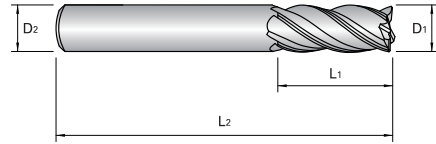
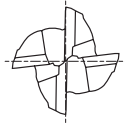


END MILLS for HEAVY CUTTING

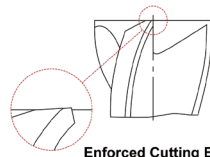


CARBIDE, 4 FLUTE MULTIPLE HELIX LONG LENGTH

- ▶ New Coating enhances heat and oxidation resistance
- ▶ Multiple Helix Designed for Optimal Chip Formation and Chip Evacuation
- ▶ Unique Geometry applied to Reduce Vibration



p.63



Mill Dia. Tolerance(mm)	Shank Dia. Tolerance
0 ~ - 0.030	h5

G9J66

G9J67

SERIES

Unit : mm

EDP No.		Mill Diameter	Shank Diameter	Length of Cut	Overall Length
PLAIN	FLAT	D1	D2	L1	L2
G9J66030	G9J67030	3.0	6	8	57
G9J66040	G9J67040	4.0	6	11	57
G9J66050	G9J67050	5.0	6	13	57
G9J66060	G9J67060	6.0	6	13	57
G9J66080	G9J67080	8.0	8	19	63
G9J66100	G9J67100	10.0	10	22	72
G9J66120	G9J67120	12.0	12	26	83
G9J66160	G9J67160	16.0	16	32	92
G9J66200	G9J67200	20.0	20	38	104

