

SERIE BC8100/MB8100

PLACAS DE PCBN
PARA TORNEADO



SERIE BC8100

SERIE DE PCBN RECUBIERTA PARA EL TORNEADO DE ACEROS ENDURECIDOS



BC8105

MÁXIMA PRECISIÓN

Para un corte continuo

- Acabados excelentes de las superficies y tolerancias estrechas con una larga vida útil de la herramienta.
- Para acabados de superficies de hasta Rz 2.4 (Ra 0.6).

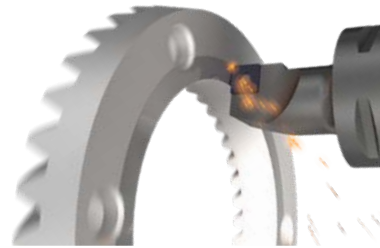


BC8110/MB8110

TORNEADO A ALTA VELOCIDAD

Para un corte continuo o ligeramente interrumpido

- Vida útil de la herramienta prolongada y estable para acabados de superficies por debajo de Rz 6.3.

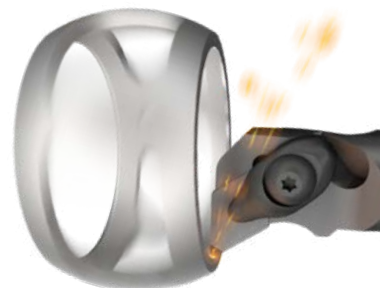


BC8120/MB8120

APLICACIONES GENERALES

Para un corte continuo o de interrupción moderada

- Primera recomendación para desbaste y preacabado.



BC8130/MB8130

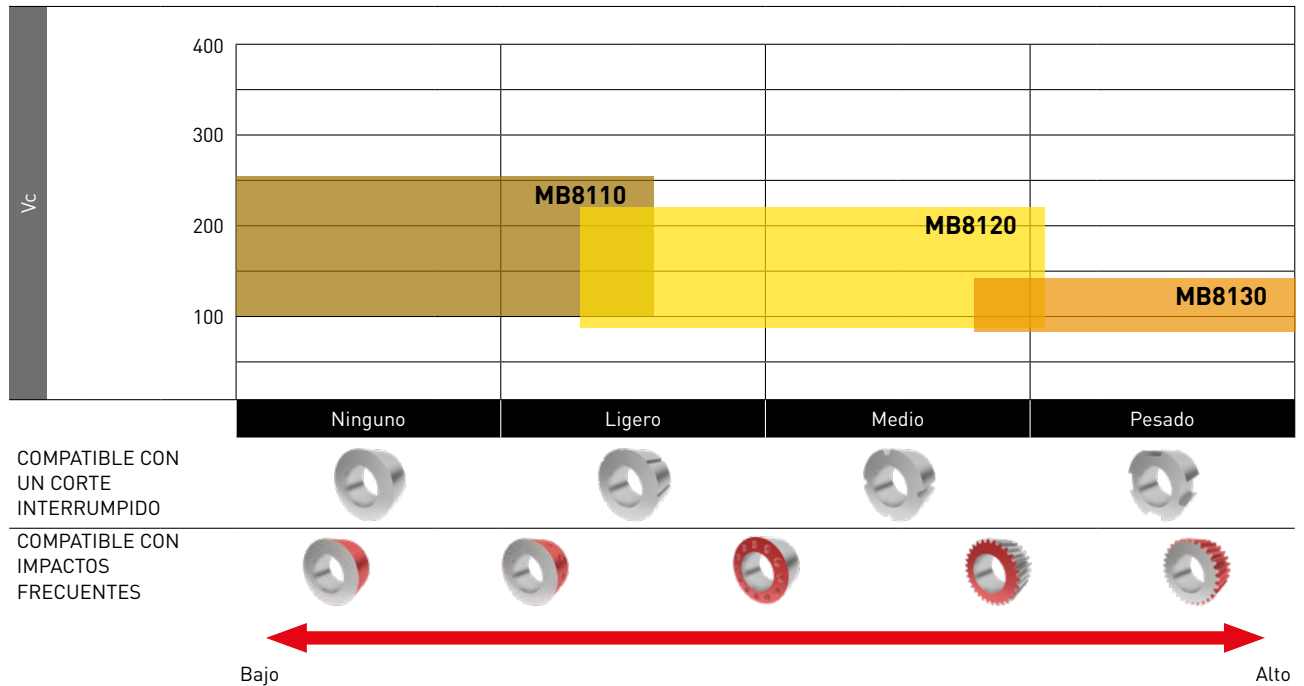
MECANIZADO INESTABLE

Para aplicaciones inestables y cortes muy interrumpidos.

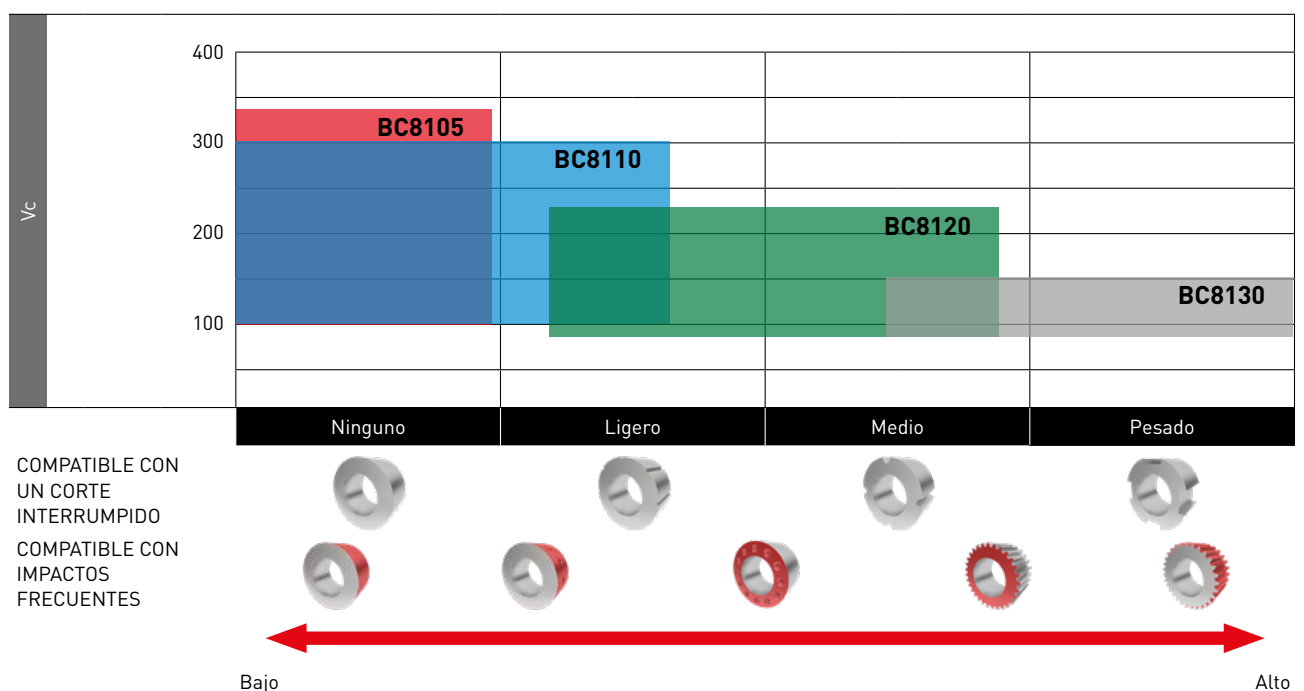
- Mantenimiento de tolerancias precisas durante un mayor número de impactos.

GAMA DE APLICACIONES

SERIE MB8100 DE PCBN SIN RECUBRIMIENTO



SERIE BC8100 DE PCBN CON RECUBRIMIENTO



CALIDADES

NUEVO RECUBRIMIENTO AVANZADO

BC8105



El recubrimiento de baja fricción evita el fundido de las virutas y permite un acabado excelente de las superficies.

BC8110



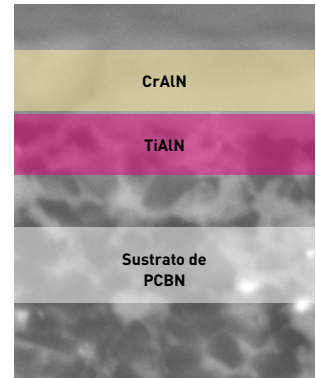
La elevada resistencia al desgaste permite una vida útil de la herramienta más larga durante el mecanizado a alta velocidad.

BC8120



La elevada resistencia al desconchado del recubrimiento ofrece una vida útil más larga.

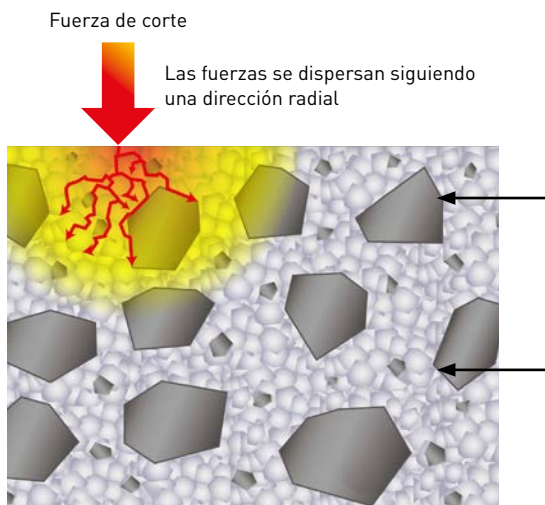
BC8130



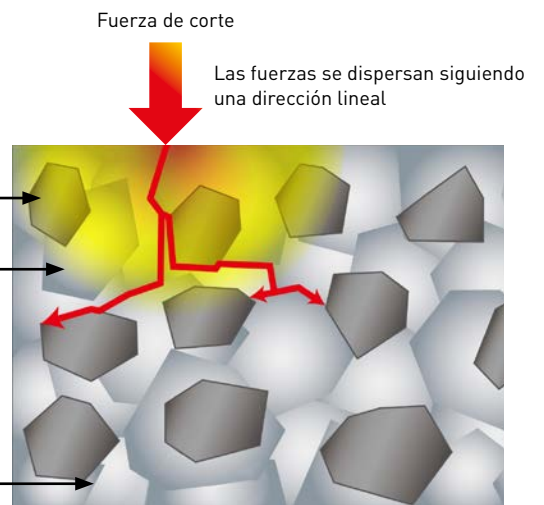
Muy resistente al astillado y el desconchado del recubrimiento.

TECNOLOGÍA DE SUSTRATO OPTIMIZADA

SERIE BC8100 / MB8100



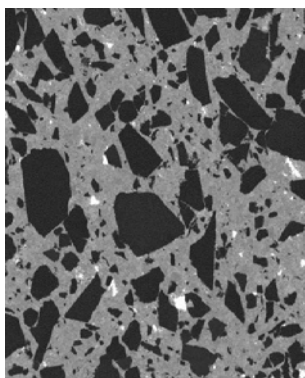
CONVENCIONAL



El nuevo aglomerante de ultra micro-partículas para las placas de PCBN con y sin recubrimiento impide el desarrollo de grietas lineales para evitar las roturas repentinas.

SERIE MB8100 DE PCBN SIN RECUBRIMIENTO

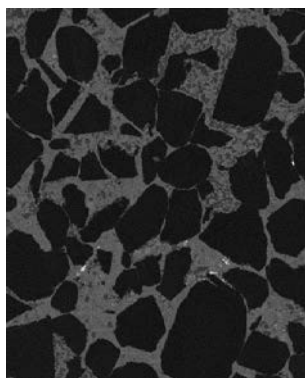
MB8110



Para corte continuo

La MB8110 tiene una excelente resistencia al desgaste, lo que la convierte en ideal para el corte continuo.

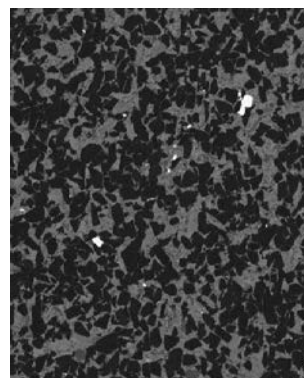
MB8120



Para corte general

La MB8120 ofrece una excelente resistencia al desgaste y a la rotura y es apta para una gama amplia de aplicaciones.

