	★★★	.591	1.102	.602	.276	10°
	SRM32C-M	SRM32C-M	M	E	★★★	.630	1.102	.642	.276	10°

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INSERTOS DE FRESADO

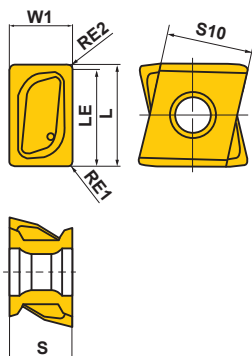
INSERTOS DE FRESADO

Material	P	Acero			●	●	●	●	●	Condiciones de Corte (Guía) : ● : Corte Estable ● : Corte General ✱ : Corte Inestable Honeado : E : Redondo							
	M	Acero Inoxidable			●	●	●	●	●								
	K	Fundición			✱		✱		✱								
	N	Metales no ferrosos															
	S	Aleaciones Termoresistentes, Aleaciones de Titanio			●	●	✱	✱	✱								
	H	Acero Endurecido			●												
Geometría	Descripción	Descripción (ISO)	Clase	Honeado	Recubierto							Carburo	Dimensiones (plgs)				
					VP15TF	MP6120	MP9120	MP9130	VP20RT	VP30RT	UP20M	UT120T	RE	L	W1	S	AN
SRM2 (METRICO) ⌀L274 	SRM16E-M	SRM16E-M	M	E	★	★	★						.315	.531	.264	.138	11°
	SRM20E-M	SRM20E-M	M	E	★	★	★						.394	.610	.335	.181	9°
	SRM25E-M	SRM25E-M	M	E	★	★	★						.492	.807	.402	.217	9°
	SRM30E-M	SRM30E-M	M	E	★	★	★						.591	.992	.480	.276	9°
	SRM32E-M	SRM32E-M	M	E	★	★	★						.630	1.028	.516	.276	9°
SRM2 40/50 (METRICO) ⌀L286 	SRG40C	SRG40C	G	E	★				★	★			.787	1.417	.807	.315	11°
	SRG50C	SRG50C	G	E	★				★	★			.984	1.575	1.024	.335	11°
SRM2 40/50 (METRICO) ⌀L286 	SRG40E	SRG40E	G	E	★				★	★			.787	1.260	.654	.315	11°
	SRG50E	SRG50E	G	E	★				★	★			.984	1.409	.787	.335	11°
TBE1 	SPMM432A	SPMT120408-A	M	E							●	●	.031	—	—	.187	11°

