DIA EDGE
TOOL NEWS
2018.12 Update
B215G

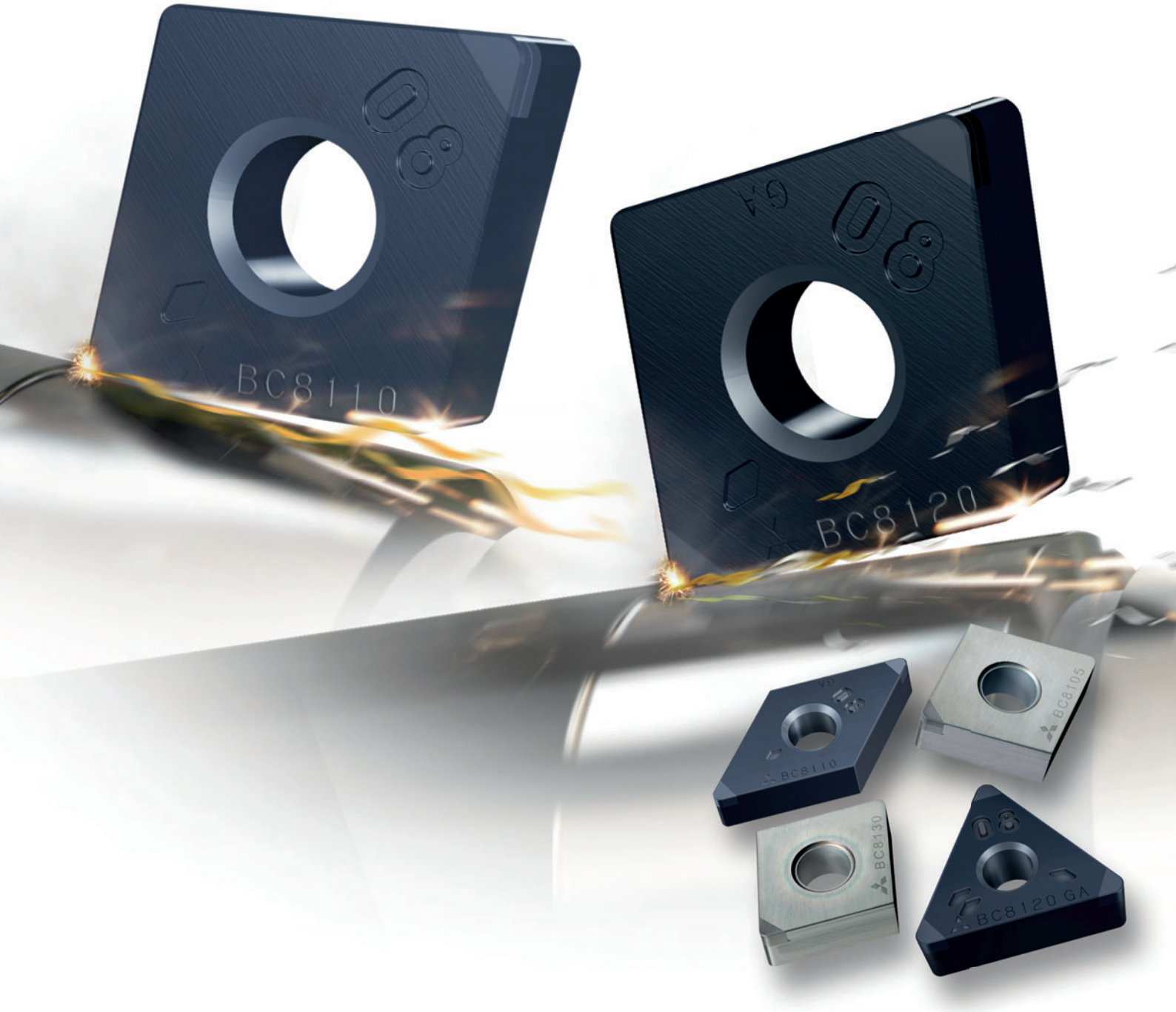
CBN-series for Hardened Steel Turning

BC8100/MB8100 Series

Series Expansion

New Generation CBN Grades

Wear and fracture resistance greatly improved for a wide range of continuous and interrupted applications.



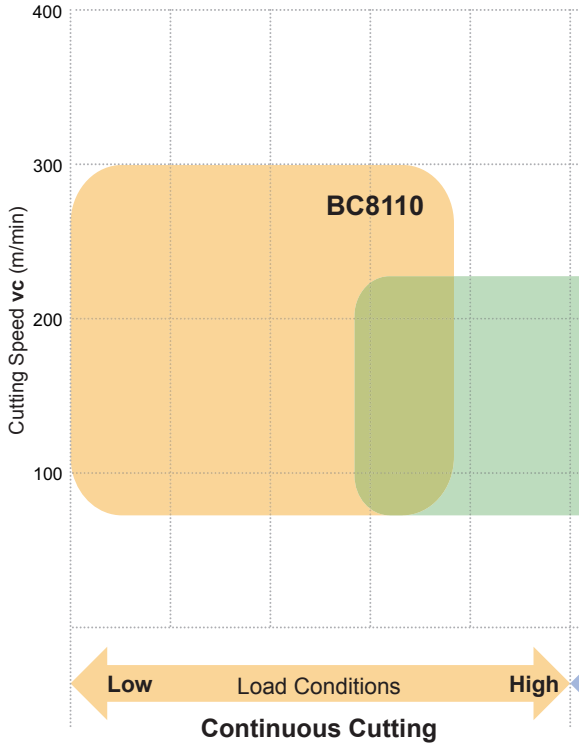
MITSUBISHI MATERIALS CORPORATION

Coated CBN-series for Hardened Steel Turning

BC8100 Series

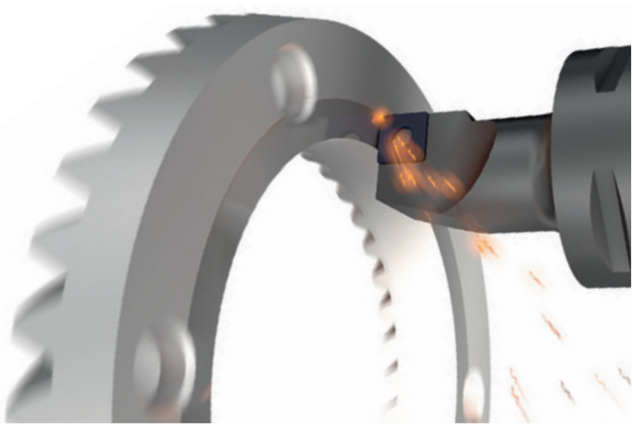
BC8110 High Speed Turning

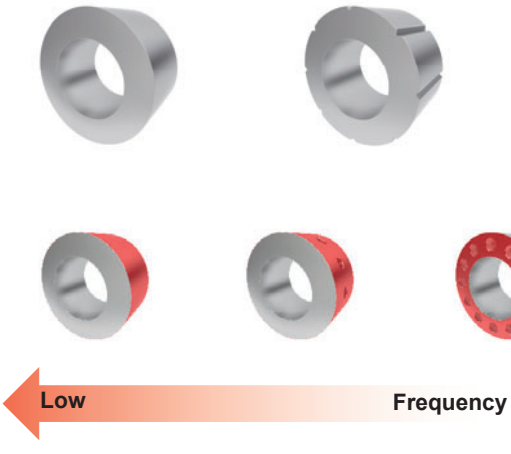
For Continous Cutting



BC8120 General Applications

For Continuous to Medium Interrupted Cutting
1st choice for roughing and pre-finishing.

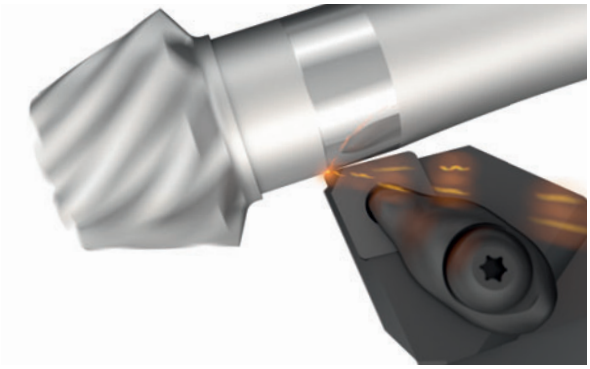


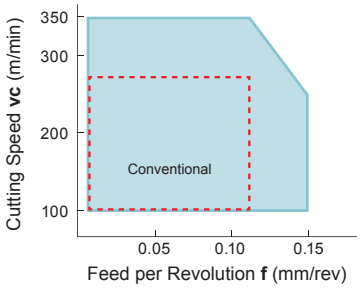


For Excellent Surface Finishes

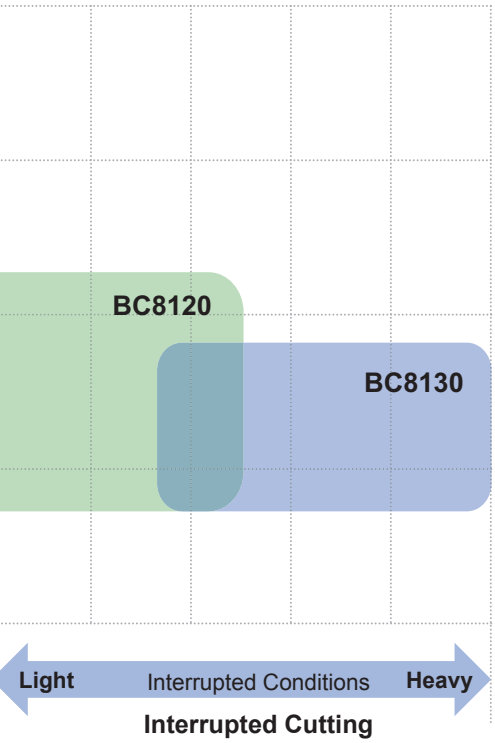
BC8105 Highest Accuracy

For Super Finish Cutting
Excellent surface finishes and close tolerances with long tool life.
For surface finishes up to Rz 2.4μm (Ra 0.6μm).



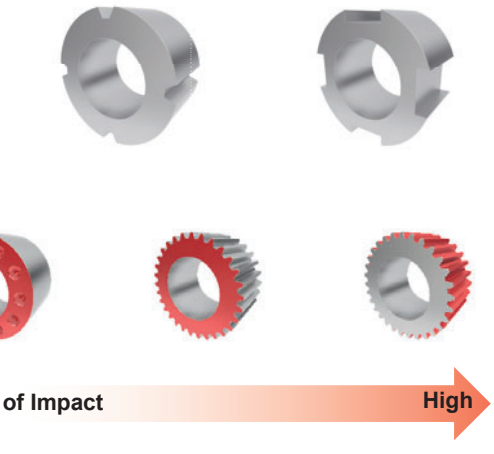


***BC8110 is recommended to improve wear resistance.**



BC8130 Tough Machining

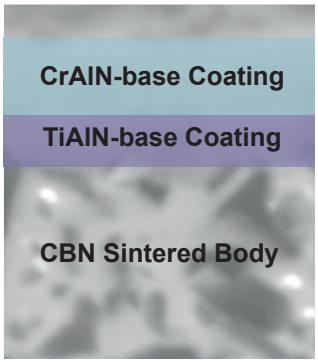
For Unstable Applications and Heavy Interrupted Cutting
Tolerance accuracy held over a high no. of impacts.



Features of the Grade

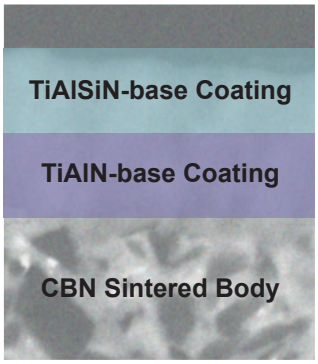
Newly Developed Special PVD Coating

BC8105



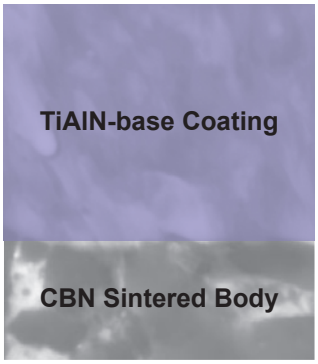
Offers excellent surface finishes.
Peeling resistance and adhesion strength are improved by having both lubricity and wear resistance.

BC8110



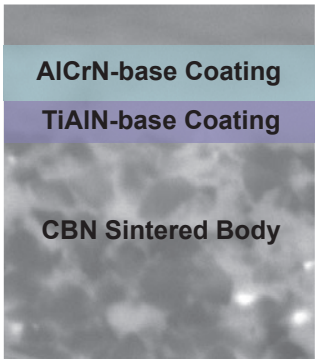
Chipping caused by built up edge is prevented with improved welding resistance.
Improved wear and adhesion strength to the CBN surface.

BC8120



Chipping caused by built up edge is prevented with improved welding resistance.
Improved adhesion to the coating to the CBN surface enhances peeling resistance.
The CBN is also improved in toughness by adopting new binder and sintering method.

BC8130

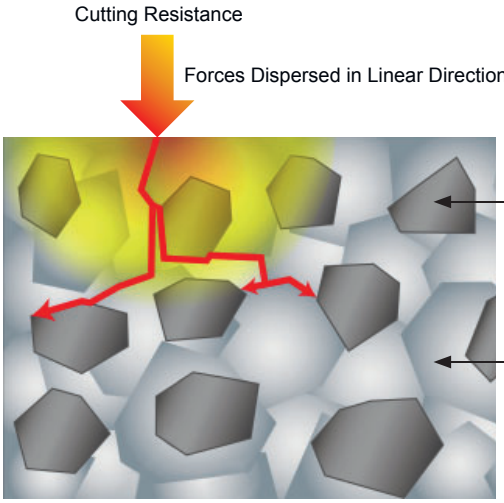


Peeling caused by severe impact and chipping are prevented with high fracture resistances.
Improved adhesion strength to the CBN surface.

