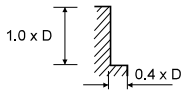
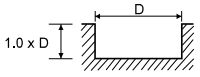
Cutting Conditions 170323 (4 Flute VXD)

MATERIAL GROUP			Type of cut		Diameter (mm)							
					6.0	8.0	10.0	12.0	14.0	16.0	20.0	25.0
P	11 12	Magnetic soft steels, structural steels, case carburizing steels		v_c (m/min)	**160 (128-192)**							
				n	8488	6366	5093	4244	3638	3183	2546	2037
				f_z	0.027	0.035	0.042	0.053	0.058	0.063	0.077	0.084
				f (mm/min)	917	891	856	900	844	802	784	684
				v_c (m/min)	**125 (100-150)**							
				n	6631	4974	3979	3316	2842	2487	1989	1592
				f_z	0.025	0.034	0.042	0.049	0.056	0.063	0.070	0.084
				f (mm/min)	663	676	668	650	637	627	557	535
	13 14	Plain carbon steels, alloy steels		v_c (m/min)	**150 (120-180)**							
				n	7958	5968	4775	3979	3410	2984	2387	1910
				f_z	0.025	0.035	0.042	0.049	0.056	0.063	0.070	0.084
				f (mm/min)	796	836	802	780	764	752	668	642
				v_c (m/min)	**120 (96-144)**							
				n	6366	4775	3820	3183	2728	2387	1910	1528
				f_z	0.025	0.034	0.042	0.049	0.056	0.063	0.070	0.077
				f (mm/min)	637	649	642	624	611	602	535	471
H	15	Alloy steels Hardened & Tempered steels		v_c (m/min)	**150 (120-180)**							
				n	7958	5968	4775	3979	3410	2984	2387	1910
				f_z	0.027	0.035	0.046	0.053	0.060	0.067	0.077	0.084
				f (mm/min)	859	836	879	844	819	800	736	642
				v_c (m/min)	**120 (96-144)**							
				n	6366	4775	3820	3183	2728	238	1910	1528
				f_z	0.027	0.035	0.042	0.053	0.058	0.063	0.077	0.084
				f (mm/min)	688	668	642	675	633	602	588	513
K	31 32 33 34	Grey cast irons		v_c (m/min)	**175 (140-210)**							
				n	9284	6963	5570	4642	3979	3482	2785	2228
				f_z	0.021	0.028	0.035	0.042	0.048	0.053	0.060	0.070
				f (mm/min)	780	780	780	780	764	738	668	624
				v_c (m/min)	**140 (112-168)**							
				n	7427	5570	4456	3714	3183	2785	2228	1783
				f_z	0.021	0.028	0.035	0.042	0.048	0.053	0.060	0.067
				f (mm/min)	624	624	624	624	611	590	535	478

SIDE CUTTING



SLOTTING



Recommended cutting depths are **maximum** depths, and **speeds and feeds are a starting point** based on these depths.
All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up.
Finishing cuts typically require reduced feed rates and/or higher spindle speed, with a_e of 2% x D; please adjust parameters accordingly.

v_c - cutting speed (m/min)
n - RPM (rev/min)
f_z - feed per tooth (mm)
f - feed rate (mm/min)
a_p - axial depth of cut
a_e - radial depth of cut

DATA

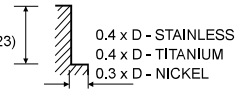
MASTERMILL VXD
EUROPA TOOL

Cutting Conditions 170323 (4 Flute VXD)

MATERIAL GROUP			Type of cut		Diameter (mm)							
					6.0	8.0	10.0	12.0	14.0	16.0	20.0	25.0
M	21	Free machining stainless steels		v_c (m/min)	**155 (124-186)**							
				n	8223	6167	4934	4112	3524	3084	2467	1974
				f_z	0.034	0.046	0.057	0.067	0.076	0.086	0.095	0.114
				f (mm/min)	1125	1125	1125	1094	1071	1055	937	900
				v_c (m/min)	**125 (100-150)**							
				n	6631	4974	3979	3316	2842	2487	1989	1592
				f_z	0.034	0.046	0.057	0.067	0.074	0.081	0.095	0.105
				f (mm/min)	907	907	907	882	841	803	756	665
	22	Ferritic, Ferritic & Austenitic, Martensitic stainless steels		v_c (m/min)	**105 (84-126)**							
				n	5570	4187	3342	2785	2387	2089	1671	1337
				f_z	0.025	0.034	0.042	0.048	0.055	0.062	0.071	0.081
				f (mm/min)								
				v_c (m/min)	**85 (68-102)**							
				n	4509	3382	2706	2255	1933	1691	1353	1082
				f_z	0.025	0.034	0.042	0.048	0.055	0.062	0.071	0.081
				f (mm/min)	446	463	452	428	425	418	386	350
	23	Austenitic stainless steels		v_c (m/min)	**44 (35-53)**							
				n	2334	1751	1401	1168	1000	875	700	560
				f_z	0.016	0.021	0.027	0.032	0.036	0.040	0.046	0.052
				f (mm/min)	151	146	149	151	144	140	128	117
				v_c (m/min)	**36 (29-43)**							
				n	1910	1432	1146	955	819	716	573	458
				f_z	0.016	0.021	0.027	0.032	0.036	0.040	0.046	0.052
				f (mm/min)	123	120	122	123	118	114	105	96
S	41 42 43	Titanium, Titanium alloys		v_c (m/min)	**70 (56-84)**							
				n	3714	2785	2228	1857	1592	1393	1114	891
				f_z	0.034	0.048	0.057	0.067	0.076	0.086	0.095	0.114
				f (mm/min)	508	529	508	494	484	476	423	406
				v_c (m/min)	**55 (44-66)**							
				n	2918	2188	1751	1459	1251	1094	875	700
				f_z	0.034	0.046	0.057	0.067	0.076	0.086	0.095	0.105
				f (mm/min)	399	399	399	388	380	374	333	293
	51 52 53	Nickel, Nickel alloys		v_c (m/min)	**32 (26-38)**							
				n	1698	1273	1019	849	728	637	509	407
				f_z	0.020	0.026	0.032	0.038	0.044	0.048	0.055	0.065
				f (mm/min)	136	132	130	129	128	122	112	106
				v_c (m/min)	**25 (20-30)**							
				n	1326	995	796	663	568	497	397	318
				f_z	0.018	0.024	0.030	0.036	0.040	0.044	0.050	0.055
				f (mm/min)	95	95	95	95	91	88	80	70

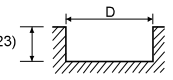
SIDE CUTTING

1.0 x D - STAINLESS
0.6 x D - STAINLESS (23)
1.0 x D - TITANIUM
0.6 x D - NICKEL



SLOTTING

1.0 x D - STAINLESS
0.5 x D - STAINLESS (23)
1.0 x D - TITANIUM
0.4 x D - NICKEL



DATA