K

INSERTOS DE FRESADO

Material	P	Acero	  	Condiciones de Corte (Guía) :										
	M	Acero Inoxidable		● : Corte Estable										
	K	Fundición		● : Corte General										
	N	Metales no ferrosos		✱ : Corte Inestable										
	S	Aleaciones con trat. térmico, Aleaciones de titanio		Honing :										
	H	Acero endurecido		E : Redondo										
Geometría	Descripción	Descripción (ISO)	Clase	Honeado	Recubierto		Dimensiones (plgs)							
					MP6120	VP15TF	L	LE	S	S10	RE1	RE2	W1	
VAS400 Cortador Lateral 	LNGU130804PNER-M	LNGU130804PNER-M	G	E	●		.512	.480	.315	.433	.016	.031	.315	
	LNGU130804PNEL-M	LNGU130804PNEL-M	G	E	●		.512	.480	.315	.433	.016	.031	.315	
	LNGU130808PNER-M	LNGU130808PNER-M	G	E	●		.512	.480	.315	.433	.031	.031	.315	
	LNGU130808PNEL-M	LNGU130808PNEL-M	G	E	●		.512	.480	.315	.433	.031	.031	.315	
	LNGU130812PNER-M	LNGU130812PNER-M	G	E	●		.512	.480	.315	.433	.047	.031	.315	
	LNGU130812PNEL-M	LNGU130812PNEL-M	G	E	●		.512	.480	.315	.433	.047	.031	.315	
	LNGU130816PNER-M	LNGU130816PNER-M	G	E	●		.512	.480	.315	.433	.063	.031	.315	
	LNGU130816PNEL-M	LNGU130816PNEL-M	G	E	●		.512	.480	.315	.433	.063	.031	.315	
	LNGU130820PNER-M	LNGU130820PNER-M	G	E	●		.512	.480	.315	.433	.079	.031	.315	
	LNGU130820PNEL-M	LNGU130820PNEL-M	G	E	●		.512	.480	.315	.433	.079	.031	.315	
	LNGU130824PNER-M	LNGU130824PNER-M	G	E	●		.512	.480	.315	.433	.094	.031	.315	
	LNGU130824PNEL-M	LNGU130824PNEL-M	G	E	●		.512	.480	.315	.433	.094	.031	.315	
	LNGU130830PNER-M	LNGU130830PNER-M	G	E	●		.512	.449	.315	.433	.118	.063	.315	
	LNGU130830PNEL-M	LNGU130830PNEL-M	G	E	●		.512	.449	.315	.433	.118	.063	.315	
	LNGU130840PNER-M	LNGU130840PNER-M	G	E	●		.512	.449	.315	.433	.157	.063	.315	
	LNGU130840PNEL-M	LNGU130840PNEL-M	G	E	●		.512	.449	.315	.433	.157	.063	.315	
	LNGU130850PNER-M	LNGU130850PNER-M	G	E	●		.512	.449	.315	.433	.197	.063	.315	
	LNGU130850PNEL-M	LNGU130850PNEL-M	G	E	●		.512	.449	.315	.433	.197	.063	.315	
	NEW	LNGU130804PNER-R	LNGU130804PNER-R	G	E	● ●		.512	.480	.315	.433	.016	.031	.315
	NEW	LNGU130804PNEL-R	LNGU130804PNEL-R	G	E	● ●		.512	.480	.315	.433	.016	.031	.315
	NEW	LNGU130808PNER-R	LNGU130808PNER-R	G	E	● ●		.512	.480	.315	.433	.031	.031	.315
	NEW	LNGU130808PNEL-R	LNGU130808PNEL-R	G	E	● ●		.512	.480	.315	.433	.031	.031	.315
	NEW	LNGU130812PNER-R	LNGU130812PNER-R	G	E	● ●		.512	.480	.315	.433	.047	.031	.315
	NEW	LNGU130812PNEL-R	LNGU130812PNEL-R	G	E	● ●		.512	.480	.315	.433	.047	.031	.315
	NEW	LNGU130816PNER-R	LNGU130816PNER-R	G	E	● ●		.512	.480	.315	.433	.063	.031	.315
	NEW	LNGU130816PNEL-R	LNGU130816PNEL-R	G	E	● ●		.512	.480	.315	.433	.063	.031	.315
	NEW	LNGU130820PNER-R	LNGU130820PNER-R	G	E	● ●		.512	.480	.315	.433	.079	.031	.315
	NEW	LNGU130820PNEL-R	LNGU130820PNEL-R	G	E	● ●		.512	.480	.315	.433	.079	.031	.315
	NEW	LNGU130824PNER-R	LNGU130824PNER-R	G	E	● ●		.512	.480	.315	.433	.094	.031	.315
	NEW	LNGU130824PNEL-R	LNGU130824PNEL-R	G	E	● ●		.512	.480	.315	.433	.094	.031	.315
	NEW	LNGU130830PNER-R	LNGU130830PNER-R	G	E	● ●		.512	.449	.315	.433	.118	.063	.315
	NEW	LNGU130830PNEL-R	LNGU130830PNEL-R	G	E	● ●		.512	.449	.315	.433	.118	.063	.315
	NEW	LNGU130840PNER-R	LNGU130840PNER-R	G	E	● ●		.512	.449	.315	.433	.157	.063	.315
	NEW	LNGU130840PNEL-R	LNGU130840PNEL-R	G	E	● ●		.512	.449	.315	.433	.157	.063	.315
	NEW	LNGU130850PNER-R	LNGU130850PNER-R	G	E	● ●		.512	.449	.315	.433	.197	.063	.315
	NEW	LNGU130850PNEL-R	LNGU130850PNEL-R	G	E	● ●		.512	.449	.315	.433	.197	.063	.315



Inserto Derecho Mostrado.

