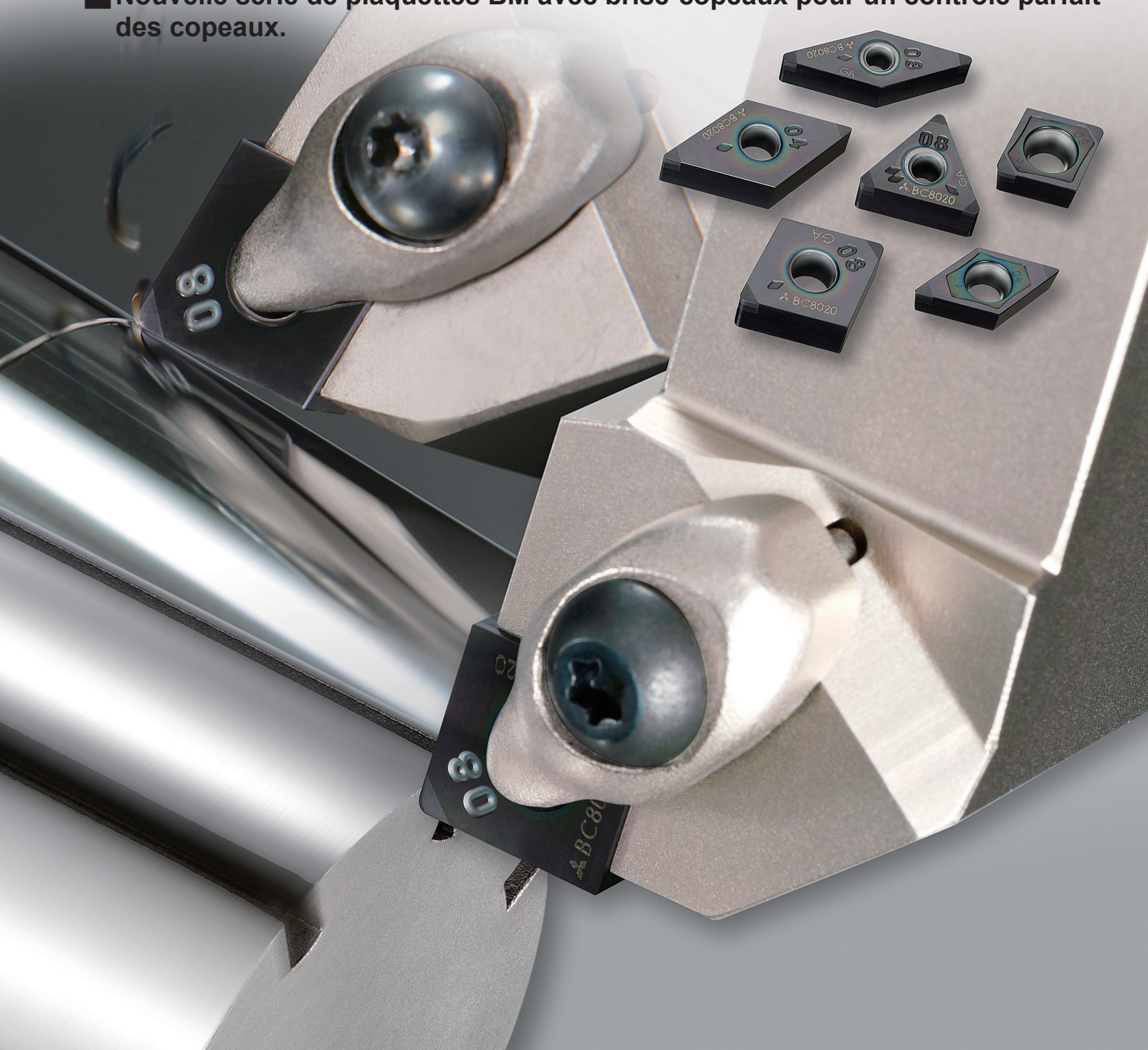


# Une nouvelle nuance CBN pour révolutionner l'usinage dans les aciers trempés

- Même dans des conditions extrêmes, il est possible d'obtenir une résistance à l'usure élevée pour augmenter la performance de l'usinage.
- La résistance de l'arrêt de coupe permet une durée de vie plus importante de l'outil même pendant des usinages instables ou interrompus.
- Nouvelle série de plaquettes BM avec brise-copeaux pour un contrôle parfait des copeaux.





