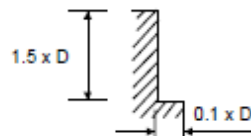


MATERIAL GROUP	HRc		Size (mm)											
			2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0	14.0	16.0	20.0	
<b>P</b>	11 12	< 30	$v_c$ (m/min)	40	40	40	40	40	40	40	40	40	40	40
			$n$	6720	4480	3360	2660	2240	1680	1330	1120	980	840	670
			$f_z$	0.011	0.019	0.025	0.031	0.037	0.05	0.063	0.075	0.085	0.108	0.136
			$f$ (mm/min)	295	335	335	335	335	335	335	335	335	365	365
	13 14	30-40	$v_c$ (m/min)	35	35	35	35	35	35	35	35	35	35	35
			$n$	5600	3640	2800	2240	1820	1400	1120	924	798	700	560
			$f_z$	0.01	0.017	0.022	0.028	0.034	0.045	0.056	0.068	0.078	0.111	0.138
			$f$ (mm/min)	225	250	250	250	250	250	250	250	250	310	310
<b>M</b>	21 22		$v_c$ (m/min)	70	70	70	70	70	70	70	70	70	70	
			$n$	11200	7420	5600	4480	3640	2800	2240	1820	1540	1400	1120
			$f_z$	0.008	0.009	0.013	0.016	0.019	0.025	0.031	0.038	0.045	0.056	0.075
			$f$ (mm/min)	280	280	280	280	280	280	280	280	280	315	315
<b>K</b>	31 32 33		$v_c$ (m/min)	55	55	55	55	55	55	55	55	55	55	
			$n$	9100	5880	4480	3500	2940	2240	1820	1400	1260	1120	900
			$f_z$	0.017	0.027	0.035	0.045	0.064	0.089	0.115	0.157	0.184	0.212	0.281
			$f$ (mm/min)	630	630	630	630	755	800	840	880	925	950	1010
<b>N</b>	61 62 63		$v_c$ (m/min)	105	105	105	105	105	105	105	105	105	105	
			$n$	16800	11200	8400	6720	5600	4200	3360	2800	2380	2100	1680
			$f_z$	0.015	0.023	0.03	0.0358	0.049	0.065	0.081	0.097	0.114	0.13	0.162
			$f$ (mm/min)	1010	1010	1010	1010	1090	1090	1090	1090	1090	1090	1090
	71 72 73		$v_c$ (m/min)	140	145	140	140	140	140	140	135	140	140	140
			$n$	22400	15400	11200	8960	7420	5600	4480	3640	3220	2800	2240
			$f_z$	0.015	.0122	0.03	0.038	0.048	0.064	0.08	0.098	0.111	0.128	0.16
			$f$ (mm/min)	1345	1345	1345	1345	1430	1430	1430	1430	1430	1430	1430
<b>S</b>	41 42 43		$v_c$ (m/min)	70	70	70	70	70	70	70	70	70	70	
			$n$	11200	7420	5600	4480	3640	2800	2240	1820	1540	1400	1120
			$f_z$	0.008	0.009	0.013	0.016	0.019	0.025	0.031	0.038	0.045	0.056	0.075
			$f$ (mm/min)	280	280	280	280	280	280	280	280	280	315	315



► The feed rate for long and long reach tools should be reduced by up to 50%

$v_c$  - cutting speed (m/min)

$n$  - RPM (rev/min)

$f_z$  - feed rate (mm/tooth)

$f$  - feed rate (mm/rev)

$z$  - No. of teeth

$a_p$  - axial depth of cut

$a_w$  - radial depth of cut

$$\text{To calculate RPM from cutting speed: } n = \frac{v_c \times 1000}{\pi \times \phi}$$

$$\text{To calculate cutting speed from RPM: } v_c = \frac{n \times \pi \times \phi}{1000}$$

All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up. The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.