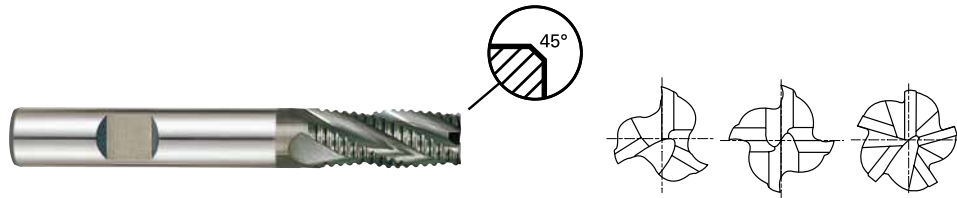


CARBIDE, MULTI FLUTE LONG LENGTH ROUGHING - COARSE

- VOLLHARTMETALL, MEHRSCHEIDEN LANG SCHRUPPFÄSER - GROB
- ⌚ Fraise carbure, multi-dents, ébauche, pas grossier, longue
- ⌚ 3 - 4 - 5 TAGLIANTI, PER SGROSSATURA, SERIE LUNGA - Bombato grosso

- ▶ Suitable for dry milling applications at high temperatures.
- ▶ Excellent high-performance end mills.
- ▶ Fast chip ejection.

- ▶ Für die Trockenbearbeitung.
- ▶ Hervorragendes Preis - Leistungsverhältnis.
- ▶ Guter Spanauswurf.

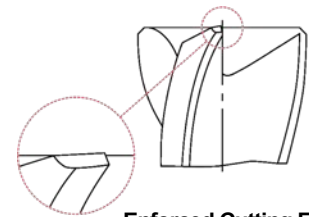


Unit : mm

EDP No.	Mill Diameter	Shank Diameter	Length of Cut	Overall Length	No. of Flute	Chamfer
	h10	h5				
G9A42060	6.0	6	16	57	3.00	0.60
G9A42080	8.0	8	16	63	3.00	0.60
G9A42100	10.0	10	22	72	4.00	0.60
G9A42120	12.0	12	26	83	4.00	0.74
G9A42140	14.0	14	26	83	4.00	0.94
G9A42160	16.0	16	32	92	4.00	0.94
G9A42180	18.0	18	32	92	4.00	0.94
G9A42200	20.0	20	38	104	4.00	0.94
G9A42250	25.0	25	45	121	5.00	0.94

Tolerances according to DIN 7160 & 7161

	Tolerance range in μm				
	Nominal-Diameter in mm				
	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
h10	0 - 40	0 - 48	0 - 58	0 - 70	0 - 84
h5	0 - 4	0 - 5	0 - 6	0 - 8	0 - 9



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	42	55		
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	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

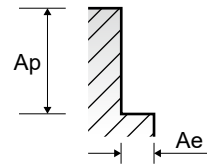
G9A42 SERIES

MULTI FLUTE ROUGHING - SIDE CUTTING

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

ISO	VDI 3323	Material Description	Ae	Ap	Parameter	Mill Diameter (Ø)									
						6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	25.0	
P	1-4	Non-alloy steel	0.3D	1.5D	Vc	250	250	245	255	255	255	250	260	285	
					fz	0.05	0.067	0.063	0.075	0.088	0.1	0.112	0.112	0.1	
	RPM	13263	9947	7799	6764	5798	5073	4421	4138	3629					
	FEED	1989	1999	1965	2029	2041	2029	1981	1854	1814					
	5	Non-alloy steel	0.3D	1.5D	Vc	200	195	205	190	195	205	210	190	210	
					fz	0.022	0.023	0.028	0.033	0.04	0.04	0.041	0.039	0.039	
	RPM	10610	7759	6525	5040	4434	4078	3714	3024	2674					
	FEED	700	535	731	665	709	653	609	472	521					
	6-7	Low alloy steel	0.3D	1.5D	Vc	250	250	245	255	255	255	250	260	285	
					fz	0.05	0.067	0.063	0.075	0.088	0.1	0.112	0.112	0.1	
RPM	13263	9947	7799	6764	5798	5073	4421	4138	3629						
FEED	1989	1999	1965	2029	2041	2029	1981	1854	1814						
8-9	Low alloy steel	0.3D	1.5D	Vc	200	195	205	190	195	205	210	190	210		
				fz	0.022	0.023	0.028	0.033	0.04	0.04	0.041	0.039	0.039		
RPM	10610	7759	6525	5040	4434	4078	3714	3024	2674						
FEED	700	535	731	665	709	653	609	472	521						
10	High alloyed steel, and tool steel	0.3D	1.5D	Vc	250	250	245	255	255	255	250	260	285		
				fz	0.05	0.067	0.063	0.075	0.088	0.1	0.112	0.112	0.1		
RPM	13263	9947	7799	6764	5798	5073	4421	4138	3629						
FEED	1989	1999	1965	2029	2041	2029	1981	1854	1814						
11.1 - 11.2	High alloyed steel, and tool steel	0.3D	1.5D	Vc	200	195	205	190	195	205	210	190	210		
				fz	0.022	0.023	0.028	0.033	0.04	0.04	0.041	0.039	0.039		
RPM	10610	7759	6525	5040	4434	4078	3714	3024	2674						
FEED	700	535	731	665	709	653	609	472	521						
M	14.1	Stainless steel	0.05D	1.0D	Vc	135	135	135	135	135	140	130	130	145	
fz	0.022	0.022	0.028	0.034	0.039	0.038	0.039	0.038	0.038	0.038					
RPM	7162	5371	4297	3581	3069	2785	2299	2069	1846						
FEED	473	355	481	487	479	423	359	314	351						
S	31-35	Heat Resistant Super Alloys	0.05D	1.0D	Vc	40	40	35	40	35	35	35	35	40	
					fz	0.026	0.024	0.036	0.04	0.037	0.032	0.038	0.041	0.06	
RPM	2122	1592	1114	1061	796	696	619	557	509						
FEED	166	115	160	170	118	89	94	91	153						
H	40	Chilled Cast Iron	0.3D	1.5D	Vc	200	195	205	190	195	205	210	190	210	
					fz	0.022	0.023	0.028	0.033	0.04	0.04	0.041	0.039	0.039	
RPM	10610	7759	6525	5040	4434	4078	3714	3024	2674						
FEED	700	535	731	665	709	653	609	472	521						

