

4G MILLS

YU-4G13



4G MILLS

**High Speed Cutting
for Pre-Hardened Steels up to HRc55**

- ▶ Mold & Die
- ▶ YG-1 Special Tailored Coating
- ▶ Dry & Wet Cutting
- ▶ Excellent Surface Finish
- ▶ Close Tolerance Applications

YG-1 CO., LTD.

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Technical Assistance : 888-868-5988

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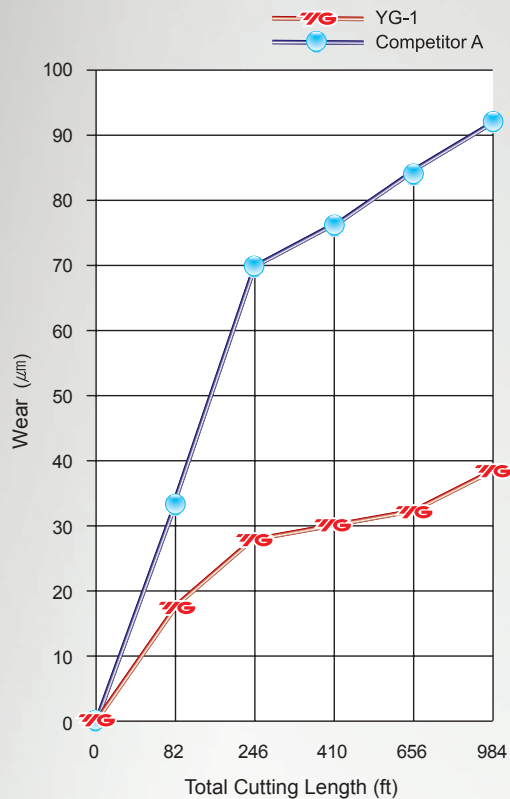
E-mail: yg1@yg1.kr

Tool specifications are subject to change without notice.

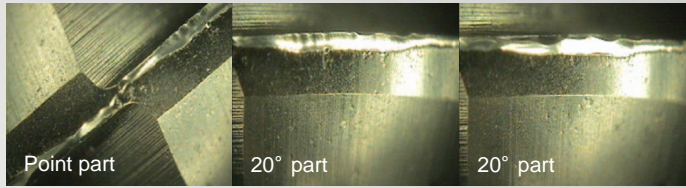
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YG-1 CO., LTD.

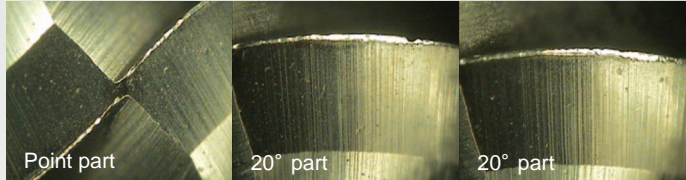
● TEST REPORT (Ball)



COMPETITOR A (Total Cutting Length : 984 ft)



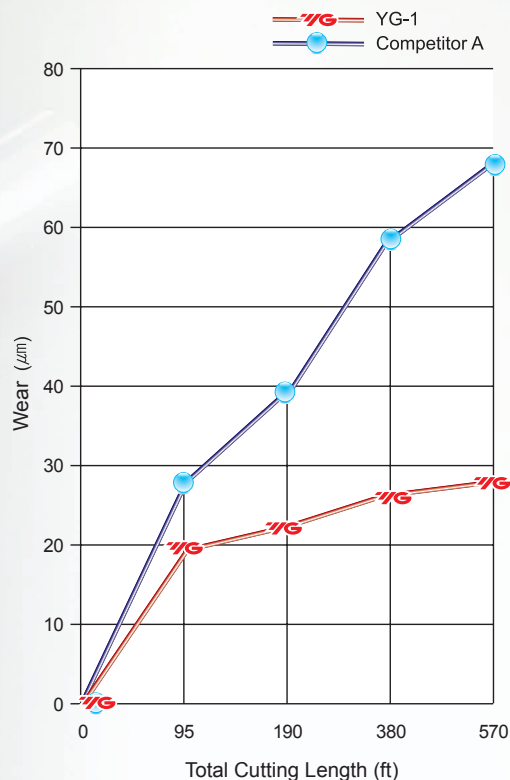
YG-1 (Total Cutting Length : 984 ft)



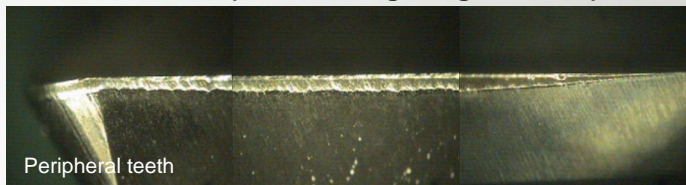
CUTTING CONDITION

Tool : 2Flute, Carbide Ball End Mill
SIZE : $\varnothing 6 \times 6 \times 12 \times 90$
Work Material : KP4M (HRc35 / DIN 1.2738 Improved)
Cutting Speed : 426.7 ft/min.
R.P.M : 6900 rev./min.
FEED : 32.68 inch/min.
Feed per tooth : .0024 inch/tooth
Milling Method : Profiling
Milling Depth : Axial : .0079"
 Radial : .0472"
Coolant : Oil Mist
Overhang : 1.024"

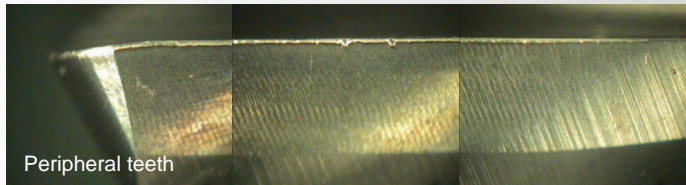
● TEST REPORT (Corner Radius)



COMPETITOR A (Total Cutting Length : 570 ft)



YG-1 (Total Cutting Length : 570 ft)



CUTTING CONDITION

Tool : 4Flute, Carbide Corner Radius End Mill
SIZE : $\varnothing 10(R0.5) \times 10 \times 25 \times 100$
Work Material : KP4M (HRc35 / DIN 1.2738 Improved)
Cutting Speed : 169 ft/min.
R.P.M : 1640 rev./min.
FEED : 7.09 inch/min.
Feed per tooth : .0011 inch/tooth
Milling Method : Down & Side Cutting
Milling Depth : Axial : .9842"
 Radial : .0197"
Coolant : Oil Mist
Overhang : 1.614"

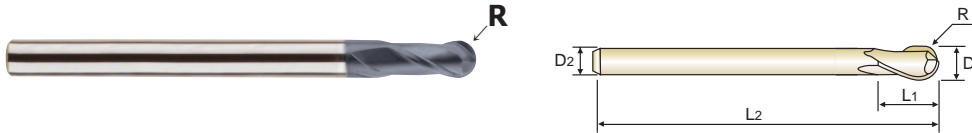
ITEM	MODEL	DESCRIPTION	SIZE		PAGE
			MIN	MAX	
GMF15		CARBIDE, 2FLUTE BALL NOSE	R.002	R3/8	4
GMF16		CARBIDE, 2FLUTE BALL NOSE WITH NECK	R.004	R1/4	6
GMF17		CARBIDE, 4FLUTE BALL NOSE	R1/16	R1/4	9
GMF18		CARBIDE, 2FLUTE CORNER RADIUS	D3/64	D3/4	10
GMF19		CARBIDE, 2FLUTE CORNER RADIUS WITH NECK	D.008	D3/4	12
GMF20		CARBIDE, 4FLUTE CORNER RADIUS	D3/64	D3/4	17
GMF21		CARBIDE, 4FLUTE CORNER RADIUS WITH NECK	D3/64	D3/4	19
GMF22		CARBIDE, 2FLUTE WITH NECK	D.008	D1/2	23
GMF23		CARBIDE, 2FLUTE	D.004	D3/4	26
GMF24		CARBIDE, 2FLUTE LONG	D3/64	D3/4	29
GMF25		CARBIDE, 4FLUTE	D3/64	D3/4	31
GMF26		CARBIDE, 4FLUTE	D3/64	D3/4	32
GMF27		CARBIDE, 4FLUTE LONG	D3/64	D1	33
GMF28		CARBIDE, 4FLUTE WITH NECK	D3/64	D1/2	35
GMF29		CARBIDE, 6FLUTE 45° HELIX	D1/4	D3/4	36
RECOMMENDED CUTTING CONDITIONS					37

◎ : Excellent ○ : Good

Carbon Steels ~HB225	Alloy Steels HB225~325	Prehardened Steels HRc30~40	Hardened Steels		High Hardened Steels HRc55~70	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
			HRc40~45	HRc45~55								
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CARBIDE, 2 FLUTE BALL NOSE

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Unique ball nose geometry with superior cutting edges result in decreased cutting forces.
- ▶ Excellent performance when cutting steels, up to HRC55



GMF15 SERIES



P.37

R ≤ 1/8 R > 1/8

Unit : inch

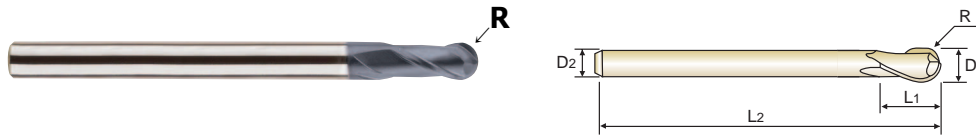
EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	R	D1	D2	L1	L2
GMF15901	R.002	.004	3/16	.008	1-1/2
GMF15902	R.004	.008	3/16	1/64	1-1/2
GMF15903	R.006	.012	3/16	1/32	1-1/2
GMF15904	R.075	.015	3/16	1/32	1-1/2
GMF15905	R.010	.020	3/16	3/64	1-1/2
GMF15906	R.012	.024	3/16	3/64	1-1/2
GMF15907	R.014	.028	3/16	1/16	1-1/2
GMF15908	R.0155	.031	3/16	1/16	1-1/2
GMF15909	R.0175	.035	3/16	5/64	1-1/2
GMF15003	R.0234	3/64	3/16	3/32	2
GMF15910	R.0234	3/64	1/4	3/32	2
GMF15911	R.0234	3/64	1/4	3/32	2-3/4
GMF15004	R1/32	1/16	3/16	5/32	2
GMF15912	R1/32	1/16	1/4	5/32	2
GMF15913	R1/32	1/16	1/4	5/32	2-3/4
GMF15005	R.0391	5/64	1/4	1/8	1-1/2
GMF15914	R.0391	5/64	3/16	3/16	2
GMF15915	R.0391	5/64	1/4	3/16	2
GMF15916	R.0391	5/64	1/4	3/16	3-1/8
GMF15006	R3/64	3/32	1/4	1/4	2-3/8
GMF15917	R3/64	3/32	1/4	1/4	3-1/8
GMF15008	R1/16	1/8	1/4	3/16	1-1/2
GMF15918	R1/16	1/8	3/16	1/4	2-3/8
GMF15919	R1/16	1/8	1/4	1/4	2-3/8
GMF15920	R1/16	1/8	1/4	1/4	3-1/8
GMF15921	R1/16	1/8	1/4	1/4	4
GMF15012	R3/32	3/16	1/4	1/4	2
GMF15922	R3/32	3/16	3/16	5/16	2-3/4
GMF15923	R3/32	3/16	1/4	5/16	2-3/4
GMF15924	R3/32	3/16	3/16	5/16	4
GMF15925	R3/32	3/16	1/4	5/16	4
GMF15926	R3/32	3/16	1/4	5/16	4-1/2

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRc40~45	HRc45~55	HRc55~70							
○	◎	◎	◎	○				○				

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GMF15 SERIES



P.37

R ≤ 1/8 R > 1/8

Unit : inch

EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	R	D1	D2	L1	L2
GMF15013	R.102	13/64	1/4	5/16	2-3/8
GMF15927	R.102	13/64	1/4	3/8	3-1/8
GMF15016	R1/8	1/4	1/4	3/8	2
GMF15928	R1/8	1/4	1/4	3/8	3-1/8
GMF15929	R1/8	1/4	1/4	1/2	3-1/2
GMF15930	R1/8	1/4	1/4	1/2	5
GMF15018	R9/64	9/32	5/16	9/16	3-1/2
GMF15020	R5/32	5/16	5/16	1/2	2
GMF15931	R5/32	5/16	5/16	1/2	3-1/2
GMF15932	R5/32	5/16	5/16	9/16	4
GMF15933	R5/32	5/16	5/16	9/16	6
GMF15024	R3/16	3/8	3/8	5/8	2-3/8
GMF15934	R3/16	3/8	3/8	5/8	3-1/2
GMF15935	R3/16	3/8	3/8	11/16	4
GMF15936	R3/16	3/8	3/8	11/16	5
GMF15937	R3/16	3/8	3/8	11/16	6
GMF15938	R3/16	3/8	3/8	11/16	7
GMF15032	R1/4	1/2	1/2	11/16	3-1/8
GMF15939	R1/4	1/2	1/2	11/16	4
GMF15940	R1/4	1/2	1/2	7/8	4-1/4
GMF15941	R1/4	1/2	1/2	7/8	6
GMF15942	R1/4	1/2	1/2	7/8	8
GMF15036	R9/32	9/16	9/16	1	4
GMF15040	R5/16	5/8	5/8	1	4
GMF15943	R5/16	5/8	5/8	1-3/16	6
GMF15048	R3/8	3/4	3/4	1-3/16	4
GMF15944	R3/8	3/4	3/4	1-1/2	6

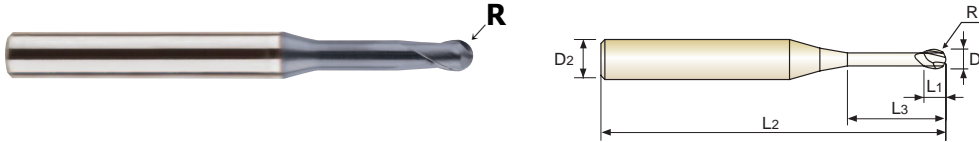
Size	Radius Tolerance (Inch)	Mill Dia. Tolerance (Inch)	Shank Dia. Tolerance
up to Ø1/4	±.0002	0~-.0005	h6
over Ø1/4	±.0004	0~-.0006	

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
○	◎	◎	◎	○				○				

CARBIDE, 2 FLUTE LONG NECK BALL NOSE

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GMF16 SERIES



P.38~39

R ≤ 1/8 R > 1/8

Unit : inch

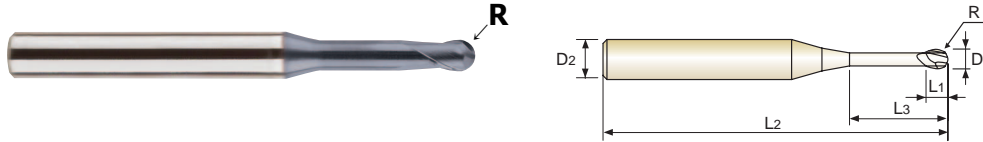
EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length
	R	D1	D2	L1	L3	L2
GMF16901	R.004	.008	3/16	.008	1/64	1-1/2
GMF16902	R.004	.008	3/16	.008	3/64	1-1/2
GMF16903	R.006	.012	3/16	.010	3/64	1-1/2
GMF16904	R.006	.012	3/16	.010	5/64	1-1/2
GMF16905	R.006	.012	3/16	.010	1/8	1-1/2
GMF16906	R.0075	.015	3/16	1/64	3/64	1-1/2
GMF16907	R.0075	.015	3/16	1/64	5/64	1-1/2
GMF16908	R.0075	.015	3/16	1/64	1/8	1-1/2
GMF16909	R.0075	.015	3/16	1/64	5/32	1-1/2
GMF16910	R.010	.020	3/16	1/64	3/64	1-3/4
GMF16911	R.010	.020	3/16	1/64	5/64	1-3/4
GMF16912	R.010	.020	3/16	1/64	1/8	1-3/4
GMF16913	R.010	.020	3/16	1/64	5/32	1-3/4
GMF16914	R.010	.020	3/16	1/64	3/16	1-3/4
GMF16915	R.010	.020	3/16	1/64	1/4	1-3/4
GMF16916	R.010	.020	3/16	1/64	5/16	1-3/4
GMF16917	R.010	.020	3/16	1/64	3/8	1-3/4
GMF16918	R.012	.024	3/16	1/32	5/64	1-3/4
GMF16919	R.012	.024	3/16	1/32	1/8	1-3/4
GMF16920	R.012	.024	3/16	1/32	5/32	1-3/4
GMF16921	R.012	.024	3/16	1/32	3/16	1-3/4
GMF16922	R.012	.024	3/16	1/32	1/4	1-3/4
GMF16923	R.012	.024	3/16	1/32	5/16	1-3/4
GMF16924	R.012	.024	3/16	1/32	3/8	1-3/4
GMF16925	R.012	.024	3/16	1/32	1/2	1-3/4
GMF16002	R1/64	1/32	3/16	1/32	5/64	1-3/4
GMF16926	R1/64	1/32	3/16	1/32	1/8	1-3/4
GMF16927	R1/64	1/32	3/16	1/32	5/32	1-3/4
GMF16928	R1/64	1/32	3/16	1/32	3/16	1-3/4
GMF16929	R1/64	1/32	3/16	1/32	1/4	1-3/4
GMF16930	R1/64	1/32	3/16	1/32	5/16	1-3/4
GMF16931	R1/64	1/32	3/16	1/32	3/8	1-3/4

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70							
○	◎	◎	◎	○				○				

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GMF16 SERIES



P.38~39

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Unit : inch

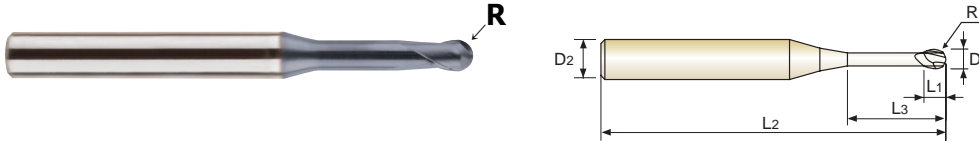
EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length
	R	D1	D2	L1	L3	L2
GMF16003	R.0234	3/64	3/16	3/64	1/8	2
GMF16932	R.0234	3/64	3/16	3/64	5/32	2
GMF16933	R.0234	3/64	3/16	3/64	3/16	2
GMF16934	R.0234	3/64	3/16	3/64	1/4	2
GMF16935	R.0234	3/64	3/16	3/64	5/16	2
GMF16936	R.0234	3/64	3/16	3/64	3/8	2
GMF16937	R.0234	3/64	3/16	3/64	1/2	2
GMF16938	R.0234	3/64	3/16	3/64	9/16	2
GMF16939	R.0234	3/64	3/16	3/64	5/8	2
GMF16940	R.0234	3/64	3/16	3/64	3/4	2
GMF16004	R1/32	1/16	3/16	1/16	5/32	2
GMF16941	R1/32	1/16	3/16	1/16	1/4	2
GMF16942	R1/32	1/16	3/16	1/16	5/16	2
GMF16943	R1/32	1/16	3/16	1/16	3/8	2
GMF16944	R1/32	1/16	3/16	1/16	1/2	2
GMF16945	R1/32	1/16	3/16	1/16	9/16	2
GMF16946	R1/32	1/16	3/16	1/16	5/8	2
GMF16947	R1/32	1/16	3/16	1/16	3/4	2
GMF16005	R.0391	5/64	3/16	5/64	1/4	2
GMF16948	R.0391	5/64	3/16	5/64	5/16	2
GMF16949	R.0391	5/64	3/16	5/64	3/8	2
GMF16950	R.0391	5/64	3/16	5/64	1/2	2
GMF16951	R.0391	5/64	3/16	5/64	9/16	2
GMF16952	R.0391	5/64	3/16	5/64	5/8	2
GMF16953	R.0391	5/64	3/16	5/64	11/16	2
GMF16954	R.0391	5/64	3/16	5/64	3/4	2
GMF16955	R.0391	5/64	3/16	5/64	1	2-3/8
GMF16956	R.0391	5/64	3/16	5/64	1-3/16	2-3/4
GMF16006	R3/64	3/32	3/16	3/32	3/8	2
GMF16957	R3/64	3/32	3/16	3/32	3/4	2
GMF16008	R1/16	1/8	1/4	1/8	5/16	2
GMF16958	R1/16	1/8	1/4	1/8	3/8	2

