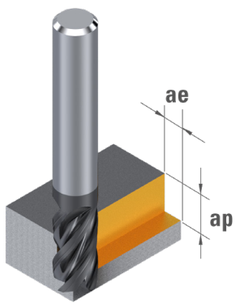
ROUTING

		VDI 3323	CARBIDE Vc [m/min]	CUTINOX Vc [m/min]	ae (mm)	ap (mm)
P	Unalloyed steel, leaded steel	1 - 5		135	<0.50×ØD1	<1×ØD1
P	Low alloyed steel < 800 N/mm²	6 - 9		105	<0.50×ØD1	<1×ØD1
P	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13		80	<0.30×ØD1	<1×ØD1
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2		100	<0.30×ØD1	<1×ØD1
M	Nickel-free stainless steel / DUPLEX > 700 N/mm²	14.3-14.4		80	<0.25×ØD1	<1×ØD1
K	Grey cast iron < 250 HB	15 - 16	180	200	<0.50×ØD1	<1×ØD1
K	Ductile, malleable, nodular cast iron > 250 HB	17 - 20	95	130	<0.50×ØD1	<1×ØD1
N	Wrought aluminium alloy < 12% Si	21 - 22	320		<0.50×ØD1	<1×ØD1
N	Cast aluminium alloy >12% Si	23 - 25	260		<0.50×ØD1	<1×ØD1
N	Copper alloy good machinability with Pb	26	160		<0.50×ØD1	<1×ØD1
N	Copper alloy with difficult machinability	27 - 28	140		<0.50×ØD1	<1×ØD1
N	Plastic, wood	29 - 30	210		<0.50×ØD1	<1×ØD1
N	Gold, silver	-	180		<0.50×ØD1	<1×ØD1
S	Refractory alloy, Fe, Ni, Co base	31- 35	20	30	<0.15×ØD1	<1×ØD1
S	Titanium, titanium alloy	36 - 37	65	70	<0.40×ØD1	<1×ØD1



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

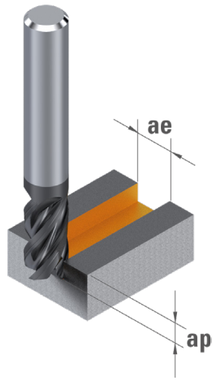
$$Vf\ [mm/min] = n\ [rpm] \times fz\ [mm] \times Z$$

Feed per tooth fz [mm]

Ø D_1 0.30 - 0.50	Ø D_1 0.60 - 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 - 10.00
0.002 - 0.005	0.006 - 0.010	0.011 - 0.015	0.016 - 0.020	0.025 - 0.030	0.040 - 0.060	0.070 - 0.080
0.002 - 0.005	0.005 - 0.009	0.010 - 0.014	0.014 - 0.018	0.023 - 0.027	0.036 - 0.055	0.065 - 0.070
0.002 - 0.004	0.005 - 0.008	0.009 - 0.012	0.013 - 0.016	0.020 - 0.024	0.032 - 0.050	0.060 - 0.065
0.002 - 0.004	0.005 - 0.008	0.009 - 0.012	0.013 - 0.016	0.020 - 0.024	0.032 - 0.050	0.060 - 0.065
0.002 - 0.004	0.004 - 0.007	0.008 - 0.011	0.011 - 0.014	0.018 - 0.021	0.028 - 0.040	0.050 - 0.055
0.003 - 0.006	0.007 - 0.012	0.013 - 0.018	0.019 - 0.024	0.030 - 0.036	0.048 - 0.070	0.085 - 0.095
0.002 - 0.005	0.006 - 0.010	0.011 - 0.015	0.016 - 0.020	0.025 - 0.030	0.040 - 0.060	0.070 - 0.080
0.004 - 0.008	0.009 - 0.015	0.017 - 0.023	0.024 - 0.030	0.038 - 0.045	0.060 - 0.090	0.110 - 0.120
0.003 - 0.007	0.008 - 0.013	0.014 - 0.020	0.021 - 0.026	0.033 - 0.039	0.052 - 0.080	0.095 - 0.105
0.004 - 0.008	0.009 - 0.015	0.017 - 0.023	0.024 - 0.030	0.038 - 0.045	0.060 - 0.090	0.110 - 0.120
0.003 - 0.006	0.007 - 0.012	0.013 - 0.018	0.019 - 0.024	0.030 - 0.036	0.048 - 0.070	0.085 - 0.095
0.004 - 0.008	0.009 - 0.015	0.017 - 0.023	0.024 - 0.030	0.038 - 0.045	0.060 - 0.090	0.110 - 0.120
0.002 - 0.005	0.006 - 0.010	0.011 - 0.015	0.016 - 0.020	0.025 - 0.030	0.040 - 0.060	0.070 - 0.080
0.001 - 0.003	0.003 - 0.005	0.006 - 0.008	0.008 - 0.010	0.013 - 0.015	0.020 - 0.030	0.035 - 0.040
0.002 - 0.005	0.006 - 0.010	0.011 - 0.015	0.016 - 0.020	0.025 - 0.030	0.040 - 0.060	0.070 - 0.080

