



Milling

New!

Increase Metal Removal Rates with Hanita VariMill II™ End Mills...

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

- Five-flute geometry enables slotting up to 1xD!
- 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:

Designed to reduce machining time!

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

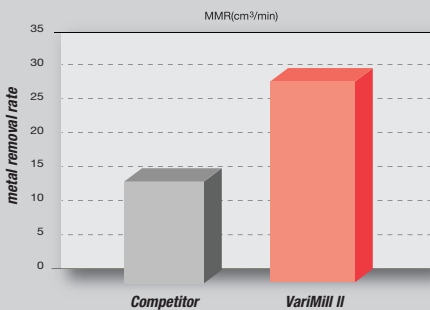
Material: SST nickel-based alloy EZ3NCT25 (25% nickel, 13% chromium) at 245 Hb

Solution: VariMill II™ 5-Flute with AlTiN Coating

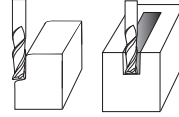
Results: 90% increase in metal removal rate

	COMPETITOR	HANITA
coating:	TiAlN	AlTiN
end mill:	4-flute 12mm 1mm radius	5-flute 12mm 1mm radius
material:	SST nickel-based alloy	SST nickel-based alloy
depth of cut (ap):	11,15mm (0.439 in)	11,15mm (0.439 in)
width of cut (ae):	12mm (0.472 in)	12mm (0.472 in)
speed (Vc):	30 m/min (100 sfm)	40 m/min (132 sfm)
rpm (N):	800 rpm	1060 rpm
feed rate (Vf):	112mm/min (4.4 in/min)	212mm/min (8.3 in/min)
chip load per tooth (fz):	0,035mm/th (0.0014 in/th)	0,04mm/th (0.0016 in/th)
metal removal rate:	15 cm ³ /min (1.00 in ³ /min)	28 cm ³ /min (1.75 in ³ /min)

90% Productivity Increase!



Operating Parameters — Metric and Inch



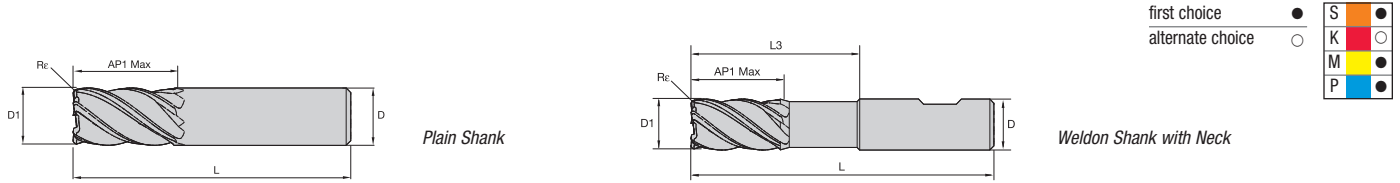
Material Group		Depth of Cut			Vc	Chip Load per Tooth (shown in decimal millimeters)										
		Axial	Radial	Axial	Cutting Speed											
		Side Milling		Slotting	AITIN	4	5	6	8	10	12	14	16	18	20	25
		ap	ae	ap	m/min											
P2	Medium and high carbon steels > 0.3% C	1.5xD	0.5xD	1xD	160-200	0,03	0,04	0,05	0,06	0,07	0,07	0,08	0,08	0,09	0,10	0,11
P3	Alloy steels and tool steels < 330 HB, < 35 HRc	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 340-450 HB, 36-48 HRc	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 < 80 KSI	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 Group		Depth of Cut			Vc	Chip Load per Tooth (shown in decimal inch)							
		Axial	Radial	Axial	Cutting Speed								
		Side Milling		Slotting	AITIN	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
		ap	ae	ap	m/min								
P2	Medium and high carbon steels > 0.3% C	1.5xD	0.5xD	1xD	520-650	0.0015	0.0021	0.0023	0.0026	0.0030	0.0031	0.0038	0.0044
P3	Alloy steels and tool steels < 330 HB, < 35 HRc	1.5xD	0.5xD	1xD	520-590	0.0011	0.0017	0.0020	0.0023	0.0029	0.0029	0.0034	0.0040
P4	Alloy steels and tool steels 340-450 HB, 36-48 HRc	1.5xD	0.5xD	1xD	460-520	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	0.0011	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	0.0009	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	0.0008	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	0.0014	0.0022	0.0025	0.0030	0.0035	0.0040	0.0045	0.0050
K2	Ductile, CGI, and malleable cast iron < 80 KSI	1.5xD	0.5xD	1xD	360-430	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	0.0004	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	0.0008	0.0010	0.0014	0.0015	0.0021	0.0023	0.0028	0.0036

