YE-TP18

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Note The new address above has currently been updated since Korean new postal standard was valid from 2014. Be noticed that the location of the Headquarters has NOT changed.

YouTube

Tool specifications are subject to change without prior notice.

SCAN QR CODE
TO SEE TitaNox Power AT WORK

YG1YETP180430003

SELECTION GUIDE

TitaNox Power
Y-COATED SOLID CARBIDE END MILLS

"High Speed Machining for Exotic Materials: Titanium and Stainless Steels"

- Excellent tools for Aerospace Industries, Energy & Power generations.
- For Roughing and Semi-finishing of universal use, also for Finishing difficult-to-machine materials.
- YG-1's advanced coating technology makes it possible to maintain an excellent Wear resistance, Oxidation resistance and better Thermal stability.

"Offers a high performance metal removal rate with secured and chatter free machining in semi-finishing and finishing."

1 Y-Coated Solid Carbide 4 Flute End Mills with Double Core


<SECTION X-X'>
Excellent chip evacuation


<SECTION Y-Y'>
Higher rigidity

- Double core geometry reduces tool deflection and improves dimensional stability.
- Optimized edge preparation protects chipping problems in high speed machining.
- Variable flute design brings out perfect performance in both slotting and side milling operations.

◎ : Excellent ○ : Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
○	○	○				◎							◎	○
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						○							◎	○

2 Y-Coated Solid Carbide 5 Flute End Mills with Multiple helix & TiAlN Coated Solid Carbide Roughing

- Multiple helix geometry delivers silent cutting and reduces chattering.
- Optimized edge preparation increases tool life and makes heavy cutting possible.
- 40° helix Corner radius is available with optimal roughing tooth profile.

Y-Coated / 5 Flutes

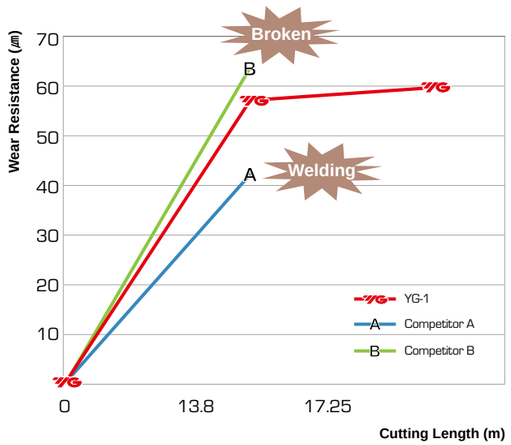
TiAlN Coated / Roughing

GUIDE LINE TO ICONS

MG HM	Tool Raw Material (Micro grain carbide)
4 5	No. of Flutes
43/45° 43/44/45° 40°	Helix Angle
PLAIN FLAT	Type of Shank
C x 45°	Chamfer Angle
	Cutting Condition Pages

CASE STUDY - TEST 1

▶Y-Coated Solid Carbide 4 Flute End Mill with Double Core



Cutting Edges

Total Milling Length : 17.25m

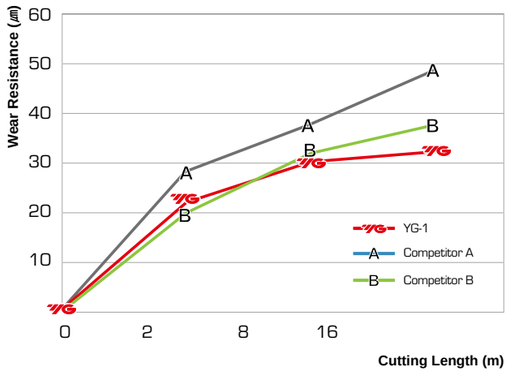
Competitor A — Total Milling Length : 16.11m

Competitor B — Total Milling Length : 16.04m

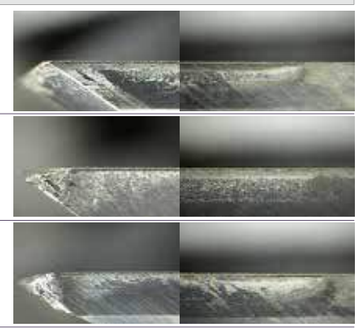
Cutting Conditions			
Milling Method	Slotting	Feed	254 mm/min.
Work Material	- DIN : Ti6Al4V (Titanium) - WR : 3.7165.1	Cutting Depth	12mm (Axial Depth)
		Coolant	Wet Cut
Size	Ø12(R1) x Ø12 x 26 x 80	Overhang	36 mm
RPM	1591 rev./min.	Machine	Machining Center

