



2017 Master Catalog

WIDIA  TM

General Purpose 4-Flute End Mills •

VariMill™ GP

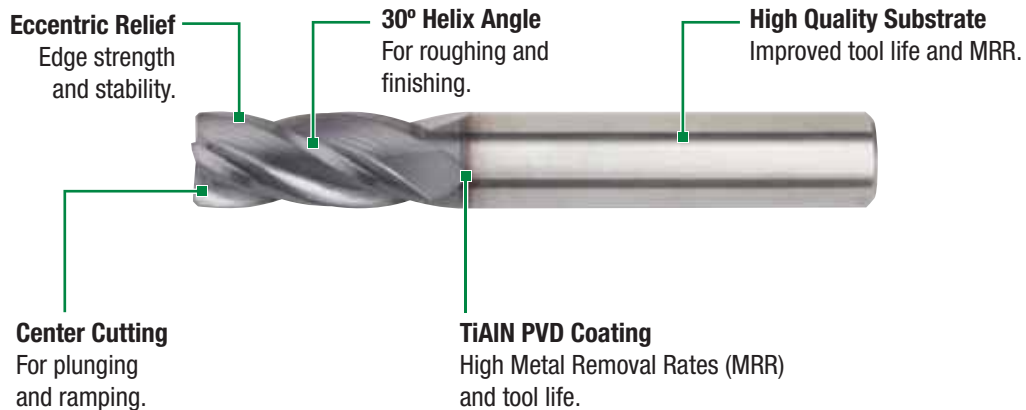
VariMill GP



VariMill GP offers plunging, slotting, and profiling for a wide range of materials and applications. Designed to provide high metal removal rates and excellent surface conditions at a value price. A wide range of diameters, lengths, and corner styles (such as chamfered, sharp edge, and ball nose) are available from stock.

VariMill GP • 4-Flute

- General purpose tools for a wide range of workpiece materials.
- Roughing and finishing with one tool.
- Various lengths-of-cut and overall lengths with different front-end designs available.
- Four flutes for high Metal Removal Rates (MRR) and tool life.



VariMill™ GP

- Increased manufacturing flexibility and reduced tooling cost.
- Less tool changes and high Metal Removal Rates (MRR).
- One tool required for roughing and finishing.
- Eccentric relief for improved edge stability and high tool life.
- Easy and cost-efficient regrinding due to eccentric relief.

I4C Series

- Wide range of lengths-of-cut — short, regular, long, and extra long.
- Steel, stainless steel, and cast iron.
- Corner chamfer for improved tool life.
- Center cut.



I4S Series

- Wide range of lengths-of-cut — short, regular, long, and extra long.
- Steel, stainless steel, and cast iron.

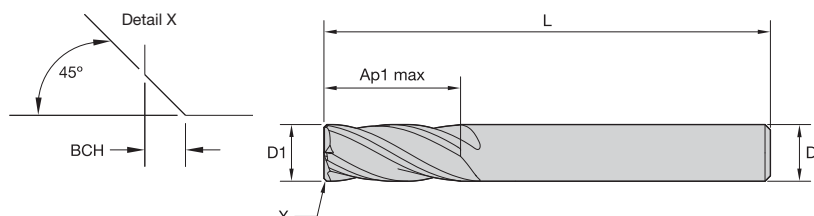
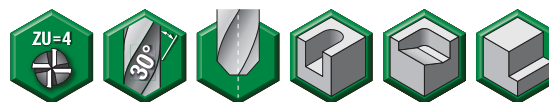


I4B Series

- Wide range of lengths-of-cut — short, regular, long, and extra long.
- Steel, stainless steel, and cast iron.
- Center cut ball nose.



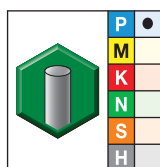
- Center cutting.
- Chamfered corners.
- Standard items listed. Additional styles and coatings made-to-order.



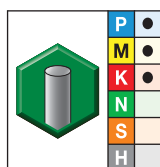
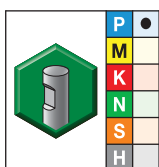
End Mill Tolerances

D1	tolerance e8	D	tolerance h6 + / -
All	+.000/- .002	≤ 1/8"	0/.00024
		> 1/8-1/4"	0/.00031
		> 1/4-3/8"	0/.00035
		> 3/8-23/32"	0/.00043
		> 23/32-1 3/16"	0/.00051

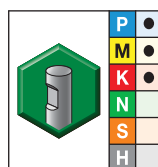
■ Series I4C • VariMill GP



grade UNCOATED

grade TiAlN
TiAlN

grade UNCOATED

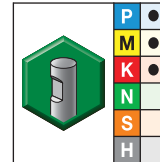
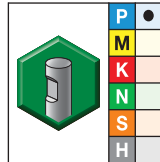
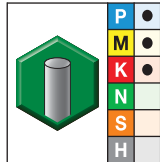
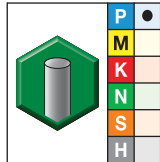
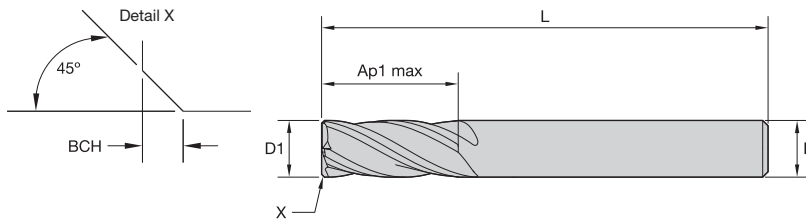
grade TiAlN
TiAlN

