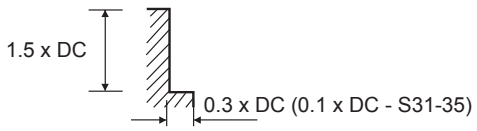
CUTTING DATA

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

VDI MATERIAL GROUP			HRc	SIDE CUTTING	Size (mm)						
					6.0	8.0	10.0	12.0	16.0	20.0	25.0
P	1-5	Non-alloy Steel	<25	v_c (m/min)	144	144	144	144	144	144	144
				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
	6-9	Low alloy Steel	25-35	v_c (m/min)	101	101	101	101	101	101	101
				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
	10-11	High alloy Steel, Tool Steel	35-45	v_c (m/min)	60	60	60	60	60	60	60
				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	12	Ferritic/ Martensitic Stainless Steel		v_c (m/min)	117	117	117	117	117	117	117
				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
	13	Martensitic Stainless Steel		v_c (m/min)	82	82	82	82	82	82	82
				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
	14	Austenitic Stainless Steel		v_c (m/min)	59	59	59	59	59	59	59
				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	15-20	Cast Iron		v_c (m/min)	106	106	106	106	106	106	106
				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	31-35	HRSA Fe & Ni/Co Based		v_c (m/min)	31	31	31	31	31	31	31
				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
	36-37	Titanium/ Titanium Alloys		v_c (m/min)	69	69	69	69	69	69	69
				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



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All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up.
For long series and long necked tools it may be necessary to reduce feed rate by up to 50%.

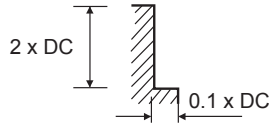
v_c - cutting speed (m/min)
n - RPM (rev/min)
f_z - feed per tooth (mm)
f - feed rate (mm/min)
a_p - axial depth of cut
a_e - radial depth of cut

CUTTING DATA - DYNAMIC 10% RADIAL DoC

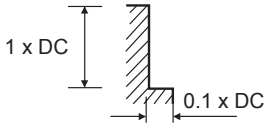
4 Flute VXD, 5 Flute VX5 & VX5H, 6 Flute VX6 & VX6C

VDI MATERIAL GROUP			HRc		Size (mm)						
					6.0	**8.0**	**10.0**	**12.0**	**14.0**	**16.0**	**20.0**
P	1-5	Non-alloy Steel	**<25**	v_c (m/min)	240	240	240	240	240	240	240
				f_z	0.05	0.086	0.107	0.128	0.15	0.167	0.172
	6-9	Low alloy Steel	**25-35**	v_c (m/min)	160	160	160	160	160	160	160
				f_z	0.037	0.063	0.079	0.095	0.111	0.124	0.129
	10-11	High alloy Steel, Tool Steel	**35-45**	v_c (m/min)	80	80	80	80	80	80	80
				f_z	0.03	0.053	0.065	0.078	0.091	0.102	0.107
M	12	Ferritic/ Martensitic Stainless Steel		v_c (m/min)	170	170	170	170	170	170	170
				f_z	0.036	0.062	0.077	0.093	0.108	0.12	0.125
	13	Martensitic Stainless Steel		v_c (m/min)	120	120	120	120	120	120	120
				f_z	0.03	0.053	0.065	0.078	0.091	0.102	0.106
	14	Austenitic Stainless Steel		v_c (m/min)	110	110	110	110	110	110	110
				f_z	0.03	0.053	0.065	0.078	0.091	0.102	0.106
K	15-20	Cast Iron		v_c (m/min)	110	110	110	110	110	110	110
				f_z	0.025	0.028	0.037	0.047	0.051	0.056	0.066
S	31-35	HRSA Fe & Ni/Co Based		v_c (m/min)	30	30	30	30	30	30	30
				f_z	0.024	0.041	0.052	0.061	0.072	0.083	0.085
	36-37	Titanium/ Titanium Alloys		v_c (m/min)	90	90	90	90	90	90	90
				f_z	0.024	0.041	0.052	0.062	0.072	0.084	0.087

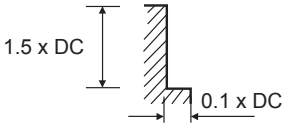
MATERIAL GROUP P, M, K



MATERIAL GROUP S31-35



MATERIAL GROUP S36-37



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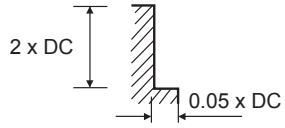
v_c - cutting speed (m/min)
n - RPM (rev/min)
f_z - feed per tooth (mm)
f - feed rate (mm/min)
a_p - axial depth of cut
a_e - radial depth of cut

CUTTING DATA - DYNAMIC 5% RADIAL DoC

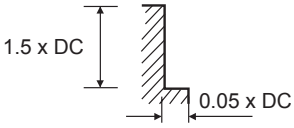
4 Flute VXD, 5 Flute VX5 & VX5H, 6 FLUTE VX6 & VX6C