CASE STUDY - TEST 2

▶Y-Coated Solid Carbide 5 Flute Corner Radius End Mill



Cutting Edges



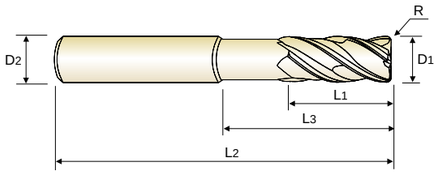
Cutting Conditions			
Milling Method	Down & Side Cutting	Feed	398 mm/min.
Work Material	- DIN : Ti6Al4V (Titanium) - WR : 3.7165.1	Axial Depth	18 mm
		Radial Depth	3.6 mm
Size	Ø12(R1) × Ø12 × 26 × 83	Coolant	Wet Cut
RPM	1591 rev./min.	Machine	Machining Center

Y-COATED SOLID CARBIDE END MILLS

4 FLUTE CORNER RADIUS with DOUBLE CORE

GMG40 PLAIN SHANK
GMG41 FLAT SHANK

▶Double Core End Mills hold an Unique Flute Design for excellent chip evacuation and higher rigidity.
▶The double core adds stability and aids chip flow while reducing tool deflection, improving dimensional stability and workpiece accuracy.



MG HM | 4 | 43/45° | PLAIN | FLAT P. 13~14

Unit : mm

EDP No.		Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length
PLAIN	FLAT	R	D1	D2	L1	L3	L2
GMG40060	GMG41060	R0.5	6.0	6	13	20	57
GMG40901	GMG41901	R1.0		6	13	20	57
GMG40080	GMG41080	R0.5	8.0	8	19	25	63
GMG40902	GMG41902	R1.0		8	19	25	63
GMG40903	GMG41903	R1.5		8	19	25	63
GMG40904	GMG41904	R2.0		8	19	25	63
GMG40100	GMG41100	R0.5	10.0	10	22	30	72
GMG40905	GMG41905	R1.0		10	22	30	72
GMG40906	GMG41906	R1.5		10	22	30	72
GMG40907	GMG41907	R2.0		10	22	30	72
GMG40120	GMG41120	R0.5	12.0	12	26	35	83
GMG40908	GMG41908	R1.0		12	26	35	83
GMG40909	GMG41909	R1.5		12	26	35	83
GMG40910	GMG41910	R2.0		12	26	35	83
GMG40911	GMG41911	R3.0		12	26	35	83
GMG40140	GMG41140	R1.0	14.0	14	26	35	83
GMG40912	GMG41912	R2.0		14	26	35	83
GMG40160	GMG41160	R1.0	16.0	16	35	43	92
GMG40913	GMG41913	R1.5		16	35	43	92
GMG40914	GMG41914	R2.0		16	35	43	92
GMG40915	GMG41915	R3.0		16	35	43	92
GMG40916	GMG41916	R4.0		16	35	43	92
GMG40200	GMG41200	R1.0	20.0	20	44	56	110
GMG40917	GMG41917	R1.5		20	44	56	110
GMG40918	GMG41918	R2.0		20	44	56	110
GMG40919	GMG41919	R3.0		20	44	56	110
GMG40920	GMG41920	R3.5		20	44	56	110
GMG40921	GMG41921	R4.0		20	44	56	110

▶ NEXT PAGE

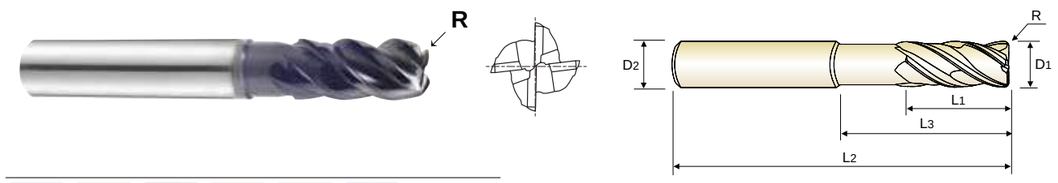
◎ : Excellent ○ : Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
○	○	○				◎							◎	○

Y-COATED SOLID CARBIDE END MILLS
4 FLUTE CORNER RADIUS with DOUBLE CORE

GMG40 PLAIN SHANK
GMG41 FLAT SHANK

- Double Core End Mills hold an Unique Flute Design for excellent chip evacuation and higher rigidity.
- The double core adds stability and aids chip flow while reducing tool deflection, improving dimensional stability and workpiece accuracy.