Nuance revêtue CBN pour un usinage universel des aciers trempés

# BC8020

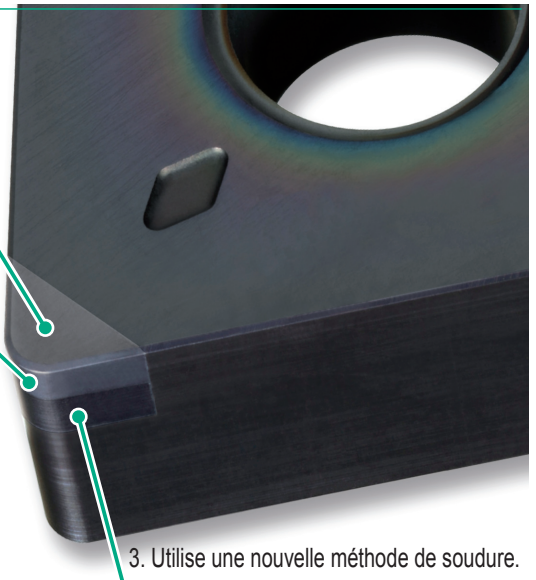
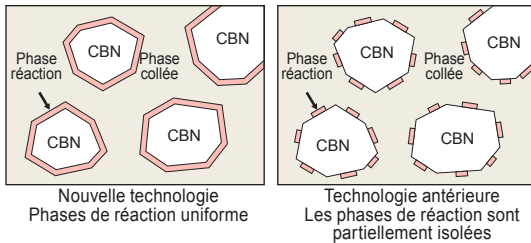
## Caractéristiques

### Excellente résistance à l'usure

Grâce à la robustesse de l'arête de coupe et à la résistance à l'usure en cratère extrêmement élevée, la nuance CBN, associée à un revêtement en céramique extrêmement résistant à l'usure, on obtient une durée de vie de l'outil prolongée et un usinage plus efficace.

### Robustesse de l'arête de coupe extrêmement fiable

1. Contient des particules CBN extrêmement dures.
2. Utilisation de la méthode unique de Mitsubishi de "frittage par activation des particules".

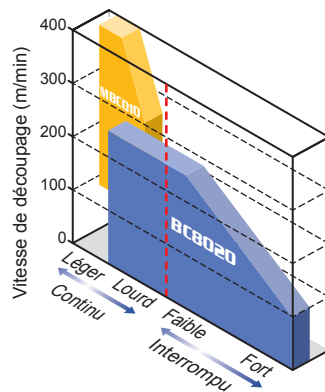


3. Utilise une nouvelle méthode de soudure.

## Grand choix d'applications

- Pour l'usinage des aciers trempés, elle est adaptée au tournage continu et à l'usinage interrompu.
- Grâce à sa haute résistance à l'usure en cratère, il est possible d'effectuer des usinages avec des  $A_p$  très profondes comme l'enlèvement des couches carbonisées.

### Grand choix d'applications

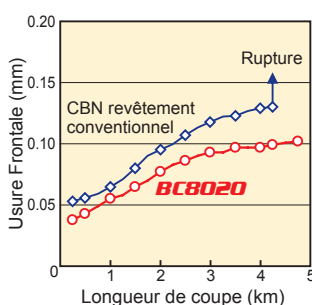


### Conditions de coupe Recommandées

Matériel de travail	Mode de découpage	Vitesse de découpage (m/min)				Avancement (mm/rev)	Epaisseur de coupe (mm)	Réfrigérant
		50	100	200	300			
Acier trempé	Coupe Continue	[Bar chart showing speed range from ~100 to ~250 m/min]				-0.3	-0.8	Humide, sec
	Coupe discontinue	[Bar chart showing speed range from ~100 to ~200 m/min]				-0.2	-0.3	Sec

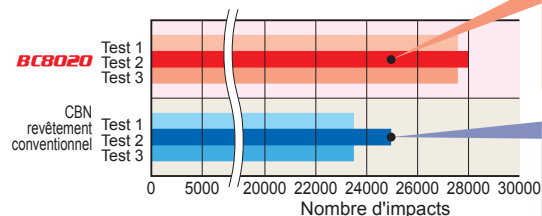
## Performance de coupe

### Coupe Continue



<Conditions de coupe>  
 Pièce traitée : Acier trempé (60HRC)  
 Plaquette : NP-CNGA120408GA  
 Vitesse de coupe : 180m/min  
 Avance : 0,15mm/tr  
 $A_p$  : 0,5mm  
 (Arrosage)