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
○	◎	◎	◎	○				○				

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GMF16 SERIES



P.38~39

R ≤ 1/8 R > 1/8

Unit : inch

EDP No.	Radius of Ball Nose R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2
GMF16959	R1/16	1/8	1/4	1/8	1/2	2
GMF16960	R1/16	1/8	1/4	1/8	9/16	2-3/8
GMF16961	R1/16	1/8	1/4	1/8	5/8	2-3/8
GMF16962	R1/16	1/8	1/4	1/8	11/16	2-3/8
GMF16963	R1/16	1/8	1/4	1/8	3/4	2-3/8
GMF16964	R1/16	1/8	1/4	1/8	1	2-3/4
GMF16965	R1/16	1/8	1/4	1/8	1-3/16	2-3/4
GMF16966	R1/16	1/8	1/4	1/8	1-3/8	2-3/4
GMF16012	R3/32	3/16	1/4	5/32	3/8	2
GMF16967	R3/32	3/16	1/4	5/32	1/2	2
GMF16968	R3/32	3/16	1/4	5/32	9/16	2-3/8
GMF16969	R3/32	3/16	1/4	5/32	5/8	2-3/8
GMF16970	R3/32	3/16	1/4	5/32	11/16	2-3/8
GMF16971	R3/32	3/16	1/4	5/32	3/4	2-3/8
GMF16972	R3/32	3/16	1/4	5/32	1	2-3/4
GMF16973	R3/32	3/16	1/4	5/32	1-3/16	2-3/4
GMF16974	R3/32	3/16	1/4	5/32	1-3/8	2-3/4
GMF16975	R3/32	3/16	1/4	5/32	1-1/2	3-1/8
GMF16013	R.102	13/64	1/4	1/4	1-3/16	2-3/4
GMF16016	R1/8	1/4	1/4	5/16	3/4	2-3/8
GMF16976	R1/8	1/4	1/4	5/16	1-3/16	2-3/8
GMF16020	R5/32	5/16	5/16	3/8	1	2-3/4
GMF16977	R5/32	5/16	5/16	9/16	1-3/8	4
GMF16024	R3/16	3/8	3/8	1/2	1-3/16	3
GMF16978	R3/16	3/8	3/8	11/16	1-3/16	4
GMF16979	R3/16	3/8	3/8	11/16	1-1/2	4
GMF16032	R1/4	1/2	1/2	9/16	1-1/4	3-1/8
GMF16980	R1/4	1/2	1/2	7/8	1-1/4	4-1/4

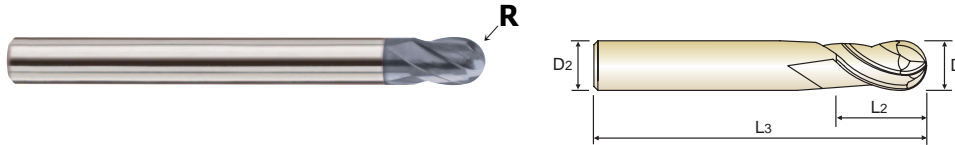
Size	Radius Tolerance (Inch)	Mill Dia. Tolerance (Inch)	Shank Dia. Tolerance
up to Ø1/4	±.0002	0~- .0005	h6
over Ø1/4	±.0004	0~- .0006	

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70							
○	◎	◎	◎	○				○				

CARBIDE, 4 FLUTE BALL NOSE

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Unique ball nose geometry with superior cutting edges result in decreased cutting forces.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Cutting edge strength is increased and part finish is improved due to new End Geometry



GMF17 SERIES



P.40

R ≤ 1/8 R > 1/8

Unit : inch

EDP No.	Radius of Ball Nose	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	R	D1	D2	L1	L2
GMF17008	R1/16	1/8	1/4	1/8	2-3/8
GMF17012	R3/32	3/16	1/4	5/32	2-3/4
GMF17016	R1/8	1/4	1/4	1/4	3-1/2
GMF17020	R5/32	5/16	5/16	5/16	4
GMF17024	R3/16	3/8	3/8	3/8	4
GMF17032	R1/4	1/2	1/2	1/2	4-1/4

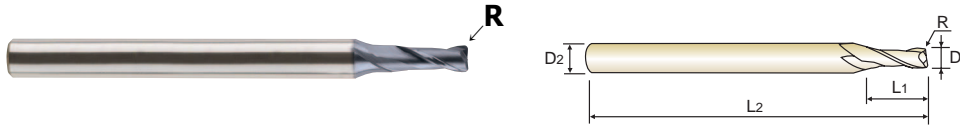
Size	Radius Tolerance (Inch)	Mill Dia. Tolerance (Inch)	Shank Dia. Tolerance
up to Ø1/4	±.0002	0~- .0008	h6
over Ø1/4	±.0004		

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
○	◎	◎	◎	○				○				

CARBIDE, 2 FLUTE CORNER RADIUS

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Available in various length shanks and corner radiuses.



GMF18 SERIES



P.40

D ≤ 1/4 D > 1/4

Unit : inch

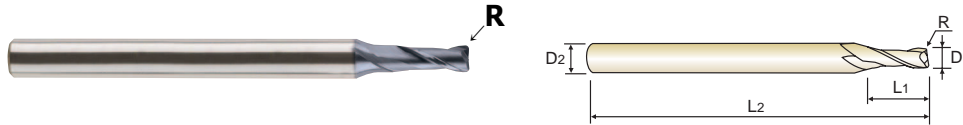
EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	R	D1	D2	L1	L2
GMF18003	R.008	3/64	1/4	3/32	2
GMF18901	R.012	3/64	1/4	3/32	2
GMF18004	R.008	1/16	1/4	5/32	2
GMF18902	R.012	1/16	1/4	5/32	2
GMF18903	R.020	1/16	1/4	5/32	2
GMF18005	R.008	5/64	1/4	1/4	2
GMF18904	R.012	5/64	1/4	1/4	2
GMF18905	R.020	5/64	1/4	1/4	2
GMF18008	R.008	1/8	1/4	5/16	2-3/8
GMF18906	R.012	1/8	1/4	5/16	2-3/8
GMF18907	R.020	1/8	1/4	5/16	2-3/8
GMF18009	R.008	9/64	1/4	3/8	2-3/4
GMF18908	R.012	9/64	1/4	3/8	2-3/4
GMF18909	R.020	9/64	1/4	3/8	2-3/4
GMF18910	R.040	9/64	1/4	3/8	2-3/4
GMF18013	R.008	13/64	1/4	1/2	3-1/2
GMF18911	R.012	13/64	1/4	1/2	3-1/2
GMF18912	R.020	13/64	1/4	1/2	3-1/2
GMF18913	R.040	13/64	1/4	1/2	3-1/2
GMF18016	R.008	1/4	1/4	5/8	2-3/8
GMF18914	R.012	1/4	1/4	5/8	2-3/8
GMF18915	R.020	1/4	1/4	5/8	2-3/8
GMF18916	R.040	1/4	1/4	5/8	2-3/8
GMF18917	R.008	1/4	1/4	5/8	3-1/2
GMF18918	R.012	1/4	1/4	5/8	3-1/2
GMF18919	R.020	1/4	1/4	5/8	3-1/2
GMF18920	R.040	1/4	1/4	5/8	3-1/2
GMF18020	R.020	5/16	5/16	3/4	2-3/4
GMF18921	R.040	5/16	5/16	3/4	2-3/4

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○				

CARBIDE, 2 FLUTE CORNER RADIUS

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Available in various length shanks and corner radiuses.



GMF18 SERIES



P.40

D ≤ 1/4 D > 1/4

Unit : inch

EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	R	D1	D2	L1	L2
GMF18922	R.020	5/16	5/16	3/4	4
GMF18923	R.040	5/16	5/16	3/4	4
GMF18924	R.060	5/16	5/16	3/4	4
GMF18925	R.080	5/16	5/16	3/4	4
GMF18024	R.020	3/8	3/8	1	3
GMF18926	R.040	3/8	3/8	1	3
GMF18927	R.020	3/8	3/8	1	4
GMF18928	R.040	3/8	3/8	1	4
GMF18929	R.060	3/8	3/8	1	4
GMF18930	R.080	3/8	3/8	1	4
GMF18032	R.020	1/2	1/2	1-3/16	3-1/8
GMF18931	R.040	1/2	1/2	1-3/16	3-1/8
GMF18932	R.020	1/2	1/2	1-3/16	4-1/4
GMF18933	R.040	1/2	1/2	1-3/16	4-1/4
GMF18934	R.060	1/2	1/2	1-3/16	4-1/4
GMF18935	R.080	1/2	1/2	1-3/16	4-1/4
GMF18936	R.100	1/2	1/2	1-3/16	4-1/4
GMF18937	R.118	1/2	1/2	1-3/16	4-1/4
GMF18036	R.040	9/16	5/8	1-3/8	6
GMF18040	R.040	5/8	5/8	1-1/4	6
GMF18938	R.080	5/8	5/8	1-1/4	6
GMF18048	R.040	3/4	3/4	1-1/2	6
GMF18939	R.080	3/4	3/4	1-1/2	6

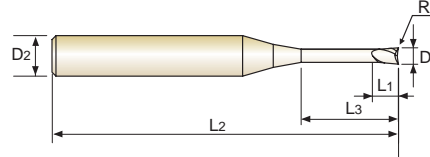
Size	Radius Tolerance (Inch)	Mill Dia. Tolerance (Inch)	Shank Dia. Tolerance
up to Ø1/4	±.0004	0~- .0005	h6
over Ø1/4	±.0006	0~- .0006	

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○				

CARBIDE, 2 FLUTE LONG NECK CORNER RADIUS

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRc55
- ▶ Available in many more various length shanks and corner radiuses.



GMF19 SERIES



P.41

D ≤ 1/4 D > 1/4

Unit : inch

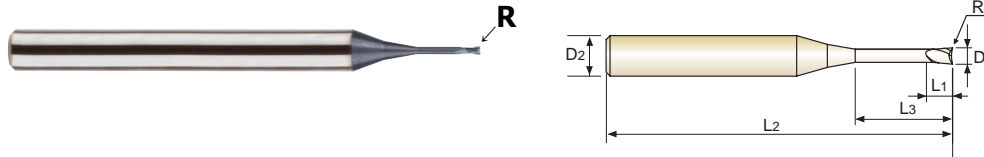
EDP No.	Corner Radius R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2
GMF19901	R.001	.008	3/16	.010	3/64	1-1/2
GMF19902	R.002	.008	3/16	.010	3/64	1-1/2
GMF19903	R.001	.012	3/16	1/64	3/64	1-1/2
GMF19904	R.001	.012	3/16	1/64	5/64	1-1/2
GMF19905	R.002	.012	3/16	1/64	3/64	1-1/2
GMF19906	R.002	.012	3/16	1/64	5/64	1-1/2
GMF19907	R.002	.015	3/16	1/32	3/64	1-1/2
GMF19908	R.002	.015	3/16	1/32	1/16	1-1/2
GMF19909	R.002	.015	3/16	1/32	5/64	1-1/2
GMF19910	R.002	.015	3/16	1/32	3/32	1-1/2
GMF19911	R.004	.015	3/16	1/32	3/64	1-1/2
GMF19912	R.004	.015	3/16	1/32	5/64	1-1/2
GMF19913	R.002	.020	3/16	1/32	3/64	1-3/4
GMF19914	R.002	.020	3/16	1/32	1/16	1-3/4
GMF19915	R.002	.020	3/16	1/32	5/64	1-3/4
GMF19916	R.002	.020	3/16	1/32	5/32	1-3/4
GMF19917	R.004	.020	3/16	1/32	5/64	1-3/4
GMF19918	R.004	.020	3/16	1/32	1/8	1-3/4
GMF19919	R.002	.024	3/16	1/32	1/8	1-3/4
GMF19920	R.002	.024	3/16	1/32	1/4	1-3/4
GMF19921	R.004	.024	3/16	1/32	5/64	1-3/4
GMF19922	R.004	.024	3/16	1/32	5/32	1-3/4
GMF19923	R.004	.024	3/16	1/32	1/4	1-3/4
GMF19924	R.008	.024	3/16	1/32	5/64	1-3/4
GMF19925	R.008	.024	3/16	1/32	5/32	1-3/4
GMF19926	R.008	.024	3/16	1/32	1/4	1-3/4
GMF19927	R.002	.031	3/16	3/64	5/64	1-3/4
GMF19928	R.002	.031	3/16	3/64	5/32	1-3/4
GMF19929	R.002	.031	3/16	3/64	1/4	1-3/4
GMF19930	R.004	.031	3/16	3/64	5/64	1-3/4
GMF19931	R.004	.031	3/16	3/64	5/32	1-3/4
GMF19932	R.004	.031	3/16	3/64	1/4	1-3/4

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○				

CARBIDE, 2 FLUTE LONG NECK CORNER RADIUS

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRc55
- ▶ Available in many more various length shanks and corner radiuses.



GMF19 SERIES



P.41

D ≤ 1/4 D > 1/4

Unit : inch

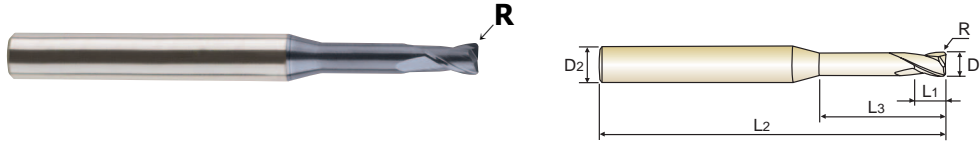
EDP No.	Corner Radius R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2
GMF19933	R.004	.031	3/16	3/64	5/16	1-3/4
GMF19934	R.008	.031	3/16	3/64	5/32	1-3/4
GMF19935	R.008	.031	3/16	3/64	1/4	1-3/4
GMF19936	R.008	.031	3/16	3/64	5/16	1-3/4
GMF19003	R.002	3/64	3/16	1/16	1/8	2
GMF19937	R.002	3/64	3/16	1/16	5/32	2
GMF19938	R.002	3/64	3/16	1/16	1/4	2
GMF19939	R.004	3/64	3/16	1/16	1/8	2
GMF19940	R.004	3/64	3/16	1/16	5/32	2
GMF19941	R.004	3/64	3/16	1/16	1/4	2
GMF19942	R.004	3/64	3/16	1/16	5/16	2
GMF19943	R.004	3/64	3/16	1/16	3/8	2
GMF19944	R.008	3/64	3/16	1/16	1/8	2
GMF19945	R.008	3/64	3/16	1/16	5/32	2
GMF19946	R.008	3/64	3/16	1/16	1/4	2
GMF19947	R.008	3/64	3/16	1/16	5/16	2
GMF19948	R.008	3/64	3/16	1/16	3/8	2
GMF19949	R.012	3/64	3/16	1/16	5/32	2
GMF19950	R.012	3/64	3/16	1/16	1/4	2
GMF19951	R.012	3/64	3/16	1/16	5/16	2
GMF19952	R.012	3/64	3/16	1/16	3/8	2
GMF19004	R.002	1/16	3/16	3/32	5/32	2
GMF19953	R.002	1/16	3/16	3/32	1/4	2
GMF19954	R.002	1/16	3/16	3/32	5/16	2
GMF19955	R.004	1/16	3/16	3/32	5/32	2
GMF19956	R.004	1/16	3/16	3/32	1/4	2
GMF19957	R.004	1/16	3/16	3/32	5/16	2
GMF19958	R.008	1/16	3/16	3/32	5/32	2
GMF19959	R.008	1/16	3/16	3/32	1/4	2
GMF19960	R.008	1/16	3/16	3/32	5/16	2
GMF19961	R.008	1/16	3/16	3/32	3/8	2
GMF19962	R.008	1/16	3/16	3/32	1/2	2

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○				

CARBIDE, 2 FLUTE LONG NECK CORNER RADIUS

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRc55
- ▶ Available in many more various length shanks and corner radiuses.



GMF19 SERIES



P.41

D ≤ 1/4 D > 1/4

Unit : inch

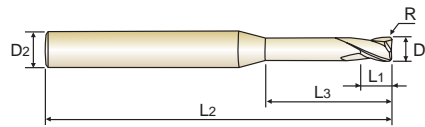
EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length
	R	D1	D2	L1	L3	L2
GMF19963	R.012	1/16	3/16	3/32	5/32	2
GMF19964	R.012	1/16	3/16	3/32	1/4	2
GMF19965	R.012	1/16	3/16	3/32	5/16	2
GMF19966	R.012	1/16	3/16	3/32	3/8	2
GMF19967	R.012	1/16	3/16	3/32	1/2	2
GMF19005	R.004	5/64	3/16	1/8	1/4	2
GMF19968	R.004	5/64	3/16	1/8	5/16	2
GMF19969	R.004	5/64	3/16	1/8	3/8	2
GMF19970	R.004	5/64	3/16	1/8	1/2	2
GMF19971	R.008	5/64	3/16	1/8	1/4	2
GMF19972	R.008	5/64	3/16	1/8	5/16	2
GMF19973	R.008	5/64	3/16	1/8	3/8	2
GMF19974	R.008	5/64	3/16	1/8	1/2	2
GMF19975	R.008	5/64	3/16	1/8	5/8	2
GMF19976	R.012	5/64	3/16	1/8	1/4	2
GMF19977	R.012	5/64	3/16	1/8	5/16	2
GMF19978	R.012	5/64	3/16	1/8	3/8	2
GMF19979	R.012	5/64	3/16	1/8	1/2	2
GMF19980	R.012	5/64	3/16	1/8	5/8	2
GMF19981	R.020	5/64	3/16	1/8	1/4	2
GMF19982	R.020	5/64	3/16	1/8	5/16	2
GMF19983	R.020	5/64	3/16	1/8	3/8	2
GMF19984	R.020	5/64	3/16	1/8	1/2	2
GMF19985	R.020	5/64	3/16	1/8	9/16	2
GMF19008	R.004	1/8	1/4	3/16	3/8	2
GMF19986	R.004	1/8	1/4	3/16	1/2	2
GMF19987	R.004	1/8	1/4	3/16	5/8	2-3/8
GMF19988	R.008	1/8	1/4	3/16	5/16	2
GMF19989	R.008	1/8	1/4	3/16	3/8	2
GMF19990	R.008	1/8	1/4	3/16	1/2	2
GMF19991	R.008	1/8	1/4	3/16	5/8	2-3/8
GMF19992	R.008	1/8	1/4	3/16	3/4	2-3/8

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○				

CARBIDE, 2 FLUTE LONG NECK CORNER RADIUS

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRc55
- ▶ Available in many more various length shanks and corner radiuses.



