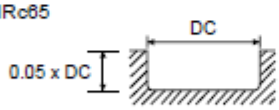
101350, 101450 (2 Flute Extended Neck) SLOTTING

MATERIAL GROUP		HRc		Size (mm)											
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.5	2.0
P	13 14	30-40	v_c (m/min)	15	30	45	65	80	95	100	125	140	150	180	210
			n	47770	47770	47770	51750	50955	50425	45495	49760	49540	47770	38215	33435
			f_z	0.001	0.001	0.002	0.002	0.004	0.005	0.006	0.006	0.007	0.008	0.011	0.013
			f (mm/min)	95	95	190	205	405	500	545	595	690	760	840	865
H	15 16	40-50	v_c (m/min)	15	30	40	55	70	85	90	100	110	120	140	165
			n	47770	47770	42460	43790	44580	45115	40945	39805	38920	38215	29720	26270
			f_z	0.001	0.001	0.002	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.011	0.013
			f (mm/min)	95	95	170	175	265	360	405	475	540	610	650	680
	15 16	50-55	v_c (m/min)	12	25	40	50	65	75	75	75	80	80	95	110
			n	38215	39805	42460	39805	41400	39805	34120	29855	28305	25475	20170	17515
			f_z	0.001	0.001	0.001	0.002	0.003	0.004	0.005	0.005	0.006	0.007	0.009	0.012
			f (mm/min)	75	80	85	155	245	315	340	295	340	355	360	420
	15 16	55-60	v_c (m/min)	10	20	30	40	50	55	60	65	65	65	80	90
			n	31845	31845	31845	31845	31845	29190	27295	25875	23000	20700	16985	14330
			f_z	0.001	0.001	0.001	0.001	0.002	0.003	0.004	0.004	0.005	0.005	0.007	0.009
			f (mm/min)	60	60	60	60	125	175	215	205	230	205	235	255
	15 16	60-65	v_c (m/min)	10	20	25	30	40	45	45	50	50	50	60	70
			n	31845	31845	26530	23885	25475	23885	20470	19900	17690	15920	12735	11145
			f_z	0.001	0.001	0.001	0.001	0.002	0.002	0.003	0.003	0.004	0.004	0.005	0.007
			f (mm/min)	60	60	50	45	100	95	120	115	140	125	125	155
	15 16	65-70	v_c (m/min)	10	15	20	25	30	40	40	40	40	40	50	60
			n	31845	23885	21230	19900	19105	21230	18195	15920	14150	12735	10615	9550
			f_z	0.0006	0.0006	0.0006	0.0006	0.0008	0.001	0.002	0.002	0.003	0.003	0.003	0.003
			f (mm/min)	35	25	25	20	30	40	70	60	85	75	60	55

< HRc65



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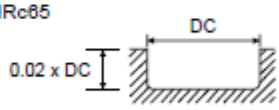

v_c - cutting speed (m/min)
n - RPM (rev/min)
f_z - feed rate (mm/tooth)
f - feed rate (mm/rev)
z - No. of teeth
a_p - axial depth of cut
a_e - radial depth of cut

To calculate RPM from cutting speed: $n = \frac{v_c * 1000}{\pi * ø}$

To calculate cutting speed from RPM: $v_c = \frac{n * \pi * ø}{1000}$

All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up. The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.

101350, 101450 (2 Flute Extended Neck) SLOTTING

MATERIAL GROUP		HRc		Size (mm)										
				2.5	3.0	3.5	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0
P	13 14	30-40	v_c (m/min)	205	205	210	210	245	245	245	245	245	245	245
			n	26115	21760	19105	16720	15605	13000	9750	7800	6500	4875	3900
			f_z	0.016	0.019	0.022	0.026	0.032	0.036	0.047	0.054	0.064	0.074	0.085
			f (mm/min)	835	820	840	865	995	935	915	840	830	720	660
H	15 16	40-50	v_c (m/min)	165	165	165	165	195	195	195	195	190	195	195
			n	21015	17515	15010	13135	12420	10350	7760	6210	5040	3880	3105
			f_z	0.016	0.02	0.023	0.027	0.032	0.037	0.046	0.055	0.065	0.074	0.085
			f (mm/min)	670	700	690	705	795	765	710	680	655	570	525
	15 16	50-55	v_c (m/min)	110	110	110	110	130	130	130	130	130	130	130
			n	14010	11675	10005	8755	8280	6900	5175	4140	3450	2585	2070
			f_z	0.015	0.018	0.021	0.025	0.03	0.035	0.043	0.051	0.059	0.07	0.082
			f (mm/min)	420	420	420	435	495	480	445	420	405	360	335
	15 16	55-60	v_c (m/min)	90	90	95	100	100	100	100	100	100	100	100
			n	11465	9550	8640	7960	6365	5305	3980	3185	2650	1990	1590
			f_z	0.011	0.014	0.016	0.019	0.022	0.026	0.032	0.038	0.045	0.053	0.061
			f (mm/min)	250	265	275	300	280	275	255	240	235	210	190
	15 16	60-65	v_c (m/min)	70	70	75	80	80	80	80	80	80	80	80
			n	8915	7430	6820	6365	5095	4245	3185	2545	2120	1590	1270
			f_z	0.009	0.011	0.013	0.015	0.018	0.021	0.026	0.03	0.037	0.042	0.048
			f (mm/min)	160	160	175	190	180	175	165	150	155	130	120
	15 16	65-70	v_c (m/min)	60	60	60	60	70	70	70	70	70	70	70
			n	7640	6365	5460	4775	4455	3715	2785	2225	1855	1390	1115
			f_z	0.005	0.008	0.01	0.012	0.014	0.017	0.02	0.025	0.03	0.034	0.038
			f (mm/min)	75	100	105	115	125	125	110	110	110	95	85

