

# MB4120

CBN GRADE FOR SINTERED ALLOY AND CAST IRON



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# MB4120

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## EXCELLENT FRACTURE RESISTANCE AND STABILITY FOR IMPROVED PRODUCTIVITY

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Increasing the CBN particle content and bonding strength makes it suitable for machining a wide range of sintered materials.

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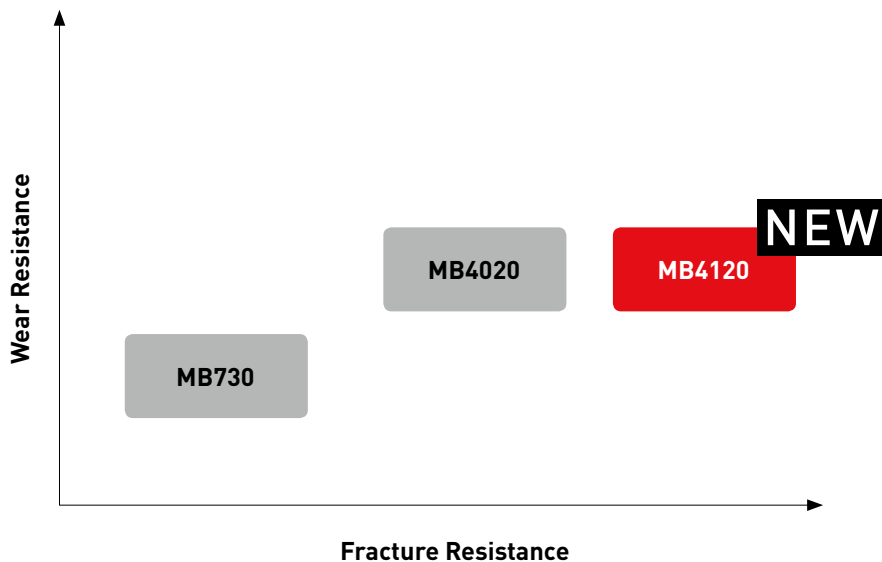
### HIGH FRACTURE RESISTANCE

Fine CBN particles increase cutting edge toughness. The high fracture resistance allows a stable performance even during interrupted machining.

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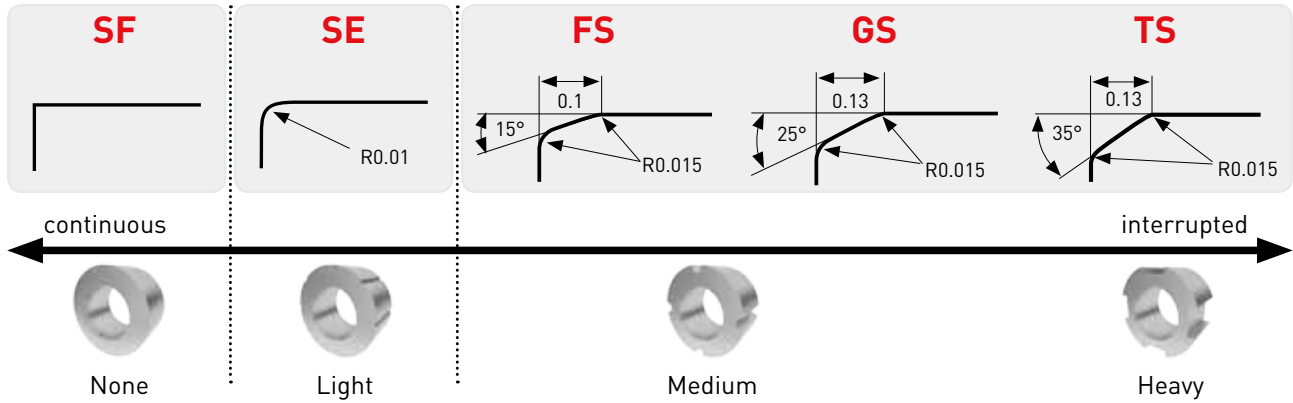
### HIGH ADHESION STRENGTH OF FINE CBN PARTICLES

Optimisation of the sintering conditions strengthens adhesion between the fine CBN particles. This increases both fracture and wear resistance.



