



PLAIN SHANK

GMF60 SERIES

FLAT SHANK

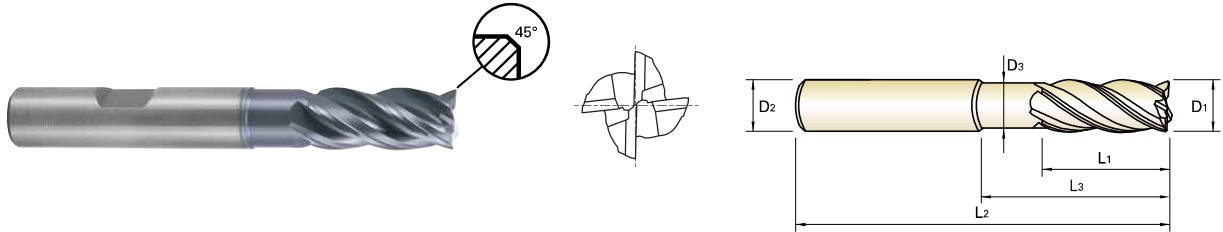
GMF61 SERIES

CARBIDE, 4 FLUTE with EXTENDED NECK

- **VOLLHARTMETALL, 4 SCHNEIDEN mit ABGESETZTEM HALS**
- **CARBURE, 4 DENTS, DÉTALONNÉE**
- **MD, 4 TAGLIENTI CON SCARICO ESTESO**

▶ Special flute geometry and multiple helix eliminate vibrations
 ▶ Excellent performance for Stainless Steels, Mild Steels, Cast Iron, Low/Medium hardness materials under HRC40

▶ Die spezielle Schneidengeometrie und der ungleiche Drill verhindern Vibrationen
 ▶ Exzellente Leistung in Edelmetallen, Baustählen, Guss und Stählen unter 40HRC

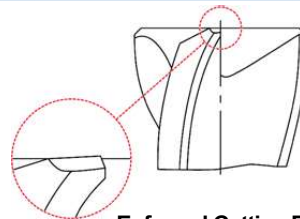


Unit : mm

EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter	Chamfer
PLAIN	FLAT	D1	D2	L1	L3	L2	D3	
GMF60030	GMF61030	3.0	6	7	12	54	2.7	0.10
GMF60901	GMF61901	3.0	6	7	17	57	2.7	0.10
GMF60902	GMF61902	3.0	6	8	14	57	2.7	0.10
GMF60040	GMF61040	4.0	6	8	15	57	3.7	0.15
GMF60903	GMF61903	4.0	6	8	22	63	3.7	0.15
GMF60904	GMF61904	4.0	6	11	16	57	3.7	0.15
GMF60050	GMF61050	5.0	6	10	17	57	4.7	0.15
GMF60905	GMF61905	5.0	6	10	27	67	4.7	0.15
GMF60906	GMF61906	5.0	6	13	18	57	4.7	0.15
GMF60060	GMF61060	6.0	6	10	15	57	5.5	0.20
GMF60907	GMF61907	6.0	6	10	20	62	5.5	0.20
GMF60908	GMF61908	6.0	6	10	32	74	5.5	0.20
GMF60909	GMF61909	6.0	6	13	21	57	5.5	0.20
GMF60080	GMF61080	8.0	8	12	20	63	7.5	0.20
GMF60910	GMF61910	8.0	8	12	30	73	7.5	0.20
GMF60911	GMF61911	8.0	8	12	46	90	7.5	0.20
GMF60912	GMF61912	8.0	8	19	27	63	7.5	0.20
GMF60100	GMF61100	10.0	10	14	25	72	9.2	0.30
GMF60913	GMF61913	10.0	10	14	35	82	9.2	0.30
GMF60914	GMF61914	10.0	10	14	55	102	9.2	0.30
GMF60915	GMF61915	10.0	10	22	32	72	9.2	0.30

▶ NEXT PAGE

Mill Dia. Tolerance (mm)		Shank Dia. Tolerance
Up to Ø12	0 ~ - 0.02	h5
Over Ø12	0 ~ - 0.03	* Shank Dia. ≥ Ø12 : h6



