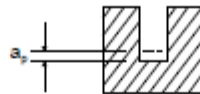




MATERIAL GROUP	HARDNESS HRC		Size (mm)										
			0.8	1.0	1.2	1.4	1.5	1.6	1.8	2.0	2.5	3.0	
<b>P</b>	11 12	< 30	$a_p$ (mm)	0.025	0.065	0.075	0.095	0.1	0.11	0.12	0.135	0.175	0.195
			$v_c$ (m/min)	78	79	79	79	78	80	84	83	85	85
			$n$	31000	25000	21000	18000	16500	16000	15000	13000	11000	9000
			$f_z$	0.007	0.01	0.014	0.016	0.017	0.018	0.019	0.021	0.023	0.031
			$f$ (mm/min)	435	500	580	580	560	570	560	550	500	500
	13 14	30-45	$a_p$ (mm)	0.023	0.064	0.074	0.093	0.098	0.1	0.11	0.12	0.16	0.19
			$v_c$ (m/min)	55	56	55	56	57	58	59	60	60	60
			$n$	22000	18000	15000	13000	12000	11500	10500	9600	7500	6300
			$f_z$	0.006	0.009	0.012	0.015	0.016	0.017	0.018	0.02	0.022	0.03
			$f$ (mm/min)	260	320	350	380	380	390	370	380	330	380
<b>H</b>	15 16	45-55	$a_p$ (mm)	0.011	0.013	0.015	0.018	0.021	0.023	0.024	0.026	0.033	0.042
			$v_c$ (m/min)	34	35	36	36	36	36	37	37	38	37
			$n$	13500	11000	9500	8000	7500	7000	6500	5500	4500	4000
			$f_z$	0.003	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.01	0.012
			$f$ (mm/min)	80	90	95	95	100	100	100	95	95	95
<b>K</b>	31 32 33 34		$a_p$ (mm)	0.025	0.065	0.075	0.095	0.1	0.11	0.12	0.135	0.175	0.195
			$v_c$ (m/min)	78	79	79	79	78	80	84	83	85	85
			$n$	31000	25000	21000	18000	16500	16000	15000	13000	11000	9000
			$f_z$	0.007	0.01	0.014	0.016	0.017	0.018	0.019	0.021	0.023	0.031
			$f$ (mm/min)	435	500	580	580	560	570	560	550	500	500



► The data shown is based on medial length tools. Please adjust machining conditions according to length.

$v_c$  - 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  
 $a_r$  - 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.