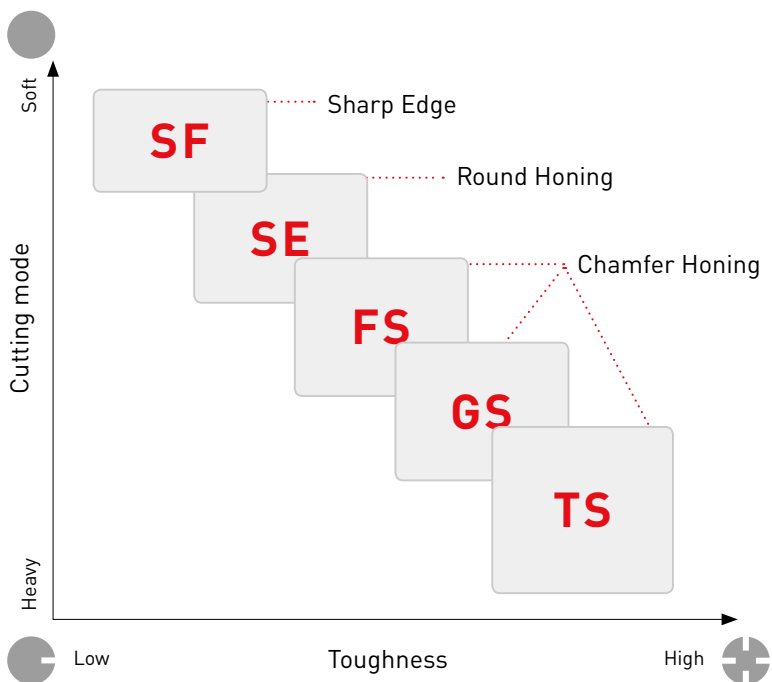
# GEOMETRY

## CUTTING EDGE PREPARATION



## WIDE RANGE OF EDGE PREPARATION (HONING)

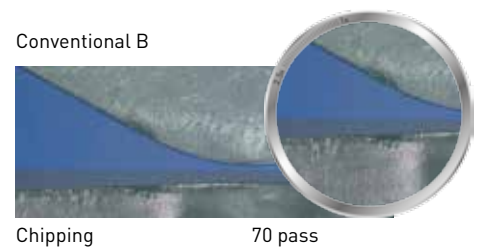
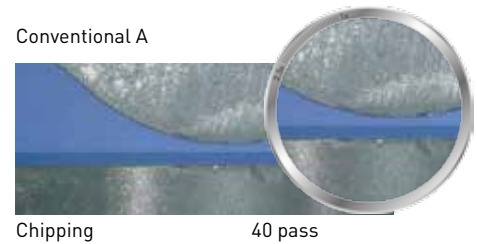
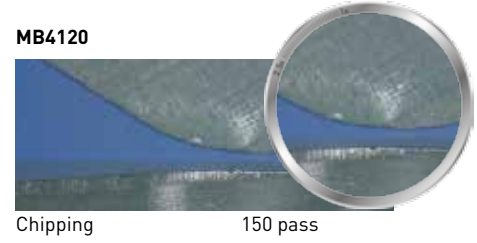
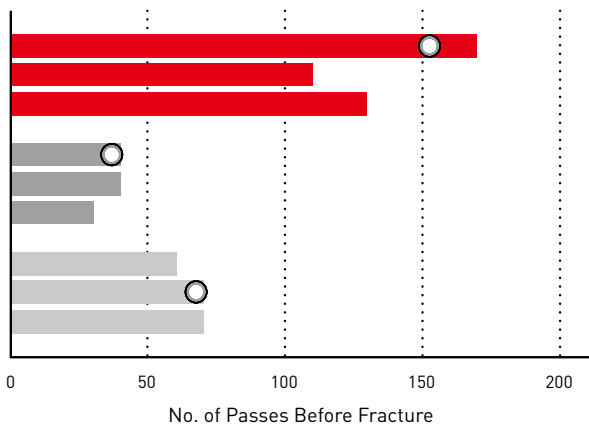
The SF honing type offers a sharper cutting edge, leading to the reduction in cutting resistance and burr development, plus also enabling an improvement in component surface finishes. The SF type is the first general recommendation, but for an increase in cutting edge strength and chipping resistance there are the SE, FS, GS and TS honing types.



# INCREASED FRACTURE RESISTANCE DURING HEAVY INTERRUPTED MACHINING

Fracture resistance comparison during interrupted facing of a high strength sintered alloy.

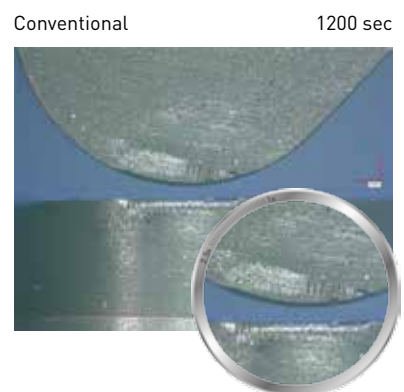
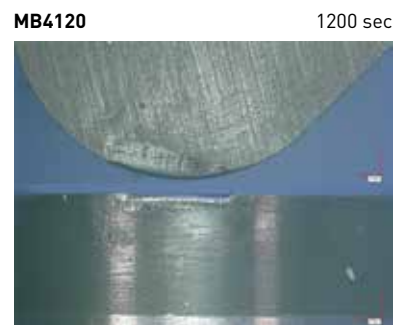
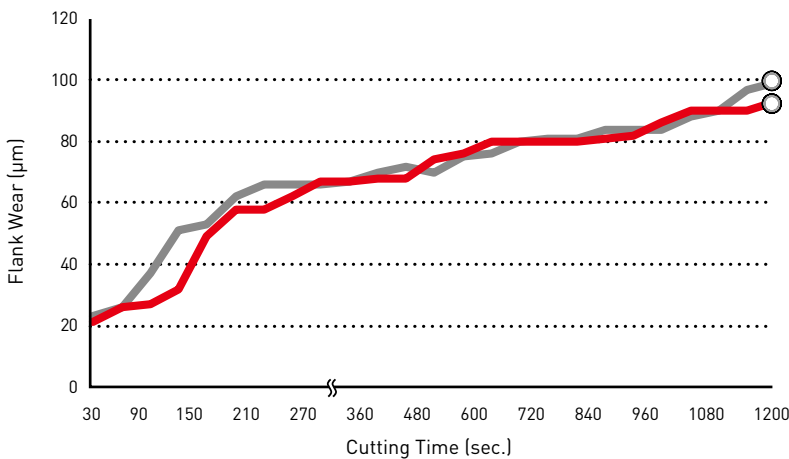
Material	High Strength Sintered Alloy
Insert	NP-TNGA160408SE3
Cutting Speed Vc (m/min)	150
Feed per Rev. fr (mm/rev.)	0.15
Depth of Cut ap (mm)	0.1
Cutting Mode	Wet Cutting



# COMPARISON OF CONTINUOUS MACHINING OF DIN GG25

Excellent fracture resistance compared to conventional products.

