
BC5110

COATED CBN GRADE FOR CAST IRON

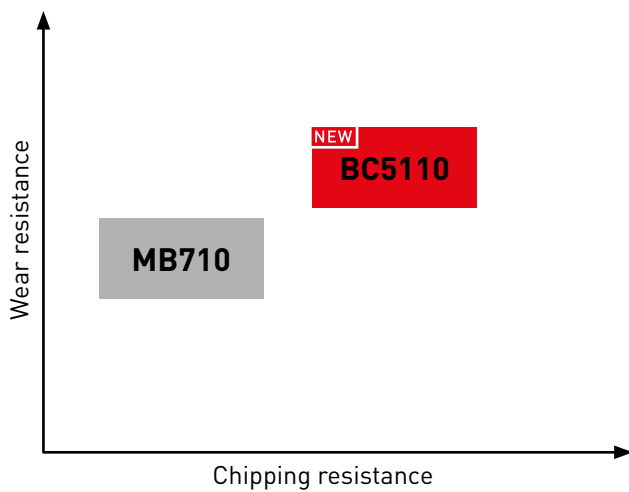


NEW

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.



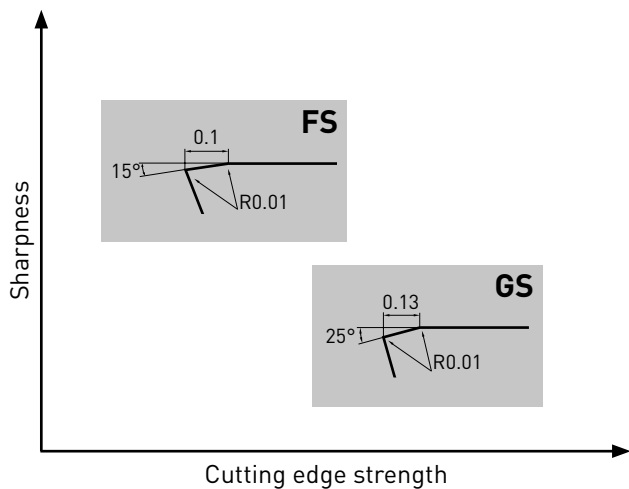
EXCELLENT CHIPPING RESISTANCE

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.

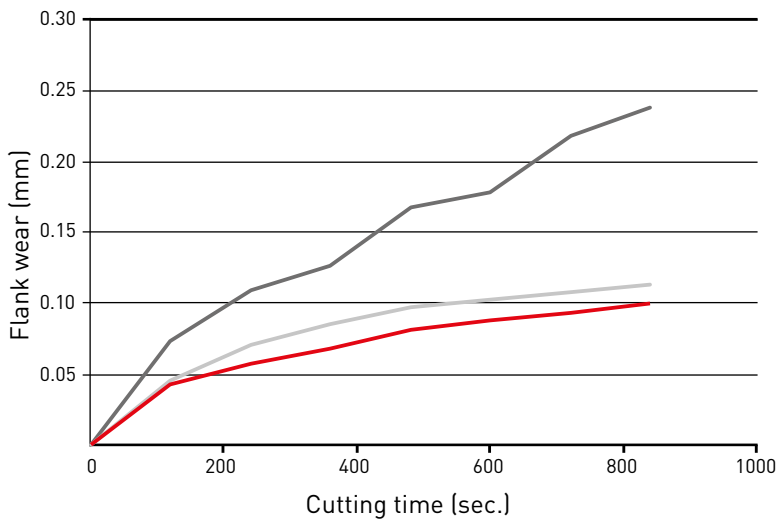
BC5110

CUTTING PERFORMANCE

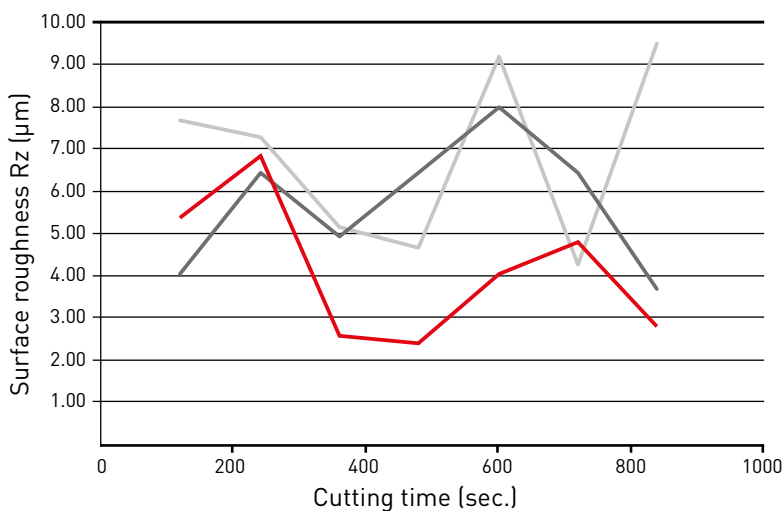
MACHINING GG25: COMPARING WEAR RESISTANCE AND SURFACE ROUGHNESS

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

FLANK WEAR COMPARISON



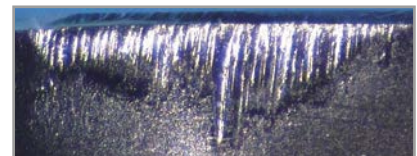
FINISHED SURFACE COMPARISON



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	NEW 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	NEW 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]

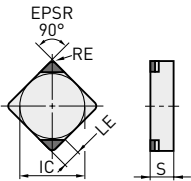


SPGN

POSITIVE INSERTS (WITHOUT HOLE)

K

G Class

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

[1 insert in one case]



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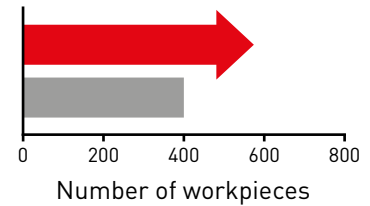
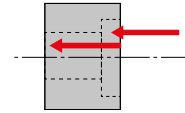
RECOMMENDED CUTTING CONDITIONS

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

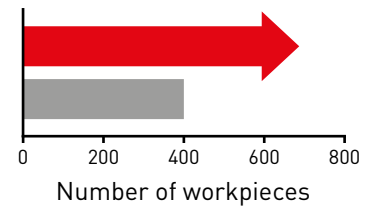
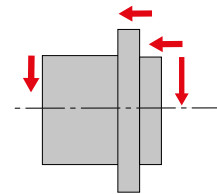
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APPLICATION EXAMPLES

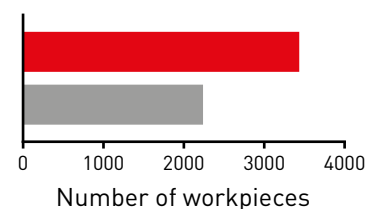
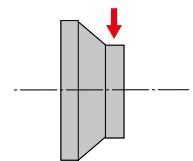
Material	Gray cast iron (GG25)
Component	Automotive parts
Tool	NP-DCGW070204FS2
Vc (m/min)	364
f (mm/rev)	0.1
ap (mm)	0.1
Cutting mode	Wet cutting
Results	BC5110 achieved 1.25 x longer tool life with stable dimensional accuracy, without cloudiness on the surface when compared with a conventional product.



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 application examples are customer's applications, therefore can differ from the recommended conditions.

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