- first choice
- alternate choice

order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1	D	length of cut Ap1 max	length L	BCH
—	—	5825747	I4C0125T025S	—	—	—	—	1/8	1/8	1/4	1 1/2	.010
5825840	I4C0125T050R	5825748	I4C0125T050R	—	—	—	—	1/8	1/8	1/2	1 1/2	.010
—	—	5825749	I4C0125T075L	—	—	—	—	1/8	1/8	3/4	2 1/4	.010
5825851	I4C0125T100X	5825751	I4C0125T100X	—	—	—	—	1/8	1/8	1	3	.010
—	—	5825752	I4C0140T056R	—	—	—	—	9/64	3/16	9/16	2	.010
—	—	5825753	I4C0156T056R	—	—	—	—	5/32	3/16	9/16	2	.010
5825852	I4C0187T062R	5825754	I4C0187T062R	—	—	—	—	3/16	3/16	5/8	2	.010
—	—	5825756	I4C0187T075L	—	—	—	—	3/16	3/16	3/4	2 1/2	.010
—	—	5825755	I4C0187T075S	—	—	—	—	3/16	3/16	3/4	1 1/2	.010
—	—	5825757	I4C0187T112L	—	—	—	—	3/16	3/16	1 1/8	3	.010
—	—	5825758	I4C0187T112X	—	—	—	—	3/16	3/16	1 1/8	3 1/4	.010
5825853	I4C0187T112X	—	—	—	—	—	—	3/16	3/16	1 1/2	3	.010
—	—	5825759	I4C0203T062R	—	—	—	—	13/64	1/4	5/8	2 1/2	.016
—	—	5825760	I4C0218T043R	—	—	—	—	7/32	1/4	7/16	2	.016
—	—	5825761	I4C0218T062L	—	—	—	—	7/32	1/4	5/8	2 1/2	.016
—	—	5825762	I4C0234T075R	—	—	—	—	15/64	1/4	3/4	2 1/2	.016
5825854	I4C0250T050S	5825764	I4C0250T050S	—	—	—	—	1/4	1/4	1/2	2	.016
5825855	I4C0250T075R	5825765	I4C0250T075R	—	—	—	—	1/4	1/4	3/4	2 1/2	.016
5825856	I4C0250T112L	5825766	I4C0250T112L	—	—	—	—	1/4	1/4	1 1/8	3	.016
5825857	I4C0250T150X	5825767	I4C0250T150X	—	—	—	—	1/4	1/4	1 1/2	4	.016
—	—	5825768	I4C0265T075R	—	—	—	—	17/64	5/16	3/4	2 1/2	.016
—	—	5825769	I4C0281T075R	—	—	—	—	9/32	5/16	3/4	2 1/2	.016
—	—	5825770	I4C0296T081R	—	—	—	—	19/64	5/16	13/16	2 1/2	.016
5825858	I4C0312T050S	5825771	I4C0312T050S	—	—	—	—	5/16	5/16	1/2	2	.016

(continued)

(Series I4C • VariMill GP — continued)

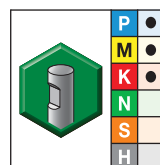
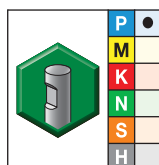
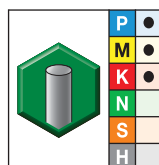
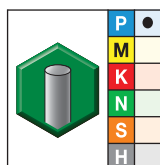
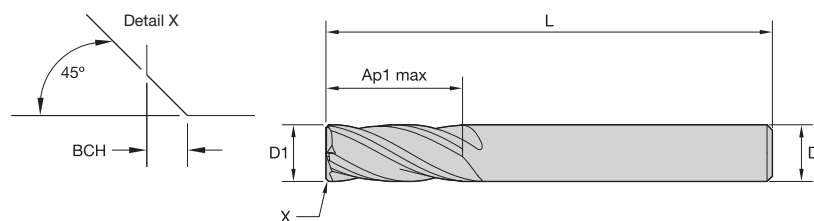


