

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Priority	Chip-breaker	Cutting speed Vc (m/min)	Feed: f (mm/rev)			
					ø12 - ø13.99	ø14 - ø18	ø18.01 - ø28	ø28.01 - ø40
P	Low carbon steel (C < 0.3) SS400 / St42-1, SM490 / St52-3, S25C / C25, etc.	For low feed machines	NDL	50 - 100	-	0.03 - 0.1	0.03 - 0.1	-
		First choice	NDJ/G	80 - 140	0.05 - 0.1	0.05 - 0.1	0.05 - 0.1	0.1 - 0.2
	Carbon steel (C > 0.3) S45C / C45, S55C / C55, etc.	For low feed machines	NDL	50 - 100	-	0.03 - 0.1	0.03 - 0.12	-
		First choice	NDJ/G	80 - 140	0.05 - 0.16	0.05 - 0.16	0.05 - 0.2	0.1 - 0.2
	Low alloy steel (C < 0.3) SCM415, 18CrMo4, etc.	For low feed machines	NDL	50 - 100	-	0.03 - 0.1	0.03 - 0.1	-
		First choice	NDJ/G	80 - 140	0.05 - 0.1	0.05 - 0.1	0.05 - 0.1	0.1 - 0.2
	Alloy steel (C > 0.3) SCM440 / 42CrMo4, SCr420 / 20Cr4, etc.	For low feed machines	NDL	50 - 100	-	0.03 - 0.1	0.03 - 0.12	-
		First choice	NDJ/G	80 - 120	0.05 - 0.16	0.05 - 0.16	0.05 - 0.2	0.1 - 0.2
M	Stainless steel (Austenitic) SUS304 / X5CrNi18-9, SUS316 / X5CrNiMo17-12-3, etc.	For low feed machines	NDL	50 - 100	-	0.03 - 0.06	0.03 - 0.06	-
		First choice	NDJ/G	60 - 100	0.05 - 0.1	0.05 - 0.1	0.05 - 0.1	0.1 - 0.15
	Stainless steel (Martensitic, Ferritic) SUS430 / X6Cr17, SUS416 / X12CrS13, etc.	For low feed machines	NDL	50 - 100	-	0.03 - 0.06	0.03 - 0.06	-
		First choice	NDJ/G	60 - 100	0.05 - 0.1	0.05 - 0.1	0.05 - 0.1	0.1 - 0.15
	Stainless steel (Precipitation hard- ening) SUS630 / X5CrNiCuNb16-4, etc.	For low feed machines	NDL	50 - 100	-	0.03 - 0.06	0.03 - 0.06	-
		First choice	NDJ/G	60 - 100	0.05 - 0.1	0.05 - 0.1	0.05 - 0.1	0.1 - 0.15
K	Grey cast iron FC250 / GG25 / 250, etc.	For low feed machines	NDL	50 - 100	-	0.03 - 0.15	0.05 - 0.18	-
		First choice	NDJ/G	80 - 140	0.05 - 0.25	0.05 - 0.25	0.05 - 0.3	0.1 - 0.3
	Ductile cast iron FCD700 / 700-2, etc.	For low feed machines	NDL	50 - 100	-	0.03 - 0.15	0.05 - 0.18	-
		First choice	NDJ/G	80 - 140	0.05 - 0.25	0.05 - 0.25	0.05 - 0.3	0.1 - 0.3
N	Aluminium alloys	For low feed machines	NDL	80 - 160	-	0.03 - 0.15	0.03 - 0.15	-
		First choice	NDJ/G	100 - 200	0.05 - 0.2	0.05 - 0.2	0.05 - 0.2	0.1 - 0.25
S	Heat-resistant alloys Inconel 718, etc.	For low feed machines	NDL	20 - 50	-	0.03 - 0.06	0.03 - 0.08	-
		First choice	NDJ/G	20 - 50	0.04 - 0.08	0.04 - 0.08	0.04 - 0.1	0.06 - 0.13
	Titanium alloys Ti-6Al-4V, etc.	For low feed machines	NDL	30 - 60	-	0.03 - 0.1	0.03 - 0.12	-
		First choice	NDJ/G	30 - 60	0.05 - 0.13	0.05 - 0.13	0.05 - 0.15	0.1 - 0.18
H	Hardened steel ≥ 40HRC	For low feed machines	NDL	40 - 100	-	0.03 - 0.08	0.03 - 0.08	-
		First choice	NDJ/G	50 - 100	0.04 - 0.08	0.04 - 0.08	0.04 - 0.1	0.06 - 0.13