

General Purpose Coated CBN Grade for Hardened Steel

BC8020

A new CBN tool grade to revolutionize the machining of hardened steels.

- Even under high load conditions, high wear resistance can be obtained to increase machining performance.
- Cutting edge strength offering longer tool life even when carrying out unstable or interrupted machining.



BC8020

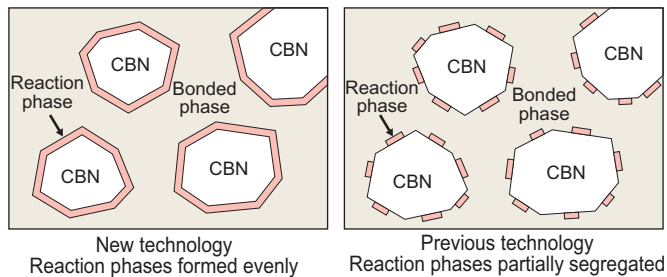
Features

Excellent wear resistance

Increased cutting edge strength and high crater wear resistant CBN grade in combination with a high wear resistant ceramic coating, results in longer tool life and improved machining efficiency.

Highly reliable cutting edge strength

1. Employs high toughness CBN particles.
2. Employs Mitsubishi's unique "Particle-activated Sintering"

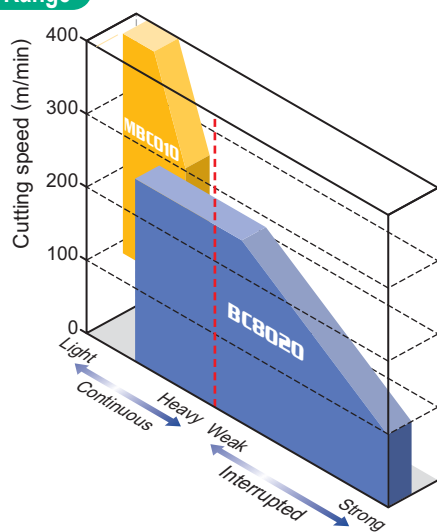


3. Using new brazing method.

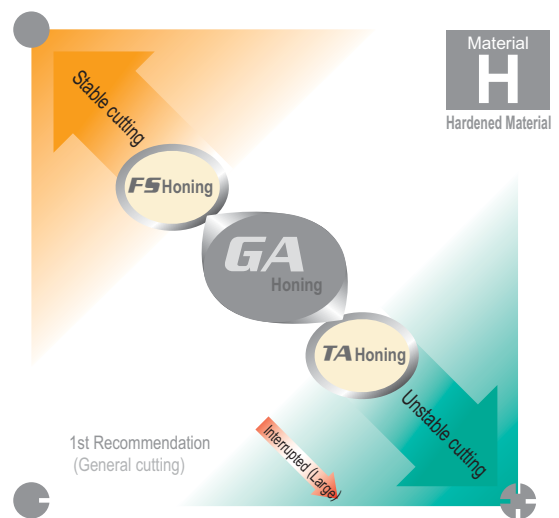
Wide application range

- For machining of hardened steels, it can be used from continuous through to interrupted machining
- High crater wear resistance makes it possible to carry out large depth of cut machining such as removal of carbonized layer.
- Available with 3 variations of honing.
 - FS (Continuous cutting)
 - GA (General purpose cutting)
 - TA (Interrupted cutting)

Application Range



Honing




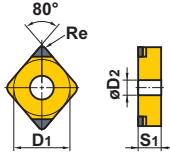

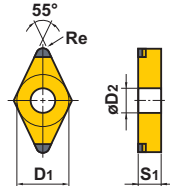

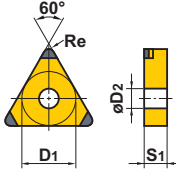

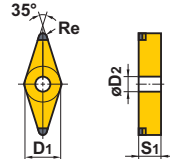

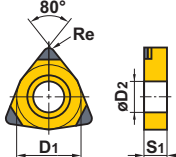
Recommended Cutting Conditions

Work Material	Cutting Mode	Cutting Speed (m/min)				Feed (mm/rev)	Depth of Cut (mm)	Coolant
		50	100	200	300			
Hardened Steel (Tempered steel)	Continuous cutting	[Bar chart showing speed range from ~100 to ~250 m/min]				-0.3	-0.5	Wet, Dry
	Interrupted cutting	[Bar chart showing speed range from ~100 to ~200 m/min]				-0.2	-0.3	

