

# TAP DRILL SELECTOR



## Machine Screw/Fractional

Tap Size	Tap Drill Size	Decimal Equivalent of Tap Drill (Inches)	Theoretical Percent of Thread	Probable Percent of Thread
0-80	56	.0465	83	74
	3/64	.0469	81	71
	1.20 mm	.0472	79	69
	1.25 mm	.0492	67	57
1-64	54m	.0550	89	81
	1.45 mm	.0571	78	71
	53	.0595	67	59
1-72	1.50 mm	.0591	77	68
	53	.0595	75	67
	1.55 mm	.0610	67	68
2-56	51	.0670	82	74
	1.75 mm	.0689	73	66
	50	.0700	69	62
	1.80 mm	.0709	65	58
2-64	50	.0700	79	70
	1.80 mm	.0709	74	66
	49	.0730	64	56
3-48	48	.0760	85	78
	5/64	.0781	77	70
	47	.0785	76	69
	2.00 mm	.0787	75	68
	46	.0810	67	60
	45	.0820	63	56
3-56	46	.0810	78	69
	45	.0820	73	65
	2.10 mm	.0827	70	62
	2.15 mm	.0846	62	54
4-40	44	.0860	80	74
	2.20 mm	.0866	78	72
	43	.0890	71	65
	2.30 mm	.0906	66	60
4-48	2.35 mm	.0925	72	72
	42	.0935	68	61
	3/32	.0938	68	60
	2.40 mm	.0945	65	57
5-40	40	.0980	83	76
	39	.0995	79	71
	38	.1015	72	65
	2.60 mm	.1024	70	63
5-44	38	.1015	79	72
	2.60 mm	.1024	77	69
	37	.1040	71	63
6-32	37	.1040	84	78
	36	.1065	78	72
	7/64	.1095	70	64
	35	.1100	69	63
	34	.1110	67	60
6-40	34	.1110	83	75
	33	.1130	77	69
	2.90 mm	.1142	73	65
	32	.1160	68	60

Tap Size	Tap Drill Size	Decimal Equivalent of Tap Drill (Inches)	Theoretical Percent of Thread	Probable Percent of Thread
8-32	3.40 mm	.1339	74	67
	29	.1360	69	62
8-36	29	.1360	78	70
	3.50 mm	.1378	72	65
10-24	27	.1440	85	79
	3.70 mm	.1457	82	76
	26	.1470	79	74
	25	.1495	75	69
	24	.1520	70	64
10-32	5/32	.1563	83	75
	22	.1570	81	73
	21	.1590	76	68
12-24	11/64	.1719	82	75
	17	.1730	79	73
	16	.1770	72	66
12-28	16	.1770	84	77
	15	.1800	78	70
	4.60 mm	.1811	75	67
	14	.1820	73	66
1/4-20	9	.1960	83	77
	8	.1990	79	73
	7	.2010	75	70
	13/64	.2031	72	66
1/4-28	5.40 mm	.2126	81	72
	3	.2130	80	72
5/16-18	F	.2570	77	72
	6.60 mm	.2598	73	68
	G	.2610	71	66
5/16-24	H	.2660	86	78
	6.80 mm	.2677	83	75
	I	.2720	75	67
3/8-16	7.80 mm	.3071	84	78
	7.90 mm	.3110	79	73
	5/16	.3125	77	72
	O	.3160	73	68
3/8-24	21/64	.3281	87	79
	8.40 mm	.3307	82	74
	Q	.3320	79	71
	8.50 mm	.3346	75	67
7/16-14	T	.3580	86	81
	23/64	.3594	84	79
	9.20 mm	.3622	81	76
	9.30 mm	.3661	77	72
	U	.3680	75	70
	9.40 mm	.3701	73	68
7/16-20	W	.3860	79	72
	25/64	.3906	72	65
1/2-13	10.50 mm	.4134	87	82
	27/64	.4219	78	73
1/2-20	29/64	.4531	72	65





