



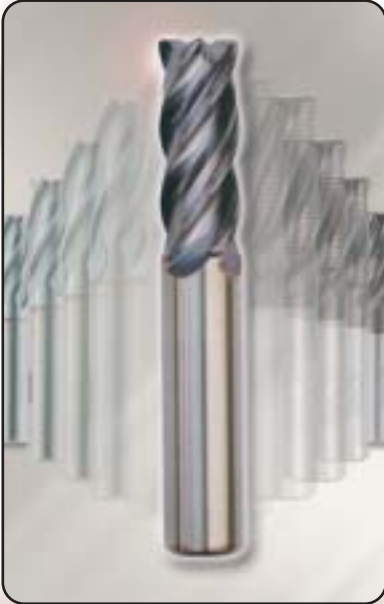
# *Varimill*

*A Tool For All Applications*



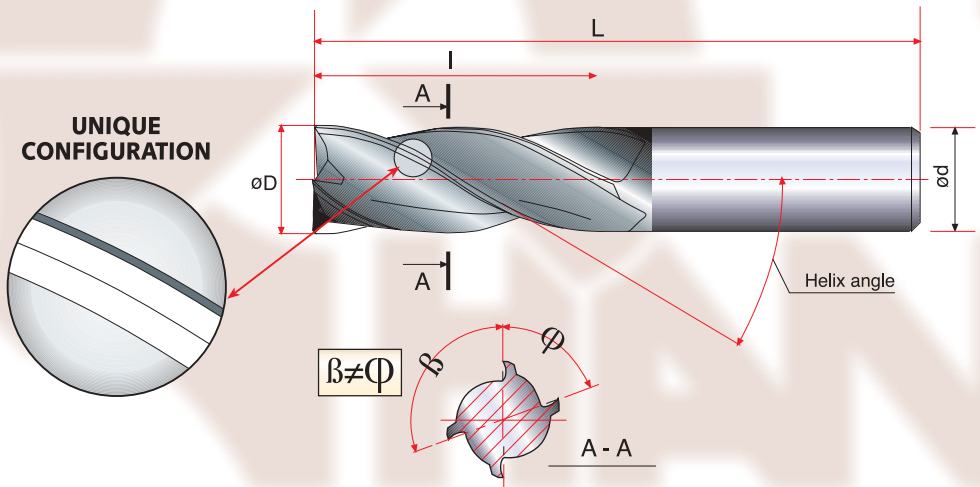
# VariMill

A Tool For All Applications



- Easily Resharpener Patented Design
- Chatter Free, avoiding resonance vibration due to special unequal flute spacing
- Smooth, Silent machining
- Superb surface finish while machining at high speeds
- Higher material removal rate in extreme conditions > +40% more than high performance tools
- **Extended tool life up to 200%** more than high performance tools
- TiAlN coating provides extended tool life in aggressive cutting conditions

- HANITA's new „VariMill“ improves stock removal rates and maximizes productivity in most machining Stainless Steels.
- One „VariMill“ instead of two tools, a rougher and a finisher achieving maximum stock removal rates and superb surface finish with long tool life.
- This new 4 flute End Mill is designed with a special geometry, unequal flute spacing, 38 degree helix and patented parabolic core diameter **increasing productivity by more than 40 %**.





HANITA Standard

PREMIUM CARBIDE



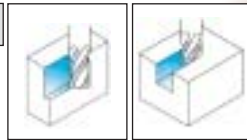
VariMill

4777

Size						z	r	Item No.
d <sub>1</sub> x d <sub>2</sub> x l <sub>2</sub> x l <sub>1</sub>								
4 x 6 x 12 x 55	4	-	477704002					
5 x 6 x 13 x 57	4	-	477705002					
6 x 6 x 13 x 57	4	-	477706002					
7 x 8 x 16 x 63	4	-	477707003					
8 x 8 x 16 x 63	4	-	477708003					
9 x 10 x 19 x 72	4	-	477709004					
10 x 10 x 22 x 72	4	-	477710004					
12 x 12 x 26 x 83	4	-	477712005					
14 x 14 x 26 x 83	4	-	477714014					
16 x 16 x 32 x 92	4	-	477716006					
18 x 18 x 32 x 92	4	-	477718018					
20 x 20 x 38 x 104	4	-	477720007					
25 x 25 x 45 x 121	4	-	477725008					

