

YG V7 PLUS A END MILLS

UGMF72 SERIES SQUARE

UGMF74 SERIES CORNER RADIUS

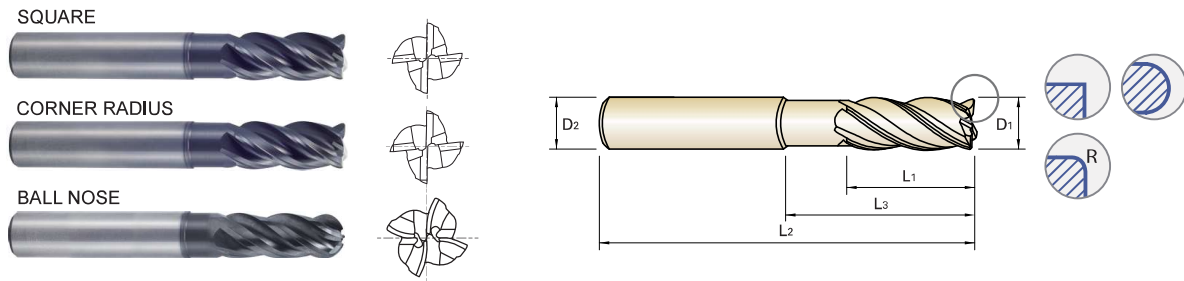
UGMH10 SERIES BALL NOSE

CARBIDE

HSS

CARBIDE, 4 FLUTE EXTENDED LENGTH

- ▶ Special flute geometry and multiple helix eliminate vibrations
- ▶ Excellent performance for stainless steels, mild steels, cast iron, low/medium hardness materials and all exotic materials up to HRc40
- ▶ Advanced coating for superior performance and tool life



MG HM
4
35°/37°
PLAIN
R ±.0008
P.1006~1010

Unit : Inch

OD	SD	LOC	LBS	OAL	Square End	Corner Radius								Ball Nose
						.010	.015	.030	.060	.090	.125	.190	.250	
D1	D2	L1	L3	L2	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.
1/8	1/8	5/32	3/8	3	UGMF72008	UGMF74008	-	UGMF74913	-	-	-	-	-	UGMH10008
		5/32	1/2	3	UGMF72913	UGMF74914	-	UGMF74915	-	-	-	-	-	UGMH10901
		5/32	5/8	3	UGMF72914	UGMF74916	-	UGMF74917	-	-	-	-	-	UGMH10902
3/16	3/16	7/32	1/2	3	UGMF72012	UGMF74012	-	UGMF74918	-	-	-	-	-	UGMH10012
		7/32	3/4	3	UGMF72915	UGMF74919	-	UGMF74920	-	-	-	-	-	UGMH10903
		7/32	1	3	UGMF72916	UGMF74921	-	UGMF74922	-	-	-	-	-	UGMH10904
1/4	1/4	3/8	3/4	4	UGMF72016	-	UGMF74016	UGMF74923	UGMF74924	-	-	-	-	UGMH10016
		3/8	1-1/8	4	UGMF72901	-	UGMF74901	UGMF74925	UGMF74926	-	-	-	-	UGMH10905
		3/8	2-1/8	4	UGMF72902	-	UGMF74902	UGMF74927	UGMF74928	-	-	-	-	UGMH10906
3/8	3/8	1/2	1-1/8	4	UGMF72024	-	UGMF74929	UGMF74024	UGMF74930	UGMF74931	-	-	-	UGMH10024
		1/2	2-1/8	4	UGMF72903	-	UGMF74932	UGMF74903	UGMF74933	UGMF74934	-	-	-	UGMH10907
		1/2	3-1/8	5	UGMF72922	-	UGMF74815	UGMF74816	UGMF74817	UGMF74818	-	-	-	UGMH10922
		1/2	3-1/8	6	UGMF72904	-	UGMF74935	UGMF74904	UGMF74936	UGMF74937	-	-	-	UGMH10908
		1/2	4-1/8	6	UGMF72917	-	UGMF74938	UGMF74939	UGMF74940	UGMF74941	-	-	-	UGMH10909

▶ 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									
◎	◎	◎	○			◎	◎						○	○

CBN END MILLS

i-Xmill END MILLS

i-SMART MODULAR TYPE END MILLS

X5070 END MILLS

4G MILL END MILLS

X-POWER END MILLS

JET-POWER END MILLS

TitaNox -POWER END MILLS

V7 PLUS A END MILLS

V7 MILL INOX END MILLS

ALU-POWER HPC END MILLS

ALU-POWER END MILLS

D-POWER GRAPHITE END MILLS

D-POWER CFRP END MILLS

ROUTERS CFRP

STANDARD CARBIDE END MILLS

ONLY ONE COATED PM60 END MILLS

SINE -POWER END MILLS

TANK-POWER END MILLS

STANDARD COBALT & HSS END MILLS

TECHNICAL DATA

CARBIDE

HSS



V7 PLUS A END MILLS

UGMF72 SERIES

SQUARE

UGMF74 SERIES

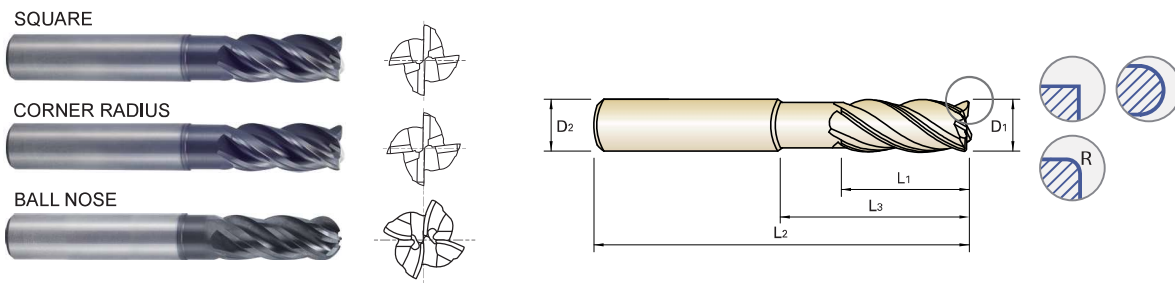
CORNER RADIUS

UGMH10 SERIES

BALL NOSE

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- ▶ Excellent performance for stainless steels, mild steels, cast iron, low/medium hardness materials and all exotic materials up to HRC40
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MG HM 4 35°/37° PLAIN ±.0008 R P.1006~1010

