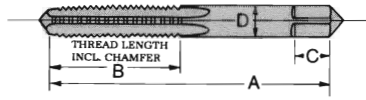


ENGINEERING DATA

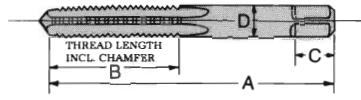
TAPS & DIES

Ground Thread Tap Dimensions

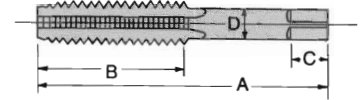
Table 302



STYLE 1



STYLE 2



STYLE 3

General Dimensions

Nominal Diameter Range - Inches		Machine Screw Size No.	Nominal Fractional Diameter (Inches)	Nominal Metric Diameter (Millimeters)	Style	Tap Dimensions—Inches				
						Length Overall A	Thread Length B	Square Length C	Shank Diameter D	Size of Square E
.052	.065	0	1/16	M1.6	1	1-5/8	5/16	3/16	.141	.110
.065	.078	1	-----	M1.8	1	1-11/16	3/8	3/16	.141	.110
.078	.091	2	-----	M2, M2.2	1	1-3/4	7/16	3/16	.141	.110
.091	.104	3	3/32	M2.5	1	1-13/16	1/2	3/16	.141	.110
.104	.117	4	-----	-----	1	1-7/8	9/16	3/16	.141	.110
.117	.130	5	1/8	M3, M3.15	1	1-15/16	5/8	3/16	.141	.110
.130	.145	6	-----	M3.5	1	2	11/16	3/16	.141	.110
.145	.171	8	5/32	M4	1	2-1/8	3/4	1/4	.168	.131
.171	.197	10	3/16	M4.5, M5	1	2-3/8	7/8	1/4	.194	.152
.197	.223	12	7/32	-----	1	2-3/8	15/16	9/32	.220	.165
.223	.260	14	1/4	M6, M6.3	2	2-1/2	1	5/16	.255	.191
.260	.323		5/16	M7, M8	2	2-23/32	1-1/8	3/8	.318	.238
.323	.395		3/8	M10	2	2-15/16	1-1/4	7/16	.381	.286
.395	.448		7/16	-----	3	3-5/32	1-7/16	13/32	.323	.242
.448	.510		1/2	M12, M12.5	3	3-3/8	1-21/32	7/16	.367	.275
.510	.573		9/16	M14	3	3-19/32	1-21/32	1/2	.429	.322
.573	.635		5/8	M16	3	3-13/16	1-13/16	9/16	.480	.360
.635	.709		11/16	M18	3	4-1/32	1-13/16	5/8	.542	.406
.709	.760		3/4	-----	3	4-1/4	2	11/16	.590	.442
.760	.823		13/16	M20	3	4-15/32	2	11/16	.652	.489
.823	.885		7/8	M22	3	4-11/16	2-7/32	3/4	.697	.523
.885	.948		15/16	M24	3	4-29/32	2-7/32	3/4	.760	.570
.948	1.010		1	M25	3	5-1/8	2-1/2	13/16	.800	.600
1.010	1.073		1-1/16	M27	3	5-1/8	2-1/2	7/8	.896	.672
1.073	1.135		1-1/8	-----	3	5-7/16	2-9/16	7/8	.896	.672
1.135	1.198		1-3/16	M30	3	5-7/16	2-9/16	1	1.021	.766
1.198	1.260		1-1/4	-----	3	5-3/4	2-9/16	1	1.021	.766
1.260	1.323		1-5/16	M33	3	5-3/4	2-9/16	1-1/16	1.108	.831
1.323	1.385		1-3/8	-----	3	6-1/16	3	1-1/16	1.108	.831
1.385	1.448		1-7/16	M36	3	6-1/16	3	1-1/8	1.233	.925
1.448	1.510		1-1/2	-----	3	6-3/8	3	1-1/8	1.233	.925
1.510	1.635		1-5/8	M39	3	6-11/16	3-3/16	1-1/8	1.305	.979
1.635	1.760		1-3/4	M42	3	7	3-3/16	1-1/4	1.430	1.072
1.760	1.885		1-7/8	-----	3	7-5/16	3-9/16	1-1/4	1.519	1.139
1.885	2.010		2	M48	3	7-5/8	3-9/16	1-3/8	1.644	1.233
2.010	2.135		2-1/8	-----	3	8	3-9/16	1-3/8	1.769	1.327
2.135	2.260		2-1/4	M56	3	8-1/4	3-9/16	1-7/16	1.894	1.420
2.260	2.385		2-3/8	-----	3	8-1/2	4	1-7/16	2.019	1.514
2.385	2.510		2-1/2	-----	3	8-3/4	4	1-1/2	2.100	1.575
2.510	2.635		2-5/8	M64	3	8-3/4	4	1-1/2	2.225	1.669
2.635	2.760		2-3/4	-----	3	9-1/4	4	1-9/16	2.350	1.762
2.760	2.885		2-7/8	M72	3	9-1/4	4	1-9/16	2.475	1.856
2.885	3.010		3	-----	3	9-3/4	4-9/16	1-5/8	2.543	1.907
3.010	3.135		3-1/8	-----	3	9-3/4	4-9/16	1-5/8	2.668	2.001
3.135	3.260		3-1/4	M80	3	10	4-9/16	1-3/4	2.793	2.095

