

HOW TO READ THE STANDARD OF CBN & PCD TURNING INSERTS

● How this section page is organized

① Organized according to turning insert shape.

(Refer to the index on the next page.)

② Inserts are arranged in order of :

- Negative inserts (with hole→without hole)
- Positive inserts (with hole→without hole)

GRADE APPLICATION RECOMMENDED FOR EACH WORK MATERIAL

cutting conditions suitable for each type of work material is shown as a general guide to select the grade.

●: Stable Cutting ●: General Cutting ✕: Unstable Cutting

INDICATION OF NEGATIVE/POSITIVE TYPE

TITLE OF PRODUCT ACCORDING TO THE INSERT TYPE

SHAPE & ANGLE MARK

PRODUCT SECTION

CBN TURNING INSERTS [NEGATIVE]

80° CN TYPE INSERTS WITH HOLE

NP-CNGA 4 3 1 FS4

Sub: Titanium, Coarse Grains, Holes & Wiper

*Please refer to page B022.

INSERT CORNER RADIUS

INSERT NUMBER

STOCK STATUS

INSERT GRADES

Workpiece Material	Shape	Order Number	(ISO) Number	Corner Radius RE	Cutting Edge Effective Length LE	Corner R	CBN	Sub
H Hardened Materials								
K Cast Iron								
S Heat Resistant Alloy, Titanium Alloy								
Hardened Alloy								
NEW PETIT CUT								
NP-CNGA431-FS4		NP-CNGA120404FS4		0.16	0.71	0.08	●	
NP-CNGA432-FS4		NP-CNGA120408FS4		0.31	0.79	0.16	●	
NP-CNGA433-FS4		NP-CNGA120412FS4		0.47	0.87	0.25	●	
NP-CNGA431-GS4		NP-CNGA120404GS4		0.16	0.71	0.08	●	
NP-CNGA432-GS4		NP-CNGA120408GS4		0.31	0.79	0.16	●	
NP-CNGA433-GS4		NP-CNGA120412GS4		0.47	0.87	0.25	●	
NP-CNGA431-GA4		NP-CNGA120404GA4		0.16	0.71	0.08	●	
NP-CNGA432-GA4		NP-CNGA120408GA4		0.31	0.79	0.16	●	
NP-CNGA433-GA4		NP-CNGA120412GA4		0.47	0.87	0.25	●	
NP-CNGA431-GH4		NP-CNGA120404GH4		0.16	0.71	0.08	●	
NP-CNGA432-GH4		NP-CNGA120408GH4		0.31	0.79	0.16	●	
NP-CNGA433-GH4		NP-CNGA120412GH4		0.47	0.87	0.25	●	
NP-CNGA431-TS4		NP-CNGA120404TS4		0.16	0.71	0.08	●	
NP-CNGA432-TS4		NP-CNGA120408TS4		0.31	0.79	0.16	●	
NP-CNGA433-TS4		NP-CNGA120412TS4		0.47	0.87	0.25	●	
NP-CNGA431-TA4		NP-CNGA120404TA4		0.16	0.71	0.08	●	
NP-CNGA432-TA4		NP-CNGA120408TA4		0.31	0.79	0.16	●	
NP-CNGA433-TA4		NP-CNGA120412TA4		0.47	0.87	0.25	●	
NP-CNGA431-TM4		NP-CNGA120404TM4		0.16	0.71	0.08	●	
NP-CNGA432-TM4		NP-CNGA120408TM4		0.31	0.79	0.16	●	
NP-CNGA433-TM4		NP-CNGA120412TM4		0.47	0.87	0.25	●	
NP-CNGA431-FSWS4		NP-CNGA120404FSWS4		0.16	0.71	0.08	●	
NP-CNGA432-FSWS4		NP-CNGA120408FSWS4		0.31	0.79	0.16	●	
NP-CNGA433-FSWS4		NP-CNGA120412FSWS4		0.47	0.87	0.25	●	
NP-CNGA431-GSWS4		NP-CNGA120404GSWS4		0.16	0.71	0.08	●	
NP-CNGA432-GSWS4		NP-CNGA120408GSWS4		0.31	0.79	0.16	●	
NP-CNGA433-GSWS4		NP-CNGA120412GSWS4		0.47	0.87	0.25	●	
NP-CNGA431-FS2		NP-CNGA120404FS2		0.08	0.67	0.04	●	
NP-CNGA432-FS2		NP-CNGA120408FS2		0.31	0.79	0.16	●	
NP-CNGA433-FS2		NP-CNGA120412FS2		0.47	0.87	0.25	●	
NP-CNGA431-GS2		NP-CNGA120404GS2		0.08	0.67	0.04	●	

* Please refer to page B012 before using the wiper insert.

Workpiece Material	Shape	Order Number	(ISO) Number	Corner Radius RE	Cutting Edge Effective Length LE	Corner R	CBN	Sub
H Hardened Materials								
K Cast Iron								
S Heat Resistant Alloy, Titanium Alloy								
Hardened Alloy								
NEW PETIT CUT								
NP-CNGA431-GS2		NP-CNGA120404GS2		0.08	0.71	0.04	●	
NP-CNGA432-GS2		NP-CNGA120408GS2		0.31	0.79	0.16	●	
NP-CNGA433-GS2		NP-CNGA120412GS2		0.47	0.87	0.25	●	
NP-CNGA431-GA2		NP-CNGA120404GA2		0.08	0.71	0.04	●	
NP-CNGA432-GA2		NP-CNGA120408GA2		0.31	0.79	0.16	●	
NP-CNGA433-GA2		NP-CNGA120412GA2		0.47	0.87	0.25	●	
NP-CNGA431-GH2		NP-CNGA120404GH2		0.08	0.71	0.04	●	
NP-CNGA432-GH2		NP-CNGA120408GH2		0.31	0.79	0.16	●	
NP-CNGA433-GH2		NP-CNGA120412GH2		0.47	0.87	0.25	●	
NP-CNGA431-TS2		NP-CNGA120404TS2		0.08	0.71	0.04	●	
NP-CNGA432-TS2		NP-CNGA120408TS2		0.31	0.79	0.16	●	
NP-CNGA433-TS2		NP-CNGA120412TS2		0.47	0.87	0.25	●	
NP-CNGA431-TA2		NP-CNGA120404TA2		0.08	0.71	0.04	●	
NP-CNGA432-TA2		NP-CNGA120408TA2		0.31	0.79	0.16	●	
NP-CNGA433-TA2		NP-CNGA120412TA2		0.47	0.87	0.25	●	
NP-CNGA431-TM2		NP-CNGA120404TM2		0.08	0.71	0.04	●	
NP-CNGA432-TM2		NP-CNGA120408TM2		0.31	0.79	0.16	●	
NP-CNGA433-TM2		NP-CNGA120412TM2		0.47	0.87	0.25	●	
NP-CNGA431-SF2		NP-CNGA120404SF2		0.08	0.71	0.04	●	
NP-CNGA432-SF2		NP-CNGA120408SF2		0.31	0.79	0.16	●	
NP-CNGA433-SF2		NP-CNGA120412SF2		0.47	0.87	0.25	●	
NP-CNGA431-SE2		NP-CNGA120404SE2		0.08	0.71	0.04	●	
NP-CNGA432-SE2		NP-CNGA120408SE2		0.31	0.79	0.16	●	
NP-CNGA433-SE2		NP-CNGA120412SE2		0.47	0.87	0.25	●	
NP-CNGA431-FSWS2		NP-CNGA120404FSWS2		0.08	0.71	0.04	●	
NP-CNGA432-FSWS2		NP-CNGA120408FSWS2		0.31	0.79	0.16	●	
NP-CNGA433-FSWS2		NP-CNGA120412FSWS2		0.47	0.87	0.25	●	
NP-CNGA431-FBWL2		NP-CNGA120404FBWL2		0.08	0.71	0.04	●	
NP-CNGA432-FBWL2		NP-CNGA120408FBWL2		0.31	0.79	0.16	●	
NP-CNGA433-FBWL2		NP-CNGA120412FBWL2		0.47	0.87	0.25	●	
NP-CNGA431-GSWS2		NP-CNGA120404GSWS2		0.08	0.71	0.04	●	
NP-CNGA432-GSWS2		NP-CNGA120408GSWS2		0.31	0.79	0.16	●	
NP-CNGA433-GSWS2		NP-CNGA120412GSWS2		0.47	0.87	0.25	●	
NP-CNGA431-GAWS2		NP-CNGA120404GAWS2		0.08	0.71	0.04	●	
NP-CNGA432-GAWS2		NP-CNGA120408GAWS2		0.31	0.79	0.16	●	
NP-CNGA433-GAWS2		NP-CNGA120412GAWS2		0.47	0.87	0.25	●	

* Please refer to page B012 before using the wiper insert.

B022 ●: USA Stock ●: Stocked in Japan

* Insert in one case

LEGEND FOR STOCK STATUS MARK is shown on the left hand page of each double-page spread.

PHOTO OF INSERT

PRODUCT NAME

PAGE REFERENCE

GRADES

TECHNICAL DATA

indicates reference pages, on the right hand page of each double-page spread.

EXTERNAL TURNING > C002 IDENTIFICATION > B003

BORING > E002 HONING > B009

B023

TURNING TOOLS

CBN & PCD INSERT STANDARDS

CBN & PCD INSERT GRADES

IDENTIFICATION	B002
CLASSIFICATION OF CBN & PCD GRADES	B004
INTRODUCTION OF CBN GRADES	B006
CBN	B008
HONING	B009
CBN BREAKER INSERT	B010
WIPER INSERT	B012
CBN GROOVING SERIES (GY)	B014
INTRODUCTION OF PCD (SINTERED DIAMOND) GRADES ...	B015
CLASSIFICATION OF CBN & PCD INSERTS	B016

STANDARD OF CBN TURNING INSERTS

NEGATIVE INSERTS WITH HOLE

CN TYPE	RHOMBIC 80°	B022
DN TYPE	RHOMBIC 55°	B025
SN TYPE	SQUARE 90°	B029
TN TYPE	TRIANGULAR 60°	B030
VN TYPE	RHOMBIC 35°	B032
WN TYPE	TRIGON 80°	B034

NEGATIVE INSERTS WITHOUT HOLE

CN TYPE	RHOMBIC 80°	B034
DN TYPE	RHOMBIC 55°	B035
RN TYPE	ROUND	B035
SN TYPE	SQUARE 90°	B036
TN TYPE	TRIANGULAR 60°	B036

POSITIVE INSERTS WITH HOLE

CC TYPE	RHOMBIC 80°	B037
CP TYPE	RHOMBIC 80°	B039
DC TYPE	RHOMBIC 55°	B040
TC TYPE	TRIANGULAR 60°	B042
TP TYPE	TRIANGULAR 60°	B043
VB TYPE	RHOMBIC 35°	B045
VC TYPE	RHOMBIC 35°	B046

POSITIVE INSERTS WITHOUT HOLE

SP TYPE	SQUARE 90°	B047
GY TYPE		B048

STANDARD OF PCD TURNING INSERTS

NEGATIVE INSERTS WITH HOLE

CN TYPE	RHOMBIC 80°	B049
DN TYPE	RHOMBIC 55°	B049
SN TYPE	SQUARE 90°	B050
TN TYPE	TRIANGULAR 60°	B050
VN TYPE	RHOMBIC 35°	B051

NEGATIVE INSERTS WITHOUT HOLE

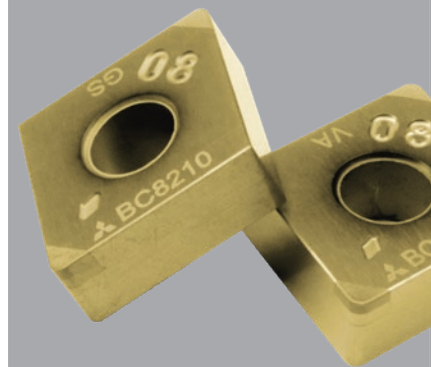
SN TYPE	SQUARE 90°	B052
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POSITIVE INSERTS WITH HOLE

CC TYPE	RHOMBIC 80°	B053
CP TYPE	RHOMBIC 80°	B053
DC TYPE	RHOMBIC 55°	B054
SP TYPE	SQUARE 90°	B054
TC TYPE	TRIANGULAR 60°	B055
TP TYPE	TRIANGULAR 60°	B056
VB TYPE	RHOMBIC 35°	B058
VC TYPE	RHOMBIC 35°	B058
WC TYPE	TRIGON 80°	B059
WP TYPE	TRIGON 80°	B059
DE TYPE	RHOMBIC 55°	B060
TE TYPE	TRIANGULAR 60°	B060
VD TYPE	RHOMBIC 35°	B061

POSITIVE INSERTS WITHOUT HOLE

SP TYPE	SQUARE 90°	B062
TP TYPE	TRIANGULAR 60°	B062



IDENTIFICATION

B

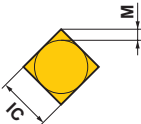
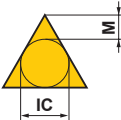
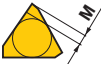
CBN & PCD TURNING INSERTS

Symbol	Insert Shape	
S	Square	
T	Triangular	
C	Rhombic 80°	
D	Rhombic 55°	
V	Rhombic 35°	
W	Trigon	
R	Round	

② Symbol for Insert Shape

BM	With Breaker
BF	With Breaker
NP	Petit Tip
No mark	Standard Type

① Insert Geometry

   				Triangular insert with a facet (Secondary Cutting Edge)						
④ Symbol for Tolerance Class				Detail of M Class Insert Tolerance						
Symbol	Tolerance of Nose Height M (inch)	Tolerance of Inscribed Circle IC (inch)	Tolerance of Thickness S (inch)	● Tolerance of Nose Height M (inch)						
				I.C.	Triangular	Square	Rhombic 80°	Rhombic 55°	Rhombic 35°	Round
				.250	±.003	±.003	±.003	±.004	±.0063	—
				.375	±.003	±.003	±.003	±.004	±.0063	—
G	±.001	±.001	±.005	.500	±.005	±.005	±.005	±.006	—	—
M*	±.003 – ±.0063	±.002 – ±.003	±.005	● Tolerance of Inscribed Circle IC (inch)						
				I.C.	Triangular	Square	Rhombic 80°	Rhombic 55°	Rhombic 35°	Round
				.250	±.002	±.002	±.002	±.002	±.002	—
				.375	±.002	±.002	±.002	±.002	±.002	±.002
				.500	±.003	±.003	±.003	±.003	—	±.003
*As a rule, the sides of these inserts are as sintered. Tolerance differs with insert size. For the accuracy of class M, refer to the table on the right.										
④ Symbol for Tolerance Class										

④ Symbol for Tolerance Class

INCH	① NP	-	② C	N	④ G	A
METRIC	NP	-	C	N	G	A

Symbol	Relief Angle
B	5° 
C	7° 
D	15° 
E	20° 
N	0° 
P	11° 

③ Symbol for Relief Angle

⑤ Symbol for Chipbreaker and Clamping System											
Inch			Metric								
Figure	I.C. .250" and over	I.C. under .250"	Symbol	Hole	Hole Configuration	Chip Breaker	Figure	Symbol	Hole	Hole Configuration	Chip Breaker
	A	D	W	With Hole	Cylindrical Hole + One Countersink (40–60°)	No		A	With Hole	Cylindrical Hole	No
	M	P	T	With Hole	One Countersink (40–60°)	One Sided		M	With Hole	Cylindrical Hole	One Sided
	N	E	B	With Hole	Cylindrical Hole + One Countersink (70–90°)	No		N	Without Hole	—	No
Special Design	X	X	H	With Hole	One Countersink (70–90°)	One Sided		X	—	—	—

⑤ Symbol for Chipbreaker and Clamping System

Inch		Diameter of Inscribed Circle (inch)	Metric						
I.C. .250" and over	I.C. under .250"								
	1.2	.156		02		04	03	03	06
	1.5	.187		L3	08	05	04	04	08
	1.8	.219		03	09	06	05	05	09
2		.250		04	11	07	06	06	11
2.5		.313		05	13	09	08	07	13
3		.375	09	06	16	11	09	09	16
4		.500	12	08	22	15	12	12	22

⑥ Symbol for Insert Size

Inch		Thickness (inch)	Metric
I.C. .250" and over	I.C. under .250"		
—	0.9	.055	S1
—	1	.063	01
—	1.1	.070	T0
—	1.5	.094	02
—	1.8	.109	T2
2	—	.125	03
2.5	—	.156	T3
3	—	.187	04

⑦ Symbol for Insert Thickness

⑥	⑦				
4	3	1	GA	WS	2
12	04	04	GA	WS	2

⑧ Symbol for Insert Corner Configuration		
Inch	Corner Radius (inch)	Metric
0.5	.008	02
1	.016	04
2	.031	08
3	.047	12
4	.063	16

⑨ Application (Honing)	
F FA FB FS	Continuous Cutting
G GA GB GH GS GN	General Cutting
T TA TH TS	Interrupted Cutting
SF SE	Edge Treatment for Sintered Alloy

⑩ Wiper	
WS	For High Rigidity Work Material
WL	For Deflection and Vibration Prevention
No mark	Without Wiper

⑪ Number of Tips	
2	2
3	3
⋮	⋮
No mark	1

Please refer to page B009 for further information.

CLASSIFICATION OF CBN & PCD GRADES

UNCOATED CBN MATERIALS

CBN sintered material based cutting tools are produced by binding CBN (cubic Boron Nitride) and ceramic. Its hardness is next to diamond and it is sintered under ultra-high pressure and high temperature.

CBN has a lower affinity to iron than diamond. The low affinity and high hardness properties mean that sintered CBN delivers a superior cutting performance especially during high-speed machining of materials such as hardened steel, cast iron and sintered alloys, etc.

B

CBN & PCD TURNING INSERTS

COATED CBN MATERIALS

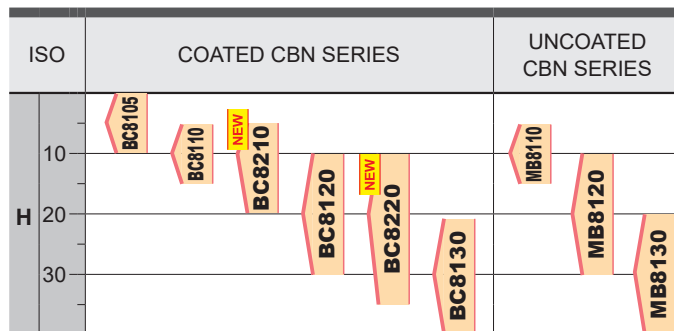
Mitsubishi Materials achieves longer tool life by using a unique "particle-activated sintering method" and combines it with an increased cutting edge strength. This specially developed PVD ceramic coating for CBN grades has a high crater wear resistance, longer tool life, and improved machine efficiency that exceed the conventional CBN grades.

PCD MATERIALS (Sintered Diamond)

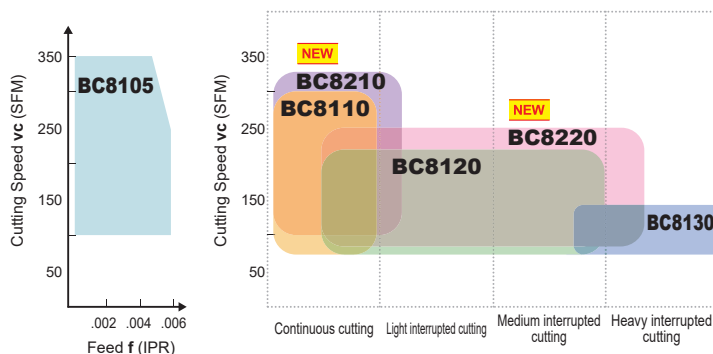
Suitable for cutting materials such as non ferrous metals and fiber reinforced plastics (FRP) including aluminum alloys. It supports ultra-high-speed finish cutting.

Workpiece materials for turning grades/application area

Hardened Steel

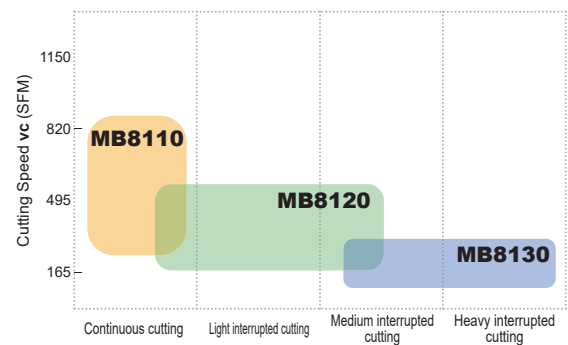


COATED CBN MATERIALS



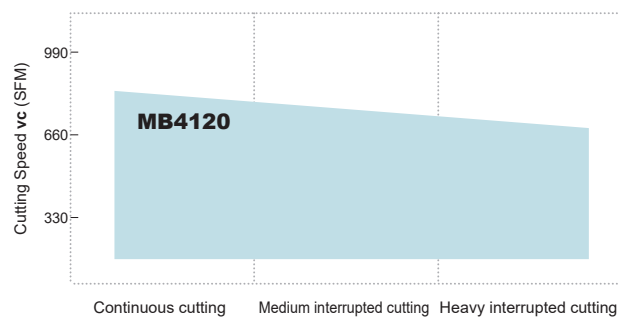
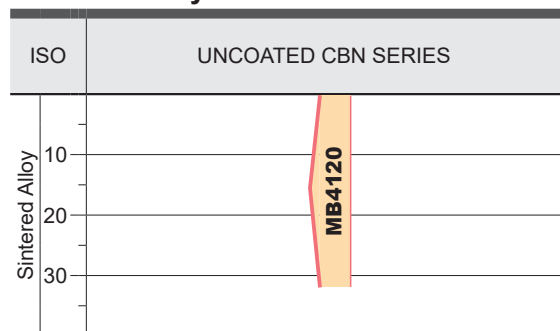
Suitable for finishing with surface roughness Ra .024 pinch or Rz .094 pinch or less.