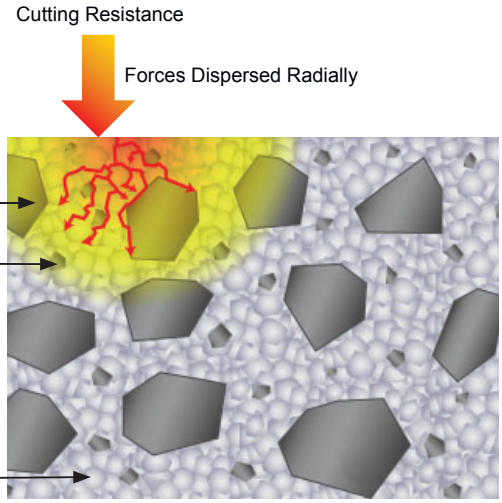
*Graphical representation.

Optimized Substrate Technology

Conventional



BC8100 Series



The new ultra micro-particle binder prevents linear crack development to avoid sudden fracturing.

NEW

CBN-series for Hardened Steel Turning

MB8100 Series

Non-coated CBN Grades Applied Ultra Micro-particle Binder Technology

MB8110 For Continuous Cutting

MB8100 having a most excellent wear resistance on this is ideal for continuous cutting.

MB8120 For General Cutting

MB8120 provides excellent wear and fracture resistance and is suitable for wider range of applications.

MB8130 For Heavy Interrupted Cutting

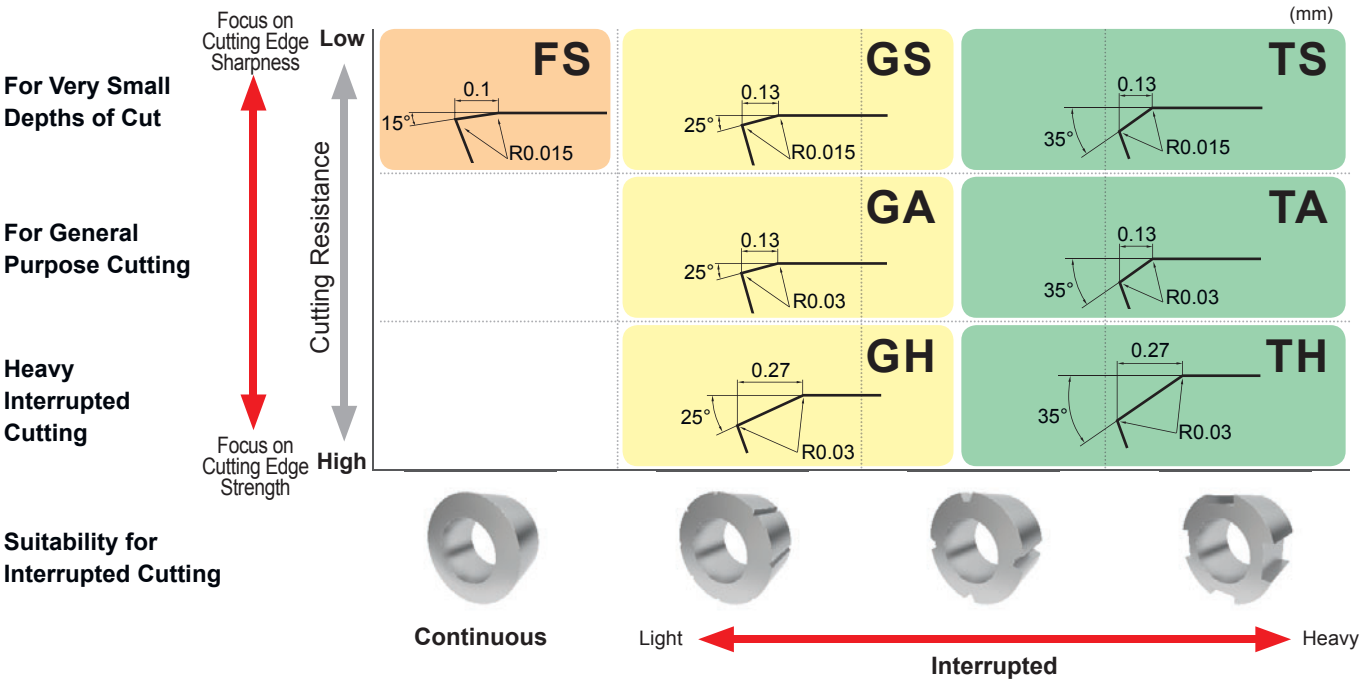
MB8130 having a most excellent fracture resistance on this series is ideal for heavy interrupted machining and in an unstable cutting condition.

Recommended Cutting Conditions

Grade	Workpiece Material	Machining Methods	Cutting Speed vc (m/min) 50 100 150 200 300	f (mm/rev)	ap (mm)	Cutting Mode
MB8110	Hardened Steels (Heat Treated Steels etc)	External Continuous Cutting		0.2	0.3	Dry, Wet
MB8120	Hardened Steels (Heat Treated Steels etc)	External Continuous Cutting		0.2	0.5	Dry, Wet
		External Interrupted Cutting		0.2	0.3	Dry, Wet
MB8130	Hardened Steels (Heat Treated Steels etc)	External Interrupted Cutting		0.2	0.3	Dry, Wet

Features of the Insert

Edge Preparation (Honing)



A variety of cutting edge preparations for all application.

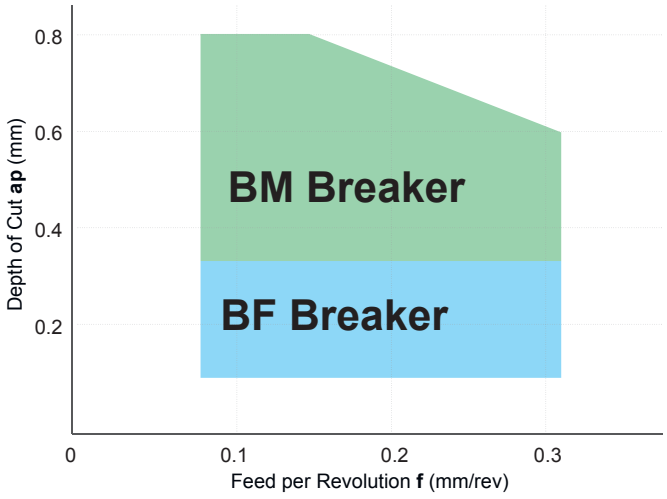
Chip Breaker

BM

Removal of Carburized Layer
For Deep Depth of Cut

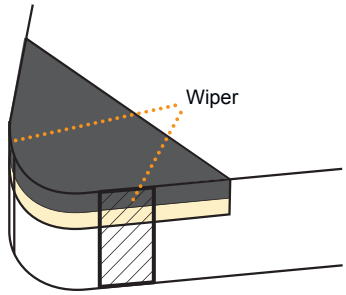
BF

Finishing Applications



Chip breaker system for excellent chip control when finishing, removing carburized layers and hard-soft cutting.

Wiper Insert



Improving Surface Finish

Under the same machining conditions as conventional chip breakers, but with the feed rate increased, the surface finish of the workpiece can be improved.

Improving Efficiency

High feed rates not only shorten machining times but also make it possible to combine roughing and finishing operations.

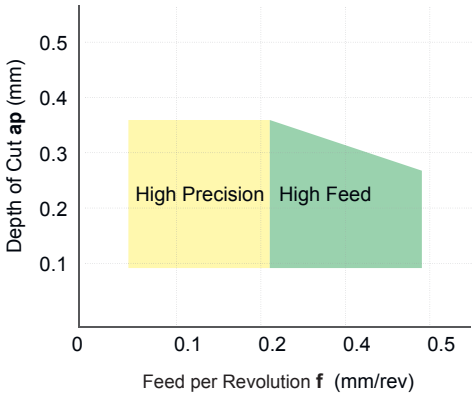
Increased Tool Life

When using at high feed conditions, the time required to cut one component is decreased, thus more parts can be machined with each insert. In addition, the high feed rate prevents rubbing, therefore, delaying the progression of wear and increasing tool life.

Improving Chip Control

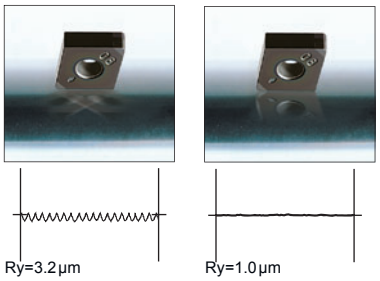
Under high feed conditions, the chips generated become thicker and are more easily broken, thus, chip control is improved.

Recommended Cutting Conditions and Performance



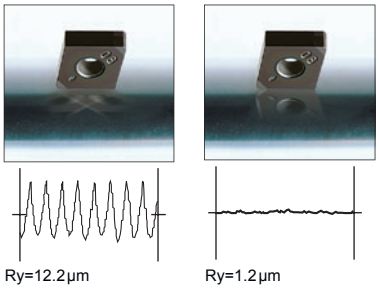
High Precision Finishing

Cutting Speed: vc=100m/min
Depth of Cut: ap=0.1mm
Feed per Rev.: f=0.1mm/rev
Cutting Mode: Dry Cutting



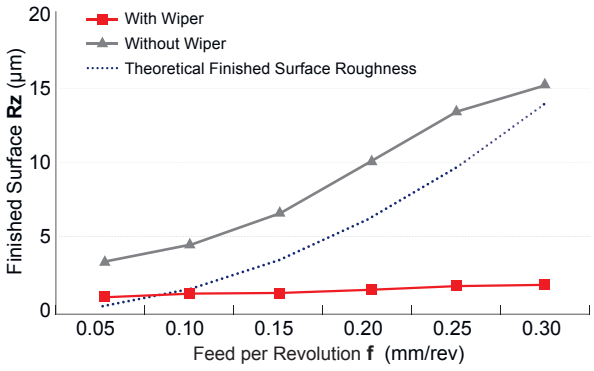
High Feed Machining

Cutting Speed: vc=100m/min
Depth of Cut: ap=0.1mm
Feed per Rev.: f=0.3mm/rev
Cutting Mode: Dry Cutting



Cutting Performance

Insert	NP-CNGA120408
Workpiece Material	Hardened Steel (60HRC)
Machining Methods	Continuous
Cutting Speed **vc** (m/min)	120
Depth of Cut **ap** (mm)	0.1
Cutting Mode	Dry Cutting



WL Wiper Insert

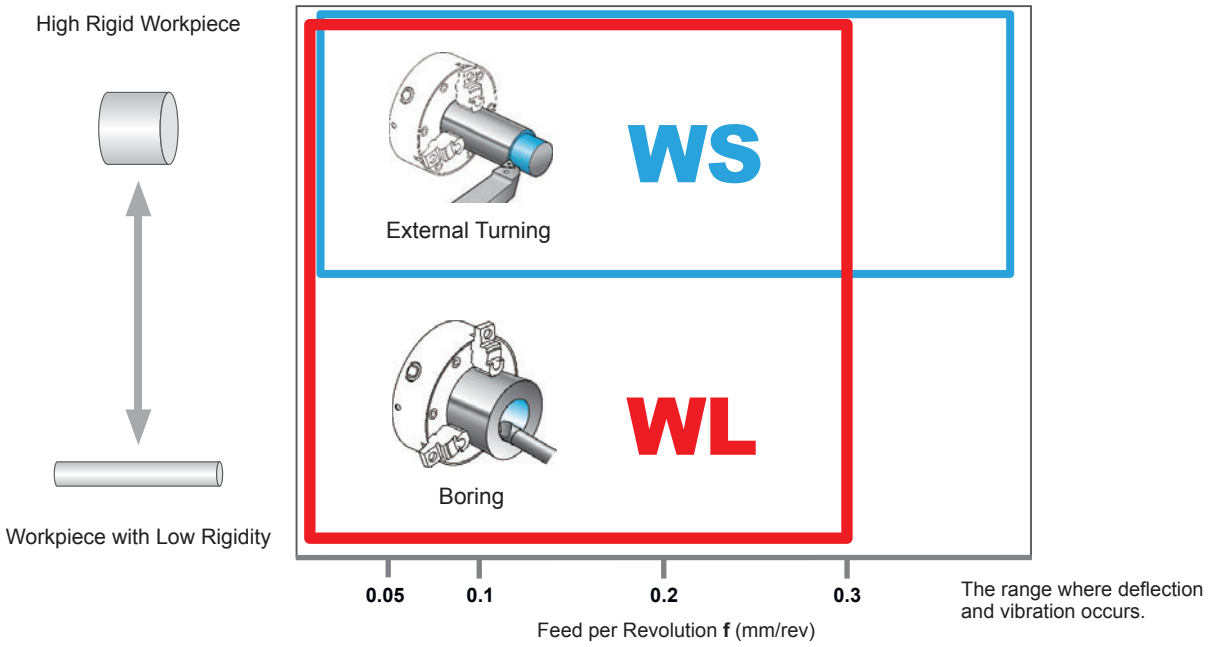
Preventing the cutting edge from vibration during boring and turning of small diameter workpieces as well as providing excellent finish surface roughness.

Inclination of the Wiper

The Optimum Wiper Width

Applying slight slope on the wiper cutting edge reduces cutting resistance.

