SÉRIE BC8100/MB8100

PLAQUETTES DE TOURNAGE PCBN NON REVÊTU POUR LE TOURNAGE D'ACIERS TRAITÉS ET TREMPÉS

DIAEDGE

MITSUBISHI MATERIALS

SÉRIE BC8100

SÉRIE PCBN REVÊTU
POUR LE TOURNAGE D'ACIERS TREMPÉS

BC8105

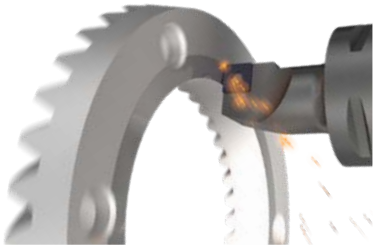
PRÉCISION OPTIMALE

Pour un usinage continu
- Excellents états de surface et tolérances étroites avec une longue durée de vie
- Pour des états de surface jusqu'à Rz 2.4 (Ra 0.6)

BC8110/MB8110

TOURNAGE À GRANDE VITESSE

Pour des coupes continues ou légèrement interrompues
- Durée de vie longue et stable pour des états de surface inférieurs à Rz 6.3



BC8120/MB8120

APPLICATIONS GÉNÉRALES

Pour des coupes continues à moyennement interrompues
- 1er choix pour l'ébauche et la finition

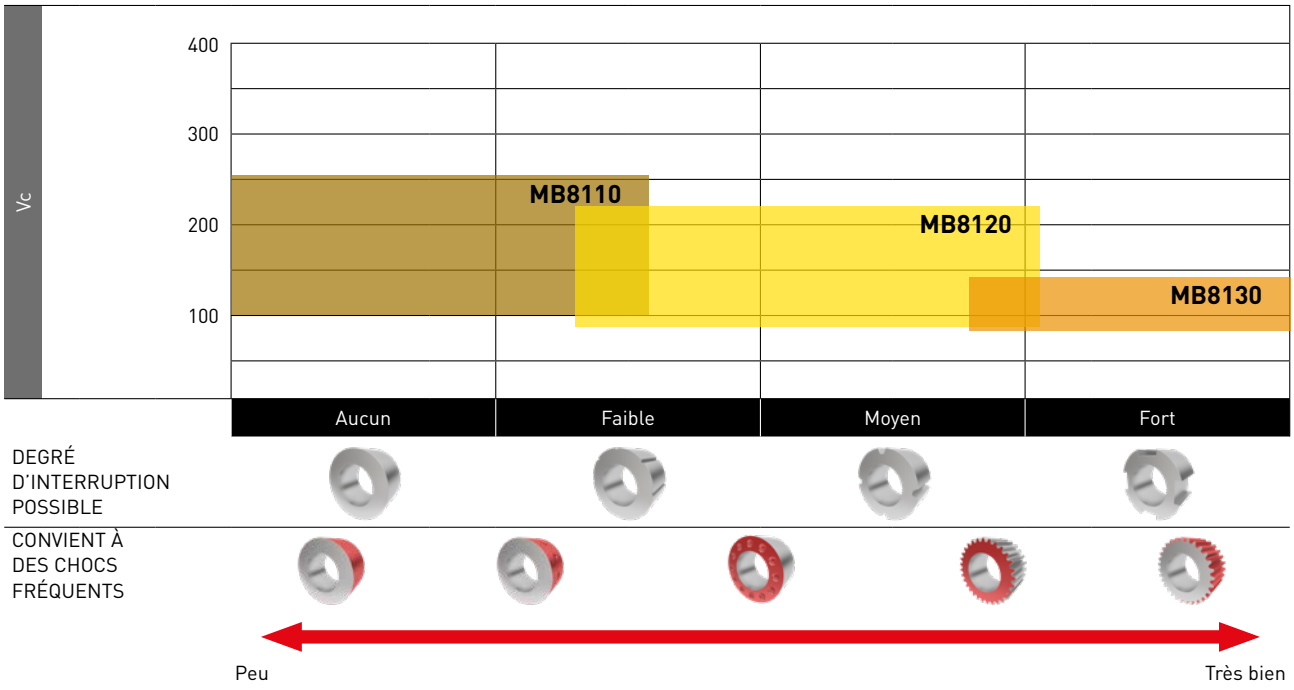
BC8130/MB8130

USINAGE DIFFICILE

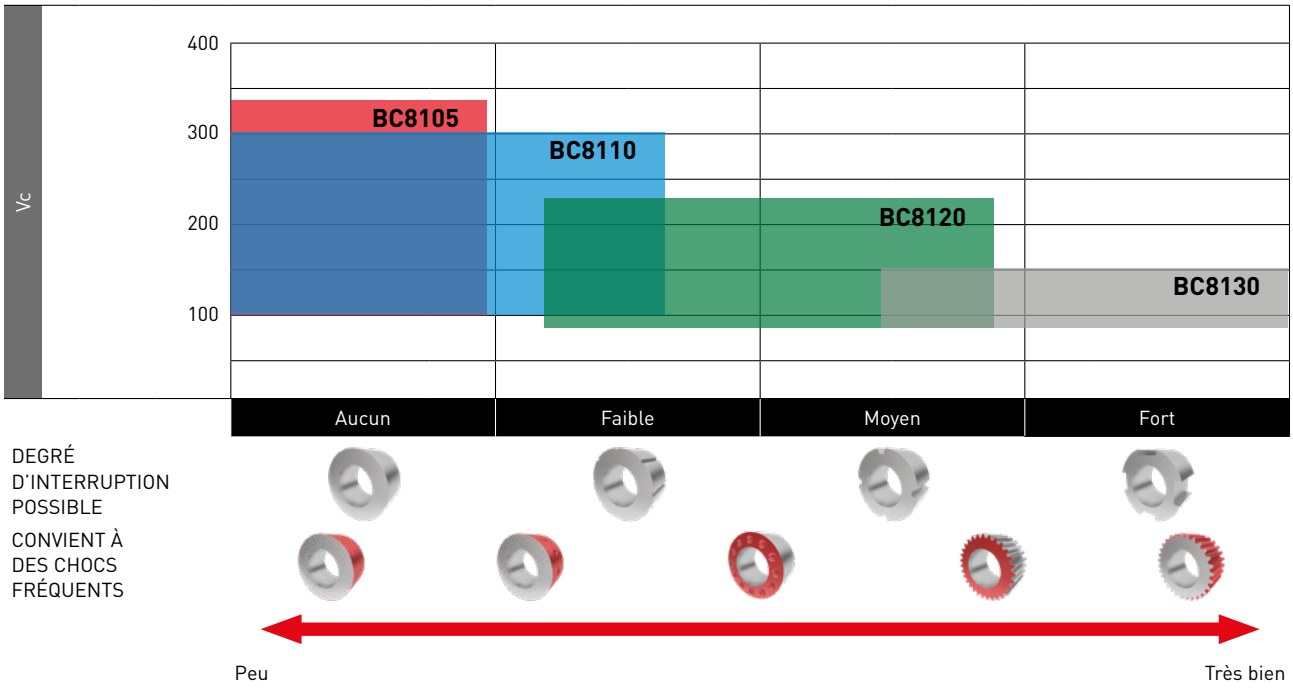
Pour des applications instables et des coupes fortement interrompues
- Tenue de cote préservée après de nombreux chocs

