

CUTTING CONDITIONS

Materials to be machined			CARBIDE	DINAC	Ø D <sub>1</sub> 0.05 - 0.10		Ø D <sub>1</sub> 0.15 - 0.50	
			n [tr/min]	n [tr/min]	Vf[mm/min]	ap[mm]	Vf[mm/min]	ap[mm]
<b>P</b>	Unalloyed steel / Low alloyed steel	< 600 N/mm <sup>2</sup>	25 - 35'000		75 - 250	0.05 - 0.35	100 - 350	0.10 - 0.45
<b>P</b>	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm <sup>2</sup>		25 - 35'000	60 - 250	0.05 - 0.30	80 - 300	0.10 - 0.40
<b>P</b>	Lead alloyed cutting steel		30 - 35'000		75 - 250	0.05 - 0.35	100 - 350	0.10 - 0.45
<b>P</b>	High alloyed steel	700 – 1500 N/mm <sup>2</sup>		15 - 35'000	50 - 200	0.05 - 0.10	80 - 300	0.10 - 0.35
<b>M</b>	Stainless steel	400 – 700 N/mm <sup>2</sup>		20 - 35'000	50 - 200	0.05 - 0.25	80 - 300	0.10 - 0.35
<b>M</b>	DUPLEX stainless steel	> 800 N/mm <sup>2</sup>		15 - 35'000	50 - 200	0.05 - 0.20	80 - 300	0.10 - 0.35
<b>H</b>	Tool steel and cast iron	> 1500 N/mm <sup>2</sup> (45 - 55 HRC)		20 - 35'000			80 - 250	0.02 - 0.07
<b>K</b>	Grey cast iron / Nodular pearlitic iron	< 250 HB	25 - 35'000		50 - 300	0.05 - 0.35	100 - 350	0.10 - 0.45
<b>K</b>	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	15 - 35'000	15 - 35'000	50 - 250	0.05 - 0.30	80 - 300	0.10 - 0.40
<b>K</b>	Nodular ferritic cast iron / Malleable cast iron		15 - 35'000	15 - 35'000	50 - 250	0.05 - 0.30	80 - 300	0.10 - 0.40
<b>S</b>	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy		10 - 15'000			80 - 250	0.05 - 0.10
<b>S</b>	Titanium, titanium alloys		20 - 35'000		75 - 200	0.05 - 0.20	100 - 300	0.10 - 0.40
<b>N</b>	Copper alloys - easy to machine (brass - bronze)		30 - 35'000		75 - 300	0.05 - 0.20	150 - 450	0.20 - 0.30
<b>N</b>	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	20 - 35'000		75 - 350	0.05 - 0.15	150 - 300	0.10 - 0.20
<b>N</b>	Aluminium alloys	Si < 8%	25 - 35'000		75 - 300	0.05 - 0.30	150 - 450	0.15 - 0.50
<b>N</b>	Cast aluminium	Si > 8%	20 - 35'000		75 - 350	0.05 - 0.20	150 - 450	0.15 - 0.45
<b>N</b>	Graphite		20 - 35'000		75 - 350	0.05 - 0.20	150 - 450	0.15 - 0.40
<b>N</b>	Plastic		30 - 35'000		100 - 350	0.05 - 0.30	180 - 450	0.15 - 0.50
<b>N</b>	Gold, silver		25 - 35'000		75 - 350	0.05 - 0.20	150 - 450	0.15 - 0.40