GMF19 SERIES



P.41

D ≤ 1/4 D > 1/4

Unit : inch

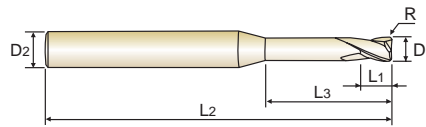
EDP No.	Corner Radius R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2
GMF19993	R.008	1/8	1/4	3/16	1	2-3/4
GMF19994	R.012	1/8	1/4	3/16	5/16	2
GMF19995	R.012	1/8	1/4	3/16	3/8	2
GMF19996	R.012	1/8	1/4	3/16	1/2	2
GMF19997	R.012	1/8	1/4	3/16	5/8	2-3/8
GMF19998	R.012	1/8	1/4	3/16	3/4	2-3/8
GMF19999	R.020	1/8	1/4	3/16	5/16	2
GMF19801	R.020	1/8	1/4	3/16	3/8	2
GMF19802	R.020	1/8	1/4	3/16	1/2	2
GMF19803	R.020	1/8	1/4	3/16	5/8	2-3/8
GMF19804	R.020	1/8	1/4	3/16	3/4	2-3/8
GMF19805	R.020	1/8	1/4	3/16	1	2-3/4
GMF19806	R.040	1/8	1/4	3/16	5/16	2
GMF19807	R.040	1/8	1/4	3/16	3/8	2
GMF19808	R.040	1/8	1/4	3/16	1/2	2
GMF19809	R.040	1/8	1/4	3/16	5/8	2-3/8
GMF19810	R.040	1/8	1/4	3/16	3/4	2-3/8
GMF19012	R.004	3/16	1/4	1/4	3/8	2
GMF19811	R.004	3/16	1/4	1/4	1/2	2
GMF19812	R.004	3/16	1/4	1/4	5/8	2-3/8
GMF19813	R.008	3/16	1/4	1/4	3/8	2
GMF19814	R.008	3/16	1/4	1/4	1/2	2
GMF19815	R.008	3/16	1/4	1/4	5/8	2-3/8
GMF19816	R.008	3/16	1/4	1/4	3/4	2-3/8
GMF19817	R.008	3/16	1/4	1/4	1	2-3/4
GMF19818	R.012	3/16	1/4	1/4	1/2	2
GMF19819	R.012	3/16	1/4	1/4	5/8	2-3/8
GMF19820	R.012	3/16	1/4	1/4	3/4	2-3/8
GMF19821	R.012	3/16	1/4	1/4	1	2-3/4
GMF19822	R.020	3/16	1/4	1/4	3/8	2
GMF19823	R.020	3/16	1/4	1/4	1/2	2
GMF19824	R.020	3/16	1/4	1/4	5/8	2-3/8

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○				

CARBIDE, 2 FLUTE LONG NECK CORNER RADIUS

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRc55
- ▶ Available in many more various length shanks and corner radiuses.



GMF19 SERIES



P.41

D ≤ 1/4 D > 1/4

Unit : inch

EDP No.	Corner Radius R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2
GMF19825	R.020	3/16	1/4	1/4	3/4	2-3/8
GMF19826	R.020	3/16	1/4	1/4	1	2-3/4
GMF19827	R.020	3/16	1/4	1/4	1-3/16	2-3/4
GMF19828	R.040	3/16	1/4	1/4	3/8	2
GMF19829	R.040	3/16	1/4	1/4	1/2	2
GMF19830	R.040	3/16	1/4	1/4	5/8	2-3/8
GMF19831	R.040	3/16	1/4	1/4	3/4	2-3/8
GMF19016	R.008	1/4	1/4	3/8	3/4	2-3/8
GMF19832	R.012	1/4	1/4	3/8	3/4	2-3/8
GMF19833	R.020	1/4	1/4	3/8	3/4	2-3/8
GMF19834	R.040	1/4	1/4	3/8	3/4	2-3/8
GMF19835	R.020	1/4	1/4	5/8	1-3/16	3-1/2
GMF19020	R.008	5/16	5/16	1/2	1	2-3/4
GMF19836	R.012	5/16	5/16	1/2	1	2-3/4
GMF19837	R.020	5/16	5/16	1/2	1	2-3/4
GMF19838	R.040	5/16	5/16	1/2	1	2-3/4
GMF19024	R.012	3/8	3/8	5/8	1-3/16	3
GMF19839	R.020	3/8	3/8	5/8	1-3/16	3
GMF19840	R.040	3/8	3/8	5/8	1-3/16	3
GMF19032	R.020	1/2	1/2	11/16	1-1/4	3-1/8
GMF19841	R.040	1/2	1/2	11/16	1-1/4	3-1/8
GMF19842	R.060	1/2	1/2	11/16	1-1/4	3-1/8
GMF19040	R.020	5/8	5/8	3/4	1-3/8	4
GMF19843	R.040	5/8	5/8	3/4	1-3/8	4
GMF19048	R.020	3/4	3/4	1	1-1/2	4
GMF19844	R.040	3/4	3/4	1	1-1/2	4

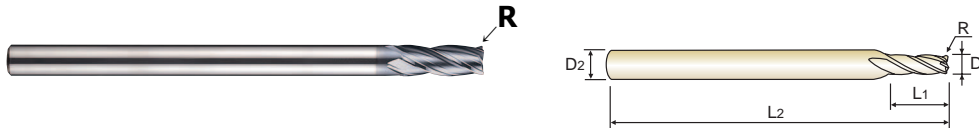
Size	Radius Tolerance (Inch)	Mill Dia. Tolerance (Inch)	Shank Dia. Tolerance
up to Ø1/4	±.0004	0~- .0005	h6
over Ø1/4	±.0006	0~- .0006	

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○				

CARBIDE, 4 FLUTE CORNER RADIUS

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Available in many more various length shanks and corner radiuses.
- ▶ Due to Multiple Helix on 1/8" and over diameter end mills, vibration is minimized and tool life increased.



GMF20 SERIES



P.42

Unit : inch

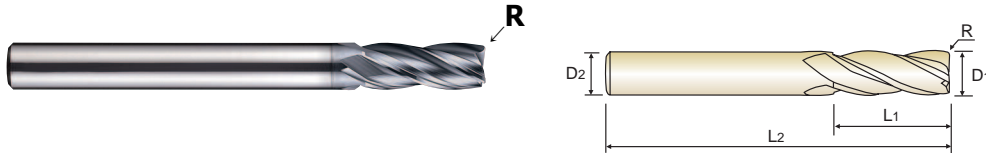
EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	R	D1	D2	L1	L2
GMF20003	R.004	3/64	1/4	3/32	2
GMF20005	R.004	5/64	1/4	1/4	2
GMF20901	R.008	5/64	1/4	1/4	2
GMF20008	R.008	1/8	1/4	5/16	2-3/8
GMF20902	R.012	1/8	1/4	5/16	2-3/8
GMF20903	R.020	1/8	1/4	5/16	2-3/8
GMF20012	R.008	3/16	1/4	3/8	2-3/4
GMF20904	R.012	3/16	1/4	3/8	2-3/4
GMF20905	R.020	3/16	1/4	3/8	2-3/4
GMF20906	R.040	3/16	1/4	3/8	2-3/4
GMF20013	R.012	13/64	1/4	1/2	3-1/2
GMF20907	R.020	13/64	1/4	1/2	3-1/2
GMF20016	R.008	1/4	1/4	5/8	3-1/2
GMF20908	R.012	1/4	1/4	5/8	3-1/2
GMF20909	R.020	1/4	1/4	5/8	3-1/2
GMF20910	R.040	1/4	1/4	5/8	3-1/2
GMF20020	R.012	5/16	5/16	3/4	2-3/4
GMF20911	R.020	5/16	5/16	3/4	2-3/4
GMF20912	R.040	5/16	5/16	3/4	2-3/4
GMF20913	R.008	5/16	5/16	3/4	4
GMF20914	R.012	5/16	5/16	3/4	4
GMF20915	R.020	5/16	5/16	3/4	4
GMF20916	R.040	5/16	5/16	3/4	4
GMF20917	R.060	5/16	5/16	3/4	4
GMF20918	R.080	5/16	5/16	3/4	4

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○				

CARBIDE, 4 FLUTE CORNER RADIUS

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Available in many more various length shanks and corner radiuses.
- ▶ Due to Multiple Helix on 1/8" and over diameter end mills, vibration is minimized and tool life increased.



GMF20 SERIES



P.42

Unit : inch

EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	R	D1	D2	L1	L2
GMF20024	R.020	3/8	3/8	1	3
GMF20919	R.012	3/8	3/8	1	4
GMF20920	R.020	3/8	3/8	1	4
GMF20921	R.040	3/8	3/8	1	4
GMF20922	R.060	3/8	3/8	1	4
GMF20923	R.080	3/8	3/8	1	4
GMF20032	R.020	1/2	1/2	1-3/16	3-1/8
GMF20924	R.040	1/2	1/2	1-3/16	3-1/8
GMF20925	R.020	1/2	1/2	1-3/16	4-1/4
GMF20926	R.040	1/2	1/2	1-3/16	4-1/4
GMF20927	R.060	1/2	1/2	1-3/16	4-1/4
GMF20928	R.080	1/2	1/2	1-3/16	4-1/4
GMF20040	R.020	5/8	5/8	1-1/4	6
GMF20929	R.040	5/8	5/8	1-1/4	6
GMF20930	R.060	5/8	5/8	1-1/4	6
GMF20931	R.080	5/8	5/8	1-1/4	6
GMF20048	R.040	3/4	3/4	1-1/2	6
GMF20932	R.080	3/4	3/4	1-1/2	6

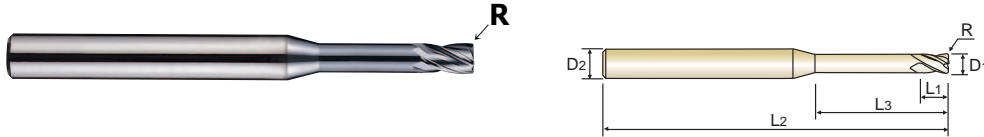
Mill Dia. Tolerance (Inch)	Corner Radius Tolerance (Inch)	Shank Dia. Tolerance
0~- .0012	± .0008	h6

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○				

CARBIDE, 4 FLUTE LONG NECK CORNER RADIUS

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Due to Multiple Helix on 1/8" and over diameter end mills, vibration is minimized and tool life increased.



GMF21 SERIES



P.43

Unit : inch

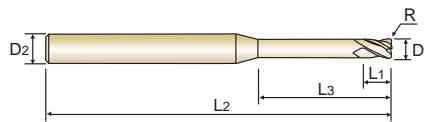
EDP No.	Corner Radius R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2
GMF21003	R.004	3/64	3/16	1/16	5/32	2
GMF21901	R.004	3/64	3/16	1/16	1/4	2
GMF21902	R.004	3/64	3/16	1/16	5/16	2
GMF21903	R.008	3/64	3/16	1/16	5/32	2
GMF21904	R.008	3/64	3/16	1/16	1/4	2
GMF21905	R.008	3/64	3/16	1/16	5/16	2
GMF21906	R.012	3/64	3/16	1/16	5/32	2
GMF21907	R.012	3/64	3/16	1/16	1/4	2
GMF21908	R.012	3/64	3/16	1/16	5/16	2
GMF21004	R.004	1/16	3/16	3/32	1/4	2
GMF21909	R.004	1/16	3/16	3/32	5/16	2
GMF21910	R.004	1/16	3/16	3/32	3/8	2
GMF21911	R.004	1/16	3/16	3/32	1/2	2
GMF21912	R.008	1/16	3/16	3/32	1/4	2
GMF21913	R.008	1/16	3/16	3/32	5/16	2
GMF21914	R.008	1/16	3/16	3/32	3/8	2
GMF21915	R.008	1/16	3/16	3/32	1/2	2
GMF21916	R.012	1/16	3/16	3/32	1/4	2
GMF21917	R.012	1/16	3/16	3/32	5/16	2
GMF21918	R.012	1/16	3/16	3/32	3/8	2
GMF21919	R.012	1/16	3/16	3/32	1/2	2
GMF21920	R.020	1/16	3/16	3/32	1/4	2
GMF21921	R.020	1/16	3/16	3/32	5/16	2
GMF21922	R.020	1/16	3/16	3/32	3/8	2
GMF21923	R.020	1/16	3/16	3/32	1/2	2
GMF21005	R.004	5/64	3/16	1/8	1/4	2
GMF21924	R.004	5/64	3/16	1/8	5/16	2
GMF21925	R.004	5/64	3/16	1/8	3/8	2
GMF21926	R.004	5/64	3/16	1/8	1/2	2

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70							
◎	◎	◎	◎	○				○				

CARBIDE, 4 FLUTE LONG NECK CORNER RADIUS

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Due to Multiple Helix on 1/8" and over diameter end mills, vibration is minimized and tool life increased.



GMF21 SERIES



P.43

Unit : inch

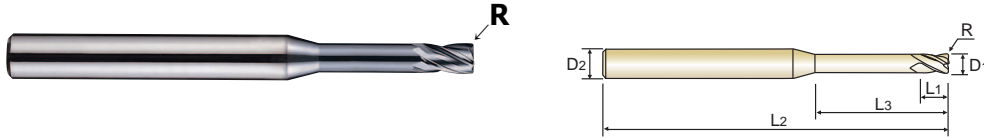
EDP No.	Corner Radius	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length
	R	D1	D2	L1	L3	L2
GMF21927	R.008	5/64	3/16	1/8	1/4	2
GMF21928	R.008	5/64	3/16	1/8	5/16	2
GMF21929	R.008	5/64	3/16	1/8	3/8	2
GMF21930	R.008	5/64	3/16	1/8	1/2	2
GMF21931	R.012	5/64	3/16	1/8	1/4	2
GMF21932	R.012	5/64	3/16	1/8	5/16	2
GMF21933	R.012	5/64	3/16	1/8	3/8	2
GMF21934	R.012	5/64	3/16	1/8	1/2	2
GMF21935	R.020	5/64	3/16	1/8	1/4	2
GMF21936	R.020	5/64	3/16	1/8	5/16	2
GMF21937	R.020	5/64	3/16	1/8	3/8	2
GMF21938	R.020	5/64	3/16	1/8	1/2	2
GMF21008	R.004	1/8	1/4	3/16	5/16	2
GMF21939	R.004	1/8	1/4	3/16	3/8	2
GMF21940	R.004	1/8	1/4	3/16	1/2	2
GMF21941	R.004	1/8	1/4	3/16	5/8	2-3/8
GMF21942	R.008	1/8	1/4	3/16	3/8	2
GMF21943	R.008	1/8	1/4	3/16	1/2	2
GMF21944	R.008	1/8	1/4	3/16	5/8	2-3/8
GMF21945	R.008	1/8	1/4	3/16	3/4	2-3/8
GMF21946	R.012	1/8	1/4	3/16	5/16	2
GMF21947	R.012	1/8	1/4	3/16	3/8	2
GMF21948	R.012	1/8	1/4	3/16	1/2	2
GMF21949	R.012	1/8	1/4	3/16	5/8	2-3/8
GMF21950	R.012	1/8	1/4	3/16	3/4	2-3/8
GMF21951	R.020	1/8	1/4	3/16	5/16	2
GMF21952	R.020	1/8	1/4	3/16	3/8	2
GMF21953	R.020	1/8	1/4	3/16	1/2	2
GMF21954	R.020	1/8	1/4	3/16	5/8	2-3/8

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70							
◎	◎	◎	◎	○				○				

CARBIDE, 4 FLUTE LONG NECK CORNER RADIUS

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Due to Multiple Helix on 1/8" and over diameter end mills, vibration is minimized and tool life increased.



GMF21 SERIES



P.43

Unit : inch

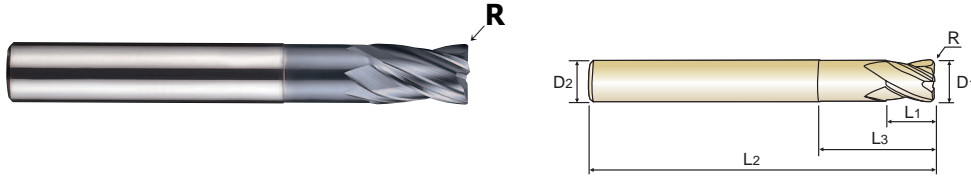
EDP No.	Corner Radius R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2
GMF21955	R.020	1/8	1/4	3/16	3/4	2-3/8
GMF21956	R.020	1/8	1/4	3/16	1	2-3/4
GMF21957	R.040	1/8	1/4	3/16	5/16	2
GMF21958	R.040	1/8	1/4	3/16	3/8	2
GMF21959	R.040	1/8	1/4	3/16	1/2	2
GMF21960	R.040	1/8	1/4	3/16	5/8	2-3/8
GMF21012	R.004	3/16	1/4	1/4	3/8	2
GMF21961	R.004	3/16	1/4	1/4	1/2	2
GMF21962	R.004	3/16	1/4	1/4	5/8	2-3/8
GMF21963	R.004	3/16	1/4	1/4	3/4	2-3/8
GMF21964	R.008	3/16	1/4	1/4	3/8	2
GMF21965	R.008	3/16	1/4	1/4	1/2	2
GMF21966	R.008	3/16	1/4	1/4	5/8	2-3/8
GMF21967	R.008	3/16	1/4	1/4	3/4	2-3/8
GMF21968	R.008	3/16	1/4	1/4	1	2-3/4
GMF21969	R.012	3/16	1/4	1/4	3/8	2
GMF21970	R.012	3/16	1/4	1/4	1/2	2
GMF21971	R.012	3/16	1/4	1/4	5/8	2-3/8
GMF21972	R.012	3/16	1/4	1/4	3/4	2-3/8
GMF21973	R.012	3/16	1/4	1/4	1	2-3/4
GMF21974	R.020	3/16	1/4	1/4	3/8	2
GMF21975	R.020	3/16	1/4	1/4	1/2	2
GMF21976	R.020	3/16	1/4	1/4	5/8	2-3/8
GMF21977	R.020	3/16	1/4	1/4	3/4	2-3/8
GMF21978	R.020	3/16	1/4	1/4	1	2-3/4
GMF21979	R.040	3/16	1/4	1/4	3/8	2
GMF21980	R.040	3/16	1/4	1/4	1/2	2
GMF21981	R.040	3/16	1/4	1/4	5/8	2-3/8
GMF21982	R.040	3/16	1/4	1/4	3/4	2-3/8

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○				

CARBIDE, 4 FLUTE LONG NECK CORNER RADIUS

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Due to Multiple Helix on 1/8" and over diameter end mills, vibration is minimized and tool life increased.



