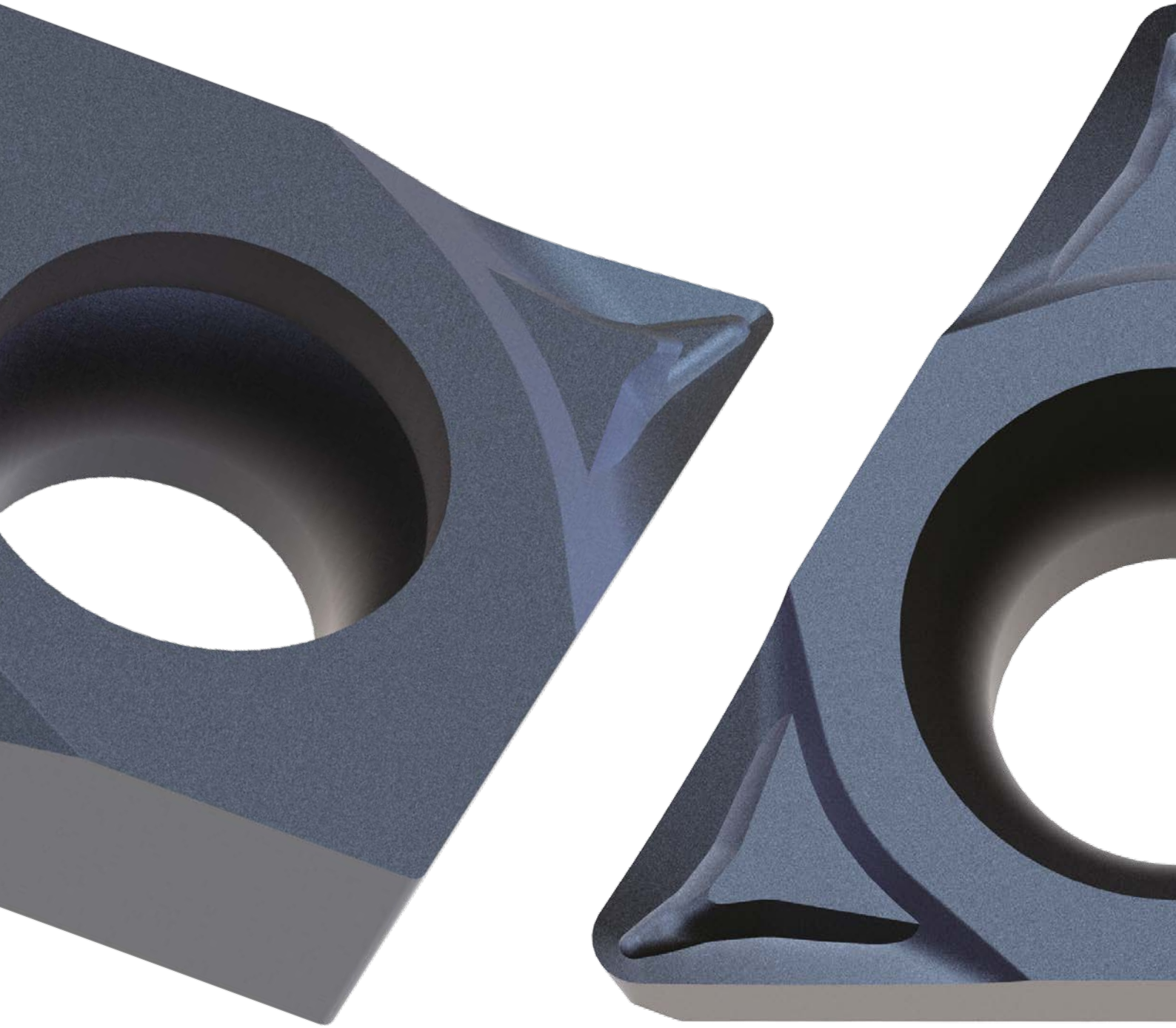


**NEW**

# FSF/FSF-P CHIPBREAKER

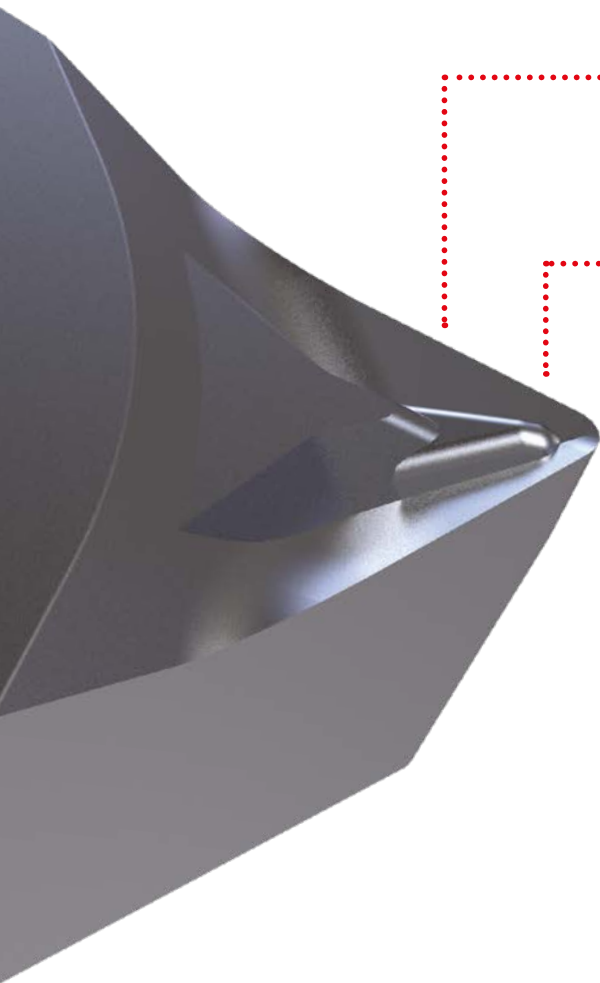
IDEAL CHIPBREAKER FOR SMALL DEPTHS OF CUT  
AND FINISHING OPERATIONS

B210E-I



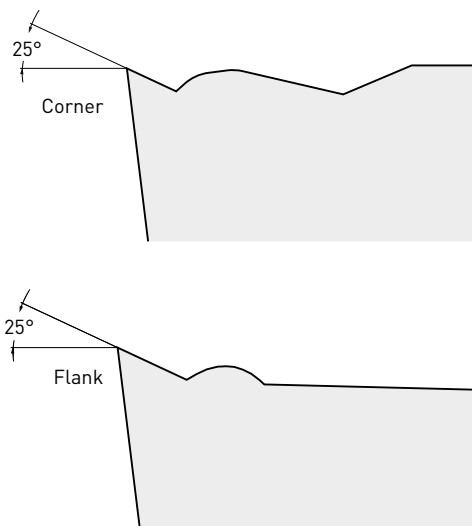
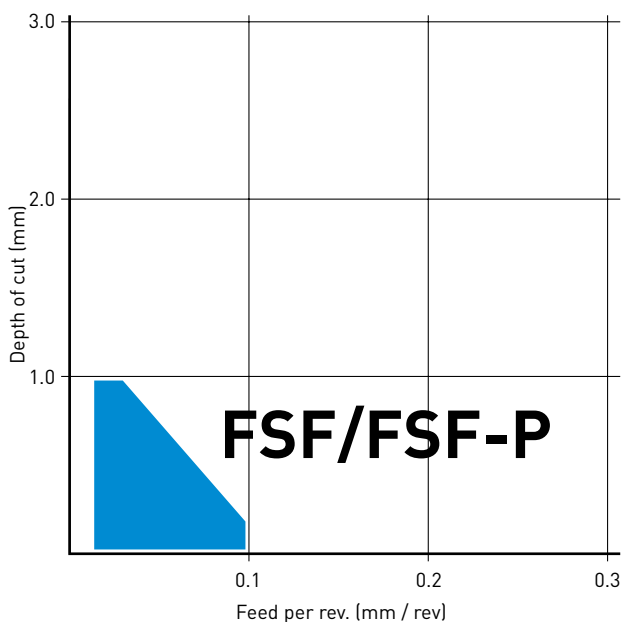
# FSF/FSF-P CHIPBREAKER

## CHIPBREAKER FOR SMALL DEPTHS OF CUT



- SHARP CUTTING EDGE**  
 The sharp 25° rake angle provides a sharp cutting edge and a beautifully finished surface.
- LOW CUTTING RESISTANCE**  
 Low cutting resistance design with gentle chipbreaker protrusion.
- MULTI-STAGE CHIPBREAKER**  
 Corresponds to fluctuations in depth of cut.

