

Increase Metal Removal Rates with Hanita VariMill II™

NEW!



...without loss of speed or tool life in stainless steel and high-temperature alloys!

- Five-flute geometry enables slotting up to 1 X D!
- Unequal flute spacing minimizes chatter for smoother machining!
- Single tool for both roughing and finishing operations for fewer setups!
- Available with multiple neck, shank, and corner radius variations!

Distributed by:





VariMill II™

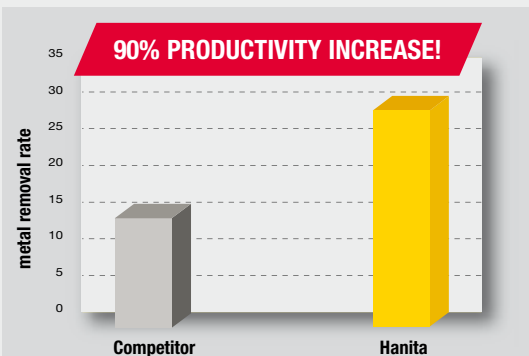
Markets and Applications

- Best suited for applications in the Aerospace, Medical, Die and Mold, Automotive, and General Engineering markets.
- Outstanding performance in stainless steel, titanium, inconel, and other high-temperature alloys.
- Increased metal removal rates in roughing and finishing operations.
- Excellent performance in both slotting and profiling operations.

Featured Application: Slotting an Engine Ring

Operation: Slotting
 Customer: Aerospace Manufacturer
 Workpiece: Engine Ring
 Material: SST nickel-based alloy EZ3NCT25 (25% nickel, 13% chromium) at 245 Hb
 Solution: **VariMill II™ 5-Flute with AlTiN Coating**
 Results: 90% increase in metal removal rate

	COMPETITOR	HANITA
coating:	TiAlN	AlTiN
end mill:	4-flute 12 mm 1 mm radius rougher/finisher	5-flute 12 mm 1 mm radius rougher/finisher
material:	SST nickel-based alloy	SST nickel-based alloy
depth of cut (ap):	11,15 mm (0.439 in)	11,15 mm (0.439 in)
width of cut (ae):	12 mm (0.472 in)	12 mm (0.472 in)
speed (Vc):	30 m/min (100 sfm)	40 m/min (132 sfm)
rpm (N):	800 rpm	1,061 rpm
feed rate (Vf):	112 mm/min (4.4 in/min)	212 mm/min (8.3 in/min)
chip load per tooth (fz):	0,035 mm/th (0.14 in/th)	0,04 mm/th (0.16 in/th)
metal removal rate:	15 cm ³ /min (245 in ³ /min)	28 cm ³ /min (458 in ³ /min)



Material Code		Depth of Cut			Vc	Chip Load Per Tooth (shown in millimeters)										
		Axial	Radial	Axial	Cutting Speed											
		Side Milling	Slotting	AITiN												
		ap	ae	ap	m/min	4	5	6	8	10	12	14	16	18	20	25
P2	Medium and high carbon steels >0.3% C	1.5xD	0.5XD	1xD	160-200	0,03	0,04	0,05	0,06	0,07	0,07	0,08	0,08	0,09	0,10	0,11
P3	Alloy steels and Tool steels <330HB, <35HRC	1.5xD	0.5XD	1xD	160-180	0,03	0,03	0,04	0,05	0,06	0,07	0,07	0,08	0,08	0,09	0,10
P4	Alloy steels and Tool steels 340-450HB, 36-48HRC	1.5xD	0.5XD	1xD	140-160	0,02	0,03	0,04	0,04	0,05	0,06	0,07	0,07	0,08	0,08	0,10
M1	Austenitic stainless steel (302, 303, 304)	1.5xD	0.5XD	1xD	90-115	0,03	0,03	0,04	0,05	0,06	0,07	0,07	0,08	0,08	0,09	0,10
M2	Austenitic stainless steel (316, 316L)	1.5xD	0.5XD	1xD	60-80	0,02	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,07	0,08	0,08
M3	Austenitic stainless steel: Duplex	1.5xD	0.5XD	1xD	60-70	0,02	0,02	0,03	0,04	0,04	0,05	0,05	0,05	0,06	0,06	0,07
K1	Grey cast iron (GG)	1.5XD	0.5XD	1XD	130-170	0,03	0,04	0,05	0,06	0,08	0,08	0,10	0,10	0,11	0,12	0,13
K2	Ductile, CGI and Malleable cast iron <80KSI	1.5XD	0.5XD	1XD	110-130	0,02	0,03	0,03	0,05	0,05	0,06	0,07	0,07	0,08	0,08	0,10
S3	Nickel based heat resistant alloys	1.5xD	0.5XD	1xD	25-40	0,01	0,01	0,02	0,03	0,03	0,04	0,04	0,05	0,06	0,06	0,07
S4	Alpha-Beta Titanium alloys (Ti6Al4V)	1.5xD	0.5XD	1xD	50-60	0,02	0,02	0,03	0,04	0,04	0,05	0,05	0,06	0,07	0,08	0,09