PLAGE D'APPLICATION

SÉRIE PCBN NON REVÊTU MB8100



SÉRIE PCBN REVÊTU BC8100



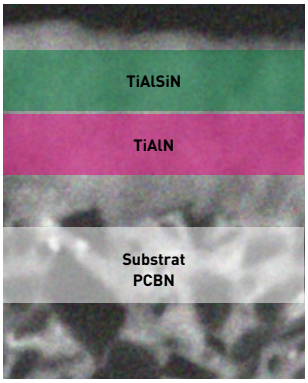
NUANCES

NOUVEAU REVÊTEMENT DE HAUTE TECHNOLOGIE

BC8105

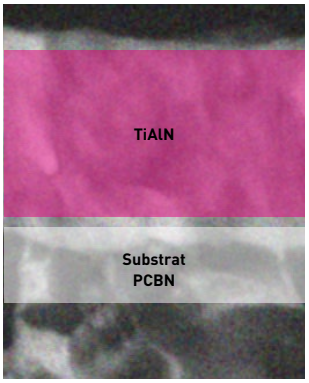
Excellent état de surface sans collage grâce à un revêtement à faible friction.

BC8110



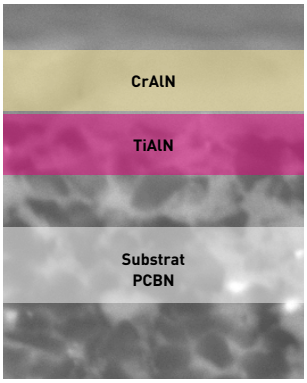
Plus longue durée de vie grâce à une grande résistance à l'usure, pour les usinages à grande vitesse.

BC8120



Durée de vie plus longue et bien équilibrée sans écaillage du revêtement.

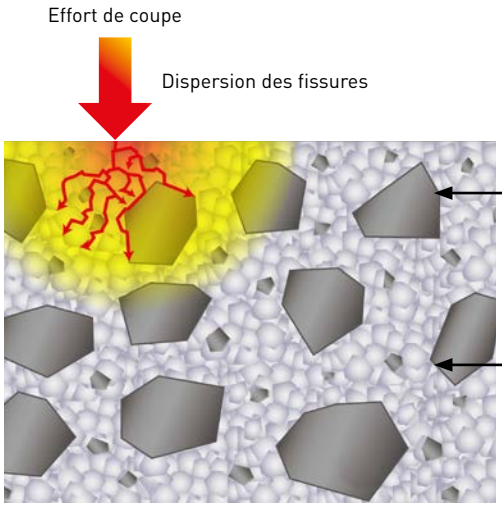
BC8130



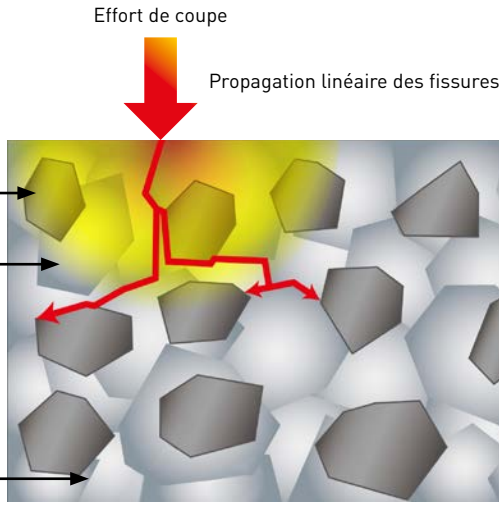
Évite l'écaillage du revêtement.

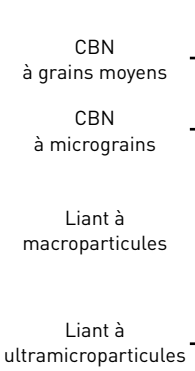
TECHNOLOGIE DE SUBSTRAT OPTIMISÉE

SÉRIE BC8100 / MB8100



PCBN CONVENTIONNEL

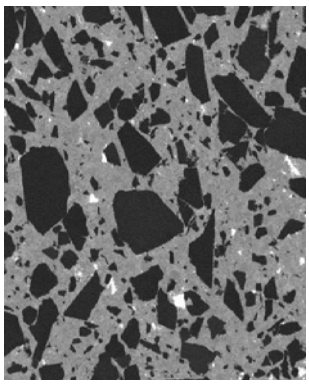




Le nouveau liant à ultramicroparticules des nuances PCBN non revêtues évite la propagation des fissures et retarde l'écaillage.

SÉRIE MB8100
NUANCES NON REVÊTUES

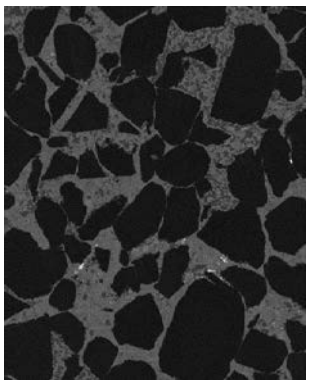
MB8110



Pour un usinage continu

La nuance MB8110 présente une excellente résistance à l'usure, ce qui en fait le premier choix pour l'usinage continu.

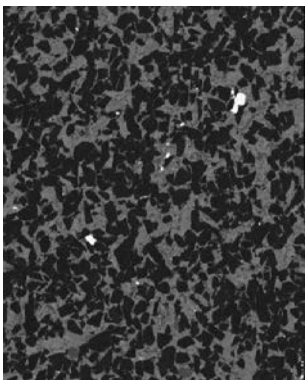
MB8120



Nuance polyvalente

La nuance MB8120 offre une excellente résistance à l'usure et à l'écaillage, elle convient donc à une large gamme d'applications.

