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# BC5110

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COATED CBN GRADE FOR CAST IRON

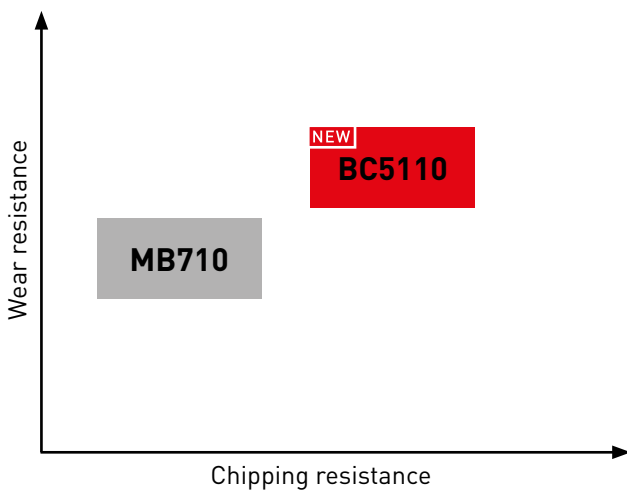
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# BC5110

## TOUGH SUBSTRATE WITH A HIGH HARDNESS COATING PROVIDES EXCELLENT CHIPPING AND WEAR RESISTANCE

- Excellent wear resistance when turning grey cast iron at low cutting speeds.
- Provides fine surface finishes on low rigidity workpieces.



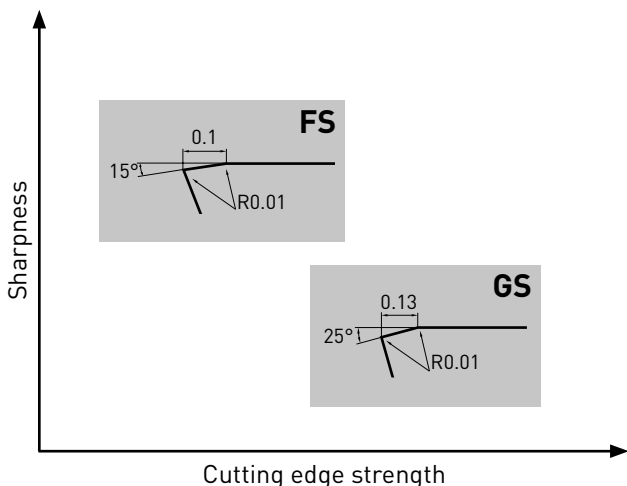
### EXCELLENT CHIPPING RESISTANCE

Compared to conventional grades, the fine grain, high CBN content greatly improves chipping resistance that provides stability and long tool life.

### EXCELLENT WEAR RESISTANCE COATING

The hard ceramic coating layer provides excellent surface finishes as well as wear and notch resistance during continuous cutting. Additionally, chipping and peeling of the coating layer is suppressed due to the improved bonding strength to the CBN substrate.

## LINE-UP OF EDGE PREPARATION (HONING)



### FS HONING

FS honing has a sharp edge with a small chamfer angle for good flank wear resistance. Recommended when burrs and dull finishes tend to occur.

### GS HONING

GS honing is suitable for thin or low rigidity workpiece materials and for applications that are prone to chip the cutting edge.

