

# Globally proven black super-smooth coating, a breakthrough for cast iron machining.

■ Ensures stable, reliable machining to cover all cast iron milling applications.

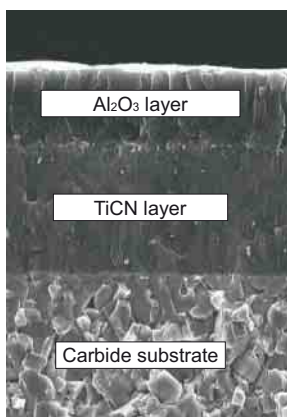


# CVD Coated Grade for Cast Iron Milling

# MC5020

## Features

- MC5020 has excellent wear, chipping and thermal crack resistance and prevents the problems usually associated with machining cast irons over prolonged periods.



Structure of MC5020

### Improved wear resistance

The micro-grain wear resistant Al<sub>2</sub>O<sub>3</sub> and fibrous TiCN layers deliver excellent wear resistance when milling a wide range of cast irons.

### Improved fracture resistance

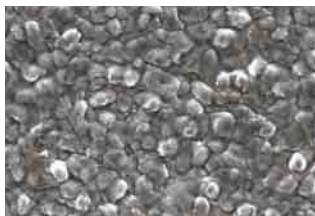
Use of a specially developed cemented carbide that provides superior resistance to fracture and thermal cracking prevents the cutting edge from sudden fracturing.

### Reduced abnormal damage

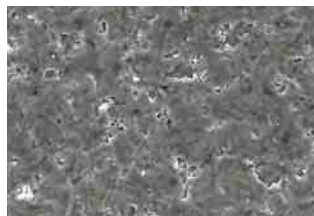
An extremely smooth black super-smooth coating prevents abnormal damage such as weld chipping.

### Black super-smooth coating

#### Comparison of Coating Surface



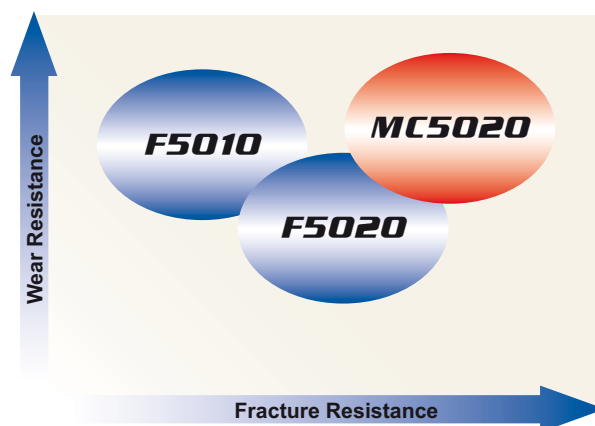
Conventional coating



Black super-smooth coating

### Application Range

MC5020 is the first recommendation for cast iron milling. Offers high wear resistance and superior fracture resistance over a wide application area.



### Recommended Cutting Conditions

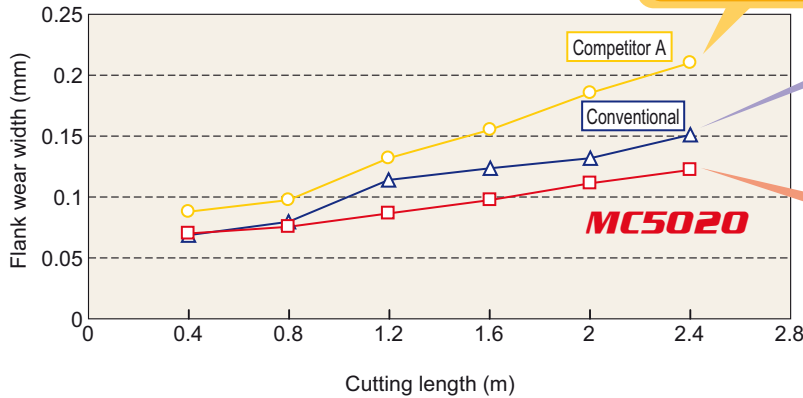
	Work Material	Tensile Strength	Cutting Speed (m/min)	Feed per Tooth (mm/tooth)
K	Cast Iron	250–350MPa	200 (100–250)	0.2 (0.1–0.3)
	Ductile Cast Iron	≤450MPa	200 (100–250)	0.2 (0.1–0.3)
		500–800MPa	110 (80–150)	0.2 (0.1–0.3)

# Cutting performance

## Wear Resistance

MC5020 delivers excellent wear resistance when machining ductile cast iron.