GMF21 SERIES



P.43

Unit : inch

EDP No.	Corner Radius R	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2
GMF21983	R.040	3/16	1/4	1/4	1	2-3/4
GMF21016	R.012	1/4	1/4	3/8	3/4	2-3/8
GMF21984	R.020	1/4	1/4	3/8	3/4	2-3/8
GMF21985	R.040	1/4	1/4	3/8	3/4	2-3/8
GMF21020	R.008	5/16	5/16	1/2	1	2-3/4
GMF21986	R.012	5/16	5/16	1/2	1	2-3/4
GMF21987	R.020	5/16	5/16	1/2	1	2-3/4
GMF21988	R.040	5/16	5/16	1/2	1	2-3/4
GMF21989	R.020	5/16	5/16	3/4	1-3/8	4
GMF21024	R.020	3/8	3/8	5/8	1-3/16	3
GMF21990	R.040	3/8	3/8	5/8	1-3/16	3
GMF21991	R.060	3/8	3/8	5/8	1-3/16	3
GMF21992	R.020	3/8	3/8	1	1-1/2	4
GMF21032	R.020	1/2	1/2	11/16	1-1/4	3-1/8
GMF21993	R.040	1/2	1/2	11/16	1-1/4	3-1/8
GMF21994	R.060	1/2	1/2	11/16	1-1/4	3-1/8
GMF21995	R.080	1/2	1/2	11/16	1-1/4	3-1/8
GMF21996	R.020	1/2	1/2	1-3/16	1-3/4	4-1/4
GMF21040	R.020	5/8	5/8	3/4	1-3/8	4
GMF21997	R.040	5/8	5/8	3/4	1-3/8	4
GMF21048	R.020	3/4	3/4	1	1-1/2	4
GMF21998	R.040	3/4	3/4	1	1-1/2	4

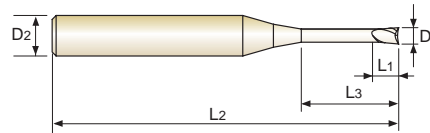
Mill Dia. Tolerance (Inch)	Corner Radius Tolerance (Inch)	Shank Dia. Tolerance
0~- .0012	± .0008	h6

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○				

CARBIDE, 2FLUTE WITH NECK

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Due to Multiple Helix on 1/8" and over diameter end mills, vibration is minimized and tool life increased.
- ▶ For 1/32" and under 1/32" diameter sizes, double neck increases tool rigidity and minimizes vibration.
- ▶ Excellent for Rib Processing of various depths



GMF22 SERIES



P.44~45

Unit : inch

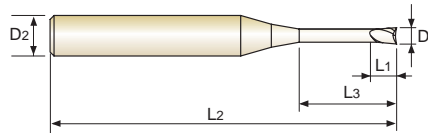
EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length
	D1	D2	L1	L3	L2
GMF22901	.008	3/16	.010	3/64	1-1/2
GMF22902	.015	3/16	1/32	3/64	1-1/2
GMF22903	.015	3/16	1/32	5/64	1-1/2
GMF22904	.015	3/16	1/32	1/8	1-1/2
GMF22905	.015	3/16	1/32	5/32	1-1/2
GMF22906	.015	3/16	1/32	3/16	1-1/2
GMF22907	.020	3/16	1/32	5/64	1-3/4
GMF22908	.020	3/16	1/32	1/8	1-3/4
GMF22909	.020	3/16	1/32	5/32	1-3/4
GMF22910	.020	3/16	1/32	3/16	1-3/4
GMF22911	.020	3/16	1/32	1/4	1-3/4
GMF22912	.024	3/16	1/32	5/64	1-3/4
GMF22913	.024	3/16	1/32	1/8	1-3/4
GMF22914	.024	3/16	1/32	5/32	1-3/4
GMF22915	.024	3/16	1/32	3/16	1-3/4
GMF22916	.024	3/16	1/32	1/4	1-3/4
GMF22917	.024	3/16	1/32	5/16	1-3/4
GMF22918	.024	3/16	1/32	3/8	1-3/4
GMF22002	1/32	3/16	3/64	5/64	1-3/4
GMF22919	1/32	3/16	3/64	1/8	1-3/4
GMF22920	1/32	3/16	3/64	5/32	1-3/4
GMF22921	1/32	3/16	3/64	3/16	1-3/4
GMF22922	1/32	3/16	3/64	1/4	1-3/4
GMF22923	1/32	3/16	3/64	5/16	1-3/4
GMF22924	1/32	3/16	3/64	3/8	1-3/4
GMF22003	3/64	3/16	1/16	1/8	2
GMF22925	3/64	3/16	1/16	5/32	2
GMF22926	3/64	3/16	1/16	3/16	2
GMF22927	3/64	3/16	1/16	1/4	2

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○		○		

CARBIDE, 2FLUTE WITH NECK

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Due to Multiple Helix on 1/8" and over diameter end mills, vibration is minimized and tool life increased.
- ▶ For 1/32" and under 1/32" diameter sizes, double neck increases tool rigidity and minimizes vibration.
- ▶ Excellent for Rib Processing of various depths



GMF22 SERIES



P.44-45

Unit : inch

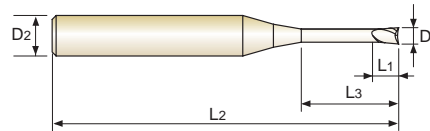
EDP No.	Mill Diameter D1	Shank Diameter D2	Length of Cut L1	Length Below Shank L3	Overall Length L2
GMF22928	3/64	3/16	1/16	5/16	2
GMF22929	3/64	3/16	1/16	3/8	2
GMF22930	3/64	3/16	1/16	1/2	2
GMF22931	3/64	3/16	1/16	9/16	2
GMF22932	3/64	3/16	1/16	5/8	2
GMF22933	3/64	3/16	1/16	3/4	2
GMF22004	1/16	3/16	3/32	5/32	2
GMF22934	1/16	3/16	3/32	1/4	2
GMF22935	1/16	3/16	3/32	5/16	2
GMF22936	1/16	3/16	3/32	3/8	2
GMF22937	1/16	3/16	3/32	1/2	2
GMF22938	1/16	3/16	3/32	9/16	2
GMF22939	1/16	3/16	3/32	5/8	2
GMF22940	1/16	3/16	3/32	3/4	2
GMF22005	5/64	3/16	1/8	1/4	2
GMF22941	5/64	3/16	1/8	5/16	2
GMF22942	5/64	3/16	1/8	3/8	2
GMF22943	5/64	3/16	1/8	1/2	2
GMF22944	5/64	3/16	1/8	9/16	2
GMF22945	5/64	3/16	1/8	5/8	2
GMF22946	5/64	3/16	1/8	3/4	2
GMF22006	3/32	3/16	5/32	5/16	2
GMF22947	3/32	3/16	5/32	1/2	2
GMF22948	3/32	3/16	5/32	5/8	2
GMF22949	3/32	3/16	5/32	3/4	2
GMF22008	1/8	1/4	3/16	5/16	2
GMF22950	1/8	1/4	3/16	3/8	2
GMF22951	1/8	1/4	3/16	1/2	2
GMF22952	1/8	1/4	3/16	9/16	2-3/8

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRc40~45	HRc45~55	HRC55~70							
◎	◎	◎	◎	○				○		○		

CARBIDE, 2FLUTE WITH NECK

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Due to Multiple Helix on 1/8" and over diameter end mills, vibration is minimized and tool life increased.
- ▶ For 1/32" and under 1/32" diameter sizes, double neck increases tool rigidity and minimizes vibration.
- ▶ Excellent for Rib Processing of various depths



GMF22 SERIES



P.44~45

Unit : inch

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length
	D1	D2	L1	L3	L2
GMF22953	1/8	1/4	3/16	5/8	2-3/8
GMF22954	1/8	1/4	3/16	11/16	2-3/8
GMF22955	1/8	1/4	3/16	3/4	2-3/8
GMF22956	1/8	1/4	3/16	1	2-3/4
GMF22012	3/16	1/4	1/4	3/8	2
GMF22957	3/16	1/4	1/4	1/2	2
GMF22958	3/16	1/4	1/4	5/8	2-3/8
GMF22959	3/16	1/4	1/4	11/16	2-3/8
GMF22960	3/16	1/4	1/4	3/4	2-3/8
GMF22961	3/16	1/4	1/4	1	2-3/4
GMF22962	3/16	1/4	1/4	1-3/16	2-3/4
GMF22013	13/64	1/4	5/16	3/4	2-3/8
GMF22963	13/64	1/4	5/16	1-3/16	2-3/4
GMF22964	13/64	1/4	5/16	1-3/8	3
GMF22965	13/64	1/4	5/16	1-1/2	3-1/8
GMF22966	13/64	1/4	5/16	2	3-1/2
GMF22016	1/4	1/4	3/8	5/8	2-3/8
GMF22967	1/4	1/4	3/8	3/4	2-3/8
GMF22968	1/4	1/4	3/8	1-3/16	2-3/4
GMF22020	5/16	5/16	1/2	1	2-3/4
GMF22024	3/8	3/8	5/8	1-3/16	3
GMF22969	3/8	3/8	5/8	1-3/4	4
GMF22032	1/2	1/2	3/4	1-3/8	3-1/8
GMF22970	1/2	1/2	3/4	2	4-1/4

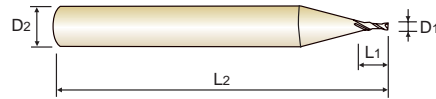
Size	Mill Dia. Tolerance (Inch)	Shank Dia. Tolerance
up to Ø1/4	0~- .0005	h6
over Ø1/4	0~- .0006	

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○		○		

CARBIDE, 2 FLUTE

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Sharp End tooth geometry allows more efficient cutting



GMF23 SERIES



P.46

Unit : inch

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
GMF23901	.004	3/16	.008	1-1/2
GMF23902	.008	3/16	1/64	1-1/2
GMF23903	.012	3/16	1/32	1-1/2
GMF23904	.015	3/16	1/32	1-1/2
GMF23905	.020	3/16	3/64	1-1/2
GMF23906	.024	3/16	3/64	1-1/2
GMF23907	.028	3/16	1/16	1-1/2
GMF23908	.031	3/16	1/16	1-1/2
GMF23909	.035	3/16	5/64	1-1/2
GMF23910	.040	1/4	3/32	2
GMF23911	.047	1/4	1/8	2
GMF23004	1/16	1/4	5/32	2
GMF23005	5/64	1/4	1/4	2
GMF23006	3/32	1/4	1/4	2
GMF23008	1/8	1/4	5/16	2
GMF23009	9/64	1/4	3/8	2
GMF23012	3/16	1/4	3/8	2
GMF23013	13/64	1/4	5/8	2-3/8
GMF23016	1/4	1/4	5/8	2-3/8
GMF23017	17/64	5/16	11/16	2-3/8
GMF23018	9/32	5/16	3/4	2-3/8
GMF23020	5/16	5/16	3/4	2-3/4
GMF23022	11/32	3/8	7/8	2-3/4
GMF23023	23/64	3/8	7/8	2-3/4
GMF23024	3/8	3/8	1	3
GMF23026	13/32	1/2	1	3
GMF23028	7/16	1/2	1-3/16	3
GMF23032	1/2	1/2	1-3/16	3-1/8
GMF23036	9/16	9/16	1-3/8	4
GMF23912	9/16	5/8	1-3/8	4
GMF23040	5/8	5/8	1-1/2	4
GMF23048	3/4	3/4	1-3/4	4

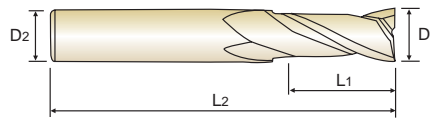
Size	Mill Dia. Tolerance (Inch)	Shank Dia. Tolerance
up to Ø 1/4	0~- .0005	h6
over Ø 1/4	0~- .0006	

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○		○		

CARBIDE, 2 FLUTE (3/16 SHANK)

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRc55
- ▶ Sharp End tooth geometry allows more efficient cutting



GMF23 SERIES



P.46

Unit : inch

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
GMF23913	.040	3/16	3/32	2
GMF23914	.047	3/16	1/8	2
GMF23915	.050	3/16	1/8	2
GMF23916	.055	3/16	5/32	2
GMF23917	.060	3/16	5/32	2
GMF23918	.063	3/16	5/32	2
GMF23919	.070	3/16	3/16	2
GMF23920	.079	3/16	1/4	2
GMF23921	.087	3/16	1/4	2
GMF23922	.094	3/16	1/4	2
GMF23923	.098	3/16	5/16	2
GMF23924	.102	3/16	5/16	2
GMF23925	.106	3/16	5/16	2
GMF23926	.110	3/16	5/16	2
GMF23927	.120	3/16	5/16	2

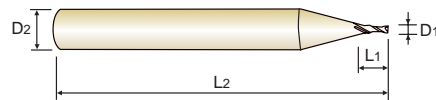
Size	Mill Dia. Tolerance (Inch)	Shank Dia. Tolerance
up to Ø1/4	0~- .0005	h6
over Ø1/4	0~- .0006	

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○		○		

CARBIDE, 2 FLUTE (1/8 Shank)

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Sharp End tooth geometry allows more efficient cutting



GMF23 SERIES



P.46

Unit : inch

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
GMF23928	.004	1/8	.008	1-1/2
GMF23929	.008	1/8	1/64	1-1/2
GMF23930	.012	1/8	1/32	1-1/2
GMF23931	.015	1/8	1/32	1-1/2
GMF23932	.020	1/8	3/64	1-1/2
GMF23933	.024	1/8	3/64	1-1/2
GMF23934	.028	1/8	1/16	1-1/2
GMF23935	.031	1/8	1/16	1-1/2
GMF23936	.035	1/8	5/64	1-1/2
GMF23937	.040	1/8	3/32	2
GMF23938	.047	1/8	1/8	2
GMF23939	.060	1/8	5/32	2
GMF23940	.079	1/8	1/4	2
GMF23941	.098	1/8	1/4	2
GMF23942	.120	1/8	5/16	2

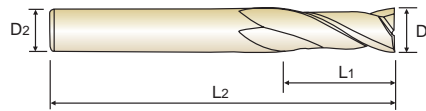
Size	Mill Dia. Tolerance (Inch)	Shank Dia. Tolerance
up to Ø1/4	0~- .0005	h6
over Ø1/4	0~- .0006	

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○		○		

CARBIDE, 2 FLUTE LONG LENGTH

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRc55
- ▶ Various length of cut and overall length end mills.



GMF24 SERIES



P.47~48

Unit : inch

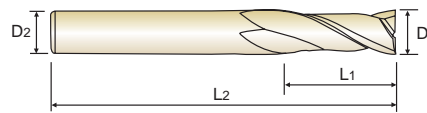
EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
GMF24003	3/64	1/4	1/8	2-3/8
GMF24901	3/64	1/4	5/32	2-3/8
GMF24902	3/64	1/4	1/4	2-3/8
GMF24903	3/64	1/4	5/16	2-3/8
GMF24904	3/64	1/4	3/8	2-3/8
GMF24004	1/16	1/4	1/4	2-3/8
GMF24905	1/16	1/4	5/16	2-3/8
GMF24906	1/16	1/4	3/8	2-3/8
GMF24907	1/16	1/4	1/2	2-3/8
GMF24908	1/16	1/4	5/8	2-3/8
GMF24005	5/64	1/4	5/16	2-3/8
GMF24909	5/64	1/4	3/8	2-3/8
GMF24910	5/64	1/4	1/2	2-3/8
GMF24911	5/64	1/4	5/8	2-3/8
GMF24006	3/32	1/4	5/8	2-3/8
GMF24008	1/8	1/4	3/8	2-3/4
GMF24912	1/8	1/4	1/2	2-3/4
GMF24913	1/8	1/4	5/8	2-3/4
GMF24914	1/8	1/4	3/4	2-3/4
GMF24915	1/8	1/4	1	2-3/4
GMF24012	3/16	1/4	1/2	2-3/4
GMF24916	3/16	1/4	5/8	2-3/4
GMF24917	3/16	1/4	3/4	2-3/4
GMF24918	3/16	1/4	1	2-3/4
GMF24919	3/16	1/4	1-3/16	2-3/4
GMF24013	13/64	1/4	3/4	2-3/4
GMF24920	13/64	1/4	1	2-3/4
GMF24921	13/64	1/4	1-3/16	3-1/8
GMF24922	13/64	1/4	1-1/2	4
GMF24016	1/4	1/4	5/8	2-3/8
GMF24923	1/4	1/4	5/8	3-1/8
GMF24924	1/4	1/4	3/4	2-3/4
GMF24925	1/4	1/4	3/4	3-1/2
GMF24926	1/4	1/4	1	3
GMF24927	1/4	1/4	1-3/16	3-1/8

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○				

CARBIDE, 2 FLUTE LONG LENGTH

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Various length of cut and overall length end mills.



GMF24 SERIES



P.47~48

Unit : inch

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
GMF24928	1/4	1/4	1-3/16	4
GMF24929	1/4	1/4	1-3/16	6
GMF24930	1/4	1/4	1-3/8	3-1/2
GMF24931	1/4	1/4	1-1/2	3-1/2
GMF24932	1/4	1/4	1-3/4	6
GMF24020	5/16	5/16	1	3-1/8
GMF24933	5/16	5/16	1-3/16	3-1/8
GMF24934	5/16	5/16	1-3/8	3-1/2
GMF24935	5/16	5/16	1-1/2	3-1/2
GMF24936	5/16	5/16	1-1/2	4-1/2
GMF24937	5/16	5/16	1-3/4	4
GMF24938	5/16	5/16	2	4
GMF24024	3/8	3/8	1-3/16	3-1/8
GMF24939	3/8	3/8	1-3/16	4
GMF24940	3/8	3/8	1-3/8	3-1/2
GMF24941	3/8	3/8	1-1/2	3-1/2
GMF24942	3/8	3/8	1-1/2	4-1/2
GMF24943	3/8	3/8	1-3/4	4
GMF24944	3/8	3/8	2	4
GMF24945	3/8	3/8	2-3/8	4-1/4
GMF24032	1/2	1/2	1-3/8	3-1/2
GMF24946	1/2	1/2	1-1/2	4
GMF24947	1/2	1/2	1-1/2	4-1/2
GMF24948	1/2	1/2	1-3/4	5
GMF24949	1/2	1/2	2	4
GMF24950	1/2	1/2	2-1/8	4-1/4
GMF24951	1/2	1/2	2-3/8	4-1/4
GMF24952	1/2	1/2	2-3/8	6
GMF24040	5/8	5/8	1-1/2	6
GMF24048	3/4	3/4	3-1/2	8
GMF24953	3/4	3/4	4-1/4	8

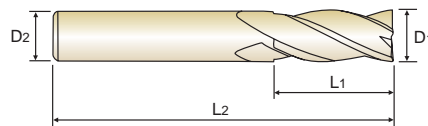
Mill Dia. Tolerance (Inch)	Shank Dia. Tolerance
0~- .0012	h6

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRc40~45	HRc45~55	HRC55~70							
◎	◎	◎	◎	○				○				

CARBIDE, 4 FLUTE

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Due to Multiple Helix on 1/8" and over diameter end mills, vibration will be minimized and tool life increased.



