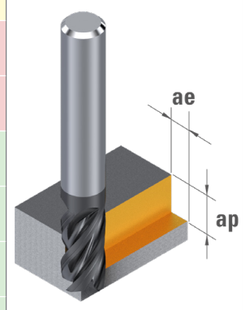
$$n\ [rpm] = \frac{Vc\ [m/min] \times 1000}{\pi \times D_1\ [mm]}$$

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

ROUTING

		VDI 3323		CARBIDE Vc [m/min]	TiAlN Vc [m/min]	DIAMANT Vc [m/min]	ae (mm)	ap (mm)
P	Unalloyed steel, leaded steel	1 - 5			**95**		<0.015×ØD1	<1×L1
P	Low alloyed steel < 800 N/mm²	6 - 9			**85**		<0.015×ØD1	<1×L1
P	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13			**65**		<0.010×ØD1	<1×L1
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2			**65**		<0.005×ØD1	<1×L1
M	Nickel-free stainless steel / DUPLEX > 700 N/mm²	14.3-14.4			**55**		<0.005×ØD1	<1×L1
K	Grey cast iron < 250 HB	15 - 16		**125**	**125**		<0.040×ØD1	<1×L1
K	Ductile, malleable, nodular cast iron > 250 HB	17 - 20		**90**	**90**		<0.025×ØD1	<1×L1
N	Wrought aluminium alloy < 12% Si	21 - 22		**165**		**255**	<0.020×ØD1	<1×L1
N	Cast aluminium alloy >12% Si	23 - 25		**125**		**200**	<0.025×ØD1	<1×L1
N	Copper alloy good machinability with Pb	26		**125**		**200**	<0.025×ØD1	<1×L1
N	Copper alloy with difficult machinability	27 - 28		**100**		**160**	<0.015×ØD1	<1×L1
N	Plastic, wood	29 - 30		**110**		**175**	<0.025×ØD1	<1×L1
N	Graphite	-		**110**		**200**	<0.020×ØD1	<1×L1
N	Gold, silver	-		**90**		**140**	<0.020×ØD1	<1×L1
S	Titanium, titanium alloy	36 - 37		**50**	**70**		<0.015×ØD1	<1×L1

Feed per tooth fz [mm]

Ø D_1 3.00 - 4.00	Ø D_1 5.00 - 6.00	Ø D_1 7.00 - 8.00	Ø D_1 10.00 - 12.00	Ø D_1 14.00 - 20.00
0.015 - 0.020	0.025 - 0.030	0.035 - 0.040	0.040 - 0.048	0.042 - 0.060
0.014 - 0.018	0.023 - 0.028	0.030 - 0.036	0.036 - 0.043	0.038 - 0.054
0.012 - 0.016	0.020 - 0.024	0.030 - 0.032	0.032 - 0.038	0.034 - 0.048
0.012 - 0.016	0.020 - 0.024	0.030 - 0.032	0.032 - 0.038	0.034 - 0.048
0.011 - 0.014	0.018 - 0.022	0.025 - 0.028	0.028 - 0.034	0.029 - 0.042
0.018 - 0.024	0.030 - 0.036	0.040 - 0.048	0.048 - 0.058	0.050 - 0.072
0.015 - 0.020	0.025 - 0.030	0.035 - 0.040	0.040 - 0.048	0.042 - 0.060
0.023 - 0.030	0.038 - 0.046	0.055 - 0.060	0.060 - 0.072	0.063 - 0.090
0.020 - 0.026	0.033 - 0.040	0.045 - 0.052	0.052 - 0.062	0.055 - 0.078
0.023 - 0.030	0.038 - 0.046	0.055 - 0.060	0.060 - 0.072	0.063 - 0.090
0.018 - 0.024	0.030 - 0.036	0.040 - 0.048	0.048 - 0.058	0.050 - 0.072
0.023 - 0.030	0.038 - 0.046	0.055 - 0.060	0.060 - 0.072	0.063 - 0.090
0.030 - 0.040	0.050 - 0.060	0.070 - 0.080	0.080 - 0.096	0.084 - 0.120
0.015 - 0.020	0.025 - 0.030	0.035 - 0.040	0.040 - 0.048	0.042 - 0.060
0.015 - 0.020	0.025 - 0.030	0.035 - 0.040	0.040 - 0.048	0.042 - 0.060

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 !