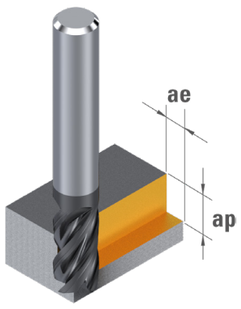
DIXI 7213

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

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

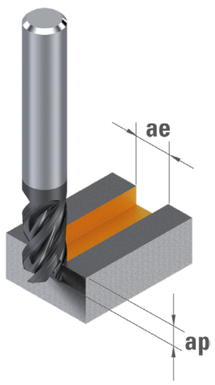
ROUTING

		VDI 3323		CARBIDE Vc [m/min]	TiAlN Vc [m/min]	ae (mm)	ap (mm)
P	Unalloyed steel, leaded steel	1 - 5			**100**	<0.3×ØD1	<1×L1
P	Low alloyed steel < 800 N/mm²	6 - 9			**80**	<0.3×ØD1	<1×L1
P	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13			**50**	<0.2×ØD1	<1×L1
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2			**90**	<0.2×ØD1	<1×L1
K	Grey cast iron < 250 HB	15 - 16		**85**	**100**	<0.4×ØD1	<1×L1
K	Ductile, malleable, nodular cast iron>250 HB	17 - 20		**70**	**85**	<0.4×ØD1	<1×L1
N	Wrought aluminium alloy < 12% Si	21 - 22		**125**		<0.4×ØD1	<1×L1
N	Cast aluminium alloy >12% Si	23 - 25		**220**		<0.4×ØD1	<1×L1
N	Copper alloy good machinability with Pb	26		**40**		<0.3×ØD1	<1×L1
N	Copper alloy with difficult machinability	27 - 28		**150**		<0.4×ØD1	<1×L1
N	Gold, silver	-		**150**		<0.4×ØD1	<1×L1
S	Titanium, titanium alloy	36 - 37		**150**		<0.4×ØD1	<1×L1

Feed per tooth fz [mm]

Ø D_1 4.00 - 5.00	Ø D_1 6.00 - 7.00	Ø D_1 8.00 - 9.00	Ø D_1 10.00 - 12.00	Ø D_1 14.00 - 20.00
0.018 - 0.023	0.027 - 0.032	0.036 - 0.040	0.035 - 0.040	0.050 - 0.070
0.017 - 0.021	0.026 - 0.030	0.034 - 0.038	0.035 - 0.040	0.050 - 0.070
0.016 - 0.020	0.024 - 0.028	0.032 - 0.036	0.030 - 0.040	0.040 - 0.060
0.016 - 0.020	0.024 - 0.028	0.032 - 0.036	0.030 - 0.040	0.040 - 0.060
0.024 - 0.030	0.036 - 0.042	0.048 - 0.054	0.050 - 0.060	0.070 - 0.100
0.020 - 0.025	0.030 - 0.035	0.040 - 0.046	0.040 - 0.050	0.060 - 0.080
0.036 - 0.045	0.054 - 0.063	0.072 - 0.082	0.070 - 0.090	0.100 - 0.140
0.030 - 0.038	0.045 - 0.053	0.060 - 0.068	0.060 - 0.070	0.080 - 0.120
0.030 - 0.038	0.045 - 0.053	0.060 - 0.068	0.060 - 0.070	0.080 - 0.120
0.024 - 0.030	0.036 - 0.042	0.048 - 0.054	0.050 - 0.060	0.070 - 0.100
0.024 - 0.030	0.036 - 0.042	0.048 - 0.054	0.050 - 0.060	0.070 - 0.100
0.022 - 0.028	0.033 - 0.039	0.044 - 0.050	0.045 - 0.050	0.060 - 0.090

SLOTTING

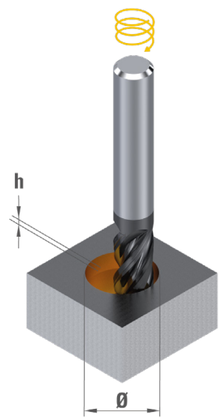
		VDI 3323		CARBIDE Vc [m/min]	TiAlN Vc [m/min]	ae (mm)	ap (mm)
P	Unalloyed steel, leaded steel	1 - 5			**70**	1×ØD1	<1×ØD1
P	Low alloyed steel < 800 N/mm²	6 - 9			**55**	1×ØD1	<1×ØD1
P	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13			**35**	1×ØD1	<0.80×ØD1
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2			**65**	1×ØD1	<0.80×ØD1
K	Grey cast iron < 250 HB	15 - 16		**60**	**70**	1×ØD1	<1×ØD1
K	Ductile, malleable, nodular cast iron > 250 HB	17 - 20		**50**	**60**	1×ØD1	<1×ØD1
N	Wrought aluminium alloy < 12% Si	21 - 22		**90**		1×ØD1	<1×ØD1
N	Cast aluminium alloy >12% Si	23 - 25		**155**		1×ØD1	<1×ØD1
N	Copper alloy good machinability with Pb	26		**30**		1×ØD1	<1×ØD1
N	Copper alloy with difficult machinability	27 - 28		**105**		1×ØD1	<1×ØD1
N	Gold, silver	-		**105**		1×ØD1	<1×ØD1
S	Titanium, titanium alloy	36 - 37		**105**		1×ØD1	<1×ØD1