GMF25 SERIES



P.49

Unit : inch

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
GMF25003	3/64	1/4	3/32	2
GMF25004	1/16	1/4	5/32	2
GMF25005	5/64	1/4	1/4	2
GMF25006	3/32	1/4	1/4	2
GMF25008	1/8	1/4	5/16	2
GMF25009	9/64	1/4	3/8	2
GMF25012	3/16	1/4	3/8	2
GMF25013	13/64	1/4	5/8	2-3/8
GMF25014	7/32	1/4	5/8	2-3/8
GMF25016	1/4	1/4	5/8	2-3/8
GMF25017	17/64	5/16	11/16	2-3/8
GMF25018	9/32	5/16	3/4	2-3/8
GMF25019	19/64	5/16	3/4	2-3/8
GMF25020	5/16	5/16	3/4	2-3/4
GMF25022	11/32	3/8	7/8	2-3/4
GMF25023	23/64	3/8	7/8	2-3/4
GMF25024	3/8	3/8	1	3
GMF25028	7/16	1/2	1-3/16	3
GMF25032	1/2	1/2	1-3/16	3-1/8
GMF25036	9/16	9/16	1-3/8	4
GMF25901	9/16	5/8	1-3/8	4
GMF25040	5/8	5/8	1-1/2	4
GMF25044	11/16	5/8	1-3/4	4
GMF25048	3/4	3/4	1-3/4	4

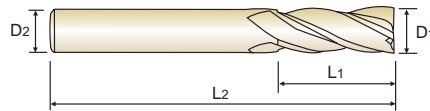
Mill Dia. Tolerance (Inch)	Shank Dia. Tolerance
0~- .0012	h6

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○		○		

CARBIDE, 4 FLUTE

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
 - ▶ Excellent performance when cutting steels, up to HRC55
 - ▶ Due to Multiple Helix on 1/8" and over diameter end mills, vibration will be minimized and tool life increased.
 - ▶ Due to gash land geometry used at end tooth, heavy duty cutting can be achieved.
- Various length products Available



GMF26 SERIES

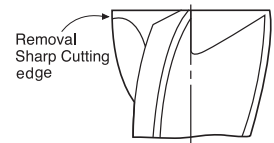


P.49

Unit : inch

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
GMF26003	3/64	1/4	3/32	2
GMF26004	1/16	1/4	5/32	2
GMF26005	5/64	1/4	1/4	2
GMF26006	3/32	1/4	1/4	2
GMF26008	1/8	1/4	5/16	2
GMF26012	3/16	1/4	3/8	2
GMF26013	13/64	1/4	5/8	2-3/8
GMF26016	1/4	1/4	5/8	2-3/8
GMF26020	5/16	5/16	3/4	2-3/4
GMF26024	3/8	3/8	1	3
GMF26032	1/2	1/2	1-3/16	3-1/8
GMF26040	5/8	5/8	1-1/4	4
GMF26048	3/4	3/4	1-3/4	4

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

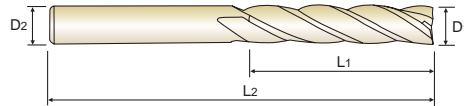


◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
○	◎	◎	◎	○				○				

CARBIDE, 4 FLUTE LONG LENGTH

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRc55
- ▶ Various length of cut and overall length products available



GMF27 SERIES



P.50

Unit : inch

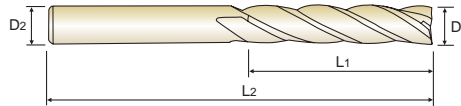
EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
GMF27003	3/64	1/4	1/8	2-3/8
GMF27901	3/64	1/4	5/32	2-3/8
GMF27902	3/64	1/4	3/16	2-3/8
GMF27903	3/64	1/4	1/4	2-3/8
GMF27004	1/16	1/4	1/4	2-3/8
GMF27005	5/64	1/4	5/16	2-3/8
GMF27904	5/64	1/4	3/8	2-3/8
GMF27905	5/64	1/4	1/2	2-3/8
GMF27906	5/64	1/4	9/16	2-3/8
GMF27006	3/32	1/4	3/8	2-3/8
GMF27907	3/32	1/4	1/2	2-3/8
GMF27008	1/8	1/4	3/8	2-3/4
GMF27908	1/8	1/4	1/2	2-3/4
GMF27909	1/8	1/4	5/8	2-3/4
GMF27910	1/8	1/4	3/4	2-3/4
GMF27911	1/8	1/4	1	2-3/4
GMF27912	1/8	1/4	1-3/16	2-3/4
GMF27012	3/16	1/4	1/2	2-3/4
GMF27913	3/16	1/4	5/8	2-3/4
GMF27914	3/16	1/4	3/4	2-3/4
GMF27915	3/16	1/4	1	2-3/4
GMF27916	3/16	1/4	1-3/16	2-3/4
GMF27013	13/64	1/4	3/4	2-3/4
GMF27917	13/64	1/4	1	2-3/4
GMF27918	13/64	1/4	1-3/16	3-1/8
GMF27016	1/4	1/4	5/8	2-3/8
GMF27919	1/4	1/4	3/4	2-3/4
GMF27920	1/4	1/4	3/4	3-1/2
GMF27921	1/4	1/4	1	3
GMF27922	1/4	1/4	1-3/16	3-1/8
GMF27923	1/4	1/4	1-3/16	4
GMF27924	1/4	1/4	1-3/8	3-1/2
GMF27925	1/4	1/4	1-1/2	3-1/2

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○				

CARBIDE, 4 FLUTE LONG LENGTH

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Various length of cut and overall length products available



GMF27 SERIES



P.50

Unit : inch

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
GMF27926	1/4	1/4	1-1/2	4-1/2
GMF27927	1/4	1/4	1-3/4	6
GMF27020	5/16	5/16	1	3-1/8
GMF27928	5/16	5/16	1-3/16	3-1/8
GMF27929	5/16	5/16	1-3/8	3-1/2
GMF27930	5/16	5/16	1-1/2	3-1/2
GMF27931	5/16	5/16	1-3/4	4
GMF27932	5/16	5/16	2	4
GMF27933	5/16	5/16	2	6
GMF27024	3/8	3/8	1-3/16	3-1/8
GMF27934	3/8	3/8	1-3/16	4
GMF27935	3/8	3/8	1-3/8	3-1/2
GMF27936	3/8	3/8	1-1/2	3-1/2
GMF27937	3/8	3/8	1-3/4	4
GMF27938	3/8	3/8	2	4
GMF27032	1/2	1/2	1-3/8	3-1/2
GMF27939	1/2	1/2	1-1/2	4
GMF27940	1/2	1/2	1-3/4	5
GMF27941	1/2	1/2	2	4
GMF27942	1/2	1/2	2-1/8	4-1/4
GMF27943	1/2	1/2	2-3/8	4-1/4
GMF27944	1/2	1/2	2-3/8	6
GMF27036	9/16	5/8	2	4-1/4
GMF27040	5/8	5/8	2	4-1/4
GMF27945	5/8	5/8	2-3/8	4-1/2
GMF27946	5/8	5/8	2-3/4	5
GMF27947	5/8	5/8	2-3/4	6
GMF27048	3/4	3/4	2-3/8	5
GMF27948	3/4	3/4	3-1/2	8
GMF27064	1	1	3-1/2	6

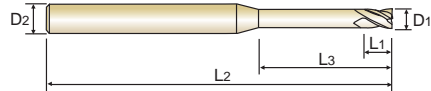
Mill Dia. Tolerance (Inch)	Shank Dia. Tolerance
0~- .0012	h6

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70							
◎	◎	◎	◎	○				○				

CARBIDE, 4 FLUTE LONG NECK

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Many more various effective lengths and overall lengths than previous standard products.



GMF28 SERIES



P.51

Unit : inch

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length
	D1	D2	L1	L3	L2
GMF28003	3/64	3/16	1/16	5/32	2
GMF28901	3/64	3/16	1/16	3/16	2
GMF28902	3/64	3/16	1/16	1/4	2
GMF28903	3/64	3/16	1/16	5/16	2
GMF28004	1/16	3/16	3/32	1/4	2
GMF28904	1/16	3/16	3/32	5/16	2
GMF28905	1/16	3/16	3/32	3/8	2
GMF28906	1/16	3/16	3/32	1/2	2
GMF28907	1/16	3/16	3/32	5/8	2
GMF28005	5/64	3/16	1/8	5/16	2
GMF28908	5/64	3/16	1/8	3/8	2
GMF28909	5/64	3/16	1/8	1/2	2
GMF28910	5/64	3/16	1/8	5/8	2
GMF28008	1/8	1/4	3/16	3/8	2
GMF28911	1/8	1/4	3/16	1/2	2
GMF28912	1/8	1/4	3/16	5/8	2-3/8
GMF28913	1/8	1/4	3/16	3/4	2-3/8
GMF28914	1/8	1/4	3/16	1-3/16	2-3/4
GMF28012	3/16	1/4	1/4	1/2	2
GMF28915	3/16	1/4	1/4	5/8	2-3/8
GMF28916	3/16	1/4	1/4	3/4	2-3/8
GMF28917	3/16	1/4	1/4	1-3/16	2-3/4
GMF28918	3/16	1/4	1/4	1-1/2	3-1/8
GMF28013	13/64	1/4	5/16	3/4	2-3/8
GMF28919	13/64	1/4	5/16	1-1/2	3-1/8
GMF28016	1/4	1/4	3/8	5/8	2-3/8
GMF28920	1/4	1/4	3/8	1-3/16	2-3/4
GMF28020	5/16	5/16	1/2	1	2-3/4
GMF28921	5/16	5/16	1/2	1-5/8	4
GMF28024	3/8	3/8	5/8	1-3/16	3
GMF28922	3/8	3/8	5/8	1-3/4	4
GMF28032	1/2	1/2	3/4	1-3/8	3-1/8
GMF28923	1/2	1/2	3/4	2	4-1/4

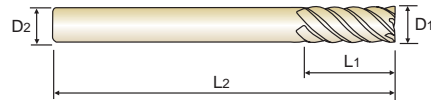
Mill Dia. Tolerance (Inch)	Shank Dia. Tolerance
0~- .0012	h6

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRc30~40	HRc40~45	HRc45~55	HRc55~70							
◎	◎	◎	◎	○				○		○		

CARBIDE, 6 FLUTE 45° HELIX

- ▶ New coating and new tool geometry gives outstanding cutting performance and wear resistance.
- ▶ Excellent performance when cutting steels, up to HRC55
- ▶ Due to 45 helix angle, better surface finish can be achieved when side cutting.
- ▶ Various effective length and overall length products.



GMF29 SERIES



P.52

Unit : inch

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	D1	D2	L1	L2
GMF29016	1/4	1/4	5/8	2-3/8
GMF29901	1/4	1/4	1-3/16	3-1/8
GMF29020	5/16	5/16	3/4	2-3/4
GMF29902	5/16	5/16	1-1/2	3-1/2
GMF29024	3/8	3/8	1	3
GMF29903	3/8	3/8	1-1/2	3-1/2
GMF29032	1/2	1/2	1-3/16	3-1/8
GMF29904	1/2	1/2	2	4
GMF29040	5/8	5/8	1-1/2	4
GMF29905	5/8	5/8	2-3/8	4-1/2
GMF29048	3/4	3/4	1-3/4	4
GMF29906	3/4	3/4	2-3/8	4-1/2

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

◎ : Excellent ○ : Good

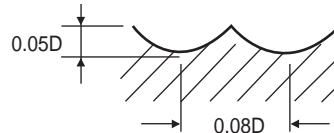
Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		High Hardened Steels	Copper	Graphite	Cast Iron	Aluminum	Stainless Steels	Titanium	Inconel
~HB225	HB225~325	HRC30~40	HRC40~45	HRC45~55	HRC55~70							
◎	◎	◎	◎	○				○				



CARBIDE, 2 FLUTE BALL NOSE

GMF15 SERIES

MATERIAL	NON-ALLOYED STEELS ALLOY STEELS CAST IRON		ALLOY STEELS HEAT RESISTANT STEELS		HARDENED STEELS	
HARDNESS	~ HRC 35		HRC 35 ~ HRC 45		HRC 45 ~ HRC 55	
STRENGTH	~ 1100N/mm ²		1110 ~ 1500N/mm ²		1500 ~ 2000N/mm ²	
DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED
R.002 × .004	39400	21.26	39370	19.29	32480	15.55
R.004 × .008	29530	27.95	29530	24.41	26570	22.24
R.006 × .012	29530	34.84	29530	31.30	26570	27.95
R.075 × .015	29490	44.09	31500	42.13	28350	37.20
R.010 × .020	29530	55.71	29530	48.82	26570	44.09
R.012 × .024	29530	67.52	29530	58.07	26570	51.18
R.014 × .028	29530	79.13	29530	67.52	26570	60.43
R.0155 × .031	30480	93.50	30480	79.13	27430	72.05
R.0175 × .035	30370	103.94	30370	89.76	27330	81.30
R.0234 × 3/64	30240	121.46	29030	102.36	26000	91.73
R1/32 × 1/16	28350	120.47	27210	100.39	24380	89.37
R.0391 × 5/64	30050	135.63	28910	114.37	24190	95.28
R3/64 × 3/32	24990	145.08	24040	125.20	20160	99.21
R1/16 × 1/8	18770	133.86	18030	118.31	15120	89.37
R3/32 × 3/16	12310	131.69	11820	113.78	9920	86.42
R. × 13/64	10820	132.87	10350	112.20	8720	85.83
R1/8 × 1/4	7880	108.27	7600	91.54	6240	69.09
R9/64 × 9/32	7070	102.17	6820	85.63	5680	65.55
R5/32 × 5/16	6710	100.00	6470	83.27	5440	64.37
R3/16 × 3/8	5860	91.73	5610	76.97	4720	59.45
R1/4 × 1/2	3940	65.75	3780	55.71	3170	42.32
R9/32 × 9/16	3670	64.76	3530	57.87	2970	41.73
R5/16 × 5/8	3370	63.19	3240	52.36	2720	40.55
R3/8 × 3/4	2800	58.27	2710	48.43	2270	37.20



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



CARBIDE, 2 FLUTE LONG NECK BALL NOSE

GMF16 SERIES

MATERIAL		NON-ALLOYED STEELS ALLOY STEELS CAST IRON			ALLOY STEELS HEAT RESISTANT STEELS			HARDENED STEELS		
HARDNESS		~ HRC 35			HRC 35 ~ HRC 45			HRC 45 ~ HRC 55		
STRENGTH		~ 1100N/mm ²			1110 ~ 1500N/mm ²			1500 ~ 2000N/mm ²		
DIA.	LBS	RPM	FEED	Ap(inch)	RPM	FEED	Ap(inch)	RPM	FEED	Ap(inch)
.008	1/64	49210	12.99	.0007	49210	12.01	.0006	42520	10.04	.0004
.008	3/64	44290	10.43	.0003	44290	9.65	.0002	38270	8.07	.0002
.012	3/64	49210	18.5	.0007	49210	16.73	.0006	42130	14.17	.0004
.012	5/64	44290	14.96	.0004	44290	13.58	.0004	37910	11.42	.0002
.012	1/8	39370	11.81	.0003	39370	10.63	.0002	33700	9.06	.0002
.015	3/64	43040	20.28	.0009	40730	17.52	.0008	35910	13.98	.0005
.015	5/64	38740	16.34	.0006	36660	14.17	.0004	32310	11.42	.0003
.015	1/8	38740	16.34	.0004	36660	14.17	.0003	32310	11.42	.0002
.015	5/32	34440	12.99	.0004	32590	11.22	.0003	28720	9.06	.0002
.020	3/64	33660	26.57	.0018	31790	22.44	.0015	28050	19.88	.0010
.020	5/64	33660	26.57	.0013	31790	22.44	.0011	28050	19.88	.0007
.020	1/8	30300	21.46	.0007	28610	18.11	.0006	25250	16.14	.0004
.020	5/32	30300	21.46	.0007	28610	18.11	.0006	25250	16.14	.0004
.020	3/16	30300	21.46	.0004	28610	18.11	.0004	25250	16.14	.0002
.020	1/4	26930	16.93	.0004	25430	14.37	.0004	22440	12.80	.0002
.020	5/16	20200	11.22	.0003	19070	9.45	.0002	16830	8.46	.0002
.020	3/8	20200	11.22	.0002	19070	9.45	.0002	16830	8.46	.0001
.024	5/64	33660	39.76	.0015	31790	32.48	.0013	28050	26.57	.0008
.024	1/8	30300	32.09	.0009	28610	26.38	.0007	25250	21.46	.0005
.024	5/32	30300	32.09	.0009	28610	26.38	.0007	25250	21.46	.0005
.024	3/16	30300	32.09	.0009	28610	26.38	.0007	25250	21.46	.0005
.024	1/4	26930	25.39	.0006	25430	20.87	.0004	22440	16.93	.0003
.024	5/16	26930	25.39	.0003	25430	20.87	.0003	22440	16.93	.0002
.024	3/8	20200	16.73	.0003	19070	13.58	.0003	16830	11.22	.0002
.024	1/2	10100	7.09	.0002	9540	5.91	.0002	8420	4.72	.0001
1/32	5/64	34470	48.82	.0028	32550	41.14	.0024	28720	33.86	.0016
1/32	1/8	34470	48.82	.0020	32550	41.14	.0017	28720	33.86	.0011
1/32	5/32	34470	48.82	.0020	32550	41.14	.0017	28720	33.86	.0011
1/32	3/16	31020	39.57	.0011	29300	33.27	.0009	25850	27.56	.0006
1/32	1/4	31020	39.57	.0011	29300	33.27	.0009	25850	27.56	.0006
1/32	5/16	31020	39.57	.0007	29300	33.27	.0006	25850	27.56	.0004
1/32	3/8	27580	31.3	.0007	26040	26.38	.0006	22980	21.65	.0004
3/64	1/8	26510	54.53	.0042	25000	45.67	.0035	22070	37.60	.0024
3/64	5/32	26510	54.53	.0030	25000	45.67	.0025	22070	37.60	.0017
3/64	3/16	26510	54.53	.0030	25000	45.67	.0025	22070	37.60	.0017
3/64	1/4	23860	44.29	.0017	22500	37.01	.0014	19870	30.51	.0009
3/64	5/16	23860	44.29	.0017	22500	37.01	.0014	19870	30.51	.0009
3/64	3/8	23860	44.29	.0017	22500	37.01	.0014	19870	30.51	.0009
3/64	1/2	21210	34.84	.0011	20000	29.13	.0009	17660	24.21	.0006
3/64	9/16	21210	34.84	.0011	20000	29.13	.0009	17660	24.21	.0006
3/64	5/8	21210	34.84	.0006	20000	29.13	.0005	17660	24.21	.0004
3/64	3/4	15900	22.83	.0006	15000	19.09	.0005	13240	15.75	.0004
1/16	5/32	22580	58.86	.0056	21350	50.39	.0047	18900	39.96	.0031
1/16	1/4	22580	58.86	.0039	21350	50.39	.0033	18900	39.96	.0022
1/16	5/16	22580	58.86	.0039	21350	50.39	.0033	18900	39.96	.0022
1/16	3/8	20320	47.64	.0022	19220	40.75	.0019	17010	32.48	.0013
1/16	1/2	20320	47.64	.0022	19220	40.75	.0019	17010	32.48	.0013
1/16	9/16	20320	47.64	.0014	19220	40.75	.0012	17010	32.48	.0008
1/16	5/8	20320	47.64	.0014	19220	40.75	.0012	17010	32.48	.0008
1/16	3/4	18070	37.6	.0014	17080	32.28	.0012	15120	25.59	.0008

DIA. = Diameter
LBS = Length Below Shank
RPM = rev./min.
FEED = inch/min.

