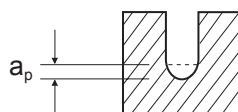


## CUTTING DATA

102365 (2 Flute Extended Neck Ball Nose)														
VDI MATERIAL GROUP	MATERIAL	HRc		Size (mm)										
				0.2 LU=1.0	0.3 LU=1.0	0.4 LU=1.0	0.5 LU=4.0	0.6 LU=4.0	0.8 LU=4.0	1.0 LU=8.0	1.2 LU=8.0	1.5 LU=10.0		
P	1-5	Non-alloy Steel	<25	$a_p$ (mm)	0.013	0.019	0.036	0.018	0.022	0.05	0.036	0.043	0.054	
				$v_c$ (m/min)	31	47	52	48	58	86	87	89	101	
				$n$	49300	49800	41300	30500	30700	34200	27600	23600	21400	
				$f_z$	0.003	0.005	0.006	0.009	0.013	0.018	0.022	0.024	0.03	
					$f$ (mm/min)	295	495	495	550	800	1230	1210	1100	1250
	6-9	Low alloy Steel	25-35	$a_p$ (mm)	0.01	0.015	0.028	0.014	0.017	0.039	0.028	0.034	0.042	
				$v_c$ (m/min)	31	47	49	46	55	81	82	84	96	
				$n$	49300	49800	38900	29200	29100	32200	26100	22200	20300	
				$f_z$	0.003	0.004	0.005	0.008	0.012	0.016	0.02	0.021	0.027	
					$f$ (mm/min)	295	395	390	470	700	1000	1000	930	1100
	10-11	High alloy Steel, Tool Steel	35-45	$a_p$ (mm)	0.01	0.015	0.028	0.014	0.017	0.039	0.028	0.034	0.042	
				$v_c$ (m/min)	31	47	49	46	55	81	82	84	96	
$n$				49300	49800	38900	29200	29100	32200	26100	22200	20300		
$f_z$				0.003	0.004	0.005	0.008	0.012	0.016	0.02	0.021	0.027		
				$f$ (mm/min)	295	395	390	470	700	1000	1000	930	1100	
K	15-20	Cast Iron	$a_p$ (mm)	0.013	0.019	0.036	0.018	0.022	0.05	0.036	0.043	0.054		
			$v_c$ (m/min)	31	47	52	48	58	86	87	89	101		
			$n$	49300	49800	41300	30500	30700	34200	27600	23600	21400		
			$f_z$	0.003	0.005	0.006	0.009	0.013	0.018	0.022	0.024	0.03		
				$f$ (mm/min)	295	495	495	550	800	1230	1210	1100	1250	
H	38	Hardened Steel	45-55	$a_p$ (mm)	0.007	0.011	0.02	0.01	0.012	0.028	0.02	0.024	0.03	
				$v_c$ (m/min)	27	40	43	40	48	72	73	74	85	
				$n$	42900	42400	34200	25400	25400	28600	23200	19600	18000	
				$f_z$	0.003	0.004	0.005	0.008	0.011	0.015	0.019	0.02	0.024	
					$f$ (mm/min)	260	340	340	400	560	850	880	785	860
	40	Chilled Cast Iron		$a_p$ (mm)	0.01	0.015	0.028	0.014	0.017	0.039	0.028	0.034	0.042	
				$v_c$ (m/min)	31	47	49	46	55	81	82	84	96	
				$n$	49300	49800	38900	29200	29100	32200	26100	22200	20300	
				$f_z$	0.003	0.004	0.005	0.008	0.012	0.016	0.02	0.021	0.027	
					$f$ (mm/min)	295	395	390	470	700	1000	1000	930	1100
	41	Hardened Cast Iron		$a_p$ (mm)	0.007	0.011	0.02	0.01	0.012	0.028	0.02	0.024	0.03	
				$v_c$ (m/min)	27	40	43	40	48	72	73	74	85	
$n$				42900	42400	34200	25400	25400	28600	23200	19600	18000		
$f_z$				0.003	0.004	0.005	0.008	0.011	0.015	0.019	0.02	0.024		
				$f$ (mm/min)	260	340	340	400	560	850	880	785	860	



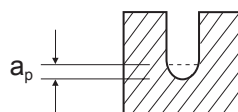
► The data given is based on LU length shown. Please adjust machining conditions according to length.

