

Slotting / Roughing ($a_e = 0.4 \times D$ or over)

ISO	Workpiece material	V_c (m/min)	f_z (mm/t)			a_p (Slotting)
			$\phi 6 - \phi 8$	$\phi 10 - \phi 12$	$\phi 16 - \phi 20$	
P	Carbon steel	140 - 180	0.03 - 0.045	0.035 - 0.055	0.05 - 0.07	2xD
	Alloy steel	70 - 150	0.025 - 0.04	0.035 - 0.055	0.05 - 0.07	2xD
M	Stainless steel	60 - 100	0.025 - 0.045	0.035 - 0.05	0.04 - 0.065	1xD
K	Cast iron	80 - 180	0.025 - 0.05	0.035 - 0.065	0.05 - 0.075	2xD
N	Aluminium alloy	300 - 750	0.025 - 0.05	0.035 - 0.065	0.035 - 0.09	2xD
S	Titanium alloy	20 - 50	0.025 - 0.04	0.03 - 0.05	0.035 - 0.085	1xD
H	Hardened steel	20 - 30	0.01 - 0.02	0.02 - 0.04	0.03 - 0.06	0.5xD

Semi-finishing / Shouldering ($a_e = 0.1 \sim 0.4 \times D$)

ISO	Workpiece material	V_c (m/min)	f_z (mm/t)			a_p
			$\phi 6 - \phi 8$	$\phi 10 - \phi 12$	$\phi 16 - \phi 20$	
P	Carbon steel	150 - 220	0.035 - 0.075	0.075 - 0.09	0.085 - 0.1	2xD
	Alloy steel	70 - 160	0.025 - 0.065	0.05 - 0.09	0.055 - 0.09	2xD
M	Stainless steel	80 - 130	0.03 - 0.05	0.04 - 0.06	0.05 - 0.065	2xD
K	Cast iron	130 - 220	0.035 - 0.065	0.05 - 0.075	0.075 - 0.09	2xD
N	Aluminium alloy	350 - 850	0.05 - 0.075	0.075 - 0.1	0.1 - 0.125	2xD
S	Titanium alloy	40 - 60	0.035 - 0.05	0.04 - 0.065	0.06 - 0.1	2xD
H	Hardened steel	30 - 70	0.015 - 0.045	0.03 - 0.05	0.05 - 0.075	2xD

Finishing (feed rate depending on required accuracy) / High feed machining at low depth of cut ($a_e = 0.05 \sim 0.1 \times D$)

ISO	Workpiece material	V_c (m/min)	f_z (mm/t)			a_p
			$\phi 6 - \phi 8$	$\phi 10 - \phi 12$	$\phi 16 - \phi 20$	
P	Carbon steel	170 - 280	0.06 - 0.09	0.085 - 0.1	0.1 - 0.125	apmax
	Alloy steel	110 - 220	0.06 - 0.09	0.085 - 0.1	0.1 - 0.125	apmax
M	Stainless steel	100 - 160	0.035 - 0.055	0.05 - 0.065	0.055 - 0.075	apmax
K	Cast iron	180 - 280	0.04 - 0.075	0.075 - 0.08	0.08 - 0.1	apmax
N	Aluminium alloy	350 - 900	0.055 - 0.09	0.085 - 0.125	0.125 - 0.18	apmax
S	Titanium alloy	50 - 70	0.04 - 0.065	0.05 - 0.075	0.075 - 0.11	apmax
H	Hardened steel	40 - 80	0.025 - 0.05	0.04 - 0.065	0.06 - 0.08	apmax

- When the depth of cut (a_e) is closer to the upper limit, please start with a lower limit value of cutting speed (V_c).
- Please set the cutting speed and the feed rate lower for the items with long slot according to how chattering occurs.
- While air blow is recommended, water-soluble coolant will be good for stainless steel, titanium alloy, and heat-resistant alloy.
- When chattering occurs with low rigid machines or settings, reduce cutting speed and feed at an equal rate.
- When chattering occurs with long tool overhang, reduce cutting speed and feed by 20 to 40%.