BC8020

Inserts

● Negative Inserts


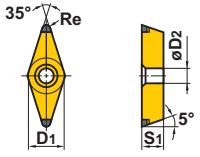

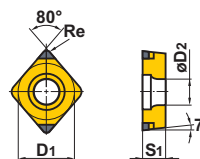

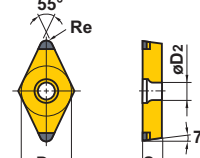

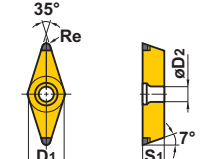

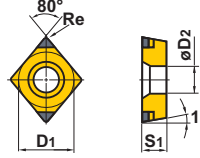

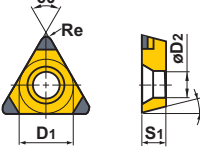
Shape	Order Number	Stock	Dimensions (mm)				Geometry	Holders
			D1	S1	Re	D2		
 Multi-corner Type Single Sided	NP-CNGA120404FS2	□	12.7	4.76	0.4	5.16		LL holder Double clamp holder Double clamp dimple bar P type boring bar D type boring head LL cartridge
	120408FS2	□	12.7	4.76	0.8	5.16		
	120412FS2	□	12.7	4.76	1.2	5.16		
	120404GA2	●	12.7	4.76	0.4	5.16		
	120408GA2	●	12.7	4.76	0.8	5.16		
	120412GA2	●	12.7	4.76	1.2	5.16		
	120404TA2	□	12.7	4.76	0.4	5.16		
	120408TA2	□	12.7	4.76	0.8	5.16		
	120412TA2	□	12.7	4.76	1.2	5.16		
 Multi-corner Type Single Sided	NP-DNGA150404FS2	□	12.7	4.76	0.4	5.16		LL holder Double clamp holder Double clamp dimple bar P type boring bar D type boring head
	150408FS2	□	12.7	4.76	0.8	5.16		
	150412FS2	□	12.7	4.76	1.2	5.16		
	150404GA2	●	12.7	4.76	0.4	5.16		
	150408GA2	●	12.7	4.76	0.8	5.16		
	150412GA2	●	12.7	4.76	1.2	5.16		
	150404TA2	□	12.7	4.76	0.4	5.16		
150408TA2	□	12.7	4.76	0.8	5.16			
150412TA2	□	12.7	4.76	1.2	5.16			
 Multi-corner Type Single Sided	NP-TNGA160404FS3	□	9.525	4.76	0.4	3.81		LL holder Double clamp holder ML type boring bar WP type boring bar Double clamp dimple bar P type boring bar D type boring head LL cartridge
	160408FS3	□	9.525	4.76	0.8	3.81		
	160412FS3	□	9.525	4.76	1.2	3.81		
	160404GA3	●	9.525	4.76	0.4	3.81		
	160408GA3	●	9.525	4.76	0.8	3.81		
	160412GA3	●	9.525	4.76	1.2	3.81		
	160404TA3	□	9.525	4.76	0.4	3.81		
	160408TA3	□	9.525	4.76	0.8	3.81		
	160412TA3	□	9.525	4.76	1.2	3.81		
 Multi-corner Type Single Sided	NP-VNGA160404FS2	□	9.525	4.76	0.4	3.81		Double clamp holder MP type boring bar Double clamp dimple bar D type boring head
	160408FS2	□	9.525	4.76	0.8	3.81		
	160404GA2	●	9.525	4.76	0.4	3.81		
	160408GA2	●	9.525	4.76	0.8	3.81		
	160404TA2	□	9.525	4.76	0.4	3.81		
	160408TA2	□	9.525	4.76	0.8	3.81		
 Multi-corner Type Single Sided	NP-WNGA080408GA3	●	12.7	4.76	0.8	5.16		LL holder Double clamp holder Double clamp dimple bar

● : Inventory maintained.

□ : Non stock, produced to order only.