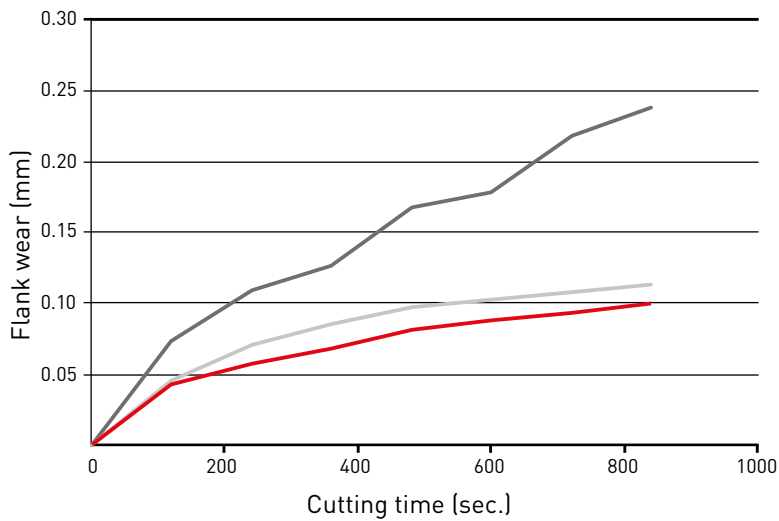
# BC5110

## CUTTING PERFORMANCE

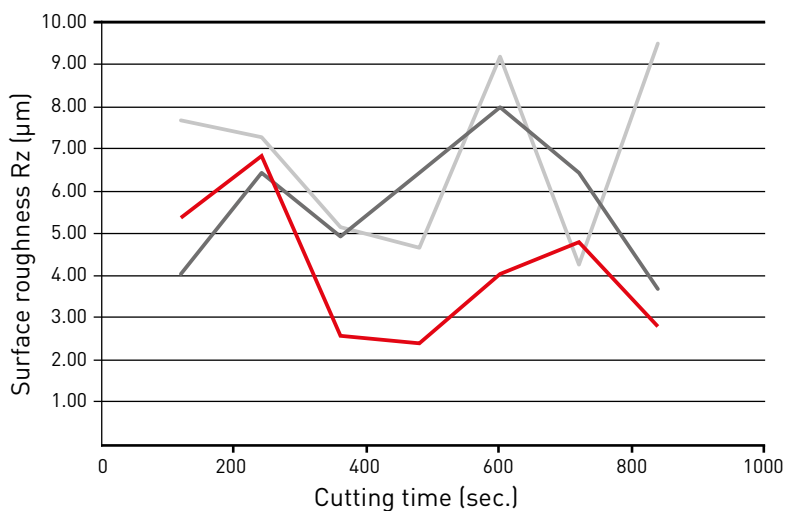
### MACHINING GG25: COMPARING WEAR RESISTANCE AND SURFACE ROUGHNESS

The tough substrate and wear resistant coating of BC5110 provides good surface finishes when compared to conventional uncoated grades.

#### FLANK WEAR COMPARISON



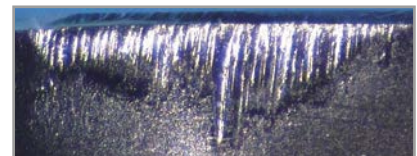
#### FINISHED SURFACE COMPARISON



BC5110 after 900 sec.



Conventional after 900 sec.



Material	Gray cast iron (GG25)
Tool	NP-CNGA120408GS2
Machining methods	External, continuous cutting
Vc (m/min)	300
f (mm/rev)	0.1
ap (mm)	0.2
Cutting mode	Wet cutting

# CNGA, DNGA, SNGA, TNGA, VNGA

## NEGATIVE INSERTS (WITH HOLE)

K

G Class

Order number	<b>NEW</b> BC5110	ZEFF	IC	S	RE	D1	LE	Geometry	
NP-CNGA120404FS2	●	2	12.7	4.76	0.4	5.16	1.8		
NP-CNGA120408FS2	●	2	12.7	4.76	0.8	5.16	2.0		
NP-CNGA120412FS2	●	2	12.7	4.76	1.2	5.16	2.2		
NP-CNGA120404GS2	★	2	12.7	4.76	0.4	5.16	1.8		
NP-CNGA120408GS2	★	2	12.7	4.76	0.8	5.16	2.0		
NP-CNGA120412GS2	★	2	12.7	4.76	1.2	5.16	2.2		
NP-DNGA150404FS2	★	2	12.7	4.76	0.4	5.16	2.1		
NP-DNGA150408FS2	★	2	12.7	4.76	0.8	5.16	2.0		
NP-DNGA150604FS2	★	2	12.7	6.35	0.4	5.16	2.1		
NP-DNGA150608FS2	★	2	12.7	6.35	0.8	5.16	2.0		
NP-DNGA150404GS2	★	2	12.7	4.76	0.4	5.16	2.1		
NP-DNGA150408GS2	★	2	12.7	4.76	0.8	5.16	2.0		
NP-DNGA150608GS2	★	2	12.7	6.35	0.8	5.16	2.0		
NP-SNGA120408GS2	★	2	12.7	4.76	0.8	5.16	2.2		
NP-TNGA160404FS3	★	3	9.525	4.76	0.4	3.81	1.6		
NP-TNGA160408FS3	★	3	9.525	4.76	0.8	3.81	1.7		
NP-TNGA160412FS3	★	3	9.525	4.76	1.2	3.81	1.9		
NP-TNGA160404GS3	★	3	9.525	4.76	0.4	3.81	1.6		
NP-TNGA160408GS3	★	3	9.525	4.76	0.8	3.81	1.7		
NP-TNGA160412GS3	★	3	9.525	4.76	1.2	3.81	1.9		
NP-VNGA160404FS2	★	2	9.525	4.76	0.4	3.81	2.5		
NP-VNGA160408FS2	★	2	9.525	4.76	0.8	3.81	2.0		
NP-VNGA160404GS2	★	2	9.525	4.76	0.4	3.81	2.5		
NP-VNGA160408GS2	★	2	9.525	4.76	0.8	3.81	2.0		