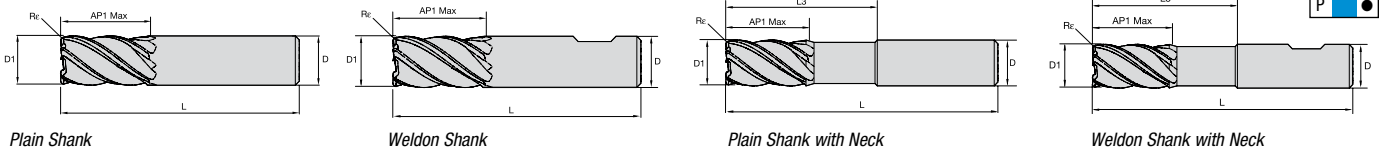
Material Code		Depth of Cut			Vc	Chip Load Per Tooth (shown in decimal inch)										
		Axial	Radial	Axial	Cutting Speed											
		Side Milling	Slotting	AITiN												
		ap	ae	ap	SFM	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1		
P2	Medium and high carbon steels >0.3% C	1.5xD	0.5XD	1xD	520-650	0,0009	0,0015	0,0021	0,0023	0,0026	0,0030	0,0031	0,0038	0,0044		
P3	Alloy steels and Tool steels <330HB, <35HRC	1.5xD	0.5XD	1xD	520-590	0,0008	0,0011	0,0017	0,0020	0,0023	0,0029	0,0029	0,0034	0,0040		
P4	Alloy steels and Tool steels 340-450HB, 36-48HRC	1.5xD	0.5XD	1xD	460-520	0,0007	0,0010	0,0015	0,0016	0,0020	0,0026	0,0027	0,0030	0,0038		
M1	Austenitic stainless steel (302, 303, 304)	1.5xD	0.5XD	1xD	290-370	0,0008	0,0011	0,0017	0,0020	0,0023	0,0027	0,0029	0,0032	0,0040		
M2	Austenitic stainless steel (316, 316L)	1.5xD	0.5XD	1xD	190-260	0,0006	0,0009	0,0013	0,0016	0,0019	0,0025	0,0025	0,0028	0,0032		
M3	Austenitic stainless steel: Duplex	1.5xD	0.5XD	1xD	190-230	0,0005	0,0008	0,0010	0,0014	0,0015	0,0019	0,0020	0,0023	0,0028		
K1	Grey cast iron (GG)	1.5XD	0.5XD	1XD	430-550	0,0008	0,0014	0,0022	0,0025	0,0030	0,0035	0,0040	0,0045	0,0050		
K2	Ductile, CGI and Malleable cast iron <80KSI	1.5XD	0.5XD	1XD	360-430	0,0006	0,0009	0,0013	0,0018	0,0019	0,0025	0,0027	0,0030	0,0040		
S3	Nickel based heat resistant alloys	1.5xD	0.5XD	1xD	80-130	0,0003	0,0004	0,0007	0,0011	0,0015	0,0016	0,0019	0,0023	0,0028		
S4	Alpha-Beta Titanium alloys (Ti6Al4V)	1.5xD	0.5XD	1xD	160-200	0,0005	0,0008	0,0010	0,0014	0,0015	0,0021	0,0023	0,0028	0,0036		

