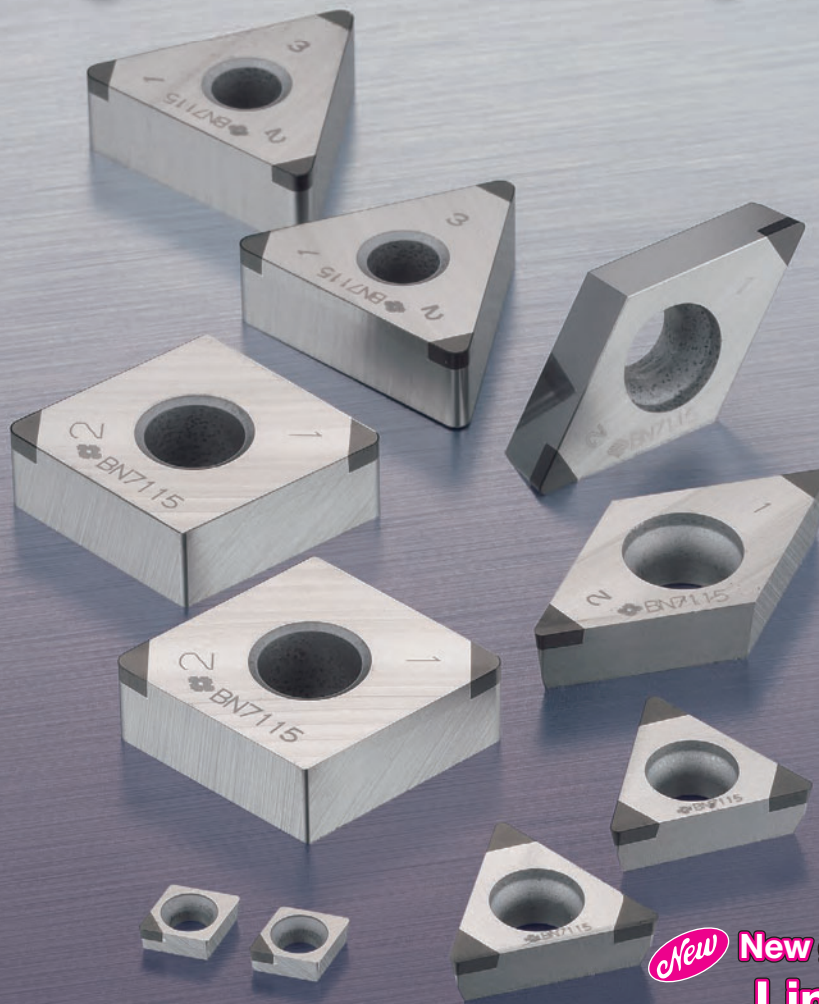


CBN Grades for Sintered Alloy Finishing

SUMIBORON **BN7115**

Excellent stability in high-precision finishing of sintered alloy



New **New grade BN7115:
Lineup of
53 items**

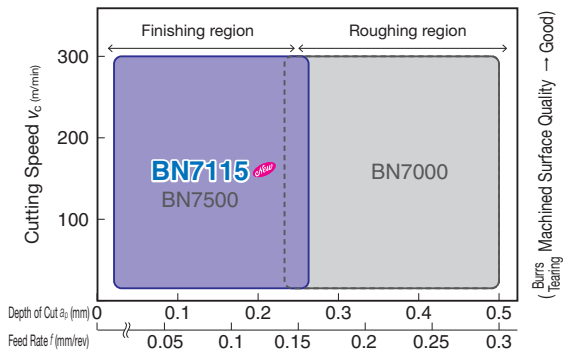
New **New cutting edge treatment with an
emphasis on fracture resistance:
US Type now available**

BN7115

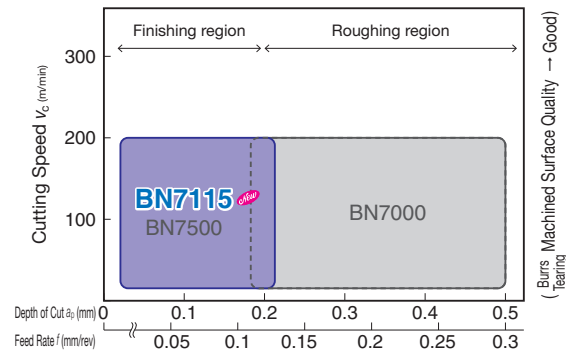
Balance of cutting edge sharpness with fracture resistance ideal for finishing of sintered alloy

Application Range

● Sintered Alloy (50 to 95HRB/90 to 200HV)