UNCOATED CBN MATERIALS



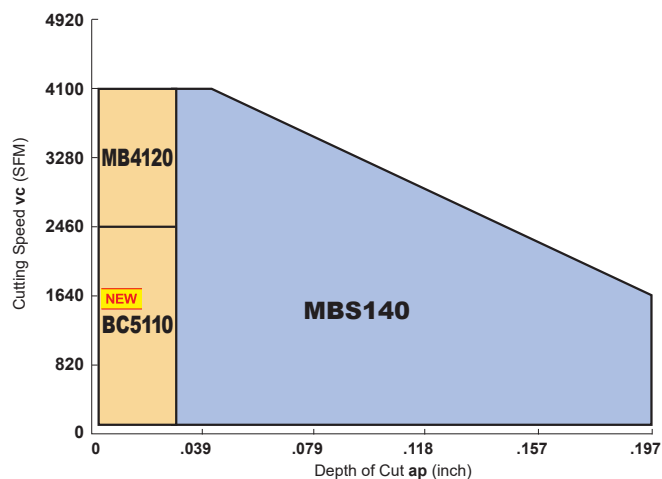
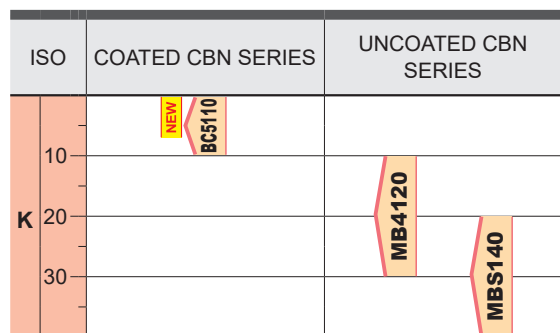
Coated CBN Grades BC8200, BC8100 and Uncoated CBN Grade MB8100 for high hardness steel machining are available in a wide range of areas from finishing to continuous cutting of hardened steels and strongly interrupted machining.

Sintered Alloys



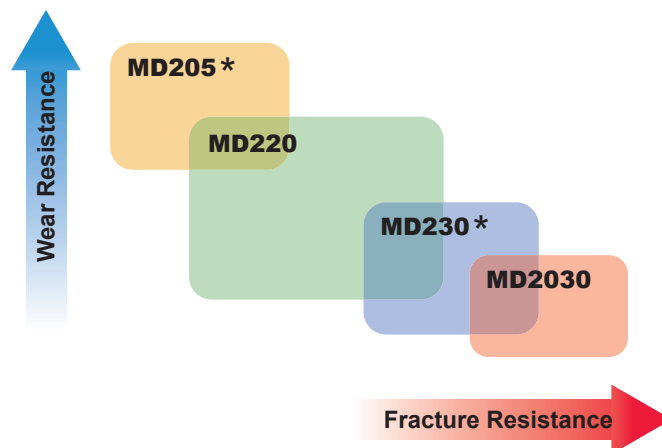
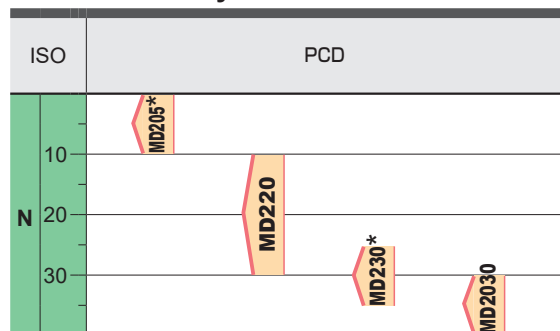
The CBN grade MB4120 for sintered alloys and cast iron cutting can be used widely from continuous cutting to interrupted cutting in the machining of cast iron and sintered alloys for valve mechanism parts and oil pump parts.

Cast Iron



Lineup of grades available from general cutting to cutting of deep depths for high efficiency machining.

Aluminum Alloys



Suitable for cutting materials such as non ferrous metals and fiber reinforced plastics (FRP) including aluminum alloys. It supports ultra-high-speed finish cutting.

*MD205 and MD230 are produced-to-order products.

INTRODUCTION OF CBN GRADES

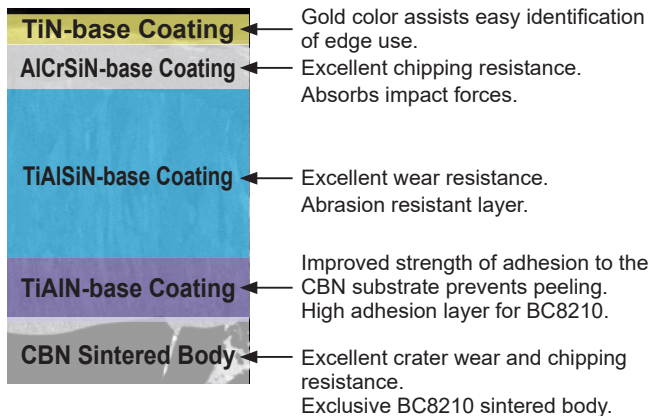
Coated CBN Grade for Machining of Hardened Steel

NEW BC8200 series

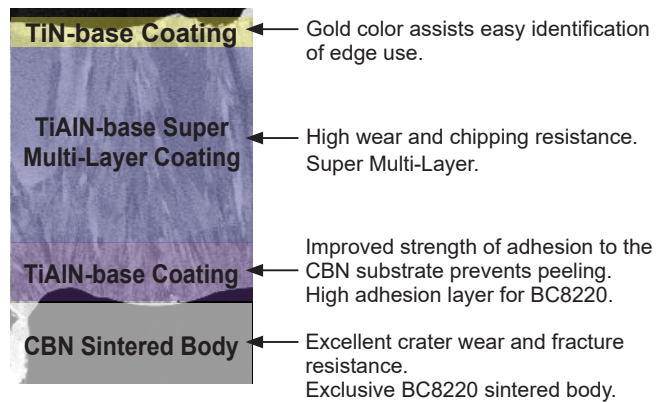
The new CBN substrate contains a new ultra micro-particle and heat resistant binder that suppress both chipping and crater wear which promotes longer tool life.

CBN & PCD TURNING INSERTS

BC8210 **NEW**

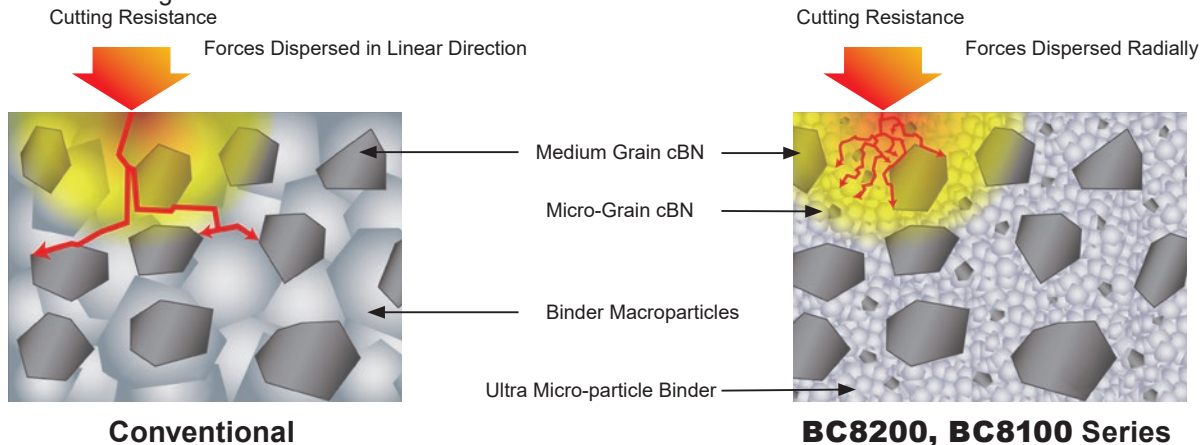


BC8220 **NEW**



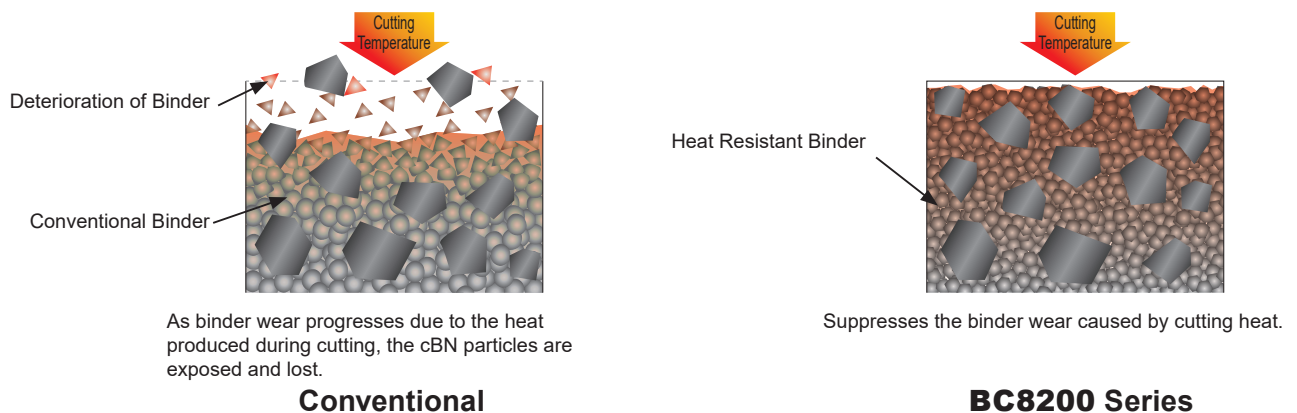
Ultra Micro-Particle Binder Prevents Sudden Defects

The ultra micro-particle binder cBN added to the CBN base material prevents linear crack development and avoids sudden fracturing.



Heat Resistant Binder Suppresses Crater Wear

By increasing the heat resistance of the binder, wear resistance due to the deterioration of the binder component increases, thereby suppressing crater wear, chipping, and fracturing.



Coated CBN Grade for Machining Cast Iron

NEW BC5110

BC5110 uses a tough substrate with a remarkably hard coating to provide excellent chipping and wear resistance.

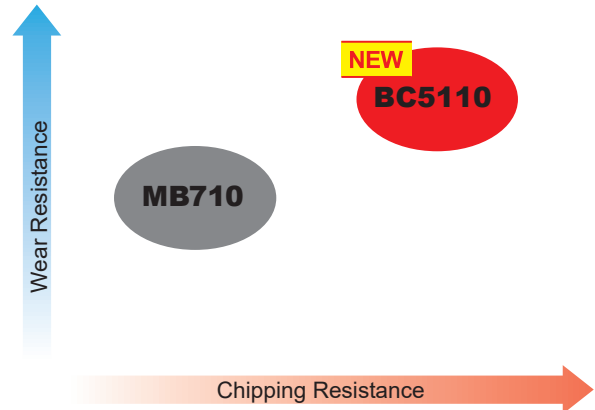
Excellent Chipping Resistance

Compared to conventional grades, the fine grain and high cBN content greatly improve chipping resistance and provide stability and long tool life.

Excellent Wear Resistance Coating

The hard ceramic coating layer provides excellent surface finishes as well as wear and notch resistance during continuous cutting.

Additionally, chipping and peeling of the coating layer is suppressed due to the improved bonding strength to the cBN substrate.



B

CBN & PCD TURNING INSERTS

FOR CYLINDER LINER

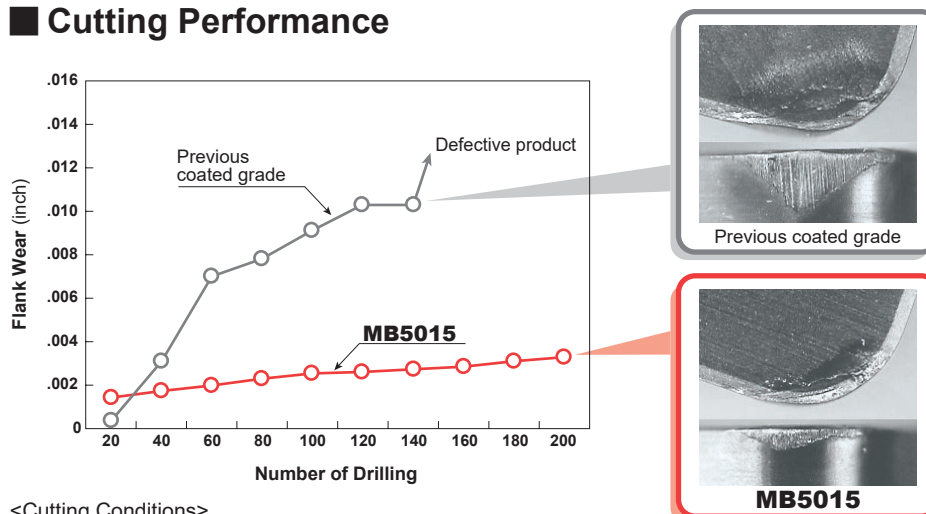
MB5015 *Produced to order only.

MB5015 is an exclusive grade for boring of centrifugal casting cylinder liners in semi finishing or finishing applications with high wear resistance.

Recommended Cutting Conditions

Work Material	Cutting Mode	Cutting Speed vc (SFM)				Feed f (IPR)	Depth of Cut ap (inch)	Cutting Mode
		330	1640	3280	4920			
Centrifugal casting	Cast Iron					-.012(Finishing) -.031(Semi-finishing)	-.002(Finishing) -.008(Semi-finishing)	Wet Cutting

Cutting Performance



<Cutting Conditions>

Work material : AISI No 30 B (Centrifugal casting) $\phi 2.48$ "

Cutting Speed : $vc=2625$ SFM Feed : $f=.014$ IPR Depth of Cut : $ap=.001$ inch

Component : Centrifugal casting Cylinder liner Hole Depth : 3.94 inch

CBN

- Suitable for high speed finishing of heat treated steel, sintered ferrous alloy and cast iron.
- Low affinity to iron, thus good surface finishes are possible.
- Grinding can be replaced by machining.



●Heat Treated Steel

Work Material		Type	Cutting Mode	Recommended Grade	Recommended Cutting Conditions			
					Cutting Speed vc (SFM)	Feed f (IPR)	Depth of Cut ap (inch)	Cutting Mode
Structural Steel Esp. Carburized Steel High Alloy Steel	35—65 HRC	Coated	High speed finishing cutting	BC8105	820 (330—1150)	≤.006	≤.008	Dry,Wet
			Continuous cutting for general purpose	NEW BC8210	655 (330—985)	≤.008	≤.014	Dry,Wet
				BC8110				
				NEW BC8220	655 (330—755)	≤.012	≤.031	Dry,Wet
				BC8120				
		Medium interrupted cutting	NEW BC8220	490 (195—655)	≤.008	≤.012	Dry,Wet	
			BC8120					
		Interrupted cutting	BC8130	390 (195—490)	≤.008	≤.012	Dry,Wet	
		Non-coated	Continuous cutting for general purpose	MB8110	655 (330—820)	≤.008	≤.012	Dry,Wet
				MB8120	490 (260—720)	≤.008	≤.020	Dry,Wet
Medium interrupted cutting	MB8120		425 (280—590)	≤.008	≤.012	Dry,Wet		
Interrupted cutting	MB8130		330 (195—490)	≤.008	≤.012	Dry,Wet		

●Cast Iron

Work Material		Work Structure	Cutting Speed vc (SFM)					Feed f (IPR)	Depth of Cut ap (inch)	Cutting Mode
			820	1640	2460	3280	4100			
Gray Cast Iron	AISI No 35 B	Ferritic + Pearlitic	BC5110	MBS140				— .020	— .039	Dry,Wet
	AISI No 45 B	Pearlitic		MB4120					MBS140 — .200	
Alloy Cast Iron		Pearlitic						— .016	— .020	Dry,Wet
Ductile Cast Iron	AISI 60-40-18	Ferritic	MB4120					— .016	— .020	Dry,Wet
	AISI 100-70-03	Ferritic + Pearlitic								

●Sintered Alloy

Work Material	Recommended Grade	Recommended Cutting Conditions		
		Cutting Speed vc (SFM)	Feed f (IPR)	Depth of Cut ap (inch)
General Sintered Alloy	MB4120	590 (260—985)	— .008	— .012
High Density Sintered Alloy	MB4120	490 (260—755)	— .008	— .012
Sintered Alloy	MB4120	425 (260—590)	— .008	— .012

●Valve Seat

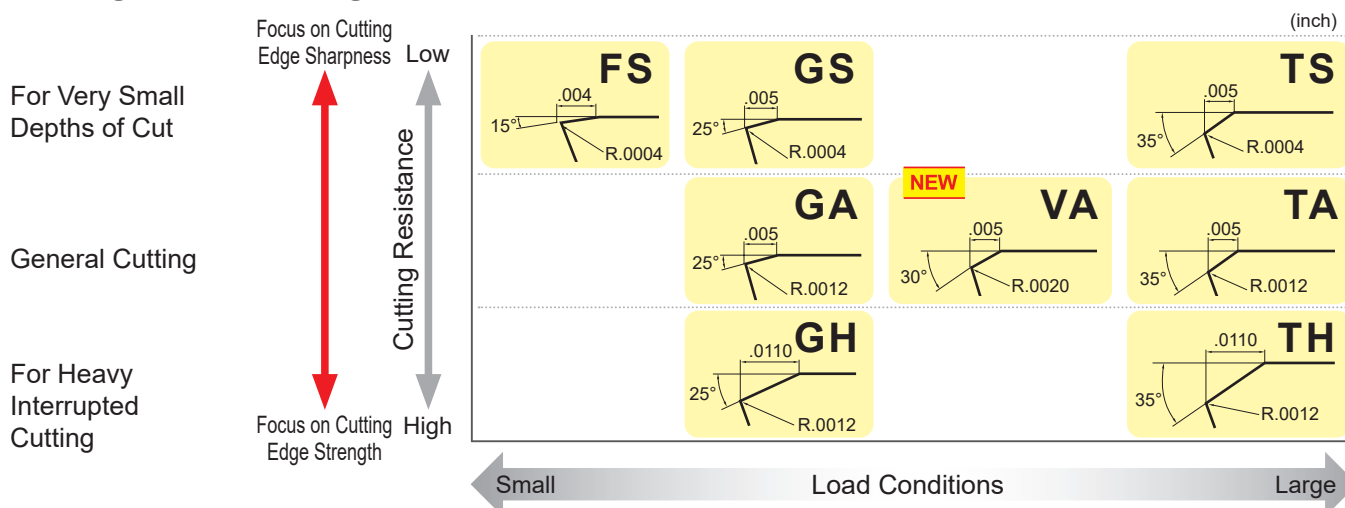
Amount of Hard Particles	None or Small	←————→		Large
Hardness of Workpiece (HV)	150	250	300	350
Plunge Cut	MB4120			
Traverse Cut	MB4120			

●Roll

Work Material	Grade	Recommended Cutting Conditions		
		Cutting Speed vc (SFM)	Feed f (IPR)	Depth of Cut ap (inch)
Cemented Carbide	MBS140	65 (30—100)	— .008	— .008

HONING

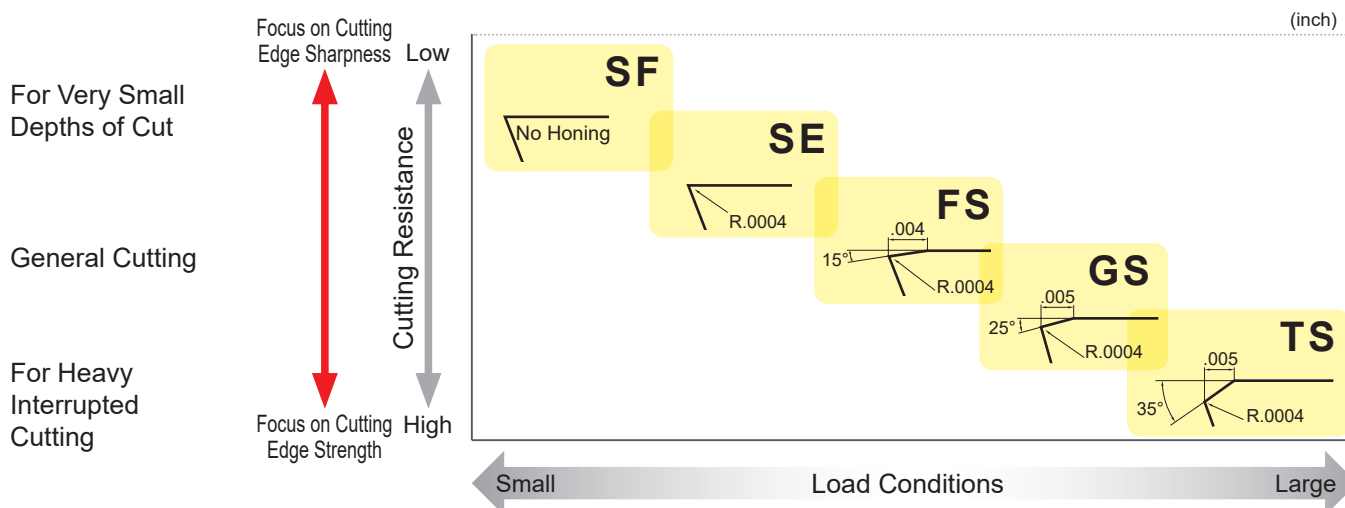
Honing for Machining Hardened Steel



B

CBN & PCD TURNING INSERTS

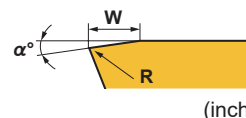
Honing for Machining Sintered Alloys



NP-CNGA120408- **G** **A** 2

Main Application

Edge Honing Type



	A			S			H			F			E		
	General			Vibration and burr control			High efficiency			Focus on dimensional precision			Chipping control		
	α	W	R	α	W	R	α	W	R	α	W	R	α	W	R
F Continuous cutting	15°	.004	0	15°	.004	.0004	—	—	—	—	—	—	—	—	—
G General cutting	25°	.005	.0012	25°	.005	.0004	25°	.0110	.0012	—	—	—	—	—	—
V For high-speed, High feed cutting	30°	.005	.0020	—	—	—	—	—	—	—	—	—	—	—	—
T Interrupted cutting	35°	.005	.0012	35°	.005	.0004	35°	.0110	.0012	—	—	—	—	—	—
S High precision cutting	—	—	—	—	—	—	—	—	—	0°	0	0	0°	0	.0004

Conventional honing shapes

F honing : .004 inch×15°+R0 G honing : .005 inch×25°+R.0012 T honing : .005 inch×35°+R.0012

New Petit Cut Series

The surface area of the CBN sintered body has been optimized to allow for a lower price. Tool management is easier because repolishing is not required.