Application of Wiper Inserts



Identification

NP-CNGA120404 FB WL 2

Edge Preperation	
Symbol	Application
GS GA GH GB	General Cutting
FS FB	Continuous Cutting
TS TA TH	Interrupted Cutting

Wiper	
WS	For High Rigidity Workpiece Material
WL	For Deflection and Vibration Prevention
No Mark	Without Wiper

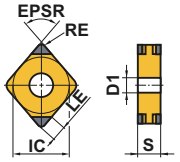
Memo

Negative Inserts (With Hole)

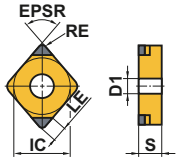
G Class

CNGA, CNGM

4 corner 80° EPSR



2 corner 80° EPSR



NEW PETIT CUT	NEW PETIT CUT	NEW PETIT CUT	NEW PETIT CUT
NP_○○4	NP_○○WS4	NP_○○2	NP_○○W○2
	 (With Wiper)		 (With Wiper)
NEW PETIT CUT			
BF_, BM_			
 (With Breaker)			

(mm)

Order Number	Coated CBN				CBN (NEW)			Cutting Edges	IC	S	RE	D1	LE
	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130						
NP-CNGA120404GA4			●	●		●		4	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408GA4			●	●		●		4	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412GA4			●	●		●		4	12.7	4.76	1.2	5.16	2.3
NP-CNGA120404GS4	●	●						4	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408GS4	●	●						4	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412GS4	●	●						4	12.7	4.76	1.2	5.16	2.3
NP-CNGA120404GH4		●	●	●				4	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408GH4		●	●	●				4	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412GH4		●	●	●				4	12.7	4.76	1.2	5.16	2.3
NP-CNGA120404FS4	●	●	●		●			4	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408FS4	●	●	●		●			4	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412FS4	●	●	●		●			4	12.7	4.76	1.2	5.16	2.3
NP-CNGA120404TA4			●	●		●	●	4	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408TA4			●	●		●	●	4	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412TA4			●	●		●	●	4	12.7	4.76	1.2	5.16	2.3
NP-CNGA120404TS4		●						4	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408TS4		●						4	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412TS4		●						4	12.7	4.76	1.2	5.16	2.3
NP-CNGA120404TH4			●	●			●	4	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408TH4			●	●			●	4	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412TH4			●	●			●	4	12.7	4.76	1.2	5.16	2.3
NP-CNGA120404FSWS4	●	●	●		●			4	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408FSWS4	●	●	●		●			4	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412FSWS4	●	●	●		●			4	12.7	4.76	1.2	5.16	2.3
NP-CNGA120404GAWS4			●	●		●		4	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408GAWS4			●	●		●		4	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412GAWS4			●	●		●		4	12.7	4.76	1.2	5.16	2.3
NP-CNGA120404GSWS4	●	●						4	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408GSWS4	●	●						4	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412GSWS4	●	●						4	12.7	4.76	1.2	5.16	2.3
NP-CNGA120402GA2			●			●		2	12.7	4.76	0.2	5.16	1.8
NP-CNGA120404GA2			●	●		●		2	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408GA2			●	●		●		2	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412GA2			●	●		●		2	12.7	4.76	1.2	5.16	2.3
NP-CNGA120402GS2		●						2	12.7	4.76	0.2	5.16	1.8
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-CNGA120404GH2		●	●	●				2	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408GH2		●	●	●				2	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412GH2		●	●	●				2	12.7	4.76	1.2	5.16	2.3
NP-CNGA120402FS2		●			●			2	12.7	4.76	0.2	5.16	1.8

● : Inventory maintained in Japan. (1 insert in one case)

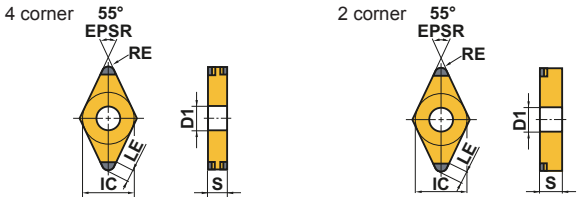
(mm)

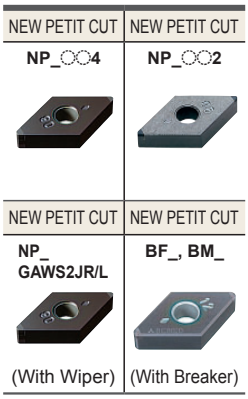
Order Number	Coated CBN				CBN			Cutting Edges	IC	S	RE	D1	LE
	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130 (NEW)						
NP-CNGA120404FS2	●	●	●		●			2	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408FS2	●	●	●		●			2	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412FS2	●	●	●		●			2	12.7	4.76	1.2	5.16	2.3
NP-CNGA120404TA2			●	●		●	●	2	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408TA2			●	●		●	●	2	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412TA2			●	●		●	●	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-CNGA120404TH2			●	●			●	2	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408TH2			●	●			●	2	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412TH2			●	●			●	2	12.7	4.76	1.2	5.16	2.3
NP-CNGA120404FBWL2	●	●	●		●			2	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408FBWL2	●	●	●		●			2	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412FBWL2	●	●	●		●			2	12.7	4.76	1.2	5.16	2.3
NP-CNGA120404FSWS2	●	●	●		●			2	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408FSWS2	●	●	●		●			2	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412FSWS2	●	●	●		●			2	12.7	4.76	1.2	5.16	2.3
NP-CNGA120404GAWS2			●	●		●		2	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408GAWS2			●	●		●		2	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412GAWS2			●	●		●		2	12.7	4.76	1.2	5.16	2.3
NP-CNGA120404GBWL2	●	●	●			●		2	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408GBWL2	●	●	●			●		2	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412GBWL2	●	●	●			●		2	12.7	4.76	1.2	5.16	2.3
NP-CNGA120404GSWS2	●	●						2	12.7	4.76	0.4	5.16	1.9
NP-CNGA120408GSWS2	●	●						2	12.7	4.76	0.8	5.16	2.1
NP-CNGA120412GSWS2	●	●						2	12.7	4.76	1.2	5.16	2.3
BF-CNGM120404TS2		●						2	12.7	4.76	0.4	5.16	1.9
BF-CNGM120408TS2		●						2	12.7	4.76	0.8	5.16	2.1
BF-CNGM120412TS2		●						2	12.7	4.76	1.2	5.16	2.3
BM-CNGM120404TA2			●					2	12.7	4.76	0.4	5.16	1.9
BM-CNGM120408TA2			●					2	12.7	4.76	0.8	5.16	2.1
BM-CNGM120412TA2			●					2	12.7	4.76	1.2	5.16	2.3

Negative Inserts (With Hole)

G Class

DNGA, DNGM





(mm)

Order Number	Coated CBN				CBN (NEW)			Cutting Edges	IC	S	RE	D1	LE
	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130						
NP-DNGA150404GA4			●	●		●		4	12.7	4.76	0.4	5.16	2.1
NP-DNGA150408GA4			●	●		●		4	12.7	4.76	0.8	5.16	2
NP-DNGA150412GA4			●	●		●		4	12.7	4.76	1.2	5.16	1.9
NP-DNGA150604GA4			●	●		●		4	12.7	6.35	0.4	5.16	2.1
NP-DNGA150608GA4			●	●		●		4	12.7	6.35	0.8	5.16	2
NP-DNGA150612GA4			●	●		●		4	12.7	6.35	1.2	5.16	1.9
NP-DNGA150404GS4	●	●						4	12.7	4.76	0.4	5.16	2.1
NP-DNGA150408GS4	●	●						4	12.7	4.76	0.8	5.16	2
NP-DNGA150412GS4	●	●						4	12.7	4.76	1.2	5.16	1.9
NP-DNGA150604GS4	●	●						4	12.7	6.35	0.4	5.16	2.1
NP-DNGA150608GS4	●	●						4	12.7	6.35	0.8	5.16	2
NP-DNGA150612GS4	●	●						4	12.7	6.35	1.2	5.16	1.9
NP-DNGA150404GH4		●	●	●				4	12.7	4.76	0.4	5.16	2.1
NP-DNGA150408GH4		●	●	●				4	12.7	4.76	0.8	5.16	2
NP-DNGA150412GH4		●	●	●				4	12.7	4.76	1.2	5.16	1.9
NP-DNGA150604GH4		●	●	●				4	12.7	6.35	0.4	5.16	2.1
NP-DNGA150608GH4		●	●	●				4	12.7	6.35	0.8	5.16	2
NP-DNGA150612GH4		●	●	●				4	12.7	6.35	1.2	5.16	1.9
NP-DNGA150404FS4	●	●	●		●			4	12.7	4.76	0.4	5.16	2.1
NP-DNGA150408FS4	●	●	●		●			4	12.7	4.76	0.8	5.16	2
NP-DNGA150412FS4	●	●	●		●			4	12.7	4.76	1.2	5.16	1.9
NP-DNGA150604FS4	●	●			●			4	12.7	6.35	0.4	5.16	2.1
NP-DNGA150608FS4	●	●			●			4	12.7	6.35	0.8	5.16	2
NP-DNGA150612FS4	●	●			●			4	12.7	6.35	1.2	5.16	1.9
NP-DNGA150404TA4			●	●		●	●	4	12.7	4.76	0.4	5.16	2.1
NP-DNGA150408TA4			●	●		●	●	4	12.7	4.76	0.8	5.16	2
NP-DNGA150412TA4			●	●		●	●	4	12.7	4.76	1.2	5.16	1.9
NP-DNGA150604TA4			●	●		●		4	12.7	6.35	0.4	5.16	2.1
NP-DNGA150608TA4			●	●		●		4	12.7	6.35	0.8	5.16	2
NP-DNGA150612TA4			●	●		●		4	12.7	6.35	1.2	5.16	1.9
NP-DNGA150404TS4		●						4	12.7	4.76	0.4	5.16	2.1
NP-DNGA150408TS4		●						4	12.7	4.76	0.8	5.16	2
NP-DNGA150412TS4		●						4	12.7	4.76	1.2	5.16	1.9
NP-DNGA150604TS4		●						4	12.7	6.35	0.4	5.16	2.1
NP-DNGA150608TS4		●						4	12.7	6.35	0.8	5.16	2
NP-DNGA150612TS4		●						4	12.7	6.35	1.2	5.16	1.9
NP-DNGA150404TH4			●	●			●	4	12.7	4.76	0.4	5.16	2.1
NP-DNGA150408TH4			●	●			●	4	12.7	4.76	0.8	5.16	2
NP-DNGA150412TH4			●	●			●	4	12.7	4.76	1.2	5.16	1.9
NP-DNGA150604TH4			●	●				4	12.7	6.35	0.4	5.16	2.1
NP-DNGA150608TH4			●	●				4	12.7	6.35	0.8	5.16	2
NP-DNGA150612TH4			●	●				4	12.7	6.35	1.2	5.16	1.9

● : Inventory maintained in Japan. (1 insert in one case)

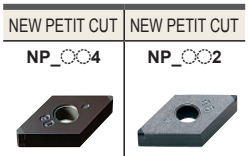
(mm)

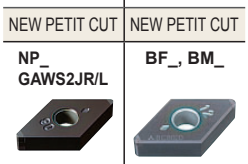
Order Number	Coated CBN				CBN		NEW	Cutting Edges	IC	S	RE	D1	LE
	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130						
NP-DNGA110408GA2			●	●		●		2	9.525	4.76	0.8	3.81	2
NP-DNGA150402GA2			●					2	12.7	4.76	0.2	5.16	2.3
NP-DNGA150404GA2			●	●		●		2	12.7	4.76	0.4	5.16	2.1
NP-DNGA150408GA2			●	●		●		2	12.7	4.76	0.8	5.16	2
NP-DNGA150412GA2			●	●		●		2	12.7	4.76	1.2	5.16	1.9
NP-DNGA150602GA2			●					2	12.7	6.35	0.2	5.16	2.3
NP-DNGA150604GA2			●	●		●		2	12.7	6.35	0.4	5.16	2.1
NP-DNGA150608GA2			●	●		●		2	12.7	6.35	0.8	5.16	2
NP-DNGA150612GA2			●	●		●		2	12.7	6.35	1.2	5.16	1.9
NP-DNGA150402GS2		●						2	12.7	4.76	0.2	5.16	2.3
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
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
NP-DNGA150612GS2	●	●						2	12.7	6.35	1.2	5.16	1.9
NP-DNGA150404GH2		●	●	●				2	12.7	4.76	0.4	5.16	2.1
NP-DNGA150408GH2		●	●	●				2	12.7	4.76	0.8	5.16	2
NP-DNGA150412GH2		●	●	●				2	12.7	4.76	1.2	5.16	1.9
NP-DNGA150604GH2		●	●	●				2	12.7	6.35	0.4	5.16	2.1
NP-DNGA150608GH2		●	●	●				2	12.7	6.35	0.8	5.16	2
NP-DNGA150612GH2		●	●	●				2	12.7	6.35	1.2	5.16	1.9
NP-DNGA150402FS2		●			●			2	12.7	4.76	0.2	5.16	2.3
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
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
NP-DNGA150612FS2	●	●	●		●			2	12.7	6.35	1.2	5.16	1.9
NP-DNGA150404TA2			●	●		●	●	2	12.7	4.76	0.4	5.16	2.1
NP-DNGA150408TA2			●	●		●	●	2	12.7	4.76	0.8	5.16	2
NP-DNGA150412TA2			●	●		●	●	2	12.7	4.76	1.2	5.16	1.9
NP-DNGA150604TA2			●	●		●		2	12.7	6.35	0.4	5.16	2.1
NP-DNGA150608TA2			●	●		●		2	12.7	6.35	0.8	5.16	2
NP-DNGA150612TA2			●	●		●		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
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
NP-DNGA150612TS2		●						2	12.7	6.35	1.2	5.16	1.9
NP-DNGA150404TH2			●	●			●	2	12.7	4.76	0.4	5.16	2.1
NP-DNGA150408TH2			●	●			●	2	12.7	4.76	0.8	5.16	2
NP-DNGA150412TH2			●	●			●	2	12.7	4.76	1.2	5.16	1.9
NP-DNGA150604TH2			●	●				2	12.7	6.35	0.4	5.16	2.1
NP-DNGA150608TH2			●	●				2	12.7	6.35	0.8	5.16	2
NP-DNGA150612TH2			●	●				2	12.7	6.35	1.2	5.16	1.9
NP-DNGA150404GAWS2JR			●			●		2	12.7	4.76	0.4	5.16	1.9
NP-DNGA150404GAWS2JL			●			●		2	12.7	4.76	0.4	5.16	1.9
NP-DNGA150408GAWS2JR			●			●		2	12.7	4.76	0.8	5.16	1.7
NP-DNGA150408GAWS2JL			●			●		2	12.7	4.76	0.8	5.16	1.7
NP-DNGA150604GAWS2JR			●			●		2	12.7	6.35	0.4	5.16	1.9
NP-DNGA150604GAWS2JL			●			●		2	12.7	6.35	0.4	5.16	1.9
NP-DNGA150608GAWS2JR			●			●		2	12.7	6.35	0.8	5.16	1.7
NP-DNGA150608GAWS2JL			●			●		2	12.7	6.35	0.8	5.16	1.7

