

Instruction
Hardware Engineering

No. LMS 6-2

Subject: Screw Threads

APPROVED BY: Manager, Hardware Engineering

STATUS: Maintenance Revision

PURPOSE: Covers the preparation of specifications to insure uniform practices in the machining and inspection of screw threads. L-3 Communications Corporation, Link Simulation & Training Division (hereafter referred to as Link) personnel shall follow the requirements of this instruction when machining and inspecting screw threads.

AFFECTED FUNCTIONS: Hardware Engineering
Manufacturing

REFERENCES: FED-STD-H28 Screw Thread Standards for Federal Services

INSTRUCTION

1. Requirements

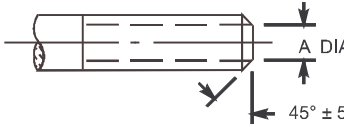
1.1 General.

- a. Standard threads. The standard thread form of screw threads manufactured at Link shall be the UNIFIED (Unified National/Unified National Rounded Root-UN/UNR) thread form. UNR applies to external threads only. In addition to the difference in designation, UN threads may have a flat or optional rounded root contour, while only a rounded root contour is used for UNR threads.
- b. Thread direction. Unless otherwise specified on the drawing, threads are right hand; a left-hand thread shall be designated "LH" as follows:

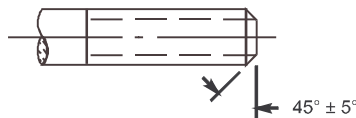
1/4-20 UNC-3A-LH

- 1.2 Chamfering. The entering end of externally threaded parts shall have a 45-degree (65-degree) chamfer. Unless otherwise specified on the drawing, chamfer dimensions shall be in accordance with Table I. (See Figure 1.)

Table I Chamfer – External Thread



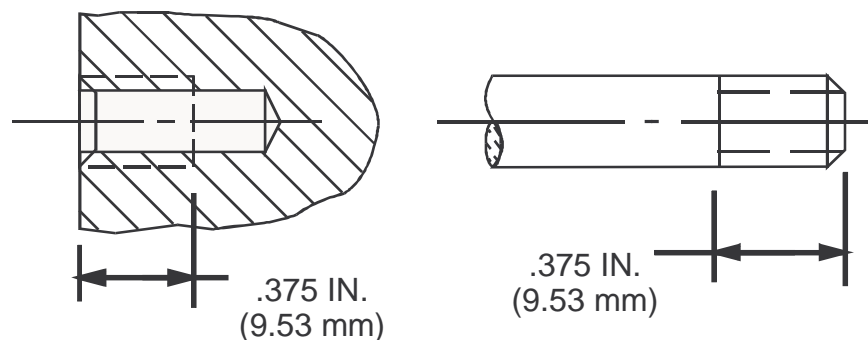
Thread Size	A Inch (mm)	Tolerance Inch (mm)	Thread Size	A Inch (mm)	Tolerance Inch (mm)
No. 0-80	.040 (1.016)	+.000 -.010 (-0.254)	1-12	.881 (22.377)	+.000 -.020 (-0.508)
No. 1-64	.049 (1.245)		1 1/8-12	1.006 (25.552)	
No. 2-56	.059 (1.499)		1 1/4-12	1.131 (25.727)	
No. 3-48	.068 (1.727)		1 3/8-12	1.256 (31.902)	
No. 4-40	.075 (1.905)		1 1/2-12	1.006 (35.077)	
No. 6-32	.092 (2.337)	+.000 -.015 (-0.381)	1 3/4-12	1.631 (41.427)	
No. 8-32	.118 (2.997)		2-12	1.881 (47.777)	
No. 10-24	.129 (3.277)		2 1/4-12	2.131 (54.127)	
No. 10-32	.144 (3.658)		2 1/2-12	2.381 (60.477)	
1/4-20	.178 (4.521)		2 3/4-12	2.631 (66.827)	
1/4-28	.197 (5.004)	+.000 -.020 (-0.508)	3-12	2.881 (93.177)	
5/16-18	.231 (5.867)		3 1/4-12	3.131 (79.527)	
5/16-24	.252 (6.401)		3 1/2-12	3.381 (85.877)	
3/8-16	.285 (7.239)		3 3/4-12	3.631 (92.227)	
3/8-24	.314 (7.976)		4-12	3.881 (98.577)	
7/16-20	.365 (9.271)		4 1/4-12	4.131 (104.927)	
1/2-20	.428 (10.871)		4 1/2-12	4.381 (111.277)	
9/16-18	.481 (12.217)		4 3/4-12	4.631 (117.627)	
5/8-18	.544 (13.818)		5-12	4.881 (123.977)	
3/4-16	.660 (16.764)		5 1/4-12	5.131 (130.327)	
7/8-14	.772 (19.609)		5 1/2-12	5.381 (136.677)	
			5 3/4-12	5.631 (143.027)	
			6-12	5.881 (149.377)	