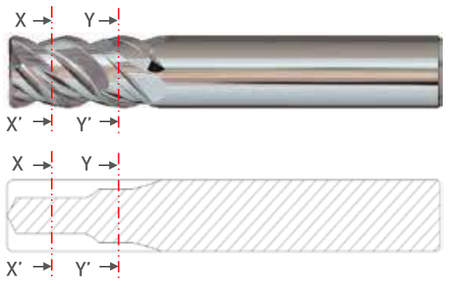
MG HM | 4 | 43/45° | PLAIN | FLAT

P. 13~14

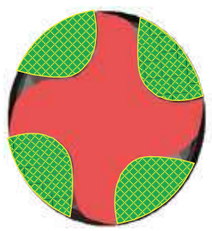
Unit : mm

EDP No.		Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length
PLAIN	FLAT	R	D_1	D_2	L_1	L_3	L_2
GMG40250	GMG41250	R1.0	25.0	25	55	70	130
GMG40922	GMG41922	R1.5		25	55	70	130
GMG40923	GMG41923	R2.0		25	55	70	130
GMG40924	GMG41924	R3.0		25	55	70	130
GMG40925	GMG41925	R4.0		25	55	70	130

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.03	h6



◆ 2 STEP CORE



<SECTION X-X'>
Excellent chip evacuation

<SECTION Y-Y'>
Higher rigidity

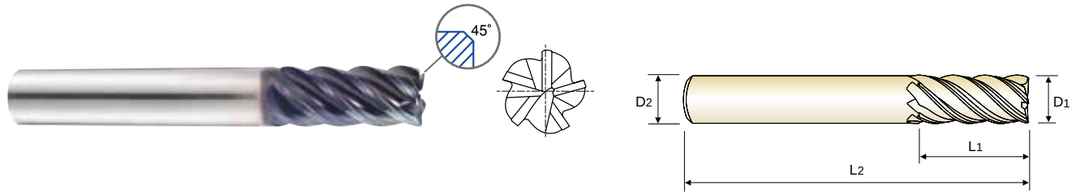
◎ : Excellent ○ : Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
○	○	○				◎							◎	○

Y-COATED SOLID CARBIDE END MILLS
5 FLUTE SHORT LENGTH

GMG24 PLAIN SHANK
GMG25 FLAT SHANK

- Excellent results and long tool life when machining Titanium and other hard to machine materials.
- High rigidity of flutes making it possible to use for heavy profile and high speed milling.
- Protected corner chipping of end teeth, also Corner Radius & Chamfer are adopted



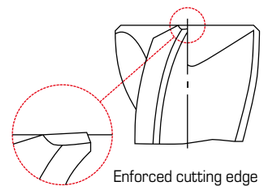
MG HM | 5 | 43/44/45° | PLAIN | FLAT | C x 45°

P. 15

Unit : mm

EDP No.		Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
PLAIN	FLAT	R	D_1	D_2	L_1	L_2
GMG24060	GMG25060	6.0	6	10	54	0.20
GMG24080	GMG25080	8.0	8	12	58	0.20
GMG24100	GMG25100	10.0	10	14	66	0.30
GMG24120	GMG25120	12.0	12	16	73	0.35
GMG24160	GMG25160	16.0	16	22	82	0.40
GMG24200	GMG25200	20.0	20	26	92	0.50
GMG24250	GMG25250	25.0	25	29	100	0.50

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.03	h6



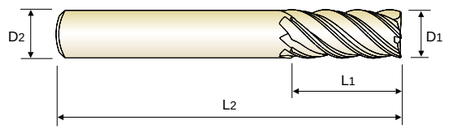
◎ : Excellent ○ : Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
○	○	○				◎							◎	○

Y-COATED SOLID CARBIDE END MILLS
5 FLUTE LONG LENGTH

GMG26 PLAIN SHANK
GMG27 FLAT SHANK

- Excellent results and long tool life when machining Titanium and other hard to machine materials.
- High rigidity of flutes making it possible to use for heavy profile and high speed milling.
- Protected corner chipping of end teeth, also Corner Radius & Chamfer are adopted

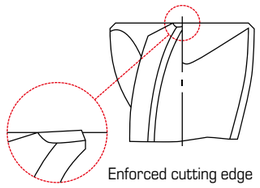


MG HM | 5 | 43/44/45° | PLAIN | FLAT | C x 45° | P. 15

Unit : mm

EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Overall Length	Chamfer Size
PLAIN	FLAT	D_1	D_2	L_1	L_2	
GMG26060	GMG27060	6.0	6	13	57	0.20
GMG26080	GMG27080	8.0	8	19	63	0.20
GMG26100	GMG27100	10.0	10	22	72	0.30
GMG26120	GMG27120	12.0	12	26	83	0.35
GMG26160	GMG27160	16.0	16	36	92	0.40
GMG26200	GMG27200	20.0	20	44	104	0.50
GMG26250	GMG27250	25.0	25	54	121	0.50

