

High Performance Taps Recommended Speed Table

Material types	Stainless Steel						Carbon Steel					
	Free Machining	Ferritic	Austenitic	Martensitic	Precipitation Hardened		Free Machining	Low Carbon	Alloy-Low Carbon	Medium Carbon	High Carbon	Alloy-High Carbon
Material Examples	303, 303SE, 416, 420F, 430F	405, 430	302, 304, 316, 329, 436 <275	403, 410, 420, 431	15-5PH 17-4PH 17-7PH		1118, 1114, 1212, 12L14, 12L15, 1215	1008, 1010, 1011, 1015, 1018, 1029	3310, 4620, 4820, 8620	1030, 1035, 1040, 4045, 1050	1050, 1065, 1070, 1080, 1090	4140, 4150, 4340
Hardness	BHN	<250	<260	<28	<275	350-440	<180	<180	<240	<275	<300	<390
	RC	<23	<26	<28	<28	<48	<20	<20	<24	<28	<32	<42
Thread Forming Taps	50-100 SFM	70-100 SFM					120-180 SFM	60-129 SFM	50-90 SFM			
Carbide Taps			20-35									
Blue Ring Color Taps	25-50 SFM	35-50 SFM	SFM 15-25	25-50 SFM	25-50 SFM		20-50 SFM	20-50 SFM	15-25 SFM	20-40 SFM		
Yellow Ring Color Taps	15-35 SFM	25-35 SFM	SFM	15-35 SFM	15-35 SFM		60-90 SFM	30-60 SFM	26-45 SFM	20-50 SFM	25-40 SFM	15-20 SFM
Red Ring Color Taps		15-25 SFM	15-25	15-25 SFM	15-25 SFM	12-20 SFM				25-50 SFM	25-50 SFM	15-25 SFM
HSS	15-35 SFM	25-35 SFM	SFM	15-35 SFM	15-35 SFM		45-65 SFM	20-45 SFM	20-30 SFM	15-35 SFM	20-30 SFM	12-19 SFM

Material types	Cast Iron & Sintered Metals								Titanium				
	Pearlitic-Martensitic	Martensitic (Malleable)	Martensitic (Ductile)	Martensitic (Malleable)	Precipitation (Malleable)	Austenitic (Gray)	Austenitic (Ductile)	Austenitic (Ductile)	Commercial Pure	& - alloy		& - alloy	
Material Examples	100-70-03	120-90-02	53004, 60003, 60000	70002, 70003	80002, 90001	ASTM A436 Type 1-6	ASTM A439 Type D-2 D-2C, D-5, D3A, D5B	ASTM A439 Type D-2B D-3, D-4	99.5, 99.2, 98.9	6Al-4V		6Al4V ELT 6Al-6V-2Sn	
Hardness	BHN	240-300	270-300	200-255	220-260	240-320	100-250	120-200	140-275	<275	300-350	300-400	330-420
	RC									<28	<36	<42	<45
Carbide Taps	15-26 SFM	12-20 SFM	35-45 SFM	30-40 SFM	29-30 SFM	35-60 SFM	20-30 SFM	15-25 SFM					
Blue Ring Color Taps									15-30 SFM				
Yellow Ring Color Taps	12-20 SFM	9-15 SFM	25-35 SFM	23-30 SFM	20-23 SFM	25-45 SFM	15-23 SFM	13-20 SFM	12-23 SFM	9-15 SFM		4-7 SFM	
Red Ring Color Taps									25-40 SFM	15-20 SFM		5-7 SFM	
HSS	12-20 SFM	9-15 SFM	25-35 SFM	23-30 SFM	20-23 SFM	25-45 SFM	15-23 SFM	13-20 SFM	12-23 SFM	9-15 SFM	8-15 SFM	4-7 SFM	

High Performance Taps Recommended Speed Table

Material types	Carbon Steel		Aluminum				Cast Iron & Sintered Metals				
	Tool Steel		Unalloyed	Wrought	Cast (Sand)	DieCastings	Pearlitic-Ferritic	Pearlitic (Gray)	Pearlitic (Malleable)	Pearlitic w Free Carbide	
Material Examples	O1, A-2, D-2, H-13, P-20		1000 Series	2000, 3000, 5000, 6000, 7000 Series	308, 319, 328, 365	360, 380, 383, 390, 392 50-125	ASTM A48 : Class 25	ASTM A48 : Classes 30, 35, 40	40010, 43010, 45006, 45008, 48005, 50005	ASTM A48 : Classes 45, 50	ASTM A48 : Classes 55, 60
Hardness BHN RC	<340 <35	350-440 <48	<30	30-80	40-100	180-300	160-200	190-220	160-200	220-260	250-320
Thread Forming Taps			240 SFM	200-250 SFM	180-200 SFM	SFM 300-450					
Carbide Taps			240-360 SFM	250-375 SFM	200-300 SFM	SFM 30-90	140-210 SFM	120-180 SFM	100-150 SFM	80-120 SFM	50-75 SFM
Blue Ring Color Taps			30-90 SFM	30-90 SFM	30-90 SFM	SFM 65-110					
Yellow Ring Color Taps	15-20 SFM		90 SFM	75-95 SFM	65-75 SFM	SFM	35-50 SFM	30-45 SFM	30-35 SFM	20-30 SFM	12-19 SFM
Red Ring Color Taps	15-25 SFM	10-20 SFM				65-110					
HSS			90 SFM	75-95 SFM	65-75 SFM	SFM	35-50 SFM	30-45 SFM	30-35 SFM	20-30 SFM	12-19 SFM

Material types	Brass/ Bronze	Copper	Nickel Alloys								
	—	—	Nickel-Alloys	Nickel-Alloys	Nickel Alloys	High Temp Alloys (Nickel Base)	High Temp Alloys (Nickel Base)	High Temp Alloys (Nickel Base)	High Temp Alloys (Nickel Base)	High Temp Alloys (Nickel Base)	High Temp Alloys (Nickel Base)
Material Examples			Nickel 200, 201, 205	Monel 400, 401, 404	Duranickel Monel K800	Inconel 700718	Waspaloy Rene41	Hastaloy BC, G, X	Inconel 600 Inconel 500700	Haynes 25188	A286, Inconel 800
Hardness BHN RC			80-170 <20	115-240 <24	150-360 <38	200-300 <30	300-400 <42	140-220 <23	240-310 <32	<28	180-230 <23
Carbide Taps											
Blue Ring Color Taps	30-65 SFM	50-60 SFM								10-15	10-12
Yellow Ring Color Taps	30-80 SFM	25-60 SFM	10-15 SFM	10-15 SFM	10-15 SFM	10-12 SFM	10-15 SFM	10-15 SFM	10-12 SFM	SFM 5-20	SFM 5-25
Red Ring Color Taps	25-60 SFM		5-20 SFM	5-20 SFM	5-25 SFM	5-25 SFM	5-20 SFM	5-25 SFM	5-20 SFM	SFM 4-7	SFM 11-15
HSS			15-20 SFM	8-20 SFM	4-9 SFM	6-9 SFM	4-8 SFM	8-11 SFM	5-7 SFM	SFM	SFM