B009

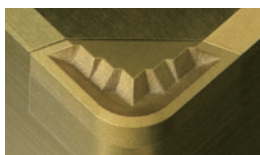
CBN BREAKER INSERT

Application Area

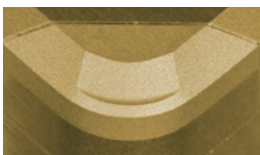
A BR breaker has been added to achieve better chip control at higher depths of cut. A versatile range of chip breakers are available for a wide range of applications.

B

CBN & PCD TURNING INSERTS



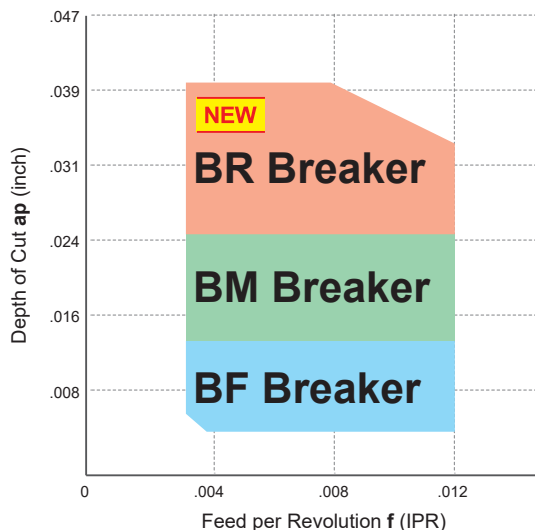
BR Breaker



BM Breaker



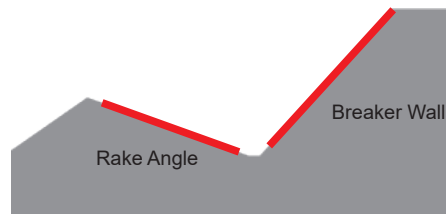
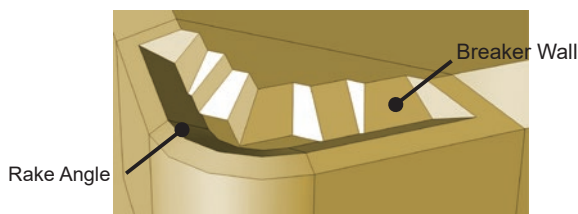
BF Breaker



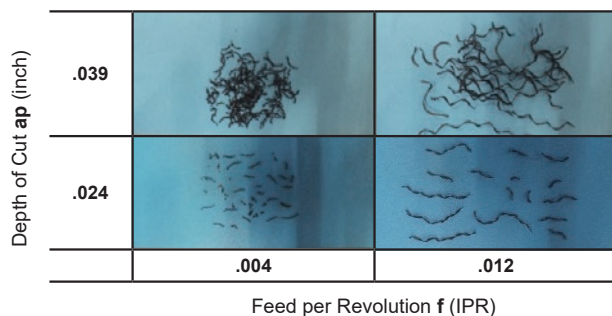
NEW BR Breaker (BC8220)

A reduced number of passes needed and improved chip control during high depth of cut. Chips are formed with the effect from the rake angle, and the multi stage chip breaker wall supports a wide range of cuts.

Recommended Cutting Conditions : $vc=260-655$ SFM, $f \leq .012$ IPR, $a_p=.024-.039$ inch



Achieves ideal chip control even at high depths of cut.

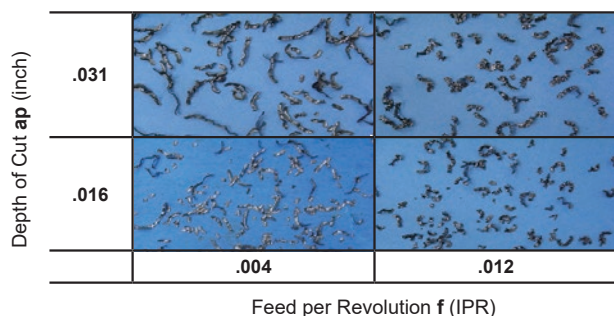
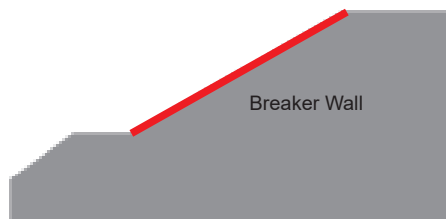
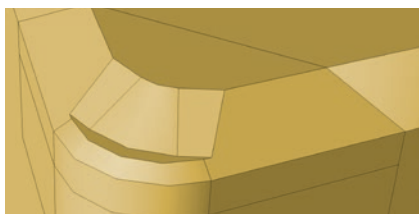


<Cutting Conditions>
 Workpiece Material : AISI 5120H (60 HRC)
 Insert : BR-CNGM432-TA2
 Cutting Speed : $vc= 655$ SFM
 Feed per Rev. : $f=.004$ IPR
 .012 IPR
 Depth of Cut : $a_p=.024$ inch
 .039 inch
 Cutting Mode : Dry Cutting

BM Breaker (BC8220)

Great chip control when machining at medium depths of cut. (.012-.031 inch)

Recommended Cutting Conditions : $vc=260-655$ SFM, $f \leq .012$ IPR, $ap=.012-.031$ inch



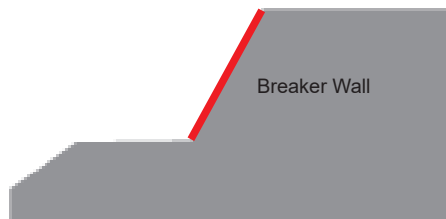
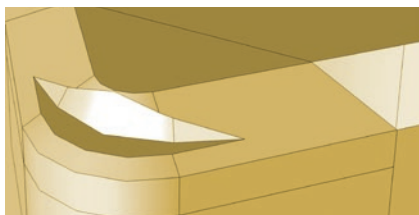
<Cutting Conditions>

Workpiece Material : JIS SCM415 (60 HRC)
 Insert : BM-CNGM432-TA2
 Cutting Speed : $vc=525$ SFM
 Feed per Rev. : $f=.004$ IPR
 .012 IPR
 Depth of Cut : $ap=.016$ inch
 .031 inch
 Cutting Mode : Dry Cutting

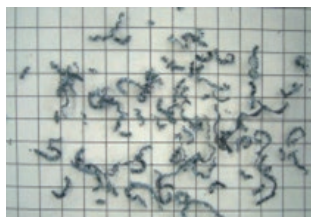
BF Breaker (BC8210, BC8220)

Achieves excellent chip control while finish cutting at depths of .012 inch or less.

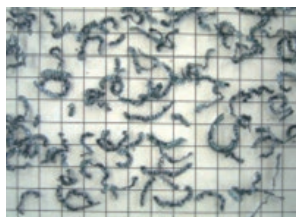
Recommended Cutting Conditions : $vc=260-655$ SFM, $f \leq .012$ IPR, $ap=.004-.012$ inch



External Turning



Boring



Cutting Speed : $vc = 330$ SFM
 Feed per Rev. : $f=.008$ IPR
 Depth of Cut : $ap = .012$ inch

Cutting Speed : $vc = 395$ SFM
 Feed per Rev. : $f = .008$ IPR
 Depth of Cut : $ap = .012$ inch

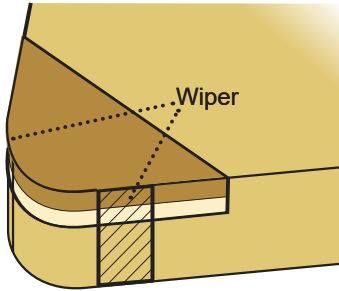
<Cutting Conditions>

Workpiece Material : JIS SCM415 (60 HRC)
 Insert : BF-CNGM432-TS2
 Cutting Mode : Dry Cutting

WIPER INSERT

B

CBN & PCD TURNING INSERTS



Improving Surface Finish

Under the same machining conditions as conventional 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

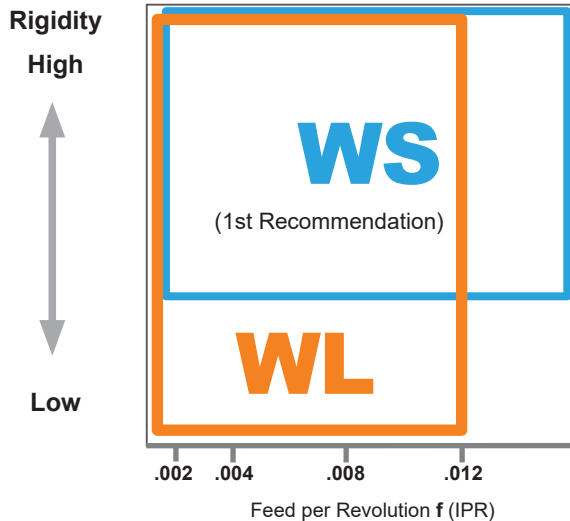
When changed to high feed conditions, the time required to cut one component is decreased, thus more parts can be machined with each insert. In addition, the high feed rate prevents rubbing, therefore, delaying the progression of wear and increasing the tool life of the insert.

Improving Chip Control

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

Application of Wiper Inserts

The most recommended wiper shape is the WS Wiper. If deflection or chatter occur, use the WL Wiper.

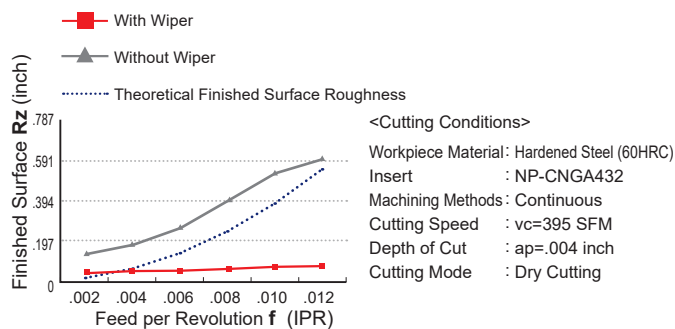


Examples of Low Rigidity:

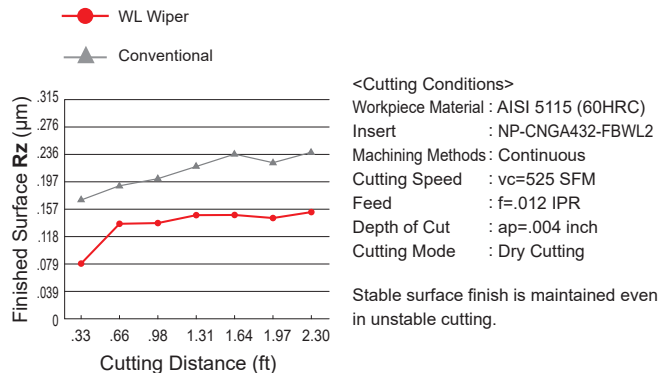
- When overhang length is long due to boring
- When the workpiece material has a small diameter

Cutting Performance

WL Wiper (External Turning)



WL Wiper (Boring)

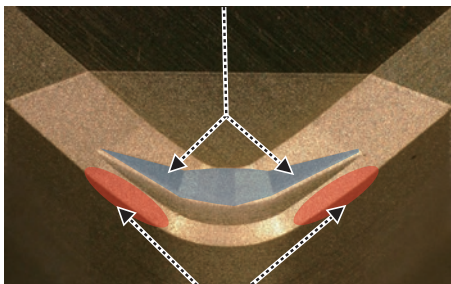


Combination of BF Breaker and WS Wiper Insert

CNGM and DNGM types are now available with new inserts that combine a BF chip breaker with a WS wiper Insert.
(BC8210 : BF-○CNGM○TSWS2, BC8220 : BF-○CNGM○TAWS2)

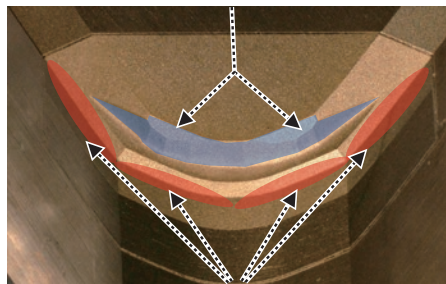
It is effective for chip control and an improvement of finished surface roughness without worrying about the hand of the tool even when continuous external or internal turning and facing.

BF breaker



WL Wiper (No hand)
BF-CNGM120408TSWS2

BF breaker



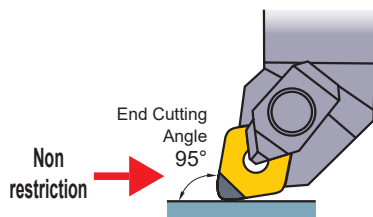
WL Wiper (No hand)
BF-DNGM150412TAWS2

■ Precautions when Using Wiper Inserts

When Using CNGM Type

No Restriction for Holders

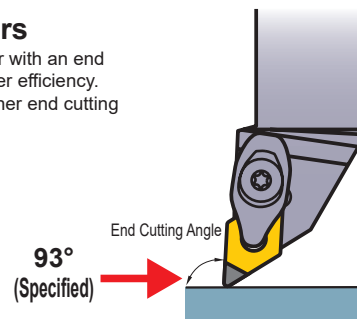
A standard holder can be used.
(★A double clamp, high rigidity tool is recommended.)



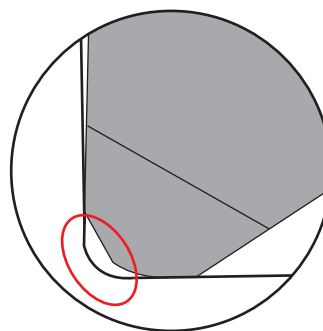
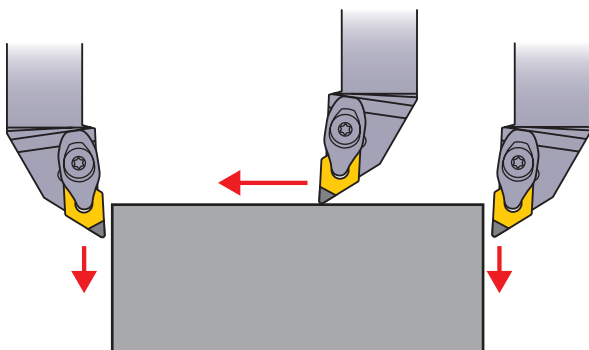
When Using DNGM Type

Restriction for Holders

Use a PDJN holder or DDJN holder with an end cutting angle of 93° to improve wiper efficiency.
There is no wiper efficiency with other end cutting angles (60°, 90°, 107°, etc.).



Displays great wiper efficiency when machining the end face and outer diameter in both right-hand and left-hand machining.



*The DNGM type is not suitable for machining the R that connects the end face and the outer diameter because it will leave uncut parts.

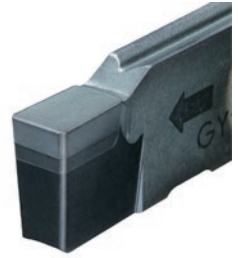
CBN GROOVING SERIES

(GY)

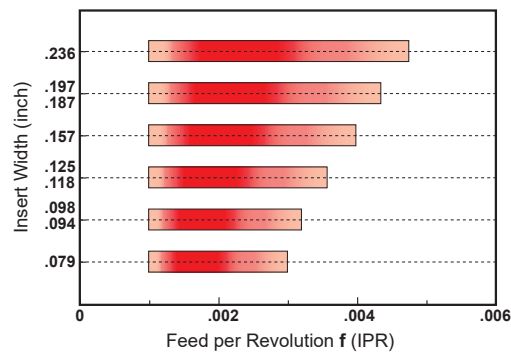
BC8110 coating for continuous machining of hardened steel has been added to GY inserts.

GY is a grooving tool series that achieves high rigidity with the "Tri-Lock System". (See page F004 for more details.)

BC8110 coating with excellent wear resistance has been added. Compared to conventional coating, it displays excellent wear resistance that achieves a longer tool life. A blade width of 6.0 has also been added to the BC8110 lineup.



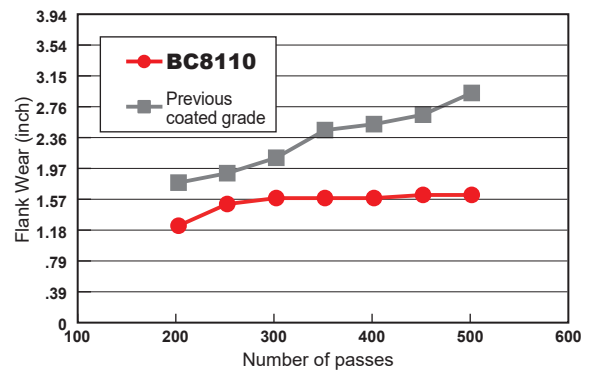
Recommended Cutting Conditions



Workpiece Material	Hardness	Grade	Cutting Speed vc (SFM)	Cutting Mode
H Hardened Steel	35—65HRC	BC8110	330 (195—395)	Dry, Wet

Cutting Performance

Tool life evaluation for the GY holder



<Cutting Conditions>

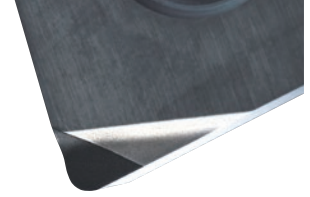
Insert : GY1G0200D020N-GFGS
 Workpiece Material : Hardened Steel (60HRC)
 Cutting Speed : vc=395 SFM
 Feed : f=.004 IPR
 Depth of Cut : ap=.012 inch
 Cutting Mode : Dry Cutting

Application Example

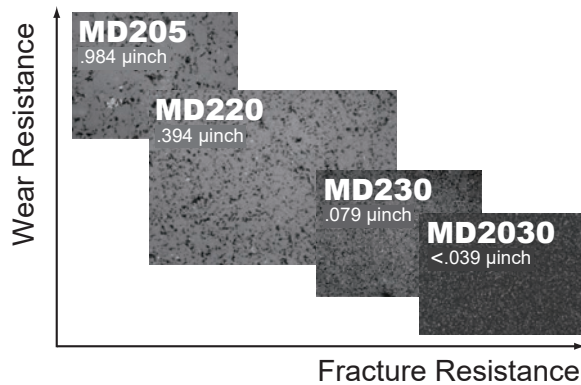
Insert	GY1G0300F020N-GFGS (Grade : BC8110)	
Workpiece Material	 SNCM230H (58—62HRC)	
Component	Input shaft	
Cutting Conditions	Cutting Speed vc (SFM)	425
	Feed f (IPR)	.004
Result	 Tool life over twice as long as conventional products	

INTRODUCTION OF PCD (SINTERED DIAMOND) GRADES

- Suitable for materials such as aluminum alloy, non ferrous metals, and fiber strengthened plastic.
- Suitable for extremely high speed finishing.