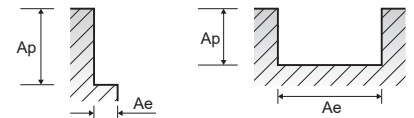
RECOMMENDED CUTTING CONDITIONS

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

G9J64, G9J65, G9J66, G9J67 SERIES 4 FLUTE MULTIFLUTE HELIX

ISO	VDI 3323	Material Description	SIDE CUTTING		SLOTTING		Parameter	Diameter (Ø)								
			Ae	Ap	Ae	Ap		3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0
P	1-4	Non-alloy steel	0.3D	1.5D (1.2D)	0.1D	0.8D	Vc	106	106	106	106	106	118	118	118	118
							fz	0.005	0.008	0.011	0.016	0.027	0.038	0.047	0.053	0.065
							RPM	11291	8470	6776	5642	4235	3745	3122	2338	1869
							FEED	228	270	298	361	459	571	588	497	487
	5	Non-alloy steel	0.3D	1.5D (1.2D)	0.1D	0.8D	Vc	75	75	75	75	75	82	82	82	82
							fz	0.005	0.008	0.011	0.016	0.027	0.038	0.047	0.053	0.065
							RPM	7945	5957	4767	3976	2982	2604	2170	1631	1302
							FEED	158	189	210	256	322	396	410	347	340
	6-7	Low alloy steel	0.3D	1.5D (1.2D)	0.1D	0.8D	Vc	106	106	106	106	106	118	118	118	118
							fz	0.005	0.008	0.011	0.016	0.027	0.038	0.047	0.053	0.065
							RPM	11291	8470	6776	5642	4235	3745	3122	2338	1869
							FEED	228	270	298	361	459	571	588	497	487
8-9	Low alloy steel	0.3D	1.5D (1.2D)	0.1D	0.8D	Vc	75	75	75	75	75	82	82	82	82	
						fz	0.005	0.008	0.011	0.016	0.027	0.038	0.047	0.053	0.065	
						RPM	7945	5957	4767	3976	2982	2604	2170	1631	1302	
						FEED	158	189	210	256	322	396	410	347	340	
10-11.1	High alloyed steel, and tool steel	0.3D	1.5D (1.2D)	0.1D	0.8D	Vc	45	45	45	45	45	49	49	49	49	
						fz	0.003	0.006	0.008	0.011	0.019	0.027	0.032	0.037	0.045	
						RPM	4753	3563	2849	2380	1785	1561	1302	973	777	
						FEED	56	84	91	105	137	168	168	144	140	
M	12-13	Stainless steel	0.1D	1.5D (1.2D)	0.1D	0.8D	Vc	104	104	104	104	104	104	104	104	104
							fz	0.004	0.006	0.009	0.013	0.022	0.034	0.039	0.045	0.055
							RPM	10990	8246	6594	5495	4123	3297	2751	2058	1652
							FEED	175	200	238	287	364	448	427	371	364
	14.1	Stainless steel	0.3D	1.5D (1.2D)	0.1D	0.8D	Vc	74	74	74	74	74	74	74	74	74
							fz	0.005	0.008	0.013	0.018	0.028	0.048	0.055	0.062	0.077
							RPM	7875	5908	4725	3934	2954	2359	1967	1477	1183
							FEED	158	189	245	284	329	455	434	368	364
	14.2	Stainless steel	0.3D	1.5D (1.2D)	0.1D	0.8D	Vc	67	67	67	67	67	67	67	67	67
							fz	0.005	0.008	0.013	0.018	0.028	0.048	0.055	0.062	0.076
							RPM	7056	5292	4235	3528	2646	2114	1764	1323	1057
							FEED	140	168	221	256	298	406	389	329	322
K	15-16	Grey cast iron	0.3D	1.5D (1.2D)	0.1D	0.8D	Vc	78	78	78	78	78	86	86	86	86
							fz	0.006	0.01	0.014	0.02	0.034	0.048	0.058	0.065	0.081
							RPM	8316	6237	4991	4158	3122	2744	2282	1715	1372
							FEED	200	249	280	333	424	525	529	445	445
	17-18	Nodular cast iron	0.3D	1.5D (1.2D)	0.1D	0.8D	Vc	78	78	78	78	78	86	86	86	86
							fz	0.006	0.01	0.014	0.02	0.034	0.048	0.058	0.065	0.081
							RPM	8316	6237	4991	4158	3122	2744	2282	1715	1372
							FEED	200	249	280	333	424	525	529	445	445
	19-20	Malleable cast iron	0.3D	1.5D (1.2D)	0.1D	0.8D	Vc	78	78	78	78	78	86	86	86	86
							fz	0.006	0.01	0.014	0.02	0.034	0.048	0.058	0.065	0.081
							RPM	8316	6237	4991	4158	3122	2744	2282	1715	1372
							FEED	200	249	280	333	424	525	529	445	445

*() : Short length



SUPER HARDENED
HSS END MILL

COATED CARBIDE END MILL
FOR GENERAL

COATED CARBIDE END MILL
FOR HEAVY CUTTING

COATED CARBIDE END MILL
FOR HARDENED MATERIAL

COATED CARBIDE DRILL
FOR GENERAL

SOLID CARBIDE, END MILLS for Heavy Cutting

Unique geometry design reduces vibration when machining versatile materials such as steels, alloy steels, stainless steels. etc

◎ : Excellent ○ : Good

SERIES

G9J64
G9J65

G9J66
G9J67

FLUTE

4

4

HELIX ANGLE

35°/37°

35°/37°

CUTTING EDGE SHAPE

SQUARE

SQUARE

SIZE MIN

D3.0

D3.0

SIZE MAX

D20.0

D20.0

PAGE

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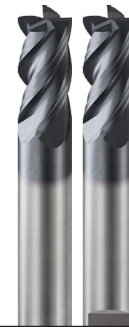
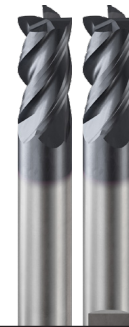
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SHORT LENGTH

LONG LENGTH

X-Coating

X-Coating



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		Duroplastic, Fiber Reinforced Plastic					
	30	Non Metallic Materials	Rubber, Wood, etc.					
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15	○	○
	32			Cured	280	30	○	○
	33		Ni or Co Based	Annealed	250	25	○	○
	34			Cured	350	38	○	○
	35			Cast	320	34	○	○
	36	Titanium Alloys	Pure Titanium		400 Rm		○	○
	37		Alpha + Beta Alloys		1050 Rm		○	○
H	38.1	Hardened steel	Hardened		550	55		
	38.2		Hardened		630	60		
	40	Chilled Cast Iron	Cast		400	42		
	41	Hardened Cast Iron	Hardened		550	55		

Recommended cutting conditions : p.63