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.03	h6



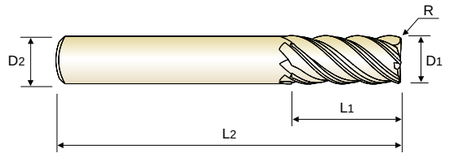
◎ : Excellent ○ : Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
○	○	○				◎							◎	○

Y-COATED SOLID CARBIDE END MILLS
5 FLUTE SHORT LENGTH CORNER RADIUS

GMG28 PLAIN SHANK
GMG29 FLAT SHANK

- Excellent results and long tool life when machining Titanium and other hard to machine materials.
- High rigidity of flutes making it possible to use for heavy profile and high speed milling.
- Protected corner chipping of end teeth, also Corner Radius & Chamfer are adopted



MG HM | 5 | 43/44/45° | PLAIN | FLAT | P. 15

Unit : mm

EDP No.		Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
PLAIN	FLAT	R	D_1	D_2	L_1	L_2
GMG28060	GMG29060	R0.5	6.0	6	10	54
GMG28080	GMG29080	R0.5	8.0	8	12	58
GMG28100	GMG29100	R0.5	10.0	10	14	66
GMG28120	GMG29120	R0.5	12.0	12	16	73
GMG28160	GMG29160	R1.0	16.0	16	22	82
GMG28200	GMG29200	R1.0	20.0	20	26	92
GMG28250	GMG29250	R1.0	25.0	25	29	100

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.03	h6

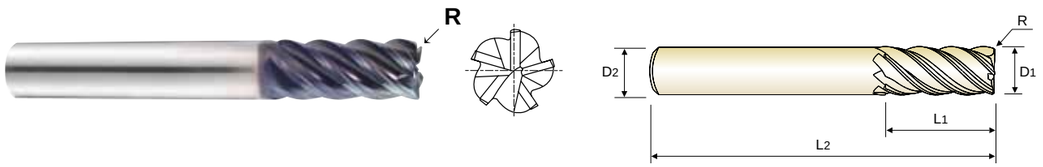
◎ : Excellent ○ : Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
○	○	○				◎							◎	○

Y-COATED SOLID CARBIDE END MILLS
5 FLUTE LONG LENGTH CORNER RADIUS

GMG30 PLAIN SHANK
GMG31 FLAT SHANK

- Excellent results and long tool life when machining Titanium and other hard to machine materials.
- High rigidity of flutes making it possible to use for heavy profile and high speed milling.
- Protected corner chipping of end teeth, also Corner Radius & Chamfer are adopted



MG HM | 5 | 43/44/45° | PLAIN | FLAT | P. 15

Unit : mm

EDP No.		Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
PLAIN	FLAT	R	D_1	D_2	L_1	L_2
GMG30060	GMG31060	R0.3	6.0	6	13	57
GMG30901	GMG31901	R0.5		6	13	57
GMG30902	GMG31902	R1.0		6	13	57
GMG30080	GMG31080	R0.5	8.0	8	19	63
GMG30903	GMG31903	R1.0		8	19	63
GMG30904	GMG31904	R1.5		8	19	63
GMG30905	GMG31905	R2.0		8	19	63
GMG30100	GMG31100	R0.5	10.0	10	22	72
GMG30906	GMG31906	R1.0		10	22	72
GMG30907	GMG31907	R1.5		10	22	72
GMG30908	GMG31908	R2.0		10	22	72
GMG30120	GMG31120	R0.5	12.0	12	26	83
GMG30909	GMG31909	R1.0		12	26	83
GMG30910	GMG31910	R1.5		12	26	83
GMG30911	GMG31911	R2.0		12	26	83
GMG30912	GMG31912	R2.5		12	26	83
GMG30913	GMG31913	R3.0		12	26	83
GMG30160	GMG31160	R1.0	16.0	16	36	92
GMG30914	GMG31914	R1.5		16	36	92
GMG30915	GMG31915	R2.0		16	36	92
GMG30916	GMG31916	R2.5		16	36	92
GMG30917	GMG31917	R3.0		16	36	92
GMG30918	GMG31918	R4.0		16	36	92