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Figure 1 Chamfer Angle

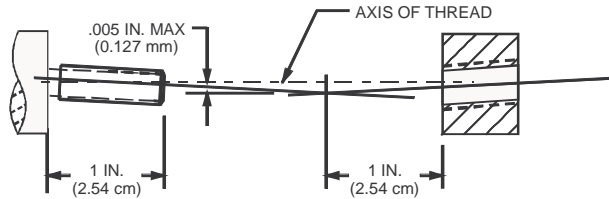
- 1.3 Length of thread. This, as specified on the drawing, shall mean the length of complete threads, including the chamfered ends of screws and the countersink depth of threaded holes. (See Figure 2.) Complete and incomplete threads are permitted beyond this dimension to insure minimum that lead length is obtained and to allow for lead threads. Unless otherwise specified on the drawing, when threads are shown to a shoulder, complete threads shall extend to within 2-1/2 threads of the shoulder.



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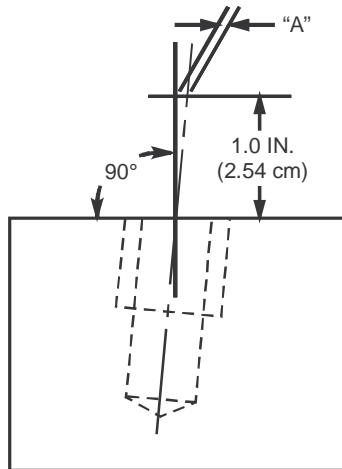
Figure 2 Threaded Length

- 1.4 Thread relief. When thread reliefs are required, they shall be specified on the drawing. When not dimensioned, they shall be in accordance with Table II. Threads shall be complete up to the relief. Manufacturing Analysis shall review all drawings of threaded parts for thread relief requirements prior to manufacture of the part.
- 1.5 Squareness of threads.
- a. Squareness of threads applies to threads about the axis of turned parts. The axis of the thread shall be square with the face or shoulder and parallel to the axis within .005 inch per inch (0.127 mm per 25.4 mm). (See Figure 3.)
 - b. The axial squareness of tapped holes located at 90 degrees from the surface shall not exceed the amount specified in column "A" of Table III when measured 1 inch (2.54 cm) above the surface. (See Figure 4.)



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Figure 3 Thread Squareness

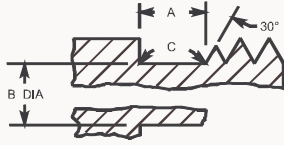


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Figure 4 Axial Squareness

- 1.6 Through holes. It shall be understood that if the tap drill depth and/or the length of thread are not specified on the drawing, the hole is to be a through hole.

