

● Standard cutting condition

ISO	Workpiece material	Hardness	Priority	Grade	Chip-breaker	Cutting speed		Feed per tooth
						V_c (m/min)	f_z (mm/t)	
P	Carbon steels (S45C / C45, S55C / C55 etc.)	< 300 HB	First choice	AH725	MJ	120 - 250	0.3 - 0.7	
		< 300 HB	for impact resistance	AH130	MJ	120 - 250	0.3 - 0.7	
	Alloy steels (SCM440 / 42CrMo4, SCr415 / 17Cr3 etc.)	150 - 300 HB	First choice	AH725	MJ	100 - 250	0.2 - 0.6	
		150 - 300 HB	for impact resistance	AH130	MJ	100 - 250	0.2 - 0.6	
	Tool steels (SKD11 / X153CrMoV12 etc.)	< 300 HB	-	AH725	ML	80 - 180	0.2 - 0.4	
M	Stainless steels (SUS304 / X5CrNi18-9, SUS316 / X5CrNiMo17-12-3 etc.)	< 200 HB	First choice	AH130	ML	100 - 250	0.2 - 0.6	
		< 200 HB	for impact resistance	AH130	MJ	100 - 250	0.2 - 0.6	
	Stainless steels (SUS430 / X6Cr17 etc.)	< 200 HB	First choice	AH4035	ML	100 - 300	0.2 - 0.6	
		< 200 HB	for impact resistance	AH4035	MJ	100 - 300	0.2 - 0.6	
K	Grey cast irons (FC250 / GG25 / 250 etc.)	150 - 250 HB	-	AH725	ML	120 - 250	0.3 - 0.7	
	Ductile cast irons (FCD400 / GGG40 etc.)	150 - 250 HB	-	AH725	ML	100 - 200	0.3 - 0.7	
H	Hardened steels (SKD61 / X40CrMoV5-1 etc.)	40 - 50 HRC	-	AH725	MJ	60 - 140	0.1 - 0.3	
	Hardened steels (SKD11 / X153CrMoV12 etc.)	50 - 60 HRC	-	AH725	MJ	20 - 60	0.05 - 0.2	

- Use air blast to remove chips from the work area in slot milling or pocketing operation.
- When machining at high cutting speeds of more than $V_c = 1000$ m/min, the dynamic balance of the tools must be adjusted.

- Cutting conditions are limited by machine power, workpiece rigidity and spindle output. When the cutting width or depth is large, set V_c and f_z to the lower recommended values and check the machine power and vibration.