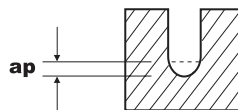


CARBIDE, 2 FLUTE LONG NECK BALL NOSE

GMF16 SERIES

MATERIAL		NON-ALLOYED STEELS ALLOY STEELS CAST IRON			ALLOY STEELS HEAT RESISTANT STEELS			HARDENED STEELS		
HARDNESS		~ HRc 35			HRc 35 ~ HRc 45			HRc 45 ~ HRc 55		
STRENGTH		~ 1100N/mm ²			1110 ~ 1500N/mm ²			1500 ~ 2000N/mm ²		
DIA.	LBS	RPM	FEED	Ap(inch)	RPM	FEED	Ap(inch)	RPM	FEED	Ap(inch)
5/64	1/4	18140	71.26	.0049	17130	60.43	.0041	15120	50.98	.0027
5/64	5/16	18140	71.26	.0049	17130	60.43	.0041	15120	50.98	.0027
5/64	3/8	18140	71.26	.0049	17130	60.43	.0041	15120	50.98	.0027
5/64	1/2	16330	57.68	.0028	15420	49.02	.0024	13610	41.34	.0016
5/64	9/16	16330	57.68	.0028	15420	49.02	.0024	13610	41.34	.0016
5/64	5/8	16330	57.68	.0028	15420	49.02	.0024	13610	41.34	.0016
5/64	11/16	16330	57.68	.0018	15420	49.02	.0015	13610	41.34	.0010
5/64	3/4	16330	57.68	.0018	15420	49.02	.0015	13610	41.34	.0010
5/64	1	14510	45.67	.0018	13710	38.78	.0015	12090	32.68	.0010
5/64	1-3/16	10890	29.92	.0011	10280	25.39	.0009	9070	21.46	.0006
3/32	3/8	16590	79.53	.0059	15640	66.34	.0049	13860	53.94	.0033
3/32	3/4	14930	64.37	.0034	14080	53.74	.0028	12470	43.70	.0019
1/8	5/16	12940	76.18	.0113	12190	64.37	.0094	10770	53.35	.0063
1/8	3/8	12940	76.18	.0113	12190	64.37	.0094	10770	53.35	.0063
1/8	1/2	12940	76.18	.0079	12190	64.37	.0066	10770	53.35	.0044
1/8	9/16	12940	76.18	.0079	12190	64.37	.0066	10770	53.35	.0044
1/8	5/8	12940	76.18	.0079	12190	64.37	.0066	10770	53.35	.0044
1/8	11/16	11650	61.81	.0045	10970	52.17	.0037	9690	43.31	.0025
1/8	3/4	11650	61.81	.0045	10970	52.17	.0037	9690	43.31	.0025
1/8	1	11650	61.81	.0045	10970	52.17	.0037	9690	43.31	.0025
1/8	1-3/16	11650	61.81	.0028	10970	52.17	.0024	9690	43.31	.0016
1/8	1-3/8	10360	48.82	.0028	9750	41.14	.0024	8620	34.25	.0016
3/16	3/8	8230	64.96	.0169	7810	55.31	.0141	6890	46.06	.0094
3/16	1/2	8230	64.96	.0169	7810	55.31	.0141	6890	46.06	.0094
3/16	9/16	8230	64.96	.0169	7810	55.31	.0141	6890	46.06	.0094
3/16	5/8	8230	64.96	.0118	7810	55.31	.0098	6890	46.06	.0066
3/16	11/16	8230	64.96	.0118	7810	55.31	.0098	6890	46.06	.0066
3/16	3/4	8230	64.96	.0118	7810	55.31	.0098	6890	46.06	.0066
3/16	1	7410	52.56	.0067	7030	44.69	.0056	6200	37.40	.0037
3/16	1-3/16	7410	52.56	.0067	7030	44.69	.0056	6200	37.40	.0037
3/16	1-3/8	7410	52.56	.0067	7030	44.69	.0056	6200	37.40	.0037
3/16	1-1/2	7410	52.56	.0067	7030	44.69	.0056	6200	37.40	.0037
13/64	1-3/16	6720	57.09	.0073	6370	44.88	.0061	5580	39.76	.0041
1/4	3/4	6140	70.67	.0225	5860	59.45	.0187	5200	49.41	.0125
1/4	1-3/16	6140	70.67	.0157	5860	59.45	.0131	5200	49.41	.0087
5/16	1	4890	71.46	.0197	4640	59.45	.0164	4030	50.79	.0109
5/16	1-3/8	4890	71.46	.0197	4640	59.45	.0164	4030	50.79	.0109
3/8	1-3/16	4040	68.11	.0236	3860	57.87	.0197	3360	49.61	.0131
3/8	1-3/16	4040	68.11	.0236	3860	57.87	.0197	3360	49.61	.0131
3/8	1-1/2	4040	68.11	.0236	3860	57.87	.0197	3360	49.61	.0131
1/2	1-1/4	3020	56.5	.0450	2880	48.43	.0375	2500	40.94	.0250
1/2	1-1/4	3020	56.5	.0450	2880	48.43	.0375	2500	40.94	.0250

(Depth of Cut per one pass)



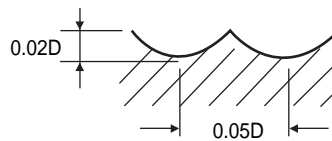
DIA. = Diameter
LBS = Length Below Shank
RPM = rev./min.
FEED = inch/min.



CARBIDE, 2 FLUTE BALL NOSE

GMF17 SERIES

MATERIAL	NON-ALLOYED STEELS ALLOY STEELS CAST IRON		ALLOY STEELS HEAT RESISTANT STEELS		HARDENED STEELS	
HARDNESS	~ HRc 35		HRc 35 ~ HRc 45		HRc 45 ~ HRc 55	
STRENGTH	~ 1100N/mm ²		1110 ~ 1500N/mm ²		1500 ~ 2000N/mm ²	
DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED
R1/16 × 1/8	22700	201.97	16540	144.29	15120	135.83
R3/32 × 3/16	17600	224.41	13020	152.56	12250	143.50
R1/8 × 1/4	14400	231.30	11530	167.32	10490	142.52
R5/32 × 5/16	11400	208.27	9270	157.87	8390	132.87
R3/16 × 3/8	9600	189.76	7720	142.52	6990	118.70
R1/4 × 1/2	7200	158.46	5790	118.70	5230	89.37



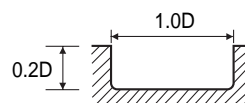
RPM = rev./min.
FEED = inch/min.



CARBIDE, 2 FLUTE CORNER RADIUS

GMF18 SERIES

MATERIAL	NON-ALLOYED STEELS ALLOY STEELS CAST IRON		ALLOY STEELS HEAT RESISTANT STEELS		HARDENED STEELS	
HARDNESS	~ HRc 35		HRc 35 ~ HRc 45		HRc 45 ~ HRc 55	
STRENGTH	~ 1100N/mm ²		1110 ~ 1500N/mm ²		1500 ~ 2000N/mm ²	
DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED
3/64	25000	9.65	15870	4.13	9830	2.36
1/16	20800	9.25	12760	4.13	8030	2.17
5/64	18100	10.24	11650	4.72	7260	2.76
1/8	12500	10.43	8090	5.12	4990	2.56
9/64	11700	12.01	7540	5.91	4690	2.95
13/64	8900	15.94	5620	7.68	3680	3.74
1/4	7500	18.50	4760	9.25	3100	4.53
5/16	6000	21.46	3830	9.84	2540	4.72
3/8	5300	22.24	3440	10.24	2120	4.92
1/2	3900	15.55	2630	8.46	1590	3.74
9/16	3500	14.96	2390	7.68	1450	3.54
5/8	3100	14.37	2120	6.69	1290	3.15
3/4	2600	11.61	1720	4.92	1050	2.56

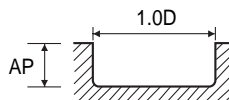


RPM = rev./min.
FEED = inch/min.



GMF19 SERIES

MATERIAL		NON-ALLOYED STEELS ALLOY STEELS CAST IRON			ALLOY STEELS HEAT RESISTANT STEELS			HARDENED STEELS		
HARDNESS		~ HRC 35			HRC 35 ~ HRC 45			HRC 45 ~ HRC 55		
STRENGTH		~ 1100N/mm ²			1110 ~ 1500N/mm ²			1500 ~ 2000N/mm ²		
DIA.	LBS	RPM	FEED	Ap(inch)	RPM	FEED	Ap(inch)	RPM	FEED	Ap(inch)
.008	3/64	44290	5.31	.0006	30560	2.36	.0005	18740	1.38	.0004
.012	3/64	49210	7.68	.0017	31500	3.35	.0013	19690	1.97	.0010
.012	5/64	44290	6.30	.0009	28350	2.76	.0007	17720	1.57	.0006
.015	3/64	52490	8.27	.0021	33600	3.54	.0016	21000	1.97	.0013
.015	1/16	52490	8.27	.0021	33600	3.54	.0016	21000	1.97	.0013
.015	5/64	47240	6.69	.0012	30240	2.76	.0009	18900	1.77	.0007
.015	3/32	47240	6.69	.0012	30240	2.76	.0009	18900	1.77	.0007
.020	3/64	42320	8.46	.0040	27560	3.74	.0030	16830	2.36	.0024
.020	1/16	42320	8.46	.0028	27560	3.74	.0021	16830	2.36	.0017
.020	5/64	42320	8.46	.0028	27560	3.74	.0021	16830	2.36	.0017
.020	1/8	38090	6.89	.0016	24800	2.95	.0012	15150	1.97	.0009
.020	5/32	38090	6.89	.0016	24800	2.95	.0012	15150	1.97	.0009
.024	5/64	35830	9.65	.0033	23620	4.33	.0025	14270	2.56	.0020
.024	1/8	32240	7.87	.0019	21260	3.54	.0015	12840	1.97	.0011
.024	5/32	32240	7.87	.0019	21260	3.54	.0015	12840	1.97	.0011
.024	1/4	28660	6.10	.0012	18900	2.76	.0009	11420	1.57	.0007
.031	5/64	36980	10.04	.0062	24380	4.33	.0046	14730	2.56	.0037
.031	5/32	33280	8.07	.0025	21950	3.54	.0019	13260	2.17	.0015
.031	1/4	33280	8.07	.0015	21950	3.54	.0012	13260	2.17	.0009
.031	5/16	29590	6.50	.0015	19510	2.76	.0012	11790	1.57	.0009
3/64	1/8	27800	9.25	.0094	18140	3.94	.0070	11090	2.36	.0056
3/64	5/32	27800	9.25	.0066	18140	3.94	.0049	11090	2.36	.0039
3/64	1/4	25020	7.48	.0037	16330	3.15	.0028	9980	1.97	.0022
3/64	5/16	25020	7.48	.0037	16330	3.15	.0028	9980	1.97	.0022
3/64	3/8	25020	7.48	.0037	16330	3.15	.0028	9980	1.97	.0022
1/16	5/32	24940	11.22	.0125	15310	4.92	.0094	9640	2.56	.0075
1/16	1/4	24940	11.22	.0087	15310	4.92	.0066	9640	2.56	.0052
1/16	5/16	24940	11.22	.0087	15310	4.92	.0066	9640	2.56	.0052
1/16	3/8	22450	9.06	.0050	13780	3.94	.0037	8670	2.17	.0030
1/16	1/2	22450	9.06	.0050	13780	3.94	.0037	8670	2.17	.0030
5/64	1/4	21770	12.20	.0109	13910	5.51	.0082	8710	3.15	.0066
5/64	5/16	21770	12.20	.0109	13910	5.51	.0082	8710	3.15	.0066
5/64	3/8	21770	12.20	.0109	13910	5.51	.0082	8710	3.15	.0066
5/64	1/2	19590	10.04	.0063	12520	4.53	.0047	7840	2.56	.0037
5/64	9/16	19590	10.04	.0063	12520	4.53	.0047	7840	2.56	.0037
5/64	5/8	19590	10.04	.0063	12520	4.53	.0047	7840	2.56	.0037
1/8	5/16	15020	12.20	.0250	9730	5.91	.0187	5950	2.95	.0150
1/8	3/8	15020	12.20	.0250	9730	5.91	.0187	5950	2.95	.0150
1/8	1/2	15020	12.20	.0175	9730	5.91	.0131	5950	2.95	.0105
1/8	5/8	15020	12.20	.0175	9730	5.91	.0131	5950	2.95	.0105
1/8	3/4	13520	10.04	.0100	8760	4.72	.0075	5360	2.36	.0060
1/8	1	13520	10.04	.0100	8760	4.72	.0075	5360	2.36	.0060
3/16	3/8	11550	20.67	.0375	7350	9.84	.0281	4790	4.92	.0225
3/16	1/2	11550	20.67	.0375	7350	9.84	.0281	4790	4.92	.0225
3/16	5/8	11550	20.67	.0263	7350	9.84	.0197	4790	4.92	.0157
3/16	3/4	11550	20.67	.0263	7350	9.84	.0197	4790	4.92	.0157
3/16	1	10390	16.73	.0150	6610	8.07	.0113	4310	3.94	.0090
3/16	1-3/16	10390	16.73	.0150	6610	8.07	.0113	4310	3.94	.0090
1/4	3/4	8980	22.24	.0500	5670	11.22	.0375	3710	5.12	.0300
1/4	1-3/16	8980	22.24	.0350	5670	11.22	.0263	3710	5.12	.0210
5/16	1	7260	25.39	.0437	4590	11.81	.0328	3040	5.51	.0263
3/8	1-3/16	6300	26.38	.0525	4200	12.40	.0394	2540	5.71	.0315
1/2	1-1/4	4720	18.50	.1000	3160	10.04	.0750	1890	4.53	.0600
5/8	1-3/8	3750	17.91	.1250	2540	8.27	.0937	1550	3.74	.0750
3/4	1-1/2	3150	13.58	.1500	2050	5.71	.1125	1260	2.95	.0900



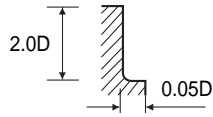
DIA. = Diameter
LBS = Length Below Shank
RPM = rev./min.
FEED = inch/min.

CARBIDE, 4 FLUTE CORNER RADIUS

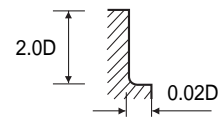


GMF20 SERIES

MATERIAL	NON-ALLOYED STEELS ALLOY STEELS CAST IRON		ALLOY STEELS HEAT RESISTANT STEELS		HARDENED STEELS	
HARDNESS	~ HRc 35		HRc 35 ~ HRc 45		HRc 45 ~ HRc 55	
STRENGTH	~ 1100N/mm ²		1110 ~ 1500N/mm ²		1500 ~ 2000N/mm ²	
DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED
3/64	25000	12.01	15870	8.86	9830	4.72
5/64	18100	12.8	11650	9.45	7260	5.12
1/8	12500	12.6	8090	9.65	4990	4.92
3/16	9400	15.75	5960	12.2	3830	5.71
13/64	8900	16.34	5620	13.78	3680	6.5
1/4	7500	15.94	4760	13.39	3100	6.3
5/16	6000	18.31	3830	14.37	2540	6.69
3/8	5300	19.09	3440	14.96	2120	7.09
1/2	3900	13.39	2630	11.81	1590	5.12
5/8	3100	11.02	2120	9.06	1290	4.53
3/4	2600	9.45	1720	7.48	1050	3.74



* 1.5XD Axial cutting depth should be for DIA over 5/8 inch



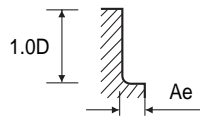
RPM = rev./min.
FEED = inch/min.