Table II Thread Relief Dimensions



Thread Size	Thread Reliefs				Basic Major Dia. Inch (mm)
	A - Inch (mm) +.015 (+0.381) -.000 (-0.000)	B (DIA)		C-Radius Inch (mm)	
		MIN Inch (mm)	MAX Inch (mm)		
No. 0-80	.038 (0,965)	.034 (0,864)	.040 (1,016)		.0600 (1,524)
No. 1-64	.047 (1,193)	.042 (1,067)	.049 (1,245)		.0730 (1,854)
No. 2-56	.054 (1,372)	.052 (1,321)	.059 (1,499)		.0860 (2,184)
No. 3-48	.062 (1,575)	.061 (1,594)	.068 (1,727)	+.005 .010 -.000 (+.0127)	.0990 (2,515)
No. 4-40	.075 (1,905)	.068 (1,727)	.075 (1,905)		.1120 (2,845)
No. 6-32	.094 (2,388)	.085 (2,159)	.092 (2,337)		.1380 (3,505)
No. 8-32	.094 (2,388)	.111 (2,819)	.118 (2,997)	(0,254) (-0,000)	.1640 (4,166)
No. 10-24	.125 (3,175)	.122 (3,099)	.129 (3,277)		.1900 (4,826)
No. 10-32	.094 (2,388)	.137 (3,480)	.144 (3,658)		.1900 (4,826)
1/4-20	.150 (3,810)	.166 (4,216)	.178 (4,521)	+.010 .020 -.000 (+.0254)	.2500 (6,350)
1/4-28	.107 (2,718)	.186 (4,724)	.197 (5,004)		.2500 (6,350)
5/16-18	.167 (4,242)	.220 (5,588)	.231 (5,867)		.3125 (7,938)
5/16-24	.125 (3,175)	.241 (6,121)	.252 (6,401)	(0,508) (-0,000)	.3125 (7,938)
3/8-16	.188 (4,775)	.274 (6,960)	.285 (7,239)		.3750 (9,525)
3/8-24	.125 (3,175)	.303 (7,696)	.314 (7,976)		.3750 (9,525)
7/16-20	.150 (3,810)	.356 (9,042)	.365 (9,271)		.4375 (11,113)
1/2-20	.150 (3,810)	.418 (10,617)	.428 (10,871)		.5000 (12,700)
9/16-18	.167 (4,242)	.474 (12,040)	.481 (12,217)		.5625 (14,288)
5/8-18	.167 (4,242)	.536 (13,644)	.544 (13,818)		.6250 (15,875)
3/4-16	.188 (4,775)	.643 (16,332)	.660 (16,764)		.7500 (19,050)
7/8-14	.214 (5,436)	.757 (19,228)	.772 (19,609)		.8750 (22,225)
1-12	.250 (6,350)	.867 (22,022)	.881 (22,377)	+.015 .030 -.000 (+.0381)	1.0000 (25,400)
1 1/8-12		.992 (25,197)	1.006 (25,552)		1.1250 (28,575)
1 1/4-12		1.117 (28,372)	1.131 (28,727)		1.2500 (31,750)
1 3/8-12		1.242 (31,547)	1.256 (31,902)		1.3750 (34,925)
1 1/2-12		1.367 (34,728)	1.381 (35,077)		1.5000 (38,100)
1 3/4-12		1.617 (41,072)	1.631 (41,427)		1.7500 (44,450)
2-12		1.867 (47,422)	1.881 (47,777)		2.0000 (50,800)
2 1/4-12		2.117 (53,772)	2.131 (54,127)		2.2500 (57,150)
2 1/2-12		2.367 (60,122)	2.381 (60,477)		2.5000 (63,500)
2 3/4-12		2.617 (66,472)	2.631 (66,827)		2.7500 (69,850)
3-12		2.867 (72,822)	2.881 (73,177)		3.0000 (76,200)
3 1/4-12		3.117 (79,172)	3.131 (79,527)		3.2500 (82,550)
3 1/2-12		3.367 (85,522)	3.381 (85,877)		3.5000 (88,900)
3 3/4-12		3.617 (91,872)	3.631 (92,227)		3.7500 (95,250)
4-12		3.867 (98,222)	3.881 (98,577)		4.0000 (101,600)
4 1/4-12	4.117 (104,572)	4.131 (104,927)	4.2500 (107,950)		
4 1/2-12	4.367 (110,922)	4.381 (111,277)	4.5000 (114,300)		
4 3/4-12	4.617 (117,272)	4.631 (117,627)	4.7500 (120,650)		
5-12	4.867 (123,622)	4.881 (123,977)	5.0000 (127,000)		
5 1/4-12	5.117 (129,972)	5.131 (130,327)	5.2500 (133,350)		
5 1/2-12	5.367 (136,322)	5.381 (136,677)	5.5000 (139,700)		
5 3/4-12	5.617 (142,672)	5.631 (143,027)	5.7500 (146,050)		
6-12	5.867 (149,022)	5.881 (149,377)	6.0000 (152,400)		

