ALPHA MILL

RECOMMENDED DEPTH OF CUT

CUTTING DATA

Fig. 1 Slotting

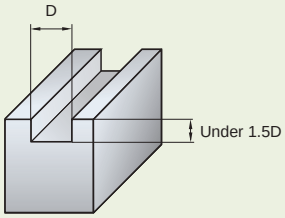


Fig. 2 Shouldering

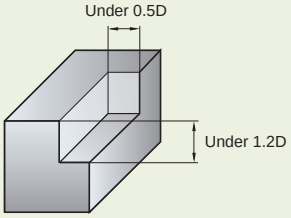
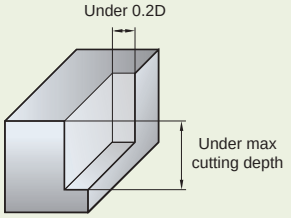


Fig. 3 Shouldering



CUTTING CONDITIONS • SINGLE EDGE HOLDERS

Workpiece	Grades	Fig	Ø10-18		Ø20-25		Ø32,40		Ø50,63		Ø80,100	
			vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)
MILD STEEL, LOW CARBON STEEL	PC5300* PC5400* PC3500	1	45~60	0.05~0.08	60~80	0.05~0.08	80~120	0.05~0.08	100~120	0.05~0.08	100~120	0.05~0.08
		2	60~90	0.08~0.1	80~120	0.08~0.10	120~180	0.08~0.10	120~140	0.08~0.10	120~140	0.08~0.10
		3	60~90	0.1~0.15	80~120	0.10~0.15	120~180	0.10~0.15	120~140	0.10~0.15	130~150	0.10~0.15
HIGH CARBON STEEL, ALLOY STEEL	PC5300* PC5400* PC3500	1	40~60	0.05	50~80	0.05	80~110	0.05	80~100	0.05	80~100	0.05
		2	50~80	0.05~0.08	80~100	0.05~0.08	110~150	0.05~0.10	100~120	0.08~0.10	100~120	0.08~0.10
		3	50~80	0.1~0.15	80~100	0.10~0.15	120~150	0.10~0.15	100~120	0.10~0.15	110~130	0.10~0.15
ALLOY TOOL STEEL	PC5300* PC5400* PC3500	1	35~50	0.05	50~70	0.05	80~100	0.05	70~90	0.05	70~90	0.05
		2	45~70	0.05~0.08	70~100	0.05~0.08	100~130	0.05~0.10	100~120	0.05~0.08	100~120	0.05~0.08
		3	45~70	0.1~0.15	70~100	0.10~0.15	100~150	0.10~0.15	100~120	0.10~0.15	110~130	0.10~0.15
PRE HARDENED STEEL	PC5300 PC5400	1	35~50	0.03	50~70	0.03	60~90	0.03	60~90	0.03	60~90	0.03
		2	45~65	0.05~0.08	60~80	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08
		3	50~80	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08
STAINLESS STEEL	PC5300 PC5400 PC9530	1	35~50	0.05	50~70	0.05	80~100	0.05	70~90	0.05	70~90	0.05
		2	45~70	0.05~0.08	70~100	0.05~0.08	100~130	0.05~0.10	100~120	0.05~0.08	100~120	0.05~0.08
		3	45~70	0.1~0.15	70~100	0.10~0.15	100~150	0.10~0.15	110~130	0.10~0.15	110~130	0.10~0.15
HRSA's	PC5300 PC5400	1	25~50	0.03~0.05	30~60	0.03~0.05	30~60	0.03~0.05	30~60	0.03~0.05	30~60	0.03~0.05
		2	30~60	0.08~0.15	30~60	0.08~0.15	30~60	0.08~0.15	30~60	0.08~0.15	30~60	0.08~0.15
		3	30~60	0.08~0.15	30~60	0.08~0.15	30~60	0.08~0.15	30~60	0.08~0.15	30~60	0.08~0.15
CAST IRON	PC5300 PC5400 PC6510	1	50~80	0.08~0.12	80~100	0.08~0.12	80~100	0.15	90~120	0.10~0.12	90~120	0.10~0.12
		2	65~90	0.12~0.15	100~120	0.12~0.15	100~130	0.15~0.18	100~140	0.12	100~140	0.12
		3	65~90	0.15~0.2	100~120	0.15~0.20	100~130	0.15~0.20	120~150	0.15~0.20	120~150	0.15~0.20
ALUMINIUM ALLOY	H01	1	200~600	0.15~0.2	250~800	0.15~0.20	300~900	0.15~0.20	400~1,000	0.10~0.20	400~1,000	0.10~0.20
		2	200~650	0.2~0.25	250~900	0.20~0.25	350~950	0.20~0.25	400~1,000	0.10~0.40	400~1,000	0.10~0.40
		3	200~650	0.25~0.3	250~900	0.25~0.3	350~950	0.25~0.30	400~1,000	0.10~0.40	400~1,000	0.10~0.40

