

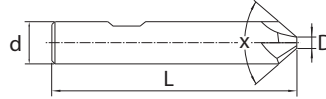
Deburring cutter 90°

General machining

5501/5601R90*FM



- Type of shank DIN 6535HA
- Type of shank: DIN 6535HB
- Non-centre cutting
- Helix angle 0°



Article	*	Dimensions [mm]					Teeth	Grade
		d(h6)	L	D	Shank	X		KMG303
5501R903FM-0300		3	48	0.2	HA	90	3	●
5501R904FM-0400		4	48	0.2	HA	90	4	●
5601R904FM-0600		6	55	0.2	HB	90	4	●
5601R904FM-0800		8	58	0.5	HB	90	4	●
5601R904FM-1000		10	65	0.5	HB	90	4	●
5601R906FM-1000		10	65	0.7	HB	90	6	○
5601R904FM-1200		12	75	0.5	HB	90	4	●
5601R906FM-1200		12	75	0.7	HB	90	6	○
5601R904FM-1600		16	85	0.7	HB	90	4	●
5601R906FM-1600		16	85	0.7	HB	90	6	○

● Ex stock ○ On demand

* With internal cooling

Application field					
P	M	K	N	S	H
✓	✓	✓	✓		

✓ Very suitable

✓ Suitable

System code > B268

Cutting data > B436

Nonstandard order > B477



Deburring cutters – FM series

Material group	Composition / structure / heat treatment	Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]				
				5501 / 5601 5501 / 5601 5601				
				KMG303				
				a_e / D				
				1/1	1/2	1/10	f-group	
P Unalloyed steel	approx. 0,15 % C	annealed	125	1			230	11
	approx. 0,45 % C	annealed	190	2			220	11
	approx. 0,45 % C	tempered	250	3			165	11
	approx. 0,75 % C	annealed	270	4			140	11
	approx. 0,75 % C	tempered	300	5			130	11
P Low-alloyed steel		annealed	180	6			175	11
		tempered	275	7			140	11
		tempered	300	8			130	11
		tempered	350	9			120	11
P High-alloyed steel and high-alloyed tool steel		annealed	200	10			165	11
		hardened and tempered	325	11			125	11
M Stainless steel	ferritic/martensitic	annealed	200	12			75	11
	martensitic	tempered	240	13			65	11
	austenitic	quench hardened	180	14			80	11
	austenitic-ferritic		230	15			65	11
K Grey cast iron	perlitic/ferritic		180	16			170	11
	perlitic (martensitic)		260	17			140	11
K Cast iron with spheroidal graphite	ferritic		160	18			210	11
	perlitic		250	19			165	11
K Malleable cast iron	ferritic		130	20			230	11
	perlitic		230	21			185	11
N Aluminium wrought alloys	cannot be hardened		60	22			1200	11
	hardenable	hardened	100	23			720	11
	Cast aluminium alloys	$\leq 12\% \text{ Si}$, cannot be hardened	75	24			480	11
		$\leq 12\% \text{ Si}$, hardenable	90	25			600	11
		$> 12\% \text{ Si}$, cannot be hardened	130	26			180	11
N Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27			360	11
	CuZn, CuSnZn		90	28			420	11
	CuSn, Pb-free copper, electrolytic copper		100	29			360	11
S Heat-resistant alloys	Fe-based alloys	annealed	200	30				
		hardened	280	31				
	Ni or Co bass	annealed	250	32				
		hardened	350	33				
		cast	320	34				
S Titanium alloys	pure titanium		R_m 400	35				
	α and β alloys	hardened	R_m 1050	36				
H Hardened steel		hardened and tempered	55 HRC	37				
		hardened and tempered	60 HRC	38				
H Hard cast iron		cast	400	39				
H Hardened cast iron		hardened and tempered	55 HRC	40				
X Non-metallic materials	Thermoplasts				41			
	Thermosetting plastics				42			
	Plastic, glass-fibre reinforced GFRP				43			
	Plastic, carbon fibre reinforced CFRP				44			
	Graphite				45			
	Wood				46			

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B460.
For examples of material for cutting tool groups view page D22.

