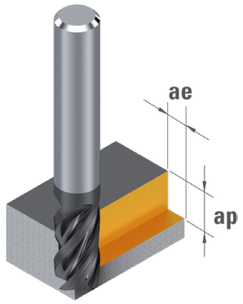
$$n\ [rpm] = \frac{Vc\ [m/min] \times 1000}{\pi \times D_1\ [mm]}$$

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

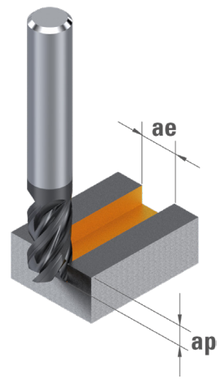
ROUTING

		VDI 3323	CUTINOX Vc [m/min]	ae (mm)	ap (mm)	Feed per tooth fz [mm] Ø D_1 1.50 - 2.00	Ø D_1 3.00 - 5.00	Ø D_1 6.00 - 8.00	Ø D_1 10.00 - 12.00	Ø D_1 16.00 - 20.00
P	Unalloyed steel, leaded steel	1 - 5	**160**	<0.4×ØD1	<1×L1	0.013 - 0.018	0.026 - 0.045	0.050 - 0.070	0.090 - 0.105	0.125 - 0.155
P	Low alloyed steel < 800 N/mm²	6 - 9	**140**	<0.3×ØD1	<1×L1	0.012 - 0.016	0.024 - 0.040	0.050 - 0.060	0.080 - 0.095	0.110 - 0.140
P	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13	**100**	<0.3×ØD1	<1×L1	0.011 - 0.014	0.022 - 0.035	0.040 - 0.060	0.070 - 0.085	0.100 - 0.125
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2	**95**	<0.3×ØD1	<1×L1	0.011 - 0.014	0.022 - 0.035	0.040 - 0.060	0.070 - 0.085	0.100 - 0.125
M	Nickel-free stainless steel/DUPLEX >700 N/mm²	14.3-14.4	**85**	<0.25×ØD1	<1×L1	0.010 - 0.013	0.020 - 0.030	0.040 - 0.050	0.065 - 0.075	0.090 - 0.110
K	Grey cast iron < 250 HB	15 - 16	**180**	<0.4×ØD1	<1×L1	0.016 - 0.021	0.032 - 0.050	0.060 - 0.080	0.105 - 0.125	0.145 - 0.180
K	Ductile, malleable, nodular cast iron>250HB	17 - 20	**150**	<0.3×ØD1	<1×L1	0.013 - 0.018	0.026 - 0.045	0.050 - 0.070	0.090 - 0.105	0.125 - 0.155
S	Refractory alloy, Fe, Ni, Co base	31- 35	**35**	<0.15×ØD1	<1×L1	0.007 - 0.010	0.014 - 0.025	0.030 - 0.040	0.050 - 0.060	0.065 - 0.085
S	Titanium, titanium alloy	36 - 37	**65**	<0.4×ØD1	<1×L1	0.014 - 0.019	0.028 - 0.050	0.060 - 0.080	0.095 - 0.115	0.135 - 0.170



SLOTTING

		VDI 3323	CUTINOX Vc [m/min]	ae (mm)	ap (mm)	Feed per tooth fz [mm] Ø D_1 1.50 - 2.00	Ø D_1 3.00 - 5.00	Ø D_1 6.00 - 8.00	Ø D_1 10.00 - 12.00	Ø D_1 16.00 - 20.00
P	Unalloyed steel, leaded steel	1 - 5	**110**	1×ØD1	<1×ØD1	0.008 - 0.011	0.016 - 0.025	0.030 - 0.040	0.055 - 0.065	0.075 - 0.095
P	Low alloyed steel < 800 N/mm²	6 - 9	**100**	1×ØD1	<1×ØD1	0.007 - 0.010	0.014 - 0.025	0.030 - 0.040	0.050 - 0.055	0.065 - 0.085
P	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13	**70**	1×ØD1	<1×ØD1	0.007 - 0.008	0.014 - 0.020	0.020 - 0.040	0.040 - 0.050	0.060 - 0.075
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2	**65**	1×ØD1	<0.8×ØD1	0.007 - 0.008	0.014 - 0.020	0.020 - 0.040	0.040 - 0.050	0.060 - 0.075
M	Nickel-free stainless steel/DUPLEX >700 N/mm²	14.3-14.4	**60**	1×ØD1	<0.5×ØD1	0.006 - 0.008	0.012 - 0.020	0.020 - 0.030	0.040 - 0.045	0.055 - 0.065
K	Grey cast iron < 250 HB	15 - 16	**125**	1×ØD1	<1×ØD1	0.010 - 0.013	0.020 - 0.030	0.040 - 0.050	0.065 - 0.075	0.085 - 0.110
K	Ductile, malleable, nodular cast iron>250HB	17 - 20	**105**	1×ØD1	<1×ØD1	0.008 - 0.011	0.016 - 0.025	0.030 - 0.040	0.055 - 0.065	0.075 - 0.095
S	Refractory alloy, Fe, Ni, Co base	31- 35	**25**	1×ØD1	<0.3×ØD1	0.004 - 0.006	0.008 - 0.015	0.020 - 0.020	0.030 - 0.035	0.040 - 0.050
S	Titanium, titanium alloy	36 - 37	**45**	1×ØD1	<0.5×ØD1	0.008 - 0.011	0.016 - 0.030	0.036 - 0.048	0.055 - 0.070	0.080 - 0.100

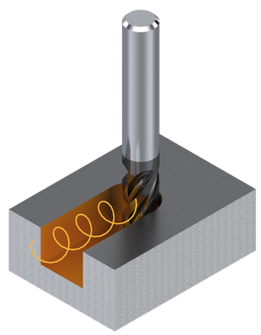


Values based on cutting oil use. The cutting parameters are very strongly influenced by external parameters, such as tool and workpiece stability, etc.
The cutting conditions must be adapted to the operating conditions !