<Cutting Conditions>  
 Workpiece : DIN GGG70  
 Cutting speed : 250m/min  
 Feed : 0.3mm/tooth  
 Depth of Cut : 1.5mm  
 Dry cutting



Competitor A



Conventional

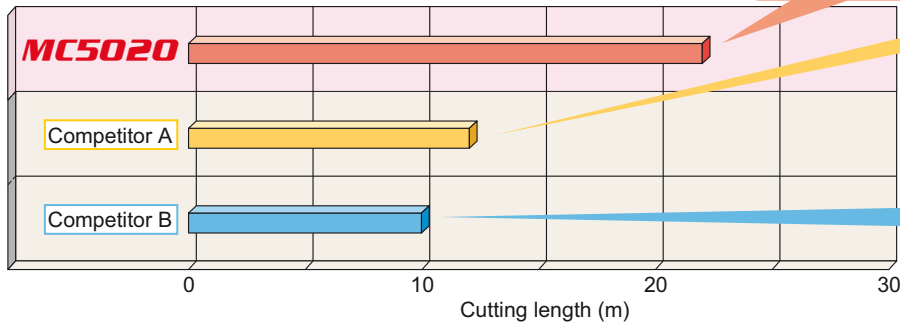


MC5020

## Fracture and Chipping Resistance

MC5020 displays exceptional fracture and chipping resistance with a highly reliable cutting edge!

<Cutting Conditions>  
 Workpiece : DIN GG30  
 (Slit material)  
 Cutting speed : 500m/min  
 Feed : 0.3mm/tooth  
 Depth of Cut : 0.5mm  
 Dry cutting



