Speed & Feed Guide

Series 2004, 2004R

Alpha 4 | 4FL | Radius

Profiling				SFM based on RDOC				IPT *(BASELINE)								
				Cutting Diameter Engaged				Cutting Diameter								
Material			Hardness	5%	10%	25%	50%	*1/8	*3/16	*1/4	5/16	3/8	1/2	5/8	1/4	1
P	Steel	Free Machining & Low Carbon: 10XX, 11XX, 12XX, A36	≤ 28 Rc	1475	1150	980	500	0.0012	0.0020	0.0024	0.0031	0.0039	0.0047	0.0060	0.0078	0.0100
	Steel	Medium Carbon Steels, 1140, 1145	28-38 Rc	1130	900	840	250									
	Steel	Alloy, 41XX	28-44 Rc	1035	840	765										
	Die Steels	A2, H13, L6, P20, S7	28-44 Rc	900	725	615	200									
M	Stainless Steels	430F, 301, 303, 410, 416 Annealed, 420F, 430, 430F	≤ 28 Rc	675	545	425	360	0.0012	0.0020	0.0024	0.0031	0.0039	0.0047	0.0060	0.0078	0.0100
	Stainless Steels	Austenitic, 301, 302, 303, 304, 304L, 420, 15-5PH, 17-4PH	≤ 28 Rc	525	430	400	210									
	Stainless Steels	Difficult to Machine, 302B, 304B, 309, 310, 316, 316Ti, PH13-8Mo	> 28 Rc	410	330	295										
	Stainless Steels	Difficult to Machine, 17-4 PH, PH13-8Mo, Nitronics	> 28 Rc	525	430	395	110	0.0006	0.0010	0.0012	0.0016	0.0020	0.0024	0.0030	0.0040	0.0050
	Stainless Steels	22% Duplex	> 28 Rc	245	195	180										
S	Super Alloys	High Temp, Nimonics, Inconel, Monel, Hastelloy	≤ 42 Rc	180	150	130	85	0.0003	0.0005	0.0006	0.0008	0.0010	0.0012	0.0016	0.0020	0.0024
	Super Alloys	Titanium: Ti 3Al-2.5V, Ti 6Al-4V Ti 10V-2Fe-3Al	≤ 42 Rc	525	425	330	175									
H	Hardened Steels	Tool Steel, Die Steel: S7, H13, A2	45-50 Rc	610	495	325	250	0.0006	0.0010	0.0012	0.0016	0.0020	0.0024	0.0030	0.0040	0.0050
	Hardened Steels	Tool Steel, Die Steel: D2, CPM-10V	50-55 Rc	510	410	280	200	0.0003	0.0005	0.0006	0.0008	0.0010	0.0012	0.0016	0.0020	0.0024
K	Cast-Iron	Gray: SAE J431, ASTM A48	≤ 240 HB	1625	1295	870	350	0.0012	0.0020	0.0024	0.0031	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	510	260									

Slotting				SFM based on RDOC			IPT								
				Cutting Diameter Engaged			Cutting Diameter								
Material			Hardness	25%	50%	100%	*1/8	*3/16	*1/4	5/16	3/8	1/2	5/8	3/4	1
P	Steel	Free Machining & Low Carbon: 10XX, 11XX, 12XX, A36	≤ 28 Rc	550	500	475	0.0004	0.0010	0.0012	0.0016	0.0020	0.0025	0.0031	0.0040	0.0050
	Steel	Medium Carbon Steels, 1140, 1145	28-38 Rc	275	250	225									
	Steel	Alloy, 41XX	28-44 Rc												
	Die Steels	A2, H13, L6, P20, S7	28-44 Rc	225	200	175									
M	Stainless Steels	430F, 301, 303, 410, 416 Annealed, 420F, 430, 430F	≤ 28 Rc	385	360	350	0.0004	0.0010	0.0012	0.0016	0.0020	0.0024	0.0031	0.0040	0.0050
	Stainless Steels	Austenitic, 301, 302, 303, 304, 304L, 420, 15-5PH, 17-4PH	≤ 28 Rc	225	210	200									
	Stainless Steels	Difficult to Machine, 302B, 304B, 309, 310, 316, 316B, 316L, 316Ti	> 28 Rc												
	Stainless Steels	Difficult to Machine, 17-4 PH, PH13-8Mo, Nitronics	> 28 Rc	125	110	100	0.0003	0.0005	0.0006	0.0008	0.0010	0.0012	0.0016	0.0020	0.0024
	Stainless Steels	22% Duplex		150	130	120									
S	Super Alloys	High Temp, Nimonics, Inconel, Monel, Hastelloy	≤ 42 Rc	100	85	75	0.0003	0.0005	0.0006	0.0008	0.0010	0.0012	0.0016	0.0020	0.0024
	Super Alloys	Titanium: Ti 3Al-2.5V, Ti 6Al-4V Ti 10V-2Fe-3Al	≤ 42 Rc	180	175	160									
H	Hardened Steels	Tool Steel, Die Steel: S7, H13, A2	45-50 Rc	275	250	225	0.0003	0.0005	0.0006	0.0008	0.0010	0.0012	0.0016	0.0020	0.0024
	Hardened Steels	Tool Steel, Die Steel: D2, CPM-10V	50-55 Rc	225	200	175	0.0001	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0015
K	Cast Iron	Gray: SAE J431, ASTM A48	≤ 240 HB	375	350	325	0.0004	0.0010	0.0012	0.0016	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									