



| MATERIAL GROUP | HRc | | Size (mm) | | | | | | | | |
|----------------|----------------|-------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 | 8.0 | 10.0 | 12.0 | |
| P | 11 12 | < 30 | v_c (m/min) | 60 | 70 | 80 | 85 | 90 | 90 | 85 | 90 |
| | | | n | 9850 | 7600 | 6450 | 5350 | 4750 | 3650 | 2750 | 2350 |
| | | | f_z | 0.006 | 0.009 | 0.019 | 0.024 | 0.029 | 0.043 | 0.047 | 0.047 |
| | | | f (mm/min) | 240 | 270 | 480 | 510 | 560 | 605 | 520 | 440 |
| | 13 14 | 30-45 | v_c (m/min) | 40 | 45 | 50 | 50 | 55 | 55 | 55 | 55 |
| | | | n | 6450 | 4750 | 3950 | 3200 | 2850 | 2150 | 1700 | 1450 |
| | | | f_z | 0.006 | 0.009 | 0.019 | 0.024 | 0.031 | 0.038 | 0.038 | 0.037 |
| | | | f (mm/min) | 145 | 170 | 300 | 305 | 350 | 325 | 255 | 215 |
| M | 21 22 | | v_c (m/min) | 35 | 35 | 40 | 40 | 45 | 45 | 45 | 45 |
| | | | n | 5350 | 3950 | 3300 | 2700 | 2400 | 1800 | 1450 | 1150 |
| | | | f_z | 0.006 | 0.009 | 0.018 | 0.024 | 0.029 | 0.042 | 0.044 | 0.045 |
| | | | f (mm/min) | 120 | 145 | 240 | 255 | 280 | 300 | 255 | 205 |
| K | 31 32 33 | | v_c (m/min) | 60 | 55 | 60 | 55 | 55 | 55 | 60 | 55 |
| | | | n | 9350 | 6050 | 4600 | 3650 | 2950 | 2200 | 1850 | 1450 |
| | | | f_z | 0.017 | 0.026 | 0.035 | 0.044 | 0.065 | 0.093 | 0.116 | 0.155 |
| | | | f (mm/min) | 640 | 640 | 640 | 640 | 770 | 815 | 860 | 900 |
| N | 61 62 63 | | v_c (m/min) | 105 | 105 | 110 | 105 | 105 | 110 | 105 | 105 |
| | | | n | 16500 | 11000 | 8800 | 6800 | 5700 | 4400 | 3400 | 2850 |
| | | | f_z | 0.016 | 0.024 | 0.029 | 0.038 | 0.048 | 0.063 | 0.081 | 0.096 |
| | | | f (mm/min) | 1035 | 1035 | 1035 | 1035 | 1100 | 1100 | 1100 | 1100 |
| | 71 72 73 | | v_c (m/min) | 140 | 145 | 140 | 145 | 145 | 145 | 145 | 140 |
| | | | n | 22000 | 15400 | 11000 | 9150 | 7600 | 5700 | 4600 | 3750 |
| | | | f_z | 0.015 | 0.021 | 0.03 | 0.036 | 0.047 | 0.063 | 0.078 | 0.095 |
| | | | f (mm/min) | 1320 | 1320 | 1320 | 1320 | 1430 | 1430 | 1430 | 1430 |

STEEL, STAINLESS STEEL



CAST IRON, COPPER, ALUMINIUM



► 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_e - 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.