Material	DIN GG25 (Perlite)
Insert	NP-TNGA160408SF3
Cutting Speed Vc (m/min)	800
Feed per Rev. fr (mm/rev.)	0.1
Depth of Cut ap (mm)	0.2
Cutting Mode	Dry Cutting




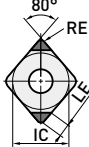
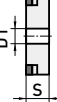

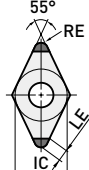
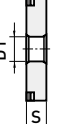
- MB4120
- Conventional A
- Conventional B

# MB4120

## NEGATIVE INSERTS (WITH HOLE)

**K** **H**

G Class

Order Number	MB4020	MB4120 <b>NEW</b>	Cutting Edges	IC	S	RE	D1	LE	Shape	Geometry		
NP-CNGA120404SF2	▲	★	2	12.7	4.76	0.4	5.16	1.9	NEW PETIT CUT	  		
NP-CNGA120408SF2	▲	●	2	12.7	4.76	0.8	5.16	2.1				
NP-CNGA120412SF2	▲	★	2	12.7	4.76	1.2	5.16	2.3				
NP-CNGA120404SE2	▲	★	2	12.7	4.76	0.4	5.16	1.9				
NP-CNGA120408SE2	▲	●	2	12.7	4.76	0.8	5.16	2.1				
NP-CNGA120412SE2	▲	★	2	12.7	4.76	1.2	5.16	2.3				
NP-CNGA120404FS2	▲	●	2	12.7	4.76	0.4	5.16	1.9				
NP-CNGA120408FS2	▲	●	2	12.7	4.76	0.8	5.16	2.1				
NP-CNGA120412FS2	▲	●	2	12.7	4.76	1.2	5.16	2.3				
NP-CNGA120404GS2	▲	●	2	12.7	4.76	0.4	5.16	1.9				
NP-CNGA120408GS2	▲	●	2	12.7	4.76	0.8	5.16	2.1				
NP-CNGA120412GS2	▲	★	2	12.7	4.76	1.2	5.16	2.3				
NP-CNGA120404TS2	▲	★	2	12.7	4.76	0.4	5.16	1.9				
NP-CNGA120408TS2	▲	●	2	12.7	4.76	0.8	5.16	2.1				
NP-CNGA120412TS2	▲	★	2	12.7	4.76	1.2	5.16	2.3				
NP-DNGA150404SF2	▲	★	2	12.7	4.76	0.4	5.16	2.1			NEW PETIT CUT	  
NP-DNGA150408SF2	▲	★	2	12.7	4.76	0.8	5.16	2.0				
NP-DNGA150412SF2	▲	★	2	12.7	4.76	1.2	5.16	1.9				
NP-DNGA150604SF2	▲	★	2	12.7	6.35	0.4	5.16	2.1				
NP-DNGA150608SF2	▲	★	2	12.7	6.35	0.8	5.16	2.0				
NP-DNGA150612SF2	▲	★	2	12.7	6.35	1.2	5.16	1.9				
NP-DNGA150404SE2	▲	★	2	12.7	4.76	0.4	5.16	2.1				
NP-DNGA150408SE2	▲	★	2	12.7	4.76	0.8	5.16	2.0				
NP-DNGA150412SE2	▲	★	2	12.7	4.76	1.2	5.16	1.9				
NP-DNGA150604SE2	▲	★	2	12.7	6.35	0.4	5.16	2.1				
NP-DNGA150608SE2	▲	★	2	12.7	6.35	0.8	5.16	2.0				
NP-DNGA150612SE2	▲	★	2	12.7	6.35	1.2	5.16	1.9				
NP-DNGA150404FS2	▲	★	2	12.7	4.76	0.4	5.16	2.1				
NP-DNGA150408FS2	▲	★	2	12.7	4.76	0.8	5.16	2.0				
NP-DNGA150412FS2	▲	★	2	12.7	4.76	1.2	5.16	1.9				
NP-DNGA150604FS2	▲	●	2	12.7	6.35	0.4	5.16	2.1				
NP-DNGA150608FS2	▲	●	2	12.7	6.35	0.8	5.16	2.0				
NP-DNGA150612FS2	▲	●	2	12.7	6.35	1.2	5.16	1.9				
NP-DNGA150404GS2	▲	★	2	12.7	4.76	0.4	5.16	2.1				
NP-DNGA150408GS2	▲	★	2	12.7	4.76	0.8	5.16	2.0				
NP-DNGA150412GS2	▲	★	2	12.7	4.76	1.2	5.16	1.9				
NP-DNGA150604GS2	▲	★	2	12.7	6.35	0.4	5.16	2.1				
NP-DNGA150608GS2	▲	●	2	12.7	6.35	0.8	5.16	2.0				
NP-DNGA150612GS2	▲	★	2	12.7	6.35	1.2	5.16	1.9				
NP-DNGA150404TS2	▲	★	2	12.7	4.76	0.4	5.16	2.1				
NP-DNGA150408TS2	▲	★	2	12.7	4.76	0.8	5.16	2.0				
NP-DNGA150412TS2	▲	★	2	12.7	4.76	1.2	5.16	1.9				
NP-DNGA150604TS2	▲	★	2	12.7	6.35	0.4	5.16	2.1				
NP-DNGA150608TS2	▲	★	2	12.7	6.35	0.8	5.16	2.0				
NP-DNGA150612TS2	▲	★	2	12.7	6.35	1.2	5.16	1.9				

●: Inventory maintained. ★: Inventory maintained in Japan. ▲: Will be replaced by new products.