Ordering Information

Hanita VariMill II™ End Mills

Specially designed for optimum performance in stainless steels, high-temperature alloys, and other ferrous materials.



Metric Sizes – Series 5777 – VariMill II 5-flute, Plain and Weldon Shanks

D1	D	AP1 max	L	Plain Shanks AlTiN-Coated End Mills with Square Corners — Rε 0		Plain Shanks AlTiN-Coated End Mills with Corner Radius		Weldon Shanks AlTiN-Coated End Mills with Corner Radius	
				catalog number	Rε mm	catalog number	Rε mm	catalog number	
4	6	11	55	577704012MT	0,25	577704002MT	0,25	577704002MW	
5	6	13	57	—	0,25	577705002MT	0,25	577705002MW	
6	6	13	57	577706012MT	0,4	577706002MT	0,4	577706002MW	
7	8	16	63	—	0,4	577707003MT	0,4	577707003MW	
8	8	19	63	577708013MT	0,5	577708003MT	0,5	577708003MW	
9	10	19	72	—	0,5	577709004MT	0,5	577709004MW	
10	10	22	72	577710015MT	0,5	577710004MT	0,5	577710004MW	
12	12	26	83	577712015MT	0,75	577712005MT	0,75	577712005MW	
14	14	26	83	577714014MT	0,75	577714004MT	0,75	577714004MW	
16	16	32	92	577716006MT	0,75	577716016MT	0,75	577716016MW	
18	18	32	92	577718018MT	—	—	0,75	577718008MW	
20	20	38	104	577720017MT	0,75	577720007MT	0,75	577720007MW	
25	25	45	121	—	0,75	577725008MT	0,75	577725008MW	

Inch Sizes – Series 5V0S – VariMill II 5-flute, Plain Shanks

D1	D	AP1 max	L	Catalog Number Standard Corner Conditions — AlTiN-Coated End Mills					
				Rε 0	Rε 0.015 in	Rε 0.030 in	Rε 0.060 in	Rε 0.090 in	Rε 0.120/0.125 in
3/16	3/16	5/8	2 1/4	TM5V0S05000S	TM5V0S05000A	TM5V0S05000B	—	—	—
1/4	1/4	3/4	2 1/2	TM5V0S07002S	TM5V0S07002A	TM5V0S07002B	TM5V0S07002C	—	—
5/16	5/16	3/4	2 1/2	TM5V0S08003S	TM5V0S08003A	TM5V0S08003B	TM5V0S08003C	—	—
3/8	3/8	7/8	2 1/2	TM5V0S10004S	TM5V0S10004A	TM5V0S10004B	TM5V0S10004C	—	—
1/2	1/2	1 1/4	3	TM5V0S13015S	TM5V0S13015A	TM5V0S13015B	TM5V0S13015C	TM5V0S13015D	TM5V0S13015E
5/8	5/8	1 1/4	3 1/2	TM5V0S16006S	—	TM5V0S16006B	TM5V0S16006C	TM5V0S16006D	—
3/4	3/4	1 1/2	4	TM5V0S19007S	—	TM5V0S19007B	TM5V0S19007C	TM5V0S19007D	TM5V0S19007E
1	1	1 3/4	4	TM5V0S25008S	—	TM5V0S25008B	TM5V0S25008C	TM5V0S25008D	TM5V0S25008E