Inserts

● Positive Inserts

Shape	Order Number	Stock	Dimensions (mm)				Geometry	Holders
			D1	S1	Re	D2		
 Multi-corner Type Single Sided	NP-VBGW160404FS2	<input type="checkbox"/>	9.525	4.76	0.4	4.43		Dimple bar
	160408FS2	<input type="checkbox"/>	9.525	4.76	0.8	4.43		
	160404GA2	<input checked="" type="checkbox"/>	9.525	4.76	0.4	4.43		
	160408GA2	<input checked="" type="checkbox"/>	9.525	4.76	0.8	4.43		
 Multi-corner Type Single Sided	NP-CCGW060202FS2	<input type="checkbox"/>	6.35	2.38	0.2	2.8		SP holder Small tools S type boring bar
	060204FS2	<input type="checkbox"/>	6.35	2.38	0.4	2.8		
	09T302FS2	<input type="checkbox"/>	9.525	3.97	0.2	4.4		
	09T304FS2	<input type="checkbox"/>	9.525	3.97	0.4	4.4		
	09T308FS2	<input type="checkbox"/>	9.525	3.97	0.8	4.4		
	060202GA2	<input checked="" type="checkbox"/>	6.35	2.38	0.2	2.8		
	060204GA2	<input checked="" type="checkbox"/>	6.35	2.38	0.4	2.8		
	09T302GA2	<input checked="" type="checkbox"/>	9.525	3.97	0.2	4.4		
	09T304GA2	<input checked="" type="checkbox"/>	9.525	3.97	0.4	4.4		
09T308GA2	<input checked="" type="checkbox"/>	9.525	3.97	0.8	4.4			
 Multi-corner Type Single Sided	NP-DCGW070202FS2	<input type="checkbox"/>	6.35	2.38	0.2	2.8		SP holder Small tools Dimple bar S type boring bar
	070204FS2	<input type="checkbox"/>	6.35	2.38	0.4	2.8		
	11T302FS2	<input type="checkbox"/>	9.525	3.97	0.2	4.4		
	11T304FS2	<input type="checkbox"/>	9.525	3.97	0.4	4.4		
	11T308FS2	<input type="checkbox"/>	9.525	3.97	0.8	4.4		
	070202GA2	<input checked="" type="checkbox"/>	6.35	2.38	0.2	2.8		
	070204GA2	<input checked="" type="checkbox"/>	6.35	2.38	0.4	2.8		
	11T302GA2	<input checked="" type="checkbox"/>	9.525	3.97	0.2	4.4		
	11T304GA2	<input checked="" type="checkbox"/>	9.525	3.97	0.4	4.4		
11T308GA2	<input checked="" type="checkbox"/>	9.525	3.97	0.8	4.4			
 Multi-corner Type Single Sided	NP-VCGW160404FS2	<input type="checkbox"/>	9.525	4.76	0.4	4.4		SP holder S type boring bar
	160408FS2	<input type="checkbox"/>	9.525	4.76	0.8	4.4		
	160404GA2	<input checked="" type="checkbox"/>	9.525	4.76	0.4	4.4		
	160408GA2	<input checked="" type="checkbox"/>	9.525	4.76	0.8	4.4		
 Multi-corner Type Single Sided	NP-CPGB080204FS2	<input type="checkbox"/>	7.94	2.38	0.4	3.5		Dimple bar
	080208FS2	<input type="checkbox"/>	7.94	2.38	0.8	3.5		
	080204GA2	<input checked="" type="checkbox"/>	7.94	2.38	0.4	3.5		
	080208GA2	<input checked="" type="checkbox"/>	7.94	2.38	0.8	3.5		
 Multi-corner Type Single Sided	NP-TPGB110304FS3	<input type="checkbox"/>	6.35	3.18	0.4	3.4		Dimple bar
	110308FS3	<input type="checkbox"/>	6.35	3.18	0.8	3.4		
	160304FS3	<input type="checkbox"/>	9.525	3.18	0.4	4.4		
	160308FS3	<input type="checkbox"/>	9.525	3.18	0.8	4.4		
	110304GA3	<input checked="" type="checkbox"/>	6.35	3.18	0.4	3.4		
	110308GA3	<input checked="" type="checkbox"/>	6.35	3.18	0.8	3.4		
	160304GA3	<input checked="" type="checkbox"/>	9.525	3.18	0.4	4.4		
160308GA3	<input checked="" type="checkbox"/>	9.525	3.18	0.8	4.4			