Ordering Information

VariMill II™ for Ferrous Materials

Series 5777 – Metric Series 5VOS – Inch

first choice ● S
 alternate choice ○ K
 M
 P



Plain Shank (metric)				ORDER NUMBER				
D1	D	AP1 Max	L	Rε 0	Rε 0,25	Rε 0,4	Rε 0,5	Rε 0,75
4	6	11	55	577704012MT	577704002MT	–	–	–
5	6	13	57	–	577705002MT	–	–	–
6	6	13	57	577706012MT	–	577706002MT	–	–
7	8	16	63	–	–	577707003MT	–	–
8	8	19	63	577708013MT	–	–	577708003MT	–
9	10	19	72	–	–	–	577709004MT	–
10	10	22	72	577710014MT	–	–	577710004MT	–
12	12	26	83	577712015MT	–	–	–	577712005MT
14	14	26	83	577714014MT	–	–	–	577714004MT
16	16	32	92	577716016MT	–	–	–	577716006MT
18	18	32	92	577718018MT	–	–	–	577718008MT
20	20	38	104	577720017MT	–	–	–	577720007MT
25	25	45	121	–	–	–	–	577725008MT

Plain Shank (inch)				ORDER NUMBER					
D1	D	AP1 Max	L	Rε 0	Rε .015	Rε .030	Rε .060	Rε .090	Rε .120
3/16	3/16	5/8	2-1/4	TM5VOS05000S	TM5VOS05000A	TM5VOS05000B	–	–	–
1/4	1/4	3/4	2 1/2	TM5VOS07002S	TM5VOS07002A	TM5VOS07002B	–	–	–
5/16	5/16	3/4	2 1/2	TM5VOS08003S	TM5VOS08003A	TM5VOS08003B	–	–	–
3/8	3/8	7/8	2 1/2	TM5VOS10004S	TM5VOS10004A	TM5VOS10004B	–	–	–
1/2	1/2	1 1/4	3	TM5VOS13015S	TM5VOS13015A	TM5VOS13015B	–	–	TM5VOS13015E
5/8	5/8	1 1/4	3 1/2	TM5VOS16006S	–	TM5VOS16006B	–	–	–
3/4	3/4	1 1/2	4	TM5VOS19007S	–	TM5VOS19007B	TM5VOS19007C	TM5VOS19007D	TM5VOS19007E
1	1	1 3/4	4 1/2	TM5VOS25008S	–	TM5VOS25008B	TM5VOS25008C	TM5VOS25008D	TM5VOS25008E

Weldon Shank (metric)				ORDER NUMBER			
D1	D	AP1 Max	L	Rε 0,25	Rε 0,4	Rε 0,5	Rε 0,75
4	6	11	55	577704002MW	–	–	–
5	6	13	57	577705002MW	–	–	–
6	6	13	57	–	577706002MW	–	–
7	8	16	63	–	577707003MW	–	–
8	8	19	63	–	–	577708003MW	–
9	10	19	72	–	–	577709004MW	–
10	10	22	72	–	–	577710004MW	–
12	12	26	83	–	–	–	577712005MW
14	14	26	83	–	–	–	577714004MW
16	16	32	92	–	–	–	577716006MW
18	18	32	92	–	–	–	577718008MW
20	20	38	104	–	–	–	577720007MW
25	25	45	121	–	–	–	577725008MW

Weldon Shank (inch)				ORDER NUMBER					
D1	D	AP1 Max	L	Rε 0	Rε .015	Rε .030	Rε .060	Rε .090	Rε .120
1/2	1/2	1 1/4	3	TM5VOS13015SW	TM5VOS13015AW	TM5VOS13015BW	–	–	TM5VOS13015EW
5/8	5/8	1 1/4	3 1/2	TM5VOS16006SW	–	TM5VOS16006BW	–	–	–
3/4	3/4	1 1/2	4	TM5VOS19007SW	–	TM5VOS19007BW	TM5VOS19007CW	TM5VOS19007DW	TM5VOS19007EW
1	1	1 3/4	4 1/2	TM5VOS25008SW	–	TM5VOS25008BW	TM5VOS25008CW	TM5VOS25008DW	TM5VOS25008EW

Plain Shank with Neck and Weldon Shank with Neck (inch)					ORDER NUMBER	
D1	D	AP1 Max	L3	L	Rε .015 – Plain Shank	Rε .030 – Weldon Shank
1/4	1/4	1/2	1 1/4	4	TM5VNS07012A	–
3/8	3/8	7/8	1 7/8	4	TM5VNS10014A	–
1/2	1/2	1 1/4	2 1/4	4	–	TM5VNS13005BW
5/8	5/8	1 1/4	2 1/4	4	–	TM5VNS16006BW
3/4	3/4	1 1/2	3 1/4	5 1/2	–	TM5VNS19017BW
1	1	1 3/4	3 1/4	5 1/2	–	TM5VNS25018BW