Unit : Inch

OD	SD	LOC	LBS	OAL	Square End	Corner Radius								Ball Nose
						.010	.015	.030	.060	.090	.125	.190	.250	
D1	D2	L1	L3	L2	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.
1/2	1/2	5/8	1-1/2	4	UGMF72032	-	UGMF74942	UGMF74032	UGMF74943	UGMF74944	UGMF74945	-	-	UGMH10032
		5/8	2-1/4	4	UGMF72905	-	UGMF74946	UGMF74905	UGMF74947	UGMF74948	UGMF74949	-	-	UGMH10910
		5/8	3-3/8	5	UGMF72923	-	UGMF74819	UGMF74820	UGMF74821	UGMF74822	UGMF74823	-	-	UGMH10923
		5/8	3-3/8	6	UGMF72906	-	UGMF74950	UGMF74906	UGMF74951	UGMF74952	UGMF74953	-	-	UGMH10911
		5/8	4-1/8	6	UGMF72918	-	UGMF74954	UGMF74955	UGMF74956	UGMF74957	UGMF74958	-	-	UGMH10912
		5/8	5/8	3/4	1-5/8	4	UGMF72040	-	-	UGMF74040	UGMF74959	UGMF74960	UGMF74961	-
3/4	2-3/8			5	UGMF72924	-	-	UGMF74824	UGMF74825	UGMF74826	UGMF74827	-	-	UGMH10924
3/4	3-3/8			5	UGMF72925	-	-	UGMF74828	UGMF74829	UGMF74830	UGMF74831	-	-	UGMH10925
3/4	2-3/8			6	UGMF72907	-	-	UGMF74907	UGMF74962	UGMF74963	UGMF74964	-	-	UGMH10913
3/4	3-3/8			6	UGMF72908	-	-	UGMF74908	UGMF74965	UGMF74966	UGMF74967	-	-	UGMH10914
3/4	4-1/8			6	UGMF72919	-	-	UGMF74968	UGMF74969	UGMF74970	UGMF74971	-	-	UGMH10915
3/4	3/4	1	2	4	UGMF72048	-	-	UGMF74048	UGMF74972	UGMF74973	UGMF74974	UGMF74975	UGMF74976	UGMH10048
		1	3	5	UGMF72926	-	-	UGMF74832	UGMF74833	UGMF74834	UGMF74835	UGMF74836	UGMF74837	UGMH10926
		1	2-1/2	6	UGMF72920	-	-	UGMF74977	UGMF74978	UGMF74979	UGMF74980	UGMF74981	UGMF74982	UGMH10916
		1	3	6	UGMF72909	-	-	UGMF74909	UGMF74983	UGMF74984	UGMF74985	UGMF74986	UGMF74987	UGMH10917
		1	4	6	UGMF72910	-	-	UGMF74910	UGMF74988	UGMF74989	UGMF74990	UGMF74991	UGMF74992	UGMH10918

▶ NEXT PAGE

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~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70									
◎	◎	◎	○			◎	◎						○	○

TECHNICAL DATA

YG V7 PLUS A END MILLS

UGMF72 SERIES SQUARE

UGMF74 SERIES CORNER RADIUS

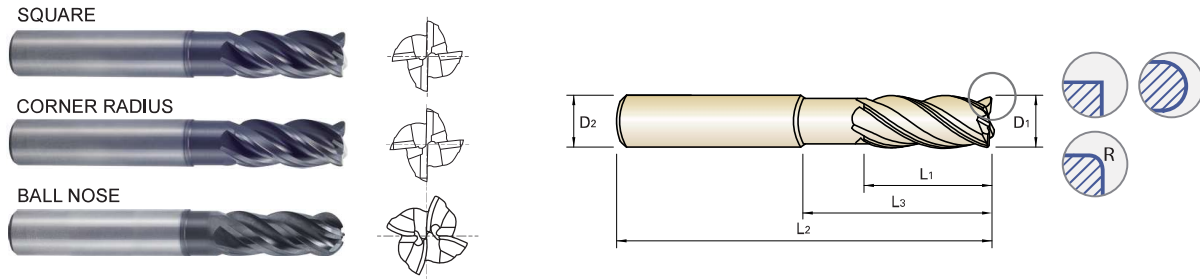
UGMH10 SERIES BALL NOSE

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HSS

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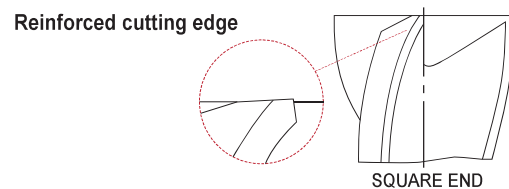
MG HM
4
35°/37°
PLAIN
R ±.0008
P.1006~1010

Unit : Inch

OD	SD	LOC	LBS	OAL	Square End	Corner Radius								Ball Nose
						.010	.015	.030	.060	.090	.125	.190	.250	
D1	D2	L1	L3	L2	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.
1	1	1-1/8	2	4	UGMF72064	-	-	UGMF74064	UGMF74993	UGMF74994	UGMF74995	UGMF74996	UGMF74997	UGMH10064
		1-1/8	2-5/8	5	UGMF72927	-	-	UGMF74838	UGMF74839	UGMF74840	UGMF74841	UGMF74842	UGMF74843	UGMH10927
		1-1/8	3	5	UGMF72928	-	-	UGMF74844	UGMF74845	UGMF74846	UGMF74847	UGMF74848	UGMF74849	UGMH10928
		1-1/8	2-5/8	6	UGMF72921	-	-	UGMF74998	UGMF74999	UGMF74801	UGMF74802	UGMF74803	UGMF74804	UGMH10919
		1-1/8	3	6	UGMF72911	-	-	UGMF74911	UGMF74805	UGMF74806	UGMF74807	UGMF74808	UGMF74809	UGMH10920
		1-1/8	4	6	UGMF72912	-	-	UGMF74912	UGMF74810	UGMF74811	UGMF74812	UGMF74813	UGMF74814	UGMH10921

BALL NOSE KEY	
Mill Diameter	Radius of Ball
1/8	1/16
5/32	5/64
3/16	3/32
7/32	7/64
1/4	1/8
9/32	9/64
5/16	5/32
11/32	11/64
3/8	3/16
7/16	7/32
1/2	1/4
5/8	5/16
3/4	3/8
1	1/2

Mill Dia. Tolerance (inch)	Shank Dia. Tolerance
0~-.0012	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									
◎	◎	◎	○			◎	◎						○	○