MB8130



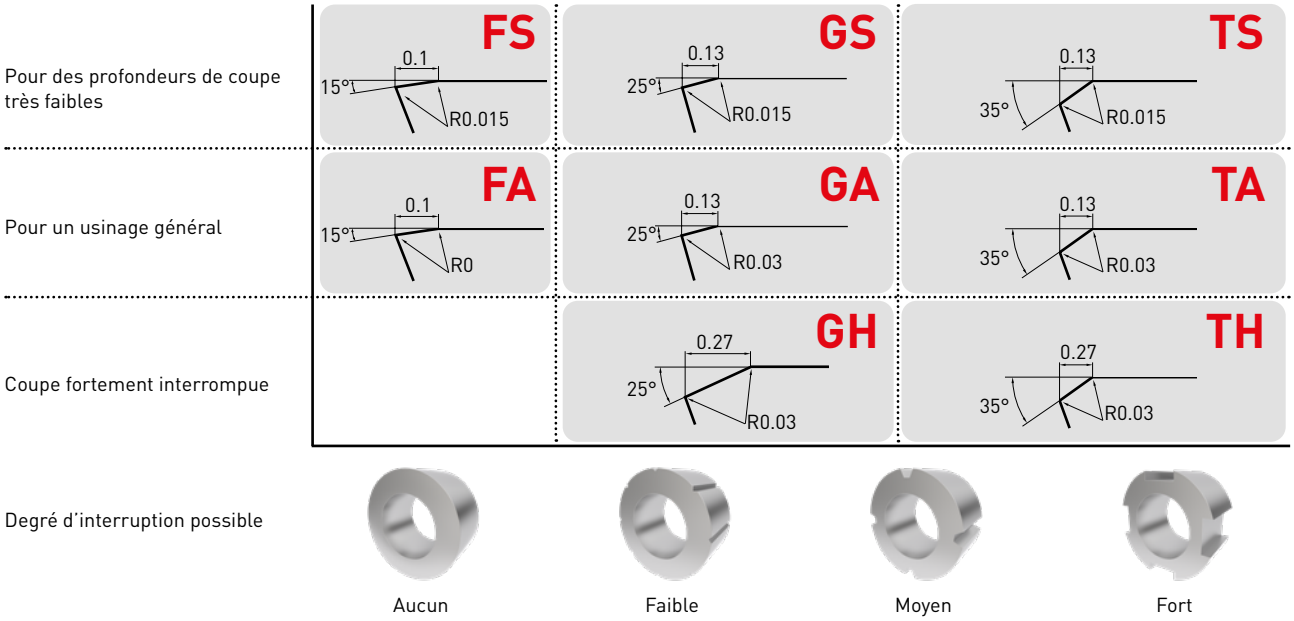
Pour une coupe fortement interrompue

Présentant la résistance à l'écaillage la plus élevée, la nuance MB8130 est idéale pour les applications instables et l'usinage fortement interrompu.

Les nuances PCBN revêtues et non revêtues utilisent une technologie de liant à ultramicroparticules.

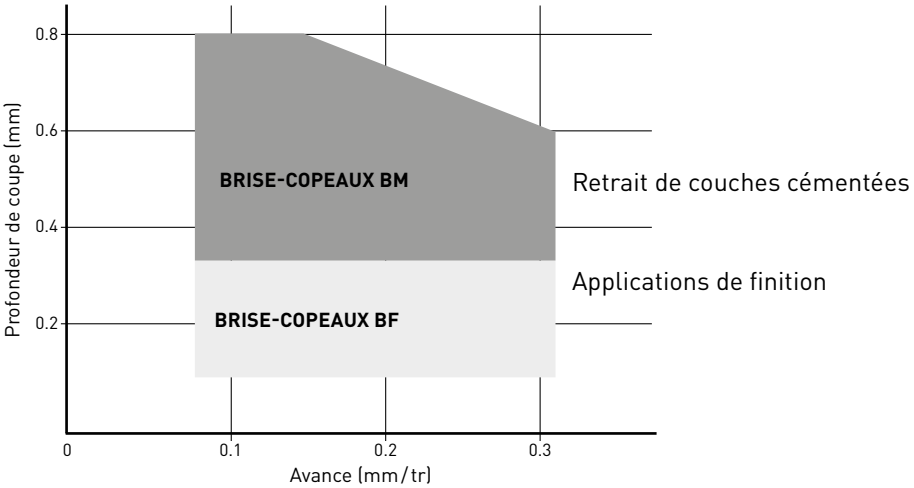
GÉOMÉTRIE

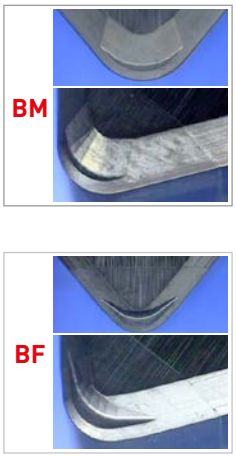
PRÉPARATION DE L'ARÊTE DE COUPE



Des préparations d'arête de coupe très variées pour couvrir toutes les applications.

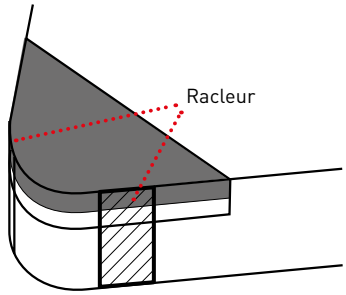
BRISE-COPEAUX BM/BF





Système de brise-copeaux pour un excellent contrôle des copeaux lors de la finition, du retrait de couches cémentées et de l'usinage de matériaux durs-tendres.

PLAQUETTE RACLEUSE



MEILLEUE ÉTAT DE SURFACE
Dans les mêmes conditions d'usinage qu'avec des brise-copeaux conventionnels, mais avec une plus grande vitesse d'avance, l'état de surface de la pièce est amélioré.

PLUS GRANDE PRODUCTIVITÉ
En plus de raccourcir les temps d'usinage, des vitesses d'avance élevées permettent de combiner les opérations d'ébauche et de finition.

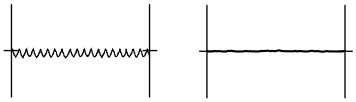
PLUS GRANDE DURÉE DE VIE DE L'OUTIL
Dans des conditions d'avance élevée, le temps requis pour couper un composant est réduit, permettant ainsi d'usiner plus de pièces avec une plaquette. De plus, la vitesse d'avance élevée évite la friction, ce qui ralentit l'usure et améliore la durée de vie de l'outil.

MEILLEUR CONTRÔLE DES COPEAUX
Dans des conditions d'avance élevée, les copeaux générés deviennent plus épais et se brisent plus facilement, ce qui améliore leur contrôle.

CONDITIONS DE COUPE RECOMMANDÉES ET PERFORMANCES

FINITION DE HAUTE PRÉCISION

Sans racleur | **Avec racleur**



Ry = 3.2 µm | Ry = 1.0 µm

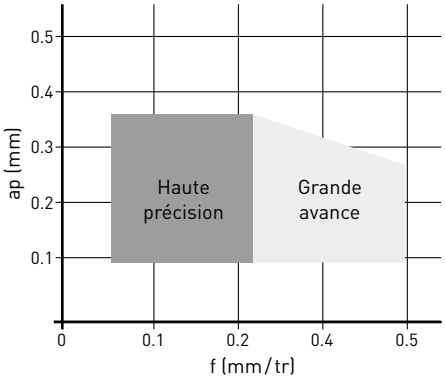
Vitesse de coupe : 100 m/min
Avance : 0.1 mm/tr
Profondeur de coupe : 0.1 mm
Usinage à sec