MB8130



Para corte muy interrumpido

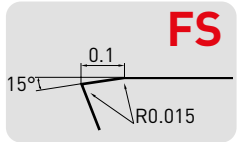
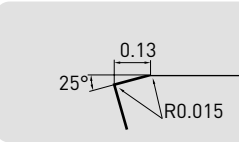

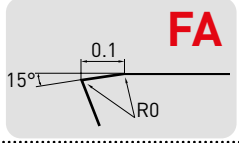
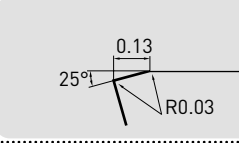
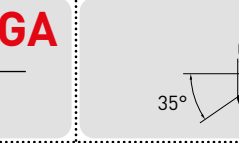
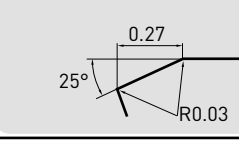
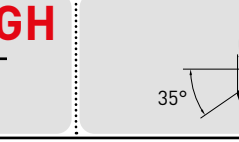




La MB8130 ofrece mayor resistencia a la rotura y es ideal para aplicaciones inestables y para un mecanizado interrumpido.

Las calidades de PCBN con y sin recubrimiento se fabrican utilizando tecnología de aglomerante de ultra micro-partículas.



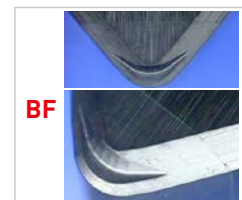
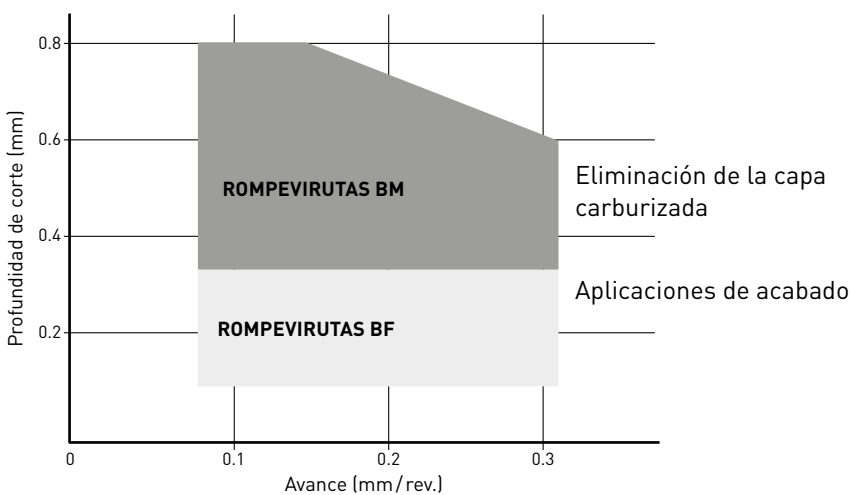
GEOMETRÍA

PREPARACIÓN DEL FILO DE CORTE

Para profundidades de corte muy pequeñas	 FS	 GS	 TS	
Para mecanizados generales	 FA	 GA	 TA	
Corte muy interrumpido		 GH	 TH	
Compatibilidad con un corte interrumpido	 Ninguno	 Ligero	 Medio	 Pesado

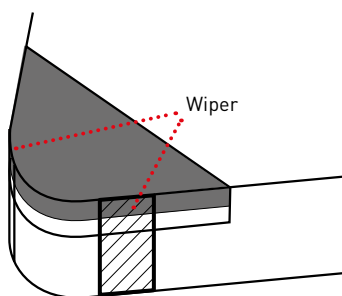
Multitud de preparaciones del filo de corte para cualquier aplicación.

ROMPEVIRUTAS BM/BF



Sistema rompevirutas para un excelente control de las virutas durante los trabajos de acabado, eliminación de capas carburizadas y mecanizados duros/suaves.

PLACA WIPER



MEJORA DEL ACABADO DE LAS SUPERFICIES

En las mismas condiciones de mecanizado que los rompevirutas convencionales, si bien con una velocidad de avance mayor, permite mejorar el acabado de la superficie de la pieza de trabajo.

MEJORA DE LA EFICACIA

Las velocidades de avance altas no solo acortan los tiempos de mecanizado, sino que también permiten combinar operaciones de desbaste y acabado.

AUMENTO DE LA VIDA ÚTIL DE LA HERRAMIENTA

Cuando se utiliza en condiciones de avance altas, el tiempo necesario para cortar un componente disminuye, lo que favorece el mecanizado de más piezas con cada placa. Además, la elevada velocidad de avance evita la fricción y, por tanto, retrasa el desarrollo del desgaste y aumenta la vida útil de la herramienta.

MEJORA DEL CONTROL DE VIRUTAS

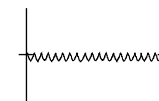
En condiciones de avance altas, las virutas generadas son cada vez más gruesas y se rompen más fácilmente, una característica que mejora el control de las virutas.

CONDICIONES DE CORTE RECOMENDADAS Y RENDIMIENTO

ACABADO DE ALTA PRECISIÓN

Sin Wiper

Con Wiper



Ry= 3.2 µm

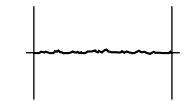
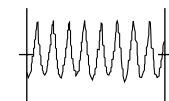
Ry= 1.0 µm

Velocidad de corte: 100 m/min
Avance: 0.1 mm/rev.
Profundidad de corte: 0.1 mm
Corte en seco

MECANIZADO DE ALTO AVANCE

Sin Wiper

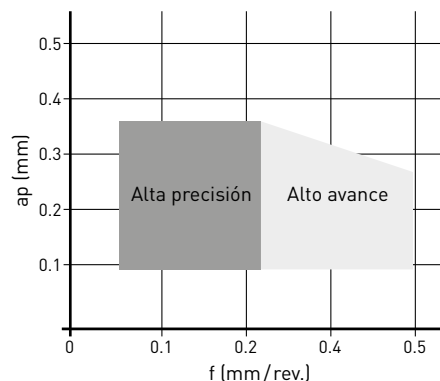
Con Wiper



Ry= 12.2 µm

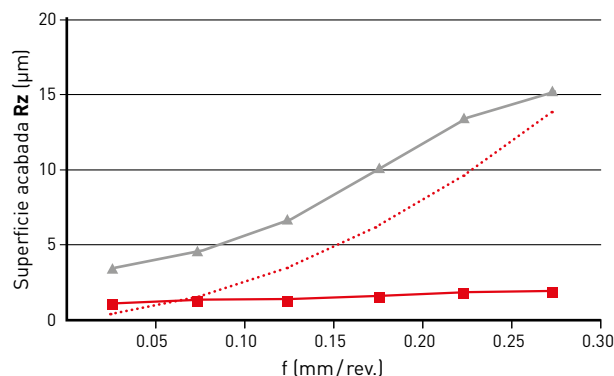
Ry= 1.2 µm

Velocidad de corte: 100 m/min
Avance: 0.3 mm/rev.
Profundidad de corte: 0.1 mm
Corte en seco



RESULTADOS DE CORTE

Placa	NP-CNGA120408
Material de la pieza de trabajo	Acero endurecido (HRC 60)
Modo de corte	Continuo
Vc (m/min)	120
f (mm/rev.)	Varios
ap (mm)	0.1
Refrigerante	Corte en seco



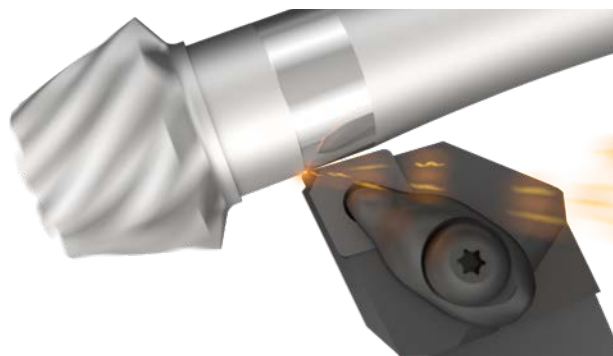
- Wiper
- ▲ Sin Wiper
- ⋯ Rugosidad teórica de la superficie acabada

BC8105

MÁXIMA PRECISIÓN

PARA UN CORTE CONTINUO

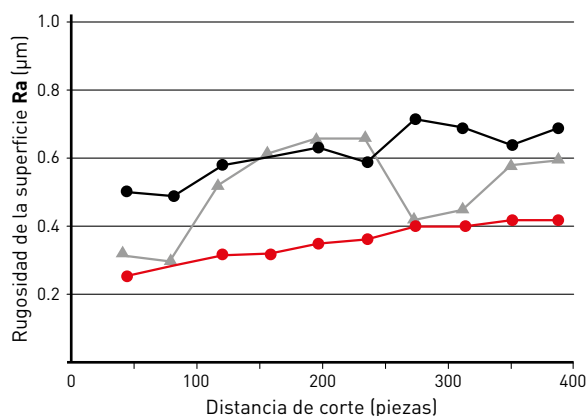
- Rugosidad excelente de las superficies y tolerancias estrechas con una larga vida útil de la herramienta.
- Para acabados de superficies de hasta Rz 2.4 μm (Ra 0.6 μm).



ACABADO DE LAS SUPERFICIES

Placa	NP-DNGA150608GS2
Material de la pieza de trabajo	34Mn5 (60 HRC)
Modo de corte	Continuo
Vc (m/min)	176
f (mm/rev.)	0.09
ap (mm)	0.15
Refrigerante	Emulsión

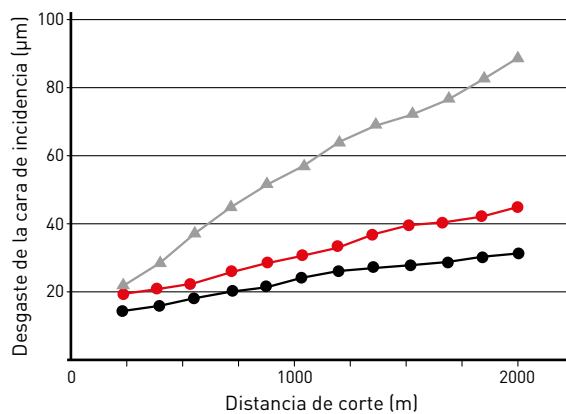
La BC8105 es la primera recomendación para la obtención de acabados superiores de las superficies.



VIDA DE LA HERRAMIENTA (DESGASTE DE LA CARA DE INCIDENCIA)

Placa	NP-CNGA120408GS2
Material de la pieza de trabajo	42CrMo4 (60 HRC)
Modo de corte	Continuo
Vc (m/min)	200
f (mm/rev.)	0.05
ap (mm)	0.05
Refrigerante	Corte en seco

Excelente resistencia al desgaste gracias a la tecnología Miracle Sigma.



BC8110

TORNEADO A ALTA VELOCIDAD

PARA UN CORTE CONTINUO

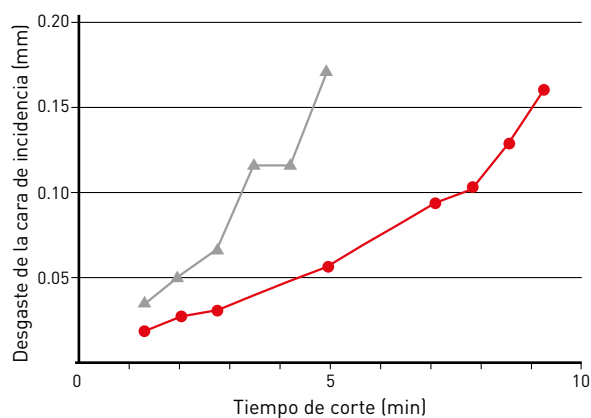
- Vida útil de la herramienta prolongada y estable para acabados de superficies por debajo de $Rz\ 6.3\ \mu\text{m}$.
- Abarca una amplia gama de aplicaciones para un corte continuo.