CBN END MILLS

i-Xmill END MILLS

i-SMART MODULAR TYPE END MILLS

X5070 END MILLS

4G MILL END MILLS

X-POWER END MILLS

JET-POWER END MILLS

TitaNox -POWER END MILLS

V7 PLUS A END MILLS

V7 MILL INOX END MILLS

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SINE -POWER END MILLS

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TECHNICAL DATA



GMF60 SERIES

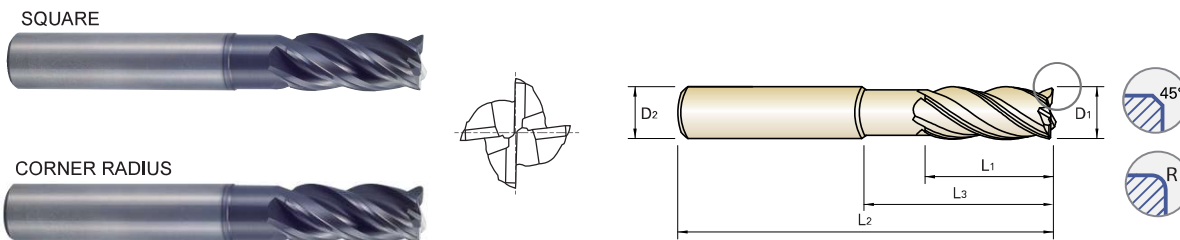
CHAMFER

GMF62 SERIES

CORNER RADIUS

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P.1012~1013

Unit : mm

OD	SD	LOC	LBS	OAL	Chamfer	Corner Radius					
						0.30	0.50	1.00	2.00	3.00	
D1	D2	L1	L3	L2	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.		
3.0	.1181	6	7	12	54	GMF60030	GMF62030	GMF62901	-	-	-
		6	7	17	57	GMF60901	GMF62902	GMF62903	-	-	-
		6	8	14	57	GMF60902	-	-	-	-	-
4.0	.1575	6	8	15	57	GMF60040	GMF62040	GMF62904	-	-	-
		6	8	22	63	GMF60903	GMF62905	GMF62906	-	-	-
		6	11	16	57	GMF60904	-	-	-	-	-
5.0	.1969	6	10	17	57	GMF60050	GMF62050	GMF62907	-	-	-
		6	10	27	67	GMF60905	GMF62908	GMF62909	-	-	-
		6	13	18	57	GMF60906	-	-	-	-	-
6.0	.2362	6	10	15	57	GMF60060	GMF62060	GMF62910	GMF62911	-	-
		6	10	20	62	GMF60907	GMF62912	GMF62913	GMF62914	-	-
		6	10	32	74	GMF60908	GMF62915	GMF62916	GMF62917	-	-
		6	13	21	57	GMF60909	-	-	-	-	-
8.0	.3150	8	12	20	63	GMF60080	-	GMF62080	GMF62918	-	-
		8	12	30	73	GMF60910	-	GMF62919	GMF62920	-	-
		8	12	46	90	GMF60911	-	GMF62921	GMF62922	-	-
		8	19	27	63	GMF60912	-	-	-	-	-
10.0	.3937	10	14	25	72	GMF60100	-	GMF62100	GMF62923	-	-
		10	14	35	82	GMF60913	-	GMF62924	GMF62925	-	-
		10	14	55	102	GMF60914	-	GMF62926	GMF62927	-	-
		10	22	32	72	GMF60915	-	-	-	-	-
12.0	.4724	12	16	30	83	GMF60120	-	GMF62120	GMF62928	GMF62929	-
		12	16	40	93	GMF60916	-	GMF62930	GMF62931	GMF62932	-
		12	16	64	117	GMF60917	-	GMF62933	GMF62934	GMF62935	-
		12	26	38	83	GMF60918	-	-	-	-	-

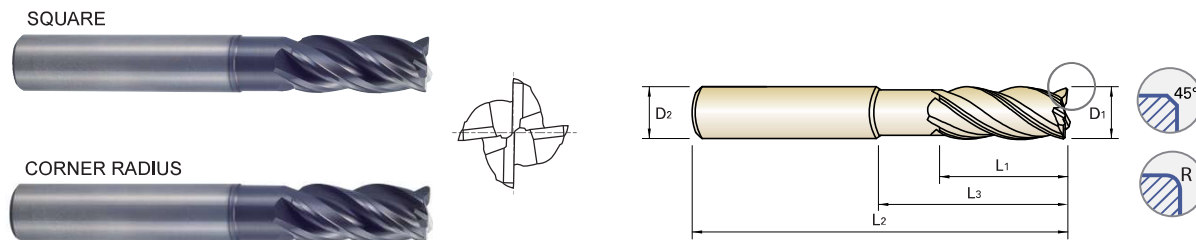
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◎ : Excellent ○ : Good

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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MG HM
4
35°/37°
PLAIN
C x 45°
P.1012~1013

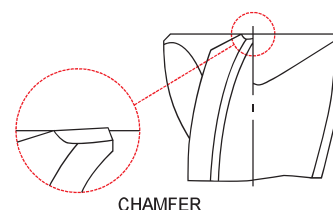
Unit : mm

OD		SD	LOC	LBS	OAL	Chamfer	Corner Radius				
Metric	Inch						0.30	0.50	1.00	2.00	3.00
D1		D2	L1	L3	L2	EDP No.	EDP No.	EDP No.	EDP No.	EDP No.	
16.0	.6299	16	22	38	92	-	-	-	GMF62160	GMF62936	GMF62937
		16	22	55	109	-	-	-	GMF62938	GMF62939	GMF62940
		16	22	87	141	-	-	-	GMF62941	GMF62942	GMF62943
		16	32	44	92	-	-	-	-	-	-
20.0	.7874	20	26	50	104	-	-	-	GMF62200	GMF62944	GMF62945
		20	26	70	124	-	-	-	GMF62946	GMF62947	GMF62948
		20	26	110	164	-	-	-	GMF62949	GMF62950	GMF62951
		20	38	54	104	-	-	-	-	-	-

CHAMFER KEY		
Mill Diameter		Chamfer Size (mm)
Metric	Inch	
3.0	.1181	0.10
4.0	.1575	0.15
5.0	.1969	0.15
6.0	.2362	0.20
8.0	.3150	0.20
10.0	.3937	0.30
12.0	.4724	0.35
16.0	.6299	0.40
20.0	.7874	0.50

Mill Dia. Tolerance (inch)	Shank Dia. Tolerance
0~-.0012	h6

REINFORCED 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	Acrylic	CFRP	Titanium	High Temperature Alloy
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◎	◎	◎	○		◎	◎						○	○

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- ALU-POWER HPC END MILLS
- ALU-POWER END MILLS
- D-POWER GRAPHITE END MILLS
- D-POWER CFRP END MILLS
- ROUTERS CFRP
- STANDARD CARBIDE END MILLS
- ONLY ONE COATED PM60 END MILLS
- SINE -POWER END MILLS
- TANK-POWER END MILLS
- STANDARD COBALT & HSS END MILLS
- TECHNICAL DATA



CARBIDE, 4 FLUTE - INCH

UGMF68, UGMF69, UGMF70, UGMF71, UGMF72, UGMF73, UGMF74, UGMF75, UGMF76, UGMF77 SERIES

CBN
END MILLS

i-Xmill
END MILLS

i-SMART
MODULAR
TYPE END MILLS

X5070
END MILLS

4G MILL
END MILLS

X-POWER
END MILLS

JET-POWER
END MILLS

TitaNox
-POWER
END MILLS

**V7 PLUS A
END MILLS**

V7 MILL INOX
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ALU-POWER
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ALU-POWER
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D-POWER
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CFRP
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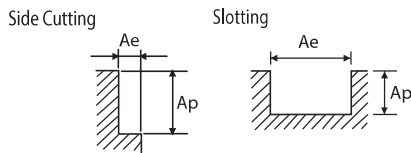
STANDARD
COBALT & HSS
END MILLS