Recommended feed rate

Solid carbide milling group 9 – Square shoulder mills UM series HSC/HPC

	a _e / D	Feed rate per cutting edge (f _z) [mm]																
		Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20							
P	1/1	0,06	0,06	0,06	0,07	0,07	0,07	0,07	0,08	0,08	0,08							
	1/2	0,08	0,08	0,08	0,09	0,09	0,09	0,09	0,10	0,10	0,10							
	1/10	0,14	0,14	0,16	0,18	0,22	0,25	0,27	0,3	0,32	0,36							
M	1/1	0,05	0,05	0,05	0,05	0,05	0,05	0,05	0,06	0,06	0,06							
	1/2	0,06	0,06	0,06	0,07	0,07	0,07	0,07	0,08	0,08	0,08							
	1/10	0,10	0,10	0,10	0,12	0,12	0,14	0,16	0,16	0,18	0,18							
K	1/1	0,06	0,06	0,06	0,07	0,07	0,07	0,07	0,08	0,08	0,08							
	1/2	0,08	0,08	0,08	0,09	0,09	0,09	0,09	0,10	0,10	0,10							
	1/10	0,14	0,14	0,16	0,18	0,22	0,25	0,27	0,3	0,32	0,36							
H	1/1	0,045	0,045	0,045	0,053	0,053	0,053	0,053	0,06	0,06	0,06							
	1/2	0,06	0,06	0,06	0,07	0,07	0,07	0,07	0,08	0,08	0,08							
	1/10	0,10	0,10	0,10	0,12	0,12	0,14	0,16	0,16	0,18	0,18							

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Solid carbide milling group 10 – Square shoulder mills VSM series

	a _e / D	Feed rate per cutting edge (f _z) [mm]																
		Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20							
P	1/1	0,03	0,04	0,05	0,05	0,05	0,05	0,06	0,06	0,07	0,08							
	1/2	0,04	0,06	0,07	0,07	0,07	0,07	0,08	0,09	0,10	0,11							
	1/10	0,05	0,08	0,09	0,09	0,09	0,09	0,11	0,12	0,14	0,15							
M	1/1	0,02	0,03	0,04	0,04	0,04	0,04	0,04	0,05	0,05	0,06							
	1/2	0,03	0,05	0,05	0,05	0,05	0,05	0,06	0,07	0,08	0,08							
	1/10	0,04	0,06	0,07	0,07	0,07	0,07	0,08	0,09	0,10	0,11							
S	1/1	0,02	0,03	0,04	0,04	0,04	0,04	0,04	0,05	0,05	0,06							
	1/2	0,03	0,05	0,05	0,05	0,05	0,05	0,06	0,07	0,08	0,08							
	1/10	0,04	0,06	0,07	0,07	0,07	0,07	0,08	0,09	0,10	0,11							

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Solid carbide milling group 11 – Deburring cutters FM series

	a _e / D	Feed rate per cutting edge (f _z) [mm]																
		Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20						
P	1/1																	
	1/2																	
	1/10	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09						
M	1/1																	
	1/2																	
	1/10	0,02	0,02	0,02	0,02	0,03	0,05	0,06	0,06	0,06	0,06	0,07						
K	1/1																	
	1/2																	
	1/10	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09						
N	1/1																	
	1/2																	
	1/10	0,03	0,03	0,05	0,05	0,06	0,09	0,11	0,11	0,12	0,12	0,14						