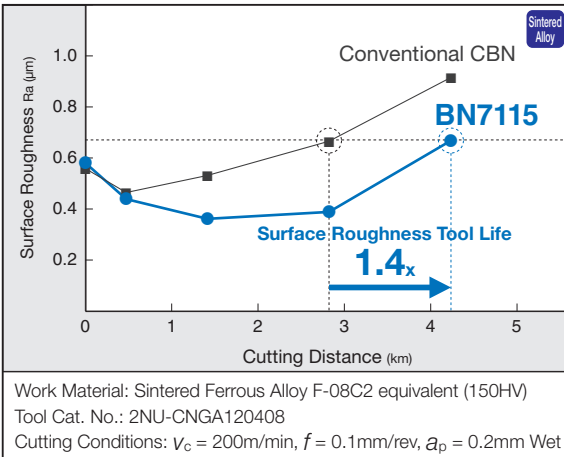


● High-density/Sintered Alloy (30 to 65HRC/300 to 800HV)

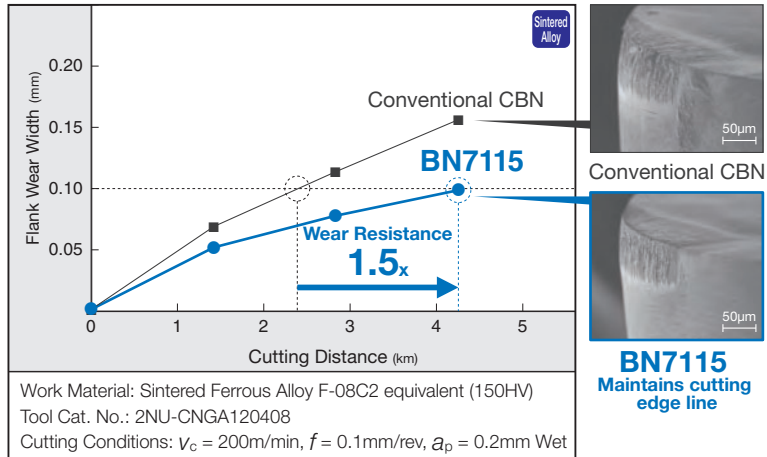


Cutting Performance

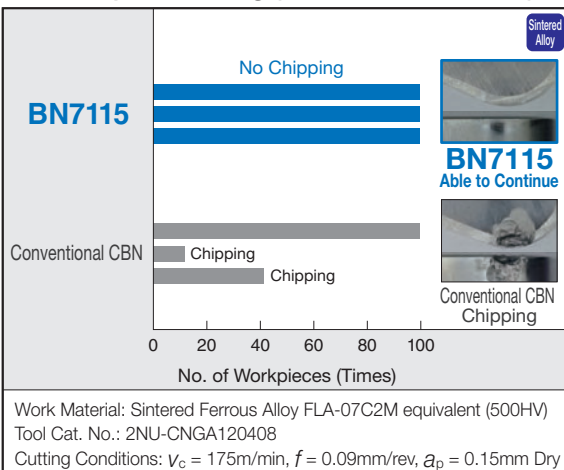
● Continuous Cutting (Surface Roughness)



● Continuous Cutting (Wear Resistance)

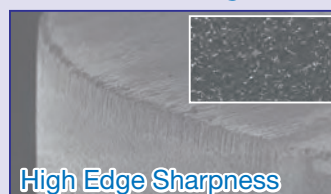


● Interrupted Cutting (Fracture Resistance)



With improved CBN particle/binder boundary strength due to the special binder and improved binding strength between CBN particles thanks to our proprietary sintering process, the edge sharpness in sintered alloy machining is excellent, suppressing burrs and tearing.

BN7115



Conventional Tool



Removal of Binder → Comparison of CBN Particles' Binding Strength

■ Stock Items

Multi-Cornered Single-Use Insert/Negative (With Hole)

Appearance	Cat. No.	Stock BN7115	No. of Corners	Dimensions (mm)			
				Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	2NU-CNGA 120404	●	2	12.7	4.76	5.16	0.4
	2NU-CNGA 120408	●					0.8
	2NU-CNGA 120412	●					1.2
	2NU-CNGA 120404LF	●					0.4
	2NU-CNGA 120408LF	●					0.8
	2NU-CNGA 120404LE	●					0.4
	2NU-CNGA 120408LE	●					0.8
	2NU-CNGA 120404LS	●					0.4
	2NU-CNGA 120404HS	●					0.4
	2NU-CNGA 120404US	●					0.4
	2NU-DNGA 150404	●	2	12.7	4.76	5.16	0.4
	2NU-DNGA 150408	●					0.8
	3NU-TNGA 160404	●	3	9.525	4.76	3.81	0.4
	3NU-TNGA 160408	●					0.8
	3NU-TNGA 160412	●					1.2
	3NU-TNGA 160404LF	●					0.4
	3NU-TNGA 160408LF	●					0.8
	3NU-TNGA 160404LE	●					0.4
	3NU-TNGA 160408LE	●					0.8
	3NU-TNGA 160404LS	●					0.4
	3NU-TNGA 160404HS	●					0.4
	3NU-TNGA 160404US	●					0.4
	2NU-VNGA 160404	●	2	9.525	4.76	3.81	0.4
	2NU-VNGA 160408	●					0.8

Part Number Suffix - LF/LE: Low Cutting Force, LS: General Purpose Continuous Cutting, HS/US: Strong Edged
10-pc packs are also available. When ordering, add "F" at the beginning of the Cat. No.