CUTTING CONDITIONS • MULTI EDGE HOLDERS

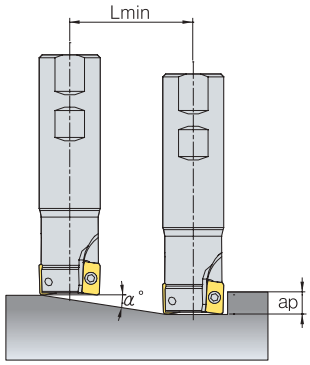
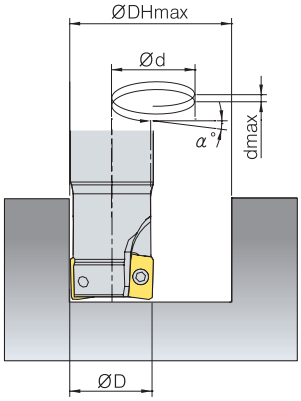
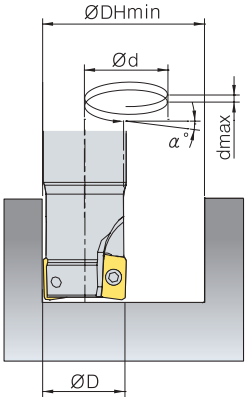
*Reduce cutting speed by 20%

Workpiece	Grades	Fig	Ø10-18		Ø20-25		Ø32,40		Ø50,63		Ø80,100	
			vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)	vc(m/min)	fz(mm/t)
MILD STEEL, LOW CARBON STEEL	PC5300* PC5400* PC3500	1	50~80	0.05~0.08	80~100	0.05~0.08	100~120	0.05~0.08	100~120	0.05~0.08	100~120	0.05~0.08
		2	65~90	0.08~0.1	100~120	0.08~0.10	120~140	0.08~0.10	120~140	0.08~0.10	120~140	0.08~0.10
		3	65~90	0.1~0.15	100~120	0.10~0.15	140~140	0.10~0.15	120~140	0.10~0.15	130~150	0.10~0.15
HIGH CARBON STEEL, ALLOY STEEL	PC5300* PC5400* PC3500	1	45~60	0.05	60~80	0.05	80~100	0.05	80~100	0.05	80~100	0.05
		2	50~80	0.05~0.08	80~100	0.05~0.08	100~120	0.08~0.10	100~120	0.08~0.10	100~120	0.08~0.10
		3	50~80	0.1~0.15	80~100	0.10~0.15	110~130	0.10~0.15	100~120	0.10~0.15	110~130	0.10~0.15
ALLOY TOOL STEEL	PC5300* PC5400* PC3500	1	40~55	0.05	50~70	0.05	70~90	0.05	70~90	0.05	70~90	0.05
		2	45~60	0.05~0.08	60~80	0.05~0.08	90~120	0.05~0.08	100~120	0.05~0.08	100~120	0.05~0.08
		3	50~75	0.12~0.18	90~110	0.12~0.18	100~130	0.10~0.15	100~120	0.10~0.15	110~130	0.10~0.15
PRE HARDENED STEEL	PC5300 PC5400	1	35~50	0.03	50~70	0.03	60~90	0.03	60~90	0.03	60~90	0.03
		2	45~60	0.05~0.08	60~80	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08
		3	50~80	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08	80~100	0.05~0.08
STAINLESS STEEL	PC5300 PC5400 PC9530	1	35~50	0.054	50~70	0.054	70~90	0.05	70~90	0.05	70~90	0.05
		2	45~60	0.05~0.08	60~80	0.05~0.08	90~120	0.05~0.08	100~120	0.05~0.08	100~120	0.05~0.08
		3	50~75	0.1~0.15	90~110	0.10~0.15	100~130	0.10~0.15	110~130	0.10~0.15	110~130	0.10~0.15
HRSA's	PC5300 PC5400	1	30~60	0.05~0.08	30~60	0.03~0.05	30~60	0.03~0.05	30~60	0.03~0.05	30~60	0.03~0.05
		2	30~60	0.05~0.08	30~60	0.08~0.15	30~60	0.08~0.15	30~60	0.08~0.15	30~60	0.08~0.15
		3	30~60	0.05~0.08	30~60	0.08~0.15	30~60	0.08~0.15	30~60	0.08~0.15	30~60	0.08~0.15
CAST IRON	PC5300 PC5400 PC6510	1	50~70	0.1~0.12	70~90	0.10~0.12	70~90	0.10~0.12	90~120	0.10~0.12	90~120	0.10~0.12
		2	50~80	0.12	80~100	0.12	90~120	0.12	100~140	0.12	100~140	0.12
		3	50~80	0.15~0.2	80~100	0.15~0.2	100~130	0.15~0.20	120~150	0.15~0.20	120~150	0.15~0.20
ALUMINIUM ALLOY	H01	1	160~600	0.1~0.2	200~800	0.10~0.20	300~900	0.10~0.20	400~1,000	0.10~0.20	400~1,000	0.10~0.20
		2	200~650	0.15~0.3	250~900	0.15~0.30	300~950	0.15~0.30	400~1,000	0.10~0.40	400~1,000	0.10~0.40
		3	200~650	0.15~0.3	250~900	0.15~0.30	300~950	0.15~0.30	400~1,000	0.10~0.40	400~1,000	0.10~0.40