▶ NEXT PAGE

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.03	h6

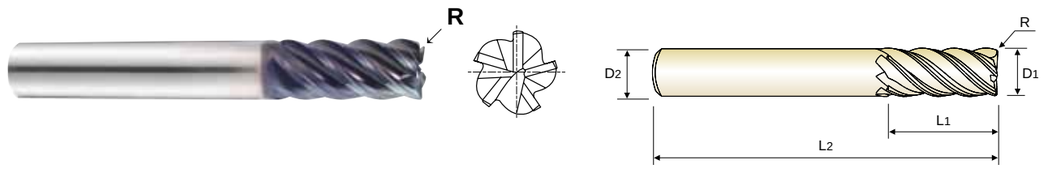
◎ : Excellent ○ : Good

P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
○	○	○				◎							◎	○

Y-COATED SOLID CARBIDE END MILLS
5 FLUTE LONG LENGTH CORNER RADIUS

GMG30 PLAIN SHANK
GMG31 FLAT SHANK

- Excellent results and long tool life when machining Titanium and other hard to machine materials.
- High rigidity of flutes making it possible to use for heavy profile and high speed milling.
- Protected corner chipping of end teeth, also Corner Radius & Chamfer are adopted



MG HM | 5 | 43/44/45° | PLAIN | FLAT | P. 15

Unit : mm

EDP No.		Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
PLAIN	FLAT	R	D_1	D_2	L_1	L_2
GMG30200	GMG31200	R1.0	20.0	20	44	104
GMG30919	GMG31919	R1.5		20	44	104
GMG30920	GMG31920	R2.0		20	44	104
GMG30921	GMG31921	R2.5		20	44	104
GMG30922	GMG31922	R3.0		20	44	104
GMG30923	GMG31923	R4.0		20	44	104
GMG30924	GMG31924	R5.0		20	44	104
GMG30250	GMG31250	R1.0	25.0	25	54	121
GMG30925	GMG31925	R1.5		25	54	121
GMG30926	GMG31926	R2.0		25	54	121
GMG30927	GMG31927	R2.5		25	54	121
GMG30928	GMG31928	R3.0		25	54	121
GMG30929	GMG31929	R4.0		25	54	121
GMG30930	GMG31930	R5.0		25	54	121

Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.03	h6

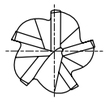
◎ : Excellent ○ : Good

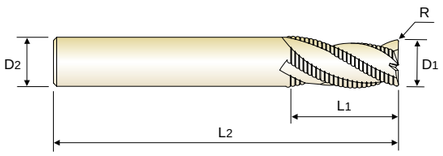
P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
○	○	○				◎							◎	○

Y-COATED SOLID CARBIDE END MILLS
5 FLUTE 40˚ HELIX CORNER RADIUS ROUGHING - FINE

EHE54 PLAIN SHANK
EHE55 FLAT SHANK

- Suitable for Titanium, Titanium Alloys and Stainless Steels.
- Optimized flute design for chip evacuation and rigidity when machining difficult-to-cut materials.
- Special roughing profile for machining Titanium and Titanium Alloys.
- Longer tool life with special coating.





MG HM | 5 | 40° | FINE | PLAIN | FLAT

P. 16

Unit : mm

EDP No.		Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
PLAIN	FLAT	R	D1	D2	L1	L2
EHE54060	EHE55060	R0.2	6.0	6	16	57
EHE54080	EHE55080	R0.2	8.0	8	16	63
EHE54100	EHE55100	R0.3	10.0	10	22	72
EHE54120	EHE55120	R0.3	12.0	12	26	83
EHE54140	EHE55140	R0.3	14.0	14	26	83
EHE54160	EHE55160	R0.3	16.0	16	32	92
EHE54200	EHE55200	R0.3	20.0	20	38	104
EHE54250	EHE55250	R0.3	25.0	25	45	121

Tolerances according to DIN 7160 & 7161

	Tolerance range in Nominal-Diameter in				
	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
h10	0 –40	0 –48	0 –58	0 –70	0 –84
h6	0 –6	0 –8	0 –9	0 –11	0 –13

◎ : Excellent ○ : Good

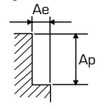
P					H	M	K	N					S	
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Stainless Steels	Cast Iron	Copper	Graphite	Aluminum	Acrylic	CFRP	Titanium	High Temperature Alloy
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70									
						○							◎	○