Negative Inserts (With Hole)

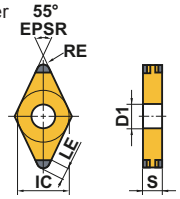
G Class

DNGA, DNGM

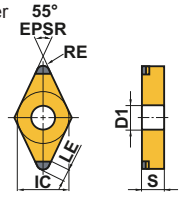




4 corner 55° EPSR



2 corner 55° EPSR



(mm)

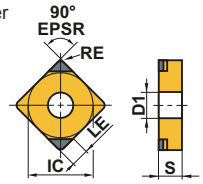
Order Number	Coated CBN				CBN (NEW)			Cutting Edges	IC	S	RE	D1	LE
	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130						
BF-DNGM150404TS2		●						2	12.7	4.76	0.4	5.16	2.1
BF-DNGM150408TS2		●						2	12.7	4.76	0.8	5.16	2
BF-DNGM150412TS2		●						2	12.7	4.76	1.2	5.16	1.9
BM-DNGM150404TA2			●					2	12.7	4.76	0.4	5.16	2.1
BM-DNGM150408TA2			●					2	12.7	4.76	0.8	5.16	2
BM-DNGM150412TA2			●					2	12.7	4.76	1.2	5.16	1.9
BM-DNGM150604TA2			●					2	12.7	6.35	0.4	5.16	2.1
BM-DNGM150608TA2			●					2	12.7	6.35	0.8	5.16	2
BM-DNGM150612TA2			●					2	12.7	6.35	1.2	5.16	1.9

Negative Inserts (With Hole)

G Class

SNGA

2 corner 90° EPSR



(mm)

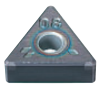
Order Number	Coated CBN				CBN (NEW)			Cutting Edges	IC	S	RE	D1	LE
	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130						
NP-SNGA120408GA2			●	●		●		2	12.7	4.76	0.8	5.16	2.3
NP-SNGA120412GA2			●	●		●		2	12.7	4.76	1.2	5.16	2.5

● : Inventory maintained in Japan. (1 insert in one case)

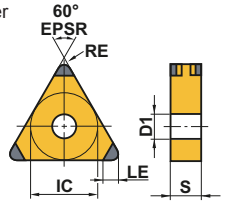
Negative Inserts (With Hole)

G Class

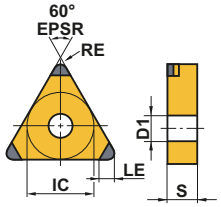
TNGA, TNGM

NEW PETIT CUT	NEW PETIT CUT	NEW PETIT CUT
NP_○○6	NP_○○3	BM_○○3
		
		(With Breaker)

6 corner



3 corner



(mm)

Order Number	Coated CBN				CBN (NEW)			Cutting Edges	IC	S	RE	D1	LE
	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130						
NP-TNGA160404GA6			●	●		●		6	9.525	4.76	0.4	3.81	1.6
NP-TNGA160408GA6			●	●		●		6	9.525	4.76	0.8	3.81	1.8
NP-TNGA160412GA6			●	●		●		6	9.525	4.76	1.2	3.81	1.9
NP-TNGA160404GS6	●	●						6	9.525	4.76	0.4	3.81	1.6
NP-TNGA160408GS6	●	●						6	9.525	4.76	0.8	3.81	1.8
NP-TNGA160412GS6	●	●						6	9.525	4.76	1.2	3.81	1.9
NP-TNGA160404GH6		●	●	●				6	9.525	4.76	0.4	3.81	1.6
NP-TNGA160408GH6		●	●	●				6	9.525	4.76	0.8	3.81	1.8
NP-TNGA160412GH6		●	●	●				6	9.525	4.76	1.2	3.81	1.9
NP-TNGA160404FS6	●	●	●		●			6	9.525	4.76	0.4	3.81	1.6
NP-TNGA160408FS6	●	●	●		●			6	9.525	4.76	0.8	3.81	1.8
NP-TNGA160412FS6	●	●	●		●			6	9.525	4.76	1.2	3.81	1.9
NP-TNGA160404TA6			●	●		●	●	6	9.525	4.76	0.4	3.81	1.6
NP-TNGA160408TA6			●	●		●	●	6	9.525	4.76	0.8	3.81	1.8
NP-TNGA160412TA6			●	●		●	●	6	9.525	4.76	1.2	3.81	1.9
NP-TNGA160404TS6		●						6	9.525	4.76	0.4	3.81	1.6
NP-TNGA160408TS6		●						6	9.525	4.76	0.8	3.81	1.8
NP-TNGA160412TS6		●						6	9.525	4.76	1.2	3.81	1.9
NP-TNGA160404TH6			●	●			●	6	9.525	4.76	0.4	3.81	1.6
NP-TNGA160408TH6			●	●			●	6	9.525	4.76	0.8	3.81	1.8
NP-TNGA160412TH6			●	●			●	6	9.525	4.76	1.2	3.81	1.9
NP-TNGA160402GA3			●			●		3	9.525	4.76	0.2	3.81	1.5
NP-TNGA160404GA3			●	●		●		3	9.525	4.76	0.4	3.81	1.6
NP-TNGA160408GA3			●	●		●		3	9.525	4.76	0.8	3.81	1.8
NP-TNGA160412GA3			●	●		●		3	9.525	4.76	1.2	3.81	1.9
NP-TNGA160402GS3		●						3	9.525	4.76	0.2	3.81	1.5
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-TNGA160404GH3		●	●	●				3	9.525	4.76	0.4	3.81	1.6
NP-TNGA160408GH3		●	●	●				3	9.525	4.76	0.8	3.81	1.8
NP-TNGA160412GH3		●	●	●				3	9.525	4.76	1.2	3.81	1.9
NP-TNGA160402FS3		●			●			3	9.525	4.76	0.2	3.81	1.5
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-TNGA160404TA3			●	●		●	●	3	9.525	4.76	0.4	3.81	1.6
NP-TNGA160408TA3			●	●		●	●	3	9.525	4.76	0.8	3.81	1.8
NP-TNGA160412TA3			●	●		●	●	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
NP-TNGA160404TH3			●	●			●	3	9.525	4.76	0.4	3.81	1.6
NP-TNGA160408TH3			●	●			●	3	9.525	4.76	0.8	3.81	1.8
NP-TNGA160412TH3			●	●			●	3	9.525	4.76	1.2	3.81	1.9
BM-TNGM160408TA3			●					3	9.525	4.76	0.8	3.81	1.8
BM-TNGM160412TA3			●					3	9.525	4.76	1.2	3.81	1.9

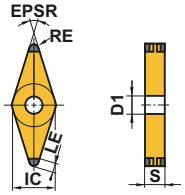
Negative Inserts (With Hole)

G Class

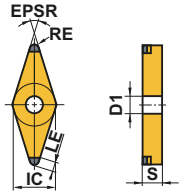
VNGA

NEW PETIT CUT
NP_○○4

4 corner 35°



2 corner 35°



NEW PETIT CUT
NP_○○2

(mm)

Order Number	Coated CBN				CBN (NEW)			Cutting Edges	IC	S	RE	D1	LE
	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130						
NP-VNGA160404GA4			●	●		●		4	9.525	4.76	0.4	3.81	2.5
NP-VNGA160408GA4			●	●		●		4	9.525	4.76	0.8	3.81	2
NP-VNGA160412GA4			●	●		●		4	9.525	4.76	1.2	3.81	1.6
NP-VNGA160404GS4	●	●						4	9.525	4.76	0.4	3.81	2.5
NP-VNGA160408GS4	●	●						4	9.525	4.76	0.8	3.81	2
NP-VNGA160412GS4		●						4	9.525	4.76	1.2	3.81	1.6
NP-VNGA160404GH4		●	●	●				4	9.525	4.76	0.4	3.81	2.5
NP-VNGA160408GH4		●	●	●				4	9.525	4.76	0.8	3.81	2
NP-VNGA160412GH4		●	●	●				4	9.525	4.76	1.2	3.81	1.6
NP-VNGA160404FS4	●	●	●		●			4	9.525	4.76	0.4	3.81	2.5
NP-VNGA160408FS4	●	●	●		●			4	9.525	4.76	0.8	3.81	2
NP-VNGA160412FS4			●					4	9.525	4.76	1.2	3.81	1.6
NP-VNGA160404TA4			●	●		●		4	9.525	4.76	0.4	3.81	2.5
NP-VNGA160408TA4			●	●		●		4	9.525	4.76	0.8	3.81	2
NP-VNGA160412TA4			●	●		●		4	9.525	4.76	1.2	3.81	1.6
NP-VNGA160404TS4		●						4	9.525	4.76	0.4	3.81	2.5
NP-VNGA160408TS4		●						4	9.525	4.76	0.8	3.81	2
NP-VNGA160404TH4			●	●				4	9.525	4.76	0.4	3.81	2.5
NP-VNGA160408TH4			●	●				4	9.525	4.76	0.8	3.81	2
NP-VNGA160412TH4			●	●				4	9.525	4.76	1.2	3.81	1.6
NP-VNGA160402GA2			●			●		2	9.525	4.76	0.2	3.81	2.5
NP-VNGA160404GA2			●	●		●		2	9.525	4.76	0.4	3.81	2.5
NP-VNGA160408GA2			●	●		●		2	9.525	4.76	0.8	3.81	2
NP-VNGA160412GA2			●	●		●		2	9.525	4.76	1.2	3.81	1.6
NP-VNGA160402GS2		●						2	9.525	4.76	0.2	3.81	2.5
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
NP-VNGA160412GS2		●						2	9.525	4.76	1.2	3.81	1.6
NP-VNGA160404GH2		●	●	●				2	9.525	4.76	0.4	3.81	2.5
NP-VNGA160408GH2		●	●	●				2	9.525	4.76	0.8	3.81	2
NP-VNGA160412GH2		●	●	●				2	9.525	4.76	1.2	3.81	1.6
NP-VNGA160402FS2		●			●			2	9.525	4.76	0.2	3.81	2.5
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
NP-VNGA160412FS2			●					2	9.525	4.76	1.2	3.81	1.6
NP-VNGA160404TA2			●	●		●		2	9.525	4.76	0.4	3.81	2.5
NP-VNGA160408TA2			●	●		●		2	9.525	4.76	0.8	3.81	2
NP-VNGA160412TA2			●	●		●		2	9.525	4.76	1.2	3.81	1.6
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
NP-VNGA160404TH2			●	●				2	9.525	4.76	0.4	3.81	2.5
NP-VNGA160408TH2			●	●				2	9.525	4.76	0.8	3.81	2
NP-VNGA160412TH2			●	●				2	9.525	4.76	1.2	3.81	1.6

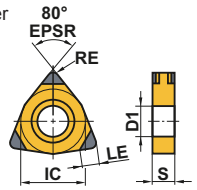
● : Inventory maintained in Japan. (1 insert in one case)

Negative Inserts (With Hole)

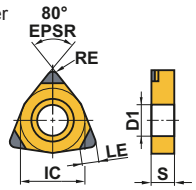
G Class

WNGA

6 corner



3 corner



NEW PETIT CUT	NEW PETIT CUT
NP_○○6	NP_○○3
	
NEW PETIT CUT	
NP_GSWS3	
	
(With Wiper)	

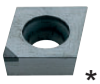
(mm)

Order Number	Coated CBN				CBN (NEW)			Cutting Edges	IC	S	RE	D1	LE
	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130						
NP-WNGA080408GS6	●	●						6	12.7	4.76	0.8	5.16	2.1
NP-WNGA080408FS6	●	●						6	12.7	4.76	0.8	5.16	2.1
NP-WNGA080408TS6		●						6	12.7	4.76	0.8	5.16	2.1
NP-WNGA080408GA3			●	●				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-WNGA080408GH3		●	●	●				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-WNGA080408TA3			●	●				3	12.7	4.76	0.8	5.16	2.1
NP-WNGA080408TS3		●						3	12.7	4.76	0.8	5.16	2.1
NP-WNGA080408TH3			●	●				3	12.7	4.76	0.8	5.16	2.1
NP-WNGA080408GSWS3		●						3	12.7	4.76	0.8	5.16	2.1

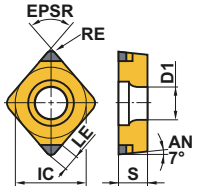
Positive Inserts (With Hole)

G Class

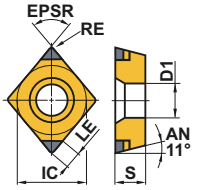
CCGW 7°, CCGT 7°, CPGB 11°

NEW PETIT CUT	NEW PETIT CUT	NEW PETIT CUT	NEW PETIT CUT
NP_○○2	NP_○○W○2	BF_, BM_	NP
			 *
	(With Wiper)	(With Breaker)	(Non-ISO)
NEW PETIT CUT			
NP_○○2			
			

2 corner 80° EPSR



2 corner 80° EPSR



(mm)

