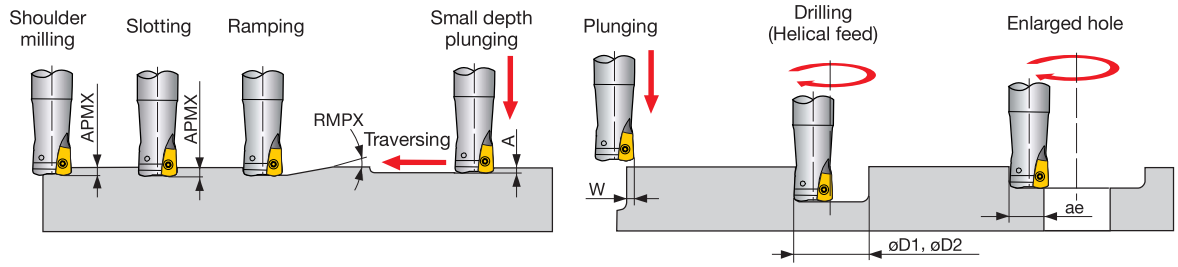
STANDARD CUTTING CONDITIONS

ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Carbon steels S45C, S55C, etc. C45, C55, etc.		- 300HB	First choice	AH3225	100 - 300	0.2 - 1.2
			- 300HB	For wear resistance	AH8015	100 - 300	0.2 - 1.2
	Alloy steels SCM440, SCr415, etc. 42CrMo4, etc.		- 300HB	First choice	AH3225	100 - 300	0.2 - 1.2
			- 300HB	For wear resistance	AH8015	100 - 300	0.2 - 1.2
	Prehardened steels NAK80, PX5, etc.		30 - 40HRC	First choice	AH8015	100 - 200	0.2 - 0.8
			30 - 40HRC	For impact resistance	AH3225	100 - 200	0.2 - 0.8
M	Stainless steels SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-2, etc.		- 200HB	First choice	AH130	100 - 150	0.2 - 0.8
K	Gray cast irons FC250, FC300, etc. 250, 300, etc.		150 - 250HB	First choice	AH8015	100 - 300	0.2 - 1.2
			150 - 250HB	For impact resistance	AH3225	100 - 300	0.2 - 1.2
	Ductile cast irons FCD400, etc. 400-15, 600-3, etc.		150 - 250HB	First choice	AH8015	80 - 200	0.2 - 1.2
			150 - 250HB	For impact resistance	AH3225	80 - 200	0.2 - 1.2
S	Titanium alloy Ti-6Al-4V, etc.		- 40HRC	First choice	AH130	30 - 60	0.2 - 0.7
			- 40HRC	For wear resistance	AH8015	30 - 60	0.2 - 0.7
	Heat-resistant alloy Inconel, Hastelloy, etc.		- 40HRC	First choice	AH8015	20 - 50	0.1 - 0.3
			- 40HRC	For impact resistance	AH3225	20 - 50	0.1 - 0.3
H	Hardened steel	SKD61, etc. X40CrMoV5-1, etc.	40 - 50HRC	First choice	AH8015	80 - 150	0.1 - 0.5
			40 - 50HRC	For impact resistance	AH3225	80 - 150	0.1 - 0.5
		SKD11, etc. X153CrMoV12, etc.	50~60HRC	First choice	AH8015	50 - 70	0.1 - 0.3

