



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
	Low alloyed steel < 800 N/mm²	6 - 9			105	<0.50×ØD1	<1×ØD1
	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
	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
	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
	Cast aluminium alloy >12% Si	23 - 25		260		<0.50×ØD1	<1×ØD1
	Copper alloy good machinability with Pb	26		160		<0.50×ØD1	<1×ØD1
	Copper alloy with difficult machinability	27 - 28		140		<0.50×ØD1	<1×ØD1
	Plastic, wood	29 - 30		210		<0.50×ØD1	<1×ØD1
	Gold, silver	-		180		<0.50×ØD1	<1×ØD1
	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

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

$$V_f \text{ [mm/min]} = n \text{ [rpm]} \times f_z \text{ [mm]} \times Z$$

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	

SLOTING

		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
	Low alloyed steel < 800 N/mm²	6 - 9			85	1×ØD1	<1.0×ØD1
	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
	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
	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
	Cast aluminium alloy >12% Si	23 - 25		190		1×ØD1	<1.0×ØD1
	Copper alloy good machinability with Pb	26		110		1×ØD1	<0.4×ØD1
	Copper alloy with difficult machinability	27 - 28		100		1×ØD1	<1.0×ØD1
	Plastic, wood	29 - 30		150		1×ØD1	<1.0×ØD1
	Gold, silver	-		130		1×ØD1	<1.0×ØD1
	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

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	

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 %

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 !



RAMPING

		VDI 3323		CARBIDE Vc [m/min]	CUTINOX Vc [m/min]	Ramp angle α	Max Depth (mm)
P	Unalloyed steel, leaded steel	1 - 5			120	<8°	<1×ØD1
	Low alloyed steel < 800 N/mm²	6 - 9			95	<5°	<1×ØD1
	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13			70	<4°	<0.8×ØD1
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2			85	<4°	<0.8×ØD1
	Nickel-free stainless steel / DUPLEX > 700 N/mm²	14.3-14.4			60	<3°	<0.7×ØD1
K	Grey cast iron < 250 HB	15 - 16		150	175	<10°	<1×ØD1
	Ductile, malleable, nodular cast iron > 250 HB	17 - 20		80	100	<5°	<1×ØD1
N	Wrought aluminium alloy < 12% Si	21 - 22		270		<8°	<1×ØD1
	Cast aluminium alloy >12% Si	23 - 25		220		<5°	<1×ØD1
	Copper alloy good machinability with Pb	26		130		<10°	<1×ØD1
	Copper alloy with difficult machinability	27 - 28		120		<5°	<1×ØD1
	Plastic, wood	29 - 30		180		<8°	<1×ØD1
	Gold, silver	-		150		<4°	<1×ØD1
S	Refractory alloy, Fe, Ni, Co base	31- 35		20	30	<2°	<0.4×ØD1
	Titanium, titanium alloy	36 - 37		55	65	<3°	<1×ØD1

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

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

$$V_f \text{ [mm/min]} = n \text{ [rpm]} \times f_z \text{ [mm]} \times Z$$

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 - 0.003	0.004 - 0.006	0.006 - 0.009	0.010 - 0.012	0.015 - 0.018	0.024 - 0.036	0.044 - 0.048
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
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
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
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
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
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
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
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
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
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
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
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
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
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

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 !