



2017 Master Catalog

WIDIA  TM

General Purpose 2-Flute End Mills •

VariMill™ GP

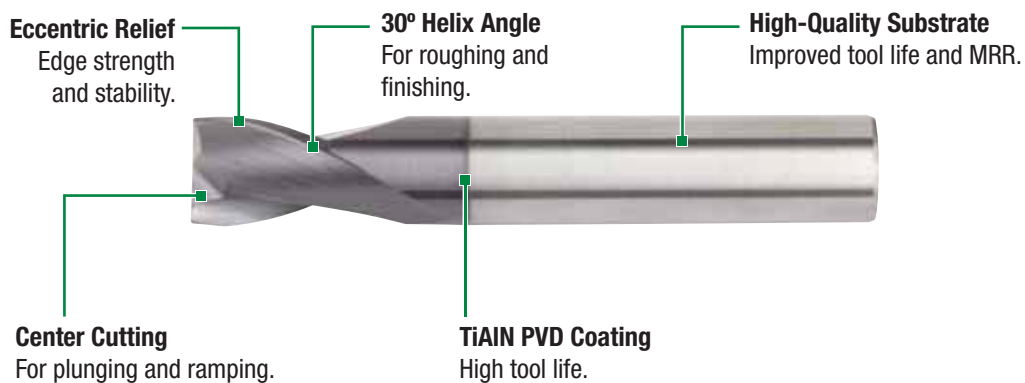
VariMill GP



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 • 2-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.
- Two flutes for high flexibility in unstable conditions.

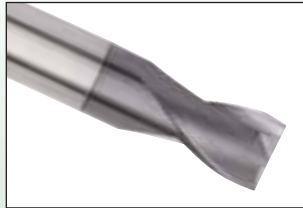


VariMill™ GP

- Increased manufacturing flexibility and reduced tool cost.
- Fewer tool changes and high Metal Removal Rates (MRR).
- No specific tool for roughing and finishing required.
- Eccentric relief for improved edge stability and high tool life.
- Easy and cost-efficient regrinding due to eccentric relief.

I2C Series

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



I2S Series

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

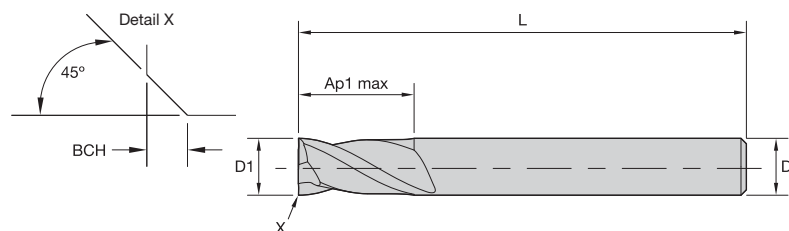
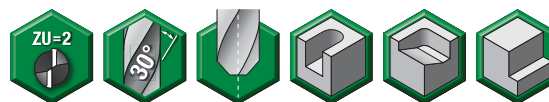


I2B Series

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



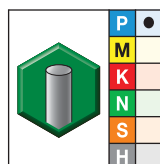
- Center cutting.
- Chamfered corners.
- Standard items listed. Additional styles and coatings made-to-order.



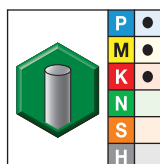
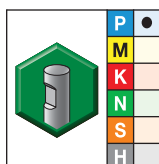
End Mill Tolerances

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

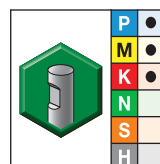
■ Series I2C • VariMill GP



grade UNCOATED

grade TiAlN
TiAlN

grade UNCOATED

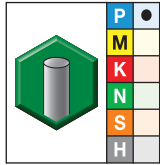
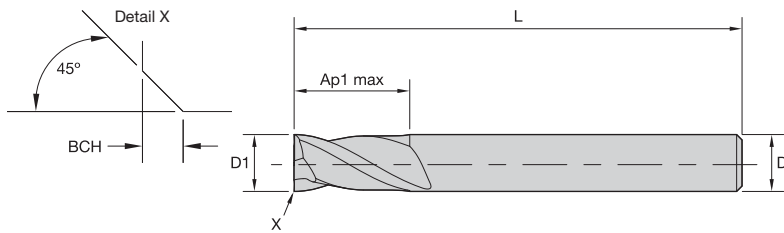
grade TiAlN
TiAlN

