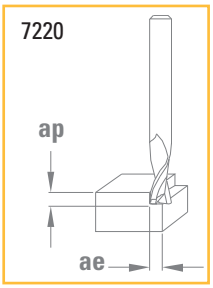
CUTTING CONDITIONS - ROUTING



Materials to be machined			C-TOP Vc [m/min]		ae [mm]	ap [mm]	Ø D_1 3 - 4
P	Unalloyed steel / Low alloyed steel	< 600 N/mm²	**100**	180	< 0.4 × D1	< 0.9 × L1	**0.030** - 0.042
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm²	**80**	170	< 0.3 x D1	< 0.9 × L1	**0.028** - 0.040
P	Lead alloyed cutting steel		**120**	100	< 0.4 × D1	< 0.9 × L1	**0.036** - 0.050
P	High alloyed steel	700 – 1500 N/mm²	**70**	100	< 0.3 x D1	< 0.9 × L1	**0.024** - 0.034
M	Stainless steel	400 – 700 N/mm²	**80**	110	< 0.3 x D1	< 0.9 × L1	**0.024** - 0.034
M	DUPLEX stainless steel	> 800 N/mm²	**50**	80	< 0.25 x D1	< 0.9 × L1	**0.022** - 0.030
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	**120**	230	< 0.4 × D1	< 0.9 × L1	**0.038** - 0.052
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	**100**	170	< 0.3 x D1	< 0.9 × L1	**0.030** - 0.042
K	Nodular ferritic cast iron / Malleable cast iron		**80**	140	< 0.3 x D1	< 0.9 × L1	**0.030** - 0.042
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	**20**	45	< 0.15 x D1	< 0.9 × L1	**0.018** - 0.026
S	Titanium, titanium alloys		**45**	80	< 0.3 x D1	< 0.9 × L1	**0.034** - 0.046

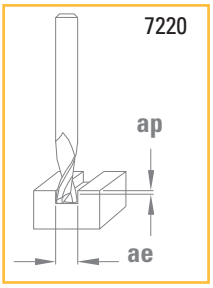
$$n\ [tr/min] = \frac{Vc\ [m/min] \times 1000}{\pi \times D_1\ [mm]}$$

$$Vf\ [mm/min] = n\ [tr/min] \times fz\ [mm] \times Z$$

Feed per tooth **fz [mm]**

Ø D_1 4 - 6	Ø D_1 6 - 8	Ø D_1 8 - 10	Ø D_1 10 - 12	Ø D_1 12 - 16
0.028 - 0.056	**0.042** - 0.112	**0.056** - 0.126	**0.064** - 0.134	**0.068** - 0.132
0.026 - 0.054	**0.040** - 0.106	**0.054** - 0.120	**0.060** - 0.128	**0.064** - 0.124
0.034 - 0.068	**0.050** - 0.134	**0.068** - 0.152	**0.076** - 0.162	**0.080** - 0.158
0.022 - 0.044	**0.034** - 0.090	**0.044** - 0.100	**0.050** - 0.108	**0.054** - 0.104
0.022 - 0.044	**0.034** - 0.090	**0.044** - 0.100	**0.050** - 0.108	**0.054** - 0.104
0.020 - 0.040	**0.030** - 0.078	**0.040** - 0.088	**0.044** - 0.094	**0.048** - 0.092
0.036 - 0.070	**0.052** - 0.140	**0.070** - 0.158	**0.078** - 0.168	**0.084** - 0.164
0.028 - 0.056	**0.042** - 0.112	**0.056** - 0.126	**0.064** - 0.134	**0.068** - 0.132
0.028 - 0.056	**0.042** - 0.112	**0.056** - 0.126	**0.064** - 0.134	**0.068** - 0.132
0.016 - 0.034	**0.026** - 0.068	**0.034** - 0.076	**0.038** - 0.080	**0.040** - 0.078
0.030 - 0.062	**0.046** - 0.124	**0.062** - 0.138	**0.070** - 0.148	**0.074** - 0.144

CUTTING CONDITIONS - SLOTTING



Materials to be machined

			C-TOP Vc [m/min]		ae [mm]	ap [mm]	Ø D_1 3 - 4
P	Unalloyed steel / Low alloyed steel	< 600 N/mm²	**75**	135	1 × D1	< 1 × D1	**0.024** - 0.034
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm²	**60**	130	1 × D1	< 1 × D1	**0.022** - 0.032
P	Lead alloyed cutting steel		**90**	150	1 × D1	< 1.3 × D1	**0.028** - 0.040
P	High alloyed steel	700 – 1500 N/mm²	**50**	80	1 × D1	< 0.8 × D1	**0.016** - 0.022
M	Stainless steel	400 – 700 N/mm²	**60**	80	1 × D1	< 0.7 × D1	**0.016** - 0.022
M	DUPLEX stainless steel	> 800 N/mm²	**40**	60	1 × D1	< 0.5 × D1	**0.012** - 0.016
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	**90**	170	1 × D1	< 1.3 × D1	**0.034** - 0.046
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	**80**	130	1 × D1	< 1 × D1	**0.024** - 0.034
K	Nodular ferritic cast iron / Malleable cast iron		**60**	110	1 × D1	< 1 × D1	**0.024** - 0.034
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	**20**	30	1 × D1	< 0.3 × D1	**0.014** - 0.020
S	Titanium, titanium alloys		**30**	60	1 × D1	< 1 × D1	**0.030** - 0.042

$$n\ [tr/min] = \frac{Vc\ [m/min] \times 1000}{\pi \times D_1\ [mm]}$$

$$Vf\ [mm/min] = n\ [tr/min] \times fz\ [mm] \times Z$$

Feed per tooth

fz [mm]

Ø D_1 4 - 6	Ø D_1 6 - 8	Ø D_1 8 - 10	Ø D_1 10 - 12	Ø D_1 12 - 16
0.022 - 0.044	**0.034** - 0.090	**0.044** - 0.100	**0.052** - 0.108	**0.054** - 0.106
0.020 - 0.044	**0.032** - 0.084	**0.044** - 0.096	**0.048** - 0.102	**0.052** - 0.100
0.028 - 0.054	**0.040** - 0.108	**0.054** - 0.122	**0.060** - 0.130	**0.064** - 0.126
0.014 - 0.028	**0.022** - 0.058	**0.028** - 0.066	**0.032** - 0.070	**0.036** - 0.068
0.014 - 0.028	**0.022** - 0.058	**0.028** - 0.066	**0.032** - 0.070	**0.036** - 0.068
0.010 - 0.020	**0.016** - 0.040	**0.020** - 0.044	**0.022** - 0.048	**0.024** - 0.046
0.032 - 0.064	**0.046** - 0.126	**0.064** - 0.142	**0.070** - 0.152	**0.076** - 0.148
0.022 - 0.044	**0.034** - 0.090	**0.044** - 0.100	**0.052** - 0.108	**0.054** - 0.106
0.022 - 0.044	**0.034** - 0.090	**0.044** - 0.100	**0.052** - 0.108	**0.054** - 0.106
0.012 - 0.028	**0.020** - 0.054	**0.028** - 0.060	**0.030** - 0.064	**0.032** - 0.062
0.028 - 0.056	**0.042** - 0.112	**0.056** - 0.124	**0.064** - 0.134	**0.066** - 0.130