USINAGE À GRANDE AVANCE

Sans racleur | **Avec racleur**

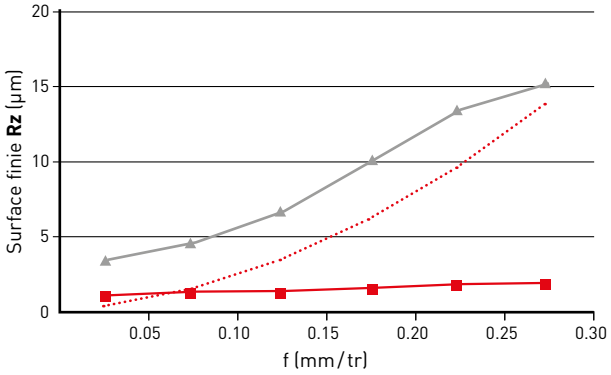
Ry = 12.2 µm | Ry = 1.2 µm

Vitesse de coupe : 100 m/min
Avance : 0.3 mm/tr
Profondeur de coupe : 0.1 mm
Usinage à sec



PERFORMANCES DE COUPE

Plaquette	NP-CNGA120408
Matière de la pièce	Acier trempé (60 HRC)
Mode de coupe	Continu
Vc (m/min)	120
f (mm/tr)	Diverse
ap (mm)	0.1
Arrosage	Usinage à sec



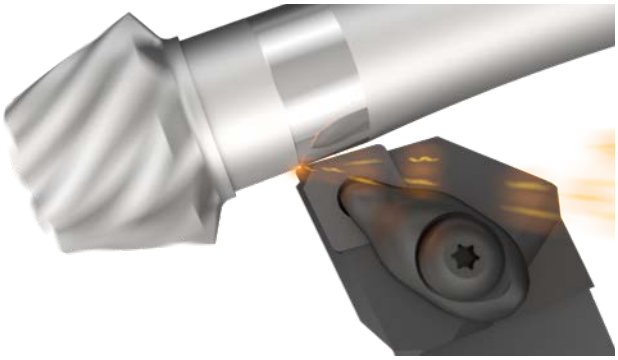
Racleur
Sans racleur
Rugosité théorique de la surface finie

BC8105

PRÉCISION OPTIMALE

POUR UN USINAGE CONTINU

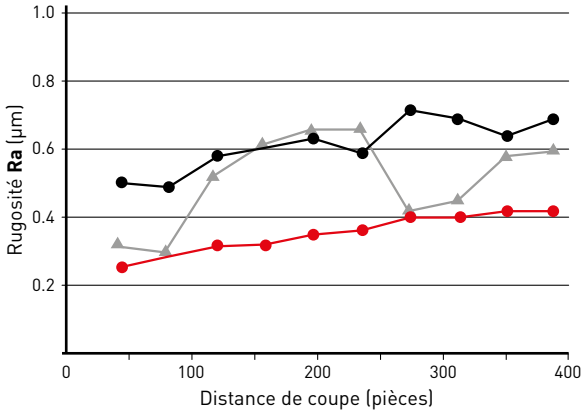
- Excellente ébauche de surface, tolérances étroites pendant une longue durée de vie
- pour un état de surface jusqu'à Rz 2.4 µm (Ra 0.6 µm)



ÉTAT DE SURFACE

Plaquette	NP-DNGA150608GS2
Matière de la pièce	34Mn5 (60 HRC)
Mode de coupe	Continue
Vc (m/min)	176
f (mm/tr)	0.09
ap (mm)	0.15
Arrosage	Huile soluble

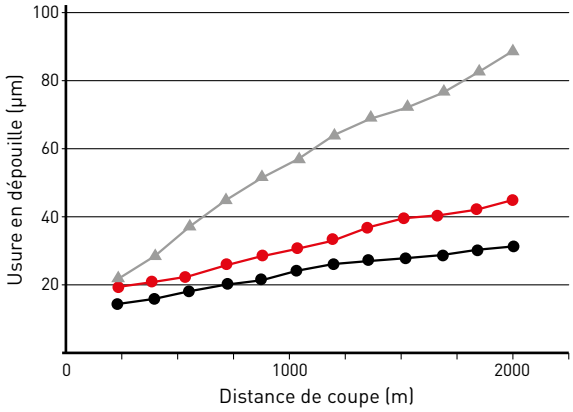
BC8105 est le premier choix pour des états de surface de qualité supérieure.



DURÉE DE VIE DE L'OUTIL (USURE EN DÉPOUILLE)

Plaquette	NP-CNGA120408GS2
Matière de la pièce	42CrMo4 (60 HRC)
Mode de coupe	Continu
Vc (m/min)	200
f (mm/tr)	0.05
ap (mm)	0.05
Arrosage	Usinage à sec

Excellente résistance à l'usure grâce à la technologie Miracle Sigma.



BC8105
BC8110
PCBN conventionnel

BC8110

TOURNAGE À GRANDE VITESSE

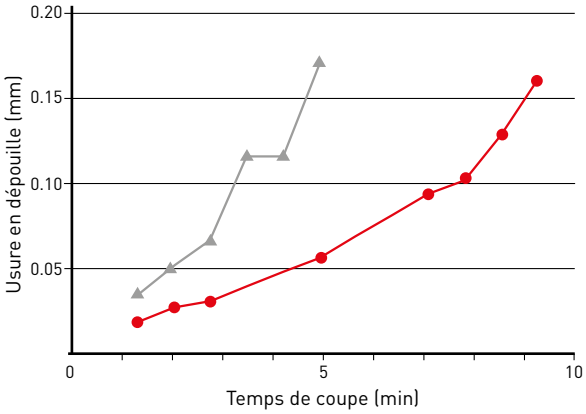
POUR UN USINAGE CONTINU

- Longue durée de vie et stabilité pour des finitions de surface inférieures à Rz 6.3 µm
- Couvre un large éventail d'applications d'usinage continu

DURÉE DE VIE DE L'OUTIL (USURE EN DÉPOUILLE)

Plaquette	NP-CNGA120408GS2
Matière de la pièce	42CrMo4 (60HRC)
Mode de coupe	Continu
Vc (m/min)	250
f (mm/tr)	0.10
ap (mm)	0.2
Arrosage	Usinage à sec

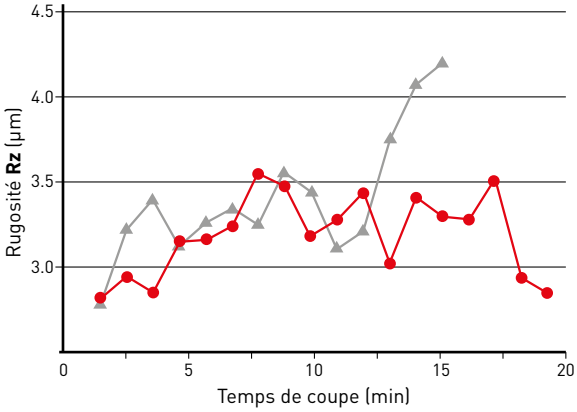
BC8110 est le premier choix pour des finitions à grande vitesse.



ÉTAT DE SURFACE

Plaquette	NP-CNGA120408GS2
Matière de la pièce	42CrMo4 (60HRC)
Mode de coupe	Continu
Vc (m/min)	250
f (mm/tr)	0.10
ap (mm)	0.2
Arrosage	Usinage à sec

Excellents états de surface préservées pendant de longs usinages continus.