- first choice
- alternate choice

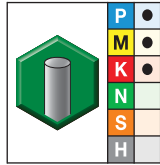
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5877923	I2C0125T025S	5873898	I2C0125T025S	—	—	—	—	1/8	1/8	1/4	1 1/2	.010
5877924	I2C0125T050R	5873899	I2C0125T050R	—	—	—	—	1/8	1/8	1/2	1 1/2	.010
5877925	I2C0125T075L	5873900	I2C0125T075L	—	—	—	—	1/8	1/8	3/4	2 1/4	.010
5877926	I2C0125T075X	5873901	I2C0125T075X	—	—	—	—	1/8	1/8	3/4	3	.010
5877927	I2C0141T056R	5873902	I2C0141T056R	—	—	—	—	9/64	3/16	9/16	2	.010
5877928	I2C0156T031R	5873903	I2C0156T031R	—	—	—	—	5/32	3/16	5/16	2	.010
5877929	I2C0156T056L	5873904	I2C0156T056L	—	—	—	—	5/32	3/16	9/16	2	.010
5877930	I2C0172T062R	5873905	I2C0172T062R	—	—	—	—	11/64	3/16	5/8	2	.010
—	—	5873906	I2C0188T031S	—	—	—	—	3/16	3/16	5/16	1 1/2	.010
5877931	I2C0188T062R	5873907	I2C0188T062R	—	—	—	—	3/16	3/16	5/8	2	.010
5877932	I2C0188T075L	5873908	I2C0188T075L	—	—	—	—	3/16	3/16	3/4	2 1/2	.010
5877933	I2C0188T112X	5873909	I2C0188T112X	—	—	—	—	3/16	3/16	1 1/8	3	.010
5877934	I2C0219T043R	5873910	I2C0219T043R	—	—	—	—	7/32	1/4	7/16	2	.016
5877935	I2C0219T062L	5873911	I2C0219T062L	—	—	—	—	7/32	1/4	5/8	2 1/2	.016
5877936	I2C0250T050S	5873912	I2C0250T050S	—	—	—	—	1/4	1/4	1/2	2	.016
5877937	I2C0250T075R	5873913	I2C0250T075R	—	—	—	—	1/4	1/4	3/4	2 1/2	.016
5877938	I2C0250T112R	5873914	I2C0250T112L	—	—	—	—	1/4	1/4	1 1/8	3	.016
5877939	I2C0250T125L	—	—	—	—	—	—	1/4	1/4	1 1/4	3 1/2	.016
5877940	I2C0250T150X	5873915	I2C0250T150X	—	—	—	—	1/4	1/4	1 1/2	4	.016
5877951	I2C0281T075R	5873916	I2C0281T075R	—	—	—	—	9/32	5/16	3/4	2 1/2	.016
5878021	I2C0312T050S	5873986	I2C0312T050S	—	—	—	—	5/16	5/16	1/2	2	.016
5877952	I2C0312T081R	5873917	I2C0312T081R	—	—	—	—	5/16	5/16	13/16	2 1/2	.016
5877953	I2C0312T112L	5873918	I2C0312T112L	—	—	—	—	5/16	5/16	1 1/8	3	.016
5877954	I2C0312T162X	5873919	I2C0312T162X	—	—	—	—	5/16	5/16	1 5/8	4	.016

(continued)

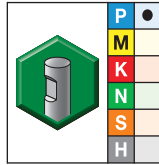
(Series I2C • VariMill GP — continued)



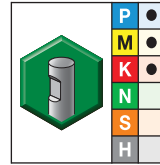
grade UNCOATED



grade TiAlN
TiAlN



grade UNCOATED



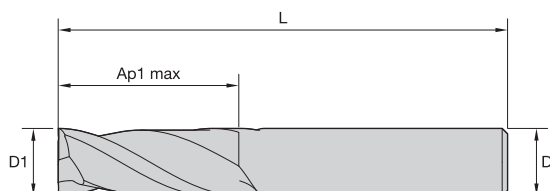
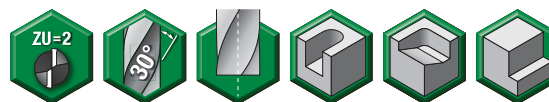
grade TiAlN
TiAlN