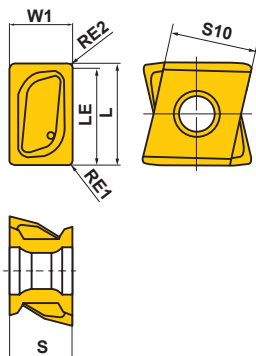
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INSERTOS DE FRESADO

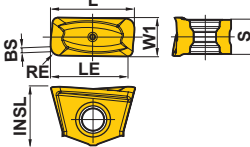
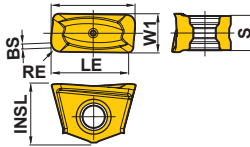
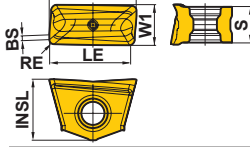
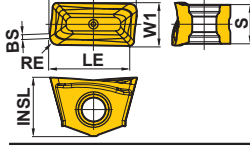
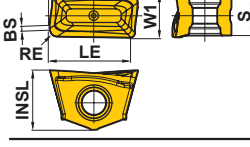
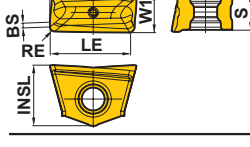
INSERTOS DE FRESADO

Material	P	Acero	Geometría	Descripción	Descripción (ISO)	Clase	Honeado	Recubierto	Dimensiones (mm)						
	M	Acero Inoxidable							L	LE	S	S10	RE1	RE2	W1
	K	Fundición													
	N	Metales no ferrosos													
	S	Aleaciones con trat. térmico, Aleaciones de titanio													
	H	Acero endurecido													
									Condiciones de Corte (Guía) :						
									● : Corte Estable						
									● : Corte General						
									✱ : Corte Inestable						
									Honing :						
									E : Redondo						
VAS500 Cortador Lateral ☞ L092															
Inserto Derecho Mostrado.															



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INSERTOS DE FRESADO

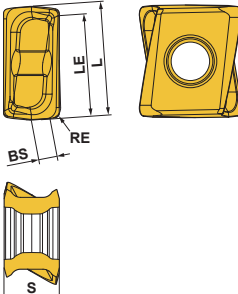
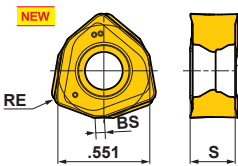
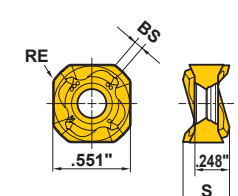
Material	P	Acero	Geometría	Descripción	Descripción (ISO)	Clase	Honeado	Recubierto	Dimensiones (plgs)						
	M	Acero Inoxidable													
	K	Fundición													
	N	Metales no ferrosos													
	S	Aleaciones Termoresistentes, Aleaciones de Titanio													
	H	Acero Endurecido													
									Dimensiones (plgs)						
									L	LE	W1	INSL	S	BS	RE
VFX5 	XNMU160708R-MS		XNMU160708R-MS		M	E	●		.630	.528	.276	.437	.256	.039	.031
	XNMU160712R-MS		XNMU160712R-MS		M	E	●		.630	.543	.276	.437	.256	.039	.047
	XNMU160716R-MS		XNMU160716R-MS		M	E	●		.630	.543	.276	.437	.256	.039	.063
	XNMU160724R-MS		XNMU160724R-MS		M	E	●		.630	.543	.276	.437	.256	.039	.094
	XNMU160732R-MS		XNMU160732R-MS		M	E	●		.681	.567	.276	.437	.256	—	.126
	XNMU160740R-MS		XNMU160740R-MS		M	E	●		.744	.598	.276	.437	.256	—	.157
VFX5 	XNMU160708R-HS		XNMU160708R-HS		M	E	●		.630	.528	.276	.437	.256	.039	.031
VFX5 	XNMU160708R-LS		XNMU160708R-LS		M	E	●		.630	.528	.276	.437	.256	.039	.031
VFX6 	XNMU190912R-MS		XNMU190912R-MS		M	E	●		.752	.650	.374	.500	.335	.039	.047
	XNMU190916R-MS		XNMU190916R-MS		M	E	●		.752	.650	.374	.500	.335	.039	.063
	XNMU190924R-MS		XNMU190924R-MS		M	E	●		.752	.654	.374	.500	.335	.039	.094
	XNMU190932R-MS		XNMU190932R-MS		M	E	●		.795	.673	.374	.500	.335	—	.126
	XNMU190940R-MS		XNMU190940R-MS		M	E	●		.858	.701	.374	.500	.335	—	.157
	XNMU190950R-MS		XNMU190950R-MS		M	E	●		.858	.701	.374	.500	.335	—	.197
VFX6 	XNMU190912R-HS		XNMU190912R-HS		M	E	●		.752	.650	.374	.500	.335	.039	.047
VFX6 	XNMU190912R-LS		XNMU190912R-LS		M	E	●		.752	.650	.374	.500	.335	.039	.047