FEATURES



Grade	Features
MD205	* For Continuous Cutting Coarse grain diamond particles are sintered and wear resistance is excellent. Use when wear resistance with MD220 is insufficient.
MD220	Materials for General Machining Sintered medium grain diamond particles. Wear resistance and fracture resistance are superbly balanced. Applicable to general finishing of non ferrous metals, non-metal cutting, and similar machining.
MD230	* For Interrupted Cutting Fine grain diamond particles are used. Fracture resistance and cutting edge sharpness are excellent. Use when fracture and a high quality finished surface is demanded with MD220.
MD2030	For Heavy Interrupted Cutting Strong sintering of ultra micro-grain PCD particles provides exceptional fracture resistance. Chipping during high-speed finish turning can be controlled.

*MD205 and MD230 are produced-to-order products.

SELECTION STANDARD

TURNING

Work Material	Recommended Grade			Recommended Cutting Conditions		
	MD205	MD220	MD2030	Cutting Speed v_c (SFM)	Feed f (IPR)	Depth of Cut a_p (inch)
Aluminum Alloy (Si $\leq$ 12%)		◎	○	2625 (655—3935)	— .008	— .039
Aluminum Alloy (Si $\geq$ 13%)	◎	○		1970 (655—3280)	— .008	— .039
Copper Alloy		◎		2295 (655—3935)	— .008	— .039
Strengthened Plastic		◎		1970 (330—3280)	— .016	— .039
Glass Fiber Reinforced Plastic		◎		1640 (330—2625)	— .010	— .039
Carbon	○	◎		1310 (330—1970)	— .012	— .039
Ceramics		○		165 (100—260)	— .004	— .039
Hard Rubber		◎		1970 (985—2625)	— .006	— .039
Wood Inorganic Board		◎		4265 (985—13120)	— .016	—
Cemented Carbide	◎	○		50 (15—65)	— .008	— .020

Note1) ◎ : 1st recommendation. ○ : 2nd recommendation

Note2) Not suitable for steel.

NEW PETIT CUT INSERT SERIES

- **Economical** Low cost is achieved by reducing the area of the diamond sintered body. In addition, tool management is economical because regrounding is unnecessary.
- **With Breaker** Chip breaker formed directly on the PCD portion delivers superior chip control.
- Corner R.002" inserts are available, making it suitable for the machining of small work corner radii.

B

CBN & PCD TURNING INSERTS

CLASSIFICATION

NEGATIVE INSERTS WITH HOLE

Product Name	Type	Tolerance	Breaker Name and Cross Section	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°
NEW PETIT CUT	Multi-Corner Type Double-Sided	G	Flat Top	NP-CNGA_04  ↻ B022	NP-DNGA_04  ↻ B025		NP-TNGA_06  ↻ B030	NP-VNGA_04  ↻ B032	NP-WNGA_06  ↻ B034
	Multi-Corner Type Double-Sided With Wiper		Flat Top	NP-CNGA_0W04  ↻ B022					
	Multi-Corner Type Single Sided		Flat Top	NP-CNGA_02  ↻ B023	NP-DNGA_02  ↻ B026	NP-SNGA_02  ↻ B029	NP-TNGA_03  ↻ B030	NP-VNGA_02  ↻ B032	NP-WNGA_03  ↻ B034
	Multi-Corner Type Single Sided With Wiper		Flat Top	NP-CNGA_0W02  ↻ B023	NP-DNGA_0W02J_R/L  ↻ B028				NP-WNGA_0W03  ↻ B034
	Multi-Corner Type Single Sided With Breaker		BF	BF-CNGM_02  ↻ B025	BF-DNGM_02  ↻ B028				
	Multi-Corner Type Single Sided With Breaker With Wiper		BF	BF-CNGM_0WS2  ↻ B025	BF-DNGM_0WS2  ↻ B028				
	Multi-Corner Type Single Sided With Breaker		BM	BM-CNGM_02  ↻ B025	BM-DNGM_02  ↻ B028		BM-TNGM_03  ↻ B031		
	Multi-Corner Type Single Sided With Breaker		BR	BR-CNGM_02  ↻ B025	BR-DNGM_02  ↻ B028				
	One-Corner Type Single Sided With Breaker	M	R/L-F	NP-CNMM_R-F  ↻ B049	NP-DNMM_R-F  ↻ B049	NP-SNMM_R-F  ↻ B050	NP-TNMM_R-F  ↻ B050	NP-VNMM_R-F  ↻ B051	

B

CBN & PCD TURNING INSERTS

NEGATIVE INSERTS WITH HOLE

Product Name	Type	Tolerance	Breaker Name and Cross Section	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°
STANDARD	Multi-Corner Type Double-Sided (Solid CBN)	G	Flat Top 	CNGA  ➔ B024		SNGA  ➔ B029	TNGA  ➔ B031		
	One-Corner Type Single Sided	M	Flat Top 	CNMA  ➔ B049					
	One-Corner Type Single Sided	G	Flat Top 		DNGA  ➔ B049	SNGA  ➔ B050	TNGA  ➔ B050	VNGA  ➔ B051	

CBN & PCD TURNING INSERTS

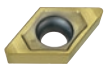
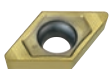
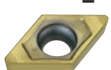
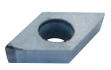
B

5° POSITIVE INSERTS WITH HOLE

Product Name	Type	Tolerance	Breaker Name and Cross Section	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Rhombic 35°	Trigon 80°
NEW PETIT CUT	Multi-Corner Type	G	Flat Top 					NP-VBGW_02  ➔ B045	
	One-Corner Type With Breaker		R-F 					NP-VBGT_R-F  ➔ B058	

CLASSIFICATION

7° POSITIVE INSERTS WITH HOLE

Product Name	Type	Tolerance	Breaker Name and Cross Section	Rhombic 80° 	Rhombic 55° 	Square 90° 	Triangular 60° 	Rhombic 35° 	Trigon 80° 
NEW PETIT CUT	Multi-Corner Type	G	Flat Top 	NP-CCGW_02  ↻ B038	NP-DCGW_02  ↻ B040		NP-TCGW_03  ↻ B042	NP-VCGW_02  ↻ B046	
	Multi-Corner Type With Wiper		Flat Top 	NP-CCGW_0W02  ↻ B038					
	Multi-Corner Type With Breaker		BF 	BF-CCGT_02  ↻ B038	BF-DCGT_02  ↻ B041				
	Multi-Corner Type With Breaker		BM 	BM-CCGT_02  ↻ B038	BM-DCGT_02  ↻ B041				
	One-Corner Type With Breaker	M	Breaker 	NP-CCMH  ↻ B053					
	One-Corner Type	G	Flat Top 	NP-CCGW_0  ↻ B038					
	One-Corner Type	M	Flat Top 	NP-CCMW  ↻ B053					
	One-Corner Type With Breaker		R/L-F 		NP-DCMT_R/L-F  ↻ B054				
	One-Corner Type With Breaker	G	R-F 					NP-VCGT_R-F  ↻ B058	
STANDARD	One-Corner Type	M	Flat Top 	CCMW  ↻ B053	DCMW  ↻ B054		TCMW TCGW  ↻ B055	VCGW  NEW ↻ B058	WCMW  ↻ B059
		G							

B

CBN & PCD TURNING INSERTS

11° POSITIVE INSERTS WITH HOLE

Product Name	Type	Tolerance	Breaker Name and Cross Section	Rhombic 80° 	Rhombic 55° 	Square 90° 	Triangular 60° 	Rhombic 35° 	Trigon 80° 
NEW PETIT CUT	Multi-Corner Type	G	Flat Top 	NP-CPGB_02  ↻ B039			NP-TPGB_03  ↻ B044		
	One-Corner Type With Breaker		Breaker 	NP-CPMH  ↻ B053					
	One-Corner Type With Breaker	M	R/L-F 				NP-TPMX_R/L-F  ↻ B056		
	One-Corner Type With Breaker		R/L-F 				NP-TPMH_R/L-F  ↻ B056		
STANDARD	One-Corner Type With Breaker		Breaker 	CPGT  ↻ B053					WPGT  ↻ B059
	One-Corner Type	G	Flat Top 			SPGX  ↻ B054	TPGX  ↻ B057		
	One-Corner Type With Breaker		R/L-F 				TPGT/V_R/L-F  ↻ B056, B057		

B

CBN & PCD TURNING INSERTS

CLASSIFICATION

15° POSITIVE INSERTS WITH HOLE

Type	Tolerance	Breaker Name and Cross Section	Rhombic 35°	
One-Corner Type (For Aluminum) With Breaker	G	R/L 	VDGX_R/L-F  ➔ B061	

20° POSITIVE INSERTS WITH HOLE

Type	Tolerance	Breaker Name and Cross Section	Rhombic 55°	Triangular 60°
One-Corner Type (For Aluminum) With Breaker	G	R/L 		TEGX_R/L  ➔ B060
One-Corner Type (For Aluminum) With Breaker		R/L-F 	DEGX_R/L-F  ➔ B060	
One-Corner Type (For Aluminum)		Flat Top 		TEGX  ➔ B060

NEGATIVE INSERTS WITHOUT HOLE

Type	Tolerance	Breaker Name and Cross Section	Rhombic 80°	Rhombic 55°	Square 90°	Triangular 60°	Round
One-Corner Type Single Sided	G	Flat Top			SNGN		
Multi-Corner Type Double-Sided (Solid CBN)		Flat Top	CNGN	DNGN	SNGN	TNGN	RNGN
			 ➔ B034	 ➔ B035	 ➔ B036	 ➔ B036	 ➔ B035

11° POSITIVE INSERTS WITHOUT HOLE

Type	Tolerance	Breaker Name and Cross Section	Square 90°	Triangular 60°
Multi-Corner Type	G	Flat Top	NP-SPGN_02	
One-Corner Type		Flat Top	SPGN	TPGN
			 ➔ B062	 ➔ B062

SPECIAL PURPOSE INSERTS

Tool Holder Type	Tolerance	Inserts
GY Type	G	GY_GFGS  ➔ B048

CBN TURNING INSERTS [NEGATIVE]



NP-CNGA 4 3 1 FS4

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

CBN

B

CBN TURNING INSERTS

NEG

WITH HOLE

C

D

R

S

T

V

W

Workpiece Material	H	Hardened Materials															
	K	Cast Iron															
	S	Heat Resistant Alloy, Titanium Alloy															
		Sintered Alloy															
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN					CBN		Solid CBN					
					NEW BC8210	BC8220	BC8105	BC8110	BC8120	BC8130	NEW BC5110	MB8110	MB8120	MB8130	MB8140		
	NP-CNGA431-FS4	NP-CNGA120404FS4	.016	.071	●		●	★	★		●						
	NP-CNGA432-FS4	NP-CNGA120408FS4	.031	.079	★		●	★	★		●						
	NP-CNGA433-FS4	NP-CNGA120412FS4	.047	.087	★		●	★	★		●						
	NP-CNGA431-GS4	NP-CNGA120404GS4	.016	.071	★		●	★									
	NP-CNGA432-GS4	NP-CNGA120408GS4	.031	.079	●		●	★									
	NP-CNGA433-GS4	NP-CNGA120412GS4	.047	.087	★		●	★									
	NP-CNGA431-GA4	NP-CNGA120404GA4	.016	.071		●			★	★		●					
	NP-CNGA432-GA4	NP-CNGA120408GA4	.031	.079		●			★	★		●					
	NP-CNGA433-GA4	NP-CNGA120412GA4	.047	.087		●			★	★		●					
	NP-CNGA431-GH4	NP-CNGA120404GH4	.016	.071	★	★		●	●	●							
	NP-CNGA432-GH4	NP-CNGA120408GH4	.031	.079	●	●		●	●	●							
	NP-CNGA433-GH4	NP-CNGA120412GH4	.047	.087	★	★		●	●	●							
	NEW NP-CNGA431-VA4	NP-CNGA120404VA4	.016	.071		★											
	NEW NP-CNGA432-VA4	NP-CNGA120408VA4	.031	.079		●											
	NEW NP-CNGA433-VA4	NP-CNGA120412VA4	.047	.087		●											
	NP-CNGA431-TS4	NP-CNGA120404TS4	.016	.071	★			★									
	NP-CNGA432-TS4	NP-CNGA120408TS4	.031	.079	★			★									
	NP-CNGA433-TS4	NP-CNGA120412TS4	.047	.087	★			★									
	NP-CNGA431-TA4	NP-CNGA120404TA4	.016	.071		★			★	★		●	●				
	NP-CNGA432-TA4	NP-CNGA120408TA4	.031	.079		★			★	★		●	●				
	NP-CNGA433-TA4	NP-CNGA120412TA4	.047	.087		★			★	★		●	●				
	NP-CNGA431-TH4	NP-CNGA120404TH4	.016	.071					●	★			●				
	NP-CNGA432-TH4	NP-CNGA120408TH4	.031	.079		★			●	★			●				
	NP-CNGA433-TH4	NP-CNGA120412TH4	.047	.087		★			●	★			●				
NEW PETIT CUT (With Wiper) *	NP-CNGA431-FSWS4	NP-CNGA120404FSWS4	.016	.071	★		●	●	●		●						
	NP-CNGA432-FSWS4	NP-CNGA120408FSWS4	.031	.079	●		●	●	●		●						
	NP-CNGA433-FSWS4	NP-CNGA120412FSWS4	.047	.087	★		●	●	●		●						
	NP-CNGA431-GSWS4	NP-CNGA120404GSWS4	.016	.071	★		●	★									
	NP-CNGA432-GSWS4	NP-CNGA120408GSWS4	.031	.079	★		●	★									
	NP-CNGA433-GSWS4	NP-CNGA120412GSWS4	.047	.087	★		●	★									
	NP-CNGA431-GAWS4	NP-CNGA120404GAWS4	.016	.071		★			★	★		●					
	NP-CNGA432-GAWS4	NP-CNGA120408GAWS4	.031	.079		●			★	★		●					
	NP-CNGA433-GAWS4	NP-CNGA120412GAWS4	.047	.087		★			★	★		●					
	NP-CNGA430.5-FS2	NP-CNGA120402FS2	.008	.067	●			●			●						
	NP-CNGA431-FS2	NP-CNGA120404FS2	.016	.071	●		●	●	●		●		●				
	NP-CNGA432-FS2	NP-CNGA120408FS2	.031	.079	●		●	●	●		●		●				
	NP-CNGA433-FS2	NP-CNGA120412FS2	.047	.087	★		●	●	●		★	●		●			
	NP-CNGA430.5-GS2	NP-CNGA120402GS2	.008	.067	●			●									

* Please refer to page B012 before using the wiper insert.

● = NEW

Cutting Conditions : ● Stable Cutting ● General Cutting ✚ Unstable Cutting

Workpiece Material	H	Hardened Materials				●	●	●	●	✱	●	●	●	✱	●	✱
	K	Cast Iron														
	S	Heat Resistant Alloy, Titanium Alloy														
		Sintered Alloy														
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN				CBN		Solid CBN					
					NEW BC8210	BC8220	BC8105	BC8110	BC8120	BC8130	NEW BC5110	MB8110	MB8120	MB8130	MB4120	MBS140
NEW PETIT CUT	NP-CNGA431-GS2	NP-CNGA120404GS2	.016	.071	●		●	●							●	
	NP-CNGA432-GS2	NP-CNGA120408GS2	.031	.079	●		●	●							●	
	NP-CNGA433-GS2	NP-CNGA120412GS2	.047	.087	●		●	●				★			●	
	NP-CNGA430.5-GA2	NP-CNGA120402GA2	.008	.067		●			●				●			
	NP-CNGA431-GA2	NP-CNGA120404GA2	.016	.071		●			●	●			●			
	NP-CNGA432-GA2	NP-CNGA120408GA2	.031	.079		●			●	●			●			
	NP-CNGA433-GA2	NP-CNGA120412GA2	.047	.087		●			●	●			●			
	NP-CNGA431-GH2	NP-CNGA120404GH2	.016	.071	★	★		●	●	●						
	NP-CNGA432-GH2	NP-CNGA120408GH2	.031	.079	●	●		●	●	●						
	NP-CNGA433-GH2	NP-CNGA120412GH2	.047	.087	★	★		●	●	●						
	NEW NP-CNGA431-VA2	NP-CNGA120404VA2	.016	.071		●										
	NEW NP-CNGA432-VA2	NP-CNGA120408VA2	.031	.079		●										
	NEW NP-CNGA433-VA2	NP-CNGA120412VA2	.047	.087		●										
	NP-CNGA431-TS2	NP-CNGA120404TS2	.016	.071	★			★							●	
	NP-CNGA432-TS2	NP-CNGA120408TS2	.031	.079	★			★							●	
	NP-CNGA433-TS2	NP-CNGA120412TS2	.047	.087	★			★							●	
	NP-CNGA431-TA2	NP-CNGA120404TA2	.016	.071		●			●	●			●	●		
	NP-CNGA432-TA2	NP-CNGA120408TA2	.031	.079		●			●	●			●	●		
	NP-CNGA433-TA2	NP-CNGA120412TA2	.047	.087		●			●	●			●	●		
	NP-CNGA431-TH2	NP-CNGA120404TH2	.016	.071					●	●				●		
	NP-CNGA432-TH2	NP-CNGA120408TH2	.031	.079		★			●	●				●		
	NP-CNGA433-TH2	NP-CNGA120412TH2	.047	.087		●			●	●				●		
	NP-CNGA431-SF2	NP-CNGA120404SF2	.016	.071											●	
	NP-CNGA432-SF2	NP-CNGA120408SF2	.031	.079											●	
	NP-CNGA433-SF2	NP-CNGA120412SF2	.047	.087											●	
	NP-CNGA431-SE2	NP-CNGA120404SE2	.016	.071											●	
	NP-CNGA432-SE2	NP-CNGA120408SE2	.031	.079											●	
	NP-CNGA433-SE2	NP-CNGA120412SE2	.047	.087											●	
NEW PETIT CUT (With Wiper) *	NP-CNGA431-FSWS2	NP-CNGA120404FSWS2	.016	.071	★		●	●	●	●		●				
	NP-CNGA432-FSWS2	NP-CNGA120408FSWS2	.031	.079	●		●	●	●	●		●				
	NP-CNGA433-FSWS2	NP-CNGA120412FSWS2	.047	.087	★		●	●	●	●		●				
	NP-CNGA431-FBWL2	NP-CNGA120404FBWL2	.016	.071				●	●	●		●				
	NP-CNGA432-FBWL2	NP-CNGA120408FBWL2	.031	.079				●	●	●		●				
	NP-CNGA433-FBWL2	NP-CNGA120412FBWL2	.047	.087				●	●	●		●				
	NP-CNGA431-GSWS2	NP-CNGA120404GSWS2	.016	.071	●			●	●							
	NP-CNGA432-GSWS2	NP-CNGA120408GSWS2	.031	.079	●			●	●							
	NP-CNGA433-GSWS2	NP-CNGA120412GSWS2	.047	.087	★			●	●							
	NP-CNGA431-GAWS2	NP-CNGA120404GAWS2	.016	.071		●			●	●			●			
	NP-CNGA432-GAWS2	NP-CNGA120408GAWS2	.031	.079		●			●	●			●			
	NP-CNGA433-GAWS2	NP-CNGA120412GAWS2	.047	.087		●			●	●			●			

* Please refer to page B012 before using the wiper insert.

● = NEW

CBN

B

CBN TURNING INSERTS

NEG

WITH HOLE

C

D

R

S

T

V

W

EXTERNAL TURNING > C002
BORING > E002

IDENTIFICATION > B002
HONING > B009

B023

CBN TURNING INSERTS [NEGATIVE]



80° CBN TYPE INSERTS WITH HOLE

NP-CNGA 4 3 1 GBWL2

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

CBN

B

CBN TURNING INSERTS

NEG

WITH HOLE

C

D

R

S

T

V

W

Workpiece Material	H	Hardened Materials									
	K	Cast Iron									
	S	Heat Resistant Alloy, Titanium Alloy									
		Sintered Alloy									
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN				CBN		Solid CBN
					NEW BC8210	BC8220	BC8105	BC8110	NEW BC8120	BC8130	
NEW PETIT CUT (With Wiper) *	NP-CNGA431-GBWL2	NP-CNGA120404GBWL2	.016	.071			●	●		●	
	NP-CNGA432-GBWL2	NP-CNGA120408GBWL2	.031	.079			●	●		●	
	NP-CNGA433-GBWL2	NP-CNGA120412GBWL2	.047	.087			●	●		●	
NEW PETIT CUT	BF-CNGM431-TS2	BF-CNGM120404TS2	.016	.071	★		★				
	BF-CNGM432-TS2	BF-CNGM120408TS2	.031	.079	★		★				
	BF-CNGM433-TS2	BF-CNGM120412TS2	.047	.087	★		★				
(With Breaker)											
NEW PETIT CUT (With Wiper) *	BF-CNGM432-TSWS2	BF-CNGM120408TSWS2	.031	.079	★						
	BF-CNGA433-TSWS2	BF-CNGM120412TSWS2	.047	.087	★						
	BF-CNGM432-TAWS2	BF-CNGM120408TAWS2	.031	.079		●					
	BF-CNGM433-TAWS2	BF-CNGM120412TAWS2	.047	.087		●					
(With Breaker)											
NEW PETIT CUT	BM-CNGM431-TA2	BM-CNGM120404TA2	.016	.071	★		●				
	BM-CNGM432-TA2	BM-CNGM120408TA2	.031	.079		●	●				
	BM-CNGM433-TA2	BM-CNGM120412TA2	.047	.087		●	●				
(With Breaker)											
NEW PETIT CUT	BR-CNGM431-TA2	BR-CNGM120404TA2	.016	.071	★						
	BR-CNGM432-TA2	BR-CNGM120408TA2	.031	.079	★						
	BR-CNGM433-TA2	BR-CNGM120412TA2	.047	.087	★						
(With Breaker)											
	CNGA432	CNGA120408	.031	—							●
	CNGA433	CNGA120412	.047	—							●

* Please refer to page B012 before using the wiper insert.