Enforced Cutting Edge

◎ : Excellent ○ : Good

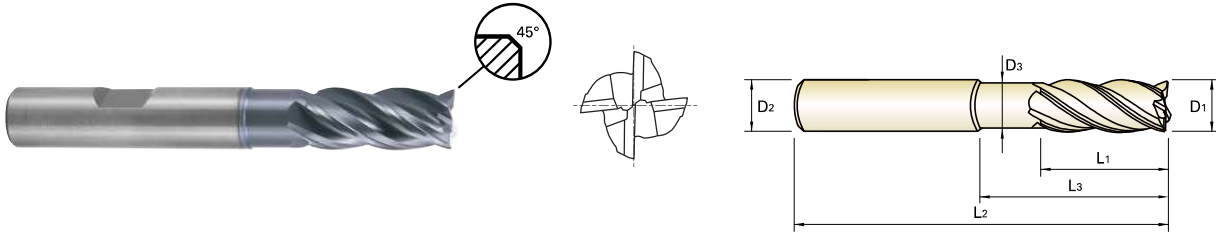
ISO Material Description	P											M				K					
	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron			
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	
ISO Material Description	N										S							H			
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend											○	○	○	○	○	○	○				

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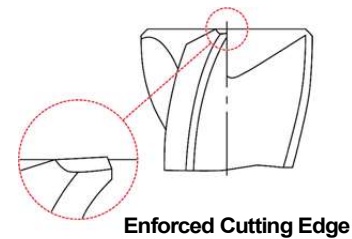
▶ Die spezielle Schneidengeometrie und der ungleiche Drill verhindern Vibrationen
 ▶ Exzellente Leistung in Edelstählen, Baustählen, Guss und Stählen unter 40HRC



Unit : mm

EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Length Below Shank	Overall Length	Neck Diameter	Chamfer
PLAIN	FLAT	D1	D2	L1	L3	L2	D3	
GMF60120	GMF61120	12.0	12	16	30	83	11.0	0.35
GMF60916	GMF61916	12.0	12	16	40	93	11.0	0.35
GMF60917	GMF61917	12.0	12	16	64	117	11.0	0.35
GMF60918	GMF61918	12.0	12	26	38	83	11.0	0.35
GMF60160	GMF61160	16.0	16	22	38	92	15.0	0.40
GMF60919	GMF61919	16.0	16	22	55	109	15.0	0.40
GMF60920	GMF61920	16.0	16	22	87	141	15.0	0.40
GMF60921	GMF61921	16.0	16	32	44	92	15.0	0.40
GMF60200	GMF61200	20.0	20	26	50	104	19.0	0.50
GMF60922	GMF61922	20.0	20	26	70	124	19.0	0.50
GMF60923	GMF61923	20.0	20	26	110	164	19.0	0.50
GMF60924	GMF61924	20.0	20	38	54	104	19.0	0.50

Mill Dia. Tolerance (mm)		Shank Dia. Tolerance
Up to Ø12	0 ~ - 0.02	h5
Over Ø12	0 ~ - 0.03	* Shank Dia. ≥ Ø12 : h6



◎ : Excellent ○ : Good

ISO Material Description	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRC	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	42	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	

ISO Material Description	N										S						H				
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys						Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRC	60	100	75	90	130	110	90	100			15	30	25	38	34	40	50	55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550
Recommend											○	○	○	○	○	○	○	○	○	○	○

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

4 FLUTE - SIDE & SLOTTING

Vc = m/min.
fz = mm/tooth
RPM = rev./min.
FEED = mm/min.