● first choice
○ alternate choice

order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1	D	length of cut Ap1 max	length L	BCH
5877955	I2C0344T100R	5873920	I2C0344T100R	—	—	—	—	11/32	3/8	1	2 1/2	.020
5877956	I2C0375T062S	5873921	I2C0375T062S	—	—	—	—	3/8	3/8	5/8	2	.020
5877957	I2C0375T100R	5873922	I2C0375T100R	—	—	—	—	3/8	3/8	1	2 1/2	.020
5877958	I2C0375T112R	5873923	I2C0375T112R	—	—	—	—	3/8	3/8	1 1/8	3	.020
5877959	I2C0375T175L	5873924	I2C0375T175L	—	—	—	—	3/8	3/8	1 3/4	4	.020
5877960	I2C0375T300X	5873925	I2C0375T300X	—	—	—	—	3/8	3/8	3	6	.020
5877961	I2C0406T100R	5873926	I2C0406T100R	—	—	—	—	13/32	7/16	1	2 3/4	.020
5877962	I2C0437T062S	5873927	I2C0437T062S	—	—	—	—	7/16	7/16	5/8	2 1/2	.020
5877963	I2C0437T100R	5873928	I2C0437T100R	—	—	—	—	7/16	7/16	1	2 1/2	.020
5877964	I2C0437T200L	5873929	I2C0437T200L	—	—	—	—	7/16	7/16	2	4	.020
5877965	I2C0437T300X	5873930	I2C0437T300X	—	—	—	—	7/16	7/16	3	6	.020
5877967	I2C0469T100R	5873931	I2C0469T100R	—	—	—	—	15/32	1/2	1	3	.020
5877968	I2C0500T062S	5873932	I2C0500T062S	—	—	—	—	1/2	1/2	5/8	2 1/2	.020
5877969	I2C0500T100R	5873933	I2C0500T100R	5878002	I2C0500W100R	5873966	I2C0500W100R	1/2	1/2	1	3	.020
5877970	I2C0500T200L	5873934	I2C0500T200L	5878003	I2C0500W200L	5873967	I2C0500W200L	1/2	1/2	2	4	.020
5877971	I2C0500T300X	5873935	I2C0500T300X	5878004	I2C0500W300X	5873968	I2C0500W300X	1/2	1/2	3	6	.020
5877972	I2C0562T075R	5873936	I2C0562T075R	5878005	I2C0562W075R	5873969	I2C0562W075R	9/16	9/16	3/4	3	.020
5877973	I2C0562T125L	5873937	I2C0562T125L	5878006	I2C0562W125L	5873971	I2C0562W125L	9/16	9/16	1 1/4	3 1/2	.020
5877974	I2C0562T225X	5873938	I2C0562T225X	5878007	I2C0562W225X	5873972	I2C0562W225X	9/16	9/16	2 1/4	5	.020
5877975	I2C0625T075S	5873939	I2C0625T075S	—	—	—	—	5/8	5/8	3/4	3	.020
5877976	I2C0625T125R	5873940	I2C0625T125R	5878008	I2C0625W125R	5873973	I2C0625W125R	5/8	5/8	1 1/4	3 1/2	.020
5877977	I2C0625T225R	5873951	I2C0625T225R	5878009	I2C0625W225R	5873974	I2C0625W225R	5/8	5/8	2 1/4	5	.020
5877978	I2C0625T300L	5873952	I2C0625T300L	5878010	I2C0625W300L	5873975	I2C0625W300L	5/8	5/8	3	6	.020
5877979	I2C0625T400X	5873953	I2C0625T400X	5878011	I2C0625W400X	5873976	I2C0625W400X	5/8	5/8	4	7	.020
5877980	I2C0687T137R	5873954	I2C0687T137R	5878012	I2C0687W137R	5873977	I2C0687W137R	11/16	3/4	1 3/8	4	.020
5877991	I2C0750T100S	5873955	I2C0750T100S	—	—	—	—	3/4	3/4	1	3	.020
5877992	I2C0750T150R	5873956	I2C0750T150R	—	—	—	—	3/4	3/4	1 1/2	4	.020
5877993	I2C0750T225R	5873957	I2C0750T225R	5878013	I2C0750W225R	5873978	I2C0750W225R	3/4	3/4	2 1/4	5	.020
5877994	I2C0750T300L	5873958	I2C0750T300L	5878014	I2C0750W300L	5873979	I2C0750W300L	3/4	3/4	3	6	.020
5877995	I2C0750T400X	5873959	I2C0750T400X	5878015	I2C0750W400X	5873980	I2C0750W400X	3/4	3/4	4	7	.020
5877996	I2C0875T150R	5873960	I2C0875T150R	5878016	I2C0875W150R	5873981	I2C0875W150R	7/8	7/8	1 1/2	4	.020
5877997	I2C0875T225L	5873961	I2C0875T225L	5878017	I2C0875W225L	5873982	I2C0875W225L	7/8	7/8	2 1/4	5	.020
5877998	I2C1000T150S	5873962	I2C1000T150S	—	—	—	—	1	1	1 1/2	4	.020
5877999	I2C1000T225R	5873963	I2C1000T225R	5878018	I2C1000W225R	5873983	I2C1000W225R	1	1	2 1/4	5	.020
5878000	I2C1000T300L	5873964	I2C1000T300L	5878019	I2C1000W300L	5873984	I2C1000W300L	1	1	3	6	.020
5878001	I2C1000T400X	5873965	I2C1000T400X	5878020	I2C1000W400X	5873985	I2C1000W400X	1	1	4	7	.020

NOTE: For application data, please see pages N11–N12.

