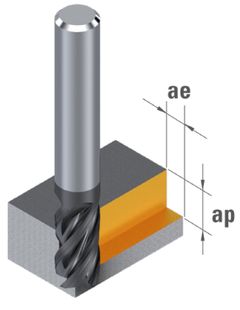
ROUTING

		VDI 3323		CARBIDE Vc [m/min]	C-TOP Vc [m/min]	ae (mm)	ap (mm)
P	Unalloyed steel, leaded steel	1 - 5			**150**	<0.40×ØD1	<2×ØD1
	Low alloyed steel < 800 N/mm²	6 - 9			**125**	<0.30×ØD1	<2×ØD1
	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13			**85**	<0.30×ØD1	<2×ØD1
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2			**95**	<0.30×ØD1	<2×ØD1
	Nickel-free stainless steel / DUPLEX > 700 N/mm²	14.3-14.4			**65**	<0.25×ØD1	<2×ØD1
K	Grey cast iron < 250 HB	15 - 16		**170**	**180**	<0.40×ØD1	<2×ØD1
	Ductile, malleable, nodular cast iron > 250 HB	17 - 20		**105**	**130**	<0.30×ØD1	<2×ØD1
N	Copper alloy good machinability with Pb	26		**110**		<0.40×ØD1	<2×ØD1
	Copper alloy with difficult machinability	27 - 28		**95**		<0.40×ØD1	<2×ØD1
	Gold, silver	-		**165**		<0.40×ØD1	<2×ØD1
S	Refractory alloy, Fe, Ni, Co base	31 - 35		**30**	**40**	<0.15×ØD1	<2×ØD1
	Titanium, titanium alloy	36 - 37		**60**	**70**	<0.30×ØD1	<2×ØD1

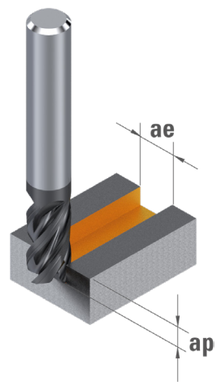
$$n\ [rpm] = \frac{Vc\ [m/min] \times 1000}{\pi \times D_1\ [mm]}$$

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

Feed per tooth fz [mm]

Ø D_1 0.30 - 0.70	Ø D_1 0.80 - 1.40	Ø D_1 1.50 - 1.90	Ø D_1 2.00 - 3.00	Ø D_1 4.00 - 6.00	Ø D_1 8.00 - 10.00	Ø D_1 12.00 - 16.00
0.004 - 0.010	0.012 - 0.022	0.023 - 0.030	0.031 - 0.047	0.062 - 0.095	0.120 - 0.130	0.140 - 0.170
0.003 - 0.009	0.011 - 0.020	0.021 - 0.027	0.029 - 0.043	0.058 - 0.085	0.110 - 0.120	0.130 - 0.160
0.003 - 0.008	0.010 - 0.018	0.020 - 0.025	0.026 - 0.039	0.052 - 0.080	0.100 - 0.110	0.120 - 0.140
0.003 - 0.008	0.010 - 0.018	0.020 - 0.025	0.026 - 0.039	0.052 - 0.080	0.100 - 0.110	0.120 - 0.140
0.003 - 0.008	0.0009 - 0.016	0.018 - 0.022	0.023 - 0.035	0.046 - 0.070	0.090 - 0.100	0.110 - 0.130
0.004 - 0.012	0.015 - 0.025	0.027 - 0.035	0.036 - 0.055	0.072 - 0.110	0.130 - 0.150	0.170 - 0.200
0.004 - 0.010	0.012 - 0.022	0.023 - 0.030	0.031 - 0.047	0.062 - 0.095	0.120 - 0.130	0.140 - 0.170
0.005 - 0.014	0.018 - 0.031	0.033 - 0.042	0.044 - 0.066	0.088 - 0.135	0.160 - 0.190	0.200 - 0.240
0.004 - 0.012	0.015 - 0.025	0.027 - 0.035	0.036 - 0.055	0.072 - 0.110	0.130 - 0.150	0.170 - 0.200
0.004 - 0.010	0.012 - 0.022	0.023 - 0.030	0.031 - 0.047	0.062 - 0.095	0.120 - 0.130	0.140 - 0.170
0.002 - 0.006	0.007 - 0.013	0.014 - 0.017	0.018 - 0.027	0.036 - 0.055	0.070 - 0.080	0.080 - 0.100
0.004 - 0.010	0.012 - 0.022	0.023 - 0.030	0.031 - 0.047	0.062 - 0.095	0.120 - 0.130	0.140 - 0.170