※ The FEED, in long & extra long types, should be reduced by around 50%



SELECTION GUIDE

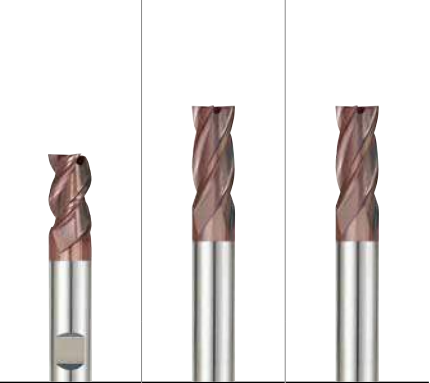


SERIES	G9G49	G9432	G9G50
FLUTE	3	4	4
HELIX ANGLE	45°	30°	30°
CUTTING EDGE SHAPE	SQUARE	SQUARE	SQUARE
SIZE MIN	D3.0	D1.0	D3.0
SIZE MAX	D20.0	D20.0	D20.0
PAGE	585	586	587

SOLID CARBIDE
K-2
END MILLS

General Purpose with Coating
Conventional or High Speed Milling, Wet or Dry Cutting

LONG LENGTH with CHAMFER	SHORT LENGTH	SHORT LENGTH with CHAMFER
TiAlN based	TiAlN based	TiAlN based



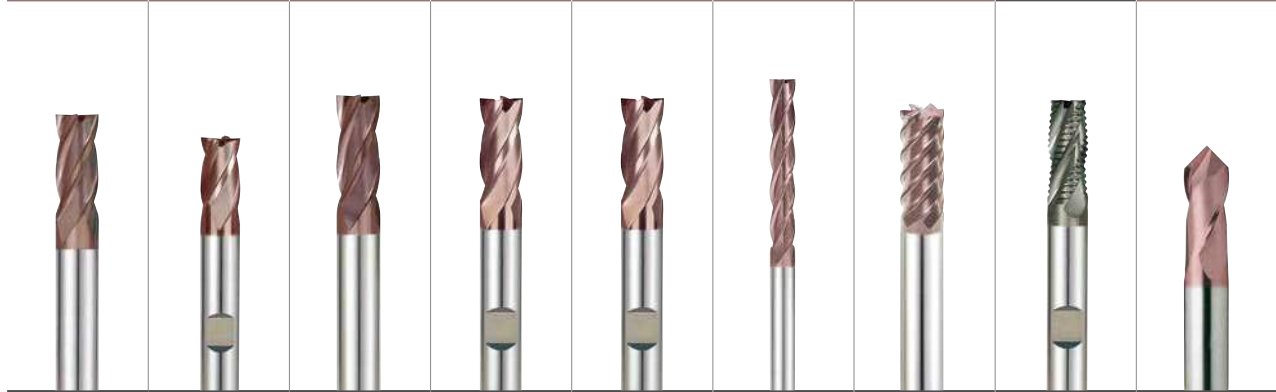
Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P 597

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRc	G9G49	G9432	G9G50
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		Ferritic	130		○	○	○
20	Malleable cast iron	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			

G9A69	G9448	G9540	G9449	G9G51	G9453	G9F45 G9F46	G9A42	G9400
4	4	4	4	4	4	4&6	Multi Flute	2
30°	≈ 30°	≈ 30°	≈ 30°	≈ 30°	30°	45°	30°	30°
SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	ROUGHING	DRILL MILL
D1.0	D2.0	D3.5	D2.0	D3.0	D3.0	D3.0	D6.0	D3.0
D20.0	D20.0	D20.0	D20.0	D20.0	D20.0	D20.0	D25.0	D20.0
588	589	590	591	592	593	594	595	596
SHORT LENGTH	SHORT LENGTH	LONG LENGTH	LONG LENGTH	LONG LENGTH with CHAMFER	EXTRA LONG LENGTH	SHORT LENGTH LONG LENGTH	LONG LENGTH	-
TiAIN based	TiAIN based	TiAIN based	TiAIN based	TiAIN based	TiAIN based	TiAIN based	X-Coating	TiAIN based



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HSS

CBN
END MILLS

i-Xmill
END MILLS

i-SMART
MODULAR
END MILLS

X5070
END MILLS

4G MILL
END MILLS

X-POWER
PRO
END MILLS

TitaNox-
POWER
END MILLS

JET-POWER
END MILLS

V7 PLUS
END MILLS

ALU-POWER
HPC
END MILLS

ALU-
POWER
END MILLS

D-POWER
GRAPHITE
END MILLS

D-POWER
CFRP
END MILLS

ROUTERS

CRX S
END MILLS

K-2
END MILLS

ONLY ONE
COATED PM60
END MILLS

TANK-
POWER
END MILLS

GENERAL
HSS
END MILLS

MILLING
CUTTERS

TECHNICAL
DATA