VIDA DE LA HERRAMIENTA (DESGASTE DE LA CARA DE INCIDENCIA)

Placa	NP-CNGA120408GS2
Material de la pieza de trabajo	42CrMo4 (60HRC)
Modo de corte	Continuo
Vc (m/min)	250
f (mm/rev.)	0.10
ap (mm)	0.2
Refrigerante	Corte en seco

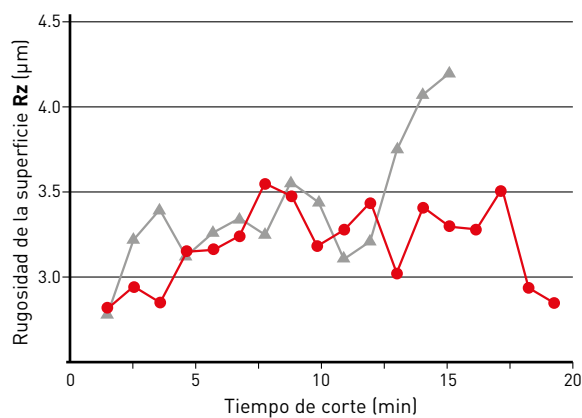
La BC8110 es la primera recomendación para acabados a alta velocidad.



ACABADO DE LA SUPERFICIE

Placa	NP-CNGA120408GS2
Material de la pieza de trabajo	42CrMo4 (60HRC)
Modo de corte	Continuo
Vc (m/min)	250
f (mm/rev.)	0.10
ap (mm)	0.2
Refrigerante	Corte en seco

Mantenimiento de unos excelentes acabados de las superficies durante cortes largos continuos.

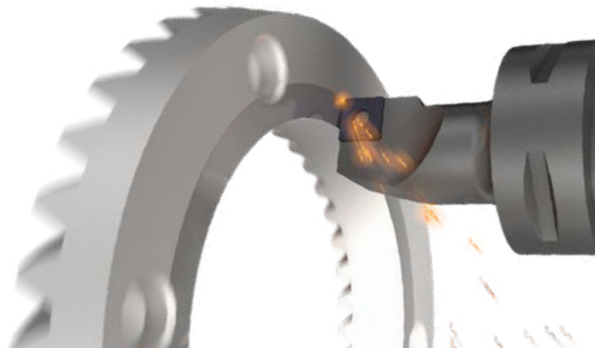


BC8120

USO GENERAL

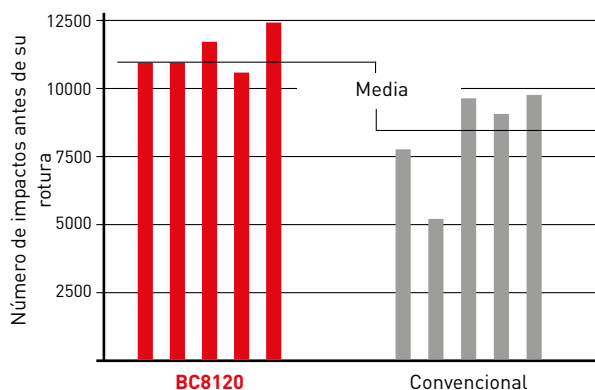
PARA UN CORTE CONTINUO O LIGERAMENTE INTERRUPTIDO

- Primera recomendación para desbaste y preacabado.
- Abarca una amplia gama de aplicaciones para un mecanizado continuo o ligeramente interrumpido.



CORTE INTERRUPTIDO

Placa	NP-CNGA120408GA2
Material de la pieza de trabajo	42CrMo4 (60 HRC)
Modo de corte	Continuo
Vc (m/min)	250
f (mm/rev.)	0.15
ap (mm)	0.1
Refrigerante	Corte en seco



Estado del filo de corte tras 8000 impactos



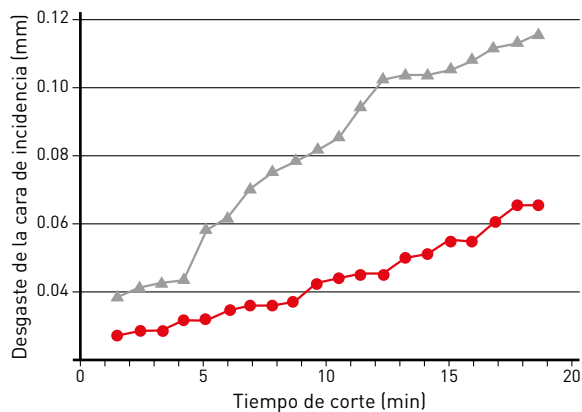
BC8120



Convencional

VIDA DE LA HERRAMIENTA (DESGASTE DE LA CARA DE INCIDENCIA)

Placa	NP-CNGA120408GA2
Material de la pieza de trabajo	42CrMo4 (60 HRC)
Modo de corte	Continuo
Vc (m/min)	150
f (mm/rev.)	0.10
ap (mm)	0.2
Refrigerante	Corte en seco



Filo de corte tras 15 min



BC8120



Convencional

Descascarillado

BC8130

MECANIZADO RESISTENTE

PARA APLICACIONES INESTABLES Y CORTES MUY INTERRUPTIDOS

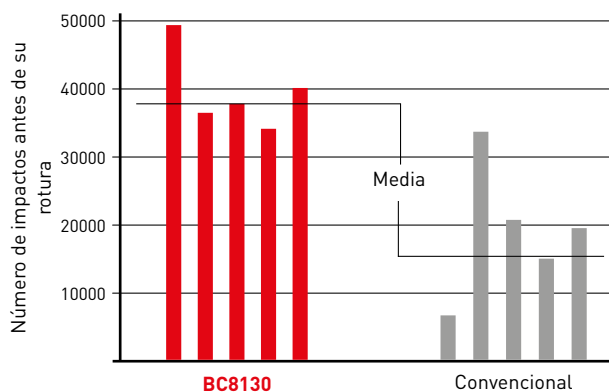
- Mantenimiento de tolerancias precisas durante un mayor número de impactos.



CORTE INTERRUPTIDO (ENSAYO DE LABORATORIO)

Placa	NP-CNGA120408GA2
Material de la pieza de trabajo	42CrMo4 (60 HRC)
Modo de corte	Muy interrumpido
Vc (m/min)	250
f (mm/rev.)	0.05
ap (mm)	0.1
Refrigerante	Corte refrigerado

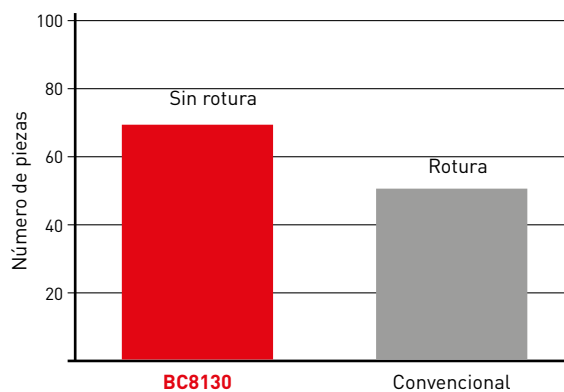
La BC8130 garantiza la estabilidad con hasta 30.000 impactos



CORTE PESADO

Placa	NP-CNGA120408TH2
Material de la pieza de trabajo	C45 (58 HRC)
Modo de corte	Muy interrumpido
Vc (m/min)	130
f (mm/rev.)	0.08
ap (mm)	0.15
Refrigerante	Corte refrigerado

Sin rotura tras el mecanizado de 70 piezas



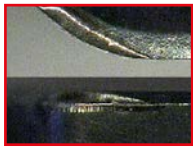
SERIE MB8100

CALIDADES DE PCBN SIN RECUBRIMIENTO CON TECNOLOGÍA DE AGLOMERANTE DE ULTRA MICRO-PARTÍCULAS

VIDA DE LA HERRAMIENTA (DESGASTE DE LA CARA DE INCIDENCIA)

Placa	NP-CNGA120408GA2
Material de la pieza de trabajo	JIS SCr420 (60HRC)
Tipo de corte	Corte continuo exterior
Vc (m/min)	250
f (mm/rev.)	0.1
ap (mm)	0.2
Refrigerante	Corte en seco

FILO DE CORTE TRAS 180 SEGUNDOS

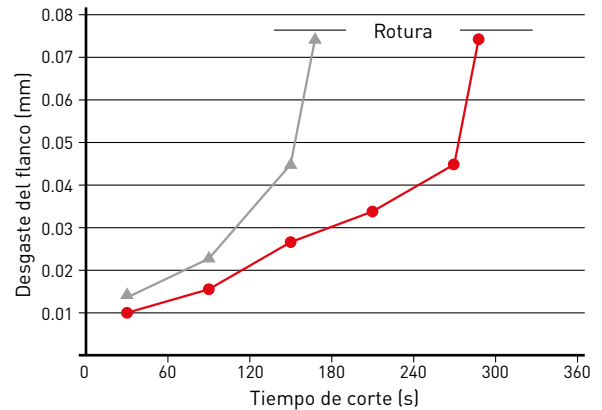


MB8110



Convencional

Desgaste elevado



CORTE PESADO

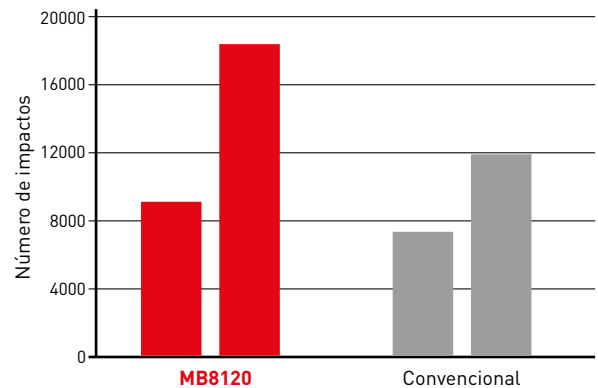
Placa	NP-CNGA120408GA2
Material de la pieza de trabajo	JIS SCr420 (60HRC)
Tipo de corte	Corte exterior interrumpido
Vc (m/min)	250
f (mm/rev.)	0.15
ap (mm)	0.1
Refrigerante	Corte en seco



MB8120



Convencional



CORTE PESADO

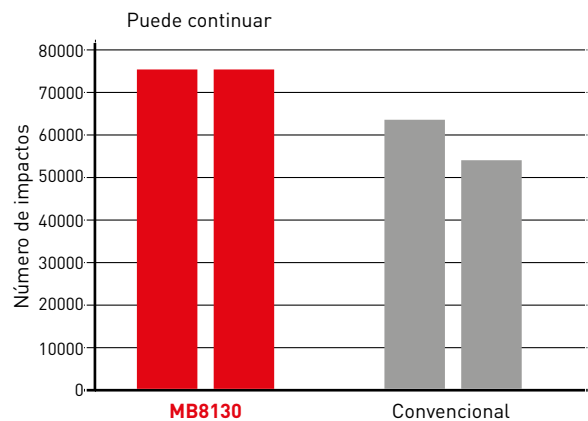
Placa	NP-CNGA120408GA2
Material de la pieza de trabajo	JIS SCr420 (60HRC)
Tipo de corte	Corte exterior muy interrumpido
Vc (m/min)	150
f (mm/rev.)	0.05
ap (mm)	0.1
Refrigerante	Corte refrigerado



MB8130



Convencional



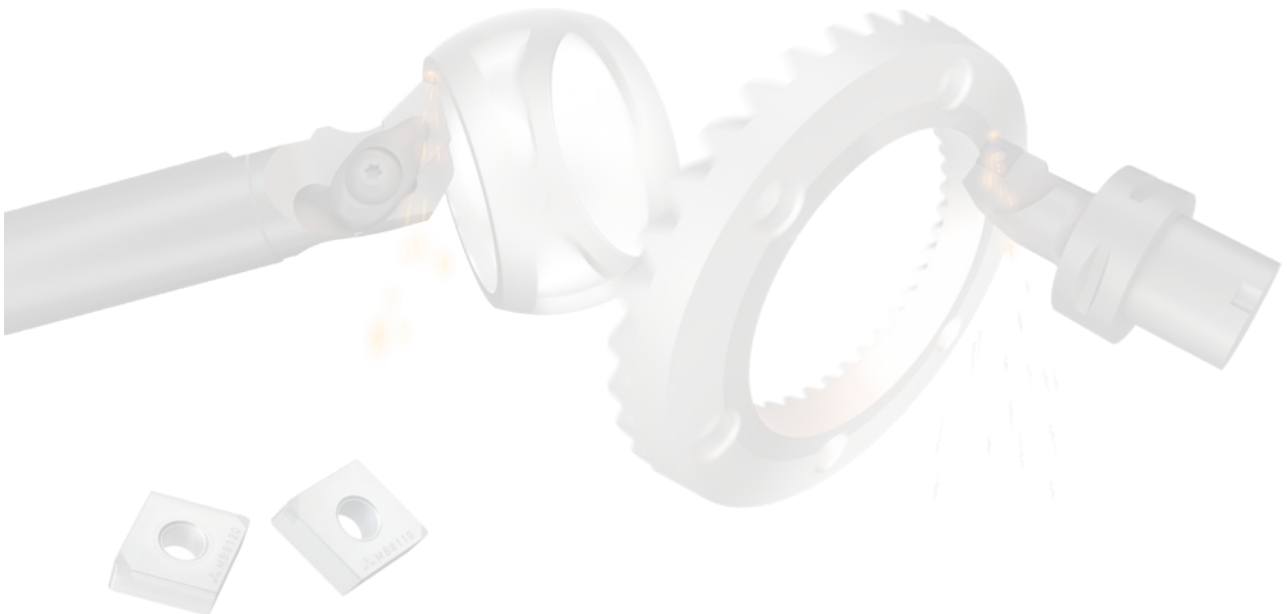
IDENTIFICACIÓN

PLACAS DE PCBN



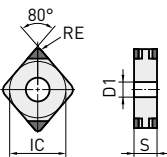
Geometría de la placa	Preparación del filo de corte	Wiper	Dirección de corte*
NP Estándar	GA Corte continuo	WS FBWL Con Wiper GBWL	Figure Símbolo JR Derecha
	FA FS Corte continuo	Sin marca Sin Wiper	JL Izquierda
	TA TH Corte interrumpido		