# MB4120

## NEGATIVE INSERTS (WITH HOLE)

**K** **H**

G Class

Order Number	MB4020	MB4120 <b>NEW</b>	Cutting Edges	IC	S	RE	D1	LE	Shape	Geometry	
NP-SNGA120404SF2	▲	★	2	12.7	4.76	0.4	5.16	2.1	NEW PETIT CUT		
NP-SNGA120408SF2	▲	★	2	12.7	4.76	0.8	5.16	2.3			
NP-SNGA120412SF2	▲	★	2	12.7	4.76	1.2	5.16	2.5			
NP-SNGA120404SE2	▲	★	2	12.7	4.76	0.4	5.16	2.1			
NP-SNGA120408SE2	▲	★	2	12.7	4.76	0.8	5.16	2.3			
NP-SNGA120412SE2	▲	★	2	12.7	4.76	1.2	5.16	2.5			
NP-SNGA120404FS2	▲	★	2	12.7	4.76	0.4	5.16	2.1			
NP-SNGA120408FS2	▲	●	2	12.7	4.76	0.8	5.16	2.3			
NP-SNGA120412FS2	▲	●	2	12.7	4.76	1.2	5.16	2.5			
NP-SNGA120404GS2	▲	★	2	12.7	4.76	0.4	5.16	2.1			
NP-SNGA120408GS2	▲	●	2	12.7	4.76	0.8	5.16	2.3			
NP-SNGA120412GS2	▲	★	2	12.7	4.76	1.2	5.16	2.5			
NP-SNGA120404TS2	▲	★	2	12.7	4.76	0.4	5.16	2.1			
NP-SNGA120408TS2	▲	★	2	12.7	4.76	0.8	5.16	2.3			
NP-SNGA120412TS2	▲	★	2	12.7	4.76	1.2	5.16	2.5			
NP-TNGA160404SF3	▲	★	3	9.525	4.76	0.4	3.81	1.6	NEW PETIT CUT		
NP-TNGA160408SF3	▲	★	3	9.525	4.76	0.8	3.81	1.8			
NP-TNGA160412SF3	▲	★	3	9.525	4.76	1.2	3.81	1.9			
NP-TNGA160404SE3	▲	★	3	9.525	4.76	0.4	3.81	1.6			
NP-TNGA160408SE3	▲	★	3	9.525	4.76	0.8	3.81	1.8			
NP-TNGA160412SE3	▲	★	3	9.525	4.76	1.2	3.81	1.9			
NP-TNGA160404FS3	▲	●	3	9.525	4.76	0.4	3.81	1.6			
NP-TNGA160408FS3	▲	★	3	9.525	4.76	0.8	3.81	1.8			
NP-TNGA160412FS3	▲	★	3	9.525	4.76	1.2	3.81	1.9			
NP-TNGA160404GS3	▲	★	3	9.525	4.76	0.4	3.81	1.6			
NP-TNGA160408GS3	▲	●	3	9.525	4.76	0.8	3.81	1.8			
NP-TNGA160412GS3	▲	★	3	9.525	4.76	1.2	3.81	1.9			
NP-TNGA160404TS3	▲	★	3	9.525	4.76	0.4	3.81	1.6			
NP-TNGA160408TS3	▲	★	3	9.525	4.76	0.8	3.81	1.8			
NP-TNGA160412TS3	▲	★	3	9.525	4.76	1.2	3.81	1.9			

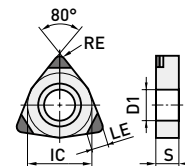
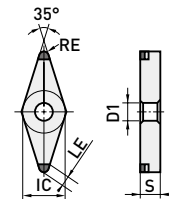
# MB4120

## NEGATIVE INSERTS (WITH HOLE)

**K** **H**

G Class

Order Number	MB4020	MB4120 <b>NEW</b>	Cutting Edges	IC	S	RE	D1	LE	Shape	Geometry
NP-VNGA160404SF2	▲	★	2	9.525	4.76	0.4	3.81	2.5	NEW PETIT CUT	
NP-VNGA160408SF2	▲	★	2	9.525	4.76	0.8	3.81	2.0		
NP-VNGA160404SE2	▲	★	2	9.525	4.76	0.4	3.81	2.5		
NP-VNGA160408SE2	▲	★	2	9.525	4.76	0.8	3.81	2.0		
NP-VNGA160404FS2	▲	★	2	9.525	4.76	0.4	3.81	2.5		
NP-VNGA160408FS2	▲	●	2	9.525	4.76	0.8	3.81	2.0		
NP-VNGA160404GS2	▲	★	2	9.525	4.76	0.4	3.81	2.5		
NP-VNGA160408GS2	▲	★	2	9.525	4.76	0.8	3.81	2.0		
NP-VNGA160404TS2	▲	★	2	9.525	4.76	0.4	3.81	2.5		
NP-VNGA160408TS2	▲	★	2	9.525	4.76	0.8	3.81	2.0		
NP-WNGA080408SF3	▲	★	3	12.7	4.76	0.8	5.16	2.1	NEW PETIT CUT	
NP-WNGA080408SE3	▲	★	3	12.7	4.76	0.8	5.16	2.1		
NP-WNGA080408FS3	▲	★	3	12.7	4.76	0.8	5.16	2.1		
NP-WNGA080408GS3	▲	★	3	12.7	4.76	0.8	5.16	2.1		
NP-WNGA080408TS3	▲	★	3	12.7	4.76	0.8	5.16	2.1		



