

YU-XP19 INCH / METRIC



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X-POWER **PRO**

PERFORMANCE UPGRADE
Y-COATED SOLID CARBIDE END MILLS
for Pre-Hardened Steels up to HRC55
for Mold & Die
for Dry & Wet Cutting





X-POWER ^{PRO}

Performance Upgrade

- Achieved from several tests to apply the most optimal technology
- New coating, raw material, honing technology

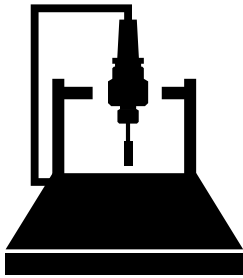
Work Material

- Pre-Hardened Steels up to HRc 55, and Cast Iron



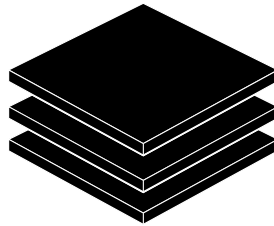
For Mold & Die Industries

- Plastic injection, die casting, military parts, automotive parts, electronic parts, etc.



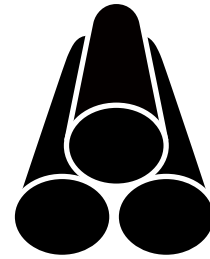
Honing

Advanced honing technology system made from YG-1



Coating

The optimal coating applied, chosen by several tests of different coating technologies



Raw Material

Made from high performance raw material with better quality



Y-COATED SOLID CARBIDE END MILLS MULTI FLUTE 20° HELIX STUB & LONG LENGTH FINE PITCH ROUGHING

STUB LENGTH

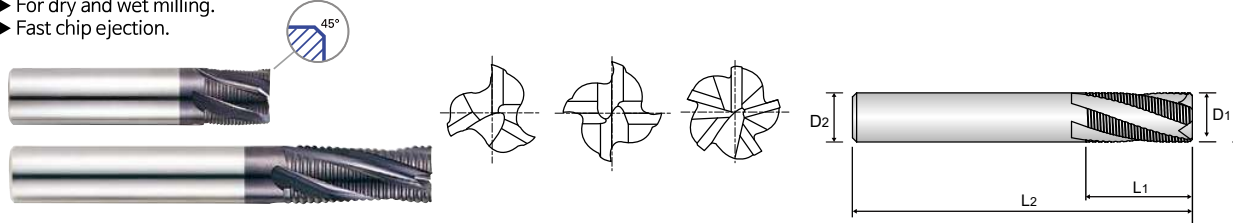
GM666

LONG LENGTH

GM156

PLAIN SHANK

- ▶ Designed to machine tool steel, alloy steel, mold steel and other high hardened materials.
- ▶ High velocity milling of hardened steels.
- ▶ For dry and wet milling.
- ▶ Fast chip ejection.



P.50-51

INCH

GM666 series - STUB LENGTH

Unit : inch

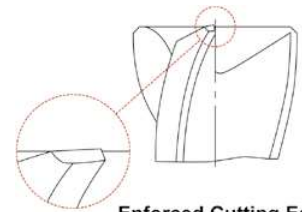
EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length	No. of Flute
	D1	D2	L1	L2	
GM666016	1/4	1/4	5/16	2-1/8	3
GM666020	5/16	5/16	3/8	2-1/4	3
GM666024	3/8	3/8	9/16	2-1/2	3
GM666032	1/2	1/2	5/8	3	4
GM666040	5/8	5/8	7/8	3-1/4	4
GM666048	3/4	3/4	1	3-3/4	4
GM666064	1	1	1	4	5

GM156 series - LONG LENGTH

Unit : inch

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length	No. of Flute
	D1	D2	L1	L2	
GM156016	1/4	1/4	3/4	2-1/2	3
GM156020	5/16	5/16	3/4	2-1/2	3
GM156024	3/8	3/8	7/8	2-1/2	3
GM156032	1/2	1/2	1	3	4
GM156040	5/8	5/8	1-1/4	3-1/2	4
GM156048	3/4	3/4	1-5/8	4	4
GM156064	1	1	1-3/4	4	5

