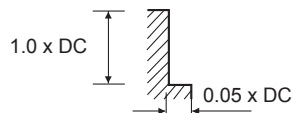


CUTTING DATA

104365, 122365 (4 Flute Standard & Heavy Cut)													
VDI MATERIAL GROUP	MATERIAL	HRc		Size (mm)									
				1.0	1.2	1.5	2.0	2.5	3.0	3.5	4.0	4.5	
P	1-5	Non-alloy Steel	<25	v_c (m/min)	84	85	88	91	101	105	113	119	122
				n	26730	22540	18670	14480	12860	11140	10280	9470	8630
				f_z	0.002	0.003	0.004	0.005	0.006	0.008	0.011	0.016	0.018
				f (mm/min)	215	270	300	290	310	360	450	605	620
	6-9	Low alloy Steel	25-35	v_c (m/min)	51	51	53	59	64	66	70	73	74
				n	16230	13520	11240	9390	8150	7000	6360	5810	5230
				f_z	0.002	0.003	0.004	0.005	0.006	0.008	0.011	0.016	0.018
				f (mm/min)	130	160	180	190	195	225	280	370	375
	10-11	High alloy Steel, Tool Steel	35-45	v_c (m/min)	51	51	53	59	64	66	70	73	74
				n	16230	13520	11240	9390	8150	7000	6360	5810	5230
				f_z	0.002	0.003	0.004	0.005	0.006	0.008	0.011	0.016	0.018
				f (mm/min)	130	160	180	190	195	225	280	370	375
M	14	Austenitic Stainless Steel	v_c (m/min)	42	42	44	50	54	54	58	61	62	
			n	13360	11140	9330	7960	6870	5730	5275	4850	4385	
			f_z	0.005	0.003	0.004	0.005	0.006	0.008	0.011	0.015	0.017	
			f (mm/min)	105	135	150	160	165	185	230	290	300	
K	15-20	Cast Iron	v_c (m/min)	84	85	88	91	101	105	113	119	122	
			n	26730	22540	18670	14480	12860	11140	10280	9470	8630	
			f_z	0.002	0.003	0.004	0.005	0.006	0.008	0.011	0.016	0.018	
			f (mm/min)	215	270	300	290	310	360	450	605	620	
H	38	Hardened Steel	45-55	v_c (m/min)	34	34	35	40	41	40	43	46	47
				n	10820	9010	7420	6360	5220	4240	3910	3660	3325
				f_z	0.001	0.001	0.002	0.002	0.006	0.004	0.004	0.004	0.005
				f (mm/min)	45	35	60	50	60	70	65	60	65
	40	Chilled Cast Iron		v_c (m/min)	51	51	53	59	64	66	70	73	74
				n	16230	13520	11240	9390	8150	7000	6360	5810	5230
				f_z	0.002	0.003	0.004	0.005	0.006	0.008	0.011	0.016	0.018
				f (mm/min)	130	160	180	190	195	225	280	370	375
	41	Hardened Cast Iron		v_c (m/min)	34	34	35	40	41	40	43	46	47
				n	10820	9010	7420	6360	5220	4240	3910	3660	3325
				f_z	0.001	0.001	0.002	0.002	0.006	0.004	0.004	0.004	0.005
				f (mm/min)	45	35	60	50	60	70	65	60	65

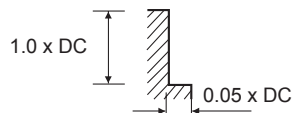


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For long series and long necked tools it may be necessary to reduce feed rate by up to 50%.