Y-COATED SOLID CARBIDE END MILLS
4 FLUTE CORNER RADIUS WITH DOUBLE CORE

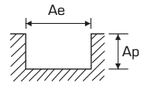
GMG40, GMG41 SERIES

Speed and Feed Recommendations							Diameter (mm)							
ISO Hardness (Brinell)	Work Materials	Type of Cut	Ap x D1	Ae x D1	Vc	Parameters	6	8	10	12	14	16	20	25
P < 300	CARBON STEELS 1.1191(C45) 1.0726(35 S 20) 1.0715(9 SMn 28) 1.0718(9 SMnPb 28)	Side Cutting	1	0.4	160 (128-192)	RPM	8488	6366	5093	4244	3638	3183	2546	2037
						Fz	0.027	0.035	0.042	0.053	0.058	0.063	0.077	0.084
						FEED	917	891	856	900	844	802	784	684
		Slotting	1	1	125 (100-150)	RPM	6631	4974	3979	3316	2842	2487	1989	1592
						Fz	0.025	0.034	0.042	0.049	0.056	0.063	0.070	0.084
						FEED	663	676	668	650	637	627	557	535
P > 300 P < 380	ALLOY STEELS 1.2330(35 CrMo 4) 1.6565(40NiCrMo6) 1.7033(34Cr4) 1.6523(21 NiCrMo2)	Side Cutting	1	0.4	150 (120-180)	RPM	7958	5968	4775	3979	3410	2984	2387	1910
						Fz	0.025	0.035	0.042	0.049	0.056	0.063	0.070	0.084
						FEED	796	836	802	780	764	752	668	642
		Slotting	1	1	120 (96-144)	RPM	6366	4775	3820	3183	2728	2387	1910	1528
						Fz	0.025	0.034	0.042	0.049	0.056	0.063	0.070	0.077
						FEED	637	649	642	624	611	602	535	471
P < 380	TOOL STEELS 1.2363(X100 CrMoV 5 1) 1.2379(X155 CrVMo 12 1) 1.2344(X40 CrMoV 5 1) 1.3243(S 6-5-2-5)	Side Cutting	1	0.4	150 (120-180)	RPM	7958	5968	4775	3979	3410	2984	2387	1910
						Fz	0.027	0.035	0.046	0.053	0.060	0.067	0.077	0.084
						FEED	859	836	879	844	819	800	735	642
		Slotting	1	1	120 (96-144)	RPM	6366	4775	3820	3183	2728	2387	1910	1528
						Fz	0.027	0.035	0.042	0.053	0.058	0.063	0.077	0.084
						FEED	688	668	642	675	633	602	588	513
K < 260	CAST IRON 0.6020(GG20) 0.8145(GTS-45-06) 0.7060(GGG-60)	Side Cutting	1	0.4	175 (140-210)	RPM	9284	6963	5570	4642	3979	3482	2785	2228
						Fz	0.021	0.028	0.035	0.042	0.048	0.053	0.060	0.070
						FEED	780	780	780	780	764	738	668	624
		Slotting	1	1	140 (112-168)	RPM	7427	5570	4456	3714	3183	2785	2228	1783
						Fz	0.021	0.028	0.035	0.042	0.048	0.053	0.060	0.067
						FEED	624	624	624	624	611	590	535	478
M	STAINLESS STEELS 300 1.4301(X5 CrNi 18 10) 1.4436(X3 CrNiMo 17 13 3) 1.4306(X2 CrNi 19 11) 1.4435(X2 CrNiMo 18 14 3)	Side Cutting	1	0.4	105 (84-126)	RPM	5570	4178	3342	2785	2387	2089	1671	1337
						Fz	0.025	0.034	0.042	0.048	0.055	0.062	0.071	0.081
						FEED	550	572	559	529	525	516	476	432
		Slotting	1	1	85 (68-102)	RPM	4509	3382	2706	2255	1933	1691	1353	1082
						Fz	0.025	0.034	0.042	0.048	0.055	0.062	0.071	0.081
						FEED	446	463	452	428	425	418	386	350

Side Cutting



Slotting



RPM = rev./min.
FEED = mm/min.
Vc = m/min.
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Note
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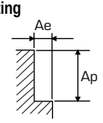
* Above recommendations are based on ideal conditions.
  Adjust parameters accordingly for smaller taper machining centers or less rigid conditions