Mill Dia. (inch)	Mill Dia. Tolerance(inch)	Shank Dia. Tolerance
1/4~3/8	0 ~ -.0022	0 ~ -.0003
1/2~5/8	0 ~ -.0027	
3/4~1	0 ~ -.0033	



Enforced Cutting Edge

◎ : 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	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45 HRc45~55	HRc55~70							
○	◎	◎	◎	○		○					

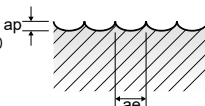
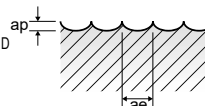


GM963 Y-COATED SOLID CARBIDE END MILLS 2 FLUTE BALL NOSE with TAPER NECK

RPM = rev./min.
FEED = inch/min.

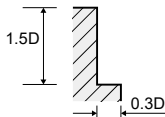
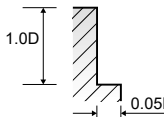
NORMAL SPEED

HIGH SPEED

MATERIAL	P						P					
	ALLOY STEELS HEAT RESISTANT STEELS		HARDENED STEELS		HARDENED STEELS		ALLOY STEELS HEAT RESISTANT STEELS		HARDENED STEELS		HARDENED STEELS	
HARDNESS	HRC30 ~ HRC40		HRC45 ~ HRC50		HRC50 ~ HRC55		~ HRC45		HRC45 ~ HRC50		HRC50 ~ HRC55	
STRENGTH	1000 ~ 1250N/mm ²		1250 ~ 1750N/mm ²		1750 ~ 2000N/mm ²		1500N/mm ²		1250 ~ 1750N/mm ²		1750 ~ 2000N/mm ²	
DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
R1/32 × 1/16	10670	9.1	15180	21.9	14960	19.7	20240	24.1	15180	31.8	14960	33.1
R1/16 × 1/8	8800	16.1	11220	38.1	10780	36.9	18480	34.7	11220	60.6	10780	56.3
R3/32 × 3/16	6420	19.9	8250	38.1	7920	36.9	18480	62.4	8250	57.2	7920	54.1
R1/8 × 1/4	5540	21.7	7590	39.8	7150	38.1	18480	80.1	7590	60.6	7150	58.4
R5/32 × 5/16	3890	23.0	6160	36.4	5830	34.7	13860	98.3	6160	54.1	5830	49.8
R3/16 × 3/8	3320	24.6	5340	34.7	5120	33.3	12020	105.7	5340	49.8	5120	47.6
R1/4 × 1/2	2590	23.0	4790	34.7	4570	33.3	9240	91.0	4790	49.0	4570	45.4
	ap: D1/16 ~ D1/4 = .008 D5/16 ~ D1/2 = .012 ae: 0.2 x D		ap: D1/16 ~ D1/4 = 0.05 x D D3/16 ~ D5/16 = .010 D3/8 ~ D1/2 = .012 ae: 0.1 x D				ap: D1/16 ~ D1/4 = .008 D5/16 ~ D1/2 = .012 ae: 0.05 x D		ap: D1/16 ~ D1/4 = 0.05 x D D3/16 ~ D5/16 = .010 D3/8 ~ D1/2 = .012 ae: 0.05 x D			

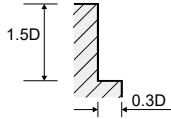
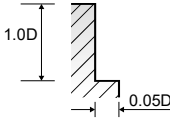
GM666 Y-COATED SOLID CARBIDE END MILLS MULTI FLUTE 20° HELIX STUB LENGTH FINE PITCH ROUGHING - SIDE CUTTING

RPM = rev./min.
FEED = inch/min.