Inch Sizes – Series 5V0S – VariMill II 5-flute, Weldon Shanks

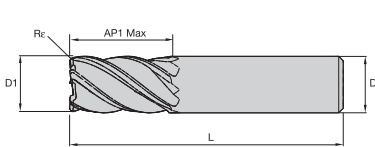
D1	D	AP1 max	L	Catalog Number Standard Corner Conditions — AlTiN-Coated End Mills					
				Rε 0	Rε 0.015 in	Rε 0.030 in	Rε 0.060 in	Rε 0.090 in	Rε 0.120/0.125 in
1/2	1/2	1 1/4	3	TM5V0S13015SW	TM5V0S13015AW	TM5V0S13015BW	TM5V0S13015CW	TM5V0S13015DW	TM5V0S13015EW
5/8	5/8	1 1/4	3 1/2	TM5V0S16006SW	—	TM5V0S16006BW	TM5V0S16006CW	TM5V0S16006DW	—
3/4	3/4	1 1/2	4	TM5V0S19007SW	—	TM5V0S19007BW	TM5V0S19007CW	TM5V0S19007DW	TM5V0S19007EW
1	1	1 3/4	4	TM5V0S25008SW	—	TM5V0S25008BW	TM5V0S25008CW	TM5V0S25008DW	TM5V0S25008EW

Inch Sizes – Series 5VNS – Inch – VariMill II Extended Neck 5-flute, Plain and Weldon Shanks

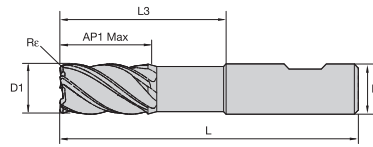
D1	D	AP1 max	L3	L	Plain Shanks AlTiN-Coated End Mills with Corner Radius		Weldon Shanks AlTiN-Coated End Mills with Corner Radius	
					Rε in	catalog number	Rε in	catalog number
1/4	1/4	3/8	1 1/4	4	0.015	TM5VNS07012A	—	—
3/8	3/8	1/2	1 7/8	4	0.015	TM5VNS10014A	—	—
1/2	1/2	5/8	2 1/4	4	0.030	TM5VNS13005B	0.030	TM5VNS13005BW
5/8	5/8	3/4	2 1/4	4	0.030	TM5VNS16006B	0.030	TM5VNS16006BW
3/4	3/4	1	3 1/4	5 1/2	0.030	TM5VNS19017B	0.030	TM5VNS19017BW
1	1	1 1/8	3 1/4	5 1/2	0.030	TM5VNS25018B	0.030	TM5VNS25018BW

Hanita VariMill II™ End Mills

Specially designed for optimum performance in titanium.



Plain Shank



Weldon Shank with Neck

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

Metric Sizes — Series 57N8 — VariMill II Extended Neck 5-flute, Plain Shanks

D1	D	AP1 max	L3	L	Catalog Number					
					Optional Corner Conditions — AlTiN-Coated End Mills					
					Rε 0	Rε 0,5mm	Rε 1,0mm	Rε 2,0mm	Rε 3,0mm	Rε 4,0mm
6	6	13	18	63	57N806002MT	57N806022MT	57N806032MT	—	—	—
8	8	19	24	76	57N808003MT	57N808023MT	57N808033MT	—	—	—
10	10	22	30	76	57N810004MT	57N810024MT	57N810034MT	57N810054MT	—	—
12	12	26	36	84	57N812005MT	57N812025MT	57N812035MT	57N812055MT	—	—
16	16	32	48	100	57N816006MT	57N816026MT	57N816036MT	57N816056MT	57N816076MT	—
20	20	38	60	115	57N820007MT	57N820027MT	57N820037MT	57N820057MT	57N820077MT	57N820087MT
25	25	45	75	135	57N825008MT	57N825028MT	57N825038MT	57N825058MT	57N825078MT	57N825088MT

