

ROUTING

		VDI 3323		CARBIDE Vc [m/min]	ae (mm)	ap (mm)
P	Unalloyed steel, leaded steel	1 - 5		155	< 0.3×ØD1	<1×L1
N	Wrought aluminium alloy < 12% Si	21 - 22		200	< 0.5×ØD1	<1×L1
	Cast aluminium alloy >12% Si	23 - 25		175	<0.4×ØD1	<1×L1
	Copper alloy good machinability with Pb	26		170	< 0.5×ØD1	<1×L1
	Copper alloy with difficult machinability	27 - 28		150	< 0.4×ØD1	<1×L1
	Plastic, wood	29 - 30		150	< 0.5×ØD1	<1×L1
	Gold, silver	-		150	< 0.3×ØD1	<1×L1
S	Titanium, titanium alloy	36 - 37		60	< 0.2×ØD1	<1×L1

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

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

Feed per tooth fz [mm]					
Ø D ₁ 0.40 - 0.90	Ø D ₁ 1.00 - 1.50	Ø D ₁ 1.60 - 2.00	Ø D ₁ 2.20 - 2.80	Ø D ₁ 3.00 - 4.00	Ø D ₁ 4.50 - 6.00
0.004 - 0.009	0.010 - 0.015	0.016 - 0.020	0.022 - 0.028	0.030 - 0.040	0.046 - 0.060
0.006 - 0.014	0.015 - 0.023	0.024 - 0.030	0.033 - 0.042	0.045 - 0.060	0.068 - 0.090
0.005 - 0.012	0.013 - 0.020	0.021 - 0.026	0.029 - 0.036	0.039 - 0.052	0.058 - 0.080
0.006 - 0.014	0.015 - 0.023	0.024 - 0.030	0.033 - 0.042	0.045 - 0.060	0.068 - 0.090
0.005 - 0.011	0.012 - 0.018	0.019 - 0.024	0.026 - 0.034	0.036 - 0.048	0.054 - 0.070
0.006 - 0.014	0.015 - 0.023	0.024 - 0.030	0.033 - 0.042	0.045 - 0.060	0.068 - 0.090
0.004 - 0.009	0.010 - 0.015	0.016 - 0.020	0.022 - 0.028	0.030 - 0.040	0.046 - 0.060
0.003 - 0.007	0.008 - 0.011	0.012 - 0.015	0.017 - 0.021	0.023 - 0.030	0.034 - 0.045

SLOTING

		VDI 3323		CARBIDE Vc [m/min]	ae (mm)	ap (mm)
P	Unalloyed steel, leaded steel	1 - 5		80	1×ØD1	< 0.3×ØD1
N	Wrought aluminium alloy < 12% Si	21 - 22		70	1×ØD1	< 0.5×ØD1
	Cast aluminium alloy >12% Si	23 - 25		60	1×ØD1	< 0.4×ØD1
	Copper alloy good machinability with Pb	26		120	1×ØD1	< 0.5×ØD1
	Copper alloy with difficult machinability	27 - 28		105	1×ØD1	< 0.4×ØD1
	Plastic, wood	29 - 30		55	1×ØD1	< 0.5×ØD1
	Gold, silver	-		105	1×ØD1	< 0.3×ØD1
S	Titanium, titanium alloy	36 - 37		40	1×ØD1	< 0.2×ØD1

Feed per tooth fz [mm]					
Ø D ₁ 0.40 - 0.90	Ø D ₁ 1.00 - 1.50	Ø D ₁ 1.60 - 2.00	Ø D ₁ 2.20 - 2.80	Ø D ₁ 3.00 - 4.00	Ø D ₁ 4.50 - 6.00
0.003 - 0.007	0.008 - 0.011	0.012 - 0.015	0.017 - 0.021	0.023 - 0.030	0.034 - 0.045
0.005 - 0.011	0.011 - 0.017	0.018 - 0.023	0.025 - 0.032	0.034 - 0.045	0.052 - 0.070
0.004 - 0.009	0.010 - 0.015	0.016 - 0.020	0.022 - 0.027	0.029 - 0.039	0.044 - 0.060
0.005 - 0.011	0.011 - 0.017	0.018 - 0.023	0.025 - 0.032	0.034 - 0.045	0.052 - 0.070
0.004 - 0.008	0.009 - 0.014	0.014 - 0.018	0.020 - 0.026	0.027 - 0.036	0.040 - 0.055
0.005 - 0.011	0.011 - 0.017	0.018 - 0.023	0.025 - 0.032	0.034 - 0.045	0.052 - 0.070
0.003 - 0.007	0.008 - 0.011	0.012 - 0.015	0.017 - 0.021	0.023 - 0.030	0.034 - 0.045
0.002 - 0.005	0.006 - 0.008	0.009 - 0.011	0.013 - 0.016	0.017 - 0.023	0.026 - 0.035

Values based on cutting oil use. The cutting parameters are very strongly influenced by external parameters, such as tool and workpiece stability, etc.
The cutting conditions must be adapted to the operating conditions !