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Table III Squareness of Tolerance

Tapped Hole Thread Size	"A" Inch (mm)
0 to 2	.015 (0.381)
4 to 6	.010 (0.254)
8 to 10	.008 (0.203)
1 / 4 to 1 / 2	.006 (0.152)
Over 1 / 2	.005 (0.127)

1.7 Countersinking.

- a. All holes to be threaded shall be countersunk 90 (610) degrees (included angle) to the diameter specified in Table IV for the corresponding screw size unless:
 - (1) Otherwise specified on the drawing.
 - (2) The threaded depth of a blind hole or the length of a through threaded hole is less than that established in Table IV.
- b. This restriction on countersinking prevents the removal of material when the resultant number of threads would be less than four (4). When countersinking is prohibited by Table IV parameters, any burrs formed during the threading operation shall be removed from the flat surface.

1.8 Tap drill.

- a. Size. Table V indicates the drill sizes to be used prior to tapping internal threads. The tap drill sizes are based on a theoretical 75 percent of thread. For tap drill sizes not listed in Table V, refer to FED-STD-H28/2.

When no-chip form taps are used rather than the usual thread-cutting taps, the tap drill sizes shall be as indicated in Table VI.

- b. Depth. Table VII has been established as a guide for computing the tap drill depth for a given depth of thread when the tap drill depth has not been specified on the drawing. Column "A" in Table VII lists the minimum clearances required for standard plug tap sizes.

Table IV Countersink Dimensions for Threaded Holes

THREAD SIZE	CSK DIA Inch (mm)	TOLERANCE Inch (mm)	MINIMUM THREAD LENGTH TO WHICH A COUNTERSINK MAY BE APPLIED	
			COUNTERSUNK ONE SIDE (BLIND HOLE)	COUNTERSUNK BOTH SIDES (THRU HOLE)
			Inch (mm)	Inch (mm)
No. 0-80	.065 (1.651)	+.015 -.000 (+0.381) (-0.000)	.059 (1.499)	.069 (1.753)
No. 1-64	.079 (2.007)		.073 (1.854)	.085 (2.159)
No. 2-56	.093 (2.362)		.084 (2.134)	.097 (2.464)
No. 3-48	.106 (2.692)		.098 (2.489)	.113 (2.870)
No. 4-40	.120 (3.048)		.117 (2.971)	.135 (3.429)
No. 6-32	.148 (3.759)		.147 (3.734)	.169 (4.293)
No. 8-32	.174 (4.420)		.147 (3.734)	.169 (4.293)
No. 10-24	.203 (5.156)		.195 (4.953)	.224 (5.690)
No. 10-32	.200 (5.080)		.147 (3.734)	.169 (4.293)
1 / 4 - 20	.264 (6.706)		.234 (5.944)	.268 (6.807)
1 / 4 - 28	.261 (6.629)		.168 (4.267)	.193 (4.902)
5 / 16 - 18	.329 (8.357)		.260 (6.604)	.299 (7.595)
5 / 16 - 24	.325 (8.255)		.195 (4.953)	.224 (5.690)
3 / 8 - 16	.393 (9.982)	.293 (7.442)	.336 (8.534)	
3 / 8 - 24	.388 (9.855)	.195 (4.953)	.224 (5.690)	
7 / 16 - 20	.452 (11.481)	.234 (5.944)	.268 (6.807)	
1 / 2 - 20	.514 (13.056)	.234 (5.944)	.268 (6.807)	
9 / 16 - 18	.579 (14.707)	.260 (6.604)	.299 (7.595)	
5 / 8 - 18	.641 (16.281)	.260 (6.604)	.299 (7.595)	
3 / 4 - 16	.768 (19.507)	.293 (7.442)	.336 (8.534)	
7 / 8 - 14	.895 (22.733)	.334 (8.484)	.383 (9.728)	
1 - 12	1.023 (25.894)	.389 (9.881)	.445 (11.303)	