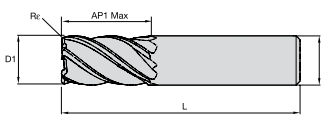


Ordering Information

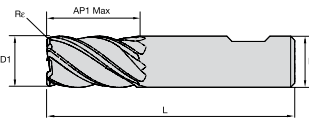
VariMill II™ for Titanium and High-Temperature Alloys

Series 57N8 – Metric Series 5VOT – Inch

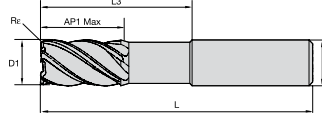
first choice ● S ●
alternate choice ○ K ○
M ○
P ○



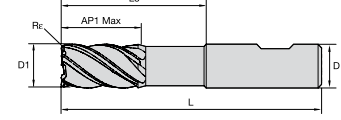
Plain Shank



Weldon Shank



Plain Shank with Neck



Weldon Shank with Neck

Plain Shank (inch)					ORDER NUMBER			
D1	D	AP1Max	L	L3	R€ 0	R€ .015	R€ .030	R€ .120
1/2	1/2	1 1/4	3	–	TM5VOT13015S	TM5VOT13015A	TM5VOT13015B	TM5VOT13015E
5/8	5/8	1 1/4	3 1/2	–	TM5VOT16006S	–	TM5VOT16006B	–
3/4	3/4	1 1/2	4	–	TM5VOT19007S	–	TM5VOT19007B	TM5VOT19007E
1	1	1 3/4	4 1/2	–	TM5VOT25008S	–	TM5VOT25008B	TM5VOT25008E

Weldon Shank (inch)					ORDER NUMBER			
D1	D	AP1Max	L	L3	R€ 0	R€ .015	R€ .030	R€ .120
1/2	1/2	1 1/4	3	–	TM5VOT13015SW	TM5VOT13015AW	TM5VOT13015BW	TM5VOT13015EW
5/8	5/8	1 1/4	3 1/2	–	TM5VOT16006SW	–	TM5VOT16006BW	–
3/4	3/4	1 1/2	4	–	TM5VOT19007SW	–	TM5VOT19007BW	TM5VOT19007EW
1	1	1 3/4	4 1/2	–	TM5VOT25008SW	–	TM5VOT25008BW	TM5VOT25008EW

Plain Shank with Neck (metric)					ORDER NUMBER					
D1	D	AP1Max	L	L3	R€ 0	R€ 0,5	R€ 1,0	R€ 2,0	R€ 3,0	R€ 4,0
6	6	13	63	18	57N806002MT	57N806022MT	57N806032MT	–	–	–
8	8	19	76	24	57N808003MT	57N808023MT	57N808033MT	–	–	–
10	10	22	76	30	57N810004MT	57N810024MT	57N810034MT	57N810054MT	–	–
12	12	26	84	36	57N812005MT	57N812025MT	57N812035MT	57N812055MT	–	–
16	16	32	100	48	57N816006MT	57N816026MT	57N816036MT	57N816056MT	57N816076MT	–
20	20	38	115	60	57N820007MT	57N820027MT	57N820037MT	57N820057MT	57N820077MT	57N820087MT
25	25	45	135	75	57N825008MT	57N825028MT	57N825038MT	57N825058MT	57N825078MT	57N825088MT

Weldon Shank with Neck (metric)					ORDER NUMBER					
D1	D	AP1Max	L	L3	R€ 0,5	R€ 1,0	R€ 1,5	R€ 2,0	R€ 3,0	R€ 4,0
6	6	13	63	18	57N806022MW	57N806032MW	57N806042MW	–	–	–
8	8	19	76	24	57N808023MW	57N808033MW	–	57N808053MW	–	–
10	10	22	76	30	57N810024MW	57N810034MW	–	57N810054MW	–	–
12	12	26	84	36	57N812025MW	57N812035MW	–	57N812055MW	–	–
16	16	32	100	48	57N816026MW	57N816036MW	–	57N816056MW	57N816076MW	–
20	20	38	115	60	57N820027MW	57N820037MW	–	57N820057MW	57N820077MW	57N820087MW
25	25	45	135	75	57N825028MW	57N825038MW	–	57N825058MW	57N825078MW	57N825088MW