

Tap Drill Sizes – STI (Screw Thread Insert) Taps

STI TAP SIZE	ALUMINUM				STEEL, PLASTIC, MAGNESIUM			
	TAP DRILL SIZE	DECIMAL EQUIV. OF TAP DRILL (INCHES)	MINOR DIA. LIMITS (AFTER TAPPING)		TAP DRILL SIZE	DECIMAL EQUIV. OF TAP DRILL (INCHES)	MINOR DIA. LIMITS (AFTER TAPPING)	
			MIN.	MAX.			MIN.	MAX.
4 - 40	#31	.1200	.116	.121	#31	.1200	.119	.124
5 - 40	#30	.1285	.128	.133	#29	.1360	.131	.136
6 - 32	#25	.1495	.144	.150	#25	.1495	.148	.154
6 - 40	#26	.1470	.144	.149	#25	.1495	.148	.153
8 - 32	#17	.1730	.170	.176	#16	.1770	.174	.180
10 - 24	1 ³ / ₆₄	.2031	.199	.205	#5	.2055	.203	.209
10 - 32	#7	.2010	.196	.202	1 ³ / ₆₄	.2031	.200	.206
12 - 24	#2	.2210	.221	.227	#1	.2280	.225	.231
1/4 - 20	1 ⁷ / ₆₄	.2656	.261	.267	1 ⁷ / ₆₄	.2656	.265	.271
1/4 - 28	G	.2610	.257	.264	1 ⁷ / ₆₄	.2656	.261	.268
5/16 - 18	Q	.3320	.328	.334	Q	.3320	.331	.337
5/16 - 24	2 ¹ / ₆₄	.3281	.323	.330	Q	.3320	.327	.334
3/8 - 16	X	.3970	.390	.398	X	.3970	.396	.402
3/8 - 24	2 ⁵ / ₆₄	.3906	.385	.392	2 ⁵ / ₆₄	.3906	.389	.396
7/16 - 14	2 ⁹ / ₆₄	.4531	.453	.463	1 ⁵ / ₃₂	.4687	.461	.471
7/16 - 20	2 ⁹ / ₆₄	.4531	.450	.458	2 ⁹ / ₆₄	.4531	.453	.461
1/2 - 13	3 ³ / ₆₄	.5156	.515	.525	1 ⁷ / ₃₂	.5312	.523	.533
1/2 - 20	3 ³ / ₆₄	.5156	.513	.522	3 ³ / ₆₄	.5156	.515	.524

NOTE: Tap Drills listed above should produce holes within the required limits. However, variations in material and equipment may require the use of drills which are larger or smaller than those recommended.

NOTE: Minor Diameter Limits for steel, plastic, and magnesium are such as to allow for material contraction and provide maximum tap life.

Formula for Obtaining Tap Drill Sizes for Cutting Taps:			
Major Dia. of Thread	-	$\frac{.01299 \times \text{Amt. of percentage of full thread}}{\text{No. of threads per inch}}$	= Drilled Hole* Size
Note: Select nearest commercial stock drill.			
Percentage of Full Thread for Other Drill Sizes			
No. of Threads per Inch	x	$\frac{\text{Major Dia. Selectedof Thread - Drill Dia.}}{.01299}$	= Percentage of Full Thread
Formula For Obtaining Tap Drill Sizes For Thread Forming Taps:			
*Drill Hole Size (inches)	=	Basic Major Dia. of thread (inches) - .0068	x $\frac{\text{Percentage of Full Thread}}{\text{No. of Threads per Inch}}$
*Drilled Hole Size (mm)	=	Basic Major Dia. of thread (mm)	- $\frac{\text{Percentage of Full Thread X mm Pitch}}{147.06}$
*Note: Drill size should be smaller than hole size by the probable amount the drill will cut oversize.			