K

INSERTOS DE FRESADO

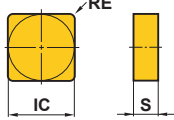
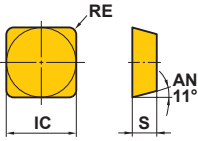
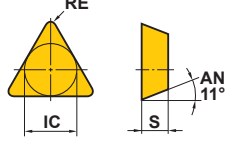
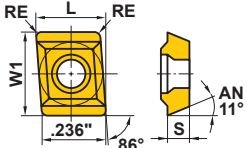
INSERTOS DE FRESADO

● = NEW

Material	P	Acero											Condiciones de Corte (Guía) : ● : Corte Estable ● : Corte General ✱ : Corte Inestable Honeado : E : Redondo F : Filo Vivo										
	M	Acero Inoxidable																					
	K	Fundición																					
	N	Metales no ferrosos																					
	S	Aleaciones Termoresistentes, Aleaciones de Titanio																					
H	Acero Endurecido																						
Geometría	Descripción	Descripción (ISO)	Clase	Honeado	Recubierto										Cermet	Carburo	Dimensiones (plgs)						
					MC5020	MC7020	MP6120	MP6130	MP7130	MP7140	MP9120	MP9130	VP15TF	VP20RT	VP30RT	MX3030	TF15	L	LE	S	BS	RE	
VPX300 ↻ L140 NEW 	LOGU1207020PNER-M	LOGU1207020PNER-M	G	E	●	●	●	●	●	●	●	●	●					.488	.445	.276	.118	.008	
	LOGU1207040PNER-M	LOGU1207040PNER-M	G	E	●	●	●	●	●	●	●	●	●	●					.488	.445	.276	.110	.016
	LOGU1207080PNER-M	LOGU1207080PNER-M	G	E	●	●	●	●	●	●	●	●	●	●					.488	.445	.276	.094	.031
	LOGU1207100PNER-M	LOGU1207100PNER-M	G	E	●	●	●	●	●	●	●	●	●	●					.488	.445	.276	.091	.039
	LOGU1207120PNER-M	LOGU1207120PNER-M	G	E	●	●	●	●	●	●	●	●	●	●					.488	.445	.276	.083	.047
	LOGU1207160PNER-M	LOGU1207160PNER-M	G	E	●	●	●	●	●	●	●	●	●	●					.488	.445	.276	.067	.063
	LOGU1207200PNER-M	LOGU1207200PNER-M	G	E	●	●	●	●	●	●	●	●	●	●					.488	.445	.276	.055	.079
	LOGU1207240PNER-M	LOGU1207240PNER-M	G	E	●	●	●	●	●	●	●	●	●	●					.488	.445	.276	.039	.094
	LOGU1207300PNER-M	LOGU1207300PNER-M	G	E	●	●	●	●	●	●	●	●	●	●					.488	.445	.276	.020	.118
	LOGU1207320PNER-M	LOGU1207320PNER-M	G	E	●	●	●	●	●	●	●	●	●	●					.488	.445	.276	.012	.126
	LOGU1207020PNFR-M	LOGU1207020PNFR-M	G	F													●	.488	.445	.276	.118	.008	
	LOGU1207040PNFR-M	LOGU1207040PNFR-M	G	F													●	.488	.445	.276	.110	.016	