### Coupe discontinue



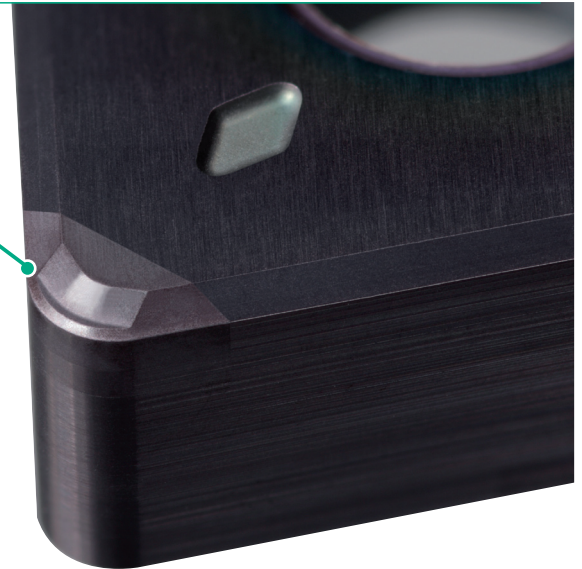
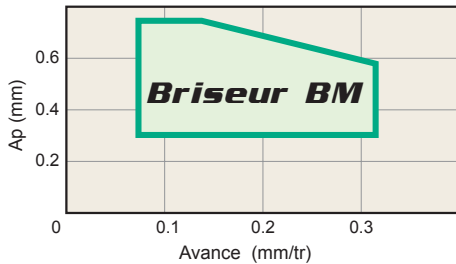
<Conditions de découpage>  
 Pièce traitée : Acier trempé (60HRC)  
 Plaquette : NP-CNGA120408GA  
 Vitesse de coupe : 150m/min  
 Avance : 0,15mm/tr  
 $A_p$  : 0,15mm  
 Coupe discontinue (Sec)



# Plaquette Brise Copeaux

## Caractéristiques

- Contrôle copeau efficace lors des usinages de couches d'acier traité
- Empêche la casse causés par les copeaux longs



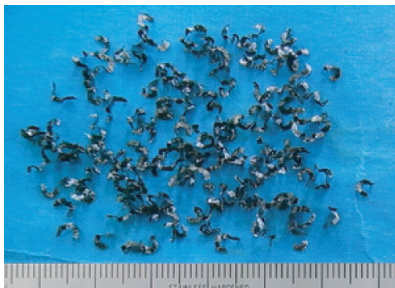
### Conditions de coupe Recommandées

Matériel de travail	Mode de découpage	Vitesse de coupe (m/min)				Avancement (mm/rev)	Ap (mm)	Réfrigérant
		50	100	200	300			
Acier trempé	Coupe Continue	----- ----- ----- -----				-0.3	-0.6	Sec
							-0.8	Humide

## Performance de Coupe

### Résistance à l'usure

- Géométrie du brise copeau BC8020-BM



<Conditions de découpage>  
 Pièce traitée : Acier trempé (60HRC)  
 Plaquette : BM-CNGM120408TA  
 Vitesse de découpage : 180m/min  
 Avancement : 0,2mm/rev  
 Epaisseur de coupe : 0,5mm  
 Coupe Continue (Humide)

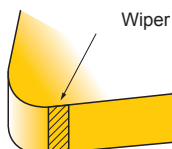


## Plaquette avec Wiper

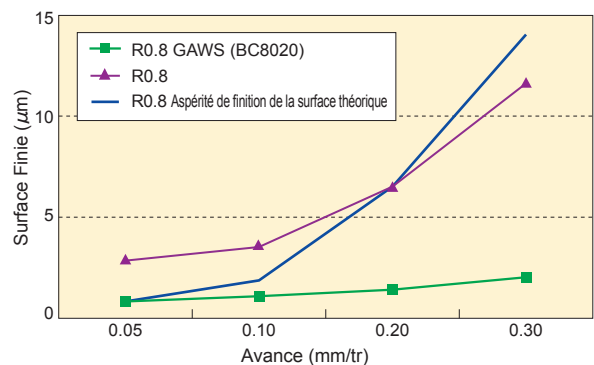
### Caractéristiques

- Résultat d'un meilleur état de surface avec une grande vitesse d'avance
- Temps d'usinage réduit

### NP-CNGA120408GAWS4



### État de surface


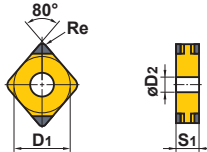

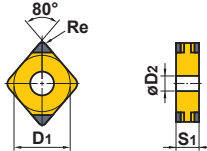

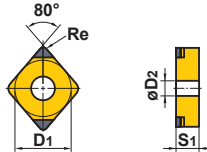

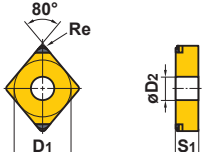

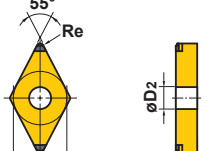

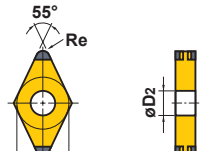


<Conditions de coupe>  
 Pièce traitée : Acier trempé (HRC60)  
 Plaquette : NP-CNGA120408GAWS4  
 Vitesse de coupe : 120m/min  
 Ap : 0,1mm  
 Usinage à sec

