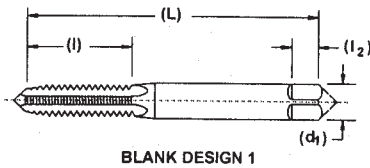


SPECIAL TAPS ENGINEERING DATA

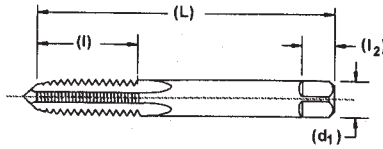
STANDARD TAP DIMENSIONS • GROUND THREAD

(Ref. USCTI Table 302)

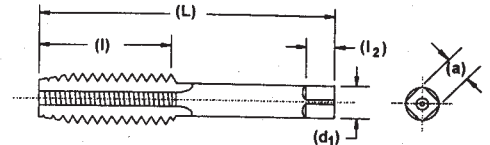
General Dimensions



BLANK DESIGN 1



BLANK DESIGN 2



BLANK DESIGN 3

Nominal Diameter Range - Inches		Machine Screw Size No.	Nominal Fractional Diameter Inches	Nominal Metric Diameter Millimeters, (Inches)	Blank Design No.	Tap Dimensions---Inches				
Over	To (Inc.)					Overall Length L	Thread Length l	Square Length l ₂	Shank Diameter d ₁	Size of Square a
.052	.065	0 (.0600)		M 1.6 (.0630)	1	1.63	.31	.19	.1410	.110
.065	.078	1 (.0730)		M1.8 (.0709)	1	1.69	.38	.19	.1410	.110
.078	.091	2 (.0860)		M2 (.0787), M2.2 (.0866)	1	1.75	.44	.19	.1410	.110
.091	.104	3 (.0990)		M2.5 (.0984)	1	1.81	.50	.19	.1410	.110
.104	.117	4 (.1120)			1	1.88	.56	.19	.1410	.110
.117	.130	5 (.1250)		M3 (.1181)	1	1.94	.63	.19	.1410	.110
.130	.145	6 (.1380)		M3.5 (.1378)	1	2.00	.69	.19	.1410	.110
.145	.171	8 (.1640)		M4 (.1575)	1	2.13	.75	.25	.1680	.131
.171	.197	10 (.1900)		M4.5 (.1772), M5 (.1969)	1	2.38	.88	.25	.1940	.152
.197	.223	12 (.2160)			1	2.38	.94	.28	.2200	.165
.223	.260		1/4 (.2500)	M6 (.2362)	2	2.50	1.00	.31	.2550	.191
.260	.323		5/16 (.3125)	M7 (.2756), M8 (.3150)	2	2.72	1.13	.38	.3180	.238
.323	.395		3/8 (.3750)	M10 (.3937)	2	2.94	1.25	.44	.3810	.286
.395	.448		7/16 (.4375)		3	3.16	1.44	.41	.3230	.242
.448	.510		1/2 (.5000)	M12 (.4724)	3	3.38	1.66	.44	.3670	.275
.510	.573		9/16 (.5625)	M14 (.5512)	3	3.59	1.66	.50	.4290	.322
.573	.635		5/8 (.6250)	M16 (.6299)	3	3.81	1.81	.56	.4800	.360
.635	.709		11/16 (.6875)	M18 (.7087)	3	4.03	1.81	.63	.5420	.406
.709	.760		3/4 (.7500)		3	4.25	2.00	.69	.5900	.442
.760	.823		13/16 (.8125)	M20 (.7874)	3	4.47	2.00	.69	.6520	.489
.823	.885		7/8 (.8750)	M22 (.8661)	3	4.69	2.22	.75	.6970	.523
.885	.948		15/16 (.9375)	M24 (.9449)	3	4.91	2.22	.75	.7600	.570
.948	1.010		1 (1.0000)	M25 (.9843)	3	5.13	2.50	.81	.8000	.600
1.010	1.073		1-1/16 (1.0625)	M27 (1.0630)	3	5.13	2.50	.88	.8960	.672
1.073	1.135		1-1/8 (1.1250)		3	5.44	2.56	.88	.8960	.672
1.135	1.198		1-3/16 (1.1875)	M30 (1.1811)	3	5.44	2.56	1.00	1.0210	.766
1.198	1.260		1-1/4 (1.2500)		3	5.75	2.56	1.00	1.0210	.766
1.260	1.323		1-5/16 (1.3125)	M33 (1.2992)	3	5.75	2.56	1.06	1.1080	.831
1.323	1.385		1-3/8 (1.3750)		3	6.06	3.00	1.06	1.1080	.831
1.358	1.448		1-7/16 (1.4375)	M36 (1.4173)	3	6.06	3.00	1.13	1.2330	.925
1.448	1.510		1-1/2 (1.5000)		3	6.38	3.00	1.13	1.2330	.925
1.510	1.635		1-5/8 (1.6250)	M39 (1.5354)	3	6.69	3.19	1.13	1.3050	.979
1.635	1.760		1-3/4 (1.7500)	M42 (1.6535)	3	7.00	3.19	1.25	1.4300	1.072
1.760	1.885		1-7/8 (1.8750)		3	7.31	3.56	1.25	1.5190	1.139
1.885	2.010		2 (2.0000)	M48 (1.8898)	3	7.63	3.56	1.38	1.6440	1.233

