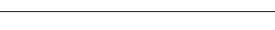
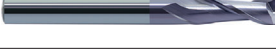
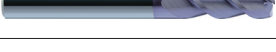
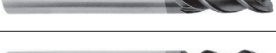
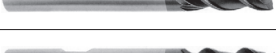
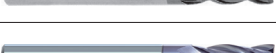


High performance milling

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
PM-2E		2	1.0-20.0	✓	✓	✓			✓	End mills	B330
PM-2EL		2	3.0-20.0	✓	✓	✓			✓	End mills	B331
PM-4E-G		4	1.0-20.0	✓	✓	✓			✓	End mills	B332
PM-4EL-G		4	3.0-20.0	✓	✓	✓			✓	End mills	B333
PM-4EX-G		4	3.0-20.0	✓	✓	✓			✓	End mills	B334
PM-4E		4	1.0-20.0	✓	✓	✓			✓	End mills	B335
PM-4EL		4	3.0-20.0	✓	✓	✓			✓	End mills	B336
PM-6E		6	6.0-20.0	✓	✓	✓			✓	End mills	B337
PM-6EL		6	6.0-20.0	✓	✓	✓			✓	End mills	B338
PM-2B		2	1.0-20.0	✓	✓	✓			✓	Ball nose cutters	B339
PM-2BL		2	2.0-20.0	✓	✓	✓			✓	Ball nose cutters	B340
PM-2BFP		2	1.0-20.0	✓	✓	✓			✓	Ball nose cutters	B341
PM-2BC		2	0.5-4.0	✓	✓	✓			✓	Ball nose cutter with conical neck	B342
PM-4B		4	3.0-20.0	✓	✓	✓			✓	Ball nose cutters	B345
PM-4BL		4	3.0-20.0	✓	✓	✓			✓	Ball nose cutters	B346
PM-2R		2	1.0-12.0	✓	✓	✓			✓	Torus mills	B347
PM-4R		4	3.0-12.0	✓	✓	✓			✓	Torus mills	B350
PM-4RL		4	6.0-16.0	✓	✓	✓			✓	Torus mills	B351
PM-4H		4	3.0-12.0	✓	✓	✓			✓	High-feed mills	B348
PM-4HL		4	4.0-12.0	✓	✓	✓			✓	High-feed mills	B349

✓ Very suitable ✓ Suitable

General machining

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
5501R302GM		2	3.0-20.0	✓	✓	✓				End mills	B272
5601R302GM		2	3.0-20.0	✓	✓	✓				End mills	B273
5502R302GM		2	1.0-20.0	✓	✓	✓				End mills	B274
5602R302GM		2	2.0-20.0	✓	✓	✓				End mills	B275
GM-2E		2	1.0-20.0	✓	✓	✓				End mills	B276
GM-2EL		2	3.0-20.0	✓	✓	✓				End mills	B277
GM-2EX		2	3.0-20.0	✓	✓	✓				End mills	B278
GM-2EFP		2	6.0-16.0	✓	✓	✓				End mills	B279
GM-2F		2	1.0-20.0	✓	✓	✓				End mills	B280
GM-2FL		2	3.0-20.0	✓	✓	✓				End mills	B281
GM-2EP		2	0.5-5.0	✓	✓	✓				Mini end mills	B282
GM-2ES		2	0.3-3.0	✓	✓	✓				Mini end mills	B284
GM-3E		3	1.0-20.0	✓	✓	✓				End mills	B285
GM-3EL		3	3.0-20.0	✓	✓	✓				End mills	B286
5501R303GM		3	3.0-20.0	✓	✓	✓				End mills	B287
5601R303GM		3	3.0-20.0	✓	✓	✓				End mills	B288
5502R303GM		3	3.0-20.0	✓	✓	✓				End mills	B289
5602R303GM		3	3.0-20.0	✓	✓	✓				End mills	B290
5502R453GM		3	3.0-20.0	✓	✓	✓				End mills	B291
5602R453GM		3	3.0-20.0	✓	✓	✓				End mills	B292
GM-4E-G		4	1.0-20.0	✓	✓	✓				End mills	B298

