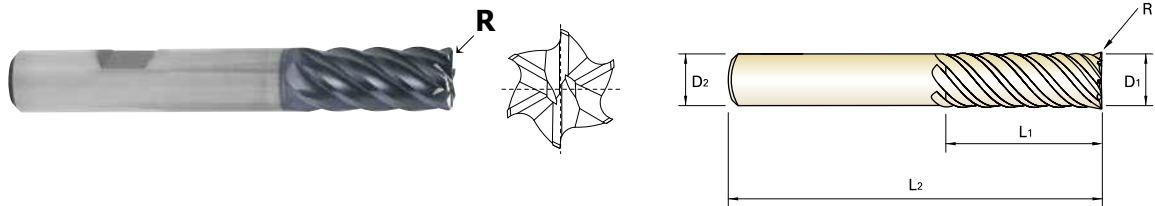




CARBIDE, 6 FLUTE CORNER RADIUS LONG LENGTH

- VOLLHARTMETALL, 6 SCHNEIDEN ECKENRADIUS LANG
- CARBURE, 6 DENTS, SÉRIE LONGUE, RAYONNÉE
- MD, 6 TAGLIENTI SERIE LUNGA TORICA

- The unique geometry of the variable pitch provides the best chatter free tool for high speed and trochoidal milling
- Excellent performance for Stainless Steels, Mild Steels, Cast Iron, Low/Medium hardness materials under HRC40
- Durch die einzigartige Geometrie und die ungleiche Teilung der Schneiden, eignet sich Fräser Bestens für hohe Bearbeitungsgeschwindigkeiten und trochiodales Fräsen.
- Exzellente Leistung in Edelstählen, Baustählen, Guss und Stählen unter 40HRc



Unit : mm						
EDP No.		Corner Radius	Mill Diameter		Length of Cut	
PLAIN	FLAT		D1	D2	L1	L2
GMG16060	GMG17060	R0.5	6.0	6	13	57
GMG16901	GMG17901	R1.0	6.0	6	13	57
GMG16080	GMG17080	R0.5	8.0	8	19	63
GMG16902	GMG17902	R1.0	8.0	8	19	63
GMG16100	GMG17100	R0.5	10.0	10	22	72
GMG16903	GMG17903	R1.0	10.0	10	22	72
GMG16904	GMG17904	R1.5	10.0	10	22	72
GMG16905	GMG17905	R2.0	10.0	10	22	72
GMG16120	GMG17120	R0.5	12.0	12	26	83
GMG16906	GMG17906	R1.0	12.0	12	26	83
GMG16907	GMG17907	R1.5	12.0	12	26	83
GMG16908	GMG17908	R2.0	12.0	12	26	83
GMG16909	GMG17909	R3.0	12.0	12	26	83
GMG16160	GMG17160	R1.0	16.0	16	32	92
GMG16910	GMG17910	R1.5	16.0	16	32	92
GMG16911	GMG17911	R2.0	16.0	16	32	92
GMG16912	GMG17912	R3.0	16.0	16	32	92
GMG16200	GMG17200	R1.0	20.0	20	38	104
GMG16913	GMG17913	R1.5	20.0	20	38	104
GMG16914	GMG17914	R2.0	20.0	20	38	104
GMG16915	GMG17915	R3.0	20.0	20	38	104
GMG16250	GMG17250	R1.0	25.0	25	44	104
GMG16916	GMG17916	R1.5	25.0	25	44	104
GMG16917	GMG17917	R2.0	25.0	25	44	104
GMG16918	GMG17918	R3.0	25.0	25	44	104

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	P										M				K						
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
VDI 3323																					
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	19	20	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommend	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	
ISO	N										S							H			
Material Description	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	
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
VDI 3323																					
HRc											15	30	25	38	34	36	37	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											○	○	○	○	○	○	○	○	○	○	○



RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDPARAMETER

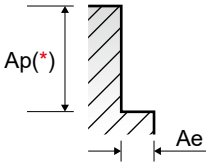
GMG16 GMG17	GMG18 GMG19	GMG12 GMG13	GMG14 GMG15
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6 FLUTE - SIDE CUTTING