# Nuance revêtue CBN pour usage universel de l'acier trempé

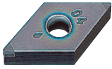
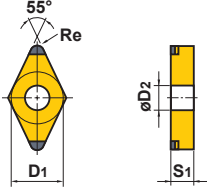
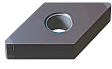
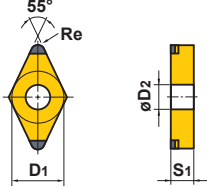

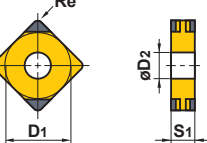

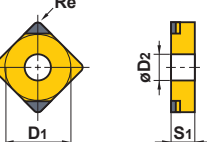
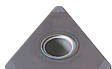
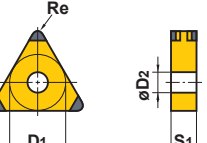
## ● Plaquettes négatives

Préparations : GA : coupe standard universel FS : coupe Continue TA : coupe discontinue

Forme	Références	Stock	Dimensions (mm)				Géométrie
			D1	S1	Re	D2	
 NOUVEAU PETIT CUT Type multi-inserts Double face	<b>NP-CNGA120404GA4</b>	●	12.7	4.76	0.4	5.16	
	<b>120408GA4</b>	●	12.7	4.76	0.8	5.16	
	<b>120412GA4</b>	●	12.7	4.76	1.2	5.16	
	<b>120404FS4</b>	★	12.7	4.76	0.4	5.16	
	<b>120408FS4</b>	★	12.7	4.76	0.8	5.16	
	<b>120412FS4</b>	★	12.7	4.76	1.2	5.16	
	<b>120404TA4</b>	★	12.7	4.76	0.4	5.16	
	<b>120408TA4</b>	★	12.7	4.76	0.8	5.16	
	<b>120412TA4</b>	★	12.7	4.76	1.2	5.16	
 NOUVEAU PETIT CUT (Racle) Type multi-inserts Double face	<b>NP-CNGA120404GAWS4</b>	★	12.7	4.76	0.4	5.16	
	<b>120408GAWS4</b>	★	12.7	4.76	0.8	5.16	
	<b>120412GAWS4</b>	★	12.7	4.76	1.2	5.16	
	<b>120404GSWS4</b>	●	12.7	4.76	0.4	5.16	
	<b>120408GSWS4</b>	●	12.7	4.76	0.8	5.16	
<b>120412GSWS4</b>	●	12.7	4.76	1.2	5.16		
 NOUVEAU PETIT CUT Type multi-inserts monoface	<b>NP-CNGA120404GA2</b>	★	12.7	4.76	0.4	5.16	
	<b>120408GA2</b>	★	12.7	4.76	0.8	5.16	
	<b>120412GA2</b>	★	12.7	4.76	1.2	5.16	
	<b>120404FS2</b>	●	12.7	4.76	0.4	5.16	
	<b>120408FS2</b>	●	12.7	4.76	0.8	5.16	
	<b>120412FS2</b>	●	12.7	4.76	1.2	5.16	
	<b>120404TA2</b>	●	12.7	4.76	0.4	5.16	
	<b>120408TA2</b>	●	12.7	4.76	0.8	5.16	
<b>120412TA2</b>	●	12.7	4.76	1.2	5.16		
 NOUVEAU PETIT CUT (brise-copeaux) Type multi-inserts Monoface	<b>BM-CNGM120408TA2</b>	●	12.7	4.76	0.4	5.16	
	<b>120412TA2</b>	●	12.7	4.76	0.8	5.16	
 NOUVEAU PETIT CUT (brise-copeaux) Type multi-inserts Monoface	<b>BM-DNGM150408TA2</b>	★	12.7	4.76	0.8	5.16	
	<b>150412TA2</b>	★	12.7	4.76	1.2	5.16	
	<b>150608TA2</b>	●	12.7	6.35	0.8	5.16	
	<b>150612TA2</b>	●	12.7	6.35	1.2	5.16	
 NOUVEAU PETIT CUT Type multi-inserts Double face	<b>NP-DNGA150404GA4</b>	★	12.7	4.76	0.4	5.16	
	<b>150408GA4</b>	★	12.7	4.76	0.8	5.16	
	<b>150412GA4</b>	★	12.7	4.76	1.2	5.16	
	<b>150604GA4</b>	●	12.7	6.35	0.4	5.16	
	<b>150608GA4</b>	●	12.7	6.35	0.8	5.16	
	<b>150612GA4</b>	●	12.7	6.35	1.2	5.16	
	<b>150404FS4</b>	★	12.7	4.76	0.4	5.16	
	<b>150408FS4</b>	★	12.7	4.76	0.8	5.16	
	<b>150412FS4</b>	★	12.7	4.76	1.2	5.16	
	<b>150404TA4</b>	★	12.7	4.76	0.4	5.16	
	<b>150408TA4</b>	★	12.7	4.76	0.8	5.16	
	<b>150412TA4</b>	★	12.7	4.76	1.2	5.16	

● : Article en stock.