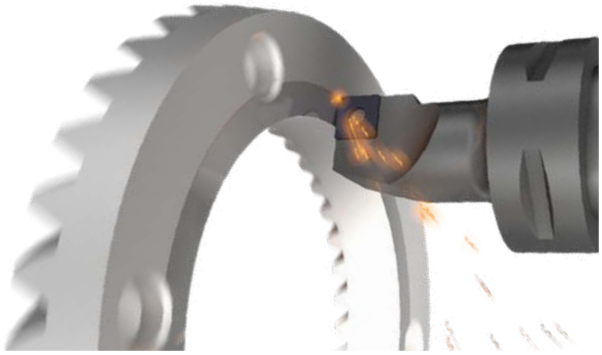
BC8110
PCBN conventionnel

BC8120

APPLICATION GÉNÉRALE

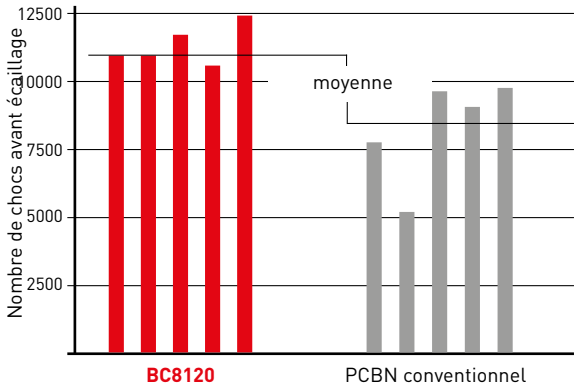
POUR DES COUPES CONTINUES OU LÉGÈREMENT INTERROMPUES

- 1er choix pour la semi-finition et la finition
- Couvre une large plage d'applications allant des usinages continus à légèrement interrompus



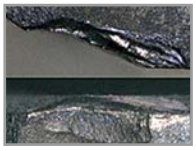
TEST DE COUPE INTERROMPUE

Plaquette	NP-CNGA120408GA2
Matière de la pièce	42CrMo4 (60 HRC)
Mode de coupe	Continu
Vc (m/min)	250
f (mm/tr)	0.15
ap (mm)	0.1
Arrosage	Usinage à sec



État de l'arête de coupe après 8 000 chocs

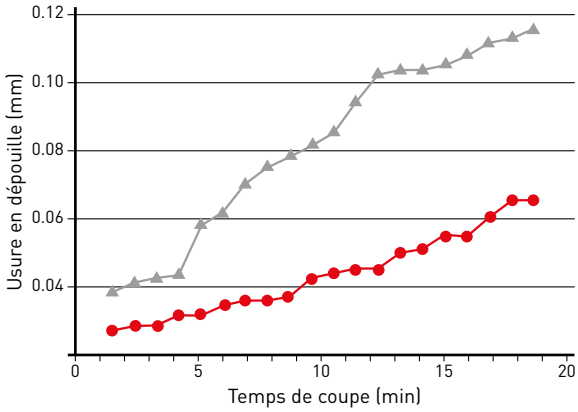
BC8120



PCBN conventionnel

DURÉE DE VIE DE L'OUTIL (USURE EN DÉPOUILLE)

Plaquette	NP-CNGA120408GA2
Matière de la pièce	42CrMo4 (60 HRC)
Mode de coupe	Continu
Vc (m/min)	150
f (mm/tr)	0.10
ap (mm)	0.2
Arrosage	Usinage à sec



Arête de coupe après 15 min

BC8120

Écaillage

PCBN conventionnel

BC8120
PCBN conventionnel

BC8130

USINAGE DIFFICILE

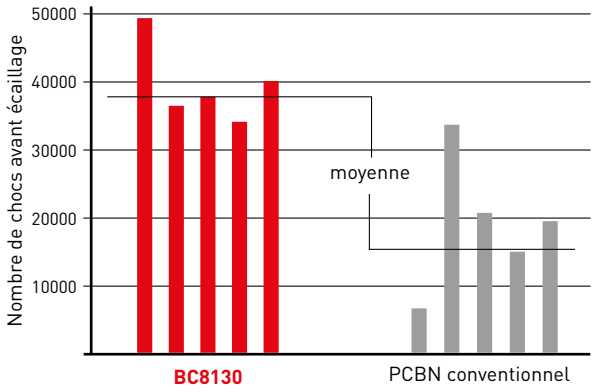
POUR DES APPLICATIONS INSTABLES ET DES COUPES FORTEMENT INTERROMPUES

- Tenue de cote préservée après de nombreux chocs

COUPE FORTEMENT INTERROMPUE (ESSAI EN LABORATOIRE)

Plaquette	NP-CNGA120408GA2
Matière de la pièce	42CrMo4 (60 HRC)
Mode de coupe	Fortement interrompu
Vc (m/min)	250
f (mm/tr)	0.05
ap (mm)	0.1
Arrosage	Lubrifié

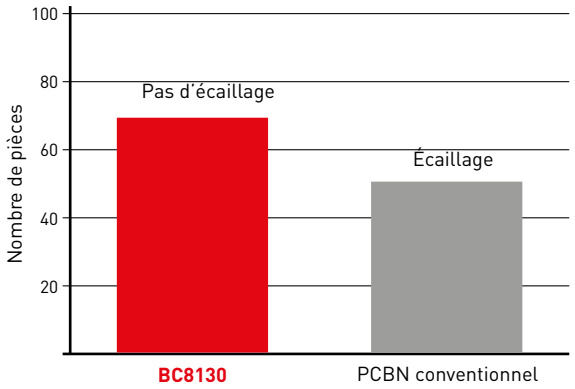
BC8130 est stable jusqu'à 3 000 chocs.



USINAGE DIFFICILE

Plaquette	NP-CNGA120408TH2
Matière de la pièce	C45 (58 HRC)
Mode de coupe	Fortement interrompu
Vc (m/min)	130
f (mm/tr)	0.08
ap (mm)	0.15
Arrosage	Lubrifié

Pas d'écaillage après l'usinage de 70 pièces.



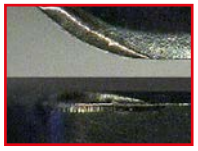
SÉRIE MB8100

NUANCES PCBN NON REVÊTUES UTILISANT LA TECHNOLOGIE DE LIANT À ULTRAMICROPARTICULES

DURÉE DE VIE DE L'OUTIL (USURE EN DÉPOUILLE)

Plaquette	NP-CNGA120408GA2
Matière de la pièce	20Cr4 (60HRC)
Type d'usinage	Usinage continu externe
Vc (m/min)	250
f (mm/tr)	0.1
ap (mm)	0.2
Arrosage	Usinage à sec

