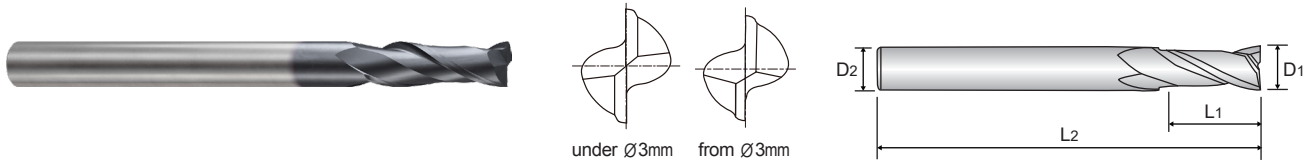


END MILLS for GENERAL

CARBIDE, 2 FLUTE 30° HELIX

- ▶ Designed for general purposes to carbon steels, tool steels, alloy steels, and stainless steels.
- ▶ Suitable for high speed machining in wet or dry condition.



Mill Dia. Tolerance (mm)	Shank Dia. Tolerance
0 ~ - 0.030	h6

G9J54 SERIES

Unit : mm

EDP No.	Mill Diameter	Mill Diameter	Shank Diameter	Length of Cut	Overall Length
	R	D1	D2	L1	L2
G9J54999N	R1.5	3.0	3	10	75
G9J54998N	R2.0	4.0	4	12	75
G9J54997N	R2.5	5.0	5	20	75
G9J54996N	R3.0	6.0	6	20	75
G9J54995N	R4.0	8.0	8	25	75
G9J54994N	R5.0	10.0	10	40	100
G9J54993N	R6.0	12.0	12	45	100