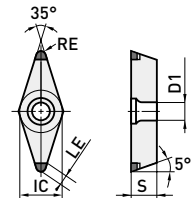
# MB4120

## POSITIVE INSERTS (WITH HOLE)

**K** **H**

G Class

Order Number	MB4020	MB4120 <b>NEW</b>	Cutting Edges	IC	S	RE	D1	LE	Shape	Geometry
NP-VBGW110304SF2	▲	★	2	6.35	3.18	0.4	2.85	2.5	NEW PETIT CUT	
NP-VBGW110308SF2	▲	★	2	6.35	3.18	0.8	2.85	2.0		
NP-VBGW160404SF2	▲	●	2	9.525	4.76	0.4	4.43	2.5		
NP-VBGW160408SF2	▲	★	2	9.525	4.76	0.8	4.43	2.0		
NP-VBGW110304SE2	▲	★	2	6.35	3.18	0.4	2.85	2.5		
NP-VBGW110308SE2	▲	★	2	6.35	3.18	0.8	2.85	2.0		
NP-VBGW160404SE2	▲	●	2	9.525	4.76	0.4	4.43	2.5		
NP-VBGW160408SE2	▲	★	2	9.525	4.76	0.8	4.43	2.0		
NP-VBGW110304FS2	▲	★	2	6.35	3.18	0.4	2.85	2.5		
NP-VBGW110308FS2	▲	★	2	6.35	3.18	0.8	2.85	2.0		
NP-VBGW160404FS2	▲	●	2	9.525	4.76	0.4	4.43	2.5		
NP-VBGW160408FS2	▲	●	2	9.525	4.76	0.8	4.43	2.0		
NP-VBGW110304GS2	▲	★	2	6.35	3.18	0.4	2.85	2.5		
NP-VBGW110308GS2	▲	★	2	6.35	3.18	0.8	2.85	2.0		
NP-VBGW160404GS2	▲	●	2	9.525	4.76	0.4	4.43	2.5		
NP-VBGW160408GS2	▲	●	2	9.525	4.76	0.8	4.43	2.0		





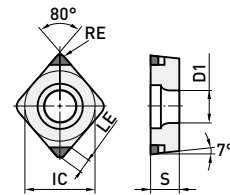
# MB4120

## POSITIVE INSERTS (WITH HOLE)

**K** **H**

G Class

Order Number	MB4020	MB4120 <b>NEW</b>	Cutting Edges	IC	S	RE	D1	LE	Shape	Geometry
NP-CCGW060202SF2	▲	★	2	6.35	2.38	0.2	2.8	1.8	NEW PETIT CUT	
NP-CCGW060204SF2	▲	●	2	6.35	2.38	0.4	2.8	1.9		
NP-CCGW060208SF2	▲	★	2	6.35	2.38	0.8	2.8	2.1		
NP-CCGW09T302SF2	▲	★	2	9.525	3.97	0.2	4.4	1.8		
NP-CCGW09T304SF2	▲	●	2	9.525	3.97	0.4	4.4	1.9		
NP-CCGW09T308SF2	▲	●	2	9.525	3.97	0.8	4.4	2.1		
NP-CCGW060202SE2	▲	★	2	6.35	2.38	0.2	2.8	1.8		
NP-CCGW060204SE2	▲	●	2	6.35	2.38	0.4	2.8	1.9		
NP-CCGW060208SE2	▲	★	2	6.35	2.38	0.8	2.8	2.1		
NP-CCGW09T302SE2	▲	★	2	9.525	3.97	0.2	4.4	1.8		
NP-CCGW09T304SE2	▲	★	2	9.525	3.97	0.4	4.4	1.9		
NP-CCGW09T308SE2	▲	●	2	9.525	3.97	0.8	4.4	2.1		
NP-CCGW060202FS2	▲	●	2	6.35	2.38	0.2	2.8	1.8		
NP-CCGW060204FS2	▲	●	2	6.35	2.38	0.4	2.8	1.9		
NP-CCGW060208FS2	▲	●	2	6.35	2.38	0.8	2.8	2.1		
NP-CCGW09T302FS2	▲	★	2	9.525	3.97	0.2	4.4	1.8		
NP-CCGW09T304FS2	▲	●	2	9.525	3.97	0.4	4.4	1.9		
NP-CCGW09T308FS2	▲	●	2	9.525	3.97	0.8	4.4	2.1		
NP-CCGW060202GS2	▲	★	2	6.35	2.38	0.2	2.8	1.8		
NP-CCGW060204GS2	▲	●	2	6.35	2.38	0.4	2.8	1.9		
NP-CCGW060208GS2	▲	★	2	6.35	2.38	0.8	2.8	2.1		
NP-CCGW09T302GS2	▲	★	2	9.525	3.97	0.2	4.4	1.8		
NP-CCGW09T304GS2	▲	★	2	9.525	3.97	0.4	4.4	1.9		
NP-CCGW09T308GS2	▲	★	2	9.525	3.97	0.8	4.4	2.1		
NP-CCGW060208TS2	▲	★	2	6.35	2.38	0.8	2.8	2.1		
NP-CCGW09T308TS2	▲	★	2	9.525	3.97	0.8	4.4	2.1		