● = NEW



55° DN TYPE INSERTS WITH HOLE

NP-DNGA 4 3 1 FS4

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

Workpiece Material	H	Hardened Materials				●	●	●	●	✱	●	●	●	✱	●	✱
	K	Cast Iron													●	✱
	S	Heat Resistant Alloy, Titanium Alloy														
		Sintered Alloy													●	
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN					CBN			Solid CBN			
					NEW BC8210	BC8220	BC8105	BC8110	BC8120	BC8130	NEW BC5110	MB8110	MB8120	MB8130	MB4120	MB5140
	NP-DNGA431-FS4	NP-DNGA150404FS4	.016	.083	★	●	★	★			●					
	NP-DNGA432-FS4	NP-DNGA150408FS4	.031	.079	★	●	★	★			●					
	NP-DNGA433-FS4	NP-DNGA150412FS4	.047	.071	★	●	★	★			●					
	NP-DNGA441-FS4	NP-DNGA150604FS4	.016	.083	★		★	★			●					
	NP-DNGA442-FS4	NP-DNGA150608FS4	.031	.079	★		★	★			●					
	NP-DNGA443-FS4	NP-DNGA150612FS4	.047	.071	★		★	★			●					
	NP-DNGA431-GS4	NP-DNGA150404GS4	.016	.083	★	●	★									
	NP-DNGA432-GS4	NP-DNGA150408GS4	.031	.079	●	●	★									
	NP-DNGA433-GS4	NP-DNGA150412GS4	.047	.071	★	●	★									
	NP-DNGA441-GS4	NP-DNGA150604GS4	.016	.083	★		★	★								
	NP-DNGA442-GS4	NP-DNGA150608GS4	.031	.079	★		★	★								
	NP-DNGA443-GS4	NP-DNGA150612GS4	.047	.071	★		★	★								
	NP-DNGA431-GA4	NP-DNGA150404GA4	.016	.083		●		★	★			●				
	NP-DNGA432-GA4	NP-DNGA150408GA4	.031	.079		●		★	★			●				
	NP-DNGA433-GA4	NP-DNGA150412GA4	.047	.071		★		★	★			●				
	NP-DNGA441-GA4	NP-DNGA150604GA4	.016	.083		★		★	★			●				
	NP-DNGA442-GA4	NP-DNGA150608GA4	.031	.079		★		★	★			●				
	NP-DNGA443-GA4	NP-DNGA150612GA4	.047	.071		★		★	★			●				
	NP-DNGA431-GH4	NP-DNGA150404GH4	.016	.083	★	●		●	●	●						
	NP-DNGA432-GH4	NP-DNGA150408GH4	.031	.079	★	★		●	●	●						
	NP-DNGA433-GH4	NP-DNGA150412GH4	.047	.071	★	★		●	●	●						
	NP-DNGA441-GH4	NP-DNGA150604GH4	.016	.083	★	★		★	★	★						
	NP-DNGA442-GH4	NP-DNGA150608GH4	.031	.079	★	★		★	★	★						
	NP-DNGA443-GH4	NP-DNGA150612GH4	.047	.071	★	★		★	★	★						
	NEW NP-DNGA431-VA4	NP-DNGA150404VA4	.016	.083		★										
	NEW NP-DNGA432-VA4	NP-DNGA150408VA4	.031	.079		●										
	NEW NP-DNGA433-VA4	NP-DNGA150412VA4	.047	.071		★										
	NEW NP-DNGA441-VA4	NP-DNGA150604VA4	.016	.083		★										
	NEW NP-DNGA442-VA4	NP-DNGA150608VA4	.031	.079		★										
	NEW NP-DNGA443-VA4	NP-DNGA150612VA4	.047	.071		★										
	NP-DNGA431-TS4	NP-DNGA150404TS4	.016	.083	★			★								
	NP-DNGA432-TS4	NP-DNGA150408TS4	.031	.079	★			★								
	NP-DNGA433-TS4	NP-DNGA150412TS4	.047	.071	★			★								
	NP-DNGA441-TS4	NP-DNGA150604TS4	.016	.083	★			★								
	NP-DNGA442-TS4	NP-DNGA150608TS4	.031	.079	★			★								
	NP-DNGA443-TS4	NP-DNGA150612TS4	.047	.071	★			★								
	NP-DNGA431-TA4	NP-DNGA150404TA4	.016	.083		★			★	★		●	●			
	NP-DNGA432-TA4	NP-DNGA150408TA4	.031	.079		★			★	★		●	●			
	NP-DNGA433-TA4	NP-DNGA150412TA4	.047	.071		●			★	★		●	●			

● = NEW

EXTERNAL TURNING > C002
BORING > E002

IDENTIFICATION > B002
HONING > B009

B025

CBN

B

CBN TURNING INSERTS

NEG

WITH HOLE

C

D

R

S

T

V

W

CBN TURNING INSERTS [NEGATIVE]



55° DN TYPE INSERTS WITH HOLE

NP-DNGA 4 4 1 TA4

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

CBN

B

CBN TURNING INSERTS

NEG

WITH HOLE

C

D

R

S

T

V

W

Workpiece Material	H	Hardened Materials				●	●	●	●	✱	●	●	●	✱	●	✱
	K	Cast Iron									●				●	✱
	S	Heat Resistant Alloy, Titanium Alloy													●	
		Sintered Alloy													●	
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN					CBN			Solid CBN			
					NEW BC8210	BC8220	BC8105	BC8110	BC8120	BC8130	NEW BC5110	MB8110	MB8120	MB8130	MB4120	MBS140
	NP-DNGA441-TA4	NP-DNGA150604TA4	.016	.083	★		★	★		●						
	NP-DNGA442-TA4	NP-DNGA150608TA4	.031	.079	★		★	★		●						
	NP-DNGA443-TA4	NP-DNGA150612TA4	.047	.071	★		★	★		●						
	NP-DNGA431-TH4	NP-DNGA150404TH4	.016	.083					●	★		●				
	NP-DNGA432-TH4	NP-DNGA150408TH4	.031	.079	★			●	★		●					
	NP-DNGA433-TH4	NP-DNGA150412TH4	.047	.071	★			●	★		●					
	NP-DNGA441-TH4	NP-DNGA150604TH4	.016	.083					★	★						
	NP-DNGA442-TH4	NP-DNGA150608TH4	.031	.079	★				★	★						
	NP-DNGA443-TH4	NP-DNGA150612TH4	.047	.071	★				★	★						
	NP-DNGA430.5-FS2	NP-DNGA150402FS2	.008	.087	●		●			●						
	NP-DNGA431-FS2	NP-DNGA150404FS2	.016	.083	●		●	●		★	●		●			
	NP-DNGA432-FS2	NP-DNGA150408FS2	.031	.079	●		●	●	●		●		●			
	NP-DNGA433-FS2	NP-DNGA150412FS2	.047	.071	●		●	●	●		●		●			
	NP-DNGA441-FS2	NP-DNGA150604FS2	.016	.083	★		★	★	★		★	●		●		
	NP-DNGA442-FS2	NP-DNGA150608FS2	.031	.079	★		★	★	★		★	●		●		
	NP-DNGA443-FS2	NP-DNGA150612FS2	.047	.071	★		★	★	★			●		●		
	NP-DNGA430.5-GS2	NP-DNGA150402GS2	.008	.087	●		●									
	NP-DNGA431-GS2	NP-DNGA150404GS2	.016	.083	●		●	●		★			●			
	NP-DNGA432-GS2	NP-DNGA150408GS2	.031	.079	●		●	●		●			●			
	NP-DNGA433-GS2	NP-DNGA150412GS2	.047	.071	★		●	●					●			
	NP-DNGA441-GS2	NP-DNGA150604GS2	.016	.083	★		★	★					●			
	NP-DNGA442-GS2	NP-DNGA150608GS2	.031	.079	★		★	★		★			●			
	NP-DNGA443-GS2	NP-DNGA150612GS2	.047	.071	★		★	★					●			
	NP-DNGA332-GA2	NP-DNGA110408GA2	.031	.079		●		●	●			●				
	NP-DNGA430.5-GA2	NP-DNGA150402GA2	.008	.087		●		●								
	NP-DNGA431-GA2	NP-DNGA150404GA2	.016	.083		●		●	●			●				
	NP-DNGA432-GA2	NP-DNGA150408GA2	.031	.079		●		●	●			●				
	NP-DNGA433-GA2	NP-DNGA150412GA2	.047	.071		●		●	●			●				
	NP-DNGA440.5-GA2	NP-DNGA150602GA2	.008	.087				★								
	NP-DNGA441-GA2	NP-DNGA150604GA2	.016	.083		★		★	★			●				
	NP-DNGA442-GA2	NP-DNGA150608GA2	.031	.079		★		★	★			●				
	NP-DNGA443-GA2	NP-DNGA150612GA2	.047	.071		★		★	★			●				
	NP-DNGA431-GH2	NP-DNGA150404GH2	.016	.083		★	★		●	●						
	NP-DNGA432-GH2	NP-DNGA150408GH2	.031	.079		★	★		●	●						
	NP-DNGA433-GH2	NP-DNGA150412GH2	.047	.071		★	★		●	●						
	NP-DNGA441-GH2	NP-DNGA150604GH2	.016	.083		★	★		★	★						
	NP-DNGA442-GH2	NP-DNGA150608GH2	.031	.079		★	★		★	★						
	NP-DNGA443-GH2	NP-DNGA150612GH2	.047	.071		★	★		★	★						

● = NEW

Cutting Conditions : ● Stable Cutting

General Cutting

Unstable Cutting



● = NEW

B

CBN TURNING INSERTS

WITH HOLE

C

D

R

2

T

V

33

EXTERNAL TURNING	➤ C002
BORING	➤ E002

IDENTIFICATION	➤ B002
HONING	➤ B009

B027

CBN TURNING INSERTS [NEGATIVE]



55° DN TYPE INSERTS WITH HOLE

NP-DNGA 4 3 1 GSWS2JR

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

CBN

B

CBN TURNING INSERTS

NEG

WITH HOLE

C

D

R

S

T

V

W

Workpiece Material	H	Hardened Materials				●	●	●	●	✱	●	●	✱	●	✱
	K	Cast Iron													
	S	Heat Resistant Alloy, Titanium Alloy													
		Sintered Alloy											●		
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN					CBN		Solid CBN			
					NEW BC8210	BC8220	BC8105	BC8110	BC8120	NEW BC5110	MB8110	MB8120	MB8130	MB8140	
	NP-DNGA431-GSWS2JR	NP-DNGA150404GSWS2JR	.016	.071	★										
	NP-DNGA431-GSWS2JL	NP-DNGA150404GSWS2JL	.016	.071	★										
	NP-DNGA432-GSWS2JR	NP-DNGA150408GSWS2JR	.031	.067	★										
	NP-DNGA432-GSWS2JL	NP-DNGA150408GSWS2JL	.031	.067	★										
	NP-DNGA441-GSWS2JR	NP-DNGA150604GSWS2JR	.016	.071	★										
	NP-DNGA441-GSWS2JL	NP-DNGA150604GSWS2JL	.016	.071	★										
	NP-DNGA442-GSWS2JR	NP-DNGA150608GSWS2JR	.031	.067	★										
	NP-DNGA442-GSWS2JL	NP-DNGA150608GSWS2JL	.031	.067	★										
	NP-DNGA431-GAWS2JR	NP-DNGA150404GAWS2JR	.016	.071	★	●		●		●					
	NP-DNGA431-GAWS2JL	NP-DNGA150404GAWS2JL	.016	.071	★	●		●		●					
	NP-DNGA432-GAWS2JR	NP-DNGA150408GAWS2JR	.031	.067	●	●		●		●					
	NP-DNGA432-GAWS2JL	NP-DNGA150408GAWS2JL	.031	.067	●	●		●		●					
	NP-DNGA441-GAWS2JR	NP-DNGA150604GAWS2JR	.016	.071	★		★		●						
	NP-DNGA441-GAWS2JL	NP-DNGA150604GAWS2JL	.016	.071	★		★		●						
	NP-DNGA442-GAWS2JR	NP-DNGA150608GAWS2JR	.031	.067	★		★		●						
	NP-DNGA442-GAWS2JL	NP-DNGA150608GAWS2JL	.031	.067	●		●		●						
	BF-DNGM431-TS2	BF-DNGM150404TS2	.016	.083	★		★								
	BF-DNGM432-TS2	BF-DNGM150408TS2	.031	.079	★		★								
	BF-DNGM433-TS2	BF-DNGM150412TS2	.047	.071	●		★								
(With Breaker)															
	BF-DNGM432-TSWS2	BF-DNGM150408TSWS2	.031	.094	★										
	BF-DNGM433-TSWS2	BF-DNGM150412TSWS2	.047	.102	★										
	BF-DNGM432-TAWS2	BF-DNGM150408TAWS2	.031	.094		●									
	BF-DNGM433-TAWS2	BF-DNGM150412TAWS2	.047	.102		●									
(With Breaker)															
	BM-DNGM431-TA2	BM-DNGM150404TA2	.016	.083		●		●							
	BM-DNGM432-TA2	BM-DNGM150408TA2	.031	.079	★		●								
	BM-DNGM433-TA2	BM-DNGM150412TA2	.047	.071		●		●							
	BM-DNGM441-TA2	BM-DNGM150604TA2	.016	.083				★							
	BM-DNGM442-TA2	BM-DNGM150608TA2	.031	.079				★							
	BM-DNGM443-TA2	BM-DNGM150612TA2	.047	.071				★							
	BR-DNGM431-TA2	BR-DNGM150404TA2	.016	.083	★										
	BR-DNGM432-TA2	BR-DNGM150408TA2	.031	.079	★										
	BR-DNGM433-TA2	BR-DNGM150412TA2	.047	.071	★										
	BR-DNGM441-TA2	BR-DNGM150604TA2	.016	.083	★										
	BR-DNGM442-TA2	BR-DNGM150608TA2	.031	.079	★										
	BR-DNGM443-TA2	BR-DNGM150612TA2	.047	.071	★										

* Please refer to page B012 before using the wiper insert.

● = NEW

● : USA Stock ★ : Stocked in Japan
<1 insert in one case>

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

Workpiece Material	H	Hardened Materials																
	K	Cast Iron																
	S	Heat Resistant Alloy, Titanium Alloy																
		Sintered Alloy																
Shapew	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN				CBN			Solid CBN						
					NEW BC8210	BC8220	BC8105	BC8110	BC8120	BC8130	NEW BC5110	MB8110	MB8120	MB8130	MB4120	MBS140		
	NEW PETIT CUT	NP-SNGA431-FS2	NP-SNGA120404FS2	.016	.079											●		
		NP-SNGA432-FS2	NP-SNGA120408FS2	.031	.087												●	
		NP-SNGA433-FS2	NP-SNGA120412FS2	.047	.098												●	
		NP-SNGA431-GS2	NP-SNGA120404GS2	.016	.079												●	
		NP-SNGA432-GS2	NP-SNGA120408GS2	.031	.087							★					●	
		NP-SNGA433-GS2	NP-SNGA120412GS2	.047	.098												●	
		NP-SNGA432-GA2	NP-SNGA120408GA2	.031	.087		★			●	●		●					
		NP-SNGA433-GA2	NP-SNGA120412GA2	.047	.098		★			●	●		●					
		NP-SNGA431-TS2	NP-SNGA120404TS2	.016	.079												●	
		NP-SNGA432-TS2	NP-SNGA120408TS2	.031	.087												●	
		NP-SNGA433-TS2	NP-SNGA120412TS2	.047	.098												●	
		NP-SNGA431-SF2	NP-SNGA120404SF2	.016	.079												●	
		NP-SNGA432-SF2	NP-SNGA120408SF2	.031	.087												●	
		NP-SNGA433-SF2	NP-SNGA120412SF2	.047	.098												●	
		NP-SNGA431-SE2	NP-SNGA120404SE2	.016	.079												●	
		NP-SNGA432-SE2	NP-SNGA120408SE2	.031	.087												●	
		NP-SNGA433-SE2	NP-SNGA120412SE2	.047	.098												●	
	SNGA432	SNGA120408	.031	—												●		
	SNGA433	SNGA120412	.047	—												●		

● = NEW

CBN

B

CBN TURNING INSERTS

NEG

WITH HOLE

C

D

R

S

T

V

W

EXTERNAL TURNING > C002
 BORING > E002

IDENTIFICATION > B002
 HONING > B009

B029

CBN TURNING INSERTS [NEGATIVE]



60° TN TYPE INSERTS WITH HOLE

NP-TNGA 3 3 1 FS6

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

CBN

B

CBN TURNING INSERTS

NEG

WITH HOLE

C

D

R

S

T

V

W

Workpiece Material	H	Hardened Materials				●	●	●	●	●	●	●	●	●	●	●	●
	K	Cast Iron															
	S	Heat Resistant Alloy, Titanium Alloy															
		Sintered Alloy															
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN					CBN			Solid CBN				
					NEW BC8210	BC8220	BC8105	BC8110	BC8120	BC8130	NEW BC5110	MB8110	MB8120	MB8130	MB4120	MBS140	
	NP-TNGA331-FS6	NP-TNGA160404FS6	.016	.063	★		●	★	★			●					
	NP-TNGA332-FS6	NP-TNGA160408FS6	.031	.067	★		●	★	★			●					
	NP-TNGA333-FS6	NP-TNGA160412FS6	.047	.075	★		●	★	★			●					
	NP-TNGA331-GS6	NP-TNGA160404GS6	.016	.063	●		●	★									
	NP-TNGA332-GS6	NP-TNGA160408GS6	.031	.067	★		●	★									
	NP-TNGA333-GS6	NP-TNGA160412GS6	.047	.075	★		●	★									
	NP-TNGA331-GA6	NP-TNGA160404GA6	.016	.063		★			★	★		●					
	NP-TNGA332-GA6	NP-TNGA160408GA6	.031	.067		★			★	★		●					
	NP-TNGA333-GA6	NP-TNGA160412GA6	.047	.075		★			★	★		●					
	NP-TNGA331-GH6	NP-TNGA160404GH6	.016	.063		★		●	●	●							
	NP-TNGA332-GH6	NP-TNGA160408GH6	.031	.067		★		●	●	●							
	NP-TNGA333-GH6	NP-TNGA160412GH6	.047	.075		★		●	●	●							
	NEW NP-TNGA331-VA6	NP-TNGA160404VA6	.016	.063		★											
	NEW NP-TNGA332-VA6	NP-TNGA160408VA6	.031	.067		★											
	NEW NP-TNGA333-VA6	NP-TNGA160412VA6	.047	.075		★											
	NP-TNGA331-TS6	NP-TNGA160404TS6	.016	.063		★			★								
	NP-TNGA332-TS6	NP-TNGA160408TS6	.031	.067		★			★								
	NP-TNGA333-TS6	NP-TNGA160412TS6	.047	.075		★			★								
	NP-TNGA331-TA6	NP-TNGA160404TA6	.016	.063		★				★	★		●	●			
	NP-TNGA332-TA6	NP-TNGA160408TA6	.031	.067		★				★	★		●	●			
	NP-TNGA333-TA6	NP-TNGA160412TA6	.047	.075		★				★	★		●	●			
NP-TNGA331-TH6	NP-TNGA160404TH6	.016	.063					●	★			●					
NP-TNGA332-TH6	NP-TNGA160408TH6	.031	.067		★			●	★			●					
NP-TNGA333-TH6	NP-TNGA160412TH6	.047	.075		★			●	★			●					
	NP-TNGA330.5-FS3	NP-TNGA160402FS3	.008	.059	●			●				●					
	NP-TNGA331-FS3	NP-TNGA160404FS3	.016	.063	★		●	●	●	●	★	●		●			
	NP-TNGA332-FS3	NP-TNGA160408FS3	.031	.067	★		●	●	●	●	★	●		●			
	NP-TNGA333-FS3	NP-TNGA160412FS3	.047	.075	★		●	●	●	●	★	●		●			
	NP-TNGA330.5-GS3	NP-TNGA160402GS3	.008	.059	★			●									
	NP-TNGA331-GS3	NP-TNGA160404GS3	.016	.063	★		●	●			★			●			
	NP-TNGA332-GS3	NP-TNGA160408GS3	.031	.067	●		●	●			★			●			
	NP-TNGA333-GS3	NP-TNGA160412GS3	.047	.075	★		●	●			★			●			
	NP-TNGA330.5-GA3	NP-TNGA160402GA3	.008	.059		★			●				●				
	NP-TNGA331-GA3	NP-TNGA160404GA3	.016	.063		●			●	●			●				
	NP-TNGA332-GA3	NP-TNGA160408GA3	.031	.067		●			●	●			●				
	NP-TNGA333-GA3	NP-TNGA160412GA3	.047	.075		●			●	●			●				
	NP-TNGA331-GH3	NP-TNGA160404GH3	.016	.063		●		●	●	●							
	NP-TNGA332-GH3	NP-TNGA160408GH3	.031	.067		★		●	●	●							
	NP-TNGA333-GH3	NP-TNGA160412GH3	.047	.075		★		●	●	●							