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

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

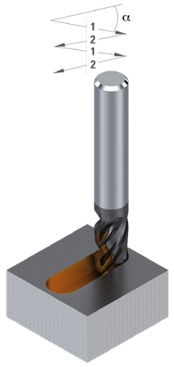
TROCHOIDAL MILLING

		VDI 3323		CUTINOX Vc [m/min]	ae (mm)	ap (mm)
P	Unalloyed steel, leaded steel	1 - 5		**320**	<0.04×ØD1	<1×L1
P	Low alloyed steel < 800 N/mm²	6 - 9		**280**	<0.03×ØD1	<1×L1
P	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13		**200**	<0.03×ØD1	<1×L1
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2		**165**	<0.03×ØD1	<1×L1
M	Nickel-free stainless steel/DUPLEX >700 N/mm²	14.3-14.4		**150**	<0.03×ØD1	<1×L1
K	Grey cast iron < 250 HB	15 - 16		**450**	<0.04×ØD1	<1×L1
K	Ductile, malleable, nodular cast iron>250HB	17 - 20		**375**	<0.03×ØD1	<1×L1
S	Refractory alloy, Fe, Ni, Co base	31- 35		**55**	<0.02×ØD1	<1×L1
S	Titanium, titanium alloy	36 - 37		**100**	<0.04×ØD1	<1×L1

Feed per tooth fz [mm]

Ø D_1 1.50 - 2.00	Ø D_1 3.00 - 5.00	Ø D_1 6.00 - 8.00	Ø D_1 10.00 - 12.00	Ø D_1 16.00 - 20.00
0.018 - 0.024	0.036 - 0.060	0.070 - 0.100	0.120 - 0.145	0.170 - 0.210
0.016 - 0.022	0.032 - 0.055	0.060 - 0.090	0.110 - 0.130	0.150 - 0.190
0.014 - 0.019	0.028 - 0.050	0.060 - 0.080	0.095 - 0.115	0.135 - 0.170
0.014 - 0.019	0.028 - 0.050	0.060 - 0.080	0.095 - 0.115	0.135 - 0.170
0.013 - 0.017	0.026 - 0.040	0.050 - 0.070	0.085 - 0.100	0.120 - 0.145
0.022 - 0.029	0.044 - 0.070	0.090 - 0.120	0.145 - 0.175	0.200 - 0.250
0.018 - 0.024	0.036 - 0.060	0.070 - 0.100	0.120 - 0.145	0.170 - 0.210
0.009 - 0.012	0.018 - 0.030	0.040 - 0.050	0.060 - 0.070	0.085 - 0.105
0.018 - 0.024	0.036 - 0.060	0.070 - 0.100	0.120 - 0.145	0.170 - 0.210

RAMPING

		VDI 3323		CUTINOX Vc [m/min]	Ramp angle α	ap (mm)
P	Unalloyed steel, leaded steel	1 - 5		**135**	<8°	<1×L1
P	Low alloyed steel < 800 N/mm²	6 - 9		**120**	<6°	<1×L1
P	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13		**85**	<5°	<1×L1
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2		**80**	<5°	<1×L1
M	Nickel-free stainless steel/DUPLEX >700 N/mm²	14.3-14.4		**70**	<5°	<1×L1
K	Grey cast iron < 250 HB	15 - 16		**155**	<10°	<1×L1
K	Ductile, malleable, nodular cast iron>250HB	17 - 20		**130**	<6°	<1×L1
S	Refractory alloy, Fe, Ni, Co base	31- 35		**30**	<3°	<1×L1
S	Titanium, titanium alloy	36 - 37		**55**	<4°	<1×L1

Feed per tooth fz [mm]

Ø D_1 1.50 - 2.00	Ø D_1 3.00 - 5.00	Ø D_1 6.00 - 8.00	Ø D_1 10.00 - 12.00	Ø D_1 16.00 - 20.00
0.007 - 0.010	0.014 - 0.025	0.030 - 0.040	0.050 - 0.060	0.065 - 0.085
0.011 - 0.014	0.022 - 0.035	0.040 - 0.060	0.070 - 0.085	0.100 - 0.125
0.010 - 0.013	0.020 - 0.030	0.040 - 0.050	0.065 - 0.075	0.090 - 0.110
0.010 - 0.013	0.020 - 0.030	0.040 - 0.050	0.065 - 0.075	0.090 - 0.110
0.008 - 0.011	0.016 - 0.030	0.030 - 0.040	0.055 - 0.065	0.080 - 0.100
0.014 - 0.019	0.028 - 0.050	0.060 - 0.080	0.095 - 0.115	0.135 - 0.170
0.012 - 0.016	0.024 - 0.040	0.050 - 0.060	0.080 - 0.095	0.110 - 0.140
0.006 - 0.008	0.012 - 0.020	0.020 - 0.030	0.040 - 0.050	0.055 - 0.070
0.013 - 0.018	0.026 - 0.045	0.050 - 0.070	0.090 - 0.105	0.125 - 0.155

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 !