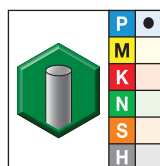
- Center cutting.
- Sharp corners.
- Standard items listed. Additional styles and coatings made-to-order.



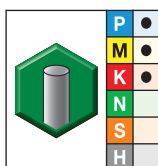
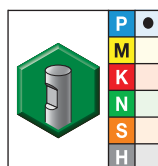
End Mill Tolerances

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

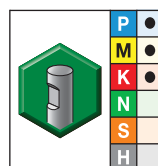
■ Series I2S • VariMill GP



grade UNCOATED

grade TiAlN
TiAlN

grade UNCOATED

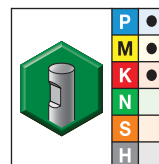
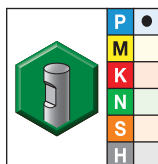
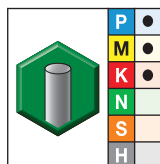
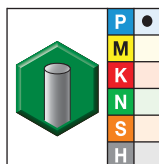
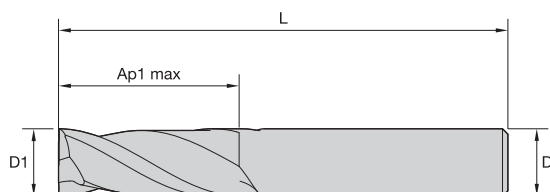
grade TiAlN
TiAlN

- first choice
- alternate choice

order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1	D	length of cut Ap1 max	length L
5873648	I2S0016T003R	5872793	I2S0016T003R	—	—	—	—	1/64	1/8	1/32	1 1/2
5873649	I2S0031T007R	5872794	I2S0031T007R	—	—	—	—	1/32	1/8	5/64	1 1/2
5873661	I2S0062T012R	5872796	I2S0062T012R	—	—	—	—	1/16	1/8	1/8	1 1/2
5873650	I2S0062T018L	5872795	I2S0062T018L	—	—	—	—	1/16	1/8	3/16	1 1/2
5873662	I2S0062T050X	5872797	I2S0062T050X	—	—	—	—	1/16	1/8	1/2	2
5873663	I2S0078T018R	5872798	I2S0078T018R	—	—	—	—	5/64	1/8	3/16	1 1/2
5873664	I2S0094T018S	5872799	I2S0094T018S	—	—	—	—	3/32	1/8	3/16	1 1/2
5873665	I2S0094T037R	5872800	I2S0094T037R	—	—	—	—	3/32	1/8	3/8	1 1/2
5873666	I2S0094T062L	5872841	I2S0094T062L	—	—	—	—	3/32	1/8	5/8	2
—	—	5872843	I2S0109T037R	—	—	—	—	7/64	1/8	3/8	1 1/2
5873667	I2S0125T025S	5872844	I2S0125T025S	—	—	—	—	1/8	1/8	1/4	1 1/2
5873669	I2S0125T050R	5872845	I2S0125T050R	—	—	—	—	1/8	1/8	1/2	1 1/2
5873670	I2S0125T075L	5872846	I2S0125T075L	—	—	—	—	1/8	1/8	3/4	2 1/4
5873671	I2S0125T075X	5872847	I2S0125T075X	—	—	—	—	1/8	1/8	3/4	3
5873672	I2S0141T056R	5872848	I2S0141T056R	—	—	—	—	9/64	3/16	9/16	2
5873673	I2S0156T031R	5872849	I2S0156T031R	—	—	—	—	5/32	3/16	5/16	2
5873674	I2S0156T056L	5872850	I2S0156T056L	—	—	—	—	5/32	3/16	9/16	2
5873675	I2S0172T062R	5872851	I2S0172T062R	—	—	—	—	11/64	3/16	5/8	2
—	—	5872852	I2S0188T031S	—	—	—	—	3/16	3/16	5/16	1 1/2
5873676	I2S0188T062R	5872853	I2S0188T062R	—	—	—	—	3/16	3/16	5/8	2
5873677	I2S0188T075L	5872854	I2S0188T075L	—	—	—	—	3/16	3/16	3/4	2 1/2
5873678	I2S0188T112X	5872855	I2S0188T112X	—	—	—	—	3/16	3/16	1 1/8	3
5873679	I2S0219T043R	5872856	I2S0219T043R	—	—	—	—	7/32	1/4	7/16	2
5873680	I2S0219T062L	5872857	I2S0219T062L	—	—	—	—	7/32	1/4	5/8	2 1/2