● = NEW

Cutting Conditions : ● Stable Cutting ● General Cutting ⊕ Unstable Cutting

[illegible]

 = **NEW**

CBN**B**

CBN TURNING INSERTS

NEG

WITH HOLE

C

D

R

S

T

V

W

EXTERNAL TURNING	➤ C002
BORING	➤ E002

IDENTIFICATION	➤ B002
HONING	➤ B009

B031

CBN TURNING INSERTS [NEGATIVE]



35°

VN TYPE INSERTS WITH HOLE

NP-VNGA 3 3 1 FS4

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

CBN

B

CBN TURNING INSERTS

NEG

WITH HOLE

C

D

R

S

T

V

W

Workpiece Material	H	Hardened Materials				●	●	●	●	✱	●	●	✱	●	✱	
	K	Cast Iron												●	✱	
	S	Heat Resistant Alloy, Titanium Alloy												●	✱	
		Sintered Alloy												●		
Shape	Order Number	(ISO) Number	Corner Radius RE	Cutting Edge Effective Length LE	Coated CBN					CBN		Solid CBN				
					NEW BC8210	BC8220	BC8105	BC8110	BC8120	BC8130	NEW BC5110	MB8110	MB8120	MB8130	MB8140	
	NEW PETIT CUT	NP-VNGA331-FS4	NP-VNGA160404FS4	.016	.098	★		●	★	★		●				
		NP-VNGA332-FS4	NP-VNGA160408FS4	.031	.079	★		●	★	★		●				
		NP-VNGA333-FS4	NP-VNGA160412FS4	.047	.059					★						
		NP-VNGA331-GS4	NP-VNGA160404GS4	.016	.098	★		●	★							
		NP-VNGA332-GS4	NP-VNGA160408GS4	.031	.079	★		●	★							
		NP-VNGA333-GS4	NP-VNGA160412GS4	.047	.059	★			★							
		NP-VNGA331-GA4	NP-VNGA160404GA4	.016	.098		★			★	★		●			
		NP-VNGA332-GA4	NP-VNGA160408GA4	.031	.079		★			★	★		●			
		NP-VNGA333-GA4	NP-VNGA160412GA4	.047	.059		★			★	★		●			
		NP-VNGA331-GH4	NP-VNGA160404GH4	.016	.098		★		●	●	●					
		NP-VNGA332-GH4	NP-VNGA160408GH4	.031	.079		★		●	●	●					
		NP-VNGA333-GH4	NP-VNGA160412GH4	.047	.059				●	●	●					
		NEW NP-VNGA331-VA4	NP-VNGA160404VA4	.016	.098		★									
		NEW NP-VNGA332-VA4	NP-VNGA160408VA4	.031	.079		★									
		NEW NP-VNGA333-VA4	NP-VNGA160412VA4	.047	.059		★									
			NP-VNGA331-TS4	NP-VNGA160404TS4	.016	.098	★			★						
			NP-VNGA332-TS4	NP-VNGA160408TS4	.031	.079	★			★						
			NP-VNGA331-TA4	NP-VNGA160404TA4	.016	.098		★			★	★		●		
			NP-VNGA332-TA4	NP-VNGA160408TA4	.031	.079		★			★	★		●		
			NP-VNGA333-TA4	NP-VNGA160412TA4	.047	.059					★	★		●		
			NP-VNGA331-TH4	NP-VNGA160404TH4	.016	.098		★		●	★					
			NP-VNGA332-TH4	NP-VNGA160408TH4	.031	.079		★		●	★					
			NP-VNGA333-TH4	NP-VNGA160412TH4	.047	.059				●	★					
	NEW PETIT CUT	NP-VNGA330.5-FS2	NP-VNGA160402FS2	.008	.098	●			●			●				
		NP-VNGA331-FS2	NP-VNGA160404FS2	.016	.098	●		●	●	●		★	●		●	
		NP-VNGA332-FS2	NP-VNGA160408FS2	.031	.079	●		●	●	●		★	●		●	
		NP-VNGA333-FS2	NP-VNGA160412FS2	.047	.059					●						
		NP-VNGA330.5-GS2	NP-VNGA160402GS2	.008	.098	●			●							
		NP-VNGA331-GS2	NP-VNGA160404GS2	.016	.098	●		●	●			●			●	
		NP-VNGA332-GS2	NP-VNGA160408GS2	.031	.079	●		●	●			●			●	
		NP-VNGA333-GS2	NP-VNGA160412GS2	.047	.059	★			●							
		NP-VNGA330.5-GA2	NP-VNGA160402GA2	.008	.098		●			●			●			
		NP-VNGA331-GA2	NP-VNGA160404GA2	.016	.098		●			●	●		●			
		NP-VNGA332-GA2	NP-VNGA160408GA2	.031	.079		●			●	●		●			
		NP-VNGA333-GA2	NP-VNGA160412GA2	.047	.059		●			●	●		●			
		NP-VNGA331-GH2	NP-VNGA160404GH2	.016	.098		★		●	●	●					
		NP-VNGA332-GH2	NP-VNGA160408GH2	.031	.079		★		●	●	●					

● = NEW

Cutting Conditions : ● Stable Cutting ● General Cutting ⊕ Unstable Cutting

[illegible]

● = NEW

CBN**B**

CBN TURNING INSERTS

NEG

WITH HOLE

c

D

R

S

T

W

EXTERNAL TURNING	➤ C002
BORING	➤ E002

IDENTIFICATION	➤ B002
HONING	➤ B009

B033

CBN TURNING INSERTS [NEGATIVE]



80° WN TYPE INSERTS WITH HOLE

NP-WNGA 4 3 2 FS6

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✚ Unstable Cutting

CBN

B

CBN TURNING INSERTS

NEG

WITH HOLE

C

D

R

S

T

V

W

Workpiece Material	H	Hardened Materials									
	K	Cast Iron									
	S	Heat Resistant Alloy, Titanium Alloy									
		Sintered Alloy									
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN				CBN		Solid CBN
					NEW BC8210	BC8220	BC8105	BC8110	BC8120	BC8130	
NEW PETIT CUT 	NP-WNGA432-FS6	NP-WNGA080408FS6	.031	.079	★		●	★			
	NP-WNGA432-GS6	NP-WNGA080408GS6	.031	.079	★		●	★			
	NP-WNGA432-TS6	NP-WNGA080408TS6	.031	.079	★			★			
NEW PETIT CUT 	NP-WNGA432-FS3	NP-WNGA080408FS3	.031	.079	●		●	★	●		●
	NP-WNGA432-GS3	NP-WNGA080408GS3	.031	.079	●		●	★			●
	NP-WNGA432-GA3	NP-WNGA080408GA3	.031	.079		●		●	●		
	NP-WNGA432-GH3	NP-WNGA080408GH3	.031	.079			●	●	●		
	NP-WNGA432-TS3	NP-WNGA080408TS3	.031	.079	★		★				●
	NP-WNGA432-TA3	NP-WNGA080408TA3	.031	.079		★		●	●		
	NP-WNGA432-TH3	NP-WNGA080408TH3	.031	.079				●	●		
	NP-WNGA432-SF3	NP-WNGA080408SF3	.031	.079							●
	NP-WNGA432-SE3	NP-WNGA080408SE3	.031	.079							●
NEW PETIT CUT (With Wiper) *	NP-WNGA432-GSWS3	NP-WNGA080408GSWS3	.031	.079	●		★				

* Please refer to page B012 before using the wiper insert.

● = NEW



80° CN TYPE INSERTS WITHOUT HOLE

CNG 4 3 1

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✚ Unstable Cutting

Workpiece Material	H	Hardened Materials									
	K	Cast Iron									
	S	Heat Resistant Alloy, Titanium Alloy									
		Sintered Alloy									
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN				CBN		Solid CBN
					NEW BC8210	BC8220	BC8105	BC8110	BC8120	BC8130	
	CNG431	CNGN120404	.016	—							★
	CNG432	CNGN120408	.031	—							●
	CNG433	CNGN120412	.047	—							●

● = NEW

B034

● : USA Stock ★ : Stocked in Japan
<1 insert in one case>

B035

CBN TURNING INSERTS [NEGATIVE]



90° SN TYPE INSERTS WITHOUT HOLE

SNG 3 2 2

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

CBN

B

CBN TURNING INSERTS

NEG

WITHOUT HOLE

C

D

R

S

T

V

W

Workpiece Material	H	Hardened Materials									
	K	Cast Iron									
	S	Heat Resistant Alloy, Titanium Alloy									
		Sintered Alloy									
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN				CBN		Solid CBN
					NEW BC8210	BC8220	BC8105	BC8110	BC8120	BC8130	
	SNG322	SNGN090308	.031	—							●
	SNG323	SNGN090312	.047	—							●
	SNG324	SNGN090316	.063	—							●
	SNG432	SNGN120408	.031	—							●
	SNG433	SNGN120412	.047	—							★
	SNG434	SNGN120416	.063	—							●

● = NEW



60° TN TYPE INSERTS WITHOUT HOLE

TNG 3 3 2

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

Workpiece Material	H	Hardened Materials									
	K	Cast Iron									
	S	Heat Resistant Alloy, Titanium Alloy									
		Sintered Alloy									
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN				CBN		Solid CBN
					NEW BC8210	BC8220	BC8105	BC8110	BC8120	BC8130	
	TNG332	TNGN160408	.031	—							●
	TNG333	TNGN160412	.047	—							●
	TNG334	TNGN160416	.063	—							●

● = NEW

 80° CC TYPE INSERTS WITH HOLE

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Workpiece Material	H	Hardened Materials												
	K	Cast Iron												
	S	Heat Resistant Alloy, Titanium Alloy												
		Sintered Alloy												
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN				CBN			Solid CBN		
					 NEW BC8210 BC8220	BC8105	BC8110	BC8120	 NEW BC5110	MB8110	MB8120	MB8130	MB4120	MB5140
	NP-CCGW21.50.5-FS2	NP-CCGW060202FS2	.008	.067					 ★					
	NP-CCGW21.51-FS2	NP-CCGW060204FS2	.016	.071					 ★					
	NP-CCGW21.52-FS2	NP-CCGW060208FS2	.031	.079										
	NP-CCGW32.50.5-FS2	NP-CCGW09T302FS2	.008	.067										
	NP-CCGW32.51-FS2	NP-CCGW09T304FS2	.016	.071										
	NP-CCGW32.52-FS2	NP-CCGW09T308FS2	.031	.079										
	NP-CCGW21.50.5-GS2	NP-CCGW060202GS2	.008	.067					 ★					
	NP-CCGW21.51-GS2	NP-CCGW060204GS2	.016	.071										
	NP-CCGW21.52-GS2	NP-CCGW060208GS2	.031	.079										
	NP-CCGW32.50.5-GS2	NP-CCGW09T302GS2	.008	.067										
	NP-CCGW32.51-GS2	NP-CCGW09T304GS2	.016	.071										
	NP-CCGW32.52-GS2	NP-CCGW09T308GS2	.031	.079										
	NP-CCGW21.50.5-GA2	NP-CCGW060202GA2	.008	.067										
	NP-CCGW21.51-GA2	NP-CCGW060204GA2	.016	.071										
	NP-CCGW21.52-GA2	NP-CCGW060208GA2	.031	.079										

B037

CBN TURNING INSERTS [POSITIVE]



NP-CCGW 2 1.5 0.5 SE2

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

CBN	Workpiece Material	H	Hardened Materials												●	●	●	●	●	*	●	●	●	*	●	*	●	*	
		K	Cast Iron																										
		S	Heat Resistant Alloy, Titanium Alloy																										
			Sintered Alloy																										
CBN TURNING INSERTS	B	Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN					CBN			Solid CBN														
							NEW BC8210	BC8220	BC8105	BC8110	BC8120	BC8130	NEW BC5110	MB8110	MB8120	MB8130	MB4120	MB5140											
		NEW PETIT CUT	NP-CCGW21.50.5-SE2	NP-CCGW060202SE2	.008	.067																							
			NP-CCGW21.51-SE2	NP-CCGW060204SE2	.016	.071																							
			NP-CCGW21.52-SE2	NP-CCGW060208SE2	.031	.079																							
			NP-CCGW32.50.5-SE2	NP-CCGW09T302SE2	.008	.067																							
			NP-CCGW32.51-SE2	NP-CCGW09T304SE2	.016	.071																							
			NP-CCGW32.52-SE2	NP-CCGW09T308SE2	.031	.079																							
		NEW PETIT CUT (With Wiper) *1	NP-CCGW32.51-FSWS2	NP-CCGW09T304FSWS2	.016	.071	★		●	●	●			●															
			NP-CCGW32.52-FSWS2	NP-CCGW09T308FSWS2	.031	.079	●		●	●	●	●		●															
		NP-CCGW32.51-FBWL2	NP-CCGW09T304FBWL2	.016	.071				●	●	●		●																
		NP-CCGW32.52-FBWL2	NP-CCGW09T308FBWL2	.031	.079				●	●	●		●																
		NP-CCGW32.52-GSWS2	NP-CCGW09T304GSWS2	.016	.071	●		●	●																				
		NP-CCGW32.52-GSWS2	NP-CCGW09T308GSWS2	.031	.079	★		●	●																				
		NP-CCGW32.51-GAWS2	NP-CCGW09T304GAWS2	.016	.071		●			●	●		●																
		NP-CCGW32.52-GAWS2	NP-CCGW09T308GAWS2	.031	.079		●			●	●		●																
		NP-CCGW32.51-GBWL2	NP-CCGW09T304GBWL2	.016	.071			●	●	●	●		●																
		NP-CCGW32.52-GBWL2	NP-CCGW09T308GBWL2	.031	.079			●	●	●	●		●																
	NEW PETIT CUT (With Breaker)	BF-CCGT32.51-TS2	BF-CCGT09T304TS2	.016	.071	●			★																				
		BF-CCGT32.52-TS2	BF-CCGT09T308TS2	.031	.079	●			★																				
	NEW PETIT CUT (With Breaker)	BM-CCGT32.51-TA2	BM-CCGT09T304TA2	.016	.071	★			●																				
		BM-CCGT32.52-TA2	BM-CCGT09T308TA2	.031	.079	★			●																				
	NEW PETIT CUT	*2 NP-CCGW03S102FS	NP-CCGW03S102FS	.008	.043	●			●				●																
		*2 NP-CCGW03S104FS	NP-CCGW03S104FS	.016	.039	●			●				●																
		*2 NP-CCGW04T002FS	NP-CCGW04T002FS	.008	.059	●			●				●																
		*2 NP-CCGW04T004FS	NP-CCGW04T004FS	.016	.055	●			●				●																
		*2 NP-CCGW03S102GS	NP-CCGW03S102GS	.008	.043				●																				
		*2 NP-CCGW03S104GS	NP-CCGW03S104GS	.016	.039				●																				
		*2 NP-CCGW04T002GS	NP-CCGW04T002GS	.008	.059				●																				
		*2 NP-CCGW04T004GS	NP-CCGW04T004GS	.016	.055				●																				

*1 Please refer to page B012 before using the wiper insert.

*2 Diameter of inscribed circle is special. (For SCLC type)

● = NEW

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

Workpiece Material	H	Hardened Materials				●	●	●	●	✱	●	●	●	✱	●	✱
	K	Cast Iron													●	✱
	S	Heat Resistant Alloy, Titanium Alloy														
		Sintered Alloy													●	
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN				CBN			Solid CBN				
					NEW BC8210 BC8220	BC8105 BC8110	BC8120 BC8130	NEW BC5110	MB8110 MB8120	MB8130 MB4120	MBS140					
	NEW PETIT CUT	NP-CPGB2.51.50.5-FS2	NP-CPGB080202FS2	.008	.067									●		
		NP-CPGB2.51.51-FS2	NP-CPGB080204FS2	.016	.071			★						●		
		NP-CPGB2.51.52-FS2	NP-CPGB080208FS2	.031	.079			★								
		NP-CPGB320.5-FS2	NP-CPGB090302FS2	.008	.067			● ●						●		
		NP-CPGB321-FS2	NP-CPGB090304FS2	.016	.071			● ●						●		
		NP-CPGB322-FS2	NP-CPGB090308FS2	.031	.079			● ●						●		
		NP-CPGB323-FS2	NP-CPGB090312FS2	.047	.087				●							
		NP-CPGB2.51.51-GS2	NP-CPGB080204GS2	.016	.071	●		● ★								
		NP-CPGB2.51.52-GS2	NP-CPGB080208GS2	.031	.079	★		● ★								
		NP-CPGB320.5-GS2	NP-CPGB090302GS2	.008	.067	★		● ●								
		NP-CPGB321-GS2	NP-CPGB090304GS2	.016	.071	★		● ★								
		NP-CPGB322-GS2	NP-CPGB090308GS2	.031	.079	★		● ★								
		NP-CPGB2.51.51-GA2	NP-CPGB080204GA2	.016	.071		★		★ ●							
		NP-CPGB2.51.52-GA2	NP-CPGB080208GA2	.031	.079		★		★ ●							
		NP-CPGB2.51.53-GA2	NP-CPGB080212GA2	.047	.087		★		★ ●							
		NP-CPGB320.5-GA2	NP-CPGB090302GA2	.008	.067		★		●							
		NP-CPGB321-GA2	NP-CPGB090304GA2	.016	.071		★		● ●							
		NP-CPGB322-GA2	NP-CPGB090308GA2	.031	.079		★		● ●							
		NP-CPGB323-GA2	NP-CPGB090312GA2	.047	.087		●		● ●							
		NEW NP-CPGB321-VA2	NP-CPGB090304VA2	.016	.071		★									
		NEW NP-CPGB322-VA2	NP-CPGB090308VA2	.031	.079		★									
		NEW NP-CPGB323-VA2	NP-CPGB090312VA2	.047	.087		★									
			NP-CPGB2.51.51-TA2	NP-CPGB080204TA2	.016	.071				●						
			NP-CPGB2.51.52-TA2	NP-CPGB080208TA2	.031	.079				●						
			NP-CPGB2.51.53-TA2	NP-CPGB080212TA2	.047	.087				●						
			NP-CPGB321-TA2	NP-CPGB090304TA2	.016	.071		★		● ●						
			NP-CPGB322-TA2	NP-CPGB090308TA2	.031	.079		★		● ●						
			NP-CPGB323-TA2	NP-CPGB090312TA2	.047	.087		★		● ●						
			NP-CPGB2.51.50.5-SE2	NP-CPGB080202SE2	.008	.067									●	
			NP-CPGB2.51.51-SE2	NP-CPGB080204SE2	.016	.071									●	
			NP-CPGB320.5-SE2	NP-CPGB090302SE2	.008	.067									●	
			NP-CPGB321-SE2	NP-CPGB090304SE2	.016	.071									●	
			NP-CPGB322-SE2	NP-CPGB090308SE2	.031	.079									●	

● = NEW

CBN

B

CBN TURNING INSERTS

POSI 11°

WITH HOLE

C

D

R

S

T

V

W

EXTERNAL TURNING > C002
BORING > E002

IDENTIFICATION > B002
HONING > B009

B039

CBN TURNING INSERTS [POSITIVE]