	LOGU1207080PNFR-M	LOGU1207080PNFR-M	G	F													●	.488	.445	.276	.094	.031	
	LOGU1207100PNFR-M	LOGU1207100PNFR-M	G	F													●	.488	.445	.276	.091	.039	
	LOGU1207120PNFR-M	LOGU1207120PNFR-M	G	F													●	.488	.445	.276	.083	.047	
	LOGU1207160PNFR-M	LOGU1207160PNFR-M	G	F													●	.488	.445	.276	.067	.063	
	LOGU1207200PNFR-M	LOGU1207200PNFR-M	G	F													●	.488	.445	.276	.055	.079	
	LOGU1207240PNFR-M	LOGU1207240PNFR-M	G	F													●	.488	.445	.276	.039	.094	
	LOGU1207300PNFR-M	LOGU1207300PNFR-M	G	F													●	.488	.445	.276	.020	.118	
	LOGU1207320PNFR-M	LOGU1207320PNFR-M	G	F													●	.488	.445	.276	.012	.126	
Solo inserto derecho.																							
WJX ↻ L224 NEW 	JOMU140715ZZER-L	JOMU140715ZZER-L	M	E	●	●	●	●	●	●	●	●	●	●				—	—	.259	.051	.059	
	JOMU140715ZZER-M	JOMU140715ZZER-M	M	E	●	●	●	●	●	●	●	●	●	●	●				—	—	.261	.051	.059
	JOMU140715ZZER-R	JOMU140715ZZER-R	M	E	●	●	●					●	●	●				—	—	.266	.051	.059	
Solo inserto derecho.																							
WSX445 ↻ L018 	SNGU140812ANFR-L	SNGU140812ANFR-L	G	F												●	—	—	.331	.059	.047		
	SNGU140812ANER-L	SNGU140812ANER-L	G	E	●	●	●	●	●	●	●	●	●	●	●	●			—	—	.331	.059	.047
	SNGU140812ANER-M	SNGU140812ANER-M	G	E	●	●	●	●	●	●	●	●	●	●	●	●			—	—	.331	.059	.047
	SNMU140812ANER-M	SNMU140812ANER-M	M	E	●	●	●	●	●	●	●	●	●	●	●	●			—	—	.331	.059	.047
	SNMU140812ANER-R	SNMU140812ANER-R	M	E	●	●	●					●	●	●	●			—	—	.331	.059	.047	
	SNMU140812ANER-H	SNMU140812ANER-H	M	E	●	●	●					●	●	●	●			—	—	.331	.059	.047	
	NEW SNGU140812ANFL-L	SNGU140812ANFL-L	G	F												●	—	—	.331	.059	.047		
	NEW SNGU140812ANEL-L	SNGU140812ANEL-L	G	E	●	●	●					●	●	●	●			—	—	.331	.059	.047	
	SNGU140812ANEL-M	SNGU140812ANEL-M	G	E	●	●	●					●	●	●	●			—	—	.331	.059	.047	
	SNMU140812ANEL-M	SNMU140812ANEL-M	M	E	●	●	●					●	●	●	●			—	—	.331	.059	.047	
	SNMU140812ANEL-R	SNMU140812ANEL-R	M	E	●	●	●					●	●	●	●			—	—	.331	.059	.047	