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

102365 (2 Flute Extended Neck Ball Nose)											
VDI MATERIAL GROUP	MATERIAL	HRc		Size (mm)							
				2.0 LU=12.0	3.0 LU=12.0	4.0 LU=16.0	5.0 LU=30.0	6.0 LU=20.0	8.0 LU=25.0	10.0 LU=30.0	12.0 LU=32.0
P	1-5 Non-alloy Steel	<25	$a_p$ (mm)	0.072	0.189	0.252	0.18	0.378	0.504	0.9	1.08
			$v_c$ (m/min)	102	129	123	109	123	122	121	121
			n	16200	13600	9700	6900	6500	4800	3850	3200
			$f_z$	0.045	0.075	0.1	0.108	0.146	0.186	0.214	0.238
			f (mm/min)	1450	2053	1950	1500	1900	1800	1600	1500
	6-9 Low alloy Steel	25-35	$a_p$ (mm)	0.056	0.147	0.196	0.14	0.294	0.392	0.7	0.84
			$v_c$ (m/min)	96	122	117	103	117	116	116	115
			n	15200	12900	9300	6500	6200	4600	3650	3000
			$f_z$	0.04	0.067	0.09	0.108	0.129	0.163	0.19	0.213
			f (mm/min)	1200	1700	1670	1100	1600	1500	1400	1300
	10-11 High alloy Steel, Tool Steel	35-45	$a_p$ (mm)	0.056	0.147	0.196	0.14	0.294	0.392	0.7	0.84
			$v_c$ (m/min)	96	122	117	103	117	116	116	115
			n	15200	12900	9300	6500	6200	4600	3650	3000
			$f_z$	0.04	0.067	0.09	0.108	0.129	0.163	0.19	0.213
			f (mm/min)	1200	1700	1670	1100	1600	1500	1400	1300
K	15-20 Cast Iron		$a_p$ (mm)	0.072	0.189	0.252	0.18	0.378	0.504	0.9	1.08
			$v_c$ (m/min)	102	129	123	109	123	122	121	121
			n	16200	13600	9700	6900	6500	4800	3850	3200
			$f_z$	0.045	0.075	0.1	0.108	0.146	0.186	0.214	0.238
			f (mm/min)	1450	2053	1950	1500	1900	1800	1600	1500
H	38 Hardened Steel	45-55	$a_p$ (mm)	0.04	0.105	0.14	0.1	0.21	0.28	0.5	0.6
			$v_c$ (m/min)	85	107	103	90	104	101	101	100
			n	13500	11300	8100	5700	5500	4000	3200	2650
			$f_z$	0.039	0.063	0.09	0.09	0.121	0.16	0.188	0.208
			f (mm/min)	1050	1400	1670	1000	1300	1250	1200	1100
	40 Chilled Cast Iron		$a_p$ (mm)	0.056	0.147	0.196	0.14	0.294	0.392	0.7	0.84
			$v_c$ (m/min)	96	122	117	103	117	116	116	115
			n	15200	12900	9300	6500	6200	4600	3650	3000
			$f_z$	0.04	0.067	0.09	0.108	0.129	0.163	0.19	0.213
			f (mm/min)	1200	1700	1670	1100	1600	1500	1400	1300
	41 Hardened Cast Iron		$a_p$ (mm)	0.04	0.105	0.14	0.1	0.21	0.28	0.5	0.6
			$v_c$ (m/min)	85	107	103	90	104	101	101	100
			n	13500	11300	8100	5700	5500	4000	3200	2650
			$f_z$	0.039	0.063	0.09	0.09	0.121	0.16	0.188	0.208
			f (mm/min)	1050	1400	1670	1000	1300	1250	1200	1100



► The data given is based on LU length shown. Please adjust machining conditions according to length.

Recommended cutting depths are **maximum** depths, and **speeds and feeds are a starting point** based on these depths.

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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