Feed per tooth fz [mm]

Ø D_1 4.00 - 5.00	Ø D_1 6.00 - 7.00	Ø D_1 8.00 - 9.00	Ø D_1 10.00 - 12.00	Ø D_1 14.00 - 20.00
0.014 - 0.017	0.020 - 0.024	0.027 - 0.030	0.026 - 0.030	0.038 - 0.053
0.013 - 0.016	0.020 - 0.023	0.026 - 0.029	0.026 - 0.030	0.038 - 0.053
0.012 - 0.015	0.018 - 0.021	0.024 - 0.027	0.023 - 0.030	0.030 - 0.045
0.012 - 0.015	0.018 - 0.021	0.024 - 0.027	0.023 - 0.030	0.030 - 0.045
0.018 - 0.023	0.027 - 0.032	0.036 - 0.041	0.038 - 0.045	0.053 - 0.075
0.015 - 0.019	0.023 - 0.026	0.030 - 0.035	0.030 - 0.038	0.045 - 0.060
0.027 - 0.034	0.041 - 0.047	0.054 - 0.062	0.053 - 0.068	0.075 - 0.105
0.023 - 0.029	0.034 - 0.040	0.045 - 0.051	0.045 - 0.053	0.060 - 0.090
0.023 - 0.029	0.034 - 0.040	0.045 - 0.051	0.045 - 0.053	0.060 - 0.090
0.018 - 0.023	0.027 - 0.032	0.036 - 0.041	0.038 - 0.045	0.053 - 0.075
0.018 - 0.023	0.027 - 0.032	0.036 - 0.041	0.038 - 0.045	0.053 - 0.075
0.017 - 0.021	0.025 - 0.029	0.033 - 0.038	0.034 - 0.038	0.045 - 0.068

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 !

HELICAL INTERPOLATION

		VDI 3323		CARBIDE Vc [m/min]	TiAlN Vc [m/min]	Ramp angle α	ap (mm)
P	Unalloyed steel, leaded steel	1 - 5			70	<6°	<1×ØD1
	Low alloyed steel < 800 N/mm²	6 - 9			55	<4°	<1×ØD1
	High-alloy steel > 800 N/mm², stainless steel ferr.- marten.	10 - 13			35	<3°	<0.8×ØD1
M	Austenitic stainless steel < 700 N/mm²	14.1-14.2			65	<3°	<0.8×ØD1
K	Grey cast iron < 250 HB	15 - 16		60	70	<7°	<1×ØD1
	Ductile, malleable, nodular cast iron > 250 HB	17 - 20		50	60	<4°	<1×ØD1
N	Wrought aluminium alloy < 12% Si	21 - 22		90		<4°	<1×ØD1
	Cast aluminium alloy >12% Si	23 - 25		155		<6°	<1×ØD1
	Copper alloy good machinability with Pb	26		30		<2°	<1×ØD1
	Copper alloy with difficult machinability	27 - 28		105		<7°	<1×ØD1
	Gold, silver	-		105		<4°	<1×ØD1
S	Titanium, titanium alloy	36 - 37		105		<3°	<1×ØD1

$h = \pi \times ø \times \tan \alpha$

$1.3xD_1 < ø < 1.9xD_1$

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

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

Feed per tooth fz [mm]

Ø D_1 4.00 - 5.00	Ø D_1 6.00 - 7.00	Ø D_1 8.00 - 9.00	Ø D_1 10.00 - 12.00	Ø D_1 14.00 - 20.00
0.011 - 0.014	0.016 - 0.019	0.022 - 0.024	0.021 - 0.024	0.030 - 0.042
0.010 - 0.013	0.016 - 0.018	0.021 - 0.023	0.021 - 0.024	0.030 - 0.042
0.010 - 0.012	0.014 - 0.017	0.019 - 0.022	0.018 - 0.024	0.024 - 0.036
0.010 - 0.012	0.014 - 0.017	0.019 - 0.022	0.018 - 0.024	0.024 - 0.036
0.012 - 0.015	0.018 - 0.021	0.024 - 0.028	0.024 - 0.030	0.036 - 0.048
0.022 - 0.027	0.033 - 0.038	0.043 - 0.050	0.042 - 0.054	0.060 - 0.084
0.018 - 0.023	0.027 - 0.032	0.036 - 0.041	0.036 - 0.042	0.048 - 0.072
0.018 - 0.023	0.027 - 0.032	0.036 - 0.041	0.036 - 0.042	0.048 - 0.072
0.014 - 0.018	0.022 - 0.026	0.029 - 0.033	0.030 - 0.036	0.042 - 0.060
0.014 - 0.018	0.022 - 0.026	0.029 - 0.033	0.030 - 0.036	0.042 - 0.060
0.014 - 0.017	0.020 - 0.023	0.026 - 0.030	0.027 - 0.030	0.036 - 0.054
0.026 - 0.033	0.039 - 0.046	0.052 - 0.055	0.057 - 0.066	0.072 - 0.096

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 !