* Ángulo del filo de corte de 93°



CNGA, CNGM

PLACAS NEGATIVAS (CON AGUJERO)

Referencia	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometría
NP-CNGA120404GA4			●	●		★		4	12.7	4.76	0.4	5.16	
NP-CNGA120408GA4			●	●		★		4	12.7	4.76	0.8	5.16	
NP-CNGA120412GA4			●	●		★		4	12.7	4.76	1.2	5.16	
NP-CNGA120404GS4	●	●						4	12.7	4.76	0.4	5.16	
NP-CNGA120408GS4	●	●						4	12.7	4.76	0.8	5.16	
NP-CNGA120412GS4	●	●						4	12.7	4.76	1.2	5.16	
NP-CNGA120404GH4		★	★	●				4	12.7	4.76	0.4	5.16	
NP-CNGA120408GH4		★	★	●				4	12.7	4.76	0.8	5.16	
NP-CNGA120412GH4		★	★	●				4	12.7	4.76	1.2	5.16	
NP-CNGA120404FS4	●	★	★		★			4	12.7	4.76	0.4	5.16	
NP-CNGA120408FS4	●	★	★		★			4	12.7	4.76	0.8	5.16	
NP-CNGA120412FS4	●	★	★		★			4	12.7	4.76	1.2	5.16	
NP-CNGA120404TA4			★	●		★	★	4	12.7	4.76	0.4	5.16	
NP-CNGA120408TA4			●	●		★	★	4	12.7	4.76	0.8	5.16	
NP-CNGA120412TA4			★	●		★	★	4	12.7	4.76	1.2	5.16	
NP-CNGA120404TS4		★						4	12.7	4.76	0.4	5.16	
NP-CNGA120408TS4		★						4	12.7	4.76	0.8	5.16	
NP-CNGA120412TS4		★						4	12.7	4.76	1.2	5.16	
NP-CNGA120404TH4			★	●			★	4	12.7	4.76	0.4	5.16	
NP-CNGA120408TH4			★	●			★	4	12.7	4.76	0.8	5.16	
NP-CNGA120412TH4			★	●			★	4	12.7	4.76	1.2	5.16	
NP-CNGA120404FSWS4	W	★	★	★		★		4	12.7	4.76	0.4	5.16	
NP-CNGA120408FSWS4	W	★	★	★		★		4	12.7	4.76	0.8	5.16	
NP-CNGA120412FSWS4	W	★	★	★		★		4	12.7	4.76	1.2	5.16	
NP-CNGA120404GAWS4	W		●	●		★		4	12.7	4.76	0.4	5.16	
NP-CNGA120408GAWS4	W		●	●		★		4	12.7	4.76	0.8	5.16	
NP-CNGA120412GAWS4	W		●	●		★		4	12.7	4.76	1.2	5.16	
NP-CNGA120404GSWS4	W	●	●					4	12.7	4.76	0.4	5.16	
NP-CNGA120408GSWS4	W	●	●					4	12.7	4.76	0.8	5.16	
NP-CNGA120412GSWS4	W	●	●					4	12.7	4.76	1.2	5.16	
NP-CNGA120402GA2			★			★		2	12.7	4.76	0.2	5.16	
NP-CNGA120404GA2			●	●		●		2	12.7	4.76	0.4	5.16	
NP-CNGA120408GA2			●	●		●		2	12.7	4.76	0.8	5.16	
NP-CNGA120412GA2			●	●		●		2	12.7	4.76	1.2	5.16	
NP-CNGA120402GS2		★						2	12.7	4.76	0.2	5.16	
NP-CNGA120404GS2	●	●						2	12.7	4.76	0.4	5.16	
NP-CNGA120408GS2	●	●						2	12.7	4.76	0.8	5.16	
NP-CNGA120412GS2	●	●						2	12.7	4.76	1.2	5.16	
NP-CNGA120404GH2		★	★	●				2	12.7	4.76	0.4	5.16	
NP-CNGA120408GH2		★	★	●				2	12.7	4.76	0.8	5.16	
NP-CNGA120412GH2		●	★	●				2	12.7	4.76	1.2	5.16	
NP-CNGA120402FS2		★				★		2	12.7	4.76	0.2	5.16	
NP-CNGA120404FS2	●	●	●		●			2	12.7	4.76	0.4	5.16	
NP-CNGA120408FS2	●	●	●		●			2	12.7	4.76	0.8	5.16	
NP-CNGA120412FS2	●	●	●		★			2	12.7	4.76	1.2	5.16	
NP-CNGA120404TA2			●	●		★	●	2	12.7	4.76	0.4	5.16	
NP-CNGA120408TA2			●	●		★	●	2	12.7	4.76	0.8	5.16	
NP-CNGA120412TA2			●	●		★	●	2	12.7	4.76	1.2	5.16	
NP-CNGA120404TS2		●						2	12.7	4.76	0.4	5.16	
NP-CNGA120408TS2		●						2	12.7	4.76	0.8	5.16	
NP-CNGA120412TS2		●						2	12.7	4.76	1.2	5.16	
NP-CNGA120404TH2			★	●			●	2	12.7	4.76	0.4	5.16	
NP-CNGA120408TH2			★	●			●	2	12.7	4.76	0.8	5.16	
NP-CNGA120412TH2			★	●			●	2	12.7	4.76	1.2	5.16	
NP-CNGA120404FBWL2	W	★	★	★		★		2	12.7	4.76	0.4	5.16	
NP-CNGA120408FBWL2	W	●	★	★		★		2	12.7	4.76	0.8	5.16	
NP-CNGA120412FBWL2	W	★	★	★		★		2	12.7	4.76	1.2	5.16	
NP-CNGA120404GBWL2	W	★	★	★		★		2	12.7	4.76	0.4	5.16	

B: Rompevirutas W: Wiper

Referencia		BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometría
NP-CNGA120408GBWL2	W	★	★	★			★		2	12.7	4.76	0.8	5.16	
NP-CNGA120412GBWL2	W	★	★	★			★		2	12.7	4.76	1.2	5.16	
NP-CNGA120404FSWS2	W	★	★	★		★			2	12.7	4.76	0.4	5.16	
NP-CNGA120408FSWS2	W	●	●	★		★			2	12.7	4.76	0.8	5.16	
NP-CNGA120412FSWS2	W	★	★	★		★			2	12.7	4.76	1.2	5.16	
NP-CNGA120404GAWS2	W			●	●		★		2	12.7	4.76	0.4	5.16	
NP-CNGA120408GAWS2	W			●	●		★		2	12.7	4.76	0.8	5.16	
NP-CNGA120412GAWS2	W			●	●		★		2	12.7	4.76	1.2	5.16	
NP-CNGA120404GSWS2	W	●	★						2	12.7	4.76	0.4	5.16	
NP-CNGA120408GSWS2	W	●	●						2	12.7	4.76	0.8	5.16	
NP-CNGA120412GSWS2	W	●	★						2	12.7	4.76	1.2	5.16	
BM-CNGM120404TA2	B			●					2	12.7	4.76	0.4	5.16	
BM-CNGM120408TA2	B		★						2	12.7	4.76	0.8	5.16	
BM-CNGM120412TA2	B			●					2	12.7	4.76	1.2	5.16	
BF-CNGM120404TS2	B		●						2	12.7	4.76	0.4	5.16	
BF-CNGM120408TS2	B		●						2	12.7	4.76	0.8	5.16	
BF-CNGM120412TS2	B		●						2	12.7	4.76	1.2	5.16	

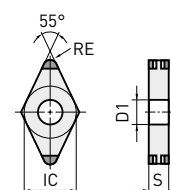
B: Rompevirutas W: Wiper



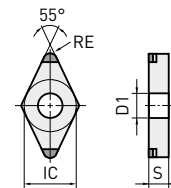
DNGA, DNGM

PLACAS NEGATIVAS (CON AGUJERO)

Referencia	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometría
NP-DNGA150404GA4			★	★		★		4	12.7	4.76	0.4	5.16	
NP-DNGA150408GA4			★	★		★		4	12.7	4.76	0.8	5.16	
NP-DNGA150412GA4			★	★		★		4	12.7	4.76	1.2	5.16	
NP-DNGA150604GA4			●	●		★		4	12.7	6.35	0.4	5.16	
NP-DNGA150608GA4			●	●		★		4	12.7	6.35	0.8	5.16	
NP-DNGA150612GA4			●	●		★		4	12.7	6.35	1.2	5.16	
NP-DNGA150404GS4	★	★						4	12.7	4.76	0.4	5.16	
NP-DNGA150408GS4	★	★						4	12.7	4.76	0.8	5.16	
NP-DNGA150412GS4	★	★						4	12.7	4.76	1.2	5.16	
NP-DNGA150604GS4	●	●						4	12.7	6.35	0.4	5.16	
NP-DNGA150608GS4	●	●						4	12.7	6.35	0.8	5.16	
NP-DNGA150612GS4	●	●						4	12.7	6.35	1.2	5.16	
NP-DNGA150404GH4		★	★	★				4	12.7	4.76	0.4	5.16	
NP-DNGA150408GH4		★	★	★				4	12.7	4.76	0.8	5.16	
NP-DNGA150412GH4		★	★	★				4	12.7	4.76	1.2	5.16	
NP-DNGA150604GH4		★	★	●				4	12.7	6.35	0.4	5.16	
NP-DNGA150608GH4		★	★	●				4	12.7	6.35	0.8	5.16	
NP-DNGA150612GH4		★	★	●				4	12.7	6.35	1.2	5.16	
NP-DNGA150404FS4	★	★	★		★			4	12.7	4.76	0.4	5.16	
NP-DNGA150408FS4	★	★	★		★			4	12.7	4.76	0.8	5.16	
NP-DNGA150412FS4	★	★	★		★			4	12.7	4.76	1.2	5.16	
NP-DNGA150604FS4	●	★			★			4	12.7	6.35	0.4	5.16	
NP-DNGA150608FS4	●	★			★			4	12.7	6.35	0.8	5.16	
NP-DNGA150612FS4	●	★			★			4	12.7	6.35	1.2	5.16	
NP-DNGA150404TA4			★	★		★	★	4	12.7	4.76	0.4	5.16	
NP-DNGA150408TA4			★	★		★	★	4	12.7	4.76	0.8	5.16	
NP-DNGA150412TA4			★	★		★	★	4	12.7	4.76	1.2	5.16	
NP-DNGA150604TA4			★	●		★		4	12.7	6.35	0.4	5.16	
NP-DNGA150608TA4			★	●		★		4	12.7	6.35	0.8	5.16	
NP-DNGA150612TA4			★	●		★		4	12.7	6.35	1.2	5.16	
NP-DNGA150404TS4		★						4	12.7	4.76	0.4	5.16	
NP-DNGA150408TS4		★						4	12.7	4.76	0.8	5.16	
NP-DNGA150412TS4		★						4	12.7	4.76	1.2	5.16	
NP-DNGA150604TS4		★						4	12.7	6.35	0.4	5.16	
NP-DNGA150608TS4		★						4	12.7	6.35	0.8	5.16	
NP-DNGA150612TS4		★						4	12.7	6.35	1.2	5.16	
NP-DNGA150404TH4			★	★			★	4	12.7	4.76	0.4	5.16	
NP-DNGA150408TH4			★	★			★	4	12.7	4.76	0.8	5.16	
NP-DNGA150412TH4			★	★			★	4	12.7	4.76	1.2	5.16	
NP-DNGA150604TH4			★	★				4	12.7	6.35	0.4	5.16	
NP-DNGA150608TH4			★	★				4	12.7	6.35	0.8	5.16	
NP-DNGA150612TH4			★	★				4	12.7	6.35	1.2	5.16	