-CONT.-

ENGINEERING DATA TAPS & DIES

Ground Thread Tap Dimensions

Table 302
(Continued)

General Dimensions

Nominal Diameter Range - Inches		Machine Screw Size No.	Nominal Fractional Diameter (Inches)	Nominal Metric Diameter (Millimeters)	Style	Tap Dimensions—Inches				
						Length Overall A	Thread Length B	Square Length C	Shank Diameter D	Size of Square E
3.260	3.385		3-3/8		3	10	4-9/16	1-3/4	2.883	2.162
3.385	3.510		3-1/2		3	10-1/4	4-15/16	2	3.008	2.256
3.510	3.635		3-5/8	M90	3	10-1/4	4-15/16	2	3.133	2.350
3.635	3.760		3-3/4		3	10-1/2	5-5/16	2-1/8	3.217	2.413
3.760	3.885		3-7/8		3	10-1/2	5-5/16	2-1/8	3.342	2.506
3.885	4.010		4	M100	3	10-3/4	5-5/16	2-1/4	3.467	2.600

SPECIAL TAPS

Unless otherwise specified:

Special taps over 1.010" to 1.510" diameter inclusive, having 14 or more threads per inch or 1.75 millimeter pitch and finer, and sizes over 1.510" diameter with 10 or more threads per inch or 2.5 millimeter pitch and finer, are made to general dimensions shown in Table 303.

Special ground thread taps are made to limits shown in Table 331 for Unified Inch Screw Threads and Table 341 for Metric M-Profile Screw Threads.

NOTES

Ground thread taps, sizes .395" and smaller, have external center on thread end (may be removed on bottoming taps). Sizes .223" and smaller have external center on shank end; sizes .224" thru .395" have truncated partial cone centers on shank end (length of cone approximately 1/4 of diameter shank). Sizes over .395" have internal center in thread and shank ends.

For standard thread limits and tolerances for Unified Inch Screw Threads see Table 327 and for Metric Threads see Table 337.

For eccentricity tolerances of tap elements see Table 317.

TOLERANCES

Element	Nominal Diameter Range—Inches		Direction	Tolerance—Inches
	Over	To (Incl.)		
Length Overall — A	.052	1.010	Plus or Minus	1/32
	1.010	4.010	Plus or Minus	1/16
Length of Thread — B	.052	.223	Plus or Minus	3/64
	.223	.510	Plus or Minus	1/16
	.510	1.510	Plus or Minus	3/32
	1.510	4.010	Plus or Minus	
Length of Square — C	.052	1.010	Plus or Minus	1/32
	1.010	4.010	Plus or Minus	1/16
Diameter of Shank — D	.052	.223	Minus	.0015
	.223	.635	Minus	.0015
	.635	1.010	Minus	.002
	1.010	1.510	Minus	.002
	1.510	2.010	Minus	.003
	2.010	4.010	Minus	.003
Size of Square — E	.052	.510	Minus	.004
	.510	1.010	Minus	.006
	1.010	2.010	Minus	.008
	2.010	4.010	Minus	.010