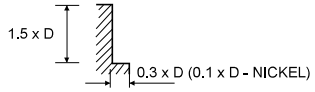
Cutting Conditions 171323, 172323, 173323, 174323 (5 Flute VX5)

MATERIAL GROUP			Type of cut		Diameter (mm)						
					6.0	8.0	10.0	12.0	16.0	20.0	25.0
P	11 12	Magnetic soft steels, structural steels, case carburizing steels		v_c (m/min)	144 (115-173)						
				n	7639	5730	4584	3820	2865	2292	1833
				f_z	0.034	0.038	0.050	0.063	0.076	0.089	0.101
				f (mm/min)	1299	1089	1146	1203	1089	1020	926
	13 14	Plain carbon steels, alloy steels		v_c (m/min)	101 (81-121)						
				n	5358	4019	3215	2679	2009	1607	1286
				f_z	0.034	0.038	0.050	0.063	0.076	0.089	0.101
				f (mm/min)	911	764	804	844	764	715	649
H	15	Alloy steels Hardened & Tempered steels		v_c (m/min)	60 (48-72)						
				n	3183	2387	1910	1592	1194	955	764
				f_z	0.024	0.027	0.035	0.044	0.054	0.062	0.071
				f (mm/min)	382	322	334	350	322	296	271
M	21	Free machining stainless steels		v_c (m/min)	117 (94-140)						
				n	6207	4655	3724	3104	2328	1862	1490
				f_z	0.024	0.025	0.030	0.046	0.054	0.061	0.071
				f (mm/min)	745	582	559	714	628	568	529
	22	Ferritic, Ferritic & Austenitic, Martensitic stainless steels		v_c (m/min)	82 (66-98)						
				n	4350	3263	2610	2175	1631	1305	1044
				f_z	0.030	0.032	0.038	0.063	0.069	0.076	0.088
				f (mm/min)	653	522	496	685	563	496	459
	23	Austenitic stainless steels		v_c (m/min)	59 (47-71)						
				n	3130	2348	1878	1565	1174	939	751
				f_z	0.030	0.032	0.038	0.063	0.069	0.076	0.088
				f (mm/min)	470	376	354	493	405	357	331
K	31 32 33 34	Grey cast irons		v_c (m/min)	106 (85-127)						
				n	5623	4218	3374	2812	2109	1687	1350
				f_z	0.043	0.048	0.063	0.079	0.096	0.111	0.126
				f (mm/min)	1209	1012	1063	1111	1012	936	850
S	41 42 43	Titanium, Titanium alloys		v_c (m/min)	69 (55-83)						
				n	3661	2745	2196	1830	1373	1098	879
				f_z	0.027	0.029	0.034	0.057	0.062	0.069	0.079
				f (mm/min)	494	398	373	522	426	379	347
	51 52 53	Nickel, Nickel alloys		v_c (m/min)	31 (25-37)						
				n	1645	1233	987	822	617	493	395
				f_z	0.021	0.022	0.027	0.044	0.048	0.053	0.062
				f (mm/min)	173	136	133	181	148	131	122

SIDE CUTTING



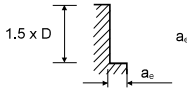
Recommended cutting depths are **maximum** depths, and **speeds and feeds are a starting point** based on these depths.
All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up.
Finishing cuts typically require reduced feed rates and/or higher 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

Cutting Conditions 175323 (5 Flute VX5 Roughing)

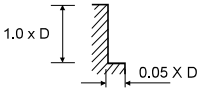
MATERIAL GROUP			Type of cut		Diameter (mm)							
					6.0	8.0	10.0	12.0	14.0	16.0	20.0	25.0
M	21 22 23	Stainless steel		v_c (m/min)	80 (64-96)							
				n	4244	3183	2546	2122	1819	1592	1273	1019
				f_z	0.025	0.034	0.041	0.051	0.057	0.063	0.081	0.091
				f (mm/min)	531	541	522	541	518	501	516	463
S	41 42 43	Titanium, Titanium alloys		v_c (m/min)	65 (52-78)							
				n	3448	2586	2069	1724	1478	1293	1035	828
				f_z	0.022	0.031	0.038	0.046	0.052	0.058	0.074	0.084
				f (mm/min)	379	401	393	397	384	375	383	348
	51 52 53	Nickel, Nickel alloys		v_c (m/min)	40 (32-48)							
				n	2122	1592	1273	1061	909	796	637	509
				f_z	0.020	0.025	0.037	0.040	0.046	0.052	0.061	0.068
				f (mm/min)	212	199	236	212	209	207	197	173

SIDE CUTTING - STAINLESS & TITANIUM



a_e: ø6.0 - ø10.0 : 0.15 x D
ø12.0 - ø16.0 : 0.1 x D
ø20.0 - ø 25.0 : 0.05 x D

SIDE CUTTING - NICKEL



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