TECHNICAL
DATA

ISO Hardness (BHN)	Work Materials	Speed and Feed Recommendations				Diameter (in.)			
		Type of Cut	Ap x D1	Ae x D1	Parameters	1/8	5/32	3/16	7/32
P <300	CARBON STEEL 10**, 11**, 12**, 12L**, 15**	Side Cutting 	1.5 (1.2)	0.5	SFM (VC)	499 (400-599)			499 (400-598)
					RPM	15249	12200	10166	8714
					FZ	.0002	.0003	.0004	.0005
		Slotting 	1 (0.8)	1	SFM (VC)	499 (400-599)			499 (400-598)
					RPM	15249	12200	10166	8714
					FZ	.0002	.0003	.0004	.0005
P >300 P <380	ALLOY STEEL 41**, 43**, 51**, 86**	Side Cutting 	1.5 (1.2)	0.5	SFM (VC)	351 (281-422)			351 (281-421)
					RPM	10727	8581	7151	6129
					FZ	.0002	.0003	.0004	.0005
		Slotting 	1 (0.8)	1	SFM (VC)	351 (281-422)			351 (281-421)
					RPM	10727	8581	7151	6129
					FZ	.0002	.0003	.0004	.0005
P <380	TOOL STEEL A2, D2, H13, P20, T15	Side Cutting 	1.5 (1.2)	0.5	SFM (VC)	210 (168-252)			
					RPM	6418	5134	4278	3667
					FZ	.0001	.0002	.0003	.0004
		Slotting 	1 (0.8)	1	SFM (VC)	210 (168-252)			
					RPM	6418	5134	4278	3667
					FZ	.0001	.0002	.0003	.0004
K <260	CAST IRON GRAY, MALLEABLE, DUCTILE	Side Cutting 	1.5 (1.2)	0.5	SFM (VC)	367 (294-440)			
					RPM	11216	8972	7477	6409
					FZ	.0002	.0004	.0006	.0007
		Slotting 	1 (0.8)	1	SFM (VC)	367 (294-440)			
					RPM	11216	8972	7477	6409
					FZ	.0002	.0004	.0006	.0007

RPM = rev./min. FEED = in./min.
SFM = ft./min. FZ = in./tooth

- NOTES:**
- ▶ Feed to be reduced by approximately 50% if L.O.C. (Length Of Cut) is over 3xD
 - ▶ The above recommendations are based on ideal conditions; for smaller taper machining centers or less rigid conditions please adjust parameters accordingly on diameters greater than 1/2"
 - ▶ In profile operations, engaging more than 2xD, reduce the radial depth of cut by 50%-60%
 - ▶ Finish cuts typically require reduced cutting feeds and speeds; also, it is recommended the radial width of cut (AE) should not exceed 2% x D1



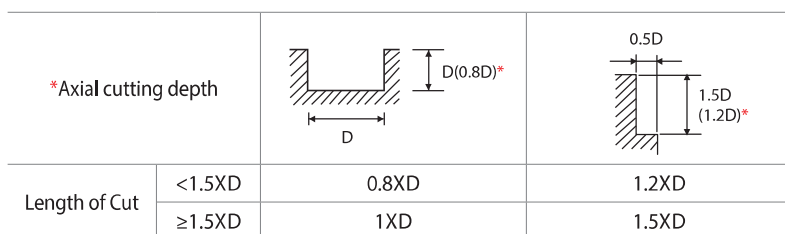
CARBIDE, 4 FLUTE - INCH

UGMF68, UGMF69, UGMF70, UGMF71, UGMF72, UGMF73, UGMF74, UGMF75, UGMF76, UGMF77 SERIES

Diameter (in.)									
1/4	9/32	5/16	11/32	3/8	7/16	1/2	5/8	3/4	1
499 (400-599)	499 (400-598)	499 (400-599)	525 (420-630)	551 (441-662)	551 (441-661)	551 (441-662)			
7625	6778	6100	5834	5613	4811	4210	3368	2806	2105
.0006	.0008	.0011	.0013	.0015	.0017	.0019	.0021	.0026	.0025
19.21	22.95	25.94	29.86	33.59	32.20	31.16	28.11	28.73	21.21
499 (400-599)	499 (400-598)	499 (400-599)	525 (420-630)	551 (441-662)	551 (441-661)	551 (441-662)			
7625	6778	6100	5834	5613	4811	4210	3368	2806	2105
.0006	.0008	.0011	.0013	.0015	.0017	.0019	.0021	.0026	.0025
19.21	22.95	25.94	29.86	33.59	32.20	31.16	28.11	28.73	21.21
351 (281-422)	351 (281-421)	351 (281-422)	368 (295-441)	384 (308-461)	384 (308-460)	384 (308-461)			
5363	4767	4291	4089	3912	3353	2934	2347	1956	1467
.0006	.0008	.0011	.0013	.0015	.0017	.0019	.0021	.0026	.0025
13.51	16.14	18.24	20.93	23.41	22.44	21.71	19.59	20.02	14.78
351 (281-422)	351 (281-421)	351 (281-422)	368 (295-441)	384 (308-461)	384 (308-460)	384 (308-461)			
5363	4767	4291	4089	3912	3353	2934	2347	1956	1467
.0006	.0008	.0011	.0013	.0015	.0017	.0019	.0021	.0023	.0025
13.51	16.14	18.24	20.93	23.41	22.44	21.71	19.59	18.17	14.78
210 (168-252)			220 (176-264)		230 (184-276)				
3209	2852	2567	2445	2343	2008	1757	1406	1171	879
.0004	.0006	.0007	.0009	.0011	.0012	.0013	.0015	.0018	.0018
5.56	6.74	7.68	8.86	9.96	9.33	8.86	8.19	8.30	6.23
210 (168-252)			220 (176-264)		230 (184-276)				
3209	2852	2567	2445	2343	2008	1757	1406	1171	879
.0004	.0006	.0007	.0009	.0011	.0012	.0013	.0015	.0018	.0018
5.56	6.74	7.68	8.86	9.96	9.33	8.86	8.19	8.30	6.23
367 (294-440)			386 (309-463)		404 (324-484)				
5608	4985	4486	4290	4115	3527	3087	2469	2058	1543
.0008	.0011	.0013	.0016	.0019	.0021	.0023	.0026	.0032	.0031
17.66	21.19	24.02	27.70	31.11	29.44	28.19	25.28	26.25	19.20
367 (294-440)			386 (309-463)		404 (324-484)				
5608	4985	4486	4290	4115	3527	3087	2469	2058	1543
.0008	.0011	.0013	.0016	.0019	.0021	.0023	.0026	.0032	.0031
17.66	21.19	24.02	27.70	31.11	29.44	28.19	25.28	26.25	19.20