CARBIDE, 4 FLUTE LONG NECK CORNER RADIUS

GMF21 SERIES

MATERIAL		NON-ALLOYED STEELS ALLOY STEELS CAST IRON			ALLOY STEELS HEAT RESISTANT STEELS			HARDENED STEELS		
HARDNESS		~ HRc 35			HRc 35 ~ HRc 45			HRc 45 ~ HRc 55		
STRENGTH		~ 1100N/mm ²			1110 ~ 1500N/mm ²			1500 ~ 2000N/mm ²		
DIA.	LBS	RPM	FEED	Ap(inch)	RPM	FEED	Ap(inch)	RPM	FEED	Ap(inch)
3/64	5/32	29980	14.57	.0010	19050	10.43	.0007	11790	5.51	.0006
3/64	1/4	26990	11.81	.0006	17140	8.46	.0004	10610	4.53	.0004
3/64	5/16	26990	11.81	.0006	17140	8.46	.0004	10610	4.53	.0004
1/16	1/4	24940	13.78	.0013	15310	10.04	.0010	9640	5.12	.0008
1/16	5/16	24940	13.78	.0013	15310	10.04	.0010	9640	5.12	.0008
1/16	3/8	22450	11.22	.0007	13780	8.07	.0006	8670	4.13	.0004
1/16	1/2	22450	11.22	.0007	13780	8.07	.0006	8670	4.13	.0004
5/64	1/4	21770	15.16	.0017	13910	11.02	.0012	8710	5.91	.0010
5/64	5/16	21770	15.16	.0017	13910	11.02	.0012	8710	5.91	.0010
5/64	3/8	21770	15.16	.0017	13910	11.02	.0012	8710	5.91	.0010
5/64	1/2	19590	12.2	.0009	12520	9.06	.0007	7840	4.72	.0006
1/8	5/16	15020	14.96	.0037	9730	11.61	.0028	5950	5.51	.0022
1/8	3/8	15020	14.96	.0037	9730	11.61	.0028	5950	5.51	.0022
1/8	1/2	15020	14.96	.0026	9730	11.61	.0020	5950	5.51	.0016
1/8	5/8	15020	14.96	.0026	9730	11.61	.0020	5950	5.51	.0016
1/8	3/4	13520	12.01	.0015	8760	9.25	.0011	5360	4.53	.0009
1/8	1	13520	12.01	.0015	8760	9.25	.0011	5360	4.53	.0009
3/16	3/8	11550	21.06	.0056	7350	17.72	.0042	4790	8.27	.0034
3/16	1/2	11550	21.06	.0056	7350	17.72	.0042	4790	8.27	.0034
3/16	5/8	11550	21.06	.0039	7350	17.72	.0030	4790	8.27	.0024
3/16	3/4	11550	21.06	.0039	7350	17.72	.0030	4790	8.27	.0024
3/16	1	10390	17.13	.0022	6610	14.37	.0017	4310	6.69	.0013
1/4	3/4	8980	18.9	.0075	5670	15.94	.0056	3710	7.48	.0045
5/16	1	7260	21.85	.0066	4590	17.13	.0049	3040	7.87	.0039
5/16	1-3/8	7260	21.85	.0066	4590	17.13	.0049	3040	7.87	.0039
3/8	1-3/16	6300	22.64	.0079	4200	17.72	.0059	2540	8.27	.0047
3/8	1-1/2	6300	22.64	.0079	4200	17.72	.0059	2540	8.27	.0047
1/2	1-1/4	4720	15.94	.0150	3160	14.17	.0113	1890	5.91	.0090
1/2	1-3/4	4720	15.94	.0105	3160	14.17	.0079	1890	5.91	.0063
5/8	1-3/8	3750	13.19	.0187	2540	11.02	.0141	1550	5.31	.0113
3/4	1-1/2	3150	11.22	.0225	2050	8.66	.0169	1260	4.13	.0135



DIA. = Diameter
LBS = Length Below Shank

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

CARBIDE, 2 FLUTE LONG NECK



GMF22 SERIES

MATERIAL		NON-ALLOYED STEELS ALLOY STEELS CAST IRON			ALLOY STEELS HEAT RESISTANT STEELS			HARDENED STEELS		
HARDNESS		~ HRC 35			HRC 35 ~ HRC 45			HRC 45 ~ HRC 55		
STRENGTH		~ 1100N/mm ²			1110 ~ 1500N/mm ²			1500 ~ 2000N/mm ²		
DIA.	LBS	RPM	FEED	Ap(inch)	RPM	FEED	Ap(inch)	RPM	FEED	Ap(inch)
.008	3/64	34100	12.01	.0003	32160	8.46	.0002	28440	6.3	.0002
.015	3/64	26930	12.01	.0009	25430	8.46	.0007	22440	7.09	.0005
.015	5/64	24240	9.84	.0006	22890	6.69	.0004	20200	5.71	.0003
.015	1/8	24240	9.84	.0004	22890	6.69	.0003	20200	5.71	.0002
.015	5/32	21540	7.68	.0004	20350	5.31	.0003	17950	4.53	.0002
.015	3/16	21540	7.68	.0004	20350	5.31	.0003	17950	4.53	.0002
.020	5/64	26970	20.87	.0013	25390	16.54	.0010	22440	11.02	.0007
.020	1/8	24270	16.93	.0007	22850	13.39	.0006	20200	8.86	.0004
.020	5/32	24270	16.93	.0007	22850	13.39	.0006	20200	8.86	.0004
.020	3/16	24270	16.93	.0004	22850	13.39	.0004	20200	8.86	.0002
.020	1/4	21570	13.39	.0004	20310	10.63	.0004	17950	7.09	.0002
.024	5/64	26970	30.12	.0015	25390	21.06	.0012	22440	15.75	.0008
.024	1/8	24270	24.41	.0009	22850	17.13	.0007	20200	12.8	.0005
.024	5/32	24270	24.41	.0009	22850	17.13	.0007	20200	12.8	.0005
.024	3/16	24270	24.41	.0009	22850	17.13	.0007	20200	12.8	.0005
.024	1/4	21570	19.29	.0006	20310	13.58	.0004	17950	10.04	.0003
.024	5/16	21570	19.29	.0003	20310	13.58	.0002	17950	10.04	.0002
.024	3/8	16180	12.60	.0003	15240	8.86	.0002	13460	6.5	.0002
1/32	5/64	27620	30.71	.0028	26000	24.02	.0022	22980	17.91	.0016
1/32	1/8	27620	30.71	.0020	26000	24.02	.0015	22980	17.91	.0011
1/32	5/32	27620	30.71	.0020	26000	24.02	.0015	22980	17.91	.0011
1/32	3/16	24850	25.00	.0011	23400	19.49	.0009	20680	14.37	.0006
1/32	1/4	24850	25.00	.0011	23400	19.49	.0009	20680	14.37	.0006
1/32	5/16	24850	25.00	.0007	23400	19.49	.0006	20680	14.37	.0004
1/32	3/8	22090	19.69	.0007	20800	15.35	.0006	18380	11.42	.0004
3/64	1/8	22070	36.81	.0042	20860	28.54	.0033	18340	19.29	.0024
3/64	5/32	22070	36.81	.0030	20860	28.54	.0023	18340	19.29	.0017
3/64	3/16	22070	36.81	.0030	20860	28.54	.0023	18340	19.29	.0017
3/64	1/4	19870	29.92	.0017	18780	23.23	.0013	16510	15.55	.0009
3/64	5/16	19870	29.92	.0017	18780	23.23	.0013	16510	15.55	.0009
3/64	3/8	19870	29.92	.0017	18780	23.23	.0013	16510	15.55	.0009
3/64	1/2	17660	23.62	.0011	16690	18.31	.0008	14670	12.4	.0006
3/64	9/16	17660	23.62	.0011	16690	18.31	.0008	14670	12.4	.0006
3/64	5/8	17660	23.62	.0006	16690	18.31	.0005	14670	12.4	.0004
3/64	3/4	13240	15.55	.0006	12520	12.01	.0005	11010	8.07	.0004
1/16	5/32	18140	33.66	.0056	17100	23.62	.0044	15120	17.72	.0031
1/16	1/4	18140	33.66	.0039	17100	23.62	.0031	15120	17.72	.0022
1/16	5/16	18140	33.66	.0039	17100	23.62	.0031	15120	17.72	.0022
1/16	3/8	16330	27.36	.0022	15390	19.09	.0017	13610	14.37	.0013
1/16	1/2	16330	27.36	.0022	15390	19.09	.0017	13610	14.37	.0013
1/16	9/16	16330	27.36	.0014	15390	19.09	.0011	13610	14.37	.0008
1/16	5/8	16330	27.36	.0014	15390	19.09	.0011	13610	14.37	.0008
1/16	3/4	14510	21.46	.0014	13680	15.16	.0011	12090	11.22	.0008
5/64	1/4	14510	32.48	.0049	13710	24.61	.0038	12090	18.9	.0027
5/64	5/16	14510	32.48	.0049	13710	24.61	.0038	12090	18.9	.0027
5/64	3/8	14510	32.48	.0049	13710	24.61	.0038	12090	18.9	.0027
5/64	1/2	13060	26.38	.0028	12340	19.88	.0022	10890	15.35	.0016
5/64	9/16	13060	26.38	.0028	12340	19.88	.0022	10890	15.35	.0016
5/64	5/8	13060	26.38	.0028	12340	19.88	.0022	10890	15.35	.0016
5/64	3/4	13060	26.38	.0018	12340	19.88	.0014	10890	15.35	.0010

DIA. = Diameter
LBS = Length Below Shank
RPM = rev./min.
FEED = inch/min.

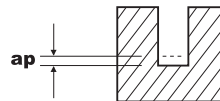
CARBIDE, 2 FLUTE LONG NECK



GMF22 SERIES

MATERIAL		NON-ALLOYED STEELS ALLOY STEELS CAST IRON			ALLOY STEELS HEAT RESISTANT STEELS			HARDENED STEELS		
HARDNESS		~ HRc 35			HRc 35 ~ HRc 45			HRc 45 ~ HRc 55		
STRENGTH		~ 1100N/mm ²			1110 ~ 1500N/mm ²			1500 ~ 2000N/mm ²		
DIA.	LBS	RPM	FEED	Ap(inch)	RPM	FEED	Ap(inch)	RPM	FEED	Ap(inch)
3/32	5/16	12910	40.16	.0059	12180	28.15	.0046	10810	21.06	.0033
3/32	1/2	11620	32.48	.0034	10960	22.83	.0026	9730	17.13	.0019
3/32	5/8	11620	32.48	.0034	10960	22.83	.0026	9730	17.13	.0019
3/32	3/4	11620	32.48	.0034	10960	22.83	.0026	9730	17.13	.0019
1/8	5/16	10300	32.09	.0113	9730	22.44	.0087	6240	16.73	.0063
1/8	3/8	10300	32.09	.0113	9730	22.44	.0087	6240	16.73	.0063
1/8	1/2	10300	32.09	.0079	9730	22.44	.0061	6240	16.73	.0044
1/8	9/16	10300	32.09	.0079	9730	22.44	.0061	6240	16.73	.0044
1/8	5/8	10300	32.09	.0079	9730	22.44	.0061	6240	16.73	.0044
1/8	11/16	9270	25.98	.0045	8760	18.31	.0035	5610	13.58	.0025
1/8	3/4	9270	25.98	.0045	8760	18.31	.0035	5610	13.58	.0025
1/8	1	9270	25.98	.0045	8760	18.31	.0035	5610	13.58	.0025
3/16	3/8	6720	42.91	.0169	6380	38.39	.0131	5630	25.39	.0094
3/16	1/2	6720	42.91	.0169	6380	38.39	.0131	5630	25.39	.0094
3/16	5/8	6720	42.91	.0118	6380	38.39	.0092	5630	25.39	.0066
3/16	11/16	6720	42.91	.0118	6380	38.39	.0092	5630	25.39	.0066
3/16	3/4	6720	42.91	.0118	6380	38.39	.0092	5630	25.39	.0066
3/16	1	6050	34.84	.0067	5740	31.1	.0052	5060	20.67	.0037
3/16	1-3/16	6050	34.84	.0067	5740	31.1	.0052	5060	20.67	.0037
13/64	3/4	6200	44.09	.0128	5910	34.25	.0100	5230	23.03	.0071
13/64	1-3/16	5580	35.63	.0073	5320	27.76	.0057	4710	18.7	.0041
13/64	1-3/8	5580	35.63	.0073	5320	27.76	.0057	4710	18.7	.0041
13/64	1-1/2	5580	35.63	.0073	5320	27.76	.0057	4710	18.7	.0041
13/64	2	5580	35.63	.0046	5320	27.76	.0035	4710	18.7	.0025
1/4	5/8	5010	39.17	.0225	4720	30.51	.0175	4160	20.47	.0125
1/4	3/4	5010	39.17	.0225	4720	30.51	.0175	4160	20.47	.0125
1/4	1-3/16	5010	39.17	.0157	4720	30.51	.0122	4160	20.47	.0087
5/16	1	4030	37.60	.0197	3830	29.72	.0153	3330	19.88	.0109
3/8	1-3/16	3360	37.20	.0236	3200	28.15	.0184	2760	16.54	.0131
3/8	1-3/4	3360	37.20	.0236	3200	28.15	.0184	2760	16.54	.0131
1/2	1-3/8	2500	29.72	.0450	2380	22.24	.0350	2060	12.99	.0250
1/2	2	2500	29.72	.0315	2380	22.24	.0245	2060	12.99	.0175

(Depth of Cut per one pass)



DIA. = Diameter
LBS = Length Below Shank

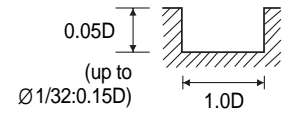
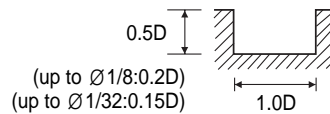
RPM = rev./min.
FEED = inch/min.

CARBIDE, 2 FLUTE



GMF23 SERIES

MATERIAL	NON-ALLOYED STEELS ALLOY STEELS CAST IRON		ALLOY STEELS HEAT RESISTANT STEELS		STAINLESS STEELS		HARDENED STEELS	
HARDNESS	~ HRC 35		HRC 35 ~ HRC 45				HRC 45 ~ HRC 55	
STRENGTH	~ 1100N/mm ²		1110 ~ 1500N/mm ²				1500 ~ 2000N/mm ²	
DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
.004	41300	3.54	24800	2.12	20670	1.66	16540	0.71
.008	41300	3.78	24800	2.12	20670	1.66	16540	0.71
.012	38400	4.02	23000	2.36	19190	1.88	15350	0.71
.015	40900	4.49	24600	2.60	20470	2.12	16380	0.95
.020	35400	4.96	21300	2.83	17720	2.36	14170	0.95
.024	31500	5.66	18900	3.31	15750	2.83	12600	1.18
.028	27600	6.37	16500	3.78	13780	3.07	11020	1.18
.031	25400	7.09	15200	4.25	12700	3.54	10160	1.42
.035	23800	7.32	14300	4.49	11900	3.78	9520	1.42
.040	21200	7.32	12700	4.49	10580	3.78	8460	1.42
.047	18100	7.80	10900	4.73	9050	4.02	7240	1.66
1/16	14200	7.56	8500	4.49	7090	3.78	5670	1.42
5/64	11700	8.23	7600	5.19	6350	3.89	5080	1.52
3/32	10800	9.10	6900	5.84	5730	4.76	4410	1.73
1/8	8400	8.66	5300	5.63	4370	4.98	3170	1.73
9/64	8100	10.82	5000	6.71	4160	5.63	3090	1.73
3/16	6500	12.77	4000	7.58	3330	6.28	2490	1.95
13/64	6100	13.42	3700	8.01	3060	6.71	2250	2.17
1/4	5300	14.29	3200	9.10	2680	7.36	1890	2.17
17/64	5000	14.39	3000	8.68	2560	7.41	1850	2.54
9/32	4800	14.88	2900	8.47	2420	7.23	1800	2.69
5/16	4200	15.92	2500	8.26	2120	7.44	1690	3.10
11/32	3900	14.68	2300	7.64	1940	7.02	1560	2.90
23/64	3700	14.47	2200	7.23	1860	7.02	1500	2.69
3/8	3400	14.26	2100	7.02	1760	7.02	1430	2.69
13/32	3200	13.23	2000	6.41	1630	6.41	1330	2.48
7/16	3000	12.40	1800	6.00	1500	6.00	1250	2.28
1/2	2600	11.21	1600	5.29	1290	5.29	1100	2.12
9/16	2400	10.13	1500	4.96	1190	4.96	1010	1.86
5/8	2200	9.09	1400	4.55	1070	4.55	910	1.65
3/4	1800	7.44	1100	3.52	880	3.52	710	1.24



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



CARBIDE, 2 FLUTE LONG LENGTH

GMF24 SERIES

MATERIAL		NON-ALLOYED STEELS ALLOY STEELS CAST IRON		ALLOY STEELS HEAT RESISTANT STEELS		HARDENED STEELS	
HARDNESS		~ HRC 35		HRC 35 ~ HRC 45		HRC 45 ~ HRC 55	
STRENGTH		~ 1100N/mm ²		1110 ~ 1500N/mm ²		1500 ~ 2000N/mm ²	
DIA.	LOC	RPM	FEED	RPM	FEED	RPM	FEED
3/64	1/8	13710	2.95	10970	2.56	6860	1.18
3/64	5/32	13710	2.95	10970	2.56	6860	1.18
3/64	1/4	12340	2.76	9870	2.36	6170	0.98
3/64	5/16	12340	2.36	9870	2.17	6170	0.98
3/64	3/8	12340	2.17	9870	1.97	6170	0.79
1/16	1/4	10000	2.76	8000	2.36	5000	0.98
1/16	5/16	10000	2.76	8000	2.36	5000	0.98
1/16	3/8	9000	2.36	7200	1.97	4500	0.79
1/16	1/2	9000	1.97	7200	1.77	4500	0.79
1/16	5/8	9000	1.97	7200	1.77	4500	0.79
5/64	5/16	9210	3.35	7370	2.76	4610	1.38
5/64	3/8	9210	3.35	7370	2.76	4610	1.38
5/64	1/2	8290	2.76	6640	2.36	4150	1.18
5/64	5/8	8290	2.36	6640	1.97	4150	0.98
3/32	5/8	7640	3.35	6150	2.76	3820	1.38
1/8	3/8	5670	3.54	4600	2.95	2830	1.38
1/8	1/2	5670	3.54	4600	2.95	2830	1.38
1/8	5/8	5670	3.54	4600	2.95	2830	1.38
1/8	3/4	5100	2.76	4140	2.36	2550	1.18
1/8	1	5100	2.56	4140	2.17	2550	0.98
3/16	1/2	3630	3.35	2890	2.76	1820	1.38
3/16	5/8	3630	3.35	2890	2.76	1820	1.38
3/16	3/4	3630	3.35	2890	2.76	1820	1.38
3/16	1	3270	2.95	2600	2.56	1640	1.18
3/16	1-3/16	3270	2.76	2600	2.17	1640	1.18
13/64	3/4	4130	5.51	3270	4.53	2140	1.97
13/64	1	4130	5.51	3270	4.53	2140	1.97
13/64	1-3/16	3720	4.53	2940	3.74	1930	1.57
13/64	1-1/2	3720	4.53	2940	3.74	1930	1.57
1/4	5/8	3390	6.30	2720	5.31	1760	2.36
1/4	3/4	3390	6.30	2720	5.31	1760	2.36
1/4	1	3390	6.30	2720	5.31	1760	2.36
1/4	1-3/16	3390	5.31	2720	4.53	1760	2.17
1/4	1-3/8	3050	4.92	2450	3.94	1580	1.97
1/4	1-1/2	3050	4.33	2450	3.54	1580	1.57
1/4	1-3/4	3050	4.33	2450	3.54	1580	1.57
5/16	1	2930	7.68	2320	5.91	1530	2.76
5/16	1-3/16	2930	7.68	2320	5.91	1530	2.76
5/16	1-3/8	2930	7.68	2320	5.91	1530	2.76
5/16	1-1/2	2930	6.50	2320	5.12	1530	2.36
5/16	1-3/4	2630	5.91	2080	4.53	1380	2.17
5/16	2	2630	5.12	2080	4.13	1380	1.97

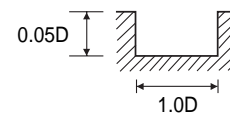
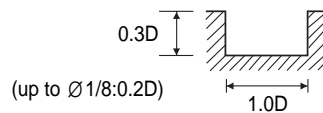
DIA. = Diameter
LOC = Length of Cut
RPM = rev./min.
FEED = inch/min.

CARBIDE, 2 FLUTE LONG LENGTH



GMF24 SERIES

MATERIAL		NON-ALLOYED STEELS ALLOY STEELS CAST IRON		ALLOY STEELS HEAT RESISTANT STEELS		HARDENED STEELS	
HARDNESS		~ HRc 35		HRc 35 ~ HRc 45		HRc 45 ~ HRc 55	
STRENGTH		~ 1100N/mm ²		1110 ~ 1500N/mm ²		1500 ~ 2000N/mm ²	
DIA.	LOC	RPM	FEED	RPM	FEED	RPM	FEED
3/8	1-3/16	2700	8.27	2200	6.5	1330	2.95
3/8	1-3/8	2700	8.27	2200	6.5	1330	2.95
3/8	1-1/2	2700	8.27	2200	6.5	1330	2.95
3/8	1-3/4	2700	7.09	2200	5.51	1330	2.56
3/8	2	2430	6.30	1980	4.92	1200	2.36
3/8	2-3/8	2430	5.51	1980	4.33	1200	1.97
1/2	1-3/8	1790	5.31	1490	4.72	900	1.97
1/2	1-1/2	1790	5.31	1490	4.72	900	1.97
1/2	1-3/4	1790	5.31	1490	4.72	900	1.97
1/2	2	1790	4.53	1490	3.94	900	1.57
1/2	2-1/8	1790	4.53	1490	3.94	900	1.57
1/2	2-3/8	1790	4.53	1490	3.94	900	1.57
5/8	1-1/2	1730	5.51	1300	4.13	810	1.97
3/4	3-1/2	1340	3.35	1050	2.36	660	1.18
3/4	4-1/4	1210	2.95	940	2.17	600	0.98

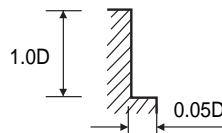


DIA. = Diameter
LOC = Length of Cut
RPM = rev./min.
FEED = inch/min.