Suffix Category	<input type="text"/>
Uncoated	LT

GENERAL PURPOSE



**Formular Symbols**

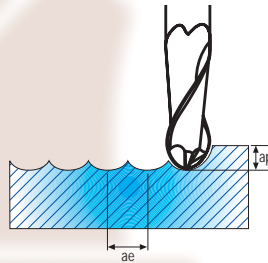
- D (mm) Tool diameter
- z No. of Flutes
- V<sub>c</sub> (m/min) Cutting Speed
- F<sub>z</sub> (mm) Feed per Tooth
- n (1/min) Spindle Speed
- V<sub>f</sub> (mm/min) Table Feed
- π 3.1416

Cutting Speed  $V_c = \frac{D \times \pi \times n}{1000}$  (m/min)

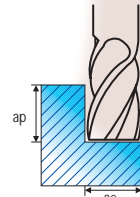
Spindle Speed  $n = \frac{V_c \times 1000}{\pi \times d}$  (1/min)

Feed per Tooth  $f_z = \frac{V_f}{z \times n}$  (mm)

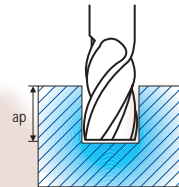
Table Feed  $V_f = f_z \times z \times n$  (mm/min)



Profiling



Side Milling



Slotting

**Cutting Section Geometry**

Material	Type	Rockwell Hardness					Performance
			ap	ae	ap		
Easy to cut Stainless Steels (304)	AISI 302	< 25	1 x D	0.5 x D	1 x D	E	
Moderately to cut Stainless Steels	AISI 410		1 x D	0.5 x D	1 x D	E	
Difficult to cut Stainless Steels (316L)	AISI 316		1 x D	0.5 x D	1 x D	E	
High Temperature Alloys			1 x D	0.2 x D	0.3 x D	E	
Soft Steel			1 x D	0.5 x D	1 x D	E	
Titanium			1 x D	0.2 x D	0.5 x D	R	
Gray Cast Iron			1 x D	0.5 x D	1 x D	R	

**Side Milling**

Material	Type	Rockwell Hardness	V <sub>c</sub> - Cutting Speed	f <sub>z</sub> - Feed per Tooth										
				TIAlN	D - Diameter in mm									
					m/min	4	5	6	8	10	12	16	18	20
Easy to cut Stainless Steels (304)	AISI 302	< 25	90 - 115	0.015	0.015	0.020	0.030	0.030	0.040	0.050	0.055	0.060	0.060	
Moderately to cut Stainless Steels	AISI 410		70 - 85	0.013	0.013	0.018	0.028	0.028	0.038	0.048	0.053	0.058	0.058	
Difficult to cut Stainless Steels (316L)	AISI 316		60 - 80	0.011	0.011	0.016	0.016	0.026	0.036	0.046	0.051	0.056	0.056	
High Temperature Alloys			25 - 35	0.011	0.011	0.017	0.027	0.027	0.038	0.049	0.055	0.060	0.060	
Soft Steel			150 - 180	0.020	0.020	0.020	0.030	0.030	0.040	0.050	0.060	0.060	0.070	
Titanium			50 - 70	0.012	0.012	0.016	0.022	0.027	0.033	0.038	0.044	0.055	0.066	
Gray Cast Iron			120 - 150	0.015	0.020	0.020	0.030	0.030	0.040	0.050	0.060	0.060	0.070	



# *Varimill*

*A Tool For All Applications*



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