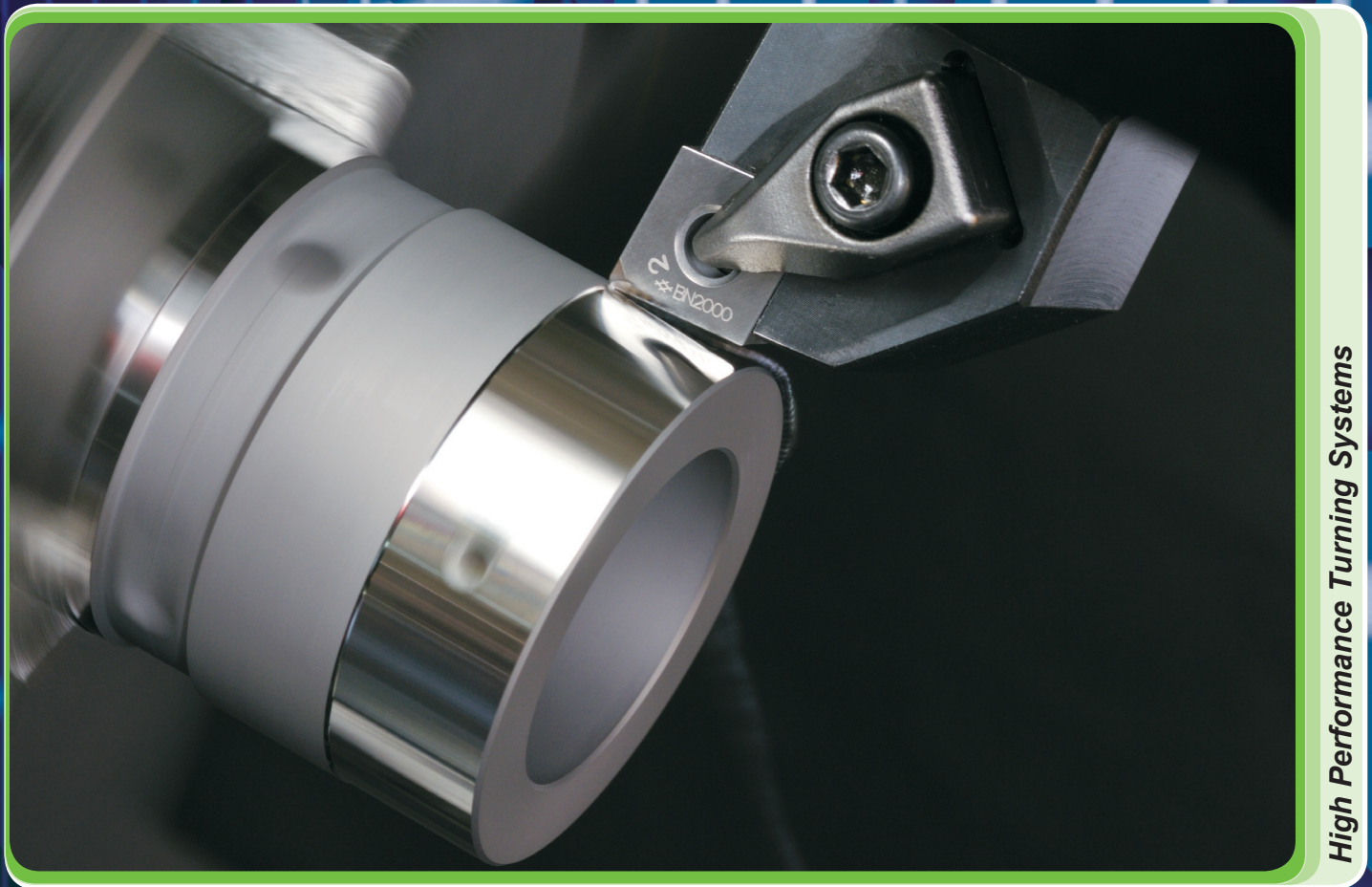
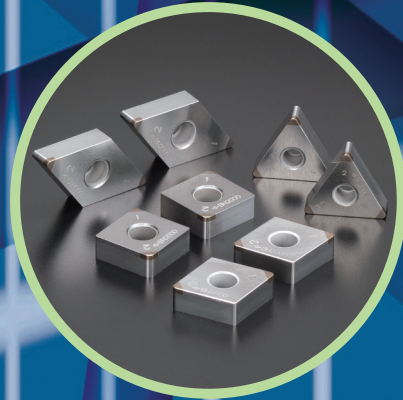