Y-COATED SOLID CARBIDE END MILLS
4 FLUTE CORNER RADIUS WITH DOUBLE CORE

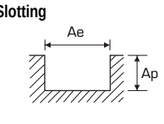
GMG40, GMG41 SERIES

Speed and Feed Recommendations							Diameter (mm)							
ISO Hardness (Brinell)	Work Materials	Type of Cut	Ap x D1	Ae x D1	Vc	Parameters	6	8	10	12	14	16	20	25
M	STAINLESS STEELS 400 1.4005(X12 CrS 13) 1.4104(X14 CrMoS 17)	Side Cutting	1	0.4	155 (124-186)	RPM	8223	6167	4934	4112	3524	3084	2467	1974
						Fz	0.034	0.046	0.057	0.067	0.076	0.086	0.095	0.114
						FEED	1125	1125	1125	1094	1071	1055	937	900
		Slotting	1	1	125 (100-150)	RPM	6631	4974	3979	3316	2842	2487	1989	1592
						Fz	0.034	0.046	0.057	0.067	0.074	0.081	0.095	0.105
						FEED	907	907	907	882	841	803	756	665
M	STAINLESS STEELS (PH) 1.4594(Z7 CNU 15.05)	Side Cutting	0.6	0.4	44 (35-53)	RPM	2334	1751	1401	1167	1000	875	700	560
						Fz	0.016	0.021	0.027	0.032	0.036	0.040	0.046	0.052
						FEED	151	146	149	151	144	140	128	117
		Slotting	0.5	1	36 (29-43)	RPM	1910	1432	1146	955	819	716	573	458
						Fz	0.016	0.021	0.027	0.032	0.036	0.040	0.046	0.052
						FEED	123	120	122	123	118	114	105	96
S	TITANIUM Ti6Al4V Ti5Al5V5Mo Ti7Al4Mo	Side Cutting	1	0.4	70 (56-84)	RPM	3714	2785	2228	1857	1592	1393	1114	891
						Fz	0.034	0.048	0.057	0.067	0.076	0.086	0.095	0.114
						FEED	508	529	508	494	484	476	423	406
		Slotting	1	1	55 (44-66)	RPM	2918	2188	1751	1459	1251	1094	875	700
						Fz	0.034	0.046	0.057	0.067	0.076	0.086	0.095	0.105
						FEED	399	399	399	388	380	374	333	293
S	HIGH TEMPERATURE ALLOYS RENE INCONEL WASPALOY HASTELLOY	Side Cutting	0.6	0.3	32 (26-38)	RPM	1698	1273	1019	849	728	637	509	407
						Fz	0.020	0.026	0.032	0.038	0.044	0.048	0.055	0.065
						FEED	136	132	130	129	128	122	112	106
		Slotting	0.4	1	25 (20-30)	RPM	1326	995	796	663	568	497	398	318
						Fz	0.018	0.024	0.030	0.036	0.040	0.044	0.050	0.055
						FEED	95	95	95	95	91	88	80	70

Side Cutting



Slotting



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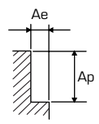
* Special design available for Inconel applications