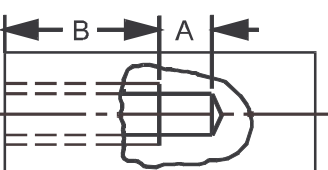
Table V Unified Screw Thread Tap Drill Sizes

THREAD SIZE	CLASS 1B AND 2B INTERNAL THREADS			CLASS 3B INTERNAL THREADS		
	MINOR DIAMETER Inch (mm)		MINOR DIAMETER NOMINAL DRILL SIZE	Inch (mm)		NOMINAL DRILL SIZE
	MIN	MAX		MIN	MAX	
No. 0-80	.0465 (1.181)	.0514 (1.306)	3 / 64 (.0469)	.0465 (1.181)	.0514 (1.306)	3 / 64 (.0469)
No. 1-64	.0561 (1.425)	.0623 (1.582)	#53 (.0595)	.0561 (1.425)	.0623 (1.582)	#53 (.0595)
No. 2-56	.0667 (1.694)	.0737 (1.872)	#50 (.0700)	.0667 (1.694)	.0737 (1.872)	#50 (.0700)
No. 3-48	.0764 (1.941)	.0845 (2.146)	#47 (.0785)	.0764 (1.941)	.0845 (2.146)	#47 (.0785)
No. 4-40	.0849 (2.156)	.0939 (2.385)	#43 (.0890)	.0849 (2.156)	.0939 (2.385)	#43 (.0890)
No. 6-32	.1040 (2.642)	.1140 (2.896)	#36 (.1065)	.1040 (2.642)	.1140 (2.896)	#36 (.1065)
No. 8-32	.1300 (3.302)	.1390 (3.531)	#29 (.1360)	.1300 (3.302)	.1389 (3.528)	#29 (.1360)
No. 10-24	.1450 (3.683)	.1560 (3.962)	#25 (.1495)	.1450 (3.683)	.1555 (3.950)	#25 (.1495)
No. 10-32	.1560 (3.962)	.1640 (4.166)	#21 (.1590)	.1560 (3.962)	.1641 (4.168)	#21 (.1590)
1 / 4 - 20	.1960 (4.978)	.2070 (5.258)	#7 (.2010)	.1960 (4.978)	.2067 (5.250)	#7 (.2010)
1 / 4 - 28	.2110 (5.359)	.2200 (5.588)	#3 (.2130)	.2110 (5.359)	.2190 (5.563)	#3 (.2130)
5 / 16 - 18	.2520 (6.401)	.2650 (6.731)	F (.2570)	.2520 (6.401)	.2630 (6.680)	F (.2570)
5 / 16 - 24	.2670 (6.781)	.2770 (7.036)	I (.2720)	.2670 (6.782)	.2754 (6.995)	I (.2720)
3 / 8 - 16	.3070 (7.798)	.3210 (8.153)	5 / 16 (.3125)	.3070 (7.798)	.3182 (8.082)	5 / 16 (.3125)
3 / 8 - 24	.3300 (8.382)	.3400 (8.636)	Q (.3320)	.3300 (8.382)	.3372 (8.565)	Q (.3320)
7 / 16 - 20	.3830 (9.728)	.3950 (10.033)	25 / 64 (.3906)	.3830 (9.728)	.3916 (9.947)	25 / 64 (.3906)