✓ Very suitable ✓ Suitable

A

Turning

B

Milling

C

Drilling

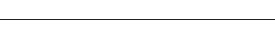
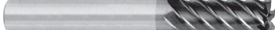
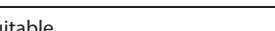
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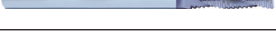
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General machining

	Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
					P	M	K	N	S	H		
A Turning	GM-4F-G		4	1.0-20.0	✓	✓	✓				End mills	B293
	GM-4EL-G		4	3.0-20.0	✓	✓	✓				End mills	B294
	GM-4FL-G		4	3.0-16.0	✓	✓	✓				End mills	B295
B Milling	GM-4EX-G		4	3.0-20.0	✓	✓	✓				End mills	B296
	GM-4E		4	1.0-20.0	✓	✓	✓				End mills	B297
	GM-4EL		4	3.0-20.0	✓	✓	✓				End mills	B299
	GM-4EFP		4	6.0-20.0	✓	✓	✓				End mills	B300
	5501R304GF		4	3.0-20.0	✓	✓	✓				End mills	B301
C Drilling	5601R304GF		4	3.0-20.0	✓	✓	✓				End mills	B302
	5502R304GF		4	3.0-20.0	✓	✓	✓				End mills	B303
	5602R304GF		4	3.0-20.0	✓	✓	✓				End mills	B304
	5508R454GM		4	3.0-20.0	✓	✓	✓				End mills	B305
	5602R454GM		4	3.0-20.0	✓	✓	✓				End mills	B306
D Technical Information	5589R45MGF		6-10	6.0-20.0	✓	✓	✓				End mills	B307
	GM-6E		6	6.0-20.0	✓	✓	✓				End mills	B308
	GM-6EL		6	6.0-20.0	✓	✓	✓				End mills	B309
	5565R302GF		2	3.0-20.0	✓	✓	✓				Ball nose cutters	B310
	5665R202GM		2	3.0-20.0	✓	✓	✓				Ball nose cutters	B311
E Index	5566R302GF		2	3.0-12.0	✓	✓	✓				Ball nose cutters	B312
	GM-2B		2	1.0-20.0	✓	✓	✓				Ball nose cutters	B313
	GM-2BL		2	2.0-20.0	✓	✓	✓				Ball nose cutters	B314

✓ Very suitable ✓ Suitable

General machining

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
GM-2BFP		2	1.0-20.0	✓	✓	✓				Ball nose cutters	B315
GM-2BS		2	0.3-3.0	✓	✓	✓				Mini ball nose cutters	B316
GM-2BP		2	0.5-5.0	✓	✓	✓				Mini ball nose cutters	B317
GM-4B		4	3.0-20.0	✓	✓	✓				Ball nose cutters	B319
GM-4BL		4	3.0-20.0	✓	✓	✓				Ball nose cutters	B320
GM-2R		2	1.0-12.0	✓	✓	✓				Torus mills	B321
GM-4R		4	3.0-12.0	✓	✓	✓				Torus mills	B322
GM-4RL		4	6.0-16.0	✓	✓	✓				Torus mills	B323
5602R303GR		3	6.0-8.0	✓	✓	✓				Rippers	B324
5602R304GR		4	10.0-20.0	✓	✓	✓				Rippers	B325
5602R305GR		5	25.0	✓	✓	✓				Rippers	B326
GM-4W		4	6.0-20.0	✓	✓	✓				Rippers	B327

✓ Very suitable ✓ Suitable

Machining high hardness steel

HM-2E		2	1.0-20.0						✓	End mills	B354
HM-2EFP		2	6.0-20.0						✓	End mills	B355
HM-2EP		2	0.5-5.0						✓	Mini end mills	B356
HM-2ES		2	0.3-3.0						✓	Mini end mills	B358
HM-4E		4	1.0-20.0						✓	End mills	B359
HM-4EL		4	3.0-20.0						✓	End mills	B360
HM-4EFP		4	6.0-20.0						✓	End mills	B361
5502R55MHH		4-8	3.0-20.0						✓	End mills	B362