SLOTTING

		VDI 3323	CARBIDE Vc [m/min]	CUTINOX Vc [m/min]	ae (mm)	ap (mm)
P	Unalloyed steel, leaded steel	1 - 5		100	1×ØD1	<1×ØD1
P	Low alloyed steel < 800 N/mm²	6 - 9		85	1×ØD1	<1.0×ØD1
P	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13		55	1×ØD1	<0.8×ØD1
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2		75	1×ØD1	<0.8×ØD1
M	Nickel-free stainless steel / DUPLEX > 700 N/mm²	14.3-14.4		45	1×ØD1	<0.7×ØD1
K	Grey cast iron < 250 HB	15 - 16	125	145	1×ØD1	<1.0×ØD1
K	Ductile, malleable, nodular cast iron > 250 HB	17 - 20	65	75	1×ØD1	<1.0×ØD1
N	Wrought aluminium alloy < 12% Si	21 - 22	230		1×ØD1	<1.0×ØD1
N	Cast aluminium alloy >12% Si	23 - 25	190		1×ØD1	<1.0×ØD1
N	Copper alloy good machinability with Pb	26	110		1×ØD1	<0.4×ØD1
N	Copper alloy with difficult machinability	27 - 28	100		1×ØD1	<1.0×ØD1
N	Plastic, wood	29 - 30	150		1×ØD1	<1.0×ØD1
N	Gold, silver	-	130		1×ØD1	<1.0×ØD1
S	Refractory alloy, Fe, Ni, Co base	31- 35	15	25	1×ØD1	<1.0×ØD1
S	Titanium, titanium alloy	36 - 37	45	55	1×ØD1	<1.0×ØD1



DIXI 7333-3D / DIXI 7333-5D ⟹ (ap & ae) -25 %
DIXI 7333-8D / DIXI 7333-10D ⟹ (ap & ae) -50 %
DIXI 7333-12D / DIXI 7333-15D ⟹ (ap & ae) -75 %

Feed per tooth fz [mm]

Ø D_1 0.30 - 0.50	Ø D_1 0.60 - 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 - 10.00
0.002 - 0.004	0.005 - 0.008	0.008 - 0.011	0.012 - 0.015	0.019 - 0.023	0.030 - 0.045	0.055 - 0.060
0.002 - 0.004	0.004 - 0.007	0.008 - 0.011	0.011 - 0.014	0.017 - 0.02	0.027 - 0.040	0.050 - 0.055
0.002 - 0.003	0.004 - 0.006	0.007 - 0.009	0.01 - 0.012	0.015 - 0.018	0.024 - 0.040	0.045 - 0.050
0.002 - 0.003	0.004 - 0.006	0.007 - 0.009	0.01 - 0.012	0.015 - 0.018	0.024 - 0.040	0.045 - 0.050
0.002 - 0.003	0.003 - 0.005	0.006 - 0.008	0.008 - 0.011	0.014 - 0.016	0.021 - 0.030	0.040 - 0.040
0.002 - 0.005	0.005 - 0.009	0.01 - 0.014	0.014 - 0.018	0.023 - 0.027	0.036 - 0.055	0.065 - 0.070
0.002 - 0.004	0.005 - 0.008	0.008 - 0.011	0.012 - 0.015	0.019 - 0.023	0.030 - 0.045	0.055 - 0.060
0.003 - 0.006	0.007 - 0.011	0.013 - 0.017	0.018 - 0.023	0.029 - 0.034	0.045 - 0.070	0.085 - 0.090
0.002 - 0.005	0.005 - 0.009	0.010 - 0.014	0.014 - 0.018	0.023 - 0.027	0.036 - 0.055	0.070 - 0.080
0.003 - 0.006	0.007 - 0.011	0.013 - 0.017	0.018 - 0.023	0.029 - 0.034	0.045 - 0.070	0.085 - 0.090
0.002 - 0.005	0.006 - 0.01	0.011 - 0.015	0.016 - 0.020	0.025 - 0.029	0.039 - 0.060	0.065 - 0.070
0.003 - 0.006	0.007 - 0.011	0.013 - 0.017	0.018 - 0.023	0.029 - 0.034	0.045 - 0.070	0.085 - 0.090
0.002 - 0.004	0.005 - 0.008	0.008 - 0.011	0.012 - 0.015	0.019 - 0.023	0.030 - 0.045	0.055 - 0.060
0.001 - 0.002	0.002 - 0.004	0.005 - 0.006	0.006 - 0.008	0.010 - 0.011	0.015 - 0.025	0.025 - 0.030
0.002 - 0.004	0.005 - 0.008	0.008 - 0.011	0.012 - 0.015	0.019 - 0.023	0.030 - 0.045	0.055 - 0.060

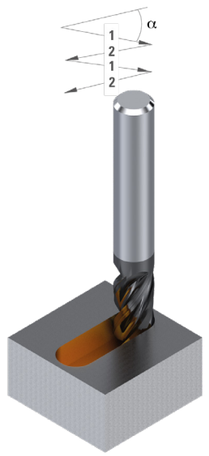
Values based on cutting oil use. The cutting parameters are very strongly influenced by external parameters, such as tool and workpiece stability, etc.
The cutting conditions must be adapted to the operating conditions !