● first choice
○ alternate choice

grade UNCOATED		grade TiAlN		grade UNCOATED		grade TiAlN		D1	D	length of cut Ap1 max	length L	BCH
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #					
5825859	I4C0312T081R	5825772	I4C0312T081R	—	—	—	—	5/16	5/16	13/16	2 1/2	.016
5825860	I4C0312T112L	5825773	I4C0312T112L	—	—	—	—	5/16	5/16	1 1/8	3	.016
5825861	I4C0312T162X	5825774	I4C0312T162X	—	—	—	—	5/16	5/16	1 5/8	4	.016
—	—	5825775	I4C0328T100R	—	—	—	—	21/64	3/8	1	2 1/2	.020
—	—	5825776	I4C0343T100R	—	—	—	—	11/32	3/8	1	2 1/2	.020
—	—	5825777	I4C0359T100R	—	—	—	—	23/64	3/8	1	2 1/2	.020
5825862	I4C0375T062S	5825778	I4C0375T062S	—	—	—	—	3/8	3/8	5/8	2	.020
5825863	I4C0375T100R	5825779	I4C0375T100R	—	—	—	—	3/8	3/8	1	2 1/2	.020
5825864	I4C0375T112L	5825780	I4C0375T112L	—	—	—	—	3/8	3/8	1 1/8	3	.020
5825865	I4C0375T175X	5825781	I4C0375T175X	—	—	—	—	3/8	3/8	1 3/4	4	.020
—	—	5825782	I4C0390T100R	—	—	—	—	25/64	7/16	1	2 3/4	.020
—	—	5825783	I4C0406T100R	—	—	—	—	13/32	7/16	1	2 3/4	.020
—	—	5825784	I4C0421T100R	—	—	—	—	27/64	7/16	1	2 3/4	.020
—	—	5825786	I4C0437T100R	—	—	—	—	7/16	7/16	1	2 3/4	.020
5825866	I4C0437T100S	5825785	I4C0437T100S	—	—	—	—	7/16	7/16	1	2 1/2	.020
5825867	I4C0437T200L	5825787	I4C0437T200L	—	—	—	—	7/16	7/16	2	4	.020
5825868	I4C0437T300X	5825788	I4C0437T300X	—	—	—	—	7/16	7/16	3	6	.020
—	—	5825789	I4C0453T100R	—	—	—	—	29/64	1/2	1	3	.020
—	—	5825790	I4C0468T100R	—	—	—	—	15/32	1/2	1	3	.020
—	—	5825791	I4C0484T100R	—	—	—	—	31/64	1/2	1	3	.020
5825869	I4C0500T062S	5825792	I4C0500T062S	5825484	I4C0500W062S	5825461	I4C0500W062S	1/2	1/2	5/8	2 1/2	.020
5825870	I4C0500T100R	5825793	I4C0500T100R	5825485	I4C0500W100R	5825462	I4C0500W100R	1/2	1/2	1	3	.020
5825871	I4C0500T200L	5825794	I4C0500T200L	5825486	I4C0500W200L	5825463	I4C0500W200L	1/2	1/2	2	4	.020
5825872	I4C0500T300X	5825795	I4C0500T300X	—	—	5825464	I4C0500W300X	1/2	1/2	3	6	.020
5825873	I4C0562T075R	5825796	I4C0562T075R	—	—	5825465	I4C0562W075R	9/16	9/16	3/4	3	.020
5825874	I4C0562T125L	5825797	I4C0562T125L	5825487	I4C0562W125L	5825466	I4C0562W125L	9/16	9/16	1 1/4	3 1/2	.020
5825875	I4C0562T225X	5825798	I4C0562T225X	—	—	5825467	I4C0562W225X	9/16	9/16	2 1/4	5	.020
5825876	I4C0625T075S	5825799	I4C0625T075S	—	—	5825469	I4C0625W075S	5/8	5/8	3/4	3	.020
5825877	I4C0625T125R	5825800	I4C0625T125R	5825488	I4C0625W125R	5825470	I4C0625W125R	5/8	5/8	1 1/4	3 1/2	.020
5825878	I4C0625T225L	5825821	I4C0625T225L	5825489	I4C0625W225L	5825471	I4C0625W225L	5/8	5/8	2 1/4	5	.020
5825879	I4C0625T400X	5825822	I4C0625T400X	—	—	5825472	I4C0625W400X	5/8	5/8	4	7	.020
—	—	5825823	I4C0687T137R	—	—	—	—	11/16	3/4	1 3/8	4	.020
5825880	I4C0750T100S	5825824	I4C0750T100S	—	—	5825473	I4C0750W100S	3/4	3/4	1	3	.020
5825881	I4C0750T150R	5825825	I4C0750T150R	5825490	I4C0750W150R	5825474	I4C0750W150R	3/4	3/4	1 1/2	4	.020
5825882	I4C0750T225R	5825826	I4C0750T225R	5825491	I4C0750W225R	5825475	I4C0750W225R	3/4	3/4	2 1/4	5	.020
5825883	I4C0750T300L	5825827	I4C0750T300L	5825492	I4C0750W300L	5825476	I4C0750W300L	3/4	3/4	3	6	.020

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(Series I4C • VariMill GP — continued)

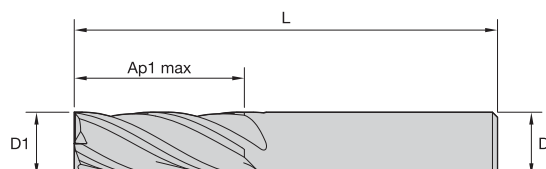


- first choice
○ alternate choice

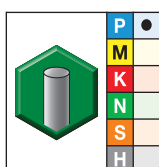
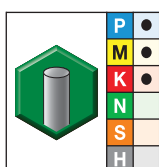
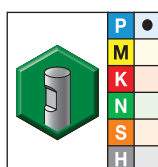
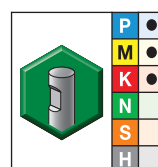
grade UNCOATED		grade TiAlN TiAlN		grade UNCOATED		grade TiAlN TiAlN		D1	D	length of cut Ap1 max	length L	BCH
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #					
5825884	I4C0750T400X	5825828	I4C0750T400X	—	—	5825477	I4C0750W400X	3/4	3/4	4	7	.020
—	—	5825829	I4C0812T150R	—	—	—	—	13/16	7/8	1 1/2	4	.020
5825885	I4C0875T150R	5825830	I4C0875T150R	5825493	I4C0875W150R	5825478	I4C0875W150R	7/8	7/8	1 1/2	4	.020
5825886	I4C0875T225L	5825831	I4C0875T225L	5825494	I4C0875W225L	5825479	I4C0875W225L	7/8	7/8	2 1/4	5	.020
5825887	I4C1000T150S	5825832	I4C1000T150S	—	—	5825480	I4C1000W150S	1	1	1 1/2	4	.020
5825888	I4C1000T225R	5825833	I4C1000T225R	5825495	I4C1000W225R	5825481	I4C1000W225R	1	1	2 1/4	5	.020
5825889	I4C1000T300L	5825834	I4C1000T300L	5825496	I4C1000W300L	5825482	I4C1000W300L	1	1	3	6	.020
5825890	I4C1000T400X	5825835	I4C1000T400X	—	—	5825483	I4C1000W400X	1	1	4	7	.020
5825891	I4C1250T200R	5825836	I4C1250T200R	—	—	—	—	1 1/4	1 1/4	2	4 1/2	.020