Referencia	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometría
NP-DNGA110408GA2			●	●		●		2	9.53	4.76	0.8	3.81	
NP-DNGA150402GA2			★					2	12.7	4.76	0.2	5.16	
NP-DNGA150404GA2			★	★		★		2	12.7	4.76	0.4	5.16	
NP-DNGA150408GA2			★	★		★		2	12.7	4.76	0.8	5.16	
NP-DNGA150412GA2			★	★		★		2	12.7	4.76	1.2	5.16	
NP-DNGA150602GA2			★					2	12.7	6.35	0.2	5.16	
NP-DNGA150604GA2			●	●		●		2	12.7	6.35	0.4	5.16	
NP-DNGA150608GA2			●	●		●		2	12.7	6.35	0.8	5.16	
NP-DNGA150612GA2			●	●		●		2	12.7	6.35	1.2	5.16	
NP-DNGA150402GS2		★						2	12.7	4.76	0.2	5.16	
NP-DNGA150404GS2	★	★						2	12.7	4.76	0.4	5.16	
NP-DNGA150408GS2	★	★						2	12.7	4.76	0.8	5.16	
NP-DNGA150412GS2	★	★						2	12.7	4.76	1.2	5.16	
NP-DNGA150604GS2	●	●						2	12.7	6.35	0.4	5.16	
NP-DNGA150608GS2	●	●						2	12.7	6.35	0.8	5.16	
NP-DNGA150612GS2	●	●						2	12.7	6.35	1.2	5.16	
NP-DNGA150404GH2		★	★	★				2	12.7	4.76	0.4	5.16	
NP-DNGA150408GH2		★	★	★				2	12.7	4.76	0.8	5.16	
NP-DNGA150412GH2		★	★	★				2	12.7	4.76	1.2	5.16	
NP-DNGA150604GH2		★	★	●				2	12.7	6.35	0.4	5.16	
NP-DNGA150608GH2		★	★	●				2	12.7	6.35	0.8	5.16	
NP-DNGA150612GH2		★	★	●				2	12.7	6.35	1.2	5.16	
NP-DNGA150402FS2		★				★		2	12.7	4.76	0.2	5.16	
NP-DNGA150404FS2	★	★	★			★		2	12.7	4.76	0.4	5.16	
NP-DNGA150408FS2	★	★	★			★		2	12.7	4.76	0.8	5.16	
NP-DNGA150412FS2	★	★	★			★		2	12.7	4.76	1.2	5.16	
NP-DNGA150604FS2	●	●	●			★		2	12.7	6.35	0.4	5.16	
NP-DNGA150608FS2	●	●	●			★		2	12.7	6.35	0.8	5.16	
NP-DNGA150612FS2	●	●	●			★		2	12.7	6.35	1.2	5.16	
NP-DNGA150404TA2			★	★		★	●	2	12.7	4.76	0.4	5.16	
NP-DNGA150408TA2			★	★		★	●	2	12.7	4.76	0.8	5.16	
NP-DNGA150412TA2			★	★		★	★	2	12.7	4.76	1.2	5.16	
NP-DNGA150604TA2			●	●		★		2	12.7	6.35	0.4	5.16	
NP-DNGA150608TA2			●	●		●		2	12.7	6.35	0.8	5.16	
NP-DNGA150612TA2			●	●		★		2	12.7	6.35	1.2	5.16	
NP-DNGA150404TS2		★						2	12.7	4.76	0.4	5.16	
NP-DNGA150408TS2		★						2	12.7	4.76	0.8	5.16	
NP-DNGA150412TS2		★						2	12.7	4.76	1.2	5.16	
NP-DNGA150604TS2		●						2	12.7	6.35	0.4	5.16	
NP-DNGA150608TS2		●						2	12.7	6.35	0.8	5.16	
NP-DNGA150612TS2		●						2	12.7	6.35	1.2	5.16	
NP-DNGA150404TH2			★	★			★	2	12.7	4.76	0.4	5.16	
NP-DNGA150408TH2			★	★			★	2	12.7	4.76	0.8	5.16	
NP-DNGA150412TH2			★	★			★	2	12.7	4.76	1.2	5.16	
NP-DNGA150604TH2			★	★				2	12.7	6.35	0.4	5.16	
NP-DNGA150608TH2			★	★				2	12.7	6.35	0.8	5.16	
NP-DNGA150612TH2			★	★				2	12.7	6.35	1.2	5.16	
NP-DNGA150404GAWS2JR	W		★			★		2	12.7	4.76	0.4	5.16	
NP-DNGA150404GAWS2JL	W		★			★		2	12.7	4.76	0.4	5.16	
NP-DNGA150408GAWS2JR	W		★			★		2	12.7	4.76	0.8	5.16	
NP-DNGA150408GAWS2JL	W		★			★		2	12.7	4.76	0.8	5.16	
NP-DNGA150604GAWS2JR	W		●			★		2	12.7	6.35	0.4	5.16	
NP-DNGA150604GAWS2JL	W		●			★		2	12.7	6.35	0.4	5.16	
NP-DNGA150608GAWS2JR	W		●			★		2	12.7	6.35	0.8	5.16	
NP-DNGA150608GAWS2JL	W		●			★		2	12.7	6.35	0.8	5.16	
BF-DNGM150404TS2	B	●						2	12.7	4.76	0.4	5.16	
BF-DNGM150408TS2	B	●						2	12.7	4.76	0.8	5.16	
BF-DNGM150412TS2	B	●						2	12.7	4.76	1.2	5.16	
BM-DNGM150404TA2	B		★					2	12.7	4.76	0.4	5.16	
BM-DNGM150408TA2	B		★					2	12.7	4.76	0.8	5.16	
BM-DNGM150412TA2	B		★					2	12.7	4.76	1.2	5.16	
BM-DNGM150604TA2	B		●					2	12.7	6.35	0.4	5.16	
BM-DNGM150608TA2	B		●					2	12.7	6.35	0.8	5.16	
BM-DNGM150612TA2	B		●					2	12.7	6.35	1.2	5.16	



B: Rompevirutas **W:** Wiper

SNGA, TNGA, TNGM

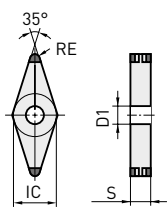
PLACAS NEGATIVAS (CON AGUJERO)

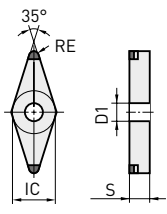
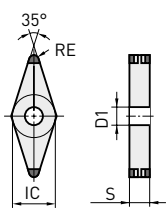
Referencia	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometría
NP-SNGA120408GA2			●	★		★		2	12.7	4.76	0.8	5.16	
NP-SNGA120412GA2			★	★		★		2	12.7	4.76	1.2	5.16	
NP-TNGA160404GA6			●	●		★		6	9.53	4.76	0.4	3.81	
NP-TNGA160408GA6			●	●		★		6	9.53	4.76	0.8	3.81	
NP-TNGA160412GA6			●	●		★		6	9.53	4.76	1.2	3.81	
NP-TNGA160404GS6	●	●						6	9.53	4.76	0.4	3.81	
NP-TNGA160408GS6	●	●						6	9.53	4.76	0.8	3.81	
NP-TNGA160412GS6	●	●						6	9.53	4.76	1.2	3.81	
NP-TNGA160404GH6		★	★	★				6	9.53	4.76	0.4	3.81	
NP-TNGA160408GH6		★	★	★				6	9.53	4.76	0.8	3.81	
NP-TNGA160412GH6		★	★	★				6	9.53	4.76	1.2	3.81	
NP-TNGA160404FS6	●	★	★		★			6	9.53	4.76	0.4	3.81	
NP-TNGA160408FS6	●	★	★		★			6	9.53	4.76	0.8	3.81	
NP-TNGA160412FS6	●	★	★		★			6	9.53	4.76	1.2	3.81	
NP-TNGA160404TA6			★	●		★	★	6	9.53	4.76	0.4	3.81	
NP-TNGA160408TA6			★	●		★	★	6	9.53	4.76	0.8	3.81	
NP-TNGA160412TA6			★	●		★	★	6	9.53	4.76	1.2	3.81	
NP-TNGA160404TS6		★						6	9.53	4.76	0.4	3.81	
NP-TNGA160408TS6		★						6	9.53	4.76	0.8	3.81	
NP-TNGA160412TS6		★						6	9.53	4.76	1.2	3.81	
NP-TNGA160404TH6			★	★			★	6	9.53	4.76	0.4	3.81	
NP-TNGA160408TH6			★	●			★	6	9.53	4.76	0.8	3.81	
NP-TNGA160412TH6			★	●			★	6	9.53	4.76	1.2	3.81	
NP-TNGA160402GA3			★			★		3	9.53	4.76	0.2	3.81	
NP-TNGA160404GA3			●	●		★		3	9.53	4.76	0.4	3.81	
NP-TNGA160408GA3			●	●		●		3	9.53	4.76	0.8	3.81	
NP-TNGA160412GA3			★	●		★		3	9.53	4.76	1.2	3.81	
NP-TNGA160402GS3		★						3	9.53	4.76	0.2	3.81	
NP-TNGA160404GS3	●	★						3	9.53	4.76	0.4	3.81	
NP-TNGA160408GS3	●	★						3	9.53	4.76	0.8	3.81	
NP-TNGA160412GS3	●	★						3	9.53	4.76	1.2	3.81	
NP-TNGA160404GH3		★	★	●				3	9.53	4.76	0.4	3.81	
NP-TNGA160408GH3		★	★	●				3	9.53	4.76	0.8	3.81	
NP-TNGA160412GH3		★	★	●				3	9.53	4.76	1.2	3.81	
NP-TNGA160402FS3		★			★			3	9.53	4.76	0.2	3.81	
NP-TNGA160404FS3	●	●	●		★			3	9.53	4.76	0.4	3.81	
NP-TNGA160408FS3	●	●	●		★			3	9.53	4.76	0.8	3.81	
NP-TNGA160412FS3	●	●	●		★			3	9.53	4.76	1.2	3.81	
NP-TNGA160404TA3			●	●		●	●	3	9.53	4.76	0.4	3.81	
NP-TNGA160408TA3			●	●		●	★	3	9.53	4.76	0.8	3.81	
NP-TNGA160412TA3			●	●		●	★	3	9.53	4.76	1.2	3.81	
NP-TNGA160404TS3		●						3	9.53	4.76	0.4	3.81	
NP-TNGA160408TS3		●						3	9.53	4.76	0.8	3.81	
NP-TNGA160412TS3		●						3	9.53	4.76	1.2	3.81	
NP-TNGA160404TH3			★	★			★	3	9.53	4.76	0.4	3.81	
NP-TNGA160408TH3			★	★			★	3	9.53	4.76	0.8	3.81	
NP-TNGA160412TH3			★	★			★	3	9.53	4.76	1.2	3.81	
BM-TNGM160408TA3	B		●					3	9.53	4.76	0.8	3.81	
BM-TNGM160412TA3	B		●					3	9.53	4.76	1.2	3.81	

B: Rompevirutas W: Wiper

VNGA

PLACAS NEGATIVAS (CON AGUJERO)

