

■ Series I4R..S I4S..S I4R..R I4S..R • TiAlN • 4-Flute Square-End and Radius-Style End Mills

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		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	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
M	1	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
	2	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
K	1	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
	2	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
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 I4S..S I4S..R • Uncoated • 4-Flute Square-End End Mills

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.	1/16	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.	.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	.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 I4S..L I4S..X • TiAlN • 4-Flute Square-End End Mills

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		
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 I4S..L I4S..X • Uncoated • 4-Flute Square-End End Mills

Material Group																	
	Side Milling (A)		uncoated		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		
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.