



Some of the hazards experienced in tapping can be greatly reduced by using the general recommendations on pages T15-T19 - Tapping-Drill Section and by following a pre-tapping check list for the tapping set-up as listed hereunder.

1. Check that the correct tap has been selected for the particular job.
2. Select the tapping drill size which best suits the application bearing in mind that the largest permissible drill should always be chosen. Relatively small decreases in hole diameter can double torque requirements at the same time producing a similar reduction in tap life. Tests have shown clearly that percentage depth of thread in excess of 60% does not increase the static strength of a threaded fastener.
3. Use the correct drill cutting speed, especially in materials with work hardening tendencies.
4. Check that the drill is sharp and drills a clean, straight, round hole.
5. Ensure that the depth of a blind hole is sufficient for tapping swarf acceptance.
6. Select a suitable tapping speed from the Tables Page T22.
7. Ensure that the tap will be presented squarely to the hole and that there will be no relative eccentricity between the tap and the hole.
8. Ensure adequate flow of the chosen lubricant (see table - Page T22).
9. When tapping, start the tap smoothly into each hole and keep the flutes clear of swarf.
10. Pre-tapped holes which are tapered, out of round, etc., will affect the life of a tap and the size of the threaded hole. These undesirable effects can be eliminated by the use of a reamer which ensures clean, accurate threaded holes with increased tap life.

DRILL SIZES FOR TAPPING

ISO-Metric

ISO METRIC THREAD - COARSE PITCH SERIES					
Nominal Diameter & Pitch mm	Drill Size mm		Nominal Diameter & Pitch mm	Drill Size mm	
	Normal Application	Special Application		Normal Application	Special Application
2.0 x 0.40	1.65	1.60	9.0 x 1.25	7.90	7.80
2.5 x 0.45	2.10	2.05	10.0 x 1.50	8.70	8.50
3.0 x 0.50	2.55	2.50	11.0 x 1.50	9.80	9.50
3.5 x 0.60	2.95	2.90	12.0 x 1.75	10.50	10.20
4.0 x 0.70	3.40	3.30	14.0 x 2.00	12.20	12.00
4.5 x 0.75	3.80	3.70	16.0 x 2.00	14.50	14.25
5.0 x 0.80	4.30	4.20	18.0 x 2.50	15.75	15.50
6.0 x 1.00	5.10	5.00	20.0 x 2.50	18.00	17.50
7.0 x 1.00	6.10	6.00	22.0 x 2.50	20.00	19.50
8.0 x 1.25	6.90	6.80	24.0 x 3.00	21.50	21.00

ISO METRIC THREAD - MISCELLANEOUS POPULAR FINE PITCH AND SPARK PLUG SIZES					
Nominal Diameter & Pitch mm	Drill Size mm		Nominal Diameter & Pitch mm	Drill Size mm	
	Normal Application	Special Application		Normal Application	Special Application
8 x 1.00	7.10	7.00	14 x 1.50	12.80	12.50
10 x 1.00	9.20	9.00	16 x 1.50	14.75	14.50
10 x 1.25	8.90	8.80	18 x 1.50	16.50	16.50
12 x 1.25	11.00	10.80	20 x 1.50	18.50	18.50
12 x 1.50	10.80	10.50	22 x 1.50	20.50	20.50
14 x 1.25	13.00	12.80	24 x 2.00	22.50	22.00



U.N.F., U.N.C.

U.N.F.					
Nominal Diameter & T.P.I.	Drill Size mm		Nominal Diameter & T.P.I.	Drill Size mm	
	Normal Application	Special Application		Normal Application	Special Application
0 x 80	1.25	1.25	3/8 x 24	8.60	8.50
1 x 72	1.55	1.55	7/16 x 20	10.00	9.80
2 x 64	1.90	1.90	1/2 x 20	11.50	11.50
3 x 56	2.15	2.15	9/16 x 18	13.00	12.80
4 x 48	2.40	2.40	5/8 x 18	14.50	14.50
5 x 44	2.70	2.70	3/4 x 16	17.50	17.50
6 x 40	2.95	2.95	7/8 x 14	20.50	20.50
8 x 36	3.50	3.50	1 x 12	23.50	23.00
10 x 32	4.10	4.10	1-1/8 x 12	26.50	26.50
12 x 28	4.70	4.70	1-1/4 x 12	30.00	29.50
1/4 x 28	5.50	5.50	1-3/8 x 12	33.00	32.50
5/16 x 24	7.00	6.90	1-1/2 x 12	36.00	36.00
U.N.C.					
Nominal Diameter & T.P.I.	Drill Size mm		Nominal Diameter & T.P.I.	Drill Size mm	
	Normal Application	Special Application		Normal Application	Special Application
1 x 64	1.55	1.55	1/2 x 13	11.00	10.80
2 x 56	1.85	1.85	9/16 x 12	12.50	12.20
3 x 48	2.10	2.10	5/8 x 11	13.80	13.50
4 x 40	2.35	2.35	3/4 x 10	17.00	16.50
5 x 40	2.65	2.65	7/8 x 9	19.50	19.50
6 x 32	2.85	2.85	1 x 8	22.50	22.00
8 x 32	3.50	3.50	1-1/8 x 7	25.50	25.00
10 x 24	3.90	3.90	1-1/4 x 7	28.50	28.00
12 x 24	4.50	4.50	1-3/8 x 6	31.00	30.50
1/4 x 20	5.20	5.10	1-1/2 x 6	34.50	34.00
5/16 x 18	6.70	6.60	1-3/4 x 5	40.00	39.50
3/8 x 16	8.10	8.00	2 x 41/2	45.50	45.00
7/16 x 14	9.50	9.20			