Referencia	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometría
NP-VNGA160404GA4			●	●		★		4	9.53	4.76	0.4	3.81	
NP-VNGA160408GA4			●	●		★		4	9.53	4.76	0.8	3.81	
NP-VNGA160412GA4			●	●		★		4	9.53	4.76	1.2	3.81	
NP-VNGA160404GS4	●	★						4	9.53	4.76	0.4	3.81	
NP-VNGA160408GS4	●	●						4	9.53	4.76	0.8	3.81	
NP-VNGA160412GS4		★						4	9.53	4.76	1.2	3.81	
NP-VNGA160404GH4		★	★	★				4	9.53	4.76	0.4	3.81	
NP-VNGA160408GH4		★	★	★				4	9.53	4.76	0.8	3.81	
NP-VNGA160412GH4		★	★	★				4	9.53	4.76	1.2	3.81	
NP-VNGA160404FS4	●	★	★		★			4	9.53	4.76	0.4	3.81	
NP-VNGA160408FS4	●	★	★		★			4	9.53	4.76	0.8	3.81	
NP-VNGA160412FS4			★					4	9.53	4.76	1.2	3.81	
NP-VNGA160404TA4			★	●		★		4	9.53	4.76	0.4	3.81	
NP-VNGA160408TA4			★	●		★		4	9.53	4.76	0.8	3.81	
NP-VNGA160412TA4			★	●		★		4	9.53	4.76	1.2	3.81	
NP-VNGA160404TS4		★						4	9.53	4.76	0.4	3.81	
NP-VNGA160408TS4		★						4	9.53	4.76	0.8	3.81	
NP-VNGA160404TH4			★	★				4	9.53	4.76	0.4	3.81	
NP-VNGA160408TH4			★	★				4	9.53	4.76	0.8	3.81	
NP-VNGA160412TH4			★	★				4	9.53	4.76	1.2	3.81	
NP-VNGA160402GA2			●			★		2	9.53	4.76	0.2	3.81	
NP-VNGA160404GA2			●	●		●		2	9.53	4.76	0.4	3.81	
NP-VNGA160408GA2			●	●		●		2	9.53	4.76	0.8	3.81	
NP-VNGA160412GA2			★	★		★		2	9.53	4.76	1.2	3.81	
NP-VNGA160402GS2		★						2	9.53	4.76	0.2	3.81	
NP-VNGA160404GS2	●	●						2	9.53	4.76	0.4	3.81	
NP-VNGA160408GS2	●	●						2	9.53	4.76	0.8	3.81	
NP-VNGA160412GS2		★						2	9.53	4.76	1.2	3.81	
NP-VNGA160404GH2		★	★	★				2	9.53	4.76	0.4	3.81	
NP-VNGA160408GH2		★	★	★				2	9.53	4.76	0.8	3.81	
NP-VNGA160412GH2		★	★	★				2	9.53	4.76	1.2	3.81	
NP-VNGA160402FS2		★			★			2	9.53	4.76	0.2	3.81	
NP-VNGA160404FS2	●	★	●		★			2	9.53	4.76	0.4	3.81	
NP-VNGA160408FS2	●	★	●		★			2	9.53	4.76	0.8	3.81	
NP-VNGA160412FS2			★					2	9.53	4.76	1.2	3.81	
NP-VNGA160404TA2			●	●		●		2	9.53	4.76	0.4	3.81	
NP-VNGA160408TA2			●	●		★		2	9.53	4.76	0.8	3.81	
NP-VNGA160412TA2			★	★		★		2	9.53	4.76	1.2	3.81	
NP-VNGA160404TS2		★						2	9.53	4.76	0.4	3.81	
NP-VNGA160408TS2		★						2	9.53	4.76	0.8	3.81	
NP-VNGA160404TH2			★	★				2	9.53	4.76	0.4	3.81	
NP-VNGA160408TH2			★	★				2	9.53	4.76	0.8	3.81	
NP-VNGA160412TH2			★	★				2	9.53	4.76	1.2	3.81	



WNGA

PLACAS NEGATIVAS (CON AGUJERO)

Referencia	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometría
NP-WNGA080408GS6	★	●						6	12.7	4.76	0.8	5.16	
NP-WNGA080408FS6	★	★						6	12.7	4.76	0.8	5.16	
NP-WNGA080408TS6		★						6	12.7	4.76	0.8	5.16	
NP-WNGA080408GA3			★	★				3	12.7	4.76	0.8	5.16	
NP-WNGA080408GS3	★	★						3	12.7	4.76	0.8	5.16	
NP-WNGA080408GH3		★	★	★				3	12.7	4.76	0.8	5.16	
NP-WNGA080408FS3	★	★	★					3	12.7	4.76	0.8	5.16	
NP-WNGA080408TA3			★	★				3	12.7	4.76	0.8	5.16	
NP-WNGA080408TS3		★						3	12.7	4.76	0.8	5.16	
NP-WNGA080408TH3			★	★				3	12.7	4.76	0.8	5.16	
NP-WNGA080408GSWS3	W	●						3	12.7	4.76	0.8	5.16	

B: Rompevirutas W: Wiper

CCGW 7°, CCGT 7°

PLACAS POSITIVAS (CON AGUJERO)

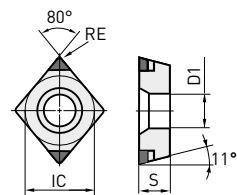
Referencia	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometría	
NP-CCGW060202GA2			●			●		2	6.35	2.38	0.2	2.8		
NP-CCGW060204GA2			●	●		●		2	6.35	2.38	0.4	2.8		
NP-CCGW060208GA2			●	●		●		2	6.35	2.38	0.8	2.8		
NP-CCGW09T302GA2			●			●		2	9.53	3.97	0.2	4.4		
NP-CCGW09T304GA2			●	●		●		2	9.53	3.97	0.4	4.4		
NP-CCGW09T308GA2			●	●		●		2	9.53	3.97	0.8	4.4		
NP-CCGW060202GS2	★	★						2	6.35	2.38	0.2	2.8		
NP-CCGW060204GS2	●	●						2	6.35	2.38	0.4	2.8		
NP-CCGW060208GS2	●	●						2	6.35	2.38	0.8	2.8		
NP-CCGW09T302GS2	★	★						2	9.53	3.97	0.2	4.4		
NP-CCGW09T304GS2	●	●						2	9.53	3.97	0.4	4.4		
NP-CCGW09T308GS2	●	●						2	9.53	3.97	0.8	4.4		
NP-CCGW09T304GH2		★	★	●				2	9.53	3.97	0.4	4.4		
NP-CCGW09T308GH2		★	★	●				2	9.53	3.97	0.8	4.4		
NP-CCGW060202FS2		●			●			2	6.35	2.38	0.2	2.8		
NP-CCGW060204FS2		●			●			2	6.35	2.38	0.4	2.8		
NP-CCGW060208FS2		●			●			2	6.35	2.38	0.8	2.8		
NP-CCGW09T302FS2	★	●			●			2	9.53	3.97	0.2	4.4		
NP-CCGW09T304FS2	●	●	●		●			2	9.53	3.97	0.4	4.4		
NP-CCGW09T308FS2	●	●	●		●			2	9.53	3.97	0.8	4.4		
NP-CCGW060204TA2				●			★	2	6.35	2.38	0.4	2.8		
NP-CCGW060208TA2				●			★	2	6.35	2.38	0.8	2.8		
NP-CCGW09T304TA2			●	●			★	★	2	9.53	3.97	0.4		4.4
NP-CCGW09T308TA2			●	●			★	★	2	9.53	3.97	0.8		4.4
NP-CCGW09T304TH2			★	●			★	★	2	9.53	3.97	0.4		4.4
NP-CCGW09T308TH2			★	●			★	★	2	9.53	3.97	0.8	4.4	
NP-CCGW09T304FBWL2	W	★	★	★		★		2	9.525	3.97	0.4	4.4		
NP-CCGW09T308FBWL2	W	★	★	★		★		2	9.525	3.97	0.8	4.4		
NP-CCGW09T304GBWL2	W	★	★	★			★	2	9.525	3.97	0.4	4.4		
NP-CCGW09T308GBWL2	W	★	★	★			★	2	9.525	3.97	0.8	4.4		
NP-CCGW09T304FSWS2	W	●	★	★		★		2	9.53	3.97	0.4	4.4		
NP-CCGW09T308FSWS2	W	●	★	★		★		2	9.53	3.97	0.8	4.4		
NP-CCGW09T304GAWS2	W			●	●		★	2	9.53	3.97	0.4	4.4		
NP-CCGW09T308GAWS2	W			●	●		★	2	9.53	3.97	0.8	4.4		
NP-CCGW09T304GSWS2	W	●	●					2	9.53	3.97	0.4	4.4		
NP-CCGW09T308GSWS2	W	●	●					2	9.53	3.97	0.8	4.4		
BF-CCGT09T304TS2	B		●					2	9.53	3.97	0.4	4.4		
BF-CCGT09T308TS2	B		●					2	9.53	3.97	0.8	4.4		
BM-CCGT09T304TA2	B			●				2	9.53	3.97	0.4	4.4		
BM-CCGT09T308TA2	B			●				2	9.53	3.97	0.8	4.4		
NP-CCGW03S102GS		●						1	3.57	1.39	0.2	2.0		
NP-CCGW03S104GS		●						1	3.57	1.39	0.4	2.0		
NP-CCGW04T002GS		●						1	4.37	1.79	0.2	2.4		
NP-CCGW04T004GS		●						1	4.37	1.79	0.4	2.4		
NP-CCGW03S102FS			●			★		1	3.57	1.39	0.2	2.0		
NP-CCGW03S104FS			●			●		1	3.57	1.39	0.4	2.0		
NP-CCGW04T002FS			●			●		1	4.37	1.79	0.2	2.4		
NP-CCGW04T004FS			●			●		1	4.37	1.79	0.4	2.4		

B: Rompevirutas W: Wiper

CPGB 11°

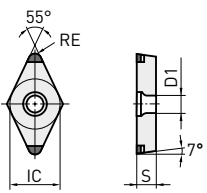
PLACAS POSITIVAS (CON AGUJERO)

Referencia	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometría
NP-CPGB080204GA2			●	●				2	7.94	2.38	0.4	3.5	
NP-CPGB080208GA2			●	●				2	7.94	2.38	0.8	3.5	
NP-CPGB080212GA2			★	★				2	7.94	2.38	1.2	3.5	
NP-CPGB090302GA2			★					2	9.53	3.18	0.2	4.5	
NP-CPGB090304GA2			●	●				2	9.53	3.18	0.4	4.5	
NP-CPGB090308GA2			●	●				2	9.53	3.18	0.8	4.5	
NP-CPGB090312GA2			★	★				2	9.53	3.18	1.2	4.5	
NP-CPGB080204GS2	●	★						2	7.94	2.38	0.4	3.5	
NP-CPGB080208GS2	●	★						2	7.94	2.38	0.8	3.5	
NP-CPGB090302GS2	★	★						2	9.53	3.18	0.2	4.5	
NP-CPGB090304GS2	●	★						2	9.53	3.18	0.4	4.5	
NP-CPGB090308GS2	●	★						2	9.53	3.18	0.8	4.5	
NP-CPGB080204FS2		★						2	7.94	2.38	0.4	3.5	
NP-CPGB080208FS2		★						2	7.94	2.38	0.8	3.5	
NP-CPGB090302FS2	★	★						2	9.53	3.18	0.2	4.5	
NP-CPGB090304FS2	●		★					2	9.53	3.18	0.4	4.5	
NP-CPGB090308FS2	●		★					2	9.53	3.18	0.8	4.5	
NP-CPGB090312FS2			★					2	9.53	3.18	1.2	4.5	
NP-CPGB080204TA2				★				2	7.94	2.38	0.4	3.5	
NP-CPGB080208TA2				★				2	7.94	2.38	0.8	3.5	
NP-CPGB080212TA2				★				2	7.94	2.38	1.2	3.5	
NP-CPGB090304TA2			★	★				2	9.53	3.18	0.4	4.5	
NP-CPGB090308TA2			★	★				2	9.53	3.18	0.8	4.5	
NP-CPGB090312TA2			★	★				2	9.53	3.18	1.2	4.5	



DCGW 7°, DCGT 7°

PLACAS POSITIVAS (CON AGUJERO)