ISO	VDI 3323	Material Description	Ae		Ap		Parameter	Diameter (Ø)												
			Side	Slotting	Side	Slotting		3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	25.0	
P	1-4	Non-alloy steel	0.5D	1.0D	1.5D (1.2D)	1.0D (0.8D)	Vc	152	152	152	152	152	168	168	168	168	168	168	168	168
							fz	0.005	0.008	0.011	0.016	0.027	0.038	0.047	0.049	0.053	0.059	0.065	0.064	
	RPM	16128	12096	9677	8064	6048	5348	4456	3820	3342	2971	2674	2139							
	FEED	323	387	426	516	653	813	838	749	709	701	695	548							
	5	Low alloy steel	0.5D	1.0D	1.5D (1.2D)	1.0D (0.8D)	Vc	107	107	107	107	107	117	117	117	117	117	117	117	
							fz	0.005	0.008	0.011	0.016	0.027	0.038	0.047	0.049	0.053	0.059	0.065	0.064	
	RPM	11353	8515	6812	5677	4257	3724	3104	2660	2328	2069	1862	1490							
	FEED	227	272	300	363	460	566	583	521	493	488	484	381							
	6-7	Low alloy steel	0.5D	1.0D	1.5D (1.2D)	1.0D (0.8D)	Vc	152	152	152	152	152	168	168	168	168	168	168	168	
							fz	0.005	0.008	0.011	0.016	0.027	0.038	0.047	0.049	0.053	0.059	0.065	0.064	
RPM	16128	12096	9677	8064	6048	5348	4456	3820	3342	2971	2674	2139								
FEED	323	387	426	516	653	813	838	749	709	701	695	548								
8-9	Low alloy steel	0.5D	1.0D	1.5D (1.2D)	1.0D (0.8D)	Vc	107	107	107	107	107	117	117	117	117	117	117	117		
						fz	0.005	0.008	0.011	0.016	0.027	0.038	0.047	0.049	0.053	0.059	0.065	0.064		
RPM	11353	8515	6812	5677	4257	3724	3104	2660	2328	2069	1862	1490								
FEED	227	272	300	363	460	566	583	521	493	488	484	381								
10-11.1	High alloyed steel, and tool steel	0.5D	1.0D	1.5D (1.2D)	1.0D (0.8D)	Vc	64	64	64	64	64	70	70	70	70	70	70	70		
						fz	0.003	0.006	0.008	0.011	0.019	0.027	0.032	0.034	0.037	0.041	0.045	0.045		
RPM	6791	5093	4074	3395	2546	2228	1857	1592	1393	1238	1114	891								
FEED	81	122	130	149	194	241	238	216	206	203	201	160								
M	12-13	Stainless steel	0.5D	1.0D	1.5D (1.2D)	1.0D (0.8D)	Vc	148	148	148	148	148	148	148	148	148	148	148		
							fz	0.004	0.006	0.009	0.013	0.022	0.034	0.039	0.042	0.045	0.05	0.055	0.055	
	RPM	15703	11777	9422	7852	5889	4711	3926	3365	2944	2617	2355	1884							
	FEED	251	283	339	408	518	641	612	565	530	523	518	415							
	14.1	Stainless steel	0.5D	1.0D	1.5D (1.2D)	1.0D (0.8D)	Vc	106	106	106	106	106	106	106	106	106	106	106	106	
							fz	0.005	0.008	0.013	0.018	0.028	0.048	0.055	0.059	0.062	0.07	0.077	0.077	
RPM	11247	8435	6748	5623	4218	3374	2812	2410	2109	1874	1687	1350								
FEED	225	270	351	405	472	648	619	569	523	525	520	416								
14.2	Stainless steel	0.5D	1.0D	1.5D (1.2D)	1.0D (0.8D)	Vc	95	95	95	95	95	95	95	95	95	95	95	95		
						fz	0.005	0.008	0.013	0.018	0.028	0.048	0.055	0.059	0.062	0.069	0.076	0.076		
RPM	10080	7560	6048	5040	3780	3024	2520	2160	1890	1680	1512	1210								
FEED	202	242	314	363	423	581	554	510	469	464	460	368								
K	15-20	Grey cast iron	0.5D	1.0D	1.5D (1.2D)	1.0D (0.8D)	Vc	112	112	112	112	112	123	123	123	123	123	123	123	
							fz	0.006	0.01	0.014	0.02	0.034	0.048	0.058	0.061	0.065	0.073	0.081	0.079	
RPM	11884	8913	7130	5942	4456	3915	3263	2797	2447	2175	1958	1566								
FEED	285	357	399	475	606	752	757	682	636	635	634	495								
S	31-35	Heat Resistant Super Alloys	0.25D	1.0D	1.0D	0.5D	Vc	26	26	26	26	26	26	26	26	26	26	26	26	
							fz	0.005	0.007	0.008	0.012	0.019	0.033	0.038	0.04	0.043	0.048	0.054	0.052	
	RPM	2759	2069	1655	1379	1035	828	690	591	517	460	414	331							
	FEED	55	58	53	66	79	109	105	95	89	88	89	69							
36-37	Titanium Alloys	0.4D	1.0D	1.0D	0.5D	Vc	58	58	58	58	58	58	58	58	58	58	58	58		
						fz	0.004	0.007	0.011	0.016	0.025	0.042	0.05	0.053	0.055	0.062	0.068	0.069		
RPM	6154	4615	3692	3077	2308	1846	1538	1319	1154	1026	923	738								
FEED	98	129	162	197	231	310	308	280	254	254	251	204								

*() : Short length & Neck type