SUMITOMO

CARBIDE - CBN - DIAMOND

BN2000



High Performance Turning Systems

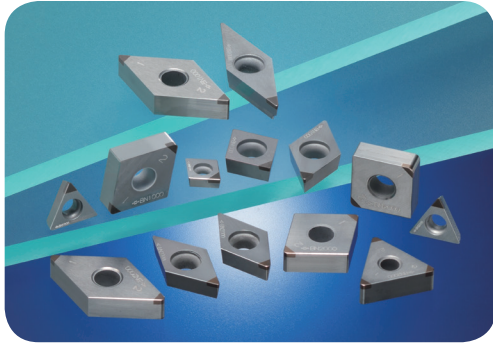
Uncoated general purpose CBN grade for hardened steel machining applications

Hardened Steel



BN2000

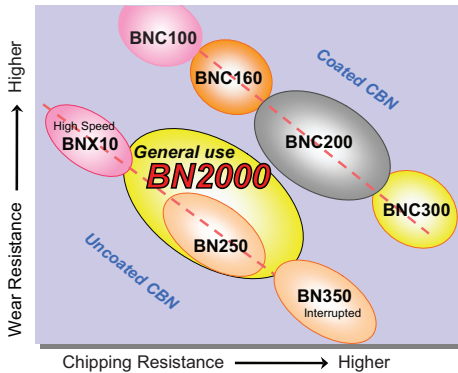
for general purpose turning of hardened steel



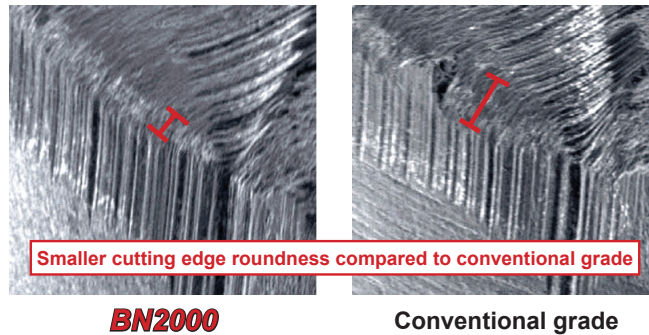
Features & Benefits

- General purpose uncoated CBN grade suitable for typical hardened steel machining applications
- Provides stable tool life in everything from continuous cutting to light-to-medium interrupted cutting
- Employs a high-purity ceramic binder which significantly improves both fracture resistance and wear resistance

Performance



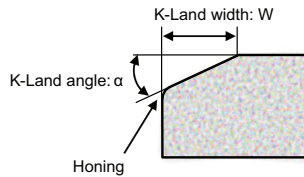
Sharpness Comparison



Edge Preparations

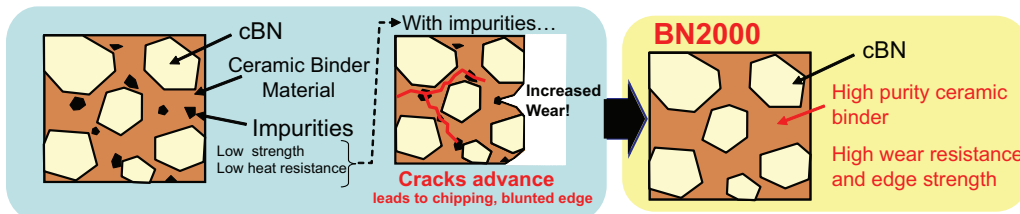
LT Type: Extra sharp edge that is able to provide a high quality machined surface.

HS Type: Extra tough edge for heavy interrupted machining applications.



