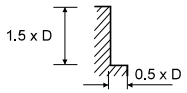
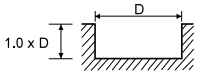
Cutting Conditions 171329, 176323, 177323, 178323, 179323 (4 Flute VX)

MATERIAL GROUP			Type of cut		Diameter (mm)								
					3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0
P	11 12	Magnetic soft steels, structural steels, case carburizing steels		v_c (m/min)	152 (122-182)					168 (135-201)			
				n	16128	12096	9677	8064	6048	5348	4456	3342	2674
				f_z	0.005	0.008	0.011	0.016	0.027	0.038	0.047	0.053	0.065
				f (mm/min)	323	387	513	516	653	813	838	709	695
				v_c (m/min)	152 (122-182)					168 (135-201)			
				n	16128	12096	9677	8064	6048	5348	4456	3342	2674
				f_z	0.005	0.008	0.011	0.016	0.027	0.038	0.047	0.053	0.065
				f (mm/min)	323	387	513	516	653	813	838	709	695
	13 14	Plain carbon steels, alloy steels		v_c (m/min)	107 (86-128)					117 (94-140)			
				n	11353	8515	6812	5677	4257	3724	3104	2328	1862
				f_z	0.005	0.008	0.011	0.016	0.027	0.038	0.047	0.053	0.065
				f (mm/min)	227	272	300	363	460	566	583	493	484
				v_c (m/min)	107 (86-128)					117 (94-140)			
				n	00353	8515	6812	5677	4257	3724	3104	2328	1862
				f_z	0.005	0.008	0.011	0.016	0.027	0.038	0.047	0.053	0.065
				f (mm/min)	227	272	300	363	460	566	583	493	484
H	15	Alloy steels Hardened & Tempered steels		v_c (m/min)	64 (52-76)					70 (56-84)			
				n	6791	5093	4074	3395	2546	2228	1857	1393	1114
				f_z	0.003	0.006	0.008	0.011	0.019	0.027	0.032	0.037	0.045
				f (mm/min)	81	122	130	149	194	241	238	206	201
				v_c (m/min)	64 (52-76)					70 (56-84)			
				n	6791	5093	4074	3395	2546	2228	1857	1393	1114
				f_z	0.003	0.006	0.008	0.011	0.019	0.027	0.032	0.037	0.045
				f (mm/min)	81	122	130	149	194	241	238	206	201
K	31 32 33 34	Grey cast irons		v_c (m/min)	112 (90-134)					123 (99-147)			
				n	11884	8913	7130	5942	4456	3915	3263	2447	1958
				f_z	0.006	0.010	0.014	0.020	0.034	0.048	0.058	0.065	0.081
				f (mm/min)	285	357	399	475	606	752	757	636	634
				v_c (m/min)	112 (90-134)					123 (99-147)			
				n	11884	8913	7130	5942	4456	3915	3263	2447	1958
				f_z	0.006	0.010	0.014	0.020	0.034	0.048	0.058	0.065	0.081
				f (mm/min)	285	357	399	475	606	752	757	636	634

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.
For short tools (176323) and long necked tools (177323, 171329) smaller than 8.0mm use maximum 0.8xD for slotting and 1.2xD for side cutting axial depth. For sizes above 8.0mm use data shown in the charts.

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

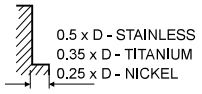
MASTERMILL VX
EUROPA TOOL

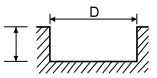
Cutting Conditions 171329, 176323, 177323, 178323, 179323 (4 Flute VX)

MATERIAL GROUP			Type of cut		Diameter (mm)								
					3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0
M	21	Free machining stainless steels		v_c (m/min)	161 (129-193)								
				n	17083	12812	10250	8541	6406	5125	4270	3203	2562
				f_z	0.004	0.006	0.009	0.013	0.022	0.034	0.040	0.045	0.055
				f (mm/min)	273	307	369	444	564	697	683	577	564
				v_c (m/min)	161 (129-193)								
				n	17083	12812	10250	8541	6406	5125	4270	3203	2562
				f_z	0.004	0.006	0.009	0.013	0.022	0.034	0.040	0.045	0.055
				f (mm/min)	273	307	369	444	564	697	683	577	564
	22	Ferritic, Ferritic & Austenitic, Martensitic stainless steels		v_c (m/min)	115 (92-138)								
				n	12202	9151	7321	6104	4576	3661	3050	2288	1830
				f_z	0.005	0.008	0.013	0.018	0.028	0.048	0.056	0.063	0.077
				f (mm/min)	244	293	381	439	512	703	683	577	564
				v_c (m/min)	115 (92-138)								
				n	12202	9151	7321	6104	4576	3661	3050	2288	1830
				f_z	0.005	0.008	0.013	0.018	0.028	0.048	0.056	0.063	0.077
				f (mm/min)	244	293	381	439	512	703	683	577	564
	23	Austenitic stainless steels		v_c (m/min)	104 (84-124)								
				n	11035	8276	6621	5517	4138	3310	2759	2069	1655
				f_z	0.005	0.008	0.013	0.018	0.028	0.048	0.055	0.062	0.077
				f (mm/min)	221	265	344	397	463	636	607	513	510
				v_c (m/min)	104 (84-124)								
				n	11035	8276	6621	5517	4138	3310	2759	2069	1655
				f_z	0.005	0.008	0.013	0.018	0.028	0.048	0.055	0.062	0.077
				f (mm/min)	221	265	344	397	463	636	607	513	510
S	41 42 43	Titanium, Titanium alloys		v_c (m/min)	81 (65-97)								
				n	8594	6446	5157	4297	3223	2578	2149	1611	1289
				f_z	0.004	0.007	0.011	0.016	0.025	0.043	0.050	0.056	0.069
				f (mm/min)	138	180	227	275	322	445	430	361	356
				v_c (m/min)	81 (65-97)								
				n	8594	6446	5157	4297	3223	2578	2149	1611	1289
				f_z	0.004	0.007	0.011	0.016	0.025	0.043	0.050	0.056	0.069
				f (mm/min)	138	180	227	275	322	445	430	361	356
	51 52 53	Nickel, Nickel alloys		v_c (m/min)	31 (25-37)								
				n	3289	2467	1974	1645	1233	987	822	617	493
				f_z	0.005	0.007	0.012	0.018	0.031	0.047	0.055	0.064	0.077
				f (mm/min)	66	69	95	118	153	186	181	158	152
				v_c (m/min)	31 (25-37)								
				n	3289	2467	1974	1645	1233	987	822	617	493
				f_z	0.005	0.007	0.012	0.018	0.031	0.047	0.055	0.064	0.077
				f (mm/min)	66	69	95	118	153	186	181	158	152

SIDE CUTTING

1.5 x D - STAINLESS
1.0 x D - TITANIUM
1.0 x D - NICKEL



SLOTTING

1.0 x D - STAINLESS
0.5 x D - TITANIUM
0.5 x D - NICKEL