

ADVANCED PERFORMANCE

Variable Helix End Mill For Carbon And Alloy Steels



INTRO

MILLING

SPECIALTY

HOLEMAKING

THREADING

INSERTS



FEATURES/DESCRIPTION	APPLICATION	FEATURES
<p>ALPHA⁶</p> <p>Equal Index End Mill</p> <ul style="list-style-type: none"> Sub-micron grade carbide substrate for wear resistance Raised land construction for rigidity Eccentric relief reduces cutting friction Equal index Progressive 40° helix for maximum MRR NEW square end sizes now available online 		<p>CARBIDE 40°</p> <p>6FL RAD</p> <p>h6 P190</p> <p>FX2</p>

STEEL			STAINLESS		CAST IRON		NON-FERROUS		HRSA		HARDENED STEEL	
P1	P2	P3	M1	M2	K1	K2	N1	N2	S1	S2	H1	H2
●	●	●	○	○	●	●					○	

● Best ○ Good

Series 2006 Alpha6 | 6FL | Multi Length | Radius

Diameter(D ₁)	LOC(L ₁)	OAL(L)	Shank(D)	Radius(R)	EDP
1/4	1/2	2	1/4	0.020	292-201133
1/4	3/4	2-1/2	1/4	0.020	292-301133
1/4	1-1/8	3	1/4	0.020	292-401133
1/4	1-1/2	4	1/4	0.020	292-501133
1/4	1-1/2	6	1/4	0.020	292-601133
5/16	13/16	2-1/2	5/16	0.020	292-301153
5/16	1-1/8	3	5/16	0.020	292-401153
5/16	1-1/2	6	5/16	0.020	292-601153
5/16	1-5/8	4	5/16	0.020	292-501153
3/8	5/8	2	3/8	0.020	292-201173
3/8	1	2-1/2	3/8	0.020	292-301173
3/8	1-3/8	3	3/8	0.020	292-401173
3/8	1-1/2	6	3/8	0.020	292-601173
3/8	1-3/4	4	3/8	0.020	292-501173
3/8	3	6	3/8	0.020	292-601193
1/2	5/8	2-1/2	1/2	0.020	292-201203
1/2	1	3	1/2	0.020	292-301203
1/2	1-1/2	6	1/2	0.020	292-601203
1/2	1-5/8	4	1/2	0.020	292-401193
1/2	2	4	1/2	0.020	292-401203
1/2	3	6	1/2	0.020	292-501203
5/8	1	3	5/8	0.020	292-201223
5/8	1-1/4	3-1/2	5/8	0.020	292-301223
5/8	1-1/2	6	5/8	0.020	292-601223
5/8	2-1/2	5	5/8	0.020	292-401223
5/8	3-1/4	6	5/8	0.020	292-501223
3/4	1	3	3/4	0.020	292-201243
3/4	1-1/2	4	3/4	0.020	292-301243
3/4	1-1/2	6	3/4	0.020	292-601233
3/4	2-5/8	5	3/4	0.020	292-401243
3/4	3-1/4	6	3/4	0.020	292-501243
3/4	4	7	3/4	0.020	292-601243
1	1-1/2	6	1	0.020	292-601253
1	1-3/4	4	1	0.020	292-301263
1	2-5/8	5	1	0.020	292-401263
1	3-1/4	6	1	0.020	292-501270
1	4	7	1	0.020	292-601263
1	4-1/2	7	1	0.020	292-601293