NOTE: For application data, please see pages N28–N29.

- Center cutting.
- Sharp corners.
- Standard items listed. Additional styles and coatings made-to-order.


End Mill Tolerances

D1	tolerance e8	D	tolerance h6 + / -
All	+ .000/- .002	≤ 1/8"	0/.00024
		> 1/8-1/4"	0/.00031
		> 1/4-3/8"	0/.00035
		> 3/8-23/32"	0/.00043
		> 23/32-1 3/16"	0/.00051

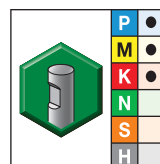
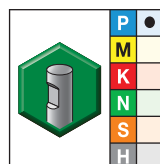
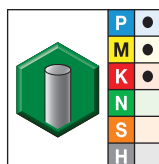
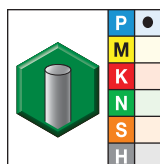
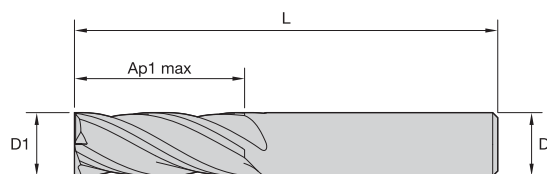
■ Series I4S • VariMill GP

grade UNCOATED

**grade TiAlN
TiAlN**

grade UNCOATED

**grade TiAlN
TiAlN**

- first choice
- alternate choice

order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1	D	length of cut Ap1 max	length L
—	—	5879053	I4S0016T003R	—	—	—	—	1/64	1/8	1/32	1 1/2
—	—	5879054	I4S0031T008R	—	—	—	—	1/32	1/8	5/64	1 1/2
5879198	I4S0062T010R	5879055	I4S0062T011R	—	—	—	—	1/16	1/8	7/64	1 1/2
5879199	I4S0078T019R	5879056	I4S0078T018R	—	—	—	—	5/64	1/8	3/16	1 1/2
5879200	I4S0094T037R	5879057	I4S0093T037R	—	—	—	—	3/32	1/8	3/8	1 1/2
—	—	5879058	I4S0093T062L	—	—	—	—	3/32	1/8	5/8	2
—	—	5879059	I4S0109T037R	—	—	—	—	7/64	1/8	3/8	1 1/2
—	—	5879060	I4S0125T025S	—	—	—	—	1/8	1/8	1/4	1 1/2
5879201	I4S0125T050R	5879131	I4S0125T050R	—	—	—	—	1/8	1/8	1/2	1 1/2
—	—	5879132	I4S0125T075L	—	—	—	—	1/8	1/8	3/4	2 1/4
5879202	I4S0125T100X	5879133	I4S0125T100X	—	—	—	—	1/8	1/8	1	3
—	—	5879134	I4S0140T056R	—	—	—	—	9/64	3/16	9/16	2
—	—	5879135	I4S0156T056R	—	—	—	—	5/32	3/16	9/16	2
5879203	I4S0187T062R	5879136	I4S0187T062R	—	—	—	—	3/16	3/16	5/8	2
—	—	5879137	I4S0187T075S	—	—	—	—	3/16	3/16	3/4	1 1/2
—	—	5879138	I4S0187T075L	—	—	—	—	3/16	3/16	3/4	2 1/2
5879204	I4S0187T112L	5879139	I4S0187T112L	—	—	—	—	3/16	3/16	1 1/8	3
—	—	5879140	I4S0187T112X	—	—	—	—	3/16	3/16	1 1/8	3 1/4
—	—	5879141	I4S0203T062R	—	—	—	—	13/64	1/4	5/8	2 1/2
—	—	5879142	I4S0218T043R	—	—	—	—	7/32	1/4	7/16	2
—	—	5879143	I4S0218T062L	—	—	—	—	7/32	1/4	5/8	2 1/2
—	—	5879144	I4S0234T075R	—	—	—	—	15/64	1/4	3/4	2 1/2
5879205	I4S0250T050S	5879145	I4S0250T050S	—	—	—	—	1/4	1/4	1/2	2
5879206	I4S0250T075R	5879146	I4S0250T075R	—	—	—	—	1/4	1/4	3/4	2 1/2

(continued)

(Series I4S • VariMill GP — continued)

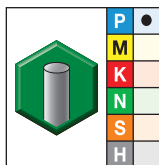
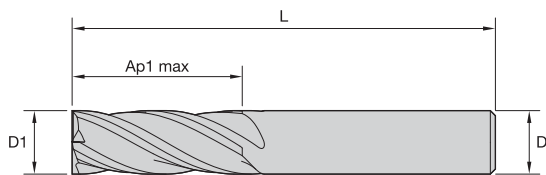