Edge Type	α	W (in)	Honing
LT	15°	0.005	no
Standard	25°	0.005	yes
HS	35°	0.005	

Coating Structure



Grade	PCBN				
	cBN content [vol%]	cBN grain size [μm]	Binder Material	Hardness [GPa]	TRS [GPa]
BN2000	50-55	2	High Purity TiN	31-34	1.05-1.15

Recommended Cutting Conditions

Recommended Speeds for BN2000 (SFM)						
Material	Application	Hardness (HrC)	Low	Low Opt.	High Opt.	High
Induction Hardened Steel	Interrupted (DRY)	45-65	200	300	550	600
Carburized Hardened Steel, Bearing Steel		45-65	200	300	550	600
Die Steel, High Speed Steel		55-65	150	200	250	300

Recommended Feeds for BN2000 (IPR)		
Finishing	General Purpose	High
0.002 - 0.004	0.004 - 0.006	0.006 - 0.008

Recommended D.O.C. for BN2000 (INCH)	
Mini-Tip (NU-)	Full-Tip
≤ 0.015	≤ 0.020

NOTE: The recommended feed rate for grooving is 0.001 - 0.002 IPR.

Insert Availability-POSITIVE (cont.)

DCGA		55° Diamond/7° Positive (CONTINUED)						
Sumitomo Cat. No.	ISO Cat. No.	BN2000	I.C.	Thickness	Nose Radius	Max D.O.C.	Hole Dia.	
NU-DCGA21.50.5	NU-DCGW070202	● .250	.094	.0078	.015	.110		
NU-DCGA21.50.5LT	NU-DCGW070202LT	● .250	.094	.0078	.015	.110		
NU-DCGA21.50.5HS	NU-DCGW070202HS	● .250	.094	.0078	.015	.110		
NU-DCGA21.51	NU-DCGW070204	● .250	.094	.0156	.015	.110		
NU-DCGA21.51LT	NU-DCGW070204LT	● .250	.094	.0156	.015	.110		
NU-DCGA21.51HS	NU-DCGW070204HS	● .250	.094	.0156	.015	.110		
NU-DCGA21.52	NU-DCGW070208	● .250	.094	.0313	.015	.110		
NU-DCGA21.52LT	NU-DCGW070208LT	● .250	.094	.0313	.015	.110		
NU-DCGA32.50.5	NU-DCGW11T302	● .375	.156	.0078	.015	.1732		
NU-DCGA32.50.5LT	NU-DCGW11T302LT	● .375	.156	.0078	.015	.1732		
NU-DCGA32.50.5HS	NU-DCGW11T302HS	● .375	.156	.0078	.015	.1732		
NU-DCGA32.51	NU-DCGW11T304	● .375	.156	.0156	.015	.1732		
NU-DCGA32.51LT	NU-DCGW11T304LT	● .375	.156	.0156	.015	.1732		
NU-DCGA32.51HS	NU-DCGW11T304HS	● .375	.156	.0156	.015	.1732		
NU-DCGA32.52	NU-DCGW11T308	● .375	.156	.0313	.015	.1732		
NU-DCGA32.52HS	NU-DCGW11T308HS	● .375	.156	.0313	.015	.1732		
NU-DCGA32.53	NU-DCGW11T312	● .375	.156	.0469	.015	.1732		
NU-DCGA32.53LT	NU-DCGW11T312LT	● .375	.156	.0469	.015	.1732		
SPG		90° Square/11° Positive						
NU-SPG321	NU-SPGN090404	● .375	.125	.0156	.015	-		
NU-SPG321LT	NU-SPGN090404LT	★ .375	.125	.0156	.015	-		
NU-SPG321HS	NU-SPGN090404HS	★ .375	.125	.0156	.015	-		
NU-SPG322	NU-SPGN090408	● .375	.125	.0313	.015	-		
NU-SPG322LT	NU-SPGN090408LT	★ .375	.125	.0313	.015	-		
NU-SPG322HS	NU-SPGN090408HS	★ .375	.125	.0313	.015	-		
TBGE		60° Triangle/5° Positive						
TBGE520.5B	TBGN060102B	● .156	.0625	.0078	.020	-		