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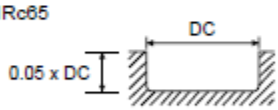

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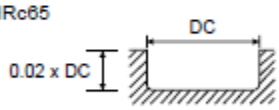


v_c - cutting speed (m/min)
n - RPM (rev/min)
f_Z - feed rate (mm/tooth)
f - feed rate (mm/rev)
z - No. of teeth
a_p - axial depth of cut
a_e - radial depth of cut

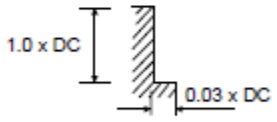
To calculate RPM from cutting speed: $n = \frac{v_c * 1000}{\pi * ø}$

To calculate cutting speed from RPM: $v_c = \frac{n * \pi * ø}{1000}$

All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up. The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.

101350, 101450 (2 Flute Extended Neck) SIDE CUTTING

MATERIAL GROUP		HARDNESS HRc		Size (mm)						
				1.0	1.5	2.0	2.5	3.0	3.5	4.0
P	13 14	30-40	v_c (m/min)	150	180	210	205	205	210	210
			n	47770	38215	33435	26115	21760	19105	16720
			f_z	0.011	0.014	0.018	0.023	0.028	0.032	0.037
			f (mm/min)	1050	1070	1200	1200	1215	1220	1235
H	15 16	40-50	v_c (m/min)	120	140	165	165	165	165	165
			n	38215	29720	26270	21015	17515	15010	13135
			f_z	0.011	0.015	0.019	0.023	0.028	0.033	0.038
			f (mm/min)	840	890	995	965	980	990	995
	15 16	50-55	v_c (m/min)	80	95	110	110	110	110	110
			n	25475	20170	17515	14010	11675	10005	8755
			f_z	0.01	0.013	0.017	0.021	0.026	0.031	0.036
			f (mm/min)	510	520	595	585	605	620	630
	15 16	55-60	v_c (m/min)	65	80	90	90	90	95	100
			n	20700	16985	14330	11465	9550	8640	7960
			f_z	0.008	0.01	0.013	0.016	0.019	0.023	0.027
			f (mm/min)	330	340	370	365	360	395	430
	15 16	60-65	v_c (m/min)	50	60	70	70	70	75	80
			n	15920	12735	11145	8915	7430	6820	6365
			f_z	0.006	0.008	0.01	0.012	0.015	0.018	0.021
			f (mm/min)	190	200	220	210	220	245	265
	15 16	65-70	v_c (m/min)	40	50	60	60	60	60	60
			n	12735	10615	9550	7640	6365	5460	4775
			f_z	0.005	0.006	0.008	0.01	0.012	0.014	0.017
			f (mm/min)	125	125	150	150	150	150	160



- Side cutting is not recommended for tools below 1.0mm.

v_c - cutting speed (m/min)
n - RPM (rev/min)
f_z - feed rate (mm/tooth)
f - feed rate (mm/rev)
z - No. of teeth
a_p - axial depth of cut
a_e - radial depth of cut

To calculate RPM from cutting speed: $n = \frac{v_c * 1000}{\pi * ø}$

To calculate cutting speed from RPM: $v_c = \frac{n * \pi * ø}{1000}$

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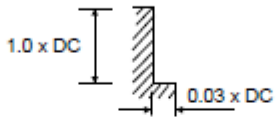
101350, 101450 (2 Flute Extended Neck) SIDE CUTTING

MATERIAL GROUP		HARDNESS HRc		Size (mm)						
				5.0	6.0	8.0	10.0	12.0	16.0	20.0
P	13 14	30-40	v_c (m/min)	245	245	245	245	245	245	245
			n	15605	13000	9750	7800	6500	4875	3900
			f_z	0.046	0.052	0.067	0.077	0.09	0.107	0.122
			f (mm/min)	1430	1350	1305	1200	1170	1040	950
H	15 16	40-50	v_c (m/min)	195	195	195	195	190	195	195
			n	12420	10350	7760	6210	5040	3880	3105
			f_z	0.046	0.053	0.066	0.079	0.092	0.108	0.121
			f (mm/min)	1140	1095	1025	980	925	835	750
	15 16	50-55	v_c (m/min)	130	130	130	130	130	130	130
			n	8280	6900	5175	4140	3450	2585	2070
			f_z	0.043	0.05	0.061	0.072	0.084	0.1	0.116
			f (mm/min)	710	690	630	595	580	515	480
	15 16	55-60	v_c (m/min)	100	100	100	100	100	100	100
			n	6365	5305	3980	3185	2650	1990	1590
			f_z	0.032	0.038	0.046	0.053	0.064	0.075	0.086
			f (mm/min)	405	400	365	335	340	295	270
	15 16	60-65	v_c (m/min)	80	80	80	80	80	80	80
			n	5095	4245	3185	2545	2120	1590	1270
			f_z	0.025	0.03	0.037	0.043	0.052	0.059	0.067
			f (mm/min)	255	255	235	215	220	185	170
	15 16	65-70	v_c (m/min)	70	70	70	70	70	70	70
			n	4455	3715	2785	2225	1855	1390	1115
			f_z	0.021	0.025	0.03	0.033	0.043	0.05	0.056
			f (mm/min)	185	185	165	145	160	135	125



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