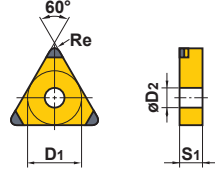

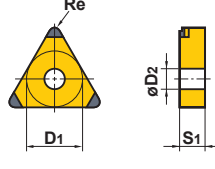

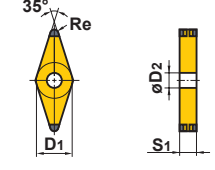

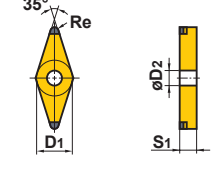

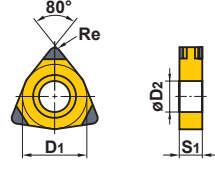

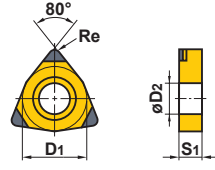
★ : Article en stock au Japon.

Forme	Références	Stock	Dimensions (mm)				Géométrie
			D1	S1	Re	D2	
NOUVEAU PETIT CUT  Type multi-inserts Monoface	<b>NP-DNGA150404GA2</b>	★	12.7	4.76	0.4	5.16	
	<b>150408GA2</b>	★	12.7	4.76	0.8	5.16	
	<b>150412GA2</b>	★	12.7	4.76	1.2	5.16	
	<b>150404FS2</b>	★	12.7	4.76	0.4	5.16	
	<b>150408FS2</b>	★	12.7	4.76	0.8	5.16	
	<b>150412FS2</b>	★	12.7	4.76	1.2	5.16	
	<b>150604FS2</b>	●	12.7	6.35	0.4	5.16	
	<b>150608FS2</b>	●	12.7	6.35	0.8	5.16	
	<b>150612FS2</b>	●	12.7	6.35	1.2	5.16	
	<b>150404TA2</b>	★	12.7	4.76	0.4	5.16	
	<b>150408TA2</b>	★	12.7	4.76	0.8	5.16	
	<b>150412TA2</b>	★	12.7	4.76	1.2	5.16	
	<b>150604TA2</b>	●	12.7	6.35	0.4	5.16	
	<b>150608TA2</b>	●	12.7	6.35	0.8	5.16	
	<b>150612TA2</b>	●	12.7	6.35	1.2	5.16	
NOUVEAU PETIT CUT (Racle)  Type multi-inserts Double face	<b>NP-DNGA150604GSWS2JR</b>	●	12.7	6.35	0.4	5.16	
	<b>150604GSWS2JL</b>	●	12.7	6.35	0.4	5.16	
	<b>150608GSWS2JR</b>	●	12.7	6.35	0.8	5.16	
	<b>150608GSWS2JL</b>	●	12.7	6.35	0.8	5.16	
NOUVEAU PETIT CUT  Type multi-inserts Double face	<b>NP-SNGA120408GA4</b>	●	12.7	4.76	0.8	5.16	
	<b>120412GA4</b>	●	12.7	4.76	1.2	5.16	
NOUVEAU PETIT CUT  Type multi-inserts Monoface	<b>NP-SNGA120408TA2</b>	●	12.7	4.76	0.8	5.16	
	<b>120412TA2</b>	●	12.7	4.76	1.2	5.16	
NOUVEAU PETIT CUT  Type multi-inserts Double face	<b>NP-TNGA160404GA6</b>	●	9.525	4.76	0.4	3.81	
	<b>160408GA6</b>	●	9.525	4.76	0.8	3.81	
	<b>160412GA6</b>	●	9.525	4.76	1.2	3.81	
	<b>160404FS6</b>	★	9.525	4.76	0.4	3.81	
	<b>160408FS6</b>	★	9.525	4.76	0.8	3.81	
	<b>160412FS6</b>	★	9.525	4.76	1.2	3.81	
	<b>160404TA6</b>	★	9.525	4.76	0.4	3.81	
	<b>160408TA6</b>	★	9.525	4.76	0.8	3.81	
<b>160412TA6</b>	★	9.525	4.76	1.2	3.81		