TBGE521B	TBGN060104B	● .156	.0625	.0156	.020	-		
TBGE522B	TBGN060108B	● .156	.0625	.0078	.020	-		
TPG		60° Triangle/11° Positive						
TPG1.81.51	TPGN090204	★ .219	.094	.0156	.020	-		
TPG1.81.51HS	TPGN090204HS	★ .219	.094	.0156	.020	-		
TPG221	TPGN110304	★ .250	.125	.0156	.020	-		
TPG221HS	TPGN110304HS	★ .250	.125	.0156	.020	-		
TPG222	TPGN110308	★ .250	.125	.0313	.020	-		
TPG222HS	TPGN110308HS	★ .250	.125	.0313	.020	-		
TPG321	TPGN160304	★ .375	.125	.0156	.020	-		
TPG321HS	TPGN160304HS	★ .375	.125	.0156	.020	-		
TPG322	TPGN160308	★ .375	.125	.0313	.020	-		
TPG322HS	TPGN160308HS	★ .375	.125	.0313	.020	-		
TPG432	TPGN220408	★ .500	.1875	.0313	.020	-		
TPG432HS	TPGN220408HS	★ .500	.1875	.0313	.020	-		
NU-TPG220.5	NU-TPGN110302	● .250	.125	.0078	.015	-		
NU-TPG220.5LT	NU-TPGN110302LT	● .250	.125	.0078	.015	-		
NU-TPG221	NU-TPGN110304	● .250	.125	.0156	.015	-		
NU-TPG221LT	NU-TPGN110304LT	● .250	.125	.0156	.015	-		
NU-TPG221HS	NU-TPGN110304HS	● .250	.125	.0156	.015	-		
NU-TPG222	NU-TPGN110308	● .250	.125	.0313	.015	-		
NU-TPG222LT	NU-TPGN110308LT	● .250	.125	.0313	.015	-		
NU-TPG222HS	NU-TPGN110308HS	● .250	.125	.0313	.015	-		
NU-TPG320.5	NU-TPGN160302	● .375	.125	.0078	.015	-		
NU-TPG321	NU-TPGN160304	● .375	.125	.0156	.015	-		
NU-TPG321LT	NU-TPGN160304LT	● .375	.125	.0156	.015	-		
NU-TPG321HS	NU-TPGN160304HS	● .375	.125	.0156	.015	-		
NU-TPG322	NU-TPGN160308	● .375	.125	.0313	.015	-		
NU-TPG322LT	NU-TPGN160308LT	● .375	.125	.0313	.015	-		
NU-TPG322HS	NU-TPGN160308HS	● .375	.125	.0313	.015	-		
TPGA		60° Triangle/11° Positive						
NU-TPGA1.81.50.5	NU-TPGW090202	● .219	.094	.0078	.015	.102		
NU-TPGA1.81.50.5LT	NU-TPGW090202LT	● .219	.094	.0078	.015	.102		
NU-TPGA1.81.50.5HS	NU-TPGW090202HS	● .219	.094	.0078	.015	.102		
NU-TPGA1.81.51	NU-TPGW090204	● .219	.094	.0156	.015	.102		
NU-TPGA1.81.51LT	NU-TPGW090204LT	● .219	.094	.0156	.015	.102		
NU-TPGA1.81.51HS	NU-TPGW090204HS	● .219	.094	.0156	.015	.102		
NU-TPGA1.81.52	NU-TPGW090208	● .219	.094	.0313	.015	.102		
NU-TPGA21.50.5	NU-TPGW110202	● .250	.094	.0078	.015	.110		
NU-TPGA21.50.5LT	NU-TPGW110202LT	● .250	.094	.0078	.015	.110		
NU-TPGA21.51	NU-TPGW110204	● .250	.094	.0156	.015	.110		
NU-TPGA21.51LT	NU-TPGW110204LT	● .250	.094	.0156	.015	.110		
NU-TPGA21.51HS	NU-TPGW110204HS	● .250	.094	.0156	.015	.110		
NU-TPGA220.5	NU-TPGW110302	● .250	.125	.0078	.015	.130		
NU-TPGA220.5LT	NU-TPGW110302LT	● .250	.125	.0078	.015	.130		
NU-TPGA220.5HS	NU-TPGW110302HS	● .250	.125	.0078	.015	.130		

● = Stocked standard item ★ = Worldwide Warehouse item

Insert Availability-POSITIVE (cont.)

