



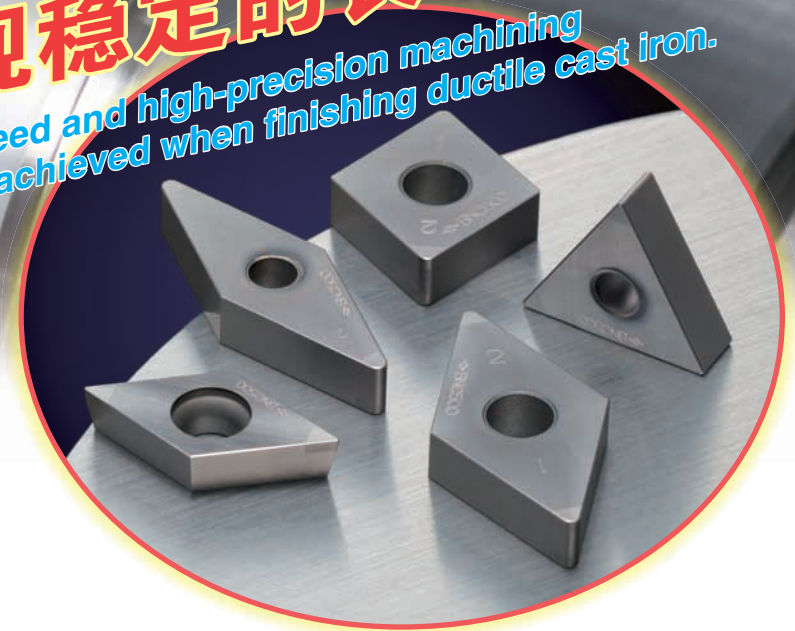
球墨铸铁加工用CBN烧结体 Coated CBN Grades for Ductile Cast Iron Machining

涂层SUMIBORON **BNC500** 第2版 Coated SUMIBORON BNC500



**在球墨铸铁的
高速精加工中
实现稳定的长寿命！！**

High-speed and high-precision machining
is achieved when finishing ductile cast iron.



球墨铸铁加工用

for Ductile Cast Iron Machining

涂层SUMIBORON

Coated SUMIBORON BNC500

BNC500

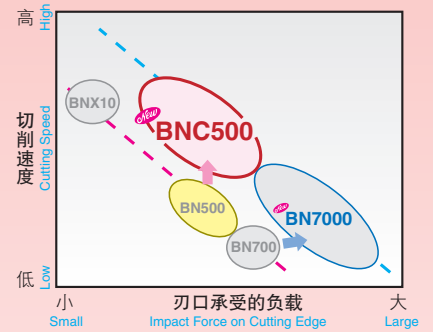
通过采用新开发的高纯度钛系粘结剂，大幅提高了CBN烧结体的韧性和耐磨损性。并通过与耐热性优异的陶瓷涂层组合使用，发挥超群的耐磨损性。在球墨铸铁的精加工中实现高速、高精度加工。此外，在高强度的球墨铸铁和蠕墨铸铁等的特殊铸铁及离心铸造铸铁加工中实现稳定的长寿命！！

Broad improvements in the toughness of the CBN sintered body and wear resistance from the application of a newly developed high-purity TiC binder. In addition, it demonstrates exceptional wear resistance by combining a ceramic coating with excellent heat resistance. High-speed and high-precision machining is achieved when finishing ductile cast iron. It also provides a long, stable tool life in machining high-strength ductile cast iron, special cast irons such as vermicular cast iron, and centrifugally-cast cast iron.

特点

Characteristics

- $V_C=400\text{m/min}$ 以上时实现稳定的长寿命！！
Achieves a Long, Stable Tool Life at $V_C=400\text{m/min}$ or Higher
耐磨损性优异，因而能够在高速条件下稳定加工
Superior wear resistance makes stable machining possible under high-speed conditions.
- 支持高精度加工！！
Supports High-precision Machining
能够长时间保持优异的尺寸精度和表面粗糙度
Can maintain excellent dimensional tolerance and surface roughness over many hours.