RPM = rev./min. FEED = in./min.
SFM = ft./min. FZ = in./tooth

NEXT PAGE ►





CARBIDE, 4 FLUTE - INCH

UGMF68, UGMF69, UGMF70, UGMF71, UGMF72, UGMF73, UGMF74, UGMF75, UGMF76, UGMF77 SERIES

CBN
END MILLS

i-Xmill
END MILLS

i-SMART
MODULAR
TYPE END MILLS

X5070
END MILLS

4G MILL
END MILLS

X-POWER
END MILLS

JET-POWER
END MILLS

TitaNox
-POWER
END MILLS

**V7 PLUS A
END MILLS**

V7 MILL INOX
END MILLS

ALU-POWER
HPC
END MILLS

ALU-POWER
END MILLS

D-POWER
GRAPHITE
END MILLS

D-POWER
CFRP
END MILLS

ROUTERS
CFRP

STANDARD
CARBIDE
END MILLS

ONLY ONE
COATED PM60
END MILLS

SINE -POWER
END MILLS

TANK-POWER
END MILLS

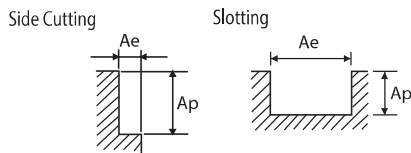
STANDARD
COBALT & HSS
END MILLS

TECHNICAL
DATA

ISO Hardness (BHN)	Work Materials	Speed And Feed Recommendations				Diameter (in.)			
		Type Of Cut	Ap x D1	Ae x D1	Parameters	1/8	5/32	3/16	7/32
M	STAINLESS STEELS 300 304, 316, 304L, 316LSUS316	Side Cutting 	1.5 (1.2)	0.5	SFM (VC)	348 [279-417]			
					RPM	10635	8508	7090	6077
					FZ	.0002	.0003	.0005	.0006
		Slotting 	1 (0.8)	1	SFM (VC)	348 [279-417]			
					RPM	10635	8508	7090	6077
					FZ	.0002	.0003	.0005	.0006
M	STAINLESS STEELS 400 416, 420F, 430F, 440F	Side Cutting 	1.5 (1.2)	0.5	SFM (VC)	486 [389-583]			
					RPM	14852	11882	9901	8487
					FZ	.0002	.0002	.0004	.0004
		Slotting 	1 (0.8)	1	SFM (VC)	486 [389-583]			
					RPM	14852	11882	9901	8487
					FZ	.0002	.0002	.0004	.0004
M	STAINLESS STEELS (PH) 17-4PH, 15-5PH, 13-8PH	Side Cutting 	1.5 (1.2)	0.5	SFM (VC)	312 [250-374]			
					RPM	9535	7628	6356	5448
					FZ	.0002	.0003	.0005	.0006
		Slotting 	1 (0.8)	1	SFM (VC)	312 [250-374]			
					RPM	9535	7628	6356	5448
					FZ	.0002	.0003	.0005	.0006
S	TITANIUM Ti6AL4V, Ti5AL5V5MO, Ti7AL4MO	Side Cutting 	1	0.35	SFM (VC)	190 [152-228]			
					RPM	5806	4645	3871	3318
					FZ	.0002	.0003	.0004	.0005
		Slotting 	0.5	1	SFM (VC)	190 [152-228]			
					RPM	5806	4645	3871	3318
					FZ	.0002	.0003	.0004	.0005
S	HIGH-TEMPERATURE ALLOY INCONEL, HASTALLOY, RENE	Side Cutting 	1	0.25	SFM (VC)	85 [68-102]			
					RPM	2598	2078	1732	1484
					FZ	.0002	.0003	.0003	.0004
		Slotting 	0.5	1	SFM (VC)	85 [68-102]			
					RPM	2598	2078	1732	1484
					FZ	.0002	.0003	.0003	.0004

RPM = rev./min. FEED = in./min.
SFM = ft./min. FZ = in./tooth

- NOTES:**
- ▶ Feed to be reduced by approximately 50% if L.O.C. (Length Of Cut) is over 3xD
 - ▶ The above recommendations are based on ideal conditions; for smaller taper machining centers or less rigid conditions please adjust parameters accordingly on diameters greater than 1/2"
 - ▶ In profile operations, engaging more than 2xD, reduce the radial depth of cut by 50%-60%
 - ▶ Finish cuts typically require reduced cutting feeds and speeds; also, it is recommended the radial width of cut (AE) should not exceed 2% x D1

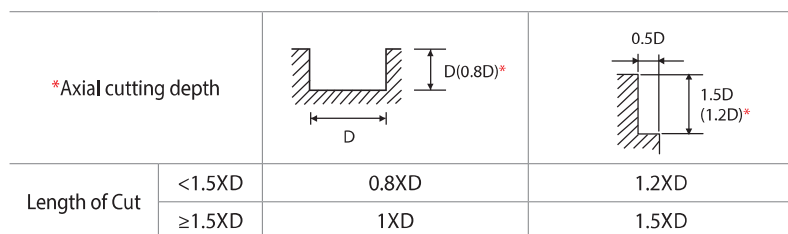


CARBIDE, 4 FLUTE - INCH

UGMF68, UGMF69, UGMF70, UGMF71, UGMF72, UGMF73, UGMF74, UGMF75, UGMF76, UGMF77 SERIES

Diameter (in.)									
1/4	9/32	5/16	11/32	3/8	7/16	1/2	5/8	3/4	1
348 (279-417)									
5317	4727	4254	3867	3545	3039	2659	2127	1772	1329
.0007	.0009	.0011	.0015	.0019	.0020	.0022	.0024	.0030	.0030
15.07	17.12	18.76	23.14	26.80	24.64	23.03	20.77	21.49	16.12
348 (279-417)									
5317	4727	4254	3867	3545	3039	2659	2127	1772	1329
.0007	.0009	.0011	.0015	.0019	.0020	.0022	.0024	.0030	.0030
15.07	17.12	18.76	23.14	26.80	24.64	23.03	20.77	21.49	16.12
486 (389-583)									
7426	6601	5941	5401	4951	4243	3713	2970	2475	1857
.0005	.0007	.0009	.0011	.0013	.0014	.0015	.0018	.0022	.0022
15.20	18.48	20.58	23.81	26.51	24.39	22.80	21.05	21.44	16.08
486 (389-583)									
7426	6601	5941	5401	4951	4243	3713	2970	2475	1857
.0005	.0007	.0009	.0011	.0013	.0014	.0015	.0018	.0022	.0022
15.20	18.19	20.58	23.81	26.51	24.39	22.80	21.05	21.44	16.08
312 (250-374)									
4767	4238	3814	3467	3178	2724	2384	1907	1589	1192
.0007	.0009	.0011	.0015	.0019	.0020	.0022	.0024	.0030	.0030
13.51	15.35	16.82	20.75	24.02	22.09	20.65	18.62	19.02	14.26
312 (250-374)									
4767	4238	3814	3467	3178	2724	2384	1907	1589	1192
.0007	.0009	.0011	.0015	.0019	.0020	.0022	.0024	.0030	.0030
13.51	15.35	16.82	20.75	24.02	22.09	20.65	18.62	19.02	14.26
190 (152-228)									
2903	2581	2323	2111	1935	1659	1452	1161	968	726
.0006	.0008	.0010	.0013	.0017	.0018	.0020	.0022	.0027	.0027
7.32	8.33	9.14	11.14	12.80	12.02	11.43	10.06	10.36	7.89
190 (152-228)									
2903	2581	2323	2111	1935	1659	1452	1161	968	726
.0006	.0008	.0010	.0013	.0017	.0018	.0020	.0022	.0027	.0027
7.32	8.33	9.14	11.14	12.80	12.02	11.43	10.06	10.36	7.89
85 (68-102)									
1299	1154	1039	945	866	742	649	520	433	325
.0005	.0006	.0007	.0010	.0013	.0014	.0015	.0017	.0021	.0020
2.45	2.82	3.11	3.87	4.50	4.15	3.89	3.52	3.68	2.66
85 (68-102)									
1299	1154	1039	945	866	742	649	520	433	325
.0005	.0006	.0007	.0010	.0013	.0014	.0015	.0017	.0021	.0020
2.45	2.82	3.11	3.87	4.50	4.15	3.89	3.52	3.68	2.66