TPGA		60° Triangle/11° Positive (CONTINUED)						
Sumitomo Cat. No.	ISO Cat. No.	BN2000	I.C.	Thickness	Nose Radius	Max D.O.C.	Hole Dia.	
NU-TPGA221	NU-TPGW110304	● .250	.125	.0156	.015	.130		
NU-TPGA221LT	NU-TPGW110304LT	● .250	.125	.0156	.015	.130		
NU-TPGA221HS	NU-TPGW110304HS	● .250	.125	.0156	.015	.130		
NU-TPGA222	NU-TPGW110308	● .250	.125	.0313	.015	.130		
NU-TPGA222LT	NU-TPGW110308LT	● .250	.125	.0313	.015	.130		
NU-TPGA222HS	NU-TPGW110308HS	● .250	.125	.0313	.015	.130		
NU-TPGA320.5	NU-TPGW160302	● .375	.125	.0078	.015	.1693		
NU-TPGA321	NU-TPGW160304	● .375	.125	.0156	.015	.1693		
NU-TPGA322	NU-TPGW160308	● .375	.125	.0313	.015	.1693		
NU-TPGA331	NU-TPGW160404	● .375	.1875	.0156	.015	.1693		
NU-TPGA331LT	NU-TPGW160404LT	● .375	.1875	.0156	.015	.1693		
NU-TPGA331HS	NU-TPGW160404HS	● .375	.1875	.0156	.015	.1693		
NU-TPGA332	NU-TPGW160408	● .375	.1875	.0313	.015	.1693		
NU-TPGA332LT	NU-TPGW160408LT	● .375	.1875	.0313	.015	.1693		
NU-TPGA332HS	NU-TPGW160408HS	● .375	.1875	.0313	.015	.1693		
TPGA221	TPGW110304	★ .250	.125	.0156	.020	.130		
TPGA221HS	TPGW110304HS	★ .250	.125	.0156	.020	.130		
TPGA222	TPGW110308	★ .250	.125	.0313	.020	.130		
TPGA222HS	TPGW110308HS	★ .250	.125	.0313	.020	.130		
TPGA331	TPGW160404	★ .375	.1875	.0156	.020	.1693		
TPGA331HS	TPGW160404HS	★ .375	.1875	.0156	.020	.1693		
TPGA332	TPGW160408	★ .375	.1875	.0313	.020	.1693		
TPGA332HS	TPGW160408HS	★ .375	.1875	.0313	.020	.1693		
TPGD		60° Triangle/11° Positive						
NU-TPGD1.51.50.5	NU-TPGW080202	● .094	.1875	.0078	.015	.090		
NU-TPGD1.51.50.5LT	NU-TPGW080202LT	● .094	.1875	.0078	.015	.090		
NU-TPGD1.51.50.5HS	NU-TPGW080202HS	● .094	.1875	.0078	.015	.090		
NU-TPGD1.51.51	NU-TPGW080204	● .094	.1875	.0156	.015	.090		
NU-TPGD1.51.51LT	NU-TPGW080204LT	● .094	.1875	.0156	.015	.090		
NU-TPGD1.51.51HS	NU-TPGW080204HS	● .094	.1875	.0156	.015	.090		
NU-TPGD1.51.52	NU-TPGW080208	● .094	.1875	.0313	.015	.090		
NU-TPGD1.51.52HS	NU-TPGW080208HS	● .094	.1875	.0313	.015	.090		
VBGA		35° Diamond/5° Positive						
NU-VBGA220.5	NU-VBGW110302	● .250	.125	.0078	.015	.134		
NU-VBGA220.5LT	NU-VBGW110302LT	● .250	.125	.0078	.015	.134		
NU-VBGA220.5HS	NU-VBGW110302HS	● .250	.125	.0078	.015	.134		
NU-VBGA221	NU-VBGW110304	● .250	.125	.0156	.015	.134		
NU-VBGA221LT	NU-VBGW110304LT	● .250	.125	.0156	.015	.134		
NU-VBGA221HS	NU-VBGW110304HS	● .250	.125	.0156	.015	.134		
NU-VBGA222	NU-VBGW110308	● .250	.125	.0313	.015	.134		
NU-VBGA222LT	NU-VBGW110308LT	● .250	.125	.0313	.015	.134		
NU-VBGA222HS	NU-VBGW110308HS	● .250	.125	.0313	.015	.134		
NU-VBGA330.5	NU-VBGW160402	● .375	.1875	.0078	.015	.1732		
NU-VBGA330.5LT	NU-VBGW160402LT	● .375	.1875	.0078	.015	.1732		
NU-VBGA331	NU-VBGW160404	● .375	.1875	.0156	.015	.1732		
NU-VBGA331LT	NU-VBGW160404LT	● .375	.1875	.0156	.015	.1732		
NU-VBGA331HS	NU-VBGW160404HS	● .375	.1875	.0156	.015	.1732		
NU-VBGA332	NU-VBGW160408	● .375	.1875	.0313	.015	.1732		
NU-VBGA332LT	NU-VBGW160408LT	● .375	.1875	.0313	.015	.1732		
NU-VBGA332HS	NU-VBGW160408HS	● .375	.1875	.0313	.015	.1732		
VCGA		35° Diamond/7° Positive						
NU-VCGA1.51.50.5	NU-VCGW080202	★ .1874	.094	.0078	.015	.091		
NU-VCGA1.51.50.5LT	NU-VCGW080202LT	★ .1874	.094	.0078	.015	.091		
NU-VCGA1.51.51	NU-VCGW080204	★ .1874	.094	.0156	.015	.091		
NU-VCGA1.51.51LT	NU-VCGW080204LT	★ .1874	.094	.0156	.015	.091		
NU-VCGA1.51.51HS	NU-VCGW080204HS	★ .1874	.094	.0156	.015	.091		
NU-VCGA1.51.52	NU-VCGW080208	★ .1874	.094	.0313	.015	.091		
NU-VCGA1.51.52LT	NU-VCGW080208LT	★ .1874	.094	.0313	.015	.091		
NU-VCGA1.51.52HS	NU-VCGW080208HS	★ .1874	.094	.0313	.015	.091		
NU-VCGA220.5	NU-VCGW110302	● .250	.125	.0078	.015	.134		
NU-VCGA220.5HS	NU-VCGW110302HS	● .250	.125	.0078	.015	.134		
NU-VCGA221	NU-VCGW110304	● .250	.125	.0156	.015	.134		
NU-VCGA221HS	NU-VCGW110304HS	● .250	.125	.0156	.015	.134		
ZNEX		80° Special Shape/7° Positive						
NU-ZNEX620.5	NU-ZNEX040102	● .1875	.0625	.0078	.015	.090		
NU-ZNEX621	NU-ZNEX040104	● .1875	.0625	.0156	.015	.090		