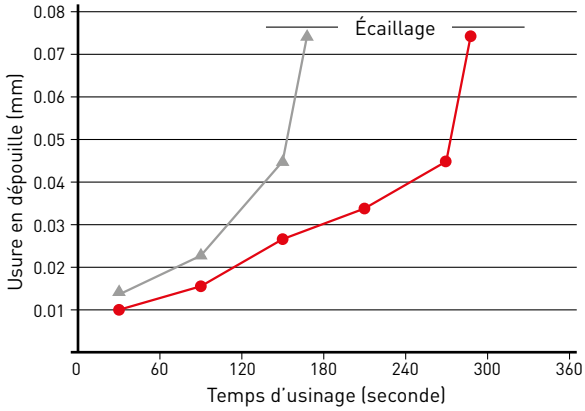
ARÊTE DE COUPE APRÈS 180 SECONDES



MB8110

Conventionnel

Forte usure



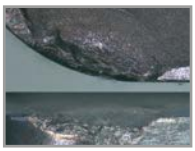
COUPE INTERROMPUE

Plaquette	NP-CNGA120408GA2
Matière de la pièce	20Cr4 (60HRC)
Type d'usinage	Coupe externe interrompue
Vc (m/min)	250
f (mm/tr)	0.15
ap (mm)	0.1
Arrosage	Usinage à sec

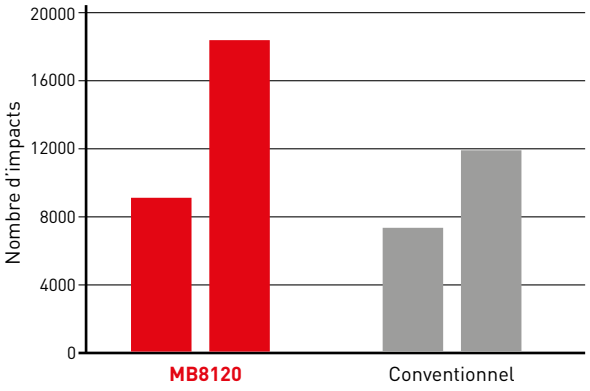
17 000 IMPACTS

MB8120

11 000 IMPACTS



Conventionnel



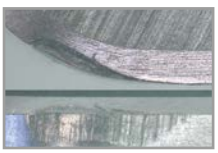
COUPE FORTEMENT INTERROMPUE

Plaquette	NP-CNGA120408GA2
Matière de la pièce	20Cr4 (60HRC)
Type d'usinage	Coupe externe fortement interrompue
Vc (m/min)	150
f (mm/tr)	0.05
ap (mm)	0.1
Arrosage	Coupe lubrifiée

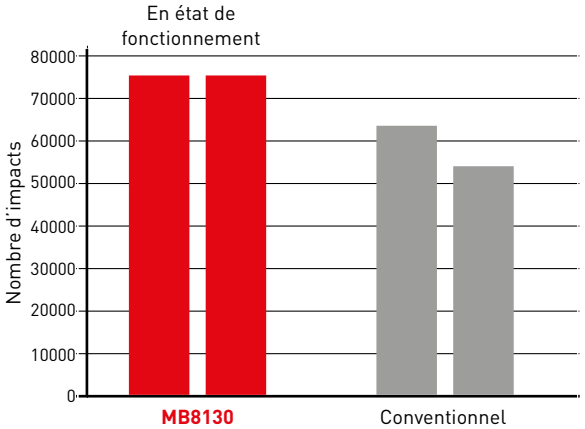
77 000 IMPACTS

MB8130

54 000 IMPACTS



Conventionnel



BC8130
PCBN conventionnel

IDENTIFICATION

POUR PLAQUETTES PCBN

NP - CNGA | 120404 | GA | WS | 4 | JR

Forme de plaquette

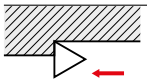
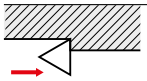
Taille de plaquette

Nombre d'arêtes de coupe

Géométrie de plaquette	
NP	Standard

Préparation de l'arête de coupe	
GA	Usinage continu
FA FS	Usinage continu
TA TH	Coupe interrompue

Racleur	
WS FBWL GBWL	Avec racleur
Sans marquage	Sans racleur

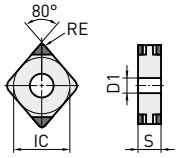
Sens de coupe*	
Forme	Symbole
	JR à droite
	JL à gauche

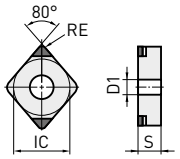
* J = Angle d'attaque 93°

CNGA, CNGM

PLAQUETTES NÉGATIVES (À TROU)

Référence		BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Géométrie
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	

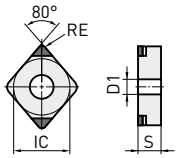




B : brise-copeaux **W** : racleur

● : Article stocké. ★ : Article stocké au Japon.

Référence		BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Géométrie
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 : brise-copeaux **W** : racleur

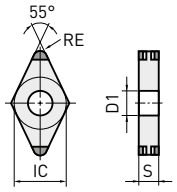
26 Vc

● : Article stocké. ★ : Article stocké au Japon.

DNGA, DNGM

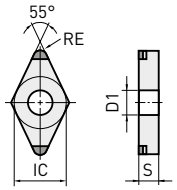
PLAQUETTES NÉGATIVES (À TROU)

Référence	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Géométrie
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	



● : Article stocké. ★ : Article stocké au Japon.

Référence		BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Géométrie
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	

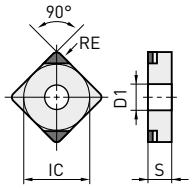


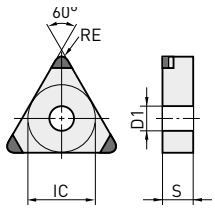
B : brise-copeaux **W** : racleur

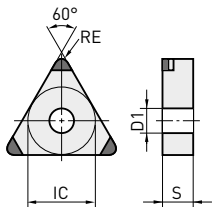
● : Article stocké. ★ : Article stocké au Japon.

SNGA, TNGA, TNGM

PLAQUETTES NÉGATIVES (À TROU)

Référence		BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Géométrie
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	





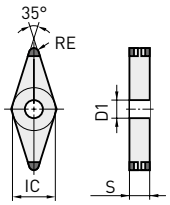
B : brise-copeaux **W** : racleur

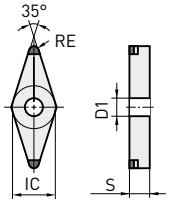
● : Article stocké. ★ : Article stocké au Japon.

VNGA

PLAQUETTES NÉGATIVES (À TROU)

Référence	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Géométrie
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	



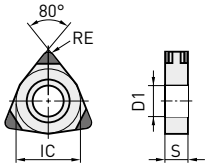
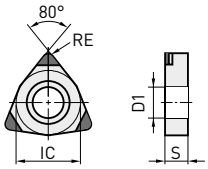


26 Vc

● : Article stocké. ★ : Article stocké au Japon.

WNGA

PLAQUETTES NÉGATIVES (PERCÉES)

Référence	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Géométrie
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 : brise-copeaux **W** : racleur

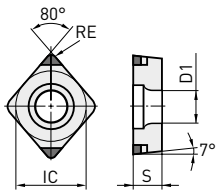
26 Vc

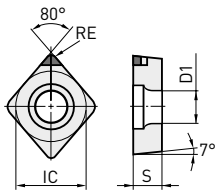
● : Article stocké. ★ : Article stocké au Japon.