# TAP DRILL SELECTOR

## Machine Screw/Fractional (con't)

Tap Size	Tap Drill Size	Decimal Equivalent of Tap Drill (Inches)	Theoretical Percent of Thread	Probable Percent of Thread	
9/16-12	15/32	.4688	87	82	
	31/64	.4844	72	68	
9/16-18	1/2	.5000	87	80	
	17/32	.5313	79	75	
	9/16	.5625	87	80	
3/4-10	41/64	.6406	84	80	
	21/32	.6563	72	68	
3/4-16	11/16	.6875	77	71	
	17.50 mm	.6890	75	69	
7/8-9	49/64	.7656	76	72	
	7/8-14	51/64	.7969	84	79
1"-8	55/64	.8594	87	83	
	7/8	.8750	77	73	
1"-12	29/32	.9063	87	81	
	59/64	.9219	72	67	
1"-14	59/64	.9219	84	78	
	1-1/8-7	31/32	.9688	84	81
	63/64	.9844	76	72	
1-1/8-12	1-1/32	1.0313	87	80	
	1-1/4-7	1.0938	84	*	
	1-7/64	1.1094	76	*	
1-1/4-12	1-11/64	1.1719	72	*	
	1-3/8-6	1-13/64	1.2031	79	*
	1-7/32	1.2188	72	*	
1-3/8-12	1-19/64	1.2969	72	*	
	1-1/2-6	1-21/64	1.3281	79	*
	1-11/32	1.3438	72	*	
1-1/2-12	1-27/64	1.4219	72	*	

\*Reaming recommended

### Tapping Speeds

Proper tapping speeds are very important in obtaining efficient tapping results. The optimum speed for tapping is the highest speed that conditions permit, consistent with acceptable tool life. Speeds must be lowered as the length of the hole increases. In short holes, taps with tapered chamfers can be operated faster than taps with bottoming chamfers. Speeds can be increased when vertical tapping, as compared to horizontal tapping.

The chart below suggests a starting point for selecting the speed to operate the tap.

### Tapping Speed Selector

Material	Speed (feet/min)	Material	Speed (feet/min)
Aluminum, Soft	90-110	Nuts, Cold Formed	60-80
Aluminum, Alloy	80-100	Plastics	60-80
Brass, Soft	90-110	Rubber, Hard	80-100
Brass, Hard	40-60	Screw Stock	65-90
Bronze, Soft	40-70	Steel, Alloy Grades	15-35
Bronze, Hard	30-50	Steel, Cast	20-35
Copper	50-60	Steel, Stainless	15-30
Die Castings	60-80	Steel, Tool Grades	25-40
Iron, Cast	70-100		

## Metric

Tap Size	Tap Drill Size	Decimal Equivalent of Tap Drill (Inches)	Theoretical Percent of Thread	Probable Percent of Thread
M1.6 x 0.35	1.20 mm	.0472	88	80
	1.25 mm	.0492	77	69
M2 x 0.40	1/16	.0625	79	72
	1.60 mm	.0630	77	69
	52	.0635	74	66
M2.5 x 0.45	2.05 mm	.0807	77	69
	46	.0810	76	67
	45	.0820	71	63
M3 x 0.50	40	.0980	79	70
	2.50 mm	.0984	77	68
	39	.0995	73	64
M3.5 x 0.60	33	.1130	81	72
	2.90 mm	.1142	77	68
	32	.1160	71	63
M4 x 0.70	3.20 mm	.1260	88	80
	30	.1285	81	73
	3.30 mm	.1299	77	69
M4.5 x 0.75	3.70 mm	.1457	82	74
	26	.1470	79	70
	25	.1495	72	64
M5 x 0.80	4.20 mm	.1654	77	69
	19	.1660	75	68
M6 x 1.00	10	.1935	84	76
	9	.1960	79	71
	5.00 mm	.1968	77	70
	8	.1990	73	65
M7 x 1.00	A	.2340	81	74
	6.00 mm	.2362	77	70
	B	.2380	74	66
M8 x 1.25	6.70 mm	.2638	80	74
	17/64	.2656	77	71
	H	.2660	77	70
	6.80 mm	.2677	74	68
M10 x 1.50	8.40 mm	.3307	82	76
	Q	.3320	80	75
	8.50 mm	.3346	77	71
M12 x 1.75	10.25 mm	.4035	77	72
	Y	.4040	76	71
	13/32	.4062	74	69
M14 x 2.00	15/32	.4688	81	76
	12.00 mm	.4724	77	72
M16 x 2.00	35/64	.5469	81	76
	14.00 mm	.5512	77	72
M20 x 2.50	11/16	.6875	78	74
	17.50 mm	.6890	77	73
M24 x 3.00	13/16	.8125	86	82
	21.00 mm	.8268	76	73
	53/64	.8281	76	73
M30 x 3.50	1-1/32	1.0312	83	80
	26.50 mm	1.0433	77	73
	1-3/64	1.0469	75	70
M36 x 4.00	1-17/64	1.2656	74	