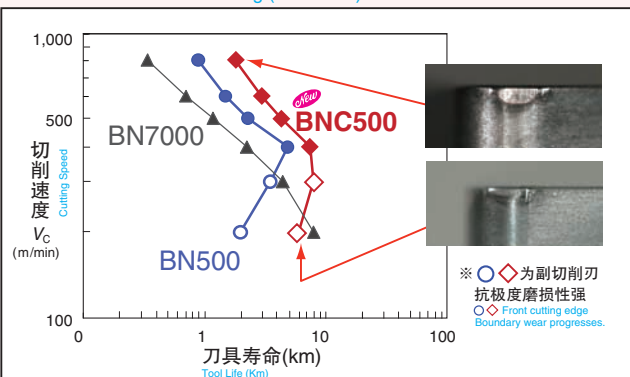


切削性能

Cutting Performance

● FCD450连续切削(V-T线图)

FCD450 Continuous Cutting (V-T Chart)



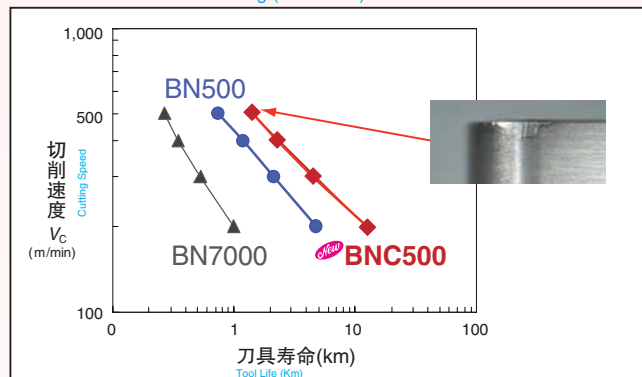
被削材: FCD450(160HB) 刀具型号: 4NC-CNGA120408

切削条件: $f=0.2\text{mm/rev}$ 、 $a_p=0.2\text{mm}$ 、Wet

寿命判定: $VB_{\text{max}}=0.2\text{mm}$

● FCD700连续切削(V-T线图)

FCD700 Continuous Cutting (V-T Chart)

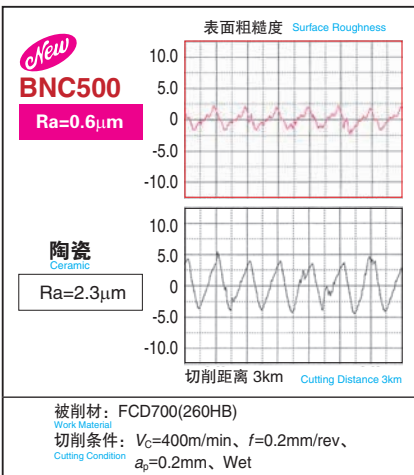


被削材: FCD700(260HB) 刀具型号: 4NC-CNGA120408

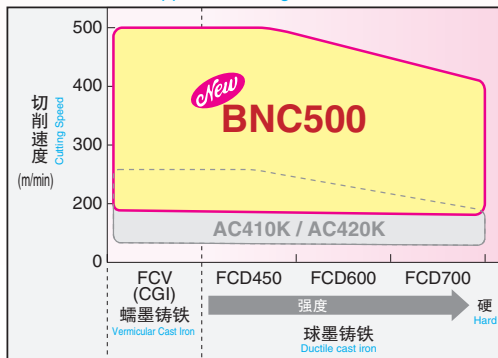
切削条件: $f=0.2\text{mm/rev}$ 、 $a_p=0.2\text{mm}$ 、Wet

