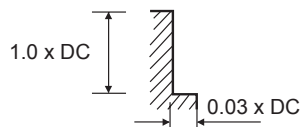


## CUTTING DATA

103350, 101550 (4 Flute Extended Neck)												
VDI MATERIAL GROUP	MATERIAL	HRc		Size (mm)								
				1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	
<b>P</b>	10-11	High alloy Steel, Tool Steel	35-45	$v_c$ (m/min)	120	140	165	165	165	165	165	180
				$n$	38215	29720	26270	21015	17515	15010	13135	12735
				$f_z$	0.007	0.009	0.012	0.015	0.018	0.021	0.025	0.028
				$f$ (mm/min)	1070	1070	1260	1260	1260	1260	1310	1425
<b>H</b>	38	Hardened Steel	40-50	$v_c$ (m/min)	120	140	165	165	165	165	165	180
				$n$	38215	29720	26270	21015	17515	15010	13135	12735
				$f_z$	0.007	0.009	0.012	0.015	0.018	0.021	0.025	0.028
				$f$ (mm/min)	1070	1070	1260	1260	1260	1260	1310	1425
		Hardened Steel	50-55	$v_c$ (m/min)	80	95	110	110	110	110	110	120
				$n$	25475	20170	17515	14010	11675	10005	8755	8490
				$f_z$	0.007	0.009	0.012	0.015	0.018	0.021	0.025	0.028
				$f$ (mm/min)	710	725	840	840	840	840	875	950
	39	Hardened Steel	55-65	$v_c$ (m/min)	50	60	70	70	70	70	70	75
				$n$	15920	12735	11145	8915	7430	6365	5570	5305
				$f_z$	0.004	0.005	0.007	0.009	0.011	0.013	0.015	0.016
				$f$ (mm/min)	255	255	310	320	325	330	330	340
		Hardened Steel	65-70	$v_c$ (m/min)	40	50	60	60	60	60	60	65
				$n$	12735	10615	9550	7640	6365	5460	4775	4600
				$f_z$	0.002	0.003	0.005	0.007	0.009	0.011	0.013	0.014
				$f$ (mm/min)	100	125	190	210	225	240	245	255
	40	Chilled Cast Iron	$v_c$ (m/min)	150	180	210	210	210	210	210	225	
			$n$	47770	38215	33435	26750	22290	19105	16720	15920	
			$f_z$	0.008	0.01	0.013	0.016	0.02	0.023	0.027	0.029	
			$f$ (mm/min)	1525	1525	1735	1710	1780	1755	1805	1845	
41	Hardened Cast Iron	$v_c$ (m/min)	120	140	165	165	165	165	165	180		
		$n$	38215	29720	26270	21015	17515	15010	13135	12735		
		$f_z$	0.007	0.009	0.012	0.015	0.018	0.021	0.025	0.028		
		$f$ (mm/min)	1070	1070	1260	1260	1260	1260	1310	1425		

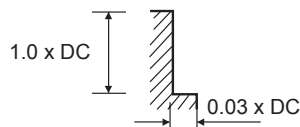


Recommended cutting depths are **maximum** depths, and **speeds and feeds are a starting point** based on these depths.  
 All recommendations are based on ideal machining conditions. Adjustments may need to be made according to your set-up.  
**For long series and long necked tools** it may be necessary 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

103350, 101550 (4 Flute Extended Neck)											
VDI MATERIAL GROUP	MATERIAL	HRc		Size (mm)							
				5.0	6.0	8.0	10.0	12.0	16.0	20.0	
<b>P</b>	10-11	High alloy Steel, Tool Steel	35-45	$v_c$ (m/min)	195	195	195	195	195	195	195
				$n$	12420	10350	7760	6210	5175	3880	3105
				$f_z$	0.03	0.034	0.043	0.051	0.06	0.071	0.078
				$f$ (mm/min)	1490	1405	1335	1265	1240	1100	965
<b>H</b>	38	Hardened Steel	40-50	$v_c$ (m/min)	195	195	195	195	195	195	195
				$n$	12420	10350	7760	6210	5175	3880	3105
				$f_z$	0.03	0.034	0.043	0.051	0.06	0.071	0.078
				$f$ (mm/min)	1490	1405	1335	1265	1240	1100	965
		Hardened Steel	50-55	$v_c$ (m/min)	130	130	130	130	130	130	130
				$n$	8280	6900	5175	4140	3450	2585	2070
				$f_z$	0.03	0.034	0.043	0.051	0.06	0.07	0.079
				$f$ (mm/min)	990	935	890	845	825	725	650
		Hardened Steel	55-65	$v_c$ (m/min)	80	80	80	80	80	80	80
				$n$	5095	4245	3185	2545	2120	1590	1270
				$f_z$	0.018	0.021	0.026	0.03	0.036	0.042	0.048
				$f$ (mm/min)	365	355	330	305	305	265	245
	Hardened Steel	65-70	$v_c$ (m/min)	70	70	70	70	70	70	70	
			$n$	4455	3715	2785	2225	1855	1390	1115	
			$f_z$	0.016	0.019	0.024	0.028	0.033	0.038	0.044	
			$f$ (mm/min)	285	280	265	250	245	210	195	
	40	Chilled Cast Iron	$v_c$ (m/min)	245	245	245	250	250	250	250	
			$n$	15605	13000	9750	7965	6635	4975	3980	
			$f_z$	0.032	0.037	0.048	0.056	0.066	0.077	0.083	
			$f$ (mm/min)	1995	1925	1870	1780	1750	1530	1320	
41	Hardened Cast Iron	$v_c$ (m/min)	195	195	195	195	195	195	195		
		$n$	12420	10350	7760	6210	5175	3880	3105		
		$f_z$	0.03	0.034	0.043	0.051	0.06	0.071	0.078		
		$f$ (mm/min)	1490	1405	1335	1265	1240	1100	965		



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 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)  
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