● = Stocked standard item ★ = Worldwide Warehouse item

Grooving Insert Availability

For GWB Type Holder		Dimensions					
CGA		BN2000	W	a _r	r	ød	s
			±.001 in ±.025 (mm)	in (mm)	in (mm)	in (mm)	in (mm)
Catalog No.							
	CGAR 4062 CGAL 4062	○	.062 (1.575)	.1378 (3.5)	.0078 (.2)	.625 (15.875)	.1875 (4.76)
	CGAR 4094 CGAL 4094	○	.094 (2.388)	.1575 (4.0)			
	CGAR 4125 CGAL 4125	○	.125 (3.175)	.1969 (5.0)			
	CGAR 6189 CGAL 6189	○	.189 (4.801)				
	CGAR 1504200 CGAL 1504200	○	.0787 (2.0)	.1373 (3.5)	.0078 (.2)	.625 (15.875)	.1875 (4.76)
	CGAR 1504300 CGAL 1504300	○	.1181 (3.0)	.1575 (4.0)			
	CGAR 1504400 CGAL 1504400	○	.1575 (4.0)	.1968 (5.0)			
	CGAR 1506500 CGAL 1506500	○	.1969 (5.0)				
	CGAR 1506600 CGAL 1506600	○	.2362 (6.0)				