APPLICATION RANGE

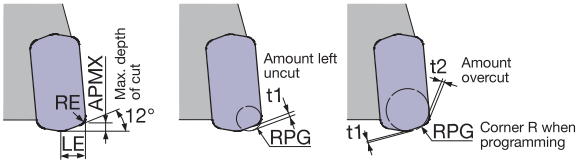


Designation	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Max. cutting width in plunging W	Min. machinable hole dia. øD1	Max. machinable hole dia. øD2	Max. cutting width in enlarged hole ae
E/HXN02R008...	8	0.5	1.07	0.15	2	10	13.2	5.87
E/HXN02R010...	10	0.5	2.8	0.15	2	13.8	17	7.82
E/HXN02R012...	12	0.5	1.9	0.15	2	17.8	21	9.81
E/HXN02R016...	16	0.5	1.2	0.15	2	25.8	29	13.8
E/HXN02R020...	20	0.5	0.88	0.15	2	33.8	37	17.8
E/HXN02M025...	25	0.5	0.66	0.15	2	43.8	47	22.8

Tool dia.: DCX (mm), Number of revolutions: *n* (min^{-1}), Feed speed: *Vf* (mm/min), Max. depth of cut: *ap* = 0.5 mm, Number of teeth: CICT														
ø8, CICT = 1		ø10, CICT = 2		ø12, CICT = 2		ø16			ø20			ø25		
n	*Vf*	*n*	*Vf*	*n*	*Vf*	*n*	*Vf*		*n*	*Vf*		*n*	*Vf*	
							CICT = 3	CICT = 4		CICT = 4	CICT = 5		CICT = 6	CICT = 7
7,960	6,370	6,370	10,200	5,310	8,500	3,980	9,560	12,740	3,180	10,180	12,720	2,550	12,240	14,280
Vc = 200 m/min, *fz* = 0.8 mm/t														
7,960	6,370	6,370	10,200	5,310	8,500	3,980	9,560	12,740	3,180	10,180	12,720	2,550	12,240	14,280
Vc = 200 m/min, *fz* = 0.8 mm/t														
5,970	2,990	4,780	4,780	3,980	3,980	2,990	4,490	5,980	2,390	4,780	5,980	1,910	5,730	6,690
Vc = 150 m/min, *fz* = 0.5 mm/t														
4,780	2,390	3,820	3,820	3,190	3,190	2,390	3,590	4,780	1,910	3,820	4,780	1,530	4,590	5,360
Vc = 120 m/min, *fz* = 0.5 mm/t														
7,960	6,370	6,370	10.200	5,310	8,500	3,980	9,560	12,740	3,180	10,180	12,720	2,550	12,240	14,280
Vc = 200 m/min, *fz* = 0.8 mm/t														
5,970	4,780	4,780	7,650	3,980	6,370	2,990	7,180	9,570	2,390	7,650	9,560	1,530	7,350	8,570
Vc = 150 m/min, *fz* = 0.8 mm/t														
1,590	800	1,270	1,270	1,060	1,060	800	1,200	1,600	640	1,280	1,600	510	1,530	1,790
Vc = 40 m/min, *fz* = 0.5 mm/t														
1,190	240	1,000	400	800	320	600	360	480	480	390	480	380	460	540
Vc = 30 m/min, *fz* = 0.2 mm/t														
4,780	1,440	3,820	2,300	3,190	1,920	2,390	2,160	2,870	1,910	2,300	2,870	1,530	2,760	3,220
Vc = 120 m/min, *fz* = 0.3 mm/t														
2,390	480	1,910	770	1,590	640	1,190	720	960	950	760	950	760	920	1,070
Vc = 60 m/min, *fz* = 0.2 mm/t														

TOOL GEOMETRY ON PROGRAMMING

When programming for CAM, the tool should be considered as a radius cutter. Usually, the corner radius should be set as R = 1 mm. If a larger radius is used, overcutting will occur. The following table shows the amount left uncut (t1) and overcut (t2).



Max. depth of cut APMX (mm)	Corner radius RE (mm)	LE (mm)	Corner R when programming RPG	Amount left uncut t1 (mm)	Amount overcut t2 (mm)
0.5	0.9	2	0.5	0.38	0
0.5	0.9	2	0.8	0.31	0
0.5	**0.9**	**2**	**1**	**0.26**	**0**
0.5	0.9	2	1.5	0.14	0.08

*Recommended