寿命判定: $VB_{\text{max}}=0.2\text{mm}$

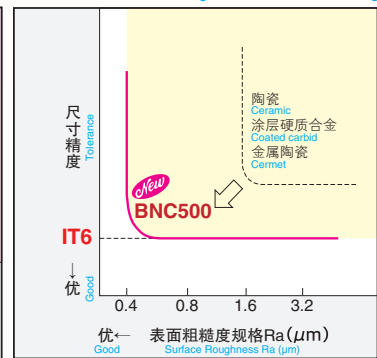
■ 加工表面质量 Machined Surface Finish



■ 适用领域 Application Range



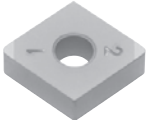
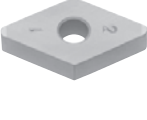

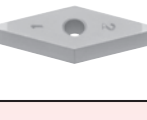


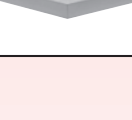

■ 高精度加工 High Precision Machining



库存型号
Stock Items


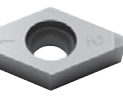
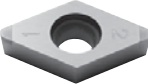



刃刃规格 Edge Treatment	标准 Standard				刃口强化型 HS Strong Edge Type HS				一次性修光刃刀片 W One-Use Wiper inserts W					
	刃刃规格 Identification Code	α	W	珩磨 Honing	符号 Notation	刃刃规格代号 Identification Code	α	W	珩磨 Honing	符号 Notation	刃刃规格代号 Identification Code	α	W	珩磨 Honing
	S01215	15°	0.12	有 Yes	HS	S01225	25°	0.12	有 Yes	W	S01215	15°	0.12	有 Yes

■ 负型/多角型一次性刃磨刀片 Multi-cornered, One-use Type/Negative

外观 Appearance	型号 Catalogue No.	库存 Stock <i>New</i>	刀尖 No. of Cutting	尺寸(mm) Dimensions								
				内切圆 Inscribed circle	厚度 Thickness	孔径 Hole	刀尖半径 Nose radius					
	4NC-CNGA 120404	●	4	12.7	4.76	5.16	0.4					
	4NC-CNGA 120408	●					0.8					
	4NC-CNGA 120412	●					1.2					
		4NC-CNGA 120408W	●	4	12.7	4.76	5.16	0.8				
		4NC-CNGA 120404HS	●					0.4				
		4NC-CNGA 120408HS	●					0.8				
		4NC-CNGA 120412HS	●					1.2				
		4NC-DNGA 150404	●					4	12.7	4.76	5.16	0.4
		4NC-DNGA 150408	●									0.8
	4NC-DNGA 150412	●	1.2									
		4NC-DNGA 150404HS	●	4	12.7	4.76	5.16	0.4				
		4NC-DNGA 150408HS	●					0.8				
		4NC-DNGA 150412HS	●					1.2				
		2NC-SNGA 120408	●					2	12.7	4.76	5.16	0.8
		2NC-SNGA 120412	●									1.2
	6NC-TNGA 160404	●	6	9.525	4.76	3.81	0.4					
	6NC-TNGA 160408	●					0.8					
	6NC-TNGA 160412	●					1.2					
		6NC-TNGA 160404HS	●	6	9.525	4.76	3.81	0.4				
		6NC-TNGA 160408HS	●					0.8				
		6NC-TNGA 160412HS	●					1.2				
	4NC-VNGA 160404	●	4	9.525	4.76	3.81	0.4					
	4NC-VNGA 160408	●					0.8					
	4NC-VNGA 160404HS	●	4	9.525	4.76	3.81	0.4					
	4NC-VNGA 160408HS	●					0.8					

型号末尾 HS: 刃刃强化型 W: 修光刃刀片 ●印: 标准库存产品
*HS: for Strong Edge Type W: Wiper ●mark: Standard stocked item

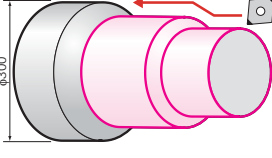
■ 正型/多角型一次性刃磨刀片 Multi-cornered, One-use Type/Positive