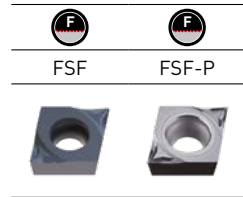
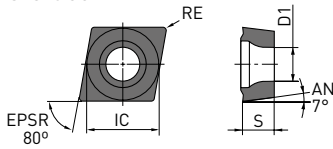
## APPLICATION RANGE



# CCGT

## 7° POSITIVE INSERTS (WITH HOLE)

### G Class



Order number	F M		MP9025	MS7025	MS9025	VP30RT	HT110	IC	S	RE	D1
	F	M									
CCGT03S101M-FSF	F		●					3.97	1.39	0.1	2.0
CCGT03S102M-FSF	F		●					3.97	1.39	0.2	2.0
CCGT04T001M-FSF	F		●					4.76	1.79	0.1	2.4
CCGT04T002M-FSF	F		●					4.76	1.79	0.2	2.4
CCGT060201M-FSF	F		●					6.35	2.38	0.1	2.8
CCGT060202M-FSF	F		●					6.35	2.38	0.2	2.8
CCGT060204M-FSF	F		●					6.35	2.38	0.4	2.8
CCGT03S101M-FSF-P	F			●	●			3.97	1.39	0.1	2.0
CCGT03S102M-FSF-P	F			●	●			3.97	1.39	0.2	2.0
CCGT04T001M-FSF-P	F			●	●			4.76	1.79	0.1	2.4
CCGT04T002M-FSF-P	F			●	●			4.76	1.79	0.2	2.4
CCGT0602V5M-FSF-P	F			●		●		6.35	2.38	0.05	2.8
CCGT060201M-FSF-P	F			●	●	●		6.35	2.38	0.1	2.8
CCGT060202M-FSF-P	F			●	●	●		6.35	2.38	0.2	2.8
CCGT060204M-FSF-P	F			●	●	●		6.35	2.38	0.4	2.8
CCGT09T3V5M-FSF-P	F			●		●		9.525	3.97	0.05	4.4
CCGT09T301M-FSF-P	F			●	●	●		9.525	3.97	0.1	4.4
CCGT09T302M-FSF-P	F			●		●		9.525	3.97	0.2	4.4
CCGT09T304M-FSF-P	F			●		●		9.525	3.97	0.4	4.4

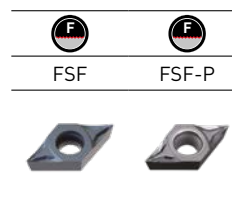
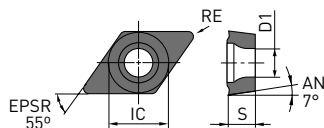
1/1



# DCGT

## 7° POSITIVE INSERTS (WITH HOLE)

### G Class



Order number		MP9025	MS7025	MS9025	VP30RT	HT110	IC	S	RE	D1
DCGT070201M-FSF	F	●					6.35	2.38	0.1	2.8
DCGT070202M-FSF	F	●					6.35	2.38	0.2	2.8
DCGT11T301M-FSF	F	●					9.525	3.97	0.1	4.4
DCGT11T302M-FSF	F	●					9.525	3.97	0.2	4.4
DCGT0702V5M-FSF-P	F		●		●		6.35	2.38	0.05	2.8
DCGT070201M-FSF-P	F		●	●	●		6.35	2.38	0.1	2.8
DCGT070202M-FSF-P	F		●	●	●		6.35	2.38	0.2	2.8
DCGT11T3V5M-FSF-P	F		●		●		9.525	3.97	0.05	4.4
DCGT11T301M-FSF-P	F		●	●	●		9.525	3.97	0.1	4.4
DCGT11T302M-FSF-P	F		●	●	●		9.525	3.97	0.2	4.4
DCGT11T304M-FSF-P	F		●		●		9.525	3.97	0.4	4.4

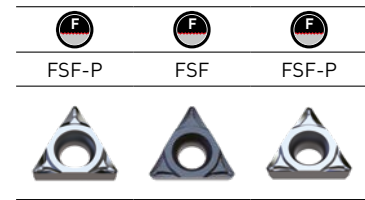
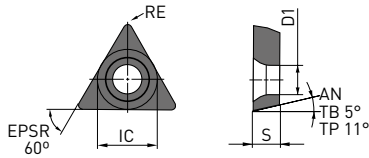
1/1