For SS & A-SE Type Holders		Dimensions (in)							
SG		BN2000	W	R	E	T	A	B	Gage Dia.
			±.001		±.001				
Catalog No.									
	SG-3047R	○	.047	.005/.010	.075	.195	.344	.4050	.3750
	SG-3062L	○	.062	.005/.010	.094	.195	.344	.4050	.3750
	SG-3062R	○	.062	.005/.010	.094	.195	.344	.4050	.3750
	SG-3094L	○	.094	.005/.010	.150	.195	.344	.4050	.3750
	SG-3094R	○	.094	.005/.010	.150	.195	.344	.4050	.3750
	SG-3125L	○	.125	.005/.010	.150	.195	.344	.4050	.3750
	SG-3125R	○	.125	.005/.010	.150	.195	.344	.4050	.3750

Small Hole Brazed Boring Bar Availability

Catalog No.	BN2000	Min. Boring Dia.	Dimensions (mm)				Applicable Adapter Sleeve	ød (mm)
			ød	H	L	R		
BNBX020R	★	2.5	2.0	1.7	40	0.2	HBX2016	2.0
BNBX025R	★	3.0	2.5	2.2	40	0.2	HBX2516	2.5
BNBX030R	★	3.5	3.0	2.7	40	0.2	HBX3016	3.0
BNBX035R	★	4.0	3.5	3.2	40	0.2	HBX3516	3.5
BNBX040R	★	4.5	4.0	3.7	40	0.2	HBX4016	4.0
BNBX045R	★	5.0	4.5	4.2	40	0.2	HBX4516	4.5
BNBX050R	★	5.5	5.0	4.7	60	0.2	HBX5016	5.0
BNBX055R	★	6.0	5.5	5.2	60	0.2	HBX5516	5.5
BNBX060R	★	6.5	6.0	5.7	60	0.2	HBX6016	6.0
BNBX065R	★	7.0	6.5	6.2	60	0.2	HBB6516	6.5
BNBX070R	★	7.5	7.0	6.7	80	0.2	HBB716	7.0
BNBX075R	★	8.0	7.5	7.2	80	0.2	HBB7516	7.5
BNBX080R	★	8.5	8.0	7.7	80	0.2	HBB816	8.0

NOTE: BNBX bars can be used with HBB type sleeves, however, HBX type sleeves are recommended for bars below ø6mm

○ = Available December 2011

★ = Worldwide Item Available September 2011

Adapter Sleeve Hardware

Screw	Setting Screw	Wrench	Applicable Sleeve
BFTX0409N	BT06035T	TRD15	HBX○○○○
-	BT0404	TH020	HBB○○○○



SUMITOMO

CARBIDE - CBN - DIAMOND

Sumitomo Electric Carbide, Inc.

Headquarters

1001 Business Center Drive
Mount Prospect, IL 60056-2181
P.O. Box 545, Mt. Prospect, IL 60056-0545
Phone: (800) 950-5202
Phone: (847) 635-0044
Fax: (847) 635-7866
<http://www.sumicarbide.com>

Detroit Branch

14496 Sheldon Road #230
Plymouth, MI 48170
Phone: (800) 239-5177
Phone: (734) 451-0200
Fax: (734) 451-5338

Cincinnati Branch

4450 Carver Woods Drive
Cincinnati, OH 45242-5545
Phone: (800) 879-1887
Phone: (513) 891-4000
Fax: (513) 794-2911

Huntsville Branch

5650 Sanderson Street NW
Suite J
Huntsville, AL 35805
Phone: (256) 895-2845
Fax: (256) 895-3150

Torrance Branch

21241 South Western Avenue
Suite 120
Torrance, CA 90501
Phone: (800) 950-5202
Fax: (310) 782-0211

Sumitomo Hardmetal Mexico (SHMM)

Ave. Aguascalientes Sur 2625
Fracc. Jardines de las Fuentes
Aguascalientes, AGS Mexico
C.P. 20290
Phone: 011-52-449-993-2740
Fax: 011-52-449-993-2753