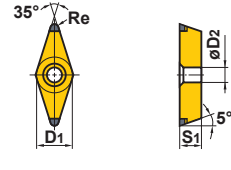
# Nuance revêtu CBN pour usage universel de l'acier trempé

## ● Plaquettes négatives

Préparations : GA : coupe standard universel FS : coupe continue TA : coupe discontinue

Forme	Références	Stock	Dimensions (mm)				Géométrie
			D1	S1	Re	D2	
 NOUVEAU PETIT CUT Type multi-inserts Monoface	<b>NP-TNGA160404GA3</b>	★	9.525	4.76	0.4	3.81	
	<b>160408GA3</b>	★	9.525	4.76	0.8	3.81	
	<b>160412GA3</b>	★	9.525	4.76	1.2	3.81	
	<b>160404FS3</b>	●	9.525	4.76	0.4	3.81	
	<b>160408FS3</b>	●	9.525	4.76	0.8	3.81	
	<b>160412FS3</b>	●	9.525	4.76	1.2	3.81	
	<b>160404TA3</b>	●	9.525	4.76	0.4	3.81	
	<b>160408TA3</b>	●	9.525	4.76	0.8	3.81	
	<b>160412TA3</b>	●	9.525	4.76	1.2	3.81	
 NOUVEAU PETIT CUT (brise-copeaux) Type multi-inserts Monoface	<b>BM-TNGM160408TA3</b>	●	9.525	4.76	0.8	3.81	
	<b>160412TA3</b>	●	9.525	4.76	1.2	3.81	
 NOUVEAU PETIT CUT Type multi-inserts Double face	<b>NP-VNGA160404GA4</b>	●	9.525	4.76	0.4	3.81	
	<b>160408GA4</b>	●	9.525	4.76	0.8	3.81	
	<b>160412GA4</b>	●	9.525	4.76	1.2	3.81	
	<b>160404FS4</b>	★	9.525	4.76	0.4	3.81	
	<b>160408FS4</b>	★	9.525	4.76	0.8	3.81	
	<b>160412FS4</b>	★	9.525	4.76	1.2	3.81	
	<b>160404TA4</b>	★	9.525	4.76	0.4	3.81	
<b>160408TA4</b>	★	9.525	4.76	0.8	3.81		
<b>160412TA4</b>	★	9.525	4.76	1.2	3.81		
 NOUVEAU PETIT CUT Type multi-inserts Monoface	<b>NP-VNGA160404GA2</b>	★	9.525	4.76	0.4	3.81	
	<b>160408GA2</b>	★	9.525	4.76	0.8	3.81	
	<b>160404FS2</b>	●	9.525	4.76	0.4	3.81	
	<b>160408FS2</b>	●	9.525	4.76	0.8	3.81	
	<b>160404TA2</b>	●	9.525	4.76	0.4	3.81	
<b>160408TA2</b>	●	9.525	4.76	0.8	3.81		
 NOUVEAU PETIT CUT Type multi-inserts Double face	<b>NP-WNGA080408GA6</b>	●	12.7	4.76	0.8	5.16	
 NOUVEAU PETIT CUT Type multi-inserts Monoface	<b>NP-WNGA080408GA3</b>	★	12.7	4.76	0.8	5.16	
	<b>080408FS3</b>	●	12.7	4.76	0.8	5.16	
	<b>080408TA3</b>	●	12.7	4.76	0.8	5.16	

## ● 5° Plaquettes positives


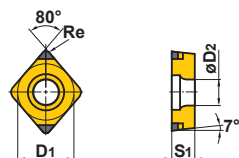

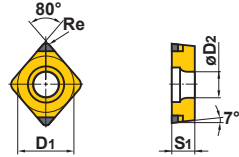

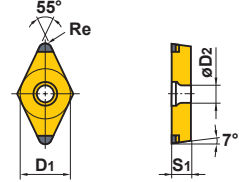

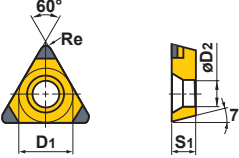

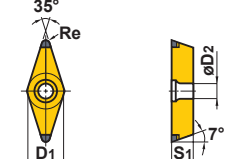
Forme	Références	Lager	Dimensions (mm)				Géométrie
			D1	S1	Re	D2	
 NOUVEAU PETIT CUT Type multi-inserts Monoface	<b>NP-VBGW110304GA2</b>	●	6.35	3.18	0.4	2.85	
	<b>160404GA2</b>	●	9.525	4.76	0.4	4.43	
	<b>160408GA2</b>	●	9.525	4.76	0.8	4.43	
	<b>110304FS2</b>	●	6.35	3.18	0.4	2.85	
	<b>160404FS2</b>	●	9.525	4.76	0.4	4.43	
	<b>160408FS2</b>	●	9.525	4.76	0.8	4.43	
	<b>160408TA2</b>	●	9.525	4.76	0.8	4.43	

● : Article en stock.