Order Number	Coated CBN				CBN (NEW)			Cutting Edges	IC	S	RE	D1	LE
	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130						
NP-CCGW060202GA2			●			●		2	6.35	2.38	0.2	2.8	1.8
NP-CCGW060204GA2			●	●		●		2	6.35	2.38	0.4	2.8	1.9
NP-CCGW060208GA2			●	●		●		2	6.35	2.38	0.8	2.8	2.1
NP-CCGW09T302GA2			●			●		2	9.525	3.97	0.2	4.4	1.8
NP-CCGW09T304GA2			●	●		●		2	9.525	3.97	0.4	4.4	1.9
NP-CCGW09T308GA2			●	●		●		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-CCGW09T304GH2		●	●	●				2	9.525	3.97	0.4	4.4	1.9
NP-CCGW09T308GH2		●	●	●				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-CCGW060204TA2				●			●	2	6.35	2.38	0.4	2.8	1.9
NP-CCGW060208TA2				●			●	2	6.35	2.38	0.8	2.8	2.1
NP-CCGW09T304TA2			●	●		●	●	2	9.525	3.97	0.4	4.4	1.9
NP-CCGW09T308TA2			●	●		●	●	2	9.525	3.97	0.8	4.4	2.1
NP-CCGW09T304TH2			●	●			●	2	9.525	3.97	0.4	4.4	1.9
NP-CCGW09T308TH2			●	●			●	2	9.525	3.97	0.8	4.4	2.1
NP-CCGW09T304FBWL2	●	●	●		●			2	9.525	3.97	0.4	4.4	1.9
NP-CCGW09T308FBWL2	●	●	●		●			2	9.525	3.97	0.8	4.4	2.1
NP-CCGW09T304FSWS2	●	●	●		●			2	9.525	3.97	0.4	4.4	1.9
NP-CCGW09T308FSWS2	●	●	●		●			2	9.525	3.97	0.8	4.4	2.1
NP-CCGW09T304GAWS2			●	●		●		2	9.525	3.97	0.4	4.4	1.9
NP-CCGW09T308GAWS2			●	●		●		2	9.525	3.97	0.8	4.4	2.1
NP-CCGW09T304GBWL2	●	●	●			●		2	9.525	3.97	0.4	4.4	1.9
NP-CCGW09T308GBWL2	●	●	●			●		2	9.525	3.97	0.8	4.4	2.1
NP-CCGW09T304GSWS2	●	●						2	9.525	3.97	0.4	4.4	1.9
NP-CCGW09T308GSWS2	●	●						2	9.525	3.97	0.8	4.4	2.1
BF-CCGT09T304TS2		●						2	9.525	3.97	0.4	4.4	1.9
BF-CCGT09T308TS2		●						2	9.525	3.97	0.8	4.4	2.1
BM-CCGT09T304TA2			●					2	9.525	3.97	0.4	4.4	1.9
BM-CCGT09T308TA2			●					2	9.525	3.97	0.8	4.4	2.1
NP-CCGW03S102GS	●							1	3.57*	1.39	0.2	2	1.1
NP-CCGW03S104GS	●							1	3.57*	1.39	0.4	2	1.1

* Diameter of inscribed circle is non-ISO standard. (For SCLC type)

● : Inventory maintained in Japan. (1 insert in one case)

(mm)

Order Number	Coated CBN				CBN NEW			Cutting Edges	IC	S	RE	D1	LE
	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130						
NP-CCGW04T002GS	●							1	4.37*	1.79	0.2	2.4	1.5
NP-CCGW04T004GS	●							1	4.37*	1.79	0.4	2.4	1.5
NP-CCGW03S102FS		●			●			1	3.57*	1.39	0.2	2	1.1
NP-CCGW03S104FS		●			●			1	3.57*	1.39	0.4	2	1.1
NP-CCGW04T002FS		●			●			1	4.37*	1.79	0.2	2.4	1.5
NP-CCGW04T004FS		●			●			1	4.37*	1.79	0.4	2.4	1.5
NP-CPGB080204GA2			●	●				2	7.94	2.38	0.4	3.5	1.9
NP-CPGB080208GA2			●	●				2	7.94	2.38	0.8	3.5	2.1
NP-CPGB080212GA2			●	●				2	7.94	2.38	1.2	3.5	2.3
NP-CPGB090302GA2			●					2	9.525	3.18	0.2	4.5	1.8
NP-CPGB090304GA2			●	●				2	9.525	3.18	0.4	4.5	1.9
NP-CPGB090308GA2			●	●				2	9.525	3.18	0.8	4.5	2.1
NP-CPGB090312GA2			●	●				2	9.525	3.18	1.2	4.5	2.3
NP-CPGB080204GS2	●	●						2	7.94	2.38	0.4	3.5	1.9
NP-CPGB080208GS2	●	●						2	7.94	2.38	0.8	3.5	2.1
NP-CPGB090302GS2	●	●						2	9.525	3.18	0.2	4.5	1.8
NP-CPGB090304GS2	●	●						2	9.525	3.18	0.4	4.5	1.9
NP-CPGB090308GS2	●	●						2	9.525	3.18	0.8	4.5	2.1
NP-CPGB080204FS2		●						2	7.94	2.38	0.4	3.5	1.9
NP-CPGB080208FS2		●						2	7.94	2.38	0.8	3.5	2.1
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-CPGB090312FS2			●					2	9.525	3.18	1.2	4.5	2.3
NP-CPGB080204TA2				●				2	7.94	2.38	0.4	3.5	1.9
NP-CPGB080208TA2				●				2	7.94	2.38	0.8	3.5	2.1
NP-CPGB080212TA2				●				2	7.94	2.38	1.2	3.5	2.3
NP-CPGB090304TA2			●	●				2	9.525	3.18	0.4	4.5	1.9
NP-CPGB090308TA2			●	●				2	9.525	3.18	0.8	4.5	2.1
NP-CPGB090312TA2			●	●				2	9.525	3.18	1.2	4.5	2.3

* Diameter of inscribed circle is non-ISO standard. (For SCLC type)

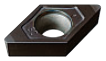
Positive Inserts (With Hole)

G Class

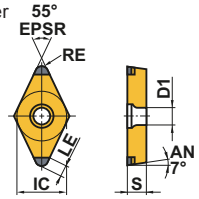
DCGW 7°, DCGT 7°

NEW PETIT CUT

NP_○○2

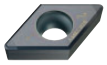


2 corner 55° EPSR RE



NEW PETIT CUT

BF_, BM_



(With Breaker)

(mm)

Order Number	Coated CBN				CBN (NEW)			Cutting Edges	IC	S	RE	D1	LE
	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130						
NP-DCGW070202GA2			●			●		2	6.35	2.38	0.2	2.8	2.3
NP-DCGW070204GA2			●	●		●		2	6.35	2.38	0.4	2.8	2.1
NP-DCGW070208GA2				●				2	6.35	2.38	0.8	2.8	2
NP-DCGW11T302GA2			●			●		2	9.525	3.97	0.2	4.4	2.3
NP-DCGW11T304GA2			●	●		●		2	9.525	3.97	0.4	4.4	2.1
NP-DCGW11T308GA2			●	●		●		2	9.525	3.97	0.8	4.4	2
NP-DCGW070202GS2	●	●						2	6.35	2.38	0.2	2.8	2.3
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
NP-DCGW11T302GS2	●	●						2	9.525	3.97	0.2	4.4	2.3
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
NP-DCGW11T304GH2		●	●	●				2	9.525	3.97	0.4	4.4	2.1
NP-DCGW11T308GH2		●	●	●				2	9.525	3.97	0.8	4.4	2
NP-DCGW070202FS2		●			●			2	6.35	2.38	0.2	2.8	2.3
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
NP-DCGW11T302FS2	●	●			●			2	9.525	3.97	0.2	4.4	2.3
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
NP-DCGW070204TA2			●	●		●	●	2	6.35	2.38	0.4	2.8	2.1
NP-DCGW070208TA2				●			●	2	6.35	2.38	0.8	2.8	2
NP-DCGW11T304TA2			●	●		●	●	2	9.525	3.97	0.4	4.4	2.1
NP-DCGW11T308TA2			●	●		●	●	2	9.525	3.97	0.8	4.4	2
NP-DCGW11T304TH2			●	●			●	2	9.525	3.97	0.4	4.4	2.1
NP-DCGW11T308TH2			●	●			●	2	9.525	3.97	0.8	4.4	2
BF-DCGT11T304TS2		●						2	9.525	3.97	0.4	4.4	2.1
BF-DCGT11T308TS2		●						2	9.525	3.97	0.8	4.4	2
BM-DCGT11T304TA2			●					2	9.525	3.97	0.4	4.4	2.1
BM-DCGT11T308TA2			●					2	9.525	3.97	0.8	4.4	2

● : Inventory maintained in Japan. (1 insert in one case)

Positive Inserts (With Hole)

G Class

TCGW 7°, TPGB 11°

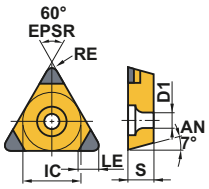
NEW PETIT CUT

NP_TCGW

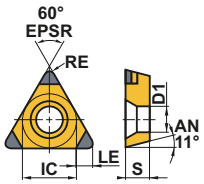
NEW PETIT CUT

NP-TPGB

3 corner



3 corner



(mm)

Order Number	Coated CBN				CBN (NEW)			Cutting Edges	IC	S	RE	D1	LE
	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130						
NP-TCGW090204GS3		●						3	5.56	2.38	0.4	2.5	1.6
NP-TCGW090208GS3		●						3	5.56	2.38	0.8	2.5	1.8
NP-TCGW110202GS3		●						3	6.35	2.38	0.2	2.8	1.5
NP-TCGW110204GS3		●						3	6.35	2.38	0.4	2.8	1.6
NP-TCGW110208GS3		●						3	6.35	2.38	0.8	2.8	1.8
NP-TCGW130304GS3		●						3	7.94	3.18	0.4	3.4	1.6
NP-TCGW130308GS3		●						3	7.94	3.18	0.8	3.4	1.8
NP-TCGW16T304GS3		●						3	9.525	3.97	0.4	4.4	1.6
NP-TCGW16T308GS3		●						3	9.525	3.97	0.8	4.4	1.8
NP-TPGB080204GA3				●				3	4.76	2.38	0.4	2.4	1.6
NP-TPGB080208GA3				●				3	4.76	2.38	0.8	2.4	1.8
NP-TPGB090204GA3			●	●		●		3	5.56	2.38	0.4	2.9	1.6
NP-TPGB090208GA3			●	●		●		3	5.56	2.38	0.8	2.9	1.8
NP-TPGB110302GA3			●			●		3	6.35	3.18	0.2	3.4	1.5
NP-TPGB110304GA3			●	●		●		3	6.35	3.18	0.4	3.4	1.6
NP-TPGB110308GA3			●	●		●		3	6.35	3.18	0.8	3.4	1.8
NP-TPGB160304GA3			●	●		●		3	9.525	3.18	0.4	4.4	1.6
NP-TPGB160308GA3			●	●		●		3	9.525	3.18	0.8	4.4	1.8
NP-TPGB080204GS3	●	●						3	4.76	2.38	0.4	2.4	1.6
NP-TPGB080208GS3	●	●						3	4.76	2.38	0.8	2.4	1.8
NP-TPGB090204GS3	●	●						3	5.56	2.38	0.4	2.9	1.6
NP-TPGB090208GS3	●	●						3	5.56	2.38	0.8	2.9	1.8
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
NP-TPGB160304GS3	●	●						3	9.525	3.18	0.4	4.4	1.6
NP-TPGB160308GS3	●	●						3	9.525	3.18	0.8	4.4	1.8
NP-TPGB160304GH3		●	●	●				3	9.525	3.18	0.4	4.4	1.6
NP-TPGB160308GH3		●	●	●				3	9.525	3.18	0.8	4.4	1.8
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-TPGB160304FS3			●					3	9.525	3.18	0.4	4.4	1.6
NP-TPGB160308FS3			●					3	9.525	3.18	0.8	4.4	1.8
NP-TPGB080204TA3				●			●	3	4.76	2.38	0.4	2.4	1.6
NP-TPGB080208TA3				●			●	3	4.76	2.38	0.8	2.4	1.8
NP-TPGB090204TA3				●			●	3	5.56	2.38	0.4	2.9	1.6
NP-TPGB090208TA3				●			●	3	5.56	2.38	0.8	2.9	1.8
NP-TPGB110304TA3			●	●		●	●	3	6.35	3.18	0.4	3.4	1.6
NP-TPGB110308TA3			●	●		●	●	3	6.35	3.18	0.8	3.4	1.8
NP-TPGB160304TA3			●	●		●	●	3	9.525	3.18	0.4	4.4	1.6
NP-TPGB160308TA3			●	●		●	●	3	9.525	3.18	0.8	4.4	1.8
NP-TPGB160304TH3			●	●			●	3	9.525	3.18	0.4	4.4	1.6
NP-TPGB160308TH3			●	●			●	3	9.525	3.18	0.8	4.4	1.8

Positive Inserts (With Hole)

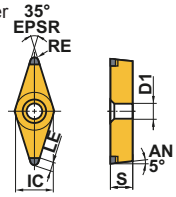
G Class

VBGW 5°, VCGW 7°

NEW PETIT CUT

NP_VBGW

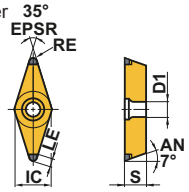
2 corner 35°



NEW PETIT CUT

NP-VCGW

2 corner 35°



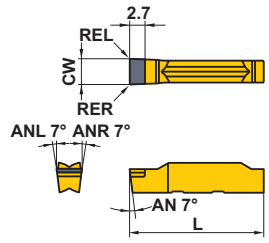
(mm)