# TBGT, TPGH

## 5°, 11° POSITIVE INSERTS (WITH HOLE)

G Class



Order number	F M		MP9025	MS7025	MS9025	VP30RT	HT110	IC	S	RE	D1
	F	M									
TBGT060101M-FSF-P	F			●	●	●		3.97	1.59	0.1	2.3
TBGT060102M-FSF-P	F			●		●		3.97	1.59	0.2	2.3
TPGH090201M-FSF	F		●					5.56	2.38	0.1	2.9
TPGH090202M-FSF	F		●					5.56	2.38	0.2	2.9
TPGH090204M-FSF	F		●					5.56	2.38	0.4	2.9
TPGH080201M-FSF-P	F			●	●	●		4.76	2.38	0.1	2.4
TPGH080202M-FSF-P	F			●		●		4.76	2.38	0.2	2.4
TPGH090201M-FSF-P	F			●	●	●		5.56	2.38	0.1	2.9
TPGH090202M-FSF-P	F			●	●	●		5.56	2.38	0.2	2.9
TPGH090204M-FSF-P	F			●	●	●		5.56	2.38	0.4	2.9

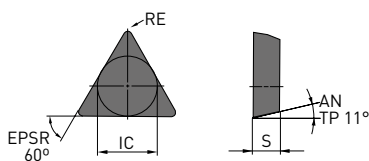
1/1



# TPGB

## 11° POSITIVE INSERTS (WITHOUT HOLE)

G Class



Strong cutting edge  
Flat Top



Order number	F M		MP9025	MS7025	MS9025	VP30RT	HT110	IC	S	RE	D1
	F	M									
TPGB110201		M					●	6.35	2.38	0.1	—
TPGB110202		M					●	6.35	2.38	0.2	—
TPGB110204		M					●	6.35	2.38	0.4	—
TPGB160304		M					●	9.525	3.18	0.4	—
TPGB160308		M					●	9.525	3.18	0.8	—
TPGB080202		M					●	4.76	2.38	0.2	—
TPGB080204		M					●	4.76	2.38	0.4	—
TPGB080208		M					●	4.76	2.38	0.8	—
TPGB090202		M					●	5.56	2.38	0.2	—
TPGB090204		M					●	5.56	2.38	0.4	—
TPGB1102V5		M					●	6.35	2.38	0.05	—
TPGN090202	—						●	5.56	2.38	0.2	—
TPGN090204	—						●	5.56	2.38	0.4	—
TPGN090208	—						●	5.56	2.38	0.8	—

1/1

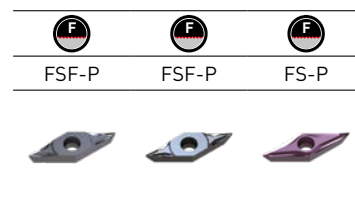
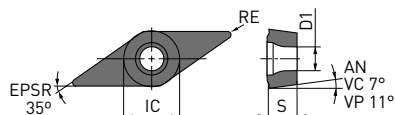
● : Inventory maintained. ★ : Inventory maintained in Japan.



# VCGT, VPGT

## 7°, 11° POSITIVE INSERTS (WITH HOLE)

G Class



Order number	F M	MP9025	MS7025	MS9025	VP30RT	HT110	IC	S	RE	D1
VCGT110302M-FSF-P	F		●		●		6.35	3.18	0.2	2.8
VCGT110304M-FSF-P	F		●		●		6.35	3.18	0.4	2.8
VPGT110301M-FSF-P	F		●	●	●		6.35	3.18	0.1	2.9
VPGT110302M-FSF-P	F		●		●		6.35	3.18	0.2	2.9
VPGT110304M-FSF-P	F		●		●		6.35	3.18	0.4	2.9
VPGT110301M-FS-P	F		●		●		6.35	3.18	0.1	2.9
VPGT110302M-FS-P	F		●		●		6.35	3.18	0.2	2.9

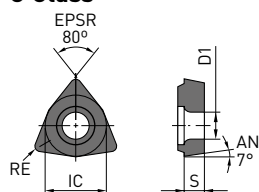
1/1



# WCGT

## 7° POSITIVE INSERTS (WITH HOLE)

G Class



Order number	F M	MP9025	MS7025	MS9025	VP30RT	HT110	IC	S	RE	D1
WCGT020102M-FSF-P	F		●	●	●		3.97	1.59	0.2	2.3
WCGTL30201M-FSF-P	F		●	●	●		4.76	2.38	0.1	2.3
WCGTL30202M-FSF-P	F		●	●	●		4.76	2.38	0.2	2.3
WCGT040201M-FSF-P	F		●	●	●		6.35	2.38	0.1	2.8
WCGT040202M-FSF-P	F		●	●	●		6.35	2.38	0.2	2.8
WCGT06T301M-FSF-P	F			●			9.525	3.97	0.1	4.4
WCGT06T302M-FSF-P	F		●	●	●		9.525	3.97	0.2	4.4
WCGT06T304M-FSF-P	F		●		●		9.525	3.97	0.4	4.4