- first choice
○ alternate choice

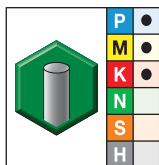
grade UNCOATED		grade TiAlN TiAlN		grade UNCOATED		grade TiAlN TiAlN		D1	D	length of cut Ap1 max	length L
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #				
5879207	I4S0250T112L	5879147	I4S0250T112L	—	—	—	—	1/4	1/4	1 1/8	3
5879208	I4S0250T150X	5879148	I4S0250T150X	—	—	—	—	1/4	1/4	1 1/2	4
—	—	5879149	I4S0265T075R	—	—	—	—	17/64	5/16	3/4	2 1/2
—	—	5879150	I4S0281T075R	—	—	—	—	9/32	5/16	3/4	2 1/2
—	—	5879151	I4S0296T081R	—	—	—	—	19/64	5/16	13/16	2 1/2
5879209	I4S0312T050S	5879152	I4S0312T050S	—	—	—	—	5/16	5/16	1/2	2
5879210	I4S0312T081R	5879153	I4S0312T081R	—	—	—	—	5/16	5/16	13/16	2 1/2
5879211	I4S0312T112L	5879154	I4S0312T112L	—	—	—	—	5/16	5/16	1 1/8	3
5879212	I4S0312T162X	5879155	I4S0312T162X	—	—	—	—	5/16	5/16	1 5/8	4
—	—	5879156	I4S0328T100R	—	—	—	—	21/64	3/8	1	2 1/2
—	—	5879157	I4S0343T100R	—	—	—	—	11/32	3/8	1	2 1/2
—	—	5879158	I4S0359T100R	—	—	—	—	23/64	3/8	1	2 1/2
5879213	I4S0375T062S	5879159	I4S0375T062S	—	—	—	—	3/8	3/8	5/8	2
5879214	I4S0375T100R	5879160	I4S0375T100R	—	—	—	—	3/8	3/8	1	2 1/2
5879215	I4S0375T112L	5879161	I4S0375T112L	—	—	—	—	3/8	3/8	1 1/8	3
5879216	I4S0375T175X	5879162	I4S0375T175X	—	—	—	—	3/8	3/8	1 3/4	4
—	—	5879163	I4S0390T100R	—	—	—	—	25/64	7/16	1	2 3/4
—	—	5879164	I4S0406T100R	—	—	—	—	13/32	7/16	1	2 3/4
—	—	5879165	I4S0421T100R	—	—	—	—	27/64	7/16	1	2 3/4
5879217	I4S0437T100S	5879166	I4S0437T100S	—	—	—	—	7/16	7/16	1	2 1/2
—	—	5879167	I4S0437T100R	—	—	—	—	7/16	7/16	1	2 3/4
5879218	I4S0437T200L	5879168	I4S0437T200L	—	—	—	—	7/16	7/16	2	4
5879219	I4S0437T300X	5879169	I4S0437T300X	—	—	—	—	7/16	7/16	3	6
—	—	5879170	I4S0453T100R	—	—	—	—	29/64	1/2	1	3
—	—	5879171	I4S0468T100R	—	—	—	—	15/32	1/2	1	3
—	—	5879172	I4S0484T100R	—	—	—	—	31/64	1/2	1	3
5879220	I4S0500T062S	5879173	I4S0500T062S	5879568	I4S0500W062S	5879526	I4S0500W062S	1/2	1/2	5/8	2 1/2
5879221	I4S0500T100R	5879174	I4S0500T100R	5879569	I4S0500W100R	5879527	I4S0500W100R	1/2	1/2	1	3
5879222	I4S0500T200L	5879175	I4S0500T200L	5879570	I4S0500W200L	5879528	I4S0500W200L	1/2	1/2	2	4
5879223	I4S0500T300X	5879176	I4S0500T300X	—	—	5879529	I4S0500W300X	1/2	1/2	3	6
5879224	I4S0562T075R	5879177	I4S0562T075R	—	—	5879530	I4S0562W075R	9/16	9/16	3/4	3
5879225	I4S0562T125L	5879178	I4S0562T125L	5879571	I4S0562W125L	5879551	I4S0562W125L	9/16	9/16	1 1/4	3 1/2
5879226	I4S0562T225X	5879179	I4S0562T225X	—	—	5879552	I4S0562W225X	9/16	9/16	2 1/4	5
5879227	I4S0625T075S	5879180	I4S0625T075S	—	—	5879553	I4S0625W075S	5/8	5/8	3/4	3
5879228	I4S0625T125R	5879181	I4S0625T125R	5879572	I4S0625W125R	5879554	I4S0625W125R	5/8	5/8	1 1/4	3 1/2
5879229	I4S0625T225L	5879182	I4S0625T225L	5879573	I4S0625W225L	5879555	I4S0625W225L	5/8	5/8	2 1/4	5

(continued)

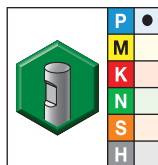
(Series I4S • VariMill GP — continued)