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

104365, 122365 (4 Flute Standard & Heavy Cut)													
VDI MATERIAL GROUP	MATERIAL	HRc		Size (mm)									
				5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	
P	1-5	Non-alloy Steel	<25	v_c (m/min)	124	128	131	133	134	134	132	132	132
				n	7890	7410	6950	6510	6090	5685	5250	4940	4670
				f_z	0.02	0.022	0.025	0.027	0.03	0.032	0.035	0.036	0.037
				f (mm/min)	630	650	695	700	730	730	735	710	690
	6-9	Low alloy Steel	25-35	v_c (m/min)	74	77	79	80	81	80	79	80	80
				n	4710	4455	4190	3920	3680	3395	3140	2995	2830
				f_z	0.02	0.023	0.026	0.027	0.028	0.03	0.032	0.032	0.031
				f (mm/min)	375	410	435	425	410	405	400	380	350
	10-11	High alloy Steel, Tool Steel	35-45	v_c (m/min)	74	77	79	80	81	80	79	80	80
				n	4710	4455	4190	3920	3680	3395	3140	2995	2830
				f_z	0.02	0.023	0.026	0.027	0.028	0.03	0.032	0.032	0.031
				f (mm/min)	375	410	435	425	410	405	400	380	350
M	14	Austenitic Stainless Steel	v_c (m/min)	62	65	67	68	68	67	66	66	67	
			n	3945	3760	3550	3330	3090	2845	2625	2470	2370	
			f_z	0.02	0.022	0.024	0.026	0.029	0.031	0.035	0.036	0.036	
			f (mm/min)	315	330	340	345	360	350	370	355	340	
K	15-20	Cast Iron	v_c (m/min)	124	128	131	133	134	134	132	132	132	
			n	7890	7410	6950	6510	6090	5685	5250	4940	4670	
			f_z	0.02	0.022	0.025	0.027	0.03	0.032	0.035	0.036	0.037	
			f (mm/min)	630	650	695	700	730	730	735	710	690	
H	38	Hardened Steel	45-55	v_c (m/min)	46	47	47	49	51	52	53	53	54
				n	2930	2720	2490	2400	2320	2205	2110	1985	1910
				f_z	0.006	0.007	0.009	0.01	0.011	0.013	0.014	0.014	0.014
				f (mm/min)	70	75	90	95	100	115	120	110	105
	40	Chilled Cast Iron	v_c (m/min)	74	77	79	80	81	80	79	80	80	
			n	4710	4455	4190	3920	3680	3395	3140	2995	2830	
			f_z	0.02	0.023	0.026	0.027	0.028	0.03	0.032	0.032	0.031	
			f (mm/min)	375	410	435	425	410	405	400	380	350	
	41	Hardened Cast Iron	v_c (m/min)	46	47	47	49	51	52	53	53	54	
			n	2930	2720	2490	2400	2320	2205	2110	1985	1910	
			f_z	0.006	0.007	0.009	0.01	0.011	0.013	0.014	0.014	0.014	
			f (mm/min)	70	75	90	95	100	115	120	110	105	

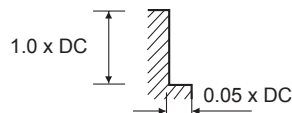


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CUTTING DATA

104365, 122365 (4 Flute Standard & Heavy Cut)												
VDI MATERIAL GROUP	MATERIAL	HRc		Size (mm)								
				9.5	10.0	11.0	12.0	14.0	16.0	18.0	20.0	
P	1-5	Non-alloy Steel	<25	v_c (m/min)	130	128	130	129	136	138	137	132
				n	4355	4075	3760	3420	3090	2745	2420	2100
				f_z	0.038	0.039	0.04	0.04	0.04	0.04	0.04	0.04
				f (mm/min)	660	635	600	545	495	440	390	335
	6-9	Low alloy Steel	25-35	v_c (m/min)	79	79	79	79	84	85	85	84
				n	2645	2515	2285	2095	1910	1690	1500	1335
				f_z	0.031	0.032	0.032	0.032	0.031	0.032	0.031	0.032
				f (mm/min)	330	320	290	270	235	215	185	170
	10-11	High alloy Steel, Tool Steel	35-45	v_c (m/min)	79	79	79	79	84	85	85	84
				n	2645	2515	2285	2095	1910	1690	1500	1335
				f_z	0.031	0.032	0.032	0.032	0.031	0.032	0.031	0.032
				f (mm/min)	330	320	290	270	235	215	185	170
M	14	Austenitic Stainless Steel	v_c (m/min)	67	66	66	64	68	69	68	66	
			n	2245	2100	1910	1700	1545	1370	1200	1050	
			f_z	0.037	0.038	0.038	0.037	0.037	0.038	0.038	0.038	
			f (mm/min)	330	320	290	250	230	210	180	160	
K	15-20	Cast Iron	v_c (m/min)	130	128	130	129	136	138	137	132	
			n	4355	4075	3760	3420	3090	2745	2420	2100	
			f_z	0.038	0.039	0.04	0.04	0.04	0.04	0.04	0.04	
			f (mm/min)	660	635	600	545	495	440	390	335	
H	38	Hardened Steel	45-55	v_c (m/min)	54	53	55	55	57	57	56	53
				n	1910	1685	1590	1460	1295	1135	990	845
				f_z	0.014	0.014	0.014	0.015	0.15	0.014	0.014	0.012
				f (mm/min)	100	95	90	90	80	65	55	40
	40	Chilled Cast Iron	v_c (m/min)	79	79	79	79	84	85	85	84	
			n	2645	2515	2285	2095	1910	1690	1500	1335	
			f_z	0.031	0.032	0.032	0.032	0.031	0.032	0.031	0.032	
			f (mm/min)	330	320	290	270	235	215	185	170	
	41	Hardened Cast Iron	v_c (m/min)	54	53	55	55	57	57	56	53	
			n	1910	1685	1590	1460	1295	1135	990	845	
			f_z	0.014	0.014	0.014	0.015	0.15	0.014	0.014	0.012	
			f (mm/min)	100	95	90	90	80	65	55	40	



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