Y-COATED SOLID CARBIDE END MILLS
5 FLUTE

GMG24, GMG25, GMG26, GMG27, GMG28, GMG29, GMG30, GMG31 SERIES

Speed and Feed Recommendations							Diameter (mm)								
ISO Hardness (Brinell)	Work Materials	Type of Cut	Ap x D1	Ae x D1	Vc	Parameters	6	8	10	12	14	16	18	20	25
P < 300	CARBON STEELS 1.1191(C45) 1.0726(35 S 20) 1.0715(9 SMn 28) 1.0718(9 SMnPb 28)	Side Cutting	1.5	0.3	144 (115-173)	RPM	7639	5730	4584	3820	3274	2865	2546	2292	1833
						Fz	0.034	0.038	0.050	0.063	0.069	0.076	0.083	0.089	0.101
						FEED	1299	1089	1146	1203	1130	1089	1057	1020	926
P > 300 P < 380	ALLOY STEELS 1.2330(35 CrMo 4) 1.6565(40NiCrMo6) 1.7033(34Cr4) 1.6523(21 NiCrMo2)	Side Cutting	1.5	0.3	101 (81-121)	RPM	5358	4019	3215	2679	2296	2009	1786	1607	1286
						Fz	0.034	0.038	0.050	0.063	0.069	0.076	0.083	0.089	0.101
						FEED	911	764	804	844	792	764	741	715	649
P < 380	TOOL STEELS 1.2363(X100 CrMoV 5 1) 1.2379(X155 CrVMo 12 1) 1.2344(X40 CrMoV 5 1) 1.3243(S 6-5-2-5)	Side Cutting	1.5	0.3	60 (48-72)	RPM	3183	2387	1910	1592	1364	1194	1061	955	764
						Fz	0.024	0.027	0.035	0.044	0.049	0.054	0.058	0.062	0.071
						FEED	382	322	334	350	334	322	308	296	271
K < 260	CAST IRON 0.6020(GG20) 0.8145(GTS-45-06) 0.7060(GGG-60)	Side Cutting	1.5	0.3	106 (85-127)	RPM	5623	4218	3374	2812	2410	2109	1874	1687	1350
						Fz	0.043	0.048	0.063	0.079	0.087	0.096	0.103	0.111	0.126
						FEED	1209	1012	1063	1111	1048	1012	965	936	850
M	STAINLESS STEELS 300 1.4301(X5 CrNi 18 10) 1.4436(X3 CrNiMo 17 13 3) 1.4306(X2 CrNi 19 11) 1.4435(X2 CrNiMo 18 14 3)	Side Cutting	1.5	0.3	82 (66-98)	RPM	4350	3263	2610	2175	1864	1631	1450	1305	1044
						Fz	0.030	0.032	0.038	0.063	0.065	0.069	0.070	0.076	0.088
						FEED	653	522	496	685	606	563	508	496	459
M	STAINLESS STEELS 400 1.4005(X12 CrS 13) 1.4104(X12 CrMoS 17)	Side Cutting	1.5	0.3	117 (94-140)	RPM	6207	4655	3724	3104	2660	2328	2069	1862	1490
						Fz	0.024	0.025	0.030	0.046	0.051	0.054	0.057	0.061	0.071
						FEED	745	582	559	714	678	628	590	568	529
M	STAINLESS STEELS(PH) 1.4594(Z7 CNU 15.05)	Side Cutting	1.5	0.3	59 (47-71)	RPM	3130	2348	1878	1565	1341	1174	1043	939	751
						Fz	0.030	0.032	0.038	0.063	0.065	0.069	0.070	0.076	0.088
						FEED	470	376	357	493	436	405	365	357	331
S	TITANIUM Ti6Al4V Ti5Al5V5Mo Ti7Al4Mo	Side Cutting	1.5	0.3	69 (55-83)	RPM	3661	2745	2196	1830	1569	1373	1220	1098	879
						Fz	0.027	0.029	0.034	0.057	0.059	0.062	0.063	0.069	0.079
						FEED	494	398	373	522	463	426	384	379	347
S	HIGH TEMPERATURE ALLOYS RENE, INCONEL WASPALOY HASTELLOY	Side Cutting	1.5	0.1	31 (25-37)	RPM	1645	1233	987	822	705	617	548	493	395
						Fz	0.021	0.022	0.027	0.044	0.046	0.048	0.049	0.053	0.062
						FEED	173	136	133	181	162	148	134	131	122

Side Cutting



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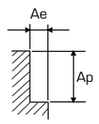
Y-COATED SOLID CARBIDE END MILLS

5 FLUTE 40˚ HELIX CORNER RADIUS ROUGHING - FINE

EHE54, EHE55 SERIES

Speed and Feed Recommendations							Diameter (mm)							
ISO Hardness (Brinell)	Work Materials	Type of Cut	Ap x D1	Ae x D1	Vc	Parameters	6	8	10	12	14	16	20	25
M	STAINLESS STEELS 400 1.4005(X12 CrS 13) 1.4104(X12 CrMoS 17)	Side Cutting	1.5	Ø6 -Ø10: 0.15 Ø12-Ø16: 0.10 Ø20-Ø25: 0.05	80 (64-96)	RPM	4244	3183	2546	2122	1819	1592	1273	1019
						Fz	0.025	0.034	0.041	0.051	0.057	0.063	0.081	0.091
						FEED	531	541	522	541	518	501	516	463
S	TITANIUM Ti6Al4V Ti5Al5V5Mo Ti7Al4Mo	Side Cutting	1.5	Ø6 -Ø10: 0.15 Ø12-Ø16: 0.10 Ø20-Ø25: 0.05	65 (52-78)	RPM	3448	2586	2069	1724	1478	1293	1035	828
						Fz	0.022	0.031	0.038	0.046	0.052	0.058	0.074	0.084
						FEED	379	401	393	397	384	375	383	348
S	HIGH TEMPERATURE ALLOYS INCONEL	Side Cutting	1	0.05	40 (32-48)	RPM	2122	1592	1273	1061	909	796	637	509
						Fz	0.020	0.025	0.037	0.040	0.046	0.052	0.061	0.068
						FEED	212	199	236	212	209	207	194	173

Side Cutting



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YG-1 CO., LTD.

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