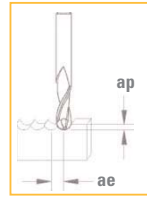


CUTTING CONDITIONS



Materials to be machined		Vc [m/min]	CARBIDE	DICUT	TiAlN	DIAMOND	ap [mm]	ae [mm]
			Vc [m/min]	Vc [m/min]	Vc [m/min]	Vc [m/min]		
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	70 100		90 110		<0.15 x ØD1	<0.5 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²			70 90		<0.15 x ØD1	<0.5 x ØD1
P	Lead alloyed cutting steel		70 100				<0.20 x ØD1	<0.5 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²			40 70		<0.10 x ØD1	<0.4 x ØD1
M	Stainless steel	400 – 700 N/mm ²			70 90		<0.15 x ØD1	<0.5 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²			40 70		<0.10 x ØD1	<0.4 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	70 100		90 110		<0.15 x ØD1	<0.5 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	40 70		70 90		<0.10 x ØD1	<0.4 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		70 100		90 110		<0.15 x ØD1	<0.5 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy			25 35		< 0.10 x ØD1	<0.10 x ØD1
S	Titanium, titanium alloys		30 45				<0.10 x ØD1	<0.4 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		140 160				<0.15 x ØD1	<0.5 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe) (Ampco)		120 140	170 190	170 190		<0.15 x ØD1	<0.5 x ØD1
N	Aluminium alloys	Si < 8%	180 240		230 340		<0.25 x ØD1	<0.5 x ØD1
N	Cast aluminium	Si > 8%	140 160		200 300		<0.25 x ØD1	<0.5 x ØD1
N	Graphite				200 300		<0.30 x ØD1	<0.6 x ØD1
N	Plastic		240 260		300 340		<0.30 x ØD1	<0.6 x ØD1
N	Gold, silver		140 160		200 220		<0.15 x ØD1	<0.5 x ØD1

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

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

Feed per tooth **fz [mm]**

Ø D ₁ 0.20 - 0.60	Ø D ₁ 0.60 - 1.00	Ø D ₁ 1.00 - 1.50	Ø D ₁ 1.50 - 3.00	Ø D ₁ 3.00 - 5.00	Ø D ₁ 5.00 - 7.00	Ø D ₁ 7.00 - 10.00	Ø D ₁ 10.00 - 12.00
0.0014 - 0.005	0.003 - 0.008	0.005 - 0.01	0.007 - 0.02	0.014 - 0.04	0.023 - 0.06	0.032 - 0.08	0.05 - 0.11
0.0010 - 0.003	0.002 - 0.006	0.003 - 0.01	0.005 - 0.015	0.010 - 0.03	0.017 - 0.04	0.024 - 0.06	0.03 - 0.08
0.0017 - 0.007	0.003 - 0.012	0.006 - 0.02	0.009 - 0.03	0.017 - 0.06	0.029 - 0.08	0.040 - 0.12	0.06 - 0.16
0.0010 - 0.003	0.002 - 0.006	0.003 - 0.01	0.005 - 0.015	0.010 - 0.03	0.017 - 0.04	0.024 - 0.06	0.03 - 0.08
0.0010 - 0.003	0.002 - 0.006	0.003 - 0.01	0.005 - 0.015	0.010 - 0.03	0.017 - 0.04	0.024 - 0.06	0.03 - 0.08
0.0014 - 0.005	0.003 - 0.008	0.005 - 0.01	0.007 - 0.02	0.014 - 0.04	0.023 - 0.06	0.032 - 0.08	0.05 - 0.11
0.0010 - 0.003	0.002 - 0.006	0.003 - 0.01	0.005 - 0.015	0.010 - 0.03	0.017 - 0.04	0.024 - 0.06	0.03 - 0.08
0.0014 - 0.005	0.003 - 0.008	0.005 - 0.01	0.007 - 0.02	0.014 - 0.04	0.023 - 0.06	0.032 - 0.08	0.05 - 0.11
0.0010 - 0.003	0.002 - 0.006	0.003 - 0.01	0.005 - 0.015	0.010 - 0.03	0.017 - 0.04	0.024 - 0.06	0.03 - 0.08
0.0017 - 0.007	0.003 - 0.012	0.006 - 0.02	0.009 - 0.03	0.017 - 0.06	0.029 - 0.08	0.040 - 0.12	0.06 - 0.16
0.0010 - 0.003	0.002 - 0.006	0.003 - 0.01	0.005 - 0.015	0.010 - 0.03	0.017 - 0.04	0.024 - 0.06	0.03 - 0.08
0.0017 - 0.007	0.003 - 0.012	0.006 - 0.02	0.009 - 0.03	0.017 - 0.06	0.029 - 0.08	0.040 - 0.12	0.06 - 0.16
0.0017 - 0.007	0.003 - 0.012	0.006 - 0.02	0.009 - 0.03	0.017 - 0.06	0.029 - 0.08	0.040 - 0.12	0.06 - 0.16
0.0024 - 0.010	0.005 - 0.017	0.008 - 0.03	0.012 - 0.04	0.024 - 0.09	0.040 - 0.12	0.056 - 0.17	0.08 - 0.24
0.0024 - 0.010	0.005 - 0.017	0.008 - 0.03	0.012 - 0.04	0.024 - 0.09	0.040 - 0.12	0.056 - 0.17	0.08 - 0.24
0.0017 - 0.007	0.003 - 0.012	0.006 - 0.02	0.009 - 0.03	0.017 - 0.06	0.029 - 0.08	0.040 - 0.12	0.06 - 0.16

n and Vf are indicative and shall be adjusted according to L₂