[1 insert in one case]



# VBGW, CCGW, DCGW, TCGW, TPGB

## POSITIVE INSERTS (WITH HOLE)

K

G Class

Order number	<b>NEW</b> BC5110	ZEFF	IC	S	RE	D1	LE	Geometry
NP-VBGW160404GS2	★	2	9.525	4.76	0.4	4.43	2.5	
NP-VBGW160408GS2	★	2	9.525	4.76	0.8	4.43	2.0	
NP-CCGW060202FS2	●	2	6.35	2.38	0.2	2.8	1.7	
NP-CCGW060204FS2	●	2	6.35	2.38	0.4	2.8	1.8	
NP-CCGW09T304FS2	●	2	9.525	3.97	0.4	4.4	1.8	
NP-CCGW09T308FS2	●	2	9.525	3.97	0.8	4.4	2.0	
NP-CCGW060202GS2	●	2	6.35	2.38	0.2	2.8	1.7	
NP-CCGW09T304GS2	★	2	9.525	3.97	0.4	4.4	1.8	
NP-CCGW09T308GS2	★	2	9.525	3.97	0.8	4.4	2.0	
NP-DCGW070204FS2	●	2	6.35	2.38	0.4	2.8	2.1	
NP-DCGW11T308FS2	★	2	9.525	3.97	0.8	4.4	2.0	
NP-DCGW070204GS2	★	2	6.35	2.38	0.4	2.8	2.1	
NP-DCGW11T304GS2	●	2	9.525	3.97	0.4	4.4	2.1	
NP-DCGW11T308GS2	●	2	9.525	3.97	0.8	4.4	2.0	
NP-TCGW110204FS3	★	3	6.35	2.38	0.4	2.8	1.6	
NP-TCGW110208FS3	★	3	6.35	2.38	0.8	2.8	1.7	
NP-TCGW090204GS3	★	3	5.56	2.38	0.4	2.5	1.6	
NP-TCGW110208GS3	★	3	6.35	2.38	0.8	2.8	1.7	
NP-TPGB090204FS3	★	3	5.56	2.38	0.4	2.9	1.6	
NP-TPGB110304FS3	★	3	6.35	3.18	0.4	3.4	1.6	
NP-TPGB110308FS3	★	3	6.35	3.18	0.8	3.4	1.7	
NP-TPGB080204GS3	★	3	4.76	2.38	0.4	2.4	1.6	
NP-TPGB110304GS3	★	3	6.35	3.18	0.4	3.4	1.6	
NP-TPGB110308GS3	★	3	6.35	3.18	0.8	3.4	1.7	

[1 insert in one case]

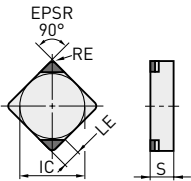


# SPGN

## POSITIVE INSERTS (WITHOUT HOLE)

K

G Class

Order number	<b>NEW</b> BC5110	ZEFF	IC	S	RE	D1	LE	Geometry
NP-SPGN120412GS2	★	2	12.7	4.76	1.2	-	2.5	

[1 insert in one case]



# BC5110

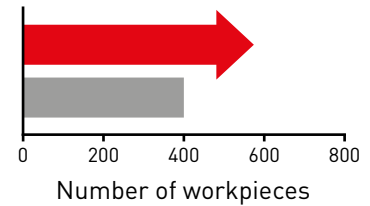
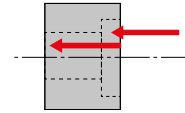
## RECOMMENDED CUTTING CONDITIONS