SLOTTING

		VDI 3323		CARBIDE Vc [m/min]	C-TOP Vc [m/min]	ae (mm)	ap (mm)
P	Unalloyed steel, leaded steel	1 - 5			**115**	1×ØD1	<2×ØD1
	Low alloyed steel < 800 N/mm²	6 - 9			**95**	1×ØD1	<1.5×ØD1
	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13			**65**	1×ØD1	<1×ØD1
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2			**70**	1×ØD1	<1×ØD1
	Nickel-free stainless steel / DUPLEX > 700 N/mm²	14.3-14.4			**50**	1×ØD1	<0.8×ØD1
K	Grey cast iron < 250 HB	15 - 16		**100**	**135**	1×ØD1	<2×ØD1
	Ductile, malleable, nodular cast iron > 250 HB	17 - 20		**85**	**95**	1×ØD1	<1×ØD1
N	Copper alloy good machinability with Pb	26		**85**		1×ØD1	<2×ØD1
	Copper alloy with difficult machinability	27 - 28		**70**		1×ØD1	<1.5×ØD1
	Gold, silver	-		**125**		1×ØD1	<1×ØD1
S	Refractory alloy, Fe, Ni, Co base	31 - 35		**25**	**30**	1×ØD1	<0.2×ØD1
	Titanium, titanium alloy	36 - 37		**55**	**55**	1×ØD1	<1×ØD1

Feed per tooth fz [mm]

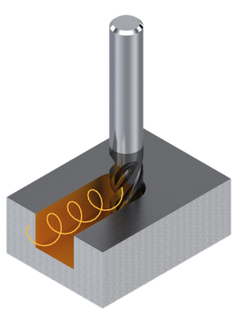
Ø D_1 0.30 - 0.70	Ø D_1 0.80 - 1.40	Ø D_1 1.50 - 1.90	Ø D_1 2.00 - 3.00	Ø D_1 4.00 - 6.00	Ø D_1 8.00 - 10.00	Ø D_1 12.00 - 16.00
0.002 - 0.006	0.007 - 0.013	0.014 - 0.018	0.019 - 0.028	0.038 - 0.055	0.070 - 0.080	0.080 - 0.100
0.002 - 0.006	0.007 - 0.012	0.013 - 0.016	0.017 - 0.026	0.034 - 0.050	0.070 - 0.070	0.080 - 0.100
0.002 - 0.005	0.006 - 0.011	0.012 - 0.015	0.016 - 0.023	0.032 - 0.050	0.060 - 0.070	0.070 - 0.080
0.002 - 0.005	0.006 - 0.011	0.012 - 0.015	0.016 - 0.023	0.032 - 0.050	0.060 - 0.070	0.070 - 0.080
0.002 - 0.005	0.006 - 0.010	0.011 - 0.013	0.014 - 0.021	0.028 - 0.040	0.050 - 0.060	0.070 - 0.080
0.002 - 0.007	0.009 - 0.015	0.016 - 0.021	0.022 - 0.033	0.044 - 0.065	0.080 - 0.090	0.100 - 0.120
0.002 - 0.006	0.007 - 0.013	0.014 - 0.018	0.019 - 0.028	0.038 - 0.055	0.070 - 0.080	0.080 - 0.100
0.003 - 0.009	0.011 - 0.019	0.020 - 0.025	0.027 - 0.040	0.052 - 0.080	0.100 - 0.110	0.120 - 0.140
0.002 - 0.007	0.009 - 0.015	0.016 - 0.021	0.022 - 0.033	0.044 - 0.065	0.080 - 0.090	0.100 - 0.120
0.002 - 0.006	0.007 - 0.013	0.014 - 0.018	0.019 - 0.028	0.038 - 0.055	0.070 - 0.080	0.080 - 0.100
0.001 - 0.004	0.004 - 0.008	0.008 - 0.010	0.011 - 0.016	0.022 - 0.035	0.040 - 0.050	0.050 - 0.060
0.002 - 0.006	0.007 - 0.013	0.014 - 0.018	0.019 - 0.028	0.038 - 0.055	0.070 - 0.080	0.080 - 0.100

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 !

