



ROUTING

		VDI 3323		CARBIDE Vc [m/min]	TiAlN Vc [m/min]	DLC Vc [m/min]	ae (mm)	ap (mm)
P	Unalloyed steel, leaded steel	1 - 5			125		<0.06×ØD1	<1×L1
	Low alloyed steel < 800 N/mm²	6 - 9			100		<0.05×ØD1	<1×L1
	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13			90		<0.04×ØD1	<1×L1
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2			110		<0.04×ØD1	<1×L1
	Nickel-free stainless steel/DUPLEX > 700 N/mm²	14.3-14.4			90		<0.03×ØD1	<1×L1
K	Grey cast iron < 250 HB	15 - 16		125	125		<0.12×ØD1	<1×L1
	Ductile, malleable, nodular cast iron > 250 HB	17 - 20		90	90		<0.06×ØD1	<1×L1
N	Copper alloy good machinability with Pb	26		180		225	<0.09×ØD1	<1×L1
	Copper alloy with difficult machinability	27 - 28		150		190	<0.07×ØD1	<1×L1
	Gold, silver	-		135		170	<0.07×ØD1	<1×L1
S	Refractory alloy, Fe, Ni, Co base	31- 35		45	30		<0.02×ØD1	<1×L1
	Titanium, titanium alloy	36 - 37		50	70		<0.06×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 0.35 - 0.50	Ø D ₁ 0.55 - 1.00	Ø D ₁ 1.10 - 1.50	Ø D ₁ 1.60 - 2.00	Ø D ₁ 2.50 - 3.00	Ø D ₁ 4.00 - 6.00	Ø D ₁ 8.00 - 12.00	Ø D ₁ 12.00 - 20.00
0.0028 - 0.0040	0.004 - 0.008	0.009 - 0.012	0.013 - 0.016	0.020 - 0.024	0.032 - 0.050	0.060 - 0.080	0.080 - 0.120
0.0025 - 0.0036	0.004 - 0.007	0.008 - 0.011	0.012 - 0.014	0.018 - 0.022	0.028 - 0.045	0.060 - 0.070	0.080 - 0.110
0.0022 - 0.0032	0.004 - 0.006	0.007 - 0.010	0.010 - 0.013	0.016 - 0.019	0.026 - 0.040	0.050 - 0.060	0.070 - 0.100
0.0022 - 0.0032	0.004 - 0.006	0.007 - 0.010	0.010 - 0.013	0.016 - 0.019	0.026 - 0.040	0.050 - 0.060	0.070 - 0.100
0.0020 - 0.0028	0.003 - 0.006	0.006 - 0.008	0.009 - 0.011	0.014 - 0.017	0.022 - 0.035	0.040 - 0.060	0.060 - 0.080
0.0034 - 0.0048	0.005 - 0.010	0.011 - 0.014	0.015 - 0.019	0.024 - 0.029	0.038 - 0.060	0.080 - 0.100	0.100 - 0.140
0.0028 - 0.0040	0.004 - 0.008	0.009 - 0.012	0.013 - 0.016	0.020 - 0.024	0.032 - 0.050	0.060 - 0.080	0.080 - 0.120
0.0042 - 0.0060	0.007 - 0.012	0.013 - 0.018	0.006 - 0.008	0.030 - 0.036	0.048 - 0.070	0.100 - 0.120	0.130 - 0.180
0.0034 - 0.0048	0.005 - 0.010	0.011 - 0.014	0.013 - 0.016	0.024 - 0.029	0.038 - 0.060	0.080 - 0.100	0.100 - 0.140
0.0028 - 0.0040	0.004 - 0.008	0.009 - 0.012	0.019 - 0.024	0.020 - 0.024	0.032 - 0.050	0.060 - 0.080	0.080 - 0.120
0.0014 - 0.0020	0.002 - 0.004	0.004 - 0.006	0.015 - 0.019	0.010 - 0.012	0.016 - 0.025	0.030 - 0.040	0.040 - 0.060
0.0028 - 0.0040	0.004 - 0.008	0.009 - 0.012	0.013 - 0.016	0.020 - 0.024	0.032 - 0.050	0.060 - 0.080	0.080 - 0.120