CCGW 7°, CCGT 7°

PLAQUETTES POSITIVES (À TROU)

Référence		BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Géométrie
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	





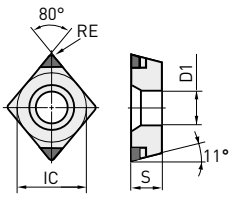
B : brise-copeaux **W** : racleur

● : Article stocké. ★ : Article stocké au Japon.

CPGB 11°

PLAQUETTES POSITIVES (À TROU)

Référence	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Géométrie
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	



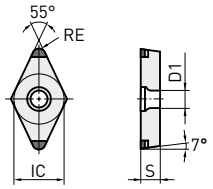
26 Vc

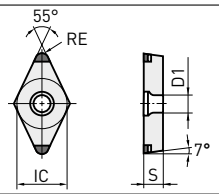
● : Article stocké. ★ : Article stocké au Japon.

DCGW 7°, DCGT 7°

PLAQUETTES POSITIVES (À TROU)

Référence		BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1	Géométrie
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	





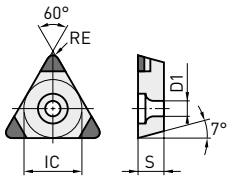
B : brise-copeaux **W** : racleur

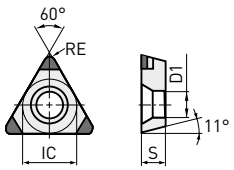
● : Article stocké. ★ : Article stocké au Japon.

TCGW 7°, TPGB 11°

PLAQUETTES POSITIVES (À TROU)

	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1
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



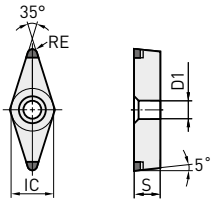


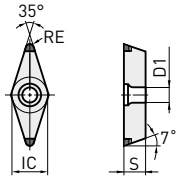
● : Article stocké. ★ : Article stocké au Japon.

VBGW 5°, VCGW 7°

PLAQUETTES POSITIVES (À TROU)

	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130	ZEFF	IC	S	RE	D1
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





● : Article stocké. ★ : Article stocké au Japon.

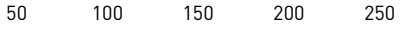
CONDITIONS DE COUPE RECOMMANDÉES

BC8100

	Matière	Nuance	Type d'usinage	Vc	f	ap	Arrosage
H	Acier trempé, acier traité, etc.	**BC8105**	Usinage continu		– 0.15	– 0.20	À sec / lubrifié
		BC8110	Usinage continu		– 0.20	– 0.35	
		BC8120	Usinage continu		– 0.30	– 0.80	
			Coupe interrompue		– 0.20	– 0.30	
		BC8130	Interrompu		– 0.20	– 0.30	

MB8100

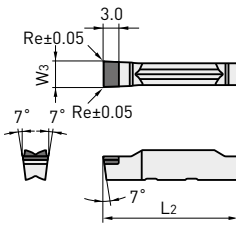
	Matière	Nuance	Type d'usinage	Vc	f	ap	Arrosage
H	Aciers trempés/traités	**MB8110**	Usinage continu		– 0.20	– 0.30	À sec / lubrifié
		MB8120	Usinage continu		– 0.20	– 0.50	
			Coupe interrompue		– 0.20	– 0.30	
		MB8130	Coupe fortement interrompue		– 0.20	– 0.30	



GY1G

PLAQUETTES POUR SYSTÈME À GORGES GY

Référence	BC8110	W3	Tolérance	Re	L2	Géométrie
GY1G0200D020N-GFGS	●	2.00	±0.03	0.2	20.70	Sans brise-copeaux (pour matières traitées)
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	

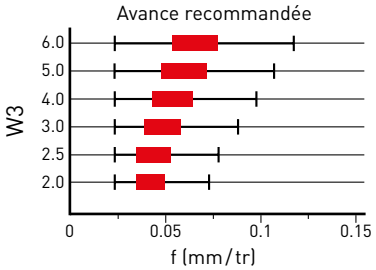


1. Lorsque vous atteignez le diamètre de trou minimum « D1 » d'une gorge interne, réduisez l'avance de 20 %.

CONDITIONS DE COUPE RECOMMANDÉES

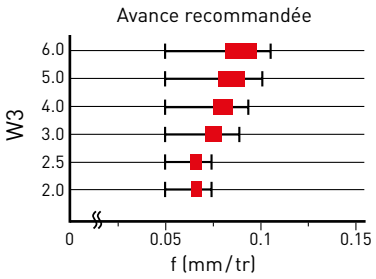
POUR GORGE EXTERNE

	Matière	Dureté	Vc
H	Acier trempé	⩽ 50HRC	80 – 120



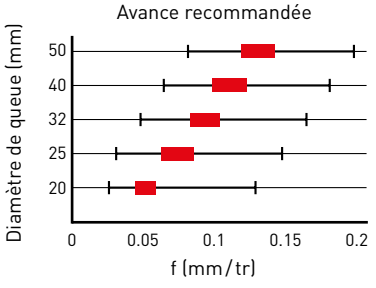
POUR GORGE FRONTALE

	Matière	Dureté	Vc
H	Acier trempé	⩽ 50HRC	60 – 100



POUR GORGE INTERNE

	Matière	Dureté	Vc
H	Acier trempé	⩽ 50HRC	60 – 100

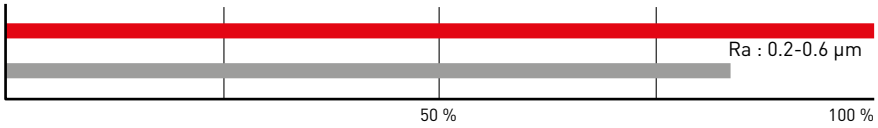


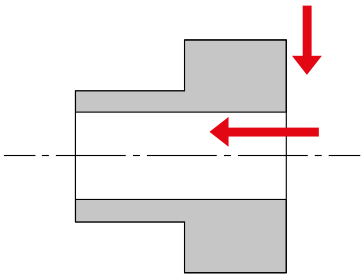
: 1re zone recommandée

EXEMPLES D'APPLICATIONS

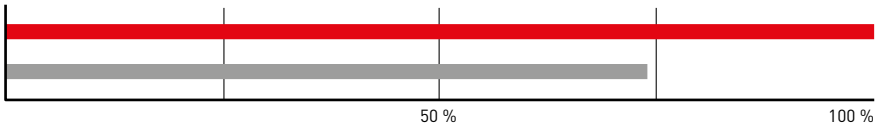
BC8105

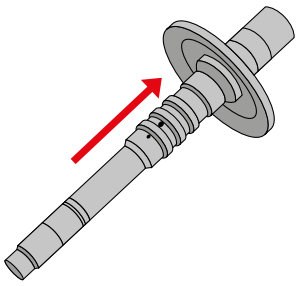
Plaquette	NP-DCGW11T308GS2
Matière de la pièce	20CrMo2-2 (58-60 HRC)
Mode de coupe	Chariotage / dressage (continus)
Vitesse de coupe Vc (m/min)	165
Avance f (mm/tr)	0.085
Profondeur de coupe ap (mm)	0.1
Arrosage	Usinage à sec
Résultat	Nombre de pièces usinées : 80