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

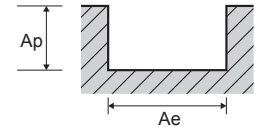
RECOMMENDED CUTTING CONDITIONS

G9F41 / G9J54 SERIES 2 FLUTE - SLOTTING

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

ISO	VDI 3323	Material Description	Ae(mm)	Ap(mm)	Parameter	Diameter (Ø)																			
						1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	8.0	9.0	10.0	12.0	14.0	16.0	20.0	
P	1-4	Non-alloy steel	1D	0.5D (Up to Ø3 : 0.2D)	Vc	49	48	53	58	62	66	70	72	73	75	77	77	78	76	74	75	81	80	79	
					fz	0.004	0.008	0.010	0.012	0.014	0.020	0.025	0.028	0.031	0.035	0.040	0.048	0.056	0.060	0.064	0.065	0.062	0.063	0.062	
	RPM		15450	10100	8500	7380	6600	6000	5550	5090	4650	4340	4100	3770	3100	2690	2350	2000	1850	1600	1250				
	FEED		115	160	170	180	190	240	275	285	290	305	325	360	350	325	300	260	230	200	155				
	5		1D	0.5D (Up to Ø3 : 0.2D)	Vc	29	28	35	37	39	41	43	43	43	45	47	46	46	46	46	47	51	50	47	
					fz	0.004	0.008	0.010	0.013	0.016	0.020	0.024	0.027	0.031	0.036	0.041	0.045	0.050	0.050	0.048	0.048	0.050	0.050		
	RPM		9200	6000	5550	4710	4100	3730	3400	3040	2750	2600	2500	2250	1850	1630	1450	1250	1150	1000	750				
	FEED		70	90	110	120	130	150	165	165	170	190	205	205	185	165	145	120	110	100	75				
	6-7	Low alloy steel	1D	0.5D (Up to Ø3 : 0.2D)	Vc	49	48	53	58	62	66	70	72	73	75	77	77	78	76	74	75	81	80	79	
					fz	0.004	0.008	0.010	0.012	0.014	0.020	0.025	0.028	0.031	0.035	0.040	0.048	0.056	0.060	0.064	0.065	0.062	0.063	0.062	
	RPM		15450	10100	8500	7380	6600	6000	5550	5090	4650	4340	4100	3770	3100	2690	2350	2000	1850	1600	1250				
	FEED		115	160	170	180	190	240	275	285	290	305	325	360	350	325	300	260	230	200	155				
8-9		1D	0.5D (Up to Ø3 : 0.2D)	Vc	29	28	35	37	39	41	43	43	43	45	47	46	46	46	46	47	51	50	47		
				fz	0.004	0.008	0.010	0.013	0.016	0.020	0.024	0.027	0.031	0.036	0.041	0.045	0.050	0.050	0.048	0.048	0.050	0.050			
RPM		9200	6000	5550	4710	4100	3730	3400	3040	2750	2600	2500	2250	1850	1630	1450	1250	1150	1000	750					
FEED		70	90	110	120	130	150	165	165	170	190	205	205	185	165	145	120	110	100	75					
10	High alloyed steel, and tool steel	1D	0.5D (Up to Ø3 : 0.2D)	Vc	49	48	53	58	62	66	70	72	73	75	77	77	78	76	74	75	81	80	79		
				fz	0.004	0.008	0.010	0.012	0.014	0.020	0.025	0.028	0.031	0.035	0.040	0.048	0.056	0.060	0.064	0.065	0.062	0.063	0.062		
RPM		15450	10100	8500	7380	6600	6000	5550	5090	4650	4340	4100	3770	3100	2690	2350	2000	1850	1600	1250					
FEED		115	160	170	180	190	240	275	285	290	305	325	360	350	325	300	260	230	200	155					
11.1 11.2		1D	0.5D (Up to Ø3 : 0.2D)	Vc	29	28	35	37	39	41	43	43	43	45	47	46	46	46	46	47	51	50	47		
				fz	0.004	0.008	0.010	0.013	0.016	0.020	0.024	0.027	0.031	0.036	0.041	0.045	0.050	0.050	0.048	0.048	0.050	0.050			
RPM		9200	6000	5550	4710	4100	3730	3400	3040	2750	2600	2500	2250	1850	1630	1450	1250	1150	1000	750					
FEED		70	90	110	120	130	150	165	165	170	190	205	205	185	165	145	120	110	100	75					
M	14.1	Stainless steel	1D	0.5D (Up to Ø3 : 0.2D)	Vc	24	29	29	30	32	34	36	36	36	38	40	39	39	39	39	40	40	38	38	
					fz	0.004	0.007	0.009	0.012	0.016	0.020	0.025	0.028	0.032	0.036	0.039	0.046	0.053	0.055	0.058	0.057	0.061	0.067	0.063	
K	15-16	Grey cast iron	1D	1.0D	Vc	63	61	63	62	62	62	62	62	62	61	60	60	60	60	62	63	58	62	60	60
					fz	0.005	0.008	0.012	0.015	0.018	0.021	0.024	0.027	0.030	0.037	0.043	0.052	0.061	0.069	0.078	0.103	0.120	0.144	0.192	
17-18	Nodular cast iron	1D	1.0D	Vc	63	61	63	62	62	62	62	62	62	61	60	60	60	60	62	63	58	62	60	60	
				fz	0.005	0.008	0.012	0.015	0.018	0.021	0.024	0.027	0.030	0.037	0.043	0.052	0.061	0.069	0.078	0.103	0.120	0.144	0.192		
19-20	Malleable cast iron	1D	1.0D	Vc	63	61	63	62	62	62	62	62	62	61	60	60	60	60	62	63	58	62	60	60	
				fz	0.005	0.008	0.012	0.015	0.018	0.021	0.024	0.027	0.030	0.037	0.043	0.052	0.061	0.069	0.078	0.103	0.120	0.144	0.192		
H	38.1 40	Hardened steel Chilled Cast Iron	1D	0.5D (Up to Ø3 : 0.2D)	Vc	29	28	35	37	39	41	43	43	43	45	47	46	46	46	46	47	51	50	47	
					fz	0.004	0.008	0.010	0.013	0.016	0.020	0.024	0.027	0.031	0.036	0.041	0.045	0.050	0.050	0.048	0.048	0.050	0.050		
					RPM	9200	6000	5550	4710	4100	3730	3400	3040	2750	2600	2500	2250	1850	1630	1450	1250	1150	1000	750	
					FEED	70	90	110	120	130	150	165	165	170	190	205	205	185	165	145	120	110	100	75	

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



SUPER HARDENED
HSS END MILL

COATED CARBIDE END MILL
FOR GENERAL

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FOR HEAVY CUTTING

COATED CARBIDE END MILL
FOR HARDENED MATERIAL

COATED CARBIDE DRILL
FOR GENERAL

SOLID CARBIDE, END MILLS for General

A highly effective solution for enhancing productivity and efficiency when cutting various materials

◎ : Excellent ○ : Good

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.47~58

SERIES	G9F44	G9J56	G9J62
FLUTE	2	2	2
HELIX ANGLE	30°	30°	30°
CUTTING EDGE SHAPE	BALL NOSE	BALL NOSE	BALL NOSE
SIZE MIN	R1.0	R1.5	R0.25
SIZE MAX	R6.0	R6.0	R2.0
PAGE	34	35	36
SHORT LENGTH		-	-
	X-Coating	X-Coating	X-Coating



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

G9J57	G9F41	G9J54	G9J61	G9J59	G9F43	G9F42	G9J55	G9J58	G9J60
4	2	2	2	3	3	4	4	6	4
30°	30°	30°	30°	30°	30°	30°	30°	45°	20°
CORNER RADIUS	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	SQUARE	Roughing
D2.0	D1.0	D3.0	D0.4	D2.0	D1.0	D1.0	D3.0	D6.0	D6.0
D12.0	D20.0	D12.0	D4.0	D12.0	D20.0	D20.0	D12.0	D16.0	D20.0
37	38	39	40	41	42	43	44	45	46
-	SHORT LENGTH	-	-	SHORT LENGTH	-	SHORT LENGTH	-	-	FINE
X-Coating	X-Coating	X-Coating	X-Coating	X-Coating	X-Coating	X-Coating	X-Coating	X-Coating	X-Coating

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SUPER HARDENED
HSS END MILL

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