TROCHOIDAL MILLING

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

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

		VDI 3323		CARBIDE Vc [m/min]	C-TOP Vc [m/min]	ae (mm)	ap (mm)
P	Unalloyed steel, leaded steel	1 - 5			450	<0.05×ØD1	<2×ØD1
P	Low alloyed steel < 800 N/mm²	6 - 9			375	<0.04×ØD1	<2×ØD1
P	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13			255	<0.04×ØD1	<2×ØD1
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2			190	<0.04×ØD1	<2×ØD1
M	Nickel-free stainless steel / DUPLEX > 700 N/mm²	14.3-14.4			130	<0.04×ØD1	<2×ØD1
K	Grey cast iron < 250 HB	15 - 16		510	495	<0.06×ØD1	<2×ØD1
K	Ductile, malleable, nodular cast iron > 250 HB	17 - 20		315	360	<0.04×ØD1	<2×ØD1
N	Copper alloy good machinability with Pb	26		305		<0.06×ØD1	<2×ØD1
N	Copper alloy with difficult machinability	27 - 28		260		<0.04×ØD1	<2×ØD1
N	Gold, silver	-		455		<0.04×ØD1	<2×ØD1
S	Refractory alloy, Fe, Ni, Co base	31 - 35		60	70	<0.02×ØD1	<2×ØD1
S	Titanium, titanium alloy	36 - 37		120	125	<0.04×ØD1	<2×ØD1

Feed per tooth fz [mm]

Ø D_1 0.30 - 0.70	Ø D_1 0.80 - 1.40	Ø D_1 1.50 - 1.90	Ø D_1 2.00 - 3.00	Ø D_1 4.00 - 6.00	Ø D_1 8.00 - 10.00	Ø D_1 12.00 - 16.00
0.005 - 0.013	0.016 - 0.029	0.030 - 0.039	0.040 - 0.061	0.081 - 0.124	0.156 - 0.169	0.182 - 0.221
0.004 - 0.012	0.015 - 0.026	0.028 - 0.035	0.037 - 0.056	0.075 - 0.111	0.143 - 0.156	0.169 - 0.208
0.004 - 0.011	0.014 - 0.024	0.025 - 0.032	0.034 - 0.051	0.068 - 0.104	0.130 - 0.143	0.156 - 0.182
0.004 - 0.011	0.014 - 0.024	0.025 - 0.032	0.034 - 0.051	0.068 - 0.104	0.130 - 0.143	0.156 - 0.182
0.004 - 0.010	0.012 - 0.021	0.023 - 0.029	0.030 - 0.046	0.060 - 0.091	0.117 - 0.130	0.143 - 0.169
0.005 - 0.015	0.019 - 0.033	0.035 - 0.045	0.047 - 0.071	0.094 - 0.143	0.169 - 0.195	0.221 - 0.260
0.005 - 0.013	0.016 - 0.028	0.030 - 0.039	0.041 - 0.061	0.081 - 0.124	0.156 - 0.169	0.182 - 0.221
0.007 - 0.019	0.023 - 0.040	0.043 - 0.055	0.057 - 0.086	0.114 - 0.176	0.208 - 0.247	0.260 - 0.312
0.005 - 0.015	0.019 - 0.033	0.035 - 0.045	0.047 - 0.071	0.094 - 0.143	0.169 - 0.195	0.221 - 0.260
0.005 - 0.013	0.016 - 0.028	0.030 - 0.039	0.041 - 0.061	0.081 - 0.124	0.156 - 0.169	0.182 - 0.221
0.003 - 0.008	0.009 - 0.017	0.018 - 0.022	0.024 - 0.035	0.047 - 0.072	0.091 - 0.104	0.104 - 0.130
0.005 - 0.013	0.016 - 0.028	0.030 - 0.039	0.041 - 0.061	0.081 - 0.124	0.156 - 0.169	0.182 - 0.221

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 !