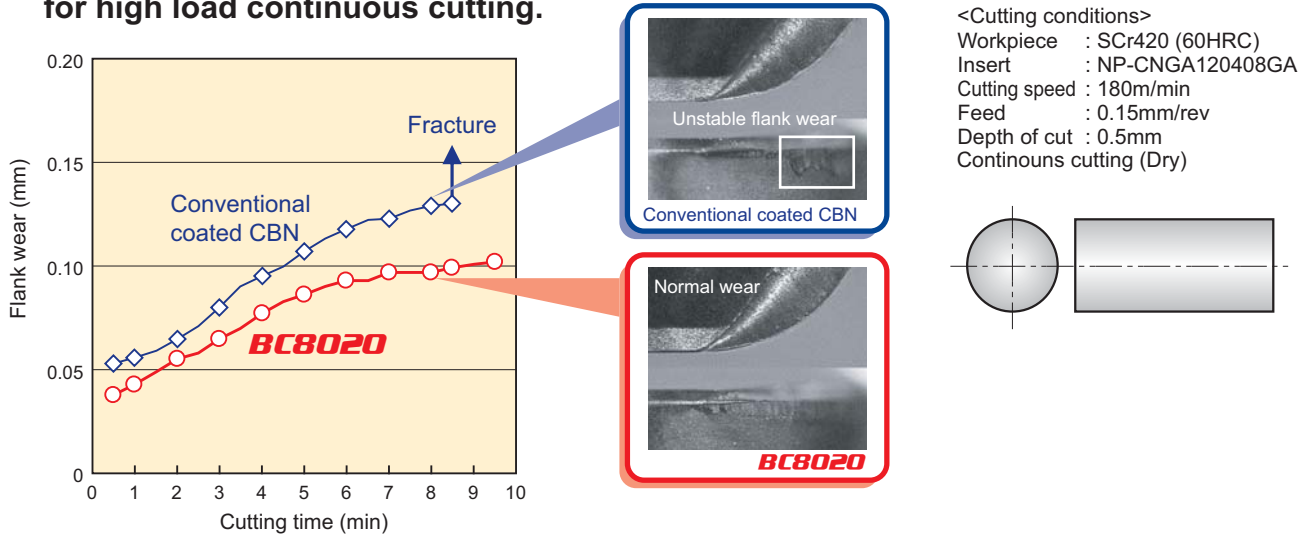
● : Inventory maintained.

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Cutting Performance

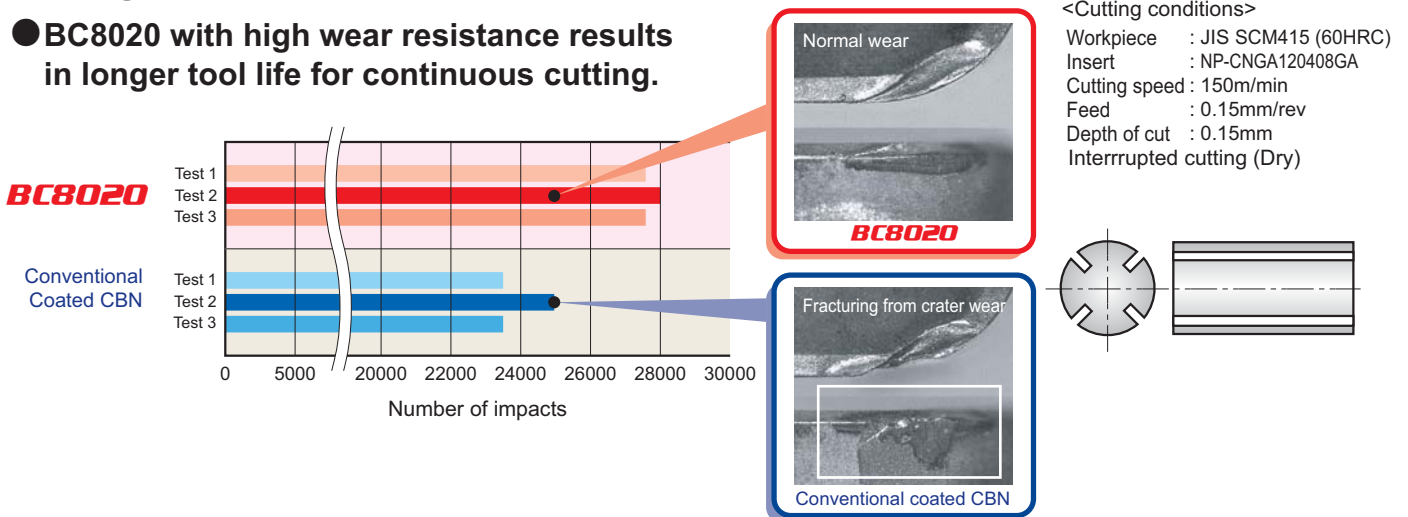
Wear resistance

● **BC8020**, offers high wear resistance for high load continuous cutting.

