



Feeds and Speeds for RAKU[®] TOOL SB-0320



formula for calculating speed (spindle)

$$n = \frac{V_c \times 12,0001}{D_c \times \pi}$$

$$15715 \text{ [rpm]} = \frac{3084 \text{ [ft/min]} \times 12,0001}{\frac{3}{4} \text{ [in]} \times 3,14}$$

formula for calculating axis feed rate

$$V_f = n \times f_z \times z_n$$

$$864 \text{ [in/min]} = 13709 \text{ [rpm]} \times 0,0315 \text{ [in]} \times 2 \text{ [number]}$$

recommended cutting data for roughing

parameter	symbol	unit
radial infeed:	a_e	[in]
axial infeed:	a_p	[in]
number of teeth:	Z_n	[number]

roughing recommendation		
min.	ideal	max.
- x D_c	0.50 x D_c	0.80 x D_c
0.10 x D_c	1.00 x D_c	2.00 x D_c
1	2	4

recommended cutting data for finishing

parameter	symbol	unit
radial infeed:	a_e	[in]
axial infeed:	a_p	[in]
number of teeth:	Z_n	[number]

finishing recommendation		
min.	ideal	max.
- x D_c	0.01 x D_c	0.10 x D_c
0,01 x D_c	0.10 x D_c	0.50 x D_c
1	2	4

validated cutting data for roughing

Type	D_c [in]	Z_n [number]	V_c [ft/min]	f_z [in]	n [rpm]	V_f [in/min]	a_e [in]	a_p [in]	L_1 [in]	L_2 [in]
torus	$\frac{3}{4}$	2	2690	0,0315	13.709	864	0,394	0,787	3,386	0,787
torus	$\frac{1}{2}$	2	1706	0,0295	13.040	770	0,236	0,472	2,165	0,630
torus	$\frac{1}{4}$	2	919	0,0276	14.043	774	0,118	0,236	0,906	0,315

validated cutting data for finishing

Type	D_c [in]	Z_n [number]	V_c [ft/min]	f_z [in]	n [rpm]	V_f [in/min]	a_e [in]	a_p [in]	L_1 [in]	L_2 [in]
ball	$\frac{3}{4}$	2	2133	0,0394	10.867	856	0,079	0,394	2,638	0,669
ball	$\frac{1}{2}$	2	1280	0,0394	9.780	770	0,047	0,236	2,047	0,413
ball	$\frac{1}{4}$	2	640	0,0394	9.780	770	0,024	0,118	0,906	0,394

parameter	symbol	unit
cutting speed:	V_c	[ft/min]
feed/tooth:	f_z	[in]

speed (spindle):	n	[rpm]
axis feed rate:	V_f	[in/min]

cutting diameter:	D_c	[in]
tool total length:	L_0	[in]
tool unclamping length:	L_1	[in]
tool cutting length:	L_2	[in]

user specifications
selection in the diagram
selection in the diagram

calculation by user
calculation by user

processing specific
processing specific
processing specific
processing specific

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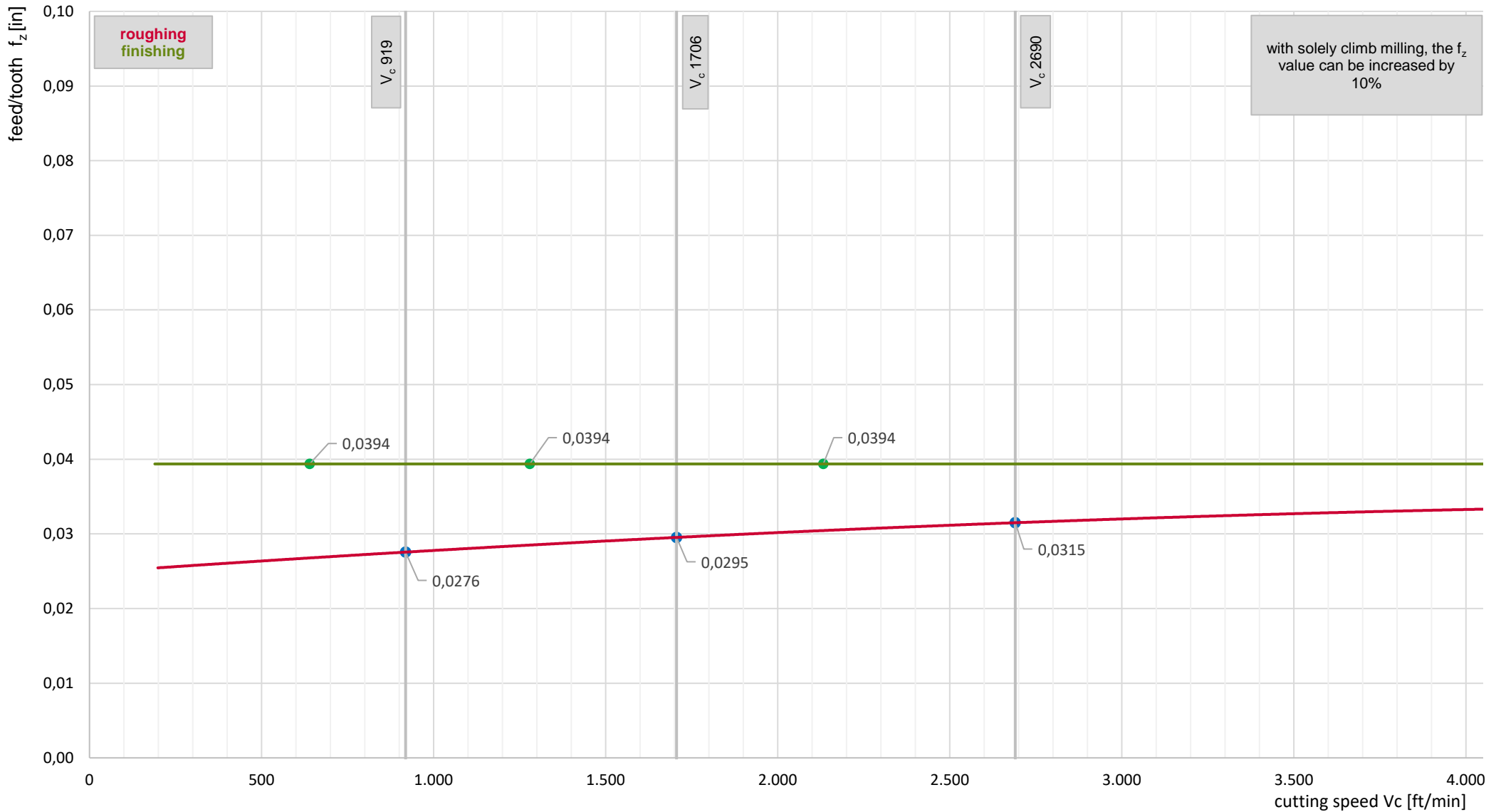
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