GMF25, GMF26 SERIES

MATERIAL	NON-ALLOYED STEELS ALLOY STEELS CAST IRON		ALLOY STEELS HEAT RESISTANT STEELS		STAINLESS STEELS		HARDENED STEELS	
HARDNESS	~ HRC 35		HRC 35 ~ HRC 45				HRC 45 ~ HRC 55	
STRENGTH	~ 1100N/mm ²		1110 ~ 1500N/mm ²				1500 ~ 2000N/mm ²	
DIAMETER	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
3/64	22680	11.81	13610	7.09	11340	5.90	9070	2.12
1/16	17720	11.34	10630	6.85	8860	5.90	7090	2.12
5/64	14560	12.12	9520	7.36	7940	6.06	6350	2.17
3/32	13440	13.64	8610	8.45	7170	7.15	5510	2.60
1/8	10540	12.99	6570	8.23	5460	6.93	3970	2.39
9/64	10090	18.84	6230	11.69	5200	9.53	3860	2.60
3/16	8180	24.04	4960	14.51	4160	11.91	3110	2.60
13/64	7640	25.11	4580	15.16	3830	12.56	2810	3.04
7/32	7330	27.07	4410	16.46	3710	13.42	2670	3.25
1/4	6570	27.07	3970	16.68	3350	13.42	2360	3.25
17/64	6290	27.51	3800	16.5	3200	13.76	2310	3.60
9/32	5980	27.70	3610	15.92	3030	13.85	2250	3.93
19/64	5650	28.73	3390	16.12	2840	14.26	2190	4.34
5/16	5290	29.56	3170	15.92	2650	14.68	2120	4.55
11/32	4830	27.49	2910	14.47	2420	13.64	1950	4.14
23/64	4590	26.87	2790	13.85	2330	13.23	1870	4.14
3/8	4280	26.46	2620	13.02	2200	13.02	1780	3.93
7/16	3710	23.15	2280	11.16	1880	10.95	1560	3.52
1/2	3240	20.74	1980	9.94	1610	9.52	1370	3.17
9/16	3030	18.81	1860	9.09	1510	8.88	1260	2.90
5/8	2770	17.57	1710	8.47	1390	8.26	1140	2.48
3/4	2200	13.85	1400	7.02	1100	6.41	890	1.65



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

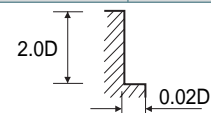
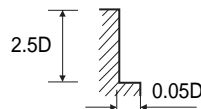
CARBIDE, 4 FLUTE LONG LENGTH



GMF27 SERIES

MATERIAL		NON-ALLOYED STEELS ALLOY STEELS CAST IRON		ALLOY STEELS HEAT RESISTANT STEELS		HARDENED STEELS	
HARDNESS		~ HRc 35		HRc 35 ~ HRc 45		HRc 45 ~ HRc 55	
STRENGTH		~ 1100N/mm ²		1110 ~ 1500N/mm ²		1500 ~ 2000N/mm ²	
DIA.	LOC	RPM	FEED	RPM	FEED	RPM	FEED
3/64	1/8	16330	8.07	9310	3.15	5710	1.57
3/64	5/32	16330	8.07	9310	3.15	5710	1.57
3/64	3/16	16330	8.07	9310	3.15	5710	1.57
3/64	1/4	14690	7.28	8380	2.95	5140	1.38
1/16	1/4	13040	8.07	7430	3.15	4560	1.57
5/64	5/16	10670	9.45	6100	3.74	3810	2.17
5/64	3/8	10670	9.45	6100	3.74	3810	2.17
5/64	1/2	9600	7.68	5490	3.15	3430	1.77
5/64	9/16	9600	7.68	5490	3.15	3430	1.77
3/32	3/8	9440	10.63	5420	4.53	3370	2.56
3/32	1/2	8500	9.65	4880	3.94	3030	2.17
1/8	3/8	7000	10.24	4050	4.53	2490	2.36
1/8	1/2	7000	10.24	4050	4.53	2490	2.36
1/8	5/8	7000	10.24	4050	4.53	2490	2.36
1/8	3/4	6300	8.27	3640	3.54	2250	1.97
1/8	1	6300	7.48	3640	3.15	2250	1.77
1/8	1-3/16	6300	7.48	3640	3.15	2250	1.77
3/16	1/2	5040	11.02	2860	4.53	1800	2.36
3/16	5/8	5040	11.02	2860	4.53	1800	2.36
3/16	3/4	5040	11.02	2860	4.53	1800	2.36
3/16	1	4540	10.04	2580	4.13	1620	2.17
3/16	1-3/16	4540	9.06	2580	3.74	1620	1.97
13/64	3/4	4970	16.54	2810	6.5	1840	3.15
13/64	1	4970	16.54	2810	6.5	1840	3.15
13/64	1-3/16	4470	13.39	2530	5.12	1650	2.56
1/4	5/8	4170	19.29	2380	8.07	1550	3.94
1/4	3/4	4170	19.29	2380	8.07	1550	3.94
1/4	1	4170	19.29	2380	8.07	1550	3.94
1/4	1-3/16	4170	16.34	2380	6.89	1550	3.35
1/4	1-3/8	3760	14.76	2140	6.1	1400	3.15
1/4	1-1/2	3760	12.99	2140	5.51	1400	2.76
1/4	1-3/4	3760	12.99	2140	5.51	1400	2.76
5/16	1	3390	21.85	1910	8.66	1270	4.33
5/16	1-3/16	3390	21.85	1910	8.66	1270	4.33
5/16	1-3/8	3390	21.85	1910	8.66	1270	4.33
5/16	1-1/2	3390	18.70	1910	7.28	1270	3.74
5/16	1-3/4	3050	16.73	1720	6.5	1140	3.35
5/16	2	3050	14.76	1720	5.71	1140	2.95
3/8	1-3/16	2960	22.83	1730	8.86	1060	4.53
3/8	1-3/8	2960	22.83	1730	8.86	1060	4.53
3/8	1-1/2	2960	22.83	1730	8.86	1060	4.53
3/8	1-3/4	2960	19.49	1730	7.68	1060	3.74
3/8	2	2660	17.52	1550	6.89	950	3.35
1/2	1-3/8	2180	16.14	1320	7.09	790	3.15
1/2	1-1/2	2180	16.14	1320	7.09	790	3.15
1/2	1-3/4	2180	16.14	1320	7.09	790	3.15
1/2	2	2180	13.58	1320	6.1	790	2.56
1/2	2-1/8	2180	13.58	1320	6.1	790	2.56
1/2	2-3/8	2180	13.58	1320	6.1	790	2.56
9/16	2	2080	13.39	1210	5.51	740	2.56
5/8	2	1960	15.16	1080	5.91	680	2.95
5/8	2-3/8	1960	12.99	1080	5.12	680	2.36
5/8	2-3/4	1960	12.99	1080	5.12	680	2.36
3/4	2-3/8	1490	9.65	860	3.74	530	1.97
3/4	3-1/2	1490	8.46	860	3.35	530	1.77
1	3-1/2	1090	7.09	800	3.54	500	1.77

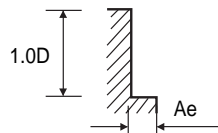
DIA. = Diameter
 LOC = Length of Cut
 RPM = rev./min.
 FEED = inch/min.





GMF28 SERIES

MATERIAL		NON-ALLOYED STEELS ALLOY STEELS CAST IRON			ALLOY STEELS HEAT RESISTANT STEELS			HARDENED STEELS		
HARDNESS		~ HRC 35			HRC 35 ~ HRC 45			HRC 45 ~ HRC 55		
STRENGTH		~ 1100N/mm ²			1110 ~ 1500N/mm ²			1500 ~ 2000N/mm ²		
DIA.	LBS	RPM	FEED	Ap(inch)	RPM	FEED	Ap(inch)	RPM	FEED	Ap(inch)
3/64	5/32	19650	12.40	.0007	12200	7.28	.0005	7560	1.97	.0004
3/64	3/16	19650	12.40	.0007	12200	7.28	.0005	7560	1.97	.0004
3/64	1/4	17690	10.04	.0004	10980	5.91	.0003	6800	1.57	.0002
3/64	5/16	17690	10.04	.0004	10980	5.91	.0003	6800	1.57	.0002
1/16	1/4	16060	11.81	.0009	10110	7.09	.0007	6140	1.77	.0006
1/16	5/16	16060	11.81	.0009	10110	7.09	.0007	6140	1.77	.0006
1/16	3/8	14460	9.65	.0005	9100	5.71	.0004	5530	1.57	.0003
1/16	1/2	14460	9.65	.0005	9100	5.71	.0004	5530	1.57	.0003
1/16	5/8	14460	9.65	.0003	9100	5.71	.0002	5530	1.57	.0002
5/64	5/16	14010	13.19	.0011	9140	7.87	.0009	6050	2.36	.0007
5/64	3/8	14010	13.19	.0011	9140	7.87	.0009	6050	2.36	.0007
5/64	1/2	12610	10.63	.0007	8230	6.50	.0005	5440	1.97	.0004
5/64	5/8	12610	10.63	.0007	8230	6.50	.0005	5440	1.97	.0004
1/8	3/8	10110	14.17	.0026	6300	8.86	.0020	3810	2.56	.0016
1/8	1/2	10110	14.17	.0019	6300	8.86	.0014	3810	2.56	.0011
1/8	5/8	10110	14.17	.0019	6300	8.86	.0014	3810	2.56	.0011
1/8	3/4	9100	11.42	.0011	5670	7.28	.0008	3430	2.17	.0006
1/8	1-3/16	9100	11.42	.0007	5670	7.28	.0005	3430	2.17	.0004
3/16	1/2	7620	22.44	.0039	4650	13.98	.0030	2960	2.36	.0024
3/16	5/8	7620	22.44	.0028	4650	13.98	.0021	2960	2.36	.0017
3/16	3/4	7620	22.44	.0028	4650	13.98	.0021	2960	2.36	.0017
3/16	1-3/16	6860	18.31	.0016	4190	11.22	.0012	2670	1.97	.0009
3/16	1-1/2	6860	18.31	.0016	4190	11.22	.0012	2670	1.97	.0009
13/64	3/4	7330	27.56	.0030	4390	16.34	.0022	2690	3.15	.0018
13/64	1-1/2	6590	22.24	.0017	3950	13.39	.0013	2420	2.56	.0010
1/4	5/8	6300	29.33	.0052	3810	18.31	.0039	2270	3.54	.0031
1/4	1-3/16	6300	29.33	.0037	3810	18.31	.0028	2270	3.54	.0022
5/16	1	5080	33.66	.0046	3040	17.91	.0035	2030	5.12	.0028
5/16	1-5/8	4570	27.36	.0026	2740	14.37	.0020	1820	4.13	.0016
3/8	1-3/16	4100	30.12	.0055	2520	14.96	.0041	1710	4.33	.0033
3/8	1-3/4	4100	30.12	.0055	2520	14.96	.0041	1710	4.33	.0033
1/2	1-3/8	3120	23.03	.0105	1900	11.22	.0079	1320	3.54	.0063
1/2	2	3120	23.03	.0074	1900	11.22	.0055	1320	3.54	.0044



DIA. = Diameter
LBS = Length Below Shank

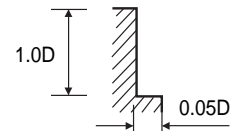
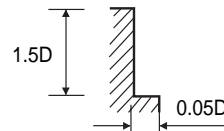
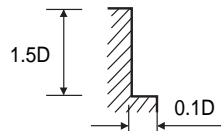
RPM = rev./min.
FEED = inch/min.



CARBIDE, 6 FLUTE 45° HELIX

GMF29 SERIES - NORMAL SPEED

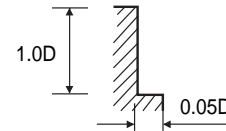
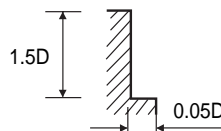
MATERIAL		NON-ALLOYED STEELS ALLOY STEELS CAST IRON		ALLOY STEELS HEAT RESISTANT STEELS		HARDENED STEELS	
HARDNESS		~ HRc 35		HRc 35 ~ HRc 45		HRc 45 ~ HRc 55	
STRENGTH		~ 1100N/mm ²		1110 ~ 1500N/mm ²		1500 ~ 2000N/mm ²	
DIA.	LOC	RPM	FEED	RPM	FEED	RPM	FEED
1/4	5/8	5775	81.85	4035	56.08	1640	8.66
1/4	1-3/16	5775	69.51	4035	47.64	1640	7.36
5/16	3/4	4440	83.30	3110	57.05	1230	8.68
5/16	1-1/2	4440	70.90	3110	48.57	1230	7.44
3/8	1	3705	86.81	2560	59.52	1105	9.09
3/8	1-1/2	3705	86.81	2560	59.52	1105	9.09
1/2	1-3/16	2950	68.64	2080	47.42	870	7.36
1/2	2	2950	58.47	2080	40.27	870	6.28
5/8	1-1/2	2225	52.50	1565	36.58	685	5.38
5/8	2-3/8	2225	44.65	1565	31.21	685	4.55
3/4	1-3/4	1850	43.82	1280	29.97	545	4.76
3/4	2-3/8	1850	37.20	1280	25.42	545	4.14



DIA. = Diameter
LOC = Length of Cut
RPM = rev./min.
FEED = inch/min.

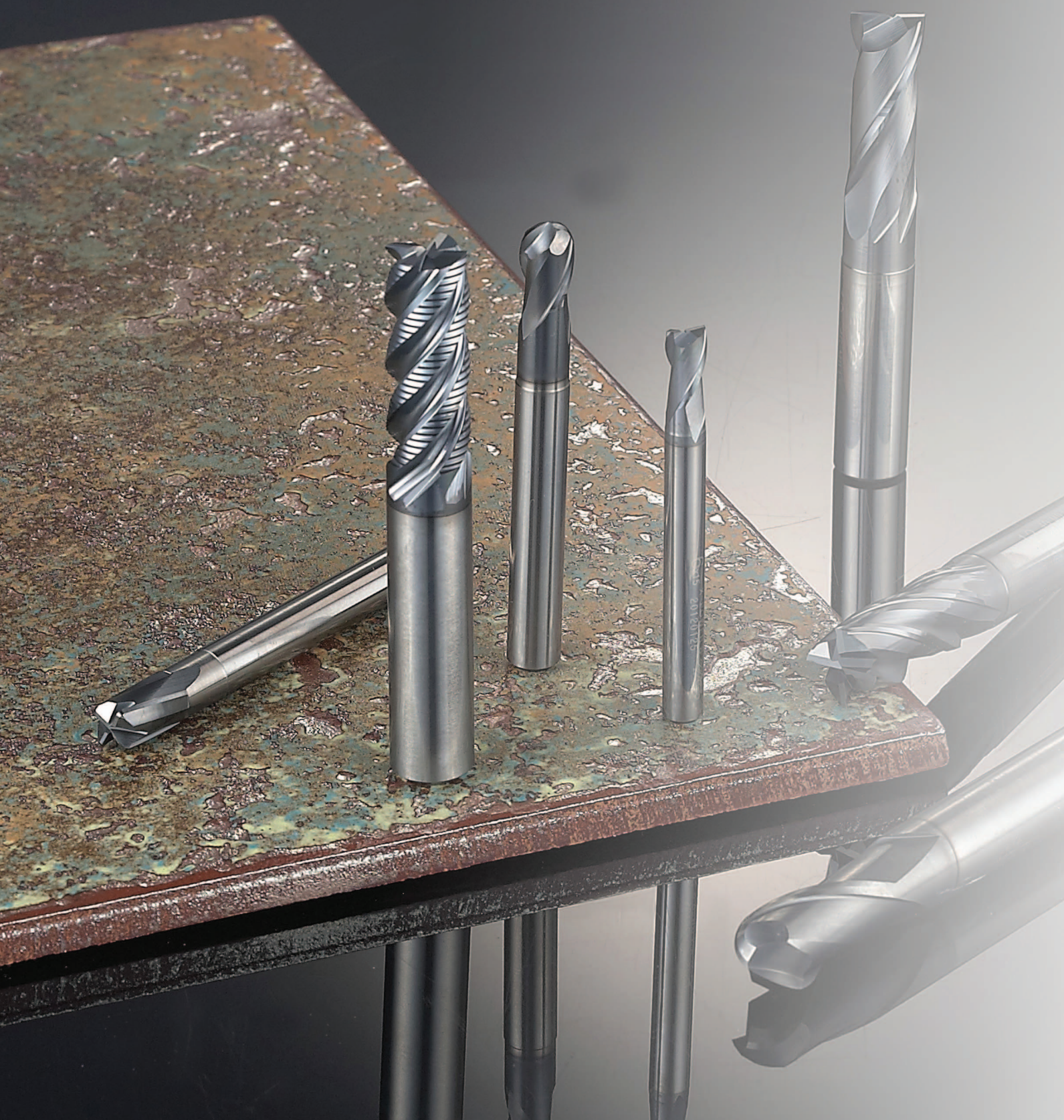
- HIGH SPEED

MATERIAL		ALLOY STEELS HEAT RESISTANT STEELS		HARDENED STEELS	
HARDNESS		HRc 35 ~ HRc 45		HRc 45 ~ HRc 55	
STRENGTH		1110 ~ 1500N/mm ²		1500 ~ 2000N/mm ²	
DIAMETER	Length of Cut	RPM	FEED	RPM	FEED
1/4	5/8	17455	249.23	8735	124.73
1/4	1-3/16	17455	211.77	8735	106.11
5/16	3/4	13335	253.82	6670	127.11
5/16	1-1/2	13335	215.58	6670	108.10
3/8	1	11005	260.02	5555	132.28
3/8	1-1/2	11005	260.02	5555	132.28
1/2	1-3/16	8735	206.14	4365	103.07
1/2	2	8735	175.40	4365	87.69
5/8	1-1/2	6670	157.50	3340	78.75
5/8	2-3/8	6670	133.94	3340	66.97
3/4	1-3/4	5555	132.28	2785	63.87
3/4	2-3/8	5555	112.44	2785	54.15



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

Suitable for wide range of work material, specifically for increasing tool life when machining pre-hardened materials, low hardness materials and cast iron, etc. High speed cutting, dry and wet cut recommended together.



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