1 / 2 - 13	.4170 (10.592)	.4340 (11.024)	27 / 64 (.4219)	.4170 (10.592)	.4284 (10.881)	27 / 64 (.4219)
1 / 2 - 20	.4460 (11.328)	.4570 (11.608)	29 / 64 (.4531)	.4460 (11.328)	.4537 (11.524)	29 / 64 (.4531)
9 / 16 - 18	.5020 (12.751)	.5150 (13.081)	1 / 2 (.5062)	.5020 (12.751)	.5106 (12.969)	1 / 2 (.5062)
5 / 8 - 18	.5650 (14.351)	.5780 (14.681)	9 / 16 (.5687)	.5650 (14.351)	.5730 (14.554)	9 / 16 (.5687)
3 / 4 - 16	.6820 (17.323)	.6960 (17.678)	11 / 16 (.6875)	.6820 (17.323)	.6908 (17.546)	11 / 16 (.6875)
7 / 8 - 14	.7980 (20.269)	.8140 (20.676)	13 / 16 (.8125)	.7980 (20.269)	.8068 (20.493)	.8024 (.8024)
1 - 12	.9100 (23.114)	.9280 (23.571)	59 / 64 (.9219)	.9100 (23.114)	.9198 (23.363)	29 / 32 (.9062)
1 1 / 8 - 12	1.0350 (26.289)	1.0530 (26.746)	1 3 / 64 (1.0469)	1.0350 (26.289)	1.0448 (26.538)	1 1 / 32 (1.0312)
1 1 / 4 - 12	1.1600 (24.464)	1.1780 (29.921)	1 11 / 64 (1.1719)	1.1600 (24.464)	1.1698 (29.713)	1 5 / 32 (1.1562)
1 3 / 8 - 12	1.2850 (32.639)	1.3030 (33.096)	1 19 / 64 (1.2969)	1.2850 (32.639)	1.2948 (32.888)	1 9 / 32 (1.2812)
1 1 / 2 - 12	1.4100 (35.814)	1.4280 (36.271)	1 27 / 64 (1.4219)	1.4100 (35.814)	1.4198 (36.063)	1 13 / 32 (1.4062)
1 3 / 4 - 12	1.6600 (42.164)	1.6780 (42.621)	1 43 / 64 (1.6719)	1.6600 (42.164)	1.6998 (42.413)	1 21 / 32 (1.6562)
2 - 12	1.9100 (48.514)	1.9280 (48.971)	1 59 / 64 (1.9219)	1.9100 (48.514)	1.9198 (48.763)	1 29 / 32 (1.9062)
2 1 / 4 - 12	2.1600 (54.864)	2.1780 (55.321)	2 5 / 32 (2.1562)	2.1600 (54.864)	2.1698 (55.113)	2 5 / 32 (2.1562)
2 1 / 2 - 12	2.4100 (61.214)	2.4280 (61.671)	-	2.4100 (61.214)	2.4198 (61.463)	61.0 mm (2.4016)
2 3 / 4 - 12	2.6600 (67.564)	2.6780 (68.021)	-	2.6600 (67.564)	2.6698 (67.813)	-
3 - 12	2.9100 (73.914)	2.9280 (74.371)	-	2.9100 (73.914)	2.9198 (74.163)	74.0 mm (2.9134)