★ : Article en stock au Japon.




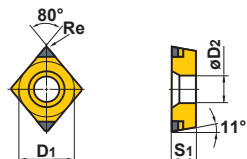

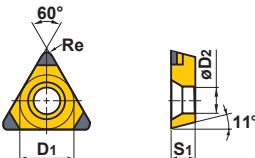
● 7° Plaquettes positives

Forme	Références	Stock	Dimensions (mm)				Géométrie
			D1	S1	Re	D2	
NOUVEAU PETIT CUT  	<b>NP-CCGW060202GA2</b>	●	6.35	2.38	0.2	2.8	
	<b>060204GA2</b>	●	6.35	2.38	0.4	2.8	
	<b>09T302GA2</b>	★	9.525	3.97	0.2	4.4	
	<b>09T304GA2</b>	●	9.525	3.97	0.4	4.4	
	<b>09T308GA2</b>	●	9.525	3.97	0.8	4.4	
	<b>060204GN2</b>	●	6.35	2.38	0.4	2.8	
	<b>09T304GN2</b>	●	9.525	3.97	0.4	4.4	
	<b>09T308GN2</b>	●	9.525	3.97	0.8	4.4	
	<b>060202FS2</b>	●	6.35	2.38	0.2	2.8	
	<b>060204FS2</b>	●	6.35	2.38	0.4	2.8	
	<b>09T302FS2</b>	★	9.525	3.97	0.2	4.4	
	<b>09T304FS2</b>	●	9.525	3.97	0.4	4.4	
	<b>09T308FS2</b>	●	9.525	3.97	0.8	4.4	
	<b>09T304TA2</b>	●	9.525	3.97	0.4	4.4	
	<b>09T308TA2</b>	●	9.525	3.97	0.8	4.4	
	Type multi-inserts Monoface	<b>09T304TN2</b>	●	9.525	3.97	0.4	
	<b>09T308TN2</b>	●	9.525	3.97	0.8	4.4	
NOUVEAU PETIT CUT (Racle)  	<b>NP-CCGW09T304GSWS2</b>	●	9.525	3.97	0.4	4.4	
Type multi-inserts Monoface	<b>09T308GSWS2</b>	●	9.525	3.97	0.8	4.4	
NOUVEAU PETIT CUT  	<b>NP-DCGW070202GA2</b>	●	6.35	2.38	0.2	2.8	
	<b>070204GA2</b>	●	6.35	2.38	0.4	2.8	
	<b>070208GA2</b>	●	6.35	2.38	0.8	2.8	
	<b>11T302GA2</b>	★	9.525	3.97	0.2	4.4	
	<b>11T304GA2</b>	●	9.525	3.97	0.4	4.4	
	<b>11T308GA2</b>	●	9.525	3.97	0.8	4.4	
	<b>070204GN2</b>	●	6.35	2.38	0.4	2.8	
	<b>11T304GN2</b>	●	9.525	3.97	0.4	4.4	
	<b>11T308GN2</b>	●	9.525	3.97	0.8	4.4	
	<b>070202FS2</b>	●	6.35	2.38	0.2	2.8	
	<b>070204FS2</b>	●	6.35	2.38	0.4	2.8	
	<b>11T302FS2</b>	★	9.525	3.97	0.2	4.4	
	<b>11T304FS2</b>	●	9.525	3.97	0.4	4.4	
	<b>11T308FS2</b>	●	9.525	3.97	0.8	4.4	
	<b>11T304TA2</b>	●	9.525	3.97	0.4	4.4	
	<b>11T308TA2</b>	●	9.525	3.97	0.8	4.4	
Type multi-inserts Monoface	<b>11T304TN2</b>	●	9.525	3.97	0.4	4.4	
	<b>11T308TN2</b>	●	9.525	3.97	0.8	4.4	
NOUVEAU PETIT CUT  	<b>NP-TCGW090204GA3</b>	●	5.56	2.38	0.4	2.5	
	<b>090208GA3</b>	●	5.56	2.38	0.8	2.5	
	<b>110204GA3</b>	●	6.35	2.38	0.4	2.8	
	<b>110208GA3</b>	●	6.35	2.38	0.8	2.8	
	<b>16T304GA3</b>	●	9.525	3.97	0.4	4.4	
	<b>16T308GA3</b>	●	9.525	3.97	0.8	4.4	
	<b>090204FS3</b>	●	5.56	2.38	0.4	2.5	
	<b>110204FS3</b>	●	6.35	2.38	0.4	2.8	
Type multi-inserts Monoface	<b>16T304FS3</b>	●	9.525	3.97	0.4	4.4	
NOUVEAU PETIT CUT  	<b>NP-VCGW160404GA2</b>	●	9.525	4.76	0.4	4.4	
	<b>160408GA2</b>	●	9.525	4.76	0.8	4.4	
	<b>160404FS2</b>	●	9.525	4.76	0.4	4.4	
	<b>160408FS2</b>	★	9.525	4.76	0.8	4.4	
	Type multi-inserts Monoface	<b>160408TA2</b>	●	9.525	4.76	0.8	