(continued)

(Series I2S • VariMill GP — continued)



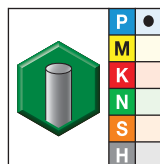
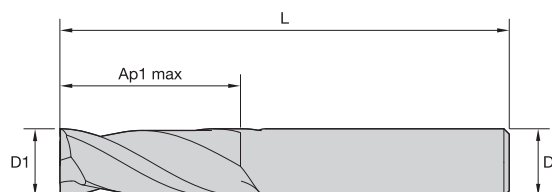
● first choice

○ alternate choice

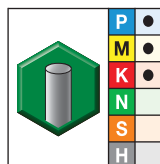
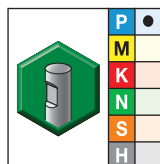
grade UNCOATED		grade TiAlN TiAlN		grade UNCOATED		grade TiAlN TiAlN		D1	D	length of cut Ap1 max	length L
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #				
5873681	I2S0250T050S	5872858	I2S0250T050S	—	—	—	—	1/4	1/4	1/2	2
5873682	I2S0250T075R	5872859	I2S0250T075R	—	—	—	—	1/4	1/4	3/4	2 1/2
5873683	I2S0250T112R	5872860	I2S0250T112R	—	—	—	—	1/4	1/4	1 1/8	3
5873684	I2S0250T125L	—	—	—	—	—	—	1/4	1/4	1 1/4	3 1/2
5873685	I2S0250T150X	5872861	I2S0250T150X	—	—	—	—	1/4	1/4	1 1/2	4
5873686	I2S0281T075R	5872862	I2S0281T075R	—	—	—	—	9/32	5/16	3/4	2 1/2
5873755	I2S0312T050S	5872941	I2S0312T050S	—	—	—	—	5/16	5/16	1/2	2
5873687	I2S0312T081R	5872863	I2S0312T081R	—	—	—	—	5/16	5/16	13/16	2 1/2
5873688	I2S0312T112L	5872864	I2S0312T112L	—	—	—	—	5/16	5/16	1 1/8	3
5873689	I2S0312T162X	5872865	I2S0312T162X	—	—	—	—	5/16	5/16	1 5/8	4
5873690	I2S0344T100R	5872866	I2S0344T100R	—	—	—	—	11/32	3/8	1	2 1/2
5873691	I2S0375T062S	5872867	I2S0375T062S	—	—	—	—	3/8	3/8	5/8	2
5873692	I2S0375T100R	5872868	I2S0375T100R	—	—	—	—	3/8	3/8	1	2 1/2
5873693	I2S0375T112R	5872869	I2S0375T112R	—	—	—	—	3/8	3/8	1 1/8	3
5873694	I2S0375T175L	5872870	I2S0375T175L	—	—	—	—	3/8	3/8	1 3/4	4
5873695	I2S0375T300X	5872881	I2S0375T300X	—	—	—	—	3/8	3/8	3	6
5873696	I2S0406T100R	5872882	I2S0406T100R	—	—	—	—	13/32	7/16	1	2 3/4
5873697	I2S0437T062S	5872883	I2S0437T062S	—	—	—	—	7/16	7/16	5/8	2 1/2
5873698	I2S0437T100R	5872884	I2S0437T100R	—	—	—	—	7/16	7/16	1	2 1/2
5873699	I2S0437T200L	5872885	I2S0437T200L	—	—	—	—	7/16	7/16	2	4
5873700	I2S0437T300X	5872886	I2S0437T300X	—	—	—	—	7/16	7/16	3	6
5873711	I2S0469T100R	5872887	I2S0469T100R	—	—	—	—	15/32	1/2	1	3
5873712	I2S0500T062S	5872888	I2S0500T062S	—	—	—	—	1/2	1/2	5/8	2 1/2
5873713	I2S0500T100R	5872889	I2S0500T100R	5873736	I2S0500W100R	5872922	I2S0500W100R	1/2	1/2	1	3
5873714	I2S0500T200L	5872890	I2S0500T200L	5873737	I2S0500W200L	5872923	I2S0500W200L	1/2	1/2	2	4
5873715	I2S0500T300X	5872891	I2S0500T300X	5873738	I2S0500W300X	5872924	I2S0500W300X	1/2	1/2	3	6
5873716	I2S0562T075R	5872892	I2S0562T075R	5873739	I2S0562W075R	5872925	I2S0562W075R	9/16	9/16	3/4	3
5873717	I2S0562T125L	5872893	I2S0562T125L	5873740	I2S0562W125L	5872926	I2S0562W125L	9/16	9/16	1 1/4	3 1/2
5873718	I2S0562T225X	5872894	I2S0562T225X	5873741	I2S0562W225X	5872927	I2S0562W225X	9/16	9/16	2 1/4	5
5873719	I2S0625T075S	5872895	I2S0625T075S	—	—	—	—	5/8	5/8	3/4	3
5873720	I2S0625T125R	5872896	I2S0625T125R	5873742	I2S0625W125R	5872928	I2S0625W125R	5/8	5/8	1 1/4	3 1/2
5873721	I2S0625T225R	5872897	I2S0625T225R	5873743	I2S0625W225R	5872929	I2S0625W225R	5/8	5/8	2 1/4	5
5873722	I2S0625T300L	5872898	I2S0625T300L	5873744	I2S0625W300L	5872930	I2S0625W300L	5/8	5/8	3	6
5873723	I2S0625T400X	5872899	I2S0625T400X	5873745	I2S0625W400X	5872931	I2S0625W400X	5/8	5/8	4	7
5873724	I2S0687T137R	5872900	I2S0687T137R	5873746	I2S0687W137R	5872932	I2S0687W137R	11/16	3/4	1 3/8	4
5873725	I2S0750T100S	5872901	I2S0750T100S	—	—	—	—	3/4	3/4	1	3