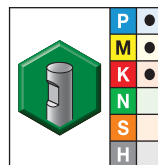
grade UNCOATED



grade TiAlN
TiAlN



grade UNCOATED



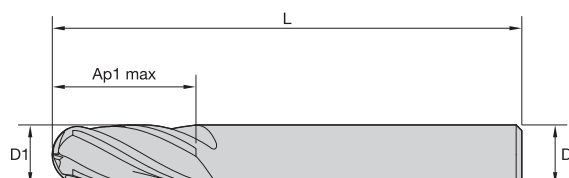
grade TiAlN
TiAlN

- first choice
- alternate choice

order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1	D	length of cut Ap1 max	length L
5879230	I4S0625T400X	5879183	I4S0625T400X	—	—	5879556	I4S0625W400X	5/8	5/8	4	7
—	—	5879184	I4S0687T137R	—	—	—	—	11/16	3/4	1 3/8	4
5879241	I4S0750T100S	5879185	I4S0750T100S	—	—	5879557	I4S0750W100S	3/4	3/4	1	3
5879242	I4S0750T150R	5879186	I4S0750T150R	5879574	I4S0750W150R	5879558	I4S0750W150R	3/4	3/4	1 1/2	4
5879243	I4S0750T225R	5879187	I4S0750T225R	5879575	I4S0750W225R	5879559	I4S0750W225R	3/4	3/4	2 1/4	5
5879244	I4S0750T300L	5879188	I4S0750T300L	5879576	I4S0750W300L	5879560	I4S0750W300L	3/4	3/4	3	6
5879245	I4S0750T400X	5879189	I4S0750T400X	—	—	5879561	I4S0750W400X	3/4	3/4	4	7
—	—	5879190	I4S0812T150R	—	—	—	—	13/16	7/8	1 1/2	4
5879246	I4S0875T150R	5879191	I4S0875T150R	5879577	I4S0875W150R	5879562	I4S0875W150R	7/8	7/8	1 1/2	4
5879247	I4S0875T225L	5879192	I4S0875T225L	5879578	I4S0875W225L	5879563	I4S0875W225L	7/8	7/8	2 1/4	5
5879248	I4S1000T150S	5879193	I4S1000T150S	—	—	5879564	I4S1000W150S	1	1	1 1/2	4
5879249	I4S1000T225R	5879194	I4S1000T225R	5879579	I4S1000W225R	5879565	I4S1000W225R	1	1	2 1/4	5
5879250	I4S1000T300L	5879195	I4S1000T300L	5879580	I4S1000W300L	5879566	I4S1000W300L	1	1	3	6
5879261	I4S1000T400X	5879196	I4S1000T400X	—	—	5879567	I4S1000W400X	1	1	4	7
5879262	I4S1250T200R	5879197	I4S1250T200R	—	—	—	—	1 1/4	1 1/4	2	4 1/2

NOTE: For application data, please see pages N28–N29.

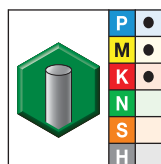
- Center cutting.
- Standard items listed. Additional styles and coatings made-to-order.



End Mill Tolerances

D1	tolerance e8	D	tolerance h6 + / -
All	+.000/- .002	≤ 1/8"	0/.00024
		> 1/8-1/4"	0/.00031
		> 1/4-3/8"	0/.00035
		> 3/8-23/32"	0/.00043
		> 23/32-1 3/16"	0/.00051

■ Series I4B • VariMill GP

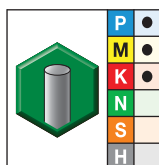
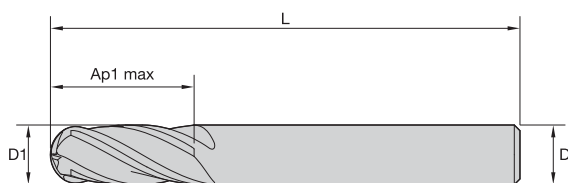
grade TiAlN
TiAlN

- first choice
- alternate choice

order #	catalog #	D1	D	length of cut Ap1 max	length L
5825624	I4B0031T008R	1/32	1/8	5/64	1 1/2
5825625	I4B0047T012R	3/64	1/8	1/8	1 1/2
5825626	I4B0062T019R	1/16	1/8	3/16	1 1/2
5825627	I4B0078T019R	5/64	1/8	3/16	1 1/2
5825628	I4B0094T019R	3/32	1/8	3/16	1 1/2
5825643	I4B0094T037L	3/32	1/8	3/8	1 1/2
5825645	I4B0109T037R	7/64	1/8	3/8	1 1/2
5825646	I4B0125T025S	1/8	1/8	1/4	1 1/2
5825647	I4B0125T050R	1/8	1/8	1/2	1 1/2
5825648	I4B0125T075L	1/8	1/8	3/4	2 1/4
5825649	I4B0125T075X	1/8	1/8	3/4	3
5825650	I4B0141T056R	9/64	3/16	9/16	2
5825651	I4B0156T031R	5/32	3/16	5/16	2
5825652	I4B0156T056L	5/32	3/16	9/16	2
5825653	I4B0172T062R	11/64	3/16	5/8	2
5825654	I4B0187T031S	3/16	3/16	5/16	1 1/2
5825655	I4B0187T062R	3/16	3/16	5/8	2
5825656	I4B0187T075L	3/16	3/16	3/4	2 1/2
5825657	I4B0187T100X	3/16	3/16	1	4
5825658	I4B0203T062R	13/64	1/4	5/8	2 1/2
5825659	I4B0219T062R	7/32	1/4	5/8	2 1/2
5825660	I4B0234T075R	15/64	1/4	3/4	2 1/2
5825661	I4B0250T050S	1/4	1/4	1/2	2
5825663	I4B0250T075R	1/4	1/4	3/4	2 1/2

(continued)

(Series I4B • VariMill GP — continued)