● = NEW

● = NEW

Material	P	Acero					●		●		●		●		Condiciones de Corte (Guía) : ● : Corte Estable ● : Corte General ✱ : Corte Inestable Honeado : E : Redondo F : Filo Vivo T : Chaflán	
	M	Acero Inoxidable					●		●		●					
	K	Fundición					●		●		●					
	N	Metales no ferrosos					●		●		●					
	S	Aleaciones Termoresistentes, Aleaciones de Titanio					●		●		●					
	H	Acero Endurecido					●		●		●					
Geometría	Descripción	Descripción (ISO)	Clase	Honeado	Recubierto		Cermet	Carburo	Dimensiones (plgs)							
					F7030	MC5020 VP15TF UP20M	NX2525	UTi20T HTi10	L	W1	IC	S	RE			
Negativos 	SNMN432	SNMN120408	M	E	★		★	★ ★	—	—	.500	.187	.031			
	SNMN433	SNMN120412	M	E	★		★	★	—	—	.500	.187	.047			
Positivos de 11° 	SPMN421	SPMN120304	M	E ★1	★			★ ★	—	—	.500	.125	.016			
	SPMN421T	SPMN120304T	M	T			★		—	—	.500	.125	.016			
	SPMN422	SPMN120308	M	E	★	●		● ●	—	—	.500	.125	.031			
	SPMN423	SPMN120312	M	E ★1	★	★		★ ★	—	—	.500	.125	.047			
	SPMN432	SPMN120408	M	E	★			★ ★	—	—	.500	.187	.031			
	SPMN433	SPMN120412	M	E	★			●	—	—	.500	.187	.047			
	SPMN532	SPMN150408	M	E				★	—	—	.625	.187	.031			
Positivos de 11° 	TPMN321	TPMN160304	M	E ★2	★	● ★	★	● ●	—	—	.375	.125	.016			
	TPMN322	TPMN160308	M	E ★2	★	● ★	★	● ●	—	—	.375	.125	.031			
	TPMN323	TPMN160312	M	E ★1		★		●	—	—	.375	.125	.047			
	TPMN431	TPMN220404	M	E				●	—	—	.500	.187	.031			
	TPMN432	TPMN220408	M	E ★1	★	● ★		● ★	—	—	.500	.187	.031			
	TPMN433	TPMN220412	M	E ★1	★	★		● ●	—	—	.500	.187	.047			
	JPMT060204-E	JPMT060204-E	M	E		★ ★			.276	.313	—	.094	.016			

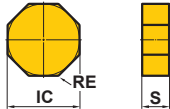
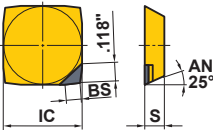
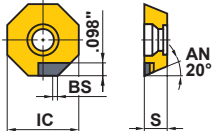
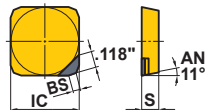
*1 HTi10 son tipo de honeado "F".

*2 HTi10 son tipo de honeado "F", NX2525 son tipo de honeado "T".

K

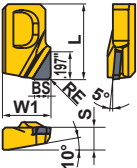
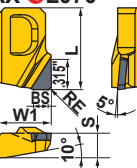
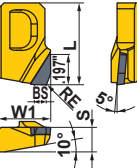
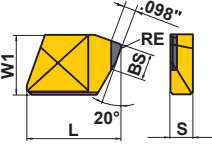
INSERTOS DE FRESADO

CBN Y PCD

Material	K	Fundición										
	N	Metales no ferrosos										
Geometría	Descripción	Descripción (ISO)	Clase	CBN	PCD	Dimensiones (plgs)						
				MB710 MB730 BC5030 MD220 MD2030		L	W1	IC	S	BS	RE	
AOX445 	SL-ONEN120404ASN	SL-ONEN120404ASN	E	★		—	—	.500	.187	—	.016	
												
