

101650, 101750 (4 Flute Crn Rad Extended Neck)

MATERIAL GROUP	HARDNESS HRC		Size (mm)						
			3.0	4.0	6.0	8.0	10.0	12.0	
<b>P</b>	13 14	<b>30-40</b>	$v_c$ (m/min)	205	210	245	250	245	250
			$n$	21760	18720	13000	9950	7800	6635
			$f_z$	0.016	0.022	0.03	0.038	0.045	0.053
			$f$ (mm/min)	1390	1470	1560	1510	1400	1405
<b>H</b>	15 16	<b>40-50</b>	$v_c$ (m/min)	165	165	195	195	195	200
			$n$	17515	13135	10350	7760	6210	5305
			$f_z$	0.014	0.02	0.027	0.035	0.041	0.048
			$f$ (mm/min)	980	1050	1115	1085	1015	1015
	15 16	<b>50-55</b>	$v_c$ (m/min)	110	110	130	130	130	130
			$n$	11675	8755	6900	5175	4140	3450
			$f_z$	0.015	0.02	0.028	0.035	0.041	0.048
			$f$ (mm/min)	700	700	770	525	675	660
	15 16	<b>55-60</b>	$v_c$ (m/min)	90	90	100	100	100	100
			$n$	9550	7165	5305	3980	3185	2650
			$f_z$	0.011	0.015	0.021	0.026	0.03	0.036
			$f$ (mm/min)	420	430	445	410	380	380
	15 16	<b>60-65</b>	$v_c$ (m/min)	70	70	80	80	80	80
			$n$	7430	5570	4245	3185	2545	2120
			$f_z$	0.009	0.012	0.017	0.021	0.024	0.029
			$f$ (mm/min)	265	265	285	265	245	245
	15 16	<b>65-70</b>	$v_c$ (m/min)	60	60	70	70	70	70
			$n$	6365	4775	3715	2785	2225	1855
			$f_z$	0.007	0.01	0.014	0.017	0.02	0.023
			$f$ (mm/min)	175	190	205	185	175	170

The diagram shows a cross-section of a 4-flute end mill. The flute height is labeled as 1.0 x DC, and the flute width is labeled as 0.03 x DC.

► For long length tools reduce feed rate by 15%.

$v_c$  - 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:  $n = \frac{v_c \times 1000}{\pi \times \phi}$

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

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.