(continued)

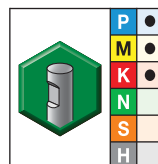
(Series I2S • VariMill GP — continued)



grade UNCOATED

grade TiAlN
TiAlN

grade UNCOATED

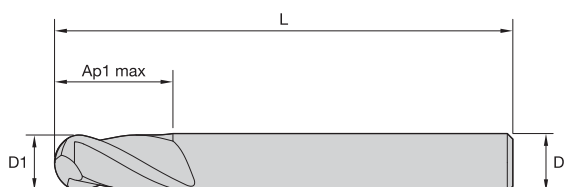
grade TiAlN
TiAlN

- first choice
○ alternate choice

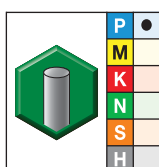
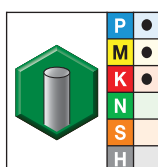
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1	D	length of cut Ap1 max	length L
5873726	I2S0750T150R	5872902	I2S0750T150R	—	—	5872933	I2S0750W225R	3/4	3/4	1 1/2	4
5873727	I2S0750T225R	5872903	I2S0750T225R	5873747	I2S0750W225R	5872933	I2S0750W225R	3/4	3/4	2 1/4	5
5873728	I2S0750T300L	5872904	I2S0750T300L	5873748	I2S0750W300L	5872934	I2S0750W300L	3/4	3/4	3	6
5873729	I2S0750T400X	5872905	I2S0750T400X	5873749	I2S0750W400X	5872935	I2S0750W400X	3/4	3/4	4	7
5873730	I2S0875T150R	5872906	I2S0875T150R	5873750	I2S0875W150R	5872936	I2S0875W150R	7/8	7/8	1 1/2	4
5873731	I2S0875T225L	5872907	I2S0875T225L	5873751	I2S0875W225L	5872937	I2S0875W225L	7/8	7/8	2 1/4	5
5873732	I2S1000T150S	5872908	I2S1000T150S	—	—	—	—	1	1	1 1/2	4
5873733	I2S1000T225R	5872909	I2S1000T225R	5873752	I2S1000W225R	5872938	I2S1000W225R	1	1	2 1/4	5
5873734	I2S1000T300L	5872910	I2S1000T300L	5873753	I2S1000W300L	5872939	I2S1000W300L	1	1	3	6
5873735	I2S1000T400X	5872921	I2S1000T400X	5873754	I2S1000W400X	5872940	I2S1000W400X	1	1	4	7

NOTE: For application data, please see pages N11–N12.