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

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

RAMPING

		VDI 3323	CARBIDE Vc [m/min]	CUTINOX Vc [m/min]	Ramp anlge α	Max Depth (mm)	Feed per tooth fz [mm] Ø D_1 0.30 - 0.50	Ø D_1 0.60 - 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 - 10.00
P	Unalloyed steel, leaded steel	1 - 5		**120**	<8°	<1×ØD1	0.002 - 0.003	0.004 - 0.006	0.006 - 0.009	0.010 - 0.012	0.015 - 0.018	0.024 - 0.036	0.044 - 0.048
	Low alloyed steel < 800 N/mm²	6 - 9		**95**	<5°	<1×ØD1	0.002 - 0.003	0.003 - 0.006	0.006 - 0.009	0.009 - 0.011	0.014 - 0.016	0.022 - 0.032	0.040 - 0.044
	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13		**70**	<4°	<0.8×ØD1	0.002 - 0.002	0.003 - 0.005	0.006 - 0.007	0.008 - 0.010	0.012 - 0.014	0.019 - 0.032	0.036 - 0.040
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2		**85**	<4°	<0.8×ØD1	0.002 - 0.002	0.003 - 0.005	0.006 - 0.007	0.008 - 0.010	0.012 - 0.014	0.019 - 0.032	0.036 - 0.040
	Nickel-free stainless steel / DUPLEX > 700 N/mm²	14.3-14.4		**60**	<3°	<0.7×ØD1	0.002 - 0.002	0.002 - 0.004	0.005 - 0.006	0.006 - 0.009	0.011 - 0.013	0.017 - 0.024	0.032 - 0.032
K	Grey cast iron < 250 HB	15 - 16	**150**	**175**	<10°	<1×ØD1	0.002 - 0.004	0.004 - 0.007	0.008 - 0.011	0.011 - 0.014	0.018 - 0.022	0.029 - 0.044	0.052 - 0.056
	Ductile, malleable, nodular cast iron > 250 HB	17 - 20	**80**	**100**	<5°	<1×ØD1	0.002 - 0.003	0.004 - 0.006	0.006 - 0.009	0.010 - 0.012	0.015 - 0.018	0.024 - 0.036	0.044 - 0.048
N	Wrought aluminium alloy < 12% Si	21 - 22	**270**		<8°	<1×ØD1	0.002 - 0.005	0.006 - 0.009	0.010 - 0.014	0.014 - 0.018	0.023 - 0.027	0.036 - 0.056	0.068 - 0.072
	Cast aluminium alloy >12% Si	23 - 25	**220**		<5°	<1×ØD1	0.002 - 0.004	0.005 - 0.008	0.009 - 0.012	0.013 - 0.016	0.020 - 0.023	0.031 - 0.048	0.056 - 0.064
	Copper alloy good machinability with Pb	26	**130**		<10°	<1×ØD1	0.002 - 0.005	0.006 - 0.009	0.010 - 0.014	0.014 - 0.018	0.023 - 0.027	0.036 - 0.056	0.068 - 0.072
	Copper alloy with difficult machinability	27 - 28	**120**		<5°	<1×ØD1	0.002 - 0.004	0.004 - 0.007	0.008 - 0.011	0.011 - 0.014	0.018 - 0.022	0.029 - 0.044	0.052 - 0.056
	Plastic, wood	29 - 30	**180**		<8°	<1×ØD1	0.002 - 0.005	0.006 - 0.009	0.010 - 0.014	0.014 - 0.018	0.023 - 0.027	0.036 - 0.056	0.068 - 0.072
	Gold, silver	-	**150**		<4°	<1×ØD1	0.002 - 0.003	0.004 - 0.006	0.006 - 0.009	0.010 - 0.012	0.015 - 0.018	0.012 - 0.020	0.044 - 0.048
S	Refractory alloy, Fe, Ni, Co base	31- 35	**20**	**30**	<2°	<0.4×ØD1	0.001 - 0.002	0.002 - 0.003	0.004 - 0.005	0.005 - 0.006	0.008 - 0.009	0.012 - 0.020	0.020 - 0.024
	Titanium, titanium alloy	36 - 37	**55**	**65**	<3°	<1×ØD1	0.002 - 0.003	0.004 - 0.006	0.006 - 0.009	0.010 - 0.012	0.015 - 0.018	0.024 - 0.036	0.044 - 0.048



DIXI 7333-3D / DIXI 7333-5D ⟹ (ap & ae) -25 %
DIXI 7333-8D ⟹ (ap & ae) -50 %

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 !