NP-DCGW 2 1.5 0.5 FS2

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

CBN

B

CBN TURNING INSERTS

POSI
7°

WITH
HOLE

C

D

R

S

T

V

W



Workpiece Material	H	Hardened Materials				●	●	●	●	✱	●	●	●	✱	●	✱
	K	Cast Iron													●	✱
	S	Heat Resistant Alloy, Titanium Alloy													●	✱
		Sintered Alloy													●	
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN					CBN			Solid CBN			
					NEW BC8210 BC8220	BC8105	BC8110	BC8120	BC8130	NEW BC5110	MB8110	MB8120	MB8130	MB8140		
	NP-DCGW21.50.5-FS2	NP-DCGW070202FS2	.008	.087	★		●				●					
	NP-DCGW21.51-FS2	NP-DCGW070204FS2	.016	.083	●			●			★	●		●		
	NP-DCGW21.52-FS2	NP-DCGW070208FS2	.031	.079	●			●				●		●		
	NP-DCGW32.50.5-FS2	NP-DCGW11T302FS2	.008	.087	●		●	●				●		●		
	NP-DCGW32.51-FS2	NP-DCGW11T304FS2	.016	.083	●		●	●	●			●		●		
	NP-DCGW32.52-FS2	NP-DCGW11T308FS2	.031	.079	●		●	●	●		●	●		●		
	NP-DCGW21.50.5-GS2	NP-DCGW070202GS2	.008	.087	★		●	●								
	NP-DCGW21.51-GS2	NP-DCGW070204GS2	.016	.083	●		●	●			★			●		
	NP-DCGW21.52-GS2	NP-DCGW070208GS2	.031	.079	●		●	●						●		
	NP-DCGW32.50.5-GS2	NP-DCGW11T302GS2	.008	.087	●		●	●						●		
	NP-DCGW32.51-GS2	NP-DCGW11T304GS2	.016	.083	●		●	●			●			●		
	NP-DCGW32.52-GS2	NP-DCGW11T308GS2	.031	.079	●		●	●			★			●		
	NP-DCGW21.50.5-GA2	NP-DCGW070202GA2	.008	.087		★		●				●				
	NP-DCGW21.51-GA2	NP-DCGW070204GA2	.016	.083		★		●	●			●				
	NP-DCGW21.52-GA2	NP-DCGW070208GA2	.031	.079		★			●							
	NP-DCGW32.50.5-GA2	NP-DCGW11T302GA2	.008	.087		★			●			●				
	NP-DCGW32.51-GA2	NP-DCGW11T304GA2	.016	.083		●		●	●			●				
	NP-DCGW32.52-GA2	NP-DCGW11T308GA2	.031	.079		●			●	●		●				
	NP-DCGW32.51-GH2	NP-DCGW11T304GH2	.016	.083				●	●	●						
	NP-DCGW32.52-GH2	NP-DCGW11T308GH2	.031	.079				●	●	●						
	NEW NP-DCGW32.51-VA2	NP-DCGW11T304VA2	.016	.083		★										
	NEW NP-DCGW32.52-VA2	NP-DCGW11T308VA2	.031	.079		●										
	NP-DCGW21.51-TA2	NP-DCGW070204TA2	.016	.083					●	●			●	●		
	NP-DCGW21.52-TA2	NP-DCGW070208TA2	.031	.079						●			●			
	NP-DCGW32.51-TA2	NP-DCGW11T304TA2	.016	.083		★			●	●			●	●		
	NP-DCGW32.52-TA2	NP-DCGW11T308TA2	.031	.079		★			●	●			●	●		
	NP-DCGW32.51-TH2	NP-DCGW11T304TH2	.016	.083					●	●				●		
	NP-DCGW32.52-TH2	NP-DCGW11T308TH2	.031	.079					●	●				●		
	NP-DCGW21.51-SF2	NP-DCGW070204SF2	.016	.083											●	
	NP-DCGW21.52-SF2	NP-DCGW070208SF2	.031	.079											●	
	NP-DCGW32.50.5-SF2	NP-DCGW11T302SF2	.008	.087											●	
	NP-DCGW32.51-SF2	NP-DCGW11T304SF2	.016	.083											●	
	NP-DCGW32.52-SF2	NP-DCGW11T308SF2	.031	.079											●	
	NP-DCGW21.51-SE2	NP-DCGW070204SE2	.016	.083											●	
	NP-DCGW21.52-SE2	NP-DCGW070208SE2	.031	.079											●	
	NP-DCGW32.50.5-SE2	NP-DCGW11T302SE2	.008	.087											●	
	NP-DCGW32.51-SE2	NP-DCGW11T304SE2	.016	.083											●	
	NP-DCGW32.52-SE2	NP-DCGW11T308SE2	.031	.079											●	

● = NEW

Cutting Conditions : ● Stable Cutting ● General Cutting ✚ Unstable Cutting

Workpiece Material	H	Hardened Materials				●	●	●	●	●	✱	●	●	●	✱	●	✱
	K	Cast Iron										●				●	✱
	S	Heat Resistant Alloy, Titanium Alloy															
		Sintered Alloy														●	
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN					CBN			Solid CBN				
					NEW BC8210	BC8220	BC8105	BC8110	BC8120	BC8130	NEW BC5110	MB8110	MB8120	MB8130	MB4120	MBS140	
 (With Breaker)	NEW PETIT CUT BF-DCGT32.51-TS2	BF-DCGT11T304TS2	.016	.083	★		★										
	BF-DCGT32.52-TS2	BF-DCGT11T308TS2	.031	.079	★		★										
 (With Breaker)	NEW PETIT CUT BM-DCGT32.51-TA2	BM-DCGT11T304TA2	.016	.083	●		●										
	BM-DCGT32.52-TA2	BM-DCGT11T308TA2	.031	.079	●		●										

● = NEW

CBN

B

CBN TURNING INSERTS

POSI
7°

WITH HOLE

C

D

R

S

T

V

W

EXTERNAL TURNING > C002
BORING > E002

IDENTIFICATION > B002
HONING > B009

B041

CBN TURNING INSERTS [POSITIVE]



60° TC TYPE INSERTS WITH HOLE

NP-TCGW 2 1.5 1 FS3

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

CBN

B

CBN TURNING INSERTS

POSI
7°

WITH
HOLE

C

D

R

S

T

V

W

Workpiece Material	H	Hardened Materials									
	K	Cast Iron									
	S	Heat Resistant Alloy, Titanium Alloy									
		Sintered Alloy									
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN				CBN		Solid CBN
					NEW BC8210	BC8220	BC8105	BC8110	NEW BC8120	NEW BC5110	
NEW PETIT CUT	NP-TCGW21.51-FS3	NP-TCGW110204FS3	.016	.063							●
	NP-TCGW21.52-FS3	NP-TCGW110208FS3	.031	.067							●
	NP-TCGW1.81.51-GS3	NP-TCGW090204GS3	.016	.063			★		★		
	NP-TCGW1.81.52-GS3	NP-TCGW090208GS3	.031	.067			★				
	NP-TCGW21.50.5-GS3	NP-TCGW110202GS3	.008	.059			●				
	NP-TCGW21.51-GS3	NP-TCGW110204GS3	.016	.063			●				●
	NP-TCGW21.52-GS3	NP-TCGW110208GS3	.031	.067			●		★		●
	NP-TCGW2.521-GS3	NP-TCGW130304GS3	.016	.063			★				
	NP-TCGW2.522-GS3	NP-TCGW130308GS3	.031	.067			★				
	NP-TCGW32.51-GS3	NP-TCGW16T304GS3	.016	.063			●				
	NP-TCGW32.52-GS3	NP-TCGW16T308GS3	.031	.067			●				
	NP-TCGW21.51-SF3	NP-TCGW110204SF3	.016	.063							●
	NP-TCGW21.52-SF3	NP-TCGW110208SF3	.031	.067							●
	NP-TCGW21.51-SE3	NP-TCGW110204SE3	.016	.063							●
	NP-TCGW21.52-SE3	NP-TCGW110208SE3	.031	.067							●

● = NEW



60°

TP

TYPE INSERTS
WITH HOLE

NP-TPGB 1.8 1.5 0.5 FS3

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

Workpiece Material	H	Hardened Materials													
	K	Cast Iron													
	S	Heat Resistant Alloy, Titanium Alloy													
		Sintered Alloy													
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN					CBN			Solid CBN		
					NEW BC8210	BC8220	BC8105	BC8110	BC8120	BC8130	NEW BC5110	MB8110	MB8120	MB8130	MB8140
NEW PETIT CUT	NP-TPGB1.81.50.5-FS3	NP-TPGB090202FS3	.008	.059										●	
	NP-TPGB1.81.51-FS3	NP-TPGB090204FS3	.016	.063							★			●	
	NP-TPGB220.5-FS3	NP-TPGB110302FS3	.008	.059	★		●	●				●		●	
	NP-TPGB221-FS3	NP-TPGB110304FS3	.016	.063	★		●	★	★		★	●		●	
	NP-TPGB222-FS3	NP-TPGB110308FS3	.031	.067	★		●	★	★		●	●		●	
	NP-TPGB321-FS3	NP-TPGB160304FS3	.016	.063					★						
	NP-TPGB322-FS3	NP-TPGB160308FS3	.031	.067					★						
	NP-TPGB1.51.51-GS3	NP-TPGB080204GS3	.016	.063	★		●	★			★				
	NP-TPGB1.51.52-GS3	NP-TPGB080208GS3	.031	.067	★		●	★							
	NP-TPGB1.81.50.5-GS3	NP-TPGB090202GS3	.008	.059										●	
	NP-TPGB1.81.51-GS3	NP-TPGB090204GS3	.016	.063	●		●	★						●	
	NP-TPGB1.81.52-GS3	NP-TPGB090208GS3	.031	.067	★		●	★							
	NP-TPGB220.5-GS3	NP-TPGB110302GS3	.008	.059	●		●	●						●	
	NP-TPGB221-GS3	NP-TPGB110304GS3	.016	.063	★		●	★			★			●	
	NP-TPGB222-GS3	NP-TPGB110308GS3	.031	.067	★		●	★			★			●	
	NP-TPGB321-GS3	NP-TPGB160304GS3	.016	.063	●		●	★							
	NP-TPGB322-GS3	NP-TPGB160308GS3	.031	.067	★		●	★							
	NP-TPGB1.51.51-GA3	NP-TPGB080204GA3	.016	.063							●				
	NP-TPGB1.51.52-GA3	NP-TPGB080208GA3	.031	.067							●				
	NP-TPGB1.81.51-GA3	NP-TPGB090204GA3	.016	.063	★			★	●			●			
	NP-TPGB1.81.52-GA3	NP-TPGB090208GA3	.031	.067	★			★	●			●			
	NP-TPGB220.5-GA3	NP-TPGB110302GA3	.008	.059	★			★				●			
	NP-TPGB221-GA3	NP-TPGB110304GA3	.016	.063	●		●	★	●			●			
	NP-TPGB222-GA3	NP-TPGB110308GA3	.031	.067	●		●	★	●			●			
	NP-TPGB321-GA3	NP-TPGB160304GA3	.016	.063	●		●	★	●			●			
	NP-TPGB322-GA3	NP-TPGB160308GA3	.031	.067	★			★	●			●			
	NP-TPGB321-GH3	NP-TPGB160304GH3	.016	.063				●	●	●					
	NP-TPGB322-GH3	NP-TPGB160308GH3	.031	.067				●	●	●					
	NEW NP-TPGB221-VA3	NP-TPGB110304VA3	.016	.063	★										
	NEW NP-TPGB222-VA3	NP-TPGB110308VA3	.031	.067	●										
	NP-TPGB1.51.51-TA3	NP-TPGB080204TA3	.016	.063							●			●	
	NP-TPGB1.51.52-TA3	NP-TPGB080208TA3	.031	.067							●			●	
	NP-TPGB1.81.51-TA3	NP-TPGB090204TA3	.016	.063							●			●	
	NP-TPGB1.81.52-TA3	NP-TPGB090208TA3	.031	.067							●			●	
	NP-TPGB221-TA3	NP-TPGB110304TA3	.016	.063	★			★	●			●	●		
	NP-TPGB222-TA3	NP-TPGB110308TA3	.031	.067	●			★	●			●	●		

● = NEW

CBN

B

CBN TURNING INSERTS

POSI 11°

WITH HOLE

C

D

R

S

T

V

W

EXTERNAL TURNING > C002
BORING > E002IDENTIFICATION > B002
HONING > B009

B043

CBN TURNING INSERTS [POSITIVE]



60°

TP

TYPE INSERTS
WITH HOLE

NP-TPGB 3 2 1 TA3

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

CBN

B

CBN TURNING INSERTS

POS
11°

WITH
HOLE

C

D

R

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V

W

Workpiece Material	H	Hardened Materials				●	●	●	●	✱	●	●	✱	●	✱	●
	K	Cast Iron									●				●	✱
	S	Heat Resistant Alloy, Titanium Alloy														
		Sintered Alloy													●	
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN				CBN			Solid CBN				
					NEW BC8210 BC8220	BC8105 BC8110 BC8120 BC8130	NEW BC5110	MB8110 MB8120 MB8130 MB4120	MBS140							
	NP-TPGB321-TA3	NP-TPGB160304TA3	.016	.063				★ ●	● ●							
	NP-TPGB322-TA3	NP-TPGB160308TA3	.031	.067				★ ●	● ●							
	NP-TPGB321-TH3	NP-TPGB160304TH3	.016	.063				● ●		●						
	NP-TPGB322-TH3	NP-TPGB160308TH3	.031	.067				● ●		●						
	NP-TPGB1.81.50.5-SF3	NP-TPGB090202SF3	.008	.059								●				
	NP-TPGB1.81.51-SF3	NP-TPGB090204SF3	.016	.063								●				
	NP-TPGB220.5-SF3	NP-TPGB110302SF3	.008	.059								●				
	NP-TPGB221-SF3	NP-TPGB110304SF3	.016	.063								●				
	NP-TPGB222-SF3	NP-TPGB110308SF3	.031	.067								●				
	NP-TPGB1.81.50.5-SE3	NP-TPGB090202SE3	.008	.059								●				
	NP-TPGB1.81.51-SE3	NP-TPGB090204SE3	.016	.063								●				
	NP-TPGB220.5-SE3	NP-TPGB110302SE3	.008	.059								●				
	NP-TPGB221-SE3	NP-TPGB110304SE3	.016	.063								●				
	NP-TPGB222-SE3	NP-TPGB110308SE3	.031	.067								●				

● = NEW



35°

VB TYPE INSERTS
WITH HOLE

NP-VBGW 2 2 0.5 FS2

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

Workpiece Material	H	Hardened Materials				●	●	●	●	●	●	●	●	●	●	●	●	●
	K	Cast Iron																
	S	Heat Resistant Alloy, Titanium Alloy																
		Sintered Alloy																
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN					CBN			Solid CBN					
					NEW BC8210	BC8220	BC8105	BC8110	BC8120	BC8130	NEW BC5110	MB8110	MB8120	MB8130	MB4120	MB5140		
	NP-VBGW220.5-FS2	NP-VBGW110302FS2	.008	.098	★		●					●						
	NP-VBGW221-FS2	NP-VBGW110304FS2	.016	.098	●		●					●		●				
	NP-VBGW222-FS2	NP-VBGW110308FS2	.031	.079	★		●					●		●				
	NP-VBGW330.5-FS2	NP-VBGW160402FS2	.008	.098	●		●					●						
	NP-VBGW331-FS2	NP-VBGW160404FS2	.016	.098				●						●				
	NP-VBGW332-FS2	NP-VBGW160408FS2	.031	.079				●						●				
	NP-VBGW220.5-GS2	NP-VBGW110302GS2	.008	.098	●		●	●										
	NP-VBGW221-GS2	NP-VBGW110304GS2	.016	.098	★		●	●						●				
	NP-VBGW222-GS2	NP-VBGW110308GS2	.031	.079	●		●	●						●				
	NP-VBGW330.5-GS2	NP-VBGW160402GS2	.008	.098	●		●	●										
	NP-VBGW331-GS2	NP-VBGW160404GS2	.016	.098	●		●	●			●			●				
	NP-VBGW332-GS2	NP-VBGW160408GS2	.031	.079	●		●	●			●			●				
	NP-VBGW220.5-GA2	NP-VBGW110302GA2	.008	.098		★		●					●					
	NP-VBGW221-GA2	NP-VBGW110304GA2	.016	.098		●		●	●				●					
	NP-VBGW222-GA2	NP-VBGW110308GA2	.031	.079		●		●	●				●					
	NP-VBGW330.5-GA2	NP-VBGW160402GA2	.008	.098		★		●					●					
	NP-VBGW331-GA2	NP-VBGW160404GA2	.016	.098		●		●	●				●					
	NP-VBGW332-GA2	NP-VBGW160408GA2	.031	.079		★		●	●				●					
	NP-VBGW331-GH2	NP-VBGW160404GH2	.016	.098				●	●	●								
	NP-VBGW332-GH2	NP-VBGW160408GH2	.031	.079				●	●	●								
	NEW	NP-VBGW331-VA2	NP-VBGW160404VA2	.016	.098		★											
	NEW	NP-VBGW332-VA2	NP-VBGW160408VA2	.031	.079		★											
		NP-VBGW221-TA2	NP-VBGW110304TA2	.016	.098					●								
		NP-VBGW222-TA2	NP-VBGW110308TA2	.031	.079					●								
		NP-VBGW331-TA2	NP-VBGW160404TA2	.016	.098		★		●	●			●					
		NP-VBGW332-TA2	NP-VBGW160408TA2	.031	.079		★		●	●			●					
		NP-VBGW331-TH2	NP-VBGW160404TH2	.016	.098				●	●								
		NP-VBGW332-TH2	NP-VBGW160408TH2	.031	.079				●	●								
		NP-VBGW221-SF2	NP-VBGW110304SF2	.016	.098										●			
		NP-VBGW222-SF2	NP-VBGW110308SF2	.031	.079										●			
		NP-VBGW331-SF2	NP-VBGW160404SF2	.016	.098										●			
		NP-VBGW332-SF2	NP-VBGW160408SF2	.031	.079										●			
		NP-VBGW221-SE2	NP-VBGW110304SE2	.016	.098										●			
		NP-VBGW222-SE2	NP-VBGW110308SE2	.031	.079										●			
		NP-VBGW331-SE2	NP-VBGW160404SE2	.016	.098										●			
		NP-VBGW332-SE2	NP-VBGW160408SE2	.031	.079										●			

● = NEW

CBN

B

CBN TURNING INSERTS

POSI 5°

WITH HOLE

C

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R

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V

W

EXTERNAL TURNING > C002
BORING > E002IDENTIFICATION > B002
HONING > B009

B045

CBN TURNING INSERTS [POSITIVE]



35°

VC TYPE INSERTS
WITH HOLE

NP-VCGW 3 3 1 FS2

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

CBN

B

CBN TURNING INSERTS

POSITIVE
7°

WITH
HOLE

C

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Workpiece Material	H	Hardened Materials				●	●	●	●	✱	●	●	✱	●	✱
	K	Cast Iron									●			✱	✱
	S	Heat Resistant Alloy, Titanium Alloy												●	✱
		Sintered Alloy												●	
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN					CBN			Solid CBN		
					NEW BC8210 BC8220	BC8105 BC8110	BC8120 BC8130	NEW BC5110	MB8110 MB8120	MB8130 MB4120	MBS140				
	NP-VCGW331-FS2	NP-VCGW160404FS2	.016	.098			●	●		●					
	NP-VCGW332-FS2	NP-VCGW160408FS2	.031	.079			●	●		●					
	NP-VCGW331-GS2	NP-VCGW160404GS2	.016	.098	★		●	●							
	NP-VCGW332-GS2	NP-VCGW160408GS2	.031	.079	★		●	●							
	NP-VCGW331-GA2	NP-VCGW160404GA2	.016	.098		●		●	●						
	NP-VCGW332-GA2	NP-VCGW160408GA2	.031	.079	★			●	●						
	NP-VCGW331-GH2	NP-VCGW160404GH2	.016	.098				●	●	●					
	NP-VCGW332-GH2	NP-VCGW160408GH2	.031	.079				●	●	●					
	NEW NP-VCGW331-VA2	NP-VCGW160404VA2	.016	.098	★										
	NEW NP-VCGW332-VA2	NP-VCGW160408VA2	.031	.079	★										
	NP-VCGW331-TS2	NP-VCGW160404TS2	.016	.098				●							
	NP-VCGW332-TS2	NP-VCGW160408TS2	.031	.079				●							
	NP-VCGW331-TA2	NP-VCGW160404TA2	.016	.098	★			●	●						
	NP-VCGW332-TA2	NP-VCGW160408TA2	.031	.079	★			●	●						
	NP-VCGW331-TH2	NP-VCGW160404TH2	.016	.098				●	●						
	NP-VCGW332-TH2	NP-VCGW160408TH2	.031	.079				●	●						

● = NEW



90° SP TYPE INSERTS WITHOUT HOLE

NP-SPGN 4 3 3 GS2

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✚ Unstable Cutting

Workpiece Material	H	Hardened Materials				●	●	●	●	✱	●	●	✱	●	✱
	K	Cast Iron												●	✱
	S	Heat Resistant Alloy, Titanium Alloy													
		Sintered Alloy											●		
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN				CBN		Solid CBN				
					NEW BC8210	BC8220	BC8105	BC8110	BC8120	BC8130	NEW BC5110	MB8110	MB8120	MB8130	MB4120
NEW PETIT CUT	NP-SPGN433-GS2	NP-SPGN120412GS2	.047	.098								★			
NEW 															

● = NEW

CBN

B

CBN TURNING INSERTS

POSI 11°

WITHOUT HOLE

C

D

R

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T

V

W

EXTERNAL TURNING > C002
BORING > E002

IDENTIFICATION > B002
HONING > B009

B047

CBN TURNING INSERTS [POSITIVE]

