



# Feeds and Speeds for RAKU<sup>®</sup> TOOL CP-6071 / CP-6072



## 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

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

$$334 \text{ [in/min]} = 15715 \text{ [rpm]} \times 0,0106 \text{ [in]} \times 2 \text{ [number]}$$

## validated cutting data for roughing

Type	D <sub>c</sub> [in]	z <sub>n</sub> [number]	V <sub>c</sub> [ft/min]	f <sub>z</sub> [in]	n [rpm]	V <sub>f</sub> [in/min]	a <sub>e</sub> [in]	a <sub>p</sub> [in]	L <sub>1</sub> [in]	L <sub>2</sub> [in]
torus	¾	2	3084	0,0106	15.715	334	0,394	0,787	3,386	0,787
torus	½	2	1837	0,0094	14.043	265	0,236	0,472	2,165	0,630
torus	¼	2	919	0,0091	14.043	254	0,118	0,236	0,906	0,315

## validated cutting data for finishing

Type	D <sub>c</sub> [in]	z <sub>n</sub> [number]	V <sub>c</sub> [ft/min]	f <sub>z</sub> [in]	n [rpm]	V <sub>f</sub> [in/min]	a <sub>e</sub> [in]	a <sub>p</sub> [in]	L <sub>1</sub> [in]	L <sub>2</sub> [in]
ball	¾	2	3084	0,0236	15.715	742	0,008	0,079	2,638	0,669
ball	½	2	1837	0,0236	14.043	663	0,005	0,047	2,047	0,413
ball	¼	2	919	0,0236	14.043	663	0,002	0,024	0,906	0,394

## recommended cutting data for roughing

parameter	symbol	unit
radial infeed:	a <sub>e</sub>	[in]
axial infeed:	a <sub>p</sub>	[in]
number of teeth:	Z <sub>n</sub>	[number]

roughing recommendation		
min.	ideal	max.
- x D <sub>c</sub>	<b>0.50 x D<sub>c</sub></b>	0.80 x D <sub>c</sub>
0.10 x D <sub>c</sub>	<b>1.00 x D<sub>c</sub></b>	2.00 x D <sub>c</sub>
1	<b>2</b>	4

parameter	symbol	unit
cutting speed:	V <sub>c</sub>	[ft/min]
feed/tooth:	f <sub>z</sub>	[in]

user specifications
selection in the diagram
selection in the diagram

speed (spindle):	n	[rpm]
axis feed rate:	V <sub>f</sub>	[in/min]

calculation by user
calculation by user

## recommended cutting data for finishing

parameter	symbol	unit
radial infeed:	a <sub>e</sub>	[in]
axial infeed:	a <sub>p</sub>	[in]
number of teeth:	Z <sub>n</sub>	[number]

finishing recommendation		
min.	ideal	max.
- x D <sub>c</sub>	<b>0.01 x D<sub>c</sub></b>	0.10 x D <sub>c</sub>
0,01 x D <sub>c</sub>	<b>0.10 x D<sub>c</sub></b>	0.50 x D <sub>c</sub>
1	<b>2</b>	4

cutting diameter:	D <sub>c</sub>	[in]
tool total length:	L <sub>0</sub>	[in]
tool unclamping length:	L <sub>1</sub>	[in]
tool cutting length:	L <sub>2</sub>	[in]

processing specific
processing specific
processing specific
processing specific

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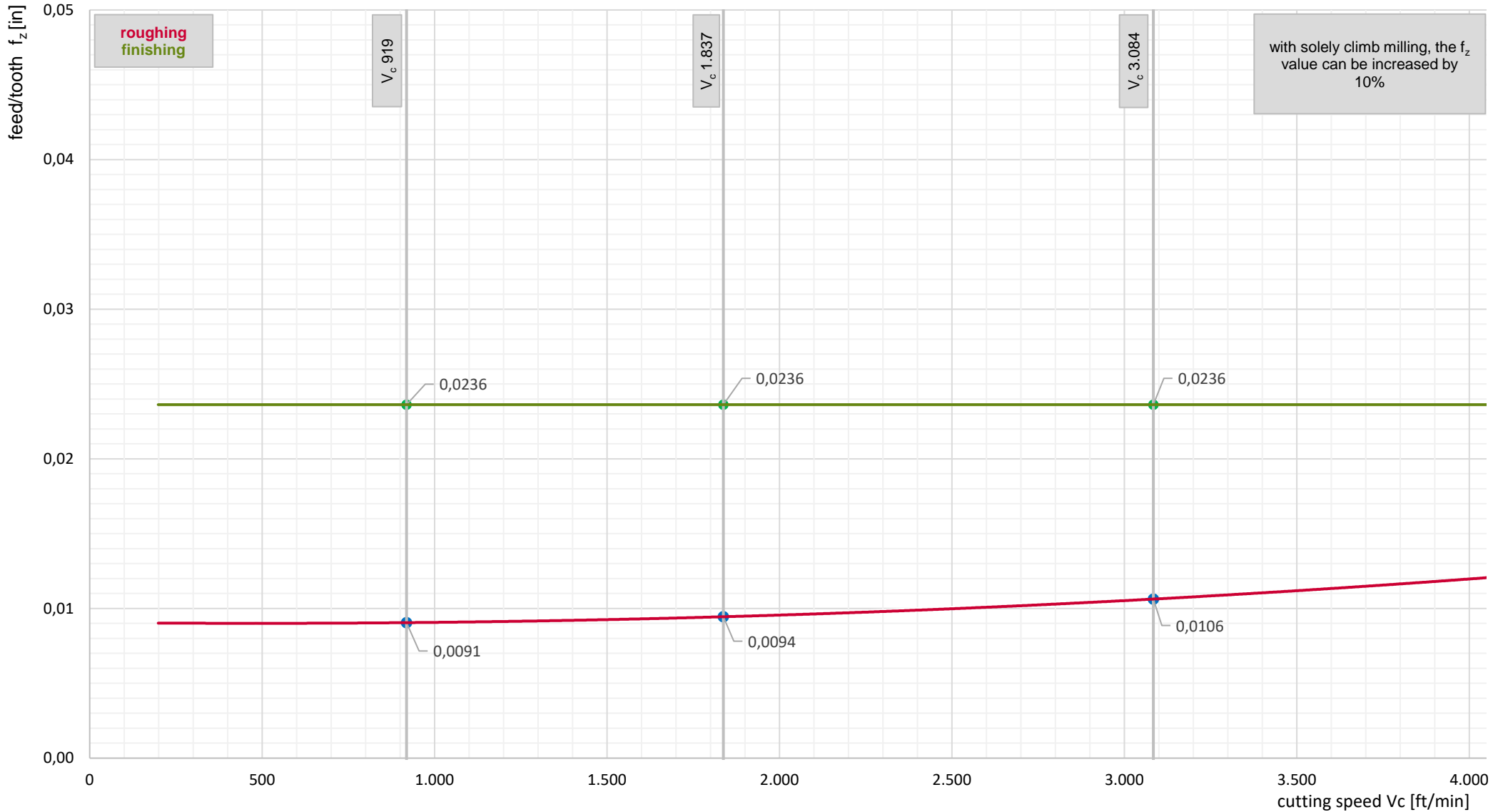
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Our recommendations on the use of the material are based on many years of experience and current scientific and practical knowledge. They are, however, provided without any obligation on our part and do not relieve the buyer of the need for suitability tests. They do not constitute a legal relationship, nor are any protected third party rights what's ever affected thereby.

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