MATERIAL	P							
	NON-ALLOYED STEELS ALLOY STEELS CAST IRON		ALLOY STEELS HEAT RESISTANT STEELS		ALLOY STEELS HEAT RESISTANT STEELS		HARDENED STEELS	
HARDNESS	~HRC30		HRC30 ~ HRC38		HRC38 ~ HRC45		HRC45 ~ HRC55	
STRENGTH	~1000N/mm ²		1000 ~ 1200N/mm ²		1200 ~ 1400N/mm ²		1400 ~ 2000N/mm ²	
DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1/4	16850	98.7	13390	35.7	9070	24.3	3670	11.1
5/16	12530	98.7	9940	35.7	6800	24.3	2590	10.3
3/8	9940	98.7	8210	35.7	5510	24.3	2160	12.3
1/2	8640	102.1	6480	34.0	4540	24.3	1810	11.1
5/8	6480	102.1	5180	32.3	3560	21.7	1300	6.8
3/4	5620	98.7	4750	30.7	2920	17.9	1190	6.4
1	5180	91.9	3890	23.9	2590	15.3	1080	6.4
								

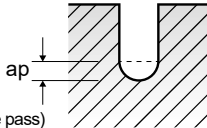
**GM156** Y-COATED SOLID CARBIDE END MILLS
MULTI FLUTE ROUGHING - **SIDE CUTTING**RPM = rev./min.
FEED = inch/min.

MATERIAL	P							
	CARBON STEELS ALLOY STEELS CAST IRON		ALLOY STEELS TOOL STEELS		HARDENED STEELS		HARDENED STEELS	
HARDNESS	~HRC30		HRC30~HRC38		HRC38~HRC45		HRC45~HRC55	
STRENGTH	~1000N/mm ²		1000 ~ 1200N/mm ²		1200 ~ 1400N/mm ²		1400 ~ 2000N/mm ²	
DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1/4	16380	96.0	13020	34.8	8820	23.6	3570	10.8
5/16	12180	96.0	9660	34.8	6620	23.6	2520	10.0
3/8	9660	96.0	7980	34.8	5360	23.6	2100	12.0
1/2	8400	99.2	6300	33.1	4410	23.6	1760	10.8
5/8	6300	99.2	5040	31.4	3470	21.1	1260	6.6
3/4	5460	96.0	4620	29.8	2840	17.4	1160	6.2
1	5040	89.4	3780	23.2	2520	14.9	1050	6.2

GM967 Y-COATED SOLID CARBIDE END MILLS
2 FLUTE BALL NOSE for RIB PROCESSINGRPM = rev./min.
FEED = inch/min.

MATERIAL	P								
	NON-ALLOYED STEELS ALLOY STEELS CAST IRON			ALLOY STEELS HEAT RESISTANT STEELS			HARDENED STEELS		
HARDNESS	~ HRC30			HRC30 ~ HRC45			HRC45 ~ HRC55		
STRENGTH	~ 1000N/mm ²			1000 ~ 1500N/mm ²			1500 ~ 2000N/mm ²		
DIAMETER	RPM	FEED	ap	RPM	FEED	ap	RPM	FEED	ap
R1/64 × 1/32	28350~36750	7.9~17.3	.0006~.0014	20480~25730	2.5~10	.0006~.0014	13130~15540	1.5~3.9	.0003~.0006
R0234 × 3/64	19430~24680	7.9~24.8	.0022~.0039	13650~17330	3.9~12.4	.0022~.0039	8720~11030	2.1~4.1	.0004~.0009
R1/32 × 1/16	14700~18900	7.9~24.8	.0030~.0057	10710~13440	3.9~12.4	.0030~.0057	6720~8400	2.1~4.1	.0006~.0012
R0391 × 5/64	12600~15230	7.9~24.8	.0035~.0071	8720~11030	3.9~12.4	.0035~.0071	5570~6930	2.1~4.1	.0007~.0014
R3/64 × 3/32	9980~12600	7.9~24.8	.0044~.0093	7040~8930	3.9~12.4	.0044~.0093	4520~5570	2.1~4.1	.0009~.0018
R1/16 × 1/8	8400~10500	7.9~24.8	.0053~.0106	5780~7350	3.9~12.4	.0053~.0106	3680~4620	2.1~4.1	.0011~.0022



(Depth of cut per one pass)