1/1



# FSF/FSF-P CHIPBREAKER

## RECOMMENDED CUTTING CONDITIONS

### CUTTING SPEED

Material	Properties	 	Cutting condition	MP9025 Vc	MS7025 Vc	MS9025 Vc	VP30RT Vc	HT110 Vc
P	Soft magnetic iron, Mild steel	≤180 HB	F	●	—	100 – 300	—	—
	Carbon steel, Alloy steel	180–280 HB	F	●	—	40 – 130	—	—
	Carbon steel, Alloy steel	280–350 HB	F	✱	—	—	155 – 190	—
M	Austenitic stainless steel	≤200 HB	F	●	—	40 – 100	60 – 150	—
	Ferritic and martensitic stainless steel	≤200 HB	F	●	—	40 – 100	—	—
	Austenitic, Ferritic and martensitic stainless steel	>200 HB	F	✱	—	—	—	50 – 90
	Electromagnetic stainless steel	230 HBW	F	●	—	40 – 160	50 – 180	—
	Duplex stainless steel	≤280 HB	F	✱	—	—	—	35 – 60
	Precipitation hardening stainless steel	<450 HB	F	✱	70 – 85	40 – 80	50 – 100	—
	Grey cast iron	≤350 MPa	M	●✱	—	—	—	90 – 125
K	Ductile cast iron	≤450 MPa	M	●●✱	—	—	—	70 – 100
	Ductile cast iron	≤800 MPa	M	●●✱	—	—	—	60 – 90
N	Aluminium alloys	—	M	●●✱	—	—	—	300 – 700
S	Heat resistant alloys	—	F	●	—	40 – 140	—	—
				✱	25 – 40	—	—	—

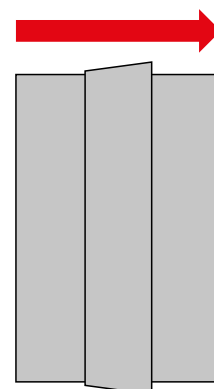
1/1

Chipbreaker	f (mm/rev)	ap (mm)
FSF, FSF-P	0.02 – 0.1	0.02 – 1.0
FS-P	0.04 – 0.2	0.2 – 0.9
Standard	0.08 – 0.3	0.3 – 2.0
Flat Top	0.08 – 0.3	0.3 – 2.0

## APPLICATION EXAMPLES

### EXTERNAL TURNING

Workpiece material	DIN 1.4301 (X5CrNi18-10)
Insert	DCGT11T301M-FSF-P
Grade	MS9025
Vc (m/min)	120
f (mm/rev)	0.02
ap (mm)	0.1
Cutting mode	Wet cutting (Oil)
Result	Chipping at the cutting edge was suppressed and chip removal was good. It is now possible to process 750 pieces, compared to the conventional 150 pieces tool life.



Cutting Conditions: ●: Stable cutting ●: General cutting ✱: Unstable cutting  
Cutting Area: F: Finish cutting M: Medium cutting

## EUROPEAN SALES COMPANIES

### GERMANY

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

### UK Office

MMC HARDMETAL UK LTD  
1 Centurion Court, Centurion Way  
Tamworth, B77 5PN  
Phone +44 1827 312312  
Email enquiries@mitsubishicarbide.co.uk

### UK Deliveries / Returns

Unit 4 B5K Business Park, Quartz Close  
Tamworth, B77 4GR

### SPAIN

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

### 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

### ITALY

MMC ITALIA S.R.L.  
Viale Certosa 144 . 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 35530 Bayraklı / İzmir  
Phone +90 232 5015000 . Fax +90 232 5015007  
Email info@mmchg.com.tr

[www.mmc-carbide.com](http://www.mmc-carbide.com)

DISTRIBUTED BY:

□

□

L

┘

B210E-I 

Published by: MMC Hartmetall GmbH – A Sales Company of  MITSUBISHI MATERIALS | 2025.04