RPM = rev./min. FEED = in./min.
SFM = ft./min. FZ = in./tooth





CARBIDE, 4 FLUTE - METRIC

GMF52, GMF53, GMF54, GMF55, GMF56, GMF57, GMF58, GMF59, GMF60, GMF61, GMF62, GMF63 SERIES

CBN
END MILLS

i-Xmill
END MILLS

i-SMART
MODULAR
TYPE END MILLS

X5070
END MILLS

4G MILL
END MILLS

X-POWER
END MILLS

JET-POWER
END MILLS

TitaNox
-POWER
END MILLS

**V7 PLUS A
END MILLS**

V7 MILL INOX
END MILLS

ALU-POWER
HPC
END MILLS

ALU-POWER
END MILLS

D-POWER
GRAPHITE
END MILLS

D-POWER
CFRP
END MILLS

ROUTERS
CFRP

STANDARD
CARBIDE
END MILLS

ONLY ONE
COATED PM60
END MILLS

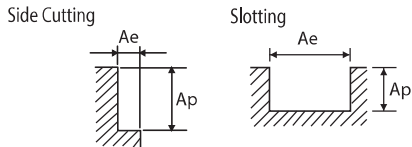
SINE -POWER
END MILLS

TANK-POWER
END MILLS

STANDARD
COBALT & HSS
END MILLS

TECHNICAL
DATA

ISO Hardness (BHN)	Work Materials	Type of Cut	Ap x D1	Ae x D1	Parameters	Diameter (mm)											
						3	4	5	6	8	10	12	14	16	18	20	25
P <300	CARBON STEEL 1.1191 (C45) 1.0726 (35 S 20) 1.0715 (9 SMN 28) 1.0718 (9 SMNPB 28)	Side Cutting 	1.5 (1.2)	0.5	SFM (VC)	499 (399-598)					551 (441-661)						
					RPM	16128	12096	9677	8064	6048	5348	4456	3820	3342	2971	2674	2139
					Fz	.0002	.0003	.0004	.0006	.0011	.0015	.0019	.0019	.0021	.0023	.0026	.0025
		Slotting 	1 (0.8)	1	SFM (VC)	499 (399-598)					551 (441-661)						
					RPM	16128	12096	9677	8064	6048	5348	4456	3820	3342	2971	2674	2139
					FEED	12.70	15.24	16.76	20.32	25.72	32.00	32.98	29.47	27.90	27.60	27.37	21.56
P >300 P <380	ALLOY STEEL 1.2330 (35 CRMO 4) 1.6565 (40NICRMO6) 1.7033 (34CR4) 1.6523 (21 NICRMO2)	Side Cutting 	1.5 (1.2)	0.5	SFM (VC)	351 (281-421)					384 (307-461)						
					RPM	11353	8515	6812	5677	4257	3724	3104	2660	2328	2069	1862	1490
					FZ	.0002	.0003	.0004	.0006	.0011	.0015	.0019	.0019	.0021	.0023	.0026	.0025
		Slotting 	1 (0.8)	1	SFM (VC)	351 (281-421)					384 (307-461)						
					RPM	11353	8515	6812	5677	4257	3724	3104	2660	2328	2069	1862	1490
					FEED	8.94	10.73	11.80	14.30	18.10	22.29	22.97	20.53	19.43	19.22	19.06	15.01
P <380	TOOL STEEL 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 (1.2)	0.5	SFM (VC)	210 (168-252)					230 (184-276)						
					RPM	6791	5093	4074	3395	2546	2228	1857	1592	1393	1238	1114	891
					FZ	.0001	.0002	.0003	.0004	.0007	.0011	.0013	.0013	.0015	.0016	.0018	.0018
		Slotting 	1 (0.8)	1	SFM (VC)	210 (168-252)					230 (184-276)						
					RPM	6791	5093	4074	3395	2546	2228	1857	1592	1393	1238	1114	891
					FEED	3.21	4.81	5.13	5.88	7.62	9.47	9.36	8.52	8.11	7.99	7.90	6.32
K < 260	CAST IRON 0.6020 (GG20) 0.8145 (GTS-45-06) 0.7060 (GGG-60)	Side Cutting 	1.5 (1.2)	0.5	SFM (VC)	367 (294-441)					404 (323-484)						
					RPM	11884	8913	7130	5942	4456	3915	3263	2797	2447	2175	1958	1566
					FZ	.0002	.0004	.0006	.0008	.0013	.0019	.0023	.0024	.0026	.0029	.0032	.0031
		Slotting 	1 (0.8)	1	SFM (VC)	367 (294-441)					404 (323-484)						
					RPM	11884	8913	7130	5942	4456	3915	3263	2797	2447	2175	1958	1566
					FEED	11.23	14.04	15.72	18.71	23.86	29.60	29.80	26.86	25.05	25.01	24.97	19.48
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 (1.2)	0.5	SFM (VC)	348 (278-417)											
					RPM	11247	8435	6748	5623	4218	3374	2812	2410	2109	1874	1687	1350
					FZ	.0002	.0003	.0005	.0007	.0011	.0019	.0022	.0023	.0024	.0028	.0030	.0030
		Slotting 	1 (0.8)	1	SFM (VC)	348 (278-417)											
					RPM	11247	8435	6748	5623	4218	3374	2812	2410	2109	1874	1687	1350
					FEED	8.86	10.63	13.82	15.94	18.60	25.50	24.35	22.39	20.59	20.66	20.46	16.37



RPM = rev./min. FEED = in./min.
SFM = ft./min. FZ = in./tooth

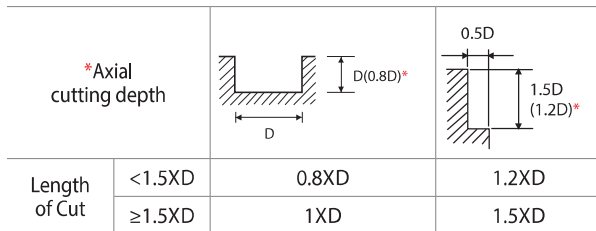
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CARBIDE, 4 FLUTE - METRIC