# MB4120

## POSITIVE INSERTS (WITH HOLE)

**K** **H**

G Class

Order Number	MB4020	MB4120 <b>NEW</b>	Cutting Edges	IC	S	RE	D1	LE	Shape	Geometry	
NP-DCGW070204SF2	▲	●	2	6.35	2.38	0.4	2.8	2.1	NEW PETIT CUT		
NP-DCGW070208SF2	▲	●	2	6.35	2.38	0.8	2.8	2.0			
NP-DCGW11T302SF2	▲	★	2	9.525	3.97	0.2	4.4	1.5			
NP-DCGW11T304SF2	▲	●	2	9.525	3.97	0.4	4.4	2.1			
NP-DCGW11T308SF2	▲	●	2	9.525	3.97	0.8	4.4	2.0			
NP-DCGW070204SE2	▲	●	2	6.35	2.38	0.4	2.8	2.1			
NP-DCGW070208SE2	▲	★	2	6.35	2.38	0.8	2.8	2.0			
NP-DCGW11T302SE2	▲	●	2	9.525	3.97	0.2	4.4	1.5			
NP-DCGW11T304SE2	▲	●	2	9.525	3.97	0.4	4.4	2.1			
NP-DCGW11T308SE2	▲	●	2	9.525	3.97	0.8	4.4	2.0			
NP-DCGW070204FS2	▲	●	2	6.35	2.38	0.4	2.8	2.1			
NP-DCGW070208FS2	▲	●	2	6.35	2.38	0.8	2.8	2.0			
NP-DCGW11T302FS2	▲	●	2	9.525	3.97	0.2	4.4	1.5			
NP-DCGW11T304FS2	▲	●	2	9.525	3.97	0.4	4.4	2.1			
NP-DCGW11T308FS2	▲	●	2	9.525	3.97	0.8	4.4	2.0			
NP-DCGW070204GS2	▲	●	2	6.35	2.38	0.4	2.8	2.1			
NP-DCGW070208GS2	▲	★	2	6.35	2.38	0.8	2.8	2.0			
NP-DCGW11T302GS2	▲	★	2	9.525	3.97	0.2	4.4	1.5			
NP-DCGW11T304GS2	▲	●	2	9.525	3.97	0.4	4.4	2.1			
NP-DCGW11T308GS2	▲	●	2	9.525	3.97	0.8	4.4	2.0			
NP-TCGW110204SF3	▲	★	3	6.35	2.38	0.4	2.8	1.6	NEW PETIT CUT		
NP-TCGW110208SF3	▲	★	3	6.35	2.38	0.8	2.8	1.8			
NP-TCGW110204SE3	▲	★	3	6.35	2.38	0.4	2.8	1.6			
NP-TCGW110208SE3	▲	★	3	6.35	2.38	0.8	2.8	1.8			
NP-TCGW110204FS3	▲	●	3	6.35	2.38	0.4	2.8	1.6			
NP-TCGW110208FS3	▲	●	3	6.35	2.38	0.8	2.8	1.8			
NP-TCGW110204GS3	▲	★	3	6.35	2.38	0.4	2.8	1.6			

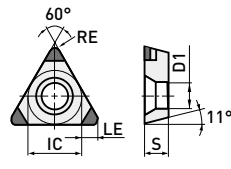
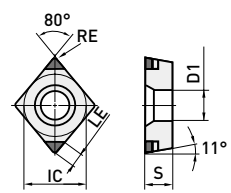
# MB4120