Multi-Cornered Single-Use Insert/Positive (With Hole)

Appearance	Relief Angle	Cat. No.	Stock BN7115	No. of Corners	Dimensions (mm)							
					Inscribed Circle	Thickness	Hole Dia.	Corner Radius				
	7°	2NU-CCGW 060204	●	2	6.35	2.38	2.8	0.4				
		2NU-CCGW 09T304	●					0.4				
		2NU-CCGW 09T308	●					0.8				
	7°	2NU-DCGW 070204	●	2	6.35	2.38	2.8	0.4				
		2NU-DCGW 070208	●					0.8				
		2NU-DCGW 11T302	●					0.2				
		2NU-DCGW 11T304	●					0.4				
		2NU-DCGW 11T308	●					0.8				
		2NU-DCGW 11T302LF	●					0.2				
		2NU-DCGW 11T304LF	●					0.4				
		2NU-DCGW 11T308LF	●					0.8				
		2NU-DCGW 11T302LE	●					0.2				
		2NU-DCGW 11T304LE	●					0.4				
2NU-DCGW 11T308LE	●	0.8										
	11°	2NU-DCGW 11T302LS	●	2	9.525	3.97	4.4	0.2				
		2NU-DCGW 11T304LS	●					0.4				
		2NU-DCGW 11T308LS	●					0.8				
		3NU-TPGW 110304	●					3	6.35	3.18	3.4	0.4
		3NU-TPGW 110308	●					0.8				
		3NU-TPGW 110302LF	●					0.2				
	5°	3NU-TPGW 110304LF	●	3	6.35	3.18	3.4	0.4				
		3NU-TPGW 110308LF	●					0.8				
		3NU-TPGW 110304LE	●					0.4				
	5°	2NU-VBGW 110304	●	2	6.35	3.18	2.8	0.4				
		2NU-VBGW 160404	●					0.4				
		2NU-VBGW 160408	●					0.8				

Part Number Suffix - LF/LE: Low Cutting Force, LS: General Purpose Continuous Cutting
10-pc packs are also available. When ordering, add "F" at the beginning of the Cat. No.

Single-Use Insert/Positive (With Hole)

Appearance	Relief Angle	Cat. No.	Stock BN7115	No. of Corners	Dimensions (mm)			
					Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	7°	NU-CCEW 03X102LF	●	1	3.5	1.4	1.9	0.2

Part Number Suffix - LF: Low Cutting Force

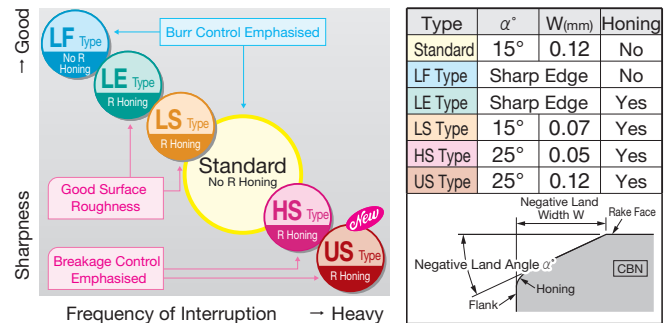
■ Recommended Cutting Conditions

● Sintered Alloy

Work Material	Grade	Recommended Cutting Conditions			Min. - Optimum - Max.
		Cutting Speed v_c (m/min)	Feed Rate f (mm/rev)	Depth of Cut a_p (mm)	
General Sintered Alloy	BN7115	10 - 150	0.01 - 0.08 - 0.15	0.05 - 0.13 - 0.25	0.05 - 0.25 - 0.50
	BN7000	10 - 150	0.01 - 0.15 - 0.30	0.05 - 0.25 - 0.50	
High-density Sintered Alloy	BN7115	10 - 100	0.01 - 0.06 - 0.12	0.05 - 0.10 - 0.20	0.05 - 0.25 - 0.50
	BN7000	10 - 100	0.01 - 0.15 - 0.30	0.05 - 0.25 - 0.50	