Table VI No-chip Form Tap Drill Sizes

THREAD SIZE	75% THREAD			70% THREAD			65% THREAD		
	Theor. Hole Core Size Inch (mm)	Nearest Drill Size	Dec. Equiv.	Theor. Hole Core Size Inch (mm)	Nearest Drill Size	Dec. Equiv.	Theor. Hole Core Size Inch (mm)	Nearest Drill Size	Dec. Equiv.
No. 0-80	.0536 (1.361)	1.35 mm	.0531	.0540 (1.372)	1.35 mm	.0531	.0545 (1.384)	-	-
No. 1-64	.0650 (1.651)	1.65 mm	.0650	.0655 (1.664)	1.65 mm	.0650	.0661 (1.679)	-	-
No. 2-56	.0769 (1.953)	1.95 mm	.0768	.0774 (1.966)	1.95 mm	.0768	.0781 (1.984)	5 / 64	.0781
No. 3-48	.0884 (2.245)	2.25 mm	.0886	.0890 (2.261)	#43	.0890	.0898 (2.281)	#43	.0890
No. 4-40	.0993 (2.522)	2.5 mm	.0984	.1000 (2.54)	#39	.0995	.1010 (2.565)	#39	.0995
No. 6-32	.1221 (3.101)	3.1 mm	.1220	.1230 (3.124)	3.1 mm	.1220	.1243 (3.157)	-	-
No. 8-32	.1481 (3.762)	3.75 mm	.1476	.1490 (3.785)	-	-	.1503 (3.818)	#25	.1495
No. 10-24	.1688 (4.288)	-	-	.1700 (4.318)	#18	.1695	.1717 (4.362)	11 / 64	.1719
No. 10-32	.1741 (4.422)	#17	.1730	.1750 (4.445)	-	-	.1763 (4.478)	-	-
1 / 4 - 20	.2245 (5.702)	5.7 mm	.2244	.2260 (5.740)	-	-	.2280 (5.791)	#1	.2280
1 / 4 - 28	.2318 (5.888)	-	-	.2329 (5.916)	5.9 mm	.2323	.2343 (5.951)	A	.2340
5 / 16 - 18	.2842 (7.219)	7.2 mm	.2835	.2861 (7.267)	7.25 mm	.2854	.2879 (7.313)	7.3 mm	.2874
5 / 16 - 24	.2912 (7.396)	7.4 mm	.2913	.2927 (7.435)	-	-	.2941 (7.470)	M	.2950
3 / 8 - 16	.3431 (8.714)	11 / 32	.3437	.3452 (8.768)	8.75 mm	.3445	.3474 (8.824)	S	.3480
3 / 8 - 24	.3537 (8.984)	9.0 mm	.3543	.3553 (9.022)	9.0 mm	.3543	.3566 (9.058)	-	-
7 / 16 - 20	.4120 (10.465)	Z	-	.4137 (10.508)	10.5 mm	-	.4154 (10.551)	-	-
1 / 2 - 20	.4745 (12.052)	-	-	.4762 (12.095)	-	-	.4779 (12.139)	-	-

Table VII Tap Drills



B = FULL THREAD DEPTH
B + A = DEPTH OF TAP DRILL

Thread Size	A(MIN) Inch (mm)	Thread Size	A(MIN) Inch (mm)
No. 0-80	.075 (1.905)	5/16-18	.278 (7.061)
No. 1-64	.094 (2.388)	5/16-24	.208 (5.283)
No. 2-56	.107 (2.718)	3/8-16	.312 (7.925)
No. 3-48	.125 (3.175)	3/8-24	.208 (5.283)
No. 4-40	.150 (3.810)	7/16-20	.250 (6.350)
No. 6-32	.188 (4.775)	1/2-20	.250 (6.350)
No. 8-32	.188 (4.775)	9/16-18	.278 (7.061)
No. 10-24	.250 (6.350)	5/8-18	.278 (7.061)
No. 10-32	.188 (4.775)	3/4-16	.312 (7.925)
1/4-20	.250 (6.350)	7/8-14	.357 (9.068)
1/4-28	.179 (4.547)	1-12	.417 (10.592)

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- 1.9 Surface texture. Surface texture of threads produced to this instruction shall have a smooth finish and be free from flaws and other defects such as fins, nicks, and burrs that would make them unsuitable for the purpose intended. Thread surface texture shall not exceed 100-microinch (0.00254 mm) arithmetical average roughness (R_A) for cut threads and 63-microinch (0.00160 mm) (R_A) for rolled and ground threads.
- 1.10 Plating and coating. Unified thread dimensions and tolerances apply to the finished product, after plating or coating, on 2B, 3A, and 3B class threads. When plated or coated, class 2A threads may be increased by the amount of the allowance provided by the Unified thread system. (“Coating”, as used herein, does not include organic finishes such as lacquer, enamel, etc.)

2. Quality Assurance Provisions

2.1 The Quality Assurance Organization shall be responsible for the inspection of screw threads. Inspection of threaded parts shall be performed using standard thread ring gages, thread plug gages, thread micrometers, or other accepted methods. All threaded parts shall be visually inspected for burrs, completeness of thread, and excessive surface roughness.

3. Preparation For Delivery (Not Applicable)