ALPHA MILL

RAMPING • HELICAL CUTTING BLIND HOLES • HELICAL CUTTING THROUGH HOLES

CUTTING DATA

Ramping	Helical Cutting Blind Holes	Helical Cutting Through Holes
		

$$Lmin = \frac{ap}{\tan \alpha^\circ} \text{ (mm)}$$

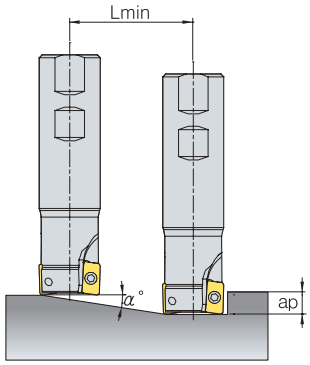
ORDER CODE	Tool Dia. ØD(min)	ap	Maximum angle α°	Lmin(mm)	Max. desirable hole Dia. ØDHmax(mm)	Max. pitch dmax(mm)	Min. desirable hole Dia. ØDHmin(mm)	Max. pitch dmax(mm)	Min. desirable hole Dia. ØDHmin(mm)	Max. pitch dmax(mm)
AMS1010HS	**10**	5	6.5	44	18.8	2.1	17.6	2	13	1.5
AMS1011HS	**11**		5.6	51	20.8	2	19.6	1.9	15	1.5
AMS1012HS	**12**		4.9	58	22.8	2	21.6	1.9	17	1.5
AMS1014HS	**14**		3.9	73	26.8	1.8	25.6	1.8	21	1.4
AMS1015HS	**15**		3.6	80	28.8	1.8	27.6	1.7	23	1.4
AMS1016HS	**16**		3.3	87	30.8	1.8	29.6	1.7	25	1.4
AMS1017HS	**17**		3	94	32.8	1.7	31.6	1.7	27	1.4
AMS1018HS	**18**		2.8	101	34.8	1.7	33.6	1.7	29	1.4
AMS1020HS	**20**		2.5	115	38.8	1.7	37.6	1.6	33	1.4
AMS1021HS	**21**		2.3	123	40.8	1.7	39.6	1.6	35	1.4
AMS1022HS	**22**		2.2	130	42.8	1.6	41.6	1.6	37	1.4
AMS1025HS	**25**		1.9	151	48.8	1.6	47.6	1.6	43	1.4
AMS1026HS	**26**		1.8	158	50.8	1.6	49.6	1.6	45	1.4
AMS1032HS	**32**		1.4	201	62.8	1.6	61.6	1.5	57	1.4
AMS1033HS	**33**		1.4	208	64.8	1.6	63.6	1.5	59	1.4
AMC1032HS	**32**		1.4	201	62.8	1.6	61.6	1.5	57	1.4
AMC1040HS	**40**		1.1	258	78.8	1.5	77.6	1.5	73	1.4
AMC1050HS	**50**		0.9	330	98.8	1.5	97.6	1.5	93	1.4
AMC1063HS	**63**		0.7	423	124.8	1.5	123.6	1.5	119	1.4
AMS1510HS	**10**	9	7.5	68	18.8	2.5	17.4	2.3	11	1.5
AMS1512HS	**12**		6.5	79	22.8	2.6	21.4	2.4	15	1.7
AMS1513HS	**13**		5.7	90	24.8	2.5	23.4	2.3	17	1.7
AMS1514HS	**14**		6.3	82	26.8	2.9	25.4	2.8	19	2.1
AMS1516HS	**16**		5	102	30.8	2.7	29.4	2.6	23	2
AMS1517HS	**17**		4.6	112	32.8	2.6	31.4	2.5	25	2
AMS1518HS	**18**		4.2	122	34.8	2.6	33.4	2.5	27	2
AMS1519HS	**19**		3.9	132	36.8	2.5	35.4	2.4	29	2
AMS1520HS	**20**		3.6	142	38.8	2.5	37.4	2.4	31	2
AMS1521HS	**21**		3.4	152	40.8	2.4	39.4	2.3	33	2
AMS1522HS	**22**		3.2	162	42.8	2.4	41.4	2.3	35	1.9
AMS1524HS	**24**		2.8	182	46.8	2.3	45.4	2.2	39	1.9
AMS1525HS	**25**		2.7	192	48.8	2.3	47.4	2.2	41	1.9
AMS1528HS	**28**		2.3	222	54.8	2.2	53.4	2.2	47	1.9
AMS1530HS	**30**		2.1	242	58.8	2.2	57.4	2.1	51	1.9
AMS1532HS	**32**		2	262	62.8	2.2	61.4	2.1	55	1.9
AMS1535HS	**35**		1.8	292	68.8	2.1	67.4	2.1	61	1.9
AMS1540HS	**40**		1.5	342	78.8	2.1	77.4	2	71	1.9
AMC15040HS	**40**		1.5	342	78.8	2.1	77.4	2	71	1.9
AMC15050HS	**50**		1.2	442	98.8	2	97.4	2	91	1.9
AMC15063HS	**63**		0.9	572	124.8	2	123.4	1.9	117	1.8
AMC15080HS	**80**		0.7	742	158.8	1.9	157.4	1.9	151	1.8
AMC15100HS	**100**		0.5	942	198.8	1.9	197.4	1.9	191	1.8