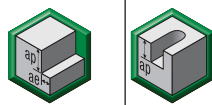
grade TiAlN
TiAlN

● first choice
○ alternate choice

order #	catalog #	D1	D	length of cut Ap1 max	length L
5825664	I4B0250T112R	1/4	1/4	1 1/8	3
5825665	I4B0250T150L	1/4	1/4	1 1/2	4
5825666	I4B0250T150X	1/4	1/4	1 1/2	6
5825667	I4B0266T075R	17/64	5/16	3/4	2 1/2
5825668	I4B0281T075R	9/32	5/16	3/4	2 1/2
5825669	I4B0312T050S	5/16	5/16	1/2	2
5825670	I4B0312T081R	5/16	5/16	13/16	2 1/2
5825681	I4B0312T112L	5/16	5/16	1 1/8	3
5825682	I4B0312T162X	5/16	5/16	1 5/8	4
5825683	I4B0344T100R	11/32	3/8	1	2 1/2
5825684	I4B0375T100S	3/8	3/8	1	2 1/2
5825685	I4B0375T100L	3/8	3/8	1	4
5825686	I4B0375T112R	3/8	3/8	1 1/8	3
5825687	I4B0375T150X	3/8	3/8	1 1/2	6
5825688	I4B0437T100R	7/16	1/2	1	2 1/2
5825689	I4B0500T100S	1/2	1/2	1	3
5825690	I4B0500T100R	1/2	1/2	1	4
5825691	I4B0500T150X	1/2	1/2	1 1/2	6
5825693	I4B0500T200L	1/2	1/2	2	4 1/2
5825692	I4B0500T200R	1/2	1/2	2	4
5825694	I4B0500T300X	1/2	1/2	3	6
5825695	I4B0562T125R	9/16	9/16	1 1/4	3 1/2
5825696	I4B0625T075S	5/8	5/8	3/4	3
5825697	I4B0625T125R	5/8	5/8	1 1/4	3 1/2
5825698	I4B0625T225L	5/8	5/8	2 1/4	5
5825699	I4B0625T300X	5/8	5/8	3	6
5825700	I4B0750T100R	3/4	3/4	1	3
5825711	I4B0750T150L	3/4	3/4	1 1/2	4
5825712	I4B0750T300X	3/4	3/4	3	6
5825713	I4B0875T150R	7/8	7/8	1 1/2	4
5825714	I4B1000T150R	1	1	1 1/2	4
5825715	I4B1000T225L	1	1	2 1/4	5

NOTE: For application data, please see page N30.

■ Series I4C..S I4S..S I4C..R I4S..R • TiAlN • VariMill GP

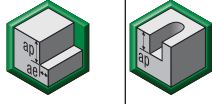
Material Group																						
	Side Milling (A) and Slotting (B)				TiAlN		Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.															
	A		B	Cutting Speed — vc SFM		frac.	D1 — Diameter															
	ap	ae	ap	min	max		dec.	1/64	1/32	1/16	5/64	3/32	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1	
P	0	Ap1 max	0.1 x D	0.5 x D	490	– 660	IPT	.0001	.0002	.0004	.0005	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049	
	1	Ap1 max	0.1 x D	0.5 x D	490	– 660	IPT	.0001	.0002	.0004	.0005	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049	
	2	Ap1 max	0.1 x D	0.5 x D	460	– 620	IPT	.0001	.0002	.0004	.0005	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049	
	3	Ap1 max	0.1 x D	0.5 x D	390	– 520	IPT	.0001	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045	
	4	Ap1 max	0.1 x D	0.5 x D	300	– 490	IPT	.0001	.0002	.0003	.0004	.0005	.0007	.0010	.0014	.0017	.0020	.0026	.0030	.0034	.0039	
M	1	Ap1 max	0.1 x D	0.5 x D	300	– 380	IPT	.0001	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045	
	2	Ap1 max	0.1 x D	0.5 x D	200	– 260	IPT	.0001	.0001	.0003	.0004	.0004	.0006	.0009	.0012	.0016	.0018	.0023	.0027	.0031	.0036	
K	1	Ap1 max	0.1 x D	0.5 x D	390	– 490	IPT	.0001	.0002	.0004	.0005	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049	
	2	Ap1 max	0.1 x D	0.5 x D	360	– 460	IPT	.0001	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045	

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.

Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.

Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

■ Series I4C..S I4S..S I4C..R I4S..R • Uncoated • VariMill GP

Material Group																				
	Side Milling (A) and Slotting (B)			uncoated		Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.														
	A		B	Cutting Speed — vc SFM		D1 — Diameter														
	ap	ae	ap	min	max	dec.	1/16	5/64	3/32	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1		
P	0	Ap1 max	0.1 x D	0.5 x D	390	– 520	IPT	.0004	.0005	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049	
	1	1.25 x D	0.1 x D	0.5 x D	390	– 520	IPT	.0004	.0005	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049	
	2	1.25 x D	0.1 x D	0.5 x D	370	– 500	IPT	.0004	.0005	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049	

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.

Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.

Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

■ Series I4C..L I4S..L I4C..X I4S..X • TiAlN • VariMill GP

Material Group																	
		Side Milling (A)		TiAlN			Recommended feed per tooth (IPT = inch/th) for side milling (A).										
							D1 — Diameter										
							frac.	3/32	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
A		Cutting Speed — vc SFM			dec.	.0938	.1250	.1875	.2500	.3125	.3750	.5000	.6250	.7500	1.0000		
ap ae		min		max	dec.	.0938	.1250	.1875	.2500	.3125	.3750	.5000	.6250	.7500	1.0000		
P	0	Ap1 max	0.1 x D	490	–	660	IPT	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	1	Ap1 max	0.1 x D	490	–	660	IPT	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	2	Ap1 max	0.1 x D	460	–	620	IPT	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	3	Ap1 max	0.1 x D	390	–	520	IPT	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	4	Ap1 max	0.1 x D	300	–	490	IPT	.0005	.0007	.0010	.0014	.0017	.0020	.0026	.0030	.0034	.0039
M	1	Ap1 max	0.1 x D	300	–	380	IPT	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	2	Ap1 max	0.1 x D	200	–	260	IPT	.0004	.0006	.0009	.0012	.0016	.0018	.0023	.0027	.0031	.0036
K	1	Ap1 max	0.1 x D	390	–	490	IPT	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	2	Ap1 max	0.1 x D	360	–	460	IPT	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.

Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.

Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

■ Series I4C..L I4S..L I4C..X I4S..X • Uncoated • VariMill GP

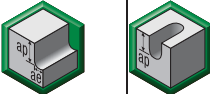
Material Group																	
		Side Milling (A)		uncoated		Recommended feed per tooth (IPT = inch/th) for side milling (A).											
		A		Cutting Speed — vc SFM			D1 — Diameter										
						frac.	3/32	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1	
		ap	ae	min		max	dec.	.0938	.1250	.1875	.2500	.3125	.3750	.5000	.6250	.7500	1.0000
P	0	Ap1 max	0.1 x D	390	–	520	IPT	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	1	Ap1 max	0.1 x D	390	–	520	IPT	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	2	Ap1 max	0.1 x D	370	–	500	IPT	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.

Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.

Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

■ Series I4B..S I4B..R • TiAlN • VariMill GP

Material Group																						
		Side Milling (A) and Slotting (B)			TiAlN		Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.															
							D1 – Diameter															
		A		B	Cutting Speed – vc SFM		frac.	1/64	1/32	1/16	5/64	3/32	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1	
ap	ae	ap	min	max	dec.	.0156	.0313	.0625	.0781	.0938	.1250	.1875	.2500	.3125	.3750	.5000	.6250	.7500	1.0000			
P	0	Ap1 max	0.1 x D	0.5 x D	490	–	660	IPT	.0001	.0002	.0004	.0005	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	1	Ap1 max	0.1 x D	0.5 x D	490	–	660	IPT	.0001	.0002	.0004	.0005	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	2	Ap1 max	0.1 x D	0.5 x D	460	–	620	IPT	.0001	.0002	.0004	.0005	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	3	Ap1 max	0.1 x D	0.5 x D	390	–	520	IPT	.0001	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	4	Ap1 max	0.1 x D	0.5 x D	300	–	490	IPT	.0001	.0002	.0003	.0004	.0005	.0007	.0010	.0014	.0017	.0020	.0026	.0030	.0034	.0039
M	1	Ap1 max	0.1 x D	0.5 x D	300	–	380	IPT	.0001	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	2	Ap1 max	0.1 x D	0.5 x D	200	–	260	IPT	.0001	.0001	.0003	.0004	.0004	.0006	.0009	.0012	.0016	.0018	.0023	.0027	.0031	.0036
K	1	Ap1 max	0.1 x D	0.5 x D	390	–	490	IPT	.0001	.0002	.0004	.0005	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	2	Ap1 max	0.1 x D	0.5 x D	360	–	460	IPT	.0001	.0002	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045

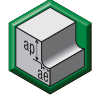
NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.

Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.

Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

Application Data • Series I4B..L I4B..X • VariMill GP

■ Series I4B..L I4B..X • TiAlN • VariMill GP

Material Group																				
	Side Milling (A)		TiAlN		Recommended feed per tooth (IPT = inch/th) for side milling (A).															
	A		Cutting Speed — vc SFM		D1 — Diameter															
	ap	ae	min		max	frac.	3/32	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1				
	ap	ae	min		max	dec.	.0938	.1250	.1875	.2500	.3125	.3750	.5000	.6250	.7500	1.0000				
P	0	Ap1 max	0.1 x D		490	–	660	IPT	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049		
	1	Ap1 max	0.1 x D		490	–	660	IPT	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049		
	2	Ap1 max	0.1 x D		460	–	620	IPT	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049		
	3	Ap1 max	0.1 x D		390	–	520	IPT	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045		
	4	Ap1 max	0.1 x D		300	–	490	IPT	.0005	.0007	.0010	.0014	.0017	.0020	.0026	.0030	.0034	.0039		
M	1	Ap1 max	0.1 x D		300	–	380	IPT	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045		
	2	Ap1 max	0.1 x D		200	–	260	IPT	.0004	.0006	.0009	.0012	.0016	.0018	.0023	.0027	.0031	.0036		
K	1	Ap1 max	0.1 x D		390	–	490	IPT	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049		
	2	Ap1 max	0.1 x D		360	–	460	IPT	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045		

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.

Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.

Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



I	4	S	0250	T	075	R
Standard	Flutes	End Mill Style	Diameter Inch	Shank Style	Ap1 max Inch	Length
Inch	2 = 2 Flutes 4 = 4 Flutes	S = Sharp Edge C = Chamfer B = Ball Nose		T = Plain Shank W = Weldon® Shank		S = Stub R = Regular L = Long X = Extra Long