Referencia	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometría
NP-DCGW070202GA2			●			●		2	6.35	2.38	0.2	2.8	
NP-DCGW070204GA2			●	●		●		2	6.35	2.38	0.4	2.8	
NP-DCGW070208GA2				●				2	6.35	2.38	0.8	2.8	
NP-DCGW11T302GA2			●			●		2	9.53	3.97	0.2	4.4	
NP-DCGW11T304GA2			●	●		●		2	9.53	3.97	0.4	4.4	
NP-DCGW11T308GA2			●	●		●		2	9.53	3.97	0.8	4.4	
NP-DCGW070202GS2	●	●						2	6.35	2.38	0.2	2.8	
NP-DCGW070204GS2	●	●						2	6.35	2.38	0.4	2.8	
NP-DCGW070208GS2	●	●						2	6.35	2.38	0.8	2.8	
NP-DCGW11T302GS2	●	●						2	9.53	3.97	0.2	4.4	
NP-DCGW11T304GS2	●	●						2	9.53	3.97	0.4	4.4	
NP-DCGW11T308GS2	●	●						2	9.53	3.97	0.8	4.4	
NP-DCGW11T304GH2		★	★	●				2	9.53	3.97	0.4	4.4	
NP-DCGW11T308GH2		★	★	●				2	9.53	3.97	0.8	4.4	
NP-DCGW070202FS2		●			●			2	6.35	2.38	0.2	2.8	
NP-DCGW070204FS2		●	●		●			2	6.35	2.38	0.4	2.8	
NP-DCGW070208FS2		★			★			2	6.35	2.38	0.8	2.8	
NP-DCGW11T302FS2	●	●			●			2	9.53	3.97	0.2	4.4	
NP-DCGW11T304FS2	●	●	●		●			2	9.53	3.97	0.4	4.4	
NP-DCGW11T308FS2	●	●	●		●			2	9.53	3.97	0.8	4.4	
NP-DCGW070204TA2			●	●		●	●	2	6.35	2.38	0.4	2.8	
NP-DCGW070208TA2				●			★	2	6.35	2.38	0.8	2.8	
NP-DCGW11T304TA2			★	●		★	●	2	9.53	3.97	0.4	4.4	
NP-DCGW11T308TA2			★	●		★	●	2	9.53	3.97	0.8	4.4	
NP-DCGW11T304TH2			★	●		●	●	2	9.53	3.97	0.4	4.4	
NP-DCGW11T308TH2			★	●		●	●	2	9.53	3.97	0.8	4.4	
BM-DCGT11T304TA2	B		●					2	9.53	3.97	0.4	4.4	
BM-DCGT11T308TA2	B		●					2	9.53	3.97	0.8	4.4	
BF-DCGT11T304TS2	B	●						2	9.53	3.97	0.4	4.4	
BF-DCGT11T308TS2	B	●						2	9.53	3.97	0.8	4.4	

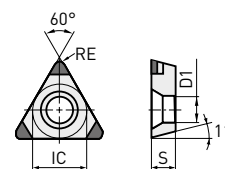
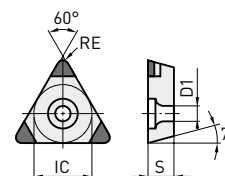
B: Rompevirutas W: Wiper



TCGW 7°, TPGB 11°

PLACAS POSITIVAS (CON AGUJERO)

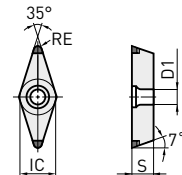
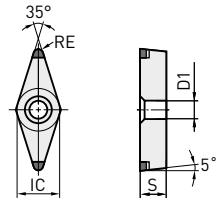
Referencia	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometría
NP-TCGW090204GS3		★						3	5.56	2.38	0.4	2.5	
NP-TCGW090208GS3		★						3	5.56	2.38	0.8	2.5	
NP-TCGW110202GS3		★						3	6.35	2.38	0.2	2.8	
NP-TCGW110204GS3		★						3	6.35	2.38	0.4	2.8	
NP-TCGW110208GS3		★						3	6.35	2.38	0.8	2.8	
NP-TCGW130304GS3		★						3	7.94	3.18	0.4	3.4	
NP-TCGW130308GS3		★						3	7.94	3.18	0.8	3.4	
NP-TCGW16T304GS3		★						3	9.53	3.97	0.4	4.4	
NP-TCGW16T308GS3		★						3	9.53	3.97	0.8	4.4	
NP-TPGB080204GA3				●				3	4.76	2.38	0.4	2.4	
NP-TPGB080208GA3				●				3	4.76	2.38	0.8	2.4	
NP-TPGB090204GA3			★	●		●		3	5.56	2.38	0.4	2.9	
NP-TPGB090208GA3			★	●		★		3	5.56	2.38	0.8	2.9	
NP-TPGB110302GA3			★			★		3	6.35	3.18	0.2	3.4	
NP-TPGB110304GA3				●	●	●		3	6.35	3.18	0.4	3.4	
NP-TPGB110308GA3				●	●	●		3	6.35	3.18	0.8	3.4	
NP-TPGB160304GA3				●	★	★		3	9.53	3.18	0.4	4.4	
NP-TPGB160308GA3				●	★	★		3	9.53	3.18	0.8	4.4	
NP-TPGB080204GS3	★	★						3	4.76	2.38	0.4	2.4	
NP-TPGB080208GS3	★	★						3	4.76	2.38	0.8	2.4	
NP-TPGB090204GS3	★	★						3	5.56	2.38	0.4	2.9	
NP-TPGB090208GS3	★	★						3	5.56	2.38	0.8	2.9	
NP-TPGB110302GS3	★	★						3	6.35	3.18	0.2	3.4	
NP-TPGB110304GS3	★	★						3	6.35	3.18	0.4	3.4	
NP-TPGB110308GS3	★	★						3	6.35	3.18	0.8	3.4	
NP-TPGB160304GS3	★	★						3	9.53	3.18	0.4	4.4	
NP-TPGB160308GS3	★	★						3	9.53	3.18	0.8	4.4	
NP-TPGB160304GH3		★	★	★				3	9.53	3.18	0.4	4.4	
NP-TPGB160308GH3		★	★	★				3	9.53	3.18	0.8	4.4	
NP-TPGB110302FS3	★	★			★			3	6.35	3.18	0.2	3.4	
NP-TPGB110304FS3	★	★	●		●			3	6.35	3.18	0.4	3.4	
NP-TPGB110308FS3	★	★	●		●			3	6.35	3.18	0.8	3.4	
NP-TPGB160304FS3			●					3	9.53	3.18	0.4	4.4	
NP-TPGB160308FS3			●					3	9.53	3.18	0.8	4.4	
NP-TPGB080204TA3				★		●		3	4.76	2.38	0.4	2.4	
NP-TPGB080208TA3				★		★		3	4.76	2.38	0.8	2.4	
NP-TPGB090204TA3				★		●		3	5.56	2.38	0.4	2.9	
NP-TPGB090208TA3				★		★		3	5.56	2.38	0.8	2.9	
NP-TPGB110304TA3			★	●		●	●	3	6.35	3.18	0.4	3.4	
NP-TPGB110308TA3			★	●		★	★	3	6.35	3.18	0.8	3.4	
NP-TPGB160304TA3			★	●		★	★	3	9.53	3.18	0.4	4.4	
NP-TPGB160308TA3			★	●		★	★	3	9.53	3.18	0.8	4.4	
NP-TPGB160304TH3			★	★		★		3	9.53	3.18	0.4	4.4	
NP-TPGB160308TH3			★	★		★		3	9.53	3.18	0.8	4.4	



VBGW 5°, VCGW 7°

PLACAS POSITIVAS (CON AGUJERO)

Referencia	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Geometría
NP-VBGW110302GA2			●			★		2	6.35	3.18	0.2	2.9	
NP-VBGW110304GA2			●	●				2	6.35	3.18	0.4	2.9	
NP-VBGW110308GA2			★	★		★		2	6.35	3.18	0.8	2.9	
NP-VBGW160402GA2			★			★		2	9.53	4.76	0.2	4.4	
NP-VBGW160404GA2			●	●		★		2	9.53	4.76	0.4	4.4	
NP-VBGW160408GA2			●	●		★		2	9.53	4.76	0.8	4.4	
NP-VBGW110302GS2	★	★						2	6.35	3.18	0.2	2.9	
NP-VBGW110304GS2	★	★						2	6.35	3.18	0.4	2.9	
NP-VBGW110308GS2	★	★						2	6.35	3.18	0.8	2.9	
NP-VBGW160402GS2	★	●						2	9.53	4.76	0.2	4.4	
NP-VBGW160404GS2	●	●						2	9.53	4.76	0.4	4.4	
NP-VBGW160408GS2	●	●						2	9.53	4.76	0.8	4.4	
NP-VBGW160404GH2		★	★	★				2	9.53	4.76	0.4	4.4	
NP-VBGW160408GH2		★	★	●				2	9.53	4.76	0.8	4.4	
NP-VBGW110302FS2		●				★		2	6.35	3.18	0.2	2.9	
NP-VBGW110304FS2		★				★		2	6.35	3.18	0.4	2.9	
NP-VBGW110308FS2		★				★		2	6.35	3.18	0.8	2.9	
NP-VBGW160402FS2		★				★		2	9.53	4.76	0.2	4.4	
NP-VBGW160404FS2			●					2	9.53	4.76	0.4	4.4	
NP-VBGW160408FS2			●					2	9.53	4.76	0.8	4.4	
NP-VBGW110304TA2						★		2	6.35	3.18	0.4	2.9	
NP-VBGW110308TA2						★		2	6.35	3.18	0.8	2.9	
NP-VBGW160404TA2			●	★		★		2	9.53	4.76	0.4	4.4	
NP-VBGW160408TA2			★	★		★		2	9.53	4.76	0.8	4.4	
NP-VBGW160404TH2			★	★				2	9.53	4.76	0.4	4.4	
NP-VBGW160408TH2			★	★				2	9.53	4.76	0.8	4.4	
NP-VCGW160404GA2			●	●				2	9.53	4.76	0.4	4.4	
NP-VCGW160408GA2			●	●				2	9.53	4.76	0.8	4.4	
NP-VCGW160404GS2	●	●						2	9.53	4.76	0.4	4.4	
NP-VCGW160408GS2	●	●						2	9.53	4.76	0.8	4.4	
NP-VCGW160404GH2		★	★	★				2	9.53	4.76	0.4	4.4	
NP-VCGW160408GH2		★	★	★				2	9.53	4.76	0.8	4.4	
NP-VCGW160404FS2		●	●			★		2	9.53	4.76	0.4	4.4	
NP-VCGW160408FS2		●	●			★		2	9.53	4.76	0.8	4.4	
NP-VCGW160404TA2			★	★				2	9.53	4.76	0.4	4.4	
NP-VCGW160408TA2			★	★				2	9.53	4.76	0.8	4.4	
NP-VCGW160404TS2		★						2	9.53	4.76	0.4	4.4	
NP-VCGW160408TS2		★						2	9.53	4.76	0.8	4.4	
NP-VCGW160404TH2			★	★				2	9.53	4.76	0.4	4.4	
NP-VCGW160408TH2			★	★				2	9.53	4.76	0.8	4.4	



CONDICIONES DE CORTE RECOMENDADAS

BC8100

Material	Calidad	Tipo de corte	Vc	f	ap	Refrigerante
H Acero endurecido (acero tratado térmicamente, etc.)	BC8105	Corte continuo		-0.15	-0.20	Seco, mojado
	BC8110	Corte continuo		-0.20	-0.35	
	BC8120	Corte continuo		-0.30	-0.80	
		Corte interrumpido		-0.20	-0.30	
	BC8130	Interrumpido		-0.20	-0.30	

50 100 150 200 250 300

MB8100

Material	Calidad	Tipo de corte	Vc	f	ap	Refrigerante
H Aceros endurecidos (aceros termotratados)	MB8110	Corte continuo exterior		-0.20	-0.30	Seco, mojado
	MB8120	Corte continuo exterior		-0.20	-0.50	
		Exterior Corte interrumpido		-0.20	-0.30	
	MB8130	Exterior Corte interrumpido		-0.20	-0.30	

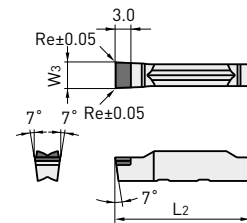
50 100 150 200 250

GY1G

PLACAS PARA EL SISTEMA DE RANURADO DE LA SERIE GY

Referencia	BC8110	W3	Tolerancia	Re	L2
GY1G0200D020N-GFGS	●	2.00	±0.03	0.2	20.70
GY1G0239E020N-GFGS	●	2.39	±0.03	0.2	20.70
GY1G0250E020N-GFGS	●	2.50	±0.03	0.2	20.70
GY1G0300F020N-GFGS	●	3.00	±0.03	0.2	20.70
GY1G0318F020N-GFGS	●	3.18	±0.03	0.2	20.70
GY1G0400G020N-GFGS	●	4.00	±0.03	0.2	25.65
GY1G0475H020N-GFGS	●	4.75	±0.03	0.2	25.65
GY1G0500H020N-GFGS	●	5.00	±0.03	0.2	25.65
GY1G0600J020N-GFGS	●	6.00	±0.03	0.2	25.65