## POSITIVE INSERTS (WITH HOLE)

**K** **H**

G Class

Order Number	MB4020	MB4120 <b>NEW</b>	Cutting Edges	IC	S	RE	D1	LE	Shape	Geometry
NP-CPGB080202SE2	▲	★	2	7.94	2.38	0.2	3.5	1.8	NEW PETIT CUT	
NP-CPGB080204SE2	▲	★	2	7.94	2.38	0.4	3.5	1.9		
NP-CPGB090302SE2	▲	★	2	9.525	3.18	0.2	4.5	1.8		
NP-CPGB090304SE2	▲	★	2	9.525	3.18	0.4	4.5	1.9		
NP-CPGB090308SE2	▲	★	2	9.525	3.18	0.8	4.5	2.1		
NP-CPGB080202FS2	▲	★	2	7.94	2.38	0.2	3.5	1.8		
NP-CPGB080204FS2	▲	●	2	7.94	2.38	0.4	3.5	1.9		
NP-CPGB090302FS2	▲	★	2	9.525	3.18	0.2	4.5	1.8		
NP-CPGB090304FS2	▲	★	2	9.525	3.18	0.4	4.5	1.9		
NP-CPGB090308FS2	▲	★	2	9.525	3.18	0.8	4.5	2.1		
NP-TPGB090202SF3	▲	★	3	5.56	2.38	0.2	2.9	1.5	NEW PETIT CUT	
NP-TPGB090204SF3	▲	★	3	5.56	2.38	0.4	2.9	1.6		
NP-TPGB110302SF3	▲	★	3	6.35	3.18	0.2	3.4	1.5		
NP-TPGB110304SF3	▲	★	3	6.35	3.18	0.4	3.4	1.6		
NP-TPGB110308SF3	▲	★	3	6.35	3.18	0.8	3.4	1.8		
NP-TPGB090202SE3	▲	★	3	5.56	2.38	0.2	2.9	1.5		
NP-TPGB090204SE3	▲	★	3	5.56	2.38	0.4	2.9	1.6		
NP-TPGB110302SE3	▲	★	3	6.35	3.18	0.2	3.4	1.5		
NP-TPGB110304SE3	▲	★	3	6.35	3.18	0.4	3.4	1.6		
NP-TPGB110308SE3	▲	★	3	6.35	3.18	0.8	3.4	1.8		
NP-TPGB090202FS3	▲	★	3	5.56	2.38	0.2	2.9	1.5		
NP-TPGB090204FS3	▲	★	3	5.56	2.38	0.4	2.9	1.6		
NP-TPGB110302FS3	▲	★	3	6.35	3.18	0.2	3.4	1.5		
NP-TPGB110304FS3	▲	★	3	6.35	3.18	0.4	3.4	1.6		
NP-TPGB110308FS3	▲	★	3	6.35	3.18	0.8	3.4	1.8		
NP-TPGB090202GS3	▲	★	3	5.56	2.38	0.2	2.9	1.5		
NP-TPGB090204GS3	▲	★	3	5.56	2.38	0.4	2.9	1.6		
NP-TPGB110302GS3	▲	★	3	6.35	3.18	0.2	3.4	1.5		
NP-TPGB110304GS3	▲	★	3	6.35	3.18	0.4	3.4	1.6		
NP-TPGB110308GS3	▲	★	3	6.35	3.18	0.8	3.4	1.8		



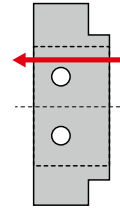
# MB4120

## RECOMMENDED CUTTING CONDITIONS

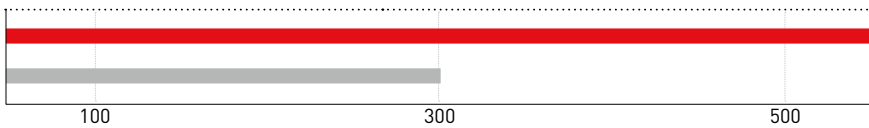
Material	Cutting Mode	Grade	f (mm/rev)	ap (mm)	Vc (m/min)
General Sintered Alloys	Dry, Wet		≤0.2	≤0.3	100 - 300
H High Strength Sintered Alloys	Dry, Wet	MB4120	≤0.2	≤0.3	100 - 225
Hardened Sintered Alloys	Dry, Wet		≤0.2	≤0.3	100 - 175
K Gray Cast Iron	Dry, Wet	MB4120	≤0.2	≤0.3	210 - 300

# APPLICATION EXAMPLES

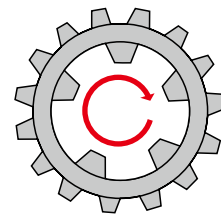
Insert	NP-DCGW11T308SF2
Workpiece Material	General Sintered Alloy
Component	Housing (Interrupted Boring)
Cutting Speed Vc (m/min)	200
Feed f (mm/rev)	0.07
Depth of Cut ap (mm)	0.2
Cutting mode	Wet Cutting



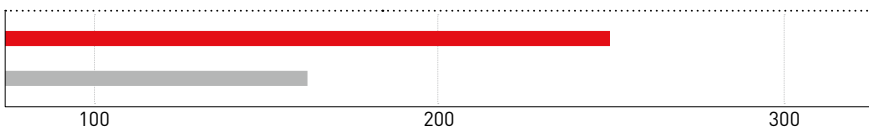
Results Double the tool life of the conventional product.



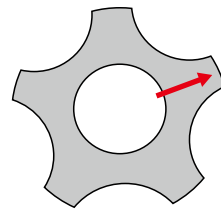
Insert	NP-DCGW11T308SF2
Workpiece Material	General Sintered Alloy
Component	Casing (Interrupted Boring)
Cutting Speed Vc (m/min)	180
Feed f (mm/rev)	0.25
Depth of Cut ap (mm)	0.2-0.3
Cutting mode	Wet Cutting



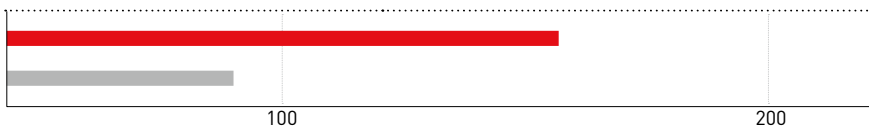
Results Double the tool life of the conventional product.



Insert	NP-DCGW11T308SF2
Workpiece Material	Iron-based Sintered Alloy (60HRB) Ra<1.0μm
Component	Pinion (Interrupted Facing)
Cutting Speed Vc (m/min)	200
Feed f (mm/rev)	0.04-0.05
Depth of Cut ap (mm)	0.4
Cutting mode	Wet Cutting



Results Compared to a conventional product, a good surface finish was maintained and 2.5 times longer tool life was achieved.