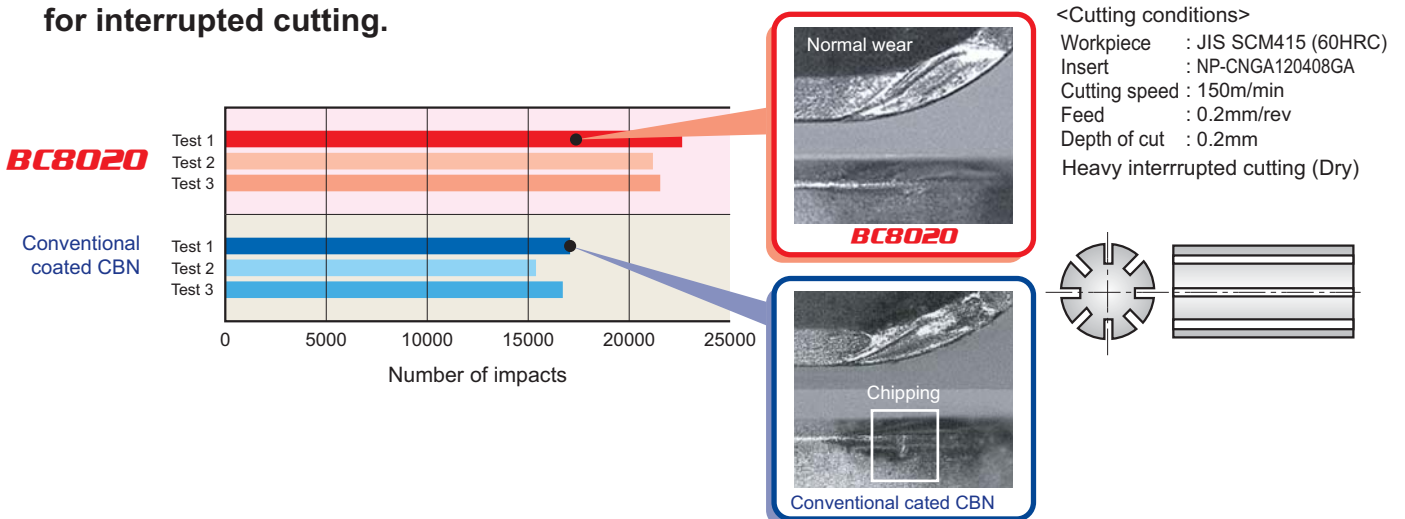


Toughness

● **BC8020** with high wear resistance results in longer tool life for continuous cutting.

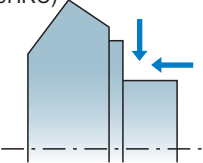
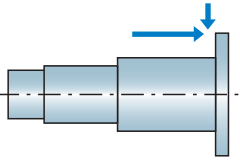
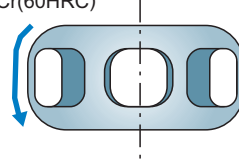


● **BC8020**, offers high chipping resistance for interrupted cutting.



BC8020

Application Examples

Insert	NP-CNGA120408GA	NP-CNGA120408GA	NP-CNGA120408GA	
Workpiece	Hardened steel included MnC(60HRC) 	JIS SCM415(60HRC) 	Hardened steel included MnCr(60HRC) 	
Component	Gear parts	Shaft	Joint parts	
Cutting Conditions	Cutting Speed (m/min)	90	130	120
	Feed (mm/rev)	0.2	0.15	0.15
	Depth of Cut (mm)	0.1	0.5	0.15
Coolant	Dry	Wet	Dry	
Results	<p>pieces/corner</p> <p>500 1000</p> <p>BC8020</p> <p>Conventional CBN</p> <p>Conventional CBN tool life was reached at 500 parts, whereas BC8020 offered stable machining of upto 1000 parts.</p>	<p>pieces/corner</p> <p>100 200</p> <p>BC8020</p> <p>Conventional Coated CBN</p> <p>Conventional coated CBN resulted in 180 parts, whereas the BC8020 was able to machine upto 200 parts with high stability.</p>	<p>pieces/corner</p> <p>250 500</p> <p>BC8020</p> <p>Conventional Coated CBN</p> <p>Conventional CBN tool life was reached at 450 parts, whereas BC8020 offered stable machining of upto 500 parts.</p>	

For Your Safety

- Don't handle inserts and chips without gloves. ● Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage. ● Please use safety covers and wear safety glasses. ● When using compounded cutting oils, please take fire precautions. ● When attaching inserts or spare parts, please use only the correct wrench or spanner. ● When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc.

MITSUBISHI MATERIALS CORPORATION

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