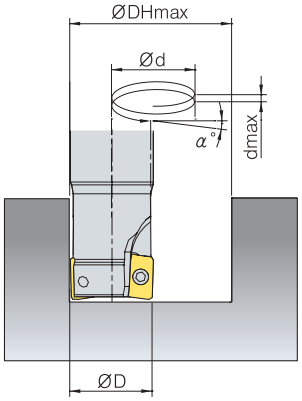
ALPHA MILL

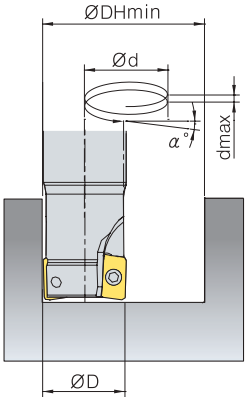
RAMPING • HELICAL CUTTING BLIND HOLES • HELICAL CUTTING THROUGH HOLES

CUTTING DATA

$$Lmin = \frac{ap}{\tan \alpha^\circ} \text{ (mm)}$$







ORDER CODE	Tool Dia. ØD(min)	ap	Maximum angle α°	Lmin(mm)	Max. desirable hole Dia. ØDHmax(mm)	Max. pitch dmax(mm)	Min. desirable hole Dia. ØDHmin(mm)	Max. pitch dmax(mm)	Min. desirable hole Dia. ØDHmin(mm)	Max. pitch dmax(mm)
AMS2010HS	**10**	10	16.82	33	18	5.4	16.4	5	11	3.3
AMS2012HS	**12**		11.69	48	22	4.6	20.4	4.2	15	3.1
AMS2014HS	**14**		7.55	75	26	3.4	24.4	3.2	19	2.5
AMS2016HS	**16**		10.3	55	30	5.5	28	5.1	23	4.2
AMS2018HS	**18**		8.23	69	34	4.9	32	4.6	27	3.9
AMS2020HS	**20**		5.6	102	38	3.7	36	3.5	31	3
AMS2022HS	**22**		5.15	111	42	3.8	40	3.6	35	3.2
AMS2025HS	**25**		3.92	146	48	3.3	46	3.2	41	2.8
AMS2032HS	**32**		2.7	212	62	2.9	60	2.8	55	2.6
AMS2040HS	**40**		1.98	289	78	2.7	76	2.6	71	2.5
AMS2050HS	**50**		1.48	386	98	2.5	96	2.5	91	2.4
AMS2063HS	**63**		1.11	514	124	2.4	122	2.4	117	2.3
AMC2050HS	**50**		0.36	1576	98	0.6	96	0.6	91	0.6
AMC2063HS	**63**		0.27	2104	124	0.6	122	0.6	117	0.6
AMC2080HS	**80**		0.21	2784	158	0.6	156	0.6	151	0.5
AMC2100HS	**100**		0.16	3584	198	0.6	196	0.5	191	0.5
AMS3025HS	**25**	10	4.72	121	48	4	46	3.8	36	3