VDI MATERIAL GROUP			HRc		Size (mm)						
					6.0	**8.0**	**10.0**	**12.0**	**14.0**	**16.0**	**20.0**
P	1-5	Non-alloy Steel	**<25**	v_c (m/min)	300	300	300	300	300	300	300
				f_z	0.068	0.116	0.144	0.172	0.202	0.225	0.232
	6-9	Low alloy Steel	**25-35**	v_c (m/min)	200	200	200	200	200	200	200
				f_z	0.05	0.085	0.106	0.128	0.149	0.167	0.174
	10-11	High alloy Steel, Tool Steel	**35-45**	v_c (m/min)	100	100	100	100	100	100	100
				f_z	0.041	0.071	0.088	0.105	0.123	0.137	0.144
M	12	Ferritic/ Martensitic Stainless Steel		v_c (m/min)	210	210	210	210	210	210	210
				f_z	0.049	0.084	0.104	0.125	0.146	0.162	0.168
	13	Martensitic Stainless Steel		v_c (m/min)	150	150	150	150	150	150	150
				f_z	0.041	0.071	0.088	0.105	0.123	0.137	0.143
	14	Austenitic Stainless Steel		v_c (m/min)	130	130	130	130	130	130	130
				f_z	0.041	0.071	0.088	0.105	0.123	0.137	0.142
K	15-20	Cast Iron		v_c (m/min)	135	135	135	135	135	135	135
				f_z	0.034	0.038	0.050	0.063	0.069	0.076	0.089
S	31-35	HRSA Fe & Ni/Co Based		v_c (m/min)	35	35	35	35	35	35	35
				f_z	0.033	0.055	0.07	0.082	0.097	0.112	0.115
	36-37	Titanium/ Titanium Alloys		v_c (m/min)	116	116	116	116	116	116	116
				f_z	0.033	0.055	0.07	0.083	0.097	0.113	0.117

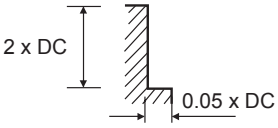
MATERIAL GROUP P, M, K



MATERIAL GROUP S31-35



MATERIAL GROUP S36-37



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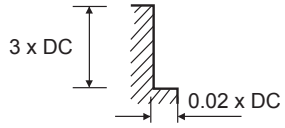
v_c - cutting speed (m/min)
n - RPM (rev/min)
f_z - feed per tooth (mm)
f - feed rate (mm/min)
a_p - axial depth of cut
a_e - radial depth of cut

CUTTING DATA - DYNAMIC 2% RADIAL DoC

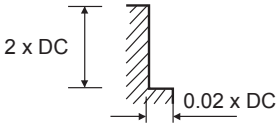
4 Flute VXD, 5 Flute VX5 & VX5H, 6 FLUTE VX6 & VX6C

VDI MATERIAL GROUP			HRc		Size (mm)						
					6.0	**8.0**	**10.0**	**12.0**	**14.0**	**16.0**	**20.0**
P	1-5	Non-alloy Steel	**<25**	v_c (m/min)	370	370	370	370	370	370	370
				f_z	0.098	0.167	0.208	0.25	0.292	0.325	0.335
	6-9	Low alloy Steel	**25-35**	v_c (m/min)	240	240	240	240	240	240	240
				f_z	0.072	0.123	0.153	0.185	0.215	0.241	0.251
	10-11	High alloy Steel, Tool Steel	**35-45**	v_c (m/min)	120	120	120	120	120	120	120
				f_z	0.059	0.102	0.127	0.152	0.178	0.198	0.208
M	12	Ferritic/ Martensitic Stainless Steel		v_c (m/min)	260	260	260	260	260	260	260
				f_z	0.071	0.121	0.15	0.18	0.211	0.234	0.242
	13	Martensitic Stainless Steel		v_c (m/min)	180	180	180	180	180	180	180
				f_z	0.059	0.102	0.127	0.152	0.178	0.198	0.205
	14	Austenitic Stainless Steel		v_c (m/min)	160	160	160	160	160	160	160
				f_z	0.059	0.102	0.127	0.152	0.178	0.198	0.205
K	15-20	Cast Iron		v_c (m/min)	170	170	170	170	170	170	170
				f_z	0.049	0.055	0.072	0.091	0.1	0.11	0128
S	31-35	HRSA Fe & Ni/Co Based		v_c (m/min)	40	40	40	40	40	40	40
				f_z	0.048	0.079	0.101	0.118	0.14	0.162	0.166
	36-37	Titanium/ Titanium Alloys		v_c (m/min)	140	140	140	140	140	140	140
				f_z	0.048	0.079	0.101	0.120	0.140	0.163	0.169

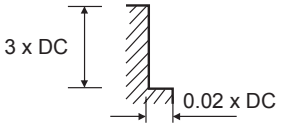
MATERIAL GROUP P, M, K



MATERIAL GROUP S31-35



MATERIAL GROUP S36-37



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