✓ Very suitable ✓ Suitable

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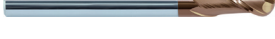
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Machining high hardness steel

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
HM-6E		6	6.0-20.0						✓	End mills	B363
HM-6EL		6	6.0-20.0						✓	End mills	B364
HM-2B		2	1.0-20.0						✓	Ball nose cutters	B365
HM-2BL		2	2.0-20.0						✓	Ball nose cutters	B366
HM-2BFP		2	1.0-20.0						✓	Ball nose cutters	B367
HM-2BS		2	0.3-3.0						✓	Mini ball nose cutters	B368
HM-2BP		2	0.5-5.0						✓	Mini ball nose cutters	B369
HM-4B		4	3.0-20.0						✓	Ball nose cutters	B371
HM-4BL		4	3.0-20.0						✓	Ball nose cutters	B372
HM-4R		4	3.0-12.0						✓	Torus mills	B373
HM-4RF		4	6.0-12.0						✓	Torus mills	B374
HM-4RP		4	6.0-16.0						✓	Torus mills	B375

✓ Very suitable ✓ Suitable

Copper and copper alloys

5502R402NM		2	3.0-20.0				✓			End mills	B378
NM-2E		2	1.0-12.0				✓			End mills	B379
NM-2EP		2	0.5-5.0				✓			Mini end mills	B380
NM-4E		4	3.0-12.0				✓			End mills	B381
NM-2B		2	1.0-12.0				✓			Ball nose cutters	B382
NM-2BP		2	0.5-5.0				✓			Mini ball nose cutters	B383

✓ Very suitable ✓ Suitable

Aluminium and aluminium alloys

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
AL-2E		2	1.0-20.0				✓			End mills	B386
AL-2EL		2	3.0-20.0				✓			End mills	B387
ALG-2E		2	1.0-20.0				✓			End mills	B388
ALG-2R		2	6.0-25.0				✓			Torus mills	B403
ALG-2R-W		2	6.0-25.0				✓			Torus mills	B404
AL-3E		3	1.0-20.0				✓			End mills	B389
AL-3EL		3	3.0-20.0				✓			End mills	B390
ALG-3E		3	1.0-20.0				✓			End mills	B391
ALG-3E-W		3	3.0-20.0				✓			End mills	B392
ALP-3E		3	1.0-20.0				✓			End mills	B393
ALP-3E-W		3	3.0-20.0				✓			End mills	B394
ALP-4E		4	3.0-20.0				✓			End mills	B395
ALP-4E-W		4	3.0-20.0				✓			End mills	B396
AL-3W		3	6.0-20.0				✓			Rippers	B397
5565R302NH		2	3.0-16.0				✓			Ball nose cutters	B398
5566R302NH		2	3.0-16.0				✓			Ball nose cutters	B399
AL-2B		2	2.0-12.0				✓			Ball nose cutters	B400
AL-2R-AIR		2	6.0-20.0				✓			High performance torus mills	B401
AL-2RL-AIR		2	6.0-20.0				✓			High performance torus mills	B402
AL-3R-AIR		3	12.0-20.0				✓			High performance torus mills	B405
AL-3RL-AIR		3	12.0-20.0				✓			High performance torus mills	B406

✓ Very suitable ✓ Suitable

A

Turning

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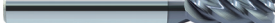
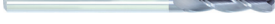
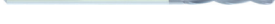
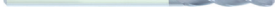
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HPC with unequal helix angle

