

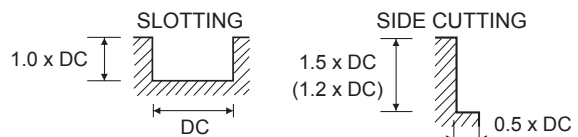
CUTTING DATA

136123,136323,137123,137323,138123,138323,139123,139323, 146323 (4 Fl Square End)

VDI MATERIAL GROUP	Material	HRc	Size (mm)												
			3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	25.0	
P	1-5 Non-alloy Steel	<25	v_c (m/min)	125	125	125	125	125	140	140	140	140	140	140	140
			n	13475	10105	8085	6735	5050	4455	3710	3180	2785	2475	2225	1780
			f_z	0.005	0.008	0.011	0.016	0.027	0.039	0.047	0.049	0.053	0.059	0.065	0.063
			f (mm/min)	275	330	340	435	555	690	695	620	590	585	580	450
	6-9 Low alloy Steel	25-35	v_c (m/min)	125	125	125	125	125	140	140	140	140	140	140	
			n	13475	10105	8085	6735	5050	4455	3710	3180	2785	2475	2225	1780
			f_z	0.005	0.008	0.011	0.016	0.027	0.039	0.047	0.049	0.053	0.059	0.065	0.063
			f (mm/min)	275	330	340	435	555	690	695	620	590	585	580	450
M	12-13 Ferritic/ Martensitic Stainless Steel	v_c (m/min)	135	135	135	135	135	135	135	135	135	135	135	135	
		n	14260	10750	8655	7130	5345	4275	3565	3055	2670	2375	2140	1710	
		f_z	0.004	0.006	0.009	0.013	0.022	0.034	0.04	0.043	0.045	0.05	0.055	0.056	
		f (mm/min)	205	255	310	360	465	585	565	520	480	475	470	380	
	14 Austenitic Stainless Steel	v_c (m/min)	95	95	95	95	95	95	95	95	95	95	95	95	
		n	10185	7600	6110	5095	3820	3055	2545	2180	1910	1695	1525	1215	
		f_z	0.005	0.008	0.013	0.018	0.028	0.048	0.056	0.06	0.063	0.07	0.077	0.078	
		f (mm/min)	195	250	310	360	435	590	565	520	480	475	470	380	
K	15-20 Cast Iron	v_c (m/min)	125	125	125	125	125	140	140	140	140	140	140	140	
		n	13475	10105	8085	6735	5050	4455	3710	3180	2785	2475	2225	1780	
		f_z	0.005	0.008	0.011	0.016	0.027	0.039	0.047	0.049	0.053	0.059	0.065	0.063	
		f (mm/min)	275	330	370	435	555	690	695	620	590	585	580	450	
S	31-35 HRSA Fe & Ni/Co Based	v_c (m/min)	25	25	25	25	25	25	25	25	25	25	25	25	
		n	2715	2005	1630	1355	1015	815	675	580	505	450	405	320	
		f_z	0.005	0.007	0.012	0.018	0.031	0.018	0.056	0.06	0.064	0.069	0.077	0.086	
		f (mm/min)	55	55	80	95	125	155	150	140	130	125	125	110	
	36-37 Titanium/ Titanium Alloys	v_c (m/min)	95	95	95	95	95	95	95	95	95	95	95	95	
		n	10185	7600	6110	5095	3820	3055	2545	2180	1910	1695	1525	1215	
		f_z	0.005	0.008	0.013	0.018	0.028	0.048	0.056	0.06	0.063	0.07	0.077	0.078	
		f (mm/min)	195	250	310	360	435	590	565	520	480	475	470	380	

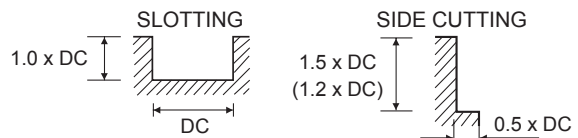
MATERIAL GROUPS P, M, K

1.2 x DC axial cutting depth should be applied for short length tools above $\varnothing 8\text{mm}$

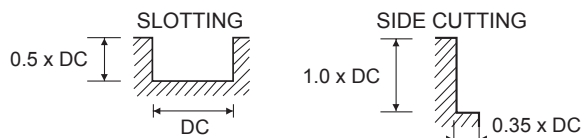


MATERIAL GROUPS S36-37

1.2 x DC axial cutting depth should be applied for short length tools above $\varnothing 8\text{mm}$



MATERIAL GROUPS S31-35



Recommended cutting depths are **maximum** depths, and **speeds and feeds are a starting point** based on these depths.

All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up.

For long series and long necked tools it may be necessary to reduce feed rate by up to 50%.

v_c - cutting speed (m/min)
 n - RPM (rev/min)
 f_z - feed per tooth (mm)
 f - feed rate (mm/min)
 a_p - axial depth of cut
 a_e - radial depth of cut