Insert Availability-*WIPER*

CNGA — 80° Diamond/Negative

Sumitomo Cat. No.	ISO Cat. No.	BN7500	I.C.	Thickness	Nose Radius	Max D.O.C.	Hole Dia.
2NUCNGA431WG	2NU-CNGA120404WG	●	.500	.1875	.0156	.015	.2031
2NUCNGA432WG	2NU-CNGA120408WG	●	.500	.1875	.0312	.015	.2031
2NUCNGA431WH	2NU-CNGA120404WH	●	.500	.1875	.0156	.015	.2031
2NUCNGA432WH	2NU-CNGA120408WH	●	.500	.1875	.0312	.015	.2031

DNGA — 55° Diamond/Negative

2NUDNGA431WG	2NU-DNGA150404WG	●	.500	.1875	.0156	.015	.2031
2NUDNGA432WG	2NU-DNGA150408WG	●	.500	.1875	.0312	.015	.2031
2NUDNGA431WH	2NU-DNGA150404WH	●	.500	.1875	.0156	.015	.2031
2NUDNGA432WH	2NU-DNGA150408WH	●	.500	.1875	.0312	.015	.2031

● = Stocked standard item

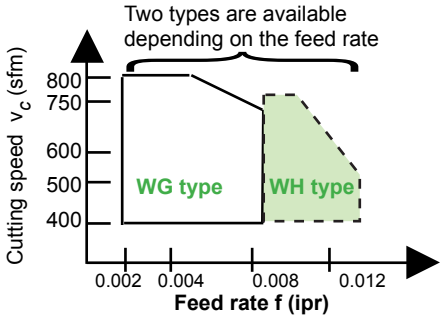
CCGA — 80° Diamond/7° Positive

Sumitomo Cat. No.	ISO Cat. No.	BN7500	I.C.	Thickness	Nose Radius	Max D.O.C.	Hole Dia.
2NUCCGA21.50.5WG	2NU-CCGW060202WG	●	.250	.094	.0078	.015	.110
2NUCCGA21.51WG	2NU-CCGW060204WG	●	.250	.094	.0156	.015	.110
2NUCCGA21.52WG	2NU-CCGW060208WG	●	.250	.094	.0312	.015	.110
2NUCCGA32.50.5WG	2NU-CCGW09T302WG	●	.375	.156	.0078	.015	.1732
2NUCCGA32.51WG	2NU-CCGW09T304WG	●	.375	.156	.0156	.015	.1732
2NUCCGA32.52WG	2NU-CCGW09T308WG	●	.375	.156	.0312	.015	.1732

DCGA — 55° Diamond/7° Positive

2NUDCGA21.50.5WG	2NU-DCGW070202WG	●	.250	.094	.0078	.015	.110
2NUDCGA21.51WG	2NU-DCGW070204WG	●	.250	.094	.0156	.015	.110
2NUDCGA21.52WG	2NU-DCGW070208WG	●	.250	.094	.0312	.015	.110
2NUDCGA32.50.5WG	2NU-DCGW11T302WG	●	.375	.156	.0078	.015	.1732
2NUDCGA32.51WG	2NU-DCGW11T304WG	●	.375	.156	.0156	.015	.1732
2NUDCGA32.52WG	2NU-DCGW11T308WG	●	.375	.156	.0312	.015	.1732

Recommended Cutting Conditions



Range of good surface roughness Rz=1.6-3.2μm

*WG type : Recommended when the feed rate is less than f=0.008 ipr
*WH type : Recommended when the feed rate is more than f=0.008 ipr

When machining powdered metals, be aware that burring can occur at high feed rates. If this happens, please reduce feed rate before exiting the part.

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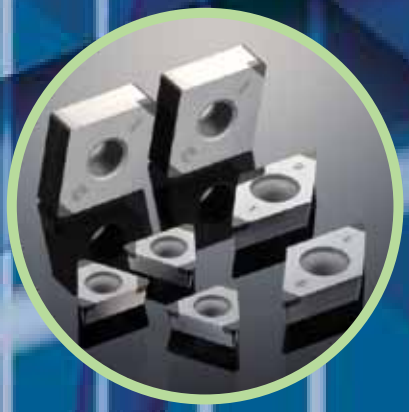
SUMITOMO

CARBIDE - CBN - DIAMOND

BN7500



High Performance Turning Systems

Uncoated CBN grade for high precision, high efficiency machining of powdered metal

Sintered Material

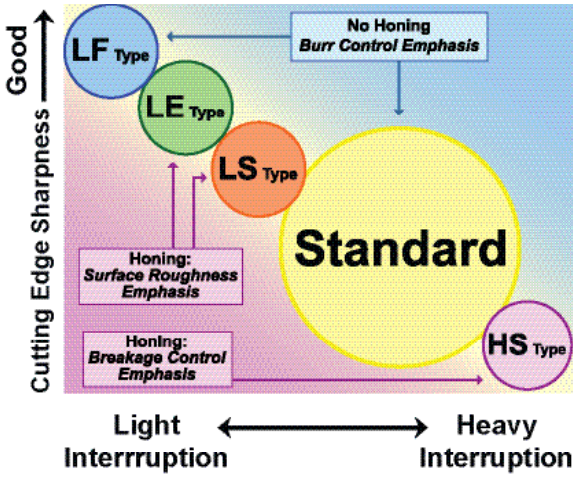
BN7500

for powdered metal machining

Features & Benefits

- New powdered metal finishing grade that provides excellent machined surface finish
- FIVE types of edge preparations for machining sintered alloys of any hardness
- Provides machining stability by reducing the variation in early milling surface roughness with the LE edge treatment, which emphasizes superior surface finish
- The LS type excels in fracture resistance and cutting edge balance and also supports finishing that includes light interrupted cutting