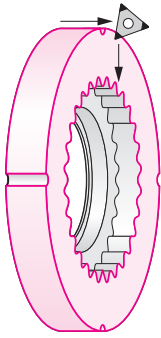
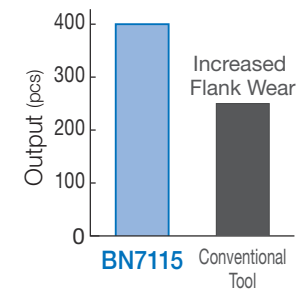

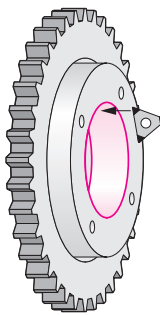
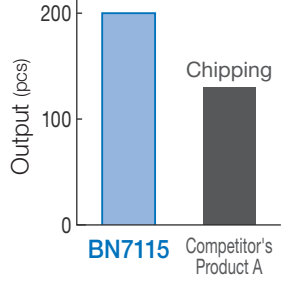
■ Cutting Edge Specification


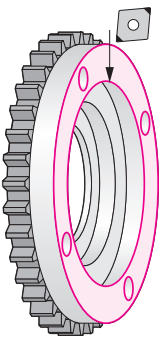
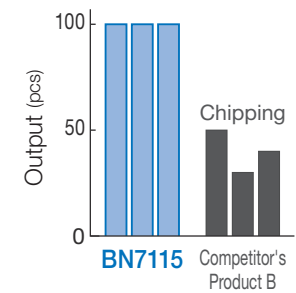

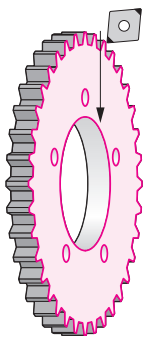
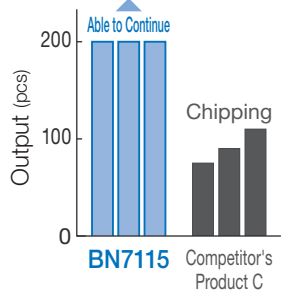
BN7115



New US Type emphasises fracture resistance, ideal for heavy interrupted cutting

Application Examples

<p>Sintered Ferrous Alloy FLA-07C2M (500HV) Gear </p> <p>Excellent wear resistance, maintaining good surface roughness. Achieves long tool life 1.5 times or longer that of conventional tools</p>  <p>Tool Life Determinant: Surface Roughness/Burr Height</p>  <p>Tool: 3NU-TNGA160404HS (BN7115) Cutting Conditions: $v_c=180\text{m/min}$ $f=0.1\text{mm/rev}$ $a_p=0.2\text{mm}$ Wet</p>	<p>Sintered Ferrous Alloy FLA-07C2M (500HV) Gear </p> <p>Surface roughness improved via excellent fracture resistance. Achieves long tool life 1.5 times or longer that of competitors' products</p>  <p>Tool Life Determinant: Surface Roughness</p>  <p>Tool: 3NU-TNGA160404US (BN7115) Cutting Conditions: $v_c=200\text{m/min}$ $f=0.1\text{mm/rev}$ $a_p=0.1\text{mm}$ Wet</p>
--	---

<p>Sintered Ferrous Alloy F-08C2 (450HV) Gear </p> <p>Surface roughness improved via excellent fracture resistance. Achieves long tool life 1.5 times or longer that of competitors' products</p>  <p>Tool Life Determinant: Surface Roughness</p>  <p>Tool: 2NU-CNGA120404US (BN7115) Cutting Conditions: $v_c=170\text{m/min}$ $f=0.08\text{mm/rev}$ $a_p=0.10\text{mm}$ Wet</p>	<p>Sintered Ferrous Alloy F-08C2 (450HV) Gear </p> <p>Excellent fracture resistance for sharp edges as well. Achieves stable tool life twice or longer that of competitors' products</p>  <p>Tool Life Determinant: Tool Breakage</p>  <p>Tool: 2NU-CNGA120408LF (BN7115) Cutting Conditions: $v_c=200\text{m/min}$ $f=0.1\text{mm/rev}$ $a_p=0.2\text{mm}$ Dry</p>
---	---

< SAFETY NOTES >



- Very hot or lengthy chips may be discharged while the machine is in operation. Therefore, machine guards, safety goggles or other protective covers must be used. Fire safety precautions must also be considered.

- Please handle with care as this product has sharp edges.
- Improper cutting conditions or mis-handling of the tool may result in breakages or projectiles. Therefore, please use the tool within its recommended conditions.

- When using non-water soluble cutting oil, precautions against fire must be taken and please ensure that a fire extinguisher is placed near the machine.

 **Sumitomo Electric Industries, Ltd.**

Hardmetal Division

Global Marketing Department : 1-1-1, Koyakita, Itami, Hyogo 664-0016, Japan

<https://www.sumitool.com/global>