Order Number	Coated CBN				CBN (NEW)			Cutting Edges	IC	S	RE	D1	LE
	BC8105	BC8110	BC8120	BC8130	MB8110	MB8120	MB8130						
NP-VBGW110302GA2			●			●		2	6.35	3.18	0.2	2.9	2.5
NP-VBGW110304GA2			●	●		●		2	6.35	3.18	0.4	2.9	2.5
NP-VBGW110308GA2			●	●		●		2	6.35	3.18	0.8	2.9	2
NP-VBGW160402GA2			●			●		2	9.525	4.76	0.2	4.4	2.5
NP-VBGW160404GA2			●	●		●		2	9.525	4.76	0.4	4.4	2.5
NP-VBGW160408GA2			●	●		●		2	9.525	4.76	0.8	4.4	2
NP-VBGW110302GS2	●	●						2	6.35	3.18	0.2	2.9	2.5
NP-VBGW110304GS2	●	●						2	6.35	3.18	0.4	2.9	2.5
NP-VBGW110308GS2	●	●						2	6.35	3.18	0.8	2.9	2
NP-VBGW160402GS2	●	●						2	9.525	4.76	0.2	4.4	2.5
NP-VBGW160404GS2	●	●						2	9.525	4.76	0.4	4.4	2.5
NP-VBGW160408GS2	●	●						2	9.525	4.76	0.8	4.4	2
NP-VBGW160404GH2		●	●	●				2	9.525	4.76	0.4	4.4	2.5
NP-VBGW160408GH2		●	●	●				2	9.525	4.76	0.8	4.4	2
NP-VBGW110302FS2		●			●			2	6.35	3.18	0.2	2.9	2.5
NP-VBGW110304FS2		●			●			2	6.35	3.18	0.4	2.9	2.5
NP-VBGW110308FS2		●			●			2	6.35	3.18	0.8	2.9	2
NP-VBGW160402FS2		●			●			2	9.525	4.76	0.2	4.4	2.5
NP-VBGW160404FS2			●					2	9.525	4.76	0.4	4.4	2.5
NP-VBGW160408FS2			●					2	9.525	4.76	0.8	4.4	2
NP-VBGW110304TA2				●				2	6.35	3.18	0.4	2.9	2.5
NP-VBGW110308TA2				●				2	6.35	3.18	0.8	2.9	2
NP-VBGW160404TA2			●	●		●		2	9.525	4.76	0.4	4.4	2.5
NP-VBGW160408TA2			●	●		●		2	9.525	4.76	0.8	4.4	2
NP-VBGW160404TH2			●	●				2	9.525	4.76	0.4	4.4	2.5
NP-VBGW160408TH2			●	●				2	9.525	4.76	0.8	4.4	2
NP-VCGW160404GA2			●	●				2	9.525	4.76	0.4	4.4	2.5
NP-VCGW160408GA2			●	●				2	9.525	4.76	0.8	4.4	2
NP-VCGW160404GS2	●	●						2	9.525	4.76	0.4	4.4	2.5
NP-VCGW160408GS2	●	●						2	9.525	4.76	0.8	4.4	2
NP-VCGW160404GH2		●	●	●				2	9.525	4.76	0.4	4.4	2.5
NP-VCGW160408GH2		●	●	●				2	9.525	4.76	0.8	4.4	2
NP-VCGW160404FS2		●	●		●			2	9.525	4.76	0.4	4.4	2.5
NP-VCGW160408FS2		●	●		●			2	9.525	4.76	0.8	4.4	2
NP-VCGW160404TA2			●	●				2	9.525	4.76	0.4	4.4	2.5
NP-VCGW160408TA2			●	●				2	9.525	4.76	0.8	4.4	2
NP-VCGW160404TS2		●						2	9.525	4.76	0.4	4.4	2.5
NP-VCGW160408TS2		●						2	9.525	4.76	0.8	4.4	2
NP-VCGW160404TH2			●	●				2	9.525	4.76	0.4	4.4	2.5
NP-VCGW160408TH2			●	●				2	9.525	4.76	0.8	4.4	2

● : Inventory maintained in Japan. (1 insert in one case)

Inserts

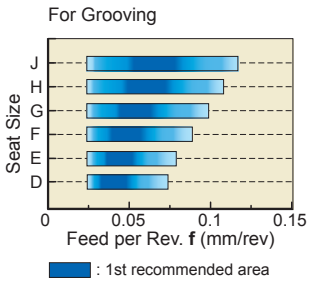
(mm)

Applications	Geometry	Order Number	Stock CBN BC8110	Seat Size	CW Grooving Width	CW Tolerance	RER/L	L
For Grooving	**Flat Top** (For Hardened Material) 	**GY1G0200D020N-GFGS**	●	**D**	2.00	±0.03	0.2	20.70
		GY1G0239E020N-GFGS	●	**E**	2.39	±0.03	0.2	20.70
		GY1G0250E020N-GFGS	●	**E**	2.50	±0.03	0.2	20.70
		GY1G0300F020N-GFGS	●	**F**	3.00	±0.03	0.2	20.70
		GY1G0318F020N-GFGS	●	**F**	3.18	±0.03	0.2	20.70
		GY1G0400G020N-GFGS	●	**G**	4.00	±0.03	0.2	25.65
		GY1G0475H020N-GFGS	●	**H**	4.75	±0.03	0.2	25.65
		GY1G0500H020N-GFGS	●	**H**	5.00	±0.03	0.2	25.65
		GY1G0600J020N-GFGS	●	**J**	6.00	±0.03	0.2	25.65

Recommended Cutting Conditions

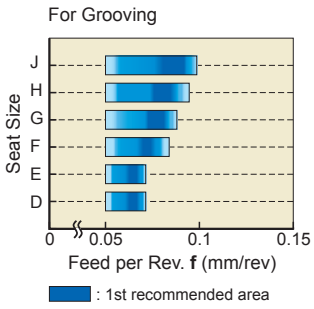
● For External Grooving
Recommended Cutting Speed **vc** (m/min)

	Workpiece Material	Properties	Cutting Speed **vc** (m/min) 50 100 150
H	Hardened Steels	≥50HRC	80 120



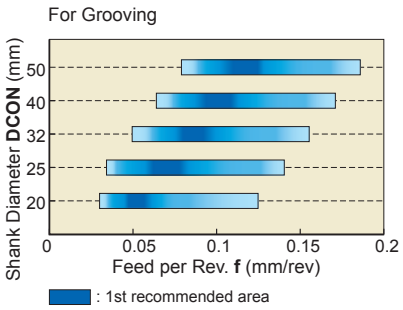
● For Face Grooving
Recommended Cutting Speed **vc** (m/min)

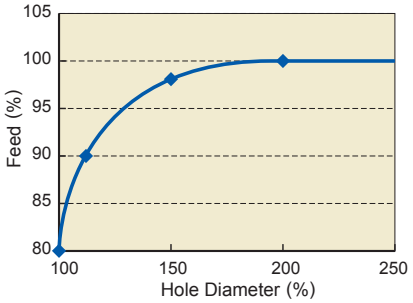
	Workpiece Material	Properties	Cutting Speed **vc** (m/min) 50 100 150
H	Hardened Steels	≥50HRC	60 100



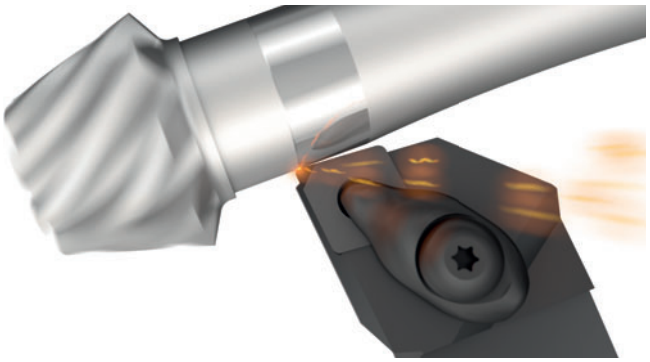
● For Internal Grooving
Recommended Cutting Speed **vc** (m/min)

	Workpiece Material	Properties	Cutting Speed **vc** (m/min) 50 100 150
H	Hardened Steels	≥50HRC	60 100

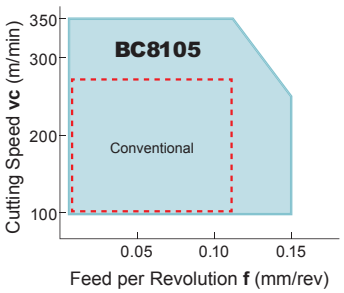




BC8105 Highest Accuracy



Application Range

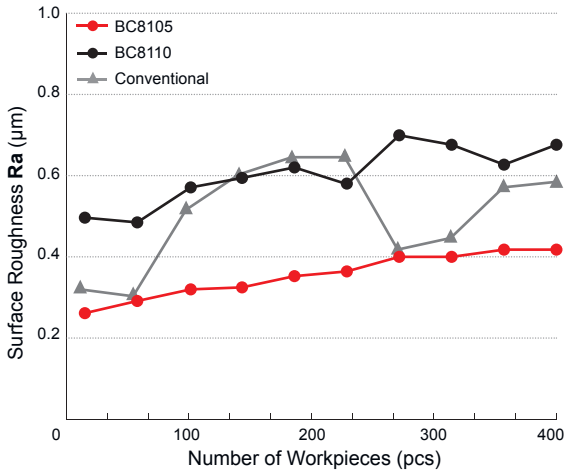


Excellent surface finishes and close tolerances with long tool life
For surface finishes up to Rz 2.4 µm (Ra 0.6 µm).

Surface Finish

Insert	NP-DNGA150608GS2
Workpiece Material	AISI 1534 (60 HRC)
Machining Methods	External Continuous Cutting
Cutting Speed **vc** (m/min)	176
Feed per Rev. **f** (mm/rev)	0.09
Depth of Cut **ap** (mm)	0.15
Cutting Mode	Wet Cutting (Emulsion)

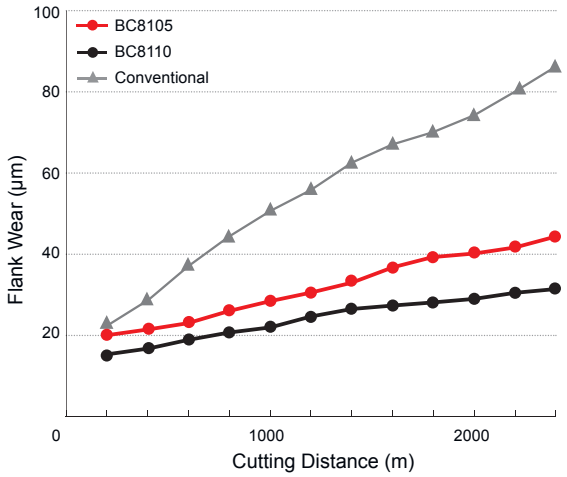
BC8105 is first choice for superior surface finishes.



Tool Life (Flank Wear)

Insert	NP-CNGA120408GS2
Workpiece Material	AISI 5120 (60 HRC)
Machining Methods	External Continuous Cutting
Cutting Speed **vc** (m/min)	200
Feed per Rev. **f** (mm/rev)	0.05
Depth of Cut **ap** (mm)	0.05
Cutting Mode	Dry Cutting

BC8105 is excellent wear resistance.



Recommended Cutting Conditions

Workpiece Material	Machining Methods	Cutting Speed vc (m/min)	f (mm/rev)	ap (mm)	Cutting Mode
		50 100 200 300 400			
Hardened Steels (Heat Treated Steels etc)	External Continuous Cutting		≦ 0.15	≦ 0.2	Dry, Wet

BC8110 High Speed Turning

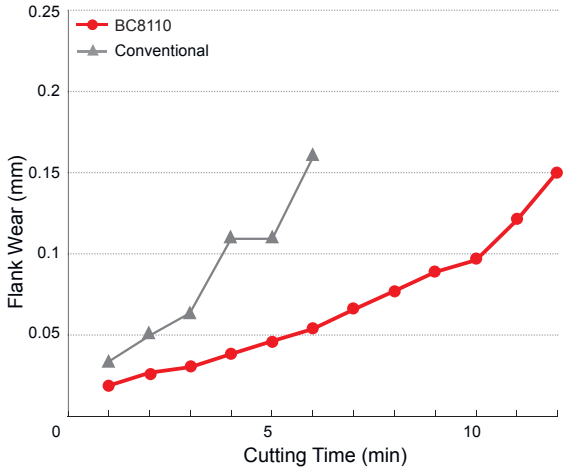
For Continuous Cutting

Covers a wide application range for continuous cutting.

Tool Life (Flank Wear)

Insert	NP-CNGA120408GS2
Workpiece Material	AISI 5120 (60HRC)
Machining Methods	External Continuous Cutting
Cutting Speed **vc** (m/min)	250
Feed per Rev. **f** (mm/rev)	0.10
Depth of Cut **ap** (mm)	0.2
Cutting Mode	Dry Cutting

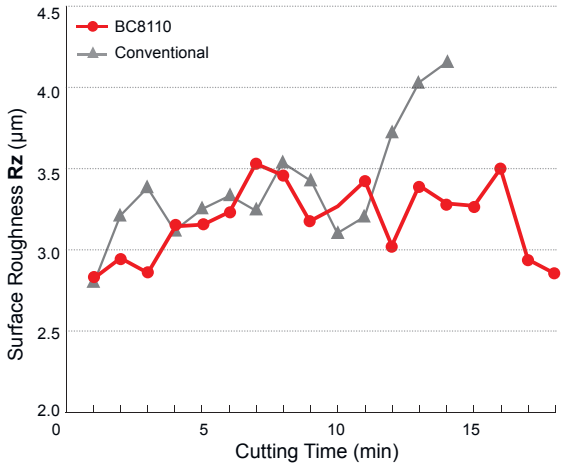
BC8110 is first choice for high speed finishing.



Surface Finish

Insert	NP-CNGA120408GS2
Workpiece Material	AISI 5120 (60HRC)
Machining Methods	External Continuous Cutting
Cutting Speed **vc** (m/min)	250
Feed per Rev. **f** (mm/rev)	0.10
Depth of Cut **ap** (mm)	0.2
Cutting Mode	Dry Cutting

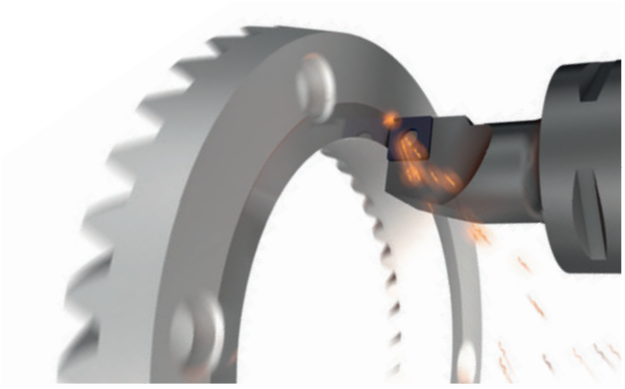
Excellent surface finishes maintained during long continuous cutting.