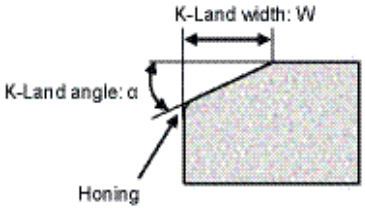
Edge Preparation



Edge Treatment Performance Range:

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

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

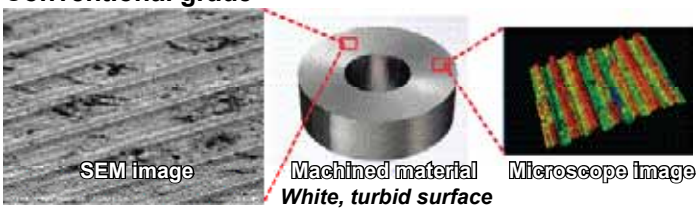


Edge Type	α	W (in)	Honing
Standard	15°	0.005	no
LF	0° (No Negative Land)		
LE			
LS	15°	0.003	yes
HS	25°	0.002	

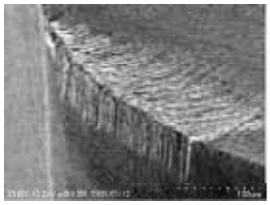
Machined Surface Comparison

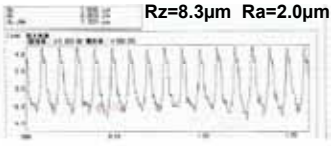
Material: Ferrous Powdered Metal (SMF 4040), **HRB:** 70, **Tool:** 2NU-CNGA120408LF, **Conditions:** *Vc* = 656 SFM, *f* = 0.004 IPR, D.O.C = 0.004"

Conventional grade

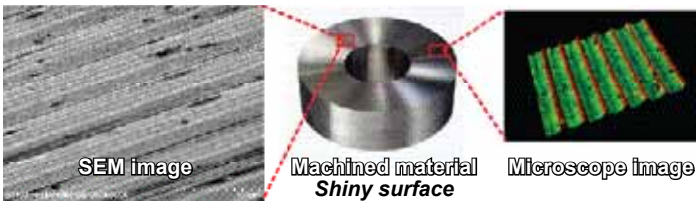


White, turbid surface

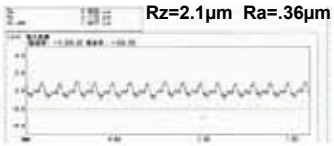




BN7500



Shiny surface



Because BN7500 maintains its sharp cutting edge, it provides a superior machined surface.

Insert Availability-*NEGATIVE*

Sumitomo Cat. No.	ISO Cat. No.	BN7500	I.C.	Thickness	Nose Radius	Max D.O.C.	Hole Dia.
CNGA	*80° Diamond/Negative*						
2NU-CNGA431	2NU-CNGA120404	●	.500	.1875	.0156	.015	.2031
2NU-CNGA431LF	2NU-CNGA120404LF	●	.500	.1875	.0156	.015	.2031
2NU-CNGA431LE	2NU-CNGA120404LE	●	.500	.1875	.0156	.015	.2031
2NU-CNGA431LS	2NU-CNGA120404LE	●	.500	.1875	.0156	.015	.2031
2NU-CNGA432	2NU-CNGA120408	●	.500	.1875	.0313	.015	.2031
2NU-CNGA432LF	2NU-CNGA120408LF	●	.500	.1875	.0313	.015	.2031
2NU-CNGA432LE	2NU-CNGA120408LE	●	.500	.1875	.0313	.015	.2031
2NU-CNGA432LS	2NU-CNGA120408LS	●	.500	.1875	.0313	.015	.2031
2NU-CNGA433	2NU-CNGA120412	●	.500	.1875	.0469	.015	.2031
DNGA	*55° Diamond/Negative*						
2NU-DNGA431	2NU-DNGA150404	●	.500	.1875	.0156	.020	.2031
2NU-DNGA432	2NU-DNGA150408	●	.500	.1875	.0313	.020	.2031
TNGA	*60° Triangle/Negative*						
3NU-TNGA331	3NU-TNGA160404	●	.375	.1875	.0156	.015	.150
3NU-TNGA331LF	3NU-TNGA160404LF	●	.375	.1875	.0156	.015	.150
3NU-TNGA331LE	3NU-TNGA160404LE	●	.375	.1875	.0156	.015	.150
3NU-TNGA331LS	3NU-TNGA160404LS	●	.375	.1875	.0156	.015	.150
3NU-TNGA331HS	3NU-TNGA160404HS	●	.375	.1875	.0156	.015	.150
3NU-TNGA332	3NU-TNGA160408	●	.375	.1875	.0313	.015	.150
3NU-TNGA332LF	3NU-TNGA160408LF	●	.375	.1875	.0313	.015	.150
3NU-TNGA332LE	3NU-TNGA160408LE	●	.375	.1875	.0313	.015	.150
3NU-TNGA332LS	3NU-TNGA160408LS	●	.375	.1875	.0313	.015	.150
3NU-TNGA332HS	3NU-TNGA160408HS	●	.375	.1875	.0313	.015	.150
3NU-TNGA333	3NU-TNGA160412	●	.375	.1875	.0469	.015	.150
VNGA	*35° Diamond/Negative*						
2NU-VNGA331	2NU-VNGA160404	●	.375	.1875	.0156	.015	.150
2NU-VNGA332	2NU-VNGA160408	●	.375	.1875	.0313	.015	.150