(Continued)

SPECIAL TAPS ENGINEERING DATA

STANDARD TAP DIMENSIONS • GROUND THREAD (cont.)

(Ref. USCTI Table 302)

General Dimensions

Nominal Diameter Range - Inches		Machine Screw Size No.	Nominal Fractional Diameter Inches	Nominal Metric Diameter Millimeters, (Inches)	Blank Design No.	Tap Dimensions—Inches				
						Overall Length L	Thread Length I	Square Length I ₂	Shank Diameter d ₁	Size of Square a
2.010	2.135		2 1/8 (2.1250)		3	8.00	3.56	1.38	1.7690	1.327
2.135	2.260		2 1/4 (2.2500)	M56 (2.2047)	3	8.25	3.56	1.44	1.8940	1.420
2.260	2.385		2 3/8 (2.3750)		3	8.50	4.00	1.44	2.0190	1.514
2.385	2.510		2 1/2 (2.5000)		3	8.75	4.00	1.50	2.1000	1.575
2.510	2.635		2 5/8 (2.6250)	M64 (2.5197)	3	8.75	4.00	1.50	2.2250	1.669
2.635	2.760		2 3/4 (2.7500)		3	9.25	4.00	1.56	2.3500	1.762
2.760	2.885		2 7/8 (2.8750)	M72 (2.8346)	3	9.25	4.00	1.56	2.4750	1.856
2.885	3.010		3 (3.0000)		3	9.75	4.56	1.63	2.5430	1.907
3.010	3.135		3 1/8 (3.1250)		3	9.75	4.56	1.63	2.6680	2.001
3.135	3.260		3 1/4 (3.2500)	M80 (3.1496)	3	10.00	4.56	1.75	2.7930	2.095
3.260	3.385		3 3/8 (3.3750)		3	10.00	4.56	1.75	2.8830	2.162
3.385	3.510		3 1/2 (3.5000)		3	10.25	4.94	2.00	3.0080	2.256
3.510	3.635		3 5/8 (3.6250)	M90 (3.5433)	3	10.25	4.94	2.00	3.1330	2.350
3.635	3.760		3 3/4 (3.7500)		3	10.50	5.31	2.13	3.2170	2.413
3.760	3.885		3 7/8 (3.8750)		3	10.50	5.31	2.13	3.3420	2.506
3.885	4.010		4 (4.0000)	M100 (3.9370)	3	10.75	5.31	2.25	3.4670	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 tap thread limits are determined by using the formulas shown in Table 331 for Unified Inch Screw Threads and Table 341 for Metric M-Profile Screw Threads.

NOTES

Tap sizes .395" and smaller have an external center on the thread end (may be removed on bottoming taps). Sizes .223" and smaller have an external center on the shank end. Sizes .224" thru .395" have truncated partial cone centers on the shank end (length of cone approx. 1/4 of diameter of shank). Sizes over .395" have internal centers on both the 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 in Inches		Direction	Tolerance (Inches)
	Over	To (Inc.)		
Length Overall - L	.0520	1.0100	Plus or Minus	.031
	1.0100	4.0100	Plus or Minus	.063
Length of Thread - I	.0520	.2230	Plus or Minus	.047
	.2230	.5100	Plus or Minus	.063
	.5100	1.5100	Plus or Minus	.094
	1.5100	4.0100	Plus or Minus	.125
Length of square - I ₂	.0520	1.0100	Plus or Minus	.031
	1.0100	4.0100	Plus or Minus	.063
Diameter of shank - d ₁	.0520	.2230	Minus	.0015
	.2230	.6350	Minus	.0015
	.6350	1.0100	Minus	.0020
	1.0100	1.5100	Minus	.0020
	1.5100	2.0100	Minus	.0030
	2.0100	4.0100	Minus	.0030
Size of square - a	.0520	.5100	Minus	.004
	.5100	1.0100	Minus	.006
	1.0100	2.0100	Minus	.008
	2.0100	4.0100	Minus	.010