- 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

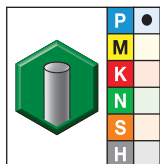
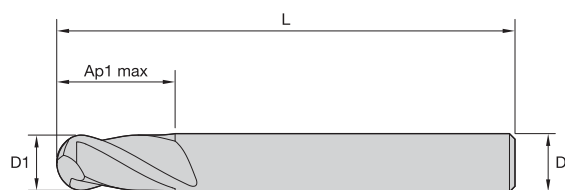
Series I2B • VariMill GP

grade UNCOATED

**grade TiAlN
TiAlN**

- first choice
- alternate choice

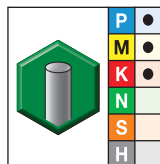
order #	catalog #	order #	catalog #	D1	D	length of cut Ap1 max	length L
5878223	I2B0031T007R	5878172	I2B0031T007R	1/32	1/8	5/64	1 1/2
-	-	5878174	I2B0046T018R	3/64	1/8	3/16	1 1/2
5878224	I2B0062T018R	5878173	I2B0062T018R	1/16	1/8	3/16	1 1/2
-	-	5878175	I2B0078T018R	5/64	1/8	3/16	1 1/2
-	-	5878176	I2B0093T018R	3/32	1/8	3/16	1 1/2
5878225	I2B0093T037L	5878177	I2B0093T037L	3/32	1/8	3/8	1 1/2
-	-	5878178	I2B0109T037R	7/64	1/8	3/8	1 1/2
5878226	I2B0125T025S	5878179	I2B0125T025S	1/8	1/8	1/4	1 1/2
5878227	I2B0125T050R	5878180	I2B0125T050R	1/8	1/8	1/2	1 1/2
-	-	5878181	I2B0125T075L	1/8	1/8	3/4	2 1/4
-	-	5878182	I2B0125T075X	1/8	1/8	3/4	3
-	-	5878183	I2B0156T031R	5/32	3/16	5/16	2
-	-	5878184	I2B0156T056L	5/32	3/16	9/16	2
-	-	5878185	I2B0187T031S	3/16	3/16	5/16	1 1/2
5878228	I2B0187T062R	5878186	I2B0187T062R	3/16	3/16	5/8	2
-	-	5878187	I2B0187T075L	3/16	3/16	3/4	2 1/2
-	-	5878188	I2B0187T100X	3/16	3/16	1	4
-	-	5878189	I2B0218T062R	7/32	1/4	5/8	2 1/2
-	-	5878190	I2B0250T050S	1/4	1/4	1/2	2
5878229	I2B0250T075R	5878191	I2B0250T075R	1/4	1/4	3/4	2 1/2
-	-	5878192	I2B0250T112R	1/4	1/4	1 1/8	3
-	-	5878193	I2B0250T150L	1/4	1/4	1 1/2	4
-	-	5878194	I2B0250T150X	1/4	1/4	1 1/2	6
-	-	5878195	I2B0312T050S	5/16	5/16	1/2	2

(continued)

(Series I2B • VariMill GP— continued)



grade UNCOATED

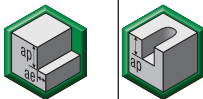
grade TiAlN
TiAlN

- first choice
○ alternate choice

order #	catalog #	order #	catalog #	D1	D	length of cut Ap1 max	length L
5878230	I2B0312T081R	5878196	I2B0312T081R	5/16	5/16	13/16	2 1/2
-	-	5878197	I2B0312T112L	5/16	5/16	1 1/8	3
-	-	5878198	I2B0312T150X	5/16	5/16	1 1/2	6
-	-	5878199	I2B0375T062S	3/8	3/8	5/8	2
5878241	I2B0375T087R	5878200	I2B0375T087R	3/8	3/8	7/8	2 1/2
-	-	5878201	I2B0375T112R	3/8	3/8	1 1/8	3
-	-	5878202	I2B0375T175L	3/8	3/8	1 3/4	4
-	-	5878203	I2B0375T300X	3/8	3/8	3	6
-	-	5878204	I2B0406T100R	13/32	7/16	1	2 1/2
-	-	5878205	I2B0437T100R	7/16	7/16	1	2 1/2
-	-	5878206	I2B0500T062S	1/2	1/2	5/8	2 1/2
5878242	I2B0500T100R	5878207	I2B0500T100R	1/2	1/2	1	3
-	-	5878208	I2B0500T150X	1/2	1/2	1 1/2	6
5878243	I2B0500T200L	5878209	I2B0500T200L	1/2	1/2	2	4
-	-	5878210	I2B0500T300L	1/2	1/2	3	6
-	-	5878211	I2B0625T125R	5/8	5/8	1 1/4	3 1/2
5878244	I2B0625T225L	5878212	I2B0625T225L	5/8	5/8	2 1/4	5
-	-	5878213	I2B0625T300X	5/8	5/8	3	6
-	-	5878214	I2B0750T100S	3/4	3/4	1	3
5878245	I2B0750T150R	5878215	I2B0750T150R	3/4	3/4	1 1/2	4
-	-	5878216	I2B0750T200X	3/4	3/4	2	6
-	-	5878217	I2B0750T225L	3/4	3/4	2 1/4	5
-	-	5878218	I2B0750T300X	3/4	3/4	3	6
5878246	I2B0875T150R	5878219	I2B0875T150R	7/8	7/8	1 1/2	4
-	-	5878220	I2B1000T150R	1	1	1 1/2	4
5878247	I2B1000T300L	5878221	I2B1000T300L	1	1	3	6

NOTE: For application data, please see pages N13–N14.