*bold numbers are EDPs for ordering

Series 2006

Alpha 6 | 6FL | Radius

Profiling			SFM based on RDOC					IPT *(BASELINE)							
			Cutting Diameter Engaged					Cutting Diameter							
Material			Hardness	5%	10%	20%	30%	50%	*1/8	*1/4	3/8	1/2	5/8	3/4	1
P	Steel	Free Machining & Low Carbon: 10XX, 11XX, 12XX, A36	≤ 28 Rc	600	550	500	450	400	0.0011	0.0022	0.0035	0.0042	0.0059	0.0680	0.0900
	Steel	Medium/High Carbon Steels, Alloy Steels: 13XX, 41XX, 43XX, 86XX	28-38 Rc	600	550	500	450	400	0.0011	0.0022	0.0035	0.0042	0.0059	0.0680	0.0900
	Die Steels	A2, H13, L6, P20, S7	28-44 Rc	550	500	450	400	375	0.0011	0.0020	0.0033	0.0040	0.0055	0.0650	0.0850
M	Stainless Steels	Ferritic	≤ 28 Rc	360	370	300	280	260	0.0007	0.0014	0.0024	0.0030	0.0040	0.5200	0.0680
	Stainless Steels	Martensitic	≤ 28 Rc	360	370	300	280	260	0.0004	0.0008	0.0016	0.0018	0.0024	0.0300	0.0400
	Stainless Steels	Difficult to Machine, 302B, 304B, 309, 310, 316, 316Ti, PH13-8Mo	> 28 Rc	320	300	280	260	240	0.0003	0.0006	0.0010	0.0015	0.0018	0.0240	0.0300
S	Super Alloys	High Temp, Nimonic, Inconel, Monel, Hastelloy	≤ 42 Rc	550	525	500	450	425	0.0010	0.0020	0.0033	0.0040	0.0055	0.0700	0.0100
	Super Alloys	Titanium: Ti 3Al-2.5V, Ti 6Al-4V Ti 10V-2Fe-3Al	≤ 42 Rc	550	525	500	450	425	0.0010	0.0020	0.0033	0.0040	0.0055	0.0700	0.0100
H	Hardened Steels	Tool Steel, Die Steel: S7, H13, A2	40-50 Rc	550	525	500	450	425	0.0010	0.0020	0.0033	0.0040	0.0055	0.0700	0.0100
	Hardened Steels	Tool Steel, Die Steel: D2, CPM-10V	50-55 Rc	165	165	130	115	100	0.0004	0.0008	0.0016	0.0018	0.0024	0.0300	0.0400
	Hardened Steels	Tool Steel, Die Steel: D2, CPM-10V	> 55 Rc	400	375	350	300	250	0.0004	0.0008	0.0016	0.0018	0.0024	0.0300	0.0400
K	Cast-Iron	Gray: SAE J431, ASTM A48	≤ 240 HB	1625	1295	900	700	350	0.0012	0.0024	0.0039	0.0047	0.0060	0.0078	0.0100
	Cast-Iron	Ductile & Malleable, ASTM A536, ASTM 897, ASTM A47, ASTM A220 ASTM A602	> 240 HB	675	540	550	400	260	0.0012	0.0024	0.0039	0.0047	0.0060	0.0078	0.0100

Slotting			SFM			IPT *(BASELINE)							
			SFM based on RDOC			Cutting Diameter							
Material			Hardness	25%	50%	100%*	*1/8	*1/4	3/8	1/2	5/8	3/4	1
P	Steel	Free Machining & Low Carbon: 10XX, 11XX, 12XX, A36	≤ 28 Rc	480	480	400	0.0005	0.0011	0.0017	0.0021	0.0029	0.0380	0.0480
	Steel	Medium/High Carbon Steels, Alloy Steels: 13XX, 41XX, 43XX, 86XX	28-38 Rc	480	480	400	0.0005	0.0011	0.0017	0.0021	0.0029	0.0380	0.0480
	Die Steels	A2, H13, L6, P20, S7	28-44 Rc	420	420	380	0.0005	0.0010	0.0016	0.0020	0.0027	0.0360	0.0460
M	Stainless Steels	Ferritic	≤ 28 Rc	420	420	400	0.0005	0.0010	0.0016	0.0020	0.0027	0.0035	0.0045
	Stainless Steels	Martensitic	≤ 28 Rc	420	420	400	0.0005	0.0010	0.0016	0.0020	0.0027	0.0035	0.0045
	Stainless Steels	Difficult to Machine, 302B, 304B, 309, 310, 316, 316Ti, PH13-8Mo	> 28 Rc	400	400	380	0.0005	0.0010	0.0016	0.0009	0.0027	0.0035	0.0045
S	Super Alloys	High Temp, Nimonic, Inconel, Monel, Hastelloy	≤ 42 Rc	120	120	95	0.0002	0.0004	0.0008	0.0009	0.0012	0.0016	0.0020
	Super Alloys	Titanium: Ti 3Al-2.5V, Ti 6Al-4V Ti 10V-2Fe-3Al	≤ 42 Rc	200	200	175	0.0002	0.0004	0.0008	0.0009	0.0012	0.0016	0.0020
H	Hardened Steels	Tool Steel, Die Steel: S7, H13, A2	40-50 Rc	350	350	300	0.003	0.0006	0.0012	0.0015	0.0020	0.0024	0.0030
	Hardened Steels	Tool Steel, Die Steel: D2, CPM-10V	50-55 Rc	180	180	150	0.0002	0.0004	0.0008	0.0009	0.0012	0.0016	0.0020
	Hardened Materials	Tool Steel, Die Steel: D2, CPM-10V	> 55 Rc	150	150	100	0.0002	0.0003	0.0005	0.0007	0.0009	0.0011	0.0014
K	Cast Iron	Gray: SAE J431, ASTM A48	≤ 240 HB	375	350	325	0.0004	0.00012	0.0020	0.0024	0.0031	0.0040	0.0050
	Cast Iron	Ductile & Malleable, ASTM A536, ASTM 897, ASTM A47, ASTM A220	> 240 HB	275	260	250	0.0004	0.00012	0.0020	0.0024	0.0031	0.0040	0.0050