● = Stocked standard item

Insert Availability-*POSITIVE*

Sumitomo Cat. No.	ISO Cat. No.	BN7500	I.C.	Thickness	Nose Radius	Max D.O.C.	Hole Dia.
CCGA	*80° Diamond/7° Positive*						
NU-CCGA21.51	NU-CCGW060204	●	.250	.094	.0156	.015	.110
NU-CCGA32.51	NU-CCGW09T304	●	.375	.156	.0156	.015	.1732
NU-CCGA32.52	NU-CCGW09T308	●	.375	.156	.0313	.015	.1732
DCGA	*55° Diamond/7° Positive*						
2NU-DCGA21.51	2NU-DCGW070204	●	.250	.094	.0156	.015	.110
2NU-DCGA21.52	2NU-DCGW070208	●	.250	.094	.0313	.015	.110
2NU-DCGA32.50.5	2NU-DCGW11T302	●	.375	.156	.0078	.015	.1732
2NU-DCGA32.50.5LF	2NU-DCGW11T302LF	●	.375	.156	.0078	.015	.1732
2NU-DCGA32.50.5LE	2NU-DCGW11T302LE	●	.375	.156	.0078	.015	.1732
2NU-DCGA32.50.5LS	2NU-DCGW11T302LS	●	.375	.156	.0078	.015	.1732
2NU-DCGA32.51	2NU-DCGW11T304	●	.375	.156	.0156	.015	.1732
2NU-DCGA32.51LF	2NU-DCGW11T304LF	●	.375	.156	.0156	.015	.1732
2NU-DCGA32.51LE	2NU-DCGW11T304LE	●	.375	.156	.0156	.015	.1732
2NU-DCGA32.51LS	2NU-DCGW11T304LS	●	.375	.156	.0156	.015	.1732
2NU-DCGA32.52	2NU-DCGW11T308	●	.375	.156	.0313	.015	.1732
2NU-DCGA32.52LF	2NU-DCGW11T308LF	●	.375	.156	.0313	.015	.1732
2NU-DCGA32.52LE	2NU-DCGW11T308LE	●	.375	.156	.0313	.015	.1732
2NU-DCGA32.52LS	2NU-DCGW11T308LS	●	.375	.156	.0313	.015	.1732
TPGA	*60° Triangle/11° Positive*						
3NU-TPGA21.51	3NU-TPGW110204	●	.250	.094	.0156	.015	.110
3NU-TPGA21.51LF	3NU-TPGW110204LE	●	.250	.094	.0156	.015	.110
3NU-TPGA21.51LE	3NU-TPGW110204LF	●	.250	.094	.0156	.015	.110
3NU-TPGA21.51LS	3NU-TPGW110204LS	●	.250	.094	.0156	.015	.110
3NU-TPGA21.52	3NU-TPGW110208	●	.250	.094	.0313	.015	.110
3NU-TPGA220.5LF	3NU-TPGW110302LF	●	.250	.125	.0078	.015	.130
3NU-TPGA221	3NU-TPGW110304	●	.250	.125	.0156	.015	.130
3NU-TPGA221LF	3NU-TPGW110304LF	●	.250	.125	.0156	.015	.130
3NU-TPGA221LE	3NU-TPGW110304LE	●	.250	.125	.0156	.015	.130
3NU-TPGA221LS	3NU-TPGW110304LS	●	.250	.125	.0156	.015	.130
3NU-TPGA222	3NU-TPGW110308	●	.250	.125	.0313	.015	.130
3NU-TPGA222LF	3NU-TPGW110308LF	●	.250	.125	.0313	.015	.130

Recommended Cutting Conditions

Recommended Speeds for BN7500 (SFM)					
Material	Application	Low	Low Opt.	High Opt.	High
Powdered Metal	Continuous & Interrupted	200	***400***	***800***	1000

Recommended D.O.C. for BN7500 (INCH)
Mini-Tip (NU-)
≤ 0.020

Recommended Feeds for BN7500 (IPR)		
Finishing	General Purpose	High
0.002 - 0.004	0.004 - 0.006	0.006 - 0.008