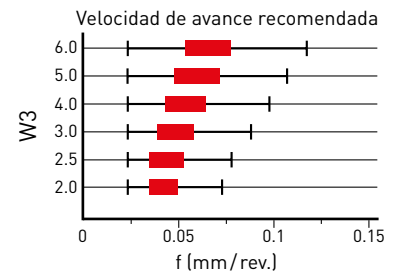
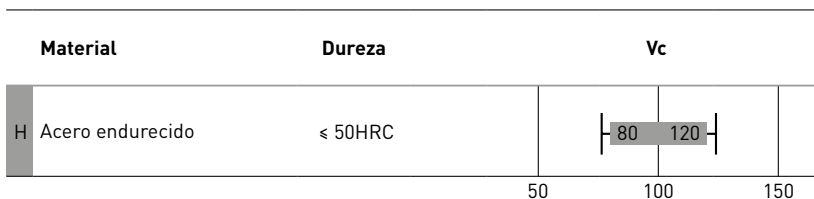
Superficie plana
(para materiales endurecidos)



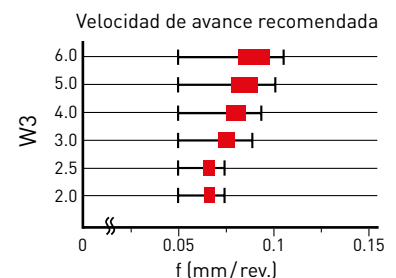
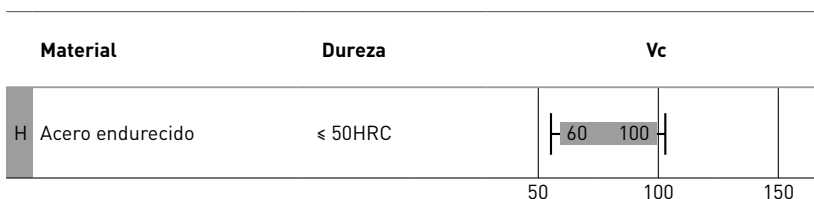
1. Cuando alcance el diámetro mín. del agujero «D1» para el ranurado interior, reduzca el avance en un 20 %.

CONDICIONES DE CORTE RECOMENDADAS

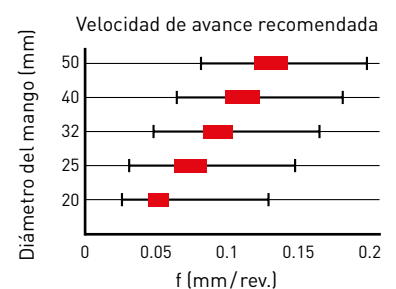
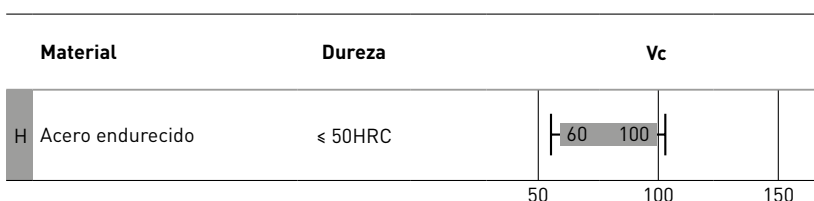
PARA RANURADO EXTERIOR



PARA RANURADO FRONTAL



PARA RANURADO INTERIOR

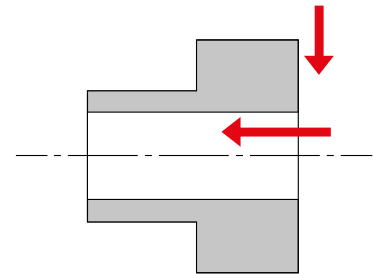
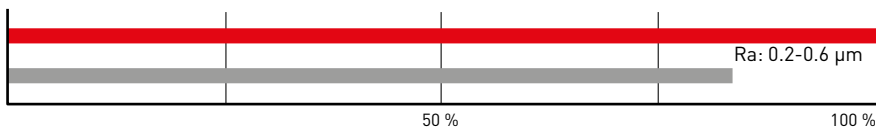


■ : 1.er área recomendada

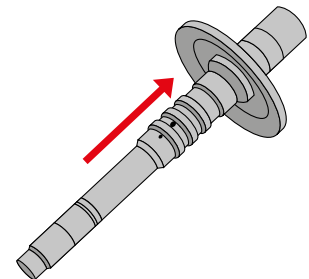
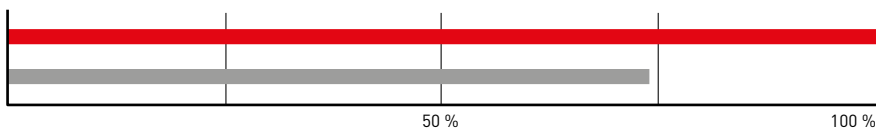
EJEMPLOS DE APLICACIÓN

BC8105

Placa	NP-DCGW11T308GS2
Material de la pieza de trabajo	20CrMo2-2 (58-60 HRC)
Modo de corte	Exterior/frontal, continuo
Velocidad de corte Vc (m/min)	165
Avance f (mm/rev.)	0.085
Profundidad de corte ap (mm)	0.1
Refrigerante	Corte en seco
Resultados	Número de piezas de trabajo: 80

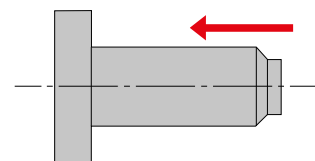
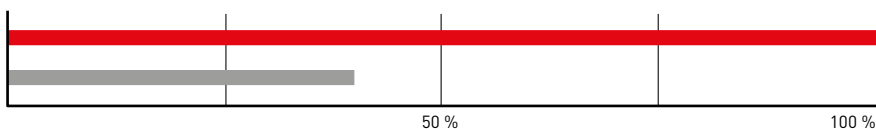


Placa	NP-CNGA120408GSWS2
Material de la pieza de trabajo	S55CHT (55-65 HRC)
Modo de corte	Exterior, continuo
Velocidad de corte Vc (m/min)	160
Avance f (mm/rev.)	0.35
Profundidad de corte ap (mm)	0.15
Refrigerante	Corte en seco
Resultados	Número de piezas de trabajo: 134

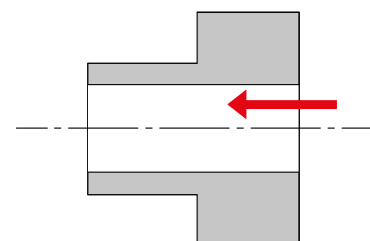
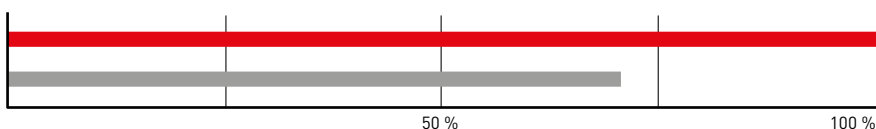


BC8110

Placa	NP-DNGA150404FS2
Material de la pieza de trabajo	S55CHT (55-65HRC)
Modo de corte	Exterior, continuo
Velocidad de corte Vc (m/min)	160
Avance f (mm/rev.)	0.20
Profundidad de corte ap (mm)	0.20
Refrigerante	Corte refrigerado
Resultados	Número de piezas de trabajo: 500

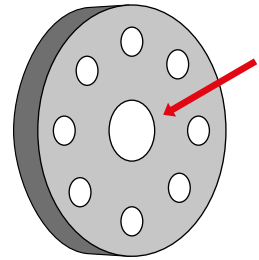
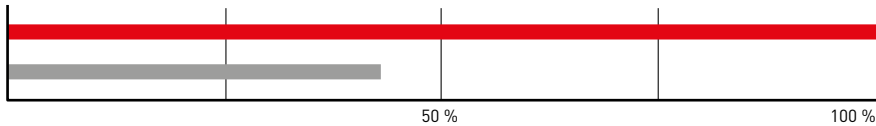


Placa	NP-CCGW09T308GS2
Material de la pieza de trabajo	16MnCr5 (60-65HRC)
Modo de corte	Interno, continuo
Velocidad de corte Vc (m/min)	110
Avance f (mm/rev.)	0.15
Profundidad de corte ap (mm)	0.20
Refrigerante	Corte en seco
Resultados	Número de piezas de trabajo: 3500

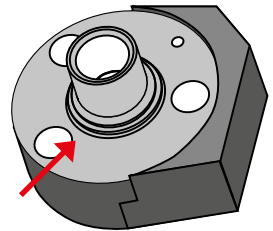
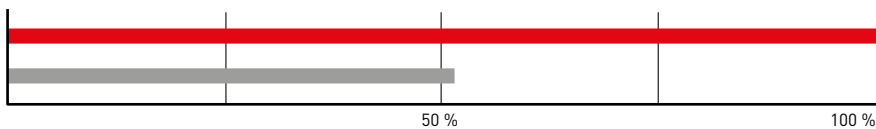


BC8120

Placa	NP-CNGA120408TA2
Material de la pieza de trabajo	SUJ (50HRC)
Modo de corte	Frontal, interrumpido
Velocidad de corte Vc (m/min)	130
Avance f (mm/rev.)	0.08
Profundidad de corte ap (mm)	0.50
Refrigerante	Corte refrigerado
Resultados	Número de piezas de trabajo: 110

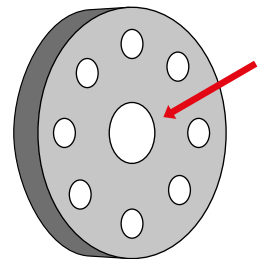
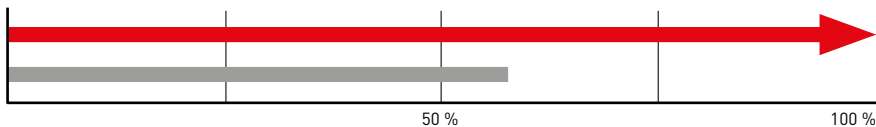


Placa	NP-CNGA120408GA2
Material de la pieza de trabajo	CAC403 (55-58HRC)
Modo de corte	Frontal, interrumpido
Velocidad de corte Vc (m/min)	150
Avance f (mm/rev.)	0.15
Profundidad de corte ap (mm)	0.10
Refrigerante	Corte en seco
Resultados	Número de piezas de trabajo: 150

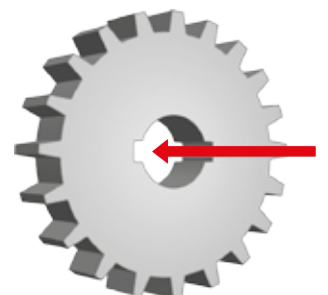
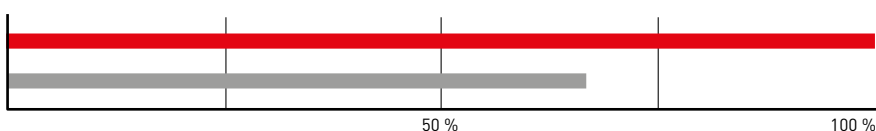


BC8130

Placa	NP-CNGA120408TH2
Material de la pieza de trabajo	S45C (58 HRC)
Modo de corte	Frontal, interrumpido
Velocidad de corte Vc (m/min)	130
Avance f (mm/rev.)	0.08
Profundidad de corte ap (mm)	0.15
Refrigerante	Corte refrigerado
Resultados	Número de piezas de trabajo: 70 (sin fractura)



Placa	NP-CCGW09T308TN2
Material de la pieza de trabajo	16MnCrS5 (58-60 HRC)
Modo de corte	Interno, interrumpido
Velocidad de corte Vc (m/min)	159-175
Avance f (mm/rev.)	0.11
Profundidad de corte ap (mm)	0.12
Refrigerante	Corte en seco
Resultados	Número de piezas de trabajo: 170



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