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

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Diameter (Ø)						
						6.0	8.0	10.0	12.0	16.0	20.0	25.0
P	1-4	Non-alloy steel	0.05D	2.0D	Vc	300	300	300	300	300	300	300
					fz	0.068	0.116	0.144	0.173	0.202	0.225	0.232
					RPM	15915	11937	9549	7958	5968	4775	3820
					FEED	6494	8308	8251	8260	7234	6446	5317
	5	Low alloy steel	0.05D	2.0D	Vc	203	203	203	203	203	203	203
					fz	0.05	0.085	0.106	0.128	0.149	0.167	0.174
					RPM	10769	8077	6462	5385	4039	3231	2585
					FEED	3231	4119	4110	4135	3610	3237	2698
	6-7	Low alloy steel	0.05D	2.0D	Vc	300	300	300	300	300	300	300
					fz	0.068	0.116	0.144	0.173	0.202	0.225	0.232
					RPM	15915	11937	9549	7958	5968	4775	3820
					FEED	6494	8308	8251	8260	7234	6446	5317
	8-9	Low alloy steel	0.05D	2.0D	Vc	203	203	203	203	203	203	203
					fz	0.05	0.085	0.106	0.128	0.149	0.167	0.174
					RPM	10769	8077	6462	5385	4039	3231	2585
					FEED	3231	4119	4110	4135	3610	3237	2698
M	10-11.1	High alloyed steel, and tool steel	0.05D	2.0D	Vc	100	100	100	100	100	100	100
					fz	0.041	0.071	0.088	0.105	0.123	0.137	0.144
					RPM	5305	3979	3183	2653	1989	1592	1273
					FEED	1305	1695	1681	1671	1468	1308	1100
	12-13	Stainless steel	0.05D	2.0D	Vc	213	213	213	213	213	213	213
					fz	0.049	0.084	0.104	0.125	0.146	0.162	0.168
					RPM	11300	8475	6780	5650	4238	3390	2712
					FEED	3322	4271	4231	4238	3712	3295	2734
	14.1	Stainless steel	0.05D	2.0D	Vc	147	147	147	147	147	147	147
					fz	0.041	0.071	0.088	0.105	0.123	0.137	0.143
					RPM	7799	5849	4679	3899	2924	2340	1872
					FEED	1918	2492	2471	2457	2158	1923	1606
	14.2	Stainless steel	0.05D	2.0D	Vc	134	134	134	134	134	134	134
					fz	0.041	0.071	0.088	0.105	0.123	0.137	0.142
					RPM	7109	5332	4265	3554	2666	2133	1706
					FEED	1749	2271	2252	2239	1967	1753	1454
S	31-35	Heat Resistant Super Alloys	0.05D	2.0D	Vc	33	33	33	33	33	33	33
					fz	0.033	0.055	0.07	0.082	0.097	0.112	0.115
					RPM	1751	1313	1050	875	657	525	420
					FEED	347	433	441	431	382	353	290
	36-37	Titanium Alloys	0.05D	2.0D	Vc	116	116	116	116	116	116	116
					fz	0.033	0.055	0.07	0.083	0.097	0.113	0.117
					RPM	6154	4615	3692	3077	2308	1846	1477
					FEED	1218	1523	1551	1532	1343	1252	1037

(*) : If product's Length of Cut(L.O.C) is below 2D, it must be applied with L.O.C x 90%



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◎ : Excellent ○ : Good

Recommended cutting conditions : P 458

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc			
P	1	Non-alloy steel	About 0.15% C	Annealed	125		⊙	⊙	⊙
	2		About 0.45% C	Annealed	190	13	⊙	⊙	⊙
	3		About 0.45% C	Quenched & Tempered	250	25	⊙	⊙	⊙
	4		About 0.75% C	Annealed	270	28	⊙	⊙	⊙
	5		About 0.75% C	Quenched & Tempered	300	32	⊙	⊙	⊙
	6	Low alloy steel		Annealed	180	10	⊙	⊙	⊙
	7			Quenched & Tempered	275	29	⊙	⊙	⊙
	8			Quenched & Tempered	300	32	⊙	⊙	⊙
	9			Quenched & Tempered	350	38	⊙	⊙	⊙
	10	High alloyed steel, and tool steel		Annealed	200	15	⊙	⊙	⊙
	11			Quenched & Tempered	325	35	⊙	⊙	⊙
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15	⊙	⊙	⊙
	13		Martensitic	Quenched & Tempered	240	23	⊙	⊙	⊙
	14		Austenitic		180	10	⊙	⊙	⊙
K	15	Grey cast iron	Pearlitic / ferritic		180	10	⊙	⊙	⊙
	16		Pearlitic (Martensitic)		260	26	⊙	⊙	⊙
	17	Nodular cast iron	Ferritic		160	3	⊙	⊙	⊙
	18		Pearlitic		250	25	⊙	⊙	⊙
	19	Malleable cast iron	Ferritic		130		⊙	⊙	⊙
	20		Pearlitic		230	21	⊙	⊙	⊙
N	21	Aluminum-wrought alloy	Not Curable		60				
	22		Curable Hardened		100				
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75				
	24		≤ 12% Si, Curable Hardened		90				
	25		> 12% Si, Not Curable		130				
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110				
	27		CuZn, CuSnZn (Brass)		90				
	28		CuSn, lead-free copper and electrolytic copper		100				
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic						
	30		Rubber, Wood, etc.						
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15	○	○	○
	32			Cured	280	30	○	○	○
	33			Annealed	250	25	○	○	○
	34		Ni or Co Based	Cured	350	38	○	○	○
	35			Cast	320	34	○	○	○
	36	Titanium Alloys	Pure Titanium		400 Rm		○	○	○
	37		Alpha + Beta Alloys	Hardened	1050 Rm		○	○	○
H	38	Hardened steel		Hardened	550	55			
	39			Hardened	630	60			
	40	Chilled Cast Iron		Cast	400	42			
	41	Hardened Cast Iron		Hardened	550	55			

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