GY TYPE INSERTS WITHOUT HOLE

GY1G 0200 D 020 N GFSG

Size Thickness Corner Radius Honing & Wiper
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

CBN

B

CBN TURNING INSERTS

POSITIVE
7°

WITHOUT
HOLE

C

D

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V

W

Workpiece Material	H	Hardened Materials				●	●	●	●	●	●	●	●	●	●	●	●
	K	Cast Iron															
	S	Heat Resistant Alloy, Titanium Alloy															
		Sintered Alloy															
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	Coated CBN				CBN			Solid CBN					
					NEW BC8210 BC8220	BC8105 BC8110	BC8120 BC8130	NEW BC5110	MB8110 MB8120	MB8130 MB4120	MBS140						
	GY1G0200D020N-GFGS	GY1G0200D020N-GFGS	.008	.106		●											
	GY1G0239E020N-GFGS	GY1G0239E020N-GFGS	.008	.106		●											
	GY1G0250E020N-GFGS	GY1G0250E020N-GFGS	.008	.106		●											
	GY1G0300F020N-GFGS	GY1G0300F020N-GFGS	.008	.106		●											
	GY1G0318F020N-GFGS	GY1G0318F020N-GFGS	.008	.106		●											
	GY1G0400G020N-GFGS	GY1G0400G020N-GFGS	.008	.106		●											
	GY1G0475H020N-GFGS	GY1G0475H020N-GFGS	.008	.106		●											
	GY1G0500H020N-GFGS	GY1G0500H020N-GFGS	.008	.106		●											
	GY1G0600J020N-GFGS	GY1G0600J020N-GFGS	.008	.106		●											

● = NEW

B048

● : USA Stock ★ : Stocked in Japan
<1 insert in one case>

PCD TURNING INSERTS [NEGATIVE]



NP-CNMM 4 3 0.5 RF

Size Thickness Corner Radius
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✚ Unstable Cutting

Work Material	N	Non ferrous Metal				
Shape	Order Number		(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220
NEW PETIT CUT  (With Breaker)	NP-CNMM430.5RF		NP-CNMM120402R-F	.008	.067	★
	NP-CNMM431RF		NP-CNMM120404R-F	.016	.071	★
	NP-CNMM432RF		NP-CNMM120408R-F	.031	.079	★
	CNMA431		CNMA120404	.016	.142	★
	CNMA432		CNMA120408	.031	.142	★

PCD

B

PCD TURNING INSERTS

NEG

WITH HOLE

C

D

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S

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V

W



NP-DNMM 4 3 0.5 RF

Size Thickness Corner Radius
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✚ Unstable Cutting

Work Material	N	Non ferrous Metal				
Shape	Order Number	(ISO) Number	Corner Radius RE	Cutting Edge Effective Length LE	PCD	
			(inch)	(inch)	MD220	
NEW PETIT CUT  (With Breaker)	NP-DNMM430.5RF	NP-DNMM150402R-F	.008	.087	★	
	NP-DNMM431RF	NP-DNMM150404R-F	.016	.083	★	
	NP-DNMM432RF	NP-DNMM150408R-F	.031	.079	★	
	DNGA431	DNGA150404	.016	.114	★	
	DNGA432	DNGA150408	.031	.094	★	

EXTERNAL TURNING > C002
BORING > E002

IDENTIFICATION > B002

B049

PCD TURNING INSERTS [NEGATIVE]



90° SN TYPE INSERTS WITH HOLE

NP-SNMM 4 3 1 RF

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

PCD

B

PCD TURNING INSERTS

NEG

WITH HOLE

C

D

R

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T

V

W

Work Material	N	Non ferrous Metal				●
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220	
NEW PETIT CUT  (With Breaker)	NP-SNMM431RF	NP-SNMM120404R-F	.016	.079	★	
	NP-SNMM432RF	NP-SNMM120408R-F	.031	.087	★	
	SNGA432	SNGA120408	.031	.150	★	



60° TN TYPE INSERTS WITH HOLE

NP-TNMM 3 3 0.5 RF

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

Work Material	N	Non ferrous Metal				●
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220	
NEW PETIT CUT  (With Breaker)	NP-TNMM330.5RF	NP-TNMM160402R-F	.008	.059	★	
	NP-TNMM331RF	NP-TNMM160404R-F	.016	.063	★	
	NP-TNMM332RF	NP-TNMM160408R-F	.031	.067	★	
	TNGA330.5	TNGA160402	.008	.122	★	
	TNGA331	TNGA160404	.016	.114	★	
	TNGA332	TNGA160408	.031	.110	★	

★ : Stocked in Japan

<1 insert in one case>



35°

VN TYPE INSERTS
WITH HOLE

NP-VNMM 3 3 0.5 RF

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✚ Unstable Cutting

Work Material	N Non ferrous Metal				●
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220
NEW PETIT CUT  (With Breaker)	NP-VNMM330.5RF	NP-VNMM160402R-F	.008	.098	★
	NP-VNMM331RF	NP-VNMM160404R-F	.016	.098	★
	NP-VNMM332RF	NP-VNMM160408R-F	.031	.079	★
	VNGA331	VNGA160404	.016	.102	★
	VNGA332	VNGA160408	.031	.071	★

PCD

B

PCD TURNING INSERTS

NEG

WITH
HOLE

C

D

R

S

T

V

W

EXTERNAL TURNING > C002

BORING > E002

IDENTIFICATION > B002

B051

PCD TURNING INSERTS [NEGATIVE]



90°

SN TYPE INSERTS WITHOUT HOLE

SNG

4

3

2

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✚ Unstable Cutting

PCD

B

PCD TURNING INSERTS

NEG

WITHOUT
HOLE

C

D

R

S

T

V

W

Work Material	Non ferrous Metal				
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD
	SNG432	SNGN120408	.031	.150	MD220
					★

B052

● : USA Stock ★ : Stocked in Japan
<1 insert in one case>

PCD TURNING INSERTS [POSITIVE]



NP-CCMH 2 1.5 0.5

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

Work Material	N	Non ferrous Metal				
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220	
NEW PETIT CUT  (With Breaker)	NP-CCMH21.50.5	NP-CCMH060202	.008	.067	●	
	NP-CCMH21.51	NP-CCMH060204	.016	.071	●	
NEW PETIT CUT 	NP-CCMW03S102	NP-CCMW03S102	.008	.043	●	
	NP-CCMW03S104	NP-CCMW03S104	.016	.039	●	
	NP-CCMW04T002	NP-CCMW04T002	.008	.059	●	
	NP-CCMW04T004	NP-CCMW04T004	.016	.055	●	
	CCMW21.50.5	CCMW060202	.008	.114	●	
	CCMW21.51	CCMW060204	.016	.114	●	
	CCMW32.50.5	CCMW09T302	.008	.130	●	
	CCMW32.51	CCMW09T304	.016	.130	●	

PCD

B

PCD TURNING INSERTS

POSI
7°
11°

WITH
HOLE

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NP-CPMH 2.5 1.5 0.5

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

Work Material	N	Non ferrous Metal				
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220	
NEW PETIT CUT  (With Breaker)	NP-CPMH2.51.50.5	NP-CPMH080202	.008	.067	●	
	NP-CPMH2.51.51	NP-CPMH080204	.016	.071	●	
	NP-CPMH320.5	NP-CPMH090302	.008	.067	●	
	NP-CPMH321	NP-CPMH090304	.016	.071	●	
 (With Breaker)	CPGT2.51.50.5	CPGT080202	.008	.146	●	
	CPGT2.51.51	CPGT080204	.016	.142	●	
	CPGT320.5	CPGT090302	.008	.130	●	
	CPGT321	CPGT090304	.016	.130	●	

EXTERNAL TURNING > C002

BORING > E002

IDENTIFICATION > B002

B053

PCD TURNING INSERTS [POSITIVE]



NP-DCMT 2 1.5 0.5 RF
 Size Thickness Corner Radius
 *Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

PCD

B

PCD TURNING INSERTS

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WITH
HOLE

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Work Material	N Non ferrous Metal					●
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220	
	NEW PETIT CUT					
	NP-DCMT21.50.5RF	NP-DCMT070202R-F	.008	.055	●	
	NP-DCMT21.50.5LF	NP-DCMT070202L-F	.008	.055	●	
	NP-DCMT21.51RF	NP-DCMT070204R-F	.016	.059	●	
	NP-DCMT21.51LF	NP-DCMT070204L-F	.016	.059	●	
	NP-DCMT32.50.5RF	NP-DCMT11T302R-F	.008	.055	●	
	NP-DCMT32.50.5LF	NP-DCMT11T302L-F	.008	.055	●	
	NP-DCMT32.51RF	NP-DCMT11T304R-F	.016	.059	●	
(With Breaker)	NP-DCMT32.51LF	NP-DCMT11T304L-F	.016	.059	●	
	DCMW21.50.5	DCMW070202	.008	.106	★	
	DCMW21.51	DCMW070204	.016	.098	●	
	DCMW32.50.5	DCMW11T302	.008	.118	●	
	DCMW32.51	DCMW11T304	.016	.114	●	



SPGX 3 2 1
 Size Thickness Corner Radius
 *Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

Work Material	N Non ferrous Metal					●
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220	
	SPGX321	SPGX090304	.016	.146	★	
	SPGX322	SPGX090308	.031	.150	★	



60° TC TYPE INSERTS WITH HOLE

TCMW 2 1.5 0.5

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✚ Unstable Cutting

Work Material	Non ferrous Metal				
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD
	TCMW21.50.5	TCMW110202	.008	.106	●
	TCMW21.51	TCMW110204	.016	.102	★
	TCGW1.210.5	TCGW060102	.008	.059	★
	TCGW1.211	TCGW060104	.016	.063	★

PCD

B

PCD TURNING INSERTS

POSI 7°

WITH HOLE

C

D

R

S

T

V

W

EXTERNAL TURNING > C002

BORING > E002

IDENTIFICATION > B002

B055

PCD TURNING INSERTS [POSITIVE]



60°

TP

TYPE INSERTS
WITH HOLE

NP-TPMX 1.8 1.5 0.5 RF

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

PCD

B

PCD TURNING INSERTS

POSITIVE
11°

WITH HOLE

C

D

R

S

T

V

W

Work Material	N	Non ferrous Metal					
Shape	Order Number	(ISO) Number	Corner Radius RE	Cutting Edge Effective Length LE	PCD		
			(inch)	(inch)	MD220		
	NEW PETIT CUT	NP-TPMX1.81.50.5RF	NP-TPMX090202R-F	.008	.059	★	
		NP-TPMX1.81.50.5LF	NP-TPMX090202L-F	.008	.059	★	
		NP-TPMX1.81.51LF	NP-TPMX090204L-F	.016	.063	★	
		NP-TPMX1.81.52LF	NP-TPMX090208L-F	.031	.067	★	
		NP-TPMX220.5LF	NP-TPMX110302L-F	.008	.059	★	
		NP-TPMX221LF	NP-TPMX110304L-F	.016	.063	★	
		NP-TPMX222LF	NP-TPMX110308L-F	.031	.067	★	
		NP-TPMX320.5LF	NP-TPMX160302L-F	.008	.059	★	
		NP-TPMX321LF	NP-TPMX160304L-F	.016	.063	★	
	(With Breaker)		NP-TPMX322LF	NP-TPMX160308L-F	.031	.067	★
	NEW PETIT CUT	NP-TPMH1.51.50.5RF	NP-TPMH080202R-F	.008	.059	●	
		NP-TPMH1.51.50.5LF	NP-TPMH080202L-F	.008	.059	●	
		NP-TPMH1.51.51RF	NP-TPMH080204R-F	.016	.063	●	
		NP-TPMH1.51.51LF	NP-TPMH080204L-F	.016	.063	●	
		NP-TPMH1.81.50.5RF	NP-TPMH090202R-F	.008	.059	●	
		NP-TPMH1.81.50.5LF	NP-TPMH090202L-F	.008	.059	●	
		NP-TPMH1.81.51RF	NP-TPMH090204R-F	.016	.063	●	
		NP-TPMH1.81.51LF	NP-TPMH090204L-F	.016	.063	●	
		NP-TPMH220.5RF	NP-TPMH110302R-F	.008	.059	●	
		NP-TPMH220.5LF	NP-TPMH110302L-F	.008	.059	●	
		NP-TPMH221RF	NP-TPMH110304R-F	.016	.063	●	
		NP-TPMH221LF	NP-TPMH110304L-F	.016	.063	●	
		NP-TPMH320.5RF	NP-TPMH160302R-F	.008	.059	★	
		NP-TPMH320.5LF	NP-TPMH160302L-F	.008	.059	★	
		NP-TPMH321RF	NP-TPMH160304R-F	.016	.063	★	
(With Breaker)		NP-TPMH321LF	NP-TPMH160304L-F	.016	.063	★	
		TPGT320.5RF	TPGT160302R-F	.008	.122	★	
		TPGT320.5LF	TPGT160302L-F	.008	.122	★	
		TPGT321RF	TPGT160304R-F	.016	.114	★	
		TPGT321LF	TPGT160304L-F	.016	.114	★	
	(With Breaker)						

● : USA Stock ★ : Stocked in Japan
<1 insert in one case>

Cutting Conditions : ● Stable Cutting ● General Cutting ✚ Unstable Cutting

Work Material	N Non ferrous Metal				
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220
	TPGV1.81.50.5RF	TPGV090202R-F	.008	.106	★
	TPGV1.81.50.5LF	TPGV090202L-F	.008	.106	★
	TPGV1.81.51RF	TPGV090204R-F	.016	.102	★
	TPGV1.81.51LF	TPGV090204L-F	.016	.102	★
	TPGV220.5RF	TPGV110302R-F	.008	.106	★
	TPGV220.5LF	TPGV110302L-F	.008	.106	★
	TPGV221RF	TPGV110304R-F	.016	.102	★
	TPGV221LF	TPGV110304L-F	.016	.102	★
(With Breaker)					
	TPGX1.51.50.5	TPGX080202	.008	.071	★
	TPGX1.51.51	TPGX080204	.016	.067	★
	TPGX1.51.52	TPGX080208	.031	.055	★
	TPGX1.81.50.5	TPGX090202	.008	.106	★
	TPGX1.81.51	TPGX090204	.016	.102	★
	TPGX1.81.52	TPGX090208	.031	.091	★
	TPGX220.5	TPGX110302	.008	.106	★
	TPGX221	TPGX110304	.016	.102	★
	TPGX222	TPGX110308	.031	.091	★
	TPGX321	TPGX160304	.016	.114	★
	TPGX322	TPGX160308	.031	.102	★

PCD

B

PCD TURNING INSERTS

POSI
11°

WITH
HOLE

C

D

R

S

T

V

W

EXTERNAL TURNING > -
BORING > E002

IDENTIFICATION > B002

B057

PCD TURNING INSERTS [POSITIVE]



35°

VB TYPE INSERTS
WITH HOLE

NP-VBGT 2 2 V5 RF

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✚ Unstable Cutting

PCD

B

PCD TURNING INSERTS

POSITIVE
35°

WITH
HOLE

C

D

R

S

T

V

W

Work Material	N Non ferrous Metal				
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220
 (With Breaker)	NP-VBGT22V5RF	NP-VBGT1103V5R-F	.002	.098	★
	NP-VBGT220.2RF	NP-VBGT110301R-F	.004	.098	★
	NP-VBGT220.5RF	NP-VBGT110302R-F	.008	.098	★
	NP-VBGT221RF	NP-VBGT110304R-F	.016	.098	★



35°

VC TYPE INSERTS
WITH HOLE

NP-VCGT 1.5 1.5 V5 RF

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✚ Unstable Cutting

Work Material	N Non ferrous Metal				
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220
 (With Breaker)	NP-VCGT1.51.5V5RF	NP-VCGT0802V5R-F	.002	.098	★
	NP-VCGT1.51.50.2RF	NP-VCGT080201R-F	.004	.098	★
	NP-VCGT1.51.50.5RF	NP-VCGT080202R-F	.008	.098	★
	NP-VCGT1.51.51RF	NP-VCGT080204R-F	.016	.098	★
	NP-VCGT22V5RF	NP-VCGT1103V5R-F	.002	.098	★
	NP-VCGT220.2RF	NP-VCGT110301R-F	.004	.098	★
	NP-VCGT220.5RF	NP-VCGT110302R-F	.008	.098	★
	NP-VCGT221RF	NP-VCGT110304R-F	.016	.098	★
 NEW	VCGW220.2	VCGW110301	.004	.122	●
	VCGW220.5	VCGW110302	.008	.118	●
	VCGW221	VCGW110304	.016	.102	●

● = NEW



80° WC TYPE INSERTS WITH HOLE

WCMW 1.5 1.5 0.5

Size Thickness Corner Radius
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✚ Unstable Cutting

Work Material	N Non ferrous Metal				
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220
	WCMW1.51.50.5	WCMWL30202	.008	.063	★
	WCMW21.50.5	WCMW040202	.008	.114	★
	WCMW32.51	WCMW06T304	.016	.118	★

PCD

B

PCD TURNING INSERTS

POSI 7° 11°

WITH HOLE

C

D

R

S

T

V

W



80° WP TYPE INSERTS WITH HOLE

WPGT 2 1.5 0.5

Size Thickness Corner Radius
*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✚ Unstable Cutting

Work Material	N Non ferrous Metal				
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220
 (With Breaker)	WPGT21.50.5	WPGT040202	.008	.114	★
	WPGT21.51	WPGT040204	.016	.114	★
	WPGT320.5	WPGT060302	.008	.130	★
	WPGT321	WPGT060304	.016	.130	★

EXTERNAL TURNING > C002
BORING > E002

IDENTIFICATION > B002

B059

PCD TURNING INSERTS [POSITIVE]

55° DE TYPE INSERTS WITH HOLE

DEGX 4 3 0.5 RF

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✚ Unstable Cutting

PCD

B

PCD TURNING INSERTS

POS 20°

WITH HOLE

C

D

R

S

T

V

W

Work Material	N Non ferrous Metal				
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220
	DEGX430.5RF	DEGX150402R-F	.008	.118	★
	DEGX430.5LF	DEGX150402L-F	.008	.118	★
	DEGX431RF	DEGX150404R-F	.016	.114	★
	DEGX431LF	DEGX150404L-F	.016	.114	★
	(With Breaker)				

60° TE TYPE INSERTS WITH HOLE

TEGX 3 2 0.5 R

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✚ Unstable Cutting

Work Material	N Non ferrous Metal				
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220
	TEGX320.5R	TEGX160302R	.008	.150	★
	TEGX320.5L	TEGX160302L	.008	.150	★
	TEGX321R	TEGX160304R	.016	.142	★
	TEGX321L	TEGX160304L	.016	.142	★
	(With Breaker)				
	TEGX320.5	TEGX160302	.008	.122	★
	TEGX321	TEGX160304	.016	.114	★

★ : Stocked in Japan
<1 insert in one case>

B060



35° VD TYPE INSERTS WITH HOLE

VDGX 3 2 0.5 RF

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✖ Unstable Cutting

Work Material	N Non ferrous Metal				●
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220
 (With Breaker)	VDGX320.5RF	VDGX160302R-F	.008	.122	★
	VDGX320.5LF	VDGX160302L-F	.008	.122	★
	VDGX321RF	VDGX160304R-F	.016	.106	★
	VDGX321LF	VDGX160304L-F	.016	.106	★

PCD

B

PCD TURNING INSERTS

POSI
15°

WITH
HOLE

C

D

R

S

T

V

W

EXTERNAL TURNING > C002
BORING > E002

IDENTIFICATION > B002

B061

PCD TURNING INSERTS [POSITIVE]



90° SP TYPE INSERTS WITHOUT HOLE

SPG 3 2 0.5

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✕ Unstable Cutting

PCD

B

PCD TURNING INSERTS

POSITIVE
11°

WITHOUT
HOLE

C

D

R

S

T

V

W

Work Material	N	Non ferrous Metal				●
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220	
	SPG320.5	SPGN090302	.008	.146	★	
	SPG321	SPGN090304	.016	.146	★	
	SPG322	SPGN090308	.031	.150	★	
	SPG421	SPGN120304	.016	.146	★	
	SPG422	SPGN120308	.031	.150	★	
	SPG423	SPGN120312	.047	.146	★	



60° TP TYPE INSERTS WITHOUT HOLE

TPG 2 2 0.5

Size Thickness Corner Radius

*Please refer to page B002.

Cutting Conditions : ● Stable Cutting ● General Cutting ✕ Unstable Cutting

Work Material	N	Non ferrous Metal				●
Shape	Order Number	(ISO) Number	Corner Radius RE (inch)	Cutting Edge Effective Length LE (inch)	PCD MD220	
	TPG220.5	TPGN110302	.008	.106	★	
	TPG221	TPGN110304	.016	.102	★	
	TPG222	TPGN110308	.031	.091	★	
	TPG320.5	TPGN160302	.008	.122	★	
	TPG321	TPGN160304	.016	.114	★	
	TPG322	TPGN160308	.031	.102	★	

★ : Stocked in Japan
<1 insert in one case>

EXTERNAL TURNING > -
BORING > E002

IDENTIFICATION > B002