BF407	SFCN42ZFFR2	SFCN1203ZFFR2	C		●	—	—	.500	.125	.094	—	
												
BOE 	OEMX12T3ETR1	OEMX12T3ETR1	M	●		—	—	.500	.156	.039	—	
	OEMX12T3ETR5	OEMX12T3ETR5	M	●		—	—	.500	.156	.197	—	
												
FBP415	SPEN42EETR1	SPEN1203EETR1	E	★		—	—	.500	.125	.055	—	
												

K

INSERTOS DE FRESADO

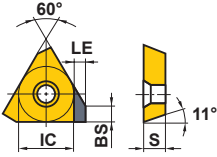
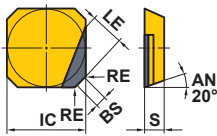
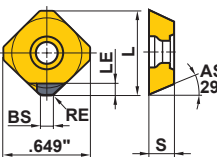
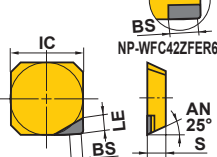
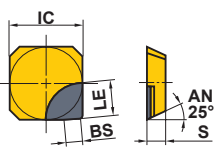
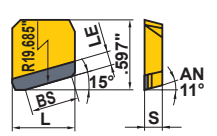
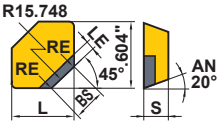
Material	K	Fundición			● ● ● ●									
	N	Metales no ferrosos			● ●									
Geometría	Descripción	Descripción (ISO)	Clase	CBN	PCD	Dimensiones (plgs)								
				MB710 MB730 BC5030	MD220 MD2030	L	W1	IC	S	BS	RE			
FMAX 	GOER1404PXFR2	GOER1404PXFR2	E			● ●	.551	.354	—	.165	.079	.016		
	GOER1408PXFR2	GOER1408PXFR2	E			● ●	.551	.354	—	.165	.079	.031		
FMAX  NEW	GOER1408PXFR2-8	GOER1408PXFR2-8	E			●	.551	.354	—	.165	.079	.031		
FMAX  NEW	GOER1401ZXFR2	GOER1401ZXFR2	E			●	.551	.354	—	.165	.079	.004		
NF10000 	NP-GDCN2004PDSR3	NP-GDCN2004PDSR3	C	★			.787	.500	—	.187	—	.031		

● = NEW

K

INSERTOS DE FRESADO

CBN Y PCD CON WIPER

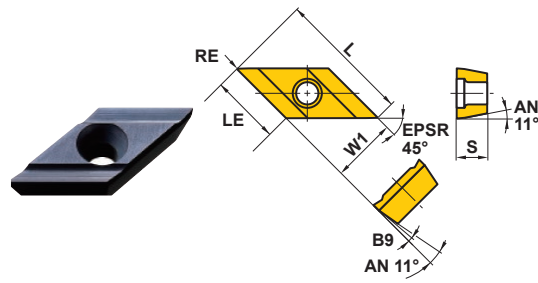
Material	K	Fundición										
	N	Metales no ferrosos										
Geometría	Descripción	Descripción (ISO)	Clase	CBN	PCD	Dimensiones (plgs)						
				MB710	MB730	MD220	L	IC	LE	S	BS	RE
PMF 	TPEW1303ZPTR2	TPEW1303ZPTR2	E	●		—	.313	.059	.125	.079	—	
SE445 	SECN42AFFR1	SECN1203AFFR1	C		●	—	.500	.197	.125	.055	.039	
ASX445 	NP-WEEW13T3AGFR3C	NP-WEEW13T3AGFR3C	E		●	.654	—	.071	.156	.118	.059	
	NP-WEEW13T3AGTR3C	NP-WEEW13T3AGTR3C	E	●		.654	—	.071	.156	.118	.059	
BF407 	NP-WFC42ZFER2	NP-WFC42ZFER2	C		●	—	.500	.118	.125	.094	—	
	NP-WFC42ZFER6	NP-WFC42ZFER6	C		●	—	.500	.130	.125	.236	—	
BF407 	WFC42ZFER2	WFC42ZFER2	C		★	—	.500	.244	.125	.094	—	
FBP415 	WPC42EETR10C	WPC42EETR10C	C	●		.500	—	.098	.125	.394	—	
SE445 	WEC42AFFR5C	WEC42AFFR5C	C		●	.500	—	.087	.125	.197	.039	
	WEC42AFTR5C	WEC42AFTR5C	C	●		.500	—	.087	.125	.197	.039	

K

INSERTOS DE FRESADO

INSERTOS DE BARRENADO

Inserto para módulo de chaflanado de broca TAW

Tipo Geometría	Descripción	Recubierto		Dimensiones (mm)					
		VP15TF		L	LE	WI	S	RE	B9
	TAWC12T301-45GM	★		17.4	9.05	8.5	3.97	0.1	5°

K

INSERTOS DE FRESADO