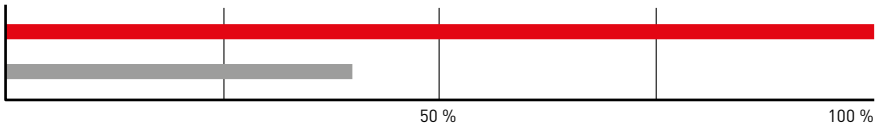
Plaquette	NP-CNGA120408GSWS2
Matière de la pièce	S55CHT (55-65 HRC)
Mode de coupe	Chariotage, continu
Vitesse de coupe Vc (m/min)	160
Avance f (mm/tr)	0.35
Profondeur de coupe ap (mm)	0.15
Arrosage	Usinage à sec
Résultat	Nombre de pièces usinées : 134

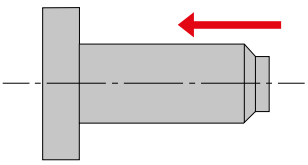




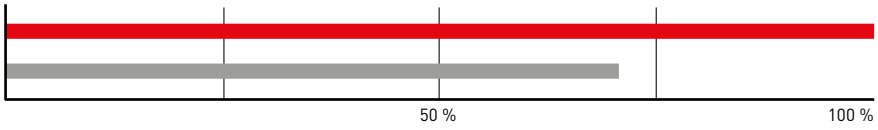
BC8110

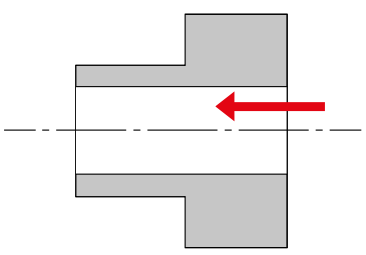
Plaquette	NP-DNGA150404FS2
Matière de la pièce	S55CHT (55-65HRC)
Mode de coupe	Chariotage, continu
Vitesse de coupe Vc (m/min)	160
Avance f (mm/tr)	0.20
Profondeur de coupe ap (mm)	0.20
Arrosage	Coupe lubrifiée
Résultat	Nombre de pièces usinées : 500





Plaquette	NP-CCGW09T308GS2
Matière de la pièce	16MnCr5 (60-65HRC)
Mode de coupe	Alésage, continu
Vitesse de coupe Vc (m/min)	110
Avance f (mm/tr)	0.15
Profondeur de coupe ap (mm)	0.20
Arrosage	Usinage à sec
Résultat	Nombre de pièces usinées : 3 500

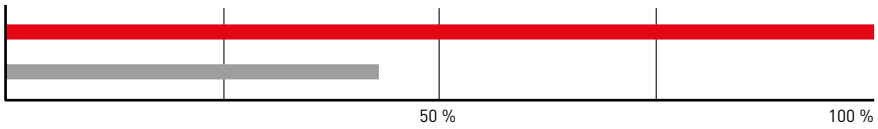


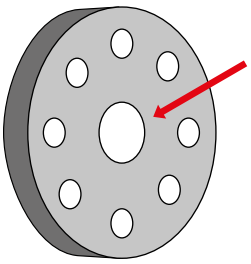


■ : outil Mitsubishi Materials ■ : outil conventionnel

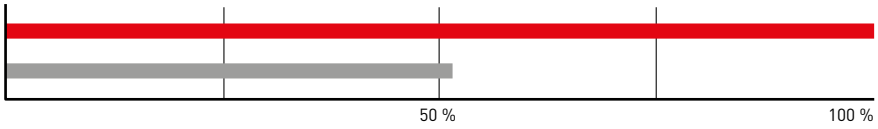
BC8120

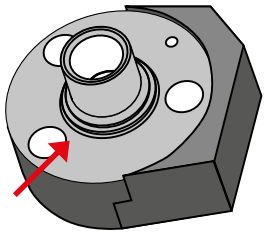
Plaquette	NP-CNGA120408TA2
Matière de la pièce	SUJ (50HRC)
Mode de coupe	Dressage, interrompu
Vitesse de coupe Vc (m/min)	130
Avance f (mm/tr)	0.08
Profondeur de coupe (mm)	0.50
Arrosage	Coupe lubrifiée
Résultat	Nombre de pièces usinées : 110





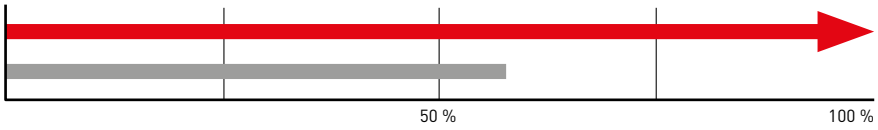
Plaquette	NP-CNGA120408GA2
Matière de la pièce	CAC403 (55-58HRC)
Mode de coupe	Dressage, interrompu
Vitesse de coupe Vc (m/min)	150
Avance f (mm/tr)	0.15
Profondeur de coupe ap (mm)	0.10
Arrosage	Usinage à sec
Résultat	Nombre de pièces usinées : 150

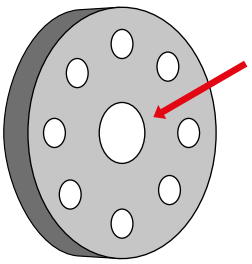




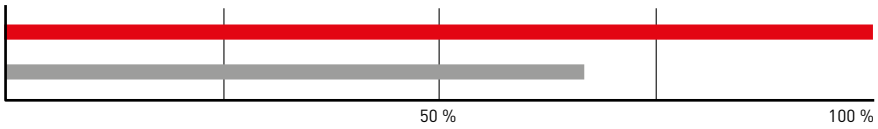
BC8130

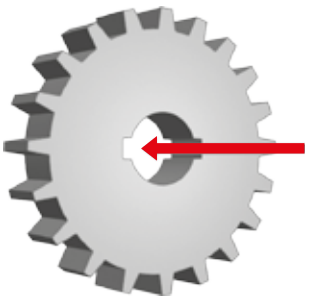
Plaquette	NP-CNGA120408TH2
Matière de la pièce	S45C (58 HRC)
Mode de coupe	Dressage, interrompu
Vitesse de coupe Vc (m/min)	130
Avance f (mm/tr)	0.08
Profondeur de coupe ap (mm)	0.15
Arrosage	Lubrifié
Résultat	Nombre de pièces usinées : 70 (pas d'écaillage)





Plaquette	NP-CCGW09T308TN2
Matière de la pièce	16MnCrS5 (58-60 HRC)
Mode de coupe	Alésage, interrompu
Vitesse de coupe Vc (m/min)	159-175
Avance f (mm/tr)	0.11
Profondeur de coupe ap (mm)	0.12
Arrosage	Usinage à sec
Résultat	Nombre de pièces usinées : 170





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