MC5020



Competitor A


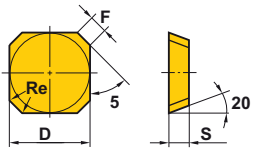

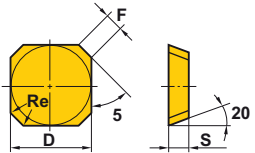

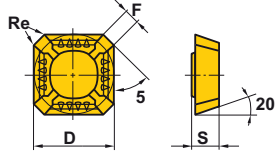

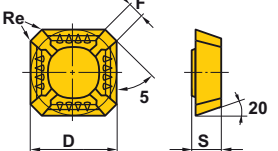

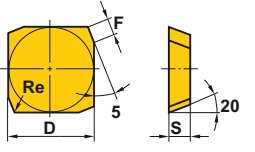

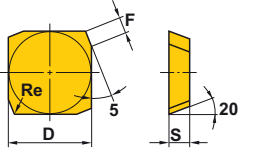

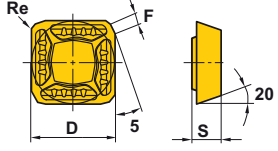



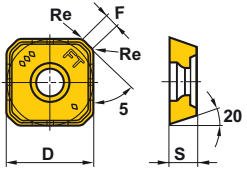

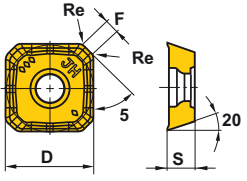

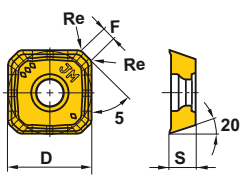

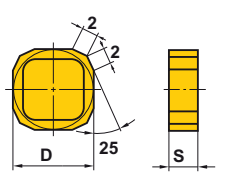

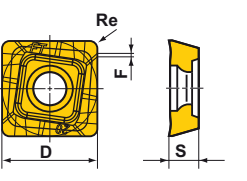

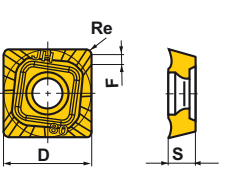

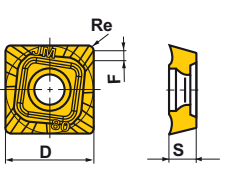
Competitor B

# MC5020

## Inserts

Finishing :Round S:Chamfer + Round :Chamfer


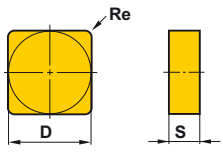

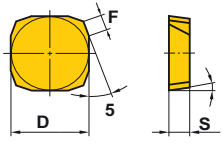

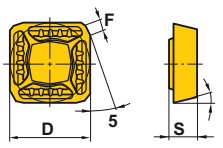

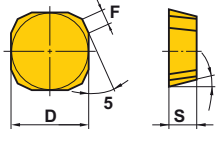

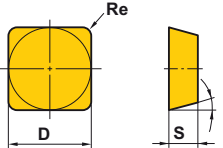

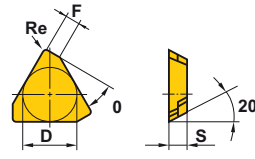

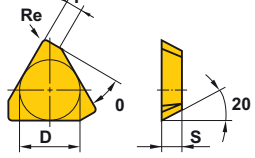
Cutter Type Insert Sharp	Order Number	Class	Honing	Stock	Dimensions (mm)				Geometry
					D	S	F	Re	
S 5 	S 20 AFS	E	S	●	12.7	3.18	1.4	1.0	
S 5 5 	S 50 AFS	E	S	●	15.875	4.76	1.4	1.0	
S 5 	S R 20 AF - S	E	E	●	12.7	3.18	1.4	1.0	
S 5 5 	S R 50 AF - S	E	E	●	15.875	4.76	1.4	1.0	
S 5 	S 20 FSR	E	S	●	12.7	3.18	1.4	1.0	
S 5 5 	S 50 FSR	E	S	●	15.875	4.76	1.4	1.0	
S 5 	S R 20 F R- S	E	E	●	12.7	3.18	1.4	1.0	


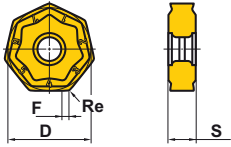

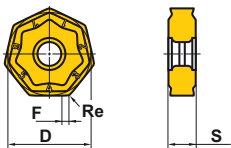

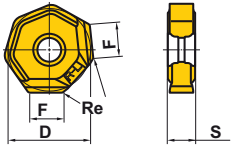
Cutter Type Insert Sharp	Order Number	Class	Honing	Stock	Dimensions (mm)				Geometry
					D	S	F	Re	
AS 5 	S M AGS -F	M	S	●	13.4	3.97	1.9	1.5	
AS 5 	S M AGS -	M	S	●	13.4	3.97	1.9	1.5	
AS 5 	S M AGS - M	M	S	●	13.4	3.97	1.9	1.5	
B 25 	S MF B2G	M	E	★	12.7	4.8	—	—	
AS 00 	S M 2 20 R-F	M	E	●	12.7	3.97	0.5	0.8	
AS 00 	S M 2 0 R-	M	E	●	12.7	3.97	1.4	0.8	
AS 00 	S M 2 0 R-M	M	E	●	12.7	3.97	1.4	0.8	

# MC5020

## Inserts

Finishing :Round S:Chamfer + Round :Chamfer

Cutter Type Insert Sharp	Order Number	Class	Honing	Stock	Dimensions (mm)				Geometry
					D	S	F	Re	
	S M 20 0	M	E	●	12.7	4.78	—	0.8	
	20 2	M	E	●	12.7	4.78	—	1.2	
FB 5 	S 20 R	E	E	●	12.7	3.175	1.4	—	 Right hand tool holder shown.
	20	E	E	★	12.7	3.175	1.4	—	
	S 20 R	N	E	★	12.7	3.175	1.4	—	
FB 5 	S R 20 R- S	E	E	●	12.7	3.175	1.4	—	
Corner Angle 5 	S K 20 DR	K	T	★	12.7	3.18	1.4	—	
S 00 	S M 20 0	M	E	★	12.7	4.76	—	0.8	
	20 2	M	E	★	12.7	4.76	—	1.2	
S 00 	0 SR	E	S	●	9.525	3.175	1.4	0.4	
S 00 	220 SR	E	S	●	12.7	4.76	1.4	1.0	

Cutter Type Insert Sharp	Order Number	Class	Honing	Stock	Dimensions (mm)				Geometry	
					D	S	F	Re		
A 0W MK Breaker 	M 200 0 -MK		E	●	20	6.55	1.0	0.8		
A 0W K Breaker 	M 200 0 - K		E	●	20	6.55	1.0	0.8		
A 0W Wiper 	W 200 C-WK		E	E	●	20	6.55	7.4	0.8	

The inserts can be used with both right and left hand cutters.





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