Metric Sizes — Series 57N8 — VariMill II Extended Neck 5-flute, Weldon Shanks

D1	D	AP1 max	L3	L	Catalog Number					
					Optional Corner Conditions — AlTiN-Coated End Mills					
					Rε 0,5mm	Rε 1,0mm	Rε 1,5mm	Rε 2,0mm	Rε 3,0mm	Rε 4,0mm
6	6	13	18	63	57N806022MW	57N806032MW	57N806042MW	—	—	—
8	8	19	24	76	57N808023MW	57N808033MW	—	57N808053MW	—	—
10	10	22	30	76	57N810024MW	57N810034MW	—	57N810054MW	—	—
12	12	26	36	84	57N812025MW	57N812035MW	—	57N812055MW	—	—
16	16	32	48	100	57N816026MW	57N816036MW	—	57N816056MW	57N816076MW	—
20	20	38	60	115	57N820027MW	57N820037MW	—	57N820057MW	57N820077MW	57N820087MW
25	25	45	75	135	57N825028MW	57N825038MW	—	57N825058MW	57N825078MW	57N825088MW

Inch Sizes — Series 5V0T — VariMill II 5-flute, Plain Shanks

D1	D	AP1 max	L	Catalog Number					
				Optional Corner Conditions — AlTiN-Coated End Mills					
				Rε 0	Rε 0.015 in	Rε 0.030 in	Rε 0.060 in	Rε 0.090 in	Rε 0.120/0.125 in
1/4	1/4	3/4	2 1/2	TM5V0T07002S	TM5V0T07002A	TM5V0T07002B	TM5V0T07002C	—	—
5/16	5/16	3/4	2 1/2	TM5V0T08003S	TM5V0T08003A	TM5V0T08003B	TM5V0T08003C	—	—
3/8	3/8	7/8	2 1/2	TM5V0T10004S	TM5V0T10004A	TM5V0T10004B	TM5V0T10004C	—	—
1/2	1/2	1 1/4	3	TM5V0T13015S	TM5V0T13015A	TM5V0T13015B	TM5V0T13015C	TM5V0T13015D	TM5V0T13015E
5/8	5/8	1 1/4	3 1/2	TM5V0T16006S	—	TM5V0T16006B	TM5V0T16006C	TM5V0T16006D	—
3/4	3/4	1 1/2	4	TM5V0T19007S	—	TM5V0T19007B	TM5V0T19007C	TM5V0T19007D	TM5V0T19007E
1	1	1 3/4	4	TM5V0T25008S	—	TM5V0T25008B	TM5V0T25008C	TM5V0T25008D	TM5V0T25008E

Inch Sizes — Series 5V0T — VariMill II 5-flute, Weldon Shanks

D1	D	AP1 max	L	Catalog Number					
				Optional Corner Conditions — AlTiN-Coated End Mills					
				Rε 0	Rε 0.015 in	Rε 0.030 in	Rε 0.060 in	Rε 0.090 in	Rε 0.120/0.125 in
1/2	1/2	1 1/4	3	TM5V0T13015SW	TM5V0T13015AW	TM5V0T13015BW	TM5V0T13015CW	TM5V0T13015DW	TM5V0T13015EW
5/8	5/8	1 1/4	3 1/2	TM5V0T16006SW	—	TM5V0T16006BW	TM5V0T16006CW	TM5V0T16006DW	—
3/4	3/4	1 1/2	4	TM5V0T19007SW	—	TM5V0T19007BW	TM5V0T19007CW	TM5V0T19007DW	TM5V0T19007EW
1	1	1 3/4	4	TM5V0T25008SW	—	TM5V0T25008BW	TM5V0T25008CW	TM5V0T25008DW	TM5V0T25008EW