外观 Appearance	后角 Rear angle	型号 Catalogue No.	库存 Stock <i>New</i>	刀尖 No. of Cutting	尺寸(mm) Dimensions					
					内切圆 Inscribed circle	厚度 Thickness	孔径 Hole	刀尖半径 Nose radius		
	7°	2NC-CCGW 060202	●	2	6.35	2.38	2.8	0.2		
		2NC-CCGW 060204	●					0.4		
		2NC-CCGW 060208	●					0.8		
			7°	2NC-CCGW 09T302	●	2	9.525	3.97	4.4	0.2
				2NC-CCGW 09T304	●					0.4
				2NC-CCGW 09T308	●					0.8
	7°	2NC-DCGW 070204	●	2	6.35	2.38	2.8	0.4		
		2NC-DCGW 11T302	●					0.2		
		2NC-DCGW 11T304	●	2	9.525	3.97	4.4	0.4		
		2NC-DCGW 11T308	●					0.8		
	11°	3NC-TPGW 090202	●	3	5.56	2.38	2.8	0.2		
		3NC-TPGW 090204	●					0.4		
		3NC-TPGW 110304	●					0.4		
			5°	3NC-TPGW 110308	●	3	6.35	3.18	3.4	0.8
				3NC-TPGW 160404	●					0.4
				3NC-TPGW 160408	●					0.8
	5°	2NC-VBGW 110304	●	2	6.35	3.18	2.8	0.4		
		2NC-VBGW 110308	●					0.8		
		2NC-VBGW 160404	●	2	9.525	4.76	4.4	0.4		
		2NC-VBGW 160408	●					0.8		

●: 标准库存产品
●mark: Standard stocked item

使用实例 Application Example

● 活塞零件外径精加工(FCD700(260HB)) Piston part outer diameter finish processing

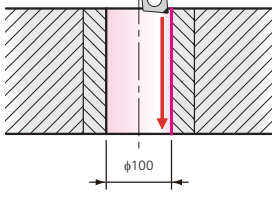


- 寿命判断基准: 尺寸精度
Tool life criteria: Dimensional accuracy
- $V_c=200\text{m/min}$
- $f=0.15\text{mm/rev}$
- $a_p=0.1\text{mm}$
- Wet
- 4NC-CNGA120408

加工数(个) No. of Workpieces	0	10	20
BNC500			8km
以往CBN Conventional CBN		2.5km	

- 以往CBN的尺寸偏差较大, 寿命短。
Competitor's CBN had large flank wear
- **BNC500尺寸稳定, 寿命达到以往CBN的3倍。**
BNC500 Achieved three times longer tool life than conventional CBN by excellent wear resistance.

● AT箱内径精加工(FCD450(160HB)) AT case inner diameter finish processing



- 寿命判断基准: 表面粗糙度
Rz=12.5 μm 、尺寸精度
Tool life criteria: Surface Roughness, Dimensional accuracy
- $V_c=350\text{m/min}$
- $f=0.15\text{mm/rev}$
- $a_p=0.3\text{mm}$
- Wet
- 2NC-CCGW09T304

加工数(个) No. of Workpieces	0	200	400
BNC500			11km
其他公司CBN Competitor's CBN		5.5km	

- 其他公司CBN尺寸修正次数多, 寿命短。
Competitor's CBN had large flank wear
- **BNC500耐磨损性优异, 尺寸修正次数少, 寿命达到其他公司CBN的2倍。**
BNC500 achieved three times longer tool life than competitor's CBN by excellent wear resistance.

◆ 安全使用注意事项 ◆



- 加工时会出现高温切屑飞散、排出切屑过长等情况, 请使用安全罩壳及防护眼镜等防护具, 并务必注意防火、防灾。
- 使用时请务必小心锋利刀尖。
- 使用非水溶性切削油的情况, 为防止火灾意外, 请配置自动灭火装置。
- 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.
- 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.

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