

STANDARD CUTTING CONDITIONS

ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut ap (mm)	Feed f (mm/rev)	Cutting speed: Vc (m/min)		
							Low carbon steels, Alloy steels	Medium carbon steels, Alloy steels	High carbon steels, Alloy steels
P	Precision finishing	Continuous	01	NS9530	0.05 - 0.5	0.03 - 0.15	150 - 250	80 - 220	80 - 180
		Light interrupted	01	NS9530	0.05 - 0.5	0.03 - 0.15	150 - 250	80 - 220	80 - 180
	Finishing	Continuous	PSS	NS9530	0.1 - 0.5	0.05 - 0.3	150 - 250	80 - 220	80 - 180
		Light interrupted	PSS	NS9530	0.1 - 0.5	0.05 - 0.3	150 - 250	80 - 220	80 - 180
		Heavy interrupted	PSS	NS9530	0.1 - 0.5	0.05 - 0.3	150 - 250	80 - 220	80 - 180
	Finishing to light cutting	Continuous	PS	NS9530	0.3 - 2.0	0.08 - 0.3	150 - 250	80 - 220	80 - 180
		Light interrupted	PS	NS9530	0.3 - 2.0	0.08 - 0.3	150 - 250	80 - 220	80 - 180
		Heavy interrupted	PS	NS9530	0.3 - 2.0	0.08 - 0.3	150 - 250	80 - 220	80 - 180
	Finishing to Medium cutting	Continuous to Heavy interrupted	PS	T9215	0.5 - 2.5	0.08 - 0.3	120 - 300	100 - 300	80 - 250
		Heavy interrupted	PS	T9125	0.5 - 2.5	0.08 - 0.3	120 - 250	80 - 180	80 - 120
	Medium cutting	Continuous to Heavy interrupted	PM	T9215	1.0 - 3.0	0.15 - 0.3	120 - 300	100 - 300	80 - 250
		Heavy interrupted	PM	T9125	1.0 - 3.0	0.15 - 0.3	120 - 250	80 - 180	80 - 120

Low carbon steels, Alloy steels: S10C, SCM415, SS400, SCr420H, etc. C10, 18CrMo4, E275A, 20Cr4, etc. Medium carbon steels, Alloy steels: S45C, SCM440, etc. C45, 42CrMo4, etc. Hi carbon steels, Alloy steels: SNCM439, etc. 41CrNiMo2, etc.

ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut ap (mm)	Feed f (mm/rev)	Cutting speed Vc (m/min)
M	Precision finishing	Continuous	Whh	GH330	0.05 - 2.0	0.03 - 0.2	100 - 150
		Continuous	PSF	AH725	0.1 - 0.5	0.05 - 0.3	50 - 150
	Finishing	Light interrupted	PSF	AH725	0.1 - 0.5	0.05 - 0.3	50 - 150
		Heavy interrupted	PSF	AH725	0.1 - 0.5	0.05 - 0.3	50 - 120
	Finishing to light cutting	Continuous	PSS	AH630	0.3 - 2.0	0.08 - 0.3	90 - 190
		Light interrupted	PSS	AH630	0.3 - 2.0	0.08 - 0.3	90 - 190
		Heavy interrupted	PSS	AH630	0.3 - 2.0	0.08 - 0.3	90 - 190
	Finishing to medium cutting	Continuous	PS	T6130	0.5 - 2.5	0.08 - 0.3	100 - 200
		Light interrupted	PS	AH630	0.5 - 2.5	0.08 - 0.3	90 - 190
		Heavy interrupted	PS	AH630	0.5 - 2.5	0.08 - 0.3	90 - 190
	Medium cutting	Continuous	PM	T6130	1.0 - 3.0*	0.15 - 0.3	100 - 200
		Light interrupted	PM	AH630	1.0 - 3.0*	0.15 - 0.3	90 - 190
Heavy interrupted		PM	AH630	1.0 - 3.0*	0.15 - 0.3	90 - 190	

* For CCMT0602 and DCMT0702 type inserts, ap = 0.5 - 2.5
Stainless steels: SUS304, SUS316, etc. X5CrNi18-9, X5CrNiMo17-12-3, etc.

ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut ap (mm)	Feed f (mm/rev)	Cutting speed: Vc (m/min)	
							Grey cast irons	Ductile cast irons
K	Finishing	Continuous	CM	T515	0.05 - 2.0	0.05 - 0.3	150 - 700	150 - 300
		Heavy interrupted	CM	T515	0.05 - 2.0	0.05 - 0.3	100 - 200	100 - 200
	Medium cutting	Light interrupted	CM	T515	0.05 - 2.0	0.05 - 0.3	100 - 300	100 - 250

Grey cast irons: FC250, etc. 250, etc.
Ductile cast irons: FCD450, etc. 450-10S, etc.

ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut ap (mm)	Feed f (mm/rev)	Cutting speed: Vc (m/min)	
							Titanium alloys	Ni-base alloys
S	Finishing	Continuous	PSS	AH8015	0.3 - 2.0	0.02 - 0.3	20 - 150	20 - 100
		Light interrupted	PSS	AH8015	0.3 - 2.0	0.02 - 0.3	20 - 150	20 - 100
	Finishing to medium cutting	Continuous	PS	AH8015	0.5 - 2.5	0.02 - 0.3	20 - 150	20 - 100
		Light interrupted	PS	AH8015	0.5 - 2.5	0.02 - 0.3	20 - 150	20 - 100

Ni-base alloys: INCONEL718 etc.
Titanium alloys: Ti - 6Al - 4V etc.