Recommended Cutting Conditions

Workpiece Material	Machining Methods	Cutting Speed vc (m/min)	f (mm/rev)	ap (mm)	Cutting Mode
		50 100 200 300 400			
Hardened Steels (Heat Treated Steels etc)	External Continuous Cutting		≦ 0.20	≦ 0.35	Dry, Wet

BC8120 General Application



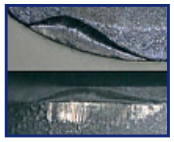
For Continuous and Light Interrupted Cutting

1st choice for roughing and pre-finishing.
Covers a wide application range between continuous and light-interrupted machining.

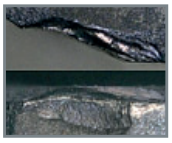
Test of Interrupted Cutting

Insert	NP-CNGA120408GA2
Workpiece Material	AISI 5120 (60HRC)
Machining Methods	External Interrupted Cutting
Cutting Speed **vc** (m/min)	250
Feed per Rev. **f** (mm/rev)	0.15
Depth of Cut **ap** (mm)	0.1
Cutting Mode	Dry Cutting

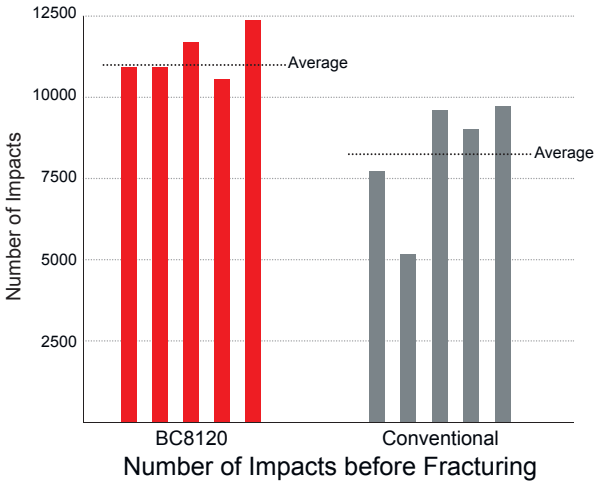
Cutting Edge Condition after 8000 Impacts



BC8120



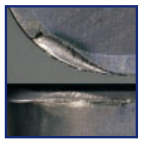
Conventional



Tool Life (Flank Wear)

Insert	NP-CNGA120408GA2
Workpiece Material	AISI 5120 (60HRC)
Machining Methods	External Continuous Cutting
Cutting Speed **vc** (m/min)	150
Feed per Rev. **f** (mm/rev)	0.10
Depth of Cut **ap** (mm)	0.2
Cutting Mode	Dry Cutting

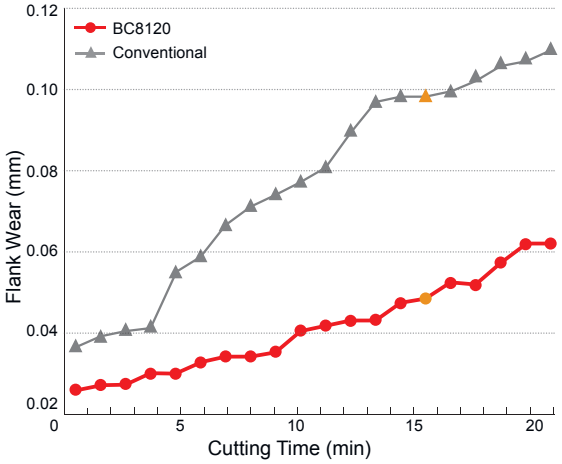
Cutting Edge after 15 min.



BC8120

Conventional

Peeling



Recommended Cutting Conditions

Workpiece Material	Machining Methods	Cutting Speed vc (m/min)	f (mm/rev)	ap (mm)	Cutting Mode
		50 100 200 300			
Hardened Steels (Heat Treated Steels etc)	External Continuous Cutting		≤ 0.3	≤ 0.5	Dry, Wet
	External Interrupted Cutting		≤ 0.2	≤ 0.3	Dry, Wet

BC8130 Tough Machining

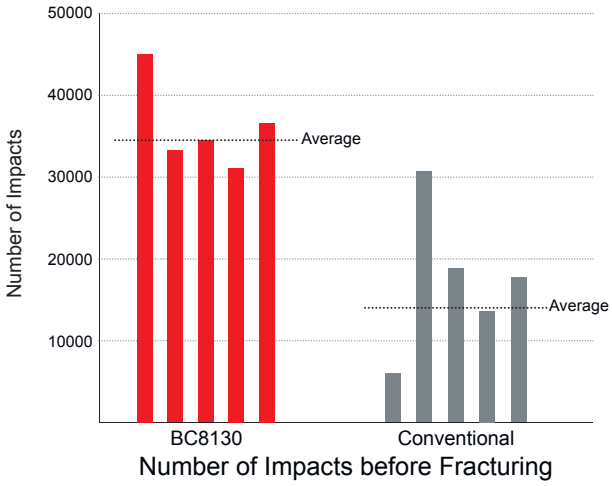
For Unstable Applications and Heavy Interrupted Cutting

Tolerance accuracy maintained over a high number of impacts.

Heavy Interrupted Cutting (Laboratory Test)

Insert	NP-CNGA120408GA2
Workpiece Material	AISI 5120 (60HRC)
Machining Methods	External Heavy Interrupted Cutting
Cutting Speed **vc** (m/min)	250
Feed per Rev. **f** (mm/rev)	0.05
Depth of Cut **ap** (mm)	0.1
Cutting Mode	Wet Cutting

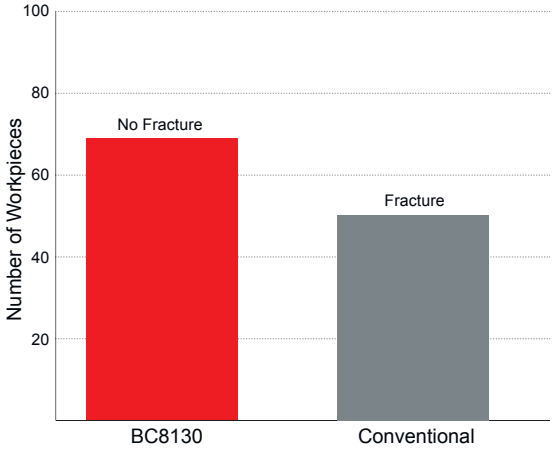
BC8130 provides stability up to 30000 impacts.



Heavy Cutting

Insert	NP-CNGA120408TH2
Workpiece Material	AISI 1045 (58HRC)
Machining Methods	External Heavy Interrupted Cutting
Cutting Speed **vc** (m/min)	130
Feed per Rev. **f** (mm/rev)	0.08
Depth of Cut **ap** (mm)	0.15
Cutting Mode	Wet Cutting

No fracturing after machining 70 pcs.



Recommended Cutting Conditions

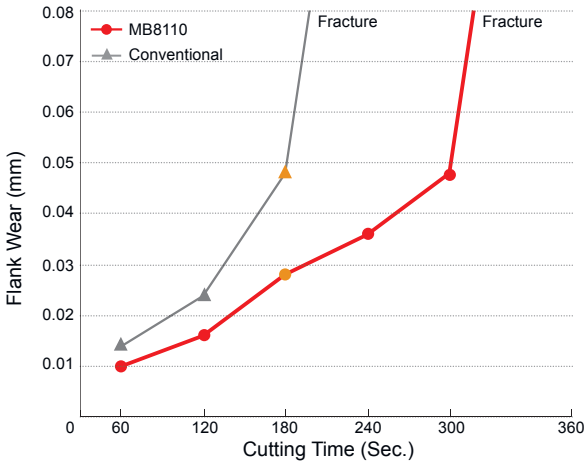
Workpiece Material	Machining Methods	Cutting Speed vc (m/min)	f (mm/rev)	ap (mm)	Cutting Mode
		0 50 100 150 200			
Hardened Steels (Heat Treated Steels etc)	External Interrupted Cutting		≤ 0.20	≤ 0.30	Dry, Wet

MB8100 Series

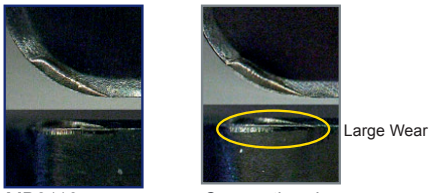
Non-coated CBN Grades Applied Ultra Micro-particle Binder Technology

Tool Life (Flank Wear)

Insert	NP-CNGA120408GA2
Workpiece Material	AISI 5120 (60HRC)
Machining Methods	External Continuous Cutting
Cutting Speed **vc** (m/min)	250
Feed per Rev. **f** (mm/rev)	0.1
Depth of Cut **ap** (mm)	0.2
Cutting Mode	Dry Cutting

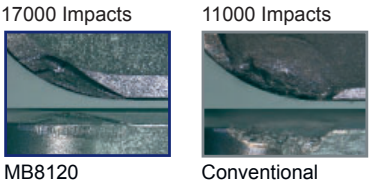


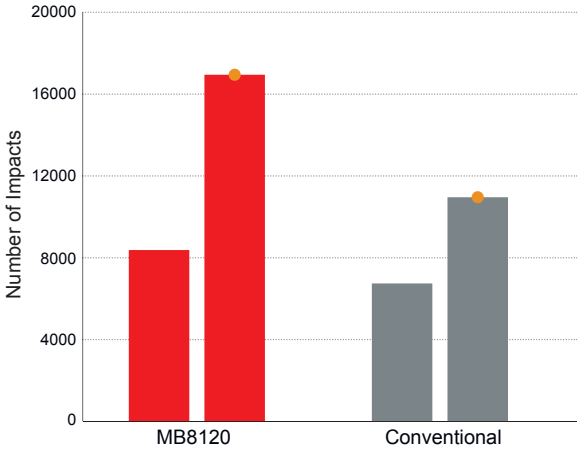
Cutting Edge after 180 sec.



Heavy Cutting

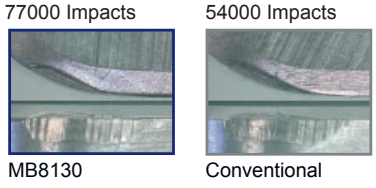
Insert	NP-CNGA120408GA2
Workpiece Material	AISI 5120 (60HRC)
Machining Methods	External Interrupted Cutting
Cutting Speed **vc** (m/min)	250
Feed per Rev. **f** (mm/rev)	0.15
Depth of Cut **ap** (mm)	0.1
Cutting Mode	Dry Cutting

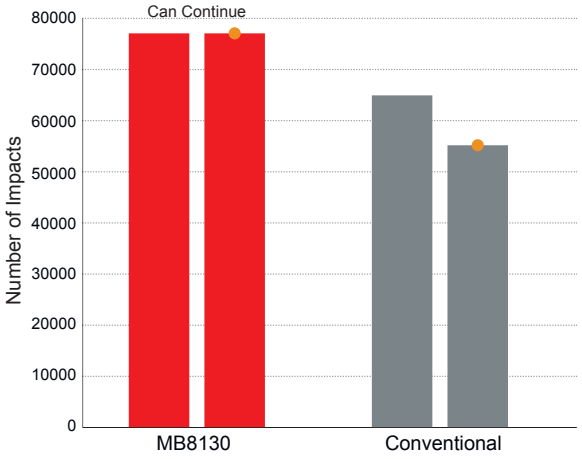




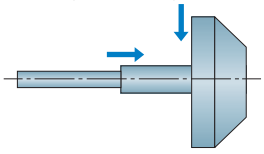
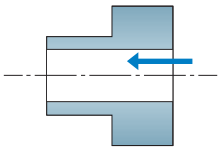
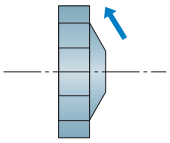
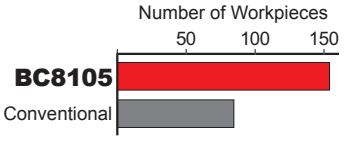
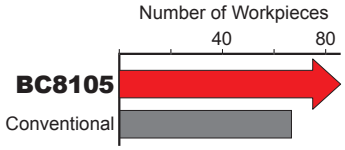
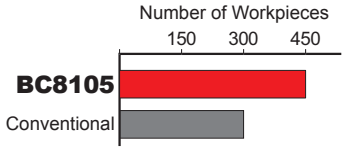
Heavy Cutting

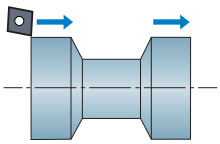
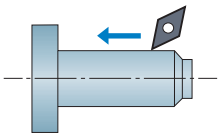
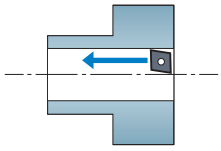
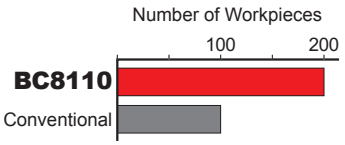
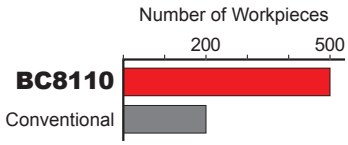
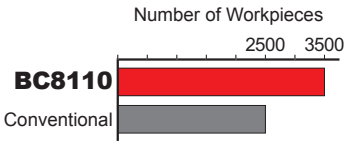
Insert	NP-CNGA120408GA2
Workpiece Material	AISI 5120 (60HRC)
Machining Methods	External Heavy Interrupted Cutting
Cutting Speed **vc** (m/min)	150
Feed per Rev. **f** (mm/rev)	0.05
Depth of Cut **ap** (mm)	0.1
Cutting Mode	Wet Cutting