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

A

Turning

B

Milling

C

Drilling

D

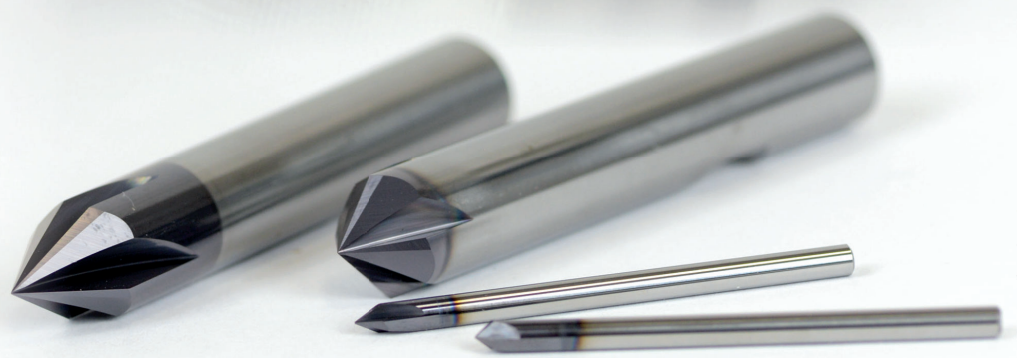
Technical Information

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FM series

Deburring Cutter



Solid carbide milling System code – DIN-ISO series

5 5 0 1 R 30 2 GM R05 0800

1 2 3 4 5 6 7 8 9 10

A

Turning

Type	
Code	Description
5	Milling cutter

Shank type	
Code	Description
1	Shank
5	DIN 6535 HA
6	Weldon shank DIN 6535 HB
7	Whistle Notch DIN 6535 HE
9	Morse taper shank

B

1

2

Milling

Cutting edge type	
Code	Description
0	Square shoulder mill
6	Ball nose cutter
8	Torus mill

Tool length	
Code	Description
1	DIN 6527 K
2	DIN 6527 L
5	Factory standard ZCC-A
6	Factory standard ZCC-B
8	DIN 6528
9	Factory standard ZCC-D

3

4

C

Drilling

Rotation direction	
Code	Description
R	Right
L	Left

Helix angle	
Code	Description
20	20°
30	30°
3841	38°/41°
45	45°
55	55°
60	60°

Number of teeth	
Code	Description
2	2
...	
M	Indicated when different diameters have a different number of teeth

5

6

7

D

Technical Information

Application	
Code	Description
GM	Semi-finishing
GF	Finishing
HM	Hard machining
MHH	High-speed hard machining
NH	High-performance machining of heat-resistant alloys

Radius [mm]	
Code	Description
R03	0,3
R15	1,5
R30	3,0
...	

Diameter [mm]	
Code	Description
0100	1,0
0800	8,0
2000	20,0
...	

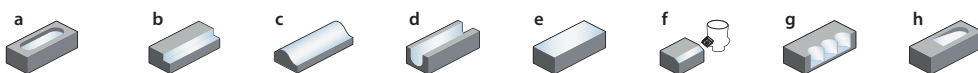
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a Groove milling
g Plunge milling
b Square shoulder milling
h Circular milling/Ramping
c Profile milling
d Slot milling
e Face milling
f Chamfer milling

A

Turning

Coated cemented carbide PVD

Grade	Grade description
KMD401	PVD coated carbide substrate for high performance milling application of non-ferrous metals, CFRP and GFRP and organic materials. The DLC layer has very good wear protection and high thermal stability.

B

Milling

KMG303	PVD coated carbide substrate for universal milling application of steel (up to HRC<=48), stainless steel and cast iron.
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KMG405	PVD coated carbide substrate for high performance milling application of steel (up to HRC <55), stainless steel, super alloy material and cast iron. High wear resistance and toughness for a wide application field.
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C

Drilling

KMG555	PVD coated carbide substrate for hard milling application of steel (HRC 55–68), highest wear resistance and toughness for best cutting result.
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KMG309	PVD coated carbide substrate for non ferrous materials. High wear resistance even in abrasive materials.
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D

Technical Information

Uncoated cemented carbide




Grade	Grade description
YK30F	Uncoated K30 carbide substrate for steel, stainless steel, cast iron and non ferrous materials.

E

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YK40F	Uncoated K20–K30/N20–N30 carbide substrate for cast iron and non ferrous materials.
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Deburring cutter

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
5501/5601		3-4	0.2-0.7	✓	✓	✓	✓			Deburring cutters	B432
5501/5601		3-4	0.2-0.7	✓	✓	✓	✓			Deburring cutters	B433
5601		4	5.2-10.0	✓	✓	✓	✓			Deburring cutters	B434

✓ Very suitable ✓ Suitable

A

Turning

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