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
5501R38414GM		4	4.0-20.0	✓	✓	✓			✓	End mills	B408
5502R38414GM		4	4.0-20.0	✓	✓	✓			✓	End mills	B409
5601R38414GM		4	4.0-20.0	✓	✓	✓			✓	End mills	B410
5602R38414GM		4	3.0-20.0	✓	✓	✓			✓	End mills	B411
5502R38414GM-R		4	4.0-20.0	✓	✓	✓			✓	Torus mills	B412
5602R38414GM-R		4	4.0-20.0	✓	✓	✓			✓	Torus mills	B413
UM-4E		4	4.0-20.0	✓	✓	✓			✓	End mills	B416
UM-4E-W		4	4.0-20.0	✓	✓	✓			✓	End mills	B417
UM-4EL		4	4.0-20.0	✓	✓	✓			✓	End mills	B418
UM-4EL-W		4	4.0-20.0	✓	✓	✓			✓	End mills	B419
UM-4ELP-W		4	4.0-20.0	✓	✓	✓			✓	End mills	B420
UM-4EFP		4	6.0-20.0	✓	✓	✓			✓	End mills	B421
UM-4R		4	4.0-20.0	✓	✓	✓			✓	Torus mills	B422
UM-4RL		4	6.0-16.0	✓	✓	✓			✓	Torus mills	B423
UM-4RFP		4	6.0-16.0	✓	✓	✓			✓	Torus mills	B424
VSM-4E		4	4.0-20.0	✓	✓			✓		End mills	B426
VSM-4E-C		4	10.0-20.0	✓	✓			✓		End mills	B427
VSM-4R		4	4.0-20.0	✓	✓			✓		Torus mills	B428

✓ Very suitable ✓ Suitable

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

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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.
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.

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.
KMG309	PVD coated carbide substrate for non ferrous materials. High wear resistance even in abrasive materials.

D

Technical
Information

Uncoated cemented carbide

Grade	Grade description
YK30F	Uncoated K30 carbide substrate for steel, stainless steel, cast iron and non ferrous materials.
YK40F	Uncoated K20–K30/N20–N30 carbide substrate for cast iron and non ferrous materials.

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A

5 5 0 1 R 30 2 GM R05 0800

1 2 3 4 5 6 7 8 9 10

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

C

3

4

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

D

5

6

7

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
...	

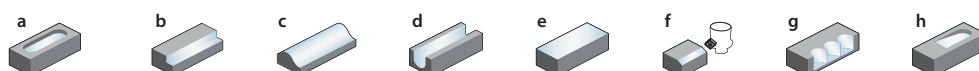
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a Groove milling
g Plunge milling

b Square shoulder milling
h Circular milling/Ramping

c Profile milling

d Slot milling

e Face milling

f Chamfer milling

GM – 2 E L P – D12 R0.5 – M08 – W

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Application	
Code	Description
GR	General roughing
GM	Semi-finishing
GF	Finishing
PM	High-performance machining
HM	Hard machining
HH	High-speed hard machining
NM	General machining of non-ferrous metals
AL	General machining of Al and Al alloys
ALP	High-performance machining of Al and Al alloys
ALG	General machining of Al and Al alloys
UM	HSC/HPC machining
VSM	General machining of heat-resistant alloys

Number
of teeth

1

2

Cutting edge type	
Code	Description
E	Square shoulder mill with protective chamfer
F	Square shoulder mill with sharp cutting edges
B	Ball nose cutter
R	Torus mill
W	Ripper
H	High-feed mill

3

Cutting edge length	
Code	Description
L	Long
X	Extra long
F	Short

4

Type	
Code	Description
S	Mini diameter
P	Ground neck
C	Conical neck

5

Diameter [mm]	
Code	Description
D3.0	3,0
D8.0	8,0
D20.0	20,0
...	

6

Radius [mm]	
Code	Description
R0.5	0,5
R1.0	1,5
R3.0	3,0
...	

7

Features	
Code	Description
G	Spiral angle 30°
M	Neck length [mm]
S	Thin shank
AIR	For aerospace industry

8

Weldon shank	
--------------	--

9



a Groove milling



b Square shoulder milling



c Profile milling



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