GMF52, GMF53, GMF54, GMF55, GMF56, GMF57, GMF58, GMF59, GMF60, GMF61, GMF62, GMF63 SERIES

ISO Hardness (BHN)	Work Materials	Speed and Feed Recommendations				Diameter (mm)											
		Type of Cut	Ap x D1	Ae x D1	Parameters	3	4	5	6	8	10	12	14	16	18	20	25
M	STAINLESS STEELS 400 1.4005 (X12 CRS 13) 1.4104 (X12 CRMOS 17)	Side Cutting 	1.5 (1.2)	0.5	SFM (VC)	486 (388-583)											
					RPM	15703	11777	9422	7852	5889	4711	3926	3365	2944	2617	2355	1884
					FZ	.0002	.0002	.0004	.0005	.0009	.0013	.0015	.0017	.0018	.0020	.0022	.0022
		FEED	9.89	11.13	13.35	16.07	20.40	25.22	24.11	22.26	20.87	20.61	20.40	16.32			
		Slotting 	1 (0.8)	1	SFM (VC)	486 (388-583)											
					RPM	15703	11777	9422	7852	5889	4711	3926	3365	2944	2617	2355	1884
FZ	.0002				.0002	.0004	.0005	.0009	.0013	.0015	.0017	.0018	.0020	.0022	.0022		
FEED	9.89	11.13	13.35	16.07	20.40	25.22	24.11	22.26	20.87	20.61	20.40	16.32					
M	STAINLESS STEELS (PH) 1.4594 (Z7 CNU 15.05)	Side Cutting 	1.5 (1.2)	0.5	SFM (VC)	312 (249-374)											
					RPM	10080	7560	6048	5040	3780	3024	2520	2160	1890	1680	1512	1210
					FZ	.0002	.0003	.0005	.0007	.0011	.0019	.0022	.0023	.0024	.0027	.0030	.0030
		FEED	7.94	9.52	12.38	14.29	16.67	22.86	21.83	20.07	18.45	18.25	18.10	14.48			
		Slotting 	1 (0.8)	1	SFM (VC)	312 (249-374)											
					RPM	10080	7560	6048	5040	3780	3024	2520	2160	1890	1680	1512	1210
FZ	.0002				.0003	.0005	.0007	.0011	.0019	.0022	.0023	.0024	.0027	.0030	.0030		
FEED	7.94	9.52	12.38	14.29	16.67	22.86	21.83	20.07	18.45	18.25	18.10	14.48					
S	TITANIUM Ti6AL4V Ti5AL5V5MO Ti7AL4MO	Side Cutting 	1	0.35	SFM (VC)	190 (152-228)											
					RPM	6154	4615	3692	3077	2308	1846	1538	1319	1154	1026	923	738
					FZ	.0002	.0003	.0004	.0006	.0010	.0017	.0020	.0021	.0022	.0024	.0027	.0027
		FEED	3.88	5.09	6.40	7.75	9.09	12.21	12.11	11.01	9.99	10.01	9.89	8.02			
		Slotting 	0.5	1	SFM (VC)	190 (152-228)											
					RPM	6154	4615	3692	3077	2308	1846	1538	1319	1154	1026	923	738
FZ	.0002				.0003	.0004	.0006	.0010	.0017	.0020	.0021	.0022	.0024	.0027	.0027		
FEED	3.88	5.09	6.40	7.75	9.09	12.21	12.11	11.01	9.99	10.01	9.89	8.02					
S	HIGH-TEMPERATURE ALLOY INCONEL HASTALLOY RENE	Side Cutting 	1	0.25	SFM (VC)	85 (68-102)											
					RPM	2759	2069	1655	1379	1035	828	690	591	517	460	414	331
					FZ	.0002	.0003	.0003	.0005	.0007	.0013	.0015	.0016	.0017	.0019	.0021	.0020
		FEED	2.17	2.28	2.09	2.61	3.10	4.30	4.13	3.72	3.50	3.48	3.52	2.71			
		Slotting 	0.5	1	SFM (VC)	85 (68-102)											
					RPM	2759	2069	1655	1379	1035	828	690	591	517	460	414	331
FZ	.0002				.0003	.0003	.0005	.0007	.0013	.0015	.0016	.0017	.0019	.0021	.0020		
FEED	2.17	2.28	2.09	2.61	3.10	4.30	4.13	3.72	3.50	3.48	3.52	2.71					

RPM = rev./min. FEED = in./min.
SFM = ft./min. FZ = in./tooth



NOTES:

- * Feed to be reduced by approximately 50% if L.O.C. (Length Of Cut) is over 3xD
- * The above recommendations are based on ideal conditions; for smaller taper machining centers or less rigid conditions please adjust parameters accordingly on diameters greater than 1/2"
- * In profile operations, engaging more than 2xD, reduce the radial depth of cut by 50%-60%
- * Finish cuts typically require reduced cutting feeds and speeds; also, it is recommended the radial width of cut (AE) should not exceed 2% x D1



CARBIDE, 4 FLUTE - INCH

UGMG53, UGMG54, UGMH10 SERIES

CBN
END MILLS

i-Xmill
END MILLS

i-SMART
MODULAR
TYPE END MILLS

X5070
END MILLS

4G MILL
END MILLS

X-POWER
END MILLS

JET-POWER
END MILLS

TitaNox
-POWER
END MILLS

V7 PLUS A
END MILLS

V7 MILL INOX
END MILLS

ALU-POWER
HPC
END MILLS

ALU-POWER
END MILLS

D-POWER
GRAPHITE
END MILLS

D-POWER
CFRP
END MILLS

ROUTERS
CFRP

STANDARD
CARBIDE
END MILLS

ONLY ONE
COATED PM60
END MILLS

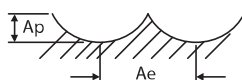
SINE -POWER
END MILLS

TANK-POWER
END MILLS

STANDARD
COBALT & HSS
END MILLS

TECHNICAL
DATA

ISO Hardness (BHN)	Work Materials	Type of Cut	Speed and Feed Recommendations				Diameter (in.)									
			Ap x D1	Ae x D1	Parameters	1/8	3/16	13/64	1/4	5/16	3/8	1/2	5/8	11/16	3/4	1
P <300	CARBON STEEL 10**, 11**, 12**, 12L**, 15**		1	0.5	SFM (VC)	531 (425-637)										
					RPM	16227	10818	9986	8114	6491	5409	4057	3245	2950	2705	2028
					Fz	.0010	.0011	.0012	.0016	.0024	.0026	.0028	.0030	.0031	.0035	.0039
					FEED	63.89	46.00	47.18	51.11	61.33	55.37	44.72	38.33	37.17	38.33	31.62
P >300 P <380	ALLOY STEEL 41**, 43**, 51**, 86**		1	0.5	SFM (VC)	371 (297-445)										
					RPM	11338	7559	6977	5669	4535	3779	2834	2268	2061	1890	1417
					Fz	.0010	.0011	.0012	.0016	.0024	.0026	.0028	.0029	.0031	.0035	.0039
					FEED	44.64	32.14	32.96	35.71	42.85	38.69	31.25	26.43	25.65	26.78	22.10
P <380	TOOL STEEL A2, D2, H13, P20, T15		1	0.5	SFM (VC)	223 (178-268)										
					RPM	6815	4543	4194	3407	2726	2272	1704	1363	1239	1136	852
					Fz	.0007	.0007	.0008	.0011	.0017	.0018	.0019	.0020	.0022	.0025	.0028
					FEED	18.24	13.59	13.87	15.02	18.03	16.10	13.15	11.16	10.93	11.27	9.39
K <260	CAST IRON GRAY, MALLEABLE, DUCTILE		1	0.5	SFM (VC)	390 (312-468)										
					RPM	11918	7946	7334	5959	4767	3973	2980	2384	2167	1986	1490
					Fz	.0012	.0013	.0015	.0020	.0029	.0032	.0034	.0037	.0039	.0044	.0049
					FEED	58.18	41.29	42.74	46.92	55.56	50.68	40.82	34.91	33.78	35.04	29.09
M	STAINLESS STEELS 300 304, 316, 304L, 316LSUS316		1	0.5	SFM (VC)	279 (223-335)										
					RPM	8526	5684	5247	4263	3410	2842	2132	1705	1550	1421	1066
					Fz	.0008	.0008	.0010	.0016	.0018	.0020	.0022	.0024	.0025	.0026	.0027
					FEED	26.85	17.90	20.66	27.53	24.17	22.38	18.46	16.11	15.62	14.55	11.41
M	STAINLESS STEELS 400 416, 420F, 430F, 440F		1	0.5	SFM (VC)	253 (202-304)										
					RPM	7732	5154	4758	3866	3093	2577	1933	1546	1406	1289	966
					Fz	.0006	.0006	.0010	.0012	.0016	.0018	.0020	.0021	.0023	.0023	.0023
					FEED	18.26	12.18	18.73	18.26	19.48	18.26	15.22	13.15	13.06	11.77	8.98
M	STAINLESS STEELS (PH) 17-4PH, 15-5PH, 13-8PH		1	0.5	SFM (VC)	253 (202-304)										
					RPM	7732	5154	4758	3866	3093	2577	1933	1546	1406	1289	966
					Fz	.0008	.0008	.0010	.0016	.0018	.0020	.0022	.0024	.0025	.0026	.0027
					FEED	24.35	16.23	18.73	24.96	21.92	20.29	16.74	14.61	14.17	13.19	10.35
S	TITANIUM TI6AL4V, TI5AL5V5MO, TI7AL4MO		0.3	0.5	SFM (VC)	154 (123-185)										
					RPM	4706	3137	2896	2353	1882	1569	1177	941	856	784	588
					Fz	.0007	.0007	.0009	.0015	.0016	.0018	.0019	.0021	.0023	.0023	.0024
					FEED	13.34	8.89	10.03	13.71	11.86	11.12	9.08	8.00	7.82	7.16	5.65
S	HIGH-TEMPERATURE ALLOY INCONEL, HASTALLOY, RENE		0.3	0.2	SFM (VC)	69 (55-83)										
					RPM	2109	1406	1298	1054	843	703	527	422	383	351	264
					Fz	.0006	.0006	.0007	.0011	.0012	.0014	.0015	.0017	.0018	.0018	.0019
					FEED	4.65	3.10	3.47	4.65	4.12	3.87	3.15	2.79	2.72	2.49	1.99



