STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grades	Cutting speed *Vc* (m/min)	Feed per tooth *fz* (mm/t)
P	Carbon steels S45C, etc. C45, etc.	~ 300HB	First choice	AH725	100 - 300	0.5 - 2
			Wear resistance	T3130	100 - 300	0.5 - 2
			Fracture resistance	AH130	100 - 300	0.5 - 2
	Alloy steels SCM440, etc. 42CrMo4, etc.	~ 300HB	First choice	AH725	100 - 200	0.5 - 1.5
			Wear resistance	T3130	100 - 200	0.5 - 1.5
			Fracture resistance	AH130	100 - 200	0.5 - 1.5
	Prehardened steels NAK80, PX5, etc.	30 ~ 40HRC	-	AH725	100 - 200	0.5 - 1
M	Stainless steels SUS304, etc. X5CrNi18-9, etc.	~ 200HB	-	AH130	100 - 150	0.3 - 0.8
K	Gray cast irons FC250, etc. 250, etc.	-	-	AH120	100 - 300	0.5 - 2
	Ductile cast irons FCD600, etc. 600-3, etc.	-	-	AH120	80 - 200	0.5 - 2
S	Titanium alloy Ti-6Al-4V, etc.	~ 40HRC	-	AH725	30 - 60	0.3 - 0.7
H	Hardened steels SKD61, etc. X40CrMoV5-1, etc.	40 ~ 50HRC	-	AH725	80 - 130	0.1 - 0.3
		50 ~ 60HRC	-	AH725	50 - 70	0.03 - 0.07

Approach angle

· Slot or pocket milling is not recommended, since chip re-cutting easily occurs.
· Tool overhang length must be as short as possible to avoid chatter. When the tool overhang length is long, decrease the number of revolutions and feed.

· Cutting conditions are generally limited by the rigidity and power of the machine and the rigidity of the workpiece. When setting the conditions, start from half of the values of the standard cutting conditions and then increase the value gradually while making sure the machine is running normally.

Tool dia: DCX (mm), Number of revolution: *n* (min-1), Feed speed: *Vf* (mm/min), Max. depth of cut: APMX = 2 mm

ø50		ø63		ø80		ø100		ø125	
n	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***
1,270	4,570	1,010	4,850	790	4,740	630	4,540	500	4,200
				Vc = 200 m/min, *fz* = 1.2 mm/t					
950	2,850	750	3,000	590	2,950	470	2,820	380	2,660
				Vc = 150 m/min, *fz* = 1.0 mm/t					
950	2,280	750	2,400	590	2,360	470	2,260	380	2,130
				Vc = 150 m/min, *fz* = 0.8 mm/t					
760	1,140	600	1,200	470	1,180	380	1,140	300	1,050
				Vc = 120 m/min, *fz* = 0.5 mm/t					
1,270	4,570	1,010	4,850	790	4,740	630	4,540	500	4,200
				Vc = 200 m/min, *fz* = 1.2 mm/t					
950	3,420	750	3,600	590	3,540	470	3,380	380	3,190
				Vc = 150 m/min, *fz* = 1.2 mm/t					
250	370	200	400	150	380	120	360	100	350
				Vc = 40 m/min, *fz* = 0.5 mm/t					
630	380	500	400	390	390	310	370	250	350
				Vc = 100 m/min, *fz* = 0.2 mm/t					
380	60	300	60	235	60	190	60	150	50
				Vc = 60 m/min, *fz* = 0.05 mm/t					