■ Series I2C..S I2S..S I2C..R I2S..R • TiAlN • VariMill GP

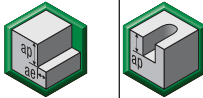
Material Group																							
	Side Milling (A) and Slotting (B)			TiAlN		Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.																	
	A		B	Cutting Speed – vc SFM		frac. dec.	D1 – Diameter																
	ap	ae	ap	min	max		1/64	1/32	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 I2C..S I2S..S I2C..R I2S..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	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	390	– 520	IPT	.0001	.0002	.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	.0001	.0002	.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	.0001	.0002	.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.

General Purpose Solid Carbide End Mills • Roughing/Finishing

Application Data • Series I2C..L I2S..L I2C..X I2S..X • VariMill™ GP



■ Series I2C..L I2S..L I2C..X I2S..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		frac.	D1 — Diameter													
						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	min		max	dec.	.0625	.0781	.0938	.1250	.1875	.2500	.3125	.3750	.5000	.6250	.7500	1.0000	
P	0	Ap1 max	0.1 x D	490	—	660	IPT	.0004	.0005	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	1	Ap1 max	0.1 x D	490	—	660	IPT	.0004	.0005	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	2	Ap1 max	0.1 x D	460	—	620	IPT	.0004	.0005	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	3	Ap1 max	0.1 x D	390	—	520	IPT	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	4	Ap1 max	0.1 x D	300	—	490	IPT	.0003	.0004	.0005	.0007	.0010	.0014	.0017	.0020	.0026	.0030	.0034	.0039
M	1	Ap1 max	0.1 x D	300	—	380	IPT	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045
	2	Ap1 max	0.1 x D	200	—	260	IPT	.0003	.0004	.0004	.0006	.0009	.0012	.0016	.0018	.0023	.0027	.0031	.0036
K	1	Ap1 max	0.1 x D	390	—	490	IPT	.0004	.0005	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	2	Ap1 max	0.1 x D	360	—	460	IPT	.0004	.0004	.0005	.0007	.0011	.0015	.0020	.0023	.0029	.0034	.0039	.0045

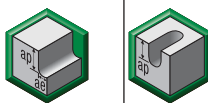
NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
 Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
 Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

■ Series I2C..L I2S..L I2C..X I2S..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.	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	min		max	dec.	.0625	.0781	.0938	.1250	.1875	.2500	.3125	.3750	.5000	.6250	.7500	1.0000	
P	0	Ap1 max	0.1 x D	390	–	520	IPT	.0004	.0005	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	1	Ap1 max	0.1 x D	390	–	520	IPT	.0004	.0005	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049
	2	Ap1 max	0.1 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 I2B..S I2B..R • TiAlN • VariMill GP

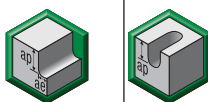
Material Group																							
	Side Milling (A) and Slotting (B)				TiAlN		Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.																
	A		B	Cutting Speed — vc SFM		frac.	D1 — Diameter																
	ap	ae	ap	min	max		dec.	1/64	1/32	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 I2B..S I2B..R • Uncoated • VariMill GP

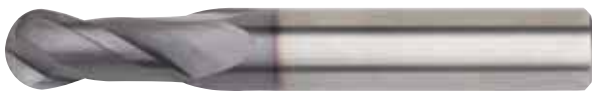
Material Group																					
		Side Milling (A) and Slotting (B)			uncoated		Recommended feed per tooth (IPT = inch/th) for side milling (A). For slotting (B), reduce IPT by 20%.														
		A		B	Cutting Speed — vc SFM		D1 — Diameter														
ap		ae	ap	min	max	frac.	1/64	1/32	1/16	5/64	3/32	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1	
P	0	Ap1 max	0.1 x D	0.5 x D	390	– 520	IPT	.0001	.0002	.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	.0001	.0002	.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	.0001	.0002	.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 I2B..L I2B..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											
							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.

■ Series I2B..L I2B..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	1.25 x D	0.1 x D	390	–	520	IPT	.0007	.0009	.0013	.0018	.0023	.0027	.0034	.0039	.0044	.0049	
	2	1.25 x D	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.