CUTTING CONDITIONS

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

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

Materials to be machined			CARBIDE	Feed per revolution f [mm]				
			Vc [m/min]	Ø D_1 < 2.00	Ø D_1 2.00 - 4.03	Ø D_1 4.03 - 7.51	Ø D_1 7.51 - 12.02	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm²	14 **16** 20	0.05 **0.15** 0.20	0.10 **0.20** 0.30	0.30 **0.50** 0.70	0.40 **0.60** 0.80	
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm²	12 **14** 16	0.05 **0.15** 0.20	0.10 **0.20** 0.30	0.25 **0.40** 0.65	0.30 **0.50** 0.70	
P	Lead alloyed cutting steel		25 **50** 70	0.05 **0.15** 0.20	0.20 **0.40** 0.50	0.40 **0.60** 0.80	0.60 **0.80** 1.00	
P	High alloyed steel	700 – 1500 N/mm²	8 **10** 12	0.05 **0.15** 0.20	0.10 **0.15** 0.25	0.20 **0.30** 0.40	0.30 **0.40** 0.50	
M	Stainless steel	400 – 700 N/mm²	10 **12** 16	0.05 **0.15** 0.20	0.10 **0.15** 0.20	0.20 **0.30** 0.40	0.30 **0.40** 0.50	
M	DUPLEX stainless steel	> 800 N/mm²	8 **10** 12	0.05 **0.15** 0.20	0.10 **0.15** 0.25	0.20 **0.30** 0.40	0.30 **0.40** 0.50	
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	20 **30** 40	0.05 **0.15** 0.20	0.10 **0.15** 0.25	0.40 **0.50** 0.60	0.60 **0.70** 0.80	
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	12 **18** 24	0.05 **0.15** 0.20	0.10 **0.15** 0.20	0.30 **0.40** 0.50	0.40 **0.50** 0.60	
K	Nodular ferritic cast iron / Malleable cast iron		14 **20** 32	0.05 **0.15** 0.20	0.10 **0.20** 0.30	0.30 **0.40** 0.50	0.40 **0.50** 0.60	
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	8 **10** 12	0.05 **0.15** 0.20	0.10 **0.15** 0.20	0.20 **0.30** 0.40	0.30 **0.40** 0.50	
S	Titanium, titanium alloys		10 **12** 16	0.05 **0.15** 0.20	0.10 **0.15** 0.20	0.20 **0.30** 0.40	0.30 **0.40** 0.50	
N	Copper alloys - easy to machine (brass - bronze)		20 **30** 40	0.05 **0.15** 0.20	0.10 **0.20** 0.30	0.30 **0.40** 0.50	0.40 **0.50** 0.60	
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	16 **24** 30	0.05 **0.15** 0.20	0.10 **0.20** 0.30	0.30 **0.40** 0.50	0.40 **0.50** 0.60	
N	Aluminium alloys	Si < 8%	20 **40** 60	0.05 **0.20** 0.30	0.10 **0.25** 0.40	0.40 **0.60** 0.80	0.60 **0.80** 1.00	
N	Cast aluminium	Si > 8%	20 **36** 50	0.05 **0.20** 0.30	0.10 **0.25** 0.40	0.40 **0.60** 0.80	0.60 **0.80** 1.00	
N	Plastic		20 **40** 60	0.05 **0.20** 0.30	0.10 **0.25** 0.40	0.40 **0.50** 0.60	0.50 **0.60** 0.70	
N	Plastic with fibres		10 **20** 30	0.05 **0.20** 0.30	0.10 **0.25** 0.40	0.30 **0.40** 0.50	0.40 **0.50** 0.60	
N	Gold, silver		20 **30** 40	0.05 **0.15** 0.20	0.10 **0.20** 0.30	0.40 **0.60** 0.80	0.60 **0.80** 1.00	
				0.05 **0.10** 0.15	0.10 **0.15** 0.20	0.10 **0.15** 0.20	0.10 **0.15** 0.20	Reaming allowance Ø [mm]