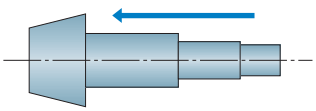
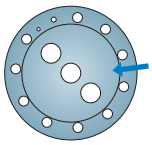
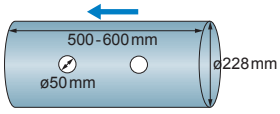
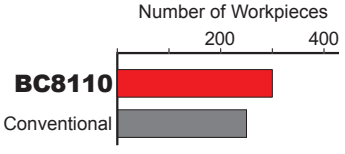
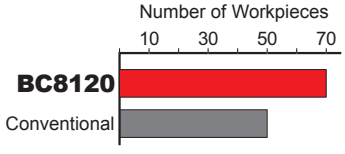
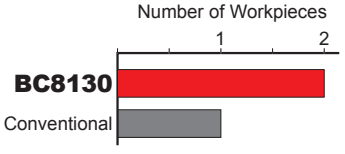




Application Examples

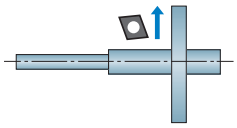
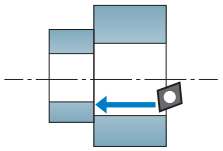
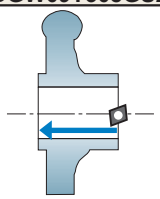
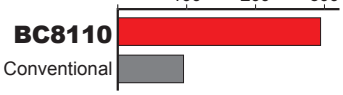
Insert	NP-CNGA120408GSWS2	NP-DCGW11T308GS2	NP-CNGA120408FBWL2
Workpiece	AISI 5120H (58-60HRC) 	AISI 4419 (58-60HRC) 	JIS 19CrNi5 (58-62HRC) 
Component	Pinion Gear	Shaft (Internal Continuous Cutting)	Differential Pinion Gear(Continuous Facing)
Cutting Conditions: Cutting Speed **vc** (m/min)	160	165	155
Cutting Conditions: Feed per Rev. **f** (mm/rev)	0.35	0.085	0.12
Cutting Conditions: Depth of Cut **ap** (mm)	0.15	0.1	0.15
Cutting Mode	Dry Cutting	Dry Cutting	Dry Cutting
Results	 Due to excellent surfaces, number of workpieces per cutting edge increased 1.5X compared to conventional product. Rz max : 4.8μm	 BC8105 achieved 1.1X longer tool life compared to conventional product.	 The surface roughness is more stable compared to conventional products, achieving 1.5X longer tool life. Ra<0.8

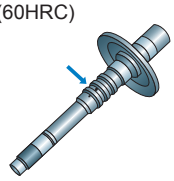
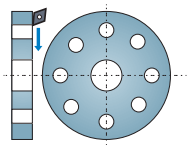
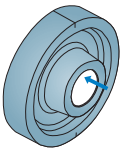
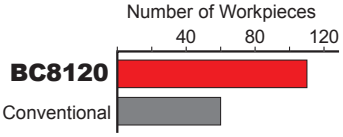
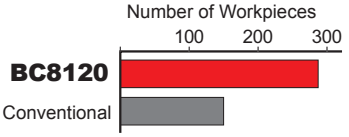
Insert	NP-CNGA120408GS2	NP-DNGA150404FS2	NP-CCGW09T308GS2
Workpiece	AISI 1049 (55-65HRC) 	AISI 1049 (55-65HRC) 	AISI 5115 (60-65HRC) 
Component	Shaft (External Continuous Cutting)	Shaft (External Continuous Cutting)	Gear (Internal Continuous Cutting)
Cutting Conditions: Cutting Speed **vc** (m/min)	250	160	110
Cutting Conditions: Feed per Rev. **f** (mm/rev)	0.15	0.20	0.15
Cutting Conditions: Depth of Cut **ap** (mm)	0.30	0.20	0.20
Cutting Mode	Wet Cutting	Wet Cutting	Dry Cutting
Results	 Increased efficiency with BC8110 due to fewer tool changes required.	 BC8110 achieved 2.5X longer tool life and could continue machining.	 Longer tool life meant reduced insert indexing.

Insert	NP-CNGA120408GBWL2	NP-CNGA120408TH2	NP-DNGA150408GH2
Workpiece	Alloy Steel (60-63HRC) 	AISI 1045 (58HRC) 	JIS SCM815 
Component	Pinion Drive (External Continuous Cutting)	Gear (Interrupted Facing)	Shaft (Tough Machining)
Cutting Conditions: Cutting Speed **vc** (m/min)	80	130	150
Cutting Conditions: Feed per Rev. **f** (mm/rev)	0.22–0.24	0.08	0.15
Cutting Conditions: Depth of Cut **ap** (mm)	0.15	0.15	0.15
Cutting Mode	Wet Cutting	Wet Cutting	Dry Cutting
Results	 A tool life of Rz<6.3 enables 1.2X the processing possible for conventional products.	 BC8120 prevented fracturing and extended 1.4X longer tool life when high-load interrupted cutting.	 BC8130 achieved stable machining without fracture even under heavy interrupted cutting when machining big workpiece.

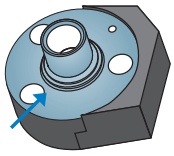
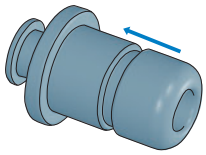
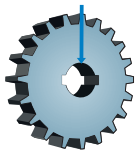
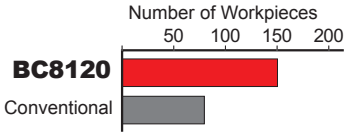
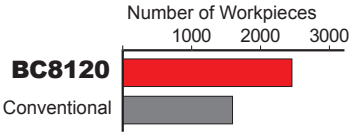
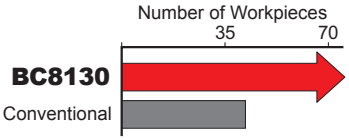
The above application examples are customer's application examples, so it can be different from the recommended conditions.

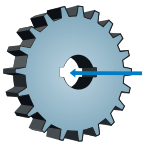
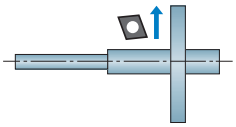
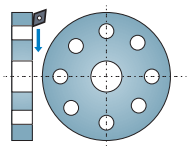
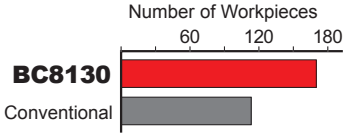
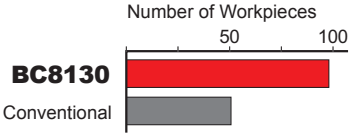
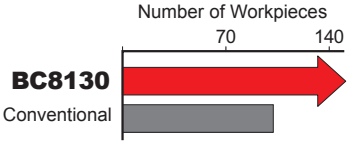
Application Examples

Insert	BF-DNGM150404TS2	NP-CNGA120408FS2	NP-CCGW09T308GS2
Workpiece	AISI 5120 (61-65HRC) 	AISI 5120H (60HRC) 	Forged Steel (60HRC) 
Component	Input Shaft (Continuous Facing)	Gear (Internal Continuous Cutting)	Locker Arm (Internal Continuous Cutting)
Cutting Conditions: Cutting Speed **vc** (m/min)	150	200	140
Cutting Conditions: Feed per Rev. **f** (mm/rev)	0.12	0.08	0.03
Cutting Conditions: Depth of Cut **ap** (mm)	0.15	0.15	0.15
Cutting Mode	Wet Cutting	Dry Cutting	Dry Cutting
Results	Number of Workpieces 200 400 600 800 1000 **BC8110** Conventional  BC8110 achieved 1.3X longer tool life.	Number of Workpieces 100 200 300 **BC8110** Conventional  Surface finish tolerance was maintained even when 3X the number of components were machined.	Number of Workpieces 200 400 600 800 **BC8110** Conventional  BC8110 with excellent wear resistance achieved 1.2X longer tool life compared to conventional product.

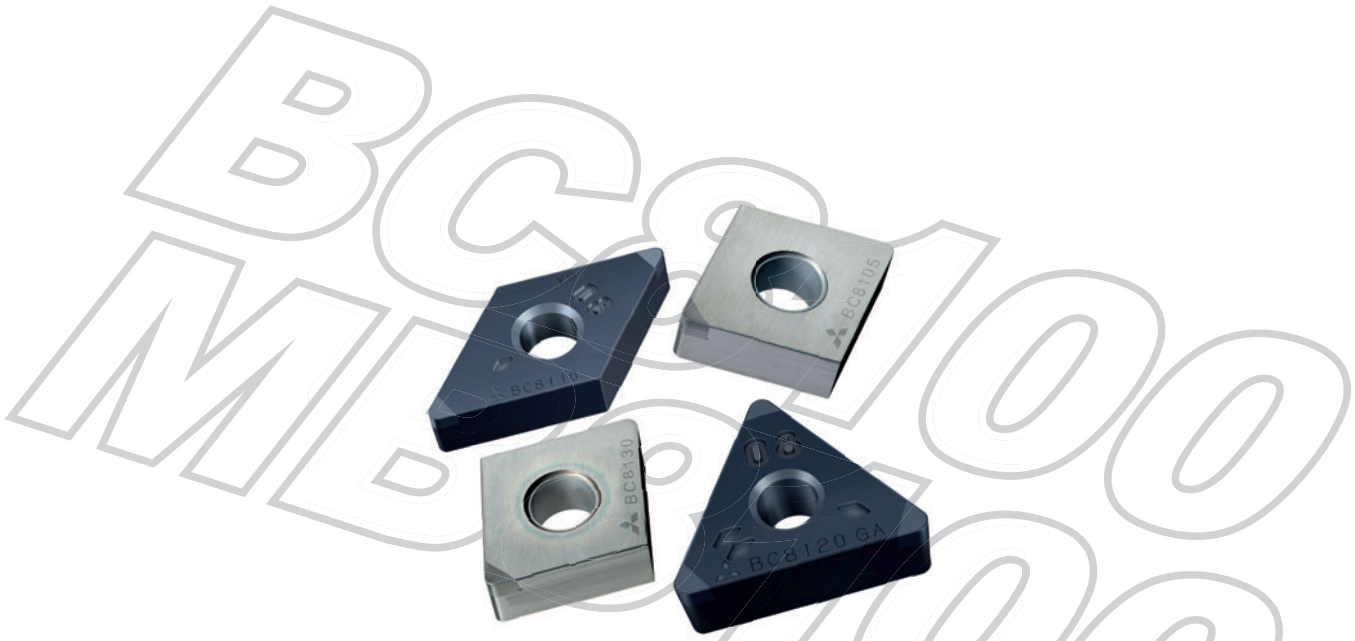
Insert	GY1G0200D020N-GFGS	NP-CNGA120408TA2	NP-CNGA120412TA2
Workpiece	AISI 4118 (60HRC) 	ASTM (50HRC) 	AISI 5120 (60HRC) 
Component	Input Shaft (Grooving)	Clamp Cylinder (Interrupted Facing)	Automobile Parts (Internal Continuous)
Cutting Conditions: Cutting Speed **vc** (m/min)	130	130	180
Cutting Conditions: Feed per Rev. **f** (mm/rev)	0.10	0.08	0.22
Cutting Conditions: Depth of Cut **ap** (mm)	0.12	0.50	0.05 — 0.10
Cutting Mode	Wet Cutting	Wet Cutting	Wet Cutting
Results	Number of Workpieces 300 600 **BC8110** 600 Conventional 270  **BC8110** 600pcs  Conventional 270pcs	Number of Workpieces 40 80 120 **BC8120** Conventional  BC8120 achieved 1.5X longer tool life.	Number of Workpieces 100 200 300 **BC8120** Conventional  BC8120 achieved stable machining due to improved surfaces.

The above application examples are customer's application examples, so it can be different from the recommended conditions.

Insert		NP-CNGA120408GA2	BM-DNGM150608TA2	NP-CNGA120408TH2
Workpiece		JIS BC3 (55-58 HRC) 	AISI 4142 (56-59 HRC) 	AISI 1045 (58 HRC) 
Component		Automobile Parts (Interrupted Facing)	Shaft (External Interrupted Cutting)	Gear (Interrupted Facing)
Cutting Conditions	Cutting Speed **vc** (m/min)	150	170	130
	Feed per Rev. **f** (mm/rev)	0.15	0.15	0.08
	Depth of Cut **ap** (mm)	0.10	0.07 ─ 0.10	0.15
Cutting Mode		Dry Cutting	Dry Cutting	Wet Cutting
Results		 Tool life was 2X and no sudden fracturing occurred.	 BC8120 achieved 1.5X longer tool life.	 BC8130 achieved 1.5X longer tool life without abnormal damage.

Insert		NP-CCGW09T308TA2	NP-DNGA150408TA2	NP-CNGA120412TA2
Workpiece		AISI 5115 (58-60 HRC) 	AISI 5120H (60 HRC) 	AISI 431 (58-60 HRC) 
Component		Gear (Internal Interrupted Cutting)	Shaft	Automobile Parts
Cutting Conditions	Cutting Speed **vc** (m/min)	159 ─ 175	158	100
	Feed per Rev. **f** (mm/rev)	0.11	0.12	0.18
	Depth of Cut **ap** (mm)	0.12	0.17	0.15
Cutting Mode		Dry Cutting	Dry Cutting	Dry Cutting
Results		 BC8130 increased 1.5X number of workpieces per cutting edge.	 BC8130 achieved 2X longer tool life without any cutting edge chipping.	 BC8130 achieved 1.5X longer tool life without abnormal damage.

The above application examples are customer's application examples, so it can be different from the recommended conditions.



CBN-series for Hardened Steel Turning

BC8100/MB8100

For Your Safety
●Don't handle inserts and chips without gloves. ●Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage. ●Please use safety covers and wear safety glasses. ●When using compounded cutting oils, please take fire precautions. ●When attaching inserts or spare parts, please use only the correct wrench or driver. ●When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc.

MITSUBISHI MATERIALS CORPORATION

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(Tools specifications subject to change without notice.)

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