AMS3032HS	**32**		3	191	62	3.2	60	3.1	50	2.6
AMS3040HS	**40**		2.29	250	78	3.1	76	3	66	2.6
AMS3050HS	**50**		1.64	350	98	2.8	96	2.7	86	2.5
AMS3063HS	**63**		1.22	470	124	2.6	122	2.6	112	2.4
AMC3040HS	**40**		1.99	288	78	2.7	76	2.6	66	2.3
AMC3050HS	**50**		1.67	343	98	2.9	96	2.8	86	2.5
AMC3063HS	**63**		1.22	470	124	2.6	122	2.6	112	2.4
AMC3080HS	**80**		0.9	636	158	2.5	156	2.5	146	2.3
AMC3100HS	**100**		0.69	830	198	2.4	196	2.4	186	2.2
AMS2025MH	**25**	10	1.5	764	48	1.3	46	1.2	-	-
AMS2032MH	**32**		1.5	1146	62	1.6	60	1.6	-	-
AMS3040MH	**40**	16	1.5	1528	78	2	76	2	-	-
AMS4020HS	**20**	16	9.5	98	38.8	6.5	37.4	6.2	31	5.2
AMS4021HS	**21**		5.2	179	40.8	3.7	39.4	3.6	33	3
AMS4025HS	**25**		7.6	122	48.8	6.5	47.4	6.3	41	5.5
AMS4026HS	**26**		7.1	130	50.8	6.4	49.4	6.2	43	5.4
AMS4032HS	**32**		3.4	276	62.8	3.7	61.4	3.6	55	3.3
AMS4033HS	**33**		3.2	288	64.8	3.7	63.4	3.6	57	3.2
AMS4040HS	**40**		2.5	376	78.8	3.4	77.4	3.4	71	3.1
AMS4050HS	**50**		1.9	502	98.8	3.2	97.4	3.2	91	3
AMS4063HS	**63**		1.4	665	124.8	3.1	123.4	3	117	2.9
AMC4050HS	**50**		1.9	502	98.8	3.2	97.4	3.2	91	3
AMC4063HS	**63**		1.4	665	124.8	3.1	123.4	3	117	2.9
AMC4080HS	**80**		1.1	878	158.8	2.9	157.4	2.9	151	2.8
AMC4100HS	**100**		0.8	1128	198.8	2.9	197.4	2.9	191	2.8
AMC4125HS	**125**		0.6	1442	248.8	2.8	247.4	2.8	241	2.7