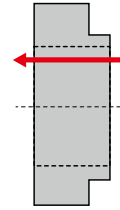
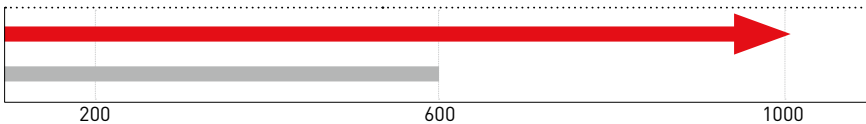


The above application examples are customer's applications, therefore can differ from the recommended conditions.

# APPLICATION EXAMPLES

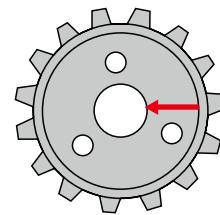
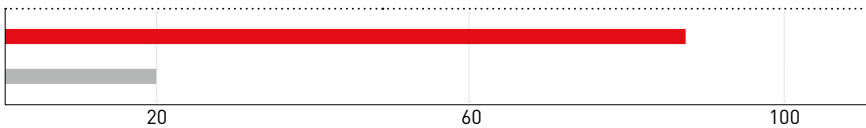
Insert	NP-TNGA160408SF3
Workpiece Material	High Strength Sintered Alloy
Component	Sprocket (Continuous Boring)
Cutting Speed Vc (m/min)	250
Feed f (mm/rev)	0.1
Depth of Cut ap (mm)	0.1
Cutting mode	Wet Cutting

Results When compared to a conventional product the flank wear was smaller and the insert could continue to be used.



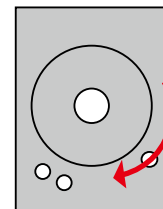
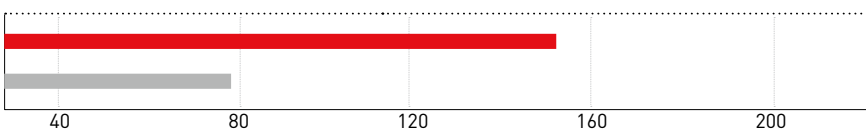
Insert	NP-TNGA160408SE3
Workpiece Material	General Sintered Alloy
Component	Sprocket (Interrupted Facing)
Cutting Speed Vc (m/min)	240
Feed f (mm/rev)	0.12
Depth of Cut ap (mm)	0.05
Cutting mode	Wet Cutting

Results Compared with a conventional cermet product, higher surface finish quality and more than 4 times longer tool life was achieved.



Insert	NP-CNGA120408SF2
Workpiece Material	Cast Iron
Component	Mechanical Parts (Interrupted Facing)
Cutting Speed Vc (m/min)	600
Feed f (mm/rev)	0.175-0.25
Depth of Cut ap (mm)	0.15-0.2
Cutting mode	Dry Cutting

Results There is no abnormal damage and more than 1.5 times longer tool life was achieved.

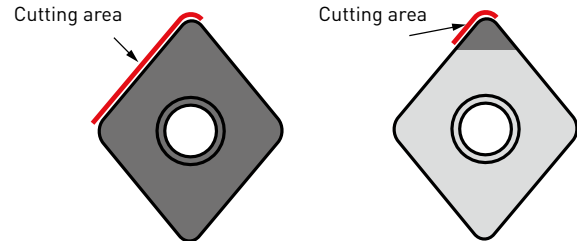


The above application examples are customer's applications, therefore can differ from the recommended conditions.

# MB4020

## FULL FACE CBN

Full face and solid CBN can be used for higher depths of cut and chamfering when conventional brazed tip CBN inserts are not suitable.



Order Number	MB4020	MB4120	Cutting Edges	IC	S	RE	D1	Shape	Geometry
CCGW060202FS	★	—	2	6.35	2.38	0.2	2.8		
CCGW060204FS	★	—	2	6.35	2.38	0.4	2.8		
CCGW060208FS	★	—	2	6.35	2.38	0.8	2.8		
CCGW09T304FS	★	—	2	9.525	3.97	0.4	4.4		
CCGW09T308FS	★	—	2	9.525	3.97	0.8	4.4		
DCGW070204FS	★	—	2	6.35	2.38	0.4	2.8		
DCGW070208FS	★	—	2	6.35	2.38	0.8	2.8		
TCGW090204FS	★	—	3	5.56	2.38	0.4	2.5		
TCGW090208FS	★	—	3	5.56	2.38	0.8	2.5		
TCGW110204FS	★	—	3	6.35	2.38	0.4	2.8		
TCGW110208FS	★	—	3	6.35	2.38	0.8	2.8		

## RECOMMENDED CUTTING CONDITIONS

### CUTTING CONDITIONS FOR FULL FACE

Material	Cutting Mode	Grade	f (mm/rev)	ap (mm)	Vc (m/min)				
					100	150	200	250	300
H General Sintered Alloys	Dry, Wet	MB4020	-0.2	-0.3 [-2.0]	[Bar chart showing Vc range from 100 to 250 m/min]				
					[Bar chart showing Vc range from 100 to 250 m/min]				
					[Bar chart showing Vc range from 100 to 250 m/min]				
K Gray Cast Iron	Dry, Wet	MB4020	-0.4	-0.5 [-2.0]	[Bar chart showing Vc range from 250 to 750 m/min]				
					Dry	-0.15	-0.5 [-2.0]	[Bar chart showing Vc range from 500 to 1000 m/min]	

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