Material	Vc	f	ap	Cutting mode
K Gray cast irons GG25, GG30 etc.	100-600	≤ 0.5	≤ 0.5	Dry, Wet

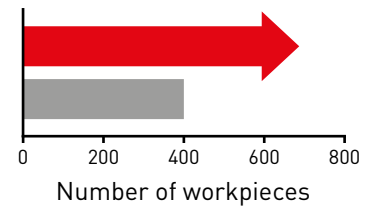
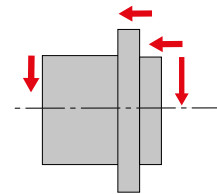
# BC5110

## APPLICATION EXAMPLES

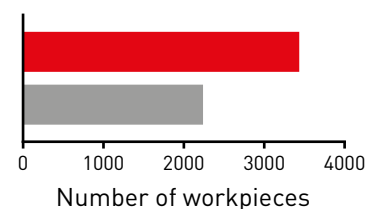
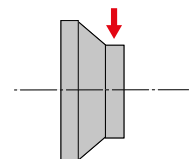
Material	Gray cast iron (GG25)
Component	Automotive parts
Tool	NP-DCGW070204FS2
Vc (m/min)	364
f (mm/rev)	0.1
ap (mm)	0.1
Cutting mode	Wet cutting
Results	BC5110 achieved 1.25 x longer tool life with stable dimensional accuracy, without cloudiness on the surface when compared with a conventional product.



Material	Gray cast iron (GG25)
Component	Automotive parts
Tool	NP-VCGW160408FS2
Vc (m/min)	530
f (mm/rev)	0.1
ap (mm)	0.1
Cutting mode	Wet cutting
Results	BC5110 achieved 1.5 x longer tool life and greatly suppressed flank wear when compared to a conventional product.



Material	Gray cast iron
Component	Ring
Tool	NP-VNGA160408FS2
Vc (m/min)	110
f (mm/rev)	0.12
ap (mm)	0.6
Cutting mode	Dry cutting
Results	BC5110 gave a 50 % increase in tool life plus an improved surface finish.



The above are customer's application examples.

**GERMANY**

MMC HARTMETALL GMBH  
Comeniusstr. 2 . 40670 Meerbusch  
Phone +49 2159 91890 . Fax +49 2159 918966  
Email admin@mmchg.de

**U.K.**

MMC HARDMETAL U.K. LTD.  
Mitsubishi House . Galena Close . Tamworth . Staffs. B77 4AS  
Phone +44 1827 312312 . Fax +44 1827 312314  
Email sales@mitsubishicarbide.co.uk

**SPAIN**

MITSUBISHI MATERIALS ESPAÑA, S.A.  
Calle Emperador 2 . 46136 Museros/Valencia  
Phone +34 96 1441711 . Fax +34 96 1443786  
Email comercial@mmevalencia.com

**FRANCE**

MMC METAL FRANCE S.A.R.L.  
6, Rue Jacques Monod . 91400 Orsay  
Phone +33 1 69 35 53 53 . Fax +33 1 69 35 53 50  
Email mmfsales@mmc-metal-france.fr

**POLAND**

MMC HARDMETAL POLAND SP. Z O.O  
Al. Armii Krajowej 61 . 50-541 Wrocław  
Phone +48 71335 1620 . Fax +48 71335 1621  
Email sales@mitsubishicarbide.com.pl

**RUSSIA**

MMC HARDMETAL 000 LTD.  
Electrozavodskaya St. 24 . build. 3 . Moscow . 107023  
Phone +7 495 725 58 85 . Fax +7 495 981 39 79  
Email info@mmc-carbide.ru

**ITALY**

MMC ITALIA S.R.L.  
Via Montefeltro 6/A . 20156 Milano  
Phone +39 0293 77031 . Fax +39 0293 589093  
Email info@mmc-italia.it

**TURKEY**

MMC HARTMETALL GMBH ALMANYA - İZMİR MERKEZ ŞUBESİ  
Adalet Mahallesi Anadolu Caddesi No: 41-1 . 15001 35580 Bayraklı/İzmir  
Phone +90 232 5015000 . Fax +90 232 5015007  
Email info@mmchg.com.tr

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