# Nuance revêtu CBN pour usage universel de l'acier trempé

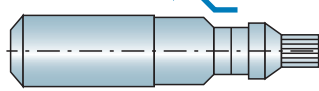
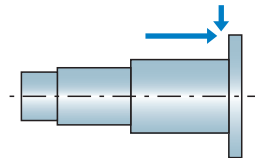
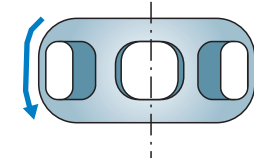
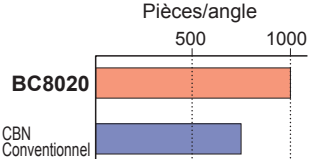
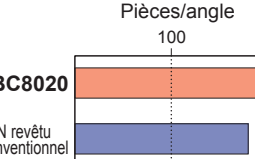
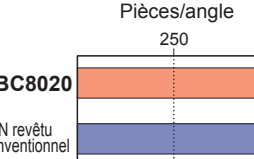
## ● 11° Plaquettes positives

Préparations : GA : coupe standard universel FS : coupe continue TA : coupe discontinue

Forme	Références	Stock	Dimensions (mm)				Géométrie
			D1	S1	Re	D2	
 NOUVEAU PETIT CUT Type multi-inserts Monoface	<b>NP-CPGB080204GA2</b>	●	7.94	2.38	0.4	3.5	
	<b>080208GA2</b>	●	7.94	2.38	0.8	3.5	
	<b>090304GA2</b>	●	9.525	3.18	0.4	4.5	
	<b>090308GA2</b>	●	9.525	3.18	0.8	4.5	
	<b>080204FS2</b>	●	7.94	2.38	0.4	3.5	
	<b>080208FS2</b>	●	7.94	2.38	0.8	3.5	
	<b>090304FS2</b>	●	9.525	3.18	0.4	4.5	
<b>090308FS2</b>	●	9.525	3.18	0.8	4.5		
 NOUVEAU PETIT CUT Type multi-inserts Monoface	<b>NP-TPGB110304GA3</b>	●	6.35	3.18	0.4	3.4	
	<b>110308GA3</b>	●	6.35	3.18	0.8	3.4	
	<b>160304GA3</b>	●	9.525	3.18	0.4	4.4	
	<b>160308GA3</b>	●	9.525	3.18	0.8	4.4	
	<b>110304FS3</b>	●	6.35	3.18	0.4	3.4	
	<b>110308FS3</b>	●	6.35	3.18	0.8	3.4	
	<b>160304FS3</b>	●	9.525	3.18	0.4	4.4	
<b>160308FS3</b>	●	9.525	3.18	0.8	4.4		

● : Article en stock.

## Exemples d'application

Plaquette	<b>BM-DNGM150408TA2</b>	<b>NP-CNGA120408GA</b>	<b>NP-TNGA160416TA</b>	
Pièce traitée	 Acier trempé (60HRC)	 Acier trempé (60HRC)	 Acier trempé (60HRC)	
Composant	Pièces d'engrenage	Axe	Pièces de jointure	
Conditions de Coupe	Vitesse de coupe (m/min)	130	130	120
	Avance (mm/tr)	0.12	0.15	0.15
	Ap (mm)	0.15	0.15	0.15
Lubrification	Sec	Arrosage	Sec	
Résultats	 Pièces/angle: 500, 1000 BC8020 CBN Conventionnel	 Pièces/angle: 100, 200 BC8020 CBN revêtu Conventionnel	 Pièces/angle: 250, 500 BC8020 CBN revêtu Conventionnel	
	L'outil CBN conventionnel proposait une durée de vie de 500 pièces, alors que le BC8020 propose un usinage stable jusqu'à 1000 pièces.	Le CBN conventionnel a atteint les 180 pièces alors que le BC8020 a pu usiner jusqu'à 200 pièces de façon très stable.	L'outil CBN conventionnel proposait une durée de vie de 450 pièces, alors que BC8020 est capable d'usiner jusqu'à 500 pièces.	



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