RPM = rev./min. FEED = in./min.
SFM = ft./min. FZ = in./tooth

SEE NOTES ON NEXT PAGE



CARBIDE, 4 FLUTE - METRIC

UGMG55, UGMG56 SERIES

CBN
END MILLS

i-Xmill
END MILLS

i-SMART
MODULAR
TYPE END MILLS

X5070
END MILLS

4G MILL
END MILLS

X-POWER
END MILLS

JET-POWER
END MILLS

TitaNox
-POWER
END MILLS

V7 PLUS A
END MILLS

V7 MILL INOX
END MILLS

ALU-POWER
HPC
END MILLS

ALU-POWER
END MILLS

D-POWER
GRAPHITE
END MILLS

D-POWER
CFRP
END MILLS

ROUTERS
CFRP

STANDARD
CARBIDE
END MILLS

ONLY ONE
COATED PM60
END MILLS

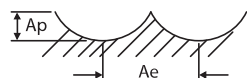
SINE -POWER
END MILLS

TANK-POWER
END MILLS

STANDARD
COBALT & HSS
END MILLS

TECHNICAL
DATA

ISO Hardness (BHN)	Work Materials	Speed and Feed Recommendations				Diameter (mm)										
		Type of Cut	Ap x D1	Ae x D1	Parameters	3	4	5	6	8	10	12	16	18	20	25
P < 300	CARBON STEEL 10**, 11** 12**, 12L**, 15**		1	0.5	SFM (VC)	531 (425-638)										
					RPM	17189	12892	10313	8594	6446	5157	4297	3223	2865	2578	2063
					Fz	.0010	.0011	.0012	.0016	.0024	.0026	.0028	.0030	.0031	.0035	.0039
					FEED	67.67	54.81	48.72	54.14	60.90	52.78	47.37	38.07	36.09	36.54	32.16
P > 300 P < 380	ALLOY STEEL 41**, 43** 51**, 86**		1	0.5	SFM (VC)	371 (297-445)										
					RPM	11990	8992	7194	5995	4496	3597	2997	2248	1998	1798	1439
					FZ	.0010	.0011	.0012	.0016	.0024	.0026	.0028	.0029	.0031	.0035	.0039
					FEED	47.20	38.23	33.99	37.76	42.48	36.82	33.04	26.20	24.86	25.49	22.43
P < 380	TOOL STEEL A2, D2, H13, P20, T15		1	0.5	SFM (VC)	223 (178-268)										
					RPM	7215	5411	4329	3608	2706	2165	1804	1353	1203	1082	866
					FZ	.0007	.0007	.0008	.0011	.0017	.0018	.0019	.0020	.0022	.0025	.0028
					FEED	19.32	16.19	14.32	15.91	17.90	15.34	13.92	11.08	10.60	10.74	9.54
K < 260	CAST IRON GRAY, MALLEABLE, DUCTILE		1	0.5	SFM (VC)	390 (312-469)										
					RPM	12626	9470	7576	6313	4735	3788	3157	2367	2104	1894	1515
					FZ	.0012	.0013	.0015	.0020	.0029	.0032	.0034	.0037	.0039	.0044	.0049
					FEED	61.64	49.21	44.14	49.71	55.18	48.32	43.25	34.67	32.81	33.40	29.59
M	STAINLESS STEELS 300 304, 316, 304L, 316LSUS316		1	0.5	SFM (VC)	279 (223-335)										
					RPM	9019	6764	5411	4509	3382	2706	2255	1691	1503	1353	1082
					FZ	.0008	.0008	.0010	.0016	.0018	.0020	.0022	.0024	.0025	.0026	.0027
					FEED	28.41	21.30	21.30	29.12	23.97	21.30	19.53	15.98	15.15	13.85	11.59
M	STAINLESS STEELS 400 416, 420F, 430F, 440F		1	0.5	SFM (VC)	253 (202-303)										
					RPM	8170	6127	4902	4085	3064	2451	2042	1532	1362	1225	980
					FZ	.0006	.0006	.0010	.0012	.0016	.0018	.0020	.0021	.0023	.0023	.0023
					FEED	19.30	14.47	19.30	19.30	19.30	17.37	16.08	13.03	12.65	11.19	9.11
M	STAINLESS STEELS (PH) 17-4PH, 15-5PH, 13-8PH		1	0.5	SFM (VC)	253 (202-303)										
					RPM	8170	6127	4902	4085	3064	2451	2042	1532	1362	1225	980
					FZ	.0008	.0008	.0010	.0016	.0018	.0020	.0022	.0024	.0025	.0026	.0027
					FEED	25.73	19.30	19.30	26.38	21.71	19.30	17.69	14.47	13.72	12.54	10.50
S	TITANIUM Ti6AL4V Ti5AL5V5MO Ti7AL4MO		0.3	0.5	SFM (VC)	154 (123-185)										
					RPM	4987	3740	2992	2493	1870	1496	1247	935	831	748	598
					FZ	.0007	.0007	.0009	.0015	.0016	.0018	.0019	.0021	.0023	.0023	.0024
					FEED	14.14	10.60	10.37	14.53	11.78	10.60	9.62	7.95	7.59	6.83	5.75
S	HIGH-TEMPERATURE ALLOY INCONEL HASTALLOY, RENE		0.3	0.2	SFM (VC)	69 (55-83)										
					RPM	2228	1671	1337	1114	836	668	557	418	371	334	267
					FZ	.0006	.0006	.0007	.0011	.0012	.0014	.0015	.0017	.0018	.0018	.0019
					FEED	4.91	3.68	3.58	4.91	4.08	3.68	3.33	2.76	